

PIPING COMPONENTS

REAL OBJECT	SYMBOL	DESCRIPTION
		ISOLATION VALVE (GENERIC REFER TO SPEC FOR DETAILS)
		GLOBE VALVE
		BUTTERFLY VALVE
		BALL VALVE
		PLUG VALVE
		NEEDLE VALVE
		CHECK VALVE (GENERIC)
		BALANCING VALVE (REFER TO SPEC FOR DETAILS)
		PRESSURE REDUCING VALVE
		2-WAY CONTROL VALVE
		3-WAY CONTROL VALVE
		FLOAT OPERATED VALVE ACTUATOR
		SAFETY OR RELIEF VALVE
		ANGLE VALVE
		BOILER STOP AND CHECK VALVE
		BACKFLOW PREVENTER (GENERIC)
		MULTI-PURPOSE VALVE (SHUTOFF, BALANCING AND CHECK)
		PUMP (GENERIC REFER TO SCHEDULES)
		Y STRAINER (GENERIC)
		STEAM TRAP (GENERIC)
		AUTOMATIC AIR VENT
		MANUAL AIR VENT
		VACUUM BREAKER
		SHOCK ABSORBER
		TEMPERATURE GAUGE
		PRESSURE GAUGE
		TEMPERATURE AND PRESSURE TAP
		SIGHT FLOW GLASS
		FLEXIBLE CONNECTOR
		EXPANSION JOINT
		GUIDE
		ANCHOR
		FLOW ARROW
		PIPING SLOPE
		PIPE CAP
		PIPE BREAK
		PIPE CROSS
		PIPING ELBOW UP
		PIPING ELBOW DOWN
		PIPING TEE UP
		PIPING TEE DOWN
		PIPING TEE (SCHEMATIC)
		UNION CONNECTION
		FLANGED CONNECTION
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		STANDARD CLEAN-OUT IN LINE END OF RUN
		STANDARD CLEAN-OUT THROUGH FLOOR END OF RUN
		STANDARD CLEAN-OUT THROUGH FLOOR IN LINE
		PIPE INSULATION
		PIPE SIZE (mm)
		PIPING ROUTED BELOW SLAB OR GRADE

VENTILATION (HVAC)

*NOTE: ALL DUCT SIZES ARE INTERIOR, FREE DIMENSIONS

REAL OBJECT	SYMBOL	DESCRIPTION
		SUPPLY AIR
		RETURN AIR
		OUTDOOR AIR
		GENERAL EXHAUST AIR
		WASHROOM EXHAUST AIR
		ISOLATION EXHAUST AIR
		LABORATORY EXHAUST AIR
		KITCHEN EXHAUST AIR
		AIR FLOW ARROW
		RECTANGULAR DUCT AND SIZE*
		ROUND DUCT AND SIZE*
		FLAT OVAL DUCT AND SIZE*
		EXTERIOR DUCT TREATMENT*
		RECTANGULAR DUCT WITH ACOUSTIC LINING*
		EXTERIOR DUCT TREATMENT - FIRE WRAP*
		DUCT SECTION, SUPPLY AIR. SIZE* IS HORIZONTAL DIM. x VERTICAL DIM. APPLIES TO RECT., ROUND AND OVAL
		DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL
		DUCT SECTION, RETURN AIR. APPLIES TO RECT., ROUND AND OVAL
		DUCT SECTION, EXHAUST AIR. APPLIES TO RECT., ROUND AND OVAL
		FLEXIBLE DUCT
		ELBOW TURN, SUPPLY DOWN. APPLIES TO RECT., ROUND AND OVAL
		ELBOW TURN, OUTSIDE AIR DOWN. APPLIES TO RECT., ROUND AND OVAL
		ELBOW TURN, RETURN DOWN. APPLIES TO RECT., ROUND AND OVAL
		ELBOW TURN, EXHAUST DOWN. APPLIES TO RECT., ROUND AND OVAL
		CHANGE IN DUCT ELEVATION RISING
		CHANGE IN DUCT ELEVATION DROPPING
		END CAP
		ELBOW, RECTANGULAR, SMOOTH RADIUS WITHOUT VANES (1.5 RW DEFAULT)
		ELBOW, ROUND, SMOOTH RADIUS (1.5 RW DEFAULT)
		MITERED ELBOW, RECTANGULAR, WITH TURNING VANES
		RECTANGULAR TO ROUND TRANSITION
		DUCT ACCESS DOOR (TOP, SIDE, BOTTOM)
		FLEXIBLE CONNECTION
		BACKDRAFT DAMPER
		MANUAL DAMPER
		MOTORIZED DAMPER
		FIRE DAMPER
		SMOKE DAMPER
		SMOKE AND FIRE DAMPER
		AIR OUTLET OR INLET TAG (REFER TO SCHEDULE)
		RECTANGULAR DIFFUSER, SUPPLY. OPTIONAL ARROWS SHOW THE FLOW DIRECTION.
		RECTANGULAR REGISTER OR GRILLE, RETURN
		RECTANGULAR REGISTER OR GRILLE, EXHAUST
		ROUND DIFFUSER, SUPPLY
		LINEAR DIFFUSER
		SIDEWALL REGISTER OR GRILLE, SUPPLY
		SIDEWALL GRILLE, RETURN OR EXHAUST
		UNDERCUT DOOR
		DOOR GRILLE OR LOUVER
		TRANSFER GRILLE OR LOUVER
		EQUIPMENT TAG (REFER TO SCHEDULE)
		RADIATION HEATING TAG (REFER TO SCHEDULE)
		RELATIVE PRESSURIZATION BASED ON CSA Z317.2 REQUIREMENTS

PIPING SYSTEMS (HVAC)

REAL OBJECT	SYMBOL	DESCRIPTION
		BOILER BLOWDOWN
		BOILER FEED WATER
		BRINE RETURN
		BRINE SUPPLY
		CHILLED WATER RETURN
		CHILLED WATER RETURN - GLYCOL
		CHILLED WATER RETURN - PROCESS
		CHILLED WATER SUPPLY
		CHILLED WATER SUPPLY - GLYCOL
		CHILLED WATER SUPPLY - PROCESS
		CONDENSER WATER RETURN
		CONDENSER WATER RETURN (COOLING TOWER)
		CONDENSER WATER SUPPLY
		CONDENSER WATER SUPPLY (COOLING TOWER)
		DUAL TEMPERATURE RETURN (HOT OR CHILLED)
		DUAL TEMPERATURE SUPPLY (HOT OR CHILLED)
		HEAT PUMP WATER RETURN
		HEAT PUMP WATER SUPPLY
		HEAT RECOVERY LOOP RETURN
		HEAT RECOVERY LOOP SUPPLY
		HEATING WATER RETURN
		HEATING WATER RETURN - GLYCOL
		HEATING WATER SUPPLY
		HEATING WATER SUPPLY - GLYCOL
		REFRIGERANT HOT GAS
		REFRIGERANT LIQUID
		REFRIGERANT SUCTION
		REFRIGERANT VENT
		RELIEF VENT
		STEAM (NOMINAL PRESSURE IN KPA)
		STEAM - CLEAN (NOMINAL PRESSURE IN KPA)
		STEAM CONDENSATE (NOMINAL PRESSURE IN KPA)
		STEAM HUMIDIFICATION (NOMINAL PRESSURE IN KPA)
		STEAM PUMPED CONDENSATE (NOMINAL PRESSURE IN KPA)
		STEAM VENT

DRAINAGE

REAL OBJECT	SYMBOL	DESCRIPTION
		ACID VENT
		ACID WASTE
		CONDENSATE DRAIN
		CONDENSATE DRAIN (PUMPED)
		GREASE VENT
		FOOTING DRAIN
		GREASE WASTE
		SANITARY VENT
		SANITARY VENT (OIL)
		SANITARY WASTE
		SANITARY WASTE (OIL)
		SANITARY WASTE (PUMPED)
		STORM DRAIN
		STORM OVERFLOW
		STORM PUMPED

PLUMBING

REAL OBJECT	SYMBOL	DESCRIPTION
		COMPRESSED AIR (NOMINAL PRESSURE IN KPA)
		DEIONIZED WATER
		DEIONIZED WATER RECIRCULATING
		DISTILLED WATER
		DOMESTIC COLD WATER
		DOMESTIC COLD WATER SOFTENED
		DOMESTIC HOT WATER
		DOMESTIC HOT WATER RECIRCULATING
		DOMESTIC HOT WATER SOFTENED
		NON-POTABLE COLD WATER
		NON-POTABLE COLD WATER SOFTENED
		NON-POTABLE HOT WATER
		NON-POTABLE HOT WATER SOFTENED
		NON-POTABLE TRAP PRIMER

		FIXTURE TRAP
		ROOF DRAIN
		FLOOR DRAIN
		PLUMBING FIXTURES

FIRE PROTECTION

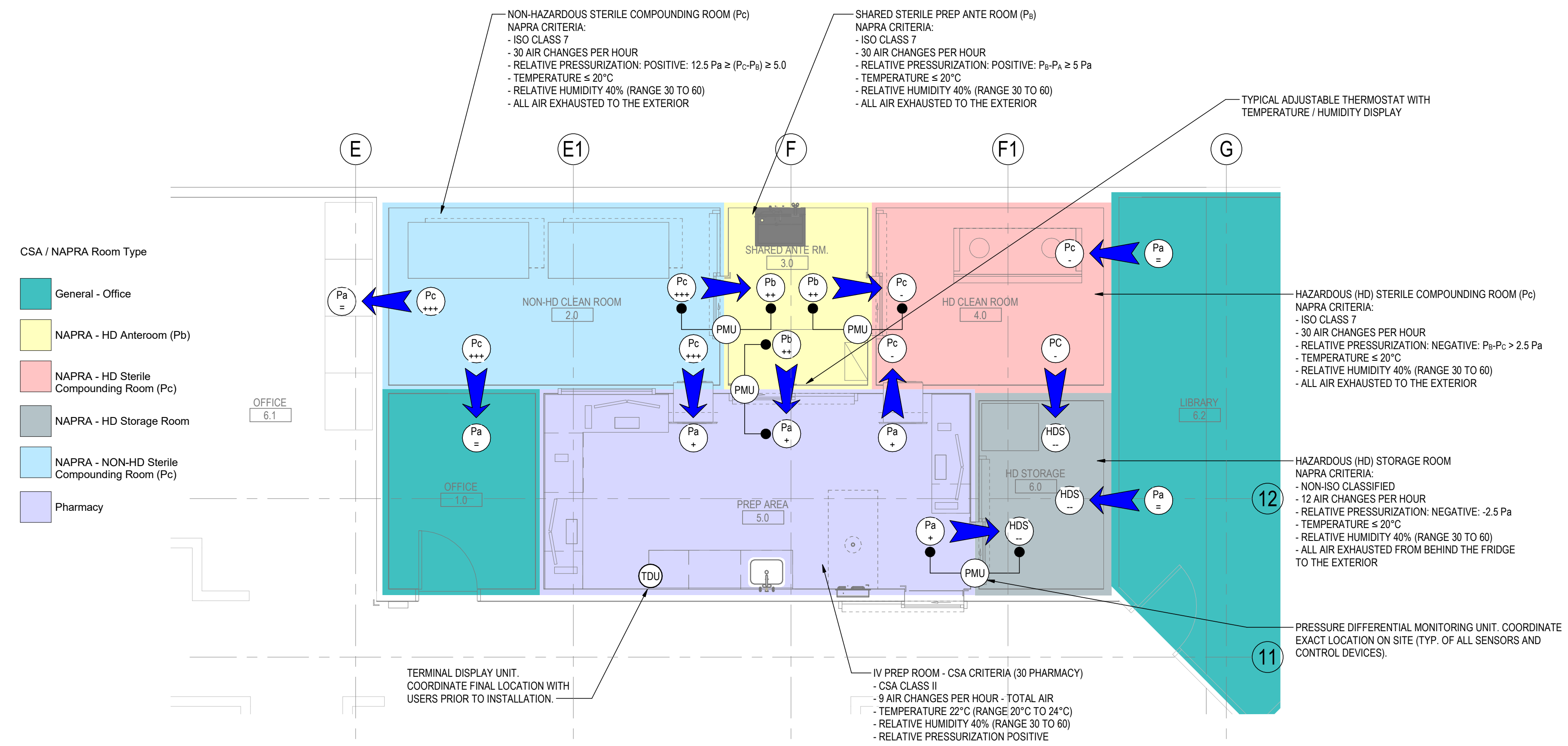
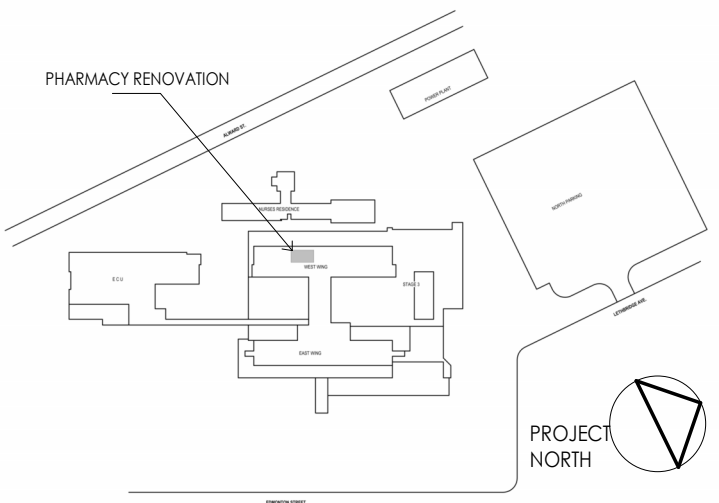
		UPRIGHT SPRINKLER
		CONCEALED PENDANT SPRINKLER
		SIDEWALL SPRINKLER
		FIRE EXTINGUISHER

CONTROLS

		CARBON DIOXIDE SENSOR
		CARBON MONOXIDE SENSOR
		DEWPOINT SENSOR
		DIFFERENTIAL PRESSURE SENSOR
		ENERGY METER
		FLOW METER
		FLOW SWITCH
		FREEZE STAT
		HUMIDITY SENSOR
		LEVEL CONTROL
		LIMIT SWITCH
		NITROGEN OXIDE SENSOR
		OCCUPANCY SENSOR
		OXYGEN SENSOR
		PRESSURE SENSOR
		PRESSURE DIFFERENTIAL MONITORING UNIT
		ROOM PRESSURE DISPLAY
		STATIC PRESSURE SENSOR
		TEMPERATURE SENSOR
		TERMINAL DISPLAY UNIT
		THERMOSTAT
		VARIABLE SPEED DRIVE
		AIR FLOW SWITCH
		CONTROLS WIRE

GENERAL NOTES

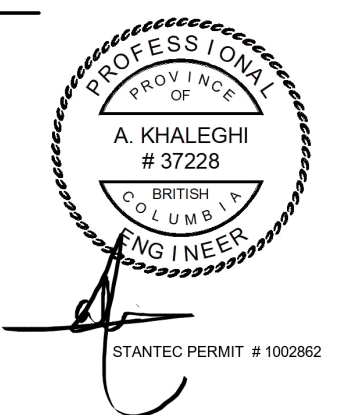
- ALL ACCESS PANELS IN THE CEILING OF PHARMACY DEPARTMENT SHALL BE CASKETED TO PREVENT AIR LEAKAGE.
- ALL NEW EXPOSED PIPES AND DUCTWORK SHALL BE PAINTED TO MATCH THE COLOR OF EXISTING SERVICES IN THAT ROOM.
- THE CONTRACTOR IS RESPONSIBLE FOR PERMITS.
- COORDINATE WITH THE BUILDING ENGINEER FOR ALL WORK AFFECTING BASE BUILDING HVAC, PLUMBING OR LIFE SAFETY SYSTEMS.
- COORDINATE WITH OWNER FOR ALL INTERACTION OF EXISTING SYSTEM UNDER OPERATION.
- CORE DRILLING, HAMMER DRILLING, TABLE SAWS AND OTHER WORK OF A NOISY, DUSTY OR VIBRANT NATURE MUST BE DONE AT TIMES AGREED TO IN ADVANCE BY OWNER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LEAVE THE SPACE CLEAN WITH NO DEMOLISHED PARTS LEFT FROM EXISTING SYSTEM.
- LOCATION OF EXISTING EQUIPMENT SHOWN ON THIS DRAWING IS FOR INFORMATION ONLY. CONTRACTOR SHALL REVIEW AND CHECK THE EXACT LOCATION, SIZE, ELEVATION AND INVERT OF ALL EXISTING EQUIPMENT, DUCTWORK AND PIPING ON SITE PRIOR TO COMMENCING WORK.
- GPS SCAN STRUCTURAL SLAB WALLS FOR LOCATIONS OF RE-BAR TO LOCATE NEW OPENINGS AS REQUIRED, AND AS DIRECTED BY THE STRUCTURAL ENGINEER. POSITION CORE TO CLEAR REINFORCEMENT. REVIEW LOCATION WITH STRUCTURAL CONSULTANT.
- PROVIDE OPENINGS IN FULL-HEIGHT WALLS FOR NEW DUCTWORK, PIPES AND CONDUIT TO PASS THROUGH. SEAL AROUND PENETRATIONS FOR SOUND ATTENUATION AND SMOKE/FIRE SEPARATION AS REQUIRED.
- MODIFY THE SIZE AND ROUTING OF ALL EXISTING AND NEW PIPING AND DUCTWORK AS REQUIRED TO SUIT THE SITE CONDITION WITHOUT EXTRA COST TO THE OWNER. PROVIDE ADEQUATE OFFSETS, AND TRANSITIONS ON NEW DUCTWORK AS REQUIRED TO SUIT SITE CONDITIONS.
- THE MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND DETAILS. SEE ARCH. WALL ELEVATIONS, REFLECTED CEILING PLANS, SECTIONS AND DETAILS FOR PRECISE LOCATION OF ALL VISIBLE MECHANICAL ELEMENTS.
- ALL EXPOSED SERVICES TO HAVE THEIR FINAL LOCATION AND HEIGHT APPROVED BY ARCHITECT PRIOR TO WORK BEING DONE.
- PATCH AND MAKE GOOD ROOF, CEILING AND WALL FOR NEW WORK, AND FOR EXISTING SERVICES REMOVED. COORDINATE WITH GENERAL OR CONSTRUCTION MANAGER.
- ENSURE THAT PIPING AND FITTING LAYOUT HAVE ENOUGH FLEXIBILITY FOR EASY REMOVAL OF THE NEW EQUIPMENT IN THE FUTURE WITHOUT CUTTING OR REMOVAL OF PIPING.
- ALL NEW AND EXISTING VALVES ETC. ARE TO BE PROPERLY LABELED, INCLUDING IDENTIFICATION OF PIPING.
- ALL EXISTING INSULATION THAT IS DAMAGED DURING CONSTRUCTION TO BE REPLACED WITH NEW.
- ALLOW FOR NEW IDENTIFICATION OF EXISTING EQUIPMENT, DUCTWORK AND PIPING.
- ALL MECHANICAL WORK SHALL BE COORDINATED WITH DIVISION 26 (ELECTRICAL). REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THE SCOPE OF DIVISIONS 26, 27.
- DECOMMISSION SYSTEM AT BMS WHERE MECHANICAL HVAC EQUIPMENT HAS BEEN REMOVED. REMOVE ABANDONED WIRING AND CONDUIT, ETC.
- COORDINATE WITH ELECTRICAL TRADES TO DE-COMMISSION ELECTRICAL WIRING, CONDUIT, ETC TO MAIN FEED WHERE MECH. EQUIPMENT HAS BEEN REMOVED.
- ALL MISCELLANEOUS METAL PIPE SLEEVES TO BE PRIMED AND PAINTED FOR RUST INHIBITING AND WEATHER PROTECTION.
- SALVAGED EQUIPMENT OF VALUE TO BE HANDED OVER TO THE OWNER FOR KEEPING AND FUTURE RE-USE. THE SMALLEST PIPE TO BE USED IS 20MM (3/4") UNLESS OTHERWISE NOTED. PIPE SIZE TO COILS SHALL BE SAME SIZE AS COIL CONNECTIONS UNLESS NOTED.
- ALL HORIZONTAL PIPING TAKE-OFFS FROM VERTICAL PIPING RISERS SHALL BE CW ISOLATION VALVES AND CIRCUIT SETTERS FOR BALANCING AND SERVICE ISOLATION AT EACH LEVEL - TYPICAL.
- EQUIPMENT START UP TO BE DONE BY SUPPLIER'S FACTORY TRAINED TECHNICIAN.
- ALLOW FOR ALL NECESSARY DUCT AND PIPE FITTINGS, BENDS, TRANSITIONS, CHANGES OF DIRECTION ETC. TO COORDINATE THE NEW MECHANICAL SERVICES INSTALLATION WITH THE EXISTING STRUCTURE AND SERVICES.
- LABEL ALL NEW EQUIPMENT WITH LAMACOID LABELS MATCH EXISTING SIZE AND COLOR. INCLUDE ELECTRICAL FEED PANEL AND CIRCUIT.
- ARRANGE AND PAY FOR THE SERVICES OF A B.C. REGISTERED PROFESSIONAL STRUCTURAL ENGINEER WHO SPECIALIZES IN THE RESTRAINT OF BUILDING ELEMENTS. THIS STRUCTURAL ENGINEER, HEREIN, REFERRED TO AS THE SEISMIC ENGINEER SHALL PROVIDE ALL REQUIRED ENGINEERING SERVICES RELATED TO SEISMIC RESTRAINTS OF NON-VIBRATION ISOLATED EQUIPMENT, DUCTWORK, PIPING AND SUPPORTS.
- THE SEISMIC ENGINEER SHALL PROVIDE ASSISTANCE TO THE CONTRACTOR AS NECESSARY DURING THE COURSE OF RESTRAINT OF EQUIPMENT, DUCTWORK AND PIPING SEISMICALLY RESTRAIN ALL NEW EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR REQUESTING CLARIFICATION OF AMBIGUOUS INSTRUCTIONS BEFORE STARTING WORK.
- WELDING ON PREMISES MUST CONFORM TO SPECIFIC GUIDELINES INCLUDING CSA Z.317 REGARDING HANDLING OF SMOKE, PRESSURIZED TANKS, WHISMS, AND FIRE ALARM. CONTACT BUILDING ENGINEER FOR DETAILS.
- REFER TO THE STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR THE REQUIREMENTS OF ANY CONCRETE WORK, SCANNING, CUTTING, ATTACHMENT TO THE STEEL BEAMS, ETC.
- INFECTION CONTROL ISSUES FOR CONTRACTORS WORKING AT THE DISCHARGE OPENINGS OF EXHAUST DUCTS.
- IH HAS ADOPTED THE FOLLOWING INFECTION CONTROL PRECAUTIONS FOR CONTRACTORS WORKING AT THE DISCHARGE OPENINGS OF ROOFTOP EXHAUST DUCTS.
- INFECTION CONTROL REQUIRES THAT WORKERS MUST BE MADE AWARE OF THE FACT THAT HOSPITAL EXHAUST DUCTS MAY CARRY DUST AND SPORE PARTICLES. HOWEVER, NOT ACTIVE TB, DUST AND SPORES, RESIDING IN THESE DUCTS, MAYBE DISCHARGED TO THE EXTERIOR WITH THE AIR MASS CREATED WITHIN THESE DUCTS.
- ALTHOUGH THE LEVEL OF RISK FOR POTENTIAL CONTAMINATION IS LOW, IT IS ADVISABLE THAT CONSTRUCTION WORKERS, ESPECIALLY THOSE WHO ARE SENSITIVE TO RESPIRATORY ILLNESSES, WEAR APPROPRIATE DUST MASKS CAPABLE OF FILTERING FINE PARTICLES.
- INSTALL FIRE STOPPING AND SMOKE SEAL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION AND MANUFACTURER'S INSTRUCTIONS IN FORMED, SLEEVED OR CORED PENETRATIONS.
- FURNISH ALL LABOUR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY TO SUPPLY AND INSTALL FIRESTOPPING AND SMOKE SEALS AROUND ALL THE EXISTING MECHANICAL SERVICE PIPING, DUCTWORK AND CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND FLOOR ASSEMBLIES. REFER TO ARCH CODE DWGS FOR DETAILS. PATCH AND SEAL ALL EXISTING OPENINGS IN WALLS AND FLOORS THAT WILL NOT BE USED FOR NEW SERVICES.
- REVIEW TYPE AND LOCATION OF ACCESS PANELS IN DRYWALL ON SITE PRIOR TO INSTALLING. NEW ACCESS PANELS SHALL LINE-UP IN DRYWALL WHILE ALLOWING ACCESS TO MECHANICAL EQUIPMENT.
- ALL PENETRATIONS (I.E. DUCTWORK, PIPING, CONDUITS) THROUGH FLOORS SHALL BE FIRE SEALED AROUND.
- SEAL ALL PIPE, DUCT, CONDUIT, ETC. PENETRATIONS THROUGH THE WALLS, FLOOR AND CEILING OF ALL AREAS TO PREVENT AIR LEAKAGE. REFER TO ARCH. DRAWINGS FOR DETAILS.
- PROVIDE NEW DUCTWORK AND PIPING AND RECONNECT TO THE EXISTING SYSTEMS, AND RE-BALANCE AND COMMISSION EXISTING SERVICES THAT ARE TO BE REMOVED AND RE-INSTALLED (RE & RE).
- PROVIDE MAINTENANCE AREAS AROUND ALL EQUIPMENT AS REQUIRED BY OODS AND RECOMMENDED BY THE EQUIPMENT MANUFACTURER. PAY PARTICULAR ATTENTION TO COLD ACCESS AND REMOVAL.
- INSTALL PIPING AND DUCTWORK SO THAT ALL VALVES, DAMPERS AND ACCESS DOORS ARE ACCESSIBLE.
- ALL HORIZONTAL DUCT MAINS TAKE-OFFS FROM VERTICAL DUCT MAIN RISERS SHALL BE CW BALANCING DAMPERS FOR BALANCING AND SERVICE ISOLATION-TYP
- CONTRACTOR TO CO-ORDINATE THERMOSTAT LOCATION TO AVOID INSTALLATION OVER DIMMER SWITCHES OR HEAT EMITTING DEVICES PRIOR TO INSTALLATION. LOCATE ALL THERMOSTATS 300mm AWAY FROM DOOR OPENING RADIUS. COORDINATE EXACT LOCATION ON SITE PRIOR TO INSTALLATION.
- UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING INDIVIDUAL AIR TERMINALS TO MATCH AIR TERMINAL CONNECTION SIZE OR AIR TERMINAL SIZE REFER TO THE AIR TERMINALS SCHEDULES IN THE SPECIFICATION.
- LOCATE BALANCE DAMPERS OVER ACCESSIBLE CEILING WHERE POSSIBLE. WHERE DAMPERS MUST BE LOCATED OVER NON-COMBUSTIBLE CEILING, PROVIDE CONCEALED REGULATORS AS SPECIFIED.
- ALL AIR TERMINALS TO BE CW BALANCING DAMPERS AT DUCT BRANCH FOR BALANCING.
- PROVIDE FLEXIBLE CONNECTORS WHERE MECHANICAL SERVICES (I.E. DUCTWORK, PIPES, CONDUITS, ETC.) CROSS STRUCTURAL SEISMIC AND EXPANSION JOINTS.



1 LEVEL 0 ENVIRONMENTAL CONTROLS
M100 1 : 50

2	ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
1	ISSUED FOR TENDER	MD	MB	2023.09.28
Issued/Revision		By	Appd	YYYY.MM.DD

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Client/Project Logo



Client/Project
Northern Health Authority

UHNBC (University Hospital of Northern BC) - Pharmacy upgrade
1475 Edmonton St. Prince George, BC V2M 1S2

Title
LEVEL 0 - HVAC ENVIRONMENTAL CONTROLS

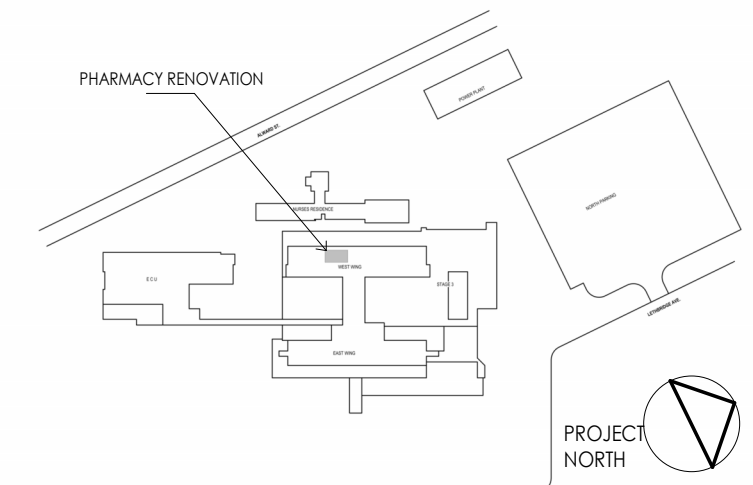
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Revision	Drawing No.
2	M100

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Notes



3	ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
2	ADDENDUM 2	CH	MB	2024.01.11
1	ISSUED FOR TENDER	MD	MB	2023.09.28
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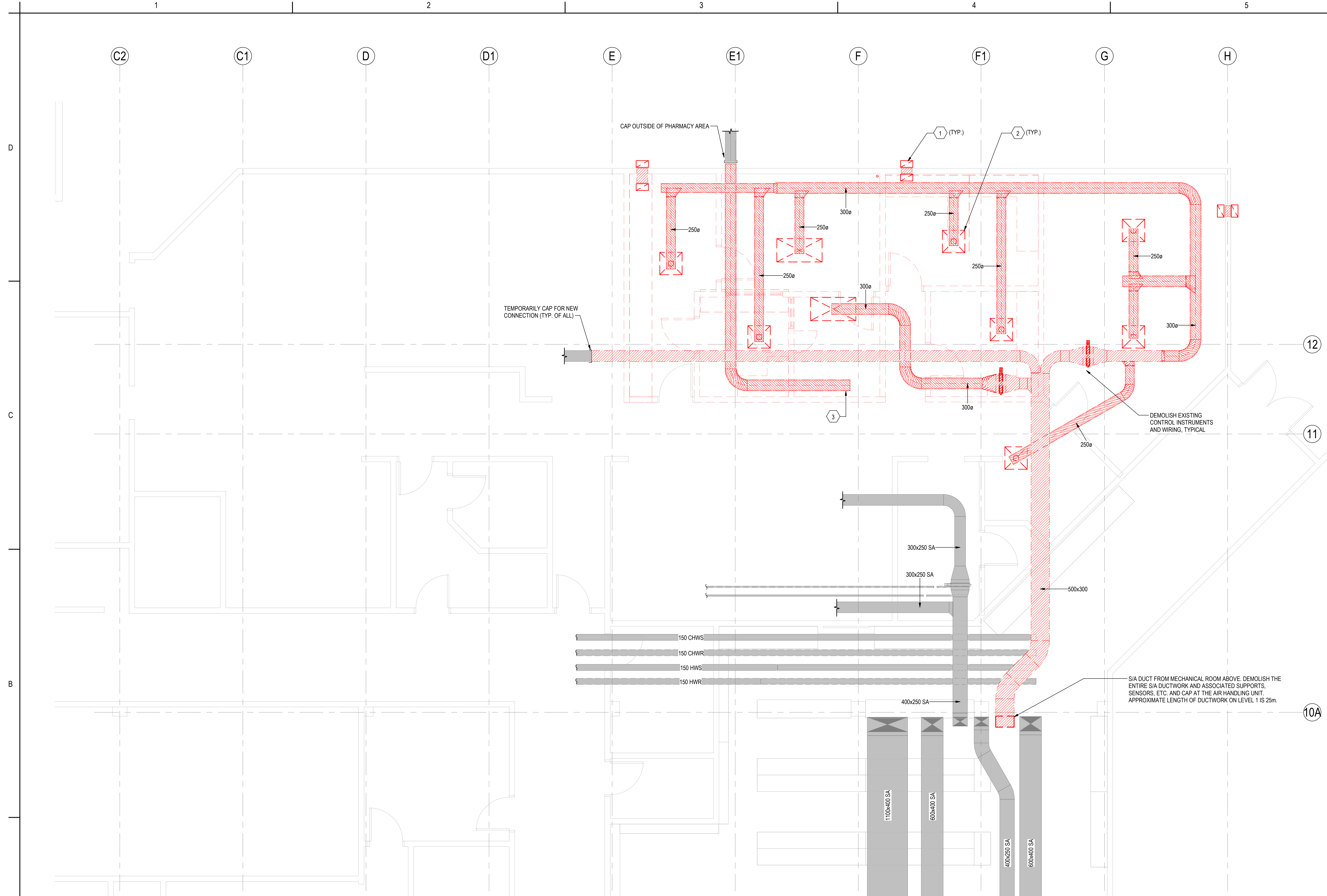
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LEVEL 0 - HVAC - DEMO

Project No.
144320228

Revision
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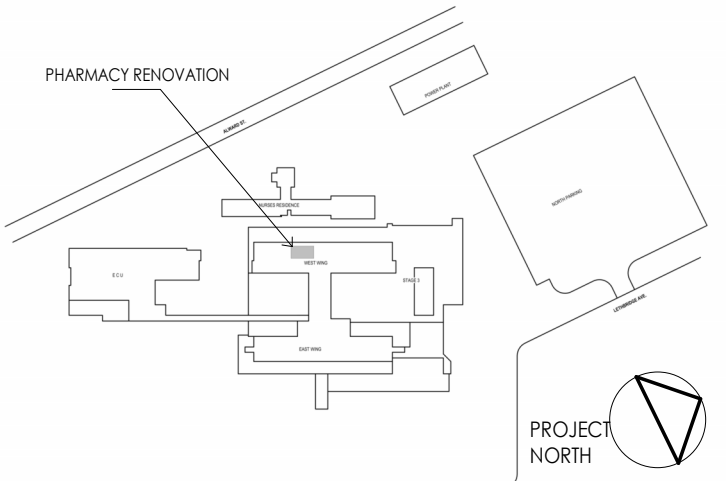
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M101



1 LEVEL 0 HVAC DEMO PLAN
M101 1 : 50

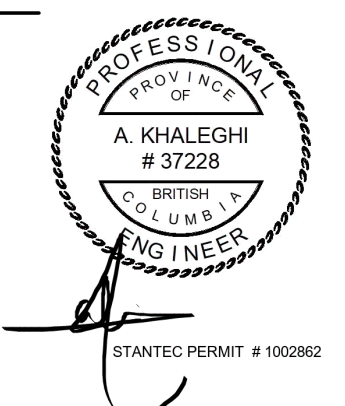
GENERAL NOTES:
1. ALL CONTROL DEVICES INCLUDED IN DEMOLITION ARE TO BE HANDED OVER TO FMO.

#	TEXT
1	EXISTING TRANSFER GRILLES AND DUCTWORK TO BE DEMOLISHED. PATCH AND MAKE GOOD WALL.
2	EXISTING SUPPLY AIR DIFFUSER AND ASSOCIATED DUCTWORK TO BE DEMOLISHED.
3	EXISTING BIO-SAFETY CABINET TO BE REMOVED AS PER ARCHITECTURE DRAWINGS. EXISTING DUCTWORK WITHIN PHARMACY RENOVATION AREA TO BE DEMOLISHED AND CAPPED OFF. PROVIDE LABEL ON CAPPED DUCT. REMOVE CONTROLS WIRING FOR EXISTING BSC AND DECOMMISSION AT BMS.



4	ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
3	POST-TENDER ADDENDUM 1	CH	MB	2024.02.15
2	ADDENDUM 7	CH	MB	2024.02.09
1	ISSUED FOR TENDER	MD	MB	2023.09.28
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UHNBC (University Hospital of Northern BC) - Pharmacy upgrade

1475 Edmonton St, Prince George, BC V2M 1S2

Title
LEVEL 0 - HVAC - OVERVIEW

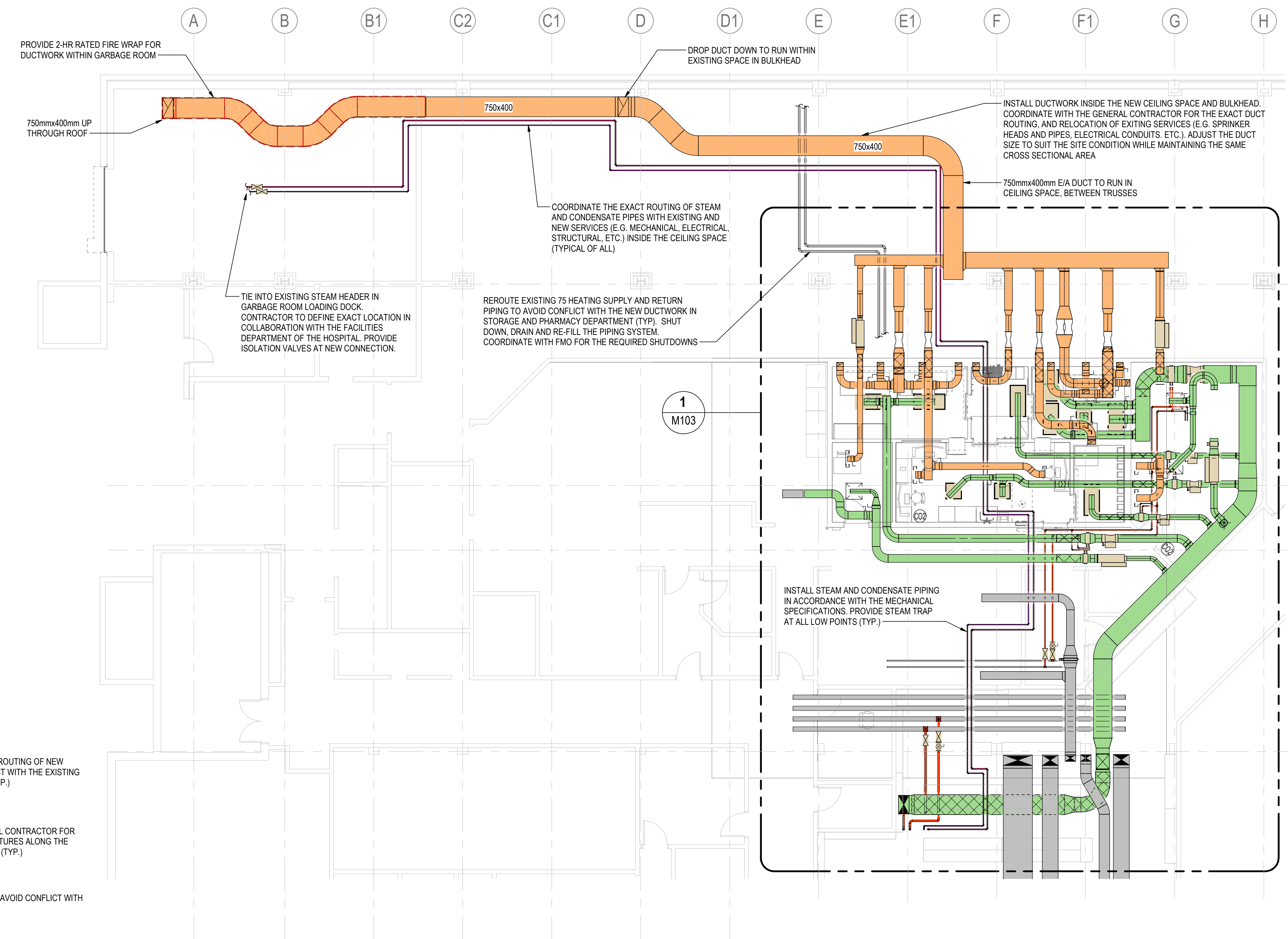
Project No.
144320228

Revision
4

Scale
As indicated

Drawing No.

M102



GENERAL NOTES:
1. COORDINATE WITH FMO FOR THE REQUIRED SHUTDOWNS. PRIOR TO RE-ACTIVATING A SYSTEM THAT IS SHUTDOWN, PERFORM A THOROUGH INSPECTION OF THE SYSTEM TO ENSURE THE SYSTEM IS READY FOR RE-COMMISSIONING I.E. THE STEAM LINES SHALL BE DRAINED TO PREVENT STEAM HAMMERING.



RELOCATE THE EXISTING SPRINKLER PIPING AND HEADS TO SUIT THE NEW DUCTWORK AND PIPING TO MAINTAIN COVERAGE PER NFPA 13 (TYP.)

COORDINATE THE EXACT LOCATION OF OPENING THE WALL FOR THE NEW DUCTWORK ON SITE (TYP.)

2 GARBAGE ROOM PENETRATION
M102 NTS

EXISTING UNIT HEATER TO REMAIN. MAINTAIN CLEARANCE TO UNIT HEATER PER MANUFACTURER'S RECOMMENDATIONS

RELOCATE THE EXISTING SPRINKLER PIPING AND HEADS TO SUIT THE NEW DUCTWORK AND PIPING TO MAINTAIN COVERAGE PER NFPA 13 (TYP.)



FIELD DETERMINE THE EXACT ROUTING OF NEW DUCTWORK TO AVOID CONFLICT WITH THE EXISTING EQUIPMENT AND SERVICES (TYP.)

COORDINATE WITH ELECTRICAL CONTRACTOR FOR RELOCATION OF ALL LIGHT FIXTURES ALONG THE PATH OF THE NEW DUCTWORK (TYP.)

REROUTE EXISTING PIPING TO AVOID CONFLICT WITH NEW DUCTWORK (TYPICAL)

1 LEVEL 0 HVAC OVERVIEW PLAN
M102 1:100

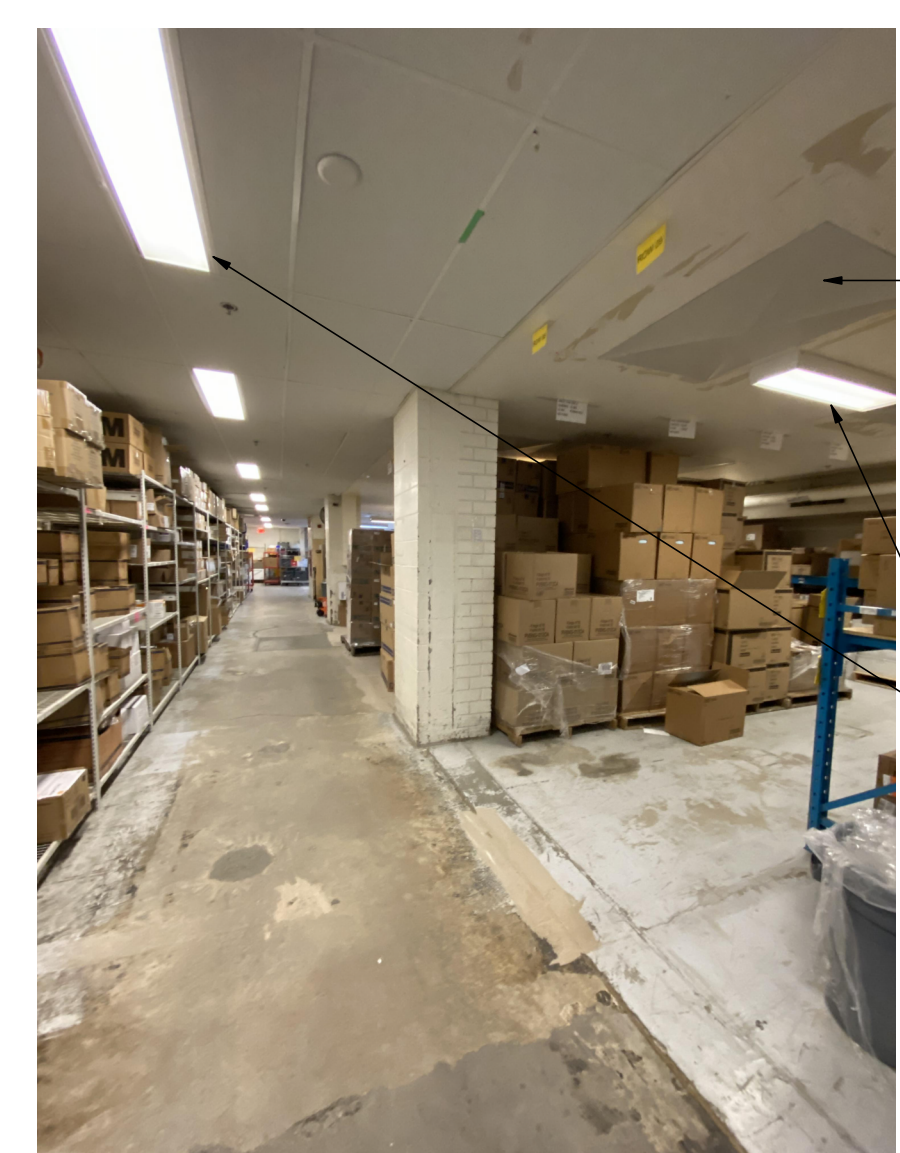
3 GARBAGE ROOM DUCT ROUTING
M102 NTS



DEMOLISH EXISTING BULKHEAD BETWEEN GL 0 AND THE GARBAGE ROOM. PROVIDE NEW BULKHEAD ONCE THE NEW EXHAUST DUCT IS INSTALLED.

TEMPORARY SUPPORT EXISTING CABLES AND OTHER SERVICES THAT ARE SUPPORTED FROM THE BULKHEAD

4 BULK STORAGE BULKHEAD
M102 NTS



NEW DUCTWORK TO BE INSTALLED ABOVE THE CEILING. COORDINATE WITH GC FOR RE- AND RE- OF EXISTING SERVICES. PROVIDE ACCESS PANELS TO ACCESS SERVICES AND EQUIPMENT ABOVE THE CEILING (TYPICAL)

RELOCATE AND RECOMMISSION EXISTING LIGHTS, SPRINKLER HEADS, SPEAKERS AND ASSOCIATED PIPING AND WIRING TO ALLOW INSTALLATION OF NEW DUCTWORK AND PIPING (TYPICAL OF ALL).

5 BULK STORAGE DUCT ROUTING
M102 NTS

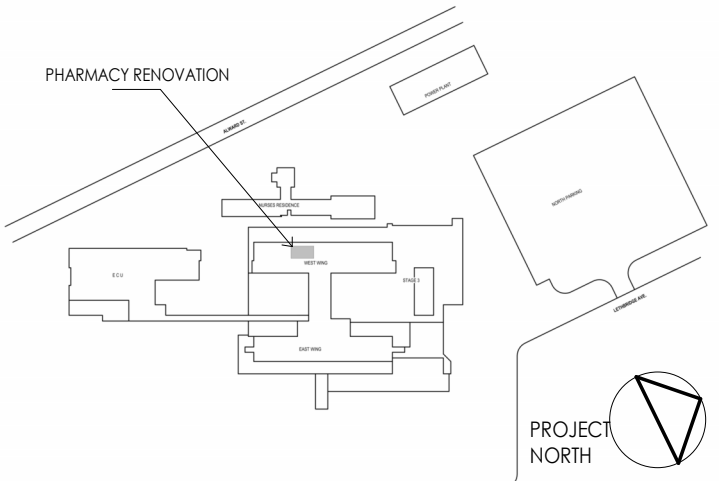


REMOVE EXISTING AND PROVIDE NEW HANGERS AND SUPPORTS FOR CEILING, PIPING, ETC. TO ALLOW INSTALLATION OF THE NEW SERVICES.

RELOCATE EXISTING WIRING, CONDUITS AND JUNCTION BOXES TO AVOID INTERFERENCE WITH NEW DUCTWORK AND PIPING (TYP. OF ALL)

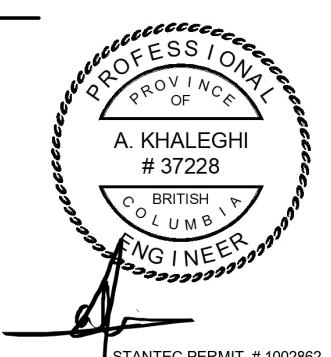
ADJUST THE STUDS ABOVE THE CEILING TO PROVIDE SUFFICIENT SPACE FOR INSTALLATION OF NEW DUCTWORK (TYP.)

6 BULK STORAGE CEILING SPACE
M102 NTS



Issued/Revision	By	App'd	YYYY.MM.DD
4 ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
3 ADDENDUM 7	CH	MB	2024.02.09
2 ADDENDUM 2	CH	MB	2024.01.11
1 ISSUED FOR TENDER	MD	MB	2023.09.28

Permit/Seal



Client/Project Logo



northern health
the northern way of caring

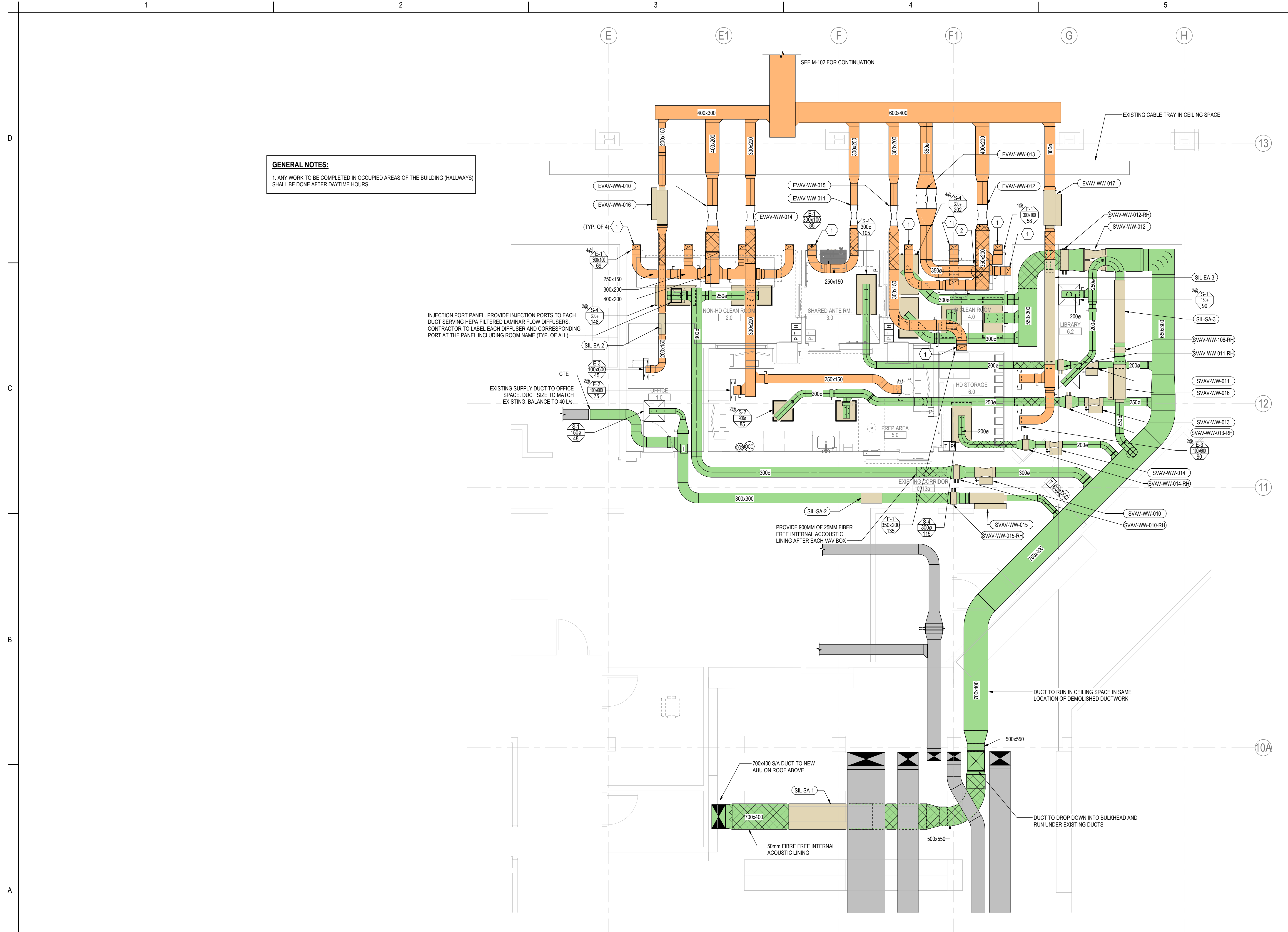
Client/Project
Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
1475 Edmonton St, Prince George, BC V2M 1S2

Title
LEVEL 0 - HVAC - NEW

Project No.
144320228
Revision
4

Scale
1 : 50
Drawing No.
M103



GENERAL NOTES:
1. ANY WORK TO BE COMPLETED IN OCCUPIED AREAS OF THE BUILDING (HALLWAYS) SHALL BE DONE AFTER DAYTIME HOURS.

INJECTION PORT PANEL. PROVIDE INJECTION PORTS TO EACH DUCT SERVING HEPA FILTERED LAMINAR FLOW DIFFUSERS. CONTRACTOR TO LABEL EACH DIFFUSER AND CORRESPONDING PORT AT THE PANEL INCLUDING ROOM NAME (TYP. OF ALL)

EXISTING SUPPLY DUCT TO OFFICE SPACE. DUCT SIZE TO MATCH EXISTING. BALANCE TO 40 L/s

PROVIDE 900MM OF 25MM FIBRE FREE INTERNAL ACOUSTIC LINING AFTER EACH VAV BOX

DUCT TO RUN IN CEILING SPACE IN SAME LOCATION OF DEMOLISHED DUCTWORK

700x400 S/A DUCT TO NEW AHU ON ROOF ABOVE

DUCT TO DROP DOWN INTO BULKHEAD AND RUN UNDER EXISTING DUCTS

1 LEVEL 0 HVAC PLAN
M103 1 : 50

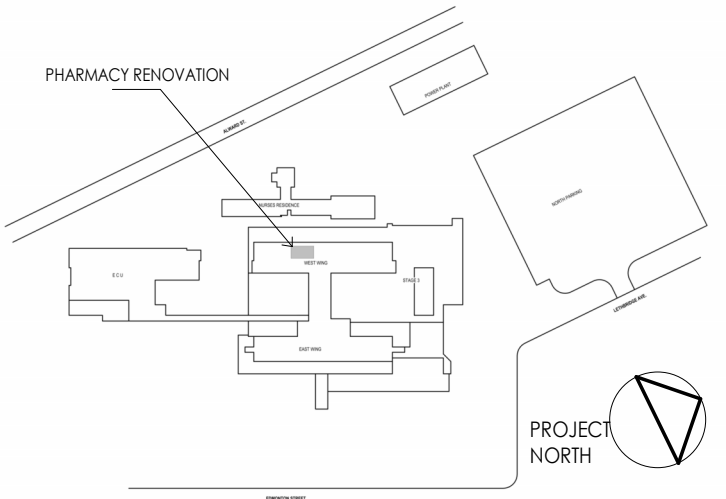
#	TEXT
1	EXHAUST AIR DUCT TO DROP DOWN IN WALL AND SERVE EXHAUST GRILLE AT LOW LEVEL.
2	EXHAUST CONNECTED TO TOP OF BIOSAFETY CABINET (CLASS II, TYPE B2) AS PER MANUFACTURER'S RECOMMENDATIONS.

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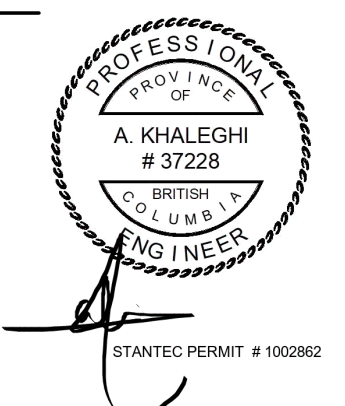
Consultant

Notes



Issued/Revision	By	App'd	YYYY.MM.DD
3 ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
2 ADDENDUM 2	CH	MB	2024.01.11
1 ISSUED FOR TENDER	MD	MB	2023.09.28

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Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade

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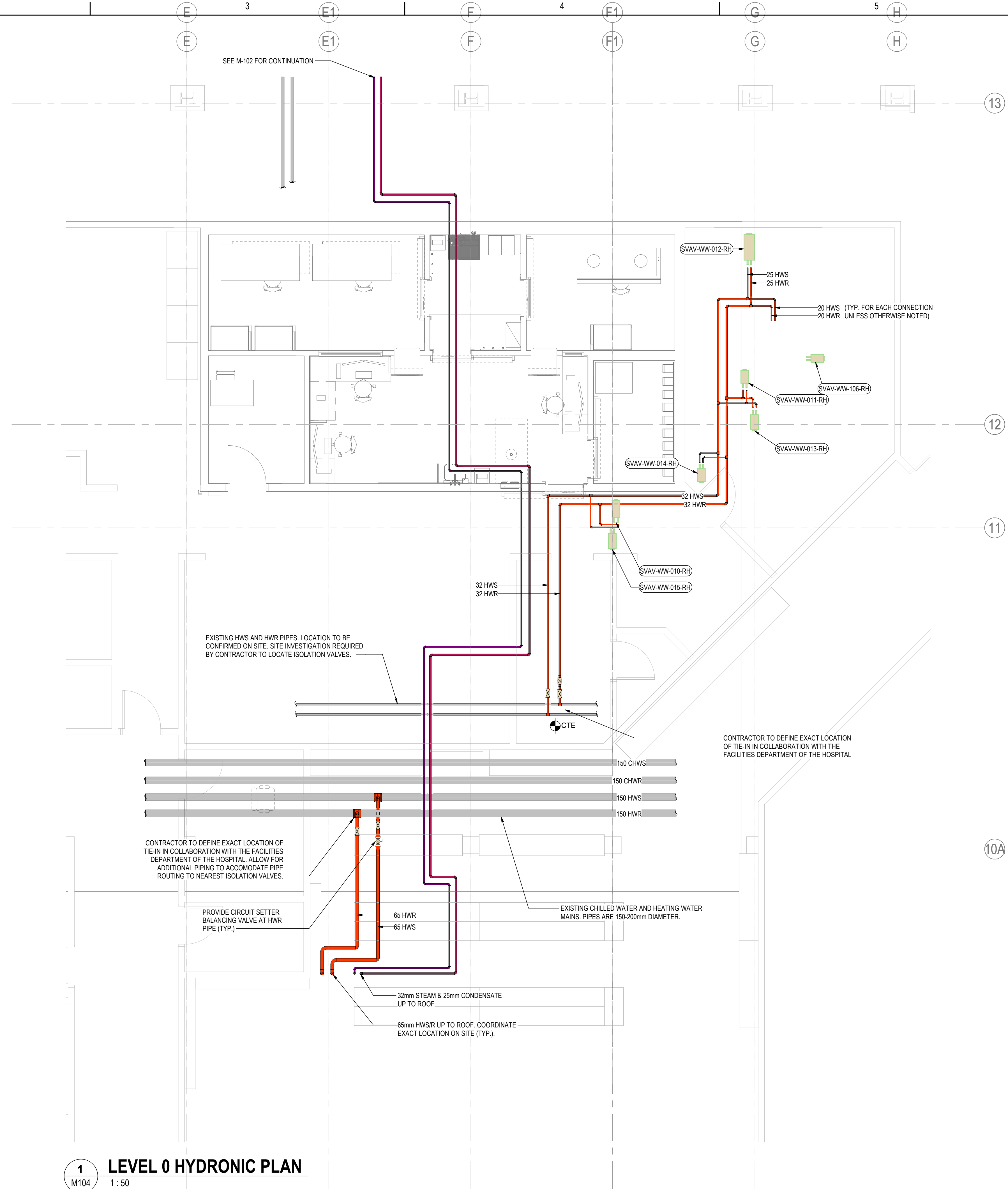
Title
LEVEL 0 - HYDRONIC - NEW

Project No.
144320228

Scale
1 : 50

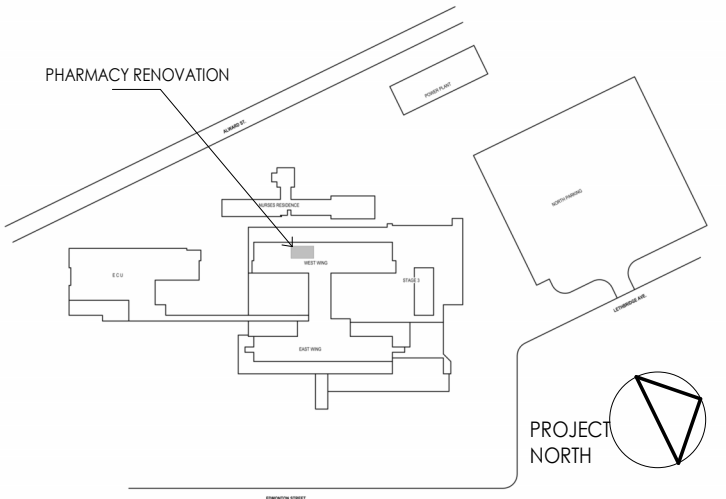
Revision
3

Drawing No.
M104



1 LEVEL 0 HYDRONIC PLAN
M104 1 : 50

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 4/10/2024 1:59:23 PM
 ORIGINAL SHEET - ARCH D



Issued/Revision	By	App'd	YYYY.MM.DD
3	CH	AK	2024.04.10
2	CH	MB	2024.01.11
1	MD	MB	2023.09.28

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Client/Project
Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade

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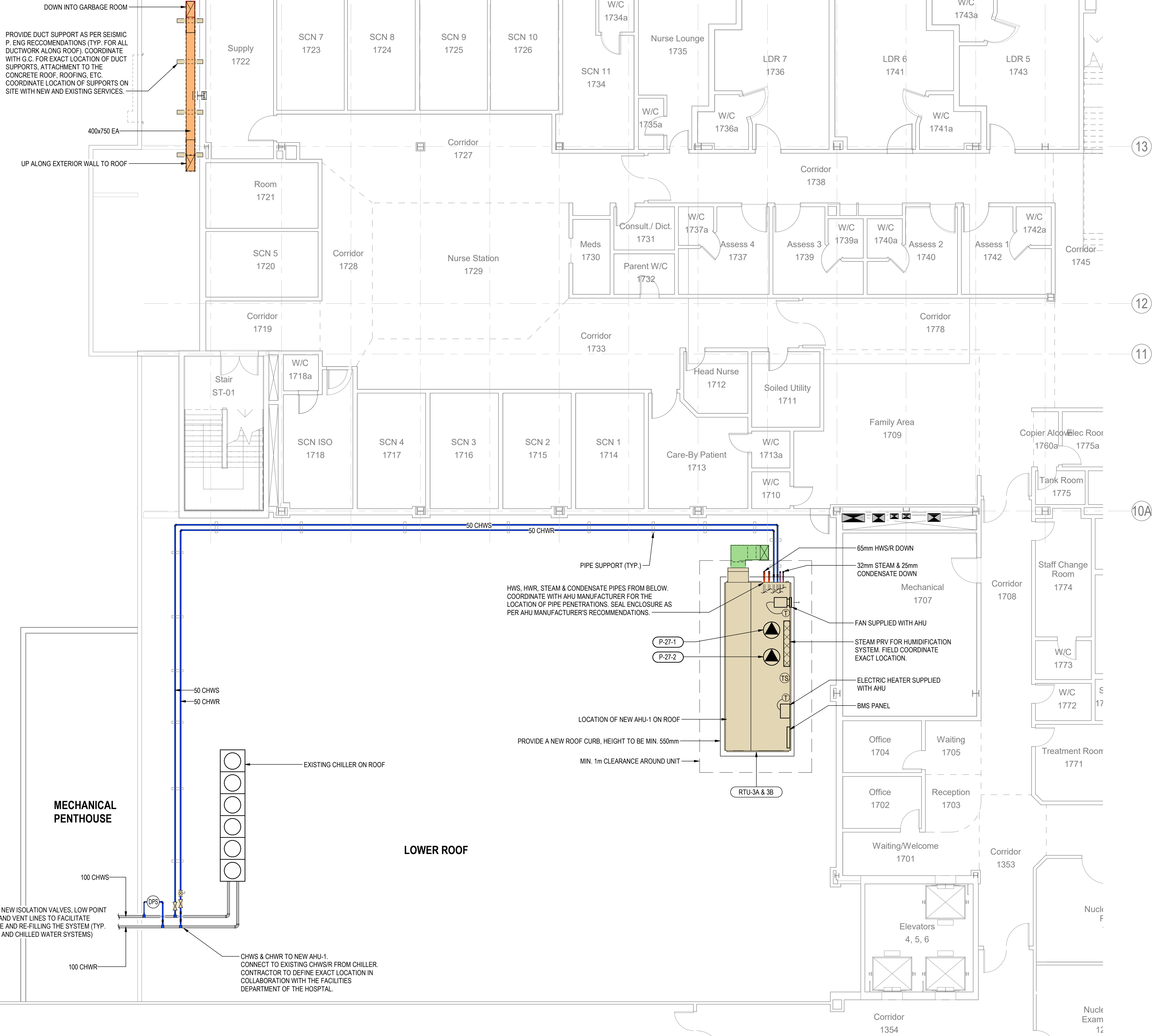
Title
LEVEL 1 - HVAC - NEW

Project No.
144320228

Revision
3

Scale
1 : 100

Drawing No.
M105



GENERAL NOTES:

1. THE DESIGN IS BASED ON THE ASSUMPTION THAT THE EXISTING HOT AND CHILLED WATER DISTRIBUTION SYSTEMS, WHERE THE NEW AHU CONNECTS, ARE 50% PROPYLENE GLYCOL.
2. ALL PIPING AND DUCTWORK ON ROOF TO BE INSULATED AND JACKETED.
3. ALL DUCTS AND PIPES TO BE MIN 600mm ABOVE FINISHED ROOF.
4. PROVIDE HEATED AND VENTILATED WEATHER PROOF ENCLOSURE FOR ALL THE VFD'S INSTALLED OUTDOORS.
5. PROVIDE SUPPORT / SLEEPER FOR PIPING AND DUCTWORK AS PER SEISMIC P.ENG'S RECOMMENDATION.
6. PLUMBING VENTS SHALL BE MIN 7.5M AWAY FROM THE AHU AIR INTAKE. RELOCATE EXISTING VENT PIPES TO SUIT.
7. HEAT TRACE ALL PIPING ON THE ROOF.

PROVIDE DUCT SUPPORT AS PER SEISMIC P. ENG RECOMMENDATIONS (TYP. FOR ALL DUCTWORK ALONG ROOF). COORDINATE WITH G.C. FOR EXACT LOCATION OF DUCT SUPPORTS, ATTACHMENT TO THE CONCRETE ROOF, ROOFING, ETC. COORDINATE LOCATION OF SUPPORTS ON SITE WITH NEW AND EXISTING SERVICES.

400x750 EA
UP ALONG EXTERIOR WALL TO ROOF

DOWN INTO GARBAGE ROOM

MECHANICAL PENTHOUSE

LOWER ROOF

PROVIDE NEW ISOLATION VALVES, LOW POINT DRAINS, AND VENT LINES TO FACILITATE DRAINAGE AND RE-FILLING THE SYSTEM (TYP. FOR HOT AND CHILLED WATER SYSTEMS)

CHWS & CHWR TO NEW AHU-1. CONNECT TO EXISTING CHWS/R FROM CHILLER. CONTRACTOR TO DEFINE EXACT LOCATION IN COLLABORATION WITH THE FACILITIES DEPARTMENT OF THE HOSPITAL.

HWS, HWR, STEAM & CONDENSATE PIPES FROM BELOW. COORDINATE WITH AHU MANUFACTURER FOR THE LOCATION OF PIPE PENETRATIONS. SEAL ENCLOSURE AS PER AHU MANUFACTURER'S RECOMMENDATIONS.

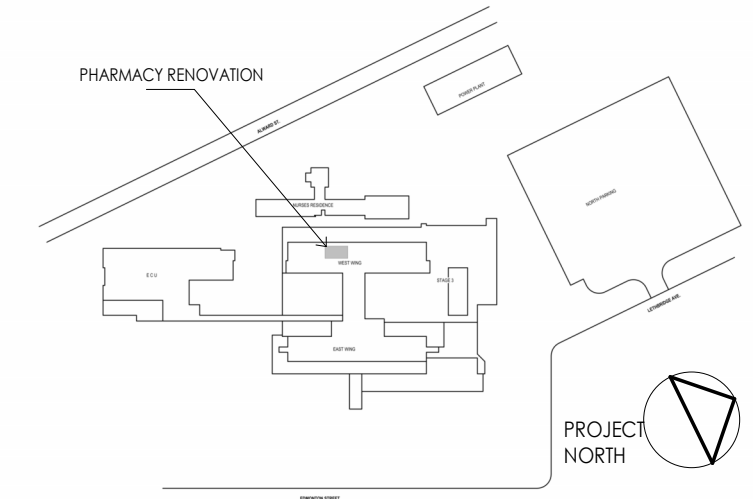
PROVIDE A NEW ROOF CURB, HEIGHT TO BE MIN. 550mm
MIN. 1m CLEARANCE AROUND UNIT

65mm HWS/R DOWN
32mm STEAM & 25mm CONDENSATE DOWN

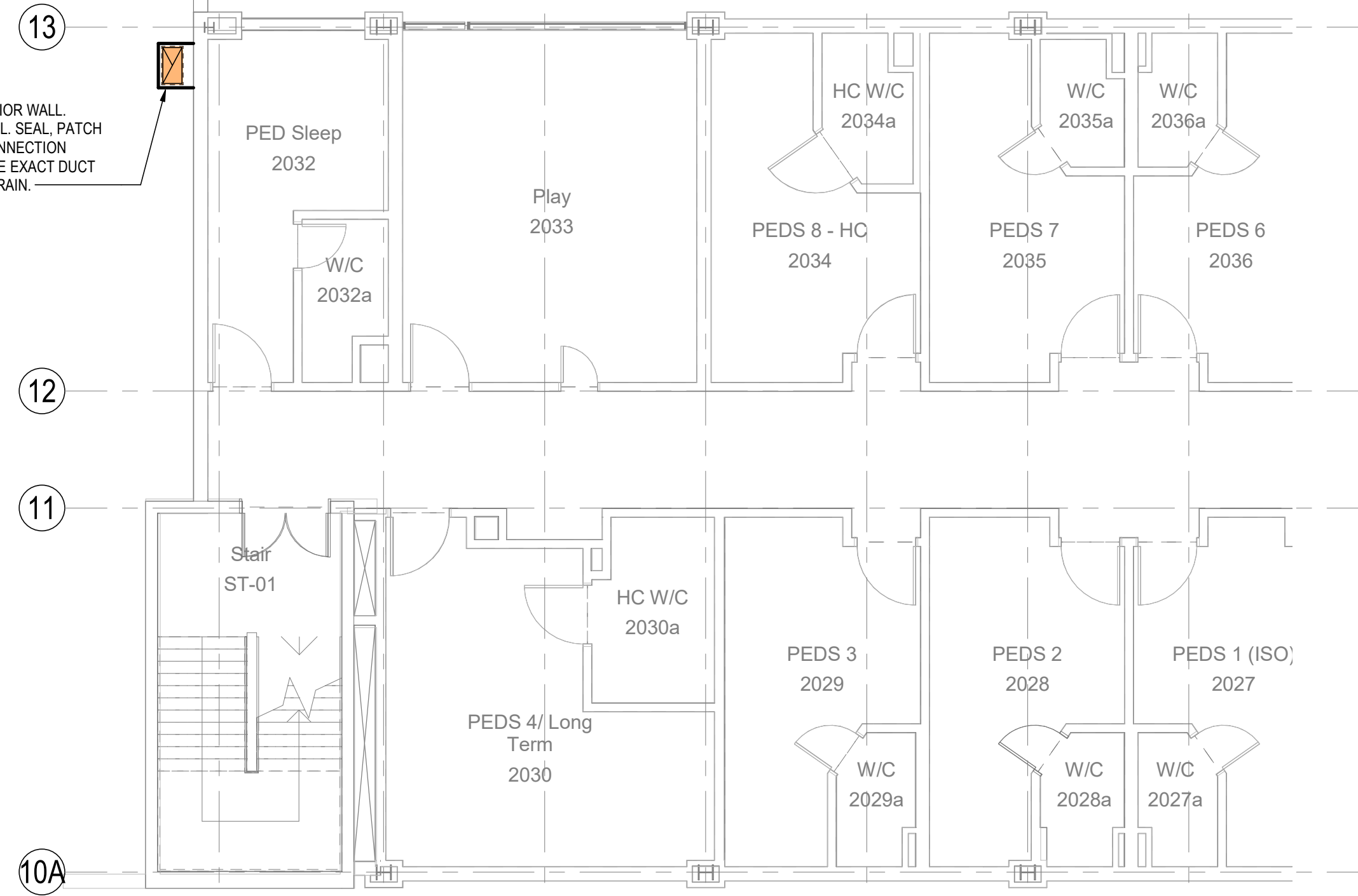
FAN SUPPLIED WITH AHU
STEAM PRV FOR HUMIDIFICATION SYSTEM. FIELD COORDINATE EXACT LOCATION.

ELECTRIC HEATER SUPPLIED WITH AHU
BMS PANEL

1 LEVEL 1 & LOWER ROOF PLAN
M105 1 : 100

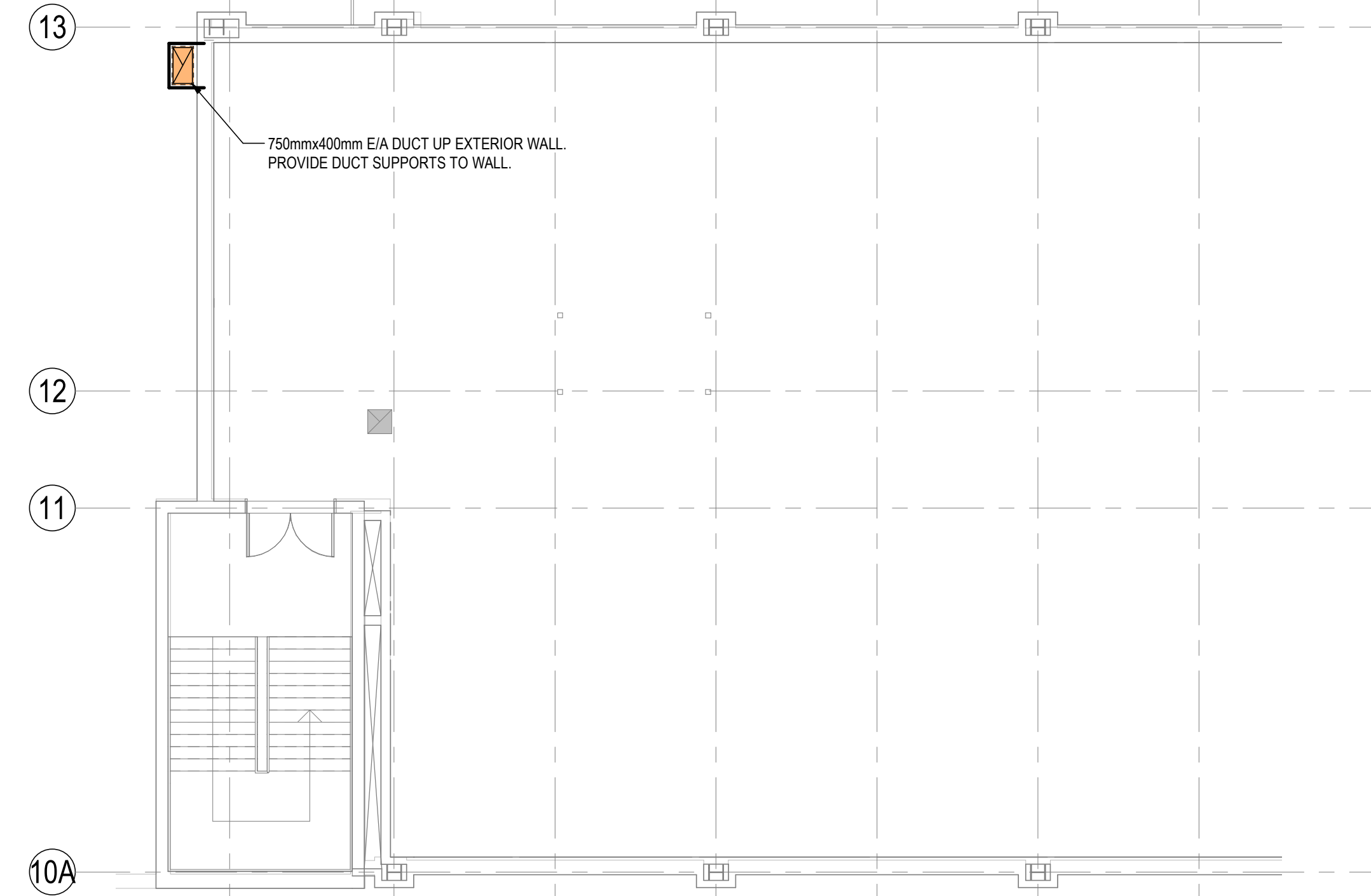


750mmx400mm E/A DUCT UP EXTERIOR WALL. PROVIDE DUCT SUPPORTS TO WALL. SEAL, PATCH AND MAKE GOOD WALL AT THE CONNECTION POINTS (TYP. OF ALL). COORDINATE EXACT DUCT LOCATION WITH EXISTING ROOF DRAIN.

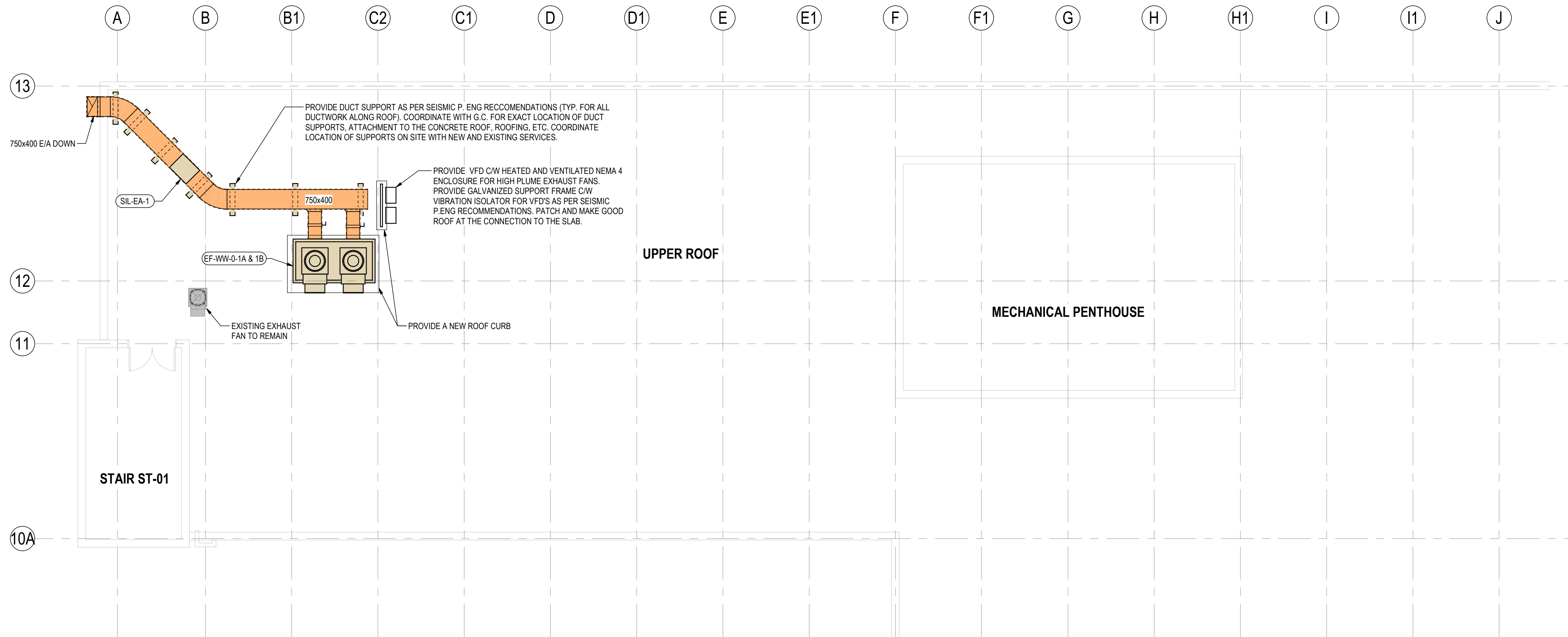


2 LEVEL 2 - HVAC - NEW
M106 1:100

750mmx400mm E/A DUCT UP EXTERIOR WALL. PROVIDE DUCT SUPPORTS TO WALL.



3 LEVEL 3 - HVAC - NEW
M106 1:100



1 UPPER ROOF - HVAC - NEW
M106 1:100

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3 ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
2 ADDENDUM 2	CH	MB	2024.01.11
1 ISSUED FOR TENDER	MD	MB	2023.09.28

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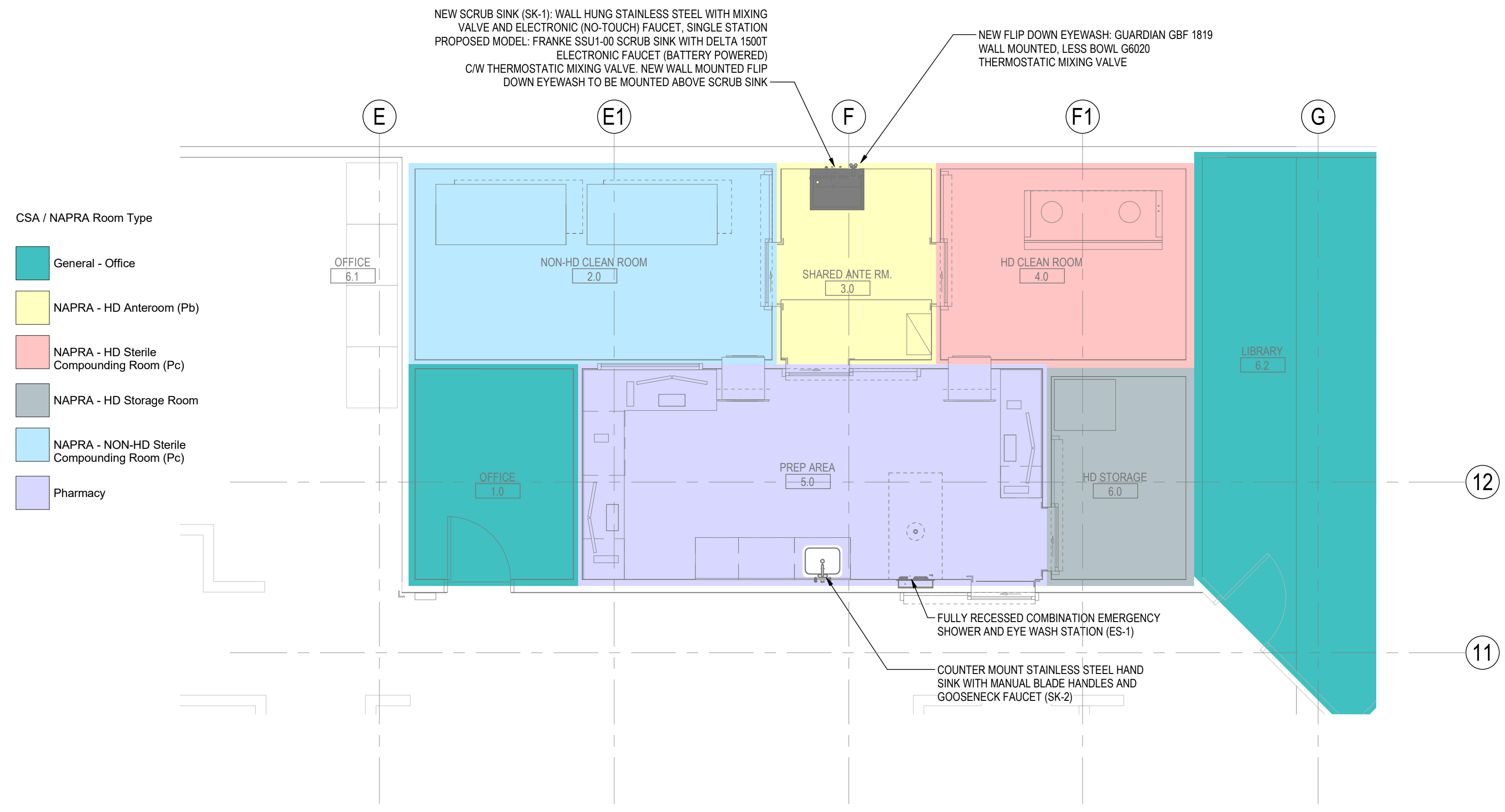
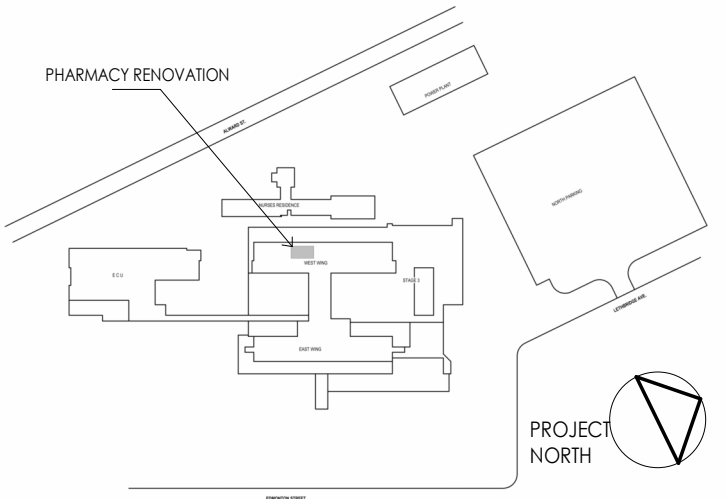
northern health
the northern way of caring

Client/Project
Northern Health Authority

UHNBC (University Hospital of Northern BC) - Pharmacy upgrade
1475 Edmonton St, Prince George, BC V2M 1S2

Title
LEVEL 2, LEVEL 3, & UPPER ROOF - HVAC - NEW

Project No.	Scale
144320228	1:100
Revision	Drawing No.
3	M106



- CSA / NAPRA Room Type
- General - Office
 - NAPRA - HD Anteroom (Pb)
 - NAPRA - HD Sterile Compounding Room (Pc)
 - NAPRA - HD Storage Room
 - NAPRA - NON-HD Sterile Compounding Room (Pc)
 - Pharmacy

1 LEVEL 0 OVERALL PLUMBING PLAN
M200 1 : 50

Issued/Revision	By	App'd	YYYY.MM.DD
2	CH	AK	2024.04.10
1	MD	MB	2023.09.28
1	MD	MB	2023.09.28

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Client/Project
Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
1475 Edmonton St. Prince George, BC V2M 1S2

Title
LEVEL 0 - PLUMBING OVERVIEW

Project No. 144320228	Scale 1 : 50
Revision 2	Drawing No. M200

1

2

3

4

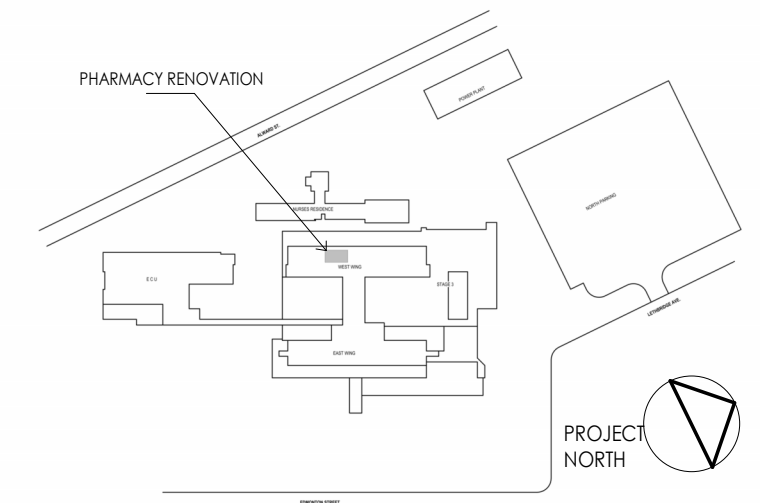
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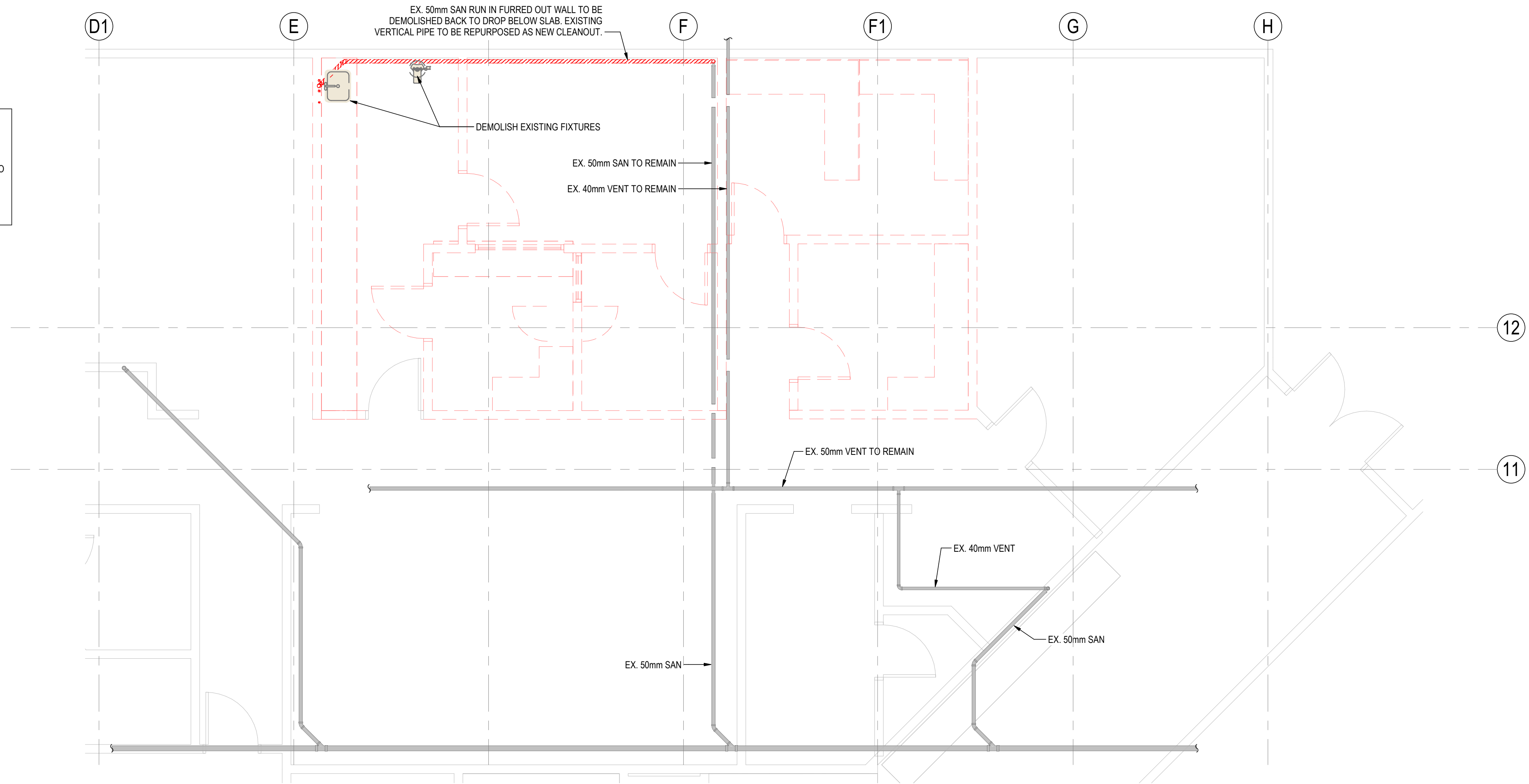
Consultant

Notes



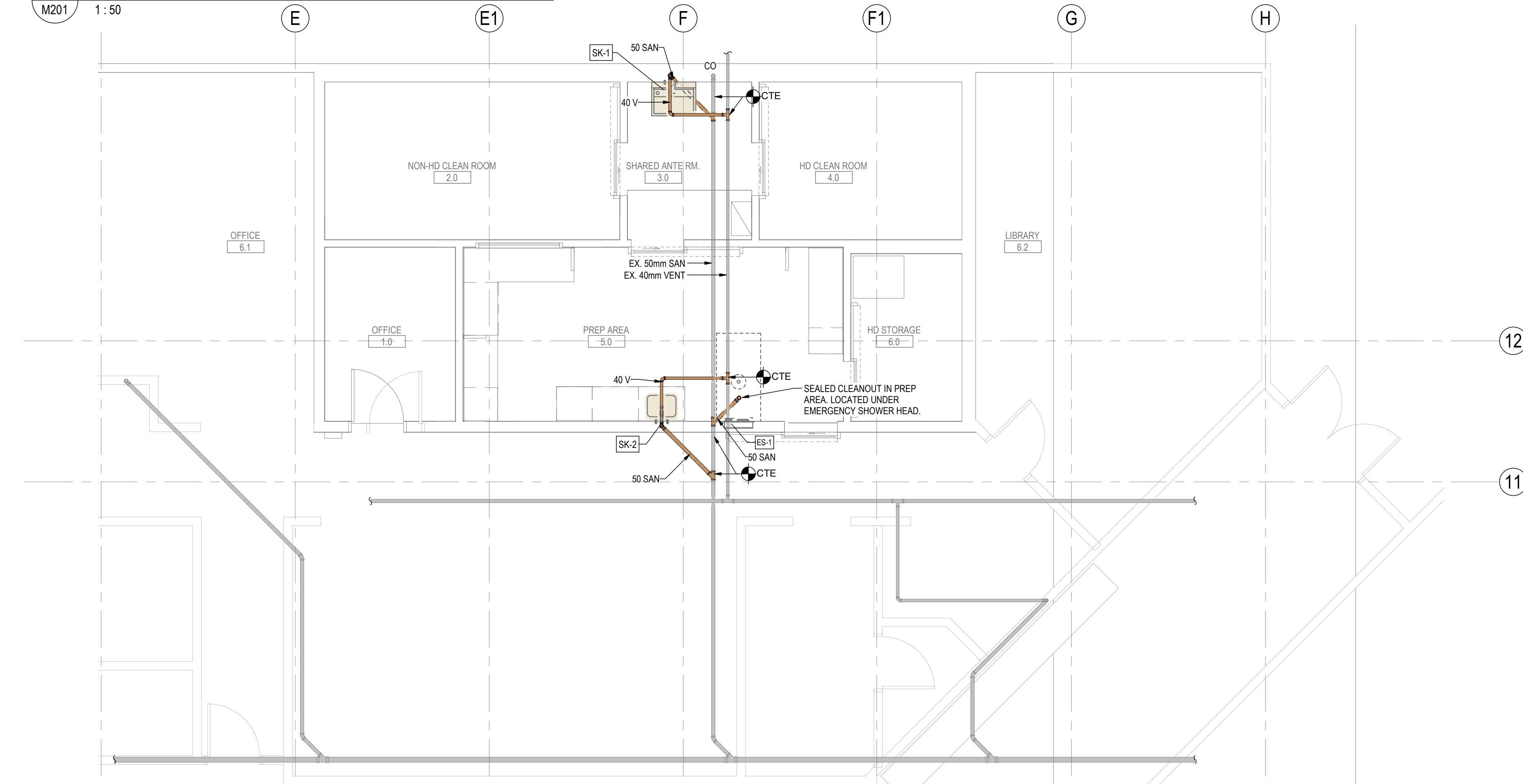
GENERAL NOTES:

1. ALL SANITARY PIPING (SAN) NOTED ON LEVEL 0 IS UNDER SLAB (UNLESS OTHERWISE NOTED).
2. PROVIDE GROUND PENETRATING RADAR (GPR) OF ALL REQUIRED PENETRATION OF THE FLOOR TO AVOID DAMAGING IN SLAB SERVICES AS WELL AS REINFORCING STEEL. COORDINATE GPR WITH BUILDING OPERATING ENGINEER WITH 48 HOURS NOTICE. ALL IN-SLAB PENETRATIONS MUST BE FIRE STOPPED AND WATER SEALED TO MAINTAIN THE INTEGRITY OF THE SLAB.



1 LEVEL 0 SANITARY PLUMBING - DEMOLITION

M201 1:50

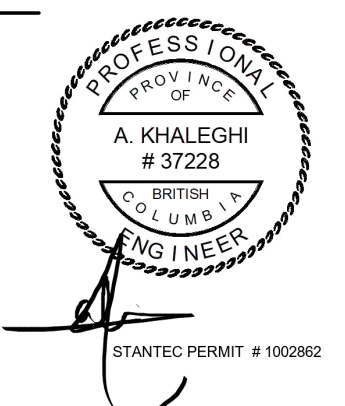


2 LEVEL 0 SANITARY PLUMBING - NEW WORK

M201 1:50

Issued/Revision	By	App'd	MD	MB	2023.09.28
2	CH	AK	2024.04.10		
1	MD	MB	2023.09.28		

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Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
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Title
LEVEL 0 - SANITARY PLUMBING - DEMO & NEW

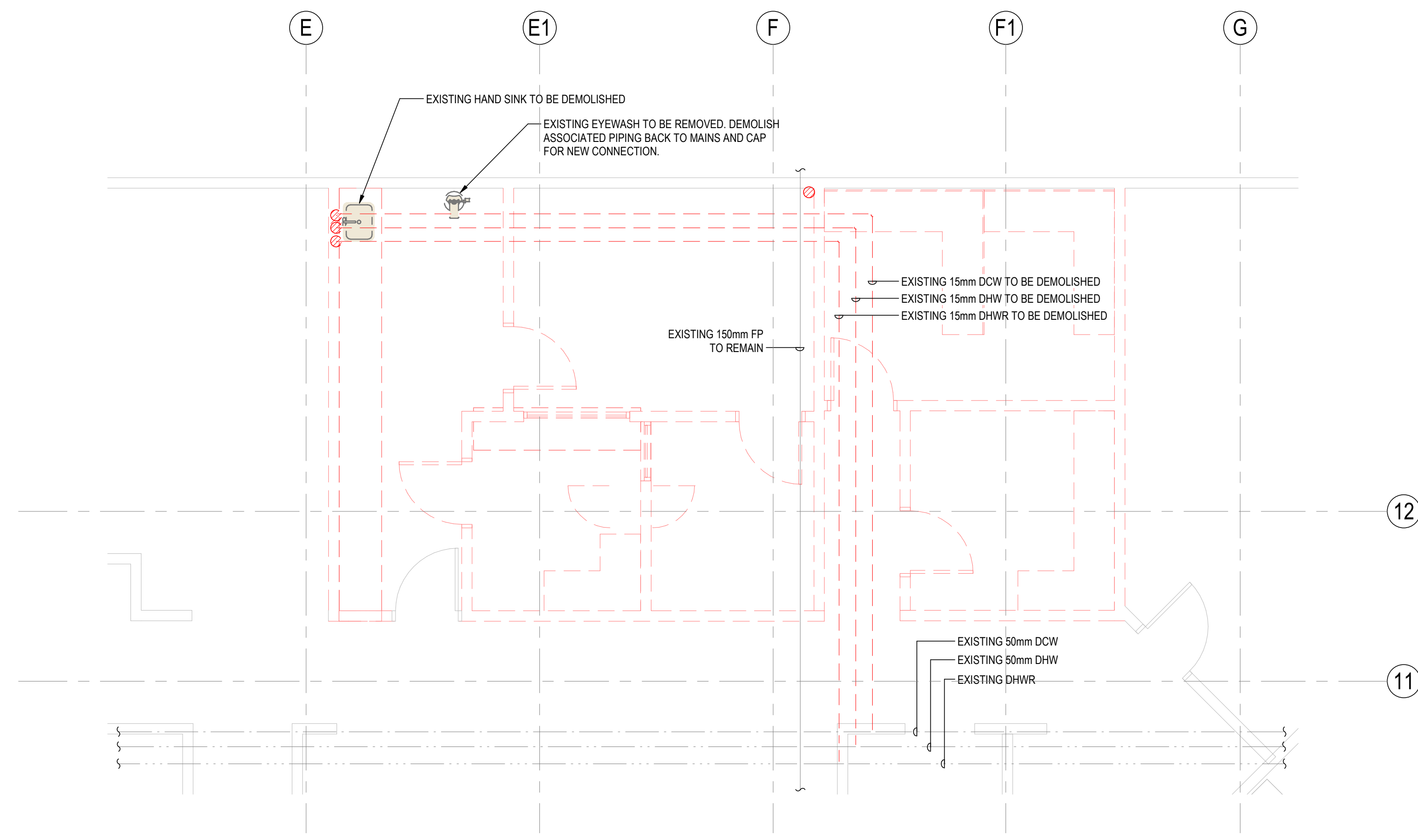
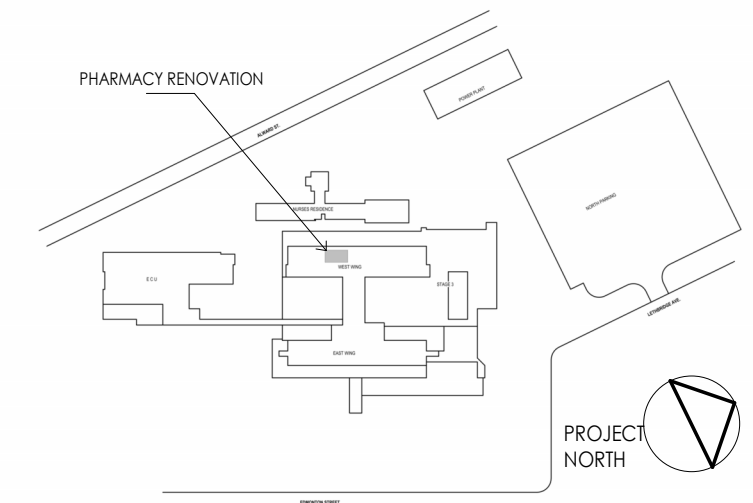
Project No. 144320228	Scale 1:50
Revision 2	Drawing No. M201

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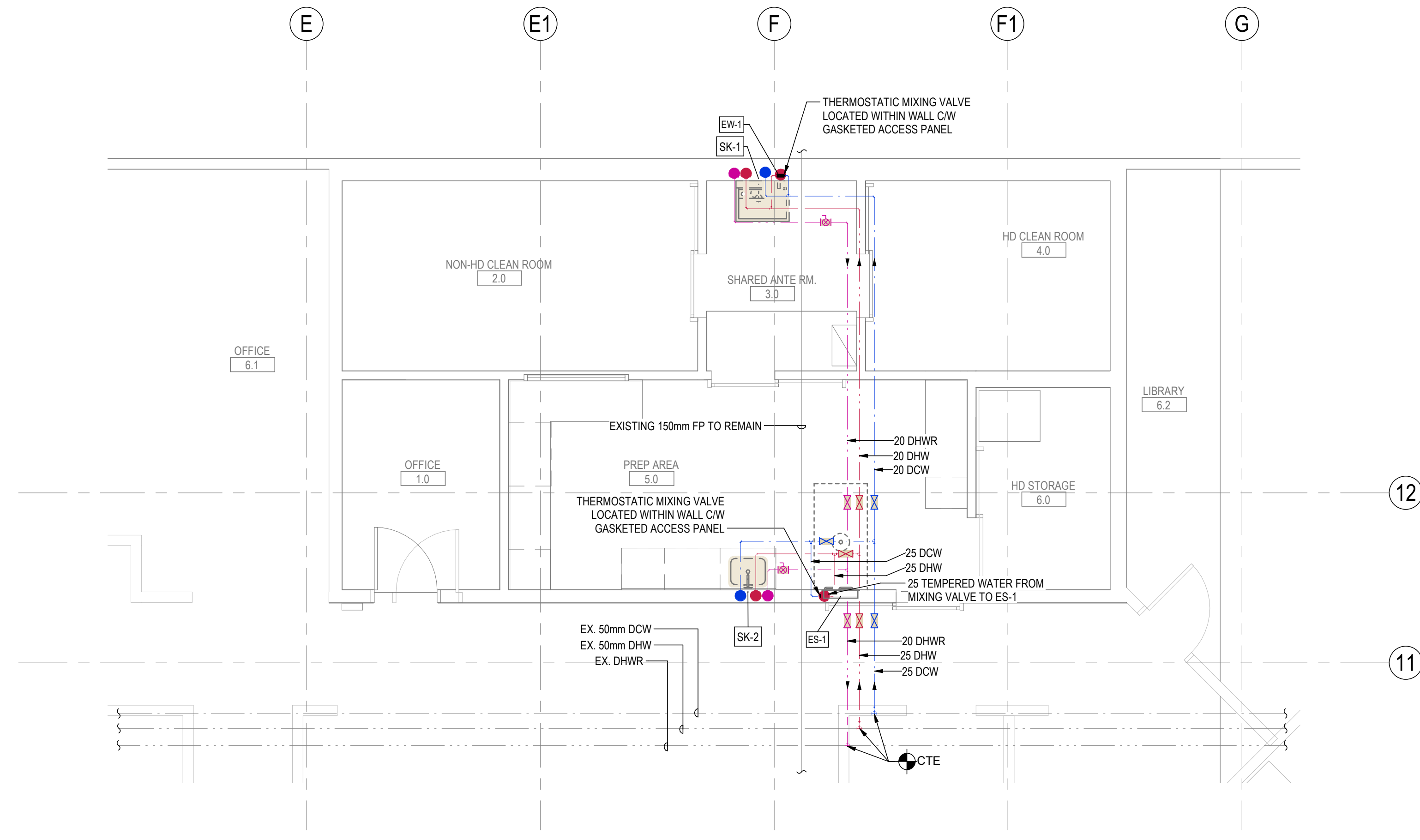
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Notes



1 LEVEL 0 PLUMBING - DEMOLITION
M202 1:50



2 LEVEL 0 PLUMBING - NEW WORK
M202 1:50

2	ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
1	ISSUED FOR TENDER	MD	MB	2023.09.28
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Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
1475 Edmonton St. Prince George, BC V2M 1S2

Title
LEVEL 0 - PLUMBING - DEMO & NEW

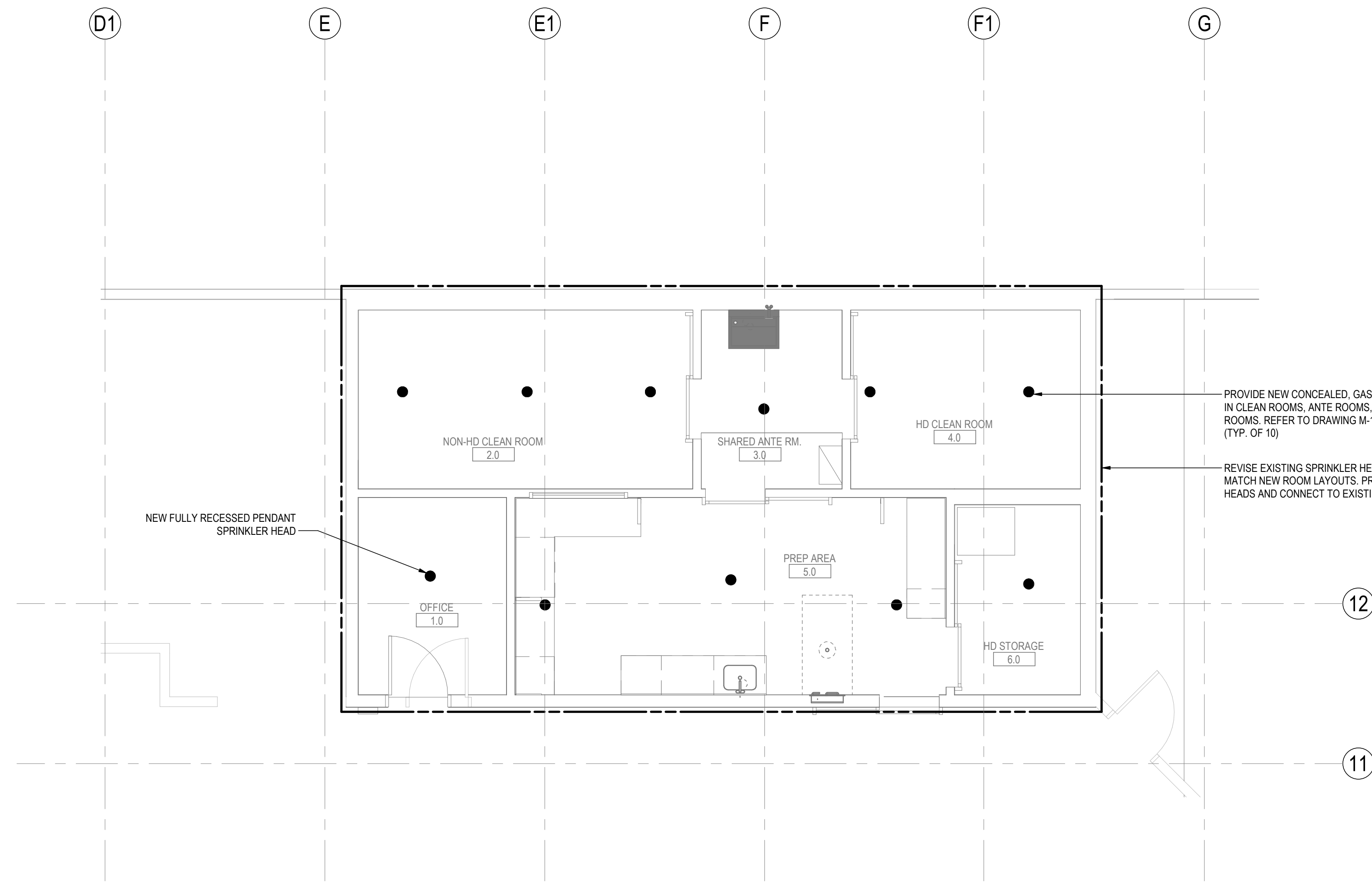
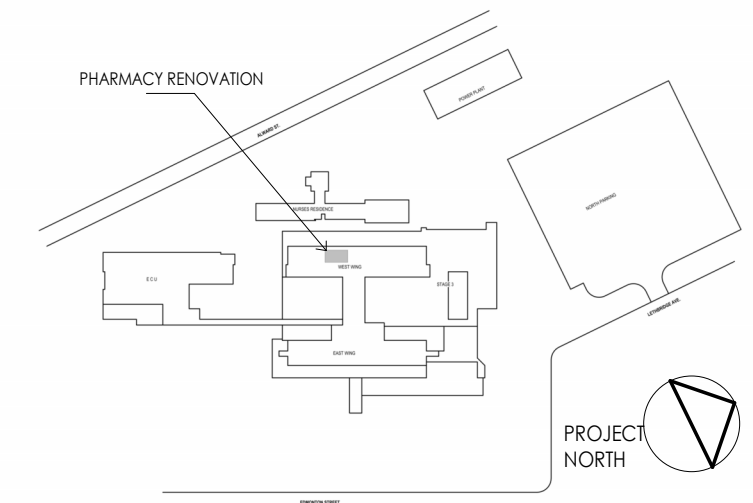
Project No.	Scale
144320228	1:50
Revision	Drawing No.
2	M202

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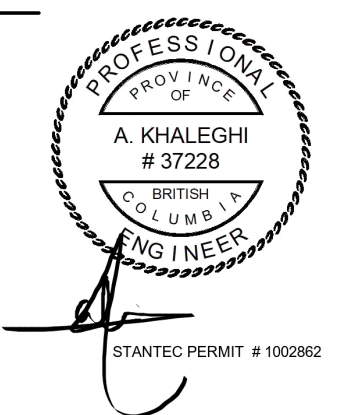
Notes



1 LEVEL 0 FIRE PROTECTION
M300 1:50

Issued/Revision	By	Appd	YYYY.MM.DD
2 ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
1 ISSUED FOR TENDER	MD	MB	2023.09.28

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1475 Edmonton St. Prince George, BC V2M 1S2

Title
LEVEL 0 - FIRE PROTECTION PLAN

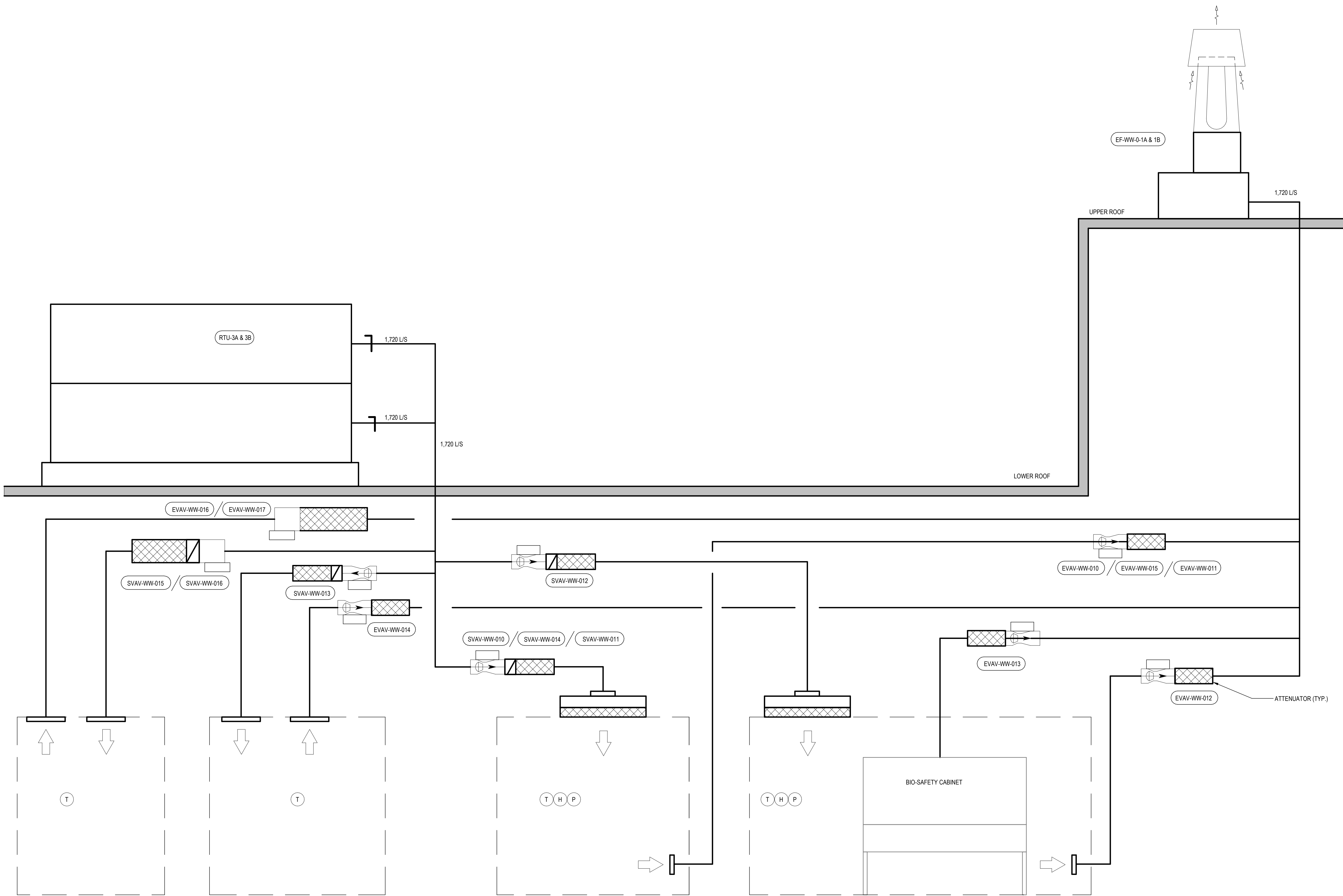
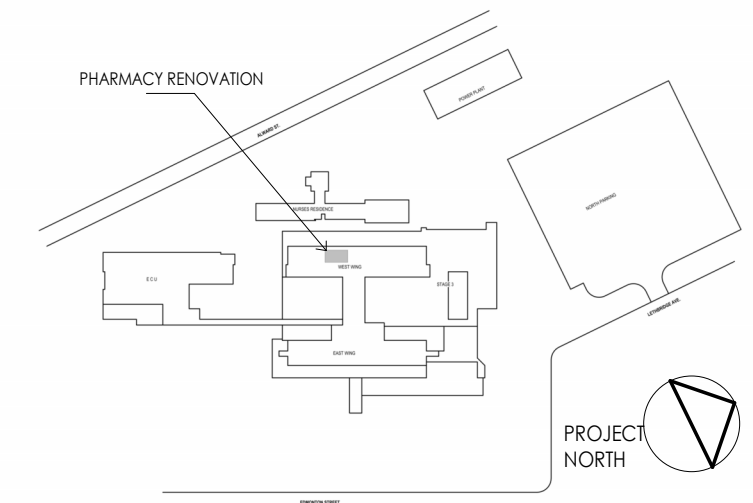
Project No. 144320228	Scale 1 : 50
Revision 2	Drawing No. M300

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Notes



OFFICE / LIBRARY STAFF ROOM
TYPICAL LAYOUT

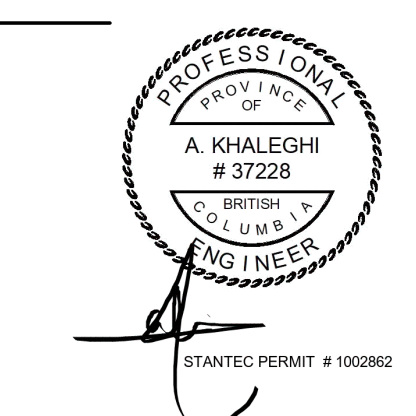
UNCLASSIFIED PREP / STORAGE
TYPICAL LAYOUT

NON-HD CLEAN ROOM / HD STORAGE /
SHARED ANTE ROOM
TYPICAL LAYOUT

HD CLEAN ROOM

3	ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
2	ADDENDUM 7	CH	MB	2024.02.09
1	ISSUED FOR TENDER	MD	MB	2023.09.28
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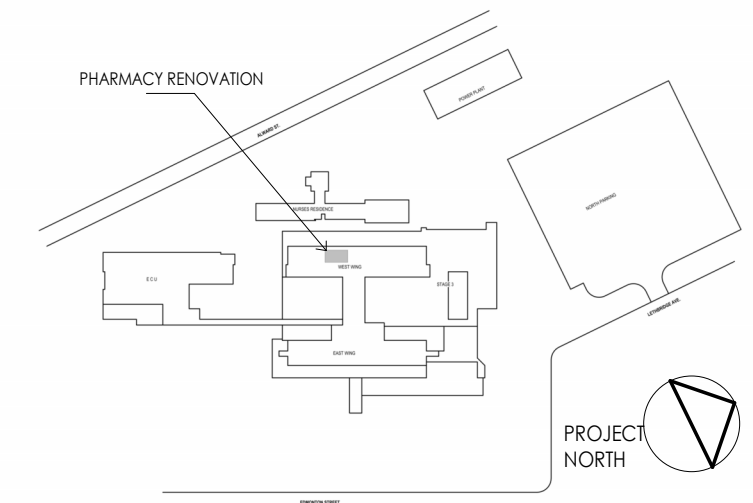
UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
1475 Edmonton St, Prince George, BC V2M 1S2

Title
MECHANICAL SCHEMATICS

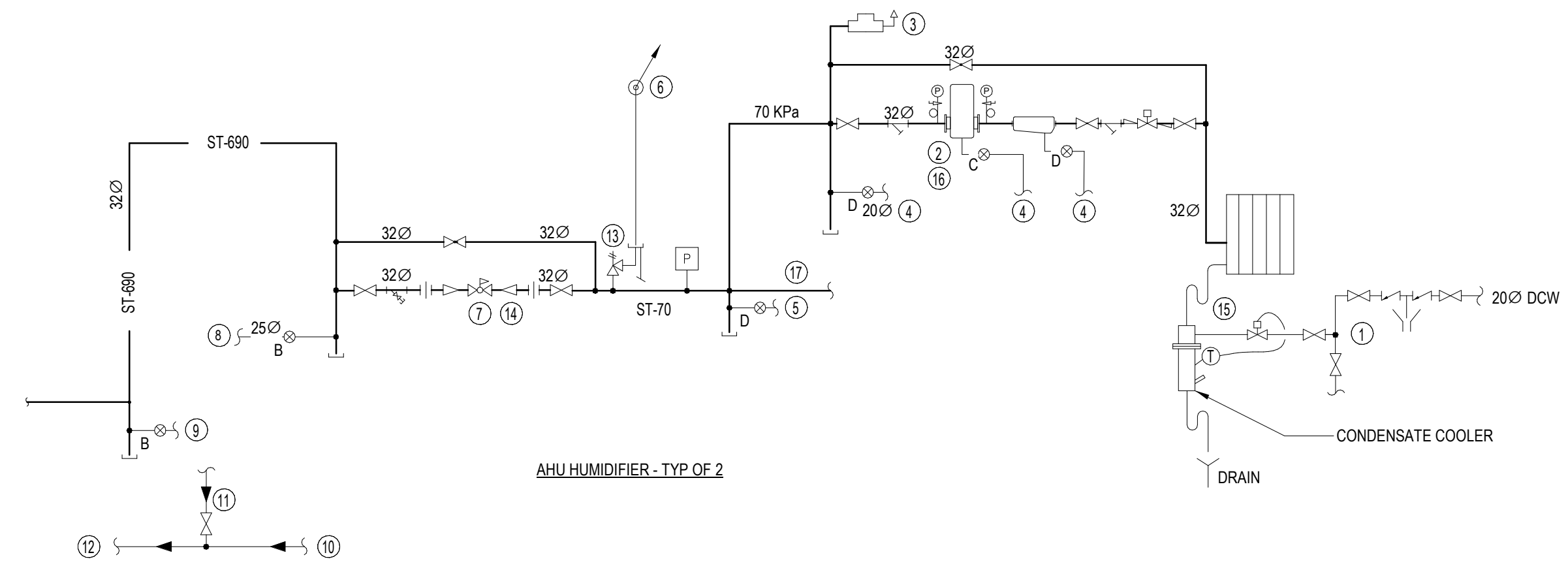
Project No. 144320228
Scale NTS

Revision 3
Drawing No. M400

1 VENTILATION SCHEMATIC
M400 NTS

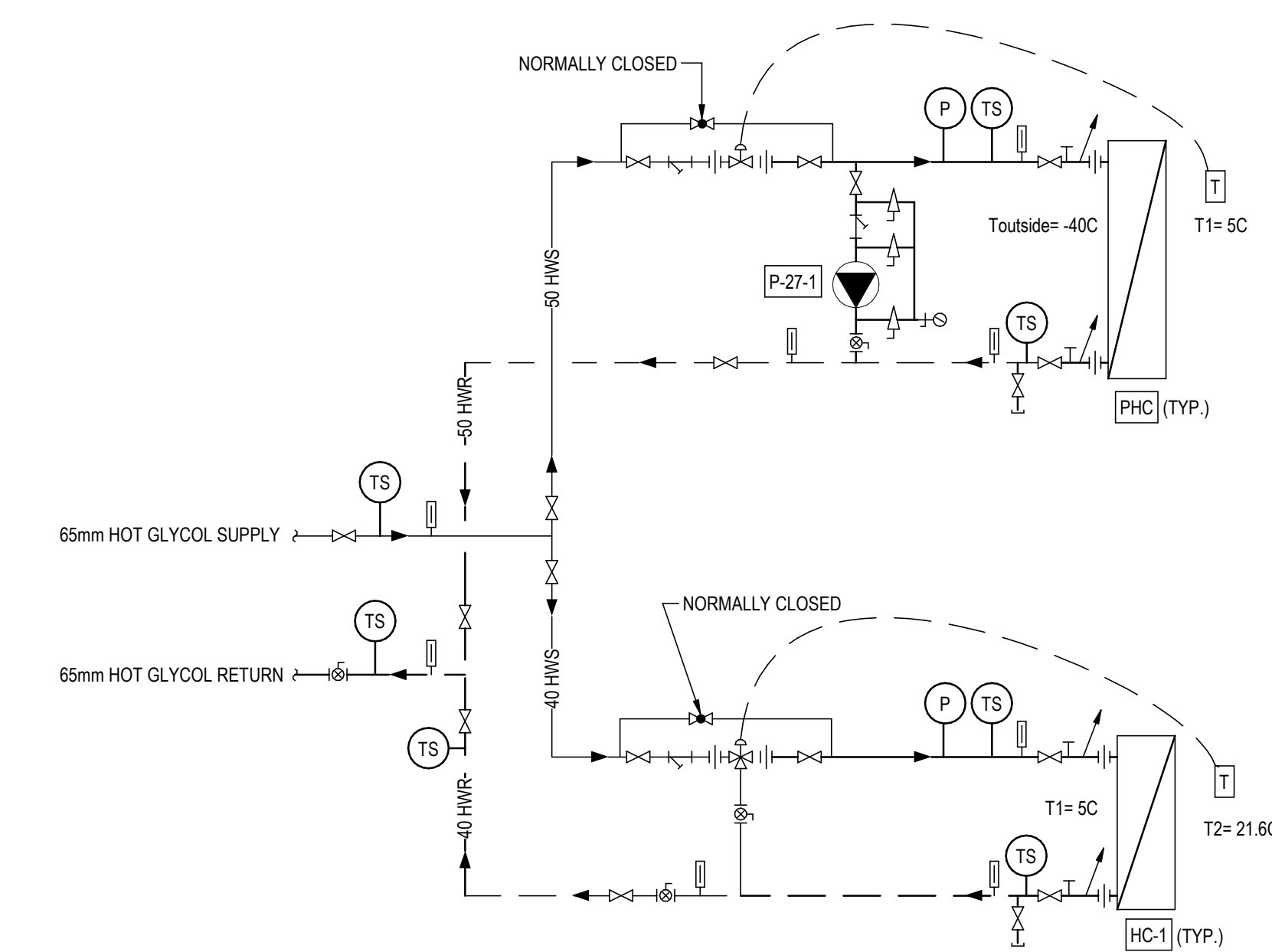


STEAM TRAP STATION TYPES:
TYPE A: INVERTED BUCKET STEAM TRAP STATION
TYPE B: THERMODYNAMIC STEAM TRAP STATION
TYPE C: THERMOSTATIC DRAIN STEAM TRAP STATION
TYPE D: F&T STEAM TRAP STATION

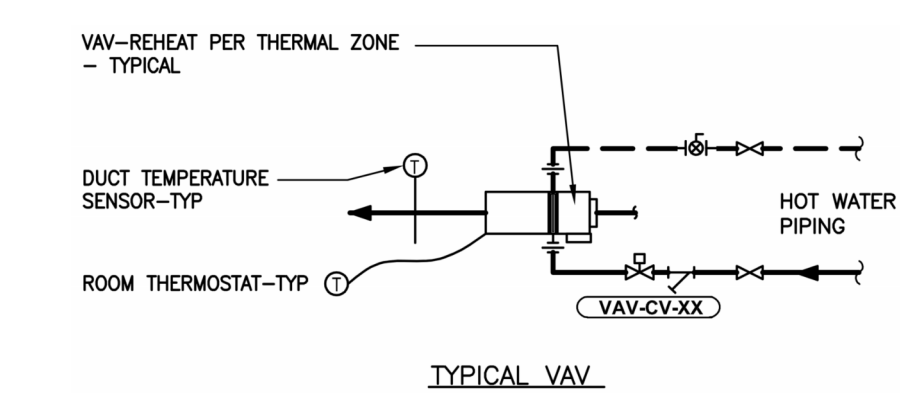


1 STEAM SCHEMATIC
M401 NTS

- ① PROVIDE COLD WATER PIPE TO DRAIN COOLERS OF AHUs. MODIFY AND RE-INSULATE EXISTING COLD WATER PIPING TO SUIT. COORDINATE WITH UHNBC FMO FOR REQUIRED SHUTDOWNS. PROVIDE ISOLATION VALVES AT TIE-IN TO THE EXISTING C/W PIPING.
 - ② 5 MICRON STEAM FILTER EQUIVALENT TO DONALDSON MODEL P-EG C/W FLUORAZ O-RING
 - ③ THERMOSTATIC AIR VENT AND VACUUM BREAKER
 - ④ TO CONDENSATE COOLER. INSULATE, HEAT TRACE, AND ALUMINUM JACKET PIPING SYSTEM ON THE ROOF FOR FREEZE PROTECTION (TYPICAL OF ALL PIPING ON ROOF)
 - ⑤ 20Ø CONDENSATE TO CONDENSATE COOLER
 - ⑥ COORDINATE WITH AHU MANUFACTURER FOR CORING THROUGH THE AHU ENCLOSURE ROOF AND SEALING THE PENETRATION
 - ⑦ COORDINATE WITH AHU MANUFACTURER FOR SUPPORTING AND ATTACHMENT OF PRV STATION AND PIPING TO THE AHU SERVICE ENCLOSURE WALL, FLOOR AND ROOF (TYP.). MECHANICAL CONTRACTOR'S SEISMIC / PIPING ENGINEER TO PROVIDE INCIDENTAL FORCES TO AHU MANUFACTURER PRIOR TO PREPARATION OF AHU SHOP DRAWINGS FOR COORDINATION
 - ⑧ 25Ø CONDENSATE LINE TO FLASH TANK
 - ⑨ PROVIDE CONDENSATE TRAP AND PIPING FOR AHU-PH-01A&B AHU'S STEAM SYSTEM, AND CONNECT TO EXISTING CONDENSATE PIPE. COORDINATE WITH FMO FOR EXACT TIE-IN POINT. MODIFY AND RE-INSULATE EXISTING CONDENSATE PIPING TO SUIT. COORDINATE WITH UHNBC FOR STEAM AND CONDENSATE SYSTEM SHUTDOWNS. PROVIDE ISOLATION VALVES AT TIE-IN TO EXISTING STEAM AND CONDENSATES PIPING.
- IN ADDITION, PROVIDE THERMOSTATIC (LIQUID EXPANSION) STEAM TRAP AT ALL LOW POINTS IN NEW STEAM PIPING TO DRAIN CONDENSATE DURING SYSTEM SHUT-DOWN. PIPE TRAP TO SAN DRAIN ON LEVEL 0 IN ACCORDANCE WITH BC PLUMBING CODE (TYP.)
- ⑩ EXISTING CONDENSATE PIPE INSIDE THE BUILDING
 - ⑪ NEW HIGH PRESSURE CONDENSATE FROM NEW STEAM PIPING
 - ⑫ EXISTING HIGH PRESSURE CONDENSATE PIPE TO FLASH TANK
 - ⑬ PRESSURE RELIEF BY SPIRAX SARCO MODEL 750 (1-1/4" x 1-1/2" ORIFICE G) C/W DRIP PAN ELBOW (1-1/2"), OR EQUIVALENT
 - ⑭ PRV MODEL SPIRAX SARCO 15Ø 25P OR EQUIVALENT
 - ⑮ WATER SEAL
 - ⑯ DRIP LEG FOR TYPE C TRAP SHALL BE DEEP TO AVOID CONDENSATE BACKING UP INTO THE STEAM FILTER WHEN THE TRAP IS CLOSED.
 - ⑰ 32Ø TO OTHER HUMIDIFIER



2 RTU-3A & 3B HEATING COIL SCHEMATIC (TYP.)
M401 NTS



3 VAV CONNECTIONS
M401 NTS

Issued/Revision	By	App'd	YYYY.MM.DD
3 ISSUED FOR CONSTRUCTION	CH	AK	2024.04.10
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UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
1475 Edmonton St. Prince George, BC V2M 1S2

Title
MECHANICAL SCHEMATICS

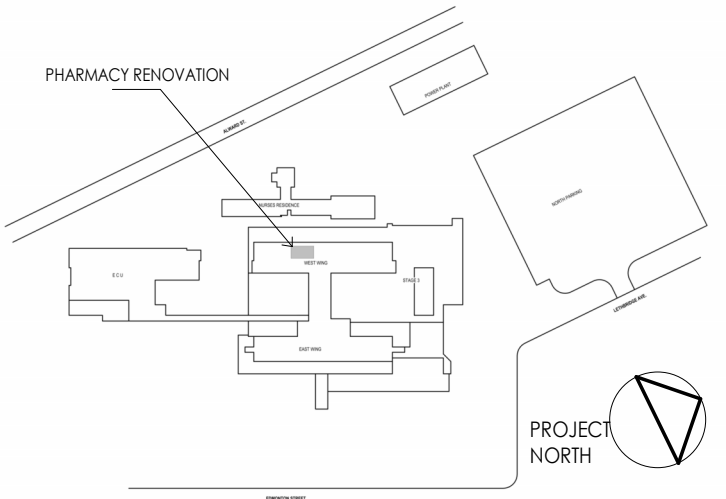
Project No. 144320228	Scale As indicated
Revision 3	Drawing No. M401

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Notes



AIR HANDLING UNIT SCHEDULE

UNIT IDENTIFICATION		AIRFLOW		PHYSICAL CHARACTERISTICS			FANS		FILTERS		STEAM HUMIDIFIER	HYDRONIC PRE-HEAT COIL					HYDRONIC HEATING COIL					COOLING COIL					MANUFACTURER	NOTES	
MARK	LOCATION	SUPPLY AIR (L/s)		UNIT OPERATING WEIGHT (kg)	MAXIMUM UNIT DIMENSIONS			SUPPLY FAN		SUPPLY		SCHEDULED SEPARATELY - REFER TO STEAM HUMIDIFIER SCHEDULE	HEATING PERFORMANCE					HEATING PERFORMANCE					COOLING PERFORMANCE						
		AIR FLOW (l/s)	EXTERNAL STATIC PRESSURE (Pa)		HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	QUANTITY	MOTOR RATING (kW)	MERV RATING	TOTAL CAPACITY...		EDB (°C)	EWB (°C)	LDB (°C)	LWB (°C)	TOTAL CAPACITY...	EDB (°C)	EWB (°C)	LDB (°C)	LWB (°C)	TOTAL CAPACITY (kW)	EDB (°C)	EWB (°C)	LDB (°C)	LWB (°C)			
RTU-3A	LEVEL 1 ROOF	1,800	875	7,000	2,540	3,110	8,130	2	7.5	8 (PRE) AND DYNAMIC V-8 AIR CLEANERS (FINAL)		98.03	-40	-	5	-	36.48	5	-	21.6	-	51.44	35.0	20.0	12.0	11.6	HAAKON	ALL	
RTU-3B	LEVEL 1 ROOF	1,800	875	7,000	2,540	3,110	8,130	2	7.5	8 (PRE) AND DYNAMIC V-8 AIR CLEANERS (FINAL)		98.03	-40	-	5	-	36.48	5	-	21.6	-	51.44	35.0	20.0	12.0	11.6	HAAKON	ALL	

- NOTES:
- ELECTRICAL FOR ALL MOTORS IS 575 / 3 / 60
 - MAXIMUM FACE VELOCITY FOR ALL FILTERS IS 2.5 M/S
 - SINGLE POINT POWER CONNECTION AT 575/3/60 AND SEPARATE 120/1/60 LIGHTING CONNECTION
 - INCLUDES ENCLOSURE FOR STEAM HUMIDIFIER
 - ALL FANS TO BE INVERTER DUTY, COMPLETE WITH ISOLATOR, AUTOMATIC DAMPER FOR FAN ISOLATION, PIEZOMETER RING AIRFLOW METERING READY FOR CONNECTION TO BMS
 - UNIT COMPLETE WITH STANDARD INSULATED ROOF CURB AND MOTOR LIFTING RAILS
 - REFER TO UNIT SECTIONS FOR MORE DETAILS
 - COILS SHALL BE RATED FOR 150 PSI (1,035 kPa)
 - SUPPLY, INSTALL, AND WIRE VARIABLE FREQUENCY DRIVES (VFD) COMPLETE WITH DISCONNECT SWITCH, FOR SPEED CONTROL OF ALL FANS. MOTORS SHALL BE FITTED WITH SHAFT GROUNDING.
 - THE AHU SHALL INCLUDE A HEATED/VENTILATED ENCLOSURE FOR MOUNTING VSD, CONTROLS, AND ELECTRICAL DISCONNECTS ETC.
 - THE AHU SHALL HAVE TWO INDEPENDANT FAN TUNNELS SO THAT ONE FAN CAN BE TAKEN OFFLINE WITH THE UNIT STILL IN OPERATION. REFER TO UNIT DIAGRAM.
 - COIL CAPACITIES SHOWN ARE FOR 100% O/A
 - 550mm HIGH ROOF CURB
 - 1900 (W) x 2540 (H) x 8100 (L) SERVICE ENCLOSURE

AHU COOLING COIL (WATER)

UNIT NO.	NORTHERN HEALTH ID NUMBER	UNIT SERVED	TOTAL CAPACITY (kW)	SENSIBLE CAPACITY (kW)	AIR							WATER (50% GLYCOL)				CONNECTION SIZE		HEIGHT (mm)	WIDTH (mm)	NO. OF COILS	MANUFACTURER	MODEL	NOTES
					S/A FLOW (l/s)	VELOCITY (m/s)	P.D. (Pa)	EDB (°C)	EWB (°C)	LDB (°C)	LWB (°C)	FLOW (l/s)	P.D. (kPa)	EWT (°C)	LWT (°C)	SUPPLY (mm)	RETURN (mm)						
CC-1		RTU-3A	51.44	50.86	1800	2.6	224	35	20	12	11.6	2.34	14.66	6	12	50	50	762	914	1	DIRECT COIL	5W-12-30.0-10-36.0-15	ALL
CC-2		RTU-3B	51.44	50.86	1800	2.6	224	35	20	12	11.6	2.34	14.66	6	12	50	50	762	914	1	DIRECT COIL	5W-12-30.0-10-36.0-15	ALL

- NOTES:
- STAINLESS STEEL CASING AND DRIP PAN
 - R-410A
 - 6 ROW, 12 FINS PER INCH
 - CASING MATERIAL: STAINLESS STEEL
 - AHRI ACHC CERTIFIED

AHU HEATING COILS (WATER)

UNIT NO	NORTHERN HEALTH ID NUMBER	SERVICE	MANUFACTURER	MODEL	CAPACITY (kW)	AIR					WATER (50% GLYCOL)				CONNECTION SIZE		HEIGHT (MM)	WIDTH (MM)	NO. OF COILS	NOTES
						S/A FLOW (L/S)	VELOCITY (M/S)	P.D. (Pa)	EDB (°C)	LDB (°C)	FLOW (l/s)	P.D. (kPa)	EWT (°C)	LWT (°C)	SUPPLY (mm)	RETURN (mm)				
PHC-1		RTU-3A	DIRECT COIL	5W-01-30.0-13-36.0-5	98.03	1800	2.6	25	-40	5	2.33	29.11	82.2	71.1	50	50	762	914	1	ALL
PHC-2		RTU-3B	DIRECT COIL	5W-01-30.0-13-36.0-5	98.03	1800	2.6	25	-40	5	2.33	29.11	82.2	71.1	50	50	762	914	1	ALL
HC-1		RTU-3A	DIRECT COIL	5W-01-30.0-08-36.0-5	36.48	1800	2.6	17	5	21.6	0.87	14.66	82.2	71.1	25	25	762	914	1	ALL
HC-2		RTU-3B	DIRECT COIL	5W-01-30.0-08-36.0-5	36.48	1800	2.6	17	5	21.6	0.87	14.66	82.2	71.1	25	25	762	914	1	ALL

- NOTES:
- CSA-C CERTIFIED, UL-C TESTED
 - THREE-POLE DISCONNECTING-TYPE CONTACTOR, AIRFLOW SWITCHES, AUTOMATIC-RESET FUNCTIONAL LIMITS
 - AUTOMATIC-RESET HIGH-TEMPERATURE LIMITS, MANUAL-RESET HIGH-TEMPERATURE LIMITS.
 - PDS FIXED, C/W PITOT TUBE
 - DOOR INTERLOCK DISCONNECT SWITCH
 - GALVANIZED SCREENS BOTH SIDES
 - ENCLOSURE FLUSH TOP AND BOTTOM

AHU SUPPLY FANS

UNIT NO	NORTHERN HEALTH ID NUMBER	UNIT SERVED	FAN TYPE	AIR FLOW (l/s)	FAN S.P. (Pa)	FAN E.S.P. (Pa)	FAN MOTOR (kW)	FAN DRAW (kW)	FAN (RPM)	FAN CLASS	IMPELLER DIA (mm)	DRIVE TYPE	VOLTS/PHASE/Hz	MANUFACTURER	MODEL	NOTES
SF-1		RTU-3A	PLENUM	1800	1617	871	7.5	6.7	3251	3	406	Direct	575/3/60	HAAKON	16TCEPQN	ALL
SF-2		RTU-3B	PLENUM	1800	1617	871	7.5	6.7	3251	3	406	Direct	575/3/60	HAAKON	16TCEPQN	ALL

- NOTES:
- INVERTER DUTY MOTOR C/W SHAFT GROUNDING
 - C/W ISOLATOR
 - FAN PIEZO RING FOR AIRFLOW MEASUREMENT
 - ELEVATION: 580 m

AHU HUMIDIFIERS

UNIT NO.	SERVICE	TYPE	MANUF	MODEL	CAPACITY (kg/HR)	STEAM PRESSURE (kPa)	AIR VOLUME (L/s)	ENTERING DB (C) / ENTERING RH (%)	DESIRED DB (C) / DESIRED RH (%)	MAXIMUM ABSORPTION DISTANCE (mm)	STEAM VALVE MODEL	NOTES
RTU3-HUM-1	RTU-3A	STEAM	CAREL	SABCBLI2U0	66.7	103.4	1800	20 / 0	20 / 35	147	SAKV00FEU0	ALL
RTU3-HUM-2	RTU-3B	STEAM	CAREL	SABCBLI2U0	66.7	103.4	1800	20 / 0	20 / 35	147	SAKV00FEU0	ALL

- NOTES:
- AIRFLOW PROVING SWITCH
 - HIGH-LIMIT HUMIDI-STAT, ON-OFF HIGH LIMIT
 - TEMPERATURE SWITCH
 - HIGH EFFICIENCY PVDF INSULATED MANIFOLDS AND TUBES
 - 304 S.S. ENCLOSURE AND TUBE
 - STEAM CONTROL VALVE, 24 VOLT ACTUATOR, STRAINER, STEAM SEPARATOR, F&T TRAP
 - CONDENSATE COOLER FOR DISPERSION MANIFOLD
 - 304 S.S. CONDENSATE DRAIN COOLER C/W TEMPERATURE ACTUATED VALVE AND FLOOR STAND
 - SUPPORT FRAME FOR INSTALLATION OF THE HUMIDIFIER
 - INSULATED COPPER PIPE BETWEEN THE HUMIDIFIER AND DISPERSION TUBE PER MANUFACTURER'S REQUIREMENTS

PUMP SCHEDULE

UNIT IDENTIFICATION			PERFORMANCE							ELECTRICAL		OPERATING WEIGHT (kg)	MANUFACTURER	MODEL	NOTES
MARK	SYSTEM SERVED	CONTROL	FLUID TYPE	FLUID TEMP (°C)	FLOW (l/s)	PUMP HEAD (kPa)	MIN EFFICIENCY (%)	HP	SPEED (RPM)	VOLTS	PHASE				
P-27-1	PREHEAT COIL 1	CONTINUOUS	50% GLYCOL	36	2.33	36	49.74	1	1,200	208	3	73.2	KSB	ETANORM	
P-27-2	PREHEAT COIL 2	CONTINUOUS	50% GLYCOL	36	2.33	36	49.74	1	1,200	208	3	73.2	KSB	ETANORM	

- NOTES:
-

NO.	ISSUED FOR	BY	DATE
1	ISSUED FOR TENDER	MD	2023.09.28
2	ISSUED FOR CONSTRUCTION	CH	2024.04.10
3	ISSUED FOR REVISION	MD	2023.09.28
4	ISSUED FOR REVISION	BY	TTTT.MM.DD

Permit/Seal



Client/Project Logo



Client/Project
Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade
1475 Edmonton St, Prince George, BC V2M 1S2

Title
MECHANICAL SCHEDULES

Project No. 144320228
Revision 2
Scale
Drawing No. M500

PHARMACY AIR VALVE SCHEDULE (AV)

Table with columns: AREA SERVED, AIR VALVE No., MANUFACTURER, MODEL, PHENIX MODEL NUMBER, SIZE (in), REHEAT COIL, OCCUPIED MODE, UNOCCUPIED MODE, NOTES. Includes rows for 2.0 NON-HD CLEAN ROOM, 3.0 SHARED ANTE ROOM, 4.0 HD CLEAN ROOM, etc.

- NOTES:
1. PRESSURE SWITCH, LOW LIMIT.
2. FAILS TO LAST POSITION.
3. HORIZONTAL VALVE ORIENTATION. CONTRACTOR TO CONFIRM AIR VALVE ORIENTATION PRIOR TO ORDERING.
4. ELECTRONIC VALVE CONTROLLER.
5. CONICAL-SHAPED DIFFUSER VALVE DESIGN.
6. PRESSURE CONTROL (POC) ALTERNATE OFFSET CAPABILITY.
7. PROVIDE PHENOLIC COATING FOR HAZARDOUS EXHAUST.
8. LOW PRESSURE OPERATION.
9. PROVIDE WITH SYSTEM, REMOTE ACCESS CAPABILITY.
10. INCLUDE HYDRONIC RE-HEAT COIL, WORKING FLUID WATER.
11. SHUT-OFF CAPABILITY.
12. INCLUDE DOOR CONTACTS AND PHOENIX CONTROLS PRESSURE INDICATOR AND MONITORING EQUIPMENT.

DUCT MOUNTED HOT WATER HEATING COIL SCHEDULE

Table with columns: REHEAT COIL NO., ROOM(S) SERVED, COIL (TOTAL CAPACITY, HEIGHT, LENGTH, NUMBER OF ROWS), AIR (AIRFLOW, EDB, LDB, FACE VELOCITY, MAX APD), FLUID (FLUID TYPE, FLUID FLOW, EWT, LWT, MAX WPD), MANUFACTURER, NOTES.

- NOTES:

VAV SCHEDULE

Table with columns: AREA SERVED, TAG, MANUFACTURER, MODEL, UNIT SIZE, MAX PRIMARY, MIN PRIMARY, TERMINAL LINER, REHEAT, WC CAPACITY, EAT, LAT, FLUID FLOW, FPD, FLUID TYPE, GLYCOL %, ROWS, MAX COIL APD, EWT, LWT, NOTES.

- NOTES:
1. VAV'S TO BE SUPPLIED WITH ATTENUATORS, TO BE FIBRE FREE.
2. CSA-C CERTIFIED, UL-C TESTED ELECTRIC COIL.
3. ELECTRIC HEATERS SHALL BE APPROVED FOR ZERO CLEARANCE FOR ALL COMBUSTIBLE MATERIALS.
4. ALL CONTROLS SHALL BE INTEGRATED AND PRE-WIRED WITH A NEMA-1 CONTROL PANEL WHICH INCLUDE A REMOVABLE, HINGED DOOR TO PROVIDE EASY ACCESS.
5. S.E.R. MODULATING ELECTRIC HEATERS SHALL BE SUPPLIED WITH AN ELECTRIC SENSOR ON EACH SIDE OF THE HEATER TO MEASURE THE TEMPERATURE AND THE AIRFLOW AND A NEPTRONIC HEC CONTROLLER TO ADJUST THE OUTPUT TEMPERATURE IN ACCORDANCE WITH THE MEASURED PARAMETERS. THE NEPTRONIC HEC CONTROLLER SHALL STOP THE ELECTRIC HEATER WHEN THERE IS NO AIRFLOW.
6. MANUAL AND AUTOMATIC CUT-OUT.
7. DOOR INTERLOCK DISCONNECT SWITCH.
8. 24 V TRANSFORMER.
9. LOW WATT DENSITY ELEMENTS, HIGH GRADE NICKEL-CHROME ALLOY.

FAN SCHEDULE

Table with columns: UNIT NO., SERVICE, LOCATION, FAN TYPE, AIR FLOW, FAN E.S.P., FAN DRAW, FAN MOTOR, FAN RPM, DRIVE TYPE, VOLTS/PH/Hz, MANUFACTURER, MODEL NO, SEE NOTE(S).

- NOTES:
1- ISOLATION DAMPER ACT. - ELECTRIC, 24 VAC, 2 POS., SR, WIEND SWITCH, W/TRANSFORMER, MODEL: TFB24-S, ONE PER FAN.
2- SURE-AIRE FLOW STATION (NO ELECTRONICS), QTY 2.
3- CSA APPROVAL, UL/CUL-705 "POWER VENTILATORS".
4- BYPASS AIR PLENUM-SINGLE WALL, STEEL, SIDE EXHAUST INTAKES.
5- COATED WITH LABCOAT, CONCRETE GRAY-RAL 7023, ENTIRE UNIT.
6- NEMA-3R DISCONNECT, MOUNTED AND WIRED.
7- MOTOR COVER.
8- WEATHERHOOD OVER BYPASS DAMPER WITH INLET SCREEN.
9- C/W NEMA PREMIUM EFFICIENT INVERTER MOTOR, TEFC, CLASS F OR GREATER INSULATION, SHAFT GROUNDING.
10- 600 MM ROOF CURB GPFHD, 25 MM INSULATION, MILL FINISH.
11- FACTORY VIBRATION TEST, 0.15 IN/S1129, PEAK, FILTER-IN AS MEASURED AT THE FAN RPM.
12- HIGH WIND RATED (+/- 140 PSF RATING).
13- FLORIDA PRODUCT APPROVAL # FL17237 & MIAMI-DADE NO# 14-0325.05
14- TEXAS DEPARTMENT OF INSURANCE PRODUCT EVALUATION RV-88.
15- OSHPD SEISMIC CERTIFIED, #OSP-0233-10.
16- EXTENDED LUBE LINES-NYLON.
17- BYPASS SHALL BE SIZED FOR 600 L/S, GALVANEAL, COATED.
18- BYPASS DAMPER ACT. -HCD-230-LE, MODULATING, W TRANSFORMER, 24 VAC, OPPOSED BLANDES, MODEL: TFB24-SR, NEMA 4 ENCLOSURE.
19-ISOLATION DAMPER - HCD-230-LE, GALVANEAL, COATED, 850 MM X 800 MM, PARALLEL BLADES, MOUNTED IN BAP, ONE PER FAN, MODEL: TFB24-SR, NEMA 4 ENCLOSURE.
20-VFD C/W NEMA 4 HEATED AND VENTILATED ENCLOSURE PER FAN.
21-MOTOR WITH GREASEABLE BEARING.
22-COATED STEEL FAN PANEL.

SILENCERS

Table with columns: UNIT NO., SERVICE, MAKE, MODEL, LOCATION, AIRFLOW, AIR PRESSURE DROP INCL. SYSTEM EFFECTS, HEIGHT (MM), WIDTH (MM), LENGTH (MM), INSERTION LOSS (dB), NOTES.

- NOTES:
1. PACKLESS SILENCER.
2. INSTALL SILENCER AS PER MANUFACTURER'S RECOMMENDATION.
3. REFER TO MECHANICAL DRAWINGS FOR THE SIZE AND SHAPE OF THE SILENCER.
4. SILENCER TO BE FIBER-FREE.
5. COORDINATE WITH SHEET METAL CONTRACTOR FOR EXACT SIZE AND GEOMETRY OF SILENCERS PRIOR TO ORDERING.
6. SILENCER SHALL SUIT THE DUCTWORK LAYOUT. MECH CONTRACTOR TO CONFIRM THE SILENCER SIZE AND GEOMETRY.
7. SILENCER C/W POLYMER FILM BAGGED PROTECTION TO PREVENT FIBREOUS MATERIAL BEING EXPOSED TO AIRSTREAM.
8. 316 L STAINLESS STEEL.
9. GALVANIZED STEEL.

HVAC GRILLES, REGISTERS AND DIFFUSERS

Table with columns: TAG, MANUFACTURER, MODEL, DUTY, TYPE, MATERIAL, FACE SIZE, ACCESSORIES. Includes rows for S-1, S-2, S-3, S-4, E-1, E-2, E-3.

- NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR TYPE OF CEILING AND/ OR SUSPENSION SYSTEM.
2. FINISH SHALL BE OF THE TYPE AND COLOR SELECTED BY THE ARCHITECT. SUBMIT CHART FOR SHOP DRAWINGS.
3. COORDINATE WITH ARCHITECT THE REQUIRED BORDER TYPE, END CAP, FRAME, MOUNTING, FINISH, AND COLOUR PRIOR TO ORDERING.
4. COMPLETE WITH AEROSOL INJECTION PORT (INJ).
5. COMPLETE WITH HEPA FILTRATION.
6. 250mm INLET.
7. 300mm INLET.



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Consultant

Notes

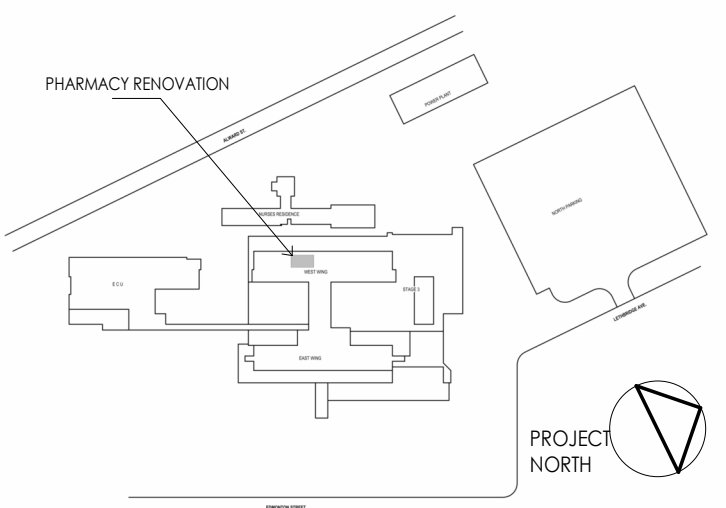
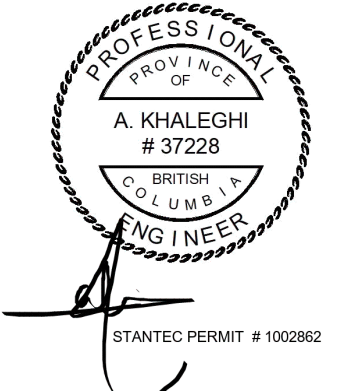


Table with columns: Issue/Revision, CH, MD, MB, AK, YYY, MM, DD. Includes rows for 2 ISSUED FOR CONSTRUCTION and 1 ISSUED FOR TENDER.

Permit/Seal



Client/Project Logo



Client/Project Northern Health Authority

UHNBC (University Hospital of Northern BC)-Pharmacy upgrade

1475 Edmonton St, Prince George, BC V2M 1S2

Title MECHANICAL SCHEDULES

Project No. 144320228

Revision 2

Drawing No. M501