















































PLUMBING FIXTURE SCHEDULE

Item	Type	Connection Sizes				Fixture		Trim		Accessories		
		HW	CW	TW	Drain	Vent	Acceptable Manufacturer	Fixture Description	Acceptable Manufacturer	Trim Description	Acceptable Manufacturer	Accessory Description
WC-1	WATER CLOSET FLUSH VALVE HANDS FREE (BATTERY)		1		3	1 1/2	AMERICAN STANDARD MADERA 2234-001 KOHLER WELLCOMME K-4350 MANSFIELD BALTIC 1311NS ZURN Z5655-BWL	VITREOUS CHINA, SIPHON JET, ELONGATED RIM, TOP SPUD FOR FLUSH VALVE, BOLT CAP, BOTTOM OUTLET, FLOOR-MOUNTED, 10" OR 12" ROUGH-IN, MIN 2" TRAP WAY, MAXIMUM 6 litres (1.6 gal) PER FLUSH.	DELTA 81T201BT ZURN SLOAN	EXPPOSED, POLISHED CHROME PLATED, SENSOR OPERATED DIAPHRAGM TYPE FLUSH VALVE WITH SEAT BUMPER, 25mm (1") SCREWDRIVER ANGLE STOP, MOTORIZED ACTUATOR, AUTOMATIC SENSOR WITH MANUAL PUSH BUTTON OVERRIDE, VACUUM BREAKER ADJUSTABLE TAIL PIECE, OPTIONAL 24 HR COURTESY FLUSH, FLUSH CONNECTION & COUPLING FOR 40mm (1 1/2") TOP SPUD WITH 11 1/2" TALL OUTLET TUBE, WALL AND SPUD ESCUTCHEONS, BATTERY OPERATED C/W 4 'AA' CELL BATTERIES, SENSOR BOX C/W COVER, VANDAL RESISTANT SCREWS, FLUSH CYCLE SET FOR 6.0 LITRE (1.6 GAL) PER FLUSH.	SEAT: BEMIS 1955C CENTOCO	SEAT: BLACK, ELONGATED, OPEN FRONT, LESS COVER, MOLDED SOLID PLASTIC, STAINLESS STEEL CHECK HINGES, STAINLESS STEEL OR SOLID BRASS INSERT POST.
WC-2	BARRIER FREE WATER CLOSET FLUSH VALVE, 16" HIGH, HANDS FREE (BATTERY)		1		3	1 1/2	AMERICAN STANDARD MADERA 3043.001 KOHLER HIGHCREST K-4302 MANSFIELD ADRIATIC 1319 ZURN ECO VANTAGE Z5665-BWL	BARRIER FREE, 16" TALL TO RIM, VITREOUS CHINA, SIPHON JET, ELONGATED RIM, TOP SPUD FOR FLUSH VALVE, BOLT CAP, BOTTOM OUTLET, FLOOR-MOUNTED, 12" ROUGH-IN, MIN 2" TRAP WAY, MAXIMUM 6 litres (1.5 gal) PER FLUSH.	DELTA 81T221BT ZURN SLOAN	EXPPOSED, POLISHED CHROME PLATED, SENSOR OPERATED DIAPHRAGM TYPE FLUSH VALVE WITH SEAT BUMPER, 25mm (1") SCREWDRIVER ANGLE STOP, MOTORIZED ACTUATOR, AUTOMATIC SENSOR WITH MANUAL PUSH BUTTON OVERRIDE, VACUUM BREAKER ADJUSTABLE TAIL PIECE, OPTIONAL 24 hr COURTESY FLUSH, FLUSH CONNECTION & COUPLING FOR 40mm (1 1/2") TOP SPUD WITH 24" TALL OUTLET TUBE, WALL AND SPUD ESCUTCHEONS, BATTERY OPERATED C/W 4 'AA' CELL BATTERIES, SENSOR BOX C/W COVER, VANDAL RESISTANT SCREWS, FLUSH CYCLE SET FOR 6.0 litre (1.6 gal) PER FLUSH.	SEAT: BEMIS 1950 CENTOCO	SEAT: BLACK, ELONGATED, OPEN FRONT WITH COVER, MOLDED SOLID PLASTIC, STAINLESS STEEL CHECK HINGES, STAINLESS STEEL OR SOLID BRASS INSERT POST.
U-1	URINAL WITH FLUSHING SYSTEM	3/4			2	1 1/2	AMERICAN STANDARD WASHBROOK 6515.005 KOHLER BARDON K-4904-ER ZURN Z5760	VITREOUS CHINA, WASHOUT TYPE, INTEGRAL FLUSHING RIM, EXTENDED SHIELDS, INTEGRAL TRAP, BACK OUTLET, WALL-MOUNTED, BACK SUPPLY SPUD, MIN 2" TRAP WAY, MAXIMUM 1.9 litres (0.5 gal) PER FLUSH. C/W FLOOR MOUNTED CARRIER PROVIDE 400 mm (16") LONG x 20ø (3/4"), STAINLESS STEEL FLEXIBLE SUPPLY CONNECTOR		REFER TO SPEC FOR AUTOMATIC URINAL FLUSHING SYSTEM. PROVIDE FLOOR MOUNTED WALL CARRIER.		
WF-1	B.F. WASH FOUNTAIN (4 USERS)	1/2	1/2		1 1/2	1 1/4	BRADLEY SENTRY SN2024-A-IR-STD-TMA-NSD-BS	BARRIER FREE SEMI-CIRCULAR STAINLESS STEEL BOWL. ALL EXPOSED COMPONENTS TO BE STAINLESS STEEL. SUITABLE FOR FOUR (4) USERS. STANDARD PEDESTAL HEIGHT. C/W BACKSPASH. TRIM: INFRARED CONTROLLED, AT EACH INDIVIDUAL USER, MOLDED SPRAYHEAD, STOP VALVES, HORIZONTAL SWING CHECK VALVES. THERMOSTATIC MIXING VALVE PRESET AT 40°C. NO SOAP DISPENSER. SUITABLE FOR 120 V/1/60 COMPLETE WITH CLASS II 120/24V PLUG IN TRANSFORMER. COLOUR BY ARCHITECT.				
WF-2	B.F. WASH FOUNTAIN (3 USERS)	1/2	1/2		1 1/2	1 1/4	BRADLEY SENTRY SN2023-A-IR-STD-TMA-NSD-BS	BARRIER FREE SEMI-CIRCULAR STAINLESS STEEL BOWL. ALL EXPOSED COMPONENTS TO BE STAINLESS STEEL. SUITABLE FOR THREE (3) USERS. STANDARD PEDESTAL HEIGHT. C/W BACKSPASH. TRIM: INFRARED CONTROLLED, AT EACH INDIVIDUAL USER, MOLDED SPRAYHEAD, STOP VALVES, HORIZONTAL SWING CHECK VALVES. THERMOSTATIC MIXING VALVE PRESET AT 40°C. NO SOAP DISPENSER. SUITABLE FOR 120 V/1/60 COMPLETE WITH CLASS II 120/24V PLUG IN TRANSFORMER. COLOUR BY ARCHITECT.				
L-1	BARRIER FREE WALL HUNG LAV FAUCET HANDS FREE (BATTERY)	1/2	1/2		1 1/4	1 1/4	AMERICAN STANDARD MURRO 0955-001EC KOHLER BRENHAM K-1997 ZURN Z5344	WALL-HUNG SINK, VITREOUS CHINA, WITH SPLASH LIP, SINGLE CENTER SUPPLY OPENING, OVERFLOW. SIZE: 559 mm x 540 mm (22 x 21 1/4"). C/W SHROUD/KNEE CONTACT GUARD	DELTA 591T1256 MOEN COMMERCIAL ZURN	BATTERY ELECTRONIC PROXIMITY SENSING FAUCET. CAST BRASS ONE PIECE BODY. ADJUSTABLE SENSING RANGE AND TIME OUT, CHROME FINISH. VANDAL RESISTANT AERATOR HAVING INTEGRAL FLOW CONTROL FOR 0.5gpm (1.9 l/min) @ 413 kPa (60 psf) MAX. UNDER COUNTER PLASTIC SURFACE MOUNTED HOUSING WITH FLUSH STAINLESS STEEL COVER FOR SOLENOID AND CONTROLLER. SENSOR ACTIVATES IN PRESENCE OF PERSON'S HANDS IN LAVATORY. USES FOUR 'AA' CELL BATTERIES.		WASTE FITTING: NPS 32 MM (1¼") OFFSET WASTE WITH OPEN GRID STRAINER. PROVIDE FLOOR MOUNTED WALL CARRIER PROVIDE SHROUD/KNEE CONTACT GUARD
SH-1	BARRIER FREE SHOWER ROUGHIN	1/2	1/2				PIPING ROUGHIN ONLY					
FD-1	FLOOR DRAIN				NOTED	1 1/2	ZURN ZN415B MIFAB F1100-C CONTOUR C2000-R6 WATTS FD-100-C-A	GENERAL DUTY CAST IRON BODY, ADJUSTABLE HEAD, NICKEL BRONZE STRAINER, INTEGRAL SEEPAGE PAN, AND CLAMPING COLLAR. USE SQUARE STRAINER IN TILED AREAS AND ROUND STRAINER ELSEWHERE. C/W TRAP PRIMER				

MECHANICAL LEGEND

Item	Description	Item	Description
-----	ITEM TO BE REMOVED		STRAINER
	CUT EXISTING & CONNECT NEW PIPING		SCREWED OR WELDED PIPE CAP
	POTABLE COLD WATER		BALL VALVE
	POTABLE HOT WATER		PENDENT HEAD
	POTABLE HOT WATER RECIRC.		UPRIGHT PENDENT HEAD
	EXISTING SAN ABOVE FLOOR		SIDEWALL HEAD
	EXISTING SAN BELOW FLOOR		FIRE HOSE CABINET
	SANITARY ABOVE FLOOR		RECESSED CABINET MOUNTED FIRE EXTINGUISHER
	SANITARY BELOW FLOOR		WALL MOUNTED FIRE EXTINGUISHER
	EXISTING STM ABOVE FLOOR		FLOOR CLEANOUT
	EXISTING STM BELOW FLOOR		LINE CLEANOUT
	VENT		THERMOSTAT (WITH GUARD WHERE INDICATED)
	SPRINKLER		SUPPLY AIR DUCT
	HEATING WATER SUPPLY		RETURN/EXHAUST AIR DUCT
	HEATING WATER RETURN		ACOUSTIC DUCT LINING
	FLOOR DRAIN		BALANCING DAMPER
	TRAP PRIMER		FIRE/SMOKE DAMPER
	TEE CONNECTION		BACK DRAFT DAMPER
	PIPE DOWN		RECTANGULAR DUCTWORK
	PIPE UP		RIGID ROUND DUCT
	FLEXIBLE CONNECTION		DIFFUSER/GRILLE SIZE (imp), TYPE & CAPACITY (cfm)
	REDUCER/INCREASER		HYDRONIC HEATING SIZE, TYPE & CAPACITY
	CHECK VALVE		EXISTING DUCT (SIZE AS INDICATED)
	UNION		

GENERAL NOTES

- A. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PREPARED SPECIFICATION.
- B. SANITARY VENT PIPING IS NOT SHOWN. PROVIDE ALL NECESSARY VENT PIPING FROM ALL FIXTURES FOR A COMPLETE SYSTEM TO ALL LOCAL PLUMBING CODE & LOCAL AUTHORITY REQUIREMENTS, CONNECTED TO EXISTING VENTS OR NEW VENTS AS REQUIRED. CO-ORDINATE VENT LOCATION(S) WITH GENERAL CONTRACTOR. MAINTAIN MIN 14"-0" FROM ANY AIR INLET. INSTALL VENT PIPING HIGH IN JOIST SPACE.
- C. UPON COMPLETION OF THE PROJECT THE CONTRACTORS SHALL PROVIDE THE FOLLOWING CERTIFICATES BEFORE 15% FINALANCE LETTERS ARE ISSUED BY THE CONSULTANT:
- POTABLE WATER TEST (SEE SPEC 15-042/22 11 16 PART 3)
 - BACKFLOW TEST CERTIFICATE(S) FOR ALL TESTABLE DEVICES
 - COPY OF MANDATORY TSSA/CSA-B149 GAS PRESSURE TEST TAG
 - GAS LEAKAGE CERTIFICATE OF AUTHORIZATION FOR SPLIT AIR CONDITIONING SYSTEMS (EXCEEDING 5 TONS)
- ALL CERTIFICATES ARE TO BE SUBMITTED TOGETHER IN A SINGLE PACKAGE.

GRILLE SCHEDULE

Item	Type	Equalizing Grid	Volume Damper	Acceptable Manufacturer	Description
D1	SQUARE CEILING DIFFUSER	YES	NONE	EH PRICE SCDA	MULTICONE, FULLY ADJUSTABLE, 24x24, STEEL CEILING DIFFUSER W/ROUND NECK. SUITABLE FOR LAY-IN T-BAR CEILING, OR DRYWALL CEILING WHEN C/W FRAME. PROVIDE FIRE STOP FLAP & FIRE BLANKET.
R1	CEILING RETURN GRILLE (NON-DUCTED)	NO	NONE	EH PRICE 80-CH	1/2x1/2x1/2 ALUMINUM EGGRATE CORE, C/W CHANNEL BORDER FOR LAY-IN T-BAR CEILING.
E1	EXHAUST GRILLE (DUCTED)	NO	NONE	EH PRICE 80-FA	1/2x1/2x1/2 ALUMINUM EGGRATE CORE, C/W 1 1/4" FLAT BORDER & SCREWED FASTENING FOR SURFACE MOUNTING.

GENERAL DIFFUSER/GRILLE NOTES:

1. ACCEPTABLE MANUFACTURERS: EH PRICE, NAILOR, TITUS, KRUEGER, CARNES, METALAIRE, TUTTLE & BAILEY
2. GRILLE COLOURS ARE SELECTED BY ARCHITECT FROM STANDARD COLOUR CHART, UNLESS OTHERWISE NOTED
3. PAINT INTERIOR OF DUCTWORK BEHIND GRILLE MATT BLACK (WHERE VISIBLE THRU GRILLE).

HYDRONIC HEATING COMPONENT SCHEDULE

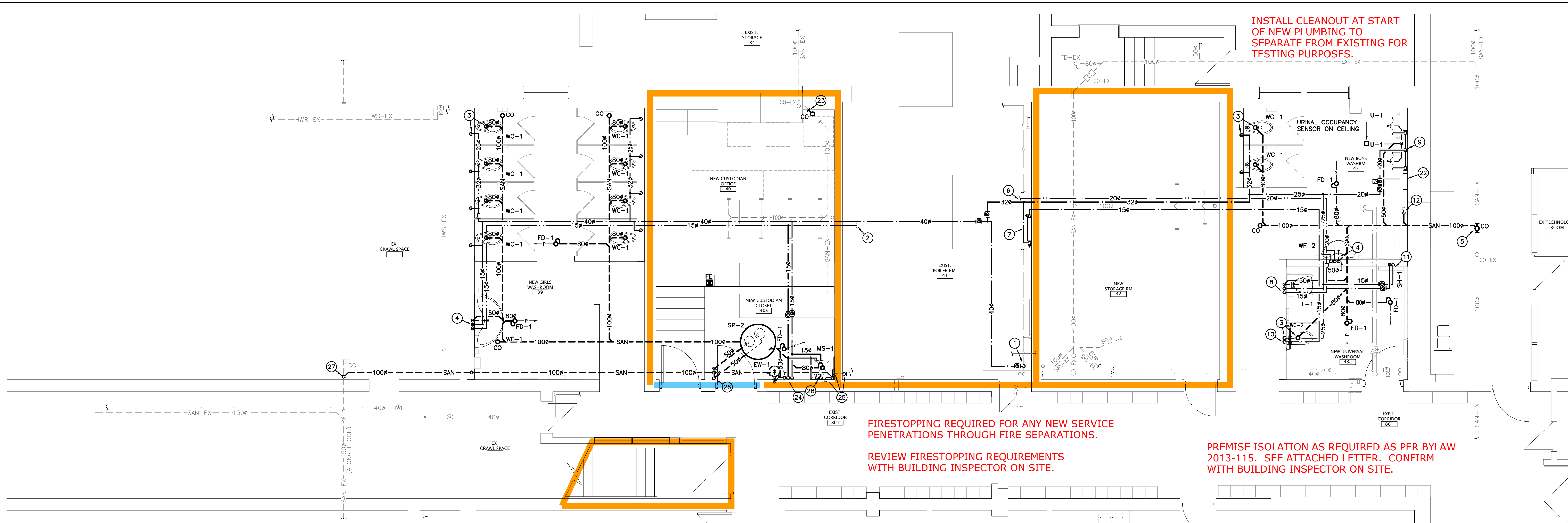
Item	Type	Acceptable Manufacturer	Description
H1	CONVECTOR	ENG-A C-3W	16ga STEEL CABINET WITH ALL MOUNTING HARDWARE. ELEMENT TO BE 4x4 ALUMINUM FINNS ON 1/2" COPPER TUBE WITH 50 FINNS/FT. PROVIDE STAMPED GRILLES ON FRONT INLET & OUTLET. SURFACE MOUNTED ON WALL WITH TOP OF UNIT AT 42" AFF. MANUAL CONTROL W/ DAMPER & OPERATOR
H2	RADIANT CEILING PANEL	ENG-A AIRTEX HEF-2	EXTRUDED ALUMINUM PANEL WITH EXPOSED TEXTURED FACE AND CONTINUOUS ALUMINUM SADDLES ON BACK TO HOLD 1/2" COPPER TUBING BONDED TO SADDLE. PANEL FINISH COMPLETED IN FACTORY (NO FIELD APPLIED PAINT). PANEL SUITABLE FOR T-BAR INSTALLATION.

GENERAL HEATING COMPONENT NOTES:

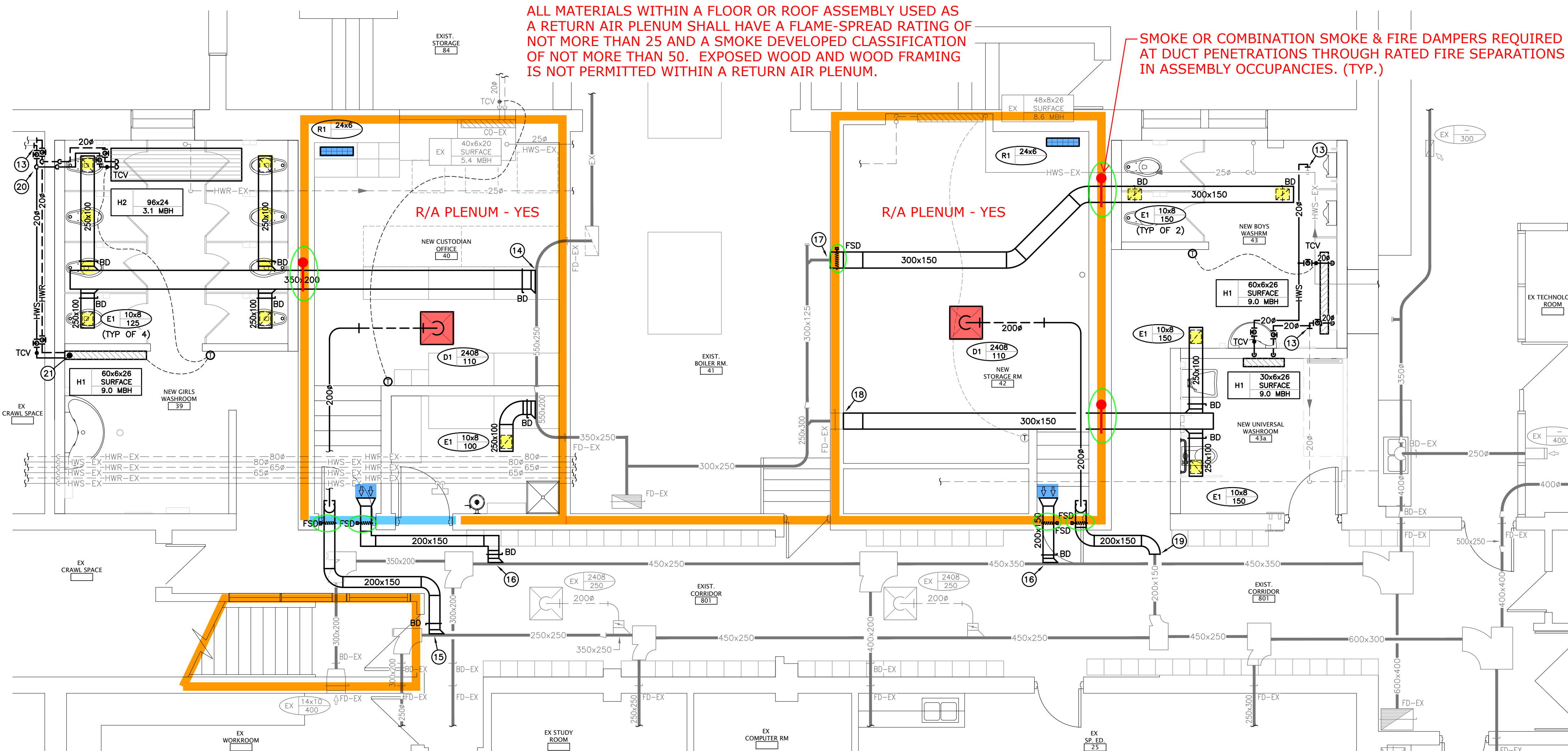
SUMP PUMP SCHEDULE

Item	Type	Capacity US/gpm	Head ft	Size hp	Speed rpm	Electrical Voltage	Manufacturer & Model	Remarks
SP-2	SANITARY SUMP PUMP — DUPLEX	20	35	202	3450	208/3/60	MYERS WGL20	DUPLEX PUMPS TO BE COMPLETE WITH CONTROL PANEL, FLOATS, HIGH LEVEL ALARM WITH AUDIBLE SIGNAL AND TEST BUTTON. PROVIDE 36" DIAMETER FIBERGLASS SUMP WITH SEALED HEAVY DUTY LID.

[illegible]



LOWER LEVEL PART PLAN - PLUMBING & DRAINAGE
SCALE: 1:50



LOWER LEVEL PART PLAN - HEATING & VENTILATION
SCALE: 1:50

- ### GENERAL RENOVATION NOTES
- CONNECT NEW 40# CW TO EXISTING 40# CW MAIN AND EXTEND TO SERVE NEW FIXTURES.
 - CONNECT NEW 15# HW TO EXISTING SUITABLE HW SOURCE IN BOILER ROOM C/W ISOLATION VALVE AND EXTEND TO SERVE NEW FIXTURE.
 - 80# SAN IN FLOOR AND 15# CW DN IN WALL SERVING WATER CLOSET (TYP.).
 - 15# H&CW & 50# SAN SERVING WASH FOUNTAIN.
 - CONNECT NEW 100# SAN TO EXISTING SAN MAIN BELOW FLOOR C/W NEW CLEANOUT.
 - CONNECT NEW 15# HW AND 25# CW TO EXISTING SUITABLE H&CW SOURCES IN BOILER ROOM C/W ISOLATION VALVES AND EXTEND TO SERVE NEW FIXTURES.
 - NEW 15# CW ROUTE TO RP BACKFLOW DEVICE. ROUTE CW BACK TO W/R'S FOR FUTURE BIDET. MOUNT RP BFD ON WALL WITHIN 1200MM AFF. PIPE DRAIN TO MS. LOCATE RP ON SUITABLE WALL SURFACE IN ROOM.
 - 15# H&CW & 50# SAN SERVING LAV.
 - 32# CW HEADER IN CHASE SERVING URINALS. 20# CW FROM HEADER TO EACH URINAL C/W URINAL FLUSHING MATRIX.
 - 15# CW DN TO CW ROUGHIN FOR FUTURE BIDET SEAT. PROVIDE STOP.
 - 15# H&CW DN SERVING SHOWER.
 - CONNECT NEW SAN TO EXISTING SAN DN FROM FLOOR ABOVE AND EXTEND DN BELOW FLOOR IN CHASE TO NEW SAN BELOW FLOOR. SIZE OF NEW SAN TO MATCH EXISTING.
 - CONNECT NEW 20# HWS OR HWR TO EXISTING CUT CONNECTION AND EXTEND TO NEW HEATER.
 - CONNECT NEW 350x200 EXH DUCT TO EXISTING EXH DUCT AND EXTEND AS INDICATED.
 - CONNECT NEW 200x150 SA DUCT C/W BALANCING DAMPER TO EXISTING SA MAIN AND EXTEND AS INDICATED.
 - CONNECT NEW 200x150 RA DUCT C/W BALANCING DAMPER TO EXISTING RA MAIN AND EXTEND AS INDICATED.
 - CONNECT NEW 300x150 EXH DUCT TO EXISTING EXH DUCT CONNECTION C/W FIRE DAMPER THRU BOILER ROOM WALL AND TRANSITION AS REQUIRED AND EXTEND AS INDICATED.
 - CONNECT NEW 300x150 EXH DUCT TO EXISTING EXH DUCT CONNECTION C/W TRANSITION AS REQUIRED AND EXTEND AS INDICATED.
 - CONNECT NEW 200x150 SA DUCT TO EXISTING CUT CONNECTION AND EXTEND AS INDICATED.
 - PROVIDE ISOLATION VALVES AND BALANCING VALVE ON HWS/R RISERS SERVING RADIANT PANEL.
 - PROVIDE ISOLATION VALVES AND BALANCING VALVE SERVING CONNECTOR WITHIN CABINET.
 - URINAL CONTROL PANEL MOUNTED ON WALL ABOVE CEILING.
 - PROVIDE CLEANOUT ON END OF EXISTING SAN BELOW FLOOR.
 - 15# H&CW DN TO MIXING VALVE ON WALL. 15# TW UP TO EYEWASH.
 - CONNECT NEW SAN TO EXISTING CUT CONNECTIONS AND ROUTE AS INDICATED. SAN TO BE ROUTED AS HIGH AS POSSIBLE THRU ROOMS. SIZE TO MATCH EXISTING.
 - 285# PD FROM SANITARY SUMP UP IN CORNER OF ROOM AND DISCHARGED INTO TOP OF ABOVE GRADE SAN MAIN.
 - CONNECT NEW 100# SAN TO EXISTING SAN ABOVE GRADE.
 - 15# H&CW DN ALONG WALL TO SERVE MOP SINK.

PROJECT NORTH	
<p>DEI Consulting Engineers MECHANICAL ELECTRICAL PLUMBING</p> <p>55 Northland Road, Waterloo, ON N2V 1Y8 Phone: 519-745-5555 Fax: 519-745-9315 Website: deiconsulting.ca Project Number: 20253</p>	
<p>L.J. DEMETER 11114-108 PROVINCE OF ONTARIO</p>	
<p>SUNNYSIDE PUBLIC SCHOOL HVAC & WASHROOM UPGRADE</p> <p>1042 Weber Street E. Kitchener, ON N2A 1B6</p>	
DRAWING TITLE: LOWER LEVEL PART PLANS RENOVATION	
PROJECT NO: A20002.7	SCALE: AS NOTED
DRAWN: AH	DRAWING NO.: REV.
CHECKED: AH	M301
DATE: FEB 2021	



The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain necessary clearance for service from Consultant before commencement of the work.

The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

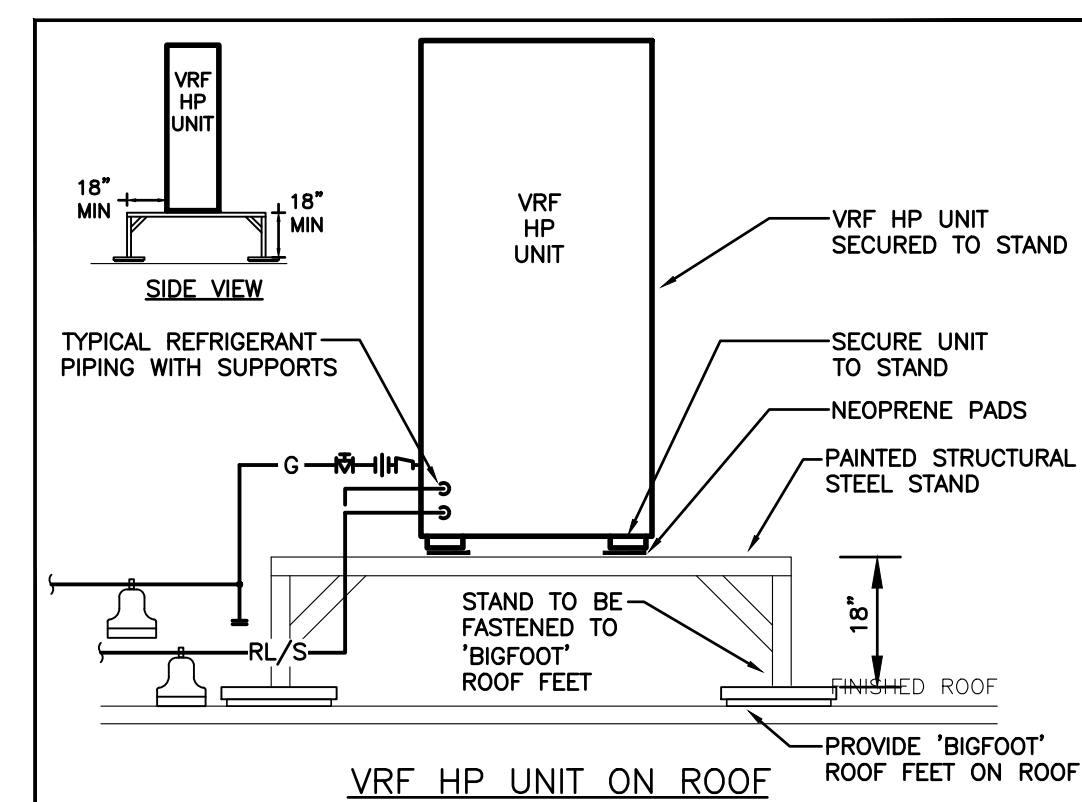
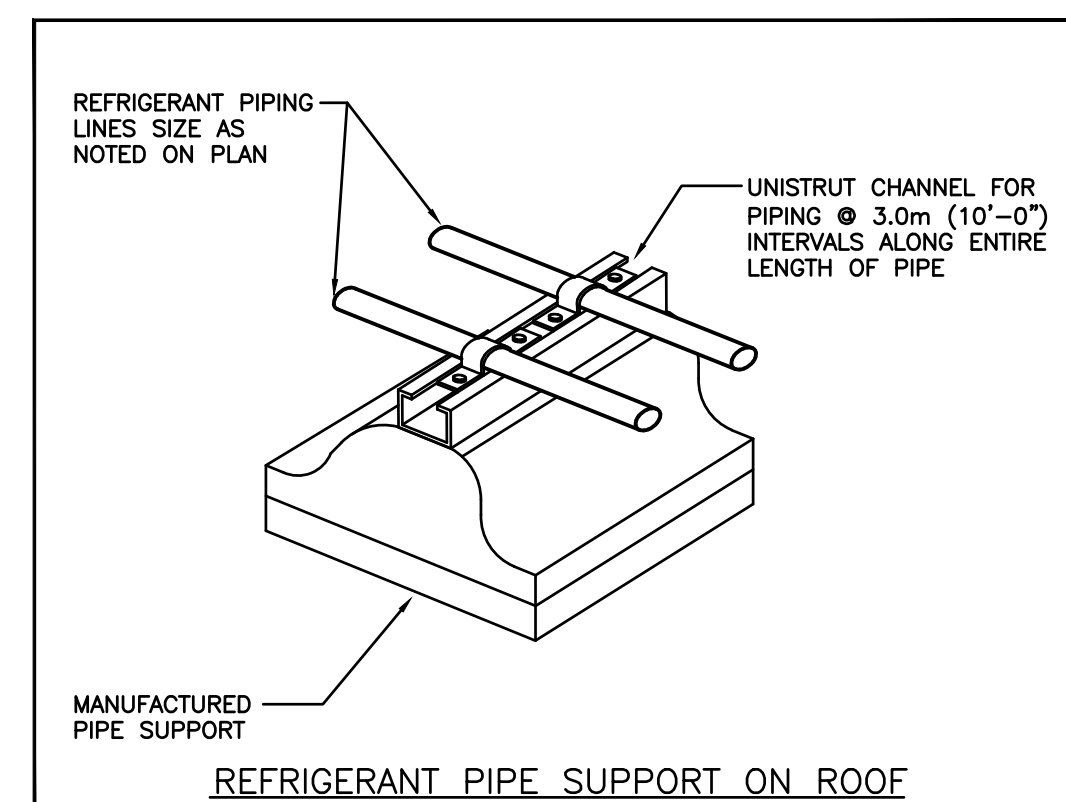
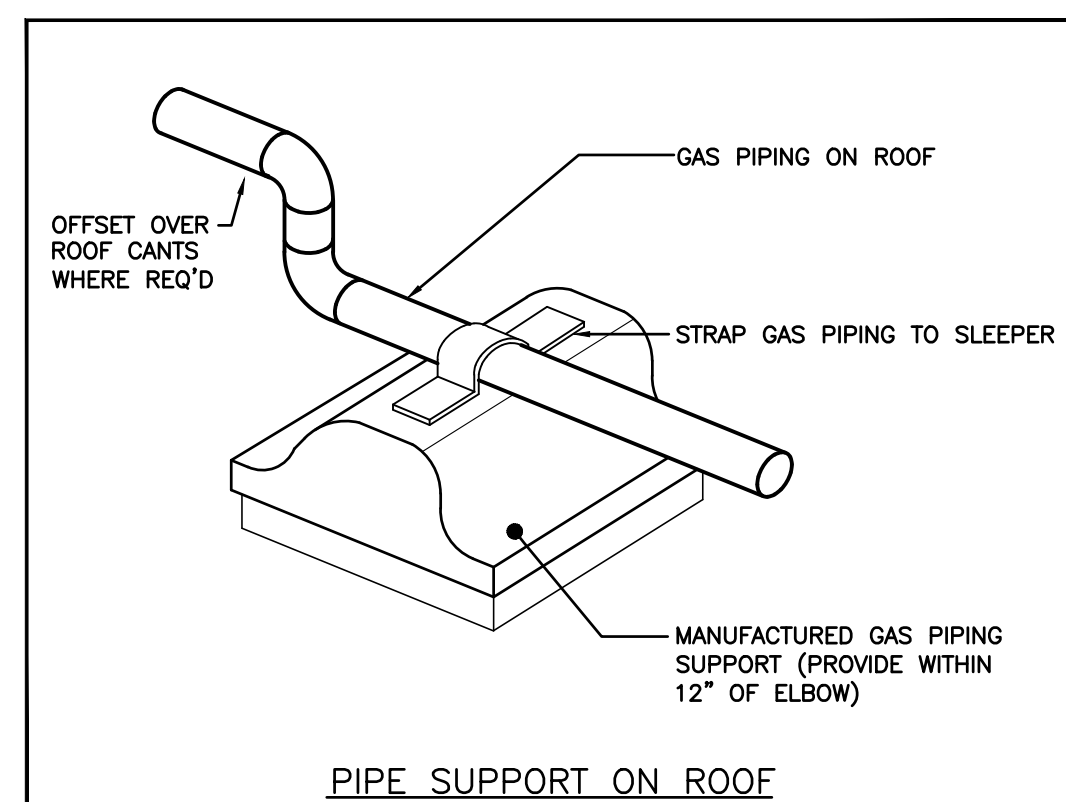
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DRAWING TITLE:		
SECOND FLOOR PLAN		
PROJECT NO: A20002.7	SCALE: AS NOTED	
DRAWN: AH	DRAWING NO:	REV.
CHECKED: AH	M403	
DATE: FEB 2021		



The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval of the Consultant for any change of service from Consultant before commencement of the work.

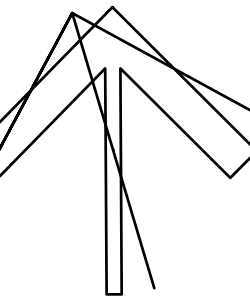
The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

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PROJECT NORTH



DRAWING TITLE:

ROOF PLAN

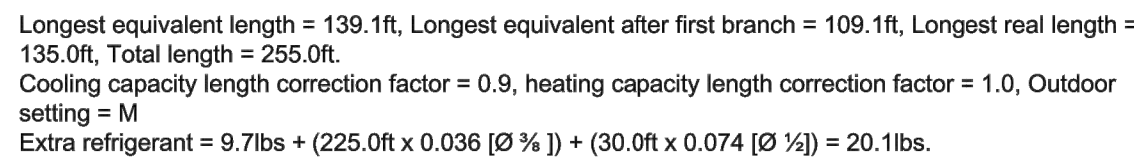
PROJECT NO: A20002.7	SCALE: AS NOTED	
DRAWN: AH	DRAWING NO: M404	REV.
CHECKED: AH		
DATE: FEB 2021		

VRF AC UNIT SCHEDULE																	
Item	Model Number	Type	Quantity	Nominal Capacity (BTU/h)		Room Design Temp.(Return Air Temp.)(°F)		Air flow rate (CFM)	Piping Connections (inch)		Power				Remarks		
				Cooling	Heating	Cooling DB	Cooling WB		Heating DB	Liquid	Gas	Volts	Phase	Hz		MCA	
RF-1.1	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-1.2	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-1.3	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-1.4	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-1.5	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-2.1	FXMQ72M	DUCTED CEILING	1	72000	81000	75.0	67.1	72.0	1784/2047	3/8	3/4	208/230V	1Ph	60Hz	9.5	C/W ACCESSORY PUMP DACA-CP1-1 & RA FILTER KIT	
RF-2.2	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-2.3	FXAQ09P	WALL MOUNTED	1	9500	10500	75.0	67.1	72.0	175/280	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-2.4	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	742/1218	3/8	5/8	208/230V	1Ph	60Hz	1.8		
RF-2.5	FXFQ48T	CEILING CASSETTE	1	48000	54000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-3.1	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-3.2	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-3.3	FXAQ07P	WALL MOUNTED	1	7500	8500	75.0	67.1	72.0	671/1112	1/4	1/2	208/230V	1Ph	60Hz	1.3	C/W ACCESSORY PUMP DACA-CP1-1	
RF-3.4	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-3.5	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	160/260	3/8	5/8	208/230V	1Ph	60Hz	0.4		
RF-3.6	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-3.7	FXAQ09P	WALL MOUNTED	1	9500	10500	75.0	67.1	72.0	175/280	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-4.1	FXAQ12P	WALL MOUNTED	1	12000	13500	75.0	67.1	72.0	180/290	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-4.2	FXAQ12P	WALL MOUNTED	1	12000	13500	75.0	67.1	72.0	180/290	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-4.3	FXAQ18P	WALL MOUNTED	1	18000	20000	75.0	67.1	72.0	400/500	1/4	1/2	208/230V	1Ph	60Hz	0.5	C/W ACCESSORY PUMP DACA-CP1-1	
RF-4.4	FXUQ36P	CEILING SUSPENDED	1	36000	40000	75.0	67.1	72.0	742/1095	3/8	5/8	208/230V	1Ph	60Hz	1.4		
RF-4.5	FXAQ07P	WALL MOUNTED	1	7500	8500	75.0	67.1	72.0	160/260	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-4.6	FXAQ09P	WALL MOUNTED	1	9500	10500	75.0	67.1	72.0	175/280	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-4.7	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-4.8	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-4.9	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-5.1	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-5.2	FXAQ07P	WALL MOUNTED	1	7500	8500	75.0	67.1	72.0	160/260	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-5.3	FXAQ07P	WALL MOUNTED	1	7500	8500	75.0	67.1	72.0	160/260	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-5.4	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-5.5	FXFQ48T	CEILING CASSETTE	1	48000	54000	75.0	67.1	72.0	742/1218	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-6.1	FXUQ18P	CEILING SUSPENDED	1	18000	20000	75.0	67.1	72.0	565/795	1/4	1/2	208/230V	1Ph	60Hz	0.6		
RF-6.2	FXFQ15T	CEILING CASSETTE	1	15000	17000	75.0	67.1	72.0	388/512	1/4	1/2	208/230V	1Ph	60Hz	0.4		
RF-6.3	FXAQ07P	WALL MOUNTED	1	7500	8500	75.0	67.1	72.0	160/260	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-6.4	FXAQ07P	WALL MOUNTED	1	7500	8500	75.0	67.1	72.0	160/260	1/4	1/2	208/230V	1Ph	60Hz	0.4	C/W ACCESSORY PUMP DACA-CP1-1	
RF-6.5	FXFQ30T	CEILING CASSETTE	1	30000	34000	75.0	67.1	72.0	671/1112	3/8	5/8	208/230V	1Ph	60Hz	1.3		
RF-6.6	FXAQ24P	WALL MOUNTED	1	24000	27000	75.0	67.1	72.0	470/635	3/8	5/8	208/230V	1Ph	60Hz	0.6	C/W ACCESSORY PUMP DACA-CP1-1	
RF-6.7	FXAQ18P	WALL MOUNTED	1	18000	20000	75.0	67.1	72.0	400/500	1/4	1/2	208/230V	1Ph	60Hz	0.5	C/W ACCESSORY PUMP DACA-CP1-1	

[illegible]



Piping diagram for GHP_1 (NNCP144J): 104%



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Longest equivalent length = 111.7ft, Longest equivalent after first branch = 81.7ft, Longest real length = 105.1ft, Total length = 125.6ft.
Cooling capacity length correction factor = 1.0, heating capacity length correction factor = 1.0, Outdoor setting = M
Extra refrigerant = 12.6lbs + (5.1ft x 0.015 [Ø ¼]) + (80.5ft x 0.036 [Ø ¾]) + (10.0ft x 0.074 [Ø 1½]) + (30.0ft x 0.114 [Ø 2"]) = 19.8lbs.

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Longest equivalent length = 143.3ft, Longest equivalent after first branch = 133.3ft, Longest real length = 135.1ft, Total length = 195.9ft.
Cooling capacity length correction factor = 0.9, heating capacity length correction factor = 1.0, Outdoor setting = M
Extra refrigerant = $12.6\text{lbs} + (10.3\text{ft} \times 0.015 [\text{Ø } \frac{1}{4}]) + (115.6\text{ft} \times 0.036 [\text{Ø } \frac{3}{8}]) + (60.0\text{ft} \times 0.074 [\text{Ø } \frac{1}{2}]) + (10.0\text{ft} \times 0.114 [\text{Ø } \frac{3}{4}]) = 22.5\text{lbs}.$

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Page 12



Longest equivalent length = 131.7ft, Longest equivalent after first branch = 101.7ft, Longest real length = 125.1ft, Total length = 266.2ft.
Cooling capacity length correction factor = 0.9, heating capacity length correction factor = 1.0, Outdoor setting = M
Extra refrigerant = 12.6lbs + (25.6ft x 0.015 [Ø %]) + (210.5ft x 0.036 [Ø %]) + (30.0ft x 0.114 [Ø %]) = 24.0lbs.

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Longest equivalent length= 100.0ft, Longest equivalent after first branch = 70.0ft, Longest real length = 95.1ft, Total length = 125.6ft.
Cooling capacity length correction factor = 1.0, heating capacity length correction factor = 1.0, Outdoor setting = R
Extra refrigerant = 9.7lbs + (10.3ft x 0.015 [Ø ¼"]) + (85.4ft x 0.036 [Ø ¾"]) + (30.0ft x 0.074 [Ø ½"]) = 15.2lbs.

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Longest equivalent length = 131.7ft, Longest equivalent after first branch = 101.7ft, Longest real length = 125.1ft, Total length = 195.9ft.
Cooling capacity length correction factor = 0.9, heating capacity length correction factor = 1.0, Outdoor setting = M
Extra refrigerant = 9.7lbs + (25.6ft x 0.015 [Ø ¼"]) + (140.3ft x 0.036 [Ø ½"]) + (30.0ft x 0.074 [Ø ¾"]) = 17.4lbs.

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The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval of any change of service from Consultant before commencement of the work.

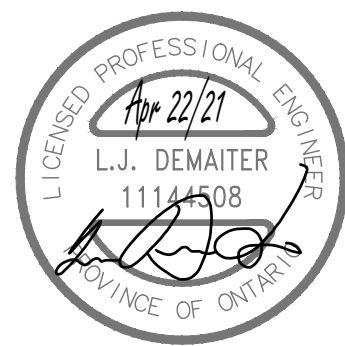
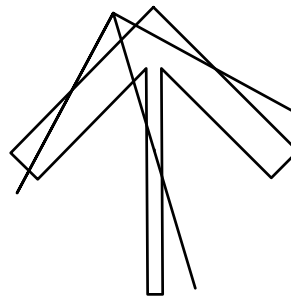
The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

Drawings, specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant.

Do not scale this drawing.

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PROJECT NORTH



SUNNYSIDE
PUBLIC SCHOOL
HVAC & WASHROOM UPGRADE

1042 Weber Street E.
Kitchener, ON
N2A 1B6

DRAWING TITLE

VRF SYSTEM PIPING SCHEMATICS

PROJECT NO:

A20002.7

DRAWN

CHECKED

AH

DATE:

SCALE:

AS NOTED

DRAWING NO:	
-------------	--

14500

M504

1

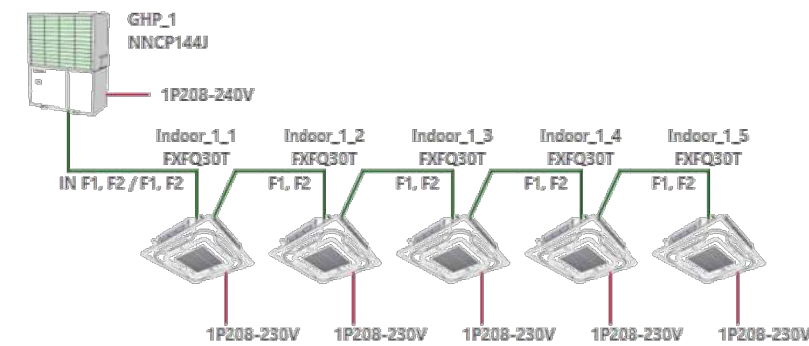




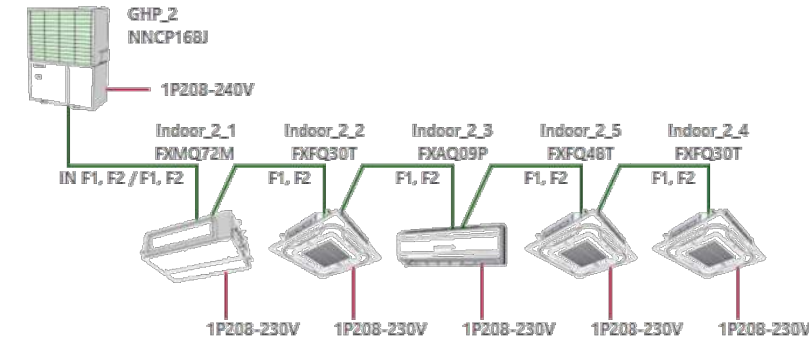
Yanmar_SmartSelect Report

Wiring diagram

Wiring diagram for GHP_1 (NNCP144J): 104%



Wiring diagram for GHP_2 (NNCP168J): 113%



Wiring diagram for GHP_3 (NNCP168J): 99%

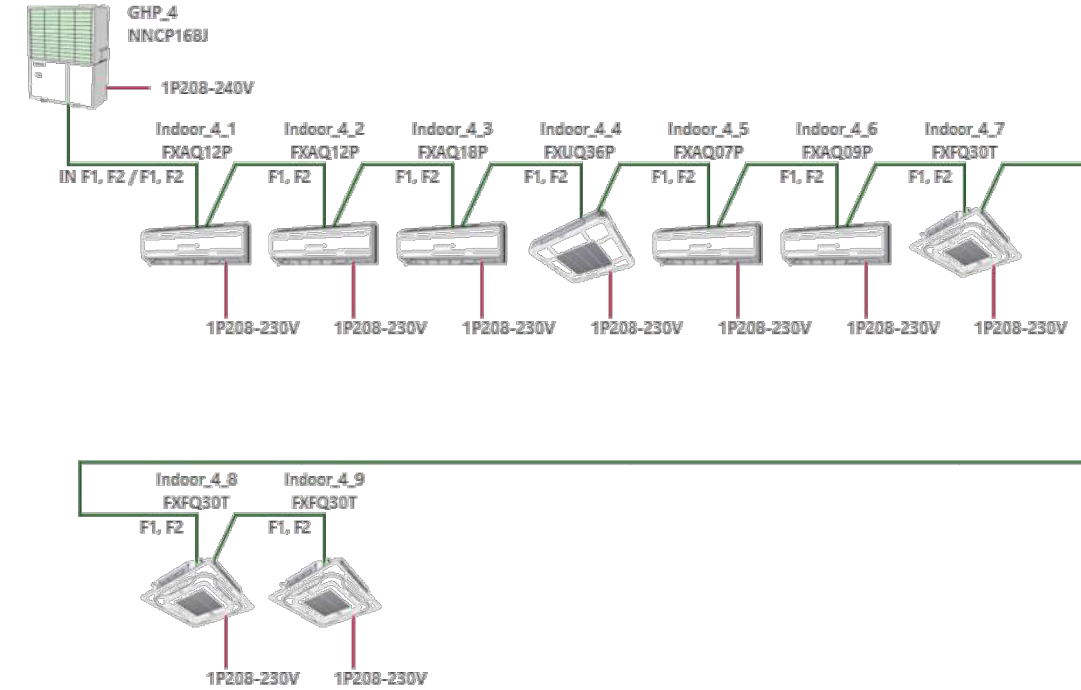
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Yanmar_SmartSelect Report

Wiring diagram for GHP_4 (NNCP168J): 110%



Wiring diagram for GHP_5 (NNCP120J): 102%

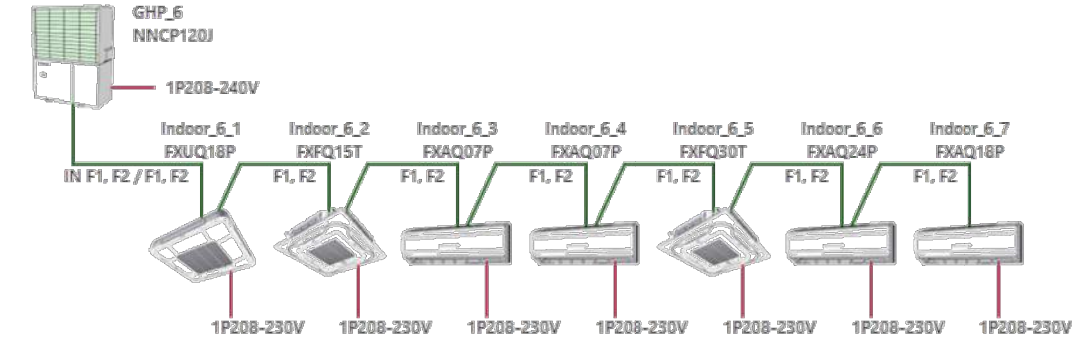
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Yanmar_SmartSelect Report

Wiring diagram for GHP_6 (NNCP120J): 100%



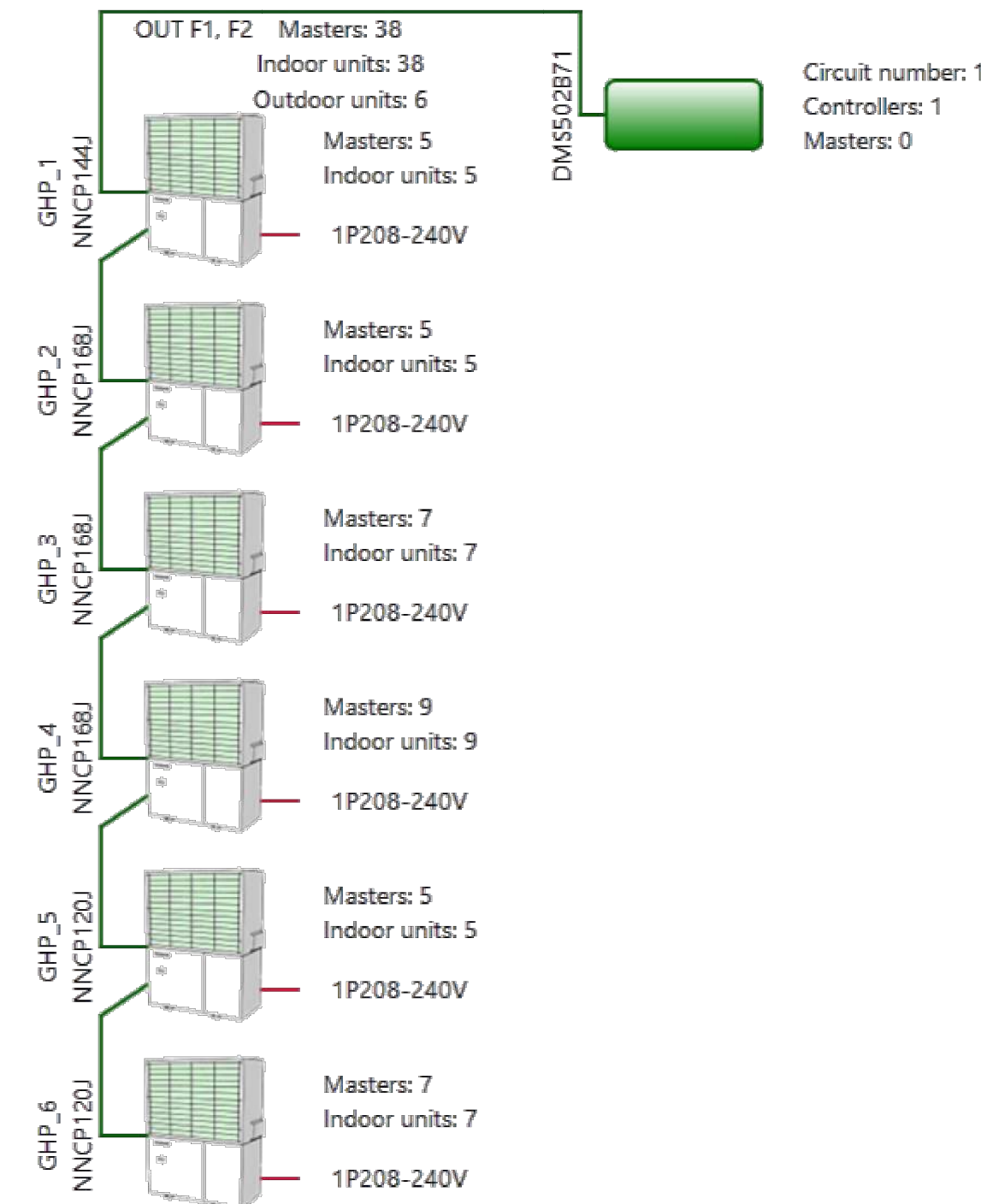
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Yanmar_SmartSelect Report

Central wiring diagram

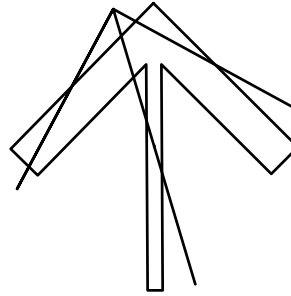


Option list

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PROJECT NORTH



SUNNYSIDE
PUBLIC SCHOOL
HVAC & WASHROOM UPGRADE
1042 Weber Street E.
Kitchener, ON
N2A 1B6

DRAWING TITLE:

VRF SYSTEM WIRING
SCHEMATICS

PROJECT NO:

A20002.7

DRAWN:

AH

CHECKED:

AH

DATE:

FEB 2021

SCALE:

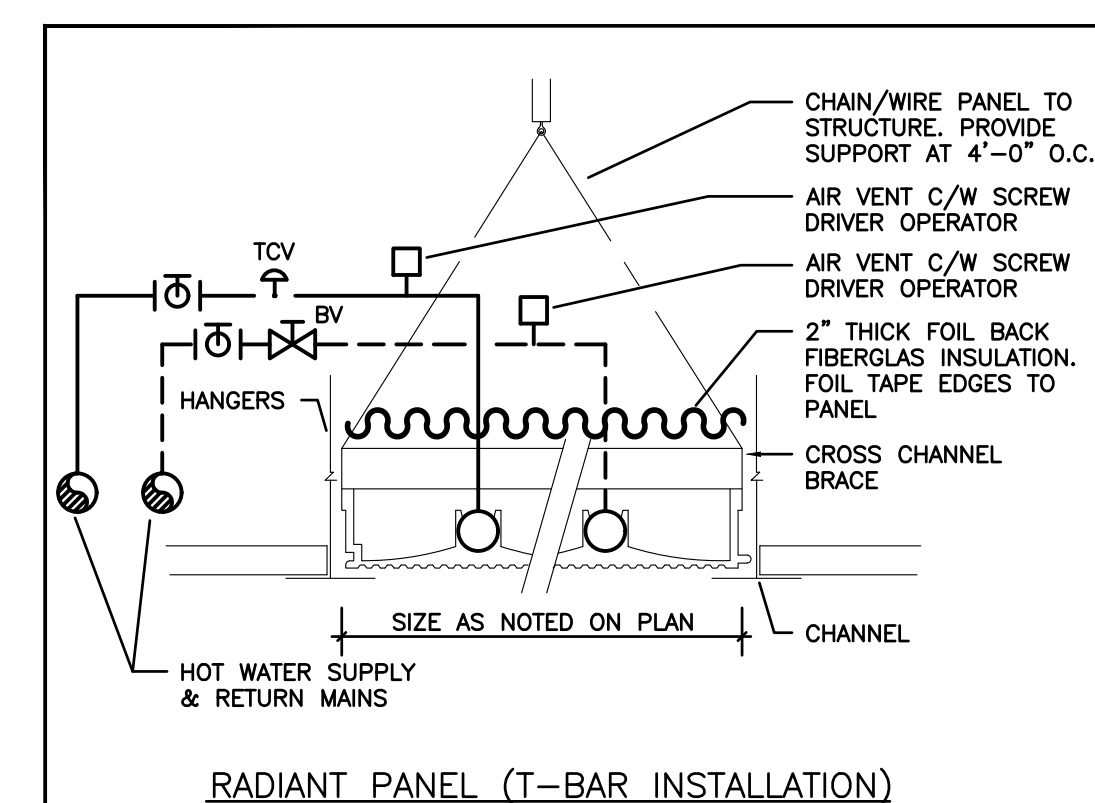
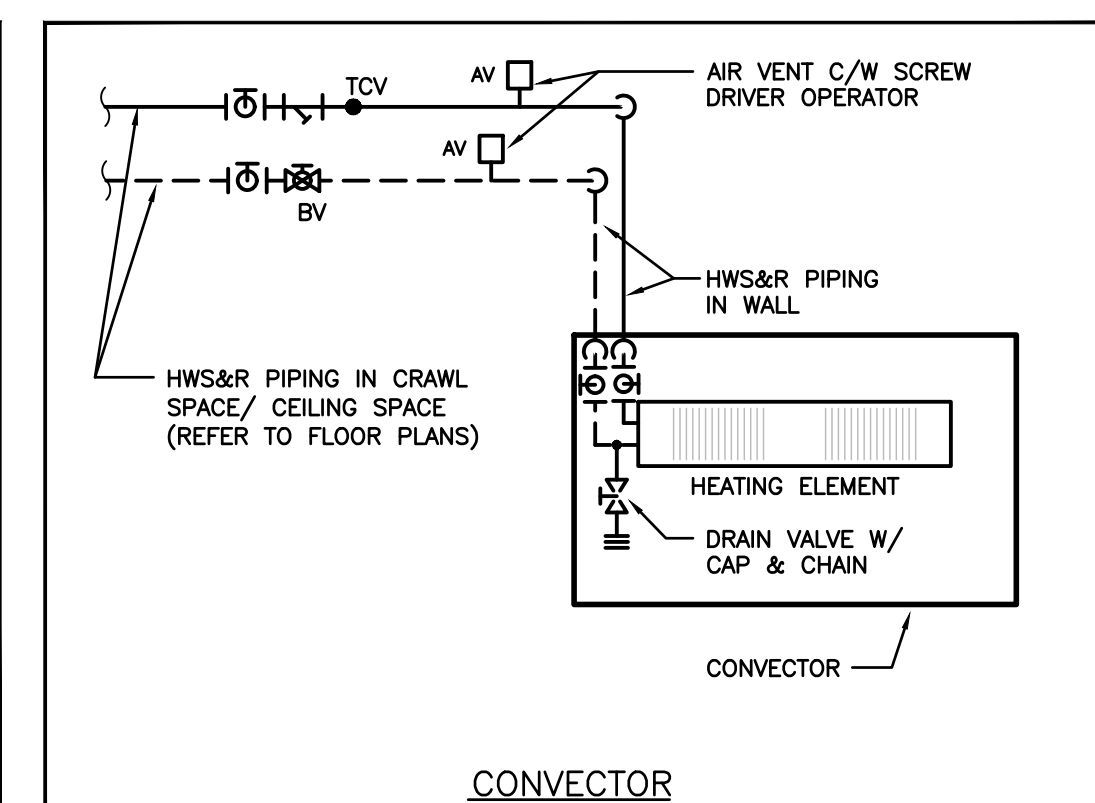
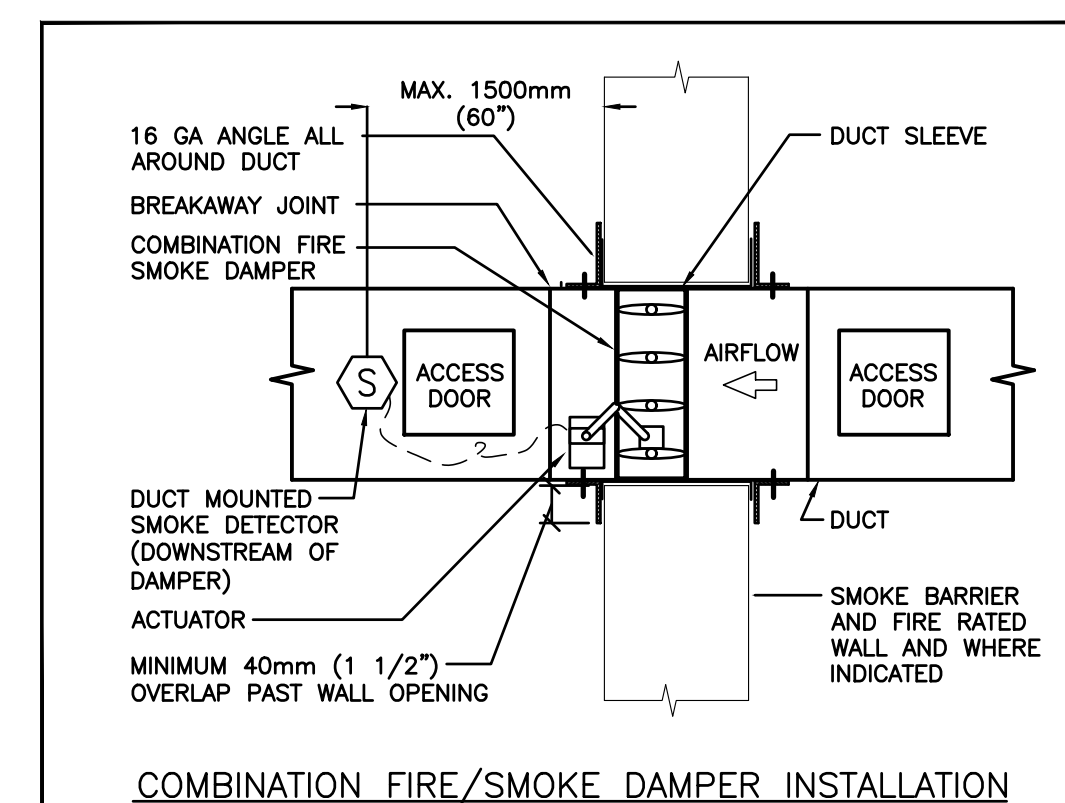
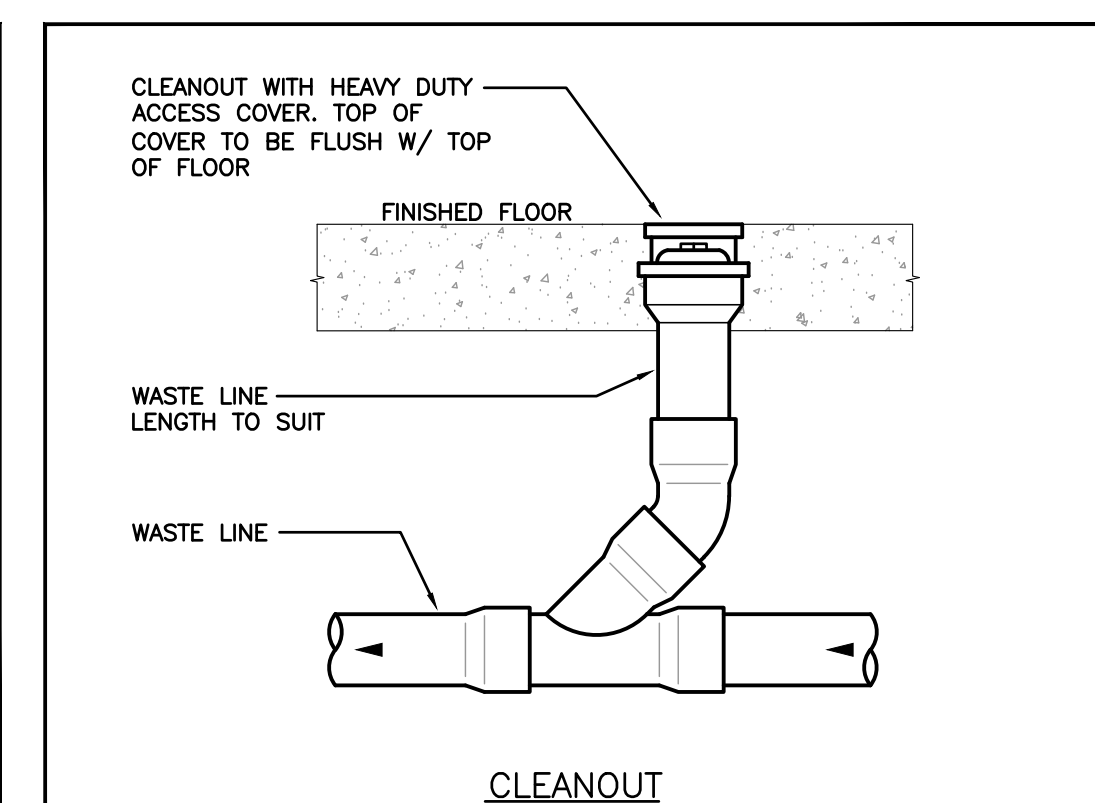
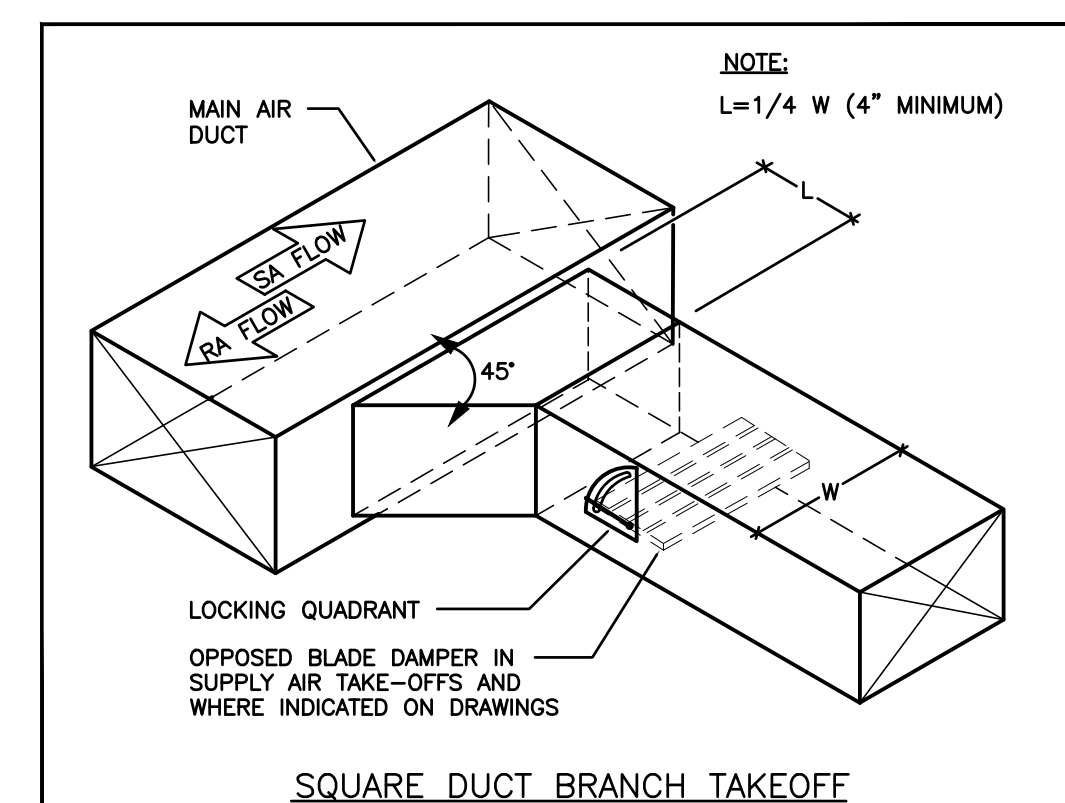
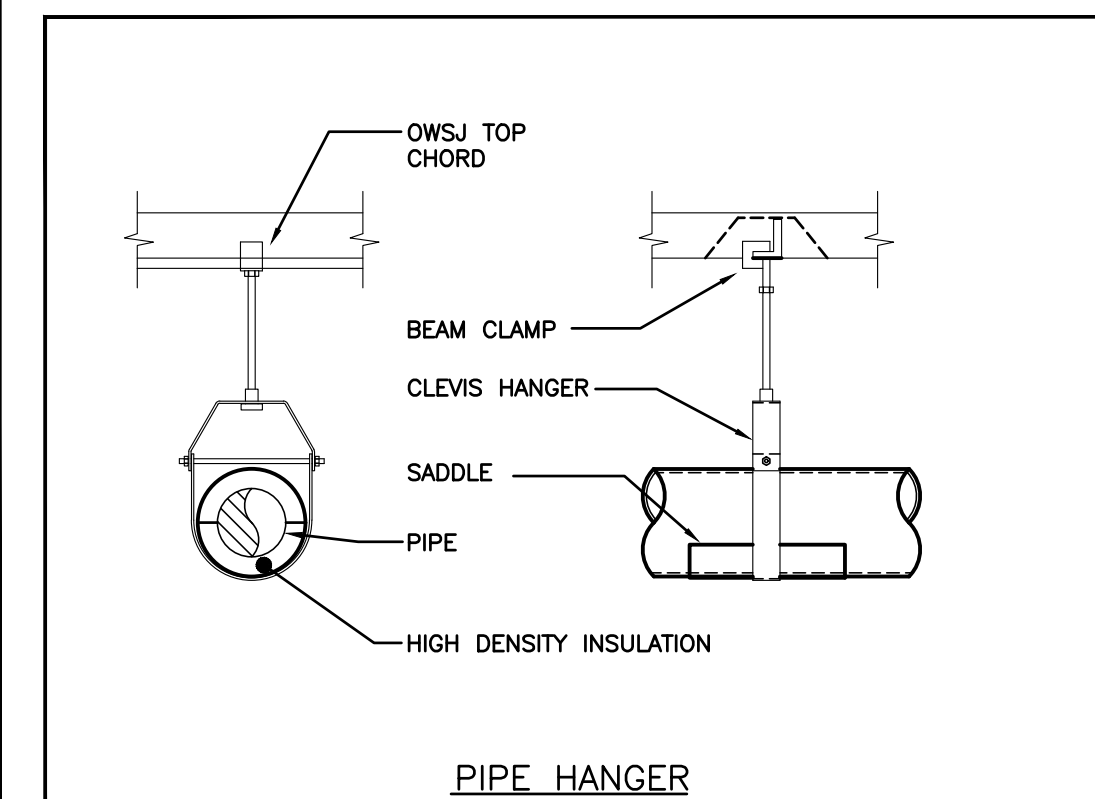
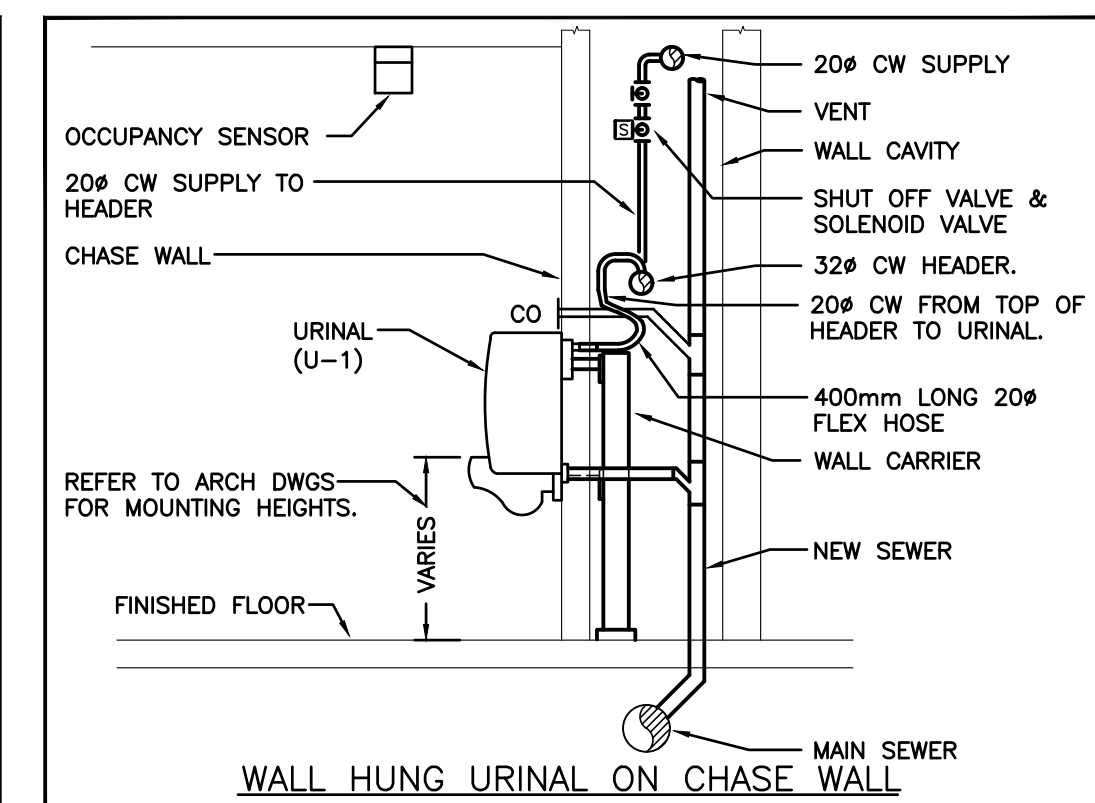
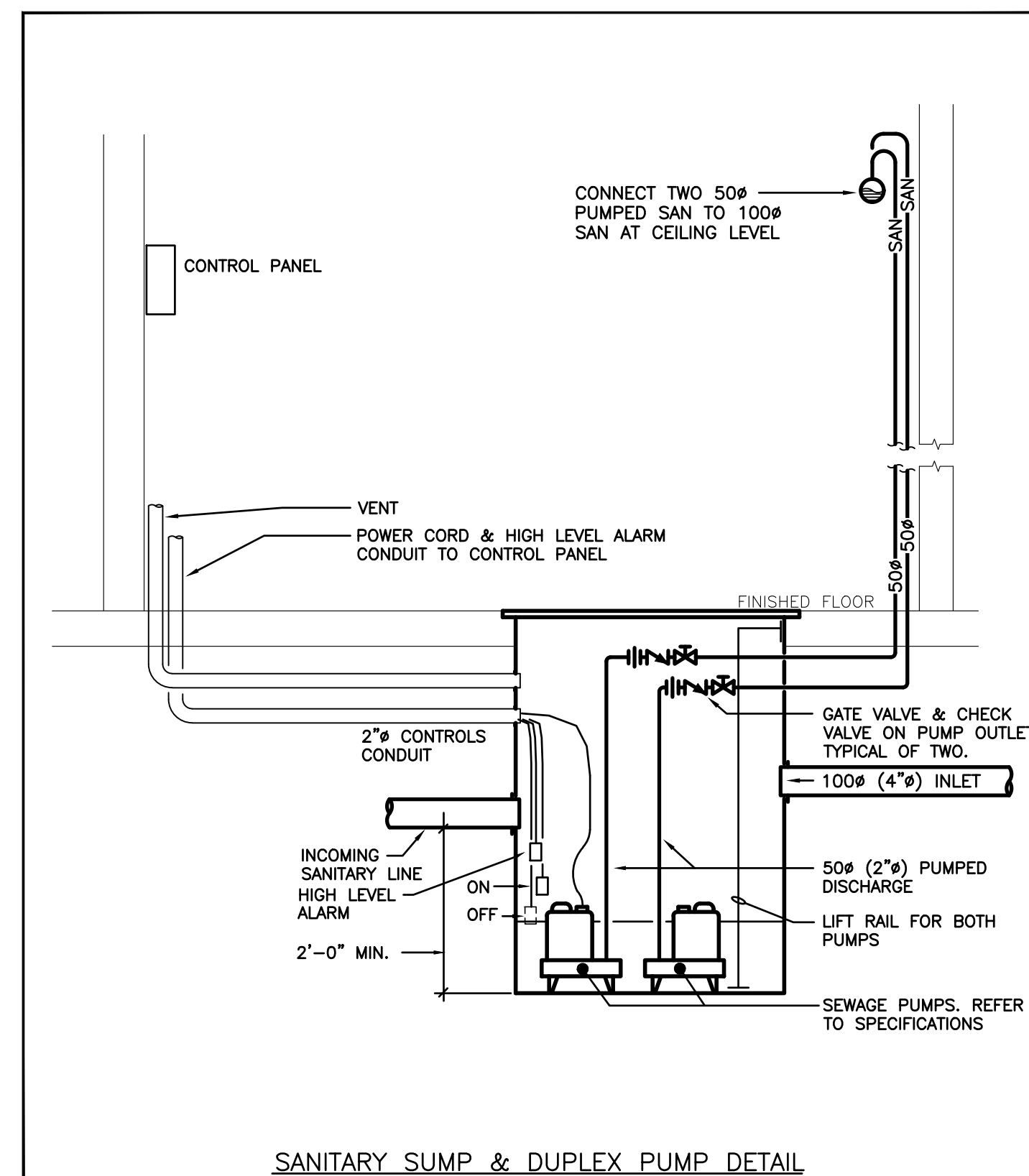
AS NOTED

DRAWING NO:

REV.

M503



[illegible]

The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval of allocation of service from Consultant before commencement of the work.

The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

Drawings are specific and, if prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant.

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DEI

Consulting Engineers

MECHANICAL | ELECTRICAL | AQUATIC

55 Northland Road, Waterloo, ON N2V 1Y8
 Phone: 519-725-2555 Fax: 519-725-2515
 Website: delassociates.ca
 Project Number: 20552



**SUNNYSIDE
PUBLIC SCHOOL
HVAC & WASHROOM UPGRADE**

1042 Weber Street E.
Kitchener, ON
N2A 1B6

DRAWING TITLE:

MECHANICAL DETAILS

PROJECT NO: A20002.7	SCALE: AS NOTED	
DRAWN: AH	DRAWING NO: M601	REV.
CHECKED: AH		
DATE: FEB 2021		

GENERAL REQUIREMENTS FOR BACKFLOW PREVENTER INSTALLATION

**Pursuant to City of Kitchener Bylaw 2013-115 being a bylaw to secure a continued
and abundant supply of pure and wholesome water**

Note: If the installation of the device(s) is a result of a survey which was previously submitted & approved by the City of Kitchener, please ensure installation is as per the approved survey before booking an inspection.

1. Backflow Protection:

- a) **Sources of cross connections** shall be installed as per Part 7 & CAN/CSA B64-10. If selection cannot be easily identified or is not listed in the CSA Selection Guide, contact Marc Hilker, Kitchener Utilities at 519-741-2600 ext. 4840
 - b) **The Premise isolation device** (installed at the meter) is required to be a Double Check Valve Assembly or a Reduced Pressure Type BFP for high hazard facilities. Residential buildings within the scope of Part 9 of the O.B.C. are not required to comply with the Backflow Regulations 2013-115 unless a hazard exists on the premises.
 - c) **A qualified tester** shall test all testable backflow prevention devices, tag the device and submit the report on a City of Kitchener test report form which are available from the Building Department reception desk, 5th floor City Hall.
 - d) **All plumbing** including the backflow preventer shall be installed by a plumber licensed with the City of Kitchener.
 - e) **Label all non-potable water piping** either with the words “non-potable water” or a symbol, which is easily recognizable as the same.
 - f) If installing **underground automatic lawn-sprinkler systems**, you are required to install an approved DCVA on the supply to the system. If chemical or fertilizer injection systems are employed on the system then an approved RP or PVB must be installed.
2. All plumbing is subject to **mandatory onsite inspection**. To arrange inspections please call 519-741-2761. For other permit inquiries contact 519-741-2433.
3. **Do not cover**, conceal or otherwise restrict access to any plumbing until the inspection has been completed and passed.
4. **Failure to follow these procedures** may result in issuance of an “Order to comply” and/or possible termination of water service.
5. **All testable backflow prevention devices** are subject to annual testing and tagging. Legible test reports on a City of Kitchener test report form must be submitted within 14 days of the test. The device shall be tagged with a City of Kitchener test tag, available from the Building Division.
6. **All buildings affected** by this initiative are required to have a new audit of the plumbing system completed 3 years after the initial survey.
7. PLEASE ENSURE YOU RETAIN A COPY OF ALL TEST REPORTS & SURVEYS.

Contact Information:

Marc Hilker

Cross Connection Control Specialist

519-741-2600 ext: 4840

519-741-2638 FAX

marc.hilker@kitchener.ca



Development Services Department
Building Division
200 King St. W., 5th Floor
Kitchener, ON N2G 4G7
Ph. 519-741-2312
TTY 1-866-969-9994
building@kitchener.ca
www.kitchener.ca

ICI PLUMBING INSPECTION AND TESTING

DRAIN, WASTE, AND VENT INSTALLATIONS ON COMMERCIAL, INDUSTRIAL, INSTITUTIONAL AND MULTI-STOREY RESIDENTIAL PROJECTS

- All plumbing, including site services, must be inspected prior to covering. Non-compliance may result in plumbing required to be uncovered.
- All underground and above ground rough-in installations of drains and vents shall be tested as per 7.3.6 of the Ontario Building Code (water test five feet head above highest point in system or 5lb air test).
- A final test shall be carried out as per 7.3.6.6 of the Ontario Building Code. Cleanouts shall be provided to allow testing.
- **All tests** to be witnessed by Municipal Building Official.
- To book inspections call 519-741-2761 with the correct permit number. Minimum 24 hour prior notice is required to receive inspection.

Any questions please feel free to contact the Building Division.