LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
~~EX~~	EXISTING PIPING TO BE REMOVED
EX(NAME)	EXISTING PIPING TO REMAIN
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER HEATING RETURN
GLYS	GLYCOL SUPPLY
GLYR	GLYCOL RETURN
RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CONDS	CONDENSER WATER SUPPLY
CONDR	CONDENSER WATER RETURN
(PSI)	LOW PRESSURE STEAM
(PSI)	HIGH PRESSURE STEAM
	LOW PRESSURE CONDENSATE RETURN (GRAVITY FLOW)
	HIGH PRESSURE CONDENSATE RETURN
PC	PUMPED CONDENSATE
LTHWS	LOW TEMPERATURE HOT WATER SUPPLY
LTHWR	LOW TEMPERATURE HOT WATER RETURN
MTHWS	MEDIUM TEMPERATURE HOT WATER SUPPLY
MTHWR	MEDIUM TEMPERATURE HOT WATER RETURN
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY
HTHWR	HIGH TEMPERATURE HOT WATER RETURN
FOD	FUEL OIL DISCHARGE
FOS	FUEL OIL SUCTION
FOR	FUEL OIL RETURN
FOV	FUEL OIL TANK VENT
CLNTS	COOLANT WATER SUPPLY
CLNTR	COOLANT WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HPWR	HEAT PUMP WATER RETURN
	PIPING RISER UP
	PIPING DROP
	PIPING RISER UP & DOWN
	PIPING BOTTOM TAKE-OFF
	REDUCER
	UNION
	FLANGE
	TEE
CTE	CONNECT TO EXISTING
	FLEXIBLE CONNECTION
	EXPANSION JOINT C/W PIPE GUIDES
	ANCHOR
	INLINE PUMP
	ISOLATING (SHUT-OFF) VALVE
CBV	CIRCUIT BALANCING VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	CHECK (FLOW CONTROL)
	STRAINER
	AIR SEPARATOR
	HOT WATER CEILING PANEL RADIATION
	HOT WATER RADIATOR
	SAFETY (S) OR RELIEF (R) VALVE
T	THERMOMETER
P	PRESSURE GAUGE
	PRESSURE REDUCING VALVE (STEAM)
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	STEAM TRAP
	STEAM TRAP
DC	DRAIN COCK
S	SOLENOID ELECTRIC VALVE
VB	VACUUM BREAKER
FS	FLOW SWITCH
LP	LOW WATER CUT-OFF
	DIGITAL TEMPERATURE SENSOR
M	FLOW METER
	EMERGENCY SHUT-OFF VALVE

LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
	POSITIVE PRESSURE (SUPPLY) DUCT UP
	POSITIVE PRESSURE (SUPPLY) DUCT UP
	NEGATIVE PRESSURE (RETURN) DUCT UP
	POSITIVE PRESSURE (SUPPLY) DUCT DOWN
	POSITIVE PRESSURE (SUPPLY) DUCT DOWN
	NEGATIVE PRESSURE (RETURN) DUCT DOWN
	EXISTING DUCTWORK TO BE REMOVED
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK
	CROSSHATCHING ON DUCTWORK INDICATES ACOUSTICALLY INTERNALLY LINED DUCTWORK
	FIRE WRAPPED DUCTWORK
	SUPPLY AIR DIFFUSER (SQUARE)
	SUPPLY AIR DIFFUSER (LAMINAR FLOW)
	RETURN/EXHAUST GRILLE
	LINEAR SUPPLY/RETURN DIFFUSER
	SIDEWALL/DUCT MOUNTED SUPPLY GRILLE
	SHADING INDICATES DIFFUSER TO HAVE BLANK OFF PANEL
	FULL RADIUS DUCT CONNECTION
	TAP-IN DUCT CONNECTION
	ROUND DUCT CONNECTION
	TURNING VANES
FD	FIRE DAMPER
SD	SMOKE DAMPER
FSD	COMBINATION FIRE DAMPER / SMOKE DAMPER
D	STANDALONE TYPE SMOKE DETECTOR BY MECHANICAL (NOT ON FIRE ALARM)
D	DUCT SMOKE DETECTOR BY ELECTRICAL FOR AHU SHUT DOWN (ON FIRE ALARM)
OED	OPEN ENDED DUCT C/W BIRD SCREEN
	DUCT FLEX CONNECTION
	DUCT SILENCER
	FLEXIBLE DUCTWORK (MAXIMUM 5'-0" IN LENGTH)
BD	BALANCING DAMPER
M	MOTORIZED DAMPER
BDD	BACK DRAFT DAMPER (GRAVITY)
T	THERMOSTAT
TRAT	REVERSE ACTING THERMOSTAT
T	THERMOSTAT C/W TAMPERPROOF COVER
H	HUMIDISTAT
S	FAN SPEED CONTROLLER
TS	TEMPERATURE SENSOR
CAP	CAP SERVICE
VFD	VARIABLE FREQUENCY DRIVE
CO_2	CARBON DIOXIDE SENSOR
DPS	DIFFERENTIAL PRESSURE SENSOR
S.S.	STAINLESS STEEL
U/C	UNDER CUT DOOR
HTL	HIGH TRANSMISSION LOSS DUCTWORK
DDC	DIRECT DIGITAL CONTROL
S/A	SUPPLY AIR
R/A	RETUR AIR
E/A	EXHAUST AIR
T/E	TOILET EXHAUST AIR / SANITARY EXHAUST AIR
G/E	GENERAL EXHAUST AIR
F/A	FRESH AIR / OUTDOOR AIR / OUTSIDE AIR

LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
EX	DENOTES EXISTING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RECIRC. PIPING
-V-	PLUMBING VENT PIPING
	SANITARY PIPING ABOVE FLOOR
	SANITARY PIPING BELOW GRADE OR FLOOR
	FIXTURE DRAIN OUTLET WITH TRAP
S	STORM PIPING ABOVE FLOOR
S	STORM PIPING BELOW GRADE OR FLOOR
AW	ACID/CORROSIVE WASTE PIPING
CS	COMBINED SEWER PIPING
FM	FORCEMAIN PIPING (PUMPED DISCHARGE)
C	CONDENSATE DRAIN PIPING
T	TEMPERED WATER PIPING
G	NATURAL GAS PIPING
CA	COMPRESSED AIR PIPING
A	ABANDONED PIPING
	HEAT TRACED PIPE
CAP	CAPPED PIPE
MA	MEDICAL AIR PIPING
MV	MEDICAL VACUUM PIPING
OX	OXYGEN PIPING
N2O	NITROUS OXIDE PIPING
AGS	ANAESTHETIC GAS SCAVENGING PIPING
N	NITROGEN PIPING
MGAS	MEDICAL GAS TERMINAL OUTLET
A AP	MEDICAL GAS ALARM PANEL
ZVB	MEDICAL GAS ZONE VALVE BOX
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
HD	HUB DRAIN
AD	AREA DRAIN
PDD	PROMENADE DECK DRAIN
PAD	PARKING AREA DRAIN
RD	ROOF DRAIN
RD	ROOF DRAIN ABOVE
GRD	GREEN ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
	ELEVATOR PIT DRAIN c/w BACK WATER VALVE
CO	CLEANOUT IN FLOOR
CO	CLEANOUT IN LINE OR STACK
W	WATER METER
G	GAS METER
NFWH	NON-FREEZE WALL HYDRANT c/w VACUUM BREAKER
HB	HOSE BIBB c/w VACUUM BREAKER
	THROTTLING/BALANCING VALVE
	RESILIENT SEAT CHECK VALVE
	CHECK VALVE c/w BALL DRIP VALVE
TMV	TEMPERATURE MIXING VALVE
	TEMPERATURE & PRESSURE RELIEF VALVE
	NATURAL GAS PLUG VALVE
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
DCBP	DOUBLECHECK VALVE BACKFLOW PREVENTER
PRV	PRESSURE REDUCING VALVE (WATER)
VTR	VENT THROUGH ROOF
MH	MANHOLE
CB	CATCH BASIN

LEGEND OF SYMBOLS

SYMBOL	DESCRIPTION
F	STANDPIPE (FIRE) PIPING
SP	SPRINKLER (FIRE) PIPING
DF	DRY STANDPIPE (FIRE) PIPING
DSP	DRY SPRINKLER (FIRE) PIPING
PSP	PREACTION SPRINKLER (FIRE) PIPING
FDP	FIRE DEPT. (SIAMESE CONNECTION) PIPING
FH	FIRE HYDRANT
FDPC	FIRE DEPARTMENT PUMPER CONNECTION
S ESV	ELECTRICALLY SUPERVISED VALVE
D/T	DRAIN/TEST VALVE
FS	FLOW SWITCH (FIRE PROTECTION)
FHC	FIRE HOSE CABINET - SURFACE MOUNTED
FHC	FIRE HOSE CABINET - FULLY RECESSED
FEX	FIRE EXTINGUISHER - SURFACE MOUNTED
FEC	FIRE EXTINGUISHER - CABINET
SCC	SPRINKLER (FIRE) CONTROL CABINET
	SPRINKLER HEAD - PENDENT
	SPRINKLER HEAD - UPRIGHT
	SPRINKLER HEAD - PENDENT c/w WIRE GUARD
	SPRINKLER HEAD - UPRIGHT c/w WIRE GUARD
	SPRINKLER HEAD - SIDEWALL
	SPRINKLER HEAD - SIDEWALL c/w WIRE GUARD
	SPRINKLER HEAD - PENDENT SIDEWALL
HT	SPRINKLER HEAD - HIGH TEMPERATURE PENDENT
HT	SPRINKLER HEAD - HIGH TEMPERATURE UPRIGHT
D	SPRINKLER HEAD - DRY PENDENT
C	SPRINKLER HEAD - CONCEALED
CS	SPRINKLER HEAD - CONCEALED w/CLEAN ROOM SEAL
SR	SPRINKLER HEAD - SEMI RECESSED
P	SPRINKLER HEAD - PENDENT
U	SPRINKLER HEAD - UPRIGHT
PG	SPRINKLER HEAD - PENDENT c/w WIRE GUARD
UG	SPRINKLER HEAD - UPRIGHT c/w WIRE GUARD
SW	SPRINKLER HEAD - SIDEWALL
SWG	SPRINKLER HEAD - SIDEWALL c/w WIRE GUARD
PSW	SPRINKLER HEAD - PENDENT SIDEWALL
PHT	SPRINKLER HEAD - HIGH TEMPERATURE PENDENT
UHT	SPRINKLER HEAD - HIGH TEMPERATURE UPRIGHT
DP	SPRINKLER HEAD - DRY PENDENT
DS	SPRINKLER HEAD - DRY SIDEWALL
C	SPRINKLER HEAD - CONCEALED
CS	SPRINKLER HEAD - CONCEALED w/CLEAN ROOM SEAL
S	SPRINKLER HEAD - SEMI RECESSED
W	SPRINKLER HEAD - WINDOW
EX	SPRINKLER HEAD - EXISTING
EXR	SPRINKLER HEAD - EXISTING TO BE REMOVED

MECHANICAL DRAWING LIST

REVISIONS

NO.	DATE	PARTICULAR
1	04/03/26	ISSUED FOR HYDRO COORD.
2	01/04/26	ISSUED FOR PROGRESS
3	17/04/26	ISSUED FOR PROGRESS
4	03/07/26	ISSUED FOR OWNER CD REVIEW
5	31/07/26	ISSUED FOR PROGRESS
6	13/08/26	ISSUED FOR TENDER

NOTES:

All dimensions and measurements must be checked and verified by the General Contractor

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VR #25-122

HANOVER POLICE RECREATION INDUSTRIAL COMMERCIAL

CLIENT
TOWN OF HANOVER

PROJECT:
HANOVER POLICE STATION

2026.01.14

ORIGINAL PAGE SIZE ARCH D - 24" X 36"
KEY TO DETAIL LOCATION:
A - DETAIL NO.
B - SHEET NO. ORIGIN

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RPL ARCHITECTS

CN N

MECHANICAL DRAWING LIST & LEGEND

M0.1

Plot Date:

DRAWN BY : -

Checked by :-

GENERAL DEMOLITION NOTES

1. ALL DISTURBED SURFACES AFTER EQUIPMENT AND SYSTEMS REMOVAL OR REROUTING TO BE PATCHED TO MATCH EXISTING OR NEW.
2. CONTRACTOR IS TO ENSURE THAT ALL EXISTING REMOVED FIXTURES AND EQUIPMENT REMAIN THE PROPERTY OF THE OWNER, UNLESS DIRECTED FOR DISPOSAL AT THE OWNERS DISCRETION. COST OF REMOVAL AND DISPOSAL TO BE INCLUDED IN CONTRACT.
3. INDICATES EXISTING AIR OUTLET. EXE–EXISTING EXHAUST, 3. EXS–EXISTING SUPPLY, EXR–EXISTING RETURN, EXG–EXISTING GRILLE

GENERAL NOTES

1. ALL DRAWINGS ARE INTEGRATED WITH THE SPECIFICATIONS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE BUT IMPLIES IN THE OTHER IS FULLY AND PROPERLY REQUIRED. WHEREVER DIFFERENCE OCCURS, THE MOST ONEROUS CONDITION GOVERN.
2. PENETRATIONS OF EITHER FIRE OR SMOKE BARRIER RESISTANT WALL SHALL BE SLEEVED AND SEALED AGAINST THE PASSAGE OF FLAME OR SMOKE WITH SUITABLE NON–COMBUSTIBLE MATERIALS EQUAL TO THE CONSTRUCTION TO BE PENETRATED. CONTRACTOR TO VERIFY ALL CEILING FINISHES WITH ARCHITECTURAL DRAWINGS.
3. CONTRACTOR AND DIFFUSER/GRILLE SUPPLIER ARE RESPONSIBLE TO PROVIDE ALL PLASTER FRAMES, MOUNTING HARDWARE AND ACCESSORIES TO SUIT ARCHITECTURAL CEILING TYPES. MECHANICAL CONTRACTOR SHALL CO–ORDINATE AND PROVIDE DETAILS OF MOUNTING REQUIREMENTS OF DIFFUSERS AND GRILLES IN DRYWALL CEILINGS TO DRYWALL TRADE AND ENSURE EDGES OF OPENINGS ARE FRAMED BY DRYWALL TRADE TO SUPPORT DIFFUSERS AND GRILLES PROPERLY. DIFFUSERS AND GRILLES MUST NOT BE SUPPORTED SOLELY BY HANGAR WIRES.
4. THE CONTRACTOR WILL HAVE ROOF PENTETRATIONS MADE AND SEALED BY AN APPROVED ROOFING CONTRACTOR IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS. ROOF STRUCTURE SHALL BE REINFORCED ACCORDINGLY, AS PER STRUCTURAL DRAWINGS AT EACH LOCATION OF ROOF TOP MECHANICAL EQUIPMENT INSTALLATION SUCH AS: EXHAUST FANS, CONDENSING UNITS
5. PENETRATIONS OF CONCRETE SHALL BE SAW–CUT OR CORE CORED. IMPACT HAMMERS ARE NOT ALLOWED. SEAL ALL DUCTWORK AND SLEEVES TO PREVENT LEAKAGE THROUGH FLOOR.
6. CONTRACTOR IS TO CO–ORDINATE ALL CEILING FINISHES WITH 6. ARCHITECTURAL DRAWINGS. CONTRACTOR WILL REVIEW MECHANICAL DRAWINGS, ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL ROOM FINISH SCHEDULES AS SOON AS CONTRACT DOCUMENTS ARE SIGNED. ADVISE CONSULTANT OF ANY CONFLICTS BETWEEN CEILING TYPE AND DIFFUSER/GRILLE TYPE.
7. MECHANICAL, DIVISION 2–14 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH ONE ANOTHER SO AS TO AVOID INTERFERENCES BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
8. WORK SHALL BE CO–ORDINATED THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK AND CONTROLS. CO–ORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL AND ELECTRICAL ALLOCATIONS.
9. PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO–ORDINATE WITH STRUCTURAL TRADES.
10. REFER TO ARCHITECTURAL FOR OWNER SUPPLIED EQUIPMENT. CONFIRM ALL MECHANIC REQUIREMENTS AND PROVIDE TO SUIT.
11. REVIEW ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND PROVIDE ON SITE INSPECTION TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
12. AVOID ANY DIRECT CONTACT BETWEEN ANY PIPING, DUCTING AND ELECTRICAL CONDUIT SYSTEMS TO PREVENT SOUND TRANSMISSION.
13. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR CO–ORDINATION OF GRILLES, DIFFUSERS AND OTHER ELEMENTS.
14. CONTRACTOR TO INCLUDE ALL REQUIRED AIR AND WATER BALANCING.
15. DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS FROM MANUFACTURERS SHOP DRAWINGS AND ON SITE INSPECTIONS.
16. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, AMENDMENTS, BULLETINS ETC AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES FOR THE AUTHORITY HAVING JURISDICTION.
17. ALL RETURN FANS, EXHAUST FANS AND SUPPLY FANS TO BE SUSPENDED FROM STRUCTURE c/w VIBRATION ISOLATION AND FLEXIBLE DUCT CONNECTIONS.
18. MECHANICAL AND ELECTRICAL SYSTEMS SHOWN ON DEMOLITION PLANS ARE BASED ON INFORMATION OBTAINED FROM ORIGINAL CONSTRUCTION CONTRACT/TENDER DOCUMENTS. THESE DRAWINGS ARE NOT BASED ON AS–BUILT RECORD OR ON EXHAUSTIVE FIELD MEASUREMENT AND ARE PROVIDED TO ASSIST THE CONTRACTOR IN DETERMINING TH EXTENT OF WORK REQUIRED. THE CONTRACTOR SHALL MAKE ALLOWANCES IN THEIR TENDER PRICE FOR THE REMOVAL OF ADDITIONAL ABANDONED SERVICES AND THE PROTECTION OF EXISTING SERVICES THAT MUST REMAIN. RECORD THE LOCATION OF ALL EXISTING SERVICES THAT REMAIN ON AS–BUILT RECORD DRAWINGS.
19. ALL ITEMS REMAIN THE PROPERTY OF THE OWNER AND SHALL BE DELIVERED TO A LOCATION ON SITE DESIGNATED BY THE OWNER. IF THE OWNER DECLARES NO INTEREST IN THE REMOVED ITEMS, ASSUME OWNERSHIP AND REMOVE THE ITEMS FROM THE SITE. ALL DUCTLESS SPLIT SYSTEMS NOT BE REUSED ARE TO BE TURNED OVER TO THE OWNER.
20. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PHASING AND STAGING. MECHANICAL AND ELECTRICAL PHASING AND SEQUENCING SPECIFICATION MUST REFERENCE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
21. ALL EXISTING AIR HANDLING UNIT FILTERS ARE TO BE MONITORED CLOSELY DURING DEMOLITION AND CONSTRUCTION PERIODS. EXISTING AIR HANDLING UNITS TO HAVE ONE CHANGE OF FILTERS DURING CONSTRUCTION AND NEW AT END OF CONSTRUCTION.
22. CONTRACTOR IS TO VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ALL EXISTING UTILITES AND SERVICES ARE TO BE MAINTAINED AND SUPPORTED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER OF THE UTILITY.
23. FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'–0" (1500mm) IN LENGTH TOTAL FOR ANY RUN OUT. NO FLEXIBLE DUCTWORK SHALL BE PERMITTED FOR OFFSETTING.
24. CONTRACTOR SHALL START DEMOLITION AND REMOVAL OF MECHANICAL EQUIPMENT IN ACCORDANCE WITH ARCHITECTURAL PHASING AND STAGING DRAWINGS.
25. DISCONNECT AND MAKE SAFE ALL MECHANICAL AND ELECTRICAL SERVICES REQUIRED TO BE REMOVED.
26. REMOVE AND DISPOSE OFFSITE EXISTING MECHANICAL EQUIPMENT REQUIRED TO BE REMOVED, ALONG WIL ALL DEDICATED ACCESSORIES.
27. CONTRACTOR SHALL REPAIR THE WALLS AND FLOORS AFFECTED BY THIS CONTRACT TO MATCH EXISTING.
28. IN ALL INSTANCES THE NEED FOR ACCESS DOORS IN GYPSUM BOARD CEILINGS SHOULD BE AVOIDED IF POSSIBLE. WHERE INSTALLATION OF COMPONENTS WHICH REQUIRE ACCESS CANNOT BE AVOIDED, SUBMIT (DIMENSIONED) LAYOUT ON ARCHITECTURAL REFLECTED CEILING PLANS TO CONSULTANTS FOR REVIEW PRIOR TO INSTALLATION OF COMPONENTS.
29. ALL CONNECTIONS TO EXISTING SERVICES TO BE DONE IN OFF HOURS. CONTRACTOR SHALL SUBMIT A SCHEDULE FOR REVIEW WITH OWNER AND CONSULTANTS PRIOR TO START OF WORK.
30. CONTRACTOR IS TO VISIT THE SITE AND BECOME FULLY FAMILIAR WITH EXTENT OF THE WORK PRIOR TO TENDER CLOSING.
31. CO–ORDINATE LOCATION OF NEW PIPING WITH EXISTING OR NEW SERVICES (PIPING, DUCTWORK, ELECTRICAL CONDUITS, LIGHTS AND BUILDING STRUCTURE). IF REQUIRED REMOVE EXISTING SERVICES AND REINSTALL. TEST SERVICES AFTER WORK IN COMPLETED.
32. CONTRACTOR IS TO RECONNECT ALL TAKE–OFFS/BRANCH LINES FROM MAINS BEING REMOVED TO NEW MAINS INSTALLED UNDER THIS CONTRACT. EXACT SIZE, LOCATION AND NUMBER OF TAKE–OFFS TO BE VERIFIED ON SITE.
33. WHERE DUCTWORK IS INDICATED TO BE DEMOLISHED, REMOVE AND CAP BACK AT MAIN DUCT.
34. WHERE PIPING IS INDICATED TO BE DEMOLISHED, REMOVE AND CAP BACK AT MAIN PIPE.
35. WHERE EQUIPMENT IS SHOWN TO BE DEMOLISHED, ALL SERVICES TO EQUIPMENT SHALL BE CAPPED BACK AT MAINS.
36. ALL PIPES CONNECTED TO EQUIPMENT SHALL BE PROVIDED WITH SHUT–OFF VALVES TO ISOLATE EQUIPMENT FOR MAINTENANCE.

GENERAL PLUMBING NOTES

1. PROVIDE A CLEANOUT AT THE BOTTOM OF EVERY SOIL AND WASTE STACK THAT CONNECTS TO A HORIZONTAL DRAINAGE PIPE.
2. PROVIDE A CLEANOUT FROM EACH PLUMBING FIXTURE WHERE REQUIRED BYONTARIO BUILDING CODE PART 7 – PLUMBING.
3. CLEANOUT FOR WALL HUNG URINALS TO BE EXTENDED ABOVE THE FLOOD LEVEL AND BE ACCESSIBLE.
4. CHECK AND VERIFY LOCATION OF ALL PIPES, DUCTS AND EQUIPMENT WITH ALL OTHER TRADES TO PREVENT INTERFERENCE. REMOVAL OR RELOCATION OF ANY SUCH WORK INTERFERING WITH WORK OF OTHER TRADES IS THE RESPONSIBILITY OF THE MECHANICAL TRADE CONCERNED UNLESS OTHERWISE APPROVED IN WRITING.
5. ALL PLUMBING FIXTURES INCLUDING FLOOR DRAINS TO BE TRAPPED, PRIMED AND VENTED AS REQUIRED BY ONTARIO BUILDING CODE, PART 7 –PLUMBING.
6. VENTS CONNECTING TO THE CORROSIVE DRAIN PIPING OR DILUTION TANK SHALL EXTEND INDEPENDENTLY TO AND TERMINATE IN OPEN AIR.
7. ALL CONDENSATE LINES TO BE TRAPPED AT UNITS. REFER TO H.V.A.C. DRAWINGS FOR DETAIL.
8. PROVIDE MIN. 2% SLOPE ON ALL HORIZONTAL CONDENSATE LINES.
9. PROVIDE ACCESS DOORS FOR ALL FLOOR DRAINS RECEIVING CONDENSATE FROM FAN COIL UNITS LOCATED IN CONCEALED CEILING SPACE.
10. FOR EXACT LOCATIONS OF FAN COIL UNITS REFER TO H.V.A.C. DRAWINGS.
11. FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT REFER TO H.V.A.C. DRAWINGS.
12. FOR MOUNTING HEIGHT OF ALL PLUMBING FIXTURES REFER TO ARCHITECTURAL ELEVATION DRAWNGS.
13. WHENEVER COLD AND HOT WATER DISTRIBUTION TO LAVATORIES IS TO RUN UNDER COUNTER, PIPING DISTRIBUTION IS TO BE INSTALLED AS TIGHT TO UNDER SIDE OF THE COUNTER AS POSSIBLE.
14. PLUMBING VENTS THROUGH ROOF SHALL BE AT LEAST 2'–11" HIGHER OR 11'–6 " AWAY FROM ANY OUTDOOR AIR INTAKES, OPENABLE WINDOWS OR DOORS.
15. ALL WATER, SANITARY, SEWER AND VENT COPPER PIPING WITH SOLDER JOINTS SHALL BE LEAD FREE.
16. DO NOT INSTALL WATER LINES IN OUTSIDE WALL WHERE THEY MAY FREEZE,UNLESS BOTH THE WALL AND THE PIPES ARE PROPERLY INSULATED.
17. EACH GROUP OF PLUMBING FIXTURES SHALL BE EQUIPPED WITH WATER SHUT–OFF VALVES IN THE CEILING SPACE.
18. INSTALL SHUT–OFF VALVES AT EACH PLUMBING FIXTURE.
19. PROVIDE ALL BACKFLOW PREVENTERS AND VACUUM BREAKERS REQUIRED BY ONTARIO BUILDING CODE AND AUTHORITIES HAVING JURISDICTION.
20. INSTALL STRAINER AND WATER HAMMER ARRESTOR UPSTREAM OF EACH BACKFLOW PREVENTER, UNLESS NOTED OTHERWISE.
21. COLD AND HOT WATER PIPING INSIDE WALLS OR RUNOUTS TO A MAXIMUM LENGTH OF 12' SHALL BE INSULATED WITH AT LEAST 1" THICKNESS OF 0.25 BTU–IN/(H. CUBIC FT. DEG. F) CONDUCTIVITY.
22. HOT WATER PIPING OF SIZE 1.5" AND BIGGER SHALL BE INSULATED WITH AT LEAST 1.5" THICKNESS OF 0.25 BTU–IN/(H. CUBIC FT. DEG. F) CONDUCTIVITY AS PER ASHRAE 90.1.
23. COORDINATE THE INSTALLATION OF CLEANOUTS AND ACCESS TO DOORS WITH ARCHITECTURAL FINISHES TO AVOID INTERFERENCE WITH BASE DETAILS.
24. PIPING, FITTINGS AND JOINTS USED IN PRESSURE SEWER, FORCE MAIN OR SUMP PUMP DISCHARGE APPLICATIONS SHALL BE CAPABLE OF WITHSTANDING AT LEAST ONE AND ONE–HALF TIMES THE MAXIMUM POTENTIAL PRESSURE.
25. IMMEDIATELY ON DISCOVERY OF ASBESTOS–CEMENT PIPING, THE CONTRACTOR SHALL STOP WORK IN THE AREA AND NOTIFY THE CONSULTANT IN ORDER TO OBTAIN FURTHER INSTRUCTION. ALL WORK ASSOCIATED WITH THE ASBESTOS–CEMENT PIPING SHALL BE EXECUTED IN CONFORMANCE WITH INSTRUCTIONS FROM THE HAZARDOUS MATERIAL ABATEMENT CONSULTANT. ONLY PERSONNEL TRAINED IN HANDLING ASBESTOS–CEMENT PIPING AND WEARING APPROPRIATE PROTECTIVE CLOTHING AND EQUIPMENT SHALL BE PERMITTED TO EXECUTE THE WORK. WORK IN THE AFFECTED AREA MAY BE RESUMED ONLY AFTER THE HAZARDOUS MATERIALS ABATEMENT CONSULTANT HAS ISSUED A CLEARANCE CERTIFICATE.

GENERAL STANDPIPE NOTES

1. DESIGN, CONSTRUCTION, INSTALLATION AND TESTING OF THE SYSTEM SHALL BE IN CONFORMANCE WITH NFPA 14, " INSTALLATION OF STANDPIPE AND HOSE SYSTEMS " , AND ONTARIO BUILDING CODE REQUIREMENTS.
2. FOLLOW REQUIREMENTS OF OCCUPATIONAL HEALTH AND SAFETY ACT, O. REG. 2013/91 – CONSTRUCTION PROJECTS, FIRE SAFETY SECTION. IN A BUILDING WITH TWO OR MORE STOREYS, A PERMANENT OR TEMPORARY STANDPIPE SHALL BE INSTALLED TO WITHIN TWO STOREYS OF THE UPPERMOST WORK LEVEL.
3. INSULATE STANDPIPE MAIN FROM TAKE–OFF FROM DOMESTIC WATER TO APOINT APPROXIMATELY 6 FEET (1800 MM) AFTER ELECTRICALLY SUPERVISED VALVE.
4. STANDPIPE SYSTEM PIPING SHALL BE PROTECTED FROM MECHANICAL DAMAGE. STANDPIPES SHOULD NOT BE PLACED IN UNSPRINKLERED AREAS OF COMBUSTIBLE CONSTRUCTION.
5. FEED MAIN, THE PORTION OF A STANDPIPE SYSTEM THAT SUPPLIES WATER TO ONE OR MORE STANDPIPES. HORIZONTAL STANDPIPE, THE HORIZONTAL PORTION OF THE SYSTEM PIPING THAT DELIVERS THE WATER SUPPLY FOR TWO OR MORE HOSE CONNECTIONS, AND FOR SPRINKLERS ON COMBINED SYSTEMS, ON A SINGLE LEVEL. BRANCH LINE, A PIPING SYSTEM, GENERALLY IN A HORIZONTAL PLANE, CONNECTING NOT MORE THAN ONE HOSE CONNECTION WITH A STANDPIPE. STANDPIPE RISER PIPING IS SYSTEM PIPING THAT DELIVERS THE WATER SUPPLY FOR HOSE CONNECTIONS, VERTICALLY FROM FLOOR TO FLOOR, INCLUDING HORIZONTAL OFFSET PORTIONS.
6. IN ALL BUILDINGS, SPRINKLERED, OR UNSPRINKLERED, STANDPIPE SYSTEM RISER PIPING SHALL BE LOCATED WITHIN A VERTICAL SERVICE SPACE, OR EXIT STAIR SHAFT. VERTICAL SERVICE SPACE SHALL BE SEPARATED FROM THE ADJACENT FLOOR AREA BY CONSTRUCTION HAVING 45 MIN FIRE–RESISTANCE RATING IN FLOOR ASSEMBLY REQUIRED TO HAVE 45 MIN TO 1 HOUR FIRE–RESISTANCE RATING. IN FLOOR ASSEMBLY WITH 1.5 HOUR AND HIGHER FIRE–RESISTANCE RATING VERTICAL SERVICE SPACE IS REQUIRED TO HAVE 1 HOUR FIRE–RESISTANCE RATING ON THE OUTSIDE OF THE SPACE.
7. STANDPIPE RISER PIPING LOCATED OUTSIDE OF FIRE–RATED VERTICAL SERVICE WILL REQUIRE PROTECTION IN FORM OF RATED FIRE WRAP DESIGNED AND LISTED SPECIFICALLY FOR PROTECTION OF PIPING. FIRE WRAP FIRE–RATING TO MATCH MINIMUM REQUIREMENTS ALLOWED FOR VERTICAL SERVICE SPACE WITHIN FLOOR ASSEMBLY.
8. FIRE WRAP TO BE CL4FIRE, OR 3M EQUAL, MATERIAL AND SHALL BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS AND TESTING AGENCY'S LISTING. COORDINATE INSTALLATION OF STANDPIPE PIPING AND FIRE WRAP TO PREVENT INTERFERENCE WITH OTHER TRADES.
9. FEED MAINS, HORIZONTAL STANDPIPES, AND BRANCH LINES SUPPLIED BY STANDPIPES DISTRIBUTED THROUGHOUT UNSPRINKLERED BUILDINGS SHALL BE PROTECTED BY A DEGREE OF FIRE RESISTANCE EQUAL TO THAT REQUIRED FOR ENCLOSED EXIT STAIRWAYS IN THE BUILDING IN WHICH THEY ARE LOCATED.
10. IN BUILDINGS EQUIPPED WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM, FEED MAINS, HORIZONTAL STANDPIPES, AND BRANCH LINES SHALL NOT BE REQUIRED TO BE PROTECTED.
11. PIPING CONNECTING STANDPIPES TO 1–1/2 IN. (40 MM) HOSE CONNECTIONS SHALL NOT BE REQUIRED TO BE PROTECTED.

NATURAL GAS NOTES

1. CONFORM TO THE LATEST EDITION OF CSA B149.1 NATURAL GAS AND PROPANE INSTALLATION CODE.
2. PIPING OR TUBING SHALL NOT BE SUPPORTED BY OTHER PIPING OR TUBING, AND SHALL BE INSTALLED WITH INDIVIDUAL SUPPORTS OF SUFFICIENT STRENGTH AND QUALITY.
3. SUPPORTS SHALL BE SPACED IN ACCORDANCE WITH TABLE BELOW

ORIENTATION	PIPE SIZE	MAX. SPACING OF SUPPORTS
HORIZONTAL	½" (15MM) OR LESS ¾"–1" (20–25MM) 1¼"–2½" (32–65MM) 3"–4" (75–100MM) 5–8" (125–200MM) 10" (250MM) OR LARGER	6 FT (2 M) 8 FT (2.5 M) 10 FT (3 M) 15 FT (5 M) 20 FT (6 M) 25 FT (8 M)
VERTICAL	ALL SIZES	EVERY FLOOR BUT NOT MORE THAN 125% OF HORIZONTAL SPACING
VERTICAL & HORIZONTAL	TUBING (ALL SIZES)	6 FT (2 M)

4. ROOFTOP PIPING MAY BE SUPPORTED WITH TREATED WOOD BLOCKS OR MATERIAL HAVING AT LEAST EQUIVALENT CHARACTERISTICS AS WOOD BLOCKS AND PROTECTION AGAINST OUTDOOR EXPOSURE.
5. THE ROOF SUPPORT SPACING FOR PIPING NPS 1 " (25mm) AND GREATER SHALL COMPLY WITH TABLE ABOVE AND SUPPORT SHALL BE PROVIDED FOR EVERY THREADED FITTING.
6. ROOFTOP PIPING LESS THAN NPS 1 " (25mm) AND ALL TUBING SHALL BE SUPPORTED ACCORDING TO TABLE ABOVE AND HORIZONTAL PIPING SHALL BE SUPPORTED EVERY 4 FT (1.2 M), AND ALL TUBING SHALL BE SUPPORTED CONTINUOUSLY WITH TREATED WOOD AND PLANKS WHEN IT IS LAID ON THE ROOFTOP.
7. EXPOSED ROOFTOP COATED OR WRAPPED GAS PIPING IS NOT ALLOWED. BARE STEEL PIPING AND FITTINGS SHALL BE CLEANED AFTER ASSEMBLY, PAINTED WITH A METAL PRIMER, AND GIVEN AT LEAST ONE COAT OF EXTERIOR ENAMEL PAINT.
8. MEANS FOR ROOFTOP PIPING EXPANSION SHALL BE PROVIDED. EXPANSION CONTROL LOOPS SHOULD BE USED ON PIPE SIZES OF 2 " (50mm) OR LESS WHENEVER THE UNRESTRAINED PIPE LENGTH IS AT LEAST 100 FT (30 M). INSTALL LARGER DIAMETER PIPING WITH EXPANSION JOINTS.
9. THE CONTROL LOOP CONSISTS OF 90° OFFSETS TO THE MAIN PIPE RUN SO IT PROVIDES AN OPEN–ENDED BOX CONFIGURATION. PIPE SUPPORTS TO PERMIT THE FREE MOVEMENT OF PIPING WHEN IT EXPANDS AND CONTRACTS.

GENERAL AUTOMATIC SPRINKLER NOTES

1. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR DESIGN OF SPRINKLER SYSTEM IN STRICT ACCORDANCE WITH THE ONTARIO BUILDING CODE, ALL APPLICABLE NFPA STANDARDS, THE REQUIREMENTS OF THE OWNER'S INSURANCE UNDERWRITER'S ENGINEERING AUTHORITY (NAME OF INSURACE Co.) AND AUTHORITIES HAVING JURISDICTION.
2. SPRINKLER DESIGN SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE STAMPED AND SIGNED BY PROFESSIONAL ENGINEER LICENSED IN PROVINCE WHERE PROJECT IS LOCATED, AND SPECIALIZING IN FIRE PROTECTION DESIGN.
3. SPRINKLER DESIGN SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE STAMPED AND SIGNED BY PROFESSIONAL ENGINEER LICENSED IN PROVINCE WHERE PROJECT IS LOCATED, AND SPECIALIZING IN FIRE PROTECTION DESIGN.
4. CONTRACTOR SHALL SUBMIT PLANS TO THE OWNER'S INSURANCE UNDERWRITER'S ENGINEERING AUTHORITY (NAME OF INSURACE Co.) AND THE CITY FOR APPROVAL IN ACCORDANCE WITH THEIR SPECIFIC REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL APPROVALS ARE RECEIVED FROM SUCH AUTHORITIES.
5. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR REDESIGN AND ANY OTHER REQUIRED ADJUSTMENTS TO EXISTING SPRINKLER SYSTEM (INCLUDING HYDRAULIC CALCULATIONS) IN STRICT ACCORDANCE WITH ALL APPLICABLE NFPA STANDARDS, INCLUDING NFPA–13, NFPA–20, NFPA–24 AND REQUIREMENTS OF THE OWNER'S INSURANCE UNDERWRITER'S ENGINEERING AUTHORITY (NAME OF INSURACE Co.) AND AUTHORITIES HAVING JURISDICTION.
6. CONTRACTOR SHALL PAY ALL FEES, CHARGES, AND COSTS REQUIRED FOR REVIEWS, INSPECTIONS, TESTS OR COMMENTS IN REGARD TO THIS PROJECT.
7. CONTRACTOR SHALL PERFORM A FLOW TEST TO BE WITNESSED BY THE CITY AUTHORITY.
8. CONTRACTOR SHALL PROVIDE AVAILABLE PRESSURE AND FLOW READINGS FOR EACH SPRINKLER ZONE AREA.
9. THE SPRINKLER LAYOUT SHOWN ON THESE DRAWINGS SERVES AS GENERAL SCOPE OF WORK. THE SPRINKLER CONTRACTOR SHALL MAKE ALL MODIFICATIONS TO THE DESIGN TO COMPLY WITH AUTHORITIES REQUIREMENTS AND TO THE ARCHITECT'S AND CONSULTANT'S APPROVAL. SPRINKLER HEADS MAY BE ADDED OR DELETED TO PROVIDE ADEQUATE COVERAGE AS DETERMINED BY THE SPRINKLER CONTRACTOR AT NO EXTRA OR CREDIT TO THE CONTRACT, PROVIDED ALL APPROVALS ARE MET IN FULL COORDINATION WITH MECHANICAL, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS OF THE BUILDING.
10. FOR FINAL COORDINATION OF SPRINKLER LAYOUT REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.
11. SPRINKLER CONTRACTOR IS TO COORDINATE WITH ALL OTHER MECHANICAL, STRUCTURAL AND ELECTRICAL ELEMENTS AND MAKE ALL NECESSARY ADJUSTMENTS TO INSTALL SPRINKLER PIPING CLEAR OF ALL OBSTRUCTIONS AND MIMIMUM 12 " (305mm) ABOVE FINISHED CEILINGS. INSTALL SPRINKLER HEADS BELOW ALL OBSTRUCTIONS TO WATER DISCHARGE AND DETECTION OF FIRE AS REQUIRED BY APPLICABLE CODES AND STANDARDS.
12. INSTALL SPRINKLER SYSTEM FEED MAINS AND CROSS MAINS AS INDICATED ON THESE DRAWINGS. SIZES INDICATED ARE MINIMUM SIZES WHICH SHALL BE INCREASED AS REQUIRED FOR CONTRACTOR'S LAYOUT. SPRINKLER CONTRACTOR SHALL LAYOUT BRANCH LINE PIPING DISTRIBUTION AND SUBMIT SHOP DRAWINGS FOR REVIEW BY CONSULTANT.
13. ANY REVISIONS TO SPRINKLER PIPING DISTRIBUTION AND PIPE SIZING AS INDICATED ON THESE DRAWINGS TO BE REVIEWED AND APPROVED BY CONSULTANT PRIOR TO INSTALLATION.
14. ALL PIPE HANGERS TO BE INSTALLED BEFORE SPRAY FIREPROOFING HAS BEEN APPLIED TO STRUCTURAL STEEL AND DECK.
15. PROVIDE ACCESSIBLE INSPECTOR'S TEST PIPE AND HEAT TRACING IF REQUIRED AT THE HIGHEST MOST REMOTE POINT ON ZONE FOR ADEQUATE TESTING AND AS REQUIRED BY STANDARDS. PROVIDE DRAIN TO SERVE THE TEST PIPE.
16. COVERPLATES FOR CONCEALED SPRINKLER HEADS TO BE STANDARD FACTORY PAINTED COLOUR, AS SELECTED BY THE ARCHITECT/CONSULTANT.
17. COVERPLATES FOR CONCEALED SPRINKLER HEADS TO BE FACTORY APPLIED CUSTOM COLOUR, AS SELECTED BY THE ARCHITECT/CONSULTANT.
18. INSULATE SPRINKLER MAIN FROM TAKE–OFF FROM DOMESTIC WATER TO A POINT APPROXIMATELY 6 FEET (1800 MM) AFTER ELECTRICALLY SUPERVISED VALVE.
19. PROVIDE SINGLE AIR VENT IN WET PIPE SYSTEM UTILIZING METALLIC PIPE LOCATED NEAR A HIGH POINT IN THE SYSTEM TO ALLOW AIR TO BE REMOVED FROM THAT PORTION OF THE SYSTEM (MANUAL VALVE, MINIMUM 1 ⁄ 2 IN. (15 MM) SIZE, AUTOMATIC AIR VENT, REMOTE INSPECTOR'S TEST VALVE, OTHER APPROVED MEANS)
20. SPRINKLER CONTRACTOR TO PERFORM FIRE HYDRANTS FLOW TEST ON WATER SUPPLY TO BUILDING TO OBTAIN WATER SUPPLY INFORMATION FOR HYDRAULIC CALCULATION.

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4	03/07/26	ISSUED FOR OWNER CD REVIEW
5	31/07/26	ISSUED FOR PROGRESS
6	13/08/26	ISSUED FOR TENDER

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MECHANICAL NOTES

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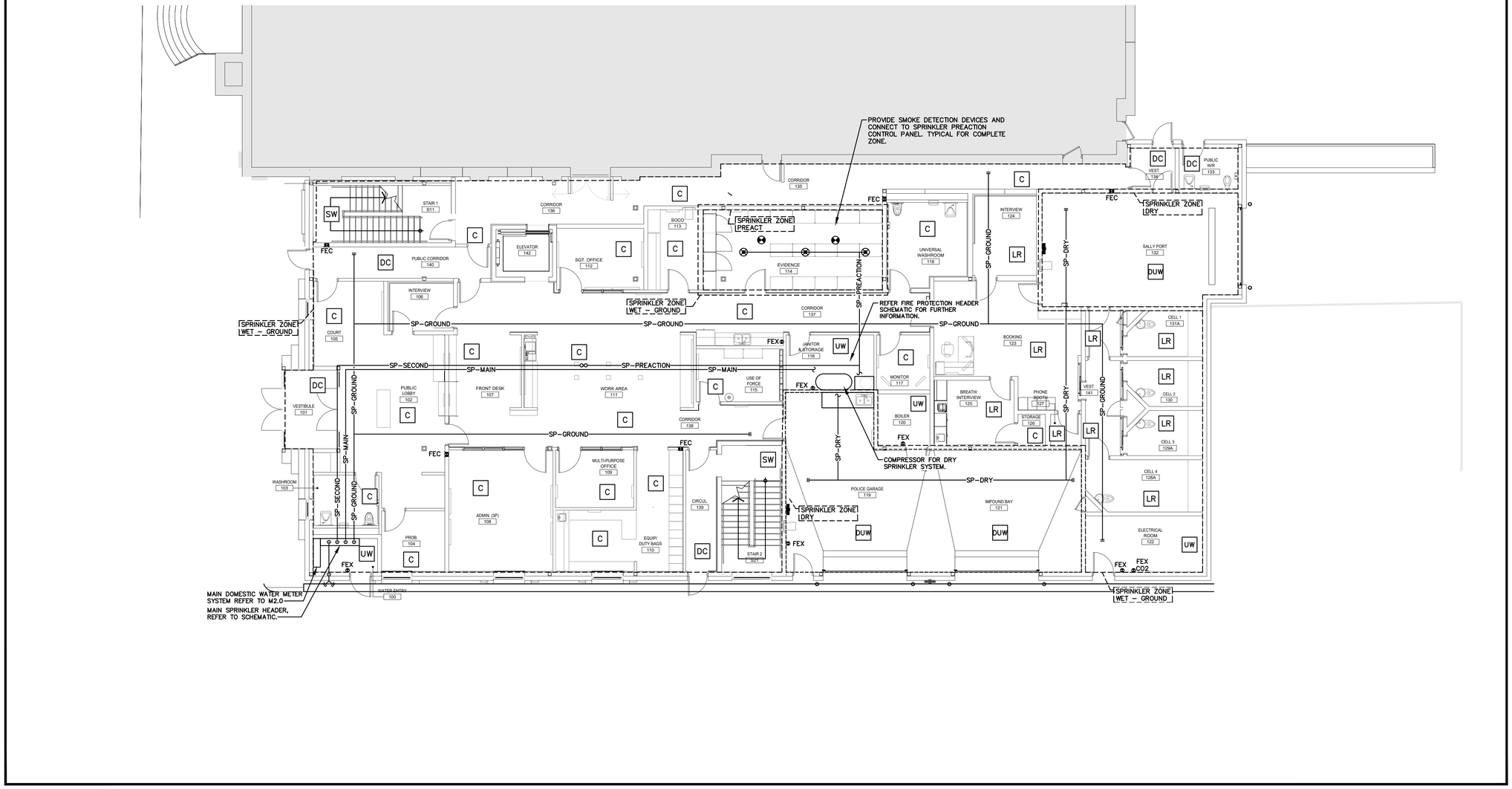

1 / M1.0 LEVEL 1 - FIRE PROTECTION

0 1 2 5m (1 : 100)

SPRINKLER HEAD LEGEND

U	UPRIGHT SPRINKLER HEAD
C	CONCEALED SPRINKLER HEAD
P	PENDENT SPRINKLER HEAD
PW	PENDENT SPRINKLER HEAD W/ WIRE GUARD
SW	SIDEWALL SPRINKLER HEAD
UW	UPRIGHT SPRINKLER HEAD W/ WIRE GUARD
DC	DRY TYPE CONCEALED HEAD
DSW	DRY TYPE SIDEWALL HEAD
DUW	DRY TYPE UPRIGHT SPRINKLER HEAD W/ WIRE GUARD
LR	LIGATURE RESISTANT SPRINKLER HEAD

REVISIONS

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LEVEL 1 FIRE PROTECTION

M1.0

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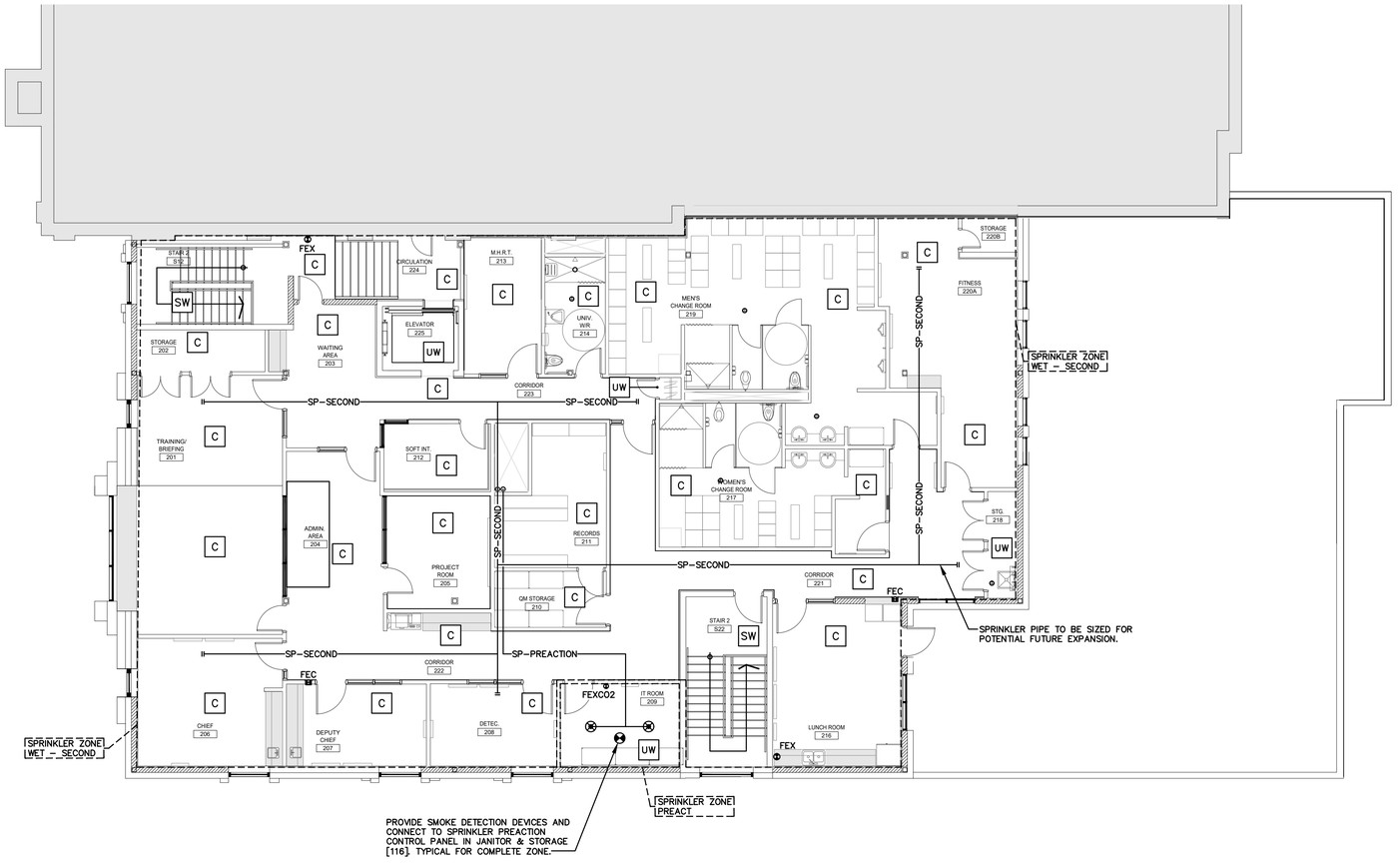

1 / M1.1 LEVEL 2 - FIRE PROTECTION

0 1 2 5m (1 : 100)

SPRINKLER HEAD LEGEND	
U	UPRIGHT SPRINKLER HEAD
C	CONCEALED SPRINKLER HEAD
P	PENDENT SPRINKLER HEAD
PW	PENDENT SPRINKLER HEAD W/ WIRE GUARD
SW	SIDEWALL SPRINKLER HEAD
UW	UPRIGHT SPRINKLER HEAD W/ WIRE GUARD
DC	DRY TYPE CONCEALED HEAD
DSW	DRY TYPE SIDEWALL HEAD
DUW	DRY TYPE UPRIGHT SPRINKLER HEAD W/ WIRE GUARD
LR	LIGATURE RESISTANT SPRINKLER HEAD

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LEVEL 2 FIRE PROTECTION

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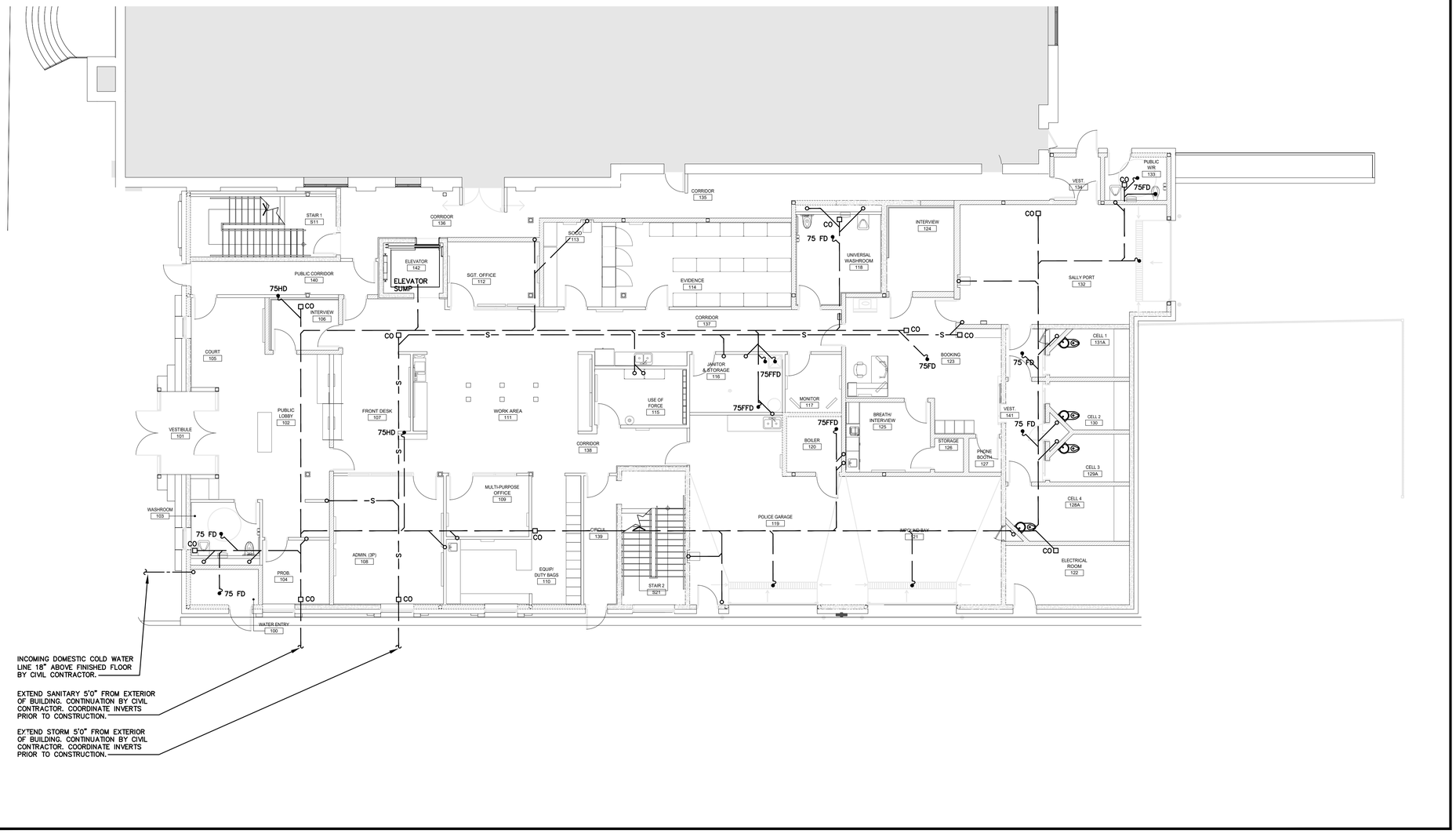

1 / M2.0 UNDERGROUND - PLUMBING

0 1 2 5m (1 : 100)

PLUMBING FIXTURE SCHEDULE

REFER	DESCRIPTION	SAN	VENT	HOT	COLD
W1	WATER CLOSET – W.H. F.V.	75	40	---	25
W2H	WATER CLOSET – W.H. F.V. B.F.	75	40	---	25
W3H	WATER CLOSET – W.H. F.V. B.F. ELEC	75	40	---	25
PW1	PENAL S.S. WC/LAV COMBINATION UNIT	75	40	12	32
U1	URINAL – W.H. F.V.	75	40	---	25
L1	LAVATORY – C.M.	40	32	15	15
L2H	LAVATORY – W.H. B.F. ELEC	40	32	15	15
S1	DOUBLE SINK – C.M.	40	32	15	15
S2	SINGLE SINK – C.M.	40	32	15	15
JS	JANITOR SINK – F.M.	50	40	15	15
SH1	SHOWER	50	40	20	20
SH2H	SHOWER – B.F.	50	40	20	20
EW	EYEWASH STATION	40	32	TEMP	20
WM1	WASHING MACHINE VALVE	50	40	20	20
BF	BOTTLE FILLING STATION	50	40	---	15

W.H. – WALL HUNG F.M. – FLOOR MOUNT F.V. – FLUSH VALVE
B.F. – BARRIE FREE ELEC – ELECTRONIC C.M. – COUNTER MOUNT

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UNDERGROUND PLUMBING

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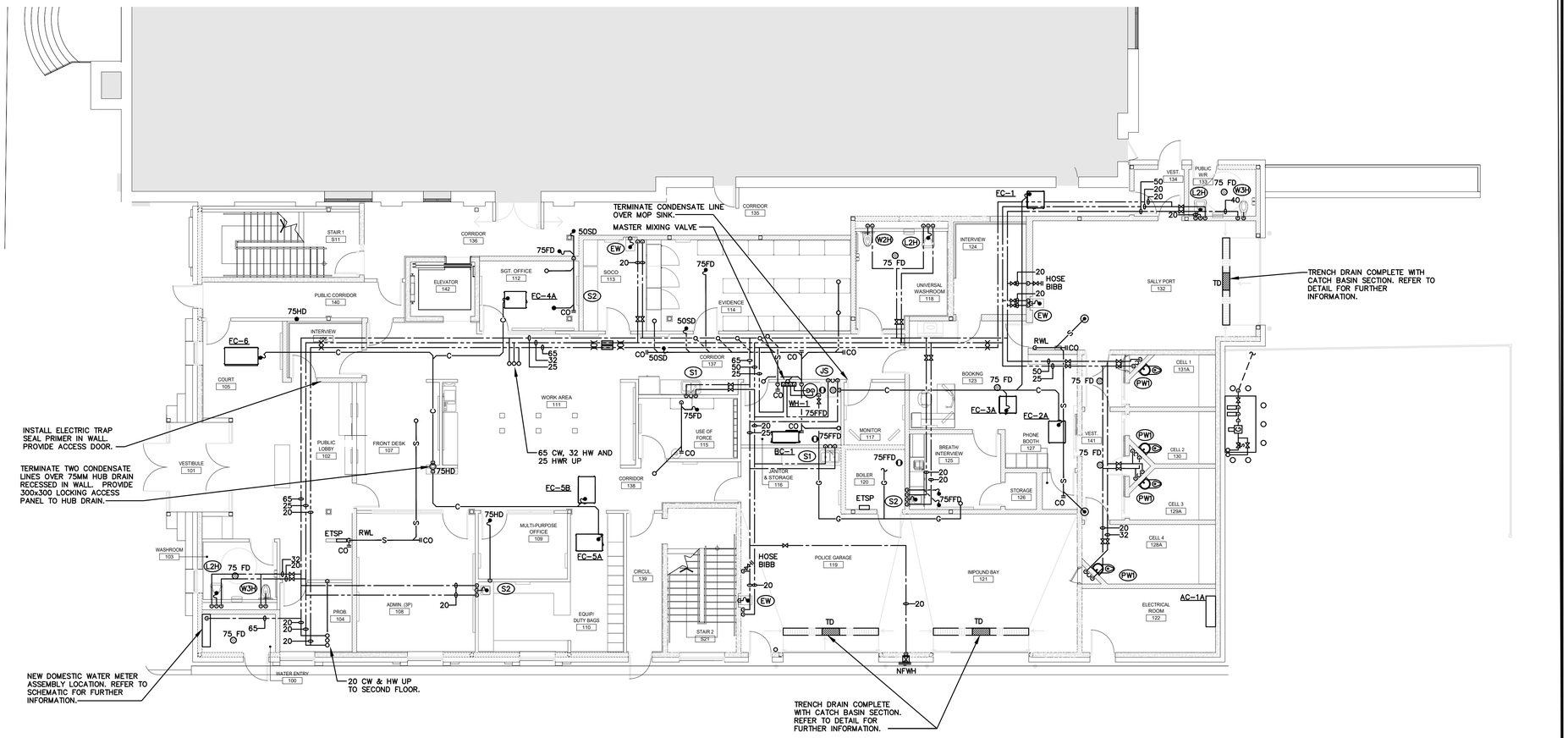

1 / M2.1 LEVEL 1 - PLUMBING

0 1 2 5m (1 : 100)

PLUMBING FIXTURE SCHEDULE

REFER	DESCRIPTION	SAN	VENT	HOT	COLD
W1	WATER CLOSET – W.H. F.V.	75	40	---	25
W2H	WATER CLOSET – W.H. F.V. B.F.	75	40	---	25
W3H	WATER CLOSET – W.H. F.V. B.F. ELEC	75	40	---	25
PW1	PENAL S.S. WC/LAV COMBINATION UNIT	75	40	12	32
U1	URINAL – W.H. F.V.	75	40	---	25
L1	LAVATORY – C.M.	40	32	15	15
L2H	LAVATORY – W.H. B.F. ELEC	40	32	15	15
S1	DOUBLE SINK – C.M.	40	32	15	15
S2	SINGLE SINK – C.M.	40	32	15	15
JS	JANITOR SINK – F.M.	50	40	15	15
SH1	SHOWER	50	40	20	20
SH2H	SHOWER – B.F.	50	40	20	20
EW	EYEWASH STATION	40	32	TEMP	20
WM1	WASHING MACHINE VALVE	50	40	20	20
BF	BOTTLE FILLING STATION	50	40	---	15

W.H. – WALL HUNG F.M. – FLOOR MOUNT F.V. – FLUSH VALVE
B.F. – BARRIE FREE ELEC – ELECTRONIC C.M. – COUNTER MOUNT

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LEVEL 1 PLUMBING

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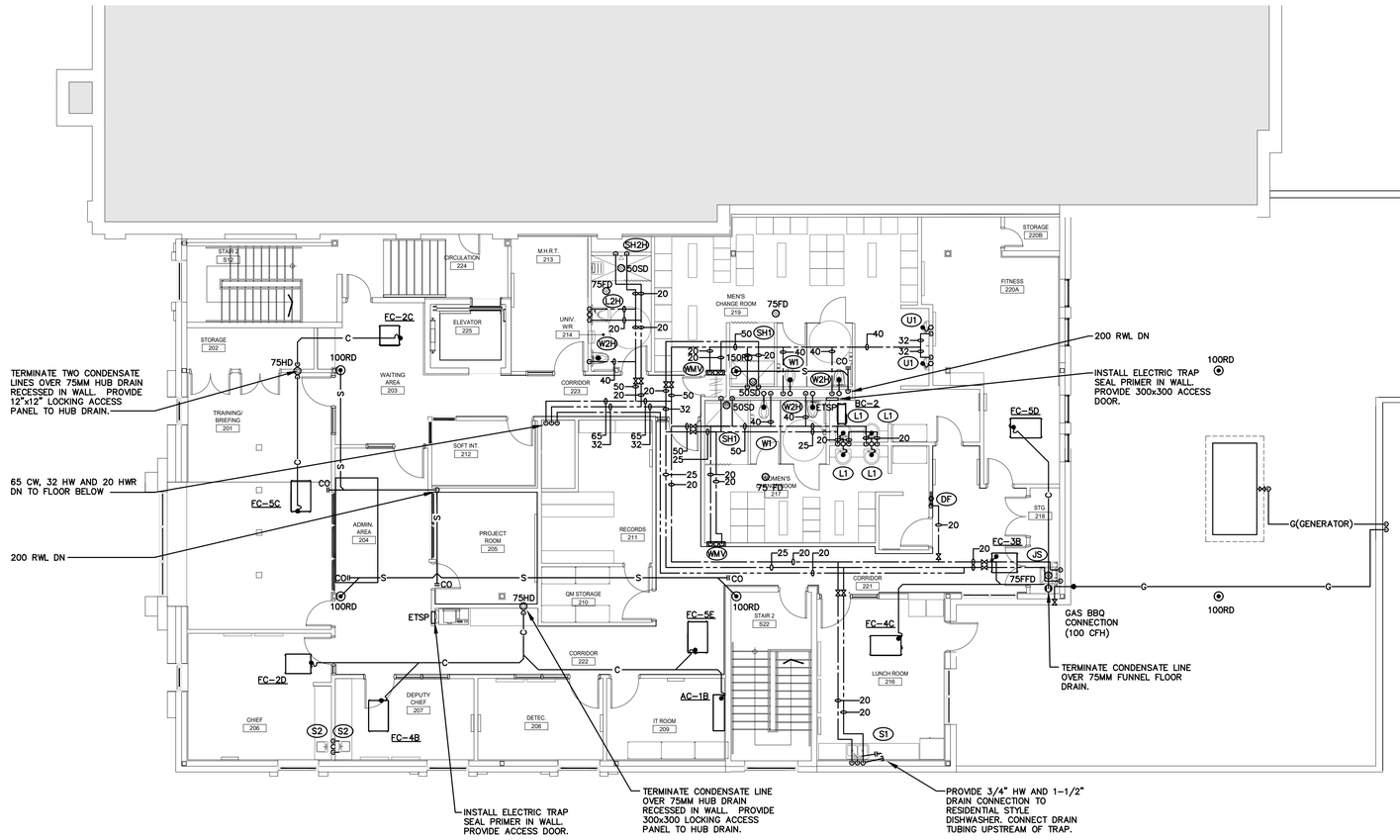

1 / M2.2 LEVEL 2 - PLUMBING

0 1 2 5m (1 : 100)

PLUMBING FIXTURE SCHEDULE

REFER	DESCRIPTION	SAN	VENT	HOT	COLD
WT	WATER CLOSET – W.H. F.V.	75	40	---	25
W2H	WATER CLOSET – W.H. F.V. B.F.	75	40	---	25
W3H	WATER CLOSET – W.H. F.V. B.F. ELEC	75	40	---	25
PWT	PENAL S.S. WC/LAV COMBINATION UNIT	75	40	12	32
UT	URINAL – W.H. F.V.	75	40	---	25
LT	LAVATORY – C.M.	40	32	15	15
L2H	LAVATORY – W.H. B.F. ELEC	40	32	15	15
ST	DOUBLE SINK – C.M.	40	32	15	15
S2	SINGLE SINK – C.M.	40	32	15	15
JS	JANITOR SINK – F.M.	50	40	15	15
SH	SHOWER	50	40	20	20
SH2H	SHOWER – B.F.	50	40	20	20
EW	EYEWASH STATION	40	32	TEMP	20
WMV	WASHING MACHINE VALVE	50	40	20	20
BF	BOTTLE FILLING STATION	50	40	---	15

W.H. – WALL HUNG F.M. – FLOOR MOUNT F.V. – FLUSH VALVE
B.F. – BARRIE FREE ELEC – ELECTRONIC C.M. – COUNTER MOUNT

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LEVEL 2 PLUMBING

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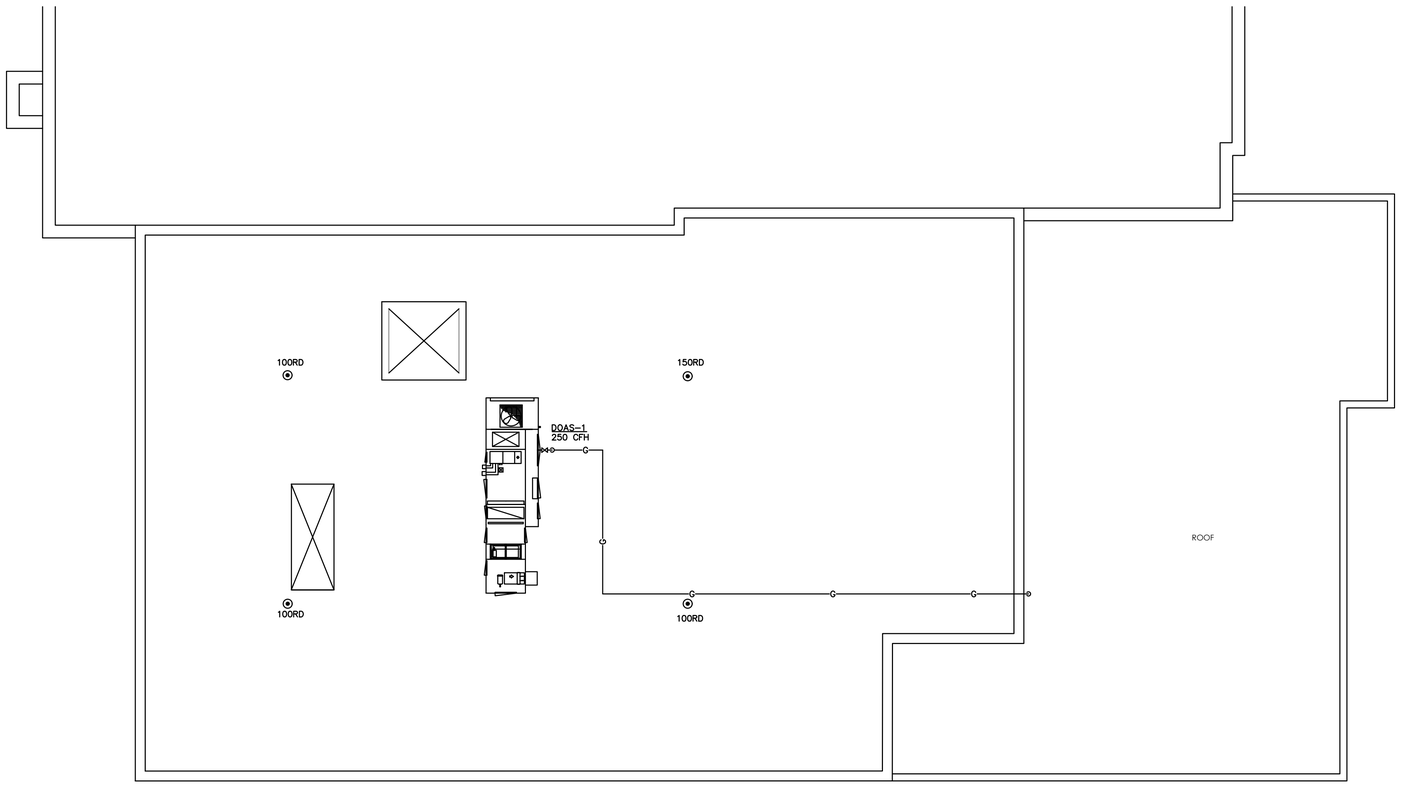

1 M2.2 ROOF - PLUMBING

0 1 2 5m (1 : 100)

PLUMBING FIXTURE SCHEDULE

REFER	DESCRIPTION	SAN	VENT	HOT	COLD
W1	WATER CLOSET – W.H. F.V.	75	40	--	25
W2H	WATER CLOSET – W.H. F.V. B.F.	75	40	--	25
W3H	WATER CLOSET – W.H. F.V. B.F. ELEC	75	40	--	25
PW1	PENAL S.S. WC/LAV COMBINATION UNIT	75	40	12	32
U1	URINAL – W.H. F.V.	75	40	--	25
L1	LAVATORY – C.M.	40	32	15	15
L2H	LAVATORY – W.H. B.F. ELEC	40	32	15	15
S1	DOUBLE SINK – C.M.	40	32	15	15
S2	SINGLE SINK – C.M.	40	32	15	15
JS	JANITOR SINK – F.M.	50	40	15	15
SH1	SHOWER	50	40	20	20
SH2H	SHOWER – B.F.	50	40	20	20
EW	EYEWASH STATION	40	32	TEMP	20
WM1	WASHING MACHINE VALVE	50	40	20	20
BF	BOTTLE FILLING STATION	50	40	--	15

W.H. – WALL HUNG F.M. – FLOOR MOUNT F.V. – FLUSH VALVE
B.F. – BARRIE FREE ELEC – ELECTRONIC C.M. – COUNTER MOUNT

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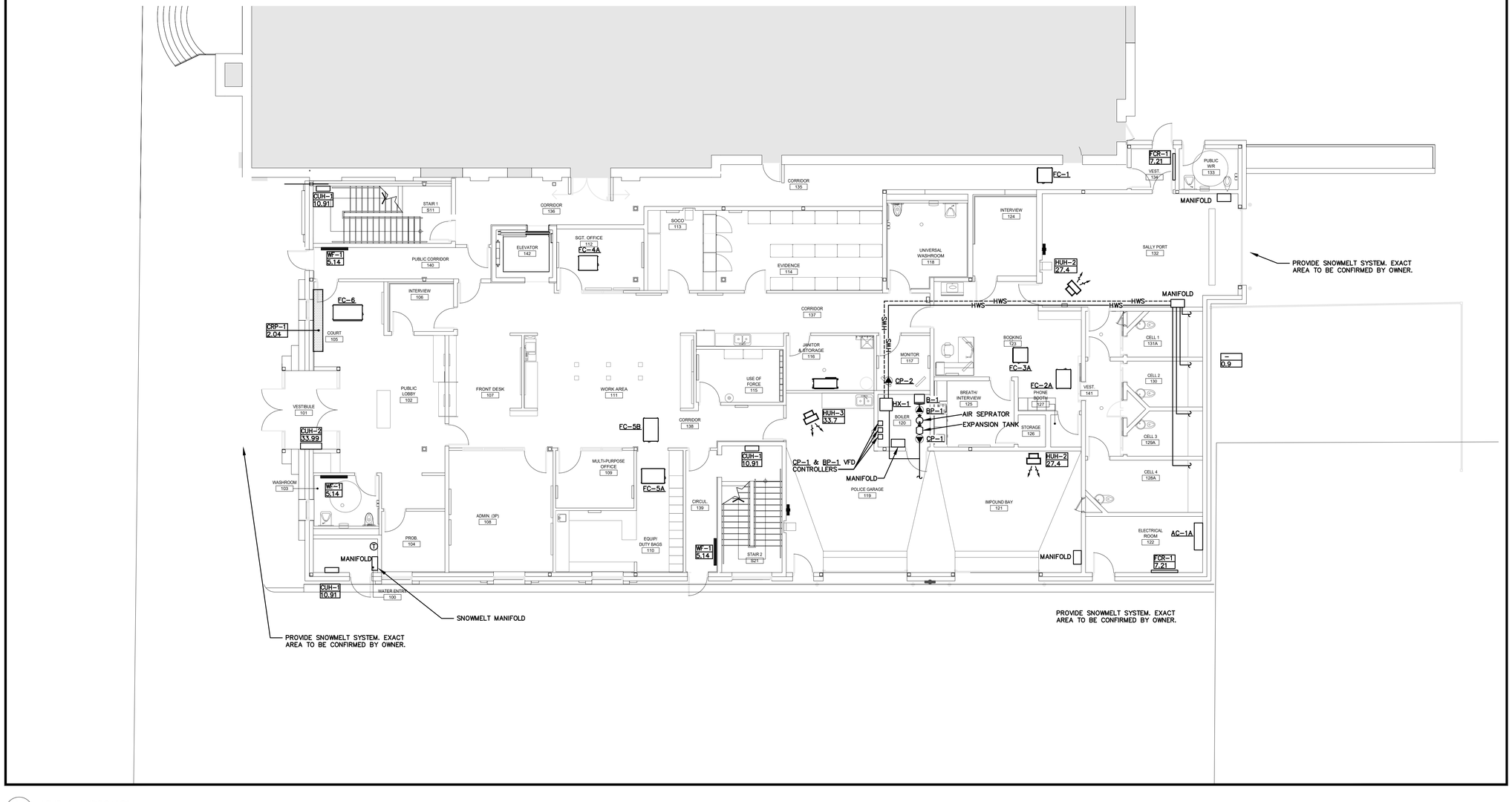

1 / M4.0 LEVEL 1 - HYDRONICS

0 1 2 5m (1 : 100)

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LEVEL 1 HYDRONICS

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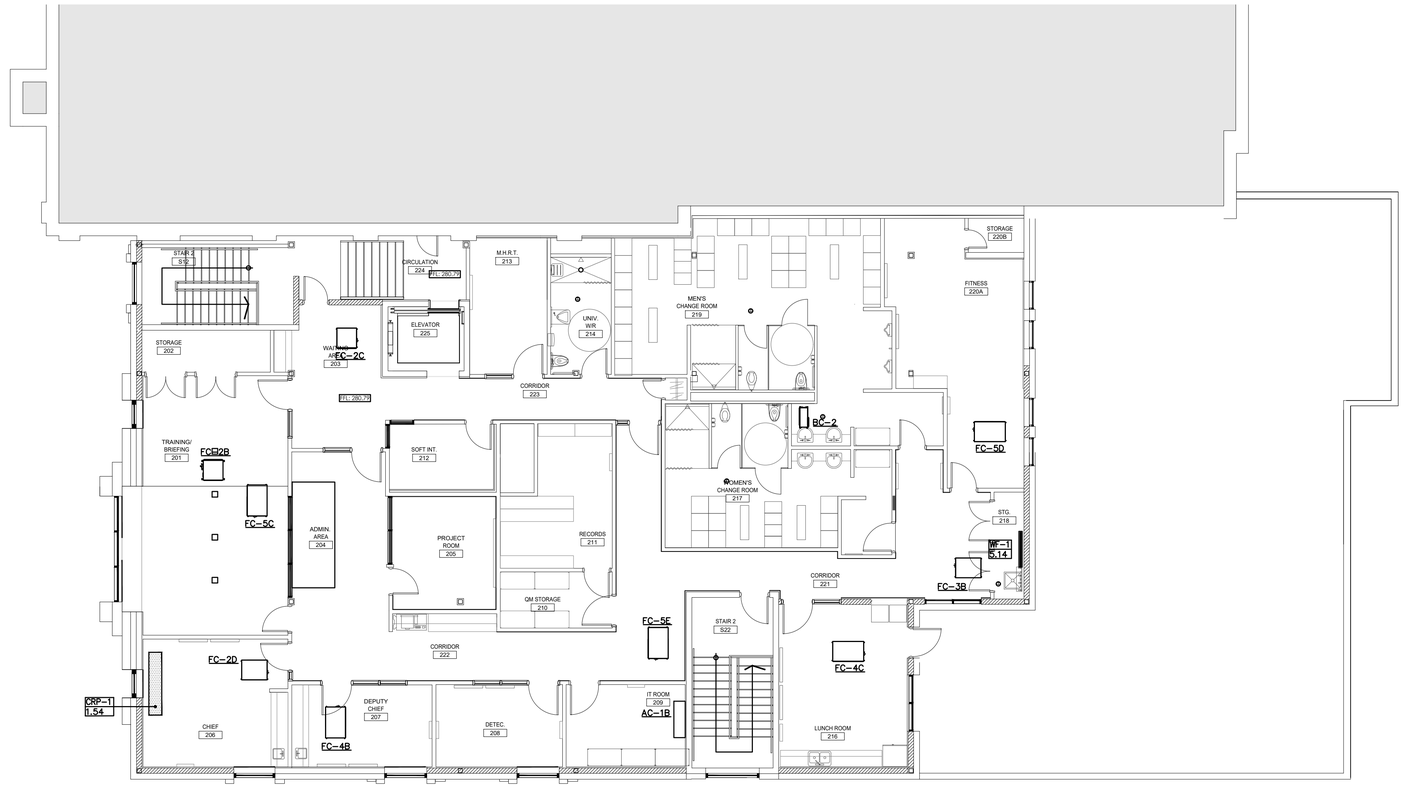

1 M4.1 LEVEL 2 - HYDRONICS

0 1 2 5m (1 : 100)

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LEVEL 2 HYDRONICS

M4.1

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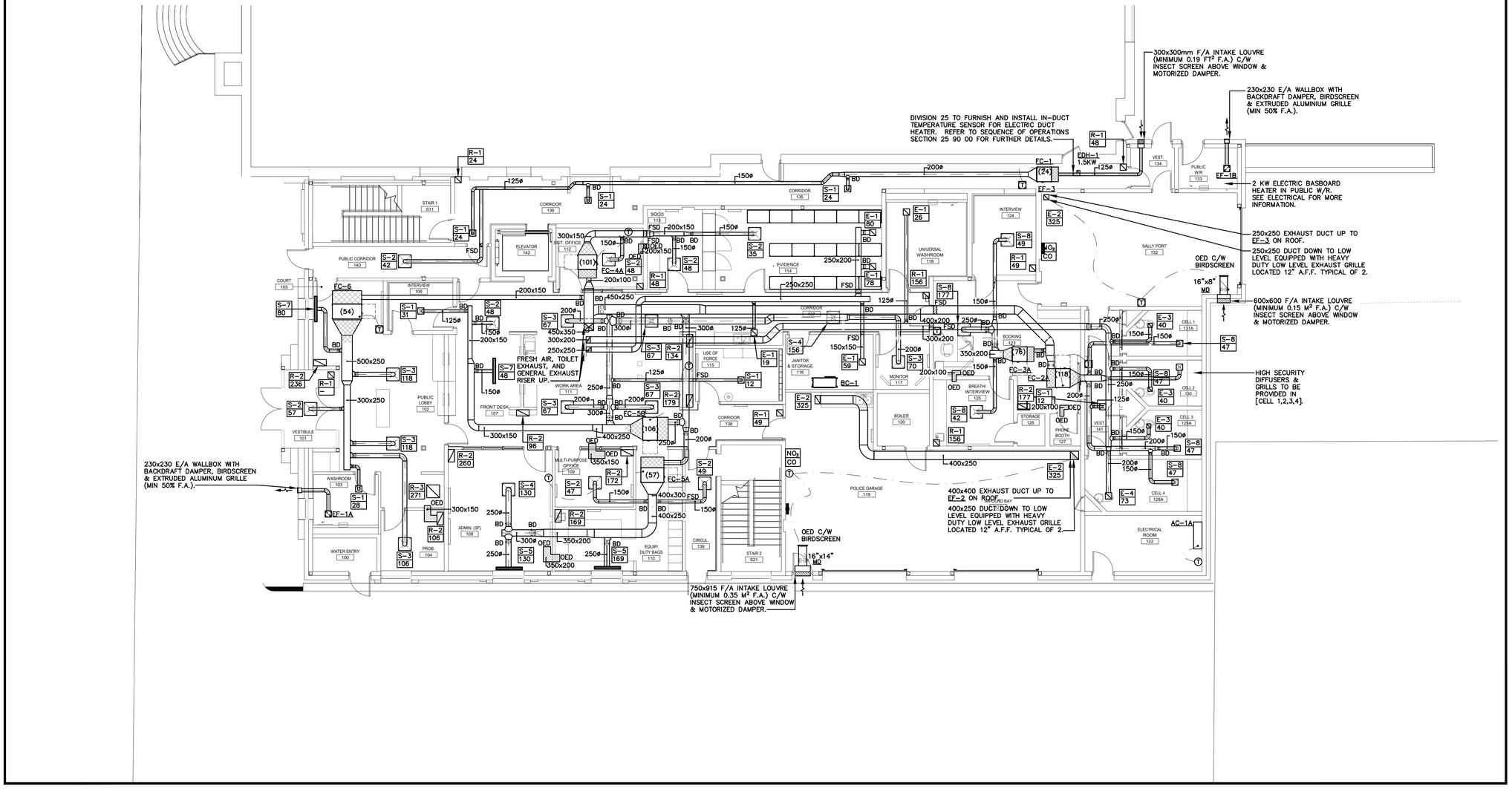

1 M5.0 LEVEL 1 - AIR DISTRIBUTION

0 1 2 5m (1 : 100)

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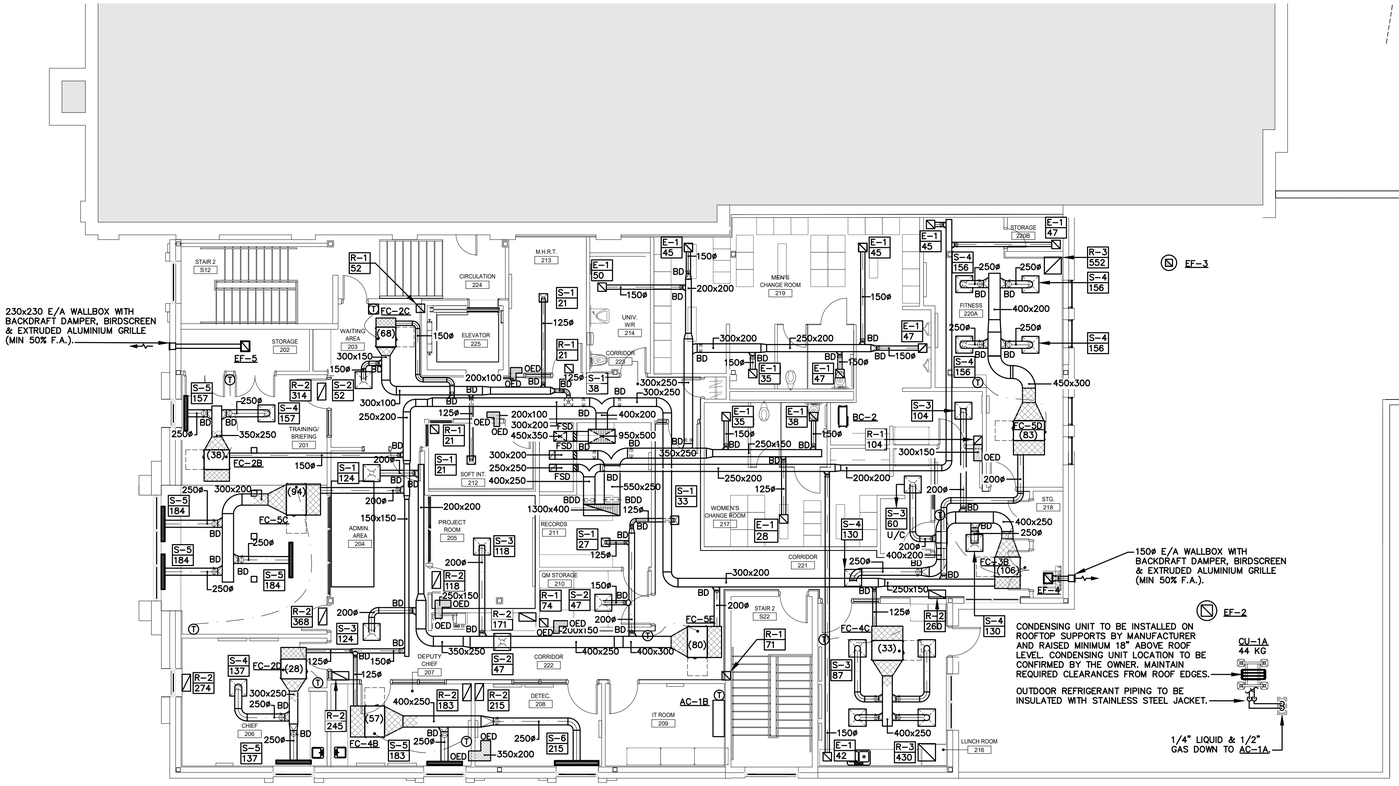

1 M5.1 LEVEL 2 - AIR DISTRIBUTION

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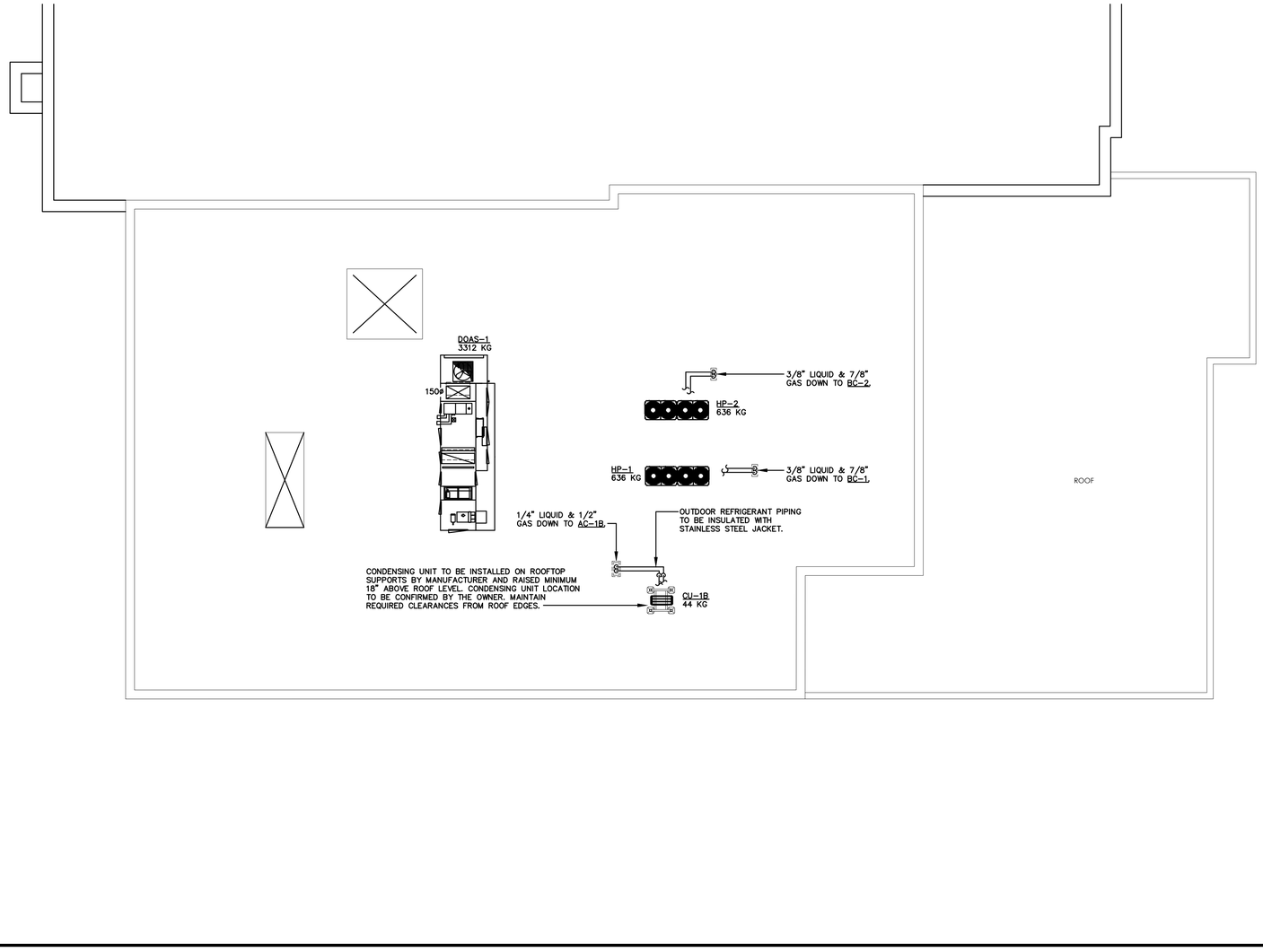

1 / M5.2 ROOF PLAN - AIR DISTRIBUTION

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ROOF PLAN AIR DISTRIBUTION

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ELECTRIC DUCT HEATER SCHEDULE

DESCRIPTION	EDH-1
BTU/HR	5,118
CAPACITY (kW)	1.50
MAX. AIRFLOW: (L/S)	24
AIR VELOCITY: (FPM)	255
DUCT DIMENSIONS: MM(IN)	150ø (6"ø)
STAGES	1
SIGNAL	MODULATING
VOLTAGE	120/1/60
MODEL REFERENCE: NEPTRONIC	DF CI00H
SPECIFICATION REFERENCE	23 82 00
COMPONENTS and OPTIONS LEGEND:	SEE BELOW
1. ALL ELECTRIC DUCT HEATERS SHALL BE SUPPLIED WITH: AC-AUTOMATIC THERMOAL CUTOUT, BLE-CONTROL BOX WITH LEFT EXT., CA-MAGNETIC CONTACTOR, CF-CONTROL FUSE, MC-MANUAL THERMAL CUTOUT, N1-CONTROL PANEL NEMA 1, HEC CONTROLLER. SEE SPEC FOR ADDITIONAL REQUIREMENTS.	
NOTE: DUCT DIMENSIONS ARE TO BE VERIFIED ON SITE BY MECHANICAL CONTRACTOR PRIOR TO ORDERING.	

AIR-CONDITIONING UNIT SCHEDULE

	DESCRIPTION	CU-1(A,B)
OUTDOOR UNIT	SOUND PRESSURE LEVEL: dB(A)	44
	OPERATING RANGE (46°C to −40°C) :	5600 - 18000
	REFRIGERANT:	R410
	WEIGHT: LBS (KG)	99 (44)
	MCA	17
	MOCP	28
	VOLTAGE: (V/PH/HZ)	208-230/1/60
	MANUFACTURER AND MODEL	MITSUBISHI ELECTRIC / PUY-A18NKA8
	REMARKS:	C/W 18" STAND. PROVIDE CONTROLLER AND INTERCONNECT WITH BMS. LOW AMBIENT COOLING

	DESCRIPTION	AC-1(A,B)
INDOOR UNIT	LOCATION:	ELECTRICAL ROOM [122] IT ROOM [209]
	AIRFLOW RANGE H/M/L: CFM	375
	COOLING CAPACITY: (BTU/H)	18,000
	MCA	1
	VOLTAGE: (V/PH/HZ)	208-230/1/60
	SOUND (DBA):	34-48
	MANUFACTURER AND MODEL:	MITSUBISHI ELECTRIC / PKA-A18LA1-TH
	REMARKS:	C/W CONDENSATE PUMP; INDOOR UNIT POWERED BY OUTDOOR UNIT

VRF FAN COIL UNIT SCHEDULE

	DESCRIPTION	FC-1	FC-2(A-D)	FC-3(A-B)	FC-4(A-C)	FC-5(A-E)	FC-6
PERFORMANCE	AIRFLOW (LOW-MID-HI), CFM (L/S)	212 - 265 - 300 (100-125-142)	265 - 318 - 371 (125-150-175)	353 - 424 - 494 (167-200-233)	618 - 742 - 883 (292-350-417)	618 - 742 - 883 (292-350-417)	883 - 1077 - 1271 (417-508-600)
	EXT. STATIC PRESSURE, IN W.G	0.40	0.40	0.40	0.40	0.40	0.40
	SOUND PRESS. LEVEL (LOW-MID-HI), dBA	24-28-30	26-30-34	27 - 31 - 34	31 - 35 - 39	31 - 35 - 39	35 - 39 - 43
	TOTAL HEATING CAPACITY, BTU/H (KW)	6700 (2.00)	13,500(4.00)	17,000 (5.00)	20,000 (5.9)	27,000 (7.9)	40,000 (11.7)
	TOTAL COOLING CAPACITY, BTU/H (KW)	6000 (1.8)	12,000 (3.50)	15,000 (4.4)	18,000 (5.3)	24,000 (7.0)	36,000 (10.6)
ELEC.	VOLTAGE (V/PH/HZ)	208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60	208-230/1/60
	MCA (A)	1.75	2.13	2.88	2.94	2.88	4.25
	MOCP (A)	15.00	15.00	15.00	15.00	15.00	15.00
GENERAL	DIMENSIONS: H X W X D (IN)	9-7/8" x 27-9/16" x 28-7/8"	9-7/8" x 27-9/16" x 28-7/8"	9-7/8" x 35-7/16" x 28-7/8"	9-7/8" x 43-5/16" x 28-7/8"	9-7/8" x 43-5/16" x 28-7/8"	9-7/8" x 55-1/8" x 28-7/8"
	NET WEIGHT, LBS (KG)	48(21.5)	47(21)	58 (26)	67 (30)	67 (30)	84 (38)
	DRIVE TYPE	DIRECT, DC MOTOR	DIRECT, DC MOTOR	DIRECT, DC MOTOR	DIRECT, DC MOTOR	DIRECT, DC MOTOR	DIRECT, DC MOTOR
	STYLE	HORIZONTAL DUCTED	HORIZONTAL DUCTED	HORIZONTAL DUCTED	HORIZONTAL DUCTED	HORIZONTAL DUCTED	HORIZONTAL DUCTED
	LOCATION:	CORRIDOR [135]	BOOKING [123] TRAINING/BRIEFING [201] WAITING AREA [203] CHIEF [206]	BOOKING [123] CORRIDOR [221]	SGT. OFFICE [112] DEPUTY CHIEF [207] LUNCH ROOM [216]	EQUIP/DUTY BAGS [110] WORK AREA [111] TRAINING/BRIEFING [201] FITNESS [220A] CORRIDOR [222]	COURT [105]
	MODEL REFERENCE:	MITSUBISHI PEFY-M06NMAU-A	MITSUBISHI PEFY-M12NMAU-A	MITSUBISHI PEFY-M15NMAU-A	MITSUBISHI PEFY-M18NMAU-A	MITSUBISHI PEFY-M24NMAU-A	MITSUBISHI PEFY-M36NMAU-A
	SPECIFICATION REFERENCE	23 81 26	23 81 26	23 81 26	23 81 26	23 81 26	23 81 26
NOTES	1. COOLING CAPACITIES ARE NOMINAL EQUIPMENT CAPACITIES BASED ON 80°F DB / 67°F WB INDOOR RETURN AND 95°F DB / 75°F WB OUTDOOR CONDITIONS. HEATING CAPACITIES ARE NOMINAL EQUIPMENT CAPACITIES BASED ON 70°F DB / 60°F WB INDOOR RETURN AND 47°F DB / 43°F WB OUTDOOR CONDITIONS. 2. ALL HORIZONTAL FAN COILS TO BE EQUIPED WITH INTEGRAL/FIELD INSTALLED CONDENSATE PUMPS. ALL CONDENSATE PUMPS TO BE POWERED FROM INDOOR FAN COIL UNIT. ALL FIELD POWER AND CONTROL WIRING BY MECHANICAL DIVISION. 3. HORIZONTAL FAN COILS TO BE PROVIDED WITH REAR RETURN. 4. HORIZONTAL FAN COILS TO BE COMPLETE WITH MANUFACTURER'S FILTER BOX AND MERV8 FILTERS. 5. VRF SYSTEM TO BE SUPPLIED WITH STAND-ALONE CONTROLS INCLUDING WALL CONTROLLERS AND CENTRAL CONTROLLER WITH GRAPHICAL INTERFACE. ALL ASSOCIATED WIRING BY MECHANICAL DIVISION 23.						

CABINET UNIT HEATER SCHEDULE

DESCRIPTION	AIR FLOW		HEATING COIL										ELECTRICAL			WEIGHT		MANUFACTURER AND MODEL	SPECIFICATION REFERENCE	REMARKS
			TOTAL CAPACITY		ENTERING FLUID TEMP		LEAVING FLUID TEMP		FLUID PRESSURE DROP		FLUID FLOW		MOTOR	AMPS	VOLTAGE					
DESIGNATION	CFM	l/s	MBH	KW	°F	°C	°F	°C	FT.WC.	kPa	GPM	L/s	HP		V/PH/HZ	LBS	KG			
CUH-1	185	87	10.91	3.20	160	71.1	140	60.0	1.8	5.4	1.11	0.1	1/25	0.85	120V/1/60	81	36.7	ENGINEERED AIR CUH-1		1. FULLY EXPOSED WALL MOUNTED CABINET, STYLE '11'. 2. BUILT-IN THERMOSTAT.
CUH-2	620	293	33.99	9.96	160	71.1	140	60.0	3.5	10.5	3.47	0.2	1/10	1.7	120V/1/60	136	61.7	ENGINEERED AIR CUH-7		1. FULLY EXPOSED WALL MOUNTED CABINET, STYLE '11'. 2. BUILT-IN THERMOSTAT.

GLYCOL FILL SYSTEM SCHEDULE

DESCRIPTION	LOCATION	VOLTAGE	MANUFACTURER	SPECIFICATION REFERENCE	REMARKS
GF-1		115/1/60	BELL & GOSSETT	23 21 16	

FORCED CONVECTION RADIATOR SCHEDULE

DESCRIPTION	AIR FLOW		HEATING COIL										ELECTRICAL			MANUFACTURER AND MODEL		REMARKS
			TOTAL CAPACITY		ENTERING FLUID TEMP		LEAVING FLUID TEMP		FLUID PRESSURE DROP		FLUID FLOW		MOTOR	AMPS	VOLTAGE			
DESIGNATION	CFM	l/s	MBH	KW	°F	°C	°F	°C	FT.WC.	kPa	GPM	L/s	HP		V/PH/HZ			
FCR-1	185	87	7.21	2.11	160	71.1	140	60.0	-	-	0.90	0.1	1/60	0.72	115/1/60	ENGINEERED AIR EF-50		1. FULLY EXPOSED WALL MOUNTED RADIATOR

WALL FIN RADIATION SCHEDULE

DESCRIPTION	MANUFACTURER AND MODEL	APPLICATION	PANEL DEPTH		ACTIVE LENGTH		PANEL HEIGHT		CAPACITY		ENTERING FLUID TEMP		LEAVING FLUID TEMP		ROWS	SPECIFICATION REFERENCE	REMARKS
DESIGNATION			INCH	mm	INCH	mm	INCH	mm	BTUH/FOOT	WATTS/METRE	°F	°C	°F	°C	#		
WF-1	ENGINEERED AIR WF-2A ENCLOSURE A	WALL MOUNTED EXPOSED	5.00	127.00	NOTE 1	NOTE 1	18.00	457.20	1285	1235	160	82.0	140	71.0	2 (6" CENTERS)	-	-

NOTES
1. REFER TO FLOOR PLANS FOR LENGTHS. CONTRACTOR TO SITE MEASURE AND COORDINATE WITH ARCHITECTURAL DRAWINGS.
2. PROVIDE ALL REQUIRED END CAPS, CORNERS, AND MOUNTING ACCESSORIES.
3. INSTALL WITH ACCESS DOORS TO ISOLATION VALVES, BALANCING VALVE, CONTROL VALVE, DRAIN AND VENT. REFER TO DETAILS.

EXHAUST FAN SCHEDULE

DESCRIPTION	SERVICE	LOCATION	AIR FLOW		AIR PRESSURE DROP		ELECTRICAL									MANUFACTURER AND MODEL	FAN TYPE	SPECIFICATION REFERENCE	REMARKS
							MOTOR				VOLTAGE	FAN RPM	DRIVE TYPE	CONTROL -VFD	EMERGENCY POWER				
DESIGNATION			CFM	l/s	HEAD: FT.IN.WG.	HEAD: kPa	FLA	HP	MCA	MOCP	V/PH/HZ				Y/N				
EF-1(A-B)	W/R [103] PUBLIC W/R [133]	CEILING	120	57	0.11	0.03	0.19	-	0.2	15	115/1/60	950	DIRECT	NO	N	GREENHECK SP-A110	CEILING CABINET FAN	23 34 00	C/W TIME-DELAY OCCUPANCY SENSOR
EF-2	POLICE GARAGE [119] & IMPOUND BAY [121]	ROOF	2115	998	0.3	0.07	10.6	3	13.2	20	208/3/60	880	DIRECT	YES	N	GREENHECK G-160-A	ROOF FAN	23 34 00	C/W VFD, 24" ROOF CURB, BURGLAR BARS, AND MOTORIZED DAMPER
EF-3	SALLY PORT [132]	ROOF	1125	531	0.3	0.07	2.4	1/2	3	15	208/3/60	1160	DIRECT	YES	N	GREENHECK G-120-A	ROOF FAN	23 34 00	C/W VFD, 24" ROOF CURB, BURGLAR BARS, AND MOTORIZED DAMPER
EF-4	STORAGE [218]	CEILING	100	47	0.1	0.02	0.19	-	0.2	15	115/1/60	950	DIRECT	NO	N	GREENHECK SP-A110	CEILING CABINET FAN	23 34 00	C/W WALL MOUNTED SWITCH
EF-5	STORAGE [202]	CEILING	75	35	0.1	0.02	0.19	-	0.2	15	115/1/60	950	DIRECT	NO	N	GREENHECK SP-A110	CEILING CABINET FAN	23 34 00	C/W WALL MOUNTED SWITCH

HOT WATER BOILER SCHEDULE

DESCIPTION	LOCATION	SERVICE	BOILER TYPE	MAXIMUM OUTPUT		FLUID	FLOW RATE		ENTERING WATER TEMP		LEAVING WATER TEMP		FLUID PRESSURE DROP		GAS INPUT		TURNDOWN	ELECTRICAL			EMERGENCY POWER	FLUE CONNECTION DIAMETER		MANUFACTURER AND MODEL	SPECIFICATION REFERENCE	REMARKS
																		MOTOR								
DESIGNATION				MBH	KW		USGPM	L/s	F	C	F	C	FT.WC.	kPa	MBH	KW		HP	KW	V/P/HZ	YES/NO	INCH	mm			
B-1	BOILER ROOM [120]	HYRDONIC HEATING SYSTEM	CONDENSING	705	207	WATER			140	60.0	160	71.1			725	212	MODULATING BURNER WITH 7:1 TURNDOWN	-	-	120/1/60	NO	6	152	LOCHINVAR FTX725N	23 52 16	-

HORIZONTAL UNIT HEATER SCHEDULE

DESCRIPTION	AIR FLOW		HEATING COIL										ELECTRICAL			WEIGHT		MANUFACTURER AND MODEL	SPECIFICATION REFERENCE	REMARKS
			TOTAL CAPACITY		ENTERING FLUID TEMP		LEAVING FLUID TEMP		FLUID PRESSURE DROP		FLUID FLOW		MOTOR	AMPS	VOLTAGE					
DESIGNATION	CFM	l/s	MBH	KW	°F	°C	°F	°C	FT.WC.	kPa	GPM	L/s	HP		V/PH/HZ	LBS	KG			
HUH-2	650	307	27.40	8.03	160	71.1	140	60.0	1.1	3.3	2.80	0.2	1/6	2.15	120/1/60	70	31.8	ENGINEERED AIR EF-50	-	1. FULLY EXPOSED CEILING MOUNTED HEATER.
HUH-3	840	396	33.70	9.88	160	71.1	140	60.0	1.4	4.2	3.40	0.2	1/12	4.0	120/1/60	64	29.0	ENGINEERED AIR EF-50	-	1. FULLY EXPOSED CEILING MOUNTED HEATER.

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MECHANICAL DETAILS

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ROOF MOUNTED DEDICATED OUTDOOR AIR SYSTEM (DOAS) SCHEDULE

	DESCRIPTION	DOAS-1
	AREA SERVED	1ST FLOOR & 2ND FLOOR
SUPPLY FAN	AIRFLOW: (CFM)	2,260
	STATIC PRESSURE: EXTERNAL / TOTAL (IN.WG).	1.0 / 4.6
	FAN TYPE	DIRECT DRIVE / ECM MOTOR
	FAN RPM	3093
	MOTOR SIZE: (HP / BHP)	5.0 / 2.38
EXHAUST FAN	AIRFLOW: (CFM)	2,145
	STATIC PRESSURE: EXTERNAL / TOTAL (IN.WG).	1.0 / 2.9
	FAN TYPE	DIRECT DRIVE / SERIES II
	FAN RPM	2200
	MOTOR SIZE: (HP / BHP)	3 / 1.86
FRESH AIR	MINIMUM OUTDOOR AIR AMOUNT: (CFM)	100%
ERW	ENERGY RECOVERY WHEEL (REFER TO SCHEDULE)	ERW
HEAT PUMP HEATING	ENTERING AIR TEMPERATURE: (°F DB)	-
	UNIT LEAVING AIR TEMPERATURE: (°F DB)	-
	HEAT PUMP HEATING CAPACITY: (MBH)	-
	AIR PRESSURE DROP: (IN.WG.)	-
	HEATING COP	-
GAS HEATING	GAS HEATING INPUT CAPACITY: (MBH / KW)	250 / 73.3
	GAS HEATING OUTPUT CAPACITY: (MBH / KW)	202.5 / 59.3
	HEAT RISE: (°F DB)	83.00
DX COOLING	ENTERING AIR TEMPERATURE: (°F DB / WB)	80
	LEAVING AIR TEMPERATURE OFF COIL: (°F DB / WB)	55.6
	TOTAL CAPACITY: (MBH)	85.0
	SENSIBLE CAPACITY: (MBH)	-
	AIR PRESSURE DROP: (IN.WG.)	0.65
	REFRIGERANT TYPE:	R-454B
	EER	12.10
FILTERS	FILTER TYPE	-
MAIN ELEC.	MCA: (A)	65.1
	MOCP: (A)	90
	VOLTAGE: (V / PH / HZ)	208 / 3 / 60 (NORMAL POWER)
UNIT SOUND POWER LEVEL (dBA) - [EXHAUST / SUPPLY]	63	86 / 90
	125	84 / 88
	250	81 / 87
	500	79 / 87
	1000	78 / 83
	2000	78 / 81
	4000	76 / 75
	8000	73/ 70
UNIT DATA	DIMENSIONS L X W X H: (IN)	229 x 73 x 80
	APPROXIMATE WEIGHT: (LBS)	7,300
	MANUFACTURER / MODEL REFERENCE	EngAir - FWX63/DJE40/O/CR/HRW900/SH60
	SPECIFICATION REFERENCE	-
NOTES	1. EER IS RATED AT AHRI CONDITIONS AND IN ACCORDANCE WITH DOE TEST PROCEDURES. 2. INSTALL UNIT WITH 24"(600MM) HIGH ROOF CURB. 3. PROVIDE WITH DEDICATED CONTROLLER AND BACNET INTERFACE FOR INTEGRATION WITH BAS 4. SUPPLY AIR DISCHARGE AND RETURN AIR CONNECTIONS OFF BOTTOM OF UNIT. 5. PROVIDE VIBRATION ISOLATION AND INSULATION IN ROOF CURB FOR SOUND ATTENUATION. REFER TO DETAILS. 6. DISCONNECT BY DIVISION 26 ELECTRICAL. UNIT TO INCLUDE SERVICE RECEPTACLE (120V) IN UNIT, SEPARATELY WIRED BY DIVISION 26 ELECTRICAL. 7. PROVIDE MOTORIZED DAMPERS ON VENTILATION AIR INTAKE AND RELIEF AIR OUTLETS.	

CEILING PANEL RADIATION SCHEDULE

DESCRIPTION	APPLICATION	PANEL WIDTH		No. of TUBES	CAPACITY		ENTERING FLUID TEMP		LEAVING FLUID TEMP		MANUFACTURER AND MODEL	SPECIFICATION REFERENCE	REMARKS
DESIGNATION		INCH	mm		BTUH/FOOT	WATTS/METRE	°F	°C	°F	°C			
CRP-1	CEILING MOUNTED	18	457	3	211	203	160	71.1	140	60.0	AIRTEX HOT WATER CEILING PANEL RADIATION	23 82 00	-
NOTE: FIELD MEASURE FOR EXACT LENGTH; REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CO-ORDINATION OF RADIATION LENGTHS													

DOMESTIC WATER HEATER

DESCRIPTION	LOCATION	SERVICE	TOTAL VOLUME		RECOV	WATER TEMP IN		WATER TEMP OUT		GAS	ELECTRICAL				MODEL	SPECIFICATION REFERENCE
DESIGNATION			GAL	LITRE	GPH	°F	°C	°F	°C	BTU/H	VOLT	PHASE	HERTZ	AMPS		
DWH-1	JANITOR $ STORAGE [116]	DOMESTIC HOT WATER	100	451	256	40	4.4	140	60.0	199900	120	1	60	5.0	AO SMITH CYCLONE FLEX BTH-199	22 30 00

SUPPLY AIR OUTLET SCHEDULE

DESCRIPTION	MANUFACTURER	MODEL REFERENCE	MOUNTING	NOMINAL FACE SIZE		CONNECTION SIZE		AIRFLOW RANGE:		MAXIMUM NOISE CRITERIA: DBA	SPECIFICATION REFERENCE
DESIGNATION				INCH	mm	INCH	mm	CFM	l/s		
S-1	PRICE	SCD	CEILING DIFFUSER	12" x 12"	300 x 300	5"Ø	125Ø	50 - 150	24 - 76	NC 25	23 37 00
S-2	PRICE	SCD	CEILING DIFFUSER	24" x 24"	600 x 600	6"Ø	150Ø	50 - 180	24 - 85	NC 25	23 37 00
S-3	PRICE	SCD	CEILING DIFFUSER	24" x 24"	600 x 600	8"Ø	200Ø	150 - 280	76 - 132	NC 25	23 37 00
S-4	PRICE	SCD	CEILING DIFFUSER	24" x 24"	600 x 600	10"Ø	250Ø	250 - 450	118 - 212	NC 25	23 37 00
S-5	PRICE	SDS100 C/W SDBI PLENUM	CEILING LINEAR	4 SLOT x 4'-0"	4 SLOT x 1200mm	10"Ø	250Ø	240 - 520	113 - 245	NC 25	23 37 00
S-6	PRICE	SDS100 C/W SDBI PLENUM	CEILING LINEAR	4 SLOT x 5'-0"	4 SLOT x 1500mm	10"Ø	250Ø	240 - 520	113 - 245	NC 25	23 37 00
S-7	PRICE	SDS50 C/W SDBI PLENUM	CEILING LINEAR	2 SLOT x 4'-0"	2 SLOT x 1200mm	6"Ø	150Ø	100 - 200	47 - 94	NC 25	23 37 00
S-8	PRICE	MSPG	CEILING DIFFUSER	12" x 12"	300 x 300	-	-	100 - 200	47 - 94	NC 25	23 37 00

EXHAUST AIR INLET SCHEDULE

DESCRIPTION	MANUFACTURER	MODEL REFERENCE	MOUNTING:	NOMINAL FACE SIZE		AIRFLOW RANGE		MAXIMUM NOISE CRITERIA: DBA	SPECIFICATION REFERENCE	REMARKS
DESIGNATION				INCH	mm	CFM	l/s			
E-1	PRICE	80DAL	CEILING GRILLE	12" x 12"	300 x 300	40 - 150	19 - 70	NC 25	23 37 00	-
E-2	PRICE	630D	DUCT MOUNTED	10" x 20"	250 x 500	600 - 700	1271 - 1695	NC 25	23 37 00	ALUMINUM GRILLE
E-3	PRICE	MSRRG	CEILING GRILLE	8" x 8"	200 x 200	50 - 100	24 - 47	NC 25	23 37 00	MAXIMUM SECURITY RISK RESISTANT GRILLES
E-4	PRICE	MSRRG	CEILING GRILLE	12" x 12"	300 x 300	100 - 200	47 - 94	NC 25	23 37 00	MAXIMUM SECURITY RISK RESISTANT GRILLES

RETURN AIR INLET SCHEDULE

DESCRIPTION	MANUFACTURER	MODEL REFERENCE	MOUNTING:	NOMINAL FACE SIZE		AIRFLOW RANGE		MAXIMUM NOISE CRITERIA: DBA	SPECIFICATION REFERENCE	REMARKS
DESIGNATION				INCH	mm	CFM	l/s			
R-1	PRICE	80	CEILING GRILLE	12" x 12"	300 x 300	150 - 300	70 - 140	NC 25	23 37 00	-
R-2	PRICE	80	CEILING GRILLE	12" x 24"	300 x 600	500 - 1000	230 - 330	NC 25	23 37 00	-
R-3	PRICE	80	CEILING GRILLE	24" x 24"	600 x 600	500 - 2000	230 - 950	NC 25	23 37 00	-

VRF BRANCH CONTROLLER SCHEDULE

DESCRIPTION	BC-1	BC-2
TOTAL # OF PORTS (# OF CONNECTED PORTS)	8 (7)	12 (9)
ELECTRICAL: V/PH/HZ	208-230/1/60	208-230/1/60
MCA (A)	0.13	0.13
MOCP (A)	15	15
NET WEIGHT, LBS(KG)	139 (63)	170 (77)
MODEL REFERENCE	MITSUBISHI CMB-M108NU-MA1-SV	MITSUBISHI CMB-M1012NU-MA1-SV
SPECIFICATION REFERENCE	23 81 29	23 81 29
1. C/W ACOUSTICAL INSULATION 2. ALL CONNECTIONS/PORTS TO BE SUPPLIED WITH ISOLATION VALVES INCLUDING UNUSED PORTS 3. C/W CONDENSATE DRAIN (IF REQUIRED BY SPECIFIC MANUFACTURER)		

HVAC EXPANSION TANK SCHEDULE

DESCRIPTION	LOCATION	SERVICE	MEDIUM	MINIMUM TOTAL VOLUME		MINIMUM ACCEPTANCE VOLUME		ACTUAL TOTAL VOLUME		ACTUAL ACCEPTANCE VOLUME		MINIMUM SUPPLY TEMP		MAXIMUM SUPPLY TEMP		MINIMUM PRESSURE		MAXIMUM PRESSURE		MODEL	SPECIFICATION REFERENCE
DESIGNATION				USGAL	LITRE	USGAL	LITRE	USGAL	LITRE	USGAL	LITRE	°F	°C	°F	°C	PSI	kPa	PSI	kPa		
ET-1		HOT WATER HEATING SYSTEM	WATER									40	4.4	160	71.1	10	69	40	276	B&G PRE-CHARGED DIAPHRAGM	23 21 16
ET-2		GLYCOL HEATING SYSTEM	40% PROPYLENE GLYCOL									40	4.4	160	71.1	10	69	40	276	B&G PRE-CHARGED DIAPHRAGM	23 21 16

PUMP SCHEDULE

DESCRIPTION	LOCATION	SERVICE	FLUID	FLOW RATE		FLUID PRESSURE DROP		ELECTRICAL						PUMP TYPE:	MANUFACTURER AND MODEL	SPECIFICATION REFERENCE	REMARKS
								MOTOR SIZE:		VOLTAGE	PUMP SPEED	CONTROL	EMERGENCY POWER				
DESIGNATION				USGPM	L/s	FT.WC.	kPa	HP	KW	V/PH/HZ	RPM		Y/N				
CP-1	BOILER [120]	HOT WATER HEATING	WATER	25	1.58	30.1	90.0	0.75	0.56	208/3/60	1200	VFD - VARIABLE	N	INLINE	BELL & GOSSETT E-80-1.5X1.5X9.5B	23 21 23	-
CP-2	BOILER [120]	GLYCOL HEATING	GLYCOL									VFD - VARIABLE	N	INLINE			
BP-1	BOILER [120]	BOILER PRIMARY	WATER	25	1.58	19.1	57.0	0.1666	0.12	115/1/60	3570	EC MOTOR	N	INLINE	BELL & GOSSETT E-80X-3X7C	23 21 23	-

HVAC HEAT EXCHANGER PLATE SCHEDULE

DESCRIPTION	LOCATION	SERVICE	CAPACITY	FLUID		ENTERING WATER TEMP		LEAVING WATER TEMP		FLOW RATE		FLUID PRESSURE DROP				MANUFACTURER AND MODEL	SPECIFICATION REFERENCE	REMARKS
DESIGNATION			MBH			°F	°C	°F	°C	USGPM	L/s	ALLOWED PSI	CALC. PSI	ALLOWED kPa	CALC. kPa			
HX-1		GLYCOL HEATING		WATER	HOT SIDE	160	71.1	140	60.0		0.00					BELL AND GOSSETT GPX MODEL	23 57 00	1. PLATE HEAT EXCHANGER
				40% GLYCOL	COLD SIDE	105	40.6	130	54.4		0.00							

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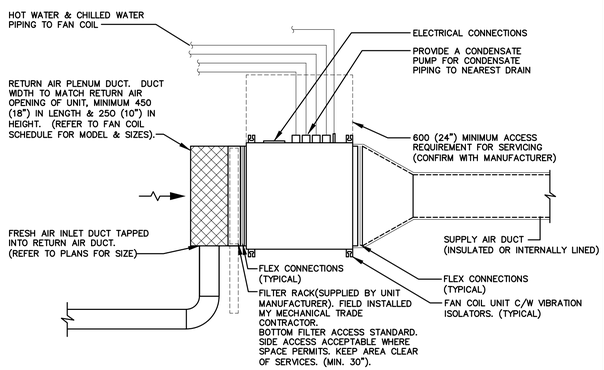
1
M7.0



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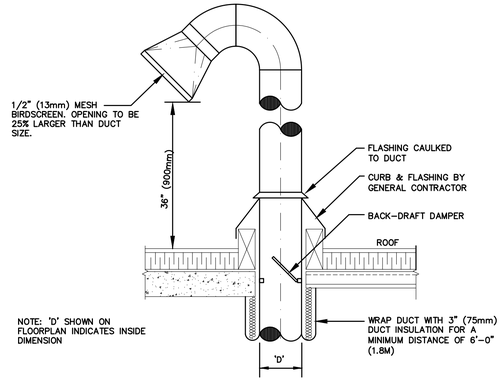
DETAIL OF TYPICAL HORIZONTAL FAN COIL UNIT (PLAN VIEW)



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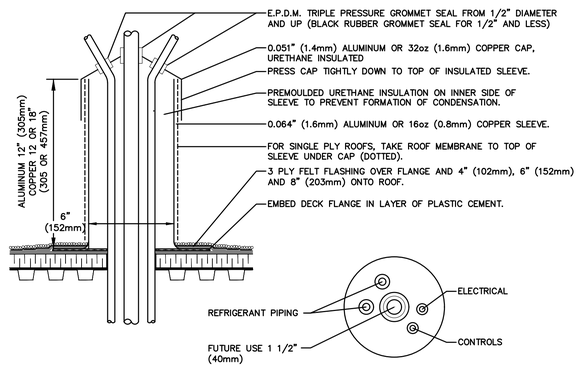
DETAIL OF EXHAUST VENT THROUGH ROOF



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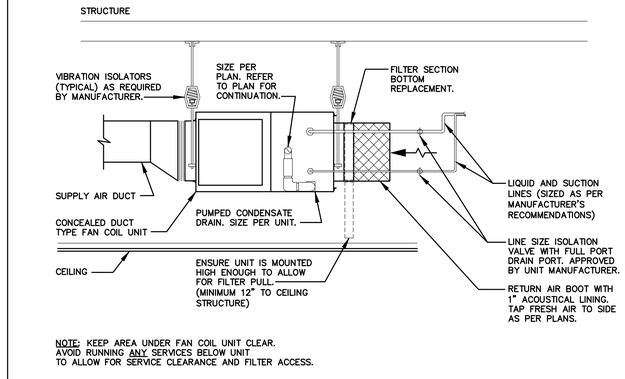
DETAIL OF REFRIGERANT PIPING THROUGH ROOF



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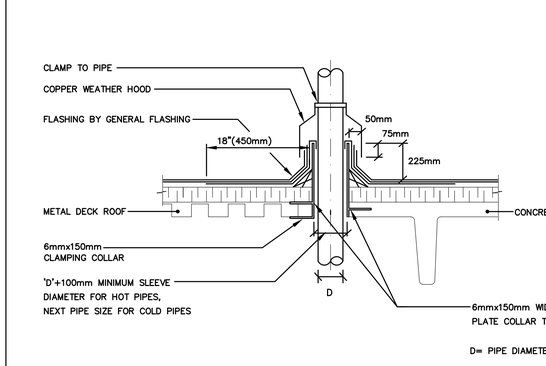
DETAIL OF TYPICAL HORIZONTAL FAN COIL UNIT (SIDE VIEW)



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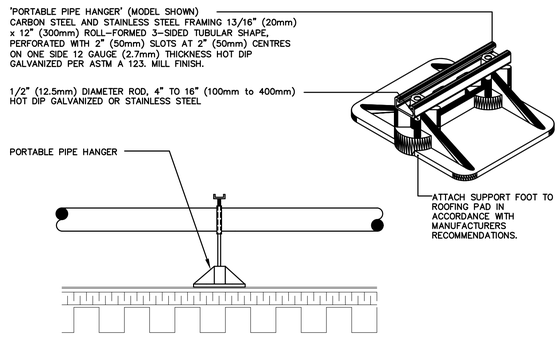
DETAIL OF PIPE/DUCT THROUGH ROOF



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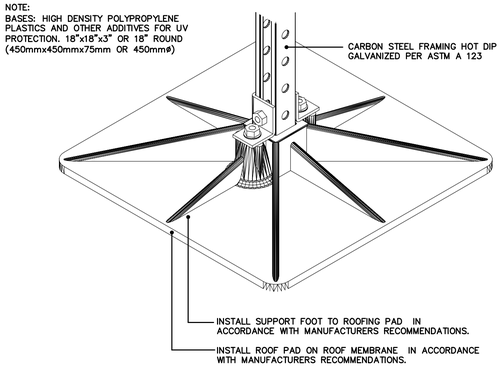
DETAIL OF PIPING ROOF SUPPORT



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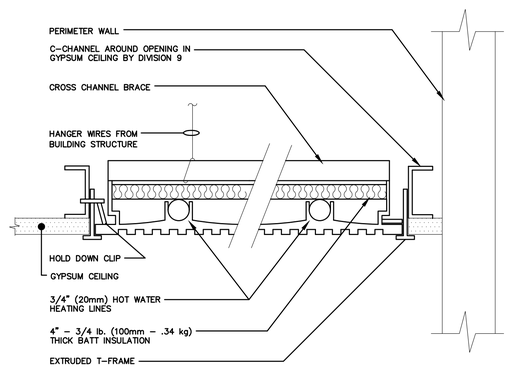
M7.0

DETAIL OF ROOF/BASE MOUNTED EQUIPMENT/CONDENSER SUPPORT FOOT



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DETAIL OF CEILING RADIANT PANEL INSTALLATION

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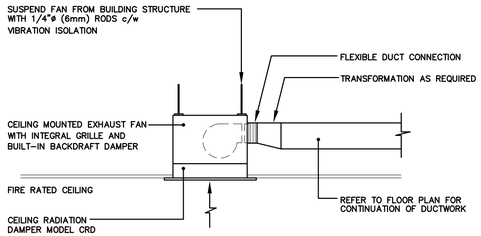

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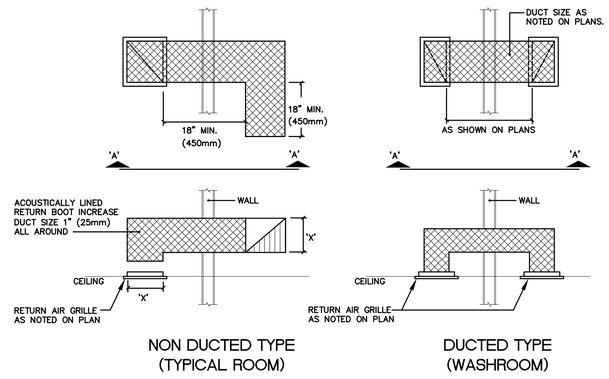
DETAIL OF CEILING MOUNTED EXHAUST FAN



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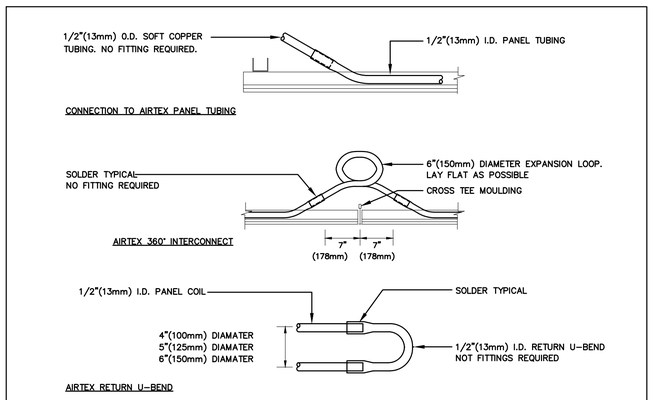
M7.1

DETAIL OF ACOUSTICALLY LINED TRANSFER DUCTS

4
M7.1

DETAIL OF INLINE EXHAUST FAN

5
M7.1



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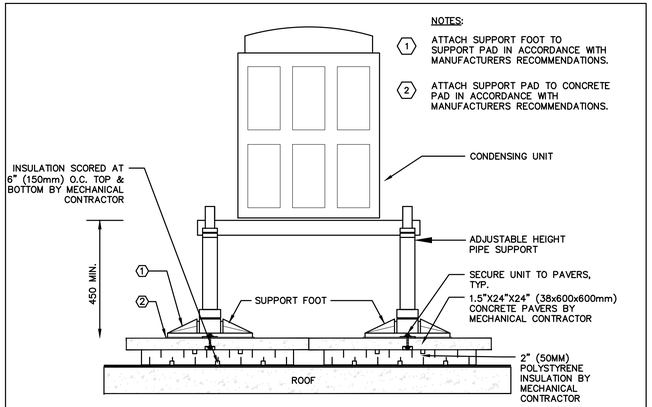
DETAIL OF CEILING RADIANT PANEL CONNECTIONS



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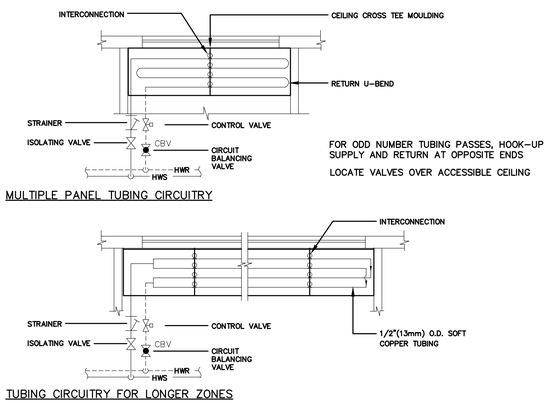
M7.1

TYPICAL DETAIL OF ROOF MOUNTED CONDENSING/HEAT PUMP UNIT SUPPORT



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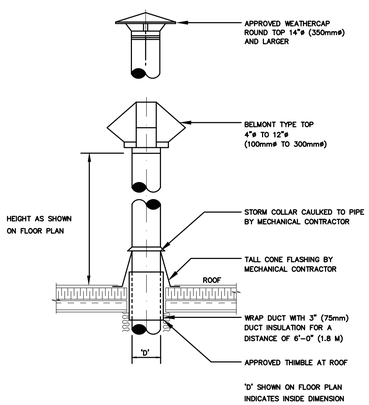
DETAIL OF CEILING RADIANT PANEL INSTALLATION



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M7.1

DETAIL OF TYPE 'B' GAS VENT

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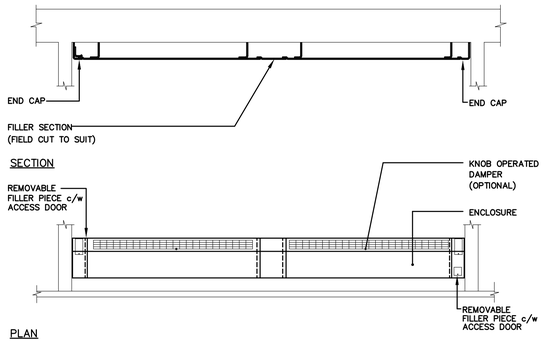
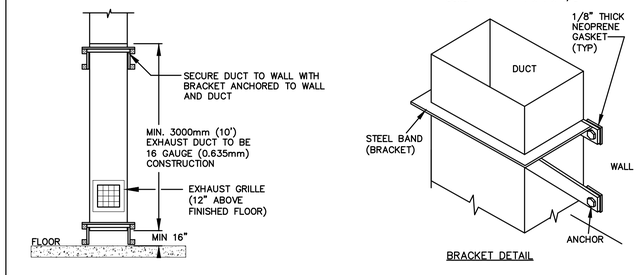


1	DETAIL OF WALL FIN ENCLOSURE INSTALLATION
M7.2	

NOTES:

1. BRACKETS TO BE SIZED FOR 10 FEET OF DUCT MAXIMUM.
2. LOCATE DUCTS AGAINST WALL OR MAXIMUM OF 1" AWAY FROM WALL.

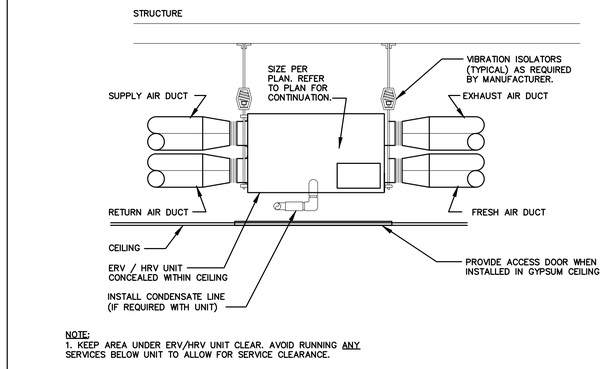


SUGGESTED BRACKET SIZING

DUCT SIZE	BAND
22"x8"	1"x 1"x 1/8"
30x8"	1"x 1"x 1/8"

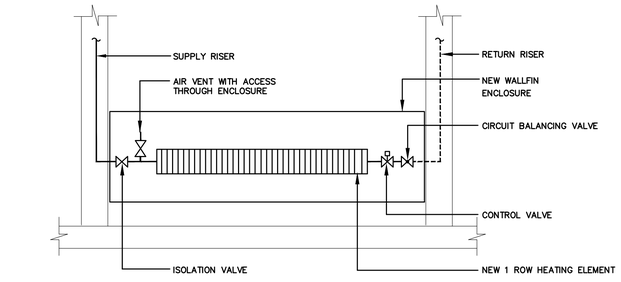
BRACKET DETAIL

2	DETAIL OF LOW LEVEL EXHAUST DUCT IN GARAGE
M7.2	



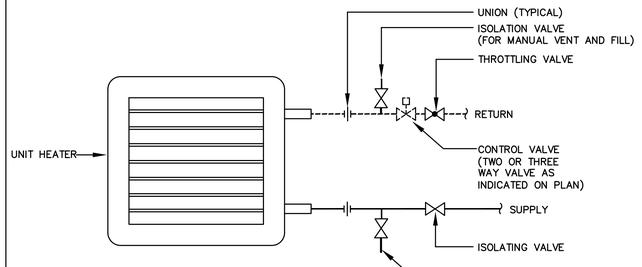
NOTE:
1. KEEP AREA UNDER ERV/HRV UNIT CLEAR. AVOID RUNNING ANY SERVICES BELOW UNIT TO ALLOW FOR SERVICE CLEARANCE.

3	DETAIL OF ERV/HRV INSTALLATION
M7.2	

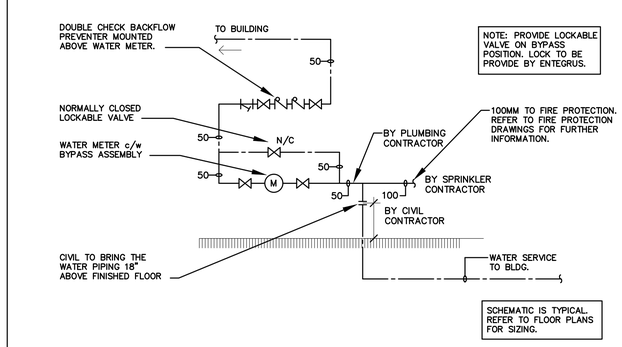


NOTE: CONTROL VALVE MAY BE LOCATED WITHIN ACCESSIBLE CEILING AREA

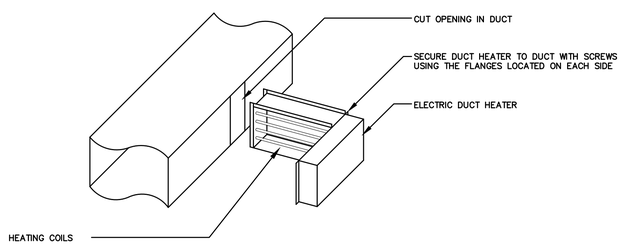
4	DETAIL OF NEW WALL FIN PIPING
M7.2	



5	DETAIL OF PIPING TO HOT WATER UNIT HEATER
M7.2	



6	WATER SERVICE SCHEMATIC
M7.2	

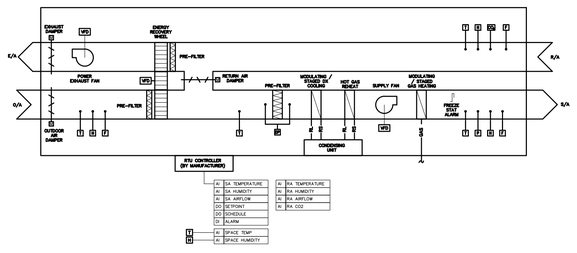


7	DETAIL OF TYPICAL DUCT MOUNTED ELECTRIC HEATER
M7.2	

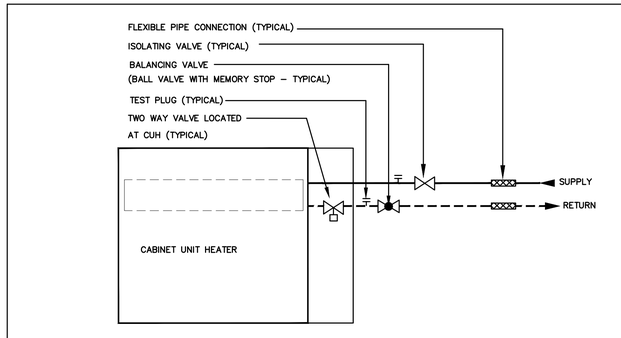
CONTROLS LEGEND:

AI | SPACE TEMP
- DESCRIPTION
- BAS INPUT/ OUTPUT

AO – ANALOGUE OUT OF BAS
AI – ANALOGUE IN TO BAS
DO – DIGITAL OUT OF BAS
DI – DIGITAL IN TO BAS



8	DOAS UNIT CONTROLS
M7.2	



NOTE: CONTROL VALVE AND ISOLATION VALVES MAY BE LOCATED WITHIN ACCESSIBLE CEILING AREA

9	DETAIL OF PIPING TO CABINET UNIT HEATER
M7.2	

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3	17/04/26	ISSUED FOR PROGRESS
4	03/07/26	ISSUED FOR OWNER CD REVIEW
5	31/07/26	ISSUED FOR PROGRESS
6	13/08/26	ISSUED FOR TENDER

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MECHANICAL DETAILS

M7.2

For Date:

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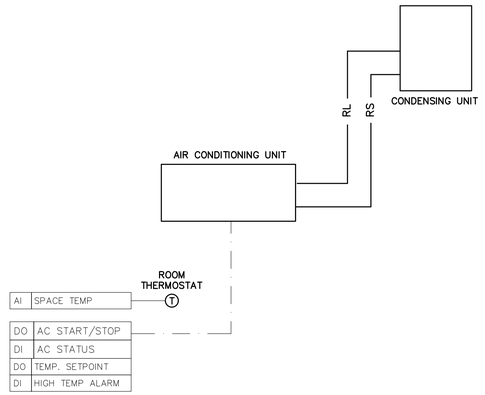
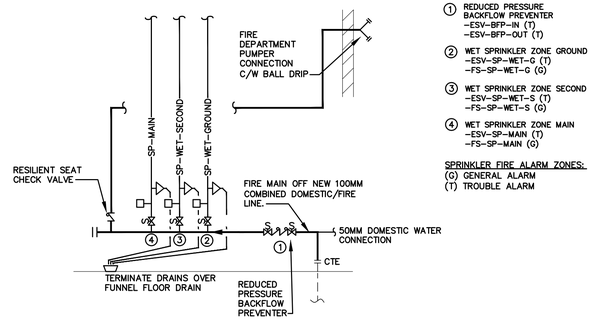


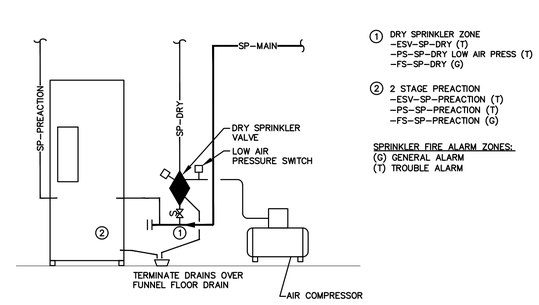
1	SPLIT AC UNIT CONTROLS
M7.3	

2	
M7.3	

3	
M7.3	



4	WATER ENTRY [100] SPRINKLER SERVICE SCHEMATIC
M7.3	



5	JANITOR + STORAGE [116] SPRINKLER SERVICE SCHEMATIC
M7.3	

REVISIONS

NO.	DATE	PARTICULAR
1	04/03/26	ISSUED FOR HYDRO COORD.
2	01/04/26	ISSUED FOR PROGRESS
3	17/04/26	ISSUED FOR PROGRESS
4	03/07/26	ISSUED FOR OWNER CD REVIEW
5	31/07/26	ISSUED FOR PROGRESS
6	13/08/26	ISSUED FOR TENDER

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MECHANICAL DETAILS

M7.3

For Date :-
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