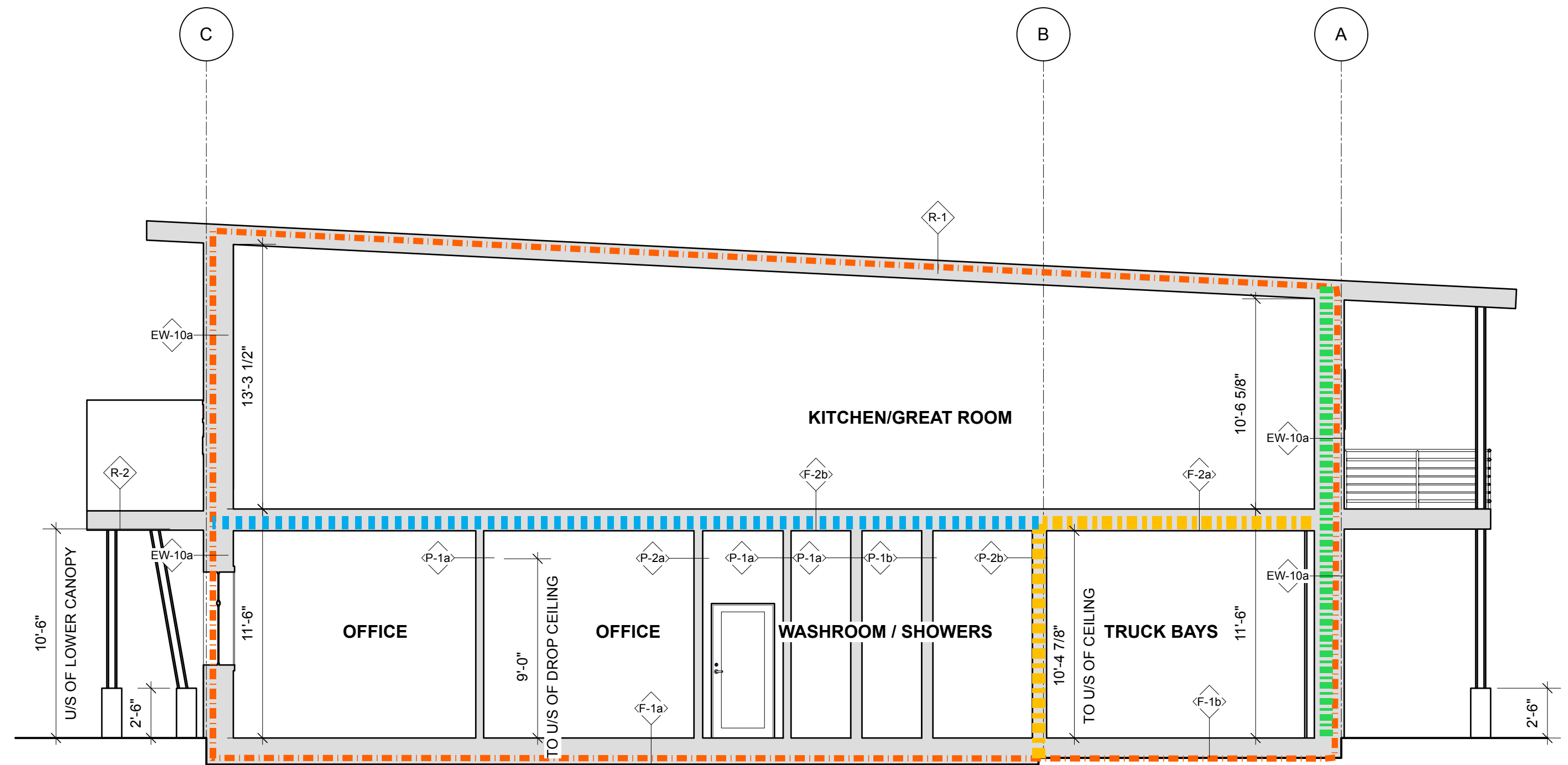
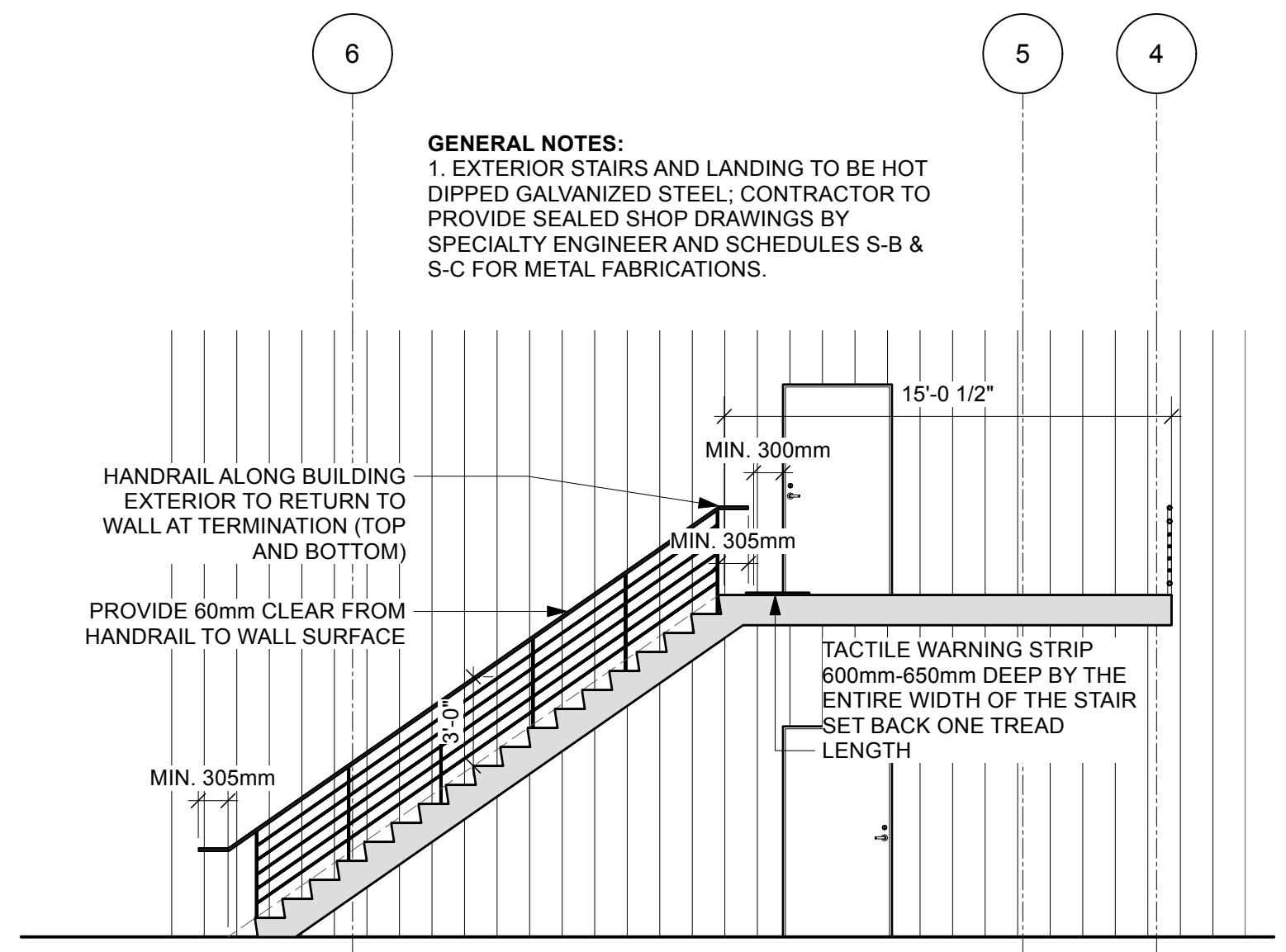


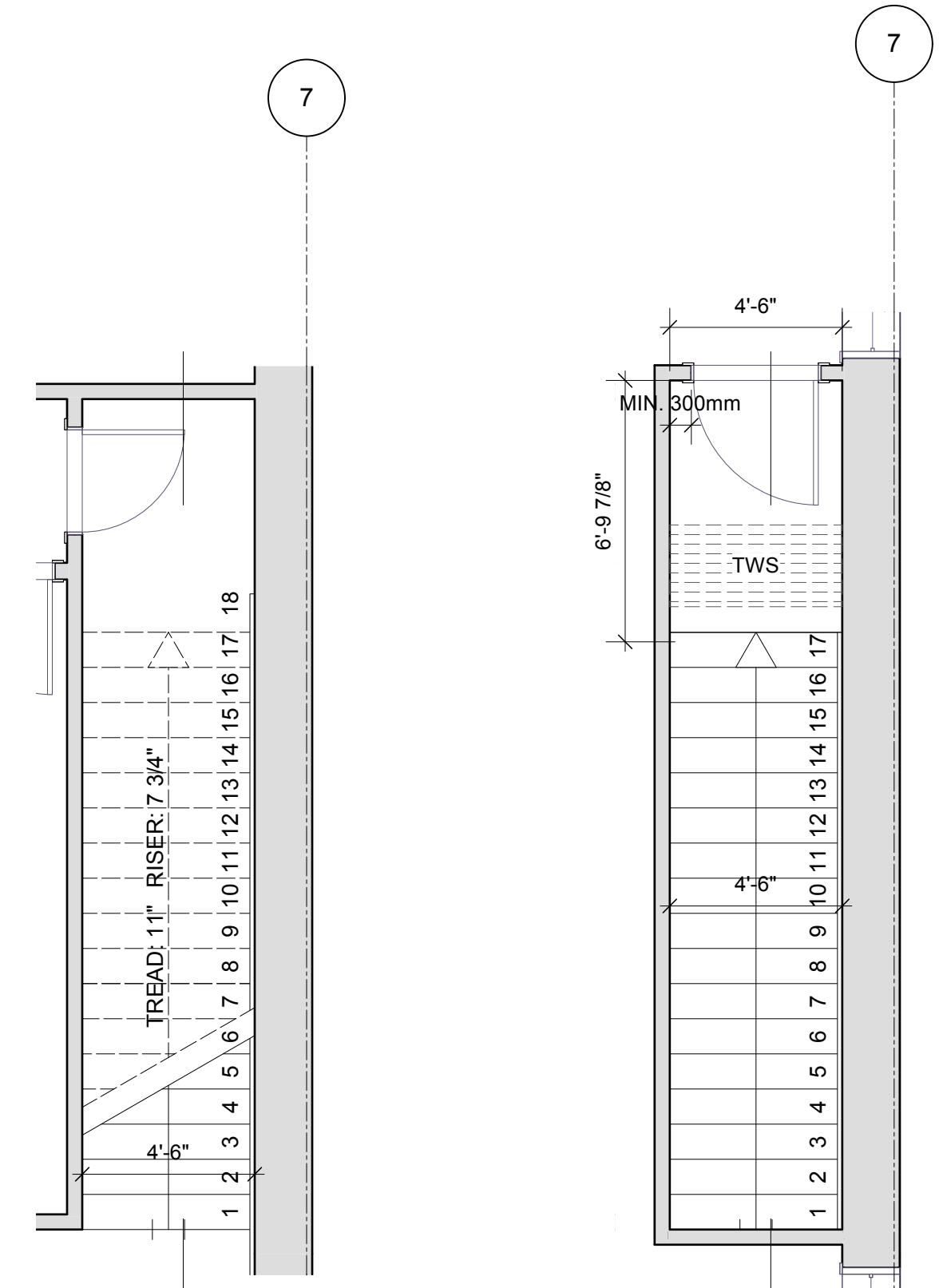
1 BUILDING SECTION
 Scale: 3/16" = 1'-0"



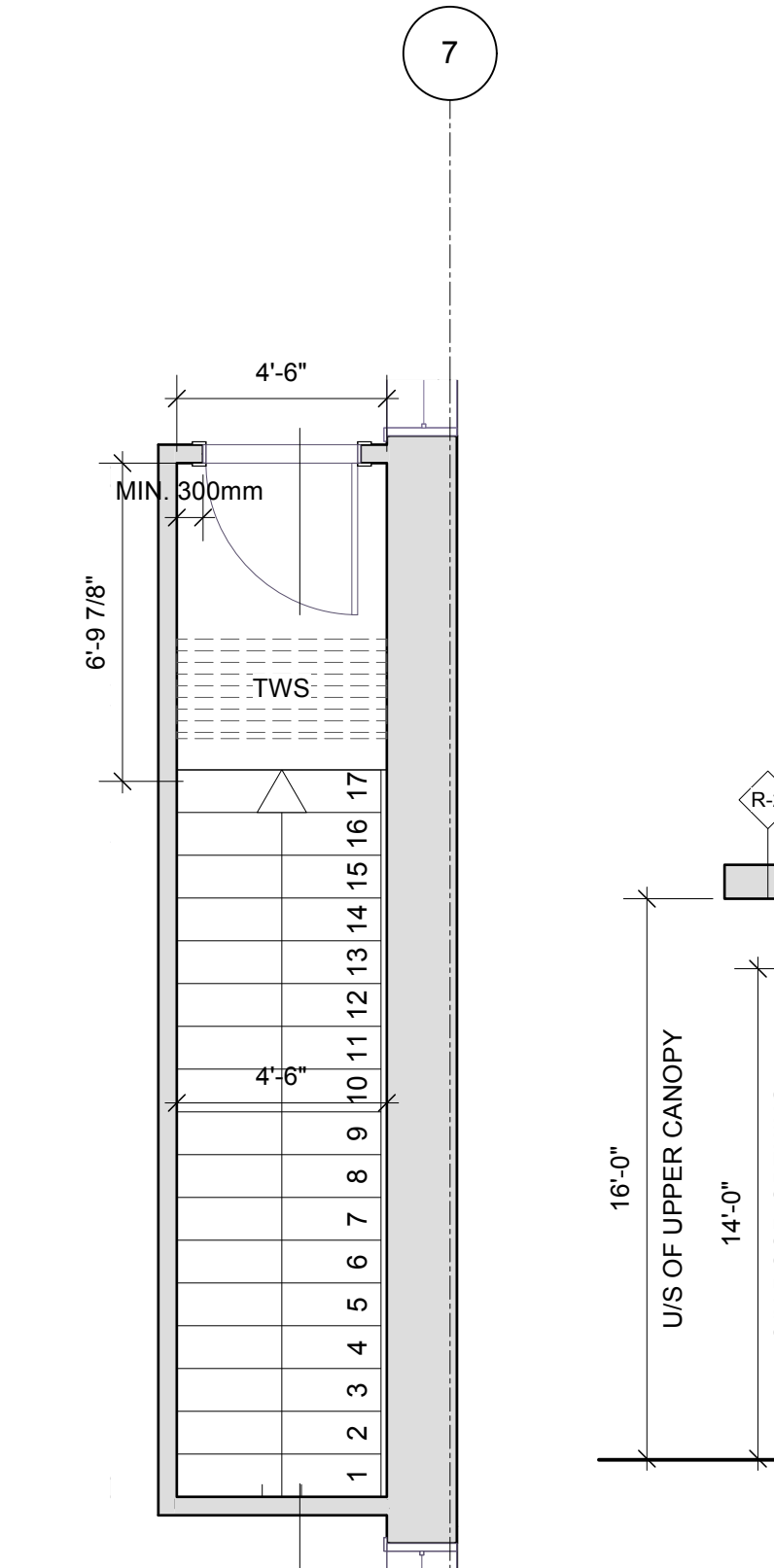
2 BUILDING SECTION
 Scale: 3/16" = 1'-0"



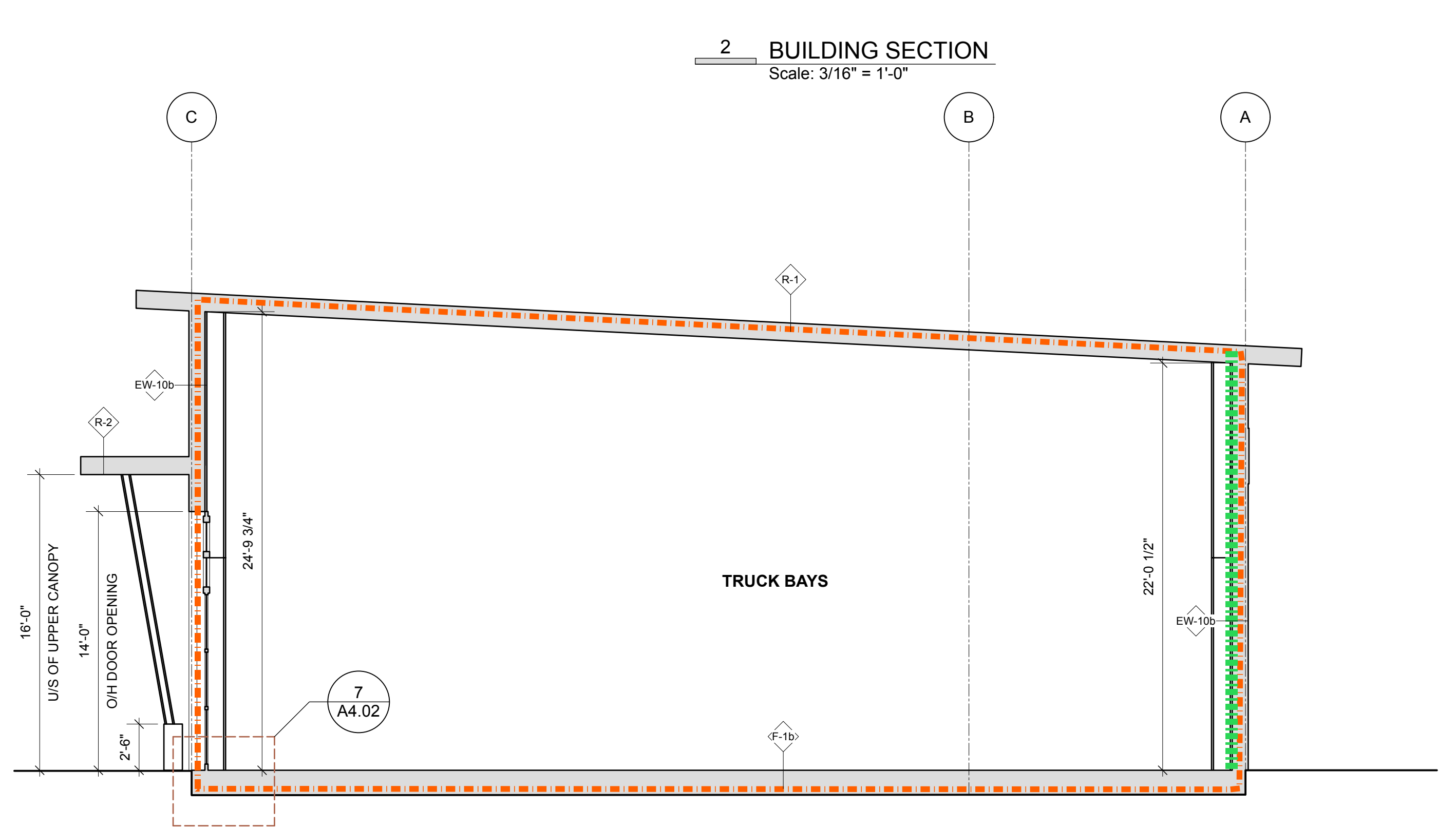
4 EXTERIOR STAIR SECTION
 Scale: 3/16" = 1'-0"



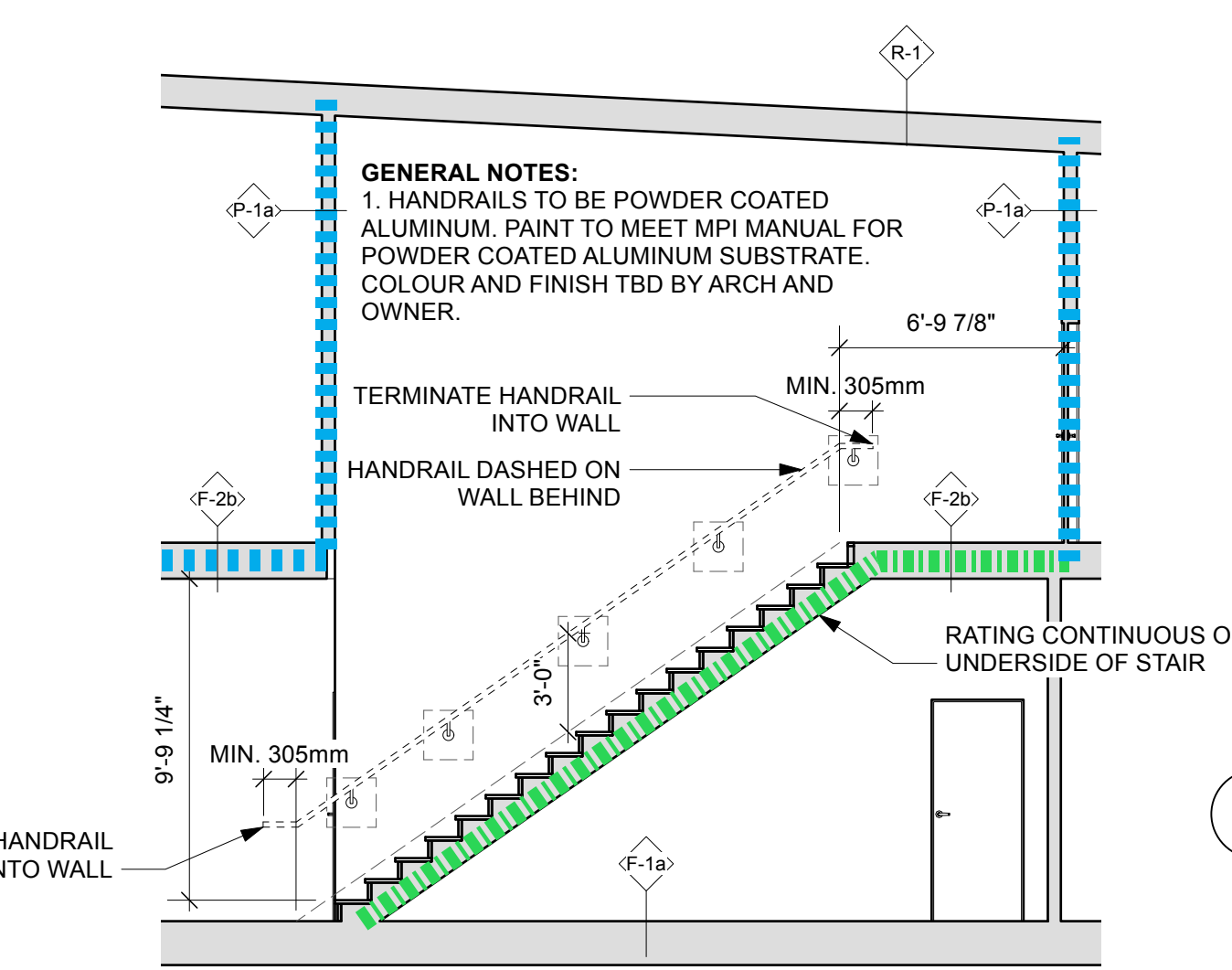
7 INTERIOR STAIR PLAN - FLOOR 1
 Scale: 1/4" = 1'-0"



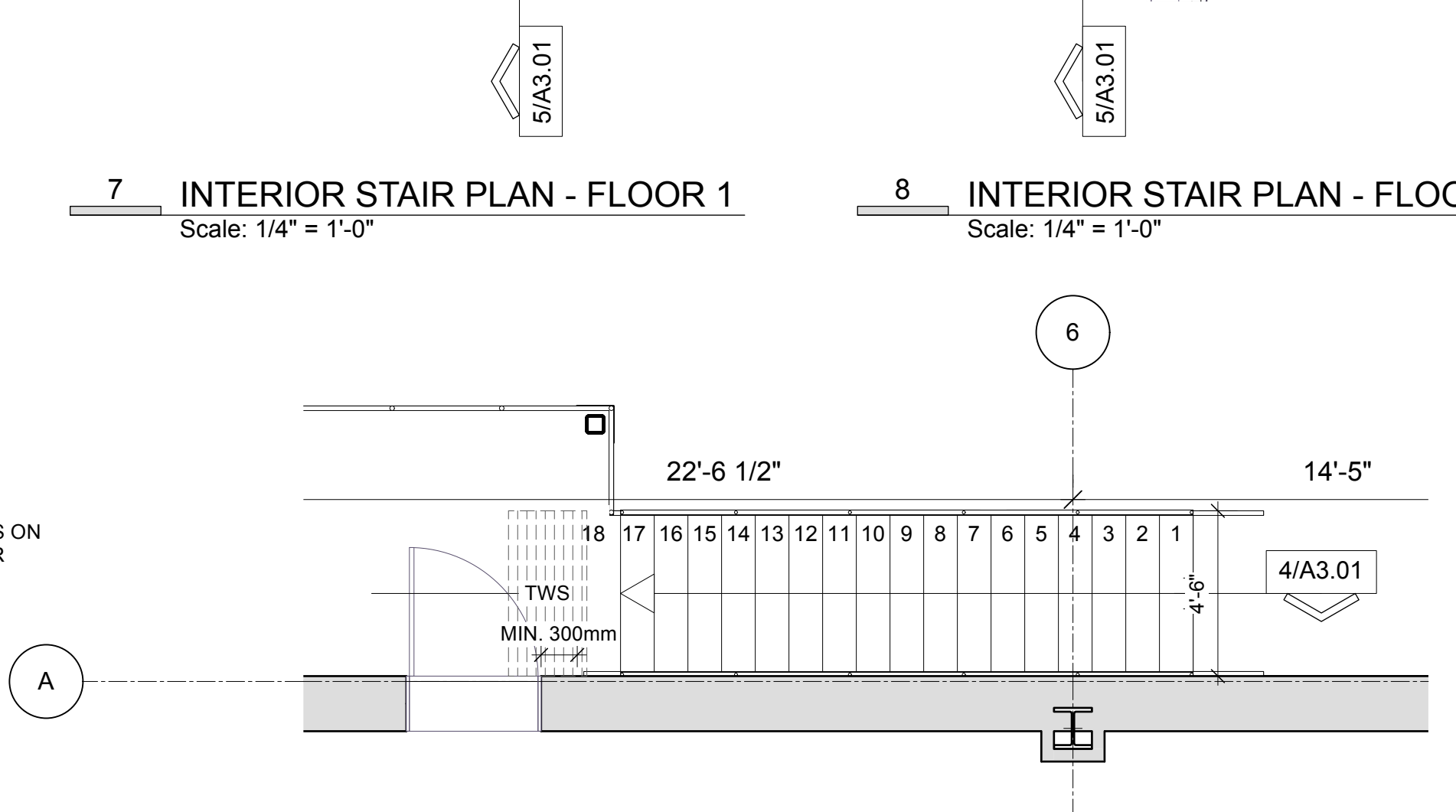
8 INTERIOR STAIR PLAN - FLOOR 2
 Scale: 1/4" = 1'-0"



3 BUILDING SECTION
 Scale: 3/16" = 1'-0"



5 INTERIOR STAIR SECTION
 Scale: 3/16" = 1'-0"



6 EXTERIOR STAIR PLAN - FLOOR 2
 Scale: 1/4" = 1'-0"

LEGEND

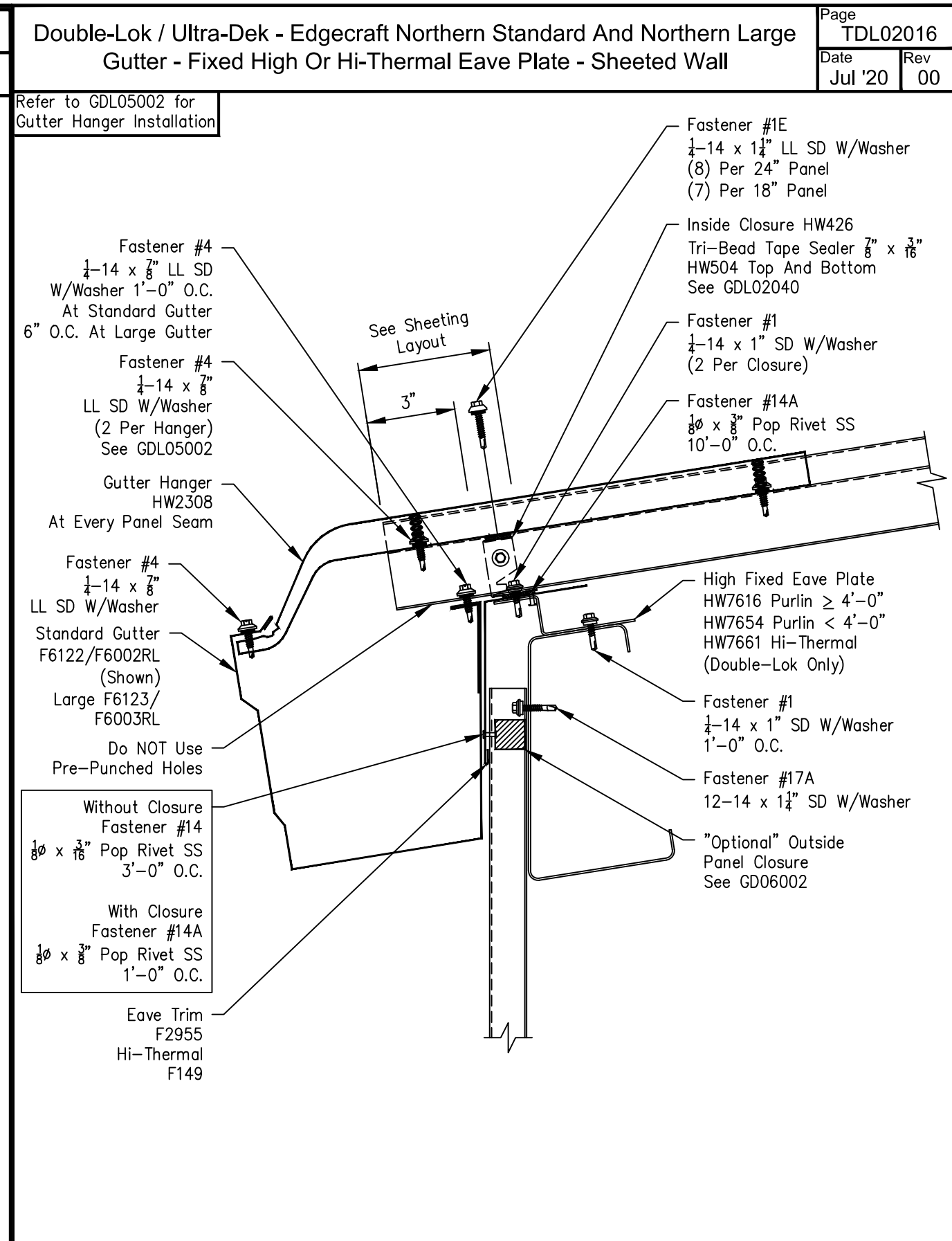
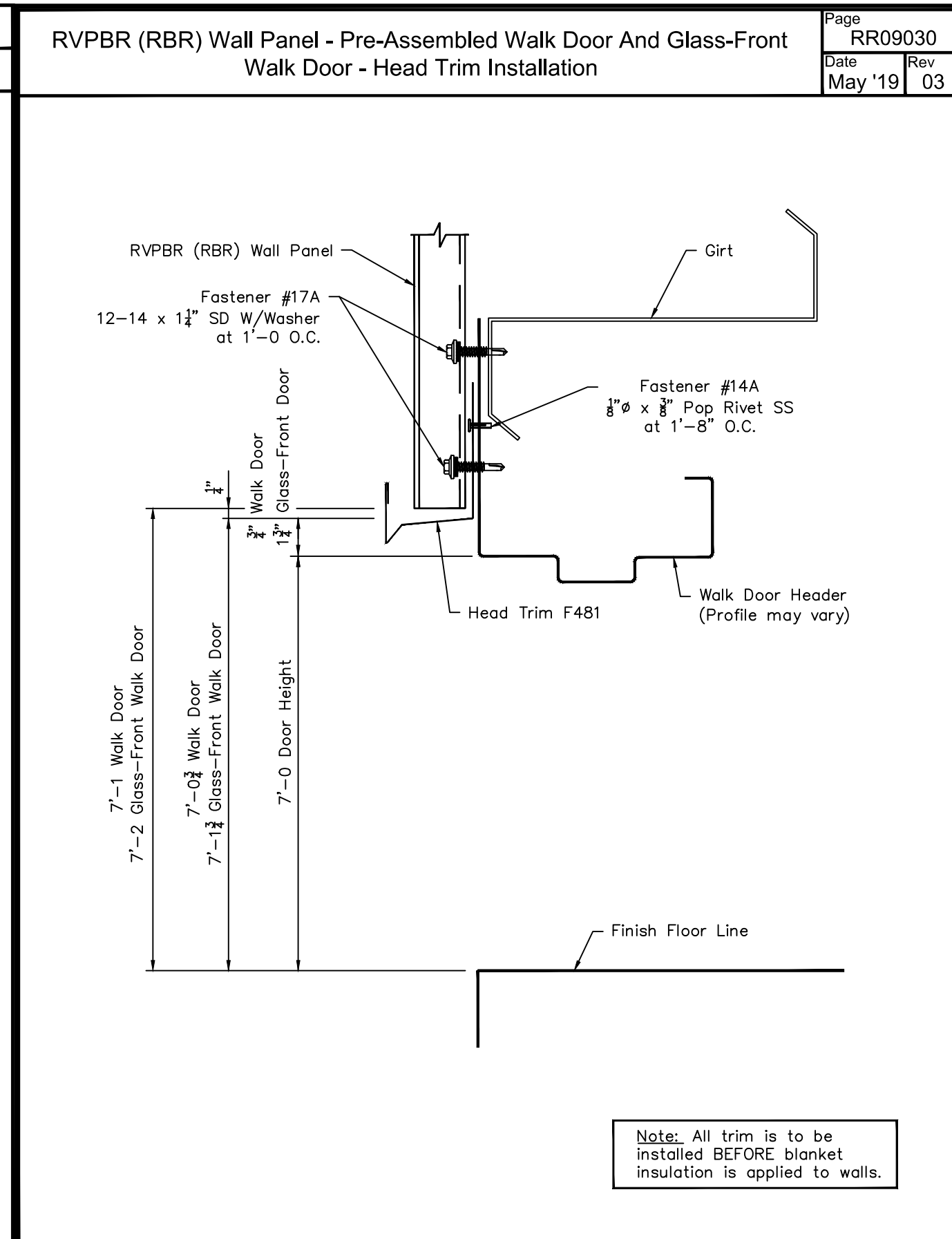
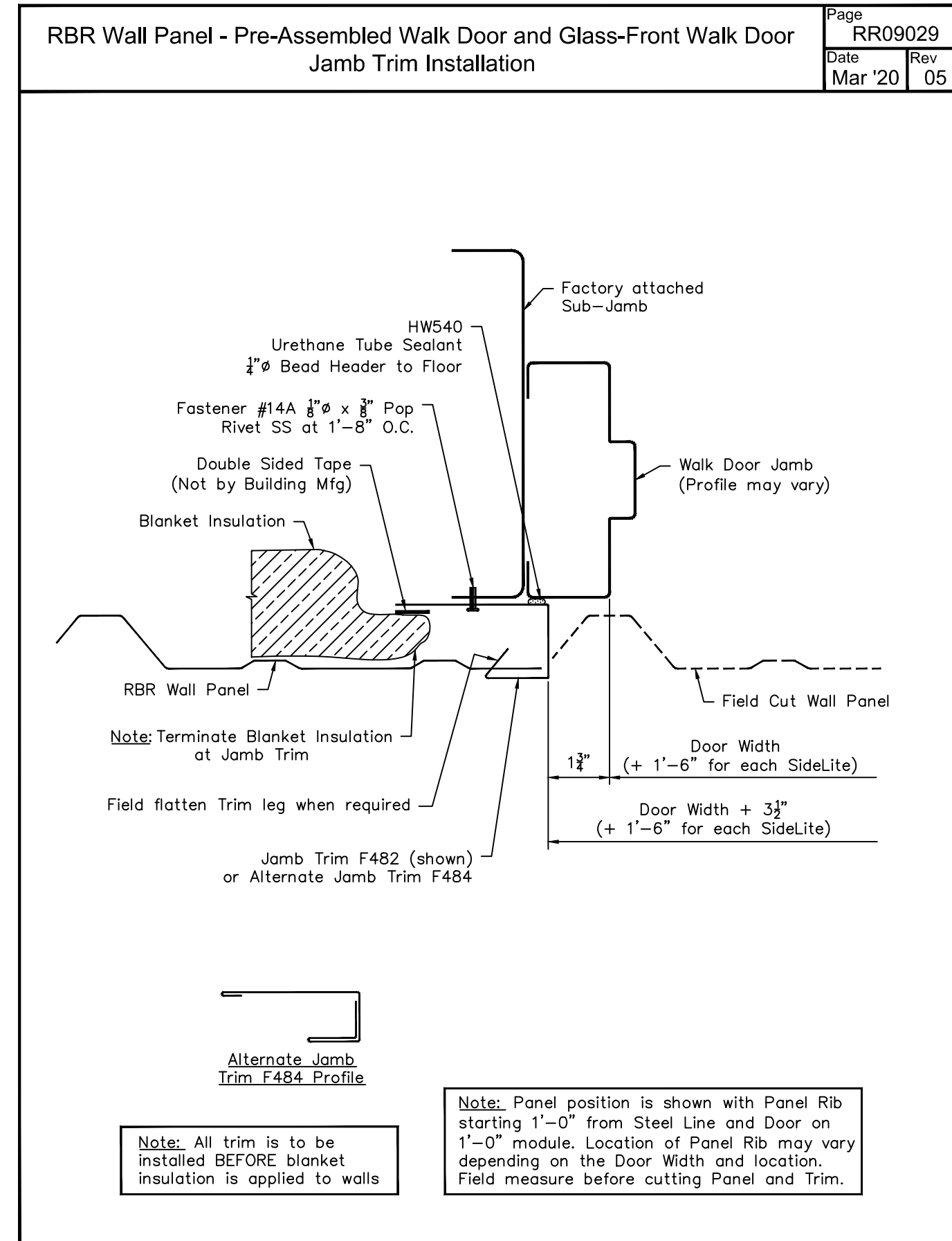
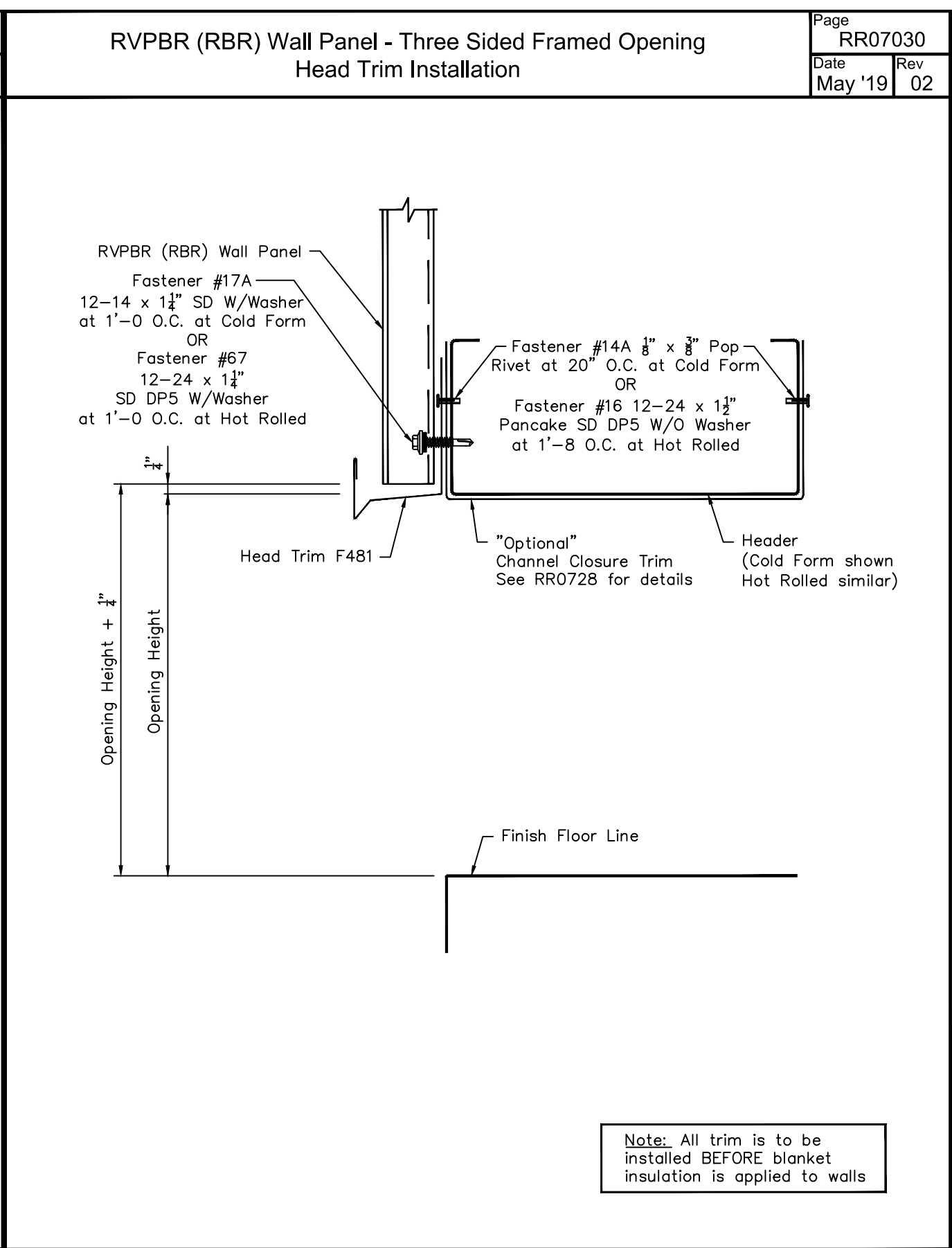
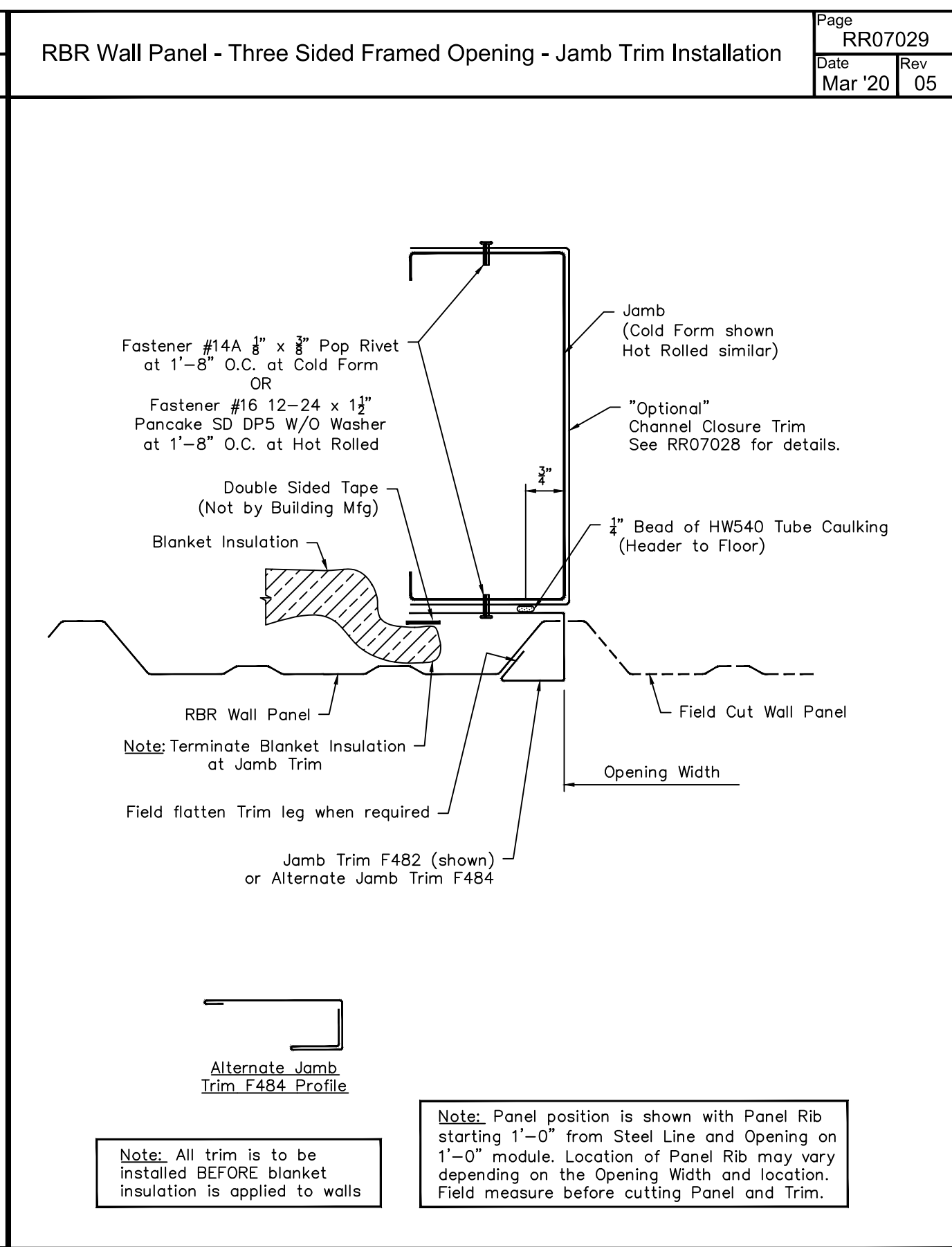
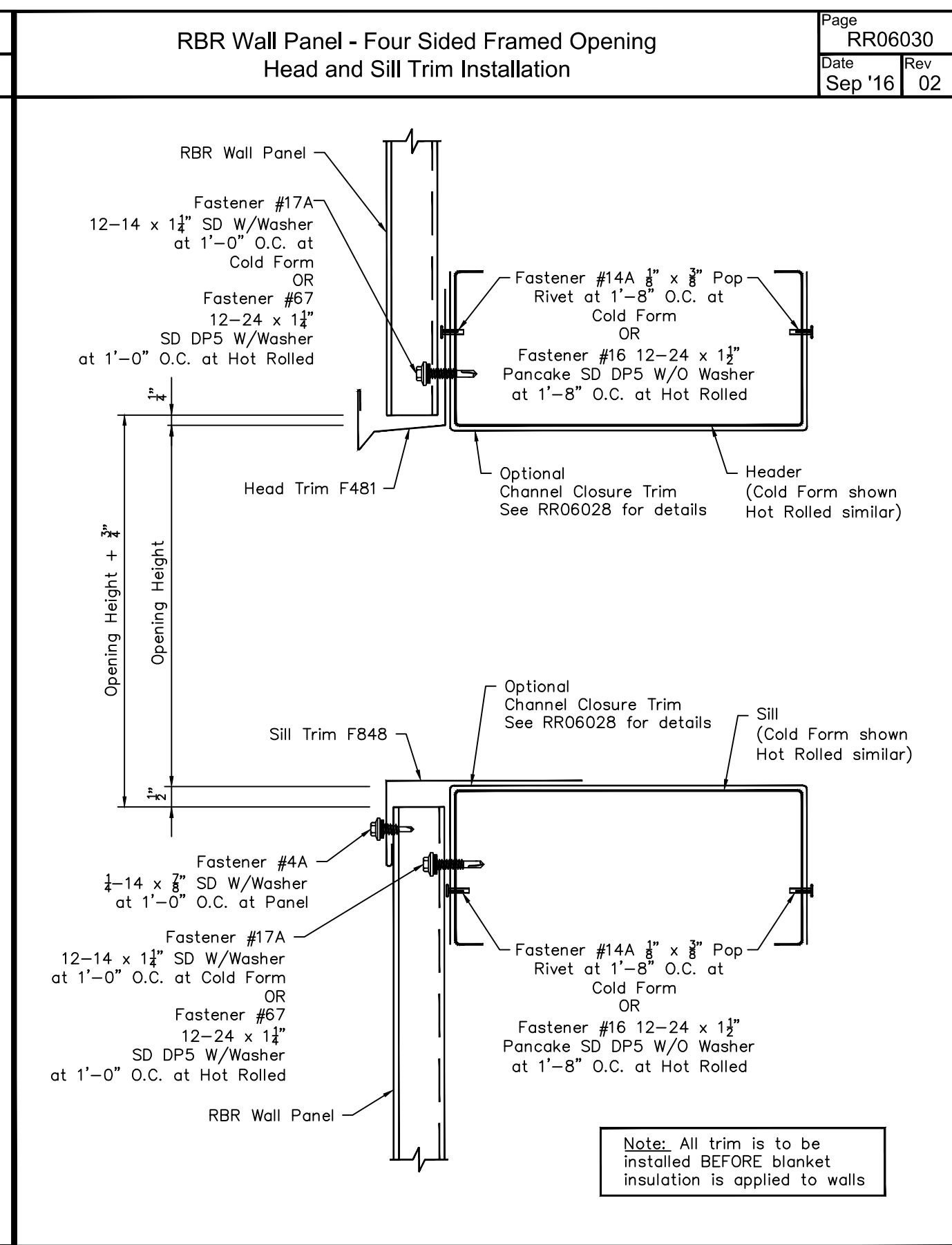
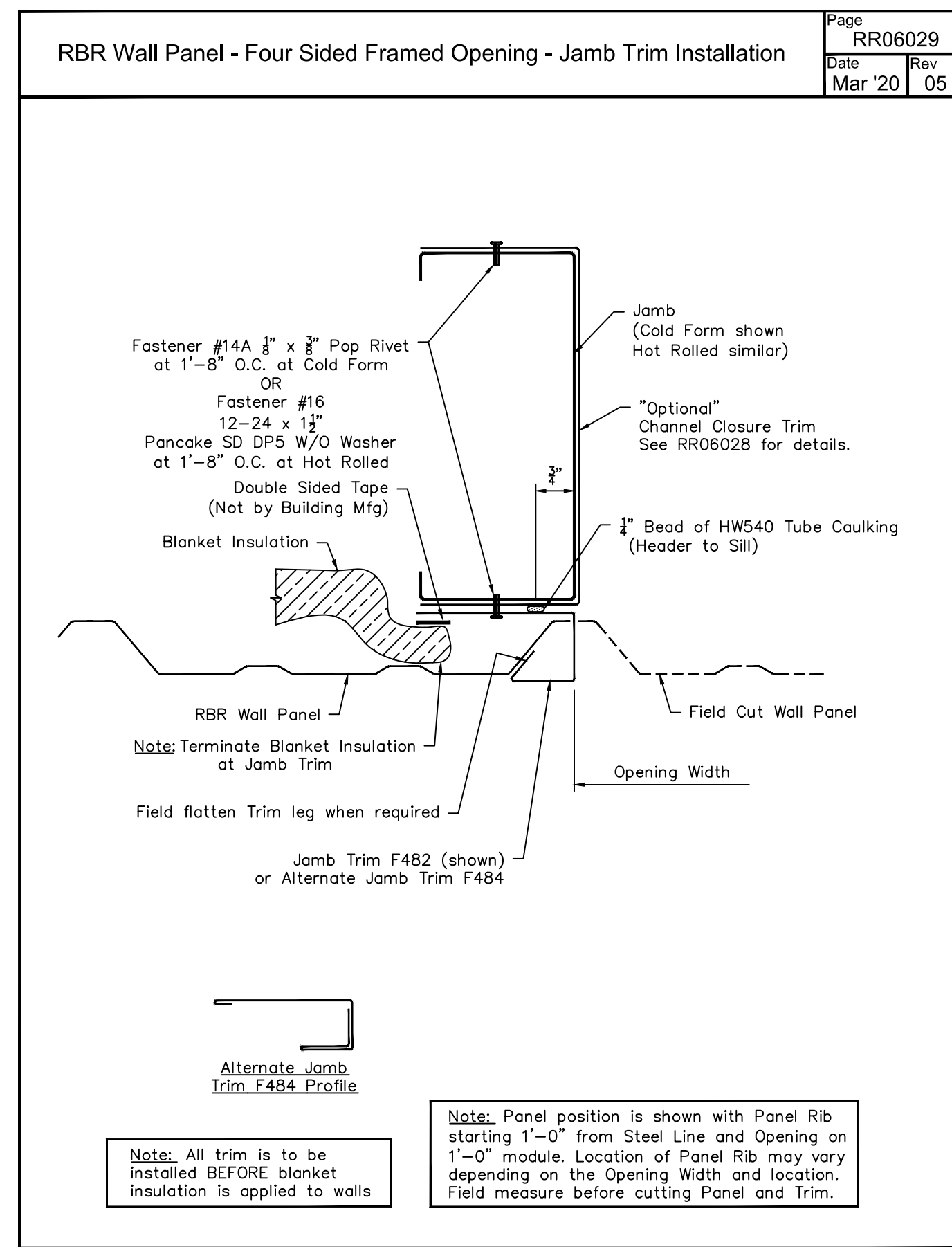
	2'-6" CLEAR AT DOOR SWING		ACCESSIBILITY CLEARANCE
	TACTILE WARNING STRIP		BULKHEAD REFER TO BUILDING SECTIONS FOR HEIGHTS
	RAINWATER LEADER		T-BAR CEILING
	FIRE DEPARTMENT CONNECTION		ASSEMBLIES TAG
	STANDPIPE		A: ARCHITECTURAL BE: REFER TO BUILDING ENCLOSURE CLADDING CONNECTIONS PACKAGE
	FLOOR DRAIN		
	THRU-WALL CONCRETE SCUPPER		
	AUTOMATED DOOR OPENER		
	SPOT DATUM		
	ROOF DRAIN WITH SLOPES		
	0 H FRR		
	3/4 H FRR		
	1 H FRR		
	1 1/2 H FRR		
	2 H FRR		
	2 H FRR (KITCHEN EXHAUST)		
	AIR BARRIER		

CHERRY CREEK FIREHALL
 5820 CHERRY CREEK ROAD,
 PORT ALBERNI, BC V9Y 8R7

I	2024-07-25	ISSUED FOR TENDER		
H	2024-07-25	ISSUED FOR BUILDING PERMIT R-1		
G	2024-06-10	ISSUED FOR CONSULTANT COORDINATION		
NO.	Y	M	D	ISSUE
REVISION				

SHEET TITLE
BUILDING & STAIR SECTIONS

DRAWING NO.
A3.01



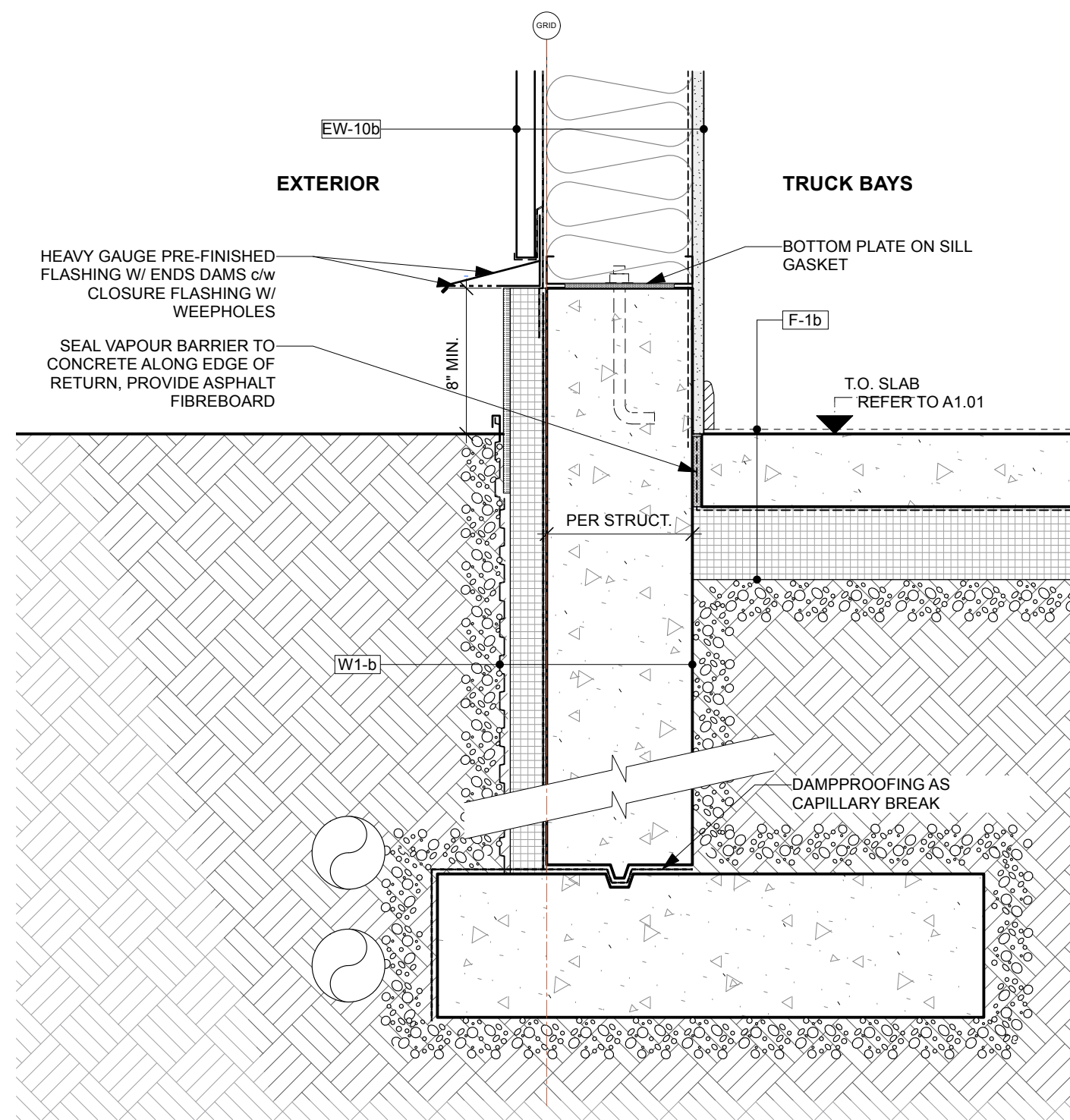
CHERRY CREEK FIREHALL
 5820 CHERRY CREEK ROAD,
 PORT ALBERNI, BC V9Y 8R7

I 2024-07-25 ISSUED FOR TENDER
 H 2024-07-25 ISSUED FOR BUILDING PERMIT R-1
 G 2024-06-10 ISSUED FOR CONSULTANT COORDINATION
 NO. Y M D ISSUE

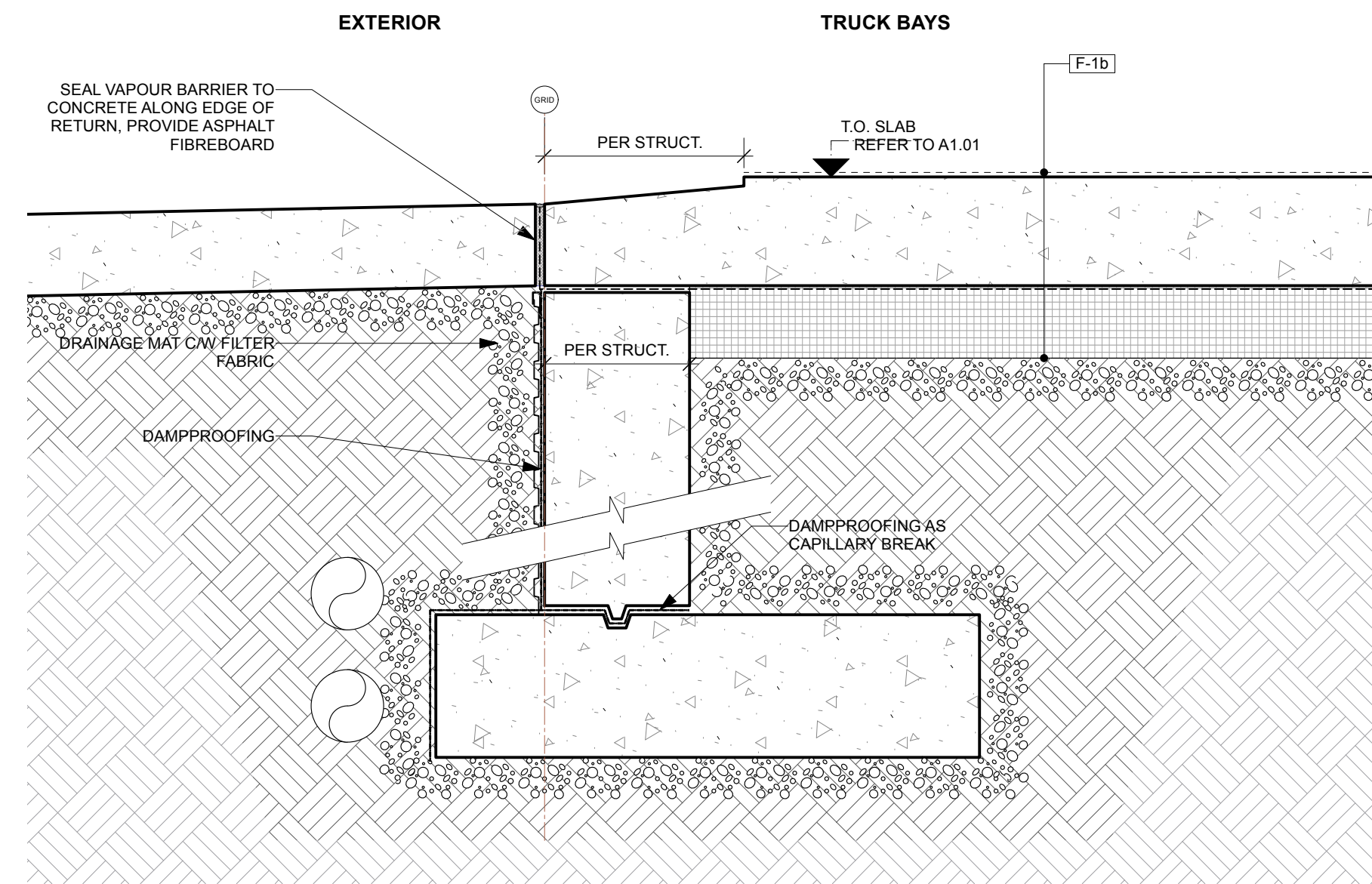
NO. Y M D ISSUE
 REVISION

SHEET TITLE
DETAILS

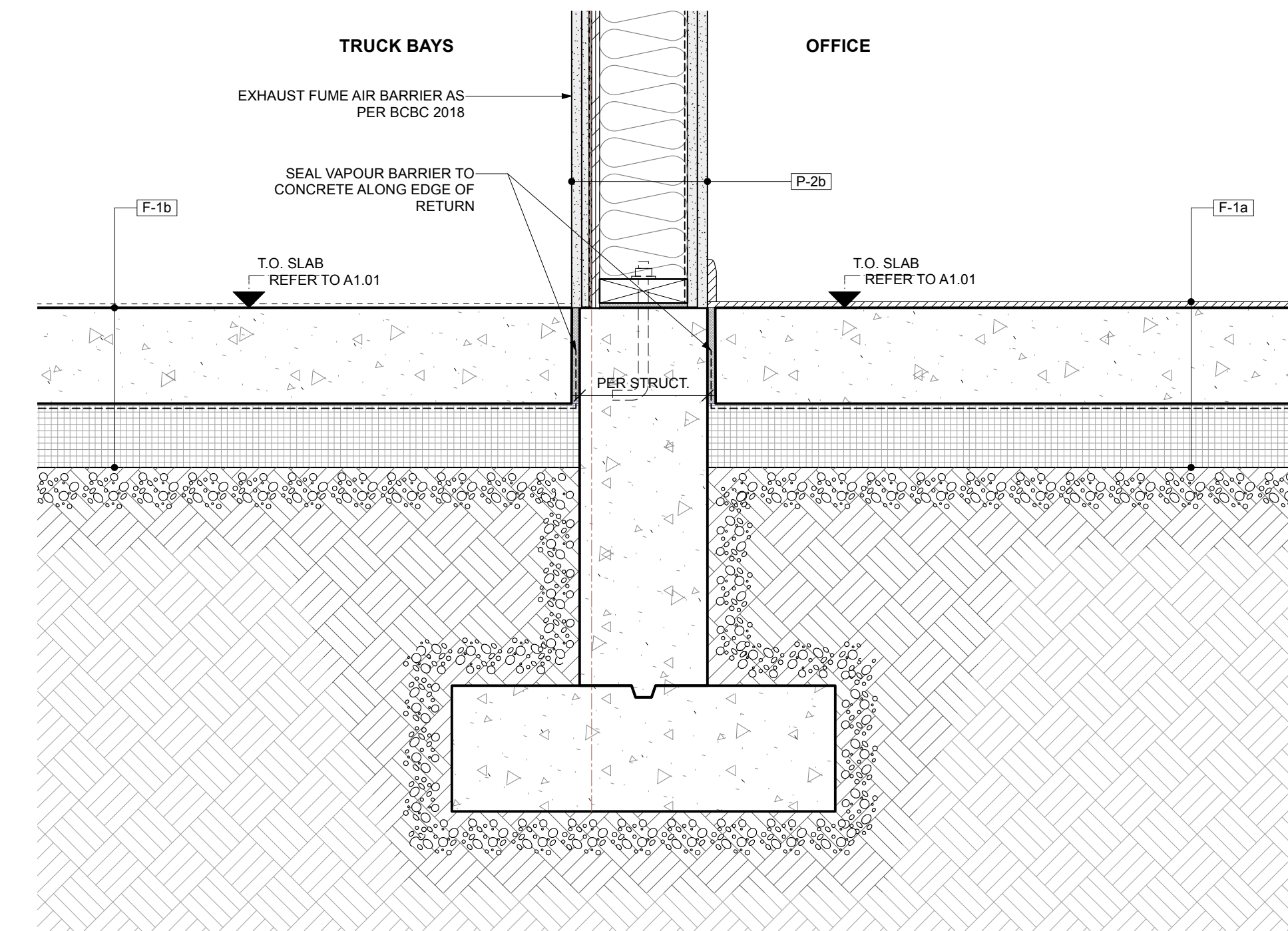
DRAWING NO.
A4.01



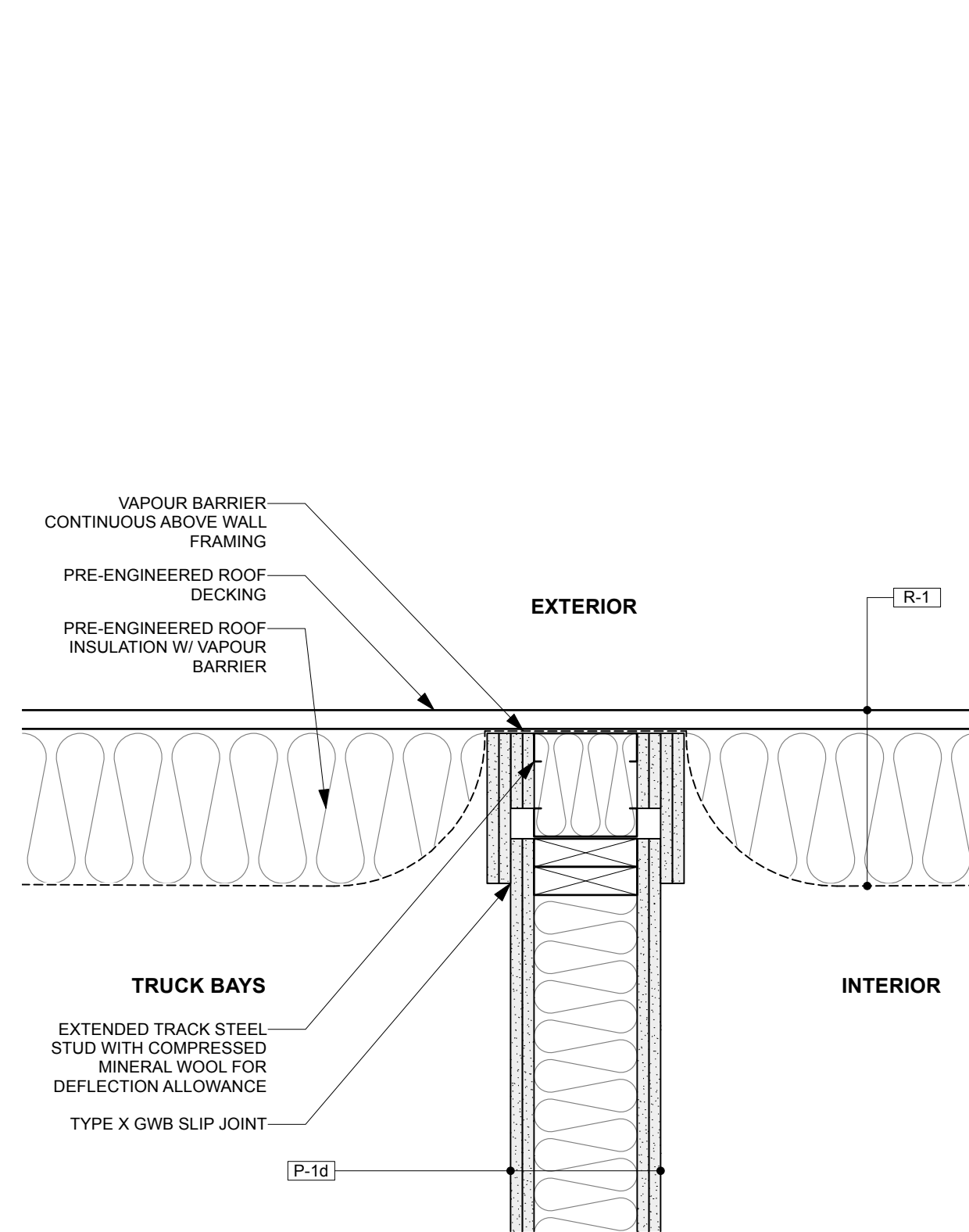
1 EXTERIOR WALL PRE-ENGINEERED STEEL AT TRUCK BAYS - DETAIL
Scale: 1 1/2" = 1'-0"



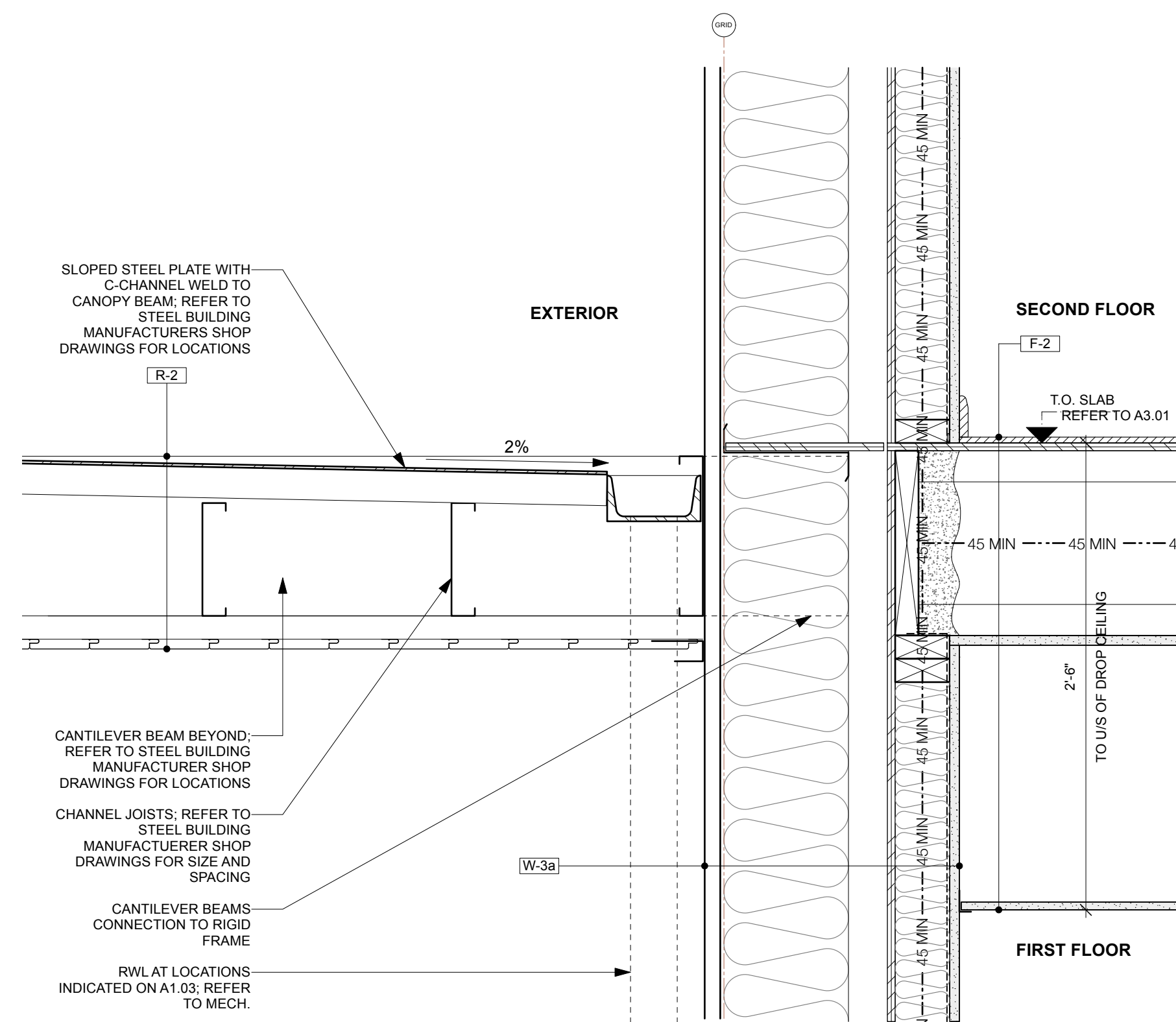
2 OVERHEAD DOOR AT FOOTING - DETAIL
Scale: 1 1/2" = 1'-0"



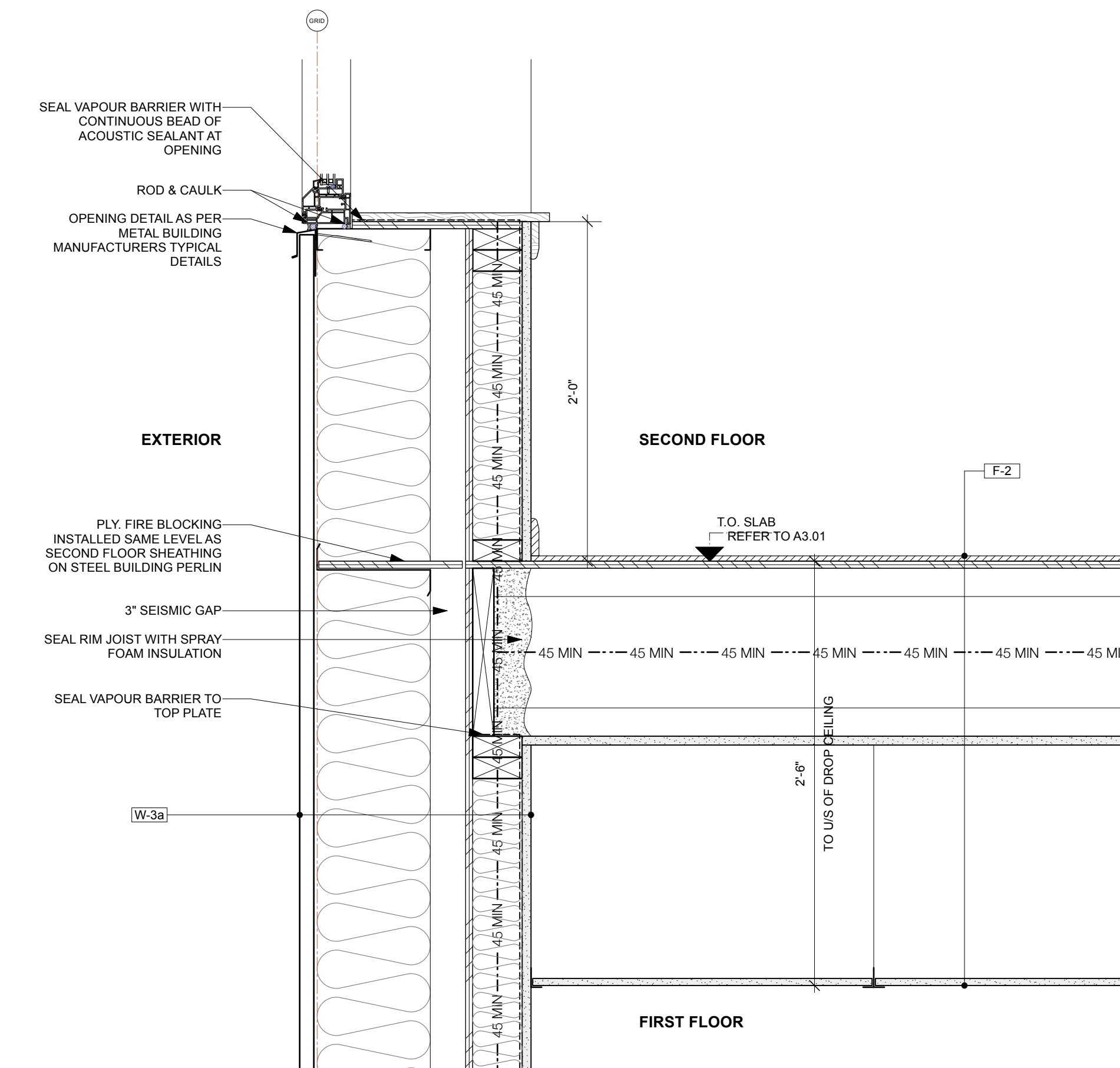
3 OFFICE TO TRUCK BAY FOUNDATION - DETAIL
Scale: 1 1/2" = 1'-0"



4 INTERIOR WALL AT PRE-ENGINEERED STEEL ROOF - DETAIL
Scale: 1 1/2" = 1'-0"

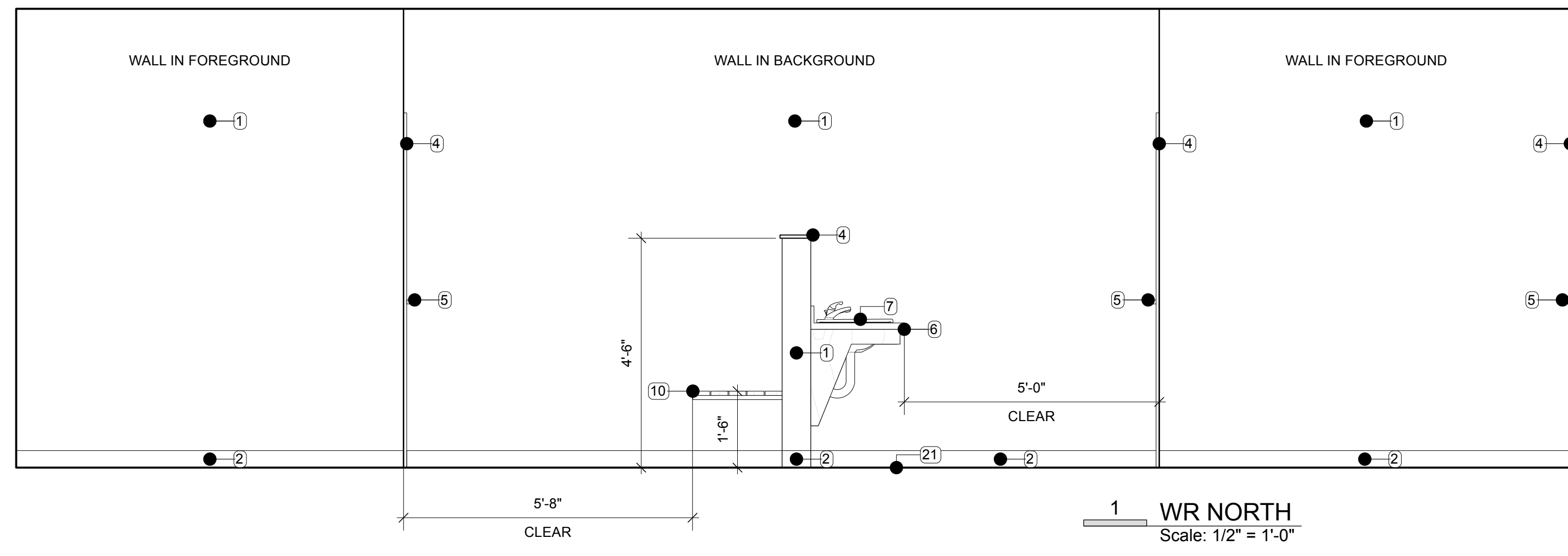


5 EXTERIOR WALL CANOPY - DETAIL
Scale: 1 1/2" = 1'-0"

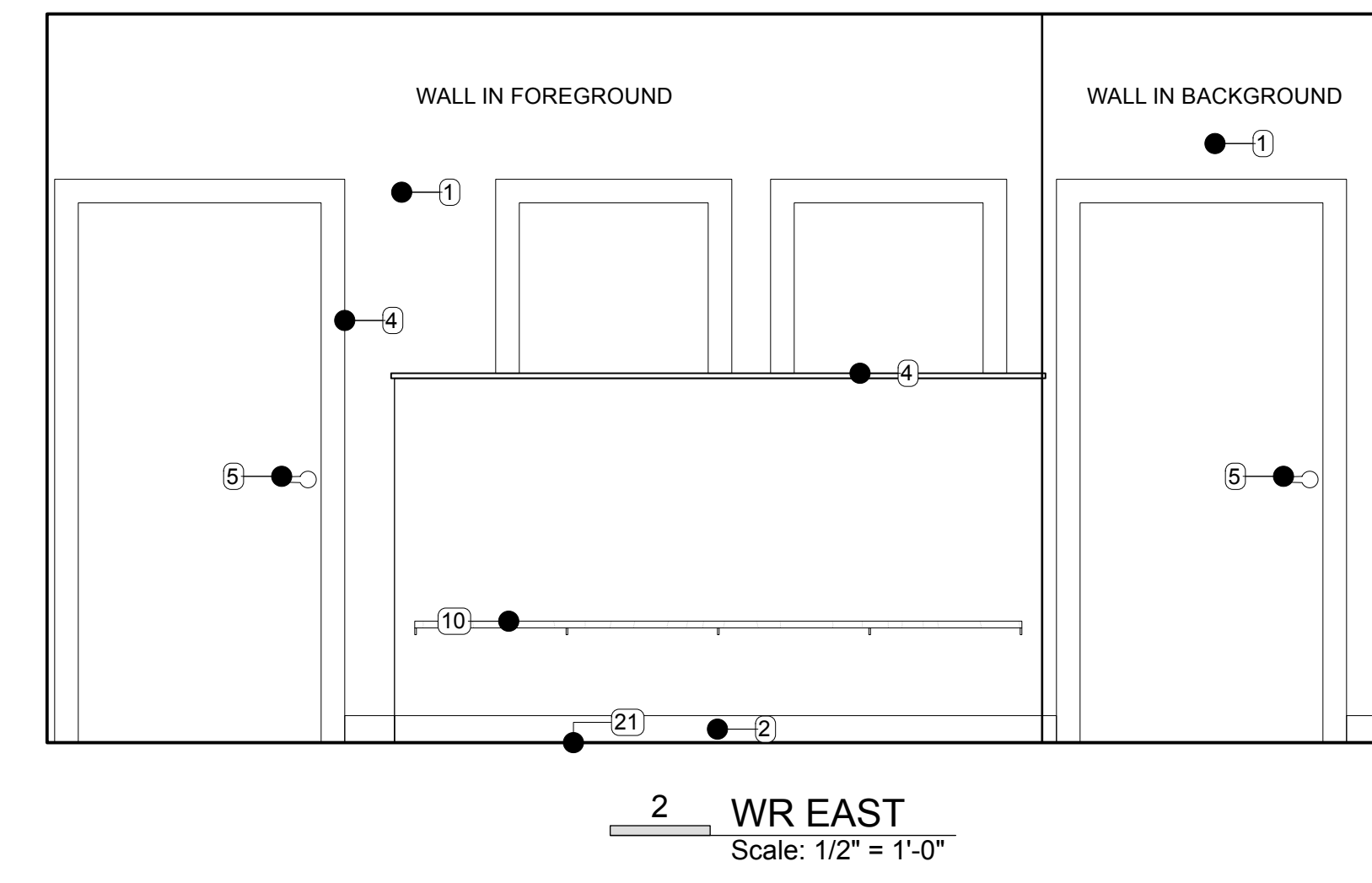


6 FLOOR TO FLOOR EXTERIOR WALL - DETAIL
Scale: 1 1/2" = 1'-0"

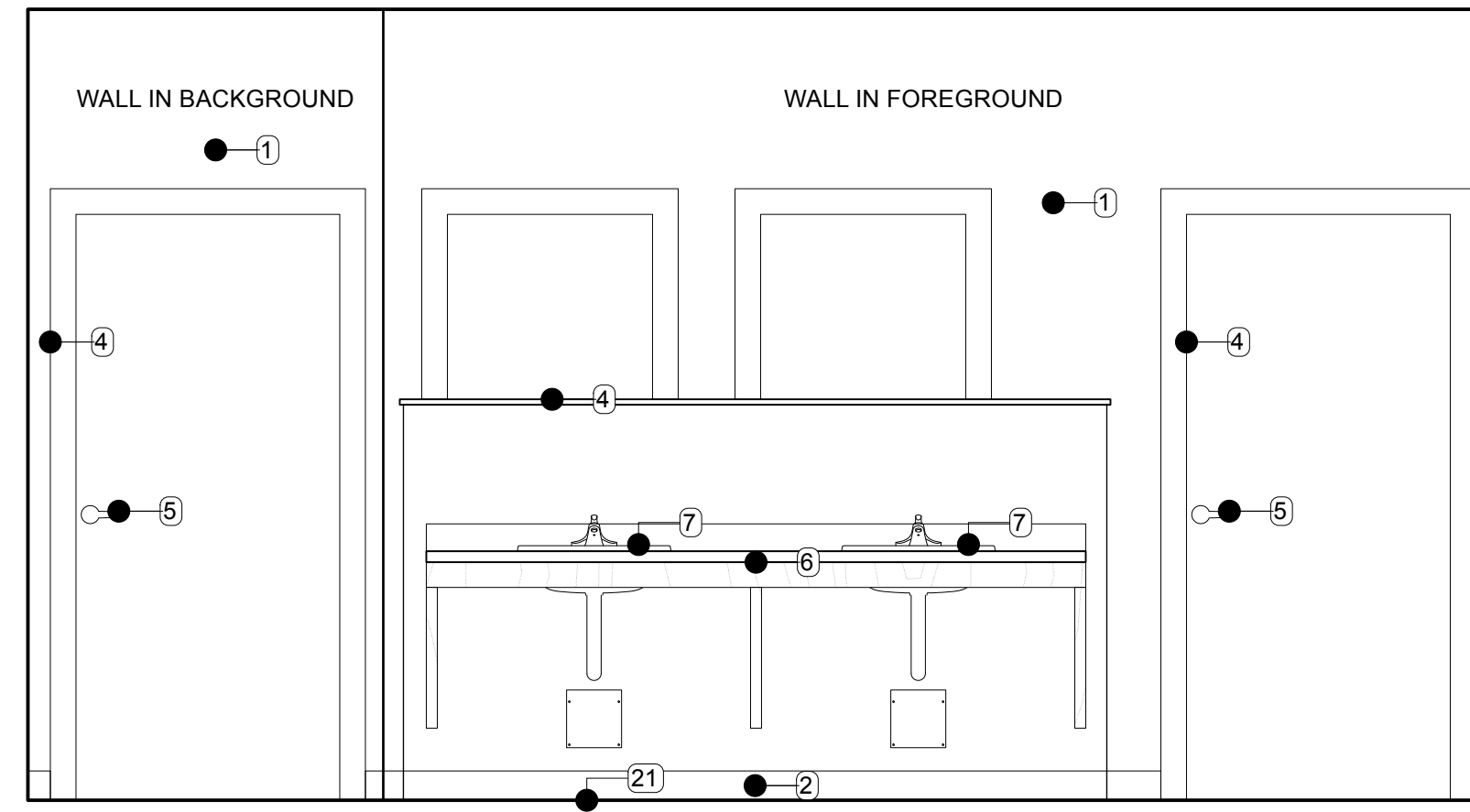
- INTERIOR ELEVATION LEGEND**
1. GWB; FINISH LEVEL 4; PAINTED; PAINT TO CONFORM TO LATEST EDITION OF MASTER PAINTERS INSTITUTE ARCHITECTURAL PAINTING SPECIFICATION MANUAL; COLOUR AND FINISH TBD BY ARCH & OWNER
 2. RESILIENT BASE; JOHNSONITE BY TARKETT OR CLIENT APPROVED EQUIVALENT; COLOUR TBD BY ARCH & OWNER
 3. SLIP-RESISTANT SHEET VINYL FLOORING; MARMOLEUM SOLID BY FORBO OR OWNER APPROVED EQUIVALENT; COLOUR AND FINISH TBD BY ARCH & OWNER
 4. TRIM; PAINTED; COLOUR TBD BY ARCH
 5. DOOR HARDWARE; REFER TO DOOR SCHEDULE; DOOR HARDWARE TO BE HAGER, SCHLAGE, VON DUPRIN, TAYMOR, DRAFTSEAL, OR OWNER APPROVED EQUIVALENT
 6. HPL COUNTER W/ INTEGRATED BACKSPLASH; THRU-COLOUR LAMINATE; COLOUR AND FINISH TBD BY ARCH & OWNER
 7. LAVATORY; REFER TO MECH.
 8. ACCESSIBLE WATER CLOSET; C/W TAMPER RESISTANT TOP LID
 9. INTEGRATED ACCESSIBLE SHOWER UNIT; 5'-0" WIDE, 3'-0" DEEP; REFER TO MECH.
 10. BENCH C/W 1"x4" DIMENSIONAL PLANKS; REFER TO STRUCT FOR DETAILS
 11. FOLDABLE SHOWER BENCH
 12. GRAB BAR; 2'-9" TO 2'-10" A.F.F.; 2'-6" MIN. LENGTH; PROVIDE SOLID BLOCKING AS PER BCBC 2018; PRODUCT TO BE BOBRICK OR OWNER APPROVED EQUIVALENT
 13. TOILET PAPER HOLDER; 2'-0" TO 2'-6" A.F.F.; PRODUCT TO BE BOBRICK OR OWNER APPROVED EQUIVALENT
 14. COAT HOOK; 3'-11" A.F.F.; PRODUCT TO BE BOBRICK OR OWNER APPROVED EQUIVALENT
 15. SHOWER ROD AND HOOKS; PRODUCT TO BE BOBRICK OR OWNER APPROVED EQUIVALENT
 16. TOWEL BAR; 4'-0" A.F.F.; PRODUCT TO BE BOBRICK OR OWNER APPROVED EQUIVALENT
 17. MILLWORK; CABINETS AND DRAWERS; MATERIAL TO BE PRE-FINISHED BIRCH PLY; MILLWORK TO CONFORM TO LATEST EDITION OF AWMAC QUALITY STANDARDS MANUAL; AWMAC GRADE CUSTOM; AWMAC INSPECTION NOT REQ'D FOR THIS PROJECT; COLOUR AND FINISH TBD BY ARCH AND OWNER
 18. MILLWORK; GABLE END; MATERIAL TO BE PRE-FINISHED BIRCH PLY; MILLWORK TO CONFORM TO LATEST EDITION OF AWMAC QUALITY STANDARDS MANUAL; AWMAC GRADE CUSTOM; AWMAC INSPECTION NOT REQ'D FOR THIS PROJECT; COLOUR AND FINISH TBD BY ARCH AND OWNER
 19. MILLWORK; 4" KICK; MATERIAL TO BE PRE-FINISHED BIRCH PLY; MILLWORK TO CONFORM TO LATEST EDITION OF AWMAC QUALITY STANDARDS MANUAL; AWMAC GRADE CUSTOM; AWMAC INSPECTION NOT REQ'D FOR THIS PROJECT; COLOUR AND FINISH TBD BY ARCH AND OWNER
 20. SS D-PULL
 21. CONCRETE FLOOR; SLIP-RESISTANT SEALED FLOOR FINISH; TBD BY ARCH AND OWNER



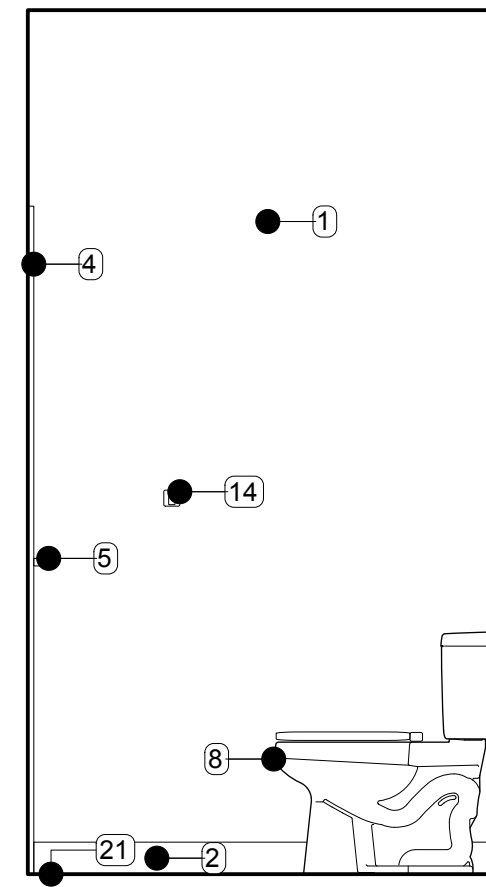
1 WR NORTH
Scale: 1/2" = 1'-0"



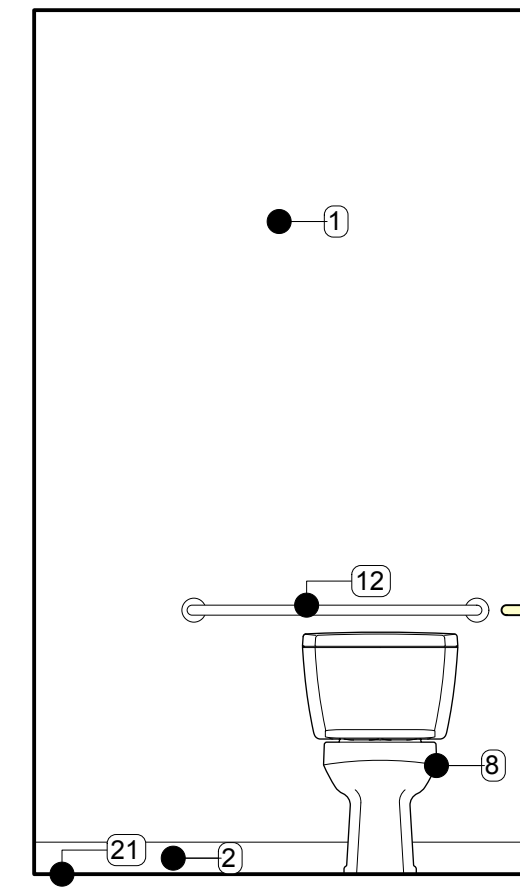
2 WR EAST
Scale: 1/2" = 1'-0"



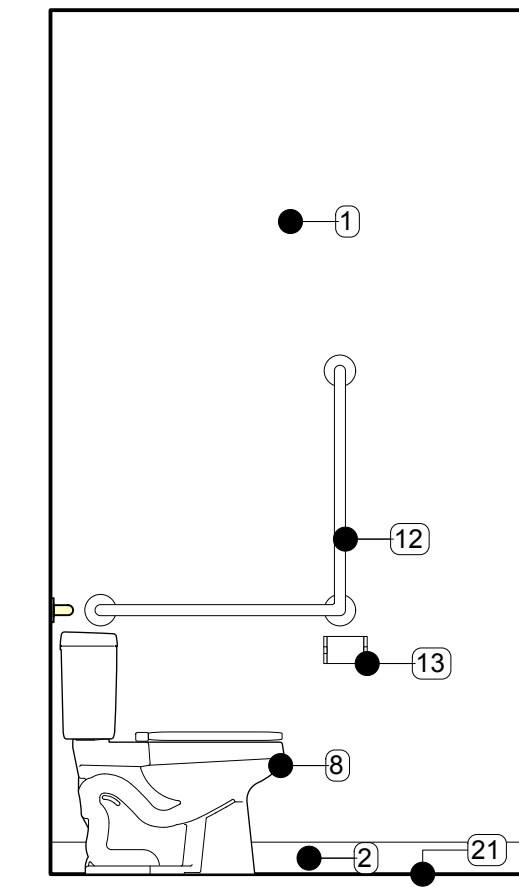
3 WR WEST
Scale: 1/2" = 1'-0"



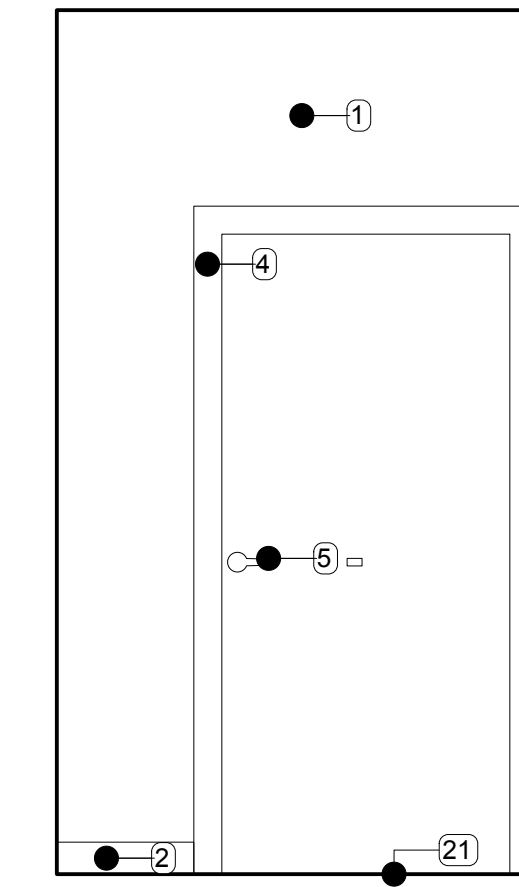
4 ACC. WR NORTH
Scale: 1/2" = 1'-0"



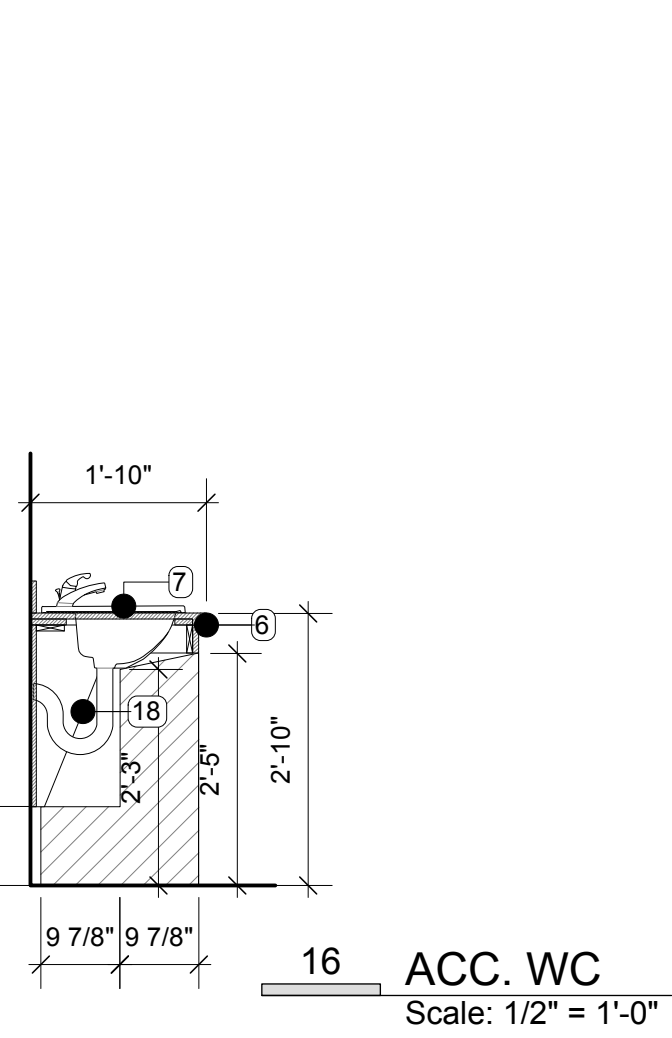
5 ACC. WR EAST
Scale: 1/2" = 1'-0"



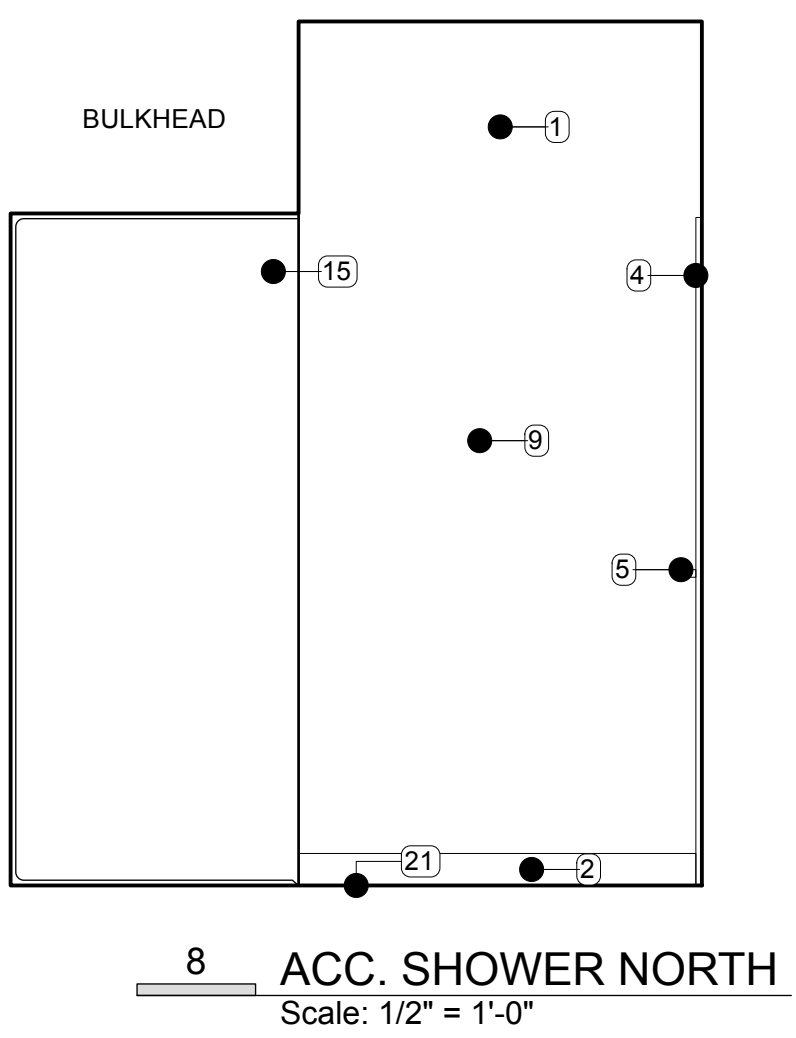
6 ACC. WR SOUTH
Scale: 1/2" = 1'-0"



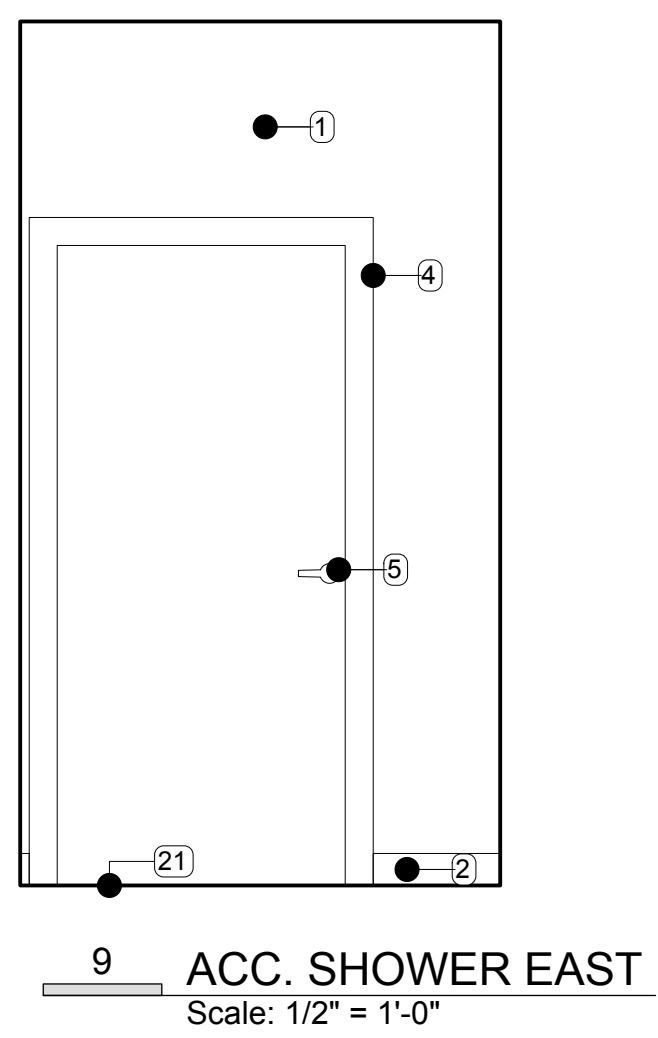
7 ACC. WR WEST
Scale: 1/2" = 1'-0"



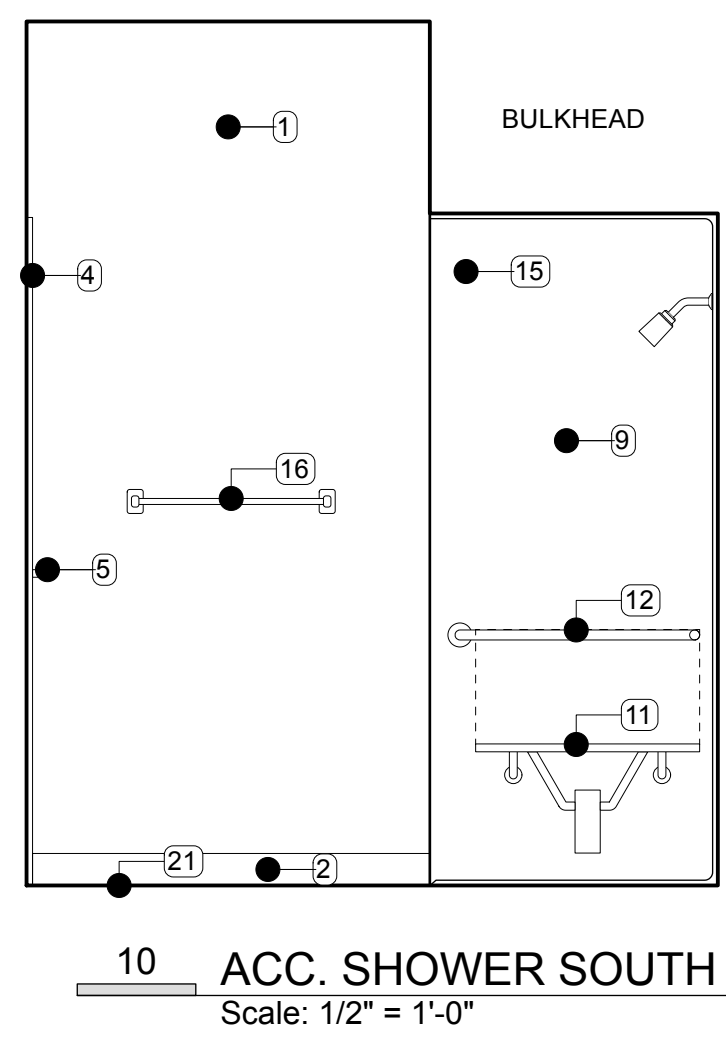
16 ACC. WC
Scale: 1/2" = 1'-0"



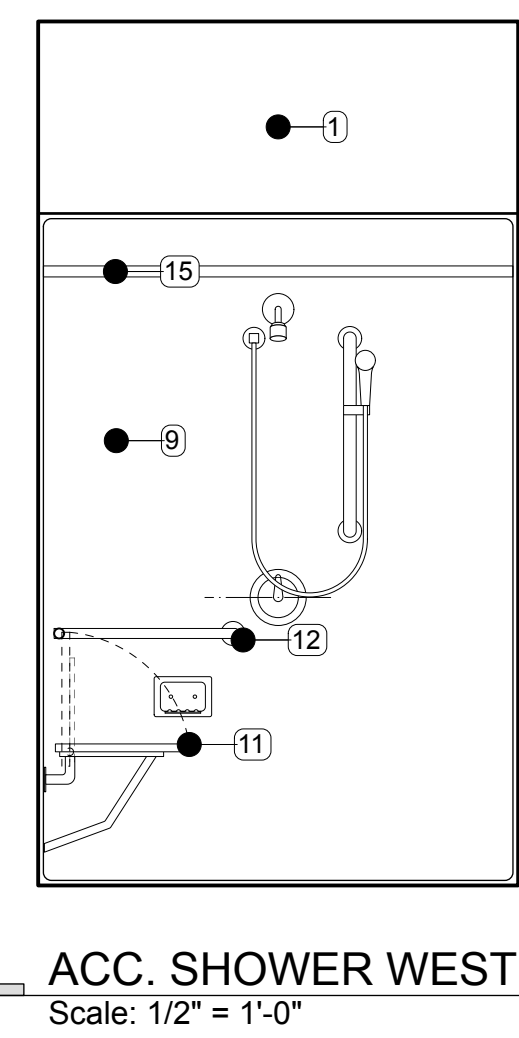
8 ACC. SHOWER NORTH
Scale: 1/2" = 1'-0"



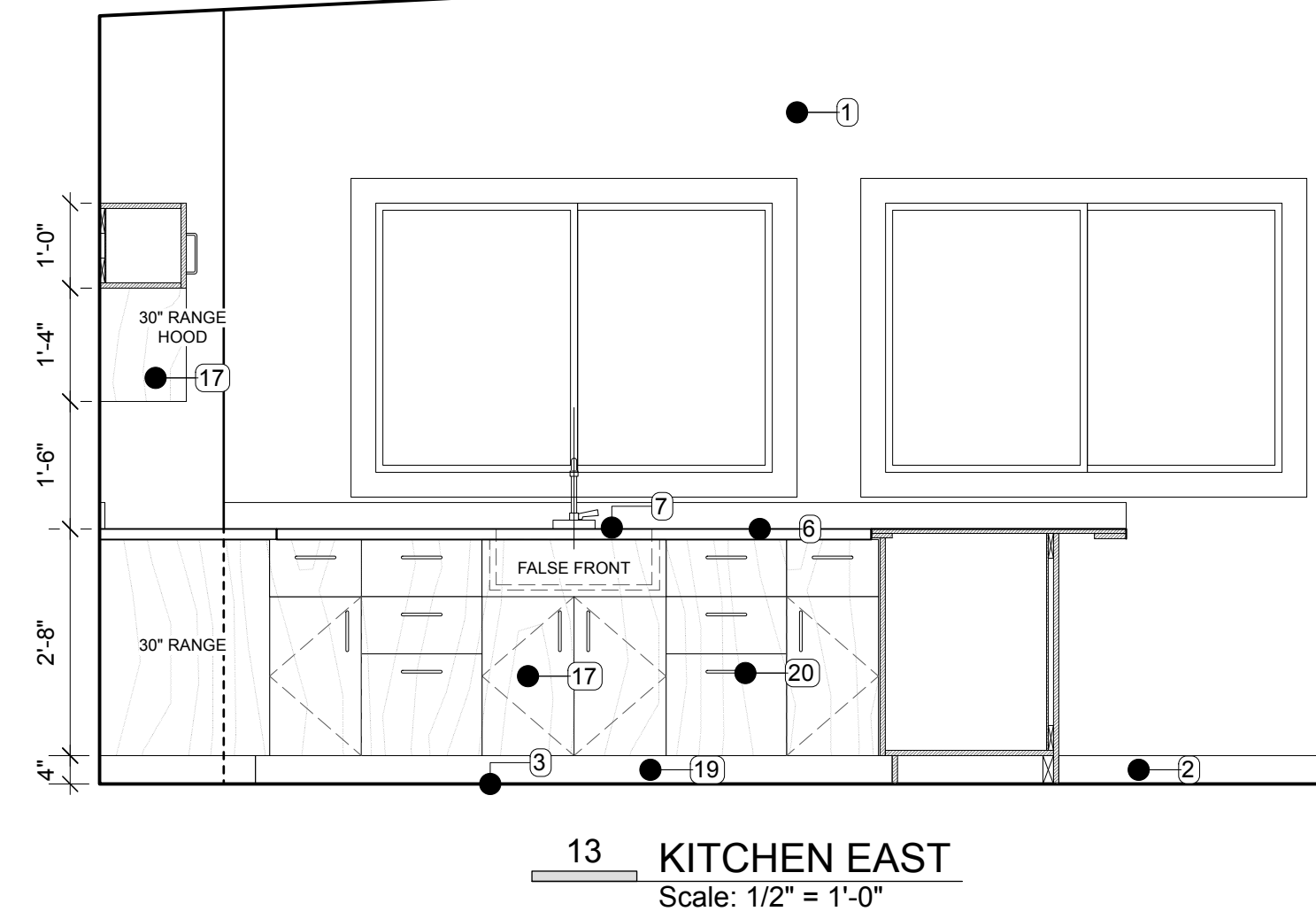
9 ACC. SHOWER EAST
Scale: 1/2" = 1'-0"



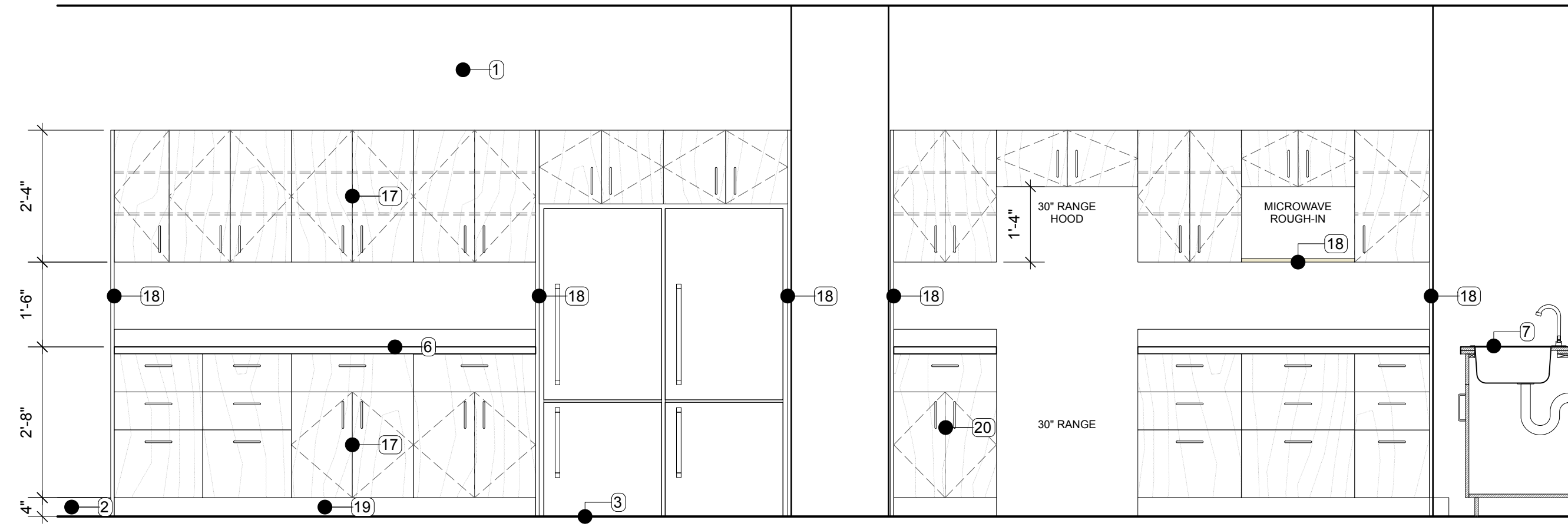
10 ACC. SHOWER SOUTH
Scale: 1/2" = 1'-0"



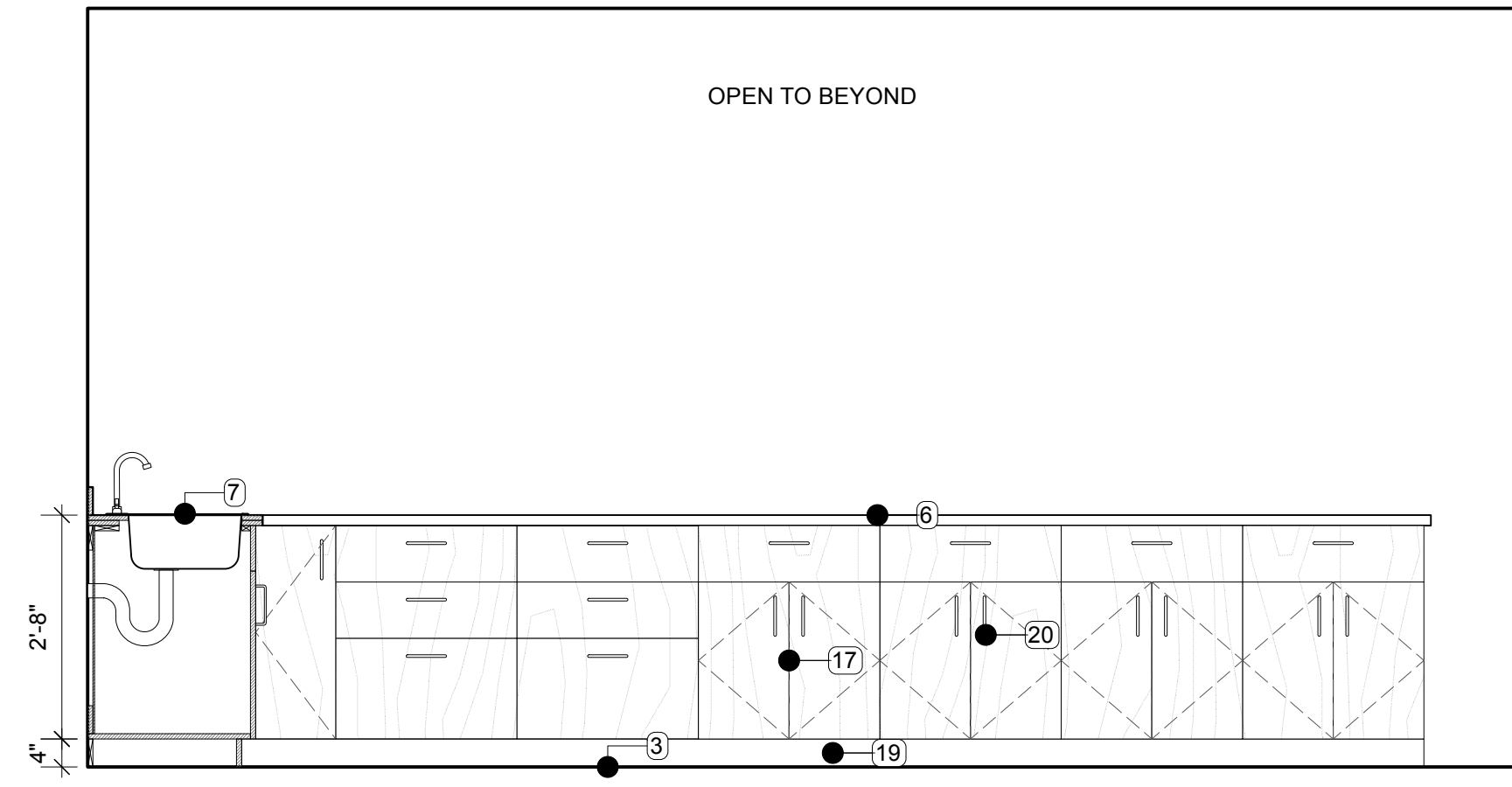
11 ACC. SHOWER WEST
Scale: 1/2" = 1'-0"



13 KITCHEN EAST
Scale: 1/2" = 1'-0"



12 KITCHEN NORTH
Scale: 1/2" = 1'-0"



14 KITCHEN SOUTH
Scale: 1/2" = 1'-0"

NO.	Y	M	D	ISSUE
I	2024	07	25	ISSUED FOR TENDER
H	2024	07	25	ISSUED FOR BUILDING PERMIT R-1
G	2024	08	10	ISSUED FOR CONSULTANT COORDINATION
N				ISSUE

NO.	Y	M	D	ISSUE
				REVISION

SHEET TITLE
INTERIOR ELEVATIONS
& MILLWORK

EXTERIOR WALLS - PLAN VIEW

INTERIOR INSULATED WOOD STUD PARTITION		
	<p>EW-10a CLADDING AS PER ELEVATIONS EXTERIOR WALL ASSEMBLY CW R-30 INSULATION - REFER TO STRUCT. 3" (76mm) SEMI-RIGID GWP SHEATHING - REFER TO STRUCT. 2x4 WOOD FRAMING CW BATT INSULATION TO FILL CAVITY - REFER TO STRUCT. VAPOR BARRIER, CAULKED AND SEALED AT PLATES 1-LAYER 5/8" GYPSUM BOARD (PAINTED)</p> <p>EW-10b CLADDING AS PER ELEVATIONS SAME AS EW-10a BUT REMOVE SHEAR WALL SHEATHING, WOOD FRAMING AND INSULATION</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	-	-
STC	-	-

PARTITIONS - PLAN VIEW

INTERIOR WOOD STUD PARTITION		
	<p>P-1a SAME AS P-2a BUT REMOVE 1-LAYER 5/8" GYPSUM BOARD (PAINTED) REFER TO STRUCT.</p> <p>P-1b 1-LAYER 5/8" GYPSUM BOARD (PAINTED) 2x4 WOOD FRAMING CW ACoustic BATT - REFER TO STRUCT. 1-LAYER 5/8" GYPSUM BOARD (PAINTED) * TYPE X GWB WHERE ASSEMBLY FORMS PART OF 1HR FIRE SEPARATION * 400mm O.C. SPACING WHERE ASSEMBLY FORMS PART OF 1HR FIRE SEPARATION</p> <p>P-1c SAME AS P-1a BUT REPLACE FRAMING WITH 2"x4" - REFER TO STRUCT.</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	-	-
STC	-	-

FLOORS - SECTION VIEW

CONCRETE SLAB ON GRADE		
	<p>F-1a FLOOR FINISH PER SCHEDULE MIN. 102MM (4") CONCRETE SLAB (SEE STRUCT. DWGS) 30 MIL POLYETHYLENE VAPOR BARRIER * COMPACTED GRANULAR FILL AND/OR SUB-BASE PER GEOTECH</p> <p>F-1b SAME AS F-1a BUT REPLACE SEALED CONCRETE WITH SLIP-RESISTANT EPOXY FINISH</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	-	-
STC	-	-

ROOFS - SECTION VIEW

METAL BUILDING MANUFACTURER ROOF		
	<p>R-1 STANDING SEAM METAL ROOFING - GREY STEEL PERINS. REFER TO STRUCTURAL R-40 INSULATION & STEEL STRUCTURE. REFER TO METAL BUILDING MANUFACTURER SHOP DRAWINGS</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	NR	1 HR
STC	-	-

ASSEMBLY NOTES:

- FIRE RATED ASSEMBLIES ARE BASED ON CBC 2018, U.L. ICC, OR US GYPSUM ASSOCIATION (GA) TEST DATA & ARE TO BE CONSTRUCTED IN ACCORDANCE WITH REQUIREMENTS OF THE TESTING AGENCIES. REFER TO SPECIFIC TEXT REPORTS INDICATED FOR REQUIRED COMPONENTS & ASSEMBLIES.
- EXTENTS OF ASSEMBLIES ARE SHOWN ON THE PLANS & SECTIONS, SUITE AND CORRIDOR PARTITIONS TO EXTEND TO UNDERSIDE OF ROOF SHEATHING TO MAINTAIN FIRE COMPARTMENTS.
- ALL GWB IS TYPE 'X' UNDO.
- FIRE RATED ASSEMBLIES FORM A SEPARATION THAT SHALL BE CONTINUOUS FROM FLOOR TO STRUCTURE ABOVE WITH NO BREAKS AT COLUMNS, WALL TRANSITIONS OR OTHER OBSTRUCTIONS ALL PENETRATIONS IN FIRE RATED ASSEMBLIES REQUIRED TO HAVE PROTECTED OPENING SHALL BE FIRE STOPPED OR PROVIDED WITH APPROVED SMOKE AND/OR FIRE DAMPERS.
- PENETRATIONS IN UNIT DEMISING WALLS (OUTLET BOXES, ETC.) MUST BE NON COMBUSTIBLE OR HAVE FT FIRE STOPPING (PUTTY POKS) PER BC93:3.1.4 AND BE STAGGERED BY 24"
- SUBSTITUTE MOISTURE RESISTANT GWB AT WASHROOMS, JANITOR ROOMS & SIMILAR USES; MAINTAIN RATING WHERE REQUIRED. PROVIDE MOISTURE RESISTANT GWB BEHIND TUB ENCLOSURES
- BLOCKING IS REQUIRED AT THE FOLLOWING LOCATIONS: CASEWORK, SHELVING & PANELING; WALL TELEVISION LOCATIONS, ACCESSORIES & EQUIPMENT, DOOR HARDWARE, TOILET PARTITIONS & ACCESSORIES;
- REFER TO MECHANICAL FOR DRAINAGE & WALL PENETRATION LOCATIONS.
- ALL PLUMBING/MECH WALL CAVITIES TO BE FILLED WITH ACOUSTIC FIBREGLASS BATTS.
- REFER TO DETAILS FOR BUILDING ENVELOPE INFORMATION.
- ACOUSTIC CAULKING REQ'D AT FULL PERIMETER OF ALL PARTY WALL S/FLOORS.
- NO DRAINS OR OTHER MECH. LOCATED WITHIN WALL CAVITIES IS TO COME IN CONTACT WITH FRAMING.
- REFER TO STRUCTURAL FOR PLYWOOD SHEAR WALL LOCATIONS. LOCATE PLYWOOD ADJACENT TO G.W.B. SIDE IN SUITE DEMISING WALLS, NOT IN AIR SPACE.

INTERIOR INSULATED WOOD STUD PARTITION		
	<p>P-1c 1-LAYER 5/8" GYPSUM BOARD (PAINTED) 2x4 WOOD FRAMING CW ACoustic BATT - REFER TO STRUCT. 1-LAYER 5/8" GYPSUM BOARD (PAINTED)</p> <p>P-1d SAME AS P-1c BUT REPLACE FRAMING WITH 2"x4" - REFER TO STRUCT. ADD 2-LAYERS 5/8" TYPE X GWB (PAINTED) UL DESIGN NO. U301: ASSEMBLY RATING 90 MINUTE, BEARING WALL ASSEMBLY</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	45 MIN	1 HR
STC	-	-

TYPICAL SUSPENDED FLOOR		
	<p>F-2a FLOOR FINISH VARIES - REFER TO FINISH SCHEDULE 5/8" D.F.R. PLYWOOD SHEATHING - REFER TO STRUCT. 1-3 SERIES WOOD I-JOISTS, PRODUCT FIRE CLASS B-H @ 12" O.C. MAX AS PER STRUCT. (CROSS BRIDGING AS PER STRUCT.) 1-LAYER OF 1/2" TYPE X GYPSUM BOARD RESILIENT CHANNEL @ 18" O.C. 2-LAYERS OF 5/8" TYPE X GYPSUM BOARD (PAINTED)</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	90 MIN	90 MIN
STC	-	-

CANOPY		
	<p>R-2 SLOPED STEEL PLATE TO GUTTER CHANNEL SLOPED C CHANNEL STEEL JOISTS PER STRUCT. RESILIENT CHANNEL @ 18" O.C. WESTFORM PROBOARD SOFFIT W/ CONTINUOUS VENT STRIPS CW WOODGRAIN FINISH</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	-	-
STC	-	-

INTERIOR SHEAR WALLS		
	<p>P-2a 1-LAYER 5/8" TYPE X GYPSUM BOARD (PAINTED) 2x4 FRAMING CW ACoustic BATT - REFER TO STRUCT. 1/2" SHEATHING - REFER TO STRUCT. 1-LAYER 5/8" TYPE X GYPSUM BOARD (PAINTED)</p> <p>P-2b SAME AS P-1c BUT REPLACE FRAMING WITH 2"x4" - REFER TO STRUCT. ADD 2-LAYERS 5/8" TYPE X GWB (PAINTED) UL DESIGN NO. U301: ASSEMBLY RATING 90 MINUTE, BEARING WALL ASSEMBLY</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	45 MIN	1 HR
STC	-	-

TYPICAL SUSPENDED FLOOR		
	<p>F-2b FLOOR FINISH VARIES - REFER TO FINISH SCHEDULE 5/8" D.F.R. PLYWOOD SHEATHING - REFER TO STRUCT. PKI 20 11 7/8" WOOD I-JOISTS @ 12" O.C. MAX AS PER STRUCT. (CROSS BRIDGING AS PER STRUCT.) FIBREGLASS BATT INSULATION (R-10 MIN) FRICTION FIT IN EACH CAVITY RESILIENT CHANNEL @ 18" O.C. 2-LAYERS OF 1/2" TYPE X GYPSUM BOARD (PAINTED)</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	45 MIN	50 MIN
STC	-	-

METAL BUILDING MANUFACTURER ROOF		
	<p>R-1 STANDING SEAM METAL ROOFING - GREY STEEL PERINS. REFER TO STRUCTURAL R-40 INSULATION & STEEL STRUCTURE. REFER TO METAL BUILDING MANUFACTURER SHOP DRAWINGS</p>	
REQUIRED	PROVIDED	REFERENCE CODE
F.R.R.	NR	1 HR
STC	-	-

WINDOW SCHEDULE

Window Types							
W-1	W-10	W-2	W-3	W-4	W-5	W-6	W-7

Nominal Size			
Mark	# OF UNITS	Unit Width	Unit Height
W- 1	4	5'6"	5'0"
W- 2	4	5'0"	4'0"
W- 3	4	3'0"	5'0"
W- 4	5	3'0"	7'0"
W- 5	1	5'6"	7'0"
W- 6	2	5'0"	3'0"
W- 7	5	6'0"	3'0"
W- 10	1	4'0"	6'0"

DOOR SCHEDULE

Door Types											
D-1	D-11	D-12	D-2	D-3a	D-3b	D-3c	D-3d	D-4a	D-4b	D-4c	D-4d

Number	Quantity	Location	Leaf Width	Leaf Height	Configuration	Door Material	Door Finish	Fire rating	Hardware	Closer	Stop	Weather Stripping
D- 1	1	Main Entrance	36"	70"	Swing	PSF, Insulated	White Factory Finish, Painted	N/A	Lever w/ Deadbolt	Self-closing Device	Floor Stop	Yes (smoke seal)
D- 2	1	Mech Room	30"	70"	Swing	PSF, Insulated	White Factory Finish, Painted	N/A	Lever w/ Deadbolt	Self-closing Device	Floor Stop	Yes (smoke seal)
D- 3a	1	Garage	30"	70"	Swing	PSF, Insulated	White Factory Finish, Painted	45 Min	Lever w/ Deadbolt	Self-closing Device	Floor Stop	Yes (smoke seal)
D- 3b	1	Garage Interior	30"	68"	Swing	PSF, Insulated	White Factory Finish, Painted	1 Hr	Passage Lever	Self-closing Device	Baseboard Stop	Yes (smoke seal)
D- 3c	2	Garage	36"	70"	Swing	PSF, Insulated	White Factory Finish, Painted	45 Min	Lever w/ Deadbolt	Self-closing Device	Floor Stop	Yes (smoke seal)
D- 3d	1	Garage	30"	70"	Swing	PSF, Insulated	White Factory Finish, Painted	45 Min	Lever w/ Deadbolt	Self-closing Device	Baseboard Stop	Yes (smoke seal)
D- 4a	3	Interior Passage	30"	68"	Swing	Wood Hollow-core	Painted	N/A	Passage Lever	N/A	Baseboard Stop	N/A
D- 4b	1	Interior Passage	33"	68"	Swing	PSF	White Factory Finish, Painted	45 Min	Passage Lever	Self-closing Device	Baseboard Stop	N/A
D- 4c	1	Interior Passage	30"	68"	Swing	PSF	White Factory Finish, Painted	45 Min	Passage Lever	Self-closing Device	Baseboard Stop	N/A
D- 8a	2	Bathroom	30"	68"	Swing	Wood Hollow-core	Painted	N/A	Privacy Lever	N/A	Baseboard Stop	N/A
D- 8b	4	Bathroom	24"	68"	Swing	Wood Hollow-core	Painted	N/A	Privacy Lever	N/A	Baseboard Stop	N/A
D- 11	5	Garage	120"	140"	Overhead	Fibreglass, Insulated	Charcoal Factory Finish	N/A	Manual Pulls	Auto-Opener w/ Fob	N/A	Yes
D- 12	1	Under Stair Storage	28"	68"	Swing	Wood Hollow-core	Painted	N/A	Passage Lever	N/A	Baseboard Stop	N/A



MacDonald Haggarty Architects Ltd.
1822 Unit E, Comox Ave. Comox, BC V9M 3M7

CHERRY CREEK FIREHALL

5820 CHERRY CREEK ROAD,
PORT ALBERNI, BC V9Y 8Y7

I 2024-07-25 ISSUED FOR TENDER
H 2024-07-25 ISSUED FOR BUILDING PERMIT R-1
G 2024-06-10 ISSUED FOR CONSULTANT COORDINATION
NO. Y M D ISSUE

SHEET TITLE
SCHEDULES

DRAWING NO.
A6.01

Appendix

A.6

Mechanical Drawings

CHERRY CREEK FIRE HALL

5920 CHERRY CREEK ROAD, PORT ALBERNI, BC



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V9A 3P2
250-384-4128
info@avalonmechanical.com

103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

PLUMBING LEGEND	
---	DOMESTIC COLD WATER (DCW)
---	DOMESTIC HOT WATER (DHW)
---	DOMESTIC HOT WATER RECIRC. (DHWR)
-D---	STORM DRAIN (ABOVE GROUND / FLOOR)
-D- - -	STORM DRAIN (UNDERGROUND / FLOOR)
-PD---	PERIMETER DRAIN
-S---	SANITARY SEWER (ABOVE GROUND / FLOOR)
-S- - -	SANITARY SEWER (UNDERGROUND / FLOOR)
-V- - - - -	SANITARY VENT
---	PIPE CONTINUOUS
o	PIPE RISER / PIPE ELBOW UP
c	PIPE ELBOW DOWN
·	PIPE TEE DOWN
·	PIPE CONNECTION
▶	PIPE FLOW DIRECTION
▷	PIPE TRANSITION (REDUCER)
SIZE Ø/FU	PIPE SIZE AND FIXTURE UNIT TAG
INV / DEPTH	PIPE INVERT TAG
M	METER
TS	TAMPER SWITCH (ALL VALVES ON FIRE SUPPRESSION PIPING)
⊘	ISOLATION VALVE (BALL OR GATE AS SPECIFIED)
⊘	CHECK VALVE
⊘	PUMP
⊘	STRAINER
⊘	DOUBLE CHECK VALVE (DCVA)
⊘	REDUCED PRESSURE BACKFLOW PREVENTOR (RP)
⊘	PRESSURE RELIEF VALVE
⊘	PRESSURE REDUCING VALVE
⊘	BACKWATER VALVE
⊘	SHUT OFF VALVE c/w THERMAL EXPANSION DEVICE
⊘	AIR ADMITTANCE VALVE
⊘	VACUUM BREAKER
⊘	WATER MANIFOLD
⊘	HOSE BIBB
⊘	FLOOR DRAIN
⊘	FUNNEL FLOOR DRAIN
⊘	ROOF DRAIN
⊘	FLOW CONTROL DEVICE
⊘	DRAIN FIXTURE FROM ABOVE
⊘	TRAP
⊘	RAIN WATER LEADER
⊘	CLEAN-OUT (FLOOR)
DN	TO/FROM BELOW
FD	FLOOR DRAIN
FU	FIXTURE UNIT
HWT	HOT WATER TANK
INV	INVERT
LV	LAVATORY
PD	PAN DRAIN
SK	SINK
SH	SHOWER
TD	TRENCH DRAIN
UP	TO/FROM ABOVE
VTR	VENT THROUGH ROOF
CW	CLOTHES WASHER
WC	WATER CLOSET

PLUMBING GENERAL NOTES	
1.	SITE VERIFY EXISTING PIPING, EQUIPMENT, ETC.
2.	ALL 8"Ø SEWER & STORM PIPES ARE AT A MINIMUM 0.5% SLOPE, ALL 6"Ø SEWER & STORM PIPES ARE AT A MINIMUM 0.75% SLOPE, ALL 4"Ø SEWER & STORM PIPES ARE AT A MINIMUM 1% SLOPE, AND ALL 3"Ø AND UNDER ARE AT A MINIMUM 2% SLOPE UNLESS OTHERWISE INDICATED.
3.	WATER PIPE SIZES ARE BASED ON NUMBER OF FIXTURE UNITS USING THE AVERAGE PRESSURE LOSS METHOD (TABLE A-2 & 3.1 (2)F)
3.1.	MATERIAL: PEX, AQUATHERM OR AQUARISE PIPE. WATER VELOCITY 8 FT/S.
4.	INSTALL SHOCK ABSORBERS WHERE REQUIRED, (TOP OF RISERS, DISHWASHERS, WASHING MACHINES, ETC.)
5.	RAINFALL INTENSITY OF 9 MM/15 MINS USED FOR STORM WATER HYDRAULIC LOAD CALCULATIONS.
6.	INSTALL TRAP PRIMERS WHERE REQUIRED.
7.	ALL PEX WATER PIPES FROM MANIFOLD TO FIXTURES ARE 1/2"Ø.

HVAC LEGEND	
---	RECTANGULAR DUCTWORK
---	ROUND DUCTWORK
---	ROUND DUCTWORK (SINGLE LINE)
---	ACOUSTICALLY LINED DUCTWORK
---	ACOUSTICALLY LINED DUCTWORK (SINGLE LINE)
---	INSULATED DUCTWORK
---	INSULATED DUCTWORK (SINGLE LINE)
---	FLEXIBLE DUCTWORK
⊘	SUPPLY DUCT UP TO LEVEL/ROOF ABOVE
⊘	SUPPLY DUCT DOWN TO LEVEL BELOW
⊘	RETURN DUCT UP TO LEVEL/ROOF ABOVE
⊘	RETURN DUCT DOWN TO LEVEL BELOW
⊘	EXHAUST DUCT UP TO LEVEL/ROOF ABOVE
⊘	EXHAUST DUCT DOWN TO LEVEL BELOW
⊘	THERMOSTAT
⊘	CARBON MONOXIDE SENSOR
⊘	BALANCING DAMPER
⊘	BACK DRAFT DAMPER
⊘	CONTROL DAMPER
⊘	FIRE DAMPER (HORIZONTAL DUCT)
⊘	FIRE DAMPER (VERTICAL DUCT)
⊘	GRILLE/DIFFUSER/LOUVER TAG
⊘	EQUIPMENT TAG
⊘	CONTROL WIRE
AD	ACCESS DOOR
DN	TO/FROM BELOW
E/A	EXHAUST AIR
R/A	RETURN AIR
S/A	SUPPLY AIR
WC	WALL CAP
UP	TO/FROM ABOVE

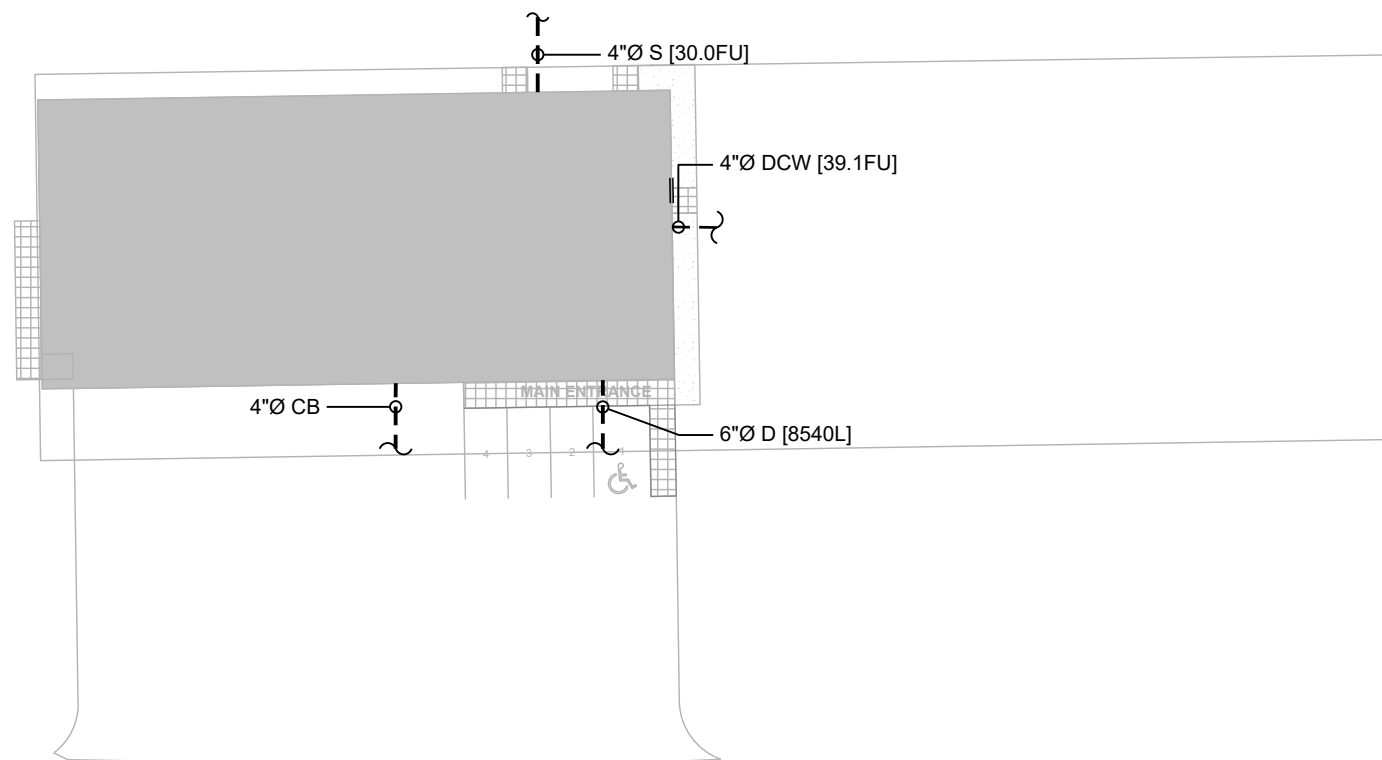
HVAC GENERAL NOTES	
1.	ELECTRIC BASEBOARD HEATERS AND BASEBOARD HEATER CONTROLS ARE SHOWN FOR REFERENCE ONLY. THESE ARE TO BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. GENERAL CONTRACTOR TO CONFIRM THAT THIS ITEM IS INCLUDED IN THE SCOPE OF ELECTRICAL TENDERS.
2.	SITE VERIFY EXISTING DUCTWORK, EQUIPMENT, ETC.
3.	ALL EQUIPMENT TO BE INSTALLED TO MANUFACTURER'S RECOMMENDATIONS. MAINTAIN ALL OPERATION AND SERVICES CLEARANCES AS RECOMMENDED BY MANUFACTURER.
4.	PROVIDE SEISMIC RESTRAINT AS REQUIRED FOR ALL MECHANICAL EQUIPMENT.
5.	INSTALL AND SUPPORT DUCTWORK, GRILLES, DIFFUSERS, ETC. PER SMACNA GUIDELINES AND AS INDICATED IN THE SPECIFICATIONS.
6.	SIZE OF DUCTS CONNECTING TO DIFFUSERS TO BE THE SAME AS THE DIFFUSER NECK SIZE, UNLESS OTHERWISE INDICATED.
7.	FRESH AIR INTAKES: ENSURE THE FOLLOWING MINIMUM CLEARANCES: 7.1. 12FT [3.6M] TO SANITARY SEWER VENT TERMINATION PER BC PLUMBING CODE 7.2. 10FT [3M] TO WASHROOM EXHAUST, AND CLASS 2 AIR EXHAUST AIR OUTLETS PER ASHRAE 62.1 7.3. 15FT [4.6M] TO GARAGE ENTRY, GARBAGE STORAGE, VEHICLE LOADING AREAS, COMMERCIAL KITCHEN NON-GREASE HOOD, AND CLASS 3 AIR EXHAUST AIR OUTLETS PER ASHRAE 62.1 7.4. 25FT [7.6M] TO TRUCK LOADING AREAS, COOLING TOWER EXHAUST ETC. 7.5. 30FT [9.1M] COMMERCIAL KITCHEN GREASE HOOD, PAINT SPRAY BOOTH, CHEMICAL STORAGE ROOM, AND CLASS 4 AIR EXHAUST AIR OUTLETS PER ASHRAE 62.1
8.	SPECIAL EXHAUST (WELDING EQUIPMENT, HOSPITAL, PHARMACY, ETC.) REQUIRE SPECIFIC MINIMUM CLEARANCES. CONSULT WITH THE ENGINEER IF NO SPECIFIC MINIMUM CLEARANCE IS INDICATED.
9.	HEAT LOSS / HEAT GAIN CALCULATIONS ARE BASED ON MINIMUM INSULATION REQUIREMENTS OF ASHRAE 90.1 SECTION 5.5 (ZONE 5) AND ARE BASED ON THE FOLLOWING TEMPERATURES: 9.1. OUTDOOR AIR DESIGN TEMPERATURE (PORT ALBERNI): 9.1.1. BCBC 1% WINTER DESIGN DAY: 17.6°F [6°C] 9.1.2. BCBC 2.5% SUMMER DRY BULB: 87.8°F [31°C] 9.2. INDOOR AIR TEMPERATURE: 9.2.1. GENERAL SPACES: 72°F [22.2°C] 9.2.2. RECEIVING / LOADING WAREHOUSE: 65°F [18°C] 9.2.3. SHOP FLOORS: 59°F [15°C]
10.	ALL HVAC EQUIPMENT EFFICIENCIES SHALL COMPLY WITH ASHRAE 90.1 SECTION 6.8. (REFER TO SPECIFICATION OR CONTACT ENGINEER).
11.	PROVIDE VIBRATION ISOLATION BETWEEN DUCTWORK AND ALL MOTORIZED EQUIPMENT.
12.	REFER TO SPECIFICATION FOR USE OF FLEX DUCT TO HVAC TERMINALS. FLEX DUCT SHALL NOT BE USED FOR DUCT ELBOWS.
13.	PROVIDE EXTERNAL THERMAL INSULATION AND INTERNAL ACOUSTIC INSULATION WHERE INDICATED AND AS REQUIRED IN THE SPECIFICATION.
14.	ALL FRESH AIR INTAKES AND EXHAUST AIR TERMINATIONS SHALL BE COMPLETE WITH BIRD-SCREEN UNLESS OTHERWISE INDICATED. EXCEPTIONS: KITCHEN EXHAUST AND DRYER EXHAUST.
15.	REPLACE ALL EXISTING AIR FILTERS WITH NEW.
16.	ACCESS DOORS TO BE PROVIDED FOR CONCEALED BALANCING DAMPERS, DUCT HEATERS, HEATING/COOLING COILS, FIRE DAMPERS, FIRE/SMOKE DAMPERS, AND MAINTENANCE OF MECHANICAL EQUIPMENT AS REQUIRED. WHERE ACCESS DOORS OCCUR IN FIRE SEPARATIONS, MAINTAIN REQUIRED FIRE RATING.

FIELD REVIEWS BY ENGINEER	
1.	ALL WORK MUST BE REVIEWED BY THE ENGINEER BEFORE BEING COVERED. CONTACT THE ENGINEER TO ARRANGE FOR FIELD REVIEWS FOR THE FOLLOWING STAGES
2.	FOUNDATION DRAINAGE SYSTEMS: DRAIN ROCK AND FILTER CLOTH INSTALLATION TO BE IN PROGRESS. CLEANOUTS TO BE EXTENDED UP TO GRADE AND READY FOR BACKFILL.
3.	BELOWGROUND WORK: PIPING TO BE BEDDED AND UNDER TEST - DO NOT BACKFILL. THRUST BLOCKS MUST BE COMPLETE. DO NOT COVER UNTIL BOTH THE ENGINEER AND THE LOCAL AUTHORITY OR PLUMBING INSPECTOR, IF APPLICABLE, HAVE REVIEWED.
4.	PIPING ABOVEGROUND: PIPING SYSTEMS TO BE UNDER TEST AND FIRESTOPPING IS TO BE COMPLETE.
5.	FIRESTOPPING IS TO BE REVIEWED ONCE APPLIED TO ALL PENETRATIONS. DO NOT COVER ANY FIRESTOPPING INSTALLATIONS UNTIL REVIEWED BY ENGINEER.
6.	ROOF MOUNTED EQUIPMENT: CURBS OR SLEEPERS TO BE INSTALLED AND EXPOSED. REVIEW TO BE BEFORE ROOF MEMBRANE OR INSULATION INSTALLED.

PROJECT START AND CLOSE OUT DOCUMENTS	
SUBMITTAL	
PLUMBING	
X	SHOP DRAWINGS OF LISTED FIRE-STOP SYSTEMS
X	SHOP DRAWINGS OF ALL PLUMBING ITEMS INDICATED IN SPECS
X	WATER DISTRIBUTION FLUSHING DECLARATION
X	WATER DISTRIBUTION CONTAMINANT LAB TEST REPORT
X	WATER MAINS CHLORINATION REPORT
X	BACKFLOW PREVENTER TEST REPORTS
X	PIPE PRESSURE TEST REPORTS
X	HOT WATER HEATER START-UP REPORTS
X	HEAT TRACING STARTUP REPORT
X	TSBC GAS INSPECTION REQUEST/REPORT
HVAC	
X	SHOP DRAWINGS OF LISTED FIRE-STOP SYSTEMS
X	SHOP DRAWINGS OF ALL HVAC ITEMS INDICATED IN SPECS
X	SUPPLEMENTAL SCHEDULE S-B: HVAC EQUIPMENT SEISMIC RESTRAINT
X	SUPPLEMENTAL SCHEDULE S-C: HVAC EQUIPMENT SEISMIC RESTRAINT
X	EQUIPMENT EXTENDED WARRANTIES CERTIFICATE(S)
X	AIR BALANCING REPORT
X	FIRE DAMPER TRIP TEST REPORT
X	EQUIPMENT COMMISSIONING REPORTS AND CHECKLISTS
X	MAINTENANCE PROGRAM
X	DEMONSTRATION TO OPERATING STAFF SIGN-OFF
X	DUCT CLEANLINESS CERTIFICATE
X	GAS DETECTOR CALIBRATION REPORT
X	HEAT TRACING STARTUP REPORT
GENERAL	
X	AS-BUILT DRAWING(S)
X	O&M MANUAL(S)

SERVICE LOADS			
SERVICE	LOAD	SIZE	NOTES
DOMESTIC WATER	39.1FU [1.46L/S]	4"Ø	2
SANITARY SEWER	30.0FU [2.62L/S]	4"Ø	1
STORM SEWER	8540L [9.5L/S]	6"Ø	1

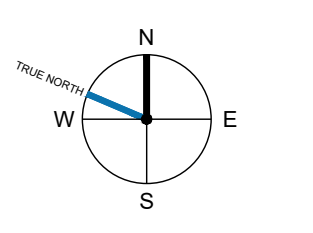
NOTES:
1. MINIMUM SLOPE PER BCBC
2. COMBINED WATER SIZED FOR FUTURE FIRE SUPPRESSION SYSTEM



SITE PLAN
SCALE: NTS

NO.	DATE	DESCRIPTION
1	26JUN2024	ISSUED FOR TENDER
2	09FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
4	04DEC2023	ISSUED FOR 75% COORDINATION
5	27OCT2023	ISSUED FOR 50% COORDINATION

DRAWING ISSUE



PROJECT
CHERRY CREEK
FIRE HALL

5920 CHERRY CREEK RD
PORT ALBERNI, BC

COVER SHEET

DESIGNED KH	APPROVED TR
AVALON PROJECT NO. 230465	SCALE AS NOTED

SHEET NUMBER
M-0.01



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V8A 3P2
250-364-4128

103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

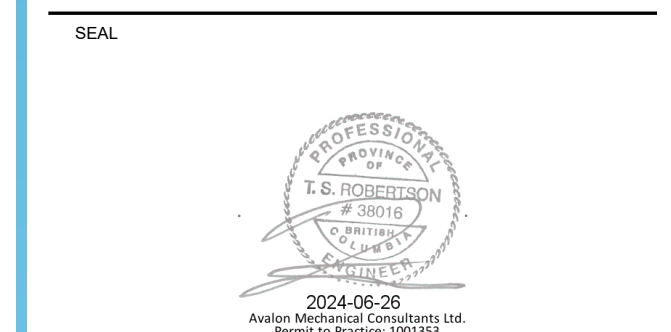
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

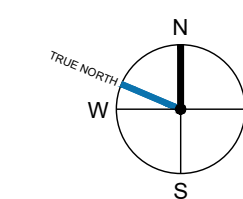
NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT NORTH



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
PLUMBING

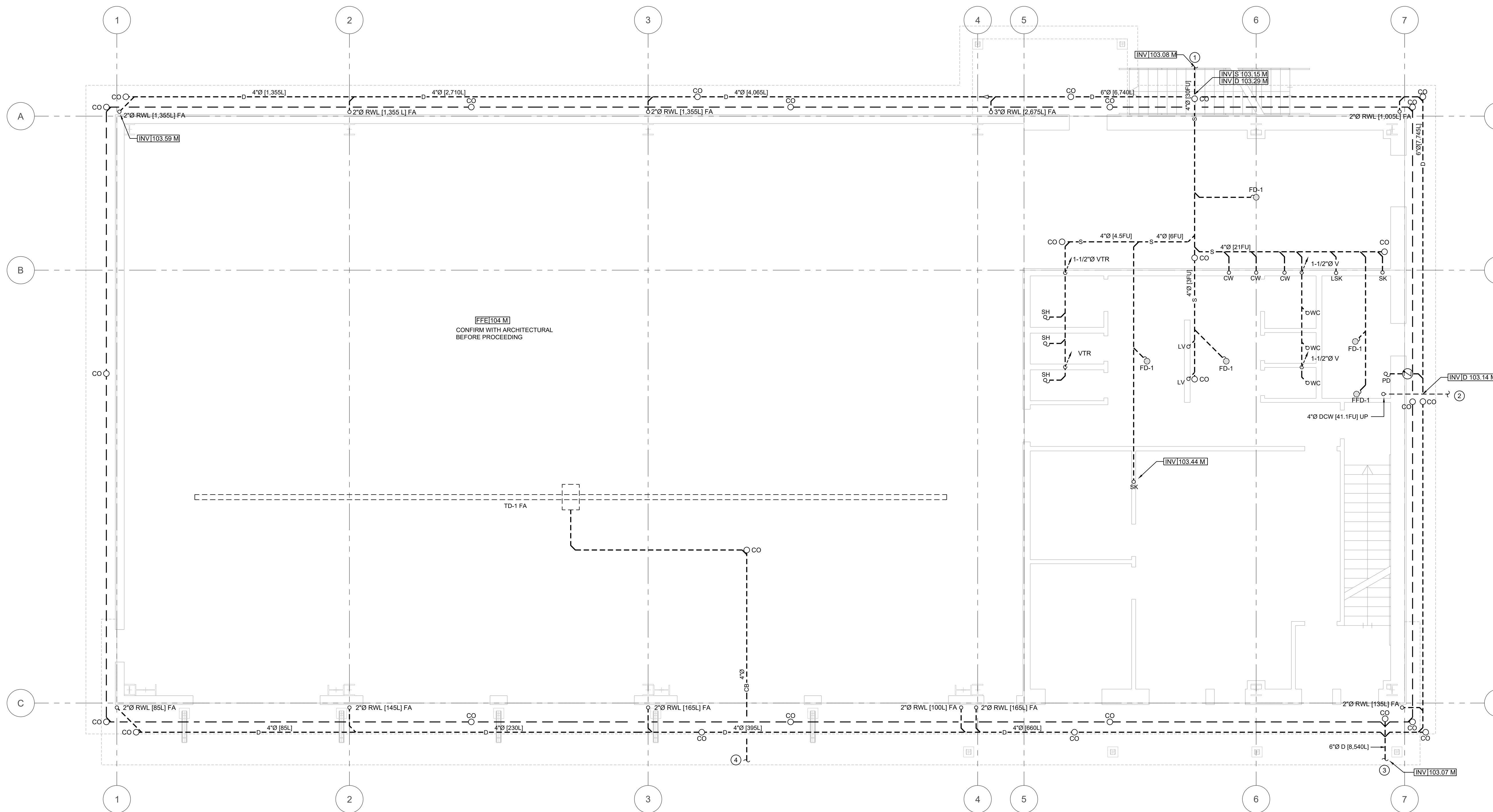
FOUNDATION PLAN

DESIGNED: KH APPROVED: TR

AVALON PROJECT NO. 230465 SCALE AS NOTED

SHEET NUMBER

M-2.00



FOUNDATION PLAN - PLUMBING

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

KEYED DRAWING NOTES

- 4" SANITARY WATER SERVICE - SEE CIVIL FOR CONTINUATION ADN COORDINATE WITH SEPTIC DESIGNER
- 4" DOMESTIC COLD WATER SERVICE - SEE CIVIL FOR CONTINUATION
- 6" STORM WATER SERVICE - SEE CIVIL FOR CONTINUATION
- TO LOT CATCH BASINS - REFER TO CIVIL FOR CONTINUATION



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V8A 3P2
250-364-4128

103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

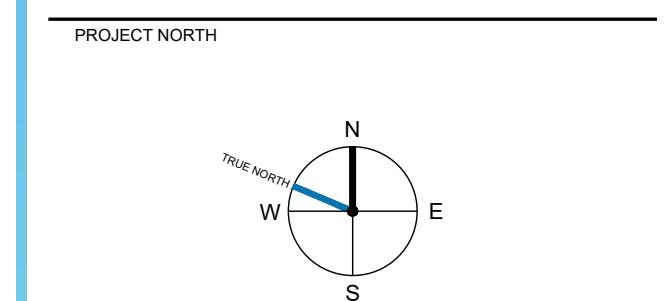
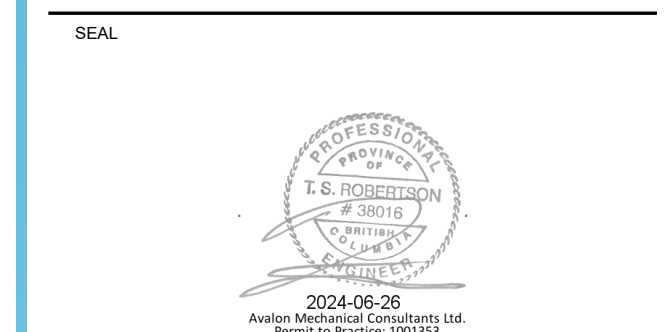
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
PLUMBING

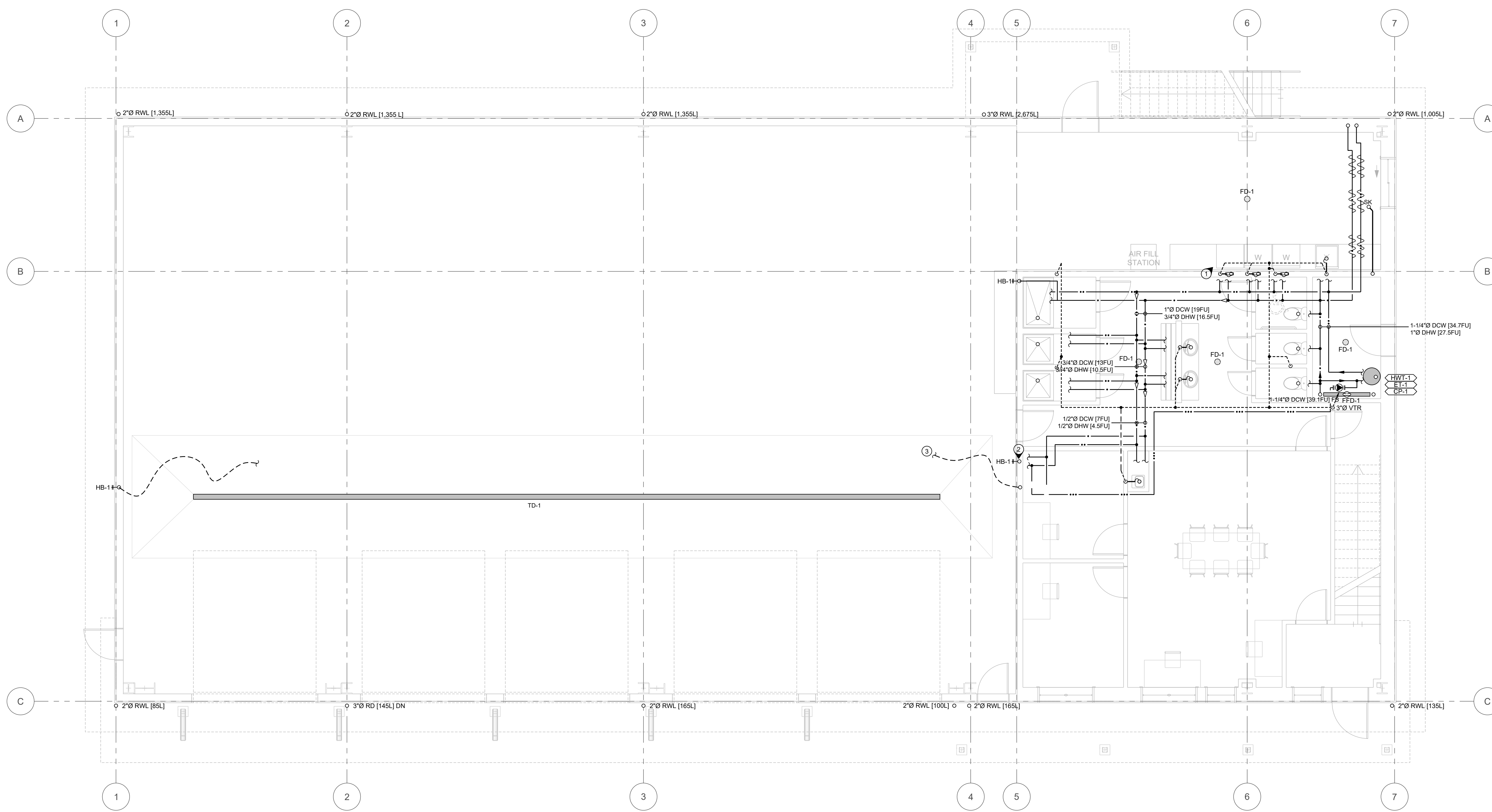
MAIN FLOOR PLAN

DESIGNED: KH APPROVED: TR

AVALON PROJECT NO. 230465 SCALE AS NOTED

SHEET NUMBER

M-1.01



MAIN FLOOR PLAN - PLUMBING
SCALE: 3/16"=1'-0"

KEYED DRAWING NOTES	
1.	ROUGH-IN FOR FUTURE CLOTHES WASHER
2.	HOT/COLD HOSE BIB
3.	1/2" DCW RAN UNDERSLAB TO HOSEBIB - SLEEVE AS PER SPECIFICATIONS

File: C:\Users\khalid\local settings\temp\AutoCAD\230465 Cherry Creek Fire Hall.dwg Pld Time: 06:15, 26 Jun 2024 - Copyright 2024, Avalon Mechanical Consultants Ltd.



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V8A 3P2
250-364-4128

103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

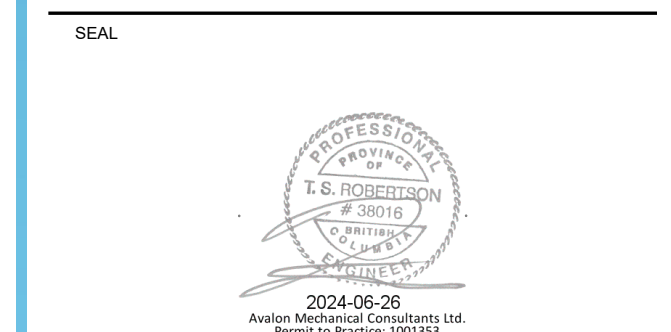
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

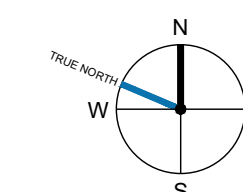
NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT NORTH



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
PLUMBING

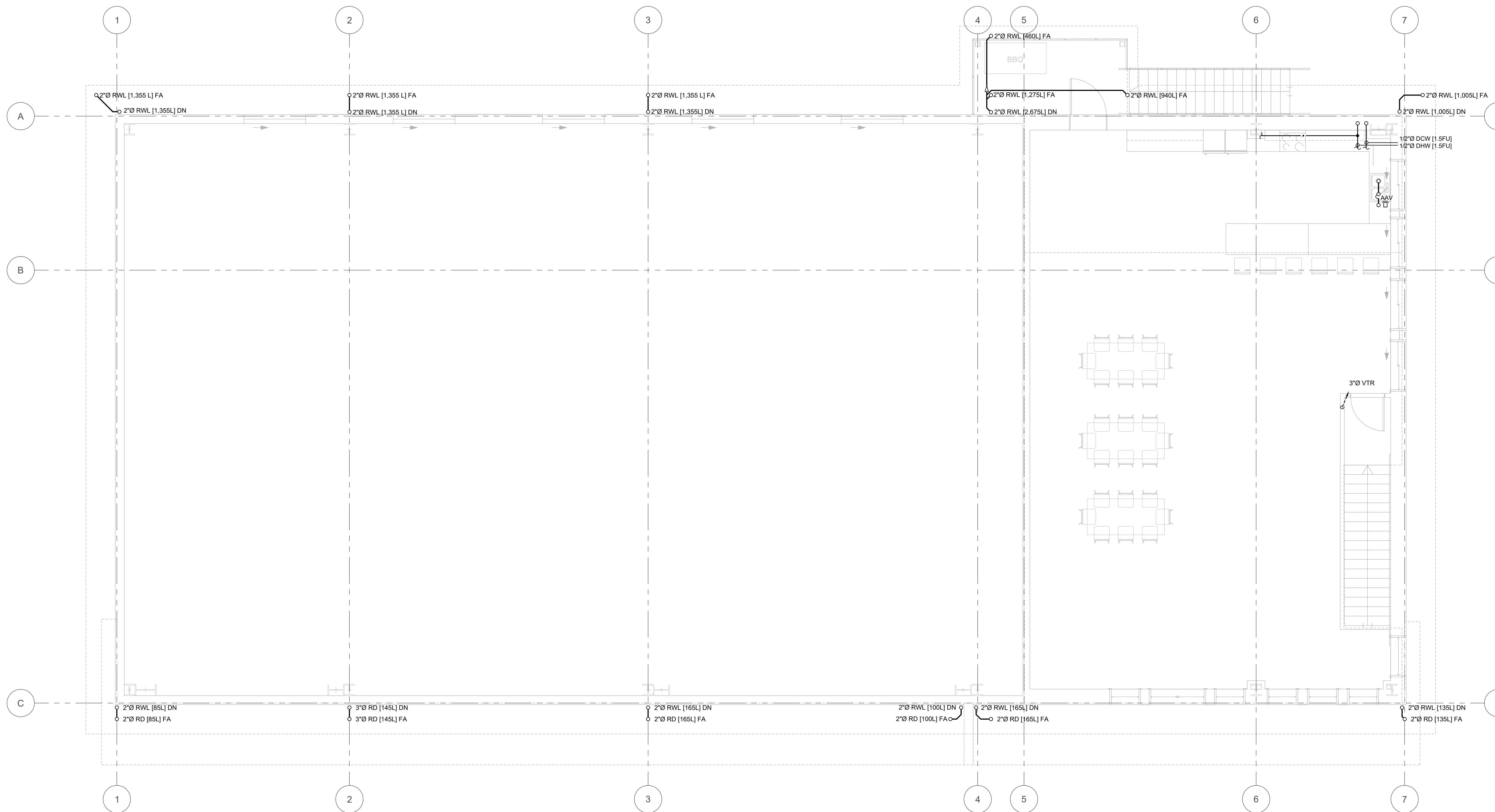
SECOND FLOOR PLAN

DESIGNED: KH APPROVED: TR

AVALON PROJECT NO: 230465 SCALE: AS NOTED

SHEET NUMBER

M-1.02



SECOND FLOOR PLAN - PLUMBING

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



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V8A 3P2
250-384-4128
103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

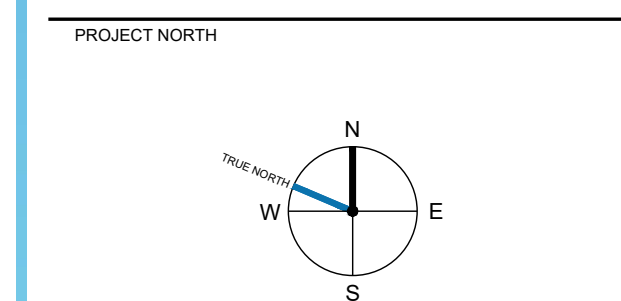
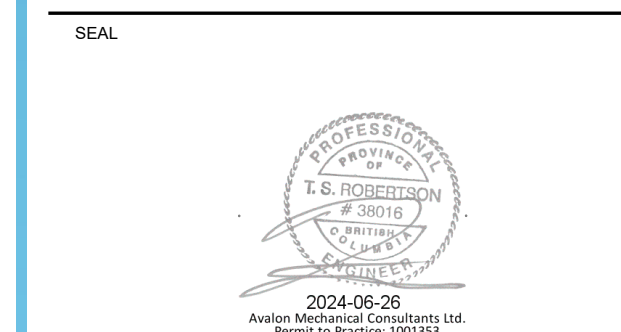
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
PLUMBING

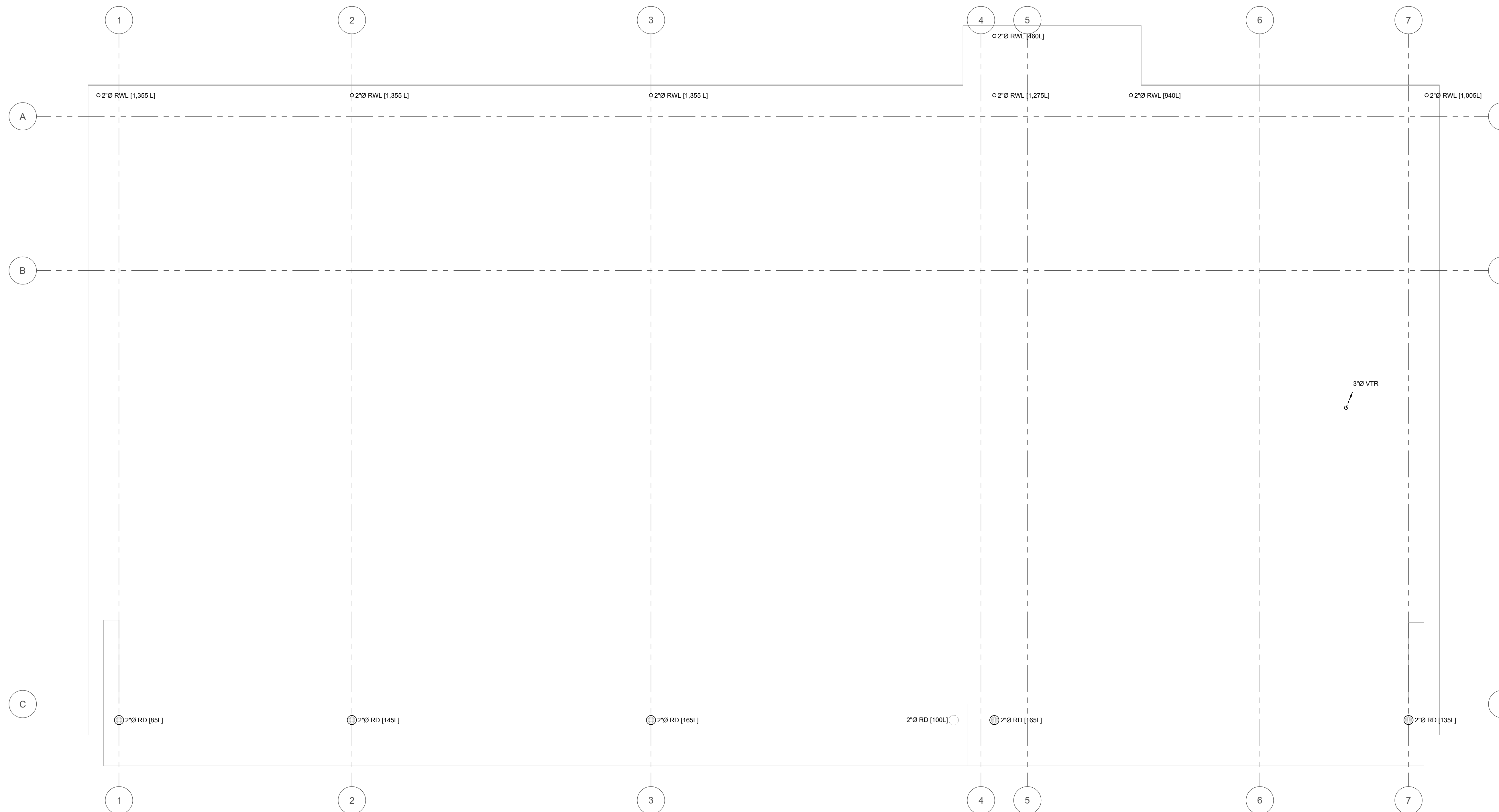
ROOF PLAN

DESIGNED: KH APPROVED: TR

AVALON PROJECT NO. 230465 SCALE AS NOTED

SHEET NUMBER

M-1.03



ROOF PLAN - PLUMBING
SCALE: 3/16"=1'-0"

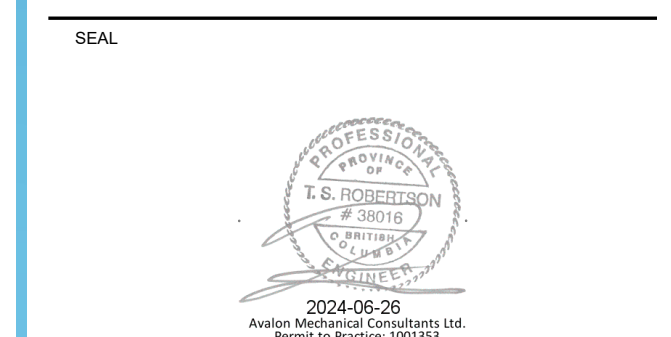
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

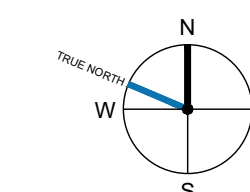
NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	09FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT NORTH



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
**HVAC
MAIN FLOOR PLAN**

DESIGNED
KH

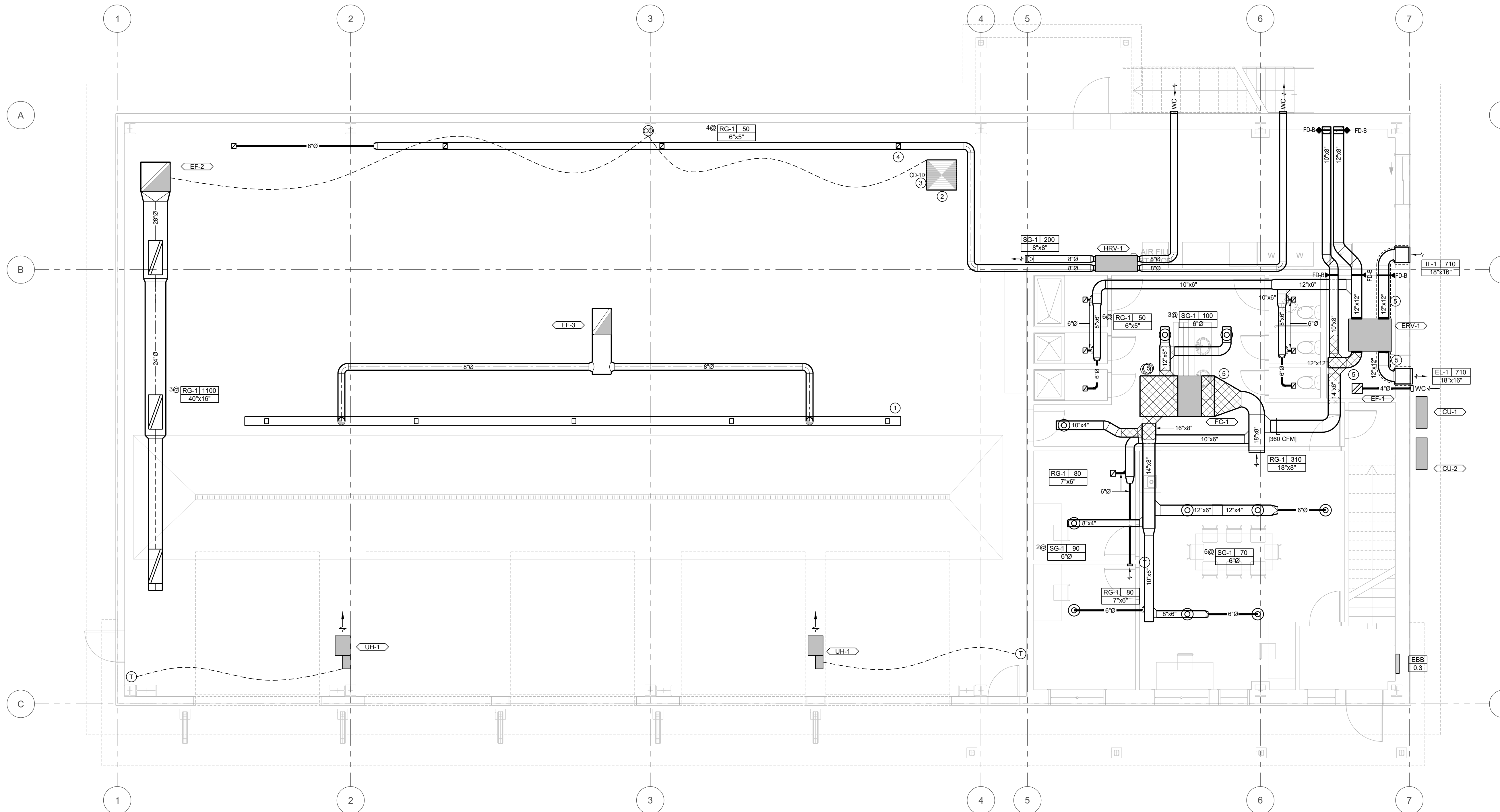
APPROVED
TR

AVALON PROJECT NO.
230465

SCALE
AS NOTED

SHEET NUMBER

M-2.01



MAIN FLOOR PLAN - HVAC

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

KEYED DRAWING NOTES

- MAGNA TRACKS HS RAIL AND EXTRACTION UNITS - PROVIDED BY OWNER
- 34"x34" DUCT OPENING TO TERMINATE WITH A GOOSENECK TO PROVIDE VENTILATION WHEN THE EXHAUST FANS ARE ON
- CONTROL DAMPER TO BE INTERLOCKED TO THE EXHAUST FAN OPERATION
- QUANTITY AND PLACEMENT OF GRILLES TO BE ADJUSTED DEPENDING ON PLACEMENT OF FIRE FIGHTING GEAR
- INSULATION SHOWN SCHEMATICALLY. REFER TO SPECIFICATIONS FOR FULL INSULATION REQUIREMENTS.



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V8A 3P2
250-384-4128
103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

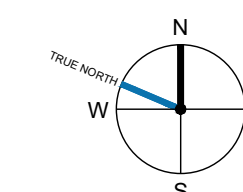
NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT NORTH



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
HVAC

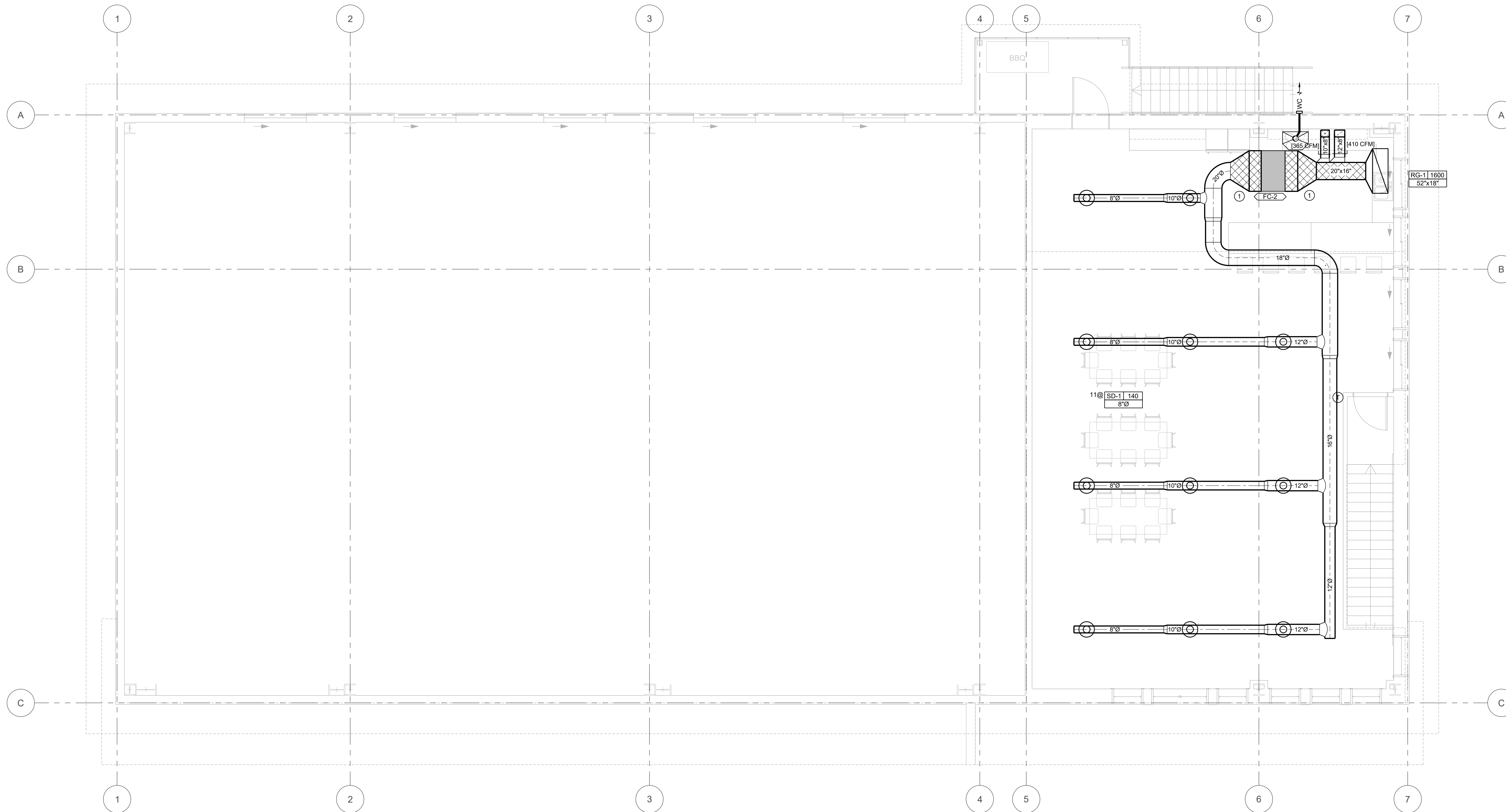
SECOND FLOOR PLAN

DESIGNED: KH APPROVED: TR

AVALON PROJECT NO. 230465 SCALE AS NOTED

SHEET NUMBER

M-2.02



SECOND FLOOR PLAN - HVAC
SCALE: 3/16"=1'-0"

KEYED DRAWING NOTES	
1.	INSULATION SHOWN SCHEMATICALLY- REFER TO SPECIFICATIONS FOR FULL INSULATION REQUIREMENTS.



AVALON MECHANICAL

300-1245 Esquimalt Road
Victoria, BC V8A 3P2
250-384-4128
103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

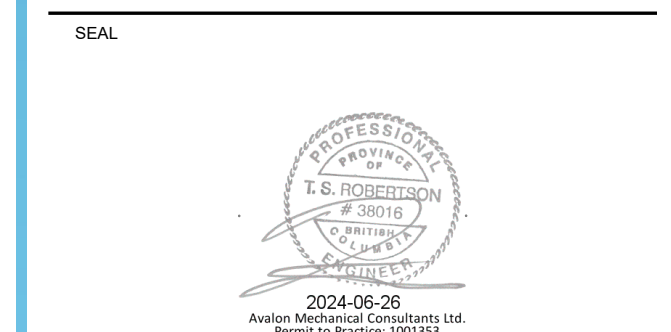
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

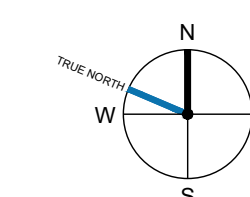
NO.	DATE	DESCRIPTION
REVISIONS		

5	26JUN2024	ISSUED FOR TENDER
4	09FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT NORTH



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SHEET TITLE
HVAC

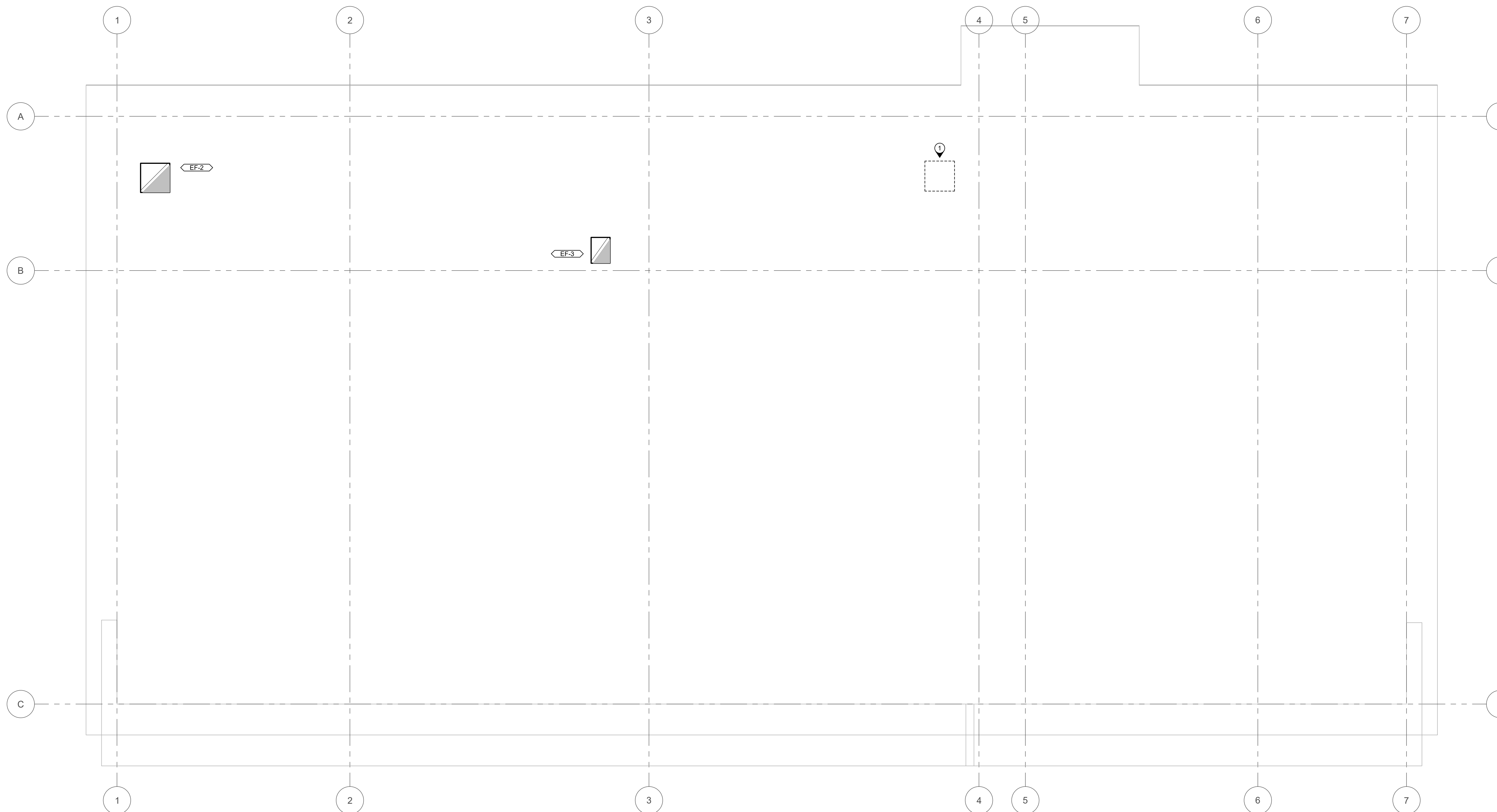
ROOF PLAN

DESIGNED: KH APPROVED: TR

AVALON PROJECT NO: 230465 SCALE: AS NOTED

SHEET NUMBER

M-2.03



ROOF PLAN - HVAC
SCALE: 3/16"=1'-0"

KEYED DRAWING NOTES	
1.	34"x34" DUCT OPENING TO TERMINATE WITH A GOOSENECK.

GRILLE / DIFFUSER / LOUVER SCHEDULE				
TAG	MAKE	MODEL	MOUNTING	NOTES
SD-1	EH PRICE	RCD	SEE PLANS	1,2,4
SG-1	EH PRICE	510	SEE PLANS	1,2,4
RG-1	EH PRICE	530	SEE PLANS	1,2,4
IL-1	EH PRICE	DE439	SEE PLANS	1,2,3
EL-1	EH PRICE	DE439	SEE PLANS	1,2,3

NOTES:
1. INTEGRAL BALANCING DAMPER
2. REFER TO ARCH FOR COLOUR
3. BIRD SCREEN
4. SEISMIC RESTRAINT CABLES

ELECTRIC UNIT HEATER SCHEDULE											
TAG	SERVICE	INPUT	MAKE	MODEL	WEIGHT	POWERLOAD	CONTROLS			NOTES	
							SUPP	INST	CONN	TYPE	
UH-1	TRUCK BAY	10 KW	OUELLET	OAS1000AM	20 KG	240/1 1/30HP	M	M	M	T	1,2

CONTROL TYPE:
T THERMOSTAT (LINE VOLTAGE)

NOTES:
1. TEMPERATURE AND PRESSURE RELIEF VALVE
2. PROVIDE SEISMIC RESTRAINT ON CHAIN HUNG EQUIPMENT

ENERGY RECOVERY VENTILATOR SCHEDULE									
TAG	SERVICE	SIZE	MAKE	MODEL	POWERLOAD	WEIGHT	CONTROL	NOTES	
ERV-1	FC-1 AND FC-2	710 CFM @ 1"	RENEWAIRE	HE10INH	208-230/1/60, 3.9 MCA, 15 MOP	350 LBS	A	1-4	
HRV-1	TRUCK BAY	200 CFM @ 0.25"	LIFEBREATH	195DCS	120/1/60, 1.5A	92 LBS	B	1-3,5	

NOTES:
1. HORIZONTAL SUPPLY AND EXHAUST CONFIGURATION
2. SEISMICALLY RATED, VIBRATION SPRING ISOLATED
3. SHIPPING WEIGHT INDICATED
4. VARIABLE SPEED ECM FANS (370W EACH)
5. VARIABLE SPEED PSC FANS

CONTROL NOTES:
A. 24/7 PROGRAMMABLE TIME CLOCK
B. CONTINUOUSLY RUN

FAN SCHEDULE										
TAG	SERVICE	TYPE	SIZE	MAKE	MODEL	SOUND	WEIGHT	POWERLOAD	CONTROL NOTES	NOTES
EF-1	MECHANICAL ROOM	CABINET	50 CFM	PANASONIC	FV-0511VFC1	0.3 SONES	9.5 LBS	120/1; 5.9 W	A	1,2
EF-2	TRUCK BAY	ROOF MOUNT UPBLAST	3300 CFM @ 0.25"	GREENHECK	GB-220	8.5 SONES	114 LBS	115/1/60; 12.2 MCA; 20 MOP	B	1,2
EF-3	VEHICLE TAILPIPE EXHAUST			NEDERMAN						3

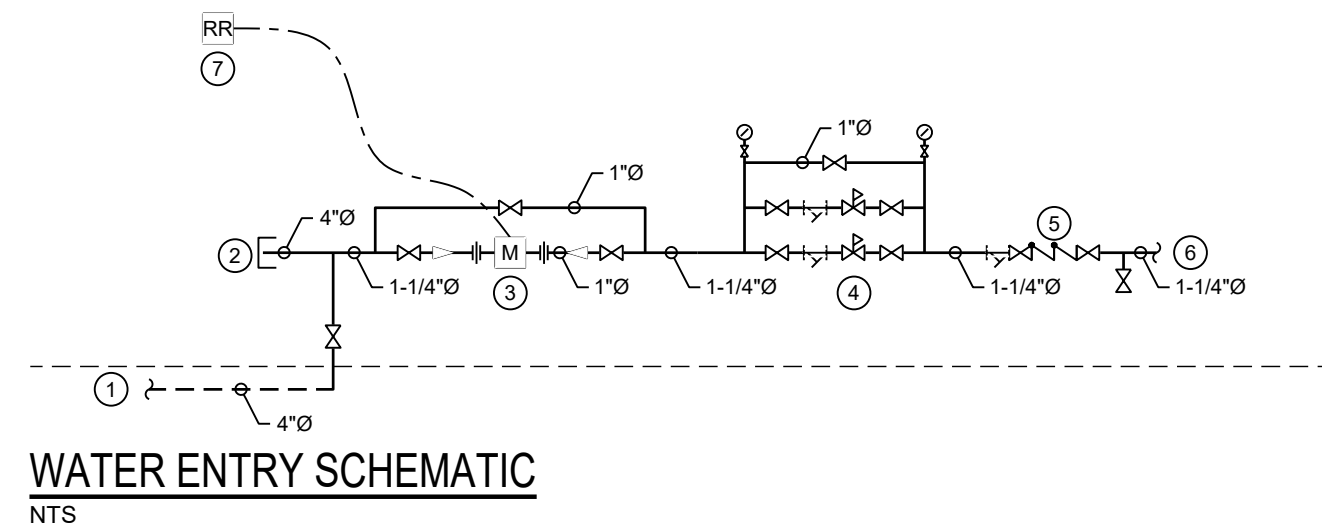
NOTES:
1. SHIPPING WEIGHT INDICATED
2. GRAVITY BACKDRAFT DAMPER
3. EQUIPMENT PROVIDED BY OWNER - PERFORMANCE AND SPECIFICATION TO BE VERIFIED

CONTROL NOTES:
A. REVERSE ACTING T-STAT
B. INTERLOCK TO CO SENSOR

FAN COIL SCHEDULE											
TAG	SERVICE	SIZE	AIR FLOW	EFFICIENCY	HEAT/COOL CAPACITY	MAKE	MODEL	WEIGHT	POWERLOAD	SOUND	NOTES
FC-1	WASHROOM, OFFICES, MEETING ROOMS	2.5 TON	830 CFM @ 0.58"	-	32,000/30,000 BTU/H	SAMSUNG	AC030BNHDC/AA	77.2 LBS	POWERED BY CU-1	41 dB(A)	1-7
FC-2	GREAT ROOM	4 TON	1500 CFM @ 0.58"	-	54,000/48,000 BTU/H	SAMSUNG	AC048BNHDC/AA	97.0 LBS	POWERED BY CU-2	45 dB(A)	1-7
CU-1	FC-1	2.5 TON	-	17.7 SEER, 10.3 EER, 11.0 HSPF	30,000-6,000 BTU/H	SAMSUNG	AC030BXADCH/AA	158.7 LBS	208-230/1/60 24.0MCA, 30MOP	52 dB(A)	2,6,8
CU-2	FC-2	4 TON	-	16.3 SEER, 8.0EER, 8.8 HSPF	39,000-8,400 BTU/H	SAMSUNG	AC048BXADCH/AA	195.1 LBS	208-230/1/60 32.8 MCA, 40MOP	58 dB(A)	2,6,8

NOTES:
1. DUCTED, CEILING MOUNTED EVAPORATOR
2. R-410A REFRIGERANT
3. POWERED BY OUTDOOR UNIT
4. WALL MOUNTED THERMOSTAT
5. FILTER RACK ON RETURN
6. SHIPPING WEIGHT INDICATED
7. INSTALL ON VIBRATION-ISOLATED HANGERS, SEISMICALLY RESTRAIN
8. MOUNT ON SLEEPERS, SEISMICALLY RESTRAIN, AND PROVIDE VIBRATION ISOLATION

KEY WATER ENTRY NOTES
1. 4" INCOMING WATER SERVICE (REFER TO CIVIL PLANS FOR CONTINUATION)
2. 4" CAPPED LINE FOR FUTURE FIRE SUPPRESSION
3. 1" SENSUS SR II WATER METER CW REMOTE READOUT RADIO TRANSMITTER. METER TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER AND AHJ REQUIREMENTS
4. 1-1/2" PRESSURE REDUCING VALVE
5. 1-1/2" DOMESTIC WATER DOUBLE CHECK VALVE ASSEMBLY
6. 1-1/2" DOMESTIC WATER (REFER TO PLUMBING PLANS FOR CONTINUATION)
7. REMOTE WATER METER READOUT



DOMESTIC WATER AND SANITARY FIXTURE UNIT TABLE							
	FIXTURE QUANTITY	DOMESTIC WATER FIXTURE UNITS			SANITARY FIXT. UNITS		
		PER FIXTURE	TOTAL		PER FIXTURE	TOTAL	
KITCHEN SINK (DOMESTIC)	1	1	1	1.4	1.0	1.0	1.4
HAND SINK	1	1.5	1.5	2.0	1.5	1.5	2.0
CLOTHES WASHER (DOMESTIC)	3	1	1	1.4	3.0	3.0	4.2
SHOWER (PUBLIC)	3	3	3	4	9.0	9.0	12.0
LAUNDRY SINK	1	1	1	1.4	1.0	1.0	1.4
LAVATORY (PUBLIC)	2	1.5	1.5	2	3.0	3.0	4.0
WATER CLOSET (TANK)	3	2.2	0	2.2	6.6	0.0	6.6
HOSE BIBB (1/2")	2	2.5	0	2.5	5.0	0.0	5.0
HOSE BIBB (1/2")	1	2.5	2.5	2.5	2.5	2.5	2.5
TOTAL					33	21	39.1

PUMP SCHEDULE							
TAG	SERVICE	SIZE	MAKE	MODEL	POWERLOAD	WEIGHT	NOTES
CP-1	HOT WATER RECIRCULATION	2.38GPM @ 4FT	GROUNDFOSS	UPS 15-35 SFC	115/1 1/12HP	5.45 LB	

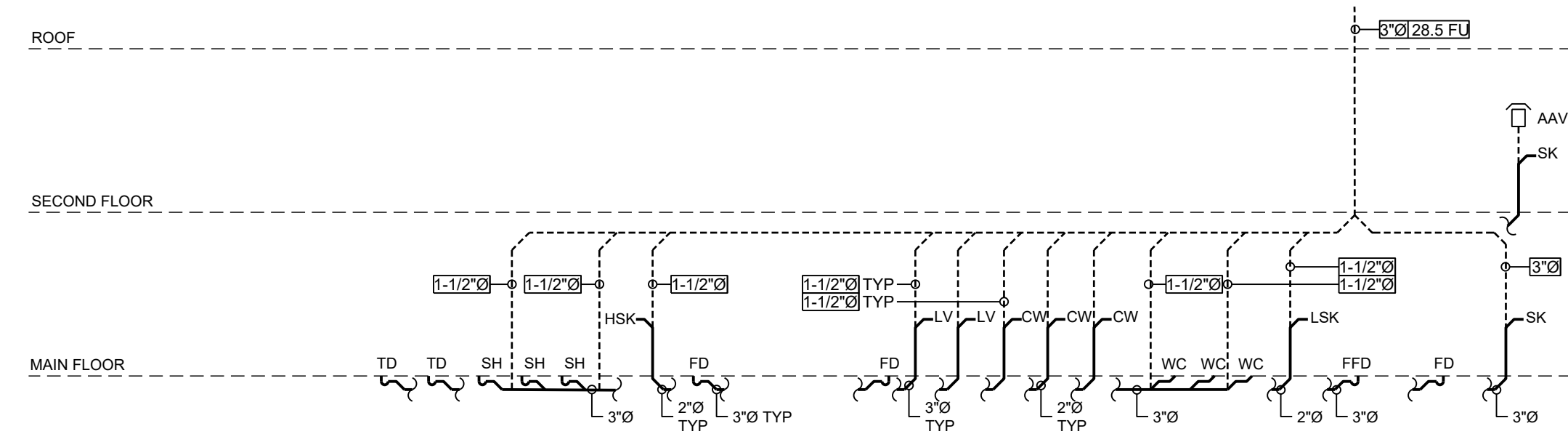
NOTES:
1. CORROSION FREE STAINLESS STEEL PUMP HOUSING
2. RATED FOR USE WITH POTABLE HOT WATER
3. THREE SPEED CIRCULATOR PUMP

EXPANSION TANK SCHEDULE								
TAG	SERVICE	SIZE	ACCEPT VOL.	PRE-CHARGE	MAKE	MODEL	WEIGHT	NOTES
ET-1	HEATING WATER SYSTEM	2.0 GAL	0.9 GAL	50 PSI	AMTROL	ST-5	5 LB	1,2

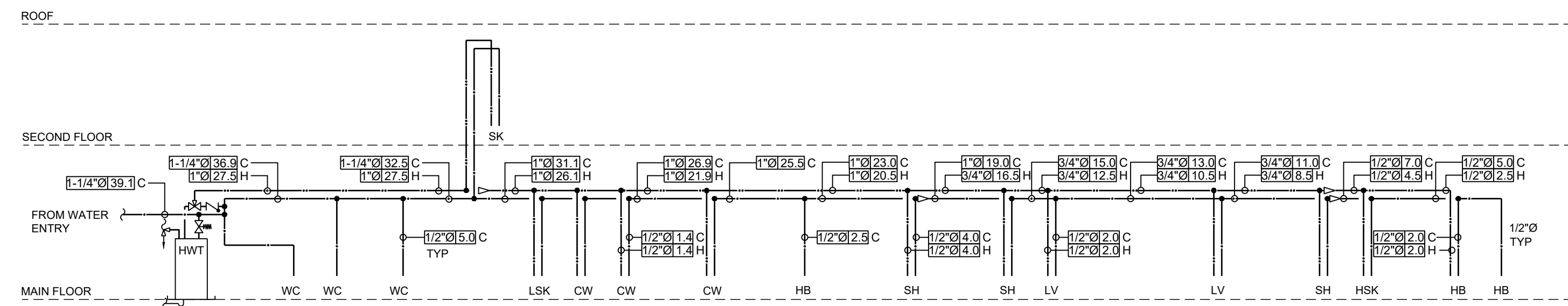
NOTES:
1. DRY WEIGHT INDICATED
2. 55 PSI PRECHARGE

DOMESTIC HOT WATER HEATER SCHEDULE									
TAG	SERVICE	SIZE	MAKE	MODEL	RECOVERY @ 100°F RISE	POWERLOAD	HEIGHT	WEIGHT	NOTES
HWT-1	DOMESTIC HOT WATER	119 USG	BRADFORD WHITE	CEHD120241*CF	99 GPH	240/1/60, 24 KW, 100FLA	66.75"	1429 LBS	ALL

NOTES:
1. TEMPERATURE AND PRESSURE RELIEF VALVE
2. INSTALLED WITH CONVERSION KIT 415-51043-67
3. UNIT WEIGHT INDICATED
4. COMPLETE WITH 6 KW HEATING ELEMENTS



SEWER SCHEMATIC
NTS



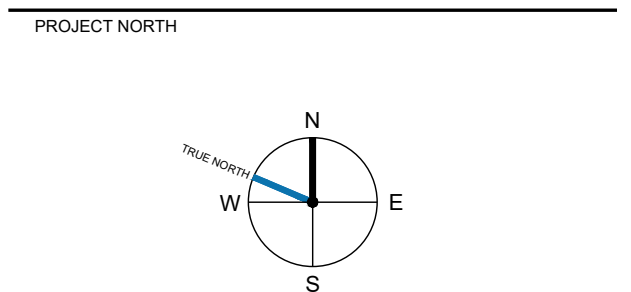
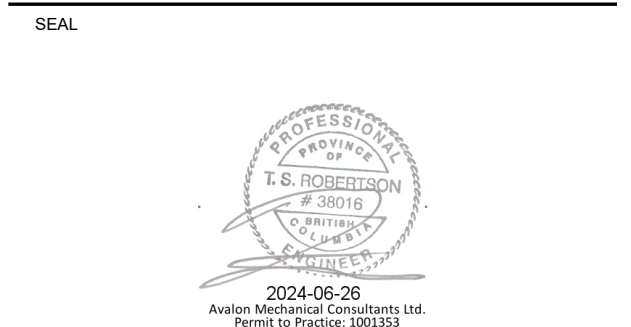
DOMESTIC WATER SCHEMATIC
NTS

DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

NO.	DATE	DESCRIPTION
REVISIONS		

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



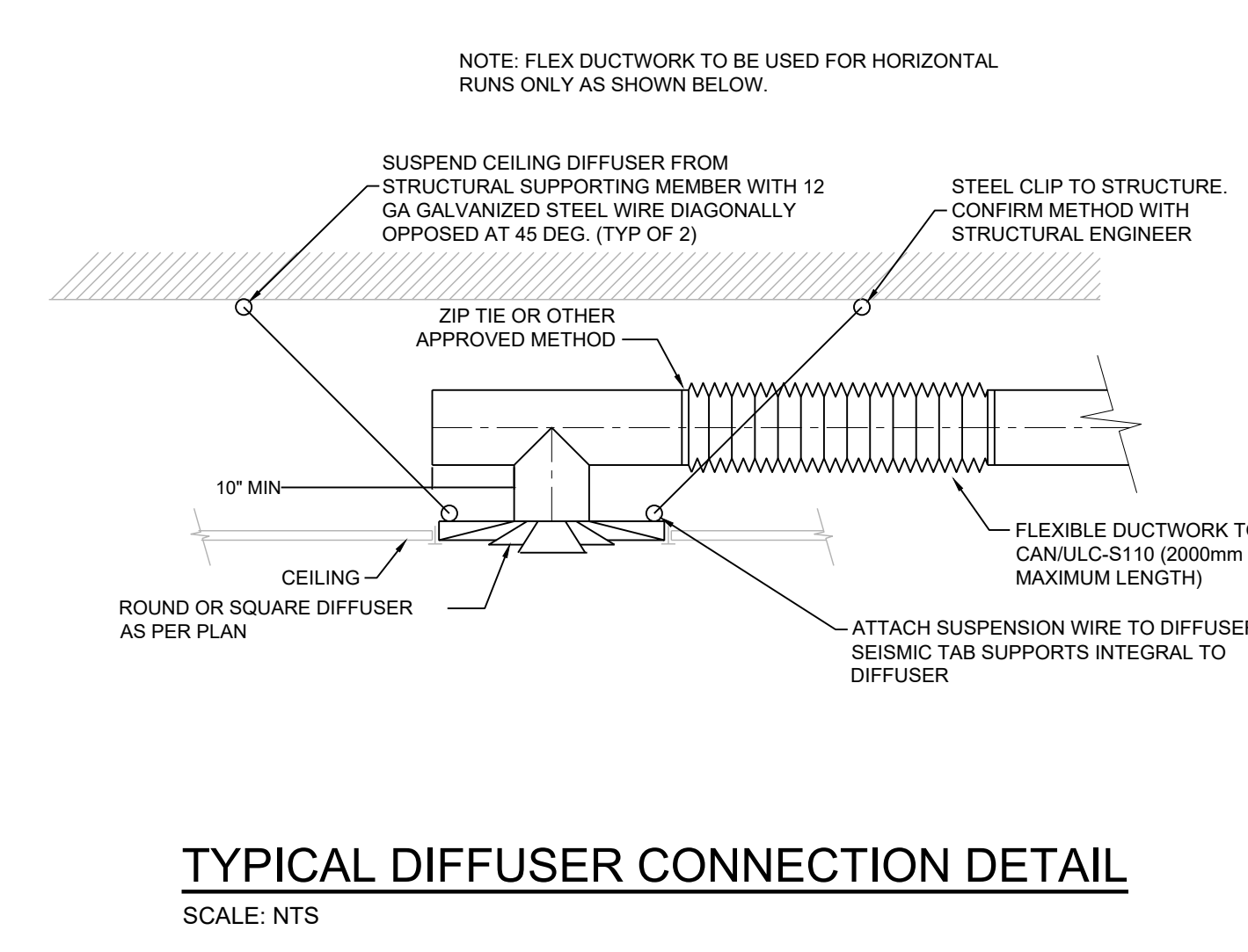
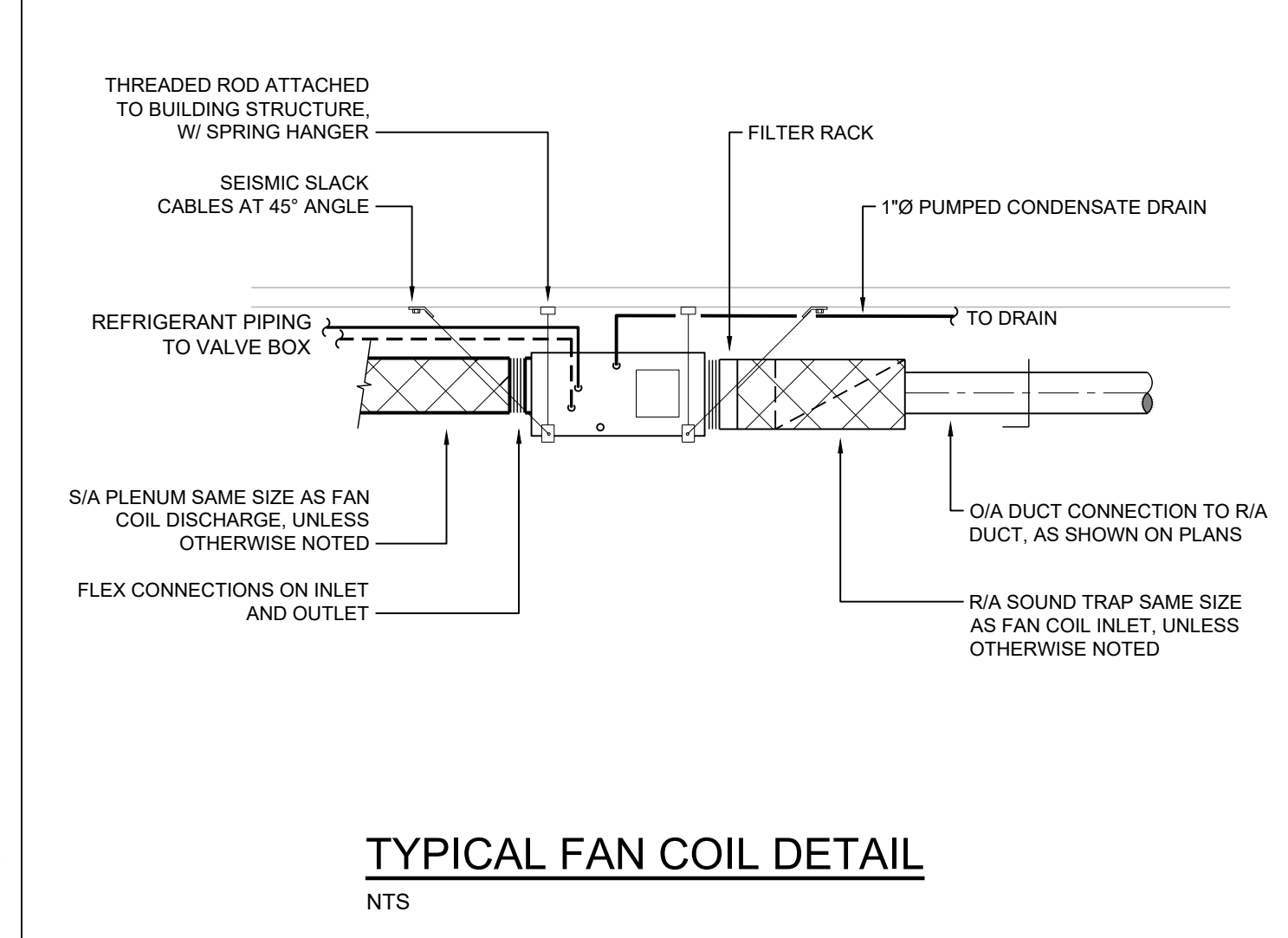
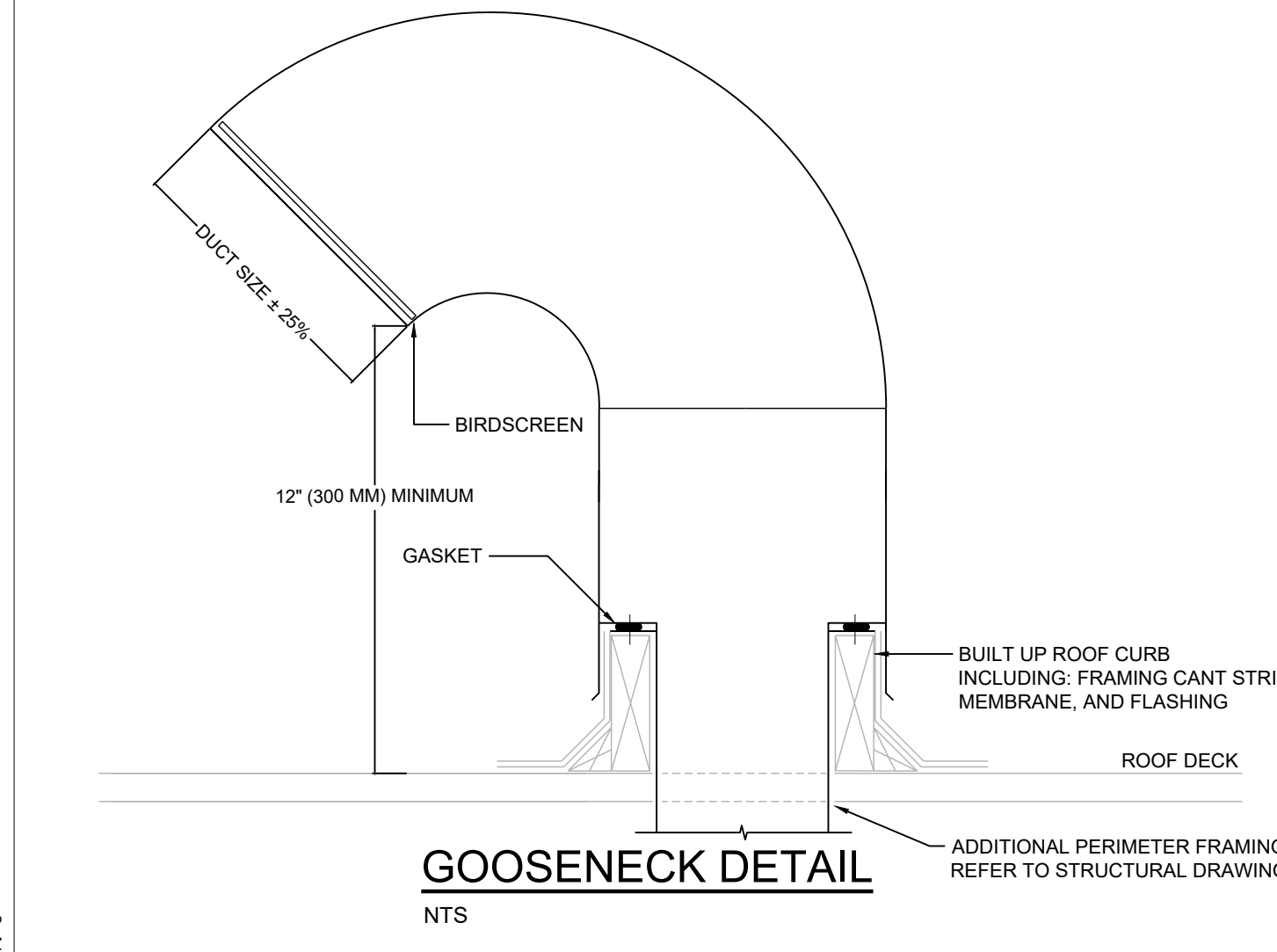
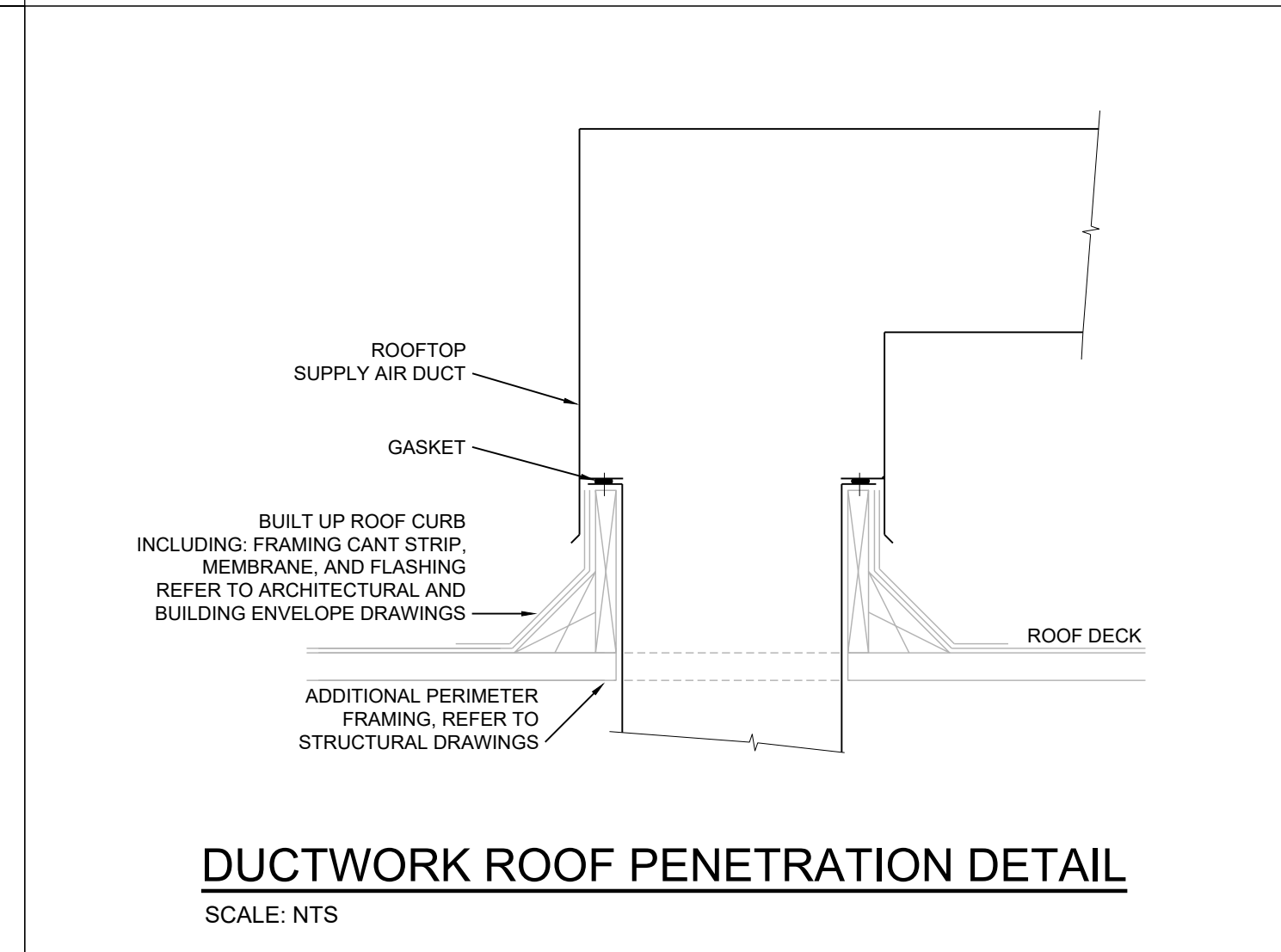
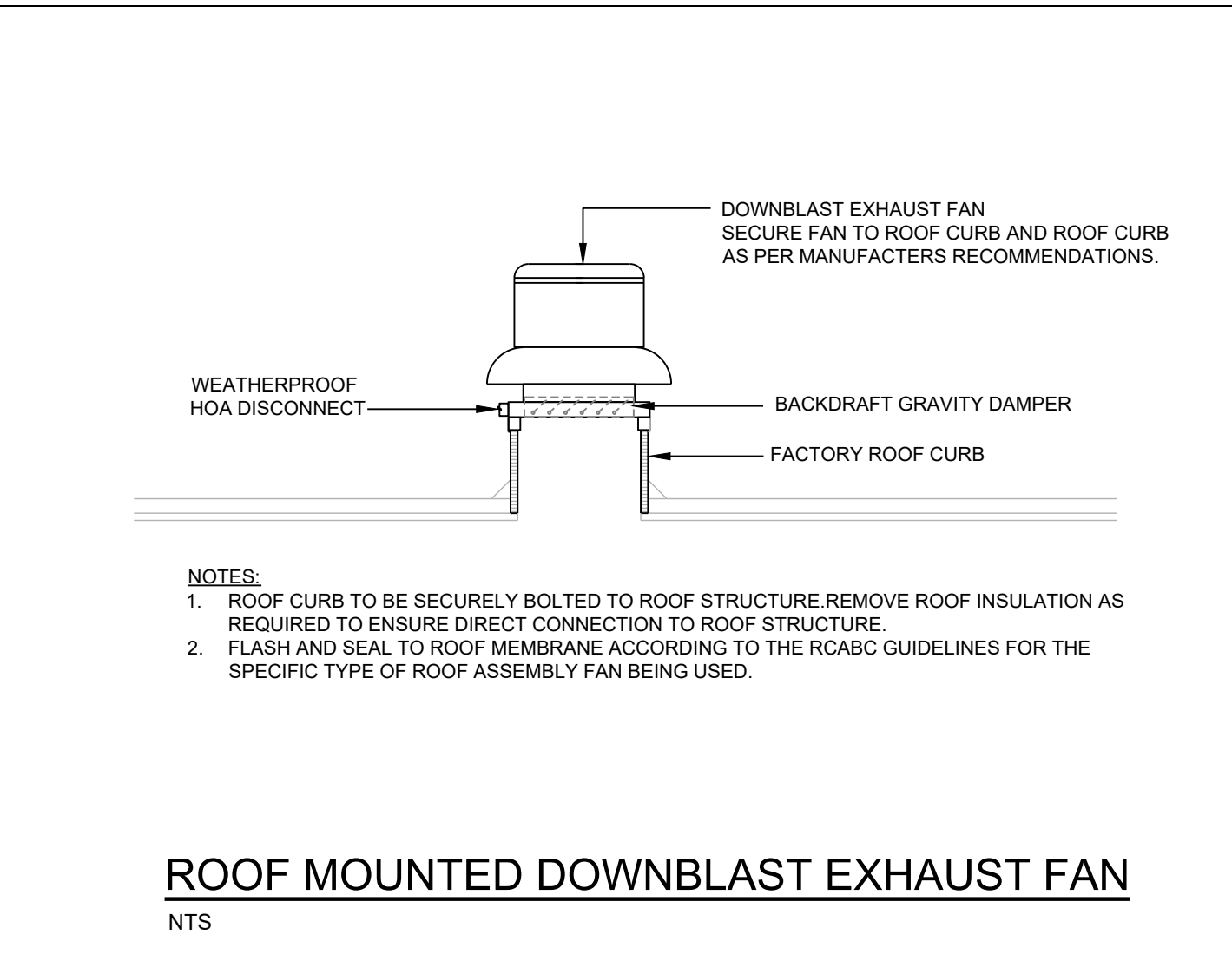
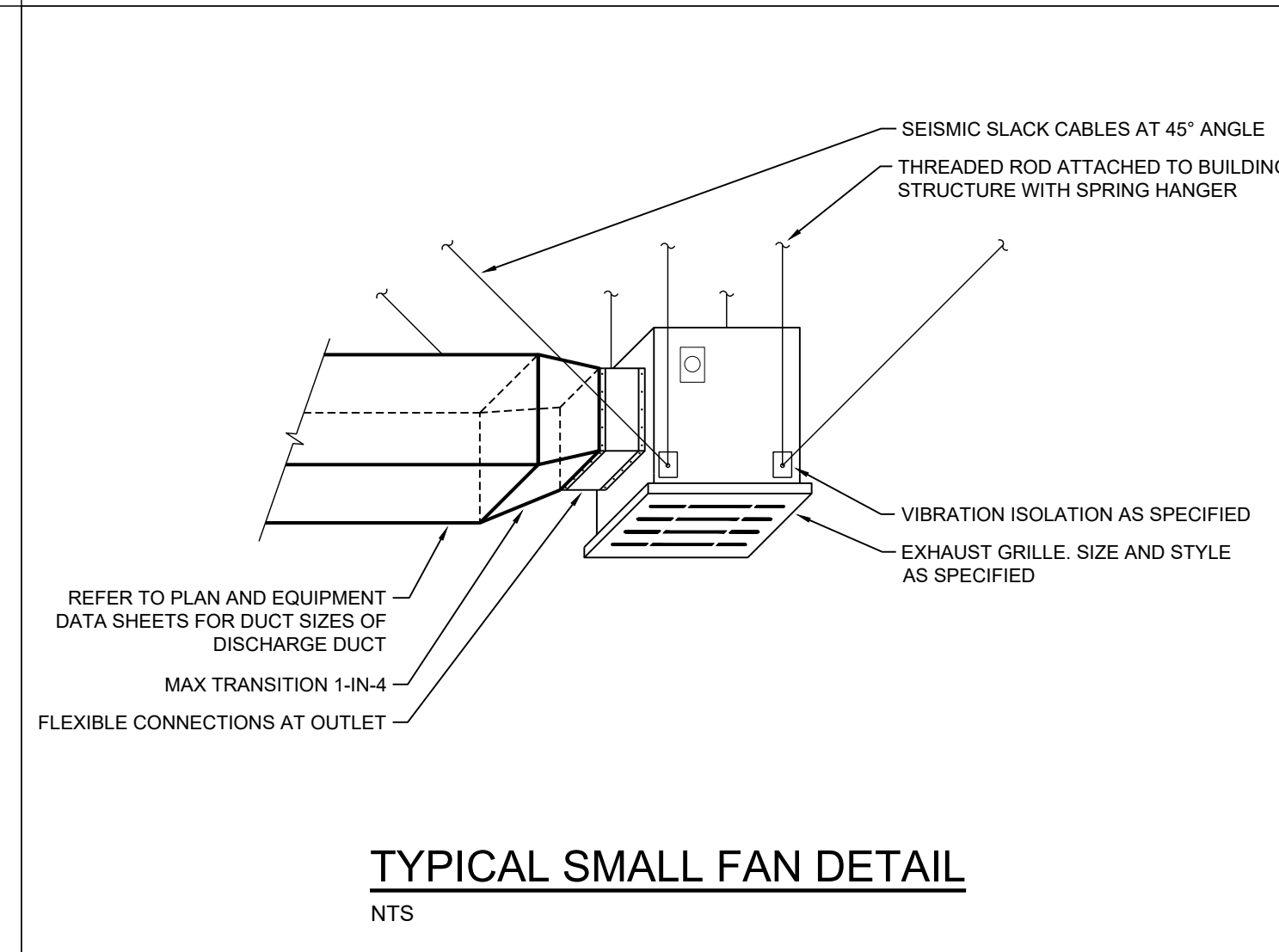
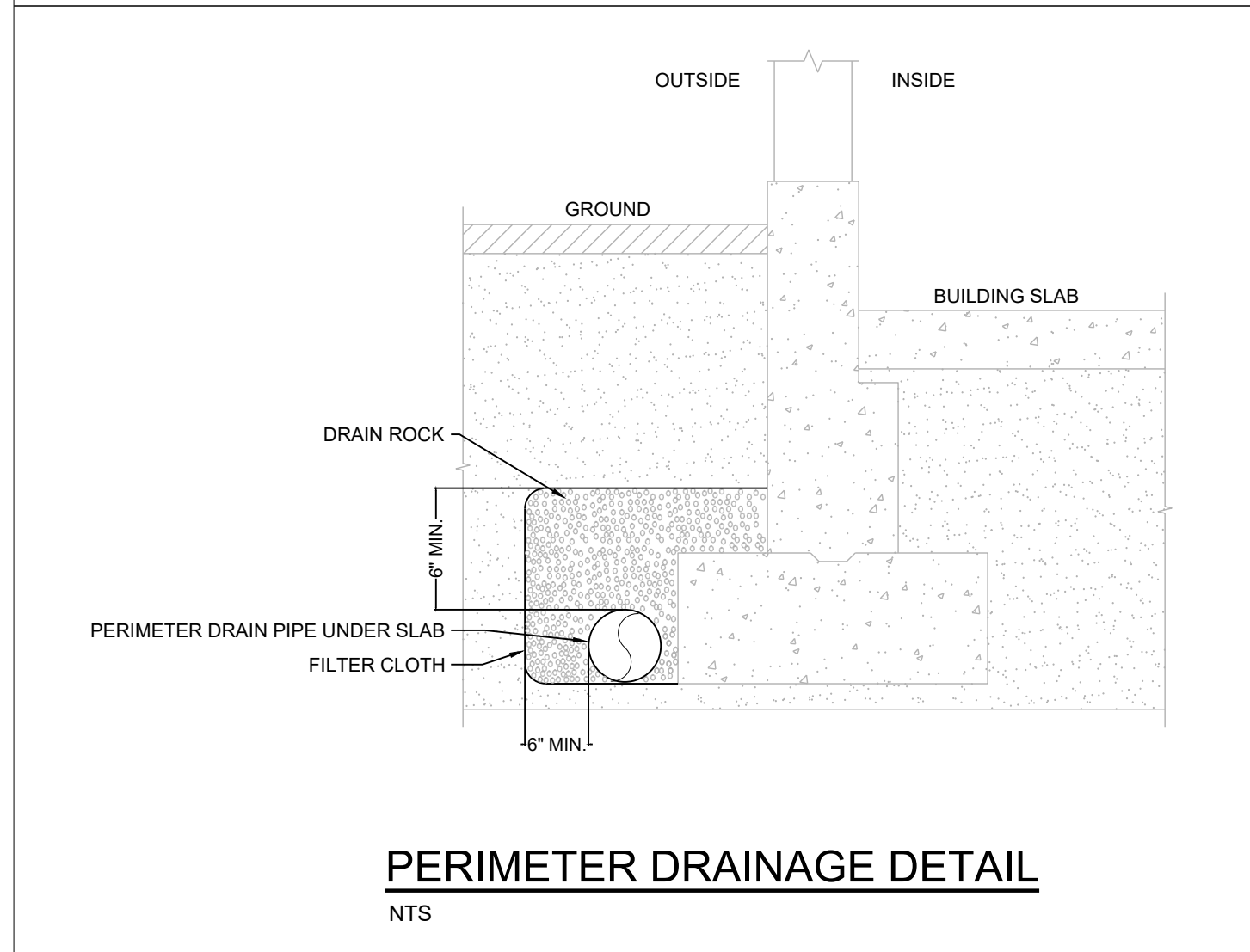
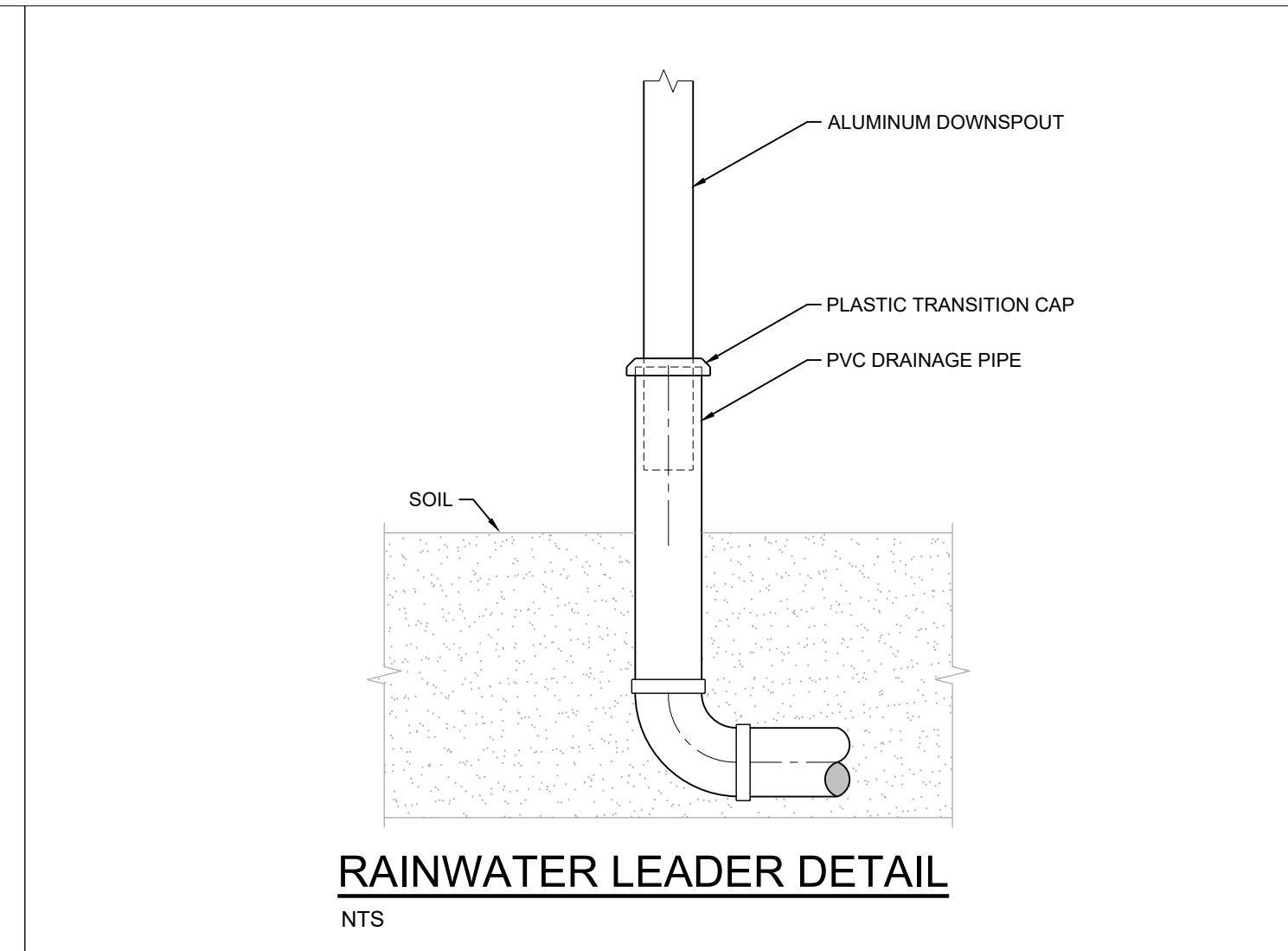
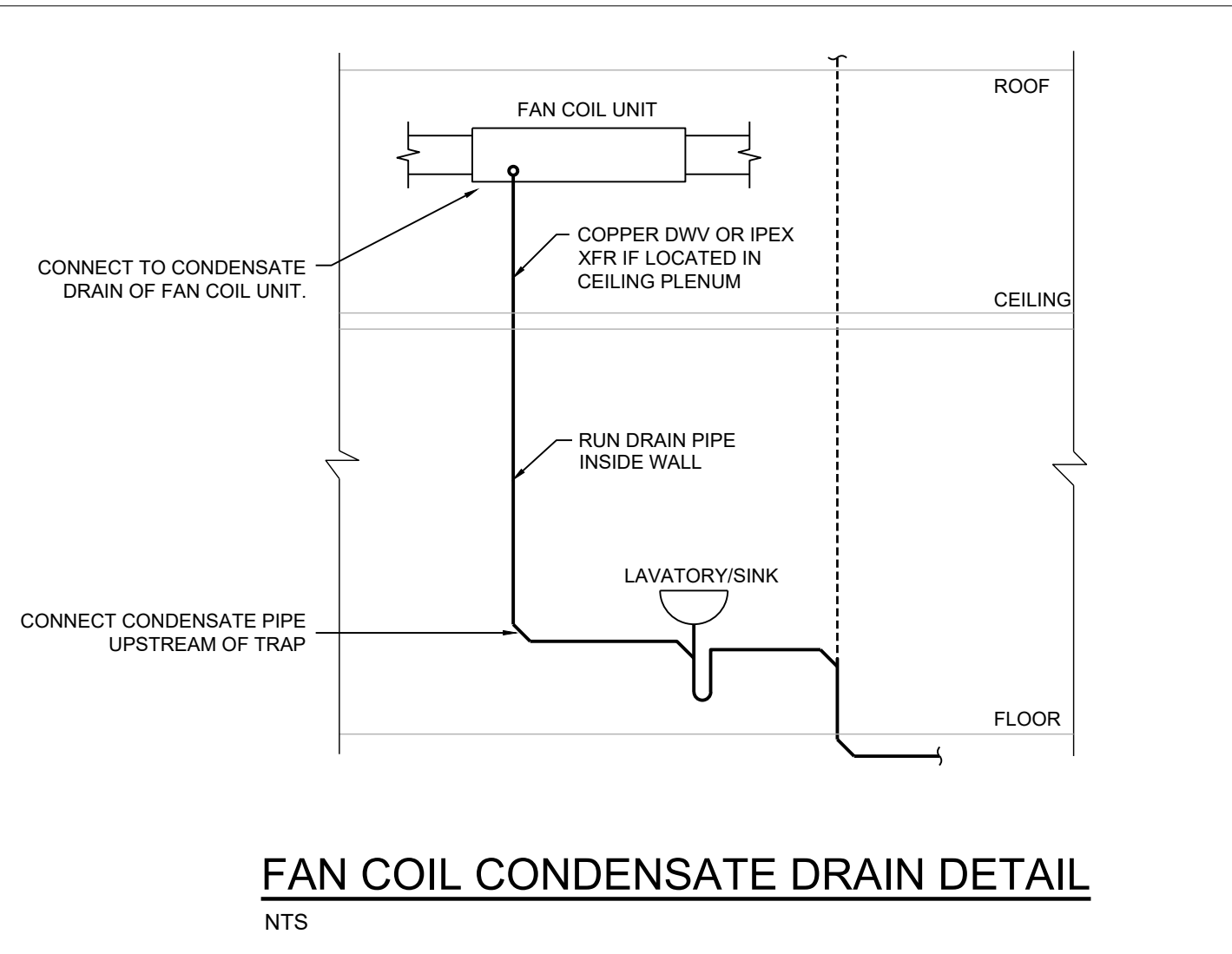
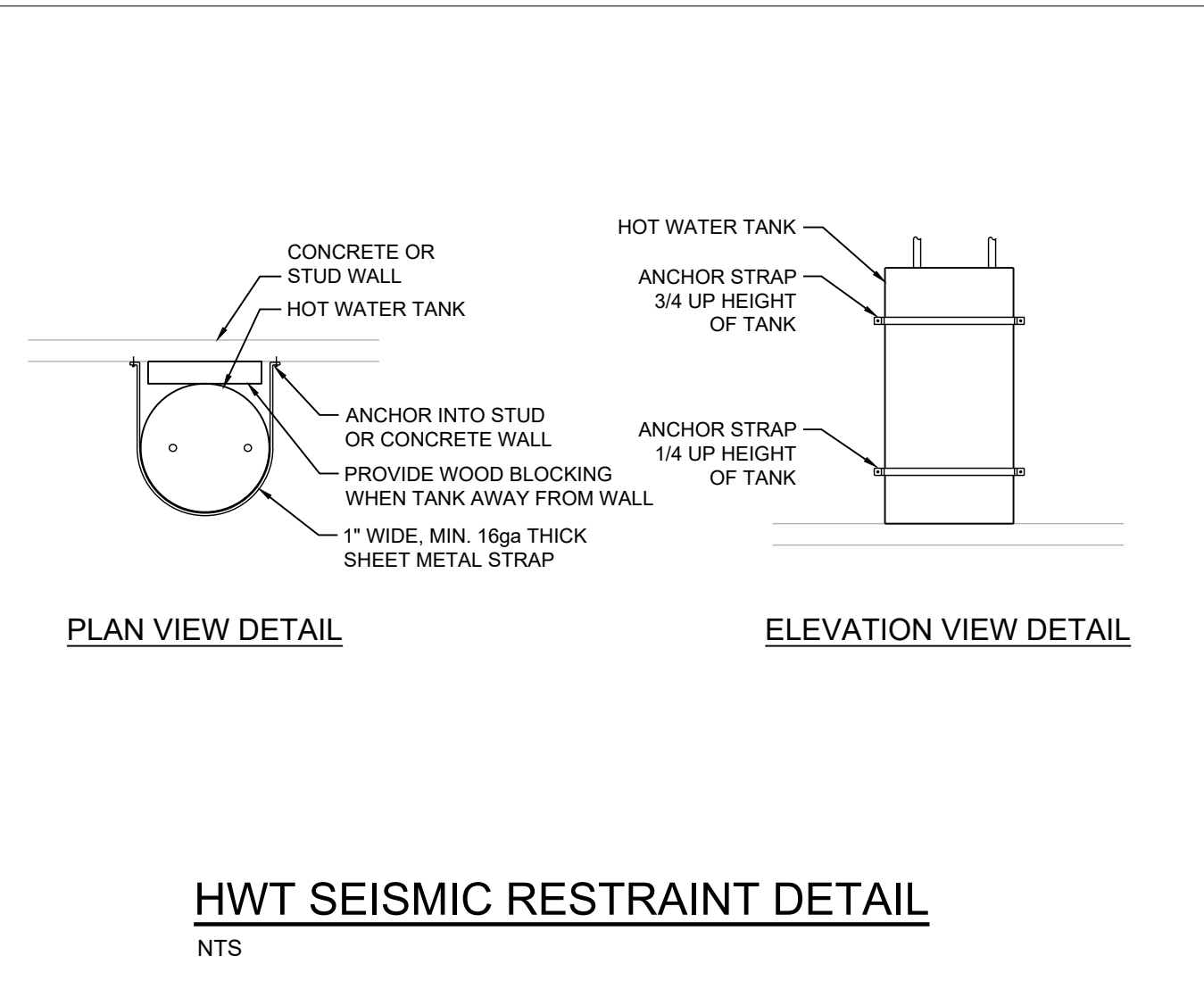
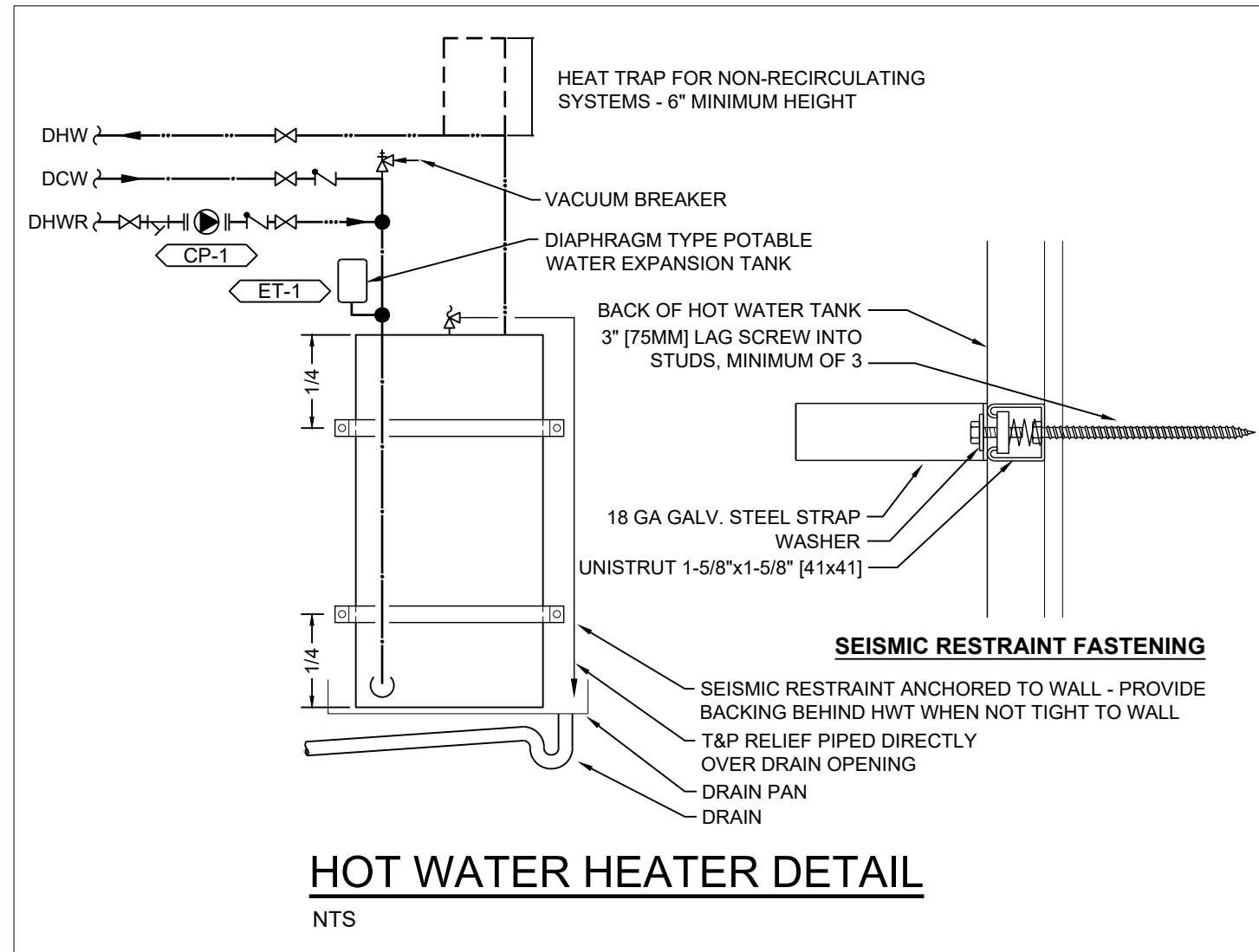
PROJECT
**CHERRY CREEK
FIRE HALL**

PROJECT
**5920 CHERRY CREEK RD
PORT ALBERNI, BC**

SHEET TITLE
**SCHEMATICS AND
SCHEDULES**

DESIGNED KH	APPROVED TR
AVALON PROJECT NO. 230465	SCALE AS NOTED
SHEET NUMBER	

M-3.01



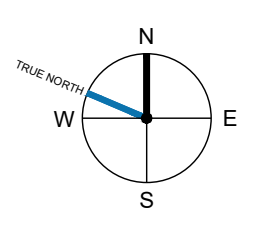
DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

NO.	DATE	DESCRIPTION

NO.	DATE	DESCRIPTION
5	26JUN2024	ISSUED FOR TENDER
4	09FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

DRAWING ISSUE



PROJECT
**CHERRY CREEK
FIRE HALL**

5920 CHERRY CREEK RD
PORT ALBERNI, BC

DETAILS

DESIGNED KH	APPROVED TR
AVALON PROJECT NO. 230465	SCALE AS NOTED
SHEET NUMBER	

M-4.01

File: C:\Users\khalilocal\working\temp\AP-Publish_8500230465 Cherry Creek Fire Hall.dwg Plot Time: 09:15, 28 Jun 2024 - Copyright 2024, Avalon Mechanical Consultants Ltd.



AVALLON MECHANICAL
 300-1245 Esquimalt Road Victoria, BC V8A 3P2 250-384-4128
 103-5220 Dublin Way Nanaimo, BC V9T 2X8 250-885-2180
 info@avalonmechanical.com

DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

AVALLON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

AVALLON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

7.1 GENERAL

1. ALL CONTROLS WIRING TO BE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE (CURRENT EDITION).
2. INPUT AND OUTPUT DEVICES AND ACCESSORIES TO BE COMPATIBLE WITH THE CONTROL SYSTEM, AND TO BE AS SPECIFIED HEREIN. PROVIDE ALL THAT IS REQUIRED TO MAKE THE POINTS LISTED IN THE SCHEDULE OF I/O DCV IN/PT & OUTPUT POINTS FULLY FUNCTIONAL. A COMPLETE INSTALLATION, READY FOR OPERATION, IS THE REQUIREMENT OF THIS SPECIFICATION. CONSEQUENTLY, ITEMS NOT NECESSARILY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER FUNCTIONING OF THE INSTALLATION, INCLUDING EQUIPMENT SERVICEABILITY, SHALL BE INCLUDED IN THE WORK, THE SAME AS IF SHOWN IN THE PROJECT SPECIFICATION.
3. PROVIDE SHOP DRAWINGS.

7.2 PRODUCTS

1. MANUAL RESET PRESSURE SWITCH
 - (A) PURPOSE: MONITOR DUCT STATIC PRESSURE AND SHUT DOWN WHEN EXCESS PRESSURE OCCURS. MANUAL RESET REQUIRED.
 - (B) PRESSURE RANGE: TO SUIT APPLICATION, OR 0.40" TO 1.6" UNLESS INDICATED OTHERWISE.
 - (C) HOUSING: WEATHERPROOF (NEMA 4, IP66) FOR OUTDOOR INSTALLATIONS.
 - (D) PRODUCT: DWYER SERIES 1900-1-MR.
2. DAMPERS
 - (A) CO-1: AS INDICATED ON DRAWINGS.

8. EXECUTION

8.1 GENERAL

1. INSTALL EQUIPMENT TO MANUFACTURER'S INSTRUCTIONS.
2. FIRESTOP ALL PIPE PENETRATIONS AND PROVIDE FIRE DAMPERS THROUGH ALL RATED ASSEMBLIES. PROVIDE 4" AND 8" FT RATINGS OF PENETRATIONS AT LEAST EQUAL TO FIRE AND TEMPERATURE RATINGS OF SEPARATE PENETRATIONS.
3. PROVIDE A SMOKE SEAL AT ALL MECHANICAL PENETRATIONS THROUGH FLOORS AND WALLS, AND WITHIN FLOOR AND WALL ASSEMBLIES.
 - (A) FOR PENETRATIONS OCCURRING IN A RATED FLOOR OR WALL ASSEMBLY, THE SMOKE SEAL SHALL BE PROVIDED USING THE FIRESTOPPING MATERIAL.
 - (B) SEALANTS USED AGAINST CPVC PIPING MUST BE CHEMICALLY COMPATIBLE WITH CPVC. ONLY USE SEALANTS WHICH HAVE BEEN SPECIFICALLY LISTED AS ACCEPTABLE BY THE PIPING MANUFACTURER.
 - (C) ACCEPTABLE SEALANTS FOR CPVC PIPING: HI-LT FV ONE-MAX, 3M 3000 FT, 3M IC 1539H.
 - (D) NOTE: MANY SMOKE SEAL PRODUCTS ARE SPECIFICALLY LISTED AS NOT BEING ACCEPTABLE FOR USE WITH CPVC PIPING.
4. PROVIDE SEISMIC RESTRAINTS FOR FAN COILS, HEAT PUMPS, FANS, ERV/HVs, HOT WATER HEATERS, DIFFUSERS, AND OTHER EQUIPMENT AS REQUIRED.
5. DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATICAL ONLY.

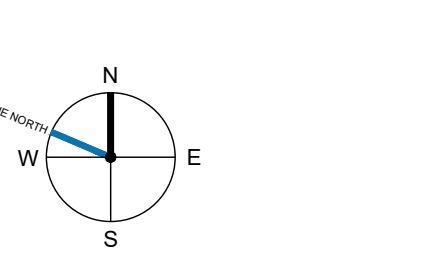
NO.	DATE	DESCRIPTION
REVISIONS		
		

NO.	DATE	DESCRIPTION
5	26JUN2024	ISSUED FOR TENDER
4	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
3	18DEC2023	ISSUED FOR BUILDING PERMIT
2	04DEC2023	ISSUED FOR 75% COORDINATION
1	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
DRAWING ISSUE		



PROJECT NORTH



PROJECT

CHERRY CREEK FIRE HALL

5920 CHERRY CREEK RD PORT ALBERNI, BC

SHEET TITLE SPECIFICATIONS

DESIGNED	APPROVED
KH	TR
AVALON PROJECT NO.	SCALE
230465	AS NOTED
SHEET NUMBER	

M-5.01

<p>1 GENERAL</p> <p>1.1 GENERAL CONDITIONS</p> <ol style="list-style-type: none"> 1. CLAUSES OF THE CONTRACT AGREEMENT, GENERAL CONDITIONS, AND REQUIREMENTS SHALL APPLY TO THIS DIVISION. 2. CONTRACTOR TO VISIT SITE PRIOR TO TENDERING TO VERIFY ELEVATIONS, MEASUREMENTS, AND CLEARANCES, ETC. <p>1.2 REFERENCES</p> <ol style="list-style-type: none"> 1. ENSURE ALL WORK AND MATERIALS COMPLY WITH NATIONAL, PROVINCIAL AND LOCAL CODES. 2. ALL ELECTRICAL EQUIPMENT SHALL BE CSA APPROVED AND INSTALLED IN ACCORDANCE WITH CSA C22-1. 3. ALL HVAC SYSTEMS SHALL BE IN ACCORDANCE WITH THE BC PLUMBING CODE. 4. ALL PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH THE BC BUILDING CODE, LOCAL CODES AND SMOKE ALARMS, EXPANSION TANKS, ETC. 5. ALL REFRIGERATION PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CSA B52 AND THE BC REFRIGERATION CODE. 6. ALL MATERIALS AND SYSTEMS SHALL BE IN ACCORDANCE WITH THE BC BUILDING CODE, CSA ASME AND ASHRAE STANDARDS. REFERENCED STANDARDS EDITIONS ARE TO BE OF THE EFFECTIVE YEAR INDICATED BY CODES AND STANDARDS. IN THE ABSENCE OF A CODE REFERENCE, THE LATEST PUBLISHED VERSION IS TO BE REFERENCED. <p>1.3 WORKMANSHIP</p> <ol style="list-style-type: none"> 1. CARRY OUT ALL WORK IN A neat and PROFESSIONAL MANNER TO THE SATISFACTION OF THE ENGINEER. 2. MAKE GOOD ANY DAMAGES TO EXISTING EQUIPMENT AND BUILDING COMPONENTS CAUSED BY WORK UNDER THIS CONTRACT AT NO EXTRA COST TO OWNER. 3. ALL ELECTRICAL INSTALLATION WORK MUST BE DONE BY A REGISTERED ELECTRICAL CONTRACTOR. <p>1.4 PERMITS</p> <ol style="list-style-type: none"> 1. OBTAIN AND PAY FOR ALL PERMITS AND GIVE ALL NOTICES. 2. ENTIRE FIRE SUPPRESSION, PLUMBING, SHEET METAL, CONTROLS, AND ELECTRICAL INSTALLATION TO CONFORM TO THE LATEST EDITIONS OF NATIONAL BUILDING AND FIRE CODES OF CANADA AS AMENDED BY C.E.B.C. ELECTRICAL CODE, FIRE MARSHAL, SMACNA STANDARDS, NFPA STANDARDS, AND EQUIPMENT MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS NECESSARY TO MEET LOCAL REQUIREMENTS. <p>1.5 EQUIPMENT AND MATERIALS</p> <ol style="list-style-type: none"> 1. ACCEPTABLE PRODUCTS ARE THOSE WHICH MEET THE DESIGN INTENT OF THE DRAWINGS AND SPECIFICATIONS. ALTERNATE EQUIPMENT, OTHER THAN THAT WHICH HAS BEEN SPECIFIED, MUST BE APPROVED IN WRITING DURING THE TENDER/PRICING STAGE. <ol style="list-style-type: none"> (A) FOR MAJOR EQUIPMENT, PROVIDE A MODEL LIST OF THE FOLLOWING FOR EVALUATION OF EQUIPMENT EQUIVANCY. SHOW THAT THE PROPOSED EQUIPMENT IS EQUAL TO OR BETTER THAN THE SPECIFIED EQUIPMENT. COMPARE THE FOLLOWING, AT A MINIMUM: <ol style="list-style-type: none"> I. PERFORMANCE CAPACITY II. SIZE AND WEIGHT, SERVICE CLEARANCES III. ELECTRICAL REQUIREMENTS IV. ACOUSTIC PERFORMANCE V. MAINTENANCE REQUIREMENTS 2. THE USE OF A TRADE NAME FOR MATERIALS DOES NOT PRECLUDE THE USE OF APPROVED ALTERNATE MATERIALS OF EQUAL PERFORMANCE AND QUALITY. 3. ALL PRODUCTS AND MATERIALS INDICATED TO BE NEW SHALL BE PURCHASED NEW FROM A PRODUCT SUPPLIER, COMPLETE WITH ALL ASSOCIATED WARRANTIES AND MANUFACTURER'S SUPPORT. THE CONTRACTOR SHALL MAKE A FORMAL REQUEST FOR ANY PROPOSALS TO USE ALTERNATE MATERIALS. 4. ADDITIONAL COSTS WHICH ARE REQUIRED TO PROVIDE EQUIVALENT TO THE ORIGINAL DESIGN INTENT (INCLUDING, BUT NOT LIMITED TO, REDESIGN, ELECTRICAL UPGRADE, EXTRA CONTROLS, RELOCATIONS, STRUCTURAL, ETC.) AND WHICH RESULT FROM THE USE OF APPROVED ALTERNATES, SHALL BE BORNE BY THE CONTRACTOR. <p>1.6 SHOP DRAWINGS</p> <ol style="list-style-type: none"> 1. SUBMIT AN ELECTRONIC PDF COPY OF SHOP DRAWINGS TO THE ENGINEER FOR THE FOLLOWING: <ol style="list-style-type: none"> (A) PLUMBING: <ol style="list-style-type: none"> I. PLUMBING FIXTURES II. DRAINAGE PRODUCTS III. PLUMBING VALVES IV. PLUMBING PUMPS V. HOT WATER HEATERS VI. EXPANSION TANKS (B) HVAC: <ol style="list-style-type: none"> I. LOUVERS, GRILLS, DIFFUSERS, AND REGISTERS II. FANS III. HEAT PUMPS IV. ENERGY/HEAT RECOVERY VENTILATORS V. FAN COILS VI. UNIT HEATERS VII. FIRE DAMPERS (C) FIRESTOP LISTINGS 2. EQUIPMENT SHOP DRAWINGS ARE TO BE SUBMITTED AT THE BEGINNING OF THE PROJECT BEFORE EQUIPMENT HAS BEEN ORDERED. 3. EQUIPMENT SHOP DRAWINGS SHALL CLEARLY INDICATE WHICH OPTIONS ARE BEING PROVIDED WHEN MULTIPLE OPTIONS ARE AVAILABLE. CLEARLY CROSS OUT NON-APPLICABLE OPTIONS. 4. FIRESTOP LISTING SHOP DRAWINGS ARE TO BE SUBMITTED AT THE BEGINNING OF THE PROJECT BEFORE ANY FIRESTOP SYSTEMS HAVE BEEN INSTALLED. FIRESTOP SUBMITTALS TO INCLUDE FIRESTOP SYSTEM LISTINGS (WITH CERTIFICATIONS AND SECTIONS OF INSTALLATION) AND FIRESTOP PRODUCTS (PIRE CAULKING, DONUTS, INSERTS, DAMPERS, ETC). <p>1.7 TESTING AND BALANCING</p> <ol style="list-style-type: none"> 1. TEST ALL PIPEWORK AND DUCTWORK AND REPAIR LEAKS. <ol style="list-style-type: none"> (A) TEST PLUMBING SYSTEMS TO BE PLUMBING CODE. (B) TEST REFRIGERATION SYSTEM TO MECHANICAL REFRIGERATION CODE. (C) TEST BACKFLOW PREVENTERS AND PROVIDE CERTIFICATES. (D) TEST FIRE AND FIRE/SMOKE DAMPERS AND PROVIDE TEST REPORTS. 2. TEST, ADJUST AND BALANCE THE AIR VOLUMES IN ACCORDANCE WITH FIGURES NOTED ON DRAWINGS (WITH INPS). ADJUST AND REPLACE PULLEYS AND SHEAVES ON BELT DRIVEN EQUIPMENT AND SPEED CONTROLLERS ON DIRECT DRIVEN EQUIPMENT AS REQUIRED. INCLUDE AN ELECTRONIC PDF COPY OF THE BALANCING REPORT. 3. CARRY OUT TESTS OF INSTALLATION AS IT PROGRESSES; REPAIR ANY FAULTY INSTALLATION AT OWN EXPENSE. <p>1.8 CLEANING</p> <ol style="list-style-type: none"> 1. ENSURE ALL NEW MECHANICAL SYSTEMS ARE CLEAN BEFORE HANDOVER. <p>1.9 SEISMIC</p> <ol style="list-style-type: none"> 1. POWER-ACTUATED FASTENERS AND DROP-IN ANCHORS SHALL NOT BE USED FOR TENSION LOADS (HANGING PIPING, EQUIPMENT, ETC). 2. ALL DUCT WORK SHALL BE PROVIDED WITH SEISMIC RESTRAINTS IN ACCORDANCE WITH SEISMIC HAZARD LEVEL (SH) A OF THE SEISMIC RESTRAINT MANUAL: GUIDELINES FOR MECHANICAL SYSTEMS, LATEST EDITION, AS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, AND TO THE SATISFACTION OF THE LOCAL BUILDING INSPECTOR. 3. CONTRACTOR IS TO ENSURE THE SERVICES OF AN ENGINEER SPECIALIZING IN THE FIELD OF STRUCTURAL SUPPLY AND SEISMIC RESTRAINT FOR THE REVIEW OF THE MECHANICAL EQUIPMENT INSTALLATIONS, INCLUDING PLUMBING SYSTEMS AND EQUIPMENT. THE ENGINEER IS TO PROVIDE SUPPLEMENTAL SCHEDULES 5-B, ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW BY SUPPORTING REGISTERED PROFESSIONAL AND 5-C, ASSURANCE OF PROFESSIONAL FIELD REVIEW AND COMPLIANCE BY SUPPORTING REGISTERED PROFESSIONAL TO AVALON MECHANICAL CONSULTANTS. <ol style="list-style-type: none"> (A) THE EQUIPMENT TO BE REVIEWED IS AS FOLLOWS: <ol style="list-style-type: none"> I. FF-2: ROOM/DOOR EXHAUST FOR TRUCK BAY II. EF-3: VEHICLE TAIL PIPE EXHAUST III. ERV-1: ENERGY RECOVERY VENTILATOR IV. HRV-1: HEAT RECOVERY VENTILATOR V. FC-1 AND FC-2: FAN COILS VI. CU-1 AND CU-2 CONDENSING UNITS VII. UH-1: UNIT HEATERS VIII. HW1-1: HOT WATER TANK <p>1.10 GUARANTEES</p> <ol style="list-style-type: none"> 1. PROVIDE A COMPREHENSIVE GUARANTEE ON ALL WORKMANSHIP, MATERIALS, AND SATISFACTORY OPERATION OF THE SYSTEMS. GUARANTEE SHALL RUN FOR ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION, UNLESS OTHERWISE INDICATED IN THE TENDER PACKAGE. <p>1.11 AS-BUILTS</p> <ol style="list-style-type: none"> 1. MARK-UP PRINTS ON SITE TO "AS-BUILT" STATUS. <ol style="list-style-type: none"> (A) TRANSFER APPROVED AS-BUILT INFORMATION TO CAD AND PROVIDE THREE COPIES OF "AS-BUILT DRAWINGS". 	<p>1.12 OPERATIONS AND MAINTENANCE MANUALS</p> <ol style="list-style-type: none"> 1. PROVIDE COMPREHENSIVE O-M MANUALS FOR ALL EQUIPMENT AND FOR REVIEW: AN ELECTRONIC PDF COPY. 2. COMPREHENSIVE MAINTENANCE MANUAL TO INCLUDE THE FOLLOWING PRODUCT APPLICABLE INFORMATION: <ol style="list-style-type: none"> (A) COVER PAGE: <ol style="list-style-type: none"> I. INCLUDE CONTACT INFORMATION FOR: OWNER, ARCHITECT, MECHANICAL CONSULTANT, GENERAL CONTRACTOR, MECHANICAL CONTRACTOR (B) TABLE OF CONTENTS (C) LIST OF EQUIPMENT SUPPLIERS AND SUBCONTRACTORS (D) TABLE OF EQUIPMENT MAINTENANCE SCHEDULES AND EQUIPMENT AND SETTINGS (E) ALL HVAC SYSTEMS SHALL BE IN ACCORDANCE WITH THE BC PLUMBING CODE AND LOCAL CODES. <ol style="list-style-type: none"> I. PLUMBING SYSTEM (I.E. BACKFLOW PREVENTER VERIFICATION, CLEANING OR STRAINERS, EXPANSION TANKS, ETC) II. HVAC SYSTEM (I.E. FILTER REPLACEMENT, FAN BELT REPLACEMENT, HEAT PUMP SERVICING, HEAT EXCHANGER SERVICING/REPLACEMENT, HYDRONIC SYSTEM COMPONENTS AND CHECKS, THERMOSTAT AND TIME/CLOCK SETTINGS, ETC) III. ANY ADDITIONAL BUILDING SYSTEM SPECIFIC REQUIREMENTS (F) REVIEWED EQUIPMENT SHOP DRAWINGS (G) CONTROLS SCHEMATICS / SHOP DRAWINGS (H) EQUIPMENT MAINTENANCE MANUALS (I) START-UP / COMMISSIONING REPORTS: <ol style="list-style-type: none"> I. TEST CERTIFICATES, ETC. II. AHU INSPECTION CERTIFICATES III. BELOW GROUND / ABOVE GROUND MATERIAL TEST CERTIFICATES IV. BACKFLOW PREVENTER TEST CERTIFICATES V. PRESSURE TEST RESULTS (I.E. PIPE PRESSURE TESTS FOR FIRE SUPPRESSION, PLUMBING, HYDRONICS, GAS, REFRIGERANT) VI. FIRE/SMOKE DAMPER TEST CERTIFICATE (J) ADDITIONAL ITEMS INCLUDED IN CLOSE-OUT DOCUMENTS LIST: <ol style="list-style-type: none"> I. CONTRACTOR'S WARRANTY INFORMATION / CERTIFICATE OF GUARANTEE II. EQUIPMENT WARRANTY CERTIFICATES AND INFORMATION AS-BUILT DRAWINGS <p>1.13 OWNER TRAINING</p> <ol style="list-style-type: none"> 1. ALLOW FOR 2 OWNER TRAINING SESSIONS OF 4 HOURS EACH. <p>1.14 ENERGY</p> <ol style="list-style-type: none"> 1. ALL MECHANICAL FIXTURES, EQUIPMENT, AND INSTALLATIONS SHALL BE COMPLIANT WITH THE PROJECT APPLICABLE ENERGY STANDARDS, ASHRAE 90.1 - 2016 OR NECB, AND THE BC BUILDING CODE. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS FD-100-C-A-1 2. SCOPE OF WORK 1. GENERAL <ol style="list-style-type: none"> I. SUPPLY ALL MATERIALS AND LABOUR NECESSARY TO ENSURE COMPLETE AND EFFICIENT SYSTEMS IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND DRAWINGS. SHOULD THERE BE ANY DISCREPANCIES OR UNCLEAR DIRECTIONS ADVISE THE ENGINEER BEFORE ANY WORK IS COMMENCED. CONTACT AVALON MECHANICAL CONSULTANTS LTD. TEL: 250-384-4128 OR ANY URGENT ITEMS IN THIS DIVISION. <p>2. SCOPE OF WORK</p> <ol style="list-style-type: none"> 1. PLUMBING SYSTEMS, AS INDICATED. 2. HVAC SYSTEMS, AS INDICATED. <p>3. MATERIALS - PLUMBING</p> <ol style="list-style-type: none"> 1. WATER DISTRIBUTION HAS BEEN SIZED FOR TANK-TYPE WATER CLOSETS AND METRING VALVE URINALS. IF FLUSH VALVES ARE USED, WATER DISTRIBUTION PIPE SIZING MUST BE INCREASED ACCORDINGLY. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS HY-420 2. ENSURE ALL ACCESSIBLE PLUMBING FIXTURES ARE COMPLIANT AND HAVE ADEQUATE CLEARANCES AND FEATURES AS REQUIRED BY THE BC BUILDING CODE. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS HY-420 3. PROVIDE FIXTURES TO BE CSA APPROVED AND SATISFY THE BC BUILDING CODE WATER EFFICIENCY (PARTS 7 AND 10) REQUIREMENTS. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS HD-100-C-G (B) SIZES: AS INDICATED ON DRAWINGS. 4. ROOF DRAIN RD-1: EPOXY COATED CAST IRON LARGE AREA ROOF DRAIN WITH DEEP SUMP, WIDE SERATED FLASHING FLANGE, FLASHING CLAMP WITH INTEGRAL GRAVEL STOP, SELF-LOCKING STRAINER, AND UNDERDECK CLAMP. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS FD-100-C-G (B) SIZES: AS INDICATED ON DRAWINGS. 5. TRENCH DRAIN TD-1: PRELOPED TRENCH DRAIN SYSTEM, 6" WIDE DUCTILE IRON FRAME, DA-DADA DUCTILE IRON GRATE ADRATE, 4" FIN CLASS, WITH 6"X24" CATCH BASIN AT TRENCH END. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS DEAF LEVEL D, DI-ADA GRATE, CB-624 CATCH BASIN. 6. WALL HYDRANTS HD-1 (EXTERIOR): NON-FREEZE KEY OPERATED WALL HYDRANT WITH CHROME PLATED FACE, INTEGRAL VACUUM BREAKER, 3/4" NPS HOSE CONNECTION, ALL BRONZE HEAD, SEAT CASTING AND INTERNAL WORKING PARTS, BRONZE WALL CASING AND HYDRANT KEY. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS HY-420 7. WALL HYDRANTS HD-2 (HOT AND COLD TYPE): 3/4" INLET HOSE BIB, W/ HOSE THREAD, HOT/COLD WATER HYDRANT WITH STAINLESS STEEL BOX ANDHINGED COVER, C/VW VACUUM BREAKER AND MOUNTING BRACKETS. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: ZURN 21327 8. BACKFLOW PREVENTERS: <ol style="list-style-type: none"> (A) DUAL CHECK VALVE 'DUOH': WATTS L478. (B) STAINLESS STEEL DUAL CHECK VALVE 'SSDUOH': WATTS SD-2. (C) DUAL CHECK WITH ATMOSPHERIC PORT 'DCAP': WATTS LF80. (D) DOUBLE CHECK VALVE ASSEMBLIES 'DCVA: WATTS 607 1" TO 2", WATTS 757 GREATER THAN 2" (E) REDUCED PRESSURE ZONE ASSEMBLIES 'RP': WATTS 009 2" TO 2", WATTS 909 GREATER THAN 2" (F) SIZES: AS INDICATED ON DRAWINGS. 9. BACKWATER VALVES: <ol style="list-style-type: none"> (A) UNDERGROUND, PROVIDE ACCESS SLEEVE TO GRADE AND IN, WHERE REQUIRED: <ol style="list-style-type: none"> I. CAP/LAS BACKWATER VALVE, ABS OR PVC AS SUITABLE. SIZES 1 1/2" TO 6". (B) ABOVEGROUND: <ol style="list-style-type: none"> I. MIFAB B01000 BACKWATER VALVE, CAST IRON. SIZES 2" TO 10". 10. PRESSURE REDUCING VALVES: <ol style="list-style-type: none"> (A) WATTS 12335 HIGH CAPACITY WATER PRESSURE REDUCING VALVE. LEAD FREE, COMPLETE WITH STRAINER, BRASS BODY (UP TO 2 1/2"), CAST IRON BODY (2 1/2" Ø). SIZES 1/2" Ø TO 2 1/2" Ø. (B) WATTS 2300 DIRECT OPERATOR WATER PRESSURE REDUCING VALVE. LEAD FREE, CAST IRON BODY, PROVIDE SEPARATE STRAINER. SIZES 3" Ø TO 4" Ø. (C) ZURN Z02098P PRESSURE REDUCING VALVE WITH LOW FLOW BY PASS, FULL PORT GLOBE, 1/2" PKR, BY-PASS VALVE, DIAPHRAGM ACTIVATED AND PILOT CONTROLLED VALVE, ALL INTERNAL AND EXTERNAL REWORKING COMPONENTS COATED WITH A HIGH QUALITY FUSION EPOXY COATING. (D) SIZES: AS INDICATED ON DRAWINGS. 11. BALANCING VALVES: <ol style="list-style-type: none"> (A) HOT WATER RECIRCULATION: RED-WHITE VALVE BRASS FINED FRICTION STATIC BALANCING VALVE, 9517AB DZR IF, NSF G1 CERTIFIED, 0.12 - 55.63 GPM RANGE, INTEGRAL MEMORY STOP, LEAD FREE. 12. EXPANSION JOINTS: <ol style="list-style-type: none"> (A) CAST IRON STACK EXPANSION JOINTS: BIBBY-STE-CROK 654XX SERIES. (B) PVC STACK EXPANSION JOINTS: PISTON-STYLE EXPANSION JOINTS. (C) CAST IRON AND PVC STACK EXPANSION JOINTS: FENICO X-8, CSA CERTIFIED. 2. ACCESS DOORS: PRIME COATED STEEL ACCESS DOOR WITH CONCEALED HINGES, FLUSH LOCKS AND ANCHOR STRAPS. RECESSED TYPE FOR DRYPWALL INSERTS FOR CEILING INSTALLATIONS. FIRE RATED FOR INSTALLATION IN RATED WALLS. 	<p>3.2 HOT WATER TANK</p> <ol style="list-style-type: none"> 1. HW1-1: AS INDICATED ON DRAWINGS. <p>3.3 EXPANSION TANK</p> <ol style="list-style-type: none"> 1. ET-1: AS INDICATED ON DRAWINGS. <p>3.4 CIRCULATING PUMP</p> <ol style="list-style-type: none"> 1. CP-1: AS INDICATED ON DRAWINGS. <p>3.5 WATER METERING SYSTEM SPECIALTIES AND ACCESSORIES</p> <ol style="list-style-type: none"> 1. BUILDING WATER METER. REFER TO DRAWINGS FOR DETAILS. <p>3.6 PLUMBING SPECIALTIES AND ACCESSORIES</p> <ol style="list-style-type: none"> 1. BALL VALVES: CLASS 125, BRONZE BODY. <ol style="list-style-type: none"> (A) GATE VALVES: CLASS 125, BRONZE BODY, SOLID WEDGE DISC. (B) GLOBE VALVES: CLASS 125, BRONZE BODY. (C) CHECK VALVES: CLASS 125, BRONZE BODY, REPLACEABLE COMPOSITION DISC, SCREWED CAP AND ENDS. (D) PRESSURE/TEMPERATURE RELIEF VALVE: AS RECOMMENDED BY WATER HEATERS MANUFACTURER, ASME B87. (E) HOT WATER TANK PAN: GALVANIZED SHEET METAL, WATERIGHT, OUTLET TO BC PLUMBING CODE. (F) WASHER BOXES: <ol style="list-style-type: none"> (A) BOXES TO BE FIRE RATED WHEN INSTALLED IN A FIRE RATED ASSEMBLY. (B) APPROVED PRODUCT: SIOUX CHIEF 696R. (G) FRIDGE/C/ME MAKER CONNECTION BOXES: <ol style="list-style-type: none"> (A) BOXES TO BE FIRE RATED WHEN INSTALLED IN A FIRE RATED ASSEMBLY. (B) APPROVED PRODUCT: SIOUX CHIEF 696R. (H) TRAP PRIMER: AUTOMATIC, BRONZE BODY C/W SEDIMENT STRAINER, UNION, AIR GAP, AND ACCESS DOOR FOR CONCEALED INSTALLATIONS. (I) AIR ADMITTANCE VALVE 'AAV': SIOUX CHEF AIR ADMITTANCE VALVE WITH VALVE BOX, 896 SERIES, ABS VALVE AND ACCESS BOX CONSTRUCTION, ASTM D2661/02665 (J) UNIONS: THREADED, ALL BRONZE CONSTRUCTION, CLASS 150. (K) VACUUM BREAKERS: BRASS BODY, STAINLESS STEEL BALL AND SPRING. (L) SHOCK ABSORBERS: WATER HAMMER ARRESTOR. (M) SIZES: TO FDI HW-201. (N) ACCEPTABLE PRODUCT: WATTS LF35M2-O SERIES WATER HAMMER ARRESTOR. 2. CLEANOUTS: WATTS CO-100 SERIES. 3. STACK CLEANOUTS: WATTS CO-460. 4. FLOOR DRAINS FD-1: EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR AND ANCHOR FLANGE, REVERSIBLE MEMBRANE CLAMP WITH PRIMARY AND SECONDARY WHEELHOLES, AND 1/2" THICK ADJUSTABLE NICKEL BRONZE STRAINER. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS FD-100-C-A-1 (B) SIZES AS INDICATED ON DRAWINGS. 5. FUNNEL FLOOR DRAINS FD-1: EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, REVERSIBLE MEMBRANE CLAMP WITH PRIMARY AND SECONDARY WHEELHOLES, AND 1/2" THICK ADJUSTABLE NICKEL BRONZE STRAINER, AND 4"X9" OVAL NICKEL BRONZE FUNNEL. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS FD-100-C-G (B) SIZES: AS INDICATED ON DRAWINGS. 6. ROOF DRAIN RD-1: EPOXY COATED CAST IRON LARGE AREA ROOF DRAIN WITH DEEP SUMP, WIDE SERATED FLASHING FLANGE, FLASHING CLAMP WITH INTEGRAL GRAVEL STOP, SELF-LOCKING STRAINER, AND UNDERDECK CLAMP. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS HD-100 (B) SIZES: AS INDICATED ON DRAWINGS. 7. TRENCH DRAIN TD-1: PRELOPED TRENCH DRAIN SYSTEM, 6" WIDE DUCTILE IRON FRAME, DA-DADA DUCTILE IRON GRATE ADRATE, 4" FIN CLASS, WITH 6"X24" CATCH BASIN AT TRENCH END. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS DEAF LEVEL D, DI-ADA GRATE, CB-624 CATCH BASIN. 8. WALL HYDRANTS HD-1 (EXTERIOR): NON-FREEZE KEY OPERATED WALL HYDRANT WITH CHROME PLATED FACE, INTEGRAL VACUUM BREAKER, 3/4" NPS HOSE CONNECTION, ALL BRONZE HEAD, SEAT CASTING AND INTERNAL WORKING PARTS, BRONZE WALL CASING AND HYDRANT KEY. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: WATTS HY-420 9. WALL HYDRANTS HD-2 (HOT AND COLD TYPE): 3/4" INLET HOSE BIB, W/ HOSE THREAD, HOT/COLD WATER HYDRANT WITH STAINLESS STEEL BOX ANDHINGED COVER, C/VW VACUUM BREAKER AND MOUNTING BRACKETS. <ol style="list-style-type: none"> (A) ACCEPTABLE PRODUCT: ZURN 21327 10. BACKFLOW PREVENTERS: <ol style="list-style-type: none"> (A) DUAL CHECK VALVE 'DUOH': WATTS L478. (B) STAINLESS STEEL DUAL CHECK VALVE 'SSDUOH': WATTS SD-2. (C) DUAL CHECK WITH ATMOSPHERIC PORT 'DCAP': WATTS LF80. (D) DOUBLE CHECK VALVE ASSEMBLIES 'DCVA: WATTS 607 1" TO 2", WATTS 757 GREATER THAN 2" (E) REDUCED PRESSURE ZONE ASSEMBLIES 'RP': WATTS 009 2" TO 2", WATTS 909 GREATER THAN 2" (F) SIZES: AS INDICATED ON DRAWINGS. 11. BACKWATER VALVES: <ol style="list-style-type: none"> (A) UNDERGROUND, PROVIDE ACCESS SLEEVE TO GRADE AND IN, WHERE REQUIRED: <ol style="list-style-type: none"> I. CAP/LAS BACKWATER VALVE, ABS OR PVC AS SUITABLE. SIZES 1 1/2" TO 6". (B) ABOVEGROUND: <ol style="list-style-type: none"> I. MIFAB B01000 BACKWATER VALVE, CAST IRON. SIZES 2" TO 10". 12. PRESSURE REDUCING VALVES: <ol style="list-style-type: none"> (A) WATTS 12335 HIGH CAPACITY WATER PRESSURE REDUCING VALVE. LEAD FREE, COMPLETE WITH STRAINER, BRASS BODY (UP TO 2 1/2"), CAST IRON BODY (2 1/2" Ø). SIZES 1/2" Ø TO 2 1/2" Ø. (B) WATTS 2300 DIRECT OPERATOR WATER PRESSURE REDUCING VALVE. LEAD FREE, CAST IRON BODY, PROVIDE SEPARATE STRAINER. SIZES 3" Ø TO 4" Ø. (C) ZURN Z02098P PRESSURE REDUCING VALVE WITH LOW FLOW BY PASS, FULL PORT GLOBE, 1/2" PKR, BY-PASS VALVE, DIAPHRAGM ACTIVATED AND PILOT CONTROLLED VALVE, ALL INTERNAL AND EXTERNAL REWORKING COMPONENTS COATED WITH A HIGH QUALITY FUSION EPOXY COATING. (D) SIZES: AS INDICATED ON DRAWINGS. 13. BALANCING VALVES: <ol style="list-style-type: none"> (A) HOT WATER RECIRCULATION: RED-WHITE VALVE BRASS FINED FRICTION STATIC BALANCING VALVE, 9517AB DZR IF, NSF G1 CERTIFIED, 0.12 - 55.63 GPM RANGE, INTEGRAL MEMORY STOP, LEAD FREE. 14. EXPANSION JOINTS: <ol style="list-style-type: none"> (A) CAST IRON STACK EXPANSION JOINTS: BIBBY-STE-CROK 654XX SERIES. (B) PVC STACK EXPANSION JOINTS: PISTON-STYLE EXPANSION JOINTS. (C) CAST IRON AND PVC STACK EXPANSION JOINTS: FENICO X-8, CSA CERTIFIED. 2. ACCESS DOORS: PRIME COATED STEEL ACCESS DOOR WITH CONCEALED HINGES, FLUSH LOCKS AND ANCHOR STRAPS. RECESSED TYPE FOR DRYPWALL INSERTS FOR CEILING INSTALLATIONS. FIRE RATED FOR INSTALLATION IN RATED WALLS. 	<p>3.7 PIPE MATERIALS</p> <ol style="list-style-type: none"> 1. GENERAL: <ol style="list-style-type: none"> (A) COMBUSTIBLE PIPING IN NON-COMBUSTIBLE BUILDINGS, OUTSIDE OF WALLS AND CONCRETE FLOOR SLABS, SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25. (B) IF COPPER PIPING IS TO BE USED FOR HOT WATER DISTRIBUTION PIPING, PIPE SIZING IS TO BE INCREASED TO ACCOMMODATE THE LOWER VELOCITY RESTRICTION. CONTACT AVALON MECHANICAL CONSULTANTS LTD FOR DETAILS. 2. DOMESTIC WATER PIPES - PVC <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. WATER SERVICE UNDERGROUND - UNDER 4" (B) PIPE: PVC SCH 80 PRESSURE PIPE TO CSA B137.3. (C) FITTINGS: PVC SCH 80 TO ASTM D 2467 (D) JOINTS: GLEUED WITH PVC SOLVENT. 3. DOMESTIC WATER PIPES - PVC <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. WATER SERVICE UNDERGROUND - 4" AND LARGER (B) PIPE: TYPE PVC BLUE BRUTE PRESSURE PIPE TO CSA B137.3. (C) FITTINGS: CAST IRON. (D) NOTE: ALL RODS, BOLTS, TO BE WRAPPED WITH DENSOL WB TAPE TO CSA 2245.30. (E) EF-1 TO EF-3: AS INDICATED ON DRAWINGS. 4. DOMESTIC WATER PIPES (COLD AND HOT) - CPVC <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. MAINS ABOVE GROUND (B) PIPE: CPVC PRESSURE PIPE TO CSA B137.6. (C) FITTINGS: EPVC TO CSA B137.6. (D) SOLVENT CEMENT FORM CPVC TO CSA B137.6. 5. DOMESTIC WATER PIPES - COPPER <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. FIRST 1/2" OF CONNECTION TO HOT WATER HEATER II. ALL PIPING BETWEEN HOT WATER HEATERS AND STORAGE TANKS (B) PIPE: TYPE L COPPER TUBE TO ASTM B88. (C) FITTINGS: WROUGHT COPPER PRESSURE FITTINGS TO ASME B16.22. (D) "SHARK-BITE" OR SIMILAR FITTINGS ARE NOT ACCEPTABLE AS JOINTS IN WATER PIPE SYSTEMS UNLESS EXPRESSLY REVIEWED AND APPROVED BY ENGINEER. (E) SOLDER: SOLDER FOR SOLDER JOINT FITTINGS TO ASTM B32, LEAD CONTENT IN EXCESS OF 2% SHALL NOT BE USED. 6. DOMESTIC WATER PIPES - STAINLESS STEEL <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. MAINS ABOVE GROUND II. SPIRAL LOCK SEAMS NEED NOT BE SEALED. (B) PRESSURE-SENSITIVE TAPE TO COMPLY WITH UL-181A OR UL-181B. (C) RESIDENTIAL KITCHEN HOOKS: SUPPLIED BY OTHERS. (D) FLEXIBLE CONNECTORS: 0.26 LB./SQ.INCH DENSITY NEOPRENE COATED GLASS FABRIC. (E) HEAT PUMP OUTDOOR UNIT WALL BRACKET. <ol style="list-style-type: none"> (A) UNIVERSAL WALL BRACKET FOR WALL HANGING OF HEAT PUMP OUTDOOR UNIT, 300 LB MAX LOAD CAPACITY, BEIGE POWDER COAT, THE RUBBER ISOLATION. (B) ACCEPTABLE PRODUCT: RECTORSAL UNIVERSAL BRACKET, WB8300 WALL BRACKET, PRODUCT CODE 87733. (F) ROUGH-IN BOX FOR DRYER VENTING, 22 GAUGE ALUMINIZED STEEL, TOP FLEX DUCT PORT, 2 1/8" X 3 1/2" (2 1/8" X 4 1/8"). 3/4" DEPTH IN WALL ASSEMBLY, CUT LISTED FOR USE IN FIRE RATED WALL IN ACCORDANCE WITH W-4.129. (G) RROUGH-IN BOX FOR DRYER VENTING, 22 GAUGE ALUMINIZED STEEL, TOP FLEX DUCT PORT, 2 1/8" X 3 1/2" (2 1/8" X 4 1/8"). 3/4" DEPTH IN WALL ASSEMBLY, CUT LISTED FOR USE IN FIRE RATED WALL IN ACCORDANCE WITH W-4.129. (H) DRYER VENT ROUGH-IN BOX: <ol style="list-style-type: none"> (A) RROUGH-IN BOX FOR DRYER VENTING, 22 GAUGE ALUMINIZED STEEL, TOP FLEX DUCT PORT, 2 1/8" X 3 1/2" (2 1/8" X 4 1/8"). 3/4" DEPTH IN WALL ASSEMBLY, CUT LISTED FOR USE IN FIRE RATED WALL IN ACCORDANCE WITH W-4.129. (I) TOLS: V/C PRESS TOOL #F7510 (PRESSFIT) OR VICTAULIC ROLL GROOVER WITH RX ROLL SETS FOR USE WITH SCHEDULE 10 PIPE. 7. DOMESTIC WATER PIPES - PEX <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. BETWEEN MAIN/BRANCH AND FIXTURES II. UNDERGROUND (B) PIPE: POLYETHYLENE PEK HD/COLD TYPE TO CSA B137.5. (C) FITTINGS: BRASS BARBED FITTINGS C/W CIMP RINGS. (D) FIXTURE STUDS: PROVIDE COPPER STUD OUTS WITH PEK BARB CONNECTIONS FOR FIXTURE STOP INSTALLATION, 90 DEGREE ELBOW WITH FLANGE. (E) SLEEVING: ALL PEX TUBING THAT IS INCREASED IN CONCRETE SHALL BE PRE-SLEEVED IN CORRUGATED POLYETHYLENE TUBING. 8. DOMESTIC WATER PIPES - PEX-A (UPONOR PROPEX) <ol style="list-style-type: none"> (A) APPLICATION: <ol style="list-style-type: none"> I. DOMESTIC HOT, COLD AND RECIRCULATION SYSTEMS, WITHIN BUILDING. II. PEK-A POLYETHYLENE PEK-A TUBING TO ASTM #876 AND #877 AND CSA B137.5. (C) FITTINGS: <ol style="list-style-type: none"> I. FITTINGS SHALL BE SUPPLIED BY THE PEX TUBING MANUFACTURER. II. PEK-A COLD EXPANSION TYPE FITTINGS, ENGINEERED POLYMER (EP) TYPE TO ASTM F1960. III. TRANSITION FITTINGS MAY BE LE
--	--	--	---

8.3 PLUMBING

- CONNECT PIPEWORK TO PLUMBING FIXTURES AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.
- PROPERLY SUPPORT PIPING AND MAKE ADEQUATE PROVISIONS FOR EXPANSION AND CONTRACTION, SLOPE AND ANCHORAGE
 - PROVIDE EXPANSION JOINTS FOR VERTICAL STACKS BELOW THE BRANCH DRAIN CONNECTIONS ON A FLOOR WHERE A RISER CLAMP IS LOCATED. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- INSTALL ALL PIPING INSIDE WALLS AND CEILINGS ON THE WARM SIDE OF THE INSULATION. PROVIDE ADDITIONAL INSULATION BEHIND PIPING AS REQUIRED TO MAXIMIZE INSULATION BETWEEN PIPE AND OUTDOOR TEMPERATURES. PROVIDE RIGID INSULATION IN TIGHT SPACES.
- PIPING IS NOT TO BE EMBEDDED IN CONCRETE SLABS OR FLOORS UNLESS APPROVED BY THE MECHANICAL ENGINEER OR INDICATED AS SUCH EXPLICITLY ON DRAWINGS.
- MAKE CONNECTIONS OF DISSIMILAR METALS WITH DIELECTRIC COUPLINGS.
- INSTALL PIPEWORK ON SITE TO AVOID INTERFERENCE WITH STRUCTURAL ELEMENTS, ETC.
- PROVIDE FANS, EQUIPPED WITH P-TRAPS, FOR:
 - HOT WATER TANKS.
- SEAL GAPS AT FLOOR AROUND:
 - WATER CLOSETS
 - SHOWERS
- INSTALL COPPER STUB-OUTS WITH PEX CONNECTIONS FOR FUTURE STOP INSTALLATION AND FASTEN FLANGE TO BACKING.
- PROVIDE ADDITIONAL DRYWALL ENCLOSURE BEHIND AND AROUND SHOWER VALVES WHERE SHOWER VALVES ARE INSTALLED IN A FIRE RATED ASSEMBLY. FIRE STOP PIPING PENETRATIONS OF SHOWER VALVE ENCLOSURE.
- INSTALL CLEANOUTS WHERE INDICATED, AND WHERE REQUIRED BY THE CODE.
 - INSTALL SHUT-OFF VALVES WHERE INDICATED, AND WHERE REQUIRED BY THE CODE.
- PROVIDE ACCESS DOORS AS REQUIRED. WHERE ACCESS DOORS OCCUR IN FIRE SEPARATIONS, MAINTAIN REQUIRED FIRE RATING.
- PROVIDE ESCUTCHEONS ON PIPES PASSING THROUGH WALLS IN FINISHED AREAS.
- INSTALL SHOCK ABSORBERS TO BC PLUMBING CODE AND TO PDI WH-201.
- INSTALL 3/4" DIAMETER CONDENSATE PIPES FROM FAN COILS. RUN PIPES CONCEALED IN WALLS AND CEILINGS. PROVIDE TRAPS AND TERMINATE PIPES IN SAFE LOCATIONS.
 - CONNECT TO TAILPIPIES OF PLUMBING FIXTURES ABOVE P-TRAPS.
- PROVIDE MIXING VALVE AND ADJUST HOT WATER TEMPERATURE AT 110°F MAXIMUM IN PUBLIC WASHROOMS FOR:
 - LAVATORIES
 - SHOWERS
- PROVIDE PLASTIC BOXES FOR WASHER CONNECTIONS. BOXES TO BE FIRE RATED WHEN INSTALLED IN A FIRE RATED ASSEMBLY.
- PROVIDE PLASTIC BOXES FOR FRIDGE/ICE MAKER CONNECTIONS. BOXES TO BE FIRE RATED WHEN INSTALLED IN A FIRE RATED ASSEMBLY.
- BACKFLOW PREVENTERS TO BE INSTALLED BETWEEN 2'-6" AND 5" ABOVE THE FLOOR, OR PER MANUFACTURER'S RECOMMENDATIONS. GREATER HEIGHTS MAY BE USED IF PROVIDED WITH A FIXED PLATFORM.
- MAKE ROOF PENETRATIONS TO RCABC STANDARDS. PROVIDE LEAD FLASHINGS (CSA APPROVED) FOR PLUMBING VENT PENETRATIONS AND PROVIDE TO THE ROOFING CONTRACTOR FOR INSTALLATION.
- PROVIDE HEAT TRACING FOR PIPING EXPOSED TO OUTDOOR TEMPERATURES:
 - WATER PIPING
 - PIPE TRAPS
- PROVIDE AIR ADMITTANCE VALVES ON THE SANITARY VENT SYSTEM WHERE INDICATED.
- PROVIDE ALL ACCESSORIES NECESSARY TO FINISH GREEN INTERCEPT LIDS FLUSH WITH FINISHED FLOOR.
- PROVIDE ALL NECESSARY FRAMES, GRATES, AND EXTENSIONS TO FINISH OIL INTERCEPTOR AND SUMP LIDS WITH FINISHED FLOORS.
- INSTALL METALLIC PIPING TO ALL HOT WATER HEATERS FOR FIRST 12" FROM EQUIPMENT BEFORE TRANSITIONING TO NON-METALLIC PIPING.
- INSTALL METALLIC PIPING BETWEEN HOT WATER HEATERS AND STORAGE TANKS. NON-METALLIC PIPING IS NOT PERMITTED.
- WHERE HYDRANTS, WHICH ARE NOT FROST-PROOF, ARE INSTALLED ON THE EXTERIOR OR IN UNHEATED SPACES, PROVIDE SHUT-OFF VALVES INSIDE THE BUILDING AND CLOSE TO THE WALL.
- REVIEW ALL COMMERCIAL EQUIPMENT PLUMBING REQUIREMENTS AND ENSURE ADEQUATE WATER SUPPLY AND DRAINAGE IS PROVIDED FOR ALL FIXTURES. CONTACT ENGINEER FOR ANY PERCEIVED OMISSIONS BEFORE PROCEEDING WITH INSTALLATION.
 - GROOVED OR PRESS-FIT STAINLESS PIPING: GASKETS AND ELASTOMERIC MATERIAL SHALL BE VERIFIED AS SUITABLE FOR THE INTENDED SERVICE, AS SPECIFIED. PIPE ENDS SHALL BE SQUARE CUT, CLEAN, AND FREE FROM INDENTATIONS, PROJECTIONS, AND ROLL MARKS. ALL INSTALLATIONS OF GROOVED OR PRESS-FIT MATERIAL MUST BE IN ACCORDANCE WITH THE MANUFACTURER'S FIELD ASSEMBLY AND INSTALLATION HANDBOOKS.
- FLUSHING AND CLEANING:
 - ALL BURIED WATER MAINS TO BE THOROUGHLY FLUSHED AND CHLORINATED IN ACCORDANCE WITH ANSI-AWWA C651-14.
 - ALL PIPING TO BE THOROUGHLY FLUSHED.
- PROVIDE LAB TEST OF WATER SAMPLE TO CONFIRM NO CONTAMINANTS ARE PRESENT:
 - LAB TO TEST FOR TOTAL COLIFORM AND E. COLI CONTAMINANTS.
 - TEST WATER SUPPLY AT THE FURTHEST POINT OF THE WATER DISTRIBUTION SYSTEM, MINIMUM TWO SAMPLES FROM TWO DIFFERENT WATER RISERS OR BRANCHES.
- LEAKS FOUND DURING TESTING OF DWV & POTABLE WATER SYSTEMS MUST BE REPORTED TO THE ENGINEER OF RECORD. AVALON RESERVES THE RIGHT TO INVESTIGATE THE CAUSE. AVALON RESERVES THE RIGHT TO REQUEST REPLACEMENT OF THE ENTIRE INSTALLED SYSTEM WHEN FAULTY INSTALLATION PRACTICES ARE DEEMED RESPONSIBLE WITHIN A REASONABLE DOUBT.

8.4 HVAC

- GENERAL:
 - DUCTS SHALL BE STRAIGHT AND SMOOTH INSIDE WITH JOINTS NEATLY FINISHED. SUPPORT DUCTWORK IN ACCORDANCE WITH SMACNA.
 - ALL DUCTWORK TO BE SEALED WITH PROTECTION FILM. MAINTAIN SEAL OVER OPENINGS AND GRILLES/DIFFUSERS UNTIL INSTALLATION. REAPPLY SEAL OVER OPEN-ENDED DUCTWORK ON-SITE DURING CONSTRUCTION TO MAINTAIN CLEANLINESS.
 - MAKE SOLID DUCTS AIRTIGHT WITH MASTIC TYPE DUCT SEALER AND TAPE.
 - TAPE EDGES OF DUCT SEALANT APPLICATION WHERE DUCTS ARE EXPOSED AND NOT PAINTED TO PROVIDE CLEAN LINES.
 - INSTALL GRILLES AND DIFFUSERS STRAIGHT AND TRUE TO FINISHED SURFACES.
 - INSTALL DUCTWORK ON SITE TO AVOID INTERFERENCE WITH PIPES, STRUCTURAL ELEMENTS, ETC.
 - ALL DUCTING AND WIRING TO BE CONCEALED IN FINISHED AREAS, UNLESS INDICATED OTHERWISE.
 - ROUND DUCTWORK IS TO BE SPIRAL SEAM WHERE EXPOSED, SNAP-LOCK IS NOT PERMITTED.
 - WHERE DUCTWORK CONTAINS A FIRE DAMPER, CONSTRUCT THE DUCT SO THAT THE FREE AREA OF THE DUCT IS MAINTAINED THROUGH THE FIRE DAMPER. PROVIDE ACCESS DOORS ON DUCTWORK FOR SERVICE/DAMPER.
 - PROVIDE ACCESS DOORS AS REQUIRED. ACCESS DOORS TO BE PROVIDED FOR CONCEALED BALANCING DAMPERS, DUCT HEATERS, HEATING/COOLING COILS, FIRE DAMPERS, FIRE/SMOKE DAMPERS, AND MAINTENANCE OF MECHANICAL EQUIPMENT AS REQUIRED. WHERE ACCESS DOORS OCCUR IN FIRE SEPARATIONS, MAINTAIN REQUIRED FIRE RATING.
 - INSTALL FLEXIBLE CONNECTIONS AT CONNECTIONS TO MAKE-UP AIR UNIT AND FAN COILS.
 - PITCH EXHAUST DUCTWORK TOWARDS EXTERIOR DISCHARGE.
 - PROVIDE TRANSITIONS TO ALL EQUIPMENT WITH DIFFERENT OPENING SIZES THAN THE DUCT, E.G. LOUVERS, FILTER BOXES, ETC. TRANSITIONS FROM DUCT TO EQUIPMENT OPENING TO BE AT 1:4. DO NOT DUCT STRAIGHT TO EQUIPMENT AND BLANK OFF REMAINDER OF OPENING.
- HEAT OR ENERGY RECOVERY VENTILATORS (HRV/ERV):
 - PROVIDE ACCESS DOORS FOR HRV/ERVs. ACCESS DOORS SHALL PROVIDE FULL ACCESS TO ALLOW UNIT REPLACEMENT AND FILTER CHANGES. DEMONSTRATE OPERATION OF DOORS AND FILTER REPLACEMENT.
 - 5' OF ACOUSTICALLY INSULATED FLEXIBLE DUCTWORK OR ACOUSTICALLY INSULATED DUCTWORK SHALL BE USED AT SUPPLY AND RETURN CONNECTIONS. PROVIDE AT LEAST ONE CHANGE OF DIRECTION BEFORE CONNECTING TO A GRILLE.
- DRYERS:
 - INSTALL DRYER EXHAUST VENT CONNECTIONS AT WALLS BEHIND DRYERS. CONNECTIONS TO BE TRULY ALIGNED WITH DRYERS' OUTLETS.
 - DRYER VENTING TO BE INSTALLED IN WALL UTILIZING DRYER ROUGH-IN BOX. PROVIDE FLEX DUCT FROM ROUGH-IN BOX TO DRYER CONNECTION. INSTALL RIGID DUCTWORK FROM ROUGH-IN BOX TO TERMINATION.
 - INSTALL EXTERNAL DRYER LINT TRAPS SO THAT ACCESS DOORS ARE EASILY ACCESSIBLE. IN WALL AND IN-CEILING LINT TRAPS DOORS TO BE ACCESSIBLE FROM THE FLOOR OR WITH A STEP STOOL WITHOUT REQUIRING APPLIANCE RELOCATION.
 - DO NOT USE SCREWS IN DRYER EXHAUST VENTING. ALL JOINTS TO BE CONNECTED AND SEALED WITH ALTERNATIVE METHODS (TAPING, MASTIC SEALER, ETC).
- TAB:
 - AIR BALANCING IS TO BE PERFORMED AFTER ALL BLOWER-DOOR TESTING IS COMPLETED.

8.5 REFRIGERATION

- ALWAYS KEEP PIPING SETS CLEAN AND DRY THROUGHOUT INSTALLATION.
- REMOVE CAPS/PLUGS FROM END OF PIPING SET PRIOR TO FLARING.
- FITTINGS SHALL BE "SIL-FOS" BRAZED. PREVENT THE OVERHEATING OF COPPER TUBE. MAKE JOINTS WHILE FLOWING PRESSURIZED NITROGEN THROUGH THE JOINT.
- CONCEAL PIPING BEHIND DUCTS, PIPES OR OTHER ITEMS WHERE POSSIBLE. RUN EXPOSED PIPING PARALLEL TO WALLS. GROUP PIPING WHEREVER PRACTICAL.
- TUBING SHALL BE SIZED AND INSTALLED AS PER HEAT PUMP MANUFACTURER'S RECOMMENDATIONS, AND SHALL BE CUT SQUARE AND HAVE ALL BURRS REMOVED. USE VIBRA-CLAMPS FOR SUPPORT OF ALL DISCHARGE PIPING WITHIN 50 FEET OF COMPRESSOR.
- PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS FOR MAINTENANCE OF EQUIPMENT, VALVES AND FITTINGS.
- SUPPORT PIPEWORK IN ACCORDANCE WITH APPLICABLE CODES AND RECOMMENDED PRACTICE OF THE TRADE. PROVIDE ALL NECESSARY SUPPORT FOR PROPER AND FIRM INSTALLATION, ALLOWING FOR PROPER ANCHORING AND PIPE EXPANSION/CONTRACTION.
- TEST REFRIGERANT PIPING 600 PSI FOR 24 HOURS, UNLESS RECOMMENDED OTHERWISE BY THE EQUIPMENT MANUFACTURER. EVACUATE PIPING TO 500 MICRONS FOR MINIMUM 1 HOUR.
 - ALL REFRIGERANT SYSTEMS LARGER THAN 5 TONS SHALL BE WITNESSED UNDER TEST BY THE ENGINEER. ALL JOINTS SHALL BE BARE OF INSULATION.
- CONTRACTOR SHALL DESIGN THE REFRIGERATION PIPING SYSTEMS AND CONTROL WIRING ROUTING ACCORDING TO THE HEAT PUMP MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES, AND TO BEST TRADE PRACTICES. MAXIMUM RECOMMENDED LENGTHS BETWEEN OUTDOOR UNITS AND INDOOR UNITS SHALL NOT BE EXCEEDED, AND OIL RETURN FOR PROPER COMPRESSOR PROTECTION SHALL BE ENSURED. THE CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM HAVING FULL WARRANTY.

8.6 HEAT TRACING

- HEAT TRACING CABLE LONGER THAN 2' SHALL BE MEGGER TESTED PRIOR TO INSTALLING THERMAL INSULATION.
- A START-UP FORM SHALL BE SUBMITTED FOR ALL HEAT TRACING CABLE LONGER THAN 2', AND SHALL INCLUDE CIRCUIT LENGTH, VOLTAGE, PIPE TEMPERATURE, AND AMPS AT 2-5 MINUTES AND 15 MINUTES.

8.7 INSULATION

- APPLY INSULATION WITH JOINTS TIGHTLY BUTTING. ADHERE TO MANUFACTURER'S RECOMMENDATION FOR INSTALLATION.
- MAINTAIN UNINTERRUPTED CONTINUITY AND INTEGRITY OF INSULATION AND VAPOUR RETARDER JACKET AND FINISHES.
- ALL MECHANICAL INSULATION TO BE INSTALLED BY COMPANIES WHICH HAVE AT LEAST 3 YEARS EXPERIENCE AND SKILLSMEN WITH RED SEAL CERTIFICATION TO TQ DESIGNATION IN THE HEAT AND FROST TRADE.
 - THESE COMPANIES ARE REQUIRED TO BE REGISTERED AS A SPONSOR TO THE HEAT AND FROST APPRENTICESHIP PROGRAM PROVIDED BY THE GOVERNMENT AND SO QUALIFY TO TRAIN APPRENTICES TO BECOME CERTIFIED JOURNEMAN.
- IDENTIFICATION
 - IDENTIFY CONTENTS OF PIPING SYSTEMS BY BACKGROUND COLOUR MARKING. PICTOGRAM (AS NECESSARY), LEGEND, DIRECTION OF FLOW BY ARROWS, TO CAN/CSB 24.3 EXCEPT WHERE SPECIFIED OTHERWISE.
 - IDENTIFY EACH PIECE OF EQUIPMENT WITH THE PROPER EQUIPMENT SCHEDULE TAG, FOR EXAMPLE: CWST-1, PC3, ETC. USE LAMICOID LABELS WITH A BLACK BACKGROUND AND WHITE LETTERS 3/4" HIGH OR PROPORTIONALLY SMALLER TO FIT EQUIPMENT. APPLY LABELS ON COOL SURFACES.
 - LABEL ALL PIPING WHICH HAS HEAT TRACING SYSTEMS APPLIED. LABEL TO BE APPLIED TO THE EXTERIOR OF THE INSULATION JACKET AND BE CLEARLY VISIBLE. APPLY AT REGULAR INTERVALS.
 - LABEL ACCESS DOORS WHICH PROVIDE ACCESS TO FIRE DAMPERS AND FIRE/SMOKE DAMPERS ON HVAC SYSTEMS FOR SERVICE AND MAINTENANCE ACCESS.
 - DOORS AND CEILING PANELS AND T-BAR CEILINGS SHALL BE LABELLED WITH COLOUR CODED DOTS TO INDICATE ACCESS TO DEVICES IN CONCEALED LOCATIONS.
 - CLOUR CODING TO BE AS FOLLOWS:
 - MECHANICAL EQUIPMENT AND CLEANING ACCESS: YELLOW.
 - CONTROL EQUIPMENT, DAMPERS, VALVES AND SENSORS: BLACK.
 - FIRE, SMOKE, AND SPRINKLER EQUIPMENT: RED.
 - PIPE MOUNTED EQUIPMENT OTHER THAN ABOVE: GREEN.
 - WHERE ACCESS IS THROUGH A T-BAR CEILING, AFFIX TWO DOTS TO T-BAR FRAME TO INDICATE WHICH CEILING PANEL IS TO BE REMOVED.
 - DOTS SHALL BE A VERY TRODR, 1.5MM IN DIAMETER.
 - DOTS SHALL NOT BE USED IN RESIDENTIAL CORRIDORS, PRIVATE RESIDENCES, MAIN ENTRY LOBBIES.
 - PROVIDE VALVE TAGS AND A VALVE TAG SCHEDULE. HANG THE VALVE TAG SCHEDULE IN THE WATER ENTRY ROOM OR MECHANICAL ROOM. VALVE TAG SCHEDULES SHALL BE FRAMED AND PROTECTED WITH GLASS. PROVIDE COPIES FOR INSERTION IN THE O&M MANUAL. VALVE TAG SCHEDULES SHALL INCLUDE FLOW DIAGRAMS FOR EACH SYSTEM.
 - VALVE TAGS IDENTIFIERS SHALL START WITH A UTILITY DESCRIPTION FOLLOWED BY THREE NUMBERS.
 - WATER: WXXX.
 - CONDENSATE COOL.
 - VALVE TAGS ARE NOT REQUIRED ON BRANCH PIPING IF THE VALVE IS WITHIN VIEW OF THE SERVED EQUIPMENT.

8.9 FIRESTOPPING

- FIRESTOPPING TO BE COMPLETED BY THE FIRE SUPPRESSION, PLUMBING, AND HVAC (SHEET METAL, REFRIGERATION, CONTROL) CONTRACTORS FOR THEIR RESPECTIVE SCOPE OF WORK. COORDINATE ALL ARRANGEMENTS AND PENETRATIONS, WHERE THEY INTERFACE WITH FIRE SEPARATIONS, IF FIRESTOPPING IS INSTALLED BY A THIRD-PARTY FIRESTOPPING CONTRACTOR. ORIENTATION OF MATERIALS THROUGH PENETRATIONS, ANNULUS SPACES AROUND MATERIALS, ETC ARE TO BE INSTALLED TO ALLOW FOR INSTALLATION OF FIRESTOPPING TO STANDARD LISTED ARRANGEMENTS.
- FIRESTOPPING INSTALLATIONS TO BE COMPLETED BY TRAINED PERSONNEL FAMILIAR WITH FIRESTOPPING INSTALLATION INSTRUCTIONS AND REQUIREMENTS.
- APPLY FIRESTOPPING TO ALL PENETRATIONS (PIPES, DUCTS, ETC) THROUGH 0-HR RATED SEPARATIONS, ALSO KNOWN AS SMOKE SEPARATIONS.

8.10 CONTROLS

- GENERAL
 - ALL LOW VOLTAGE (24 VOLTS AND LESS) WIRING RELATED TO THE MECHANICAL EQUIPMENT AND SCOPE TO BE BY THE MECHANICAL CONTROLS CONTRACTOR.
 - MOUNTING HEIGHTS
 - UNLESS OTHERWISE NOTED, MOUNT CONTROLS AT 1.2 METERS (48") ABOVE THE FINISHED FLOOR. ALIGN CONTROLS WITH NEARBY ELECTRICAL SWITCHES WHERE POSSIBLE.
 - FOR DEVICES REQUIRED TO MEET ACCESSIBILITY REQUIREMENTS, COMPLY WITH PRODUCT-SPECIFIC ACCESSIBILITY REQUIREMENTS IN THE ABSENCE OF SPECIFIC REQUIREMENTS, MOUNT AT 1.0 METERS (40") ABOVE THE FINISHED FLOOR.
- ### 8.11 SEQUENCE OF OPERATIONS
- PUMPS
 - CP-1: AS INDICATED ON DRAWINGS.
 - HEAT PUMPS & FAN COILS
 - CU-1/FC-1 TO CU-2/FC-2: INSTALL THERMOSTATS WHERE INDICATED, FANS TO RUN CONTINUOUSLY FOR SPACE VENTILATION.
 - FANS
 - EF-1 AND EF-3: AS INDICATED ON DRAWINGS.
 - EF-2:
 - LOW ALARM - 25PPM CO, 0.7PPM NO₂
 - ACTIVATE EF-2 AT 100% SPEED.
 - HIGH ALARM - 100PPM CO, 3PPM NO₂
 - ACTIVATE AUDIBLE ALARM.
 - ENERGY/HEAT RECOVERY UNITS
 - ERV-1: AS INDICATED ON DRAWINGS.
 - HRV-1: AS INDICATED ON DRAWINGS.
 - DAMPERS
 - CD-1: AS INDICATED ON DRAWINGS.
- END OF SECTION**



AVALON MECHANICAL

300-1245 Esquamalt Road
Victoria, BC V8A 3P2
250-384-4128

103-5220 Dublin Way
Nanaimo, BC V9T 2K8
250-585-2180

info@avalonmechanical.com

DRAWINGS ARE NOT TO BE USED FOR COSTING, PRICING, TENDER, OR CONSTRUCTION UNLESS THEY HAVE BEEN ISSUED AS SUCH.

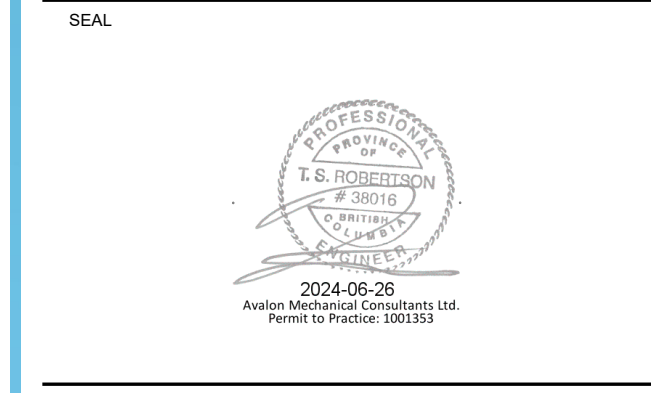
AVALON MECHANICAL WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL WORK, COSTS, OR COORDINATION REQUIRED FOR DRAWINGS USED FOR OTHER PURPOSES THAN INDICATED.

NO.	DATE	DESCRIPTION
REVISIONS		
1		
2		
3		
4		
5		

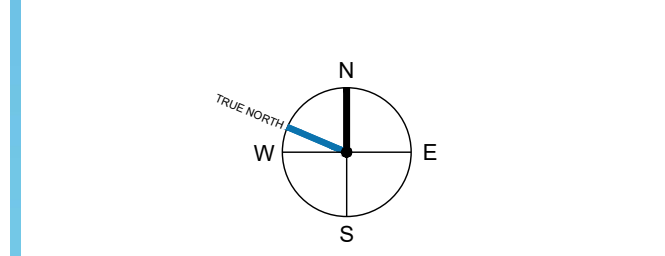
NO.	DATE	DESCRIPTION
1	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
2	18DEC2023	ISSUED FOR BUILDING PERMIT
3	04DEC2023	ISSUED FOR 75% COORDINATION
4	27OCT2023	ISSUED FOR 50% COORDINATION

NO.	DATE	DESCRIPTION
5	26JUN2024	ISSUED FOR TENDER
6	05FEB2024	RE-ISSUED FOR BUILDING PERMIT
7	18DEC2023	ISSUED FOR BUILDING PERMIT
8	04DEC2023	ISSUED FOR 75% COORDINATION
9	27OCT2023	ISSUED FOR 50% COORDINATION

DRAWING ISSUE



PROJECT NORTH



CHERRY CREEK FIRE HALL

5920 CHERRY CREEK RD
PORT ALBERNI, BC

SPECIFICATIONS

DESIGNED	APPROVED
KH	TR
AVALON PROJECT NO. 230465	SCALE AS NOTED
SHEET NUMBER	

M-5.01

Appendix

A.7

Electrical Drawings

Cherry Creek Fire Hall IFT Set - Table of Contents

Networking	Pgs.2-5
Access Controls	Pgs. 6-8
Camera & NVR Specs.	Pgs. 9-11
Light Fixture Schedule	Pg. 12
Lighting Pre-approval Sheets	Pgs. 13-14
Drawings	Pgs. 15-18



Part 1 GENERAL

1.1 REFERENCE STANDARDS

- .1 ANSI/TIA-568-C1 Commercial Building Telecommunications Cable Standard.
- .2 ANSI/TIA 607 Commercial Building Grounding and Bonding Requirements for Telecommunications.
- .1 Heading 4

1.2 DEFINITIONS

- .1 LAN. Local Area Network
- .2 LAN Room. The home run point for network systems. In this project the LAN room is the area under the stairs as noted in on plans.

Part 2 PRODUCTS

2.1 SUBMITTALS

- .1 Provide shop drawings for supplied network related equipment including:
 - .1 Network switches
 - .2 Patch panels.
 - .3 Data rack
 - .4 Wireless Access Points.

2.2 Cabling

- .1 Network cabling: Category 6, with matching terminal equipment.

2.3 Data Racks

- .1 19" Fixed Wall Mount 23" Height. Hoffman E19FWM12U20, or similar.

2.4 Wireless Access Point

- .1 Indoor: Unifi AC PRO wireless access points (WAP) from ubiquity or approved equal, c/w ceiling mount kit.

2.5 Network Switch

- .1 24 port POE switch HP Aruba 2530-24G-POE+

2.6 Patch Panel

- .1 24 Port Cat6 Unshielded.

- .2 Quantity adjusted to meet project requirements with no less than 12 free spaces.
- .3 Reference product: Trendnet TC-P24C6

2.7 Universal Power Supply

- .1 700A VA Rack mount.
- .2 Reference product: Cyberpower OR700LCDRM1U
- .3 Connect to the local area network.

Part 3 METHODS

3.1 Cabling

- .1 All cabling must meet or exceed the CAT6 'certification' and must be fully compliant with the EIA/TIA structured cabling standards. All cabling certification results along with standard 25 year cabling vendor warranty shall be recorded and provided to the customer in hardcopy.
- .2 As set out in the EIA/TIA cabling system administration standard – all cabling and patch panels shall be properly identified and labelled in an orderly fashion.
- .3 Data pass through fire separated assemblies shall be installed using fire rated sleeves. Use of fire rated sealant is not approved for low voltage cabling.
- .4 Contractor is responsible for fiber termination and verification.
- .5 Workmanship is to be of high quality, neat and tidy.
- .6 Supply and install plates and outlet jacks.
- .7 Each data outlet marked on plan with the number of runs. If not marked, assume 2 runs required. Each run cat 6, blue. There is no colour distinction between voice, data or other.
- .8 Fiber: supply and install 6 strand single mode fiber for identified runs or cable runs over 100 meters.

3.2 General Wiring

- .1 Connections of conductors to terminal parts shall ensure a tight, conductive connection without damaging the conductors and be made by means of pressure connectors, wire binding screws, or splices to flexible leads.
- .2 Conductors shall be connected to devices and to fittings so that tension is not transmitted to joints or terminals.
- .3 Wires and cables shall not be placed in such a manner as to prevent access to equipment.

- .4 Terminals for more than one conductor shall identified and intended for the purpose.
- .5 Conductors under a single terminal shall be of the same gauge and composition.
- .6 Terminals shall be marked or color coded where necessary to indicate the correct connections.
- .7 At raceway connections to junction boxes and open ends of raceway, the following shall apply.
 - .1 Conductors shall be protected from abrasion.
 - .2 Raceway shall be sized and installed in accordance with NFPA 70
- .8 Circuit identification shall be within the control panel and enclosures used for wiring connections. Circuit identification shall not visible to the public.
- .9 Strain relief shall be provided for wiring leaving control panels and junction boxes not utilizing raceway.
- .10 For multiple cable bundles, prior to installation of cable ties or wraps the bundle is to be tidied through the use of a cable organizing tool, e.g. Panduit CTOB24K,



3.3 Dropped Ceilings

- .1 In dropped ceiling areas suspend network/tel/tv cables neatly in J hooks above t-bar and run parallel to building grid.
- .2 J hook not to be loaded past 50% of manufacturers recommended capacity.
- .3 In drop ceiling areas vertical drop into outlet shall be contained within bonded metal conduit extending above T-bar.

3.4 LAN Room

- .1 Supply and install cable tray in LAN room. Provide sufficient cable to form 1 meter slack droop to tray.
- .2 Coordinate with owner to determine appropriate cable lengths. Cable tray to be of sufficient size for all conductors with adequate spare capacity for additional future connections.
- .3 An as built floor plan to be left in the room reflecting the labelling of all structured cabling.
- .4 Install one 2" non-corrugated conduit between electrical room and LAN room.

- .5 Supply one horizontal power bar for a half height rack, and two horizontal power bars and one vertical power for a full height rack.
- .6 Supply patch cords, one per network connection plus 15% spare.
- .7 Length of patch cords to be selected such that rack installation is tidy.

3.5 Testing and Verification

- .1 Confirm wiring integrity with point to point test unit.
- .2 Measure bandwidth on each connection using a laptop computer or similar device equipped with a tool such as NetStress.
- .3 Provide a copy the test report to the engineer when complete.
- .4 Include test results in the maintenance and close out materials.

Part 1 GENERAL

1.1 SCOPE OF SPECIFICATION

- .1 This specification covers keyless access control systems for use in commercial buildings. The document provides general information about the products and methods to be used. The project drawings describe the specific access control requirements for the building and are usually presented as a dedicated drawing sheet.

1.2 DEFINITIONS

- .1 "Electrical Contractor" includes any security specialist subcontractor if engaged on the project.
- .2 "Card" also refers to "Fob" or other RFID device used to unlock doors.

1.3 REFERENCE STANDARDS

- .1 NFPA 731 Standard for the Installation of Premise Security Systems.
- .2 UL294 Access Control System Units

Part 2 PRODUCTS

2.1 DIVISION OF SUPPLY

- .1 Keyless access control systems involve the door division (08) and the electrical division (16). Unless otherwise advised the electrical contractor shall assume responsibility for supply of all access control system components except for electric strikes.
- .2 The project drawings will normally contain a schedule listing by item which division is responsible for supply, installation, and commissioning of access control components.
- .3 The electrical contractor shall coordinate with division 8 to ensure that electric strikes or other components supplied by that division are compatible with the access control system.

2.2 SUBMITTALS

- .1 Provide shop drawings for related equipment including:
 - .1 Access control system head unit, if applicable.
 - .2 Card/fob readers
 - .3 Interface units.
 - .4 Card programming unit.
 - .5 Relevant Accessories.
- .2 Acceptable Systems
 - .1 The following systems are acceptable for commercial access control:
 - .1 Schlage MTB / Engage
 - .2 Hartmann Odyssey

- .2 Other systems may be considered if proposed no less than 48 hours prior to close of tender.

2.3 Fob/Card Readers

- .1 Fob/Card readers shall be hardwired.
- .2 Readers shall support 125kHz and 13.56 Mhz contactless smart cards, and 2.4 GHz Bluetooth.
- .3 Reference product: Schlage (Allegion) MTB series.

2.4 Fob/Cards

- .1 Compatible with system provided.
- .2 Provide 25 Blank access cards.

2.5 Management Software

- .1 Provide access management software capable at a minimum of credential issue/replacement with audit history.
- .2 System may be cloud based accessible via browser, tablet or smartphone.

Part 3 INSTALLATION

3.1 System Installation

- .1 Installation personnel shall be experienced in the installation, inspection and testing of premisses security systems.
- .2 All equipment shall be installed in accordance with manufacturers instructions.
- .3 The system shall be complete and functional. Include in contract pricing all labour and necessary accessories in order to form a complete and functional system, including card programming capability.

3.2 Cabling

- .1 The nature of access control system cabling may vary depending on product used. Where access control systems rely on hardwired category network cable then the related specification governing ethernet networks products and installation applies.
- .2 Where access control systems rely on dedicated cabling of another nature then the system manufacturers standards as well as any relevant codes apply.

3.3 System Configuration and Verification.

- .1 Configure one fob/card for each type of access (e.g. building manager, typical user).
- .2 For each door:
 - .1 Test access using each card programmed in step 1.
 - .2 Check operation of door contacts, correct indication of door forced and held open alarms.

3.4 Owner training.

- .1 Provide a minimum of two hours training for Owner / Owners representative explaining the operation of the access control system
 - .1 System configuration.
 - .2 Card programming
 - .3 Basic operation.
 - .4 Maintenance / testing.

3.5 Close out materials

- .1 Supply a manual including the following:
 - .1 Title page with name of project, installer contact information, and date.
 - .2 Shop drawings for access control system.
 - .3 Manufacturer's user manuals.
 - .4 A record of testing / completion by the system installer.

END OF SPECIFICATION

Part 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 27 05 13 Network Products and Methods.

1.2 REFERENCE STANDARDS

- .1 NFPA 731 Standard for the Installation of Premise Security Systems.
- .2 UL 2044, Standard for Commercial Closed Circuit Television Equipment.
- .3 UL 2802, Standard for Performance Testing of Camera Image Quality.
- .4 UL 60065, Standard for Audio, Video, and Similar Electronic Apparatus.

Part 2 PRODUCTS

2.1 SUBMITTALS

- .1 Provide shop drawings for related equipment including:
 - .1 Cameras
 - .2 Recording equipment.
 - .3 Relevant Accessories.
- .2 Cabling
 - .1 Camera systems are hosted by the building local area network. Refer to the related specification governing ethernet networks products and installation.

2.1 IP Cameras

- .1 Exterior, Narrow FOV
 - .1 Horizontal mount, bullet style, variable 2.8mm-10mm (minimum) lens.
 - .2 IP66 enclosure.
 - .3 Conduit mounting base as required.
 - .4 Reference product: Uniview IPC2325LB-ADZK-G
- .2 Exterior, Wide FOV
 - .1 Horizontal mount, turret style, variable 2.8mm-10mm (minimum) lens.
 - .2 IP66 enclosure.
 - .3 Conduit mounting base as required.
 - .4 Reference product: Uniview IPC3635SR3-ADPZ-F
- .3 Interior

- .1 Dome style, variable 2.80-10mm (minimum) lens.
- .2 Reference product: Uniview IPC3535LB-ADZK-G

2.2 Network Video Recorder

- .1 POE outputs, quantity and type selected to support all cameras specified with 30% spare capacity for expansion.
- .2 4TB drive capacity for systems with up to 6 cameras.
- .3 8TB drive capacity for systems with more than 6 cameras.
- .4 16TB drive capacity for systems with more than 13 cameras.
- .5 Software for management and viewing recorded data included at no extra cost.
- .6 Install network connection and patch cord.
- .7 Reference products:
 - .1 1-3 cameras: Uniview NVR301-04X-P4 , 4 channel unit.
 - .2 4-6 cameras: Uniview NVR301-08X-P8, 8 channel unit.
 - .3 7-13 cameras: Uniview NVR301-16LX-P8, 16 channel unit.
 - .4 14-25 cameras: Uniview NVR304-32E2-P16, 32 channel unit.

Note: This 32 channel NVR is not fully POE capable, additional POE switch required.

Part 3 INSTALLATION

3.1 System Installation

- .1 Installation personnel shall be experienced in the installation, inspection and testing of premisses security systems.
- .2 All equipment shall be installed in accordance with manufacturers instructions.

3.2 Cabling

- .1 Camera systems are hosted by the building local area network. Refer to the related specification governing ethernet networks products and installation.

3.3 Cameras

- .1 Install cameras at designated locations, connected to local area network, DCHP IP assignment by router.
- .2 Camera installation is to mitigate effects of ice, rain, wind, temperature extremes and other environmental factors.
- .3 Point of local area network connection shall not be easily accessible to the public.

- .4 Adjust camera aim, zoom and focus as necessary.
- .5 Avoid aiming camera directly into the sun, or backlighting of sufficient intensity to affect image quality.
- .6 If the installation location cannot avoid backlighting leading to image quality issues then the camera is to be equipped with automatic exposure compensation or be of a high dynamic range type.
- .7 Mounting bolts into building membrane must be gasketed to prevent moisture ingress.

3.4 System Configuration and Verification.

- .1 Set system clock as required.
- .2 Name cameras by floor and area or as designated by Owner
- .3 Review each camera live feed with Owner to validate aiming.
- .4 Allow system to record all cameras for a minimum of 24 hours. Validate successful recording.
- .5 Evaluate quality of exterior camera recording during night time condition, as necessary make adjustments or recommendations.

3.5 Owner training.

- .1 Provide a minimum of two hours training for Owner / Owners representative explaining the operation of the camera and NVR system, including
 - .1 System configuration.
 - .2 Alarm and acknowledgement, as applicable.
 - .3 Basic operation
 - .4 Remote access, if applicable.

3.6 Close out materials

- .1 Supply a manual including the following:
 - .1 Title page with name of project, installer contact information, and date.
 - .2 Shop drawings for cameras and NVR system
 - .3 NVR system user manual.
 - .4 A record of testing / completion by the system installer.

END OF SPECIFICATION

LIGHTING FIXTURE SCHEDULE

ID	DESCRIPTION	TYPE CODE	MOUNTING	VOLTAGE	LOAD	LUMEN RANGE	COMMENTS	COUNT
A	4' LENSED STRIP LIGHT WITH INTEGRATED MOTION SENSOR	10101B	CEILING, SURFACE	120 V	40 W	4000-5000	DIM NOT REQUIRED	1
BL2	12V REMOTE DUAL BACKUP LIGHT	90001B	WALL MOUNT, 7' / 2130MM AFF OR AS INDICATED	12 V	10 W	N/A	N/A	7
EL4	4' ECONOMY LINEAR	10102B	CEILING, SURFACE	120 V	27 W	3400+	0-10V DIM	2
EL8	8' ECONOMY LINEAR	10102E	CEILING, SURFACE	120 V	53 W	7000+	0-10V DIM	2
ELS4	4' LINEAR LED 100% DOWNLIGHT	40104B	CEILING, SUSPENDED	120 V	20 W		0-10V DIM	12
FP22	2'X2' LED FLAT PANEL WITH SURFACE MOUNTING KIT	10300B	CEILING, SURFACE	120 V	30 W	3000-3500	0-10V DIM	8
FR22	2'X2" RECESSED LED FLAT PANEL	20300B	CEILING, RECESSED	120 V	30 W	3000-3500	0-10V DIM	11
G8	8" SPHERICAL LED	40009A	CEILING, SUSPENDED	120 V	50 W		REFER TO GENERAL NOTES FOR FINISH/TRIM DETAILS	4
G12	12" SPHERICAL LED	40009C	CEILING, SUSPENDED	120 V	150 W		REFER TO GENERAL NOTES FOR FINISH/TRIM DETAILS	2
HB	RECTANGULAR LED HIGH BAY, WIDE DISTRIBUTION, FROSTED LENS	42001A	CEILING, SUSPENDED	120 V	150 W	18000-24000	0-10V DIM	18
R4	CANLESS COLOUR SELECTABLE 4" ROUND DOWNLIGHT	20000B	CEILING, RECESSED	120 V	14 W	1200	WHITE (STANDARD/NO OPTIONS)	6
R6	CANLESS COLOUR SELECTABLE 6" ROUND DOWNLIGHT	20000C	CEILING, RECESSED	120 V	16 W	1500	WHITE (STANDARD/NO OPTIONS)	13
S	7" WALL SCNCE	34000A	WALL, SURFACE	120 V	22 W		ELV DIM	8
SL4	4' LED STRIP LIGHT, LENSED	10100B	CEILING, SURFACE	120 V	40 W	4000-5000	0-10V DIM	1
WWD	SLIM LED WALL PACK WITH INTEGRATED DAYLIGHT SENSOR	30001B	WALL, SURFACE	120 V	20 W	1500-2500	DIM NOT REQUIRED	5

Type A	4' LENSED STRIP LIGHT WITH INTEGRATED MOTION SENSOR	10101B
Integral motion sensor required.		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Eaton	4SRL-LD5-44SL-LW-UNV-x-CD1-SVPD2-U	Include motion sensor accessory.
EELighting	SLD-4-4WS44-3CCTA	
Leviton	LCOMN48-LED840K040L	
Type BL2	12V REMOTE DUAL BACKUP LIGHT	90001B
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Aimlite	RMSM2-06-12V5WLJWHT	
Emergi-lite	EF9DM-LI	
Ready-Lite	RM2-LD9	
Type EL4	4' ECONOMY LINEAR	10102B
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Startek	NOV2D-4-S-SD	
Type EL8	8' ECONOMY LINEAR	10102E
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Startek	NOV2D-8-S-SD	
Type ELS4	4' LINEAR LED 100% DOWNLIGHT	40104B
90 CRI Minimum. Fixed CCT (4000K unless otherwise noted)		
Total lumens indicated.		
Length as indicated.		
Vendor is to provide specific part number matching specifications.		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Nulite	PXP3-06	
Startek	NOV2D-4-S	
Type FP22	2'X2' LED FLAT PANEL WITH SURFACE MOUNTING KIT	10300B
Match required lumen output shown on lighting schedule (unless output selectable)		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Cooper Lighting	Metalux 22CGTS NUV	Selectable CT and output
Lithonia Lighting	EPANL2x2	
Signify Lighting	Fluxpanel 2x2	
Type FR22	2'X2" RECESSED LED FLAT PANEL	20300B
Match required lumen output shown on lighting schedule (unless output selectable)		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Cooper Lighting	Metalux 22CGTS NUV	Selectable CT and output
Lithonia Lighting	EPANL2x2	
Signify Lighting	Fluxpanel 2x2	
Type G8	8" SPHERICAL LED	40009A
Supply and install compatible LED lamps rated maximum supported by fixture.		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Progress Lighting	Opal P4401-29	
Type G12	12" SPHERICAL LED	40009C
Supply and install compatible LED lamps rated maximum supported by fixture.		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Progress Lighting	Opal P4403-29	
Type HB	RECTANGULAR LED HIGH BAY, WIDE DISTRIBUTION, FROSTED LENS	42001A
Match Intensity according to light fixture schedule		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Signify	FCX series	
Eaton Metalux	OHBL Series	
Signify	IBE Series	
Type R4	CANLESS COLOUR SELECTABLE 4" ROUND DOWNLIGHT	20000B
Available in white only.		
Match size and intensity to light fixture schedule.		
Colour selectable. 0-10V dim required.		
Make use of frame kit whenever possible.		
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Cooper Lighting	LCR4 series	
Juno Lighting	Podz JPD24DBDC-AL010L-MVOLT ZT10	
Lotus Lighting	LDR4 series	
Lightolier	CR4R	
EE Lighting	CDFP-64R6-3WS	

Type R6	CANLESS COLOUR SELECTABLE 6" ROUND DOWNLIGHT	20000C
----------------	---	---------------

Available in white only.
 Match size and intensity to light fixture schedule.
 Colour selectable. 0-10V dim required.
 Make use of frame kit whenever possible.

<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Cooper Lighting	LCR6 series	
Juno Lighting	Podz JPDZ6DBDC-AL010L-MVOLT ZT10	
Lotus Lighting	LCR6 series	
Lightolier	CR6R	
EE Lighting	CDFP-64R4-3WS	

Type S	7" WALL SCONCE	34000A
---------------	-----------------------	---------------

<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
WAC Lighting	Pocket	

Type SL4	4' LED STRIP LIGHT, LENSED	10100B
-----------------	-----------------------------------	---------------

Frosted lens preferred.
 4000K acceptable unless project specifications vary.

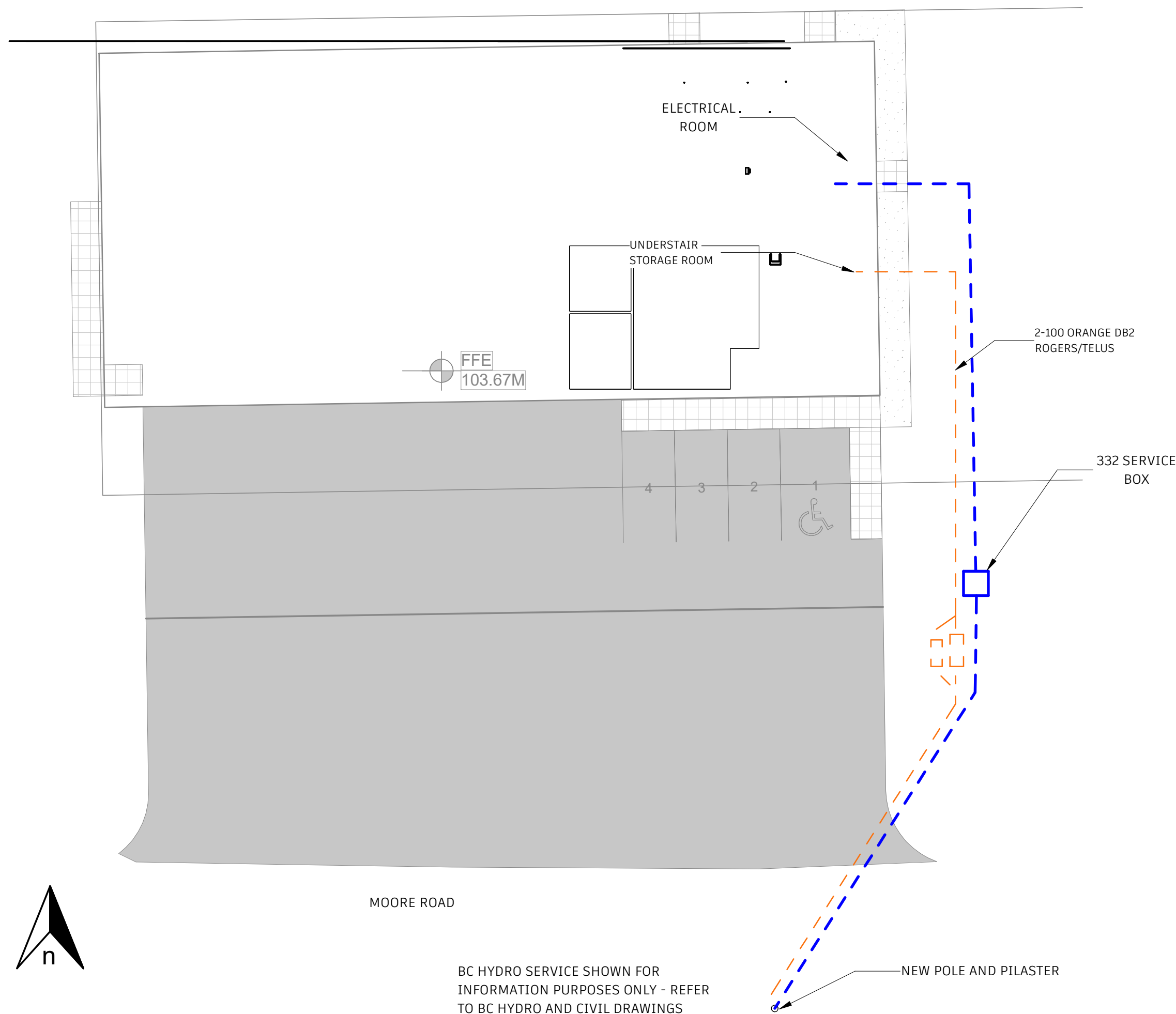
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Eaton	Metalux 4SLSTPSC-UNV	Color selectable
Visioneering	LCOMN48-LED-8-XX-040L	
EE Lighting	FS2-4-7634-WS	
Lithonia Lighting	CSS L48 AL03 MVOLT SWW3 80 CRI	Color and output selectable

Type WWD	SLIM LED WALL PACK WITH INTEGRATED DAYLIGHT SENSOR	30001B
-----------------	---	---------------

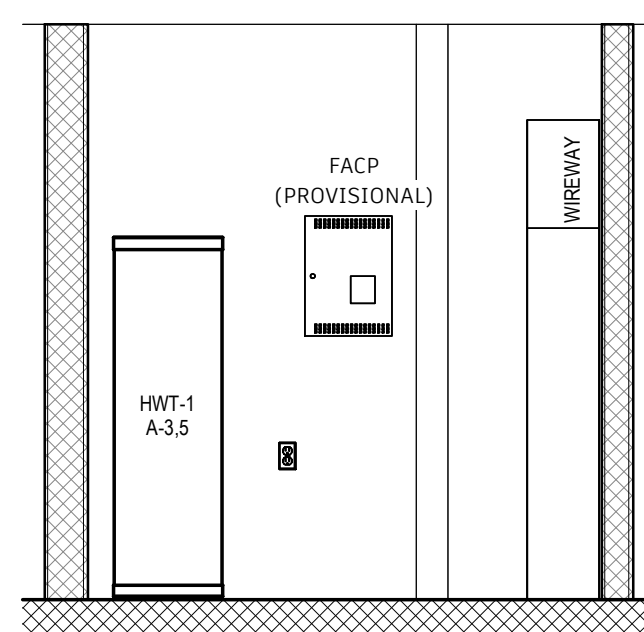
<u>Manufacturer</u>	<u>Model/Series</u>	<u>Comments</u>
Eaton Lighting	XTOR2B-W-PC1	
Williams Lighting	VWM V-L20/740-T3-x-CGL-PC-DIM-120	

1. Manufacturer, series or model information provided on this pre-approval sheet indicate general product series that are deemed acceptable.
2. Part numbers provided are not necessarily complete. Details such as intensity, colour temperature, finish, and optical distribution can vary.
3. It is the responsibility of the contractor to ensure products comply with the contract drawings and specifications.
4. Additional alternates submissions must be supplied to the engineer prior to 72 hours in advance of close of tender.
5. Muir Engineering reserves the right to charge the contractor or supplier for post tender alternate review.

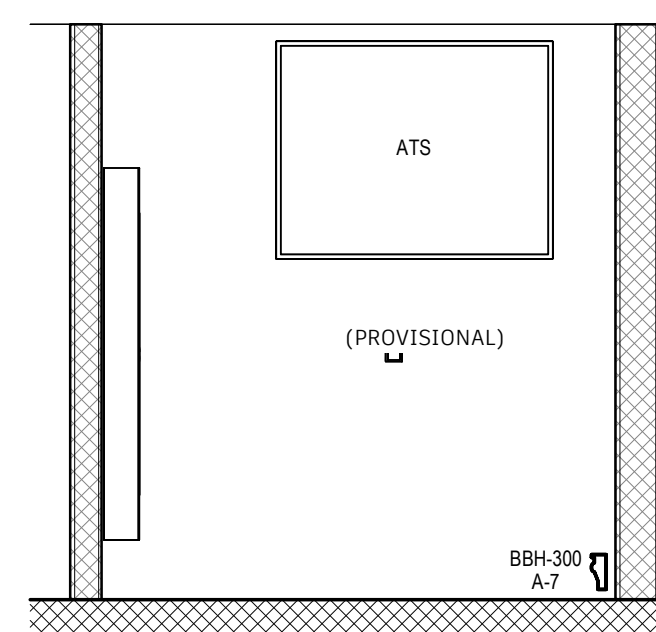
SHEET LIST	
SHEET	SHEET NAME
E01	SITE PLAN & SPECIFICATIONS
E02	POWER AND SYSTEMS
E03	LIGHTING AND CEILING
E04	SECURITY & LIGHTING CONTROLS
S1	MARKET RESIDENTIAL BUILDING SPECIFICATION
S4	COMMERCIAL PROJECT SPECIFICATION



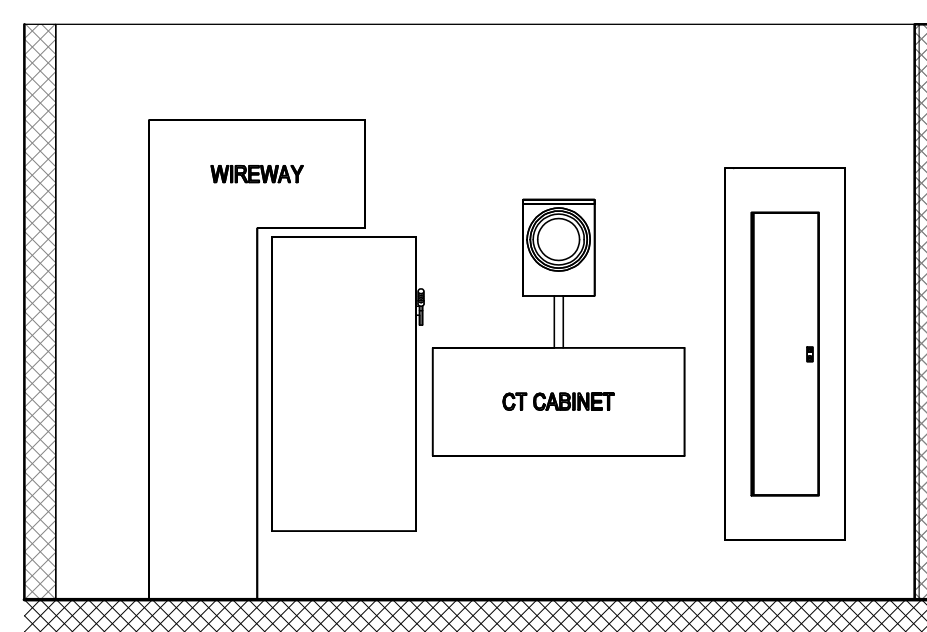
2 SITE PLAN
1/16" = 1'-0"



3 ELECTRICAL ROOM ELEVATION - EAST
3/8" = 1'-0"

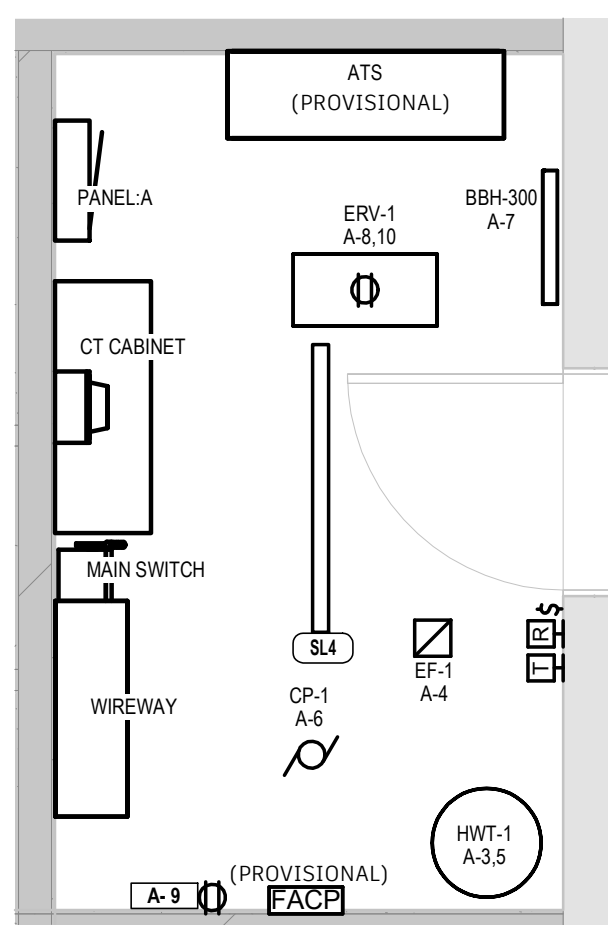


5 ELECTRICAL ROOM ELEVATION - WEST
3/8" = 1'-0"

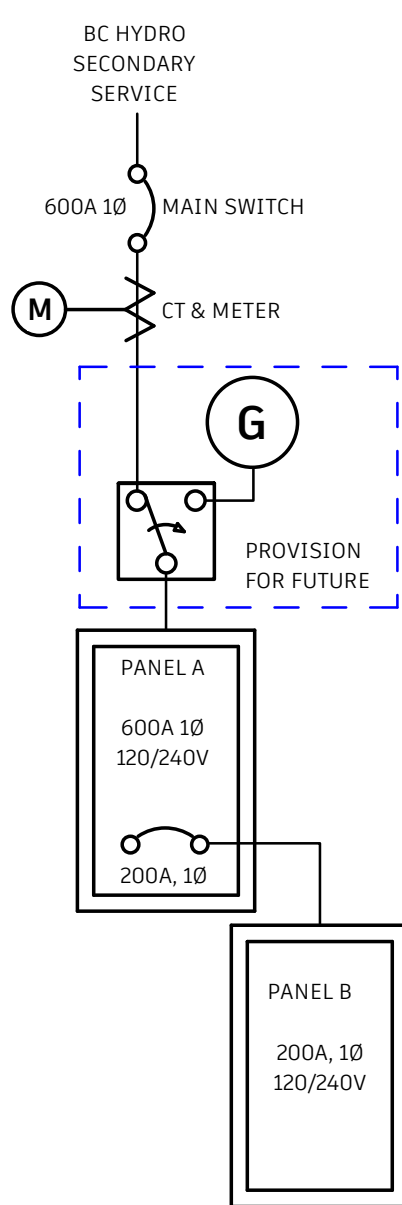


4 ELECTRICAL ROOM ELEVATION - SOUTH
3/8" = 1'-0"

1 ONE-LINE DIAGRAM



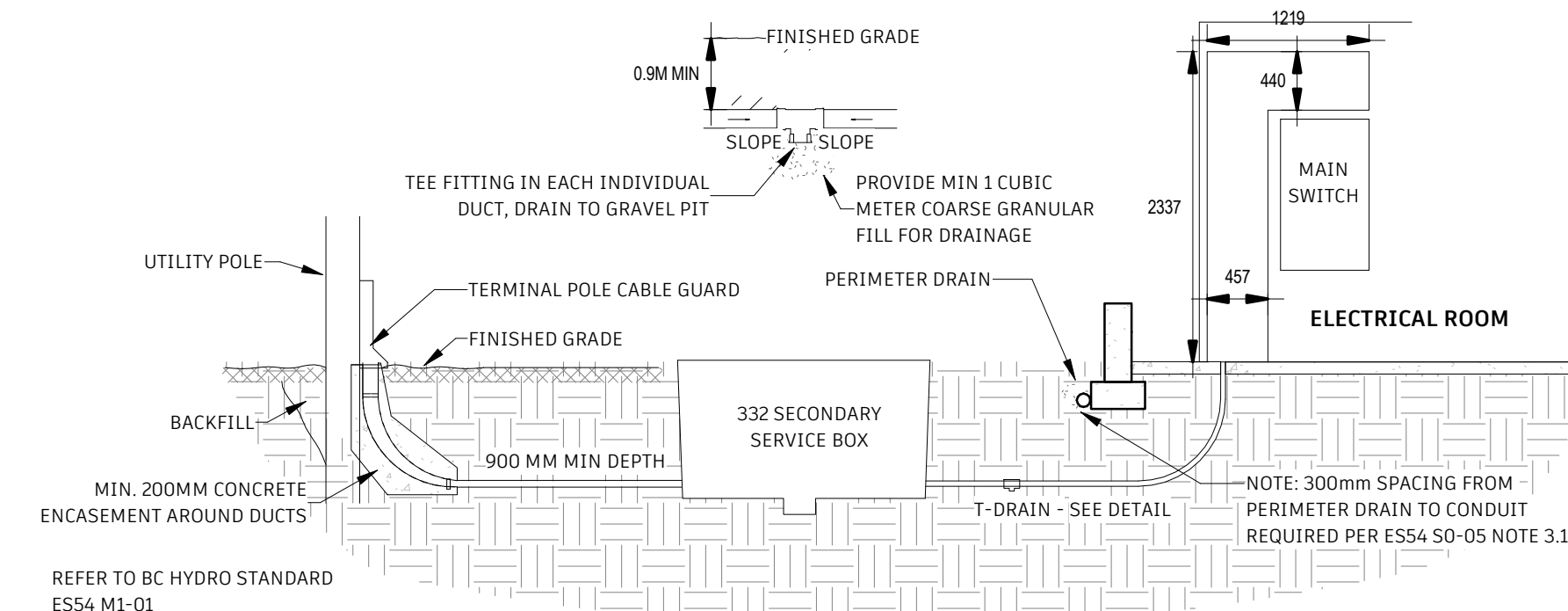
6 MECH/ELEC ROOM
3/8" = 1'-0"



CEC LOAD CALCULATION:

COMMON AREA	17.1KW
CEC AREA LOAD:	20KW
ELECTRIC SPACE HEATING:	13KW
HEAT PUMP:	30KW
HOT WATER TANK:	8.8KW
COMPRESSORS:	6KW
RANGE:	2.5KW
HIGH BAY LIGHTING:	97.4KW
TOTAL LOAD (CONSIDERED CONTINUOUS):	122KW
TOTAL LOAD (CONTINUOUS LOADS @ 125%):	152.5KW
AMP DRAW (120/240V):	507A
RECOMMENDED SERVICE SIZE:	600A

7 Pole w/ Pilaster to Wireway via Service Box



NOTES AND SPECIFICATIONS

- GENERAL
 - THESE DRAWINGS ARE NOT INTENDED TO BE EXHAUSTIVELY COMPLETE, AND ARE DIAGRAMMATIC IN NATURE. THE INTENTION IS TO INDICATE SYSTEMS AND THEIR FUNCTION. THE ELECTRICAL CONTRACTOR SHALL PROVIDE (SUPPLY AND INSTALL) ALL EQUIPMENT, MATERIALS, LABOUR, AND SERVICES NECESSARY TO FORM COMPLETE AND OPERATING SYSTEMS.
 - THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES REQUIRED FOR THE WORK AND THE COST THEREOF SHALL BE INCLUDED IN THE CONTRACT PRICE.
 - ALL WORK SHALL MEET OR EXCEED THE REQUIREMENTS OF CEC, BCBC AND ANY AUTHORITY HAVING JURISDICTION AND THE AUTHORITY SHALL BE NOTIFIED OF THE WORK, IN ADVANCE OF ANY WORK BEING PERFORMED, AND AS REQUIRED WHILE THE WORK IS BEING PERFORMED.
 - COPIES OF ALL INSPECTION REQUESTS SHALL BE PROVIDED TO THE ENGINEER AT THE TIME OF SUBMISSION TO THE INSPECTION AUTHORITY. COPIES OF ALL INSPECTION REPORTS ISSUED BY THE AUTHORITY SHALL BE SUBMITTED TO THE ENGINEER WITHIN 24 HOURS OF ISSUE.
 - IF ANY ASPECT OF THE DRAWINGS IS FOUND TO BE IN CONFLICT WITH THE REQUIREMENTS OF ANY AUTHORITY, THEN THE REQUIREMENTS OF THE AUTHORITY SHALL GOVERN.
 - THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE SITE AND SHALL BECOME AWARE OF EXISTING CONDITIONS, SERVICES, AND SYSTEMS PRIOR TO COMMENCING WORK OR ORDERING MATERIALS, AND SHALL NOTIFY THE ENGINEER OF ANY SITE CONDITIONS THAT MAY AFFECT THE WORK.
 - THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL AND OTHER RELEVANT DRAWINGS.
 - THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS, EQUIPMENT, TOOLS, AND WORK COMPLETE OR IN PROGRESS UNTIL SUBSTANTIAL COMPLETION ACCEPTANCE BY THE ENGINEER. ANY MATERIAL OR WORK LOST, STOLEN, OR DAMAGED PRIOR TO SUBSTANTIAL COMPLETION ACCEPTANCE SHALL BE REPLACED OR REDONE AT NO ADDITIONAL COST TO THE OWNER.
 - FOR ANY CONTEMPLATED CHANGE TO THE WORK A CONTEMPLATED CHANGE NOTIFICATION (CCN) SHALL BE ISSUED. IN RESPONSE, THE CONTRACTOR SHALL SUBMIT A PRICE TO THE ENGINEER FOR CONSIDERATION. THE PRICE SHALL BE DETAILED, SHOWING MATERIAL (MATERIAL QUANTITIES, UNIT COSTS, AND EXTENDED COST), LABOUR (LABOUR QUANTITIES, UNIT COSTS AND EXTENDED COSTS), OVERHEAD, PROFIT, AND TAXES. NO WORK THAT WILL CAUSE A CHANGE TO THE PROJECT COST SHALL BE COMMENCED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER. THE ENGINEER WILL PROVIDE A REVISED CONTRACT VALUE FORM FOR SIGNING BY OWNER, ENGINEER AND CONTRACTOR PRIOR TO PROCEEDING WITH WORK.
 - CHECK ALL DIMENSIONS ON SITE BEFORE ORDERING OR PLACING MATERIAL TO ENSURE THAT LENGTHS, SIZE, ETC. OF NEW MATERIALS/EQUIPMENT ARE COMPATIBLE WITH SITE CONDITIONS.
 - FIELD REVIEW BY ENGINEER IS REQUIRED PRIOR TO COVER UP OF ANY ELECTRICAL WORK. PROVIDE A MINIMUM 72 HOURS NOTICE IN ADVANCE OF WORK THAT WILL CONCEAL WIRING OR ELECTRICAL DEVICES. THE CONTRACTOR SHALL BEAR THE EXPENSE OF REMOVAL OF ANY MATERIALS TO ACCESS WORK CONCEALED PRIOR TO INSPECTION IF SUCH NOTICE IS NOT PROVIDED.
 - THE ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL NEW EQUIPMENT, MATERIALS, AND ASSOCIATED LABOUR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
- PROJECT COMMISSIONING AND CLOSE OUT
 - WARRANTY: THE ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL NEW EQUIPMENT, MATERIALS, AND ASSOCIATED LABOUR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
 - ONE SET OF DRAWINGS (THE RECORD DRAWINGS) SHALL BE KEPT FOR THE SOLE PURPOSE OF SHOWING CHANGES TO THE WORK OR DEVIATION FROM THE WORK SHOWN ON THE TENDER DRAWINGS. THE CHANGES SHALL BE RECORDED NEATLY AND LEGIBLY AND SHALL BE PROVIDED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE WORK.
 - THE ELECTRICAL CONTRACTOR SHALL TEST ALL SYSTEMS TO ENSURE PROPER OPERATION, WHERE PRACTICAL ALL TESTING SHALL BE DONE ON THE SAME DAY, AND THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE AND GIVEN THE OPPORTUNITY TO OBSERVE. THE ELECTRICAL CONTRACTOR SHALL SUBMIT A LETTER TO THE ENGINEER ATTESTING TO THE PROPER OPERATION OF ALL SYSTEMS AND SHALL NOT CONSIDER THE WORK COMPLETE UNTIL ACCEPTED BY THE ENGINEER.COMMISSIONING.
 - PROVIDE 72 HOURS NOTICE TO THE OWNER AND ENGINEER THAT THE WORK IS SUBSTANTIALLY PERFORMED AND THAT A SITE REVIEW IS REQUESTED.
 - ELECTRICAL CONTRACTOR SHALL PROVIDE A COPY OF THE FINAL ELECTRICAL INSPECTION CERTIFICATE TO THE ELECTRICAL ENGINEER AND OWNER UPON PROJECT COMPLETION PRIOR TO REQUESTING A SUBSTANTIAL PERFORMANCE REVIEW.
 - AFTER ACCEPTANCE OF THE WORK BY THE ENGINEER, THE CONTRACTOR SHALL DEMONSTRATE AND EXPLAIN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS TO THE OWNER. THE RECORD DRAWING SHALL BE REVIEWED WITH THE OWNER AND SHALL BECOME THE PROPERTY OF THE OWNER.
- MAINTENANCE MANUAL
 - AN ELECTRICAL MAINTENANCE MANUAL SHALL BE PROVIDED PRIOR TO FINAL ACCEPTANCE OF THE WORK.
 - THE MANUAL SHALL HAVE A HARD COVER, THREE-RING OR POST TYPE BINDING, WITH LARGE BLOCK LETTERS ON THE FRONT SHOWING: PROJECT NAME/DATE/ELECTRICAL MAINTENANCE MANUAL
 - THE MANUAL SHALL CONTAIN A LETTER OF WARRANTY, CONTACT LIST, A COPY OF "FINAL RECORD" DRAWINGS, THE ELECTRICAL EQUIPMENT SHOP DRAWINGS, TESTING AND VERIFICATION REPORTS AND ANY OTHER INFORMATION REQUIRED FOR THE MAINTENANCE AND OPERATION OF ALL NEW ELECTRICAL EQUIPMENT.
 - INCLUDE PANEL SCHEDULES ON STANDARD 8.5" X 11" PAPER.
 - PROVIDE TWO HARD COPY MANUALS PLUS ONE COMPLETE COPY ON USB FLASH DRIVE.
 - SUBMIT FINAL ELECTRONIC VERSION TO ENGINEER FOR REVIEW PRIOR TO PRINTING HARD COPIES.
- BASIC MATERIALS AND METHODS
 - ALL EQUIPMENT SHALL BE NEW AND SPECIFICALLY INTENDED FOR THE PURPOSE USED UNLESS OTHERWISE STATED.
 - PRODUCTS OTHER THAN THOSE SPECIFIED WILL BE CONSIDERED, UNLESS SPECIFICALLY STATED OTHERWISE. SHOULD ANY BIDDER PROPOSE TO USE MATERIALS OR EQUIPMENT OTHER THAN THAT SPECIFIED OR SHOWN ON THE DRAWING, THEN A REQUEST TO USE THE ALTERNATE SHALL BE SUBMITTED TO THE ENGINEER NO LATER THAN 96 HOURS BEFORE THE TENDER CLOSES. THE RESPONSIBILITY FOR DEMONSTRATING EQUALITY OR SUPERIORITY OF PROPOSED ALTERNATES REST WITH THE PROPONENT OF THE PROPOSED ALTERNATE, AND ALL MATERIALS NEEDED TO DETERMINE EQUALITY OR SUPERIORITY SHALL BE INCLUDED WITH THE SUBMISSION. THE DETERMINATION OF THE ENGINEER SHALL BE FINAL.
 - ALTERNATE REQUESTS MUST BE SUBMITTED THROUGH THE TENDERING AGENCY / GENERAL CONTRACTOR. DIRECT SUBMISSION TO THE ENGINEER NOT ACCEPTED, AND SUPPLIERS OF THE ALTERNATE PRODUCTS SHALL BE APPROVED BY THE TENDERING AGENCY / GENERAL CONTRACTOR PRIOR TO ENGINEERS EVALUATION OF THE PRODUCTS.
 - ANY PRODUCT THAT IS INSTALLED WHICH IS NOT IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS AND WHICH HAS NOT BEEN APPROVED THROUGH THE PRECEDING PROCESS SHALL, IF SO DIRECTED BY THE ENGINEER, BE REMOVED AND REPLACED WITH THE SPECIFIED PRODUCT AT NO COST TO THE OWNER.
 - ALL WORKMANSHIP SHALL BE OF "HIGH QUALITY". ALL EQUIPMENT AND DEVICES SHALL BE LEVEL AND SHALL ALIGN VERTICALLY OR HORIZONTALLY. ALL WIRING SHALL BE INSTALLED PERPENDICULAR OR HORIZONTAL TO ARCHITECTURAL ELEMENTS.
 - ALL PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 - ALL EQUIPMENT SHALL BE SECURELY MOUNTED, OR SEISMICALLY RESTRAINED AS REQUIRED BY THE BRITISH COLUMBIA BUILDING CODE.
 - ALL DISCONNECTS, STARTERS, SWITCHES, PANEL, JUNCTION BOXES, MANHOLES, ETC. SHALL BE IDENTIFIED WITH LAMACOID 3MM THICK PLASTIC ENGRAVED NAMEPLATES, WITH WHITE FACE AND BLACK LETTERING. THE LETTERING SHALL BE 3MM HIGH MINIMUM AND SHALL BE 5MM HIGH WHERE SPACE PERMITS.
 - PANELS SHALL HAVE TYPE WRITTEN DIRECTORIES, CLEARLY IDENTIFYING THE LOAD OF EACH CIRCUIT.
- DISTRIBUTION, PROTECTION, AND WIRING METHODS.
 - WIRE #10 AWG AND SMALLER IS TO BE SOLID, UNLESS OTHERWISE INDICATED. IF LARGER THAN #10, THEN THEY ARE TO BE STRANDED.
 - CONDUIT SHALL BE EMT OR RPVC UNLESS OTHERWISE INDICATED.
 - USE OF NMD ALLOWED WHERE PERMITTED BY CODE.
 - INSTALL RECEPTACLES AT 18" AFF UNLESS OTHERWISE NOTED.
 - RECEPTACLES TO BE WHITE, DECORA TYPE, HEAVY DUTY INDUSTRIAL GRADE. REFERENCE PRODUCT: LEVITON 16242-W.
 - LABEL RECEPTACLE WITH PANEL AND SOURCE CIRCUIT.
 - PANELS SHALL EMPLOY BOLT ON BREAKERS.
- UTILITY COORDINATION
 - ELECTRICAL CONTRACTOR SHALL INCLUDE IN THEIR SCOPE OF WORK INSTALLATION OF TRANSFORMERS OR UNDERGROUND / ABOVE GROUND UTILITY CABLING FROM BC HYDRO, TELUS AND SHAW WHEN REQUESTED BY THE UTILITY COMPANY. CONTRACTOR SHALL REFER TO UTILITY COMPANY DRAWINGS AND DETAILS FOR ALL SUCH WORK AND COMPLY WITH ALL APPLICABLE UTILITY STANDARDS. COORDINATE ALL SERVICE RELATED ACTIVITIES WITH RELEVANT UTILITIES, GENERAL CONTRACTOR AND OTHER TRADES.
 - WORK RELATED TO UTILITY CONNECTIONS SHALL CONFORM WITH THE DRAWINGS AND REQUIREMENTS OF THE UTILITY.
 - CONTRACTOR TO CARRY COST OF POLE HOLD AND ANY MATERIALS REQUIRED FOR BUILDING POWER SUPPLY NOT PROVIDED BY BC HYDRO.
 - OWNER WILL CARRY BC HYDRO DIRECT COSTS.
 - ROGERS AND TELUS DESIGNS ARE IN PROGRESS. INCLUDE COSTS RELATED TO INSTALLATION OF PILASTER, 30 METERS 2 X 100MM ORANGE DUCTING AND TWO SMALL IN GROUND SERVICE BOXES. COSTS OF EXCAVATION NOT INCLUDED.
 - CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR UTILITY COORDINATION ONCE THE RESPECTIVE UTILITY ISSUES "FOR CONSTRUCTION" DRAWINGS.
- FIRESTOPPING AND FIRE RATED ASSEMBLIES
 - FIRE-STOPPING OF PENETRATIONS IN FIRE RATED SURFACES CAUSED BY ELECTRICAL INFRASTRUCTURE IS THE RESPONSIBILITY OF THIS DIVISION.
 - PROVIDE ELECTRICAL CONSULTANT WITH 48 HOUR'S NOTICE PRIOR TO CONCEALING ANY FIRE-STOPPING WORK. SUCH WORK MAY ONLY BE COVERED AFTER INSPECTION BY THE LOCAL AUTHORITY.
 - OUTLET BOXES: METAL OR UL LISTED ELECTRICAL BOXES RATED APPROPRIATELY FOR THE FIRE SEPARATION (E.G. "CLASS 1 HR W") ARE TO BE USED IN FIRE RATED ASSEMBLIES. ANY JUNCTION BOXES IN RATED SHAFTS SHALL BE COMPLETED AS PER APPROVAL OF THE AHJ. CONFIRM WITH BUILDING AND ELECTRICAL INSPECTORS PRIOR TO INSTALLATION.
 - ANY JUNCTION BOXES IN RATED SHAFTS SHALL BE COMPLETED PER APPROVAL OF THE LOCAL AUTHORITY. CONFIRM WITH BUILDING AND ELECTRICAL INSPECTORS PRIOR TO INSTALLATION.
 - AVOID INSTALLING OUTLET BOXES ON OPPOSITE SIDES OF FIRE SEPARATION IN SAME STUD CAVITY. IF THIS REQUIREMENT CANNOT BE ACHIEVED THEN BOXES MUST BE EQUIPPED WITH INTUMESCENT PUTTY PADS, HITLI CPS-P PA OR EQUAL.

COPYRIGHT RESERVED: THIS DRAWING AND ALL COPYRIGHT THEREIN ARE THE SOLE AND EXCLUSIVE PROPERTY OF THE CONSULTANT. REPRODUCTION OR USE OF THIS DRAWING IN WHOLE OR IN PART IS PROHIBITED AND MAY NOT BE USED WITHOUT THE WRITTEN CONSENT OF THE CONSULTANT.

PROJECT:
CHERRY CREEK FIREHALL

ADDRESS:
5920 CHERRY CREEK ROAD
PORT ALBERNI BC

CLIENT:
CHERRY CREEK FIRE DEPARTMENT

DESIGNED BY:
MF
DRAWN BY:
MF
SCALE:
As indicated

REVISION HISTORY

OCTOBER 27, 2023	COORDINATION
DECEMBER 7, 2023	COORDINATION
DECEMBER 21, 2023	BUILDING PERMIT
JUNE 25, 2024	CONSTRUCTION

A 1.F. 50% COORDINATION
B 1.F. 75% COORDINATION
C 1.F. BUILDING PERMIT
D 1.F. CONSTRUCTION

REVISION: D

SEAL:

Permit to Practice # 1001549

SHEET TITLE:
SITE PLAN & SPECIFICATIONS

Project Number: 23062
SHEET **E01** OF **4**

PROJECT:
**CHERRY CREEK
FIREHALL**

ADDRESS:
**5920 CHERRY
CREEK ROAD
PORT ALBERNI
BC**

CLIENT:
**CHERRY CREEK
FIRE
DEPARTMENT**

DESIGNED BY:
MF
DRAWN BY:
MF
SCALE:
As indicated

REVISION HISTORY
OCTOBER 27, 2023
DECEMBER 7, 2023
DECEMBER 21, 2023
JUNE 25, 2024
A I.F. 50% COORDINATION
B I.F. 75% COORDINATION
C I.F. BUILDING PERMIT
D I.F. CONSTRUCTION

REVISION: D
SEAL:
PROFESSIONAL
ENGINEER
B. C. MUIR
31323
Permit to Practice # 1001549

SHEET TITLE:
**POWER AND
SYSTEMS**

Project Number: 23062
SHEET OF
E02 4

SCHEDULE OF MECHANICAL MOTOR LOADS

NOTE 1: DISCONNECT IS TO BE PROVIDED PER CEC 28-600 - 28-604 UNLESS A COMPLIANT MEANS OF DISCONNECT IS INCLUDED WITH THE EQUIPMENT SUPPLIED.

ID	DESCRIPTION	LOCATION	SUPPLY	LOAD	FLA	MCA	MOCP	PANEL	CIRCUIT	DISCONNECT	CONTROLS
CP-1	PUMP	MECH/ELEC	120 V/1ø/60 Hz	600 W	5.0 A	15 A	15 A	A	6	REQUIRED, REFER TO NOTE 1	CONTROLS BY MECH
CU-1	CONDENSING UNIT	HEAT PUMPS	240 V/1ø/60 Hz	5760 W	24.0 A	24 A	30 A	A	27,29	REQUIRED	CONTROLS BY MECH
CU-2	CONDENSING UNIT	HEAT PUMPS	240 V/1ø/60 Hz	7872 W	32.8 A	33 A	40 A	A	28,30	REQUIRED	CONTROLS BY MECH
EF-1	FAN	MECH/ELEC	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	A	4	SWITCH/SENSOR SERVES AS DISCONNECT	CONTROLLED BY LOCAL REVERSE THERMOSTAT
EF-2	FAN	VEHICLE BAYS	120 V/1ø/60 Hz	1800 W	15.0 A	12 A	20 A	B	14	SWITCH/SENSOR SERVES AS DISCONNECT	SWITCHED WITH LOCAL TIMER CONTROL
EF-3	FAN	VEHICLE BAYS	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	B	15	SWITCH/SENSOR SERVES AS DISCONNECT	SWITCHED WITH LOCAL TIMER CONTROL
ERV-1	ENERGY RECOVERY VENTILATOR	MECH/ELEC	240 V/1ø/60 Hz	480 W	2.0 A	15 A	15 A	A	8,10	REQUIRED - SEE NOTE 1	CONTROLS BY MECH. PROVIDE RECEPTACLE FOR PLUG IN.
FC-1	FAN COIL	WASHROOM	240 V/1ø/60 Hz	0 W	2.0 A	15 A	15 A				POWERED BY CU-1
FC-2	FAN COIL	MESS HALL	240 V/1ø/60 Hz	0 W	2.0 A	15 A	15 A				POWERED BY CU-2
GDO-1	GARAGE DOOR OPENER	BAY 5	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	B	6	NOT REQUIRED	PROVIDE RECEPTACLE FOR PLUG-IN
GDO-1	GARAGE DOOR OPENER	BAY 4	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	B	5	NOT REQUIRED	PROVIDE RECEPTACLE FOR PLUG-IN
GDO-1	GARAGE DOOR OPENER	BAY 3	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	B	4	NOT REQUIRED	PROVIDE RECEPTACLE FOR PLUG-IN
GDO-1	GARAGE DOOR OPENER	BAY 2	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	B	3	NOT REQUIRED	PROVIDE RECEPTACLE FOR PLUG-IN
GDO-1	GARAGE DOOR OPENER	BAY 1	120 V/1ø/60 Hz	120 W	1.0 A	15 A	15 A	B	2	NOT REQUIRED	PROVIDE RECEPTACLE FOR PLUG-IN
HRV-1	HEAT RECOVERY VENTILATOR	WORK/PREP AREA	120 V/1ø/60 Hz	180 W	1.5 A	15 A	15 A	B	19	REQUIRED - SEE NOTE 1	CONTROLS BY MECH. PROVIDE RECEPTACLE FOR PLUG IN.

- TAGS**
- A-22,24 CIRCUIT TAG: PANEL-CIRCUIT
 - SL20 LIGHT FIXTURE: ID
 - SHEET NOTE (SEE SCHEDULE)

SCHEDULE OF RESISTIVE HEATING AND NON MOTORIZED MECHANICAL

ID	DESCRIPTION	LOCATION	VOLTAGE	LOAD	PANEL	CIRCUIT	COMMENTS
BBH-300	BASEBOARD HEATER	MECH/ELEC	120 V	300 W	A	7	SUPPLIED BY ELECTRICAL DIVISION
BBH-300	BASEBOARD HEATER	FOYER	120 V	300 W	A	49	SUPPLIED BY ELECTRICAL DIVISION
HWT-1	HOT WATER TANK	MECH/ELEC	240 V	23999 W	A	3,5	REFER TO MECHANICAL DRAWINGS
UH-10000	UNIT HEATER	VEHICLE BAYS	240 V	10000 W	B	20,22	SUPPLIED BY MECHANICAL DIVISION
UH-10000	UNIT HEATER	VEHICLE BAYS	240 V	10000 W	B	21,23	SUPPLIED BY MECHANICAL DIVISION

PANEL A
LOCATION: MECH/ELEC
SUPPLY FROM: CT CABINET
CONFIGURATION: SURFACE MOUNTED/NEMA 1
1ø 120/240 Single / 3 WIRE
600 A RATED / MLO
A.I.C. RATING: 22000 A

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	POLES	TRIP	CIRCUIT DESCRIPTION	CKT	
1	FACP (PROVISIONAL)	15 A	1	0	500		1	SECURITY PANEL	2	
3	HWT-1, MECH/ELEC	125 A	2	12000	600		1	LIGHTS - MECH/ELEC	4	
5	PUMP, MECH/ELEC	15 A	1		300	240	1	15 A	6	
7	BASEBOARD HEATER	15 A	1	200	240		2	ERV-1, MECH/ELEC	8	
9	RECEPTACLE - MECH/ELEC	15 A	1				1	20 A	10	
11	LIGHTS - WORK/PREP AREA	15 A	1	133	516		1	20 A	12	
13	LIGHTING - FOYER/STAIRS	10 A	1	75	307		1	15 A	14	
15	LIGHTS - MESS HALL	15 A	1				1	20 A	16	
17	RECEPTACLES - WORK AREA	20 A	1	1350	7200		1	30 A	18	
19	POWER CONNECTION, WORK/PREP AREA	15 A	2	900	750		1	15 A	20	
21	RECEPTACLES - WORK/PREP AREA...	20 A	1	1500	1500		1	15 A	22	
23	RECEPTACLE, WORK/PREP AREA	20 A	1	1500	600		1	15 A	24	
25	RECEPTACLE, WORK/PREP AREA	20 A	2	2880	3936		2	40 A	26	
27	CONDENSING UNIT, HEAT PUMPS	30 A	2						28	
29	RECEPTACLES - OFFICES	15 A	1	1200	1750		1	20 A	30	
31	RECEPTACLES - EXTERIOR (REAR)	15 A	1	1000	1000		1	15 A	32	
33	RECEPTACLES - RESTROOM	20 A	1	1600	550		1	15 A	34	
35	CEILING RECEPTACLES	15 A	1	1500	1500		1	20 A	36	
37	MICROWAVE, MESS HALL	15 A	1	1000	950		1	20 A	38	
39	RANGE, MESS HALL	40 A	2	3000	1500		1	20 A	40	
41	RECEPTACLES - KITCHEN COUNTER A	20 A	1	1500	1000		1	15 A	42	
43	RECEPTACLES - KITCHEN COUNTER B	20 A	1	1500	1000		1	15 A	44	
45	RECEPTACLES - KITCHEN COUNTER C	20 A	1	1500	1000		1	15 A	46	
47	RECEPTACLES - KITCHEN COUNTER D	20 A	1	1500	1000		1	15 A	48	
49	BASEBOARD HEATER	15 A	1	300	15452		2	225 A	50	
51	SPARE 2P/20A, MECH/ELEC	20 A	2	0	0		2	225 A	52	
53	SPARE 2P/20A, MECH/ELEC	20 A	2	0	0		2	20 A	54	
55	SPARE 2P/20A, MECH/ELEC	20 A	2	0	0		2	20 A	56	
57	SPARE 2P/20A, MECH/ELEC	20 A	2	0	0		2	20 A	58	
59	SPARE 2P/20A, MECH/ELEC	20 A	2	0	0		2	20 A	60	
61	SPARE 1P/15A, MECH/ELEC	15 A	1	0	0		2	20 A	62	
63	SPARE 1P/15A, MECH/ELEC	15 A	1	0	0		2	20 A	64	
65	SPARE 1P/15A, MECH/ELEC	15 A	1	0	0		2	20 A	66	
67	SPARE 1P/15A, MECH/ELEC	15 A	1	0	0		2	20 A	68	
69	SPARE 1P/15A, MECH/ELEC	15 A	1	0	0		2	20 A	70	
71	SPARE 1P/15A, MECH/ELEC	15 A	1	0	0		2	20 A	72	
TOTAL VA:				59879 VA	49924 VA					
TOTAL AMPS:				499 A	416 A					

PANEL B
LOCATION: VEHICLE BAYS 28
SUPPLY FROM: A
CONFIGURATION: SURFACE MOUNTED/NEMA 1
1ø 120/240 Single / 3 WIRE
225 A RATED / MLO
A.I.C. RATING: 22000 A

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	POLES	TRIP	CIRCUIT DESCRIPTION	CKT	
1	RECEPTACLES - VEHICLE BAYS	15 A	1	1000	120		1	15 A	2	
3	GARAGE DOOR OPENER - VEHICLE BAYS 28	15 A	1	120	120		1	15 A	4	
5	GARAGE DOOR OPENER - VEHICLE BAYS 28	15 A	1	120	120		1	15 A	6	
7	RECEPTACLES - EXTERIOR (SIDE)	15 A	1	500	500		1	15 A	8	
9	CEILING RECEPTACLES - BAY 4/5, VEHICLE...	15 A	1	500	500		1	15 A	10	
11	CEILING RECEPTACLES - BAY 2/3, VEHICLE...	15 A	1	500	500		1	15 A	12	
13	CEILING RECEPTACLES - BAY 1, VEHICLE...	15 A	1	500	1800		1	20 A	14	
15	EF-3, VEHICLE BAYS	20 A	1	120	1350		1	15 A	16	
17	LIGHTING - OFFICES	20 A	1	1380	200		1	15 A	18	
19	HRV-1, WORK/PREP AREA	15 A	1	180	5000		2	60 A	20	
21	UNIT HEATER, VEHICLE BAYS	60 A	2	5000	5000				22	
23									24	
25									26	
27									28	
29									30	
31									32	
33									34	
35									36	
37									38	
39									40	
41									42	
TOTAL VA:				15452 VA	13856 VA					
TOTAL AMPS:				129 A	115 A					

SYMBOL LEGEND

DESCRIPTION	TYPICAL MOUNTING HEIGHT
○ CEILING MOUNT DATA OUTLET (#RUNS INDICATED)	CEILING MOUNTED
○ WIRELESS ACCESS POINT	CEILING MOUNTED
○ WALL MOUNT DATA OUTLET (#RUNS INDICATED)	18" / 450MM AFF OR AS NOTED
○ WIRELESS ACCESS POINT	7" / 220 MM AFF OR AS NOTED
EMERGENCY LIGHTING BATTERY WITH LIGHTS	WALL MOUNTED, HEIGHT TO SUIT LOCATION BUT NOT TO EXCEED 80 INCH / 2130MM
○ AC POWER CONNECTION POINT	CEILING MOUNTED
○ DUPLEX RECEPTACLE, CEILING CORD REEL	CEILING MOUNTED
○ DUPLEX 20A T-SLOT RECEPTACLE	18" / 450MM AFF UNLESS OTHERWISE INDICATED
○ DUPLEX RECEPTACLE	18" / 450MM AFF UNLESS OTHERWISE INDICATED
○ WEATHERPROOF GROUND FAULT RECEPTACLE	18" / 450MM AFF UNLESS OTHERWISE INDICATED
○ AC POWER CONNECTION POINT	APPROPRIATE FOR SPECIFIC CONNECTION
○ 240V RECEPTACLE	18" / 450MM AFF UNLESS OTHERWISE INDICATED
○ FIRE ALARM CONTROL PANEL	WALL MOUNT, EYE LEVEL (-1500MM)
○ LINE VOLTAGE CEILING MOUNT OCCUPANCY SENSOR	CEILING MOUNTED
○ LOW VOLTAGE CEILING MOUNT OCCUPANCY SENSOR	CEILING MOUNTED
○ DIMMING CONTROL, 0-10V	48" / 1200MM AFF UNLESS NOTED
○ LIGHT SWITCH, DECORA	48" / 1200MM AFF UNLESS NOTED
○ LIGHT SWITCH, DECORA, 3 WAY	48" / 1200MM AFF UNLESS NOTED
○ LIGHT SWITCH, DECORA, 4 WAY	48" / 1200MM AFF UNLESS NOTED
○ TIMER CONTROL, DIMMING, 0-10V	48" / 1200MM AFF UNLESS NOTED
○ VACANCY SENSING SWITCH, PIR, 0-10V DIMMING	48" / 1200MM AFF UNLESS NOTED
○ 12V REMOTE DUAL BACKUP LIGHT	WALL MOUNT, 7" / 2130MM AFF OR AS INDICATED
○ NON-PROGRAMMABLE THERMOSTAT	60" / 1500MM AFF
○ REVERSE THERMOSTAT	60" / 1500MM AFF

