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Mechanical

Addendum No. M-03

Reference: Added Scope and clarification

Issue Date: November 12, 2024

Project: UHN TWH – SEM & Corridor (EXP Project Number MRK-23004289-A0)

This addendum shall form an integral part of the Bid Documents for the above project and shall be read in conjunction therewith. This addendum shall, however, take precedence over all requirements of the previously issued Drawings and Specifications with which it may prove to be at variance, unless otherwise clarified by the Consultant.

This addendum must be signed by the Bidder in the appropriate space and must be attached to the back of the Bid Form for submission at the time of bidding. Bids not including this addendum signed as requested may be rejected as informal.

Revisions / Clarifications

The following changes and clarifications shall be considered when submitting your bid.

1.1. MECHANICAL DRAWINGS

1.1.1. M-004 - SNOW MELT SYSTEM - COURTYARD -SEM CENTRE

.1 Revised as shown.

1.1.2. M-100A - CHILLER RELOCATION -DEMOLITION AND NEW WORK - MECHANICAL

.1 Revised as shown.

1.1.3. M-101 – UNDERGROUND FLOOR PLAN – DEMO – PLUMBING

.1 Revised scope of work boundary to include demo for storm and sanitary line.

.2 Revised general notes for structural excavation procedure.

.3 Revised note for existing pipe support during excavation.

- 1.1.4. **M-102 – LEVEL 1 FLOOR PLAN – DEMO - PLUMBING**
 - .1 Added demo for pipe falling outside of wall enclosure.
 - .2 Revised existing DHWR piping to remain.
 - .3 Added keynote for sink to be removed.
 - .4 Added keynote for existing risers to remain.

- 1.1.5. **M-111 – UNDERGROUND FLOOR PLAN – NEW WORK – MECHANICAL**
 - .1 Added two options to run the incoming water main.
 - .2 Added new piping for the incoming fire main.
 - .3 Added core drilling for pipe sleeve.
 - .4 Added existing mechanical equipment tags.
 - .5 Added water tight seal provision for sump pit cover.
 - .6 Added connect to existing note for booster pump.
 - .7 Added keynotes for the fire main and water main.
- 1.1.6. **M-112 – LEVEL 1 FLOOR PLAN – NEW WORK - PLUMBING**
 - .1 Domestic hot water recirculation line updated to serve additional fixtures.
 - .2 Pipe sizes for the domestic hot water recirculation have been updated.
 - .3 Keynote for sink tie-back connections has been updated.
 - .4 Storm and Sanitary lines have been re-routed to fall within the pipe enclosure.

- 1.1.7. **M-113 – BELOW GRADE FLOOR PLAN – CORRIDOR – NEW WORK - PLUMBING**
 - .1 All floor cleanout have been deleted, storm piping revised accordingly.
 - .2 Revised keynote for underground services and removed cost allowance.

- 1.1.8. **M-114 – LEVEL 1 FLOOR PLAN – CORRIDOR – NEW WORK - PLUMBING**
 - .1 All floor cleanouts have been deleted, wall cleanouts added.
 - .2 Added fire rating for pipe sleeves.

- 1.1.9. **M-211A - LEVEL 1 FLOOR PLAN - NEW WORK -VENTILATION**
 - .1 Revised as shown.

- 1.1.10. **M-301 - LEVEL 1 FLOOR PLAN - DEMO – HVAC PIPING**
 - .1 Revised as shown.

- 1.1.11. **M-311A - LEVEL 1 FLOOR PLAN - NEW WORK – HVAC PIPING**
 - .1 Revised as shown.

- 1.1.12. **M-313 - PENTHOUSE & ROOF FLOOR PLAN – NEW WORK – HVAC**

.1 Revised as shown.

1.1.13. M-601 - VENTILATION SCHEMATIC DIAGRAMS

.1 Revised as shown.

1.1.14. M-602 - HYDRONIC & PIPING SCHEMATIC DIAGRAMS

.1 Revised as shown.

1.1.15. M-701 – MECHANICAL SCHEDULES #1

.1 Revised as shown.

1.1.16. M-702 – MECHANICAL SCHEDULES #2

.1 Revised as shown.

1.1.1. M-703 – MECHANICAL SCHEDULES #3

.1 Revised as shown.

1.1.2. M-901 – TYPICAL DETAILS #1

.1 Revised as shown.

1.1.3. M-902 – TYPICAL DETAILS #2

.1 Revised as shown.

1.1.4. M-903 – TYPICAL DETAILS #3

.1 Revised as shown.

1.1.5. M-904 – TYPICAL DETAILS #4

.1 Revised as shown.

1.1.6. M-1001– PLUMBING SECTIONS

.1 Elevations updated.

.2 Location of fire main and water main updated.

1.2. MECHANICAL SPECIFICATIONS (New added sections)

1.2.1. 22 13 29 Drainage Pumps and Accessories

1.2.2. 22 35 00 Domestic Water Heat Exchangers

1.2.3. 23 34 18 Roof Mounted Exhaust Fans

1.3. MECHANICAL SPECIFICATIONS (Revised sections)

1.3.1. 22 12 19 DOMESTIC WATER PIPING SPECIALTIES

----- END OF MECHANICAL ADDENDUM No. M-03 -----

MECHANICAL AIR SIDE SYMBOLS	
SYMBOL	DESCRIPTION
	NEW DUCT (FIRST FIGURE INDICATES DIMENSION SHOWN)
	NEW DUCT (SINGLE LINE)
	SUPPLY AIR DIFFUSER
	SUPPLY AIR LINEAR SLOT DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	DOOR GRILLE
	EXHAUST/RETURN AIR SIDE GRILLE
	SUPPLY AIR SIDE GRILLE
	ACOUSTICALLY LINED DUCT
	SILENCER
	RECTANGULAR ELBOW WITH AIR TURNING VANES
	DUCT TRANSITION FROM RECTANGULAR TO ROUND
	DUCT CONCENTRIC REDUCER
	ROUND DUCT TAKE-OFF FROM RECTANGULAR DUCT
	ROUND DUCT TAKE-OFF FROM ROUND DUCT
	RECTANGULAR DUCT TAKE-OFF FROM RECTANGULAR DUCT
	SUPPLY/OUTSIDE AIR DUCT UP
	RETURN AIR DUCT UP
	EXHAUST AIR DUCT UP
	SUPPLY/OUTSIDE AIR DUCT DOWN
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT DOWN
	DUCT OFFSET
	ACCESS DOOR
	AIR FLOW DIRECTION
	DUCT MOUNTED REHEAT COIL
	VAV/CAV BOX c/w SILENCER
	VAV/CAV BOX c/w SILENCER AND REHEAT COIL
	VENTURI AIR VALVE
	CONTROL WIRING
	LINE VOLTAGE THERMOSTAT
	THERMOSTAT / TEMPERATURE SENSOR
	HUMIDISTAT / HUMIDITY SENSOR
U/C	UNDERCUT
OED	OPEN-ENDED DUCT
S/A	SUPPLY AIR
R/A	RETURN AIR
E/A	EXHAUST AIR
O/A	OUTDOOR AIR
W/E	WASHROOM EXHAUST AIR
F/H	FUME HOOD
	DUCT REDUCER (SINGLE LINE AND DOUBLE LINE)
	MOTORIZED DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	FIRE DAMPER
	BALANCING DAMPER (VOLUME)
	BACKDRAFT DAMPER
	SUPPLY AIR DUCT RISER
	RETURN AIR DUCT RISER
	EXHAUST AIR DUCT RISER

MECHANICAL PIPING SYMBOLS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	HEATING WATER SUPPLY		EXISTING HEATING WATER SUPPLY
	HEATING WATER RETURN		EXISTING HEATING WATER RETURN
	CHILLED WATER SUPPLY		EXISTING PERIMETER HEATING WATER SUPPLY
	CHILLED WATER RETURN		EXISTING PERIMETER HEATING WATER RETURN
	GLYCOL WATER SUPPLY		CHILLED GLYCOL SUPPLY
	GLYCOL WATER RETURN		CHILLED GLYCOL RETURN
	REFRIGERANT GAS		
	REFRIGERANT LIQUID		
	REFRIGERANT DISCHARGE		
	LOW PRESSURE STEAM		
	HIGH PRESSURE STEAM		
	LOW PRESSURE CONDENSATE		
	PUMPED CONDENSATE		
	UNION		
	PIPE DOWN		
	PIPE UP		
	COMBINATION VALVE (SHUT-OFF VALVE, CHECK VALVE, & BALANCING VALVE)		
	2-WAY CONTROL VALVE		
	3-WAY CONTROL VALVE		
	PUMP DISCHARGE CONTROL VALVE		
	ISOLATING VALVE		
	CHECK VALVE		
	STRAINER		
	STRAINER WITH DRAIN DOWN VALVE		
	CIRCUIT BALANCING VALVE		
	PRESSURE REDUCING VALVE		
	PUMP		
	THERMOMETER		
	EXPANSION BELLOWS c/w GUIDES		
	PIPE ANCHOR		
	PIPE GUIDE		
	PIPE END CAP		
	BLIND FLANGE		
	FLANGE CONNECTION		
	PRESSURE SENSOR		
	AUTOMATIC DRAIN TRAP (COMPRESSED AIR)		
	STEAM TRAP		
	HUMIDIFIER DISTRIBUTION MANIFOLD		
	FLOW MEASURING ORIFICE		
	FLEXIBLE PIPE CONNECTION		
	QUICK CONNECTOR		
	FLOW DIRECTION		
	DIFFERENTIAL PRESSURE SENSOR		
	PRESSURE SENSOR		
	WALL MOUNTED CONTROL PANEL		

FIRE PROTECTION SPRINKLER LEGEND	
	CONCEALED SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	WINDOW SPRINKLER HEAD
	FIRE HOSE CABINET
	FIRE EXTINGUISHER

PLUMBING SYMBOLS	
SYMBOL	DESCRIPTION
	SANITARY DRAIN (ABOVE FLOOR LEVEL)
	SANITARY DRAIN (UNDERGROUND OR BELOW FLOOR SLAB)
	PUMPED DISCHARGE
	STORM DRAIN (ABOVE FLOOR LEVEL)
	STORM DRAIN (UNDERGROUND OR BELOW FLOOR LEVEL)
	FOOTING DRAIN (WEEPING TILE)
	RADIO ISOTOPE DRAIN
	RADIO ISOTOPE DRAIN (UNDERGROUND)
	PITCH (XX INDICATES SLOPE FOR EACH SYSTEM)
	CONDENSATE DRAIN
	PUMPED CONDENSATE DRAIN
	SANITARY VENT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATION
	PIPE DOWN
	PIPE UP
	HEAT TRACING c/w INSULATION
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	ROOF DRAIN
	TRENCH DRAIN c/w FRAME
	SCUPPER DRAIN
	RAIN WATER LEADER
	VENT THROUGH ROOF
	DRINKING FOUNTAIN
	EMERGENCY SHOWER
	EYE WASH
	FLOOR CLEANOUT

MEDICAL GAS SYMBOLS	
SYMBOL	DESCRIPTION
	MEDICAL AIR
	MEDICAL VACUUM
	OXYGEN

ANNOTATION	
SYMBOL	DESCRIPTION
	KEYNOTE
	EQUIPMENT TAG
	RISER TAG
	REVISION TAG
	RADIANT PANEL TAG - "XX" DENOTES TYPE, "###" DENOTES - ACTIVE LENGTH
	FORCE FLOW HEATER TAG - "XX" DENOTES HEATING SOURCE, "YY" DENOTES SIZE
	UNIT HEATER TAG - "XX" DENOTES HEATING SOURCE, "YY" DENOTES SIZE
	DIFFUSER/GRILLE TAG - "A" DENOTES TYPE, "XX0" DENOTES NECK SIZE (WHERE APPLICABLE), "###" DENOTES AIRFLOW
	BOOSTER COIL TAG - "##" DENOTES AIR FLOW

	VIEW TITLE SCALE	VIEW TITLE
	1 M-101	DETAIL CALLOUT

EXISTING AND DEMOLITION SYMBOLS	
SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT/SERVICES
	EXISTING EQUIPMENT/SERVICES TO BE REMOVED
	EXISTING EQUIPMENT/SERVICES TO BE REMOVED AND RELOCATED
	RELOCATED EQUIPMENT/SERVICES
	CONNECT TO EXISTING
	CAPPED SERVICE

DRAWING LIST		
DWG NO.	DWG NAME	SCALE
M-001	MECHANICAL SYMBOL LEGEND, DRAWING LIST AND GENERAL NOTES	N.T.S.
M-002	KEYPLAN	N.T.S.
M-003	SEPARATE PRICE PLAN	1:250
M-004	SNOW MELT SYSTEM - COURTYARD - SEM CENTRE	1:100
M-100A	CHILLER RELOCATION - DEMOLITION AND NEW WORK - MECHANICAL	1:50
M-100B	BASEMENT & LEVEL 1 - DEMO - MECHANICAL	1:100
M-101	UNDERGROUND FLOOR PLAN - DEMO - PLUMBING	1:50
M-102	LEVEL 1 FLOOR PLAN - DEMO - PLUMBING	1:50
M-111	UNDERGROUND FLOOR PLAN - NEW WORK - MECHANICAL	1:50
M-112	LEVEL 1 FLOOR PLAN - NEW WORK - PLUMBING	1:50
M-113	BELOW GRADE FLOOR PLAN - CORRIDOR - NEW WORK - PLUMBING	1:50
M-114	LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - PLUMBING	1:50
M-115	ROOF PLAN - CORRIDOR - NEW WORK - PLUMBING	1:50
M-201	LEVEL 1 FLOOR PLAN - DEMO - VENTILATION	1:50
M-211A	LEVEL 1 FLOOR PLAN - NEW WORK - VENTILATION	1:50
M-211B	LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - VENTILATION	1:50
M-300A	BELOW GRADE FLOOR PLAN - NEW WORK - PNEUMATIC PIPING	1:50
M-300B	BELOW GRADE FLOOR PLAN - NEW WORK - HVAC & PIPING	1:50
M-301	LEVEL 1 FLOOR PLAN - DEMO - HVAC PIPING	1:50
M-311A	LEVEL 1 FLOOR PLAN - NEW WORK - HVAC PIPING	1:50
M-311B	LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - PIPING	1:50
M-313	PENTHOUSE & ROOF PLAN - NEW WORK - HVAC	1:100
M-400	BELOW GRADE FLOOR PLAN - NEW WORK - FIRE PROTECTION	1:50
M-401	LEVEL 1 FLOOR PLAN - DEMO - FIRE PROTECTION	1:50
M-411A	LEVEL 1 FLOOR PLAN - NEW WORK - FIRE PROTECTION	1:50
M-411B	LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - FIRE PROTECTION	1:50
M-501	LEVEL 1 FLOOR PLAN - NEW WORK - MEDICAL GAS	1:50
M-601	VENTILATION SCHEMATIC DIAGRAMS	N.T.S.
M-602	HYDRONIC & STEAM PIPING SCHEMATIC DIAGRAMS	N.T.S.
M-603	PLUMBING, SANITARY & MEDICAL GAS SCHEMATIC DIAGRAMS	N.T.S.
M-701	MECHANICAL SCHEDULES #1	N.T.S.
M-702	MECHANICAL SCHEDULES #2	N.T.S.
M-703	MECHANICAL SCHEDULES #3	N.T.S.
M-801	MECHANICAL CONTROL DIAGRAMS #1	N.T.S.
M-802	MECHANICAL CONTROL DIAGRAMS #2	N.T.S.
M-803	MECHANICAL CONTROL DIAGRAMS #3	N.T.S.
M-901	TYPICAL DETAILS - 1	N.T.S.
M-902	TYPICAL DETAILS - 2	N.T.S.
M-903	TYPICAL DETAILS - 3	N.T.S.
M-904	TYPICAL DETAILS - 4	N.T.S.
M-1001	PLUMBING SECTIONS	1:50

GENERAL NOTES:	AFTER ANY PARTIAL DEMOLITION.
1. ALL SERVICES SHOWN ARE DIAGRAMMATIC ONLY. THE ARRANGEMENTS OF EQUIPMENT SHOWN ARE APPROXIMATE AND MAY BE ALTERED BY THE ENGINEERS TO MEET THE ON-SITE CONDITIONS OF THE PROJECT.	8. CONTRACTOR SHALL MAINTAIN CONTINUOUS OPERATION OF PLUMBING STACKS AND WATER SUPPLY MAINS THAT REQUIRE OFFSETTING AND MAKING NEW CONNECTIONS RESPECTIVELY DURING CONSTRUCTION PERIOD.
2. CONTRACTOR TO REVIEW THE EXISTING SERVICES AND DISCUSS WITH THE CLIENT/ENGINEER BEFORE ALTERATIONS	9. CONTRACTOR SHALL COORDINATE WITH OTHER MECHANICAL AND ELECTRICAL TRADES FOR FINAL PIPE ROUTING ON SITE.
3. CONTRACTOR TO REROUTE ANY SERVICES IF REQUIRED TO INSTALL NEW SERVICES.	10. CONTRACTOR TO PROVIDE FOR ANY REQUIRED OFFSETS TO AVOID INTERFERENCE WITH OTHER SERVICES.
4. COORDINATE WITH ALL CONSULTANT DRAWINGS BEFORE ORDERING ANY NEW EQUIPMENT/GRILLES.	11. CONTRACTOR TO ALLOW FOR ADDITIONAL PIPE HANGERS AND SUPPORTS ON EXISTING PIPING IF NECESSARY. CONTRACTOR TO MAKE ALLOWANCE FOR 50 FT OF PIPING, IF ALLOWANCE IS NOT USED, CREDIT SHALL BE PROVIDED BACK TO OWNER.
5. ALL EXISTING PLUMBING SERVICES SHOWN IS APPROXIMATE AND BASED ON VISUAL SITE SURVEY AND ON EXISTING RECORD DRAWINGS. CONTRACTOR SHALL VERIFY ALL CONNECTIONS, PIPE SIZES, LOCATIONS AND INVERTS OF DRAINS ON SITE AND REPORT ANY DISCREPANCY TO THE CONSULTANT FOR RESOLUTION.	12. CONTRACTOR TO ALLOW FOR FIXING ANY EXISTING SANITARY PIPING WHERE SLOPE HAS NOT BEEN MAINTAINED.
6. ANY PLUMBING SERVICES THAT ARE NOT SHOWN ON THE DRAWINGS THAT ARE EXPOSED DURING DEMOLITION/CONSTRUCTION SHALL BE VERIFIED BY THE CONTRACTOR TO THE SOURCE. ROUTING SHALL BE REPORTED TO THE CONSULTANT WITH PROPOSED RESOLUTIONS REQUIRED FOR THE SERVICE.	13. CONTRACTOR TO ALLOW FOR INSULATION ON EXISTING PIPING IF IT IS DAMAGED OR MISSED.
7. EXISTING DUCT MAINS OR BRANCHES TO BE FINISHED WITH CAPPED CONNECTIONS	14. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CUTTING EXISTING WALLS AND FLOOR SLAB. IF EXISTING SERVICES ARE CUT/DAMAGED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PATCH AND REPAIR THE SERVICE.

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NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.15
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD / Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.09
NO.	DESCRIPTION	DATE

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON M5T 2S8

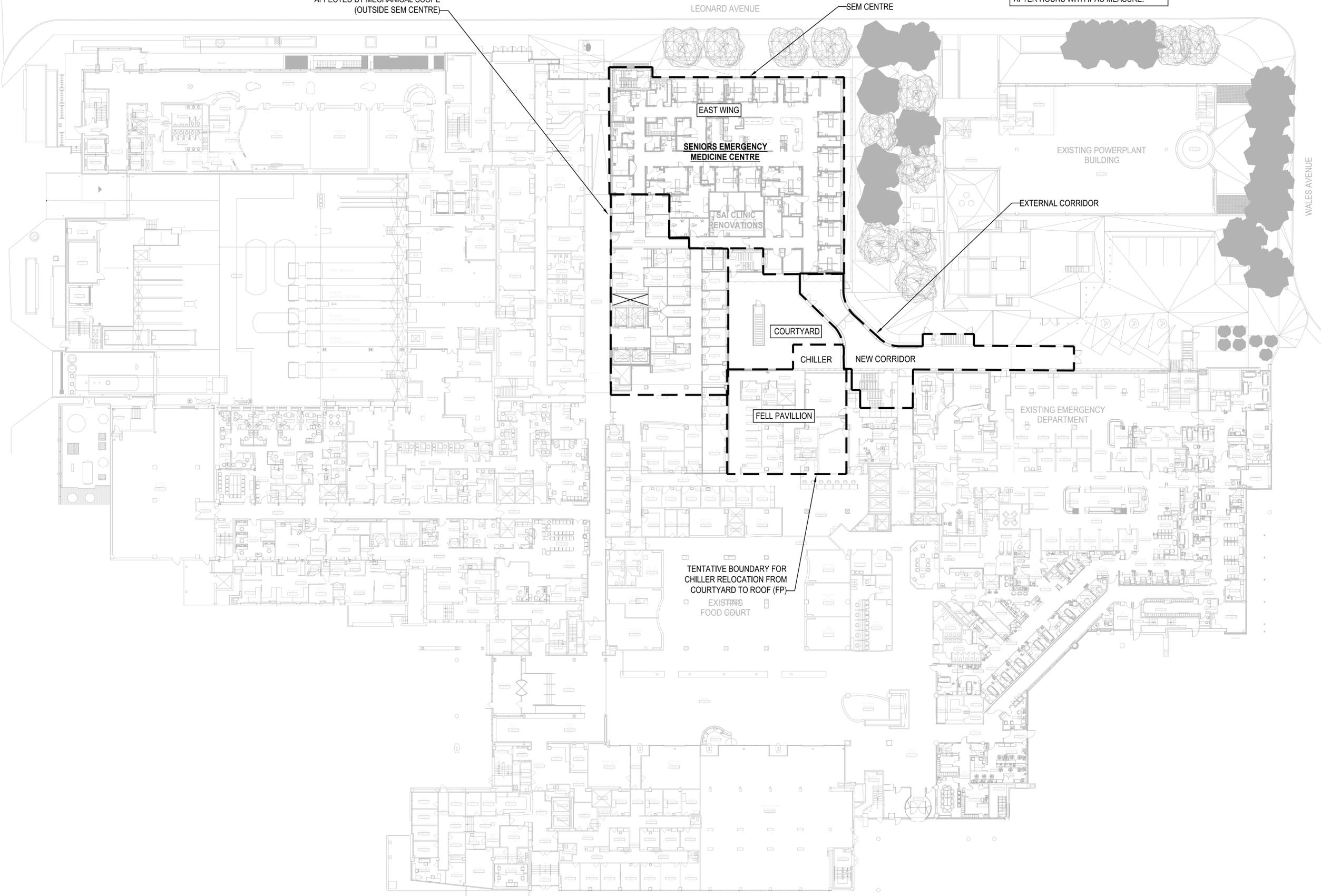
TITLE:
 MECHANICAL SYMBOL LEGEND, DRAWING LIST AND GENERAL NOTES

PROJECT NO: MRK-23004289
 CHECKED: S.S.

DRAWING NO: M-001

AREA NOT INCLUDED IN RENOVATION BUT
AFFECTED BY MECHANICAL SCOPE
(OUTSIDE SEM CENTRE)

NOTE: ALL WORK SCOPE OUTSIDE OF SEM
CENTRE BOUNDARIES TO BE COMPLETED
AFTER HOURS WITH IPAC MEASURE.



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External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON, M5T 2S8

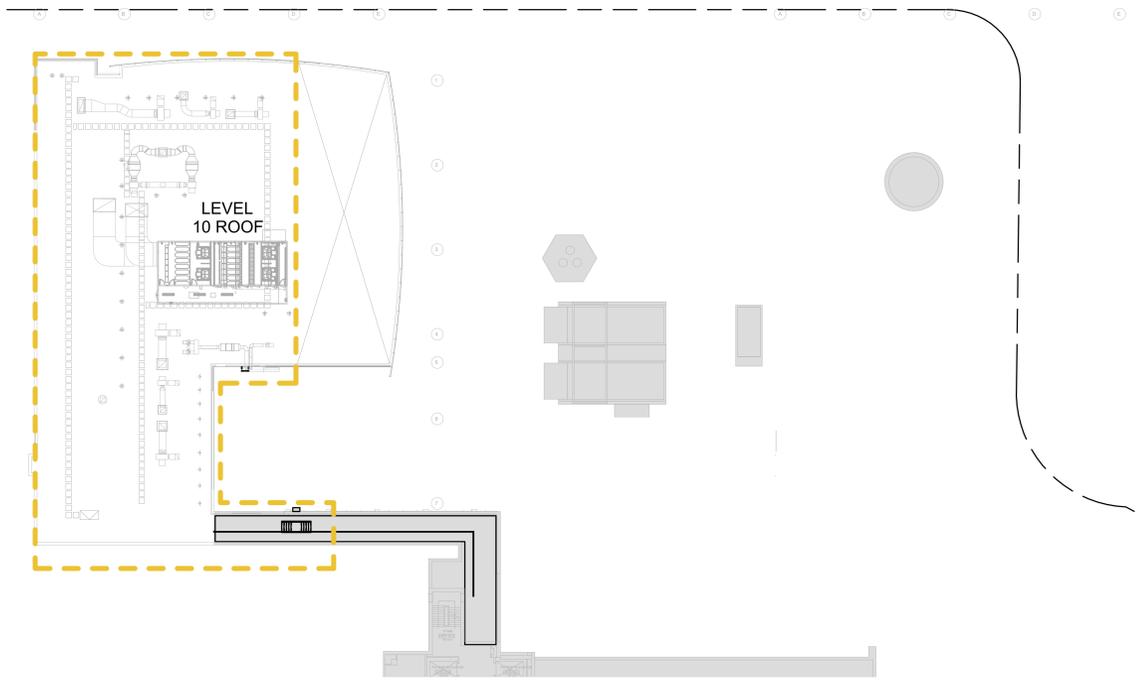
TITLE:
KEYPLAN

LEGEND - SEPARATE PRICE	
	PATIENT TRANSFER
	FELL REMEDIATION WATERPROOFING
	SAI TOUCHDOWN DAY AREA
	BELOW GRADE CRAWL SPACE
	COURTYARD LANDSCAPING, IRRIGATION & SNOW MELT
	SENIORS EMERGENCY MEDICINE CENTRE & CORRIDOR & CHILLER

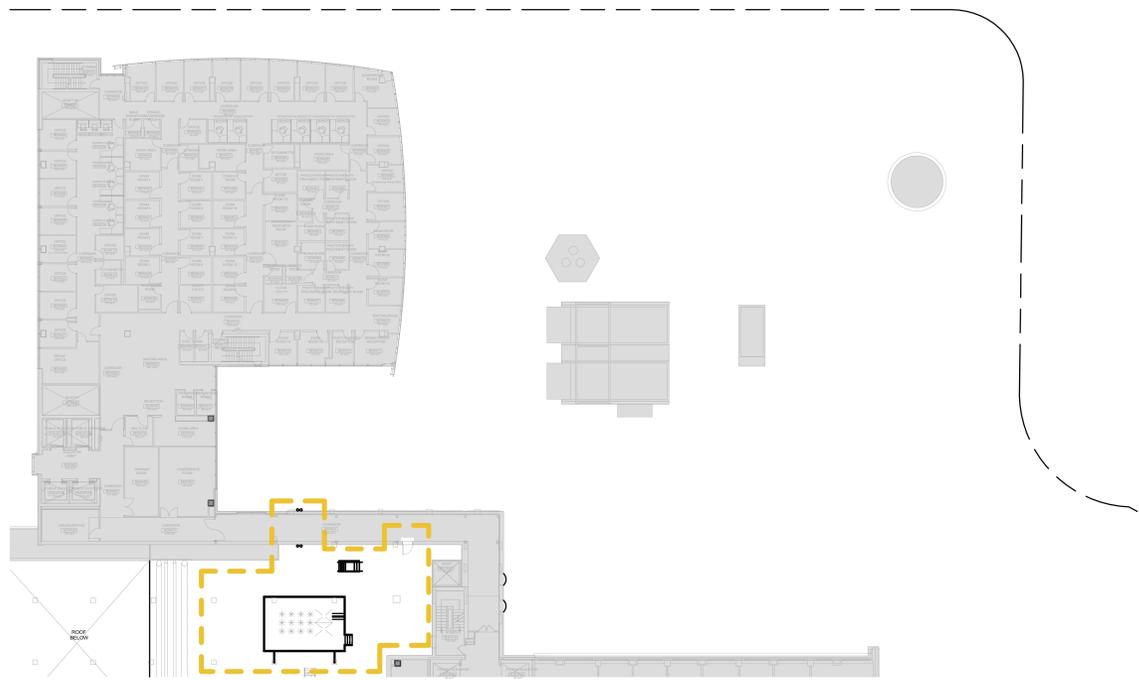
CLIENT:
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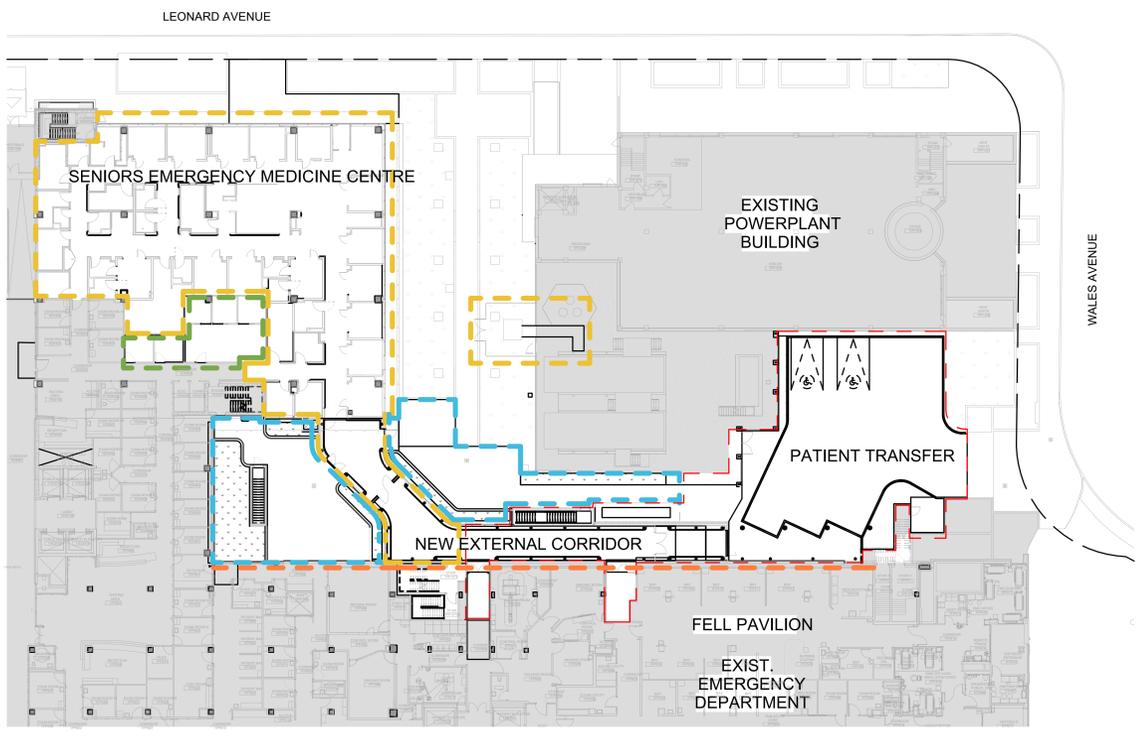
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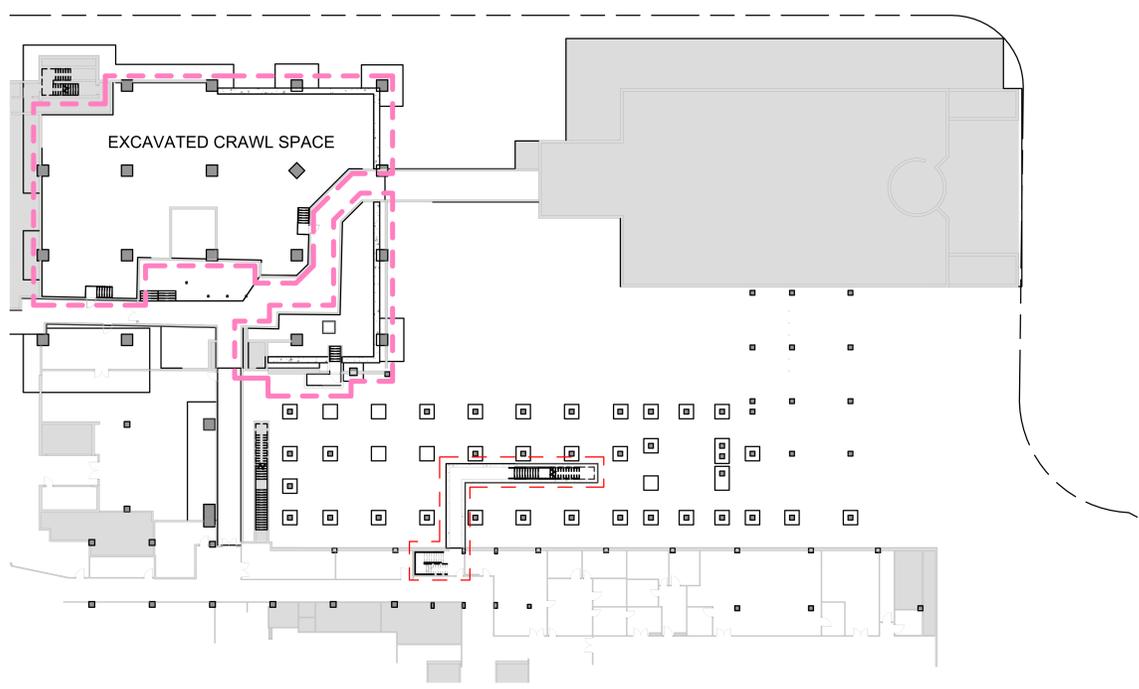
4 Separate Price - Level 10
 1:250



3 Separate Price - Level 8
 1:250



2 Separate Price - Level 1
 1:250



1 Separate Price - Basement Plan
 1:250

NOTE: SEPRATE SCOPE IDENTIFICATION DRAWINGS PREPARED BY ARCH.

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6	Issued for Level	2024.10.13
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD - Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Program	2024.04.09

PROJECT:
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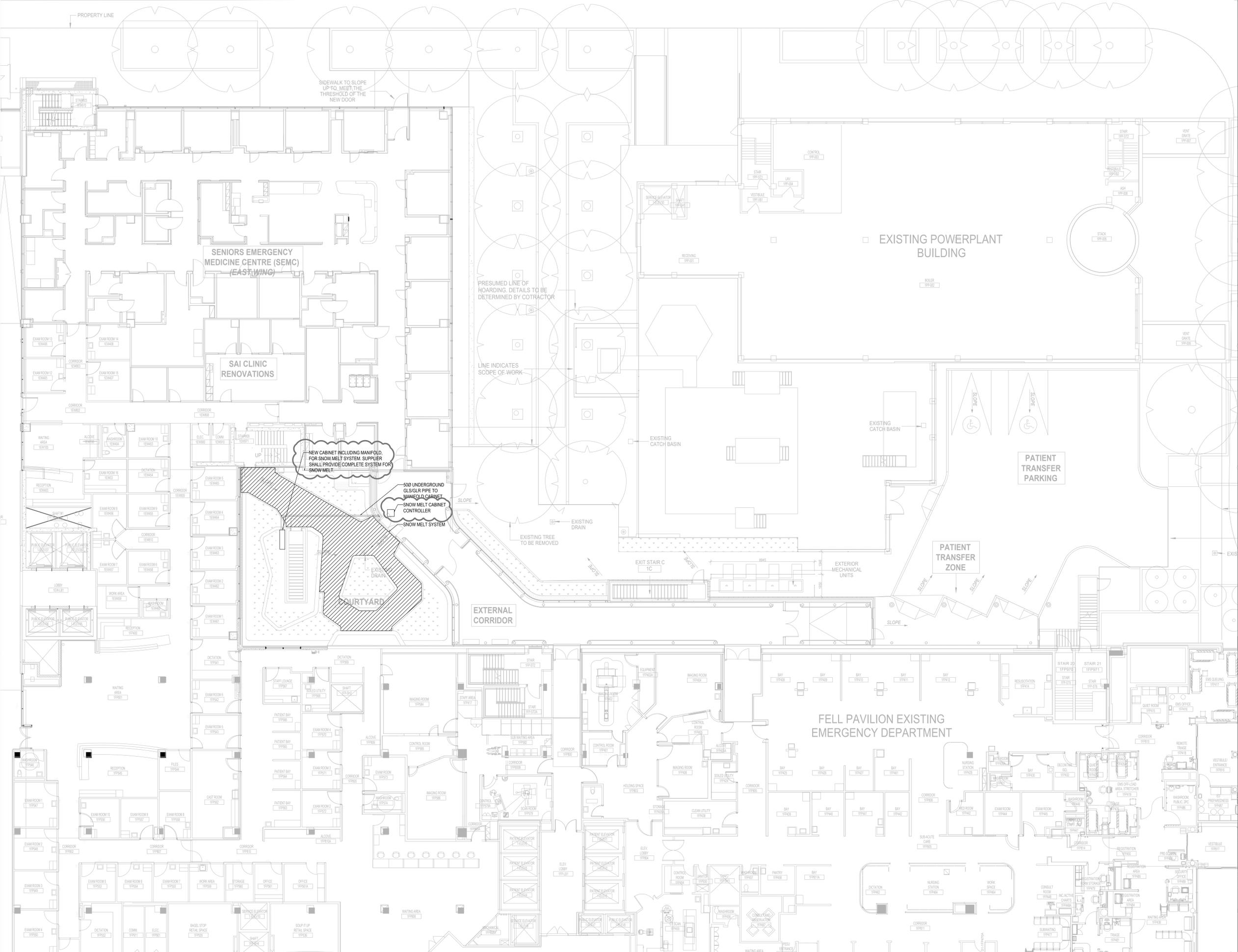
TITLE:
 SEPARATE PRICE PLAN

PROJECT NO: MRK-23004289
 CHECKED: S.S.

DRAWING NO: M-003

LOCATION OF SOIL EXTRACTION EQUIPMENT

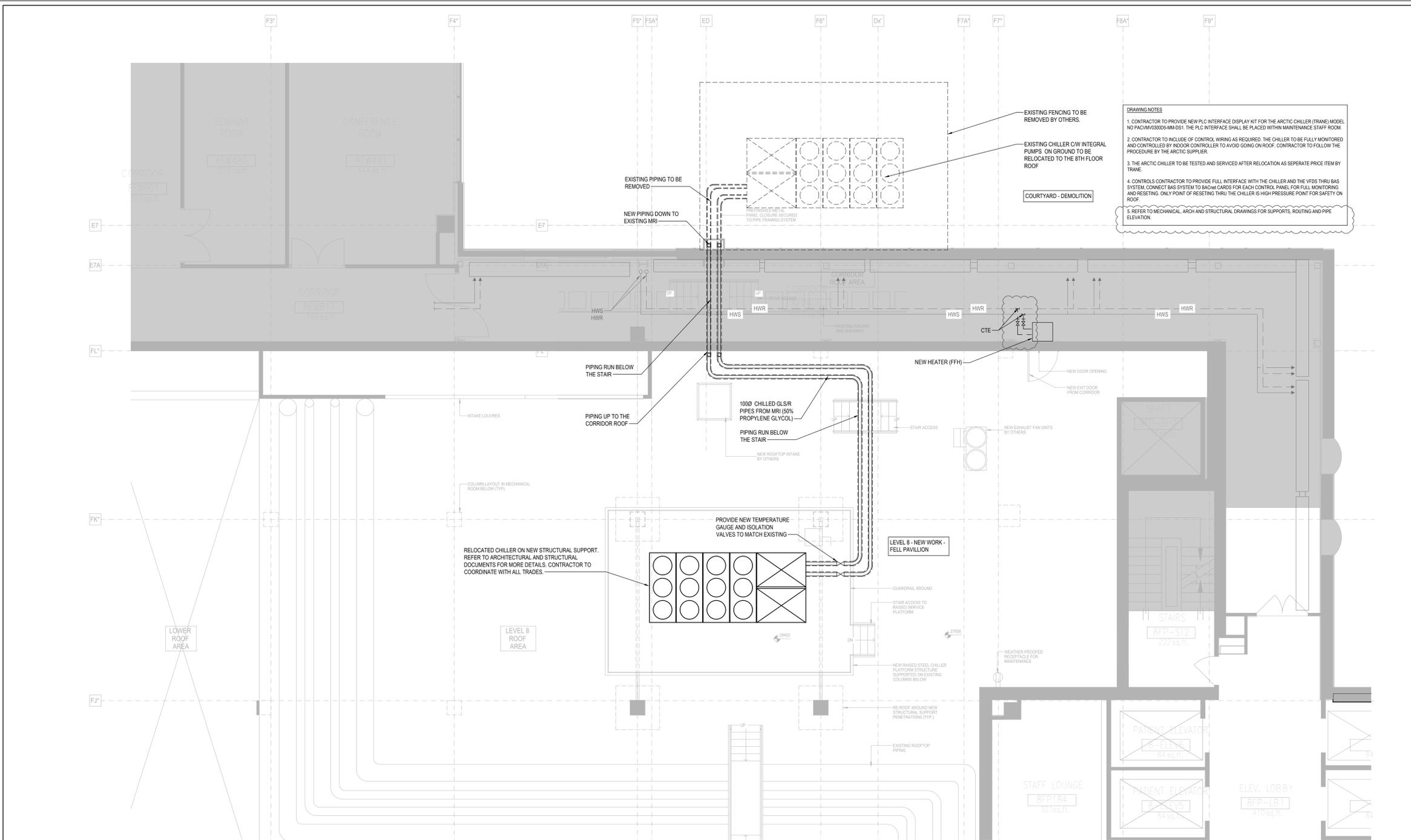
LEONARD AVENUE



NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Review	2024.10.17
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD - Phase	2024.08.12
2	Issued for 100% DD	2024.08.10
1	Issued for Design Development Progress	2024.04.09

PROJECT:
 Seniors Emergency Medicine Centre (SEM) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON M5T 2S8

SNOW MELT SYSTEM - COURTYARD -
 SEM CENTRE



1 LEVEL 8 FLOOR PLAN - NEW WORK
1:50



EXISTING CHILLER



EXISTING CHILLER



EXISTING CHILLER ISOLATION VALVES



EXISTING CHILLER TEMPERATURE GAUGE

- GENERAL NOTES**
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
 - THE EXISTING SERVICES SHOWN ON THIS DRAWING ARE FOR INFORMATION. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND EQUIPMENT SIZE BEFORE THE COMMENCEMENT OF ANY WORK.
 - CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
 - PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT-DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING FOR AFTER-HOUR WORK, AS REQUIRED.
 - THE NEW PIPING AND ASSOCIATED WORK SHALL BE PERFORMED BEFORE THE CHILLER CAN BE MOVED AND SWITCH OVER TO NEW SYSTEM.
 - CONTRACTOR IN INCLUDE CONTROLS SCOPE FOR EXTENSION OF CONTROLS FOR THE CHILLER WITH BASE BUILDING CONTRACTOR.
 - CONTRACTOR IN INCLUDE FOR EXTENSION OF CONTROLS FROM THE CHILLER SUPPLIER (FRANE).

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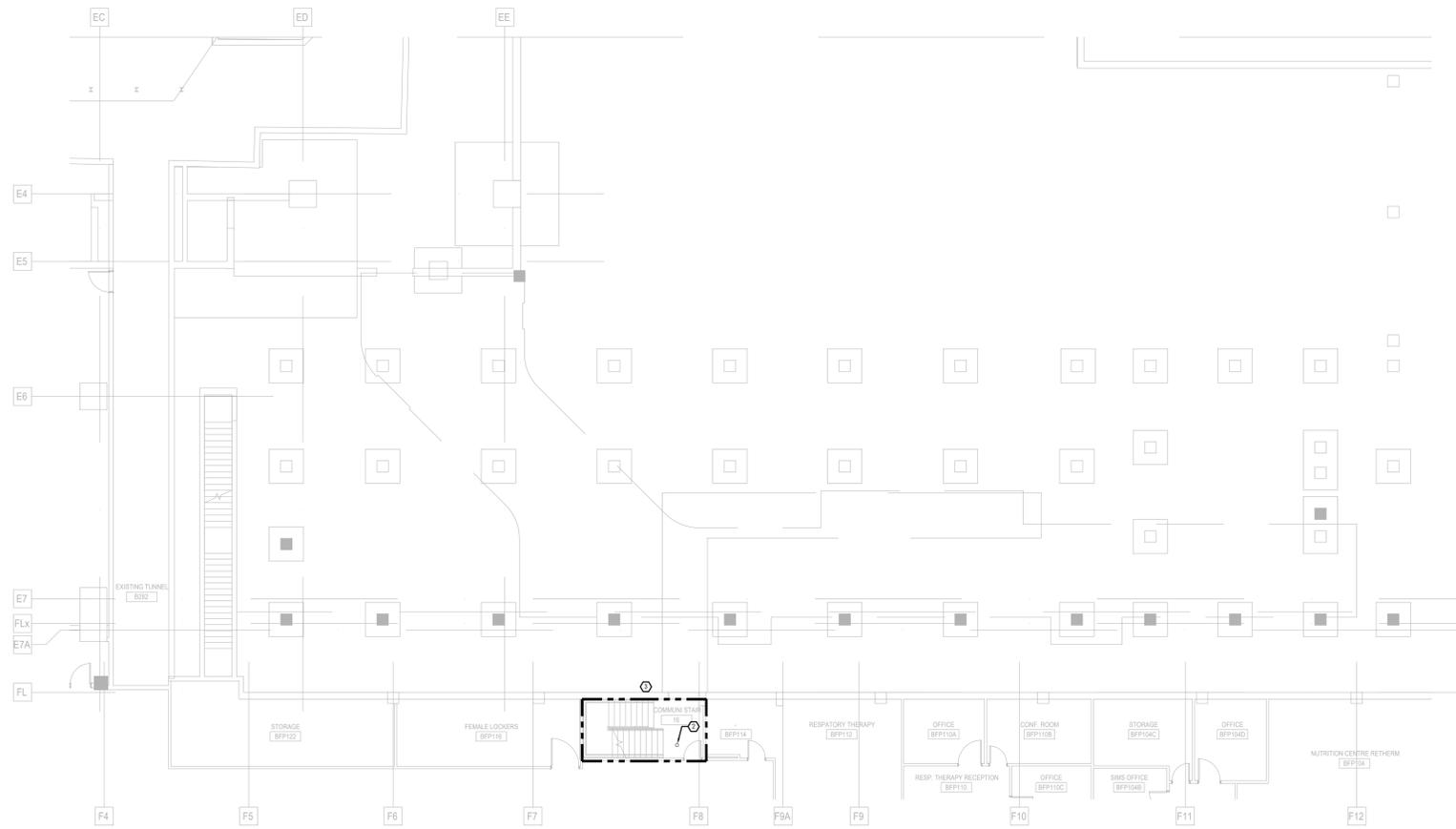
CONSULTANT:
 1 905 895 3217 (1 905 895 0167)
 220 Commerce Valley Drive West, Suite 110
 Markham, ON L3T 0A8
 Canada
 www.exp.com
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 • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.08
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.13
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD (Permit)	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.09
NO.	DESCRIPTION	DATE

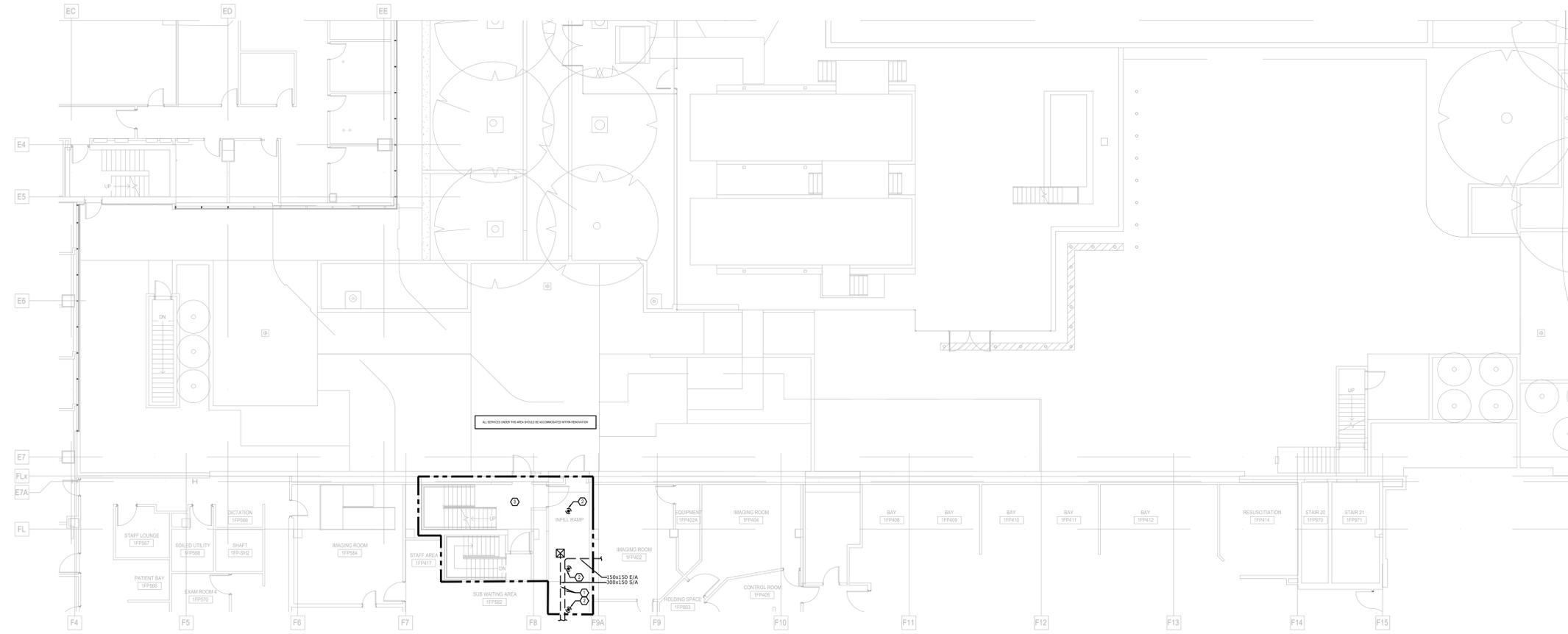
PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
 CHILLER RELOCATION -
 DEMOLITION AND NEW WORK -
 MECHANICAL

PROJECT NO: MRK-23004289
 CHECKED: S.S.
 DRAWING NO: M-100A



1 BASEMENT - DEMO - MECHANICAL
1:100



2 LEVEL 1 - DEMO - MECHANICAL
1:100

DRAWING KEYNOTES

- 1 EXISTING DUCTWORK TO BE REMOVED AND NEW DIFFUSER OR DUCT WORK SHALL BE PROVIDED
- 2 EXISTING SPRINKLER HEADS TO BE REMOVED AND NEW SPRINKLER HEADS TO BE PROVIDED
- 3 CONTRACTOR TO INCLUDE FOR COMPLETE INSTALLATION FOR NEW SERVICES OR RESOLUTING ANY EXISTING SERVICES FOR NEW INSTALLATION

CLIENT:
 University Health Network
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 399 Bathurst Street
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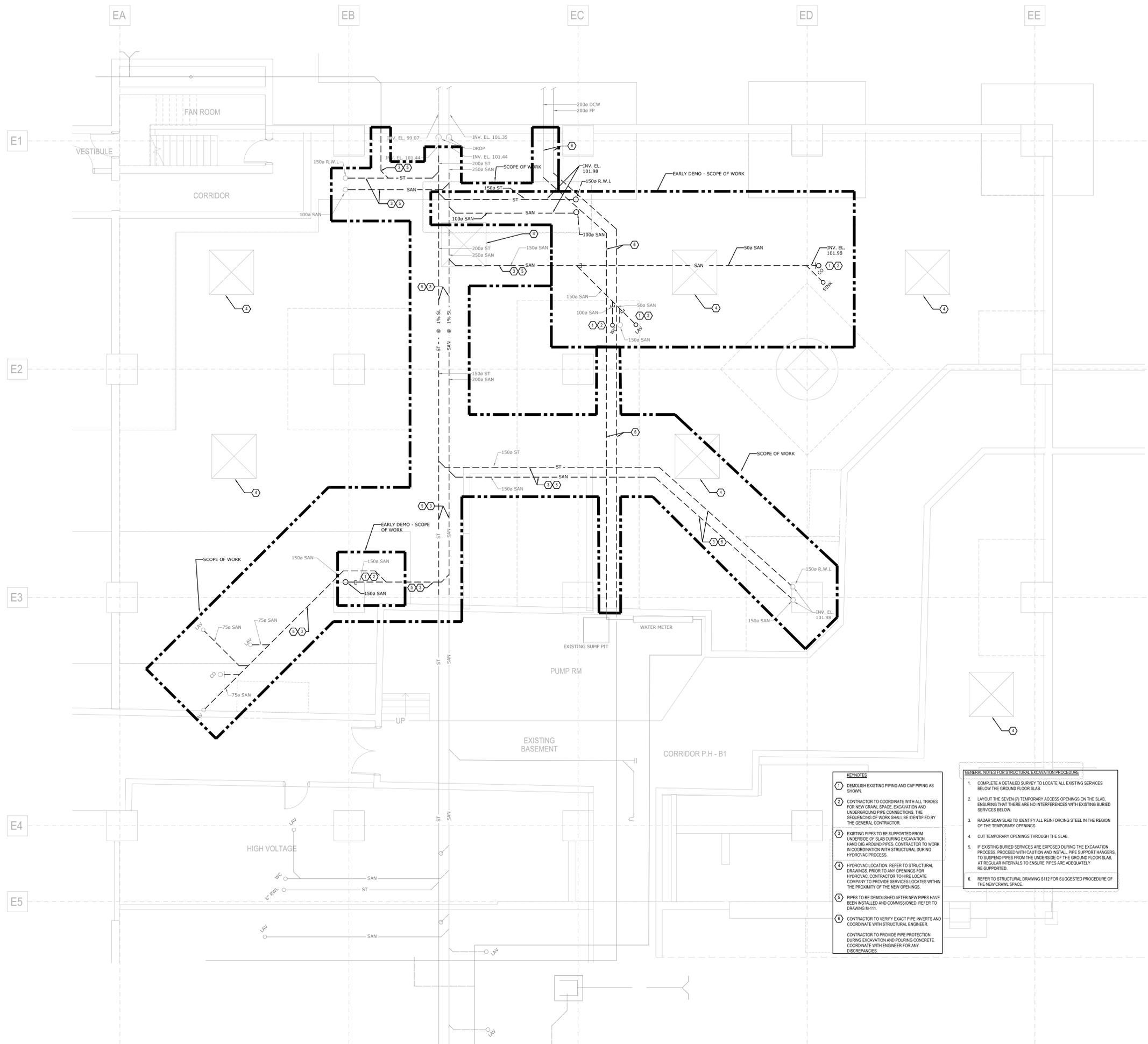
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9	Issued for Addendum M-03	2024.11.12
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1	Issued for Design Development Progress	2024.04.02

SHEET REVISION

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON M5T 2S8

TITLE:
 BASEMENT & LEVEL 1 - DEMO -
 MECHANICAL

PROJECT NO: MRK-23004289
 CHECKED: [Signature]
 DRAWING NO: M-100B



- KEYNOTES**
- 1 DEMOLISH EXISTING PIPING AND CAP PIPING AS SHOWN.
 - 2 CONTRACTOR TO COORDINATE WITH ALL TRADES FOR NEW DRAIN SPACE, EXCAVATION AND UNDERGROUND PIPE CONNECTIONS. THE SEQUENCING OF WORK SHALL BE IDENTIFIED BY THE GENERAL CONTRACTOR.
 - 3 EXISTING PIPES TO BE SUPPORTED FROM UNDERSIDE OF SLAB DURING EXCAVATION. HAND DIG AROUND PIPES. CONTRACTOR TO WORK IN COORDINATION WITH STRUCTURAL DURING HYDROVAC PROCESS.
 - 4 HYDROVAC LOCATION. REFER TO STRUCTURAL DRAWINGS. PRIOR TO ANY OPENINGS FOR HYDROVAC, CONTRACTOR TO HIRE LOCATE COMPANY TO PROVIDE SERVICES LOCATES WITHIN THE PROXIMITY OF THE NEW OPENINGS.
 - 5 PIPES TO BE DEMOLISHED AFTER NEW PIPES HAVE BEEN INSTALLED AND COMMISSIONED. REFER TO DRAWING M-111.
 - 6 CONTRACTOR TO VERIFY EXACT PIPE INVERTS AND COORDINATE WITH STRUCTURAL ENGINEER.
- CONTRACTOR TO PROVIDE PIPE PROTECTION DURING EXCAVATION AND POURING CONCRETE. COORDINATE WITH ENGINEER FOR ANY DISCREPANCIES.

- GENERAL NOTES FOR STRUCTURAL EXCAVATION PROCEEDURE**
1. COMPLETE A DETAILED SURVEY TO LOCATE ALL EXISTING SERVICES BELOW THE GROUND FLOOR SLAB.
 2. LAYOUT THE SEVEN (7) TEMPORARY ACCESS OPENINGS ON THE SLAB, ENSURING THAT THERE ARE NO INTERFERENCES WITH EXISTING BURIED SERVICES BELOW.
 3. RADAR SCAN SLAB TO IDENTIFY ALL REINFORCING STEEL IN THE REGION OF THE TEMPORARY OPENINGS.
 4. CUT TEMPORARY OPENINGS THROUGH THE SLAB.
 5. IF EXISTING BURIED SERVICES ARE EXPOSED DURING THE EXCAVATION PROCESS, PROCEED WITH CAUTION AND INSTALL PIPE SUPPORT HANGERS, TO SUPPORT PIPES FROM THE UNDERSIDE OF THE GROUND FLOOR SLAB, AT REGULAR INTERVALS TO ENSURE PIPES ARE ADEQUATELY RE-SUPPORTED.
 6. REFER TO STRUCTURAL DRAWING S112 FOR SUGGESTED PROCEDURE OF THE NEW DRAIN SPACE.

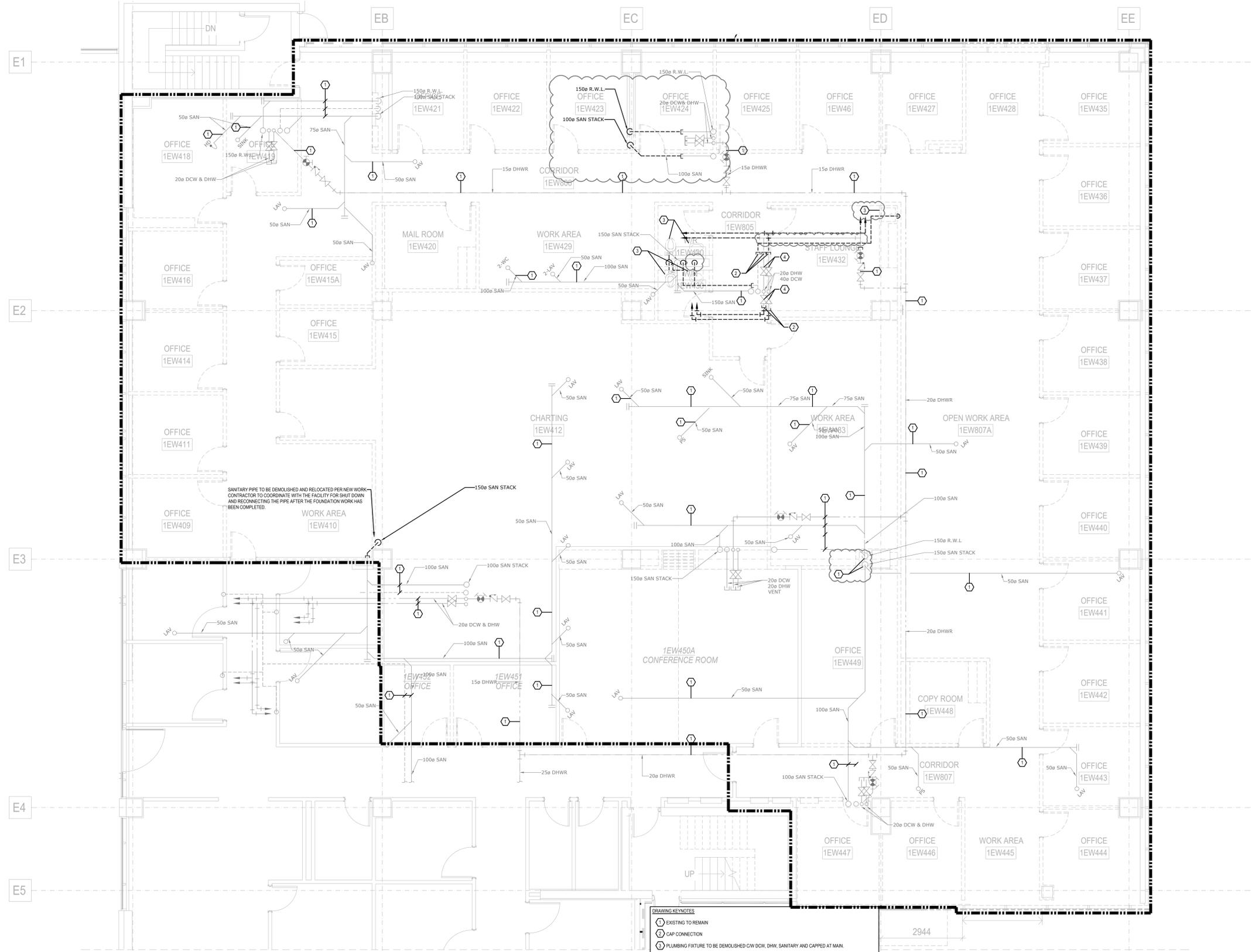
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1	Issued for Design Development Progress	2024.04.02

SHEET REVISION

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
UNDERGROUND FLOOR PLAN - DEMO - PLUMBING

PROJECT NO: MRK-23004289
 CHECKED: [Signature]
 DRAWING NO: **M-101**



- DRAWING KEYNOTES**
- ① EXISTING TO REMAIN
 - ② LAP CONNECTION
 - ③ PLUMBING FIXTURE TO BE DEMOLISHED CW DCW, DHW, SANITARY AND CAPPED AT MAIN
 - ④ ASSUME ALL EXISTING VALVES NOT HOLDING AND INCLUDE FOR PIPE FREEZING AND NEW VALVES

- GENERAL NOTES**
- A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
 - B. THE EXISTING SERVICES SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM THE ORIGINAL CONSTRUCTION DRAWINGS. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND STRUCTURE TO CONFIRM THE SIZE AND LOCATION OF THESE SERVICES BEFORE THE COMMENCEMENT OF ANY WORK.
 - C. CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
 - D. CONTRACTOR TO FIELD VERIFY ALL PIPE CONNECTION LOCATIONS AND ROUTING WITH BUILDING SERVICES PRIOR TO COMMENCEMENT OF WORK. NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.
 - E. FOR DUST CONTROL, CAP EXISTING DUCTS IN THE CONSTRUCTION AREA. CONNECTION TO EXISTING AIR DUCTS TO BE DONE AFTER COMPLETION OF ALL DUST PRODUCING TASKS.
 - F. PROVIDE ALL CUTTING AND PATCHING REFER TO SPECIFICATIONS.
 - G. REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAIN.
 - H. PROVIDE CORNING OF FLOOR SLAB SCAN OR X-RAY SLAB BEFORE CORNING TO INVESTIGATE EXISTING REBAR LOCATION (TOP & BOTTOM) CUTTING EXISTING REBARS IN THE SLAB IS NOT PERMITTED.
 - I. THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED FIRE PROTECTION CONTRACTOR.
 - J. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE CURRENT FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
 - K. PROVIDE GUARDS ON ALL UPRIGHT SPRINKLERS SUBJECT TO DAMAGE, AND ON SPRINKLER HEADS IN STORAGE ROOMS, ELECTRICAL ROOMS, IT ROOMS.
 - L. REFER TO ARCHITECTURAL CODE COMPLIANCE PLANS FOR ALL FIRE RATED WALL PARTITIONS. PROVIDE "FIRE WRAP" TO ALL VERTICAL AND HORIZONTAL STANDPIPE THAT IS "NOT" ENCLOSED IN 2HR RATED ASSEMBLY AS PER NFPA REQUIREMENTS.
 - M. CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
 - N. COORDINATE WITH BUILDING SUPERVISOR FOR APPROVAL TO SWITCH OFF VALVES FEEDING THE AREA PRIOR TO DEMOLISHING WORK.
 - O. DRAIN THE FIRE PIPE LINE PRIOR TO COMMENCING WORK. COORDINATE ON SITE.
 - P. REMOVE OBSOLETE SPRINKLER HEADS AND REPLACE THEM WITH PENDANT SPRINKLERS.
 - Q. RE-ROUTE THE EXISTING PIPES TO SUIT NEW LOCATION. ADD NEW PIPES WHERE NECESSARY. CAP ANY UNUSED PIPES.
 - R. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT-DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING USE OF HOT TAP/TEMPORARY FREEZING AND AFTER-HOURS WORK AS REQUIRED.
 - S. CONTRACTOR SHALL PROVIDE FIRE STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE-RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE-RATED WALL OR FLOOR. FIRE STOPPING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 - T. CONTRACTOR SHALL CUT BACK AND CAP ALL INACTIVE/DECOMMISSIONED PIPING BRANCHES TO THE NEAREST ACTIVE MAIN ON THIS FLOOR/BELOW SLAB. REPAIR/FILL FLOOR SLAB PENETRATIONS AND MAKE GOOD. REMOVE ALL REDUNDANT PIPES, CONDUITS INCLUDING LOOSE WIRES AND DUCTWORK COMPLETE. CAP AT MAIN.
 - U. RELOCATE OR REROUTE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.

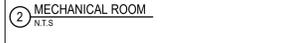
NO.	DESCRIPTION	DATE
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2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.05

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street, Toronto, ON, M5T 2S8

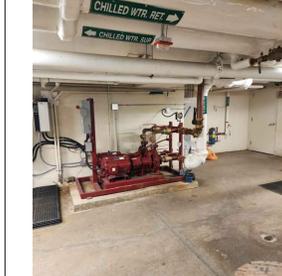
LEVEL 1 FLOOR PLAN - DEMO - PLUMBING



PICTURE REFERENCE 1 (2)

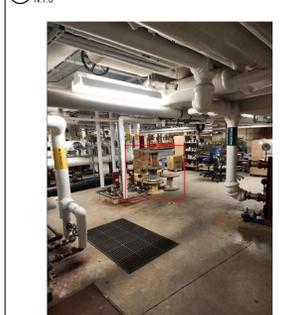


MECHANICAL ROOM
N.T.S



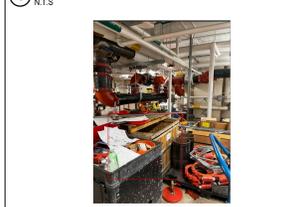
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BOOSTER PUMPS
N.T.S



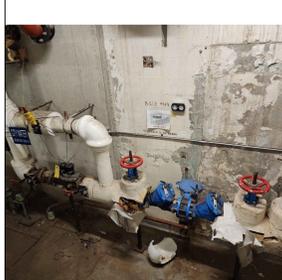
PICTURE REFERENCE 3 (2)

NEW PROPOSED HOT WATER HEATER LOCATION
N.T.S



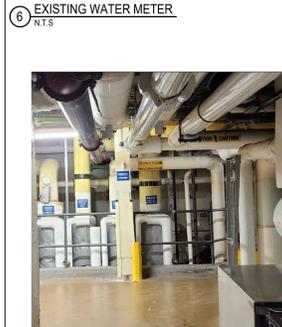
PICTURE REFERENCE 4 (2)

NEW PROPOSED HOT WATER HEATER LOCATION
N.T.S



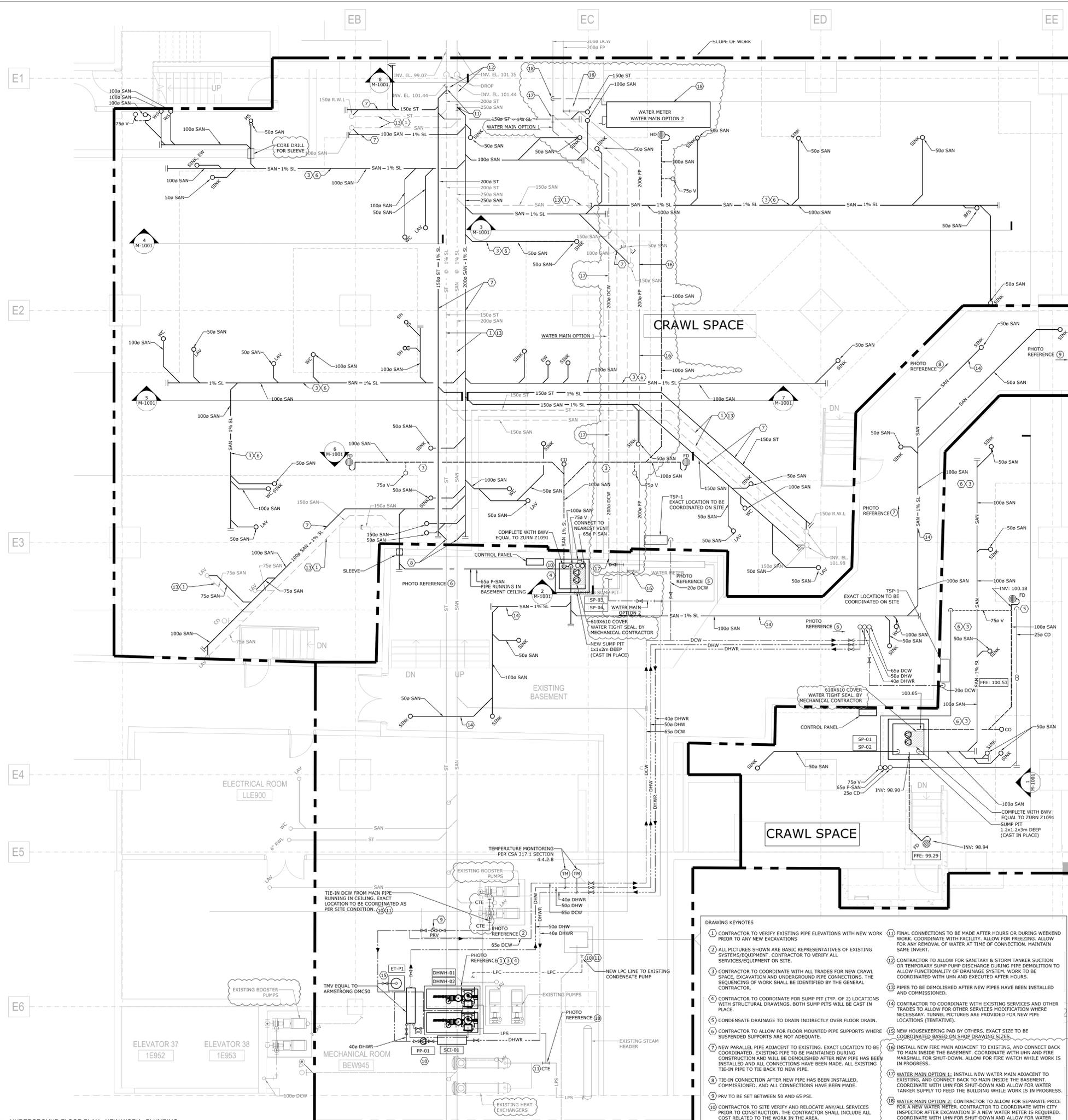
PICTURE REFERENCE 5 (2)

EXISTING WATER METER
N.T.S



PICTURE REFERENCE 6 (2)

STEAM
N.T.S

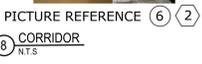


UNDERGROUND FLOOR PLAN - NEW WORK - PLUMBING
1:50

CLIENT:
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PICTURE REFERENCE 6 (2)

CORRIDOR
N.T.S



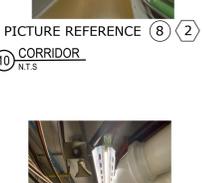
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CORRIDOR
N.T.S



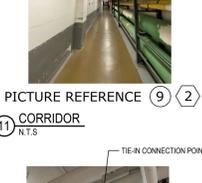
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CORRIDOR
N.T.S



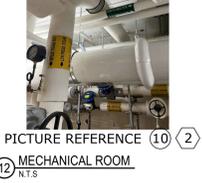
PICTURE REFERENCE 9 (2)

CORRIDOR
N.T.S



PICTURE REFERENCE 10 (2)

CORRIDOR
N.T.S



PICTURE REFERENCE 11 (2)

MECHANICAL ROOM
N.T.S

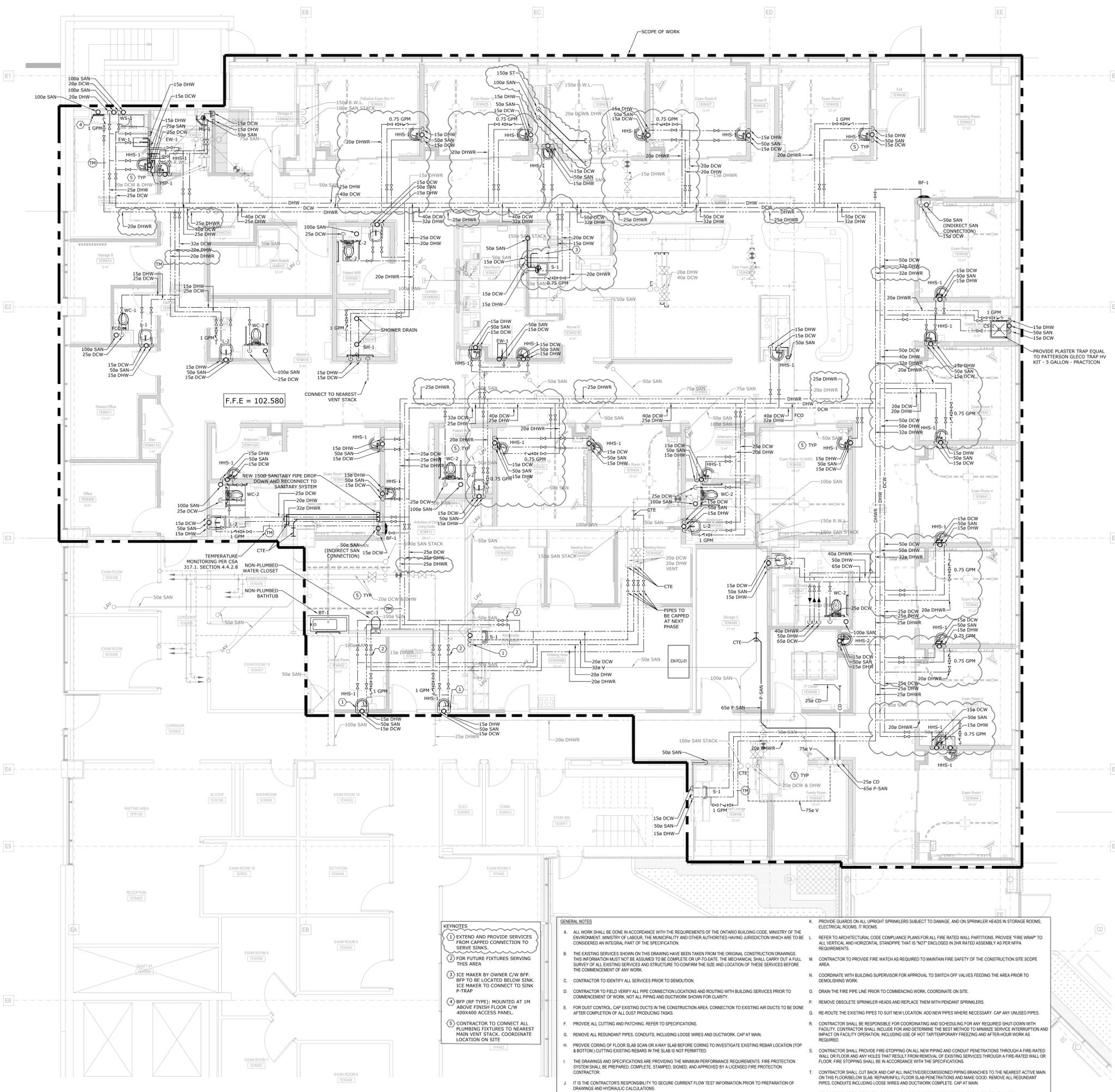
- DRAWING KEYNOTES**
- CONTRACTOR TO VERIFY EXISTING PIPE ELEVATIONS WITH NEW WORK PRIOR TO ANY NEW EXCAVATIONS.
 - ALL PICTURES SHOWN ARE BASIC REPRESENTATIVES OF EXISTING SYSTEMS/EQUIPMENT. CONTRACTOR TO VERIFY ALL SERVICES/EQUIPMENT ON SITE.
 - CONTRACTOR TO COORDINATE WITH ALL TRADES FOR NEW CRAWL SPACE. EXCAVATION AND UNDERGROUND PIPE CONNECTIONS, THE SEQUENCING OF WORK SHALL BE IDENTIFIED BY THE GENERAL CONTRACTOR.
 - CONTRACTOR TO COORDINATE FOR SUMP PIT (TYP. OF 2) LOCATIONS WITH STRUCTURAL DRAWINGS. BOTH SUMP PITS WILL BE CAST IN PLACE.
 - CONDENSATE DRAINAGE TO DRAIN INDIRECTLY OVER FLOOR DRAIN.
 - CONTRACTOR TO ALLOW FOR FLOOR MOUNTED PIPE SUPPORTS WHERE SUSPENDED SUPPORTS ARE NOT ADEQUATE.
 - NEW PARALLEL PIPE ADJACENT TO EXISTING. EXACT LOCATION TO BE COORDINATED. EXISTING PIPE TO BE MAINTAINED DURING CONSTRUCTION AND WILL BE DEMOLISHED AFTER NEW PIPE HAS BEEN INSTALLED AND ALL CONNECTIONS HAVE BEEN MADE. ALL EXISTING TIE-IN PIPE TO TIE BACK TO NEW PIPE.
 - TIE-IN CONNECTION AFTER NEW PIPE HAS BEEN INSTALLED, COMMISSIONED, AND ALL CONNECTIONS HAVE BEEN MADE.
 - PRV TO BE SET BETWEEN 50 AND 65 PSI.
 - CONTRACTOR TO SITE VERIFY AND RELOCATE ANY/ALL SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INCLUDE ALL COST RELATED TO THE WORK IN THE AREA.
 - FINAL CONNECTIONS TO BE MADE AFTER HOURS OR DURING WEEKEND WORK. COORDINATE WITH FACILITY. ALLOW FOR FREEZING. ALLOW FOR ANY REMOVAL OF WATER AT TIME OF CONNECTION. MAINTAIN SAME INVERT.
 - CONTRACTOR TO ALLOW FOR SANITARY & STORM TANKER SUCTION OR TEMPORARY SUMP PUMP DISCHARGE DURING PIPE DEMOLITION TO ALLOW FUNCTIONALITY OF DRAINAGE SYSTEM. WORK TO BE COORDINATED WITH UHN AND EXECUTED AFTER WORKS.
 - PIPES TO BE DEMOLISHED AFTER NEW PIPES HAVE BEEN INSTALLED AND COMMISSIONED.
 - CONTRACTOR TO COORDINATE WITH EXISTING SERVICES AND OTHER TRADES TO ALLOW FOR OTHER SERVICES MODIFICATION WHERE NECESSARY. TUNNEL PICTURES ARE PROVIDED FOR NEW PIPE LOCATIONS (TENTATIVE).
 - NEW HOUSEKEEPING PAD BY OTHERS. EXACT SIZE TO BE COORDINATED BASED ON SHOP DRAWINGS SIZES.
 - INSTALL NEW FIRE MAIN ADJACENT TO EXISTING, AND CONNECT BACK TO MAIN INSIDE THE BASEMENT. COORDINATE WITH UHN AND FIRE MARSHALL FOR SHUT-DOWN. ALLOW FOR FIRE WATCH WHILE WORK IS IN PROGRESS.
 - WATER MAIN OPTION 1: INSTALL NEW WATER MAIN ADJACENT TO EXISTING, AND CONNECT BACK TO MAIN INSIDE THE BASEMENT. COORDINATE WITH UHN FOR SHUT-DOWN AND ALLOW FOR WATER TANKER SUPPLY TO FEED THE BUILDING WHILE WORK IS IN PROGRESS.
 - WATER MAIN OPTION 2: CONTRACTOR TO ALLOW FOR SEPARATE PRICE FOR A NEW WATER METER. CONTRACTOR TO COORDINATE WITH CITY INSPECTOR AFTER EXCAVATION IF A NEW WATER METER IS REQUIRED. COORDINATE WITH UHN FOR SHUT-DOWN AND ALLOW FOR WATER TANKER SUPPLY TO FEED THE BUILDING WHILE WORK IS IN PROGRESS.

NO.	REVISION	DESCRIPTION	DATE
1	ISSUED FOR DESIGN DEVELOPMENT PROGRESS		2024.04.09
2	ISSUED FOR 100% CD		2024.05.10
3	ISSUED FOR 90% CD - PHASE 1		2024.06.02
4	ISSUED FOR 90% CD		2024.06.06
5	ISSUED FOR 100% CD		2024.06.27
6	ISSUED FOR TENDER		2024.07.11
7	ISSUED FOR ADDENDUM M-01		2024.10.25
8	ISSUED FOR ADDENDUM M-02		2024.11.06
9	ISSUED FOR ADDENDUM M-03		2024.11.20

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON M5T 2S8

TITLE:
 UNDERGROUND FLOOR PLAN - NEW WORK - MECHANICAL

PROJECT NO: MRK-23004289
 DRAWING NO: M-111
 CHECKED: P.R.



F.F.E = 102,580

- KEYNOTES**
1. EXTEND AND PROVIDE SERVICES FROM CAPPED CONNECTION TO SERVE SINKS.
 2. FOR FUTURE FIXTURES SERVING THIS AREA.
 3. ICE MAKER BY OWNER C/W BFP. BFP TO BE LOCATED BELOW SINK. ICE MAKER TO CONNECT TO SINK P-TRAP.
 4. BFP (BP TYPE): MOUNTED AT 1M ABOVE FINISH FLOOR C/W 400x400 ACCESS PANEL.
 5. CONTRACTOR TO CONNECT ALL PLUMBING FIXTURES TO NEAREST MAIN VENT STACK, COORDINATE LOCATION ON SITE.

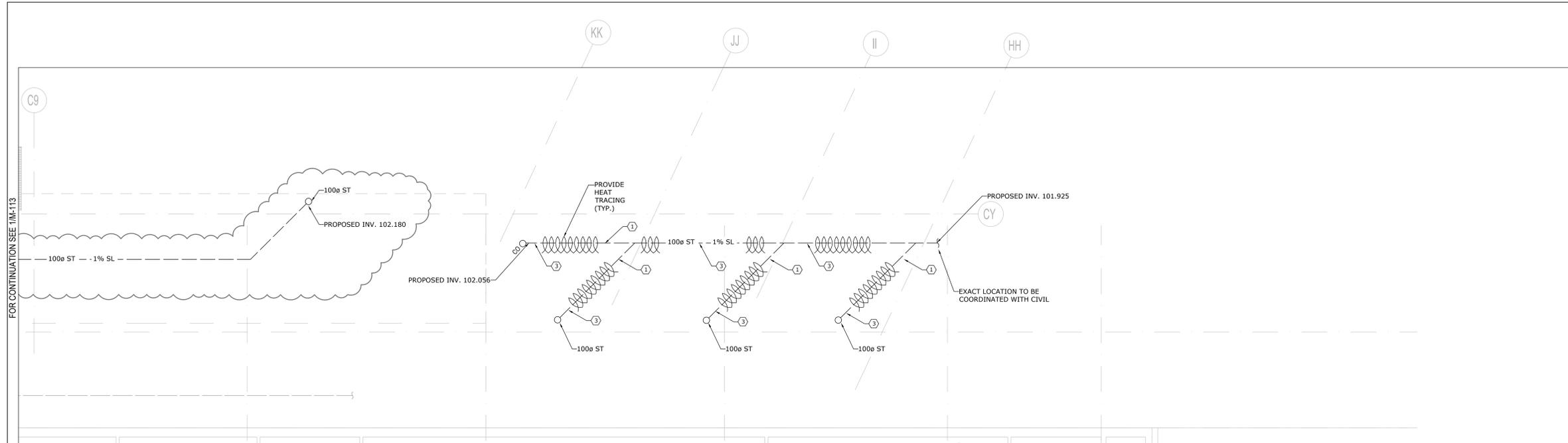
- GENERAL NOTES**
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
 - THE EXISTING SERVICES SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM THE ORIGINAL CONSTRUCTION DRAWINGS. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND STRUCTURE TO CONFIRM THE SIZE AND LOCATION OF THESE SERVICES BEFORE THE COMMENCEMENT OF ANY WORK.
 - CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
 - CONTRACTOR TO FIELD VERIFY ALL PIPE CONNECTION LOCATIONS AND ROUTING WITH BUILDING SERVICES PRIOR TO COMMENCEMENT OF WORK. NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.
 - FOR DUST CONTROL, CAP EXISTING DUCTS IN THE CONSTRUCTION AREA. CONNECTION TO EXISTING AIR DUCTS TO BE DONE AFTER COMPLETION OF ALL DUST PRODUCING TASKS.
 - PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
 - REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAN.
 - PROVIDE CORING OF FLOOR SLAB SCAN OR X-RAY SLAB BEFORE CORING TO INVESTIGATE EXISTING REBAR LOCATION (TOP & BOTTOM). CUTTING EXISTING REBARS IN THE SLAB IS NOT PERMITTED.
 - THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED FIRE PROTECTION CONTRACTOR.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE CURRENT FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.

- PROVIDE GUARDS ON ALL UPRIGHT SPRINKLERS SUBJECT TO DAMAGE, AND ON SPRINKLER HEADS IN STORAGE ROOMS, ELECTRICAL ROOMS, IT ROOMS.
- REFER TO ARCHITECTURAL CODE COMPLIANCE PLANS FOR ALL FIRE RATED WALL PARTITIONS. PROVIDE "FIRE WRAP" TO ALL VERTICAL AND HORIZONTAL STANDPIPE THAT IS NOT ENCLOSED IN FIRE RATED ASSEMBLY AS PER NFPA REQUIREMENTS.
- CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
- COORDINATE WITH BUILDING SUPERVISOR FOR APPROVAL TO SWITCH OFF VALVES FEEDING THE AREA PRIOR TO DEMOLISHING WORK.
- DRAIN THE FIRE PIPE LINE PRIOR TO COMMENCING WORK. COORDINATE ON SITE.
- REMOVE OBSOLETE SPRINKLER HEADS AND REPLACE THEM WITH PENDANT SPRINKLERS.
- RE-ROUTE THE EXISTING PIPES TO SUIT NEW LOCATION. ADD NEW PIPES WHERE NECESSARY. CAP ANY UNUSED PIPES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT-DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING USE OF HOT TAP/TEMPORARY FREEZING AND AFTER-HOUR WORK AS REQUIRED.
- CONTRACTOR SHALL PROVIDE FIRE STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE-RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE-RATED WALL OR FLOOR. FIRE STOPPING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL CUT BACK AND CAP ALL INACTIVE/DECOMMISSIONED PIPING BRANCHES TO THE NEAREST ACTIVE MAIN ON THIS FLOOR/BELOW SLAB. REPAIR/INFLU FLOOR SLAB PENETRATIONS AND MAKE GOOD. REMOVE ALL REDUNDANT PIPES, CONDUITS INCLUDING LOOSE WIRES AND DUCTWORK COMPLETE. CAP AT MAN.
- RELOCATE OR RE-ROUTE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.

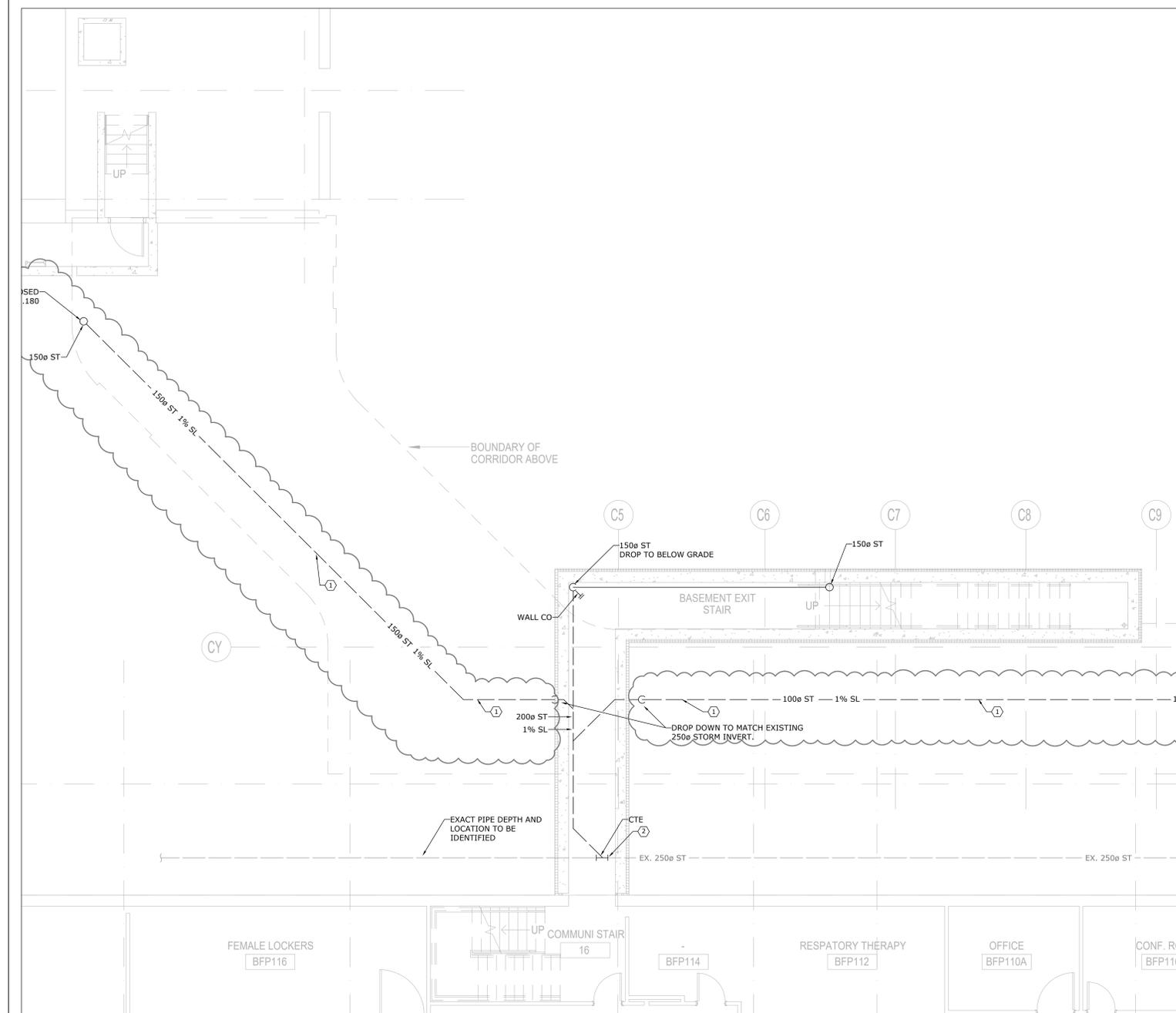
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5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD - Permit	2024.08.02
2	Issued for 100 DD	2024.08.01
1	Issued for Design Development Progress	2024.04.09
NO.	DESCRIPTION	DATE

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON M5T 2S8

TITLE:
LEVEL 1 FLOOR PLAN - NEW WORK - PLUMBING



2 BELOW GRADE FLOOR PLAN - PATIENT TRANSFER - NEW WORK - PLUMBING
1:50



1 BELOW GRADE FLOOR PLAN - CORRIDOR - NEW WORK - PLUMBING
1:50

- KEYNOTES:**
- 1 CONTRACTOR TO ALLOW FOR UNDERGROUND SERVICES COORDINATION WITH OTHER TRADES.
 - 2 CONTRACTOR TO COORDINATE TIE-IN CONNECTION AND ALLOW FOR PUMPED DISCHARGE AS REQUIRED. COORDINATE WITH UHN.
 - 3 PROVIDE 50MM RIGID INSULATION AROUND CAST-IRON PIPE.

- GENERAL NOTES:**
- A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
 - B. THE EXISTING SERVICES SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM THE ORIGINAL CONSTRUCTION DRAWINGS. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND STRUCTURE TO CONFIRM THE SIZE AND LOCATION OF THESE SERVICES BEFORE THE COMMENCEMENT OF ANY WORK.
 - C. CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
 - D. CONTRACTOR TO FIELD VERIFY ALL PIPE CONNECTION LOCATIONS AND ROUTING WITH BUILDING SERVICES PRIOR TO COMMENCEMENT OF WORK. NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.
 - E. FOR DUST CONTROL, CAP EXISTING DUCTS IN THE CONSTRUCTION AREA. CONNECTION TO EXISTING AIR DUCTS TO BE DONE AFTER COMPLETION OF ALL DUST PRODUCING TASKS.
 - F. PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
 - G. REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAIN.
 - H. PROVIDE CORING OF FLOOR SLAB SCAN OR X-RAY SLAB BEFORE CORING TO INVESTIGATE EXISTING REBAR LOCATION (TOP & BOTTOM). CUTTING EXISTING REBARS IN THE SLAB IS NOT PERMITTED.
 - I. THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED FIRE PROTECTION CONTRACTOR.
 - J. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE CURRENT FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
 - K. PROVIDE GUARDS ON ALL UPRIGHT SPRINKLERS SUBJECT TO DAMAGE, AND ON SPRINKLER HEADS IN STORAGE ROOMS, ELECTRICAL ROOMS, IT ROOMS.
 - L. REFER TO ARCHITECTURAL CODE COMPLIANCE PLANS FOR ALL FIRE RATED WALL PARTITIONS. PROVIDE "FIRE WRAP" TO ALL VERTICAL AND HORIZONTAL STANDPIPE THAT IS NOT ENCLOSED IN 2HR RATED ASSEMBLY AS PER NFPA REQUIREMENTS.
 - M. CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
 - N. COORDINATE WITH BUILDING SUPERVISOR FOR APPROVAL TO SWITCH OFF VALVES FEEDING THE AREA PRIOR TO DEMOLISHING WORK.
 - O. DRAIN THE FIRE PIPE LINE PRIOR TO COMMENCING WORK. COORDINATE ON SITE.
 - P. REMOVE OBSOLETE SPRINKLER HEADS AND REPLACE THEM WITH PENDANT SPRINKLERS.
 - Q. RE-ROUTE THE EXISTING PIPES TO SUIT NEW LOCATION. ADD NEW PIPES WHERE NECESSARY. CAP ANY UNUSED PIPES.
 - R. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT-DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING USE OF HOT TAP/TEMPORARY FREEZING AND AFTER-HOUR WORK AS REQUIRED.
 - S. CONTRACTOR SHALL PROVIDE FIRE STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE-RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE-RATED WALL OR FLOOR. FIRE STOPPING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 - T. CONTRACTOR SHALL CUT BACK AND CAP ALL INACTIVE/DECOMMISSIONED PIPING BRANCHES TO THE NEAREST ACTIVE MAIN ON THIS FLOOR/BELOW SLAB. REPAIR/FILL FLOOR SLAB PENETRATIONS AND MAKE GOOD. REMOVE ALL REDUNDANT PIPES, CONDUITS INCLUDING LOOSE WIRES AND DUCTWORK COMPLETE. CAP AT MAIN.
 - U. RELOCATE OR REROUTE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.

CLIENT:
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 www.uhn.ca

ARCHITECT:
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 www.cumulusarch.com

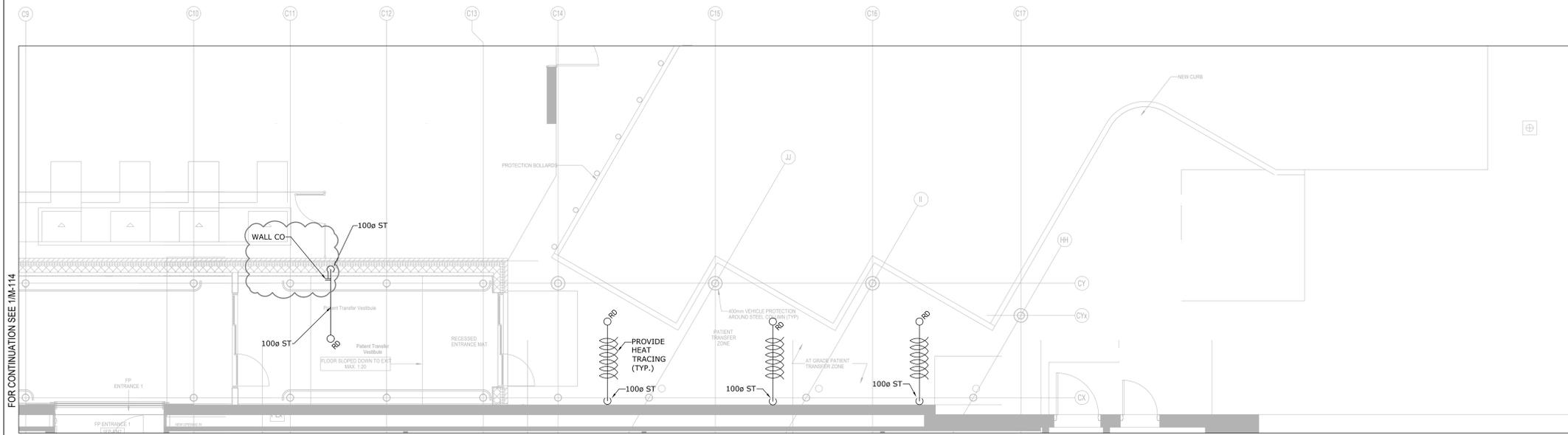
CONSULTANT:
 1 800 695 2277 | 1 800 695 0167
 220 Commerce Valley Drive West, Suite 110
 Markham, ON L3T 0A8
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NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.13
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3	Issued for 50% CD / Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.09

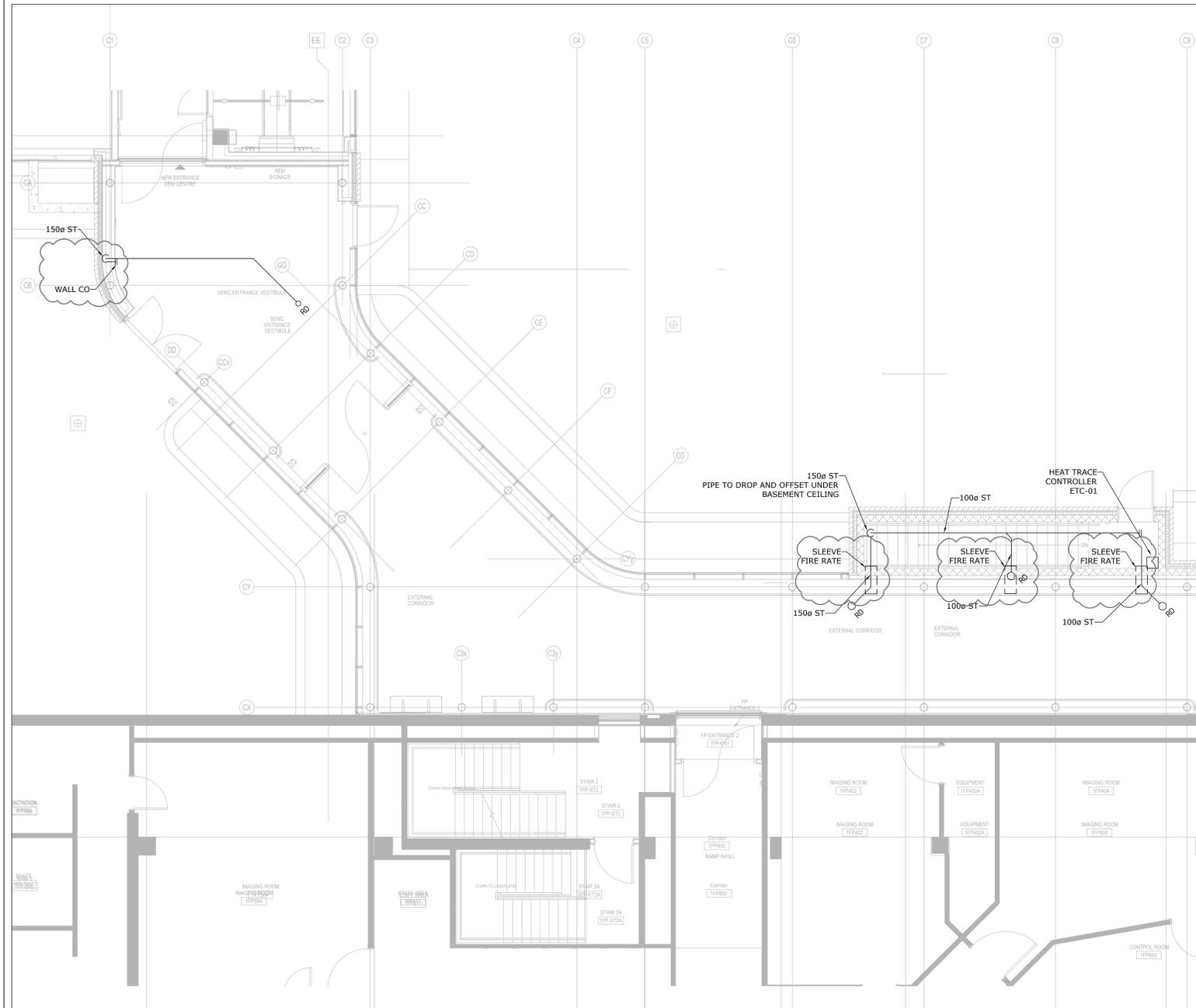
PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
 BELOW GRADE FLOOR PLAN - CORRIDOR -
 NEW WORK - PLUMBING

PROJECT NO: MRK-23004289
DRAWING NO: M-113
CHECKED: S.S.



2 LEVEL 1 FLOOR PLAN - PATIENT TRANSFER - NEW WORK - PLUMBING
1:50



1 LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - PLUMBING
1:50

- GENERAL NOTES**
- A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
 - B. THE EXISTING SERVICES SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM THE ORIGINAL CONSTRUCTION DRAWINGS. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND STRUCTURE TO CONFIRM THE SIZE AND LOCATION OF THESE SERVICES BEFORE THE COMMENCEMENT OF ANY WORK.
 - C. CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
 - D. CONTRACTOR TO FIELD VERIFY ALL PIPE CONNECTION LOCATIONS AND ROUTING WITH BUILDING SERVICES PRIOR TO COMMENCEMENT OF WORK. NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.
 - E. FOR DUST CONTROL, CAP EXISTING DUCTS IN THE CONSTRUCTION AREA. CONNECTION TO EXISTING AIR DUCTS TO BE DONE AFTER COMPLETION OF ALL DUST PRODUCING TASKS.
 - F. PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
 - G. REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAN.
 - H. PROVIDE CORING OF FLOOR SLAB SCAN OR X-RAY SLAB BEFORE CORING TO INVESTIGATE EXISTING REBAR LOCATION (TOP & BOTTOM). CUTTING EXISTING REBARS IN THE SLAB IS NOT PERMITTED.
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 - N. COORDINATE WITH BUILDING SUPERVISOR FOR APPROVAL TO SWITCH OFF VALVES FEEDING THE AREA PRIOR TO DEMOLISHING WORK.
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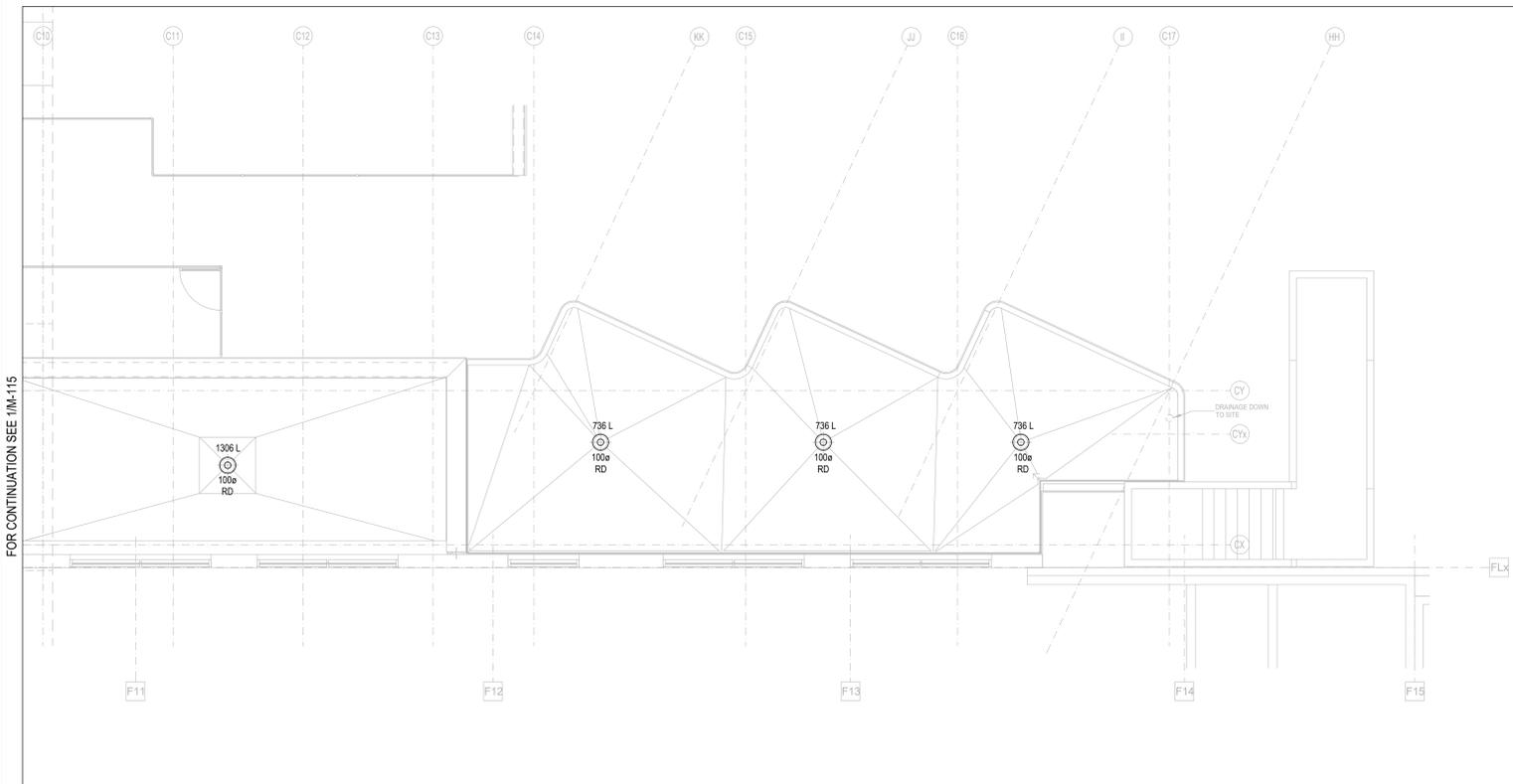
CONSULTANT:
 1-800-665-2277 | 1-800-665-0167
 220 Commerce Valley Drive West, Suite 1110
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5	Issued for 100% CD	2024-09-27
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3	Issued for 50% CD / Permit	2024-08-02
2	Issued for 100 DD	2024-05-10
1	Issued for Design Development Progress	2024-04-09

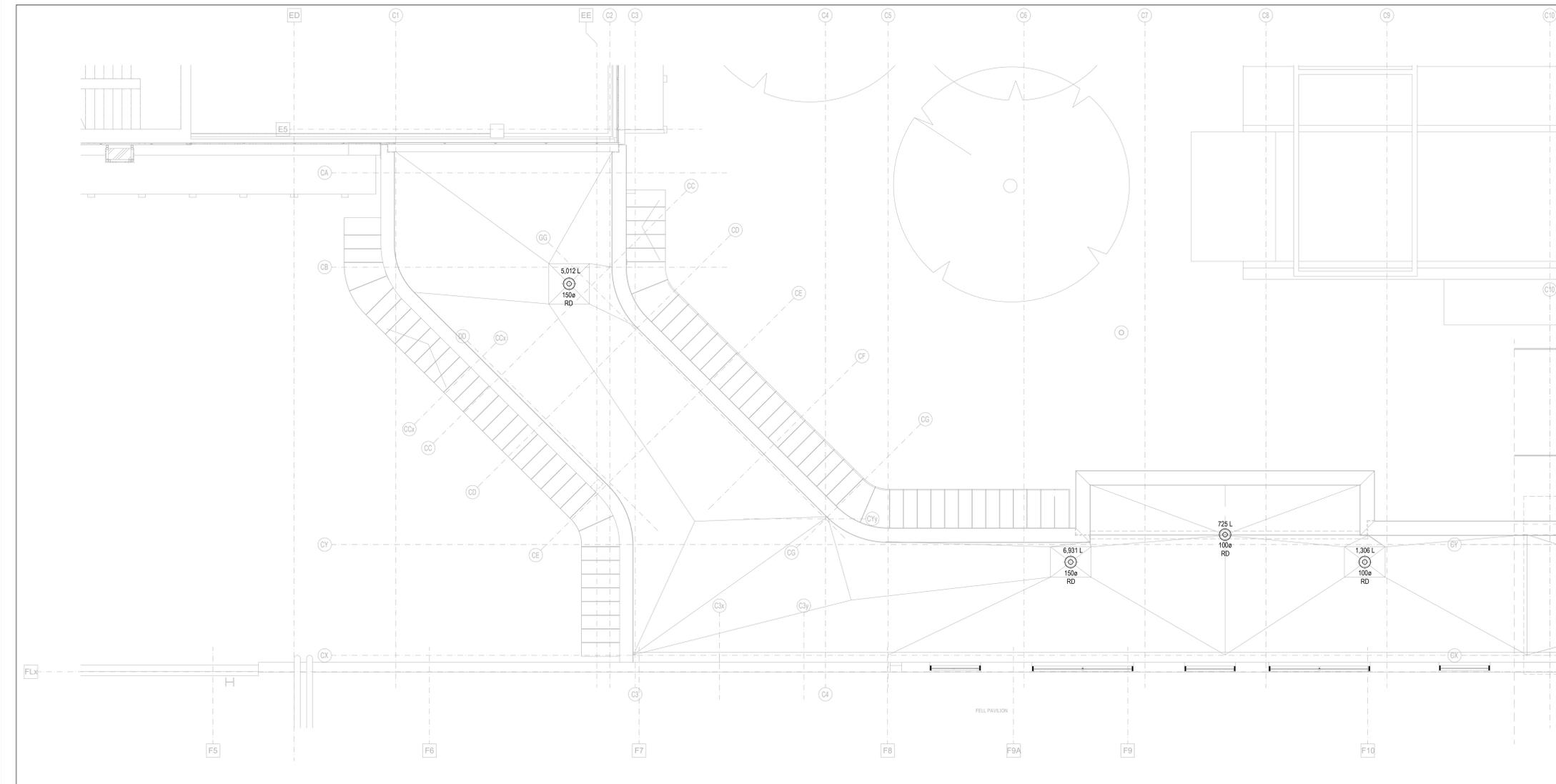
PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON M5T 2S8

TITLE:
 LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - PLUMBING

PROJECT NO: MRK-23004289
DRAWING NO: M-114
CHECKED: S.S.



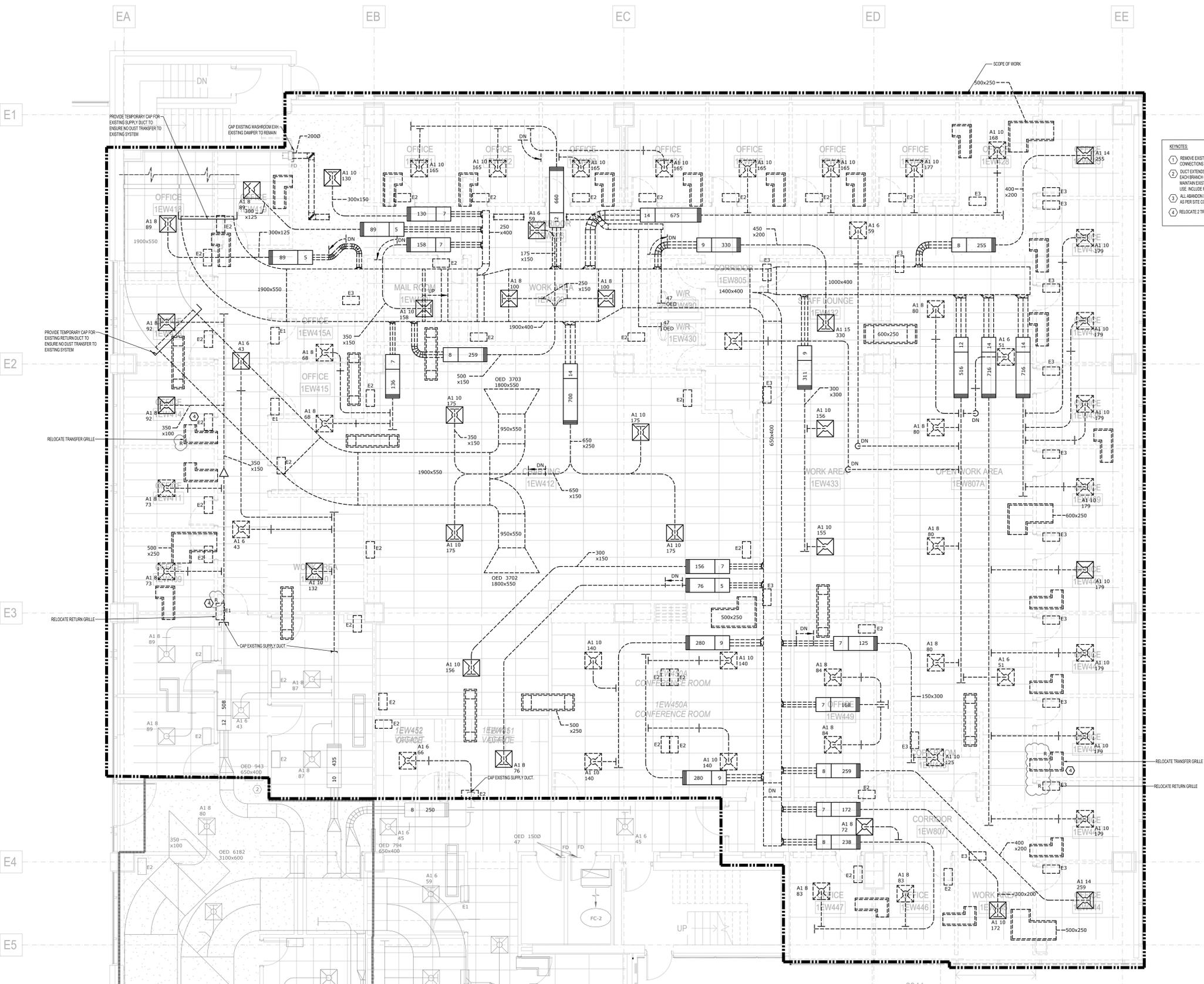
2 ROOF PLAN - PATIENT TRANSFER CANOPY - NEW WORK - PLUMBING
1:50



1 ROOF PLAN - CORRIDOR - NEW WORK - PLUMBING
1:50

NO	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024-11-12
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2	Issued for 100 DD	2024-05-10
1	Issued for Design Development Progress	2024-04-09

PROJECT:	Seniors Emergency Medicine Centre (SEMC) & External Corridor
TITLE:	Roof Plan - Corridor - New Work - Plumbing
PROJECT NO:	MRK-23004289
DRAWING NO:	M-115
CHECKED:	S.S.



- KEYNOTES:**
- REMOVE EXISTING DUCT CAPS TO CONNECT NEW DUCT. CONTRACTOR TO MAKE SURE ALL DUCT CONNECTIONS ARE SEALED PROPERLY AND ENSURE PROPER CLEARANCE FOR ALL ACCESS POINTS.
 - DUCT EXTENDS TO EXISTING OUTDOORWORK AND NOT INCLUDED IN THE SCOPE. CONTRACTOR TO VERIFY EACH BRANCH ON SITE AND ENSURE NO INTERRUPTION TO OCCUPIED SPACES. CONTRACTOR TO MAINTAIN EXISTING SPACES AT ALL TIMES AND MAKE SURE NO DUST IS TRANSFERRED TO SPACES IN USE. INCLUDE FOR AFTER HOURS WORK IF REQUIRED FOR MAIN CONTRACTOR'S REQUIREMENTS.
 - ALL ABANDONED DUCTS WITHIN THE RENOVATION AREAS SHALL BE REMOVED, CUT BACK AND CAP AT MAIN AS PER SITE CONDITION.
 - RELOCATE 2 TRANSFER GRILLES AND 2 RETURN GRILLES.

- GENERAL NOTES:**
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
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 - RELOCATE OR REMOVE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.
 - NOTE THAT ALL WORK SCOPES OUTSIDE OF SEM CENTER BOUNDARIES TO BE COMPLETED AFTER HOURS WITH IPAC CONTROL MEASURES.

CLIENT:
UHN University Health Network
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ARCHITECT:
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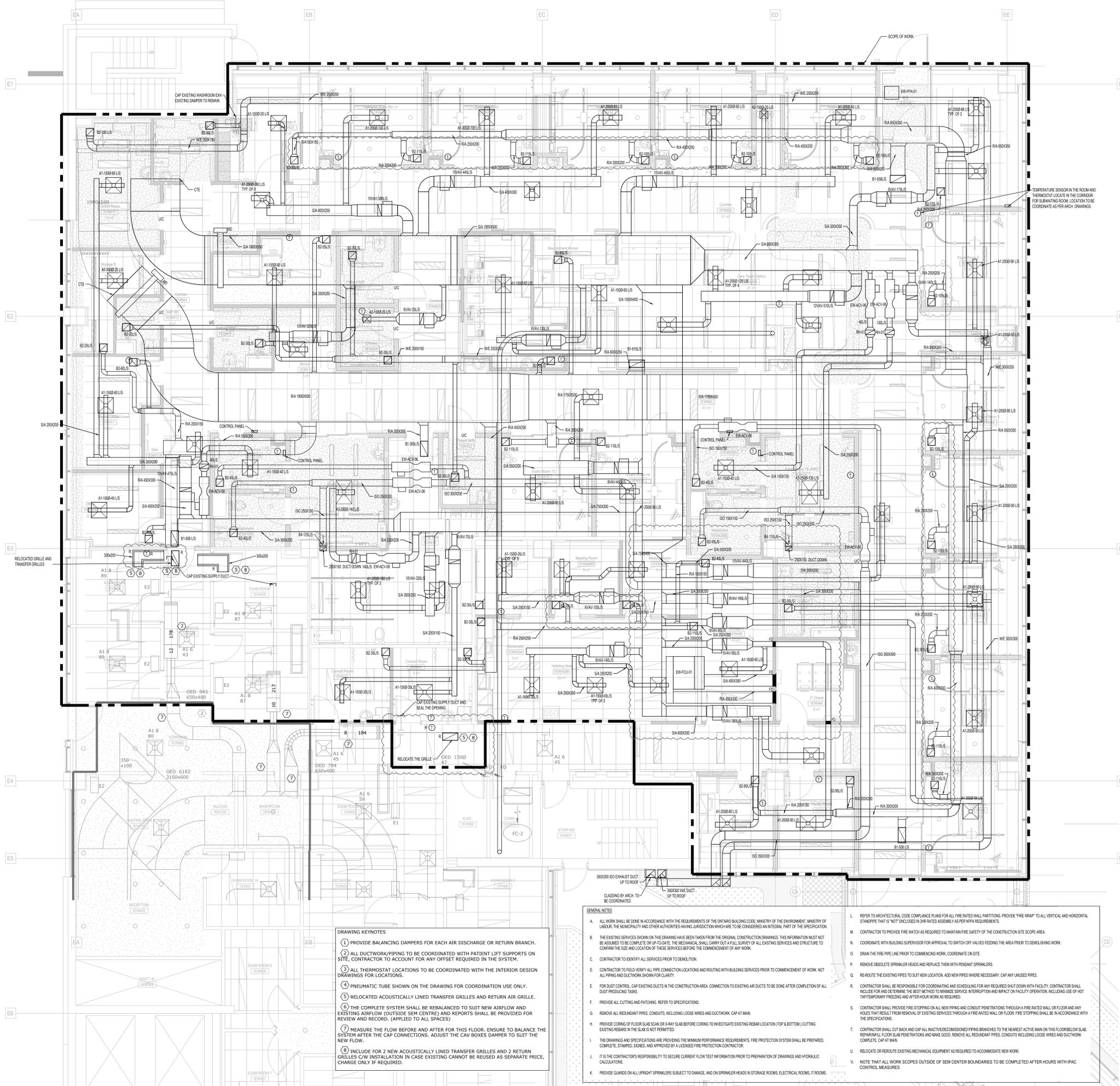
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PROJECT:
 Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
 LEVEL 1 FLOOR PLAN - DEMO - VENTILATION

PROJECT NO: MRK-23004289
 CHECKED: S.S.
 SHEET NO: M-201



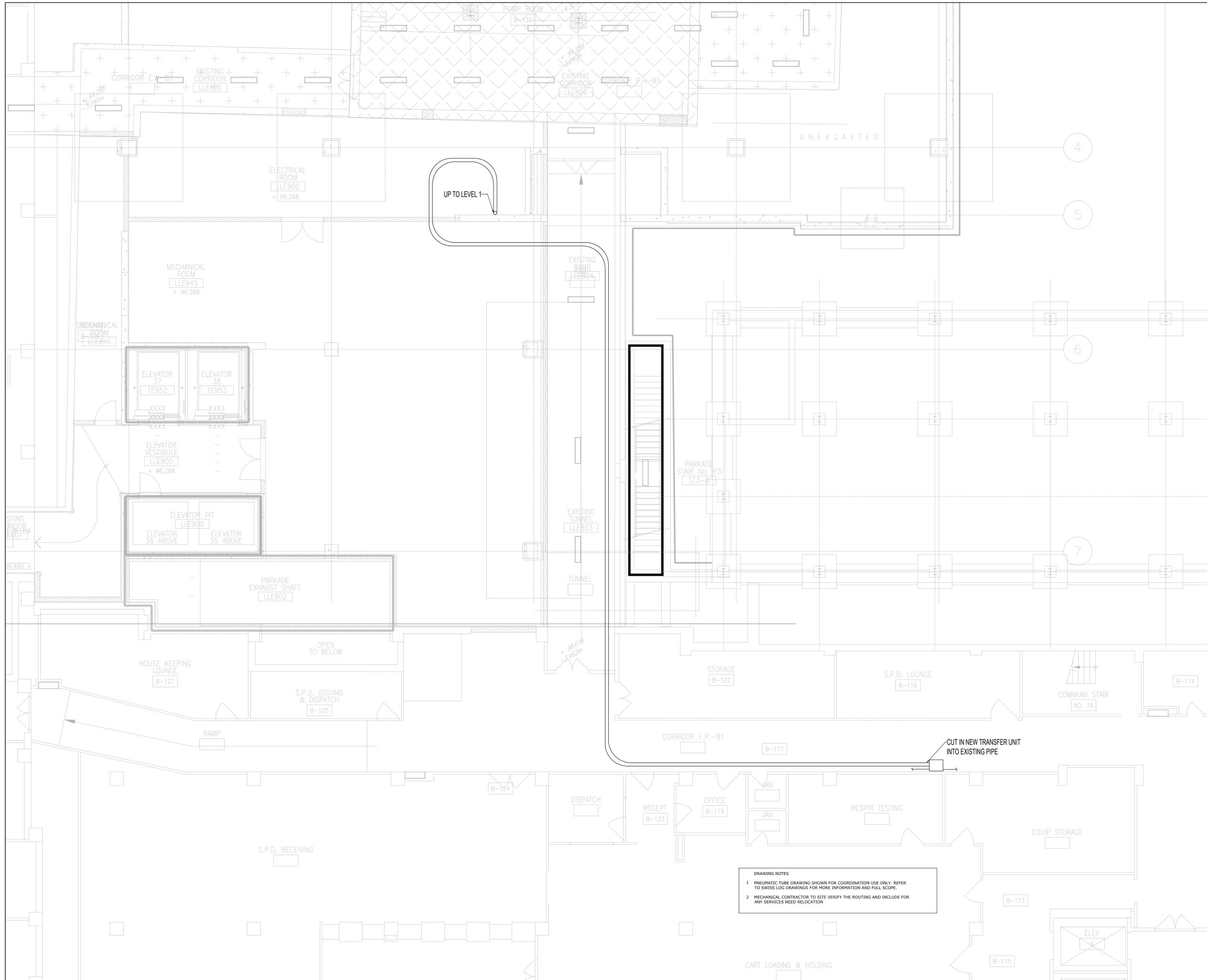
- DRAWING KEYNOTES**
- 1 PROVIDE BALANCING DAMPERS FOR EACH AIR DISCHARGE OR RETURN BRANCH.
 - 2 ALL DUCTWORK/PIPING TO BE COORDINATED WITH PATIENT LIFT SUPPORTS ON SITE. CONTRACTOR TO ACCOUNT FOR ANY OFFSET REQUIRED IN THE SYSTEM.
 - 3 ALL THERMOSTAT LOCATIONS TO BE COORDINATED WITH THE INTERIOR DESIGN DRAWINGS FOR LOCATIONS.
 - 4 PNEUMATIC TUBE SHOWN ON THE DRAWING FOR COORDINATION USE ONLY.
 - 5 RELOCATED ACOUSTICALLY LINED TRANSFER GRILLES AND RETURN AIR GRILLE.
 - 6 THE COMPLETE SYSTEM SHALL BE REBALANCED TO SUIT NEW AIRFLOW AND EXISTING AIRFLOW (OUTSIDE SEM CENTER) AND REPORTS SHALL BE PROVIDED FOR REVIEW AND RECORD. (APPLIED TO ALL SPACES)
 - 7 MEASURE THE FLOW BEFORE AND AFTER FOR THIS FLOOR. ENSURE TO BALANCE THE SYSTEM AFTER THE CAP CONNECTIONS. ADJUST THE CAV BOXES DAMPER TO SUIT THE NEW FLOW.
 - 8 INCLUDE FOR 2 NEW ACOUSTICALLY LINED TRANSFER GRILLES AND 2 RETURN GRILLES C/W INSTALLATION IN CASE EXISTING CANNOT BE REUSED AS SEPARATE PRICE, CHARGE ONLY IF REQUIRED.

- GENERAL NOTES**
- A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
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 - F. PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
 - G. REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAN.
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 - I. THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED FIRE PROTECTION CONTRACTOR.
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 - T. CONTRACTOR SHALL CUT BACK AND CAP ALL INACTIVE/DECOMMISSIONED PIPING BRANCHES TO THE NEAREST ACTIVE MAIN ON THIS FLOOR/LOW SLAB REPAIR/IN FLOOR SLAB PENETRATIONS AND MAKE GOOD. REMOVE ALL REDUNDANT PIPES. CONDUITS INCLUDING LOOSE WIRES AND DUCTWORK COMPLETE. CAP AT MAN.
 - U. RELOCATE OR REROUTE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.
 - V. NOTE THAT ALL WORK SCOPES OUTSIDE OF SEM CENTER BOUNDARIES TO BE COMPLETED AFTER HOURS WITH IPAC CONTROL MEASURES.

NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD / Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.09
NO.	DESCRIPTION	DATE

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON M5T 2S8

LEVEL 1 FLOOR PLAN - NEW WORK - VENTILATION



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 Canada
 www.exp.com

• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
 • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

DRAWING NOTES

- 1 PNEUMATIC TUBE DRAWING SHOWN FOR COORDINATION USE ONLY. REFER TO SWISS LOG DRAWINGS FOR MORE INFORMATION AND FULL SCOPE.
- 2 MECHANICAL CONTRACTOR TO SITE VERIFY THE ROUTING AND INCLUDE FOR ANY SERVICES NEED RELOCATION

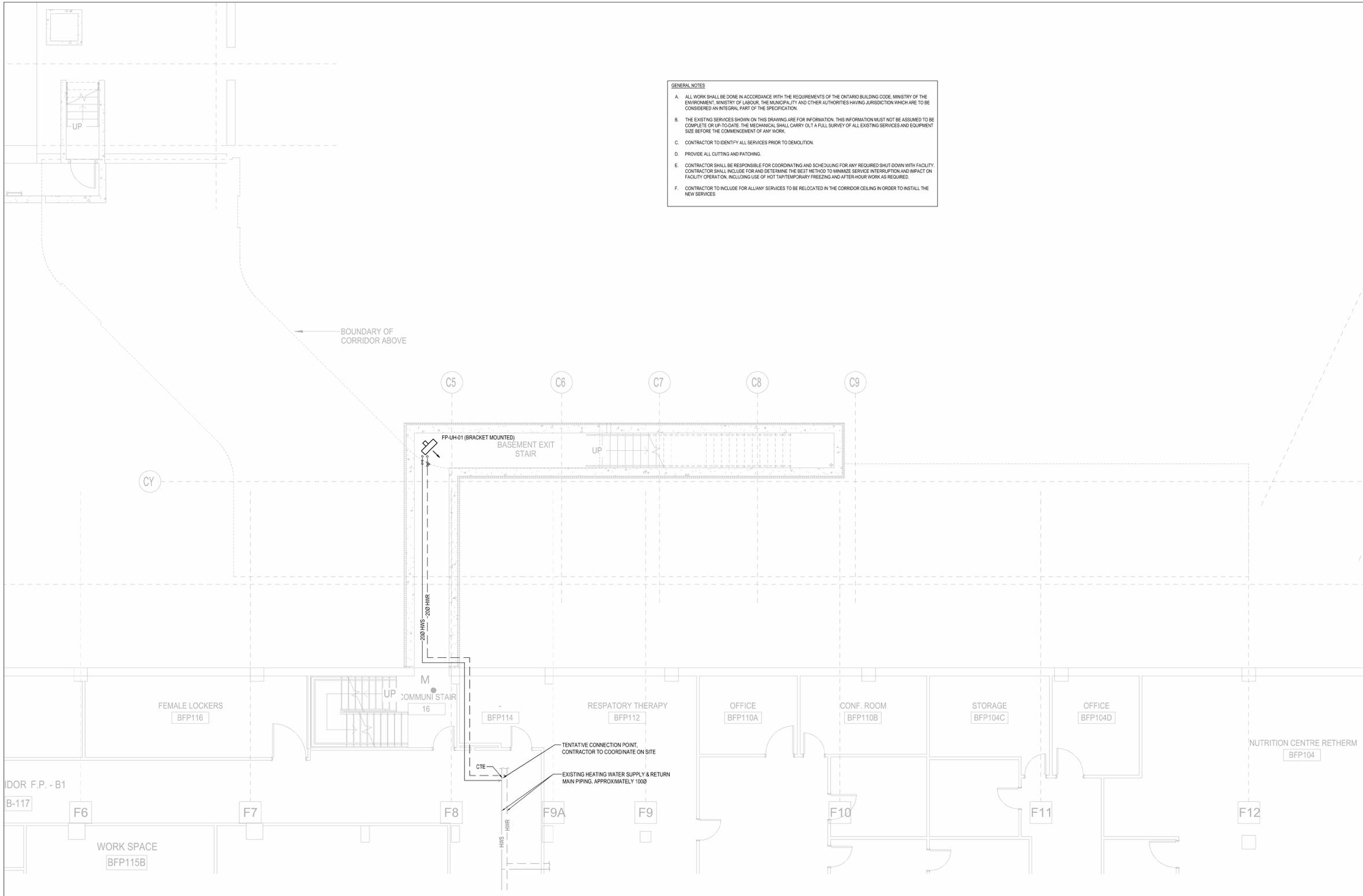
NO	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024-11-12
8	Issued for Addendum M-02	2024-11-08
7	Issued for Addendum M-01	2024-10-29
6	Issued for Tender	2024-10-11
5	Issued for 100% CD	2024-09-27
4	Issued for 90% CD	2024-09-09
3	Issued for 50% CD / Permit	2024-08-02
2	Issued for 100 DD	2024-05-10
1	Issued for Design Development Program	2024-04-09

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON M5T 2S8

TITLE:
**BELOW GRADE FLOOR PLAN - NEW WORK
 - PNEUMATIC PIPING**

PROJECT NO:
 MRK-23004289

DRAWING NO:
M-300A



GENERAL NOTES

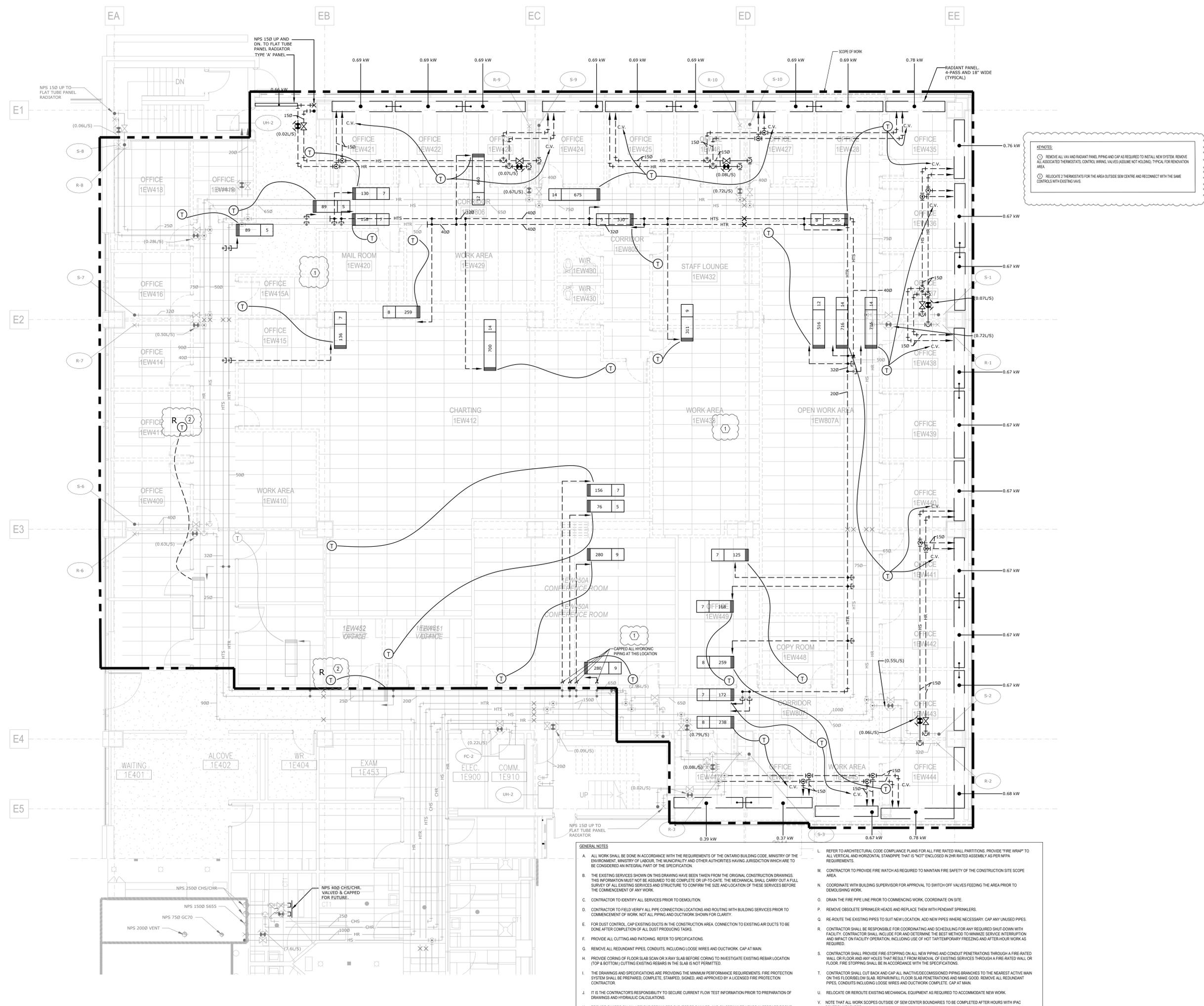
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
- THE EXISTING SERVICES SHOWN ON THIS DRAWING ARE FOR INFORMATION. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND EQUIPMENT SIZE BEFORE THE COMMENCEMENT OF ANY WORK.
- CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
- PROVIDE ALL CUTTINGS AND PATCHING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT-DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING USE OF HOT TAP/TEMPORARY FREEZING AND AFTER-HOUR WORK AS REQUIRED.
- CONTRACTOR TO INCLUDE FOR ALL ANY SERVICES TO BE RELOCATED IN THE CORRIDOR CEILING IN ORDER TO INSTALL THE NEW SERVICES.

1 BELOW GRADE FLOOR PLAN - NEW WORK - HVAC & PIPING
1:50

NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD - Phase 1	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.05

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
BELOW GRADE FLOOR PLAN - NEW WORK - HVAC & PIPING



KEYNOTES

- REMOVE ALL W/ AND RADIANT PANEL PIPING AND CAP AS REQUIRED TO INSTALL NEW SYSTEM. REMOVE ALL ASSOCIATED THERMOSTATS, CONTROL WIRING, VALVES (ASSUME NOT HOLDING), TYPICAL FOR RENOVATION AREA.
- RELOCATE 2 THERMOSTATS FOR THE AREA OUTSIDE SEM CENTRE AND RECONNECT WITH THE SAME CONTROLS WITH EXISTING W/VS.

GENERAL NOTES

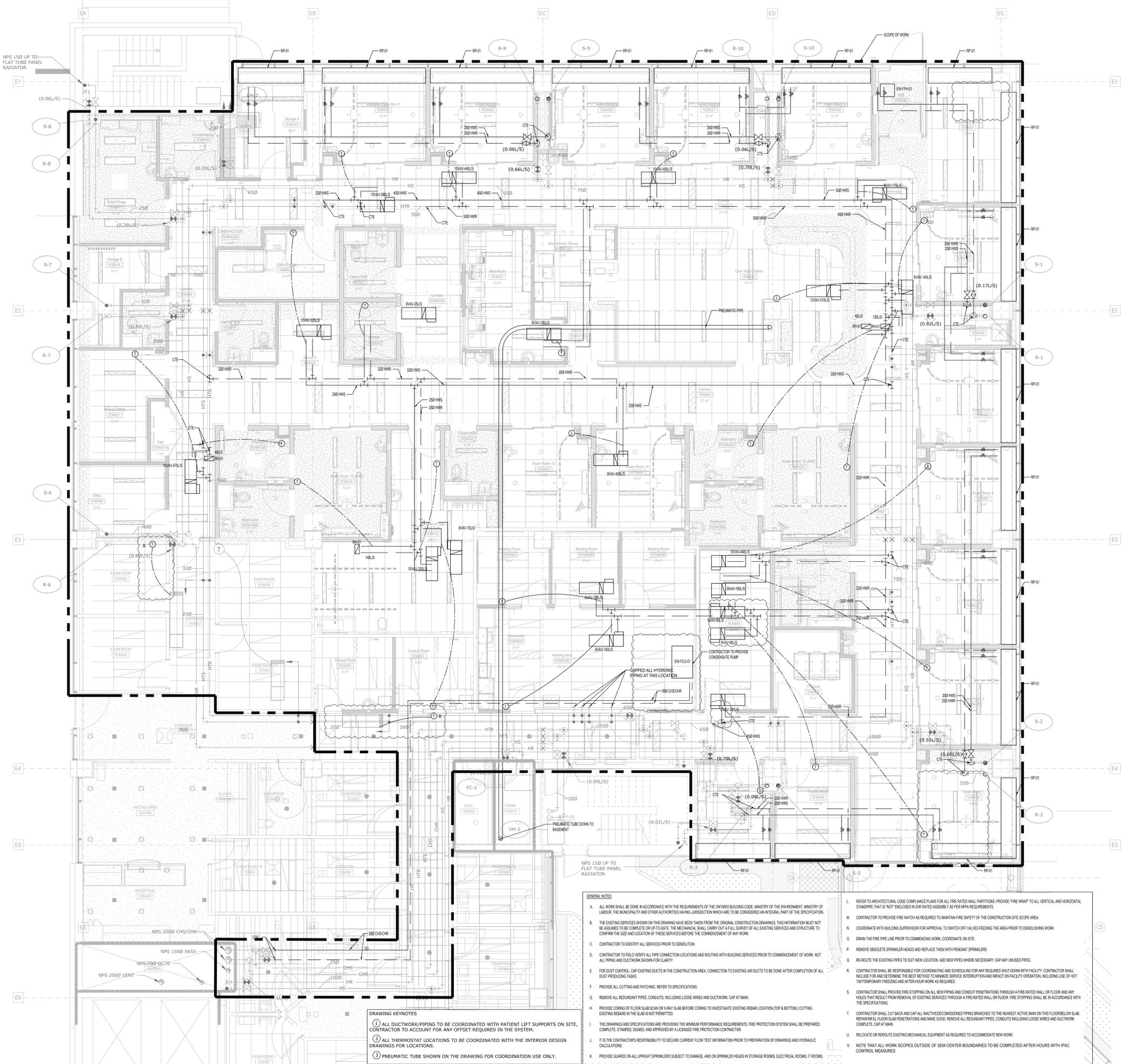
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
- THE EXISTING SERVICES SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM THE ORIGINAL CONSTRUCTION DRAWINGS. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP-TO-DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND STRUCTURE TO CONFIRM THE SIZE AND LOCATION OF THESE SERVICES BEFORE THE COMMENCEMENT OF ANY WORK.
- CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
- CONTRACTOR TO FIELD VERIFY ALL PIPE CONNECTION LOCATIONS AND ROUTING WITH BUILDING SERVICES PRIOR TO COMMENCEMENT OF WORK. NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.
- FOR DUST CONTROL, CAP EXISTING DUCTS IN THE CONSTRUCTION AREA. CONNECTION TO EXISTING AIR DUCTS TO BE DONE AFTER COMPLETION OF ALL DUST PRODUCING TASKS.
- PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
- REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAIN.
- PROVIDE CORING OF FLOOR SLAB SCAN OR X-RAY SLAB BEFORE CORING TO INVESTIGATE EXISTING REBAR LOCATION (TOP & BOTTOM) CUTTING EXISTING REBAR IN THE SLAB IS NOT PERMITTED.
- THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED FIRE PROTECTION CONTRACTOR.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE CORNING FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
- PROVIDE GUARDS ON ALL UPRIGHT SPRINKLERS SUBJECT TO DAMAGE, AND ON SPRINKLER HEADS IN STORAGE ROOMS.

- REFER TO ARCHITECTURAL CODE COMPLIANCE PLANS FOR ALL FIRE RATED WALL PARTITIONS. PROVIDE "FIRE WRAP" TO ALL VERTICAL AND HORIZONTAL STANDPIPE THAT IS "NOT" ENCLOSED IN 2HR RATED ASSEMBLY AS PER NFPA REQUIREMENTS.
- CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
- COORDINATE WITH BUILDING SUPERVISOR FOR APPROVAL TO SWITCH OFF VALVES FEEDING THE AREA PRIOR TO DEMOLISHING WORK.
- DRAIN THE FIRE PIPE LINE PRIOR TO COMMENCING WORK. COORDINATE ON SITE.
- REMOVE OBSOLETE SPRINKLER HEADS AND REPLACE THEM WITH PENDANT SPRINKLERS.
- RE-ROUTE THE EXISTING PIPES TO SUIT NEW LOCATION. ADD NEW PIPES WHERE NECESSARY. CAP ANY UNUSED PIPES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING USE OF HOT TAP/TEMPORARY FREEZING AND AFTER-HOUR WORK AS REQUIRED.
- CONTRACTOR SHALL PROVIDE FIRE STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE-RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE-RATED WALL OR FLOOR. FIRE STOPPING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL CUT BACK AND CAP ALL INACTIVE/DECOMMISSIONED PIPING BRANCHES TO THE NEAREST ACTIVE MAIN ON THIS FLOOR/BELIEF SLAB. REPAIR/FILL FLOOR SLAB PENETRATIONS AND MAKE GOOD. REMOVE ALL REDUNDANT PIPES, CONDUITS INCLUDING LOOSE WIRES AND DUCTWORK COMPLETE. CAP AT MAIN.
- RELOCATE OR REROUTE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.
- NOTE THAT ALL WORK SCOPES OUTSIDE OF SEM CENTRE BOUNDARIES TO BE COMPLETED AFTER HOURS WITH IPAC CONTROL MEASURES.

NO.	REVISION	DESCRIPTION	DATE
9	Issued for Addendum M-03		2024-11-20
8	Issued for Addendum M-02		2024-11-06
7	Issued for Addendum M-01		2024-10-29
6	Issued for Tender		2024-10-11
5	Issued for 100% CD		2024-09-27
4	Issued for 90% CD		2024-09-09
3	Issued for 50% CD - Permit		2024-08-02
2	Issued for 100 DD		2024-05-10
1	Issued for Design Development Progress		2024-04-09

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON M5T 2S8

LEVEL 1 FLOOR PLAN - DEMO - HVAC PIPING



GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, MINISTRY OF THE ENVIRONMENT, MINISTRY OF LABOUR, THE MUNICIPALITY AND OTHER AUTHORITIES HAVING JURISDICTION WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THE SPECIFICATION.
- THE EXISTING SERVICES SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM THE ORIGINAL CONSTRUCTION DRAWINGS. THIS INFORMATION MUST NOT BE ASSUMED TO BE COMPLETE OR UP TO DATE. THE MECHANICAL SHALL CARRY OUT A FULL SURVEY OF ALL EXISTING SERVICES AND STRUCTURE TO CONFIRM THE SIZE AND LOCATION OF THESE SERVICES BEFORE THE COMMENCEMENT OF ANY WORK.
- CONTRACTOR TO IDENTIFY ALL SERVICES PRIOR TO DEMOLITION.
- CONTRACTOR TO FIELD VERIFY ALL PIPE CONNECTION LOCATIONS AND ROUTING WITH BUILDING SERVICES PRIOR TO COMMENCEMENT OF WORK. NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.
- FOR DUST CONTROL, CAP EXISTING DUCTS IN THE CONSTRUCTION AREA. CONNECTION TO EXISTING AIR DUCTS TO BE DONE AFTER COMPLETION OF ALL DUST PRODUCING TASKS.
- PROVIDE ALL CUTTING AND PATCHING. REFER TO SPECIFICATIONS.
- REMOVE ALL REDUNDANT PIPES, CONDUITS, INCLUDING LOOSE WIRES AND DUCTWORK. CAP AT MAIN.
- PROVIDE CORING OF FLOOR SLAB SCAVOR ARRAY SLAB BEFORE CORING TO INVESTIGATE EXISTING REBAR LOCATION (TOP & BOTTOM) CUTTING EXISTING REBAR IN THE SLAB IS NOT PERMITTED.
- THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED FIRE PROTECTION CONTRACTOR.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE CURRENT FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
- PROVIDE GUARDS ON ALL UPPOINT SPRINKLERS SUBJECT TO DAMAGE, AND ON SPRINKLER HEADS IN STORAGE ROOMS, ELECTRICAL ROOMS, IT ROOMS.
- REFER TO ARCHITECTURAL CODE COMPLIANCE PLANS FOR ALL FIRE RATED WALL PARTITIONS. PROVIDE 'FIRE WRAP' TO ALL VERTICAL AND HORIZONTAL STANDPIPE THAT IS 'NOT' ENCLOSED IN 2HR RATED ASSEMBLY AS PER NFPA REQUIREMENTS.
- CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
- COORDINATE WITH BUILDING SUPERVISOR FOR APPROVAL TO SWITCH OFF VALVES FEEDING THE AREA PRIOR TO DEMOLISHING WORK.
- DRAIN THE FIRE PIPE LINE PRIOR TO COMMENCING WORK. COORDINATE ON SITE.
- REMOVE OBSOLETE SPRINKLER HEADS AND REPLACE THEM WITH PENDANT SPRINKLERS.
- RE-ROUTE THE EXISTING PIPES TO SUIT NEW LOCATION. ADD NEW PIPES WHERE NECESSARY. CAP ANY UNUSED PIPES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING FOR ANY REQUIRED SHUT-DOWN WITH FACILITY. CONTRACTOR SHALL INCLUDE FOR AND DETERMINE THE BEST METHOD TO MINIMIZE SERVICE INTERRUPTION AND IMPACT ON FACILITY OPERATION, INCLUDING USE OF HOT TAP/TEMPORARY FEEDING AND AFTER-HOURS WORK AS REQUIRED.
- CONTRACTOR SHALL PROVIDE FIRE STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE RATED WALL OR FLOOR. FIRE STOPPING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL CUT BACK AND CAP ALL INACTIVE/DECOMMISSIONED PIPING BRANCHES TO THE NEAREST ACTIVE MAIN ON THIS FLOOR/BELOW SLAB. REPAIR ALL FLOOR SLAB PENETRATIONS AND MAKE GOOD. REMOVE ALL REDUNDANT PIPES, CONDUITS INCLUDING LOOSE WIRES AND DUCTWORK. COMPLETE CAP AT MAIN.
- RELOCATE OR REMOVE EXISTING MECHANICAL EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK.
- NOTE THAT ALL WORK SCOPES OUTSIDE OF SEM CENTER BOUNDARIES TO BE COMPLETED AFTER HOURS WITH IPAC CONTROL MEASURES.

DRAWING KEYNOTES

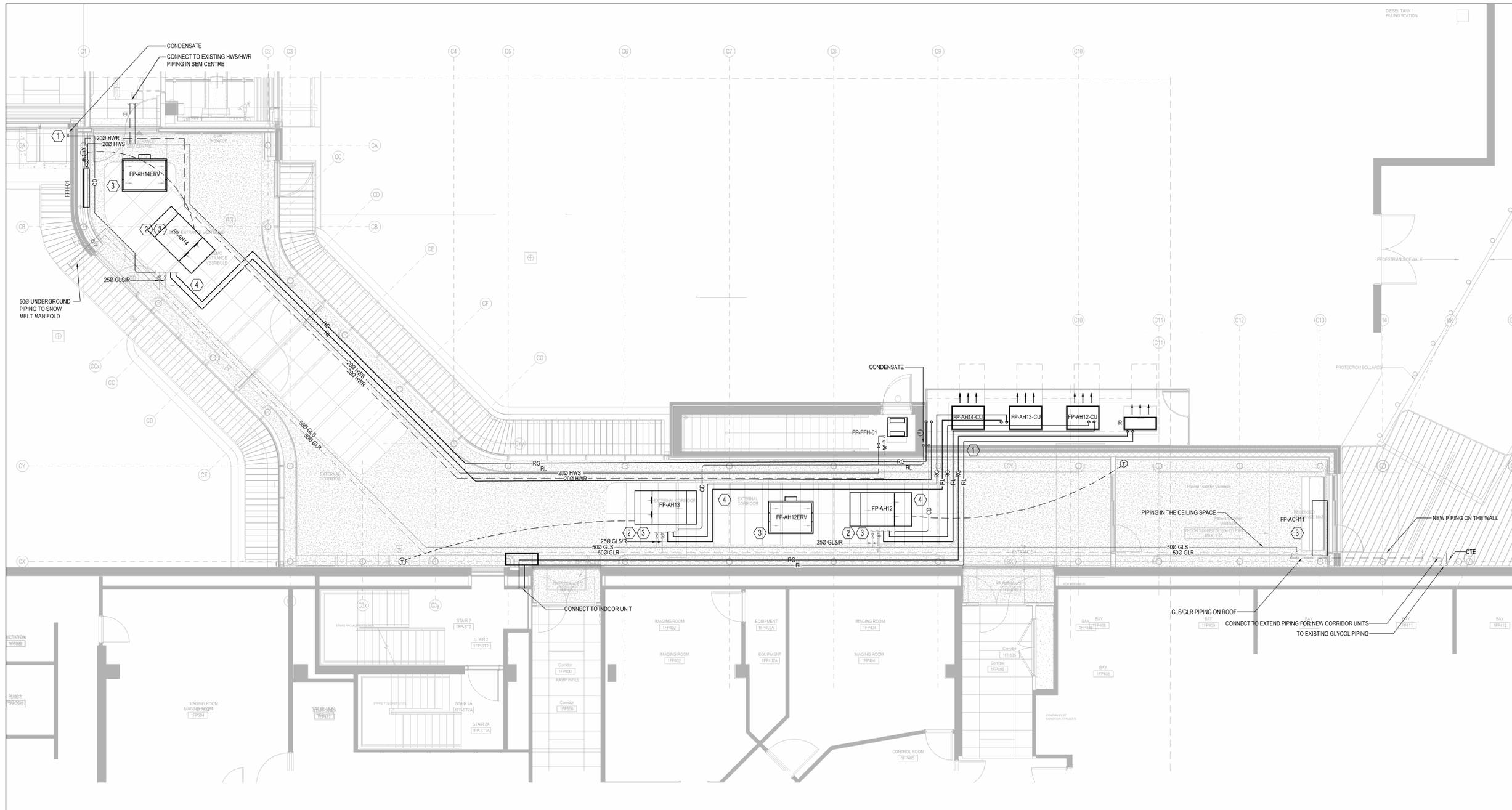
- ALL DUCTWORK/PIPPING TO BE COORDINATED WITH PATIENT LIFT SUPPORTS ON SITE. CONTRACTOR TO ACCOUNT FOR ANY OFFSET REQUIRED IN THE SYSTEM.
- ALL THERMOSTAT LOCATIONS TO BE COORDINATED WITH THE INTERIOR DESIGN DRAWINGS FOR LOCATIONS.
- PNEUMATIC TUBE SHOWN ON THE DRAWING FOR COORDINATION USE ONLY.

NO.	DESCRIPTION	DATE
1	Issued for Design Development Progress	2024.04.09
2	Issued for 100% CD	2024.05.10
3	Issued for 90% CD - Permit	2024.06.02
4	Issued for 90% CD	2024.06.06
5	Issued for 100% CD	2024.07.27
6	Issued for Permit	2024.07.31
7	Issued for Addendum M-01	2024.10.29
8	Issued for Addendum M-02	2024.11.06
9	Issued for Addendum M-03	2024.11.12

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
 LEVEL 1 FLOOR PLAN - NEW WORK - HVAC PIPING

PROJECT NO: MRK-23004289
 CHECKED: S.S.
 DRAWING NO: M-311A



1 LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - PIPING
1:50

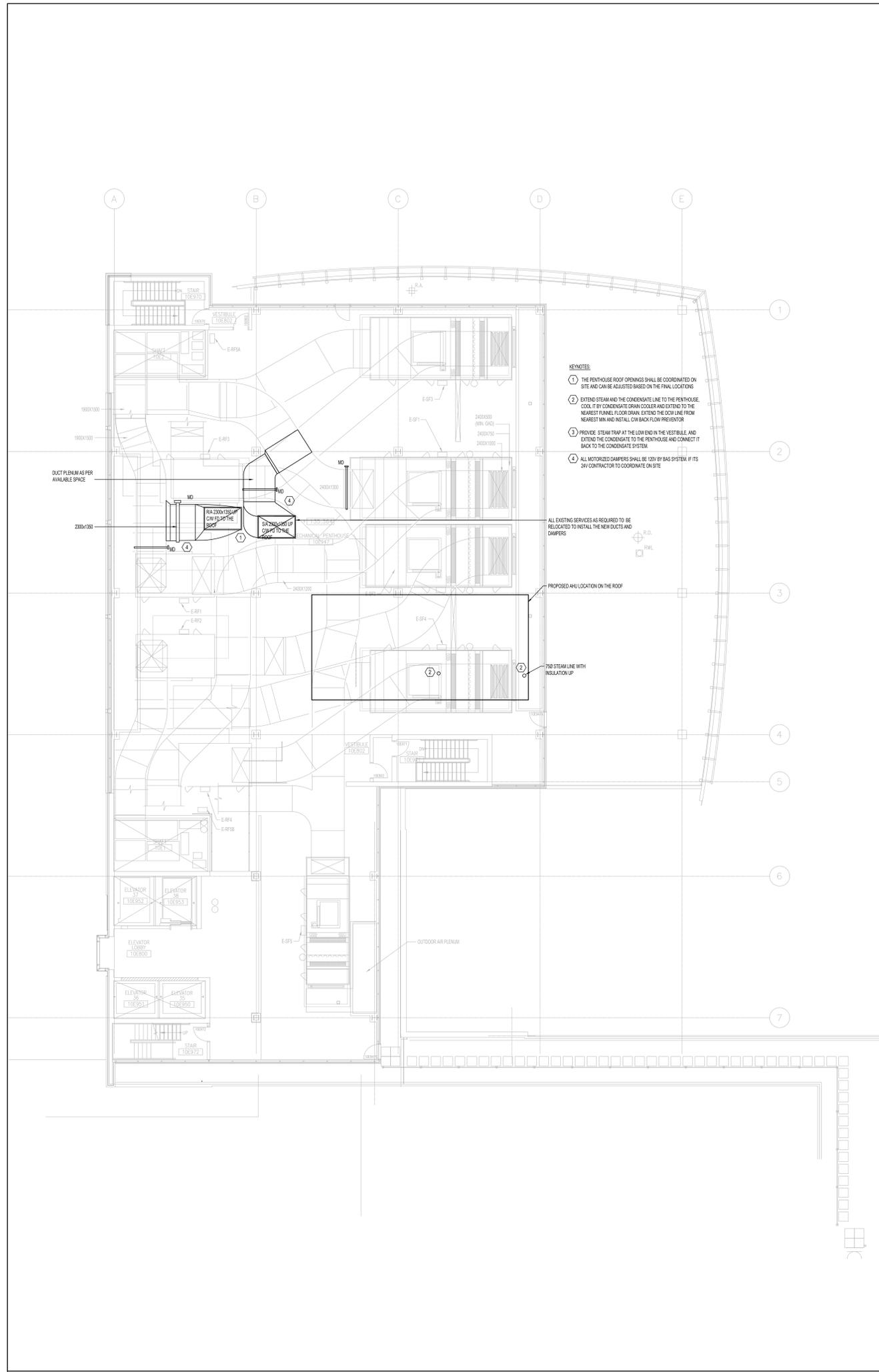
DRAWING NOTES:

- 1 CONTRACTOR TO INSTALL ALL PIPING TO CONDENSER UNIT CLOSE TO THE WALL. PIPES SHOWN FOR SCOPE CLARIFICATION
- 2 ALL AHUs TO BE INSTALLED WITH CONDENSATE PUMP (TYPICAL OF 3)
- 3 ALL SERVICES TO BE INSTALLED IN SUCH A WAY THAT THE MECHANICAL EQUIPMENT CAN BE REMOVED WITHOUT REMOVING ANY SERVICES. DO NOT INSTALL ANY PIPE, CABLE, WIRE, ETC. UNDER THE MECHANICAL UNITS
- 4 THE PIPING SHALL BE COORDINATED WITH EQUIPMENT LOCATION AND INSTALL AROUND THE UNITS

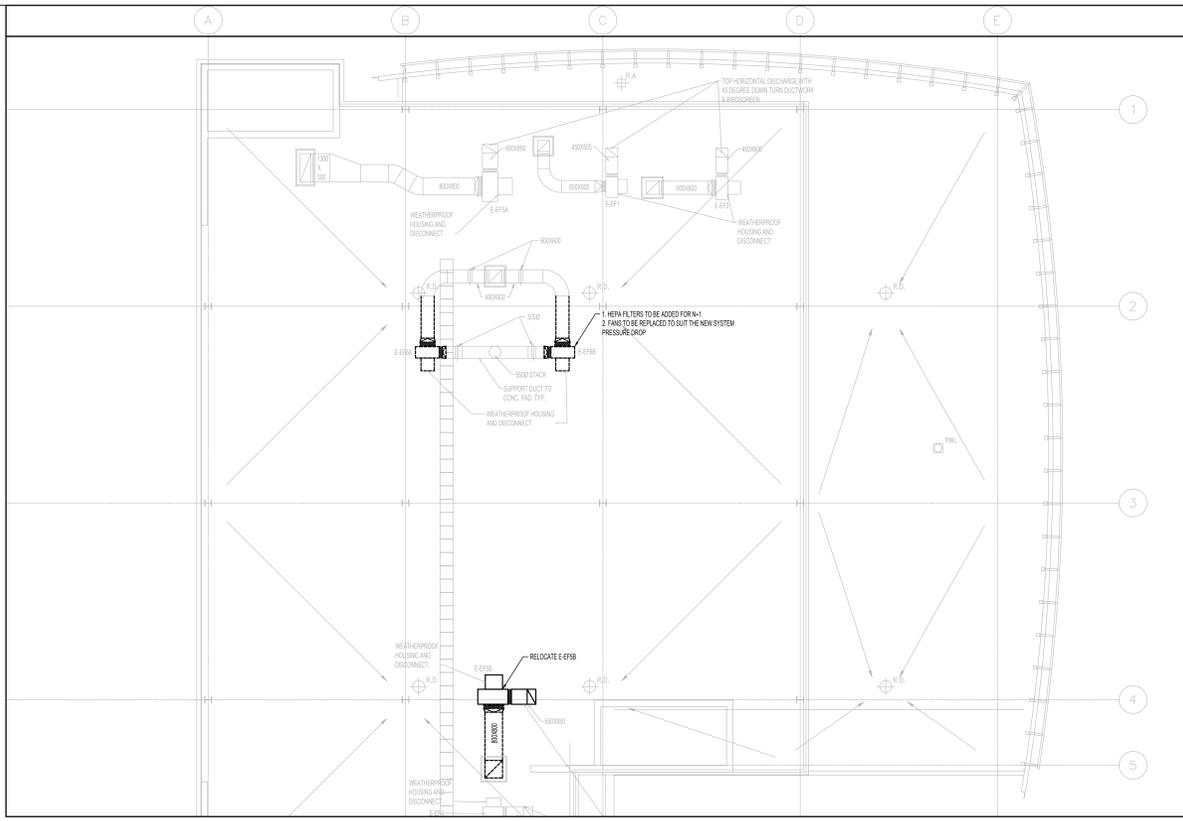
NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.11
5	Issued for 100% CIP	2024.09.27
4	Issued for 90% CIP	2024.09.09
3	Issued for 50% CIP - Phase 1	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Program	2024.04.05

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

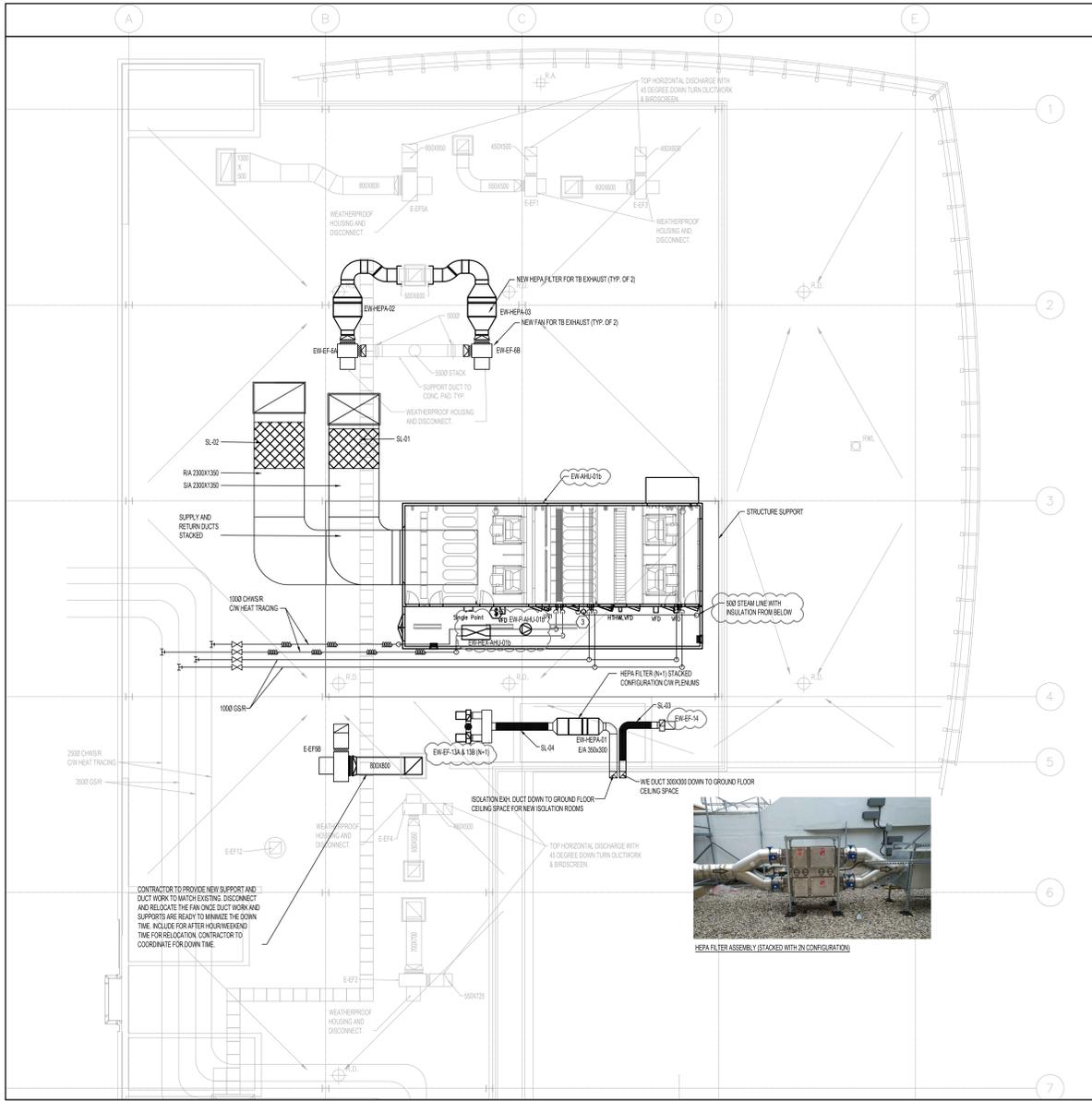
TITLE:
 LEVEL 1 FLOOR PLAN - CORRIDOR - NEW
 WORK - PIPING



1 PENTHOUSE FLOOR PLAN - NEW WORK - HVAC
1:100



2 ROOF FLOOR PLAN - DEMO - HVAC
1:100



3 ROOF FLOOR PLAN - NEW WORK - HVAC
1:100

CLIENT:
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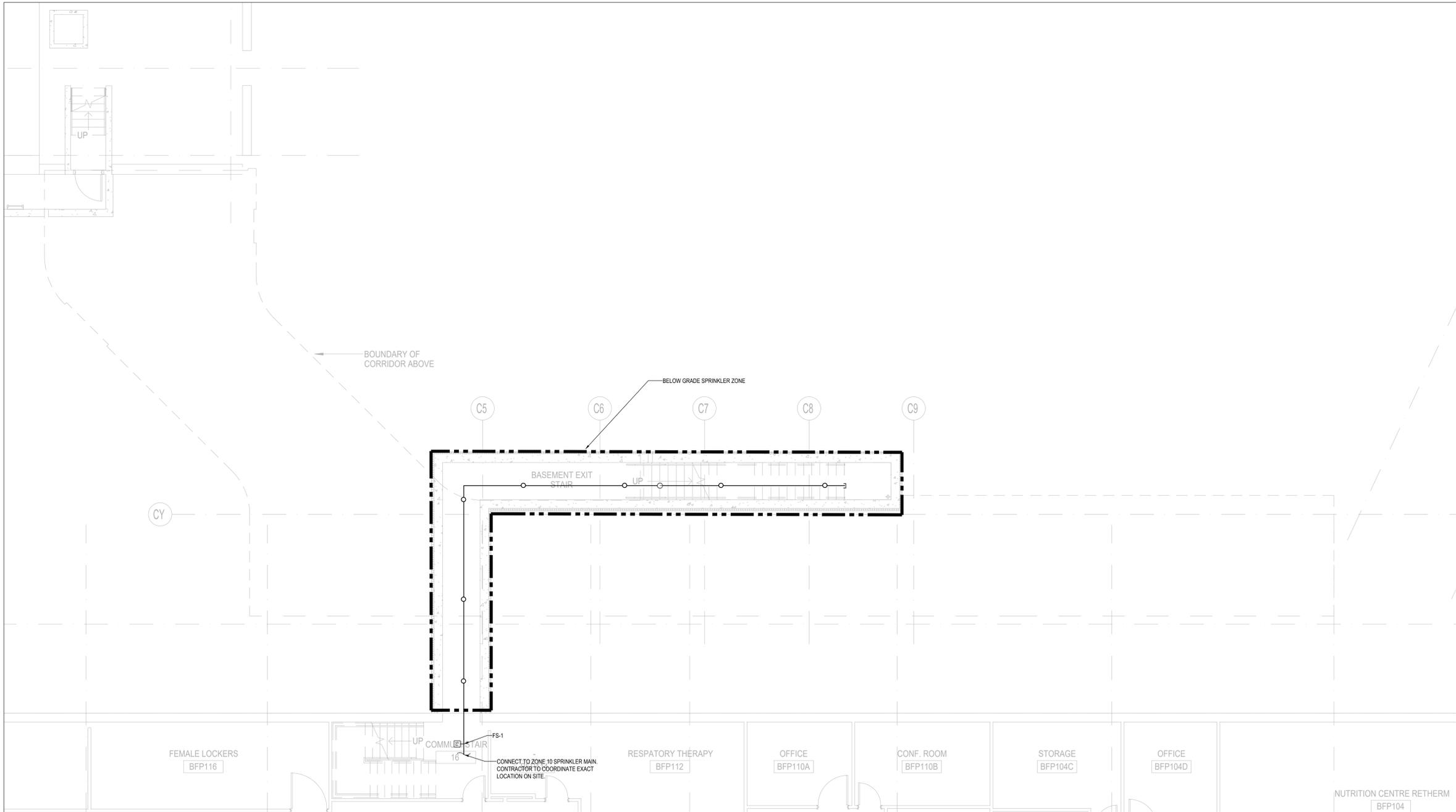
NO.	REVISION	DATE
9	Issued for Addendum M-03	2024.11.18
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD - Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Program	2024.04.09
NO.	DESCRIPTION	DATE

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
 PENTHOUSE & ROOF FLOOR PLAN - NEW
 WORK - HVAC

PROJECT NO:
 MRK-23004289

DRAWING NO:
 M-313



1 BELOW GRADE FLOOR PLAN - NEW WORK - FIRE PROTECTION
1/30

NOTE: CONTRACTOR TO SUBMIT SPRINKLER SHOP DRAWINGS WITH THE ENGINEER'S STAMP AND THE HYDRAULIC LOAD CALCULATIONS TO THE CITY AS PART OF PERMIT SUBMISSION.

FIRE PROTECTION SYSTEM SHALL BE IN ACCORDANCE WITH AND SUBJECT TO NFPA AND OBC REGULATIONS.

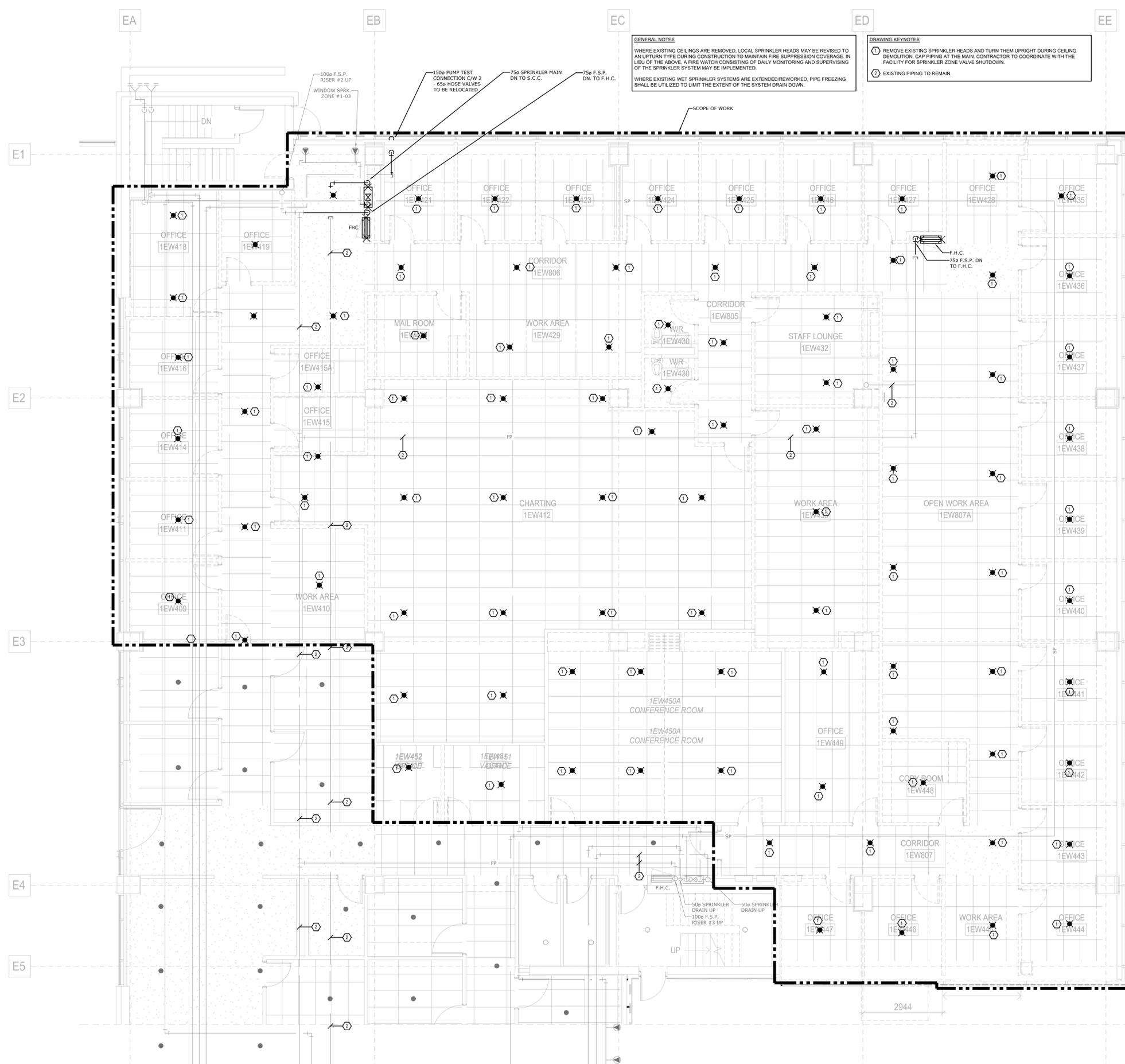
- FIRE PROTECTION NOTES**
- CONTRACTOR TO INCLUDE FOR ALL OFFSETS REQUIRED FOR COORDINATION WITHIN MECHANICAL AND ELECTRICAL SERVICES. THE OFFSETTING INCLUDES ALL HVAC, HYDRONICS, PLUMBING AND FIRE PROTECTION SERVICES.
 - THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. THE FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED SPRINKLER CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR THE FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
 - CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
 - THE CONTRACTOR SHALL PROVIDE FIRE-STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE-RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE-RATED WALL OR FLOOR.
 - COORDINATE WITH HOSPITAL OF SHUTTING DOWN AND DRAINING FIRE LINE PRIOR TO COMMENCING NEW WORK. PROVIDE FIRE WATCH AS REQUIRED TO ENSURE BUILDING SAFETY DURING SPRINKLER MAIN PIPE REMOVAL.
 - SPRINKLER PIPES SHALL NOT BE INSTALLED BENEATH CEILING MOUNTED MECHANICAL EQUIPMENT.

NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD / Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.09

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
 BELOW GRADE FLOOR PLAN - NEW WORK - FIRE PROTECTION

PROJECT NO: MRK-23004289
CHECKED: S.S.
DRAWING NO: M-400



GENERAL NOTES
 WHERE EXISTING CEILING ARE REMOVED, LOCAL SPRINKLER HEADS MAY BE REVISED TO AN UPTURN TYPE DURING CONSTRUCTION TO MAINTAIN FIRE SUPPRESSION COVERAGE. IN LIEU OF THE ABOVE, A FIRE WATCH CONSISTING OF DAILY MONITORING AND SUPERVISING OF THE SPRINKLER SYSTEM MAY BE IMPLEMENTED.
 WHERE EXISTING WET SPRINKLER SYSTEMS ARE EXTENDED/REWORKED, PIPE FREEZING SHALL BE UTILIZED TO LIMIT THE EXTENT OF THE SYSTEM DRAIN DOWN.

DRAWING KEYNOTES
 ① REMOVE EXISTING SPRINKLER HEADS AND TURN THEM UPRIGHT DURING CEILING DEMOLITION. CAP PIPING AT THE MAIN. CONTRACTOR TO COORDINATE WITH THE FACILITY FOR SPRINKLER ZONE VALVE SHUTDOWN.
 ② EXISTING PIPING TO REMAIN.

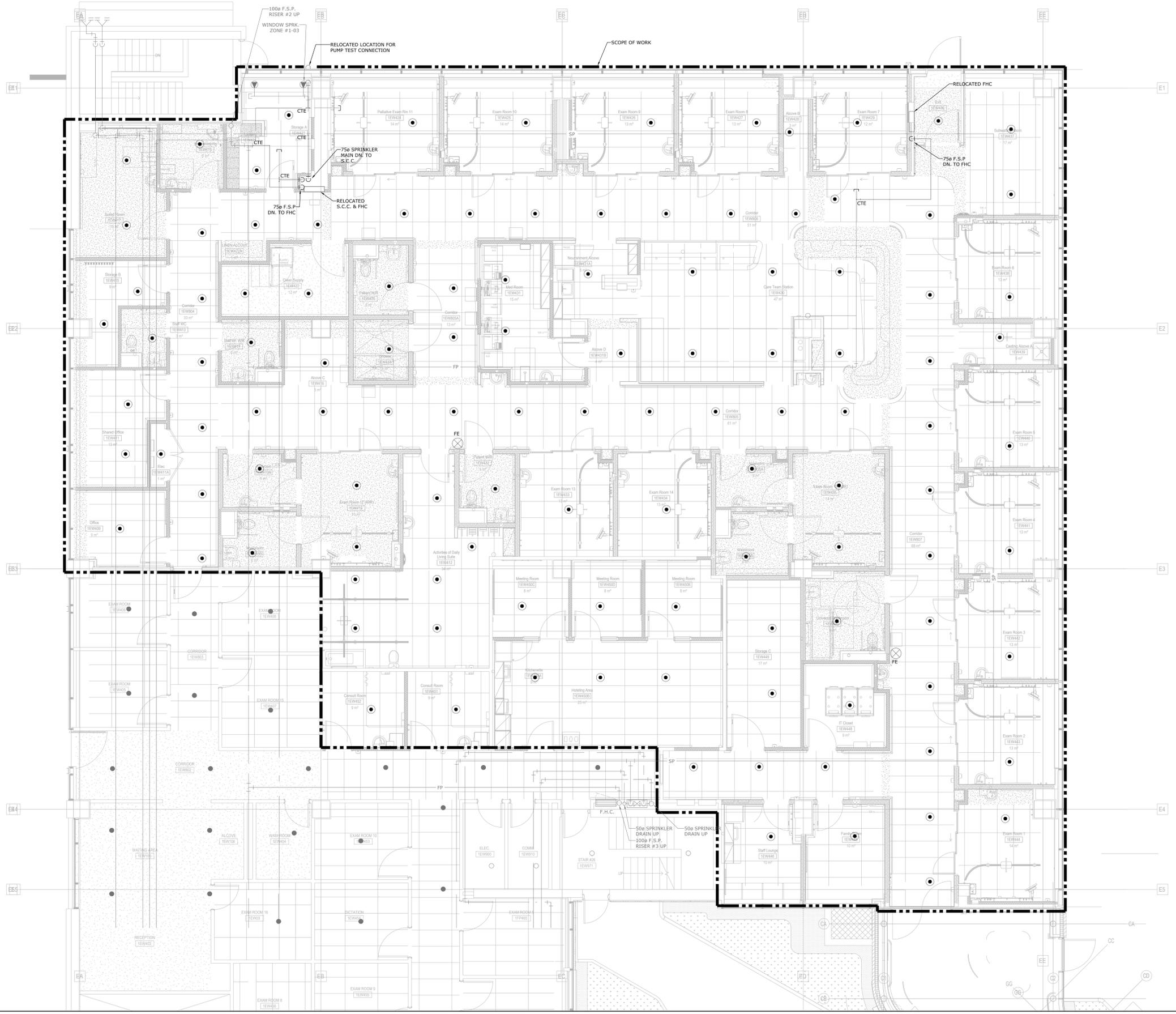
① LEVEL 1 FLOOR PLAN - DEMO - FIRE PROTECTION
 1:50

NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.29
6	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD / Permit	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Progress	2024.04.09
NO.	DESCRIPTION	DATE

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
 LEVEL 1 FLOOR PLAN - DEMO - FIRE PROTECTION

PROJECT NO: MRK-23004289
 CHECKED: P.R.
 DRAWING NO: M-401

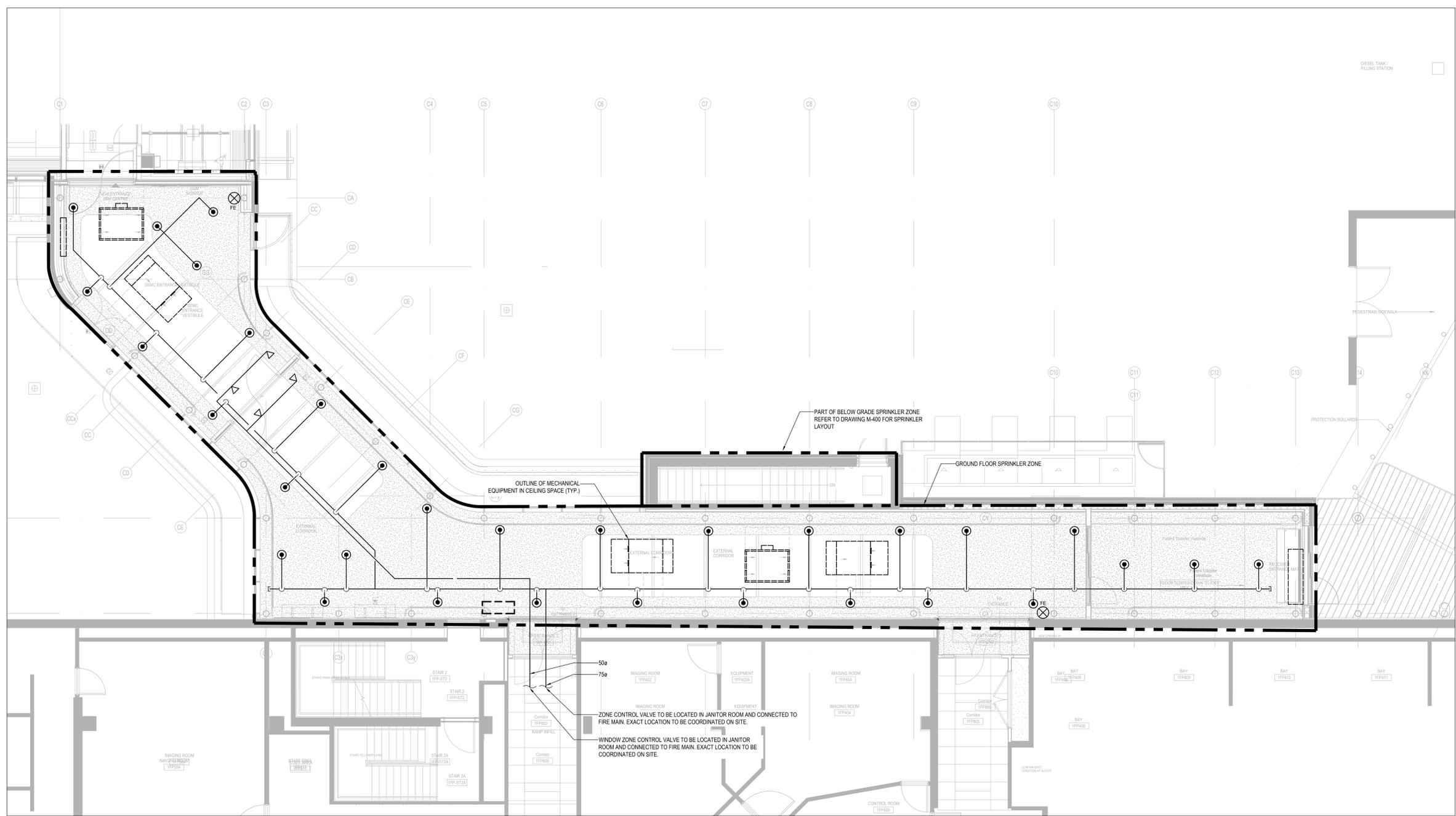


NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.06
7	Issued for Addendum M-01	2024.10.25
6	Issued for Revise	2024.10.11
5	Issued for 100% CD	2024.09.27
4	Issued for 90% CD	2024.09.09
3	Issued for 50% CD / Permit	2024.08.02
2	Issued for 100% DD	2024.05.10
1	Issued for Design Development Progress	2024.04.05

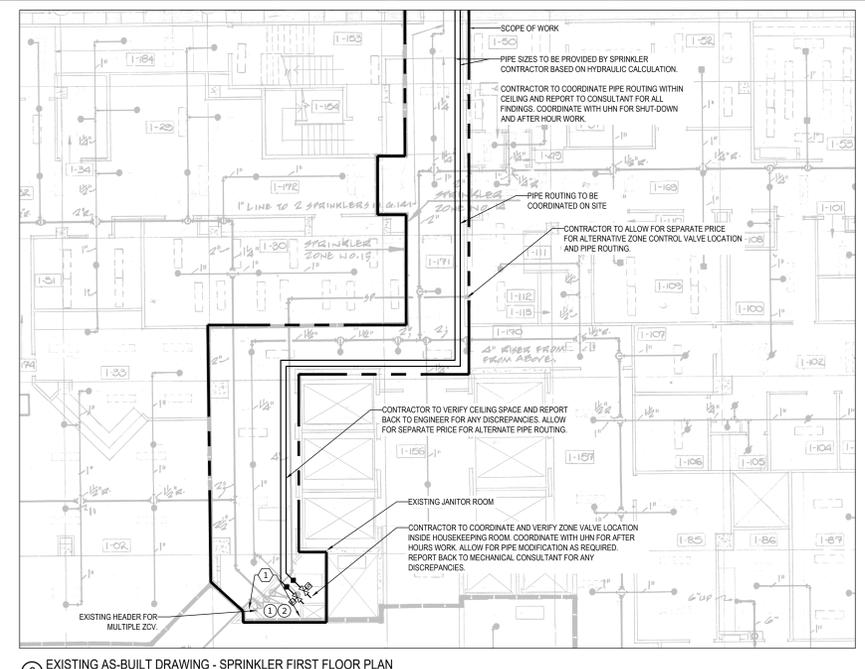
PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

LEVEL 1 FLOOR PLAN - NEW WORK - FIRE PROTECTION

PROJECT NO: MRK-23004289 DRAWING NO: M-411A
 CHECKED: P.R.



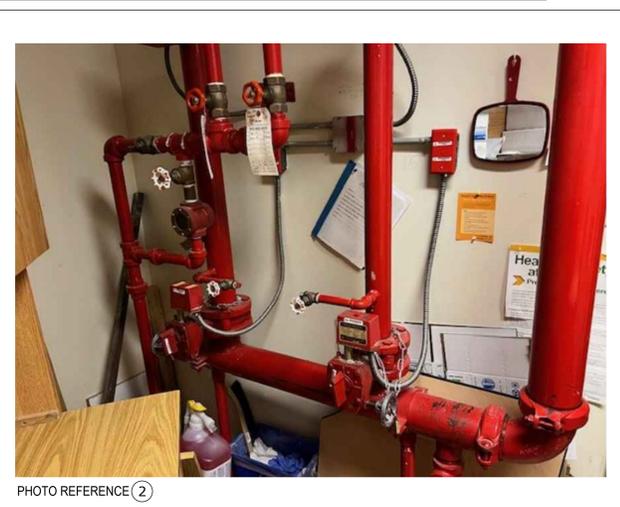
1 LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - FIRE PROTECTION
 1:50



2 EXISTING AS-BUILT DRAWING - SPRINKLER FIRST FLOOR PLAN
 1:100



3 JANITOR ROOM HEADER
 N.T.S.



4 JANITOR ROOM HEADER
 N.T.S.

NOTE: CONTRACTOR TO SUBMIT SPRINKLER SHOP DRAWINGS WITH THE ENGINEER'S STAMP AND THE HYDRAULIC LOAD CALCULATIONS TO THE CITY AS PART OF PERMIT SUBMISSION.
 FIRE PROTECTION SYSTEM SHALL BE IN ACCORDANCE WITH AND SUBJECT TO NFPA AND OBC REGULATIONS.

KEYNOTES
 1 CONTRACTOR TO INCLUDE FOR FLUSHING AND SCOPING OF EXISTING HUB DRAIN AND HOUSEKEEPING DRAIN (MIN 30" Ø) AND PROVIDE THE UPDATED REPORT C/W PICTURES FOR THE DRAINAGE SYSTEM.

- FIRE PROTECTION NOTES
- CONTRACTOR TO INCLUDE FOR ALL OFFSETS REQUIRED FOR COORDINATION WITHIN MECHANICAL AND ELECTRICAL SERVICES. THE OFFSETTING INCLUDES ALL HVAC, HYDRONICS, PLUMBING AND FIRE PROTECTION SERVICES.
 - THE DRAWINGS AND SPECIFICATIONS ARE PROVIDING THE MINIMUM PERFORMANCE REQUIREMENTS. THE FIRE PROTECTION SYSTEM SHALL BE PREPARED, COMPLETE, STAMPED, SIGNED, AND APPROVED BY A LICENSED SPRINKLER CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR THE FLOW TEST INFORMATION PRIOR TO PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
 - CONTRACTOR TO PROVIDE FIRE WATCH AS REQUIRED TO MAINTAIN FIRE SAFETY OF THE CONSTRUCTION SITE SCOPE AREA.
 - THE CONTRACTOR SHALL PROVIDE FIRE STOPPING ON ALL NEW PIPING AND CONDUIT PENETRATIONS THROUGH A FIRE-RATED WALL OR FLOOR AND ANY HOLES THAT RESULT FROM REMOVAL OF EXISTING SERVICES THROUGH A FIRE-RATED WALL OR FLOOR.
 - COORDINATE WITH HOSPITAL OF SHUTTING DOWN AND DRAINING FIRE LINE PRIOR TO COMMENCING NEW WORK. PROVIDE FIRE WATCH AS REQUIRED TO ENSURE BUILDING SAFETY DURING SPRINKLER MAIN PIPE REMOVAL.
 - SPRINKLER PIPES SHALL NOT BE INSTALLED BENEATH CEILING MOUNTED MECHANICAL EQUIPMENT.

SCOPE OF WORK
 PIPE SIZES TO BE PROVIDED BY SPRINKLER CONTRACTOR BASED ON HYDRAULIC CALCULATION.
 CONTRACTOR TO COORDINATE PIPE ROUTING WITHIN CEILING AND REPORT TO CONSULTANT FOR ALL FINDINGS. COORDINATE WITH UHN FOR SHUT-DOWN AND AFTER HOUR WORK.
 PIPE ROUTING TO BE COORDINATED ON SITE.
 CONTRACTOR TO ALLOW FOR SEPARATE PRICE FOR ALTERNATIVE ZONE CONTROL VALVE LOCATION AND PIPE ROUTING.
 CONTRACTOR TO VERIFY CEILING SPACE AND REPORT BACK TO ENGINEER FOR ANY DISCREPANCIES. ALLOW FOR SEPARATE PRICE FOR ALTERNATE PIPE ROUTING.
 CONTRACTOR TO COORDINATE AND VERIFY ZONE VALVE LOCATION INSIDE HOUSEKEEPING ROOM. COORDINATE WITH UHN FOR AFTER HOURS WORK. ALLOW FOR PIPE MODIFICATION AS REQUIRED. REPORT BACK TO MECHANICAL CONSULTANT FOR ANY DISCREPANCIES.
 EXISTING JANITOR ROOM
 EXISTING HEADER FOR MULTIPLE ZCV

NO.	DESCRIPTION	DATE
1	Issued for Design Development Progress	2024.04.09
2	Issued for 100% CD	2024.05.10
3	Issued for 90% CD / Permit	2024.05.02
4	Issued for 90% CD	2024.05.09
5	Issued for 100% CD	2024.05.27
6	Issued for 100% CD	2024.10.25
7	Issued for Addendum M-01	2024.11.06
8	Issued for Addendum M-02	2024.11.06
9	Issued for Addendum M-03	2024.11.12

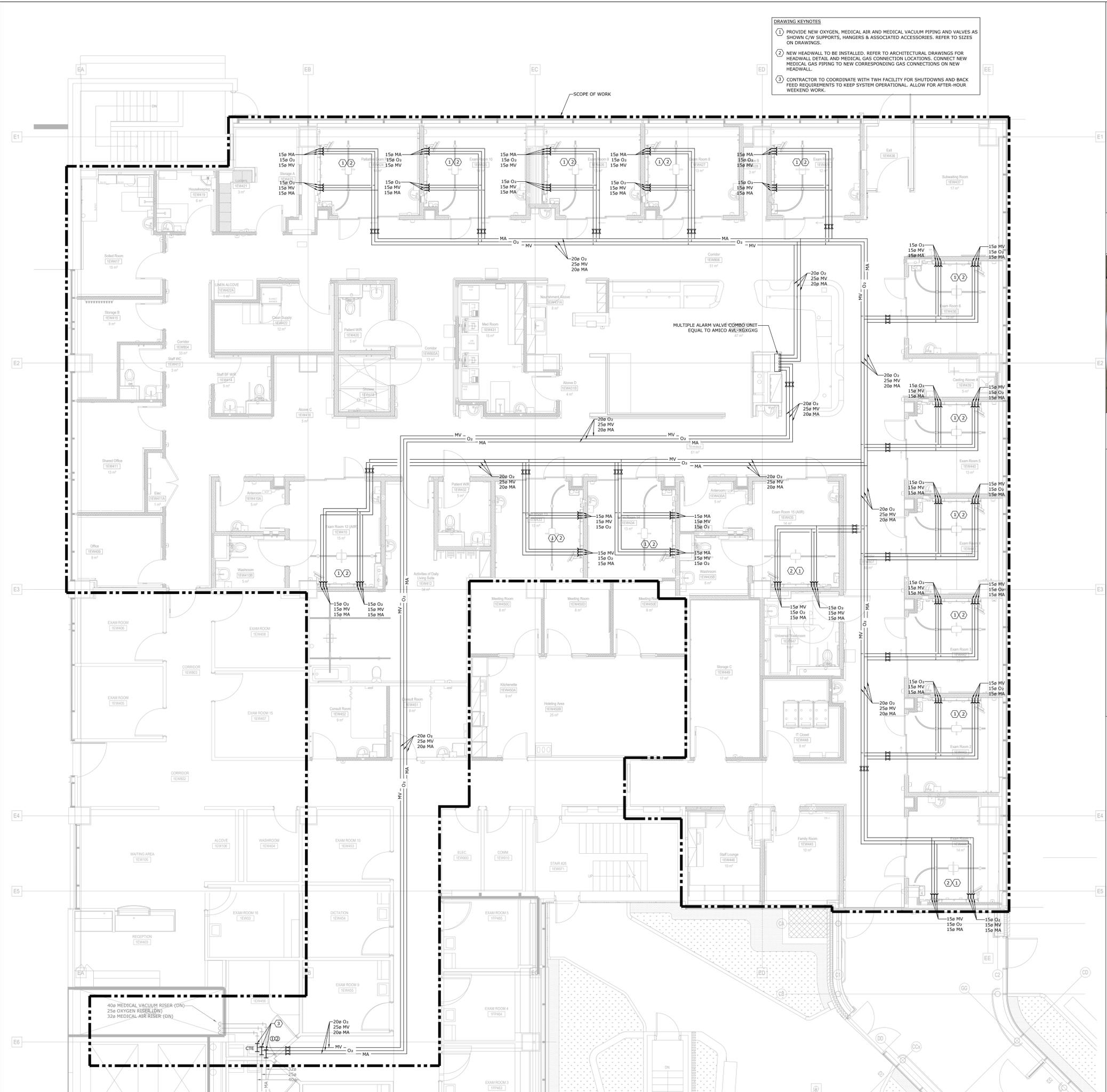
PROJECT:
 Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
 LEVEL 1 FLOOR PLAN - CORRIDOR - NEW WORK - FIRE PROTECTION

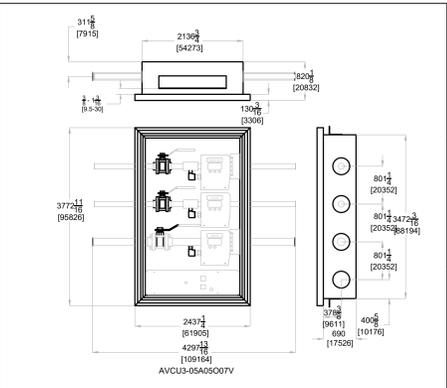
PROJECT NO:
 MRK-23004289

DRAWING NO:
M-411B

CHECKED:
 S.S.



- DRAWING KEYNOTES**
- 1 PROVIDE NEW OXYGEN, MEDICAL AIR AND MEDICAL VACUUM PIPING AND VALVES AS SHOWN C/W SUPPORTS, HANGERS & ASSOCIATED ACCESSORIES. REFER TO SIZES ON DRAWINGS.
 - 2 NEW HEADWALL TO BE INSTALLED. REFER TO ARCHITECTURAL DRAWINGS FOR HEADWALL DETAIL AND MEDICAL GAS CONNECTION LOCATIONS. CONNECT NEW MEDICAL GAS PIPING TO NEW CORRESPONDING GAS CONNECTIONS ON NEW HEADWALL.
 - 3 CONTRACTOR TO COORDINATE WITH TWH FACILITY FOR SHUTDOWNS AND BACK FEED REQUIREMENTS TO KEEP SYSTEM OPERATIONAL. ALLOW FOR AFTER-HOUR WEEKEND WORK.



2 MEDICAL GAS ZONE VALVE B2 DETAIL



PHOTO REFERENCE 1

3 EXISTING MEDICAL GAS PIPING

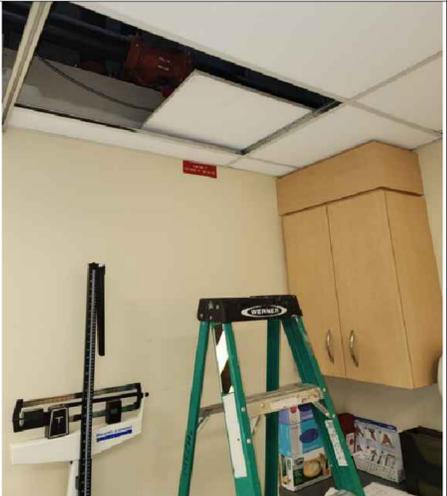


PHOTO REFERENCE 2

4 EXISTING MEDICAL GAS PIPING LOCATION

CLIENT:
UHN University Health Network
 Toronto Western Hospital
 399 Bathurst Street
 Toronto ON M5T 2S8
 www.uhn.ca

ARCHITECT:
 CUMMILLUS ARCHITECTS INC.
 160 Pears Ave. - Suite 300
 Toronto, ON M5R 3P8
 416-539-0763
 www.cummillus.com

CONSULTANT:
 exp.
 1 800 695 2017 / 1 800 695 0167
 220 Commerce Valley Drive West, Suite 110
 Markham, ON L3T 0A6
 Canada
 www.exp.com

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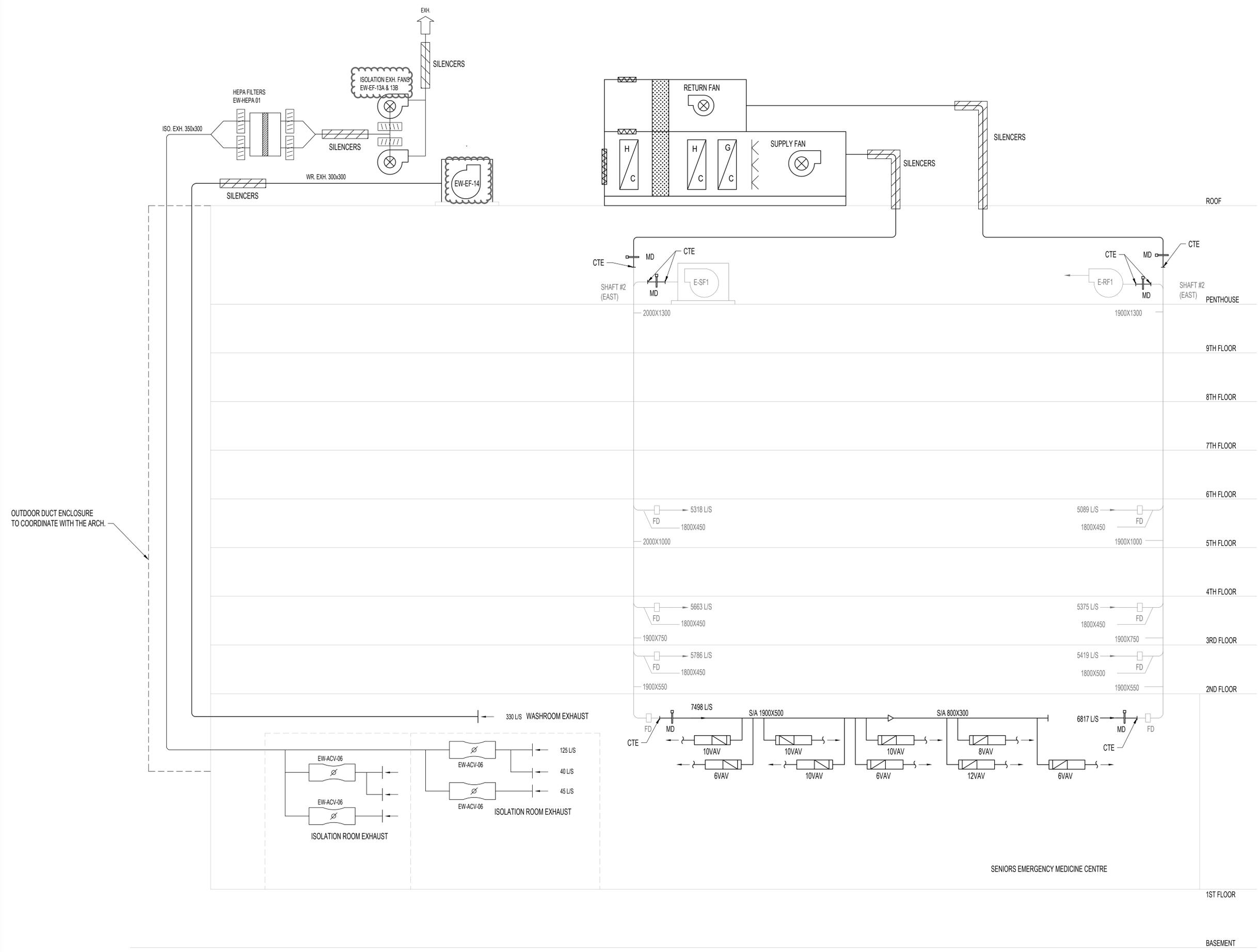
NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024 11 12
8	Issued for Addendum M-02	2024 11 06
7	Issued for Addendum M-01	2024 10 25
6	Issued for Tender	2024 10 11
5	Issued for 100% CD	2024 09 27
4	Issued for 90% CD	2024 08 09
3	Issued for 50% CD - Permit	2024 08 02
2	Issued for 100 DD	2024 05 10
1	Issued for Design Development Progress	2024 04 09
NO.	DESCRIPTION	DATE

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
 LEVEL 1 FLOOR PLAN - NEW WORK -
 MEDICAL GAS

PROJECT NO:
 MRK-23004289

DRAWING NO:
M-501



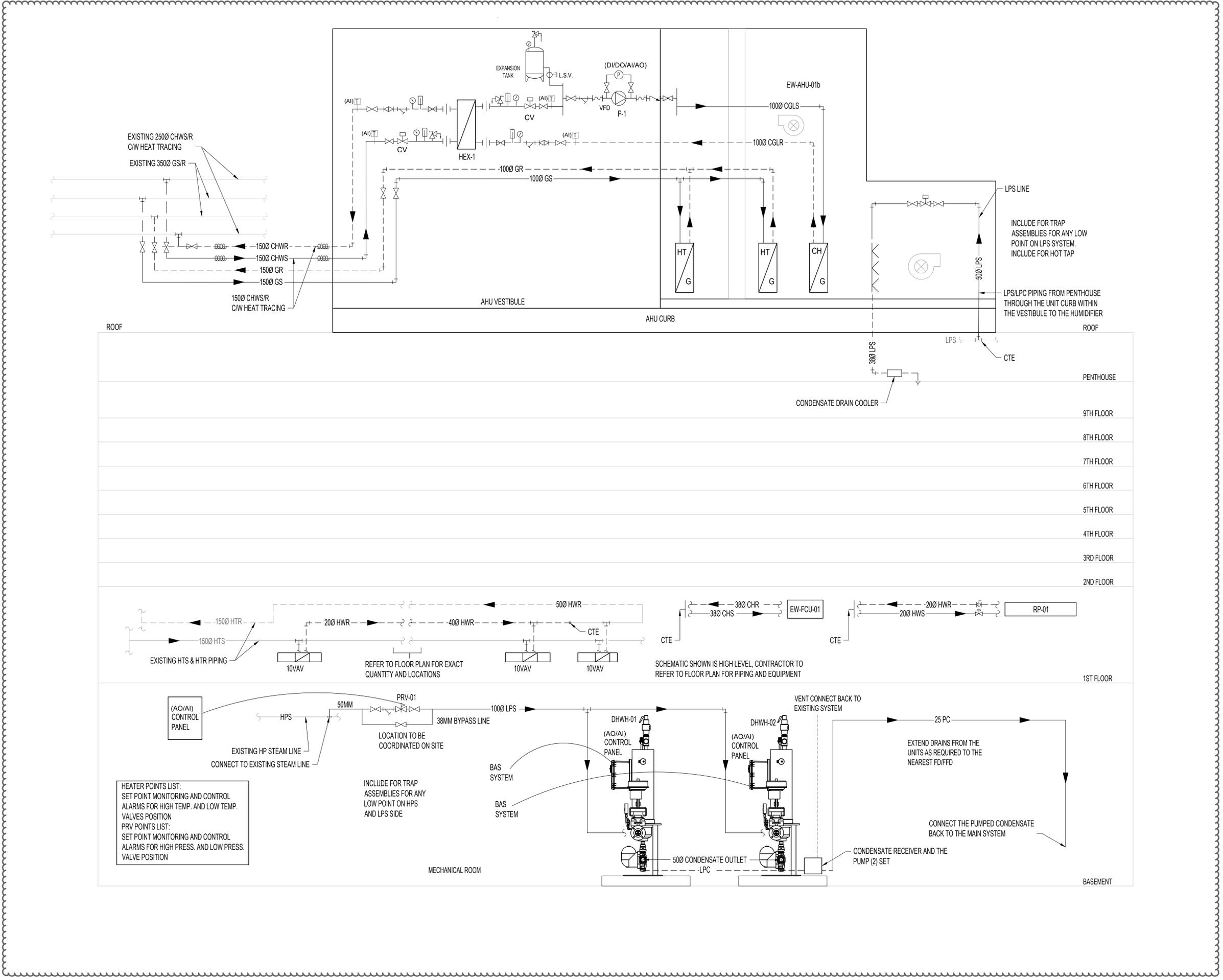
SENIORS EMERGENCY MEDICINE CENTRE

NO	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024-11-12
8	Issued for Addendum M-02	2024-11-06
7	Issued for Addendum M-01	2024-10-29
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4	Issued for 90% CD	2024-09-09
3	Issued for 50% CD / Permit	2024-08-02
2	Issued for 100 DD	2024-05-10
1	Issued for Design Development Progress	2024-04-09
NO		

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) &
 External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
 VENTILATION SCHEMATIC DIAGRAMS

PROJECT NO: MRK-23004289
 DRAWING NO: M-601
 CHECKED: S.S.



EXISTING 2500 CHWS/R
 C/W HEAT TRACING
 EXISTING 3500 GS/R
 1500 CHWR
 1500 CHWS
 1500 GR
 1500 GS
 1500 CHWS/R
 C/W HEAT TRACING

INCLUDE FOR TRAP
 ASSEMBLIES FOR ANY LOW
 POINT ON LPS SYSTEM.
 INCLUDE FOR HOT TAP

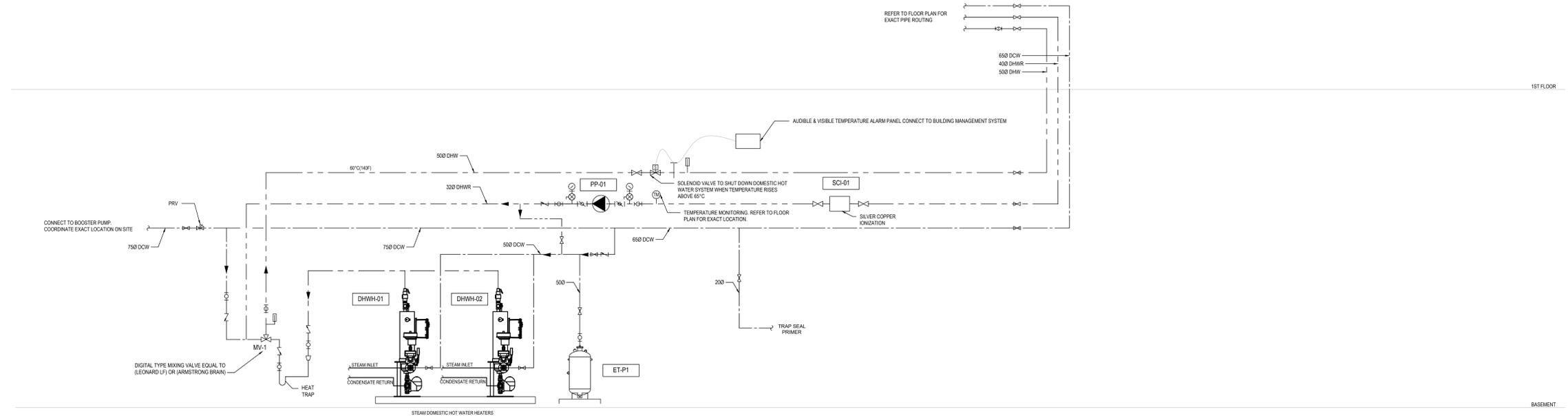
HEATER POINTS LIST:
 SET POINT MONITORING AND CONTROL
 ALARMS FOR HIGH TEMP. AND LOW TEMP.
 VALVES POSITION
 PRV POINTS LIST:
 SET POINT MONITORING AND CONTROL
 ALARMS FOR HIGH PRESS. AND LOW PRESS.
 VALVE POSITION

INCLUDE FOR TRAP
 ASSEMBLIES FOR ANY
 LOW POINT ON HPS
 AND LPS SIDE

NO.	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024-11-12
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7	Issued for Addendum M-01	2024-10-29
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3	Issued for 50% CD / Permit	2024-08-02
2	Issued for 100 DD	2024-05-10
1	Issued for Design Development Progress	2024-04-09
NO.	DESCRIPTION	DATE

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

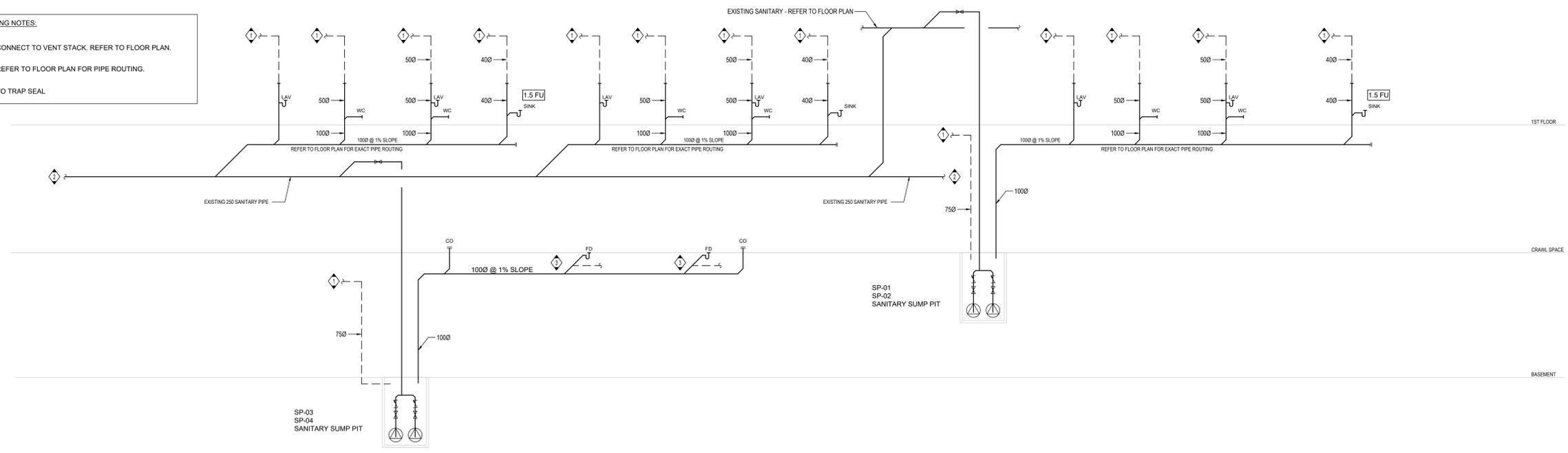
TITLE:
HYDRONIC & PIPING SCHEMATIC DIAGRAMS



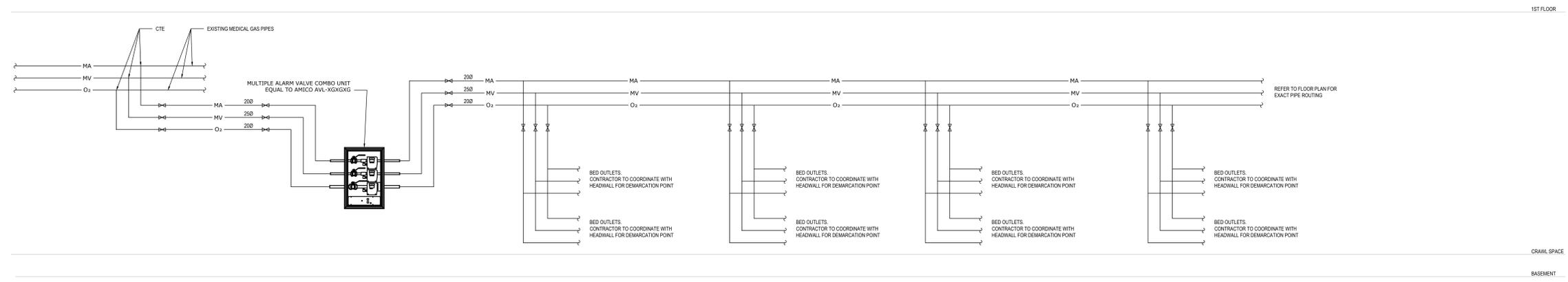
1 PLUMBING SCHEMATIC DIAGRAM
M-603

DRAWING NOTES:

- ◇ CONNECT TO VENT STACK. REFER TO FLOOR PLAN.
- ◇ REFER TO FLOOR PLAN FOR PIPE ROUTING.
- ◇ TO TRAP SEAL



2 SANITARY SCHEMATIC DIAGRAM
M-603



3 MEDICAL GAS SCHEMATIC DIAGRAM
M-603

NO.	REVISION	DESCRIPTION	DATE
9	Issued for Addendum M-03		2024-11-12
8	Issued for Addendum M-02		2024-11-06
7	Issued for Addendum M-01		2024-10-29
6	Issued for Tender		2024-10-11
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4	Issued for 90% CD		2024-09-09
3	Issued for 50% CD / Permit		2024-08-02
2	Issued for 100 DD		2024-05-10
1	Issued for Design Development Progress		2024-04-09
NO.			

PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
PLUMBING, SANITARY & MEDICAL GAS SCHEMATIC DIAGRAMS

PROJECT NO:
MRK-23004289

DRAWING NO:
M-603

CHECKED:
S.S.

AIR CURTAIN SCHEDULE (ELECTRIC)																
SYSTEM REFERENCE TAG	LOCATION	DESCRIPTION	MANUFACTURER	MODEL	AIRFLOW (L/S)	HEATING CAPACITY (KW)	ELECTRICAL		EMERGENCY POWER (Y/N)	REMOLE THERMOSTAT (Y/N)	UNIT				WEIGHT (KG)	REMARKS
							MOTOR (KW)	POWER (V/PHz)			NZ WIDTH (MM)	WIDTH (MM)	HEIGHT (MM)	DEPTH (MM)		
FP-ACH11	CORRIDOR EAST DOOR	CEILING MOUNTED	POWERED AIRE	CHA-2-72 (E)	1659	20	2 x 0.75	575/360	Y	N	1800	1900	426	515	182	
NOTES: 1. UNIT IS CW LOCAL CONTROL PANEL/DO NOT CONNECT WITH BACHET CARD TO BE CONNECTED TO BAS CONTROLS 2. MECHANICAL CONTRACTOR TO INCLUDE FOR STEP DOWN TRANSFORMER IF REQUIRED AND ELEC. TO PROVIDE POWER. 3. INTERLOCK UNIT WITH CONCEALED DOOR SWITCH AND UNIT TO BE BOTTOM SUPPLY AND BOTTOM RETURN. 4. UNIT COLOR TO BE COORDINATED ON SITE AND WITH ARCH. BEFORE ORDERING. 5. FOR EQUALS OR ALTERNATES - THE MIN LENGTH WILL BE TO COVER THE DOOR OPENING AND IF THE UNIT IS LONGER ITS TO BE ACCEPTED BY THE CONSULTANTS. 6. MOUNTING AS PER MANUFACTURER RECOMMENDATION																

ENERGY RECOVERY VENTILATOR SCHEDULE (ERV)																
SYSTEM REFERENCE TAG	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	AIR FLOW (CFM)	AIR FLOW (L/S)	HEATING COIL (ELEC) TOTAL (KW)	ELECTRICAL (UNIT AND ELEC. HEATER)				EMERGENCY POWER (Y/N)	FIRE SHUT DOWN (Y/N)	UNIT WEIGHT (KG)	REMARKS	
								FLA (A)	MCA (A)	MROPD (A)	POWER (V/Hz/PH)					
FP-AH2ERV-1	ENERGY RECOVERY	CEILING MOUNTED	OXYGEN 8	A16N	500	236	2.00	14.9	18.3	20	208/60/1	Y	N	200.0		
FP-AH4ERV-1	ENERGY RECOVERY	CEILING MOUNTED	OXYGEN 8	A16N	500	236	2.00	14.9	18.3	20	208/60/1	Y	N	200.0		
NOTES: 1. ERV DESIGNED WITH FAN AND ELEC. HEATER FOR PRE HEAT 2. PROVIDE ECM MOTOR 3. ALL UNITS TO HAVE BOTTOM ACCESS FOR SERVICE. 4. MERV 13B FILTERS 5. MAIN POWER WILL FEED THE ELEC. HEATER AND ELECTRICAL CONTRACTOR TO PROVIDE WIRING FROM HEATER TO THE UNIT 6. MAINTAIN CLEARANCE AS REQUIRED. UNIT TO BE INSTALLED SUCH A WAY THAT IT CAN BE DROPPED FOR MAINTENANCE WITHOUT PIPING REWORK.																

CEILING MOUNTED VENTILATION UNIT SCHEDULE																													
SYSTEM REFERENCE TAG	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	AIR FLOW			COOLING COIL (DX)				HEATING COIL (30% P GLY)					SILENCER		ELECTRICAL		EMERGENCY POWER (Y/N)	FIRE SHUT DOWN (Y/N)	UNIT WEIGHT (KG)	REMARKS					
					(CFM)	(L/S)	(Pa)	TOTAL (KW)	SENSIBLE (KW)	EAT DB (°C)	EAT WB (°C)	LAT DB (°C)	LAT WB (°C)	TOTAL (KW)	EAT DB (°C)	LAT DB (°C)	EWT (°C)	LWT (°C)	FLOW (L/S)	PD (KPA)					INLET (Y/N)	DISCHARGE (Y/N)	MCA (A)	MROPD (A)	POWER (V/Hz/PH)
FP-ACH12	CORRIDOR VENT.	CORRIDOR CEILING MOUNTED	DAIKIN	BCHD0161	1500	708	124	15.6	13	26.7	18.3	12.0	11.7	5.4	21.10	27.3	50.7	37.8	0.095	0.81	N	N	19.8	25	115/60/1	Y	N	216	
FP-ACH13	CORRIDOR VENT.	CORRIDOR CEILING MOUNTED	DAIKIN	BCHD0161	1500	708	124	15.6	13	26.7	18.3	12.0	11.7	5.4	21.10	27.3	50.7	37.8	0.095	0.81	N	N	19.8	25	115/60/1	Y	N	216	
FP-ACH14	CORRIDOR VENT.	CORRIDOR CEILING MOUNTED	DAIKIN	BCHD0161	1500	708	124	15.6	13	26.7	18.3	12.0	11.7	5.4	21.10	27.3	50.7	37.8	0.095	0.81	N	N	19.8	25	115/60/1	Y	N	216	
NOTES: 1. UNITS TO BE COMPLETE WITH Z' (50MM) MERV 13 FILTER SECTION. 2. PROVIDE ECM MOTOR 3. ALL UNITS TO HAVE BOTTOM ACCESS FOR SERVICE AND INSTALLED IN SUCH A WAY THAT THE UNIT CAN BE DROPPED DOWN FOR MAINTENANCE WITHOUT THE PIPING REWORK. 4. REFER TO FLOOR PLANS FOR LOCATIONS AND PROVIDE REQUIRED CLEARANCE AS PER THE MANUFACTURER RECOMMENDATION 5. REFER TO CONDENSING UNIT SCHEDULE FOR OUTDOOR UNITS. 6. FOCUS ARE COMPLETE WITH DRAIN PAN AND LEAK DETECTION																													

AIR COOLED CONDENSING UNIT SCHEDULE														
SYSTEM REFERENCE TAG	AC INDOOR UNIT REFERENCE	LOCATION	MANUFACTURER	MODEL	NOMINAL COOLING CAPACITY		ELECTRICAL		EMERGENCY POWER (Y/N)	FIRE ALARM SHUT DOWN (Y/N)	WEIGHT (KG)	REMARKS		
					(KW)	(Tons)	MOP AMPS	VOLTAGE (V/PHz)						
FP-AH12-CU	FP-AH12	OUTDOOR	REFPLUS	OEZ-050-1H1-SD	15.94	40	26.38	208/60/3	Y	N	172			
FP-AH13-CU	FP-AH13	OUTDOOR	REFPLUS	OEZ-050-1H1-SD	15.94	40	26.38	208/60/3	Y	N	172			
FP-AH14-CU	FP-AH14	OUTDOOR	REFPLUS	OEZ-050-1H1-SD	15.94	40	26.38	208/60/3	Y	N	172			
NOTES: 1. REFRIGERANT SHALL BE R410A OR ANY LATEST REF. AVAILABLE AS LONG AS THE UNIT CAPACITY AND SIZING IS MET. 2. CONTRACTOR TO COORDINATE ON SITE FOR THE REFRIGERANT PIPING SIZE AND INSTALLATION BASED ON MANUFACTURER RECOMMENDATION. 3. MECHANICAL CONTRACTOR TO COORDINATE WALL, CEILING AND ROOF PENETRATIONS AND ELECTRICAL REQUIREMENTS ON SITE. 4. REFER TO ASSOCIATED INDOOR UNIT SCHEDULE FOR COMPLETE SYSTEM INFORMATION 5. UNITS COMPLETE WITH LOW-AMBIENT KIT. FINAL LOCATION AND ENCLOSURE TO BE COORDINATED WITH ARCH. DRAWINGS														

SNOW MELT ZONES CAPACITY OUTPUT SCHEDULE														
REFERENCE ZONE TAG	DESCRIPTION /LOCATION	FLUID TYPE	TOTAL OUTPUT		EGT (°C)	LGT (°C)	FLUID PD (KPa)	PRESSURE RATING (KPa)	APP. AREA (m²)	OUTPUT/AREA (W / m²)	TUBE DIAMETER (MM)	NO OF CIRCUITS (QTY)	MANIFOLD CABINET SIZE (MMxMMxMM)	REMARKS
			(MBH)	(KW)										
SM-ZONE-01	SEM COURTYARD	GLYCOL	129.0	37.8	0.86	51.6	40.6	23.50	600.0	90.0	420.0	20.0	1000x500x150	FINAL COORINATION TO BE DONE BASED ON SHOP DRAWINGS
NOTES: 1. MECHANICAL CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR MANIFOLD LOCATION. 2. MECHANICAL CONTRACTOR TO COORDINATE WITH ARCHITECTURAL/LANDSCAPE DRAWINGS FOR EXACT ZONE BOUNDARY. 3. INSTALL SNOW ICE DETECTOR IN LOCATION EXPOSED TO OUTDOOR WEATHER CONDITIONS. SLEEVE SENSOR CABLE TO THE CONTROL. 4. COORDINATE THE WIRE MESH, INSULATION ETC. WITH THE SUPPLIER AND WITH GENERAL CONTRACTOR 5. USE GLYCOL MIN. 30% FOR THE SNOW MELT SYSTEM TO MATCH EXISTING. 6. SUPPLIER TO INCLUDE THE CONTROLLER ETC WITH BACHET CARD IN THE CORRIDOR CEILING. 7. CONTRACTOR TO ENSURE FULL INSTALLATION AND COORDINATION ON SITE 8. SLEEVE ALL PIPING PASSING THRU THE SNOW MELT ZONE.														

HEAT EXCHANGER SCHEDULE																	
SYSTEM REFERENCE TAG	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	HEAT TRANSFER (KW)	COLD SIDE (BUILDING - WATER)				COLD SIDE (AHU COIL - GLYCOL)				PRESSURE RATING (PSI)	WEIGHT (KG)	REMARKS	
						FLUID	FLOW (L/S)	EWT (°C)	LWT (°C)	PD (KPA)	FLUID	FLOW (L/S)	EWT (°C)				LWT (°C)
EW-HEX-AHU-01b	AHU COOLING	AHU VESTIBULE	BELL & GOSSETT	AP86	530	WATER	14	7.2	16.1	27	30%	15	17.2	8.3	33.5	1,034	2,230
NOTES: 1. HEAT EXCHANGER IS TO BE RATED IN ACCORDANCE WITH AHRI STANDARD 400 2. PROVIDE 25-50MM RUBBER/NEOPRENE PADS. THE HEX IS TO BE INSTALLED INTEGRAL TO THE UNIT VESTIBULE AND COODINATED BY AHU UNIT SUPPLIER. CONTRACTOR TO PROVIDE PROPER CLEARANCE FOR MAINTENANCE.																	

PUMP SCHEDULE (HYDRONIC SYSTEM)															
SYSTEM REFERENCE TAG	DESCRIPTION SYSTEM	LOCATION	MANUFACTURER	MODEL	FLUID TYPE	FLOW RATE (L/S)	PUMP HEAD (KPA)	MOTOR SIZE		ELECTRICAL (V/PHz)	VFD (Y/N)	OPERATION (DUTY/STANDBY)	PRESSURE RATING (KPA)	EMERGENCY POWER (Y/N)	REMARKS
								MOTOR POWER (KW)	DUTY POINT POWER (KW)						
EW-P-AHU-01b	COOLING PUMP	AHU VESTIBULE	BELL & GOSSETT	E-80 SERIES 4XX7B	30% P.G.	15	82	2.2	2.0	575/360	Y	DUTY	1207	Y	
NOTES: 1. BAS INTERFACE FOR SETPOINT MONITORING, ALARM, ETC. 2. PUMP COMPLETE WITH VFD. MECHANICAL CONTRACTOR TO SUPPLY AND ELECTRICAL CONTRACTOR TO INSTALL THE VFD. 3. PROVIDE SUCTION GUIDE & FLO-TREX VALVE 4. PROVIDE 25-50MM RUBBER/NEOPRENE PADS, THE PUMP IS TO BE INSTALLED INTEGRAL TO THE UNIT VESTIBULE AND COODINATED BY AHU UNIT SUPPLIER. CONTRACTOR TO PROVIDE PROPER CLEARANCE FOR MAINTENANCE.															

STEAM PRESSURE REDUCING VALVE (PRV) SCHEDULE								
SYSTEM REFERENCE TAG	DESCRIPTION	MODEL	INLET PRESSURE (KPA)	OUTLET PRESSURE (KPA)	FLOW REQUIRED (KG/HR)	BYPASS (Y/N)	PRESSURE RATING (KPA)	REMARKS
NOTES: 1. 50MM INLET AND 100MM OUTLET								

CLIENT:
 University Health Network
 Toronto Western Hospital
 399 Bathurst Street
 Toronto ON M5T 2S8
 www.uhn.ca

ARCHITECT:
 160 Pears Ave. - Suite 300
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 416-539-0783
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 1-866-696-3217 | 1-866-696-0187
 520 Commerce Valley Drive West, Suite 110
 Markham, ON L3T 0A8
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 www.asp.com

BUILDINGS EARTH & ENVIRONMENT ENERGY
 INDUSTRIAL INFRASTRUCTURE SUSTAINABILITY

9	Issued for Addendum M-03	2024-11-27
8	Issued for Addendum M-02	2024-11-06
7	Issued for Addendum M-01	2024-10-25
6	Issued for Tender	2024-09-11
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3	Issued for 50% CD / Permit	2024-08-02
2	Issued for 100 DD	2024-05-10
1	Issued for Design Development Program	2024-04-05
NO	DESCRIPTION	DATE

PROJECT:
 Seniors Emergency Medicine Centre (SEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street, Toronto, ON, M5T 2S8

TITLE:
 MECHANICAL SCHEDULES #2

PROJECT NO: MRK-23004289 | DRAWING NO:
 CHECKED: M-702

PLUMBING FIXTURE SCHEDULE												
SYSTEM REFERENCE TAG	TYPE	LOCATION	MANUFACTURER	MODEL	TRIM AND ACCESSORIES						REMARKS	
					FAUCET/VALVE	FLOW	FIXTURE DRAIN AND P-TRAP	VALVES AND SUPPLIES	CARRIER	SEAT		MISC
WC-1	WALL HUNG WATER CLOSET - NON BF	STAFF WRM	AMERICAN STANDARD	3351101.02	SLOAN SL-ROYAL 111-1-28-SG	4.8 LFP			WATTS ISCA-101-LJR	CENTOCO AM500STS00SFE-001		
WC-2	WALL HUNG WATER CLOSET - BF	PATIENT, UNIVERSAL AND BF WASHROOM	AMERICAN STANDARD	3351101.02	SLOAN ROYAL 111-YG-1-28-SG	4.8 LFP			WATTS ISCA-101-LJR	CENTOCO AM500STS00SFE-001		C/W FRANKE BACKREST - CM-16104-WM
WC-3	WATER CLOSET - BF	ACTIVITIES OF DAILY LIVING SUITE	ZURN	Z5561-LH						ZURN Z5967SS-EL		
L-1	LAVATORY - NON BF	STAFF WRM	AMERICAN STANDARD	356915.02	CHICAGO FAUCETS - 786-GN8FCABCP (RIGID)	3.8 LPM	MCQUIRE PRODRAIN MCQUIRE P-TRAP 8902CBSAN	MCQUIRE LFKC170LK	WATTS CA-411		MIXING VALVE LAWLER 570-86820	TRANSITION TO 1-1/2" P-TRAP AS PER IPAC REQUIREMENTS.
L-2	LAVATORY - BF	PATIENT, UNIVERSAL AND BF WASHROOM	AMERICAN STANDARD	0958908EC.020 0062000.020	CHICAGO FAUCETS - 786-GN8FCABCP (RIGID)	3.8 LPM	MCQUIRE PRODRAIN MCQUIRE P-TRAP 8902CBSAN	MCQUIRE LFKC170LK	WATTS CA-411-CA-481		MIXING VALVE LAWLER 570-86820	TRANSITION TO 1-1/2" P-TRAP AS PER IPAC REQUIREMENTS.
S-1	COUNTER SINK - SINGLE BOWL - HANDS FREE	NOURISHMENT, KITCHENETTE	FRANKE	LBS5808.316P-1-3	CHICAGO FAUCETS - 786-GN8FCABCP (RIGID)	5.7 LPM	MCQUIRE P-TRAP 8902CBSAN	MCQUIRE LFKC165LK	WATTS CA-421-CA-480		MIXING VALVE LAWLER 570-86820	
HHS-1	HAND HYGIENE SINK - FOOT DEPAL	REFER TO DRAWINGS	AMERICAN STANDARD	9118111.02	CHICAGO FAUCET 626-FCABCP	5.7 LPM	MCQUIRE P-TRAP 8902CBSAN	634-EPLDABCP	WATTS CA-421-M80		MIXING VALVE LAWLER 570-86820	
HHS-2	HAND HYGIENE SINK - HANDS FREE - BARRIER FREE	REFER TO DRAWINGS	WHITEHALL	4151-CSG-H1	CHICAGO FAUCET 116-429-AB-1	5.7 LPM	MCQUIRE P-TRAP 8902CBSAN	MCQUIRE LFKC165LK	WATTS CA-421-M80		MIXING VALVE 243.260.00.1242.340.00.1	HARDWARE CHICAGO FAUCET 243.260.00.1242.340.00.1
CS-1	CASTING SINK - FLOOR MOUNTED	CASTING ALCOVE A	FRANKE	SL2424-316-12-1140F-316	CHICAGO FAUCETS - 631-GN8FCABCP	5.7 LPM					MIXING VALVE LAWLER 570-86820	COMPLETE WITH PATTERSON GLECO TRAP HV KIT - 5 GALLON - PRACTICON
SH-1	SHOWER	SHOWER ROOM	CHICAGO FAUCETS	HAND SHOWER - 624-LCP	CHICAGO FAUCETS - SH-TP6-00-023	5.5 LPM			WATTS WDS-SQNB (102MM NICKEL BRONZE)			
MS-1	MOP SINK	HOUSEKEEPING ROOM	STERN WILLIAMS	SBC-1700	CHICAGO FAUCETS - 897-317-XKCP							
BT-1	BATHTUB	ACTIVITIES OF DAILY LIVING SUITE	ZARA	ZARA II								
BF-1	BOTTLE FILLING STATION	CORRIDORS	ZARA	LZWSM8K								
EW-1	EYEWASH STATION	SOILED & HOUSEKEEPING ROOMS	BRADLEY	S19294HB, S19294HT							MIXING VALVE NAVIGATOR S19-2000 EFX8	
WS-1	WASHER DISINFECTOR	SOILED ROOM	MEIKO	SAN TOPLINE 10A	CHICAGO FAUCETS 540-LDE35-317ABCP	3.8 LPM						SUPPLIED BY UHN
TSP-1	TRAP SEAL PRIMER	REFER TO DRAWINGS	PPP	MP-500-12V								COMPLETE WITH DU-4 TO SERVE MULTIPLE FLOOR DRAINS.
FD-1	FLOOR DRAIN	REFER TO DRAWINGS										

NOTES: 1. COLOUR OF ALL FIXTURES (EXCEPT STAINLESS STEEL) & WATER CLOSET SEATS SHOULD BE WHITE.
2. QUANTITY OF FIXTURES AS INDICATED IN THE DRAWINGS.
3. FIXTURES IN KITCHEN & SERVEY AREAS ARE SUPPLIED BY OTHERS. REFER TO KITCHEN SCHEDULES ON DRAWINGS.
3. ALL FIXTURES TO BE SUPPLIED WITH MIXING VALVES.

IMPERIAL TO METRIC SIZING CONVERSION					
1/8"	3mm	1"	25mm	3"	75mm
1/4"	6mm	1-1/4"	32mm	3-1/2"	90mm
3/8"	10mm	1-1/2"	40mm	4"	100mm
1/2"	15mm	2"	50mm	5"	125mm
3/4"	20mm	2-1/2"	65mm	6"	150mm

DOMESTIC HOT WATER HEATER SCHEDULE - STEAM DOUBLE WALL												
SYSTEM REFERENCE TAG	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	HOT WATER FLOW LIS	STEAM PRESSURE (KPa)	STEAM FLOW (Kg/hr)	OPERATING TEMP. MAX. (°C)	ELECTRICAL MOP AMP	EMERGENCY POWER (Y/N)	OPERATING WEIGHT (KG)	REMARKS
DHW-H01	STEAM DOMESTIC HEATER	LEVEL 0 - MECH ROOM	COLTON INDUSTRIES	PK-08D	2.2	69	1045	71	10	120/160	455	
DHW-H02	STEAM DOMESTIC HEATER	LEVEL 0 - MECH ROOM	COLTON INDUSTRIES	PK-08D	2.2	69	1045	71	10	120/160	455	LEAD/ LAG OPERATION (ADJ.)

NOTES: 1. THE DHW EATERS ARE SKID SYSTEM AND C/W HEATERS, VALVES, CONTROLS ETC.
2. CONTRACTOR TO CONNECT THE LIPS AND CONDENSATE BACK TO THE MAIN SYSTEM AND INCLUDE FOR FREEZING AS REQUIRED
3. MATCH THE EXISTING PNEUMATIC CONTROLS FOR STEAM SYSTEM IN THE MECHANICAL ROOM
4. INCLUDE FOR CONDENSATE PUMP FOR EACH HEATER SKID TO CONNECT TO THE EXISTING SYSTEM (2 IN TOTAL)

EXPANSION TANK SCHEDULE									
EQUIPMENT TAG	DESCRIPTION	SERVICE	LOCATION	MANUFACTURER - MODEL	DIMENSIONS (MM)	MAX. WORKING PRESSURE (KPA)	TANK CAPACITY (L)	OPERATING WEIGHT (KG)	COMMENTS
ET-1	EXPANSION TANK	DOMESTIC WATER	LEVEL 0 - MECH ROOM	TACO - CMN-12P	1019 x 508	1691	440	267	DOUBLE WATER BLADDER TYPE
ET-2	EXPANSION TANK	CHILLED GLYCOL	ROOF AHU VESTIBULE	AMTROL - 200-L	610 x 965	-	-	287	

PLUMBING & DRAINAGE PUMPS													
REFERENCE TAG	SERVICE	LOCATION	TYPE	FLOW RATE LIS	HEAD PRESSURE KPA	RPM	MANUFACTURER-MODEL	MOTOR SIZE KW (HP)	ELECTRICAL POWER SUPPLY (V/PH/Hz)	STARTER TYPE	WEIGHT (KG)	EMERGENCY POWER(Y/N)	COMMENTS
PP-01	DHW RECIRCULATION	LEVEL 0	RECIRCULATION	1.30	110	3450	TACO - VR15H	0.9	208/160	-	14	NO	
SP-1	SANITARY	FOUNDATION	SUBMERSIBLE	4.7	105	3450	ZOELLER - 6294	1.11 kW	208/360	-	44	YES	DUTY C/W GUIDE RAIL Z-RAIL 38-0129 STEP-DOWN TRANSFORMER (800V/208V) TO BE SUPPLIED BY MANUFACTURER.
SP-2	SANITARY	FOUNDATION	SUBMERSIBLE	4.7	105	3450	ZOELLER - 6294	1.11 kW	208/360	-	44	YES	STAND-BY C/W GUIDE RAIL Z-RAIL 38-0129 STEP-DOWN TRANSFORMER (800V/208V) TO BE SUPPLIED BY MANUFACTURER.
SP-3	SANITARY	FOUNDATION	SUBMERSIBLE	4.7	120	3450	ZOELLER - J6294	1.11 kW	208/360	-	44	YES	DUTY C/W GUIDE RAIL Z-RAIL 38-0129 STEP-DOWN TRANSFORMER (800V/208V) TO BE SUPPLIED BY MANUFACTURER.
SP-4	SANITARY	FOUNDATION	SUBMERSIBLE	4.7	120	3450	ZOELLER - J6294	1.11 kW	208/360	-	44	YES	STAND-BY C/W GUIDE RAIL Z-RAIL 38-0129 STEP-DOWN TRANSFORMER (800V/208V) TO BE SUPPLIED BY MANUFACTURER.

NOTES:

DOMESTIC HOT WATER - COPPER SILVER IONIZATION SCHEDULE																								
REFERENCE TAG	MANUFACTURER	MODEL	SYSTEM	SERVICE	DHW SIZE	TOTAL IONIZATION OUTPUT REQUIREMENTS	WATER TREATMENT TYPE	CONTROLLER							FLOW CELL					REMARKS				
								CONTROLLER MODEL	PASSWORD PROTECTION	CONTROLLER TYPE	VARIABLE DC VOLTAGE OUTPUT CAPACITY	OPERATIONAL STATUS VOLT FREE CONTACT(S)	VISUAL ALARM	FLOW CELL MODEL NO.	NO. OF INSTALLED & ACTIVE ION CHAMBER CELLS	NO. OF SPARE ION CHAMBER CELLS	EXTERNAL JACKET COMPOSITION	ELECTRODES PER CELL	ORIENTATION		PRESSURE TOLERANCE (PSI)	TEMPERATURE TOLERANCE (C)	CONNECTION	LOCATION INSTALLED
SCI-1	CSI DEFENDER	CSI-E1	DHWR	DOMESTIC HOT WATER RETURN	32mm	10 AMPS	COPPER SILVER IONIZATION	CSI-E1+1 (or) SMX-A1+1	YES	PLC	0 - 180	1	YES - LED (GREEN / AMBER / RED)	ICR-820	2	NA	316 - SCHEDULE 40 STAINLESS STEEL	VERTICAL	≤ 250	99	32mm	DHWR	YES	1,2,3,4,5,6,7,8,9,10

NOTES:
1. CONTROLLER MUST INCLUDE INTEGRATED ELECTRICAL BREAKERS FOR EACH CHAMBER CELL(S) AND PLC
2. IONIZATION SYSTEM TO PROVIDE AUTOMATED PLC VARIABLE VOLTAGE AND CONSTANT CURRENT
3. CONTROLLER TO PROVIDE INDEPENDENT CHAMBER CELL ACTIVATION AND MONITORING
4. PROVIDE 208/160 (15 amps) TO THE COPPER SILVER IONIZATION CONTROLLER
5. ELECTRODES SHALL CONTAIN NO LESS THAN 90% COPPER AND 10% SILVER
6. CONTROLLER MUST BE INSTALLED NO MORE THAN 12 FEET FROM CHAMBER CELL(S)
7. CONTROLLER AND CHAMBER CELLS MUST BE INSTALLED AT NO LESS THAN 4 FEET FROM FLOOR
8. CONTROLLER AND CHAMBER CELLS MUST BE INSTALLED AT NO MORE THAN 6 FEET FROM THE FLOOR
9. CONTROLLER AND CHAMBER CELLS MUST BE EASILY ACCESSIBLE FOR MAINTENANCE
10. PROVIDE LAMOTTE DC1500 ELECTRONIC COLORIMETER (COPPER)

ELECTRIC HEAT TRACING SCHEDULE								
REFERENCE TAG	MANUFACTURER	MODEL	DESCRIPTION	LENGTH (M)	REQUIRED OUTPUT (W/M)	ELECTRIC		REMARKS
						V/PH/Hz	EMERGENCY POWER (Y/N)	
ETC-01	RAYCHEM	5XL2-CR	SERVING CORRIDOR CANOPY	32.6	10	208/160	Y	CONTROLLER CS910-485 RAYCHEM

NOTES:
1. PROVIDE CABLE SEGMENTS AS REQUIRED TO COMPLETELY TRACE PIPING RUN AS INDICATED ON DRAWINGS.
2. PROVIDE RAYCLO (OR EQUIVALENT) POWERED AND UN-POWERED CONNECTIONS AND SUPPORTS AS REQUIRED TO PROVIDE COMPLETE SYSTEM.
3. PICK-UP DRY CONTACTS AT EACH CONTROLLER TO ALARM BAS ON ANY TROUBLE SIGNAL.
4. COMMUNICATIONS CABLE IS REQUIRED TO BE EXTENDED FROM PIPE MOUNTED RTD BACK TO CONTROLLER. ALLOW FOR SUFFICIENT CONTROLS CABLE AND CONDUIT.
5. CONTROLS CABLE TO BE IN CONDUIT
6. HEAT TRACING AND PIPE SYSTEMS ARE DESIGNED FOR -23°C (-10°F) AMBIENT TEMPERATURE
7. THIS SCHEDULE IS TO BE READ IN CONJUNCTION WITH SPECIFICATION 20 05 25 REGARDING STANDARDS FOR PIPE INSULATION.

CLIENT:



ARCHITECT:



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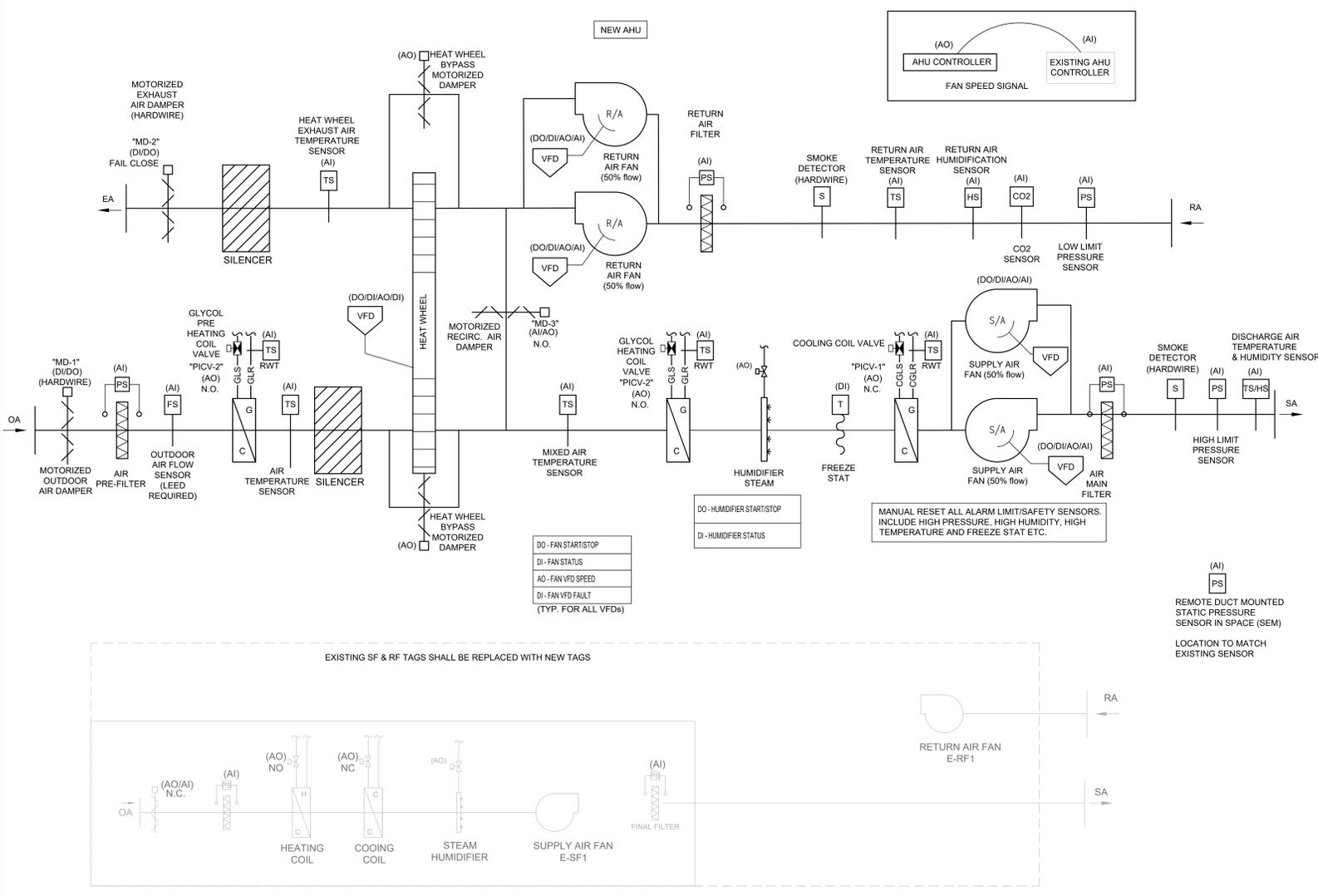
BUILDINGS EARTH & ENVIRONMENT ENERGY
INDUSTRIAL INFRASTRUCTURE SUSTAINABILITY

NO	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.10.04
7	Issued for Addendum M-01	2024.10.25
6	Issued for Tender	2024.10.11
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4	Issued for 90% CD	2024.08.06
3	Issued for 50% CD (Permit)	2024.08.02
2	Issued for 100 DD	2024.05.10
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PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON M5T 2S8

TITLE:
MECHANICAL SCHEDULES #3

PROJECT NO: MRK-23004289
DRAWING NO: M-703
CHECKED:



SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME SYSTEM:

- GENERAL**
- THE SYSTEM START IS INITIATED BY A BAS SCHEDULE 24/7 (ADJ.).
 - THE OPERATOR SHALL BE ABLE TO OVERRIDE THE SCHEDULE AND START/STOP THE SYSTEM THROUGH THE BAS.
 - THE SYSTEM SHALL OPERATE AS A MIXED AIR UNIT IN NORMAL OPERATION, WITH THE OUTDOOR AIR DAMPER SET TO A MINIMUM POSITION (33%) REFER TO SCHEDULE FOR VARIOUS STAGES OF THIS UNIT.
 - ALL TEMPERATURE SENSORS IN THE AIR HANDLING UNIT SHALL BE AVERAGE TYPE.
 - THE UNIT CONSISTS OF A SUPPLY FAN, AN EXHAUST FAN, AN ENERGY RECOVERY WHEEL, COILS, FILTERS, MANIFOLD ETC.
 - THE UNIT SHALL BE EQUIPPED WITH CONTROLLER FOR INTEGRATION TO THE BAS. THE CONTROLLER SHALL BE CONTROLLING THE COMPONENTS OF THE UNIT. THE BAS IS TO SCHEDULE, ENABLE/DISABLE, MONITOR AND HAVE SETPOINT ADJUSTMENTS OF THE UNIT.
 - THE UNIT SHALL BE WORKING IN PARALLEL WITH EXISTING UNIT ONCE COMMISSIONING IS COMPLETE.
- 2. UNIT START UP**
- ON STARTUP, THE OUTSIDE AIR DAMPER AND THE EXHAUST AIR DAMPER SHALL CLOSE. THE RE-CIRCULATION AIR DAMPER SHALL OPEN.
 - ONCE THE DAMPER STATUS ARE PROVED, THE VFD OF THE RETURN AIR FANS SHALL BE ENABLED. RETURN FAN(S) SPEED SHALL RAMP TO THE MINIMUM SPEED OF 30 % (ADJ.).
 - ONCE THE RETURN FAN(S) ARE RUNNING, THE VFD OF THE SUPPLY FAN(S) SHALL BE ENABLED. SUPPLY FAN(S) SPEED SHALL RAMP TO THE MINIMUM SPEED OF 30 % (ADJ.).
 - ONCE OUTSIDE AIR DAMPER AND EXHAUST AIR DAMPER MODULATE OPEN. RE-CIRCULATION AIR DAMPER SHALL MODULATE TO OPERATE WITH THE PERCENTAGE OF OUTDOOR AIR AS INDICATED IN THE AHU SCHEDULE.
 - WHEN SUPPLY FAN(S) AND RETURN FAN(S) ARE PROVEN ON, THE SUPPLY FAN(S) VFD SHALL BE USED FOR BALANCING AND MAINTAINING THE SUPPLY AIR DUCT STATIC PRESSURE SET POINT (ADJ.) AND THE RETURN FAN(S) VFD SHALL BE USED FOR BALANCING AND MAINTAINING THE RETURN AIR DUCT STATIC PRESSURE SET POINT (ADJ.) AND SPACE POSITIVE PRESSURE SET POINT (ADJ.); THE DUCT STATIC PRESSURE SENSORS SHALL BE LOCATED 2/3 OF SUPPLY/RETURN DUCT WORK.
 - ONCE BOTH SUPPLY FAN(S) AND RETURN FAN(S) ARE RUNNING, THE SYSTEM SHALL ENABLE THE TEMPERATURE, PRESSURE AND HUMIDITY CONTROL SEQUENCE MENTIONED BELOW.
- 3. UNIT SHUTDOWN**
- WHEN THE UNIT SHUTS DOWN, BOTH SUPPLY FAN(S) AND RETURN FAN(S) SHALL STOP.
 - ONCE THE SUPPLY AND RETURN FAN(S) HAVE BEEN PROVEN OFF THE OUTDOOR AIR DAMPER AND EXHAUST AIR DAMPER SHALL FULLY CLOSE AFTER 4 SECONDS' DELAY.
 - THE RE-CIRCULATION AIR DAMPER SHALL FULLY OPEN.
 - THE HEAT RECOVERY WHEEL SHALL STOP.
 - THE HUMIDIFIER VALVE AND THE COOLING COIL VALVE SHALL CLOSE.
- 4. SUPPLY AIR TEMPERATURE CONTROL**
- THE HEAT RECOVERY WHEEL, THE RE-CIRCULATION AIR DAMPER, THE HEATING COIL VALVE AND THE COOLING COIL VALVE SHALL MODULATE IN SEQUENCE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT. REFER TO HEAT RECOVERY WHEEL CONTROL SEQUENCE FOR SUPPLY AIR TEMPERATURE CONTROL WHEN HEAT WHEEL IS IN OPERATION.
 - SUPPLY AIR TEMPERATURE SETPOINT SHALL BE MAINTAINED AT 13°C (ADJ.).
- 5. PRE-HEATING COIL VALVE (GLYCOL COIL)**
- THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND MODULATE THE PRE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.
- THE HEATING COIL VALVE SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 15°C (ADJ.),
 - AND THE SUPPLY AIR TEMPERATURE IS BELOW SETPOINT.
 - AND THE FAN STATUS IS ON.
- THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.
- 6. HEATING COIL VALVE (GLYCOL COIL)**
- THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND MODULATE THE PRE HEATING COIL VALVE TO MAINTAIN ITS HEATING SETPOINT.
- THE HEATING COIL VALVE SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 15°C (ADJ.),
 - AND THE SUPPLY AIR TEMPERATURE IS BELOW SETPOINT.
 - AND THE FAN STATUS IS ON.
- THE HEATING COIL VALVE SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.
- 7. COOLING COIL VALVE (GLYCOL COIL)**
- THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND MODULATE THE COOLING COIL VALVE TO MAINTAIN ITS COOLING SETPOINT.
- THE COOLING COIL SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS MORE THAN 12°C (ADJ.),
 - AND THE SUPPLY AIR TEMPERATURE IS ABOVE SETPOINT.
 - AND THE FAN STATUS IS ON.
- THE COOLING COIL SHALL OPEN TO 100% (ADJ.) WHENEVER THE FREEZESTAT IS ON.
- 8. HEAT RECOVERY WHEEL - VARIABLE SPEED:**
- THE CONTROLLER SHALL MODULATE THE HEAT RECOVERY WHEEL FOR ENERGY RECOVERY AS FOLLOWS:
- COOLING RECOVERY MODE:**
- THE CONTROLLER SHALL MEASURE THE HEAT WHEEL DISCHARGE AIR TEMPERATURE AND MODULATE THE HEAT WHEEL SPEED TO MAINTAIN A SETPOINT 1°C (ADJ.) LESS THAN THE UNIT SUPPLY AIR TEMPERATURE SETPOINT. THE HEAT WHEEL SHALL RUN FOR COOL RECOVERY WHENEVER:
- THE UNIT RETURN AIR TEMPERATURE IS 3°C (ADJ.) OR MORE BELOW THE OUTSIDE AIR TEMPERATURE.
 - AND THE UNIT IS IN A HEATING MODE.
 - AND THE SUPPLY FAN IS ON.
- HEATING RECOVERY MODE:**
- THE CONTROLLER SHALL MEASURE THE HEAT WHEEL DISCHARGE AIR TEMPERATURE AND MODULATE THE HEAT WHEEL SPEED TO MAINTAIN A SETPOINT 1°C (ADJ.) GREATER THAN THE UNIT SUPPLY AIR TEMPERATURE SETPOINT. THE HEAT WHEEL SHALL RUN FOR HEAT RECOVERY WHENEVER:
- THE UNIT RETURN AIR TEMPERATURE IS 3°C (ADJ.) OR MORE ABOVE THE OUTSIDE AIR TEMPERATURE.
 - AND THE UNIT IS IN A HEATING MODE.
 - AND THE SUPPLY FAN IS ON.

- 8. HUMIDITY CONTROL**
- WHEN BOTH SUPPLY AND RETURN FAN(S) ARE PROVEN ON, THE ELECTRIC HUMIDIFIER SHALL BE ENABLED AND THE HUMIDIFIER VALVE SHALL MODULATE TO MAINTAIN THE RETURN AIR HUMIDITY SET POINT. THE SUPPLY AIR HUMIDITY SENSOR SHALL OVERRIDE THE RETURN AIR HUMIDITY CONTROL TO PREVENT THE SUPPLY AIR HUMIDITY RISING ABOVE 65%.
 - WHEN THE OUTDOOR AIR TEMPERATURE IS LESS THAN 10°C (ADJ.), THE RETURN AIR HUMIDITY SET POINT SHALL BE 35% (ADJ.) WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE 10°C, THE SET POINT SHALL BE 50% (ADJ.).
 - HUMIDITY CONTROL SHALL BE ENABLED IN BOTH OCCUPIED MODE
 - WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 20°C AND THE RETURN AIR HUMIDITY IS MORE THAN 60% FOR 15 MINUTES (ADJ.), SYSTEM SHALL ENTER INTO DEHUMIDIFICATION MODE. THE COOLING COIL VALVE SHALL MODULATE TO MAINTAIN A LOWER SET POINT FOR DEHUMIDIFICATION. REHEAT COILS AT SPACE LEVEL SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SET POINT.
- 9. ECONOMIZER CONTROL:**
- THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE OUTDOOR AIR, EXHAUST AIR AND RE-CIRCULATION AIR DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 1°C (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION (AS INDICATED ON THE AHU SCHEDULE) OPEN WHENEVER OCCUPIED. DURING ECONOMIZER OPERATION, THE HEAT RECOVERY WHEEL BY-PASS MOTORIZED DAMPER WILL BE FULLY OPEN AND HEAT WHEEL WILL BE OFF.
 - THE ECONOMIZER SHALL BE ENABLED WHENEVER:
 - OUTSIDE AIR TEMPERATURE IS LESS THAN 18°C (ADJ.) AND,
 - THE OUTSIDE AIR ENTHALPY IS LESS THAN 33KJ/KG (ADJ.) AND,
 - THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE AND,
 - THE OUTSIDE AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY AND,
 - THE SUPPLY FAN STATUS IS ON.
 - THE ECONOMIZER SHALL CLOSE WHENEVER:
 - MIXED AIR TEMPERATURE DROPS 2.8°C (ADJ.) BELOW SETPOINT OR,
 - THE FREEZESTAT IS ON OR,
 - ON LOSS OF SUPPLY FAN STATUS.
- 10. SAFETY**
- THE FREEZE STAT (LOW TEMPERATURE SWITCH) SHALL STOP THE UNIT VIA HARDWARE INTERLOCK IF THE TEMPERATURE DROPS BELOW THE FREEZE STAT SET POINT OF 4°C (ADJ.). THE HEATING COIL VALVE SHALL FULLY OPEN. AN ALARM RESET CAN BE PERFORMED AT THE UNIT PANEL.
 - IF THE DISCHARGE AIR HIGH STATIC PRESSURE SWITCH EXCEEDS THE DUCT STATIC PRESSURE SET POINT OF 1000 PA (ADJ.), THE UNIT SHALL SHUTDOWN VIA HARDWARE INTERLOCK. AN ALARM SHALL BE ANNUNCIATED AT THE BAS. A LOCAL MANUAL RESET IS REQUIRED TO RESUME NORMAL OPERATION.
 - THE HUMIDIFIER AIR PROVING SWITCH AND HIGH LIMIT CUT-OUT SHALL DE-ENERGIZE THE HUMIDIFIER UPON ACTIVATION. A LOCAL MANUAL RESET IS REQUIRED TO RESUME NORMAL OPERATION.
 - SMOKE DETECTOR SHALL BE INTEGRATED TO THE FIRE ALARM SYSTEM BY FIRE ALARM CONTRACTOR. A SIGNAL RELAY SHALL BE PROVIDED FOR BAS CONTRACTOR. A HARDWIRED CONNECTION SHALL BE PROVIDED TO THE VFD TO SHUT DOWN THE UNIT AND GENERATE AN ALARM UPON RECEIVING A SMOKE DETECTOR SIGNAL. A LOCAL MANUAL STARTUP IS REQUIRED TO RESUME NORMAL OPERATION.
 - THE FIRE SYSTEM SHALL SHUTDOWN THE UNIT VIA HARDWARE INTERLOCK. A SEPARATE SIGNAL SHALL BE SENT TO THE BAS. A LOCAL MANUAL STARTUP IS REQUIRED TO RESUME NORMAL OPERATION.
- 12. POWER RESTORATION**
- IN THE EVENT OF LOSS OF NORMAL POWER, THE UNIT SHALL SHUTDOWN.
- 13. INTEGRATION**
- FOLLOWING POINTS WILL BE READING FROM THE VFD OVER BACNET MS/TP:
 - SPEED AND EXTERNAL SPEED REFERENCE
 - FREQUENCY;
 - CURRENT;
 - TORQUE PERCENTAGE;
 - POWER (KW);
 - TOTAL POWER (KWH);
 - OPERATION HOURS;
 - VFD TEMPERATURE;
 - FAULT AND ALARM;
 - HOA STATUS;
 - TRENDS
 - THE BAS SHALL TREND THE FOLLOWING POINTS:
 - ALL ANALOG INPUTS;
 - ALL ANALOG OUTPUTS;
 - SET POINT AND SCHEDULE
 - ALL BINARY INPUTS;
 - ALL BINARY OUTPUTS;
 - CRITICAL ALARM POINTS
- 15. FILTERS**
- PRE-FILTER DIFFERENTIAL PRESSURE MONITOR:
THE BAS SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE PRE-FILTER.
- ALARMS SHALL BE PROVIDED AS FOLLOWS:
- PRE-FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- MAIN FILTER DIFFERENTIAL PRESSURE MONITOR:
THE BAS SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE MAIN FILTER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- MAIN FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- RETURN FILTER DIFFERENTIAL PRESSURE MONITOR:
THE BAS SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE RETURN FILTER.
- ALARMS SHALL BE PROVIDED AS FOLLOWS:
- RETURN FILTER CHANGE REQUIRED: FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- THE FOLLOWING SENSORS ARE FOR THE PURPOSE OF MONITORING AND ENERGY CALCULATIONS:
 - OUTDOOR AIRFLOW
 - HEAT WHEEL SUPPLY AIR TEMPERATURE
 - SUPPLY FAN DISCHARGE AIR TEMPERATURE
 - SUPPLY AIRFLOW
 - HEATING COIL SUPPLY AIR TEMPERATURE
 - COOLING COIL SUPPLY AIR TEMPERATURE
 - RETURN AIRFLOW
 - RETURN FAN DISCHARGE AIR TEMPERATURE
 - EXHAUST AIRFLOW
 - ALARM AND WARNING
 - THE BAS SHALL ANNUNCIATE THE FOLLOWING ALARMS:
 - RETURN DUCT CO2 LEVEL HIGH
 - SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
 - SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
 - SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
 - HIGH SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) GREATER THAN SETPOINT.
 - LOW SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) LESS THAN SETPOINT.
 - SUPPLY FAN VFD FAULT.
 - RETURN FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
 - RETURN FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
 - RETURN FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
 - RETURN FAN VFD FAULT.
 - HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 2.8°C (ADJ.) GREATER THAN SETPOINT.
 - LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 2.8°C (ADJ.) LESS THAN SETPOINT.
 - HEAT WHEEL ROTATION FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
 - HEAT WHEEL IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
 - HEAT WHEEL RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
 - HEAT WHEEL VFD FAULT
 - PRE-FILTER CHANGE REQUIRED: PRE-FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
 - MAIN FILTER CHANGE REQUIRED: MAIN FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
 - RETURN FILTER CHANGE REQUIRED: RETURN FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
 - HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 32°C (ADJ.).
 - LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 7°C (ADJ.).
 - HIGH RETURN AIR CARBON DIOXIDE CONCENTRATION: IF THE RETURN AIR CO2 CONCENTRATION IS GREATER THAN 1000 PPM (ADJ.) WHEN THE UNIT IS RUNNING.
 - HIGH RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS GREATER THAN 70% (ADJ.).
 - LOW RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS LESS THAN 35% (ADJ.).
 - HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 32°C (ADJ.).
 - LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 7°C (ADJ.).
 - HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 49°C (ADJ.).
 - LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 7°C (ADJ.).

GENERAL NOTE:

- ALL FLOW MEASURING DEVICES SHALL BE REVIEWED WITH CONSULTANT BEFORE INSTALLATION AND UPSTREAM AND DOWNSTREAM DISTANCES SHALL BE COMPLIED AS PER MANUFACTURER RECOMMENDATIONS.
- THE AIR HANDLING SYSTEM SEQUENCE OR OPERATION SHALL BE PRINTED AND LAMINATED TO A HARD COPY WHICH APPROPRIATELY DISPLAYS ALL NECESSARY EQUIPMENT, DEVICES AND OTHER CONTROL COMPONENTS, INCLUDING THE SEQUENCE OF OPERATION. THE SEQUENCE OF OPERATION SHALL BE SECURELY FIXED ONTO THE AIR HANDLING UNIT. ALSO DISPLAY THE SEQUENCE OF OPERATION FOR PUMP AND HEX.
- CONTROLS CONTRACTOR TO ENSURE PARALLEL OPERATION FOR THE UNITS. NEW UNITS SHALL WORK WITH EXISTING UNIT AS PER THE SCENARIOS PROVIDED IN AHU SCHEDULE.
 - PARALLEL OPERATION: BOTH UNITS TO RUN AT THE SAME FAN SPEED & CONTROL TO THE SAME SET POINT
 - ONE UNIT OUT OF SERVICE: THE REMAINING UNIT OPERATES AT FULL CAPACITY.
- THE BAS SYSTEM SHALL CLEARLY REPRESENT THE FULL SYSTEM (EXISTING AND NEW UNIT) INCLUDING SEQUENCE AND GRAPHICS.

1 AHU CONTROL DIAGRAM
M-801 SCALE: N.T.S.

FROST PROTECTION:

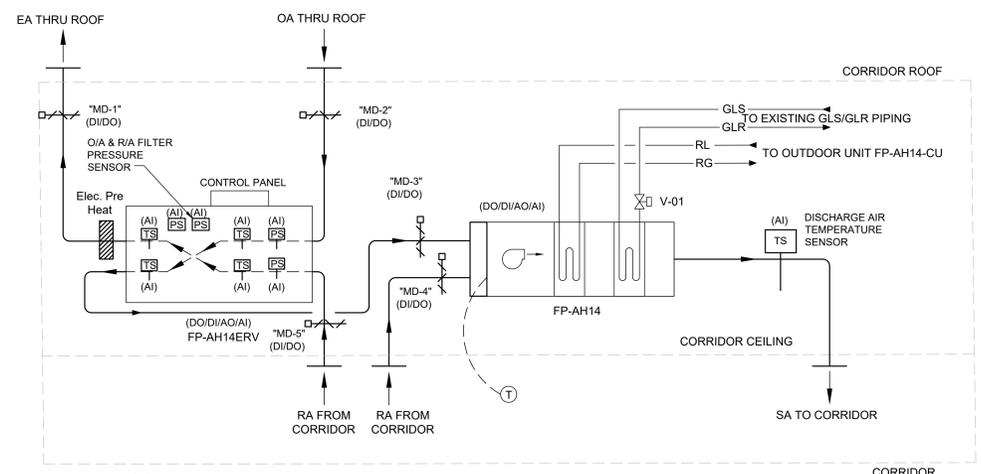
THE HEAT WHEEL SHALL MODULATE IT'S SPEED TO MAINTAIN AN EXHAUST DISCHARGE TEMPERATURE ABOVE 0°C (ADJ.) TO PREVENT FREEZING OF THE WHEEL.

WHENEVER THE HEAT RECOVERY WHEEL IS OFF, THE BYPASS DAMPER SHALL MODULATE OPEN TO BYPASS THE HEAT RECOVERY WHEEL.

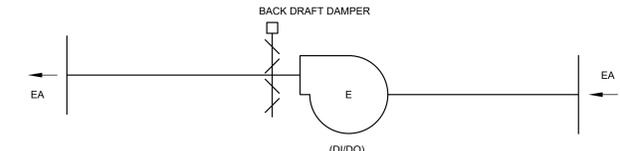
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TITLE:
CONTROL DIAGRAMS #1



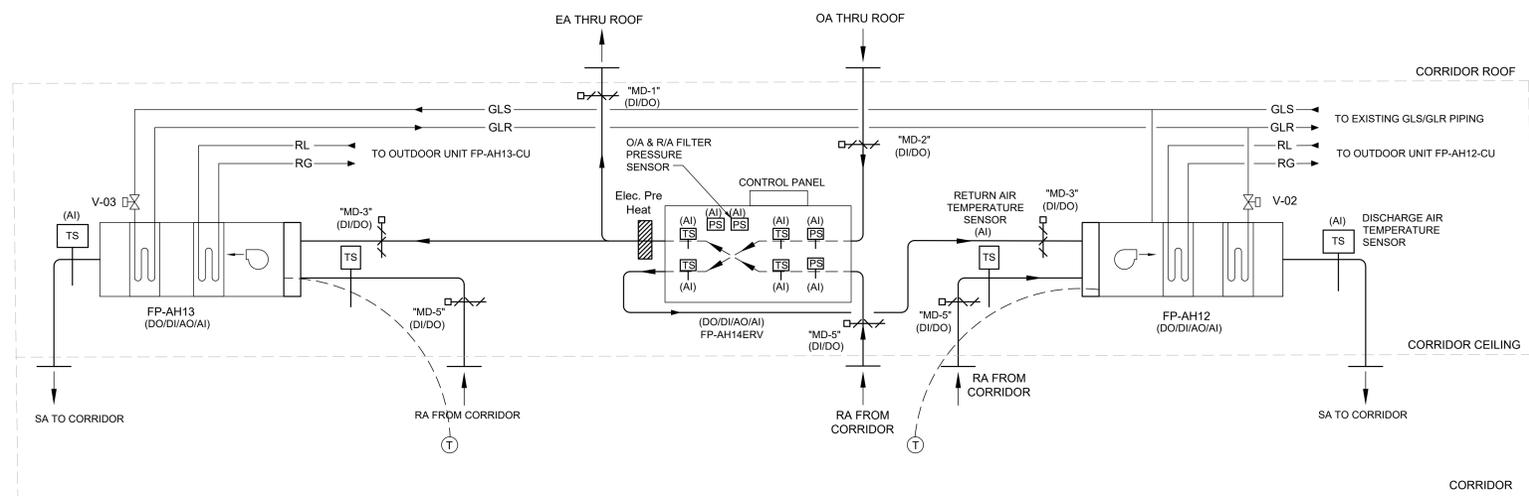
SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME SYSTEM:
 REFER TO DIAGRAM BELOW
 DURING EMERGENCY AND EVACUATION MODE:
 THE RETURN AIR DAMPER AND EXHAUST AIR DAMPERS SHALL BE CLOSED TO PRESSURIZED THE VESTIBULE



SEQUENCE OF OPERATION:
 VENTILATION MODE:
 1. EXHAUST FAN SHALL BE STARTED AND STOPPED THROUGH THE BAS BY EITHER THE OPERATOR OR THE PRE-PROGRAMMED TIME SCHEDULE, AND RUN CONTINUOUSLY.
 2. THE BAS SHALL MONITOR THE STATUS OF EXHAUST FAN AT THE MCC AND PROVIDE TROUBLE ALARM AT BAS
 3. BAS SHALL START/STOP EXHAUST FANS BASED ON PROGRAMMABLE SCHEDULE.

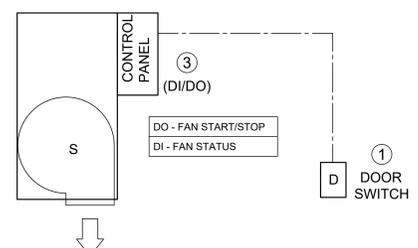
1 VESTIBULE CONTROL DIAGRAM
 M-802 SCALE: N.T.S.

5 WASHROOM EXHAUST FAN CONTROL DIAGRAM
 M-802 SCALE: N.T.S.



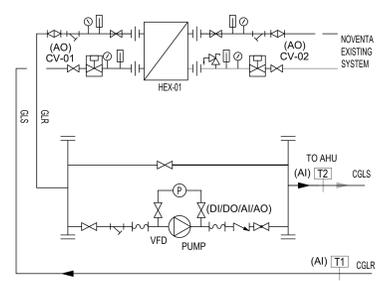
SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME SYSTEM:
 GENERAL
 a. THE SYSTEM START IS INITIATED BY A BAS SCHEDULE 24/7 (ADJ.).
 b. THE OPERATOR SHALL BE ABLE TO OVERRIDE THE SCHEDULE AND START/STOP THE SYSTEM THROUGH THE BAS.
 c. THE SYSTEM SHALL OPERATE AS A MIXED AIR UNIT IN NORMAL OPERATION, WITH THE OUTDOOR AIR DAMPER SET TO A MINIMUM POSITION (33%) REFER TO SCHEDULE FOR VARIOUS STAGES OF THIS UNIT.
 d. ALL TEMPERATURE SENSORS IN THE AIR HANDLING UNIT SHALL BE AVERAGE TYPE.
 e. THE UNIT SHALL BE EQUIPPED WITH CONTROLLER FOR INTEGRATION TO THE BAS. THE CONTROLLER SHALL BE CONTROLLING THE COMPONENTS OF THE UNIT. THE BAS IS TO SCHEDULE, ENABLE/DISABLE, MONITOR AND HAVE SETPOINT ADJUSTMENTS OF THE UNIT.
 2. UNIT STARTUP
 a. ON STARTUP, THE OUTSIDE AIR DAMPER AND THE EXHAUST AIR DAMPER SHALL CLOSE. THE RE-CIRCULATION AIR DAMPER SHALL OPEN.
 3. UNIT SHUTDOWN
 a. ONCE THE UNIT(S) HAVE BEEN PROVEN OFF THE OUTDOOR AIR DAMPER AND EXHAUST AIR DAMPER SHALL FULLY CLOSE AFTER 4 SECONDS' DELAY.
 b. THE RE-CIRCULATION AIR DAMPER SHALL FULLY OPEN.
 4. SUPPLY AIR TEMPERATURE CONTROL
 a. SUPPLY AIR TEMPERATURE SETPOINT SHALL BE MAINTAINED AT 22.22 TO 23.8°C (ADJ.).
 5. ERV UNIT: ALARM SHALL BE GENERATED AT BAS SYSTEM UPON FAILURE AND OUTDOOR AIR INTAKE DAMPER SHALL BE CLOSED
 NOTE: REFRIGERANT VALVES ETC. SHALL PROVIDED AS PER MANUFACTURER RECOMMENDATION

2 CORRIDOR UNIT CONTROL DIAGRAM
 M-802 SCALE: N.T.S.



SEQUENCE:
 1. FFH TO BE INTERLOCKED WITH DOOR VIA DOOR SWITCH
 2. FAN SHALL RUN AT HIGH SPEED WHEN DOOR IS OPENED. FAN SHALL REMAIN ON UNTIL SET DELAY TIME EXPIRES.
 3. CONTROL PANEL TO RELAY GENERAL ALARM TO BAS SYSTEM.
 4. UNIT CONFIGURATION IS AS PER THE LAYOUTS

3 CONTROL SCHEMATIC - FORCE FLOW HEATER
 M-802 SCALE: N.T.S.



SEQUENCE OF OPERATION (NEW SYSTEM):
 COOLING
 THE CONTROL VALVES AT THE HEAT EXCHANGER WILL BE OPEN. PUMPS WILL TURN ON AS PER AHU COOLING DEMAND
 BAS TO PROVIDE ALARM IF PUMP FAILS

4 CONTROL SCHEMATIC - HEX/PUMP
 M-802 SCALE: N.T.S.

MISCELLANEOUS CONTROL / MONITOR

FIRE ALARM
 1. THE BAS SHALL PICK UP A FIRE ALARM OUTPUT ALARM CONTACT FROM THE FIRE ALARM PANEL AND REPORT TO THE OPERATOR'S WORKSTATION.

ELECTRICAL ROOM
 1. BAS TO MONITOR THE FOLLOWING:
 ROOM TEMPERATURE AI
 AC UNITS STATUS DI
 TROUBLE ALARM DI
 WATER LEAK DETECTION ALARM DI
 2. WHEN ROOM TEMPERATURE EXCEEDS 29.4°C (85°F), AN ALARM SHALL REGISTER AT THE BAS.

ELECTRICAL HEAT TRACING
 1. BAS TO MONITOR THE ELECTRICAL HEAT TRACING; A BAS ALARM SHALL BE GENERATED FOR ANY FAILURE.

GENERAL NOTE: ALL FLOW MEASURING DEVICES SHALL BE REVIEWED WITH CONSULTANT BEFORE INSTALLATION AND UPSTREAM AND DOWNSTREAM DISTANCES SHALL BE COMPLIED AS PER MANUFACTURER RECOMMENDATIONS

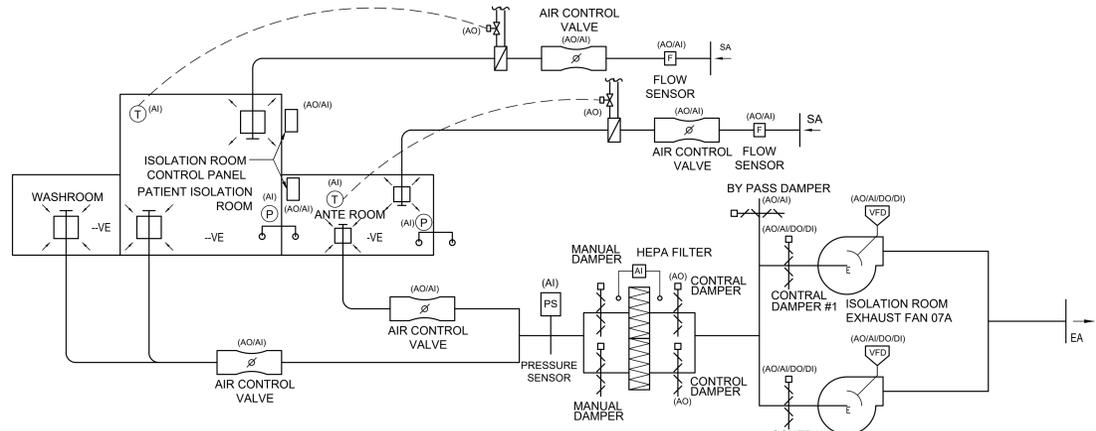
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 Seniors Emergency Medicine Centre (SEMC) & External Corridor
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 399 Bathurst Street Toronto, ON M5T 2S8

TITLE:
 CONTROL DIAGRAMS #2

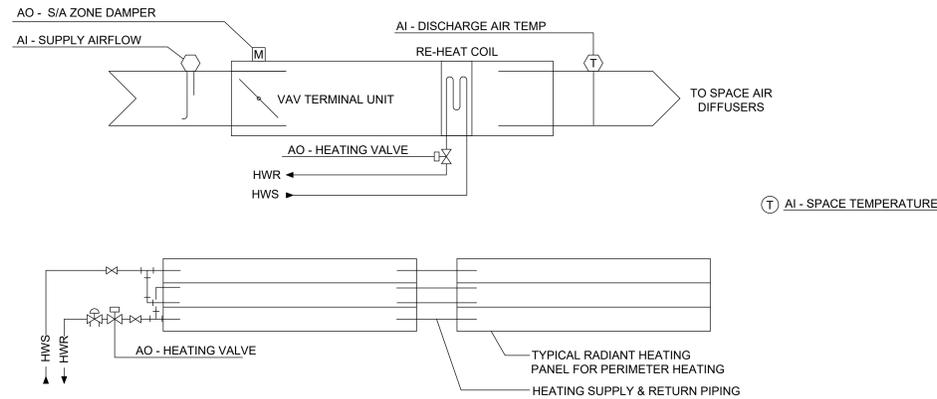
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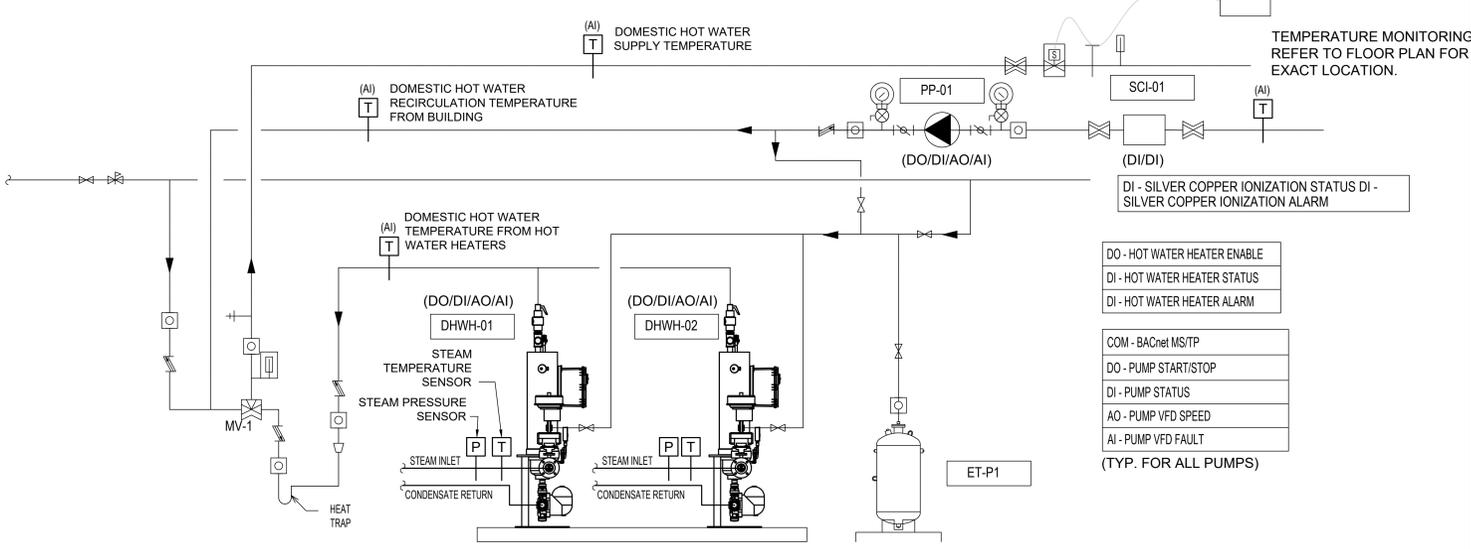
- SEQUENCE:**
1. THERMOSTAT IN ANTE ROOM AND PATIENT ISOLATION ROOM WILL MAINTAIN SPACE TEMPERATURE BY MODULATING THEIR RESPECTIVE REHEAT COIL CONTROL VALVE.
 2. BUILDING AUTOMATION SYSTEM (BAS) SHALL RECEIVE A FLOW SIGNAL FROM FLOW STATIONS FOR RESPECTIVE ANTE ROOM AND PATIENT ISOLATION ROOM SUPPLY DUCTS AND MODULATE THEIR RESPECTIVE CONSTANT SUPPLY AIR VOLUME TO ANTE ROOM AND PATIENT ISOLATION ROOM.
 3. DEDICATED SPACE PRESSURE CONTROLLERS SHALL MONITOR THE ANTE ROOM AND PATIENT ISOLATION ROOM PRESSURES. REFERENCE THIS TO THE CORRIDOR PRESSURE AND MODULATE RESPECTIVE AIR CONTROL VALVES TO HOLD SPECIFIED NEGATIVE PRESSURES. PRESSURE DIFFERENTIALS BETWEEN PATIENT ISOLATION ROOM, ANTE ROOM AND CORRIDOR SHALL BE AS FOLLOWS:
 - 3.1 NEGATIVE PRESSURE DIFFERENTIAL BETWEEN ANTE ROOM AND CORRIDOR - 2.5 PA (MINIMUM)
 - 3.2 NEGATIVE PRESSURE DIFFERENTIAL BETWEEN PATIENT ISOLATION ROOM AND ANTE ROOM - 2.5 PA (MINIMUM)
 - 3.3 NEGATIVE PRESSURE DIFFERENTIAL BETWEEN PATIENT ISOLATION ROOM AND CORRIDOR - 7.5 PA (MINIMUM)
 - 3.4 NEGATIVE PRESSURE DIFFERENTIAL BETWEEN PATIENT ISOLATION ROOM AND ADJACENT ROOMS - 7.5 PA (MINIMUM)
 - 3.5 READINGS FOR SPACE PRESSURES FOR BOTH PATIENT ISOLATION ROOM AND ANTE ROOM SHALL BE PROVIDED AT BOTH LOCAL ISOLATION ROOM CONTROL PANELS AND AT BAS. IF NEGATIVE PRESSURE DIFFERENTIAL RISES ABOVE, AN ALARM SHALL BE GENERATED AT THE BAS
 4. SPECIFIED PRESSURE DIFFERENTIALS, AN AUDIBLE AND VISUAL ALARM SHALL BE INITIATED AT LOCAL ISOLATION ROOM CONTROL PANELS AND AN ALARM SIGNAL SHALL BE INITIATED AT BAS.
 5. UPON INITIAL START, WHEN ISOLATION ROOM EXHAUST FANS ARE ENERGIZED, DAMPERS IN AIR CONTROL VALVES, HEPA FILTERS AND EXHAUST FANS ARE FULLY OPEN. IF BOTH EXHAUST FANS ARE DE-ENERGIZED THE DAMPERS IN AIR CONTROL VALVES, HEPA FILTERS AND EXHAUST FANS ARE FULLY CLOSED.
 6. DURING NORMAL OPERATION, BOTH ISOLATION ROOM EXHAUST FANS SHALL OPERATE AT 50% SPEED AND EACH EXHAUST FAN SHALL EXHAUST 50% OF THE REQUIRED AIRFLOW FROM THE PATIENT ISOLATION ROOM AND ANTE ROOM. IN THE EVENT OF FAILURE OF EITHER EXHAUST FAN, THE RESPECTIVE DAMPER FOR THE ISOLATION ROOM EXHAUST FAN SHALL FULLY CLOSE, THE RESPECTIVE DAMPER FOR THE OTHER ISOLATION ROOM EXHAUST FAN SHALL FULLY OPEN AND THE OTHER ISOLATION ROOM EXHAUST FAN SHALL RAMP UP TO 100% SPEED TO ENSURE THAT THE REQUIRED EXHAUST AIRFLOW FROM THE SPACES IS MAINTAINED.
 7. DURING NORMAL OPERATION, AIR FROM THE PATIENT ISOLATION ROOM AND ANTE ROOM SHALL BE EXHAUSTED THROUGH BOTH HEPA FILTERS. IN THE EVENT OF FAILURE, OR CLOGGING OF ONE HEPA FILTER, THE RESPECTIVE CONTROL DAMPER FOR OTHER HEPA FILTER SHALL FULLY OPEN AND EXHAUST AIR SHALL FLOW FULLY THROUGH OTHER HEPA FILTER.
 8. PROVIDE DIFFERENTIAL PRESSURE SENSORS AT FILTERS. PROVIDE READINGS AND ALARMS AT SENSORS.
 9. PROVIDE DOOR CONTACT FOR ANTE ROOM AND ISOLATION ROOM. (MECHANICAL CONTROLS CONTRACTOR TO COORDINATE WITH DOOR MANUFACTURER ON SITE)
 10. PROVIDE BY PASS DAMPER TO ENSURE AIR VELOCITY ON EXHAUST AIR IN CASE THE AIR VALVES ARE CLOSING.

1 ISOLATION ROOM EXHAUST CONTROL DIAGRAM SEQUENCE OF OPERATION
 M-803 SCALE: N.T.S.



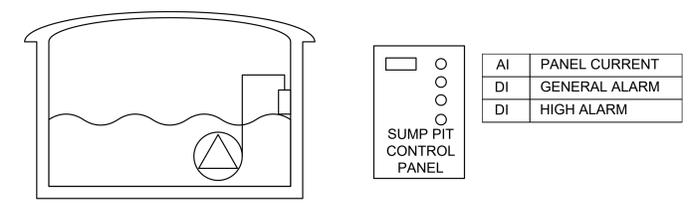
- SEQUENCE OF OPERATION:**
1. THE RADIANT PANEL AND VAV BOX ARE CONTROLLED BY A ROOM TEMPERATURE SENSOR COMPLETE WITH LOCAL SET POINT CONTROL. THE ROOM TEMPERATURE SENSOR SHALL MODULATE THE CONTROL VALVES IN SEQUENCE TO MAINTAIN ROOM SET POINT OF 72°F (ADJUSTABLE).
 2. THE BAS SHALL CONTROL THE RADIANT PANEL (FIRST STAGE HEATING) AND THE REHEAT COIL (SECOND STAGE HEATING) IN SEQUENCE TO MAINTAIN THE HEATING SET POINT. THE CONTROLS SHALL BE NON-OVERLAPPING.
 3. DURING COOLING OPERATION, THE RADIANT PANEL CONTROL VALVES ARE FULLY CLOSED.
 4. THE NIGHT SETBACK TEMPERATURE SHALL BE 65°F IF REQUIRED (TO BE ADJUSTED BY FACILITY STAFF).
 5. ALL VAVS SHALL BE EQUIPPED WITH DISCHARGE AIRFLOW TEMP SENSOR AND A 24V MODULATING AIRFLOW DAMPER

3 CONTROL SCHEMATIC - VAV BOX WITH REHEAT AND RADIANT HEATING PANEL
 M-803 SCALE: N.T.S.



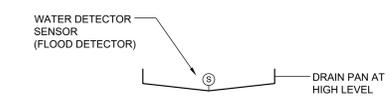
- SEQUENCE OF OPERATION:**
1. THE DOMESTIC HOT WATER RECIRCULATION AND SUPPLY TEMPERATURE SHALL MONITORED BY THE BAS. HIGH OR LOW TEMPERATURES SHALL BE ALARMED AT THE OPERATOR'S WORKSTATION. DHWR PUMP SHALL BE SCHEDULED TO RUN AND ALARMED AT THE OPERATOR'S WORKSTATION.
 2. DOMESTIC STEAM HEATERS PANEL SHALL CONTROL THE TEMPERATURE CONTROL VALVE AND MODULATE IT TO MAINTAIN REQUIRED. PANEL TO COMMUNICATE TO BAS VIA BACNET MSTP. (PROCESS VALUE, ALARM, TCV OPENING)
 3. MONITOR DHW TEMPERATURE AND INITIATE ALARM IF THIS WATER TEMPERATURE EXCEEDS 65°C (149°F).
 4. THE DHW RECIRCULATION PUMP SHALL RUN CONTINUOUSLY WITH THE OPTION OF TEMPERATURE CONTROL AT THE OPERATOR'S WORKSTATION. MONITOR PUMP STATUS.
 5. BAS SHALL MONITOR THE DHW SUPPLY, DHW RETURN TEMPERATURES AND ALL TEMPERATURE MONITORING SENSOR.
 6. BAS SHALL MONITOR THE SILVER COPPER IONIZATION STATUS AND GENERATE FAULT ALARM

2 CONTROL SCHEMATIC - DOMESTIC HOT WATER HEATERS
 M-803 SCALE: N.T.S.



- SEQUENCE OF OPERATION:**
1. THE BAS SHALL PROVIDE PUMP STATUS AND HIGH LEVEL ALARM INDICATION.

4 CONTROL SCHEMATIC - SUMP PUMP
 M-803 SCALE: N.T.S.



- SEQUENCE OF OPERATION:**
1. A WATER DETECTOR SENSOR SHALL BE PROVIDED TO GENERATE ALARM AT BAS IN THE EVENT OF THE PLUGGED UP DRAIN OF DRIP PAN

5 DRIP PAN WATER DETECTION - CONTROLS
 M-803

GENERAL NOTE: ALL FLOW MEASURING DEVICES SHALL BE REVIEWED WITH CONSULTANT BEFORE INSTALLATION AND UPSTREAM AND DOWNSTREAM DISTANCES SHALL BE COMPLIED AS PER MANUFACTURER RECOMMENDATIONS

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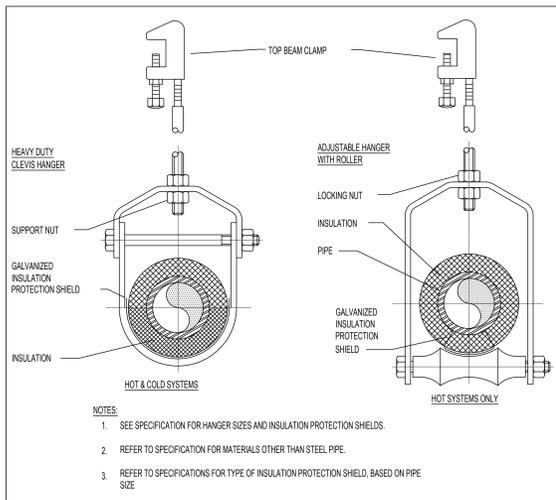
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TITLE:
CONTROL DIAGRAMS #3

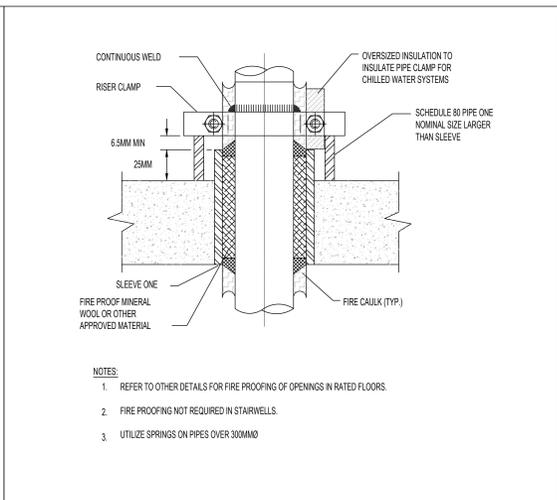
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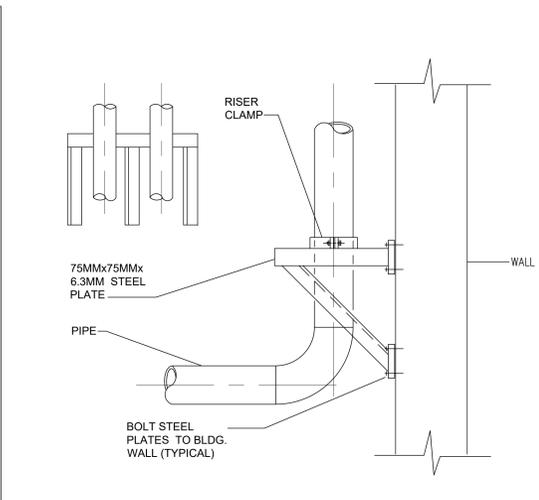
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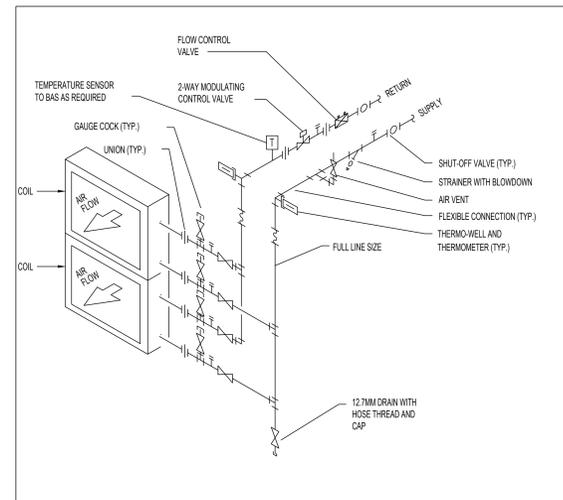
PIPE HANGAR SUPPORT LESS THAN OR EQUAL TO 200MM DIAMETER PIPE DETAIL SCALE: N.T.S. 01



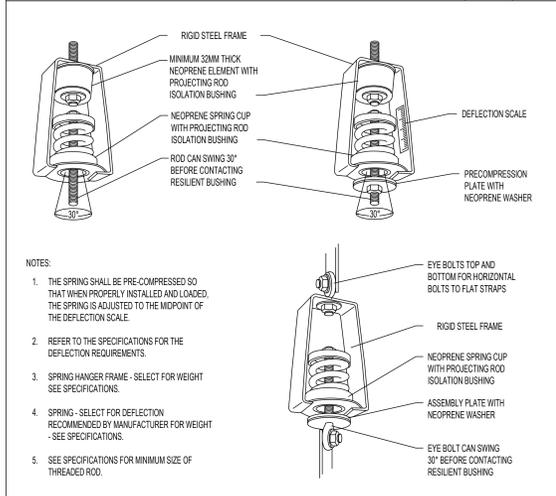
TYPICAL PIPE RISER SUPPORT DETAIL SCALE: N.T.S. 02



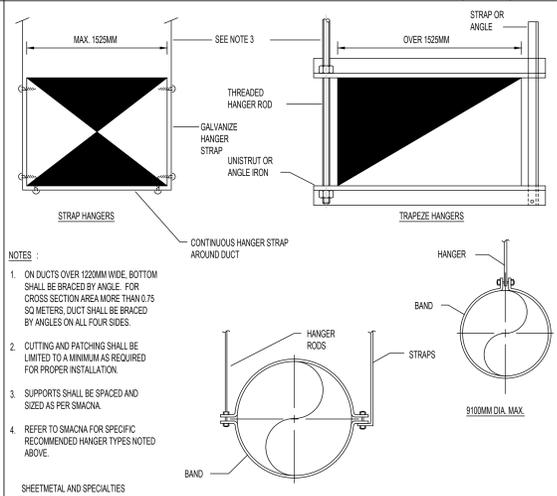
EXTERIOR PIPE RISER SUPPORT DETAIL SCALE: N.T.S. 03



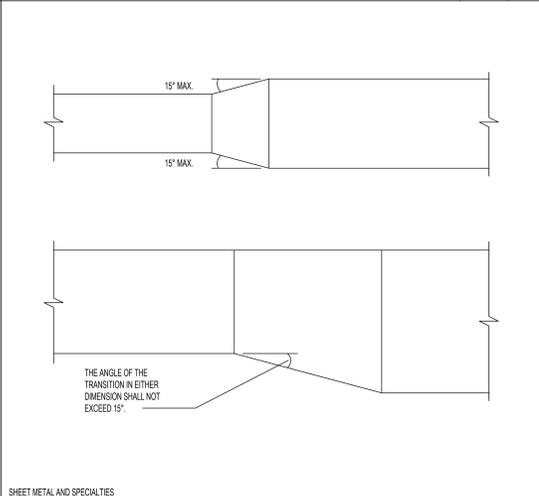
TWO-WAY MODULATING WATER COIL DETAIL SCALE: N.T.S. 04



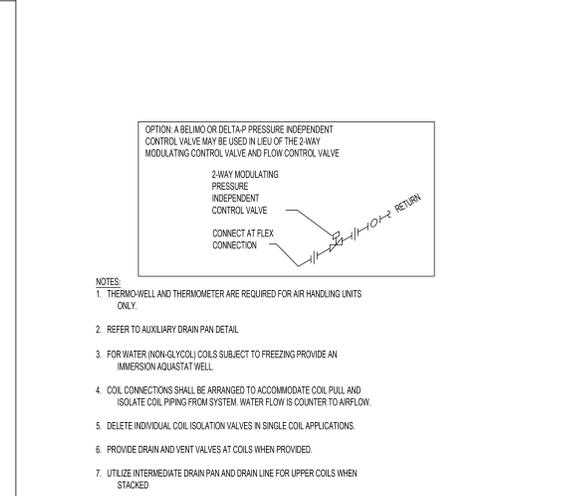
SPRING ISOLATED HANGERS FOR PIPE OR EQUIPMENT DETAIL SCALE: N.T.S. 05



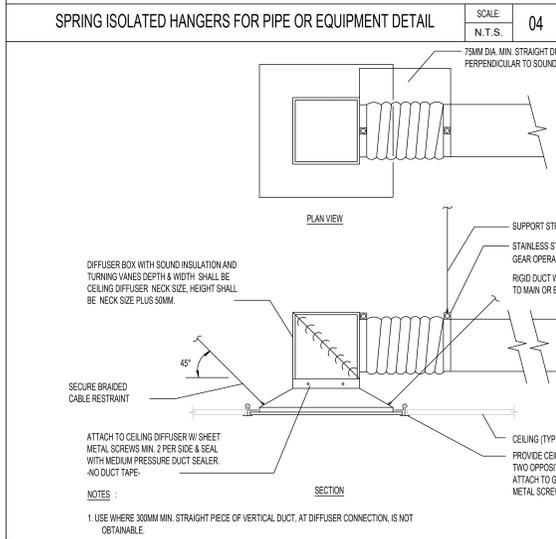
DUCT HANGER SUPPORT SCALE: N.T.S. 06



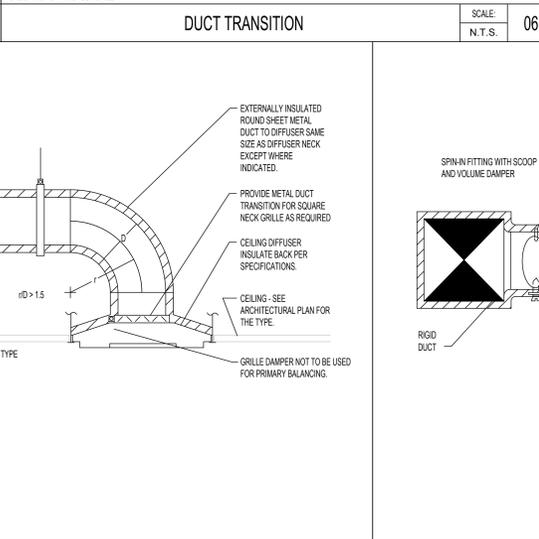
DUCT TRANSITION SCALE: N.T.S. 07



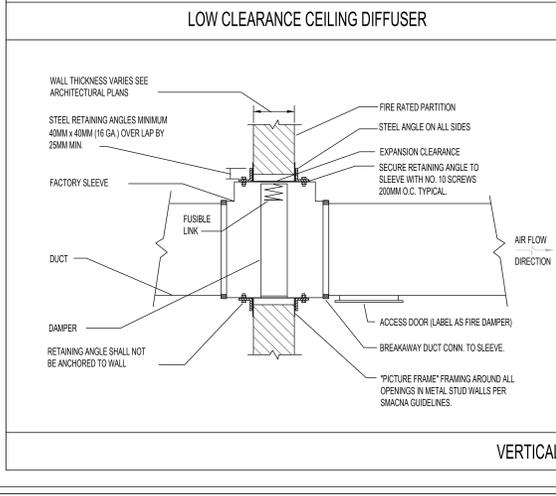
LOW CLEARANCE CEILING DIFFUSER SCALE: N.T.S. 08



CEILING DIFFUSER - RIGID DUCT SCALE: N.T.S. 09



DIFFUSER WITH INSULATED PLENUM SCALE: N.T.S. 10



VERTICAL FIRE DAMPER SCALE: N.T.S. 11

- NOTES:
- DAMPERS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION REQUIREMENTS.
 - DAMPERS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH THE U.L. REQUIREMENTS.
 - PRODUCT TO MEET REQUIREMENTS SET IN UL LISTING 556.
 - VERTICAL DAMPER SHOWN - HORIZONTAL INSTALLATION SIMILAR EXCEPT WITH SPRING LOADED DAMPER.
 - DAMPER BLADES SHALL BE OUT OF AIRSTREAM TYPE "B" (SEE SMACNA FIRE DAMPER AND HEAT STOP GUIDE - 2ND EDITION PAGE 9 OR NEWER VERSION IF APPLICABLE) WITH 100% FREE AREA WHEN DUCT DIMENSIONS REQUIRE MULTIPLE DAMPER SECTIONS. TYPE "A" MAY BE USED.
 - WALL OPENINGS TO BE DUCT DIMENSIONS PLUS 10.4MM PER METER.
 - FIRE DAMPER ASSEMBLIES INCLUDING SLEEVES AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION.
 - GENERAL CONTRACTOR SHALL COORDINATE CEILING ACCESS DOORS AS REQUIRED TO ACCESS DAMPER.
 - ACCESS DOORS IN DUCT. ACCESS DOOR SHALL BE PROVIDED IN DUCT AND SHALL BE OF ADEQUATE SIZE AND LOCATION TO PERMIT MAINTENANCE & RESETTING OF DAMPER.
 - MANUFACTURER'S PRINTED INSTRUCTIONS SHALL BE MADE AVAILABLE TO INSPECTING AUTHORITIES.

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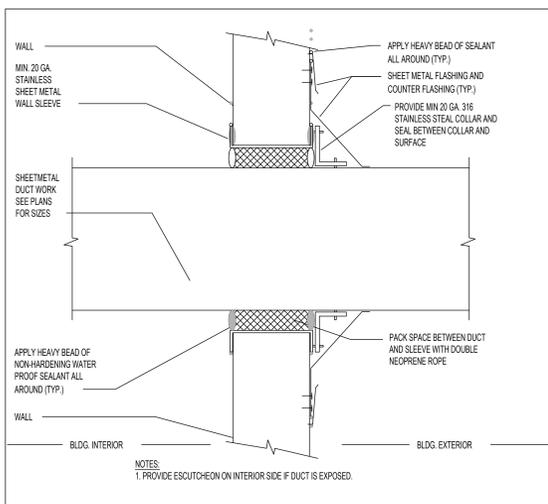
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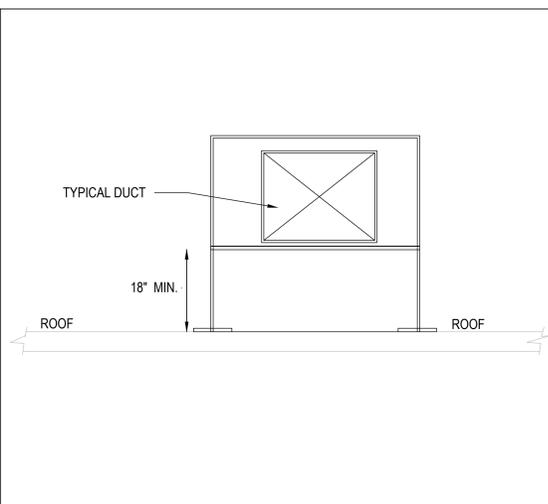
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 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE: TYPICAL DETAILS - 1

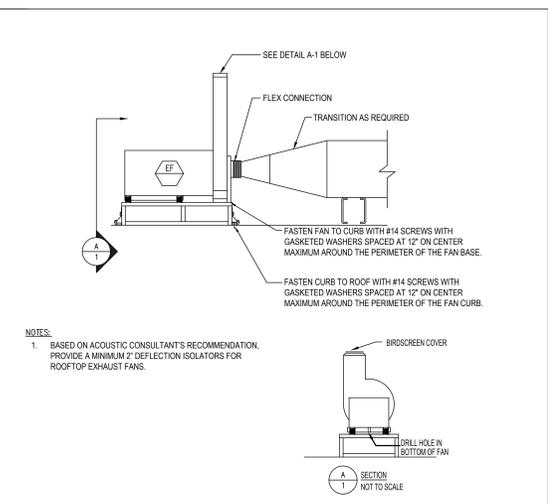
PROJECT NO: MRK-23004289 DRAWING NO: M-901
 CHECKED: S.S.



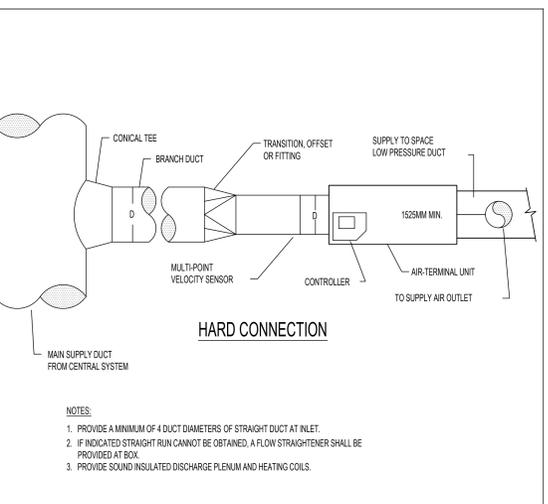
DUCT PENETRATION THROUGH EXTERIOR WALL SCALE: 01 N.T.S.



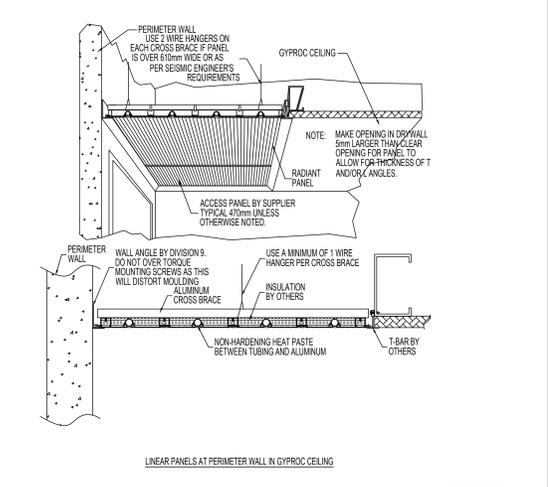
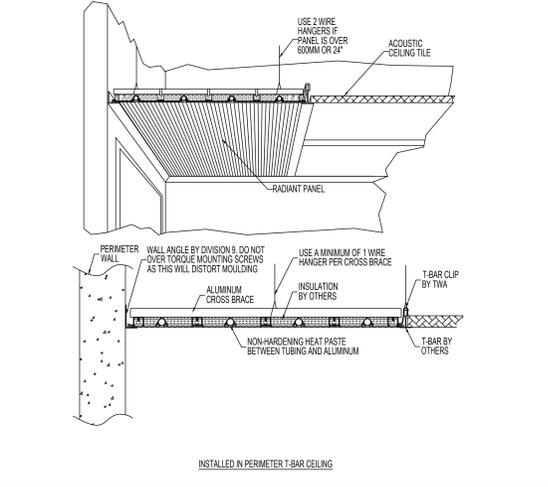
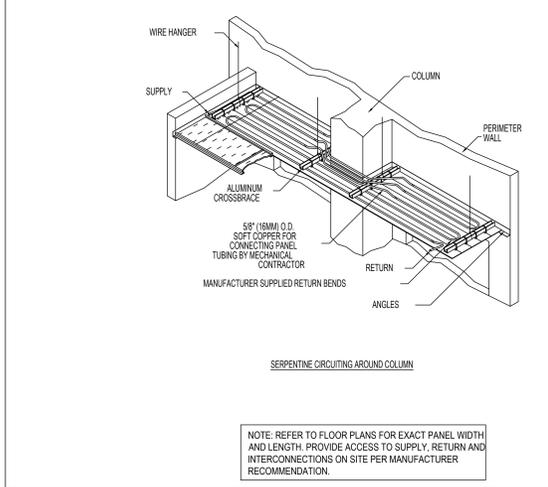
ROOF DUCTWORK SUPPORT DETAIL SCALE: 02 N.T.S.



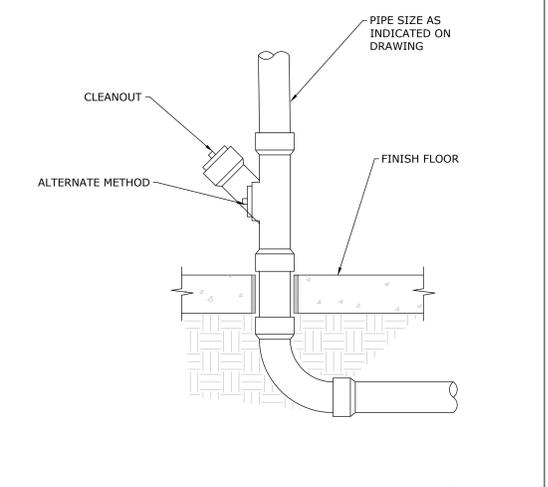
UTILITY FAN SET DETAIL SCALE: 03 N.T.S.



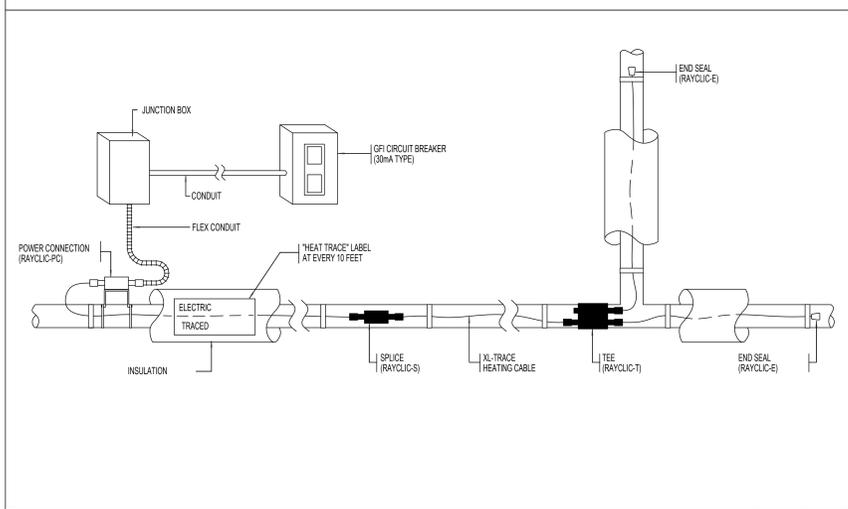
AIR TERMINAL UNIT CONNECTION SCALE: 04 N.T.S.



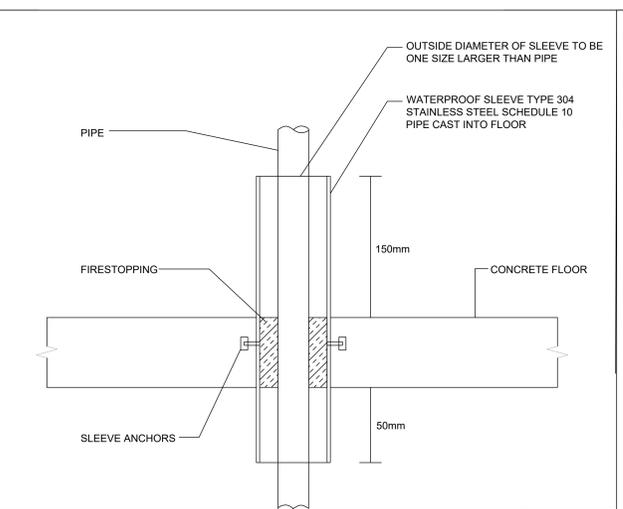
RADIANT PANEL TYPICAL INSTALLATION DETAILS SCALE: 05 N.T.S.



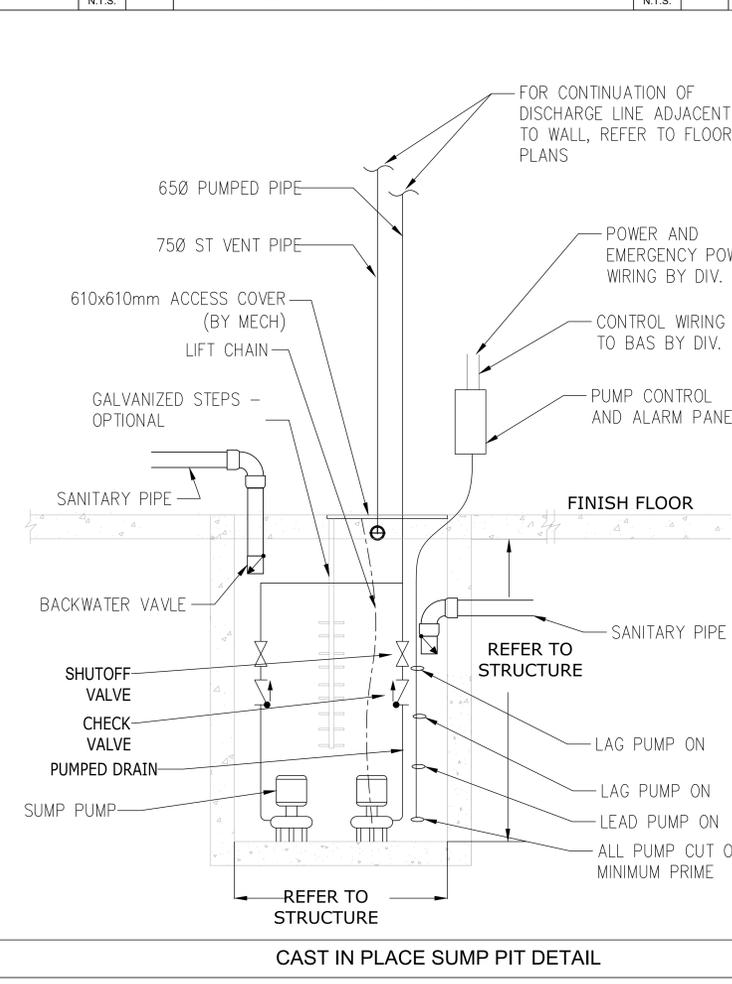
CLEANOUT NEAR BASE OF STACK SCALE: 06 N.T.S.



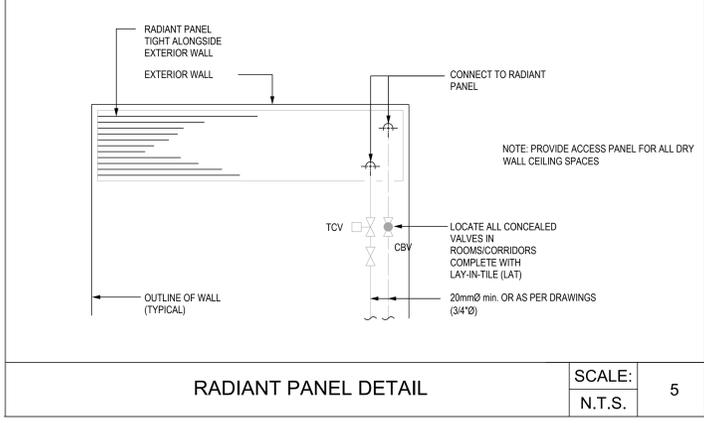
ELECTRIC HEAT TRACING INSTALLATION DETAIL - WATER PIPING SCALE: 07 N.T.S.



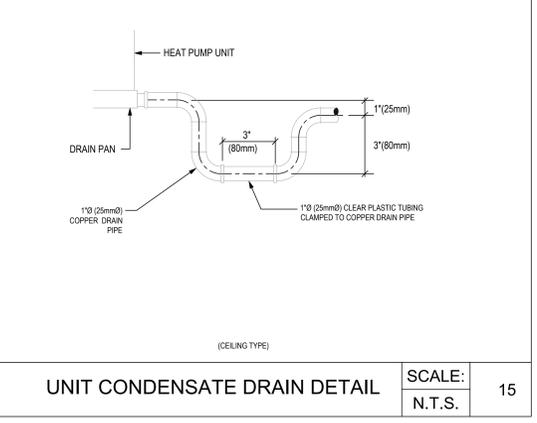
WATERSTOP PIPE SLEEVE SCALE: 08 N.T.S.



CAST IN PLACE SUMP PIT DETAIL



RADIANT PANEL DETAIL SCALE: 5 N.T.S.



UNIT CONDENSATE DRAIN DETAIL SCALE: 15 N.T.S.

CLIENT: University Health Network Toronto Western Hospital 399 Bathurst Street Toronto ON M5T 2S8 www.uhn.ca

ARCHITECT: CUMULUS ARCHITECTS INC. 160 Pears Ave - Suite 300 Toronto, ON M5R 3P8 416-539-0763 www.cumulusarch.com

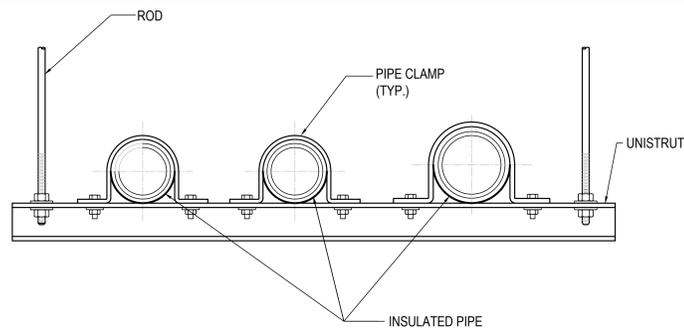
CONSULTANT: exp. BUILDINGS • EARTH & ENVIRONMENT • ENERGY • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY

PROJECT: Seniors Emergency Medicine Centre (SEMC) & External Corridor Toronto Western Hospital 399 Bathurst Street Toronto, ON M5T 2S8

TITLE: TYPICAL DETAILS - 2

PROJECT NO: MRK-23004289 DRAWING NO: M-902

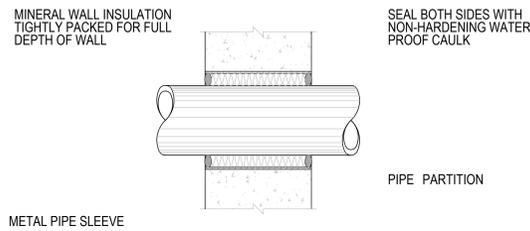
NO.	REVISION	DESCRIPTION	DATE
1	Issued for Addendum M-03		2024.11.12
2	Issued for Addendum M-02		2024.11.06
3	Issued for Addendum M-01		2024.10.29
4	Issued for Tender		2024.10.11
5	Issued for 100% CD		2024.09.27
6	Issued for 90% CD		2024.09.09
7	Issued for 50% CD / Permit		2024.08.02
8	Issued for 100 DD		2024.08.10
9	Issued for Design Development Progress		2024.04.09
10			



NOTES:
1. ALL HANGING METHODS TO BE COORDINATED WITH STRUCTURAL.

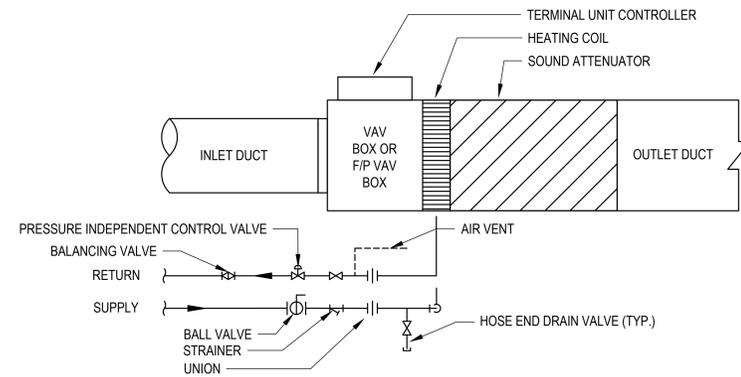
PIPE GROUP HANGER SUPPORT

SCALE: N.T.S. 01



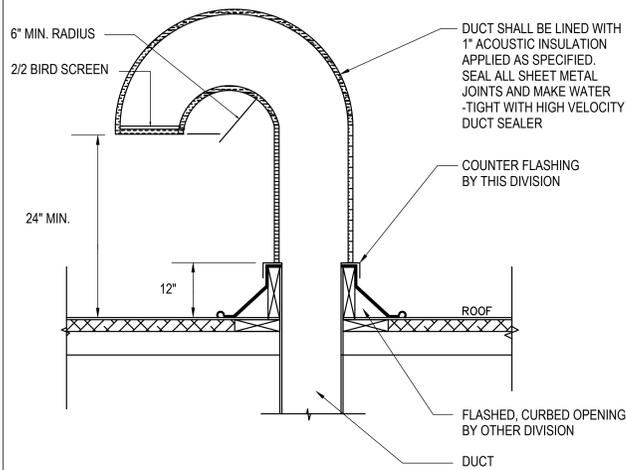
PIPE PENETRATION THROUGH NON-FIRE RATE WALL DETAIL

SCALE: N.T.S. 02



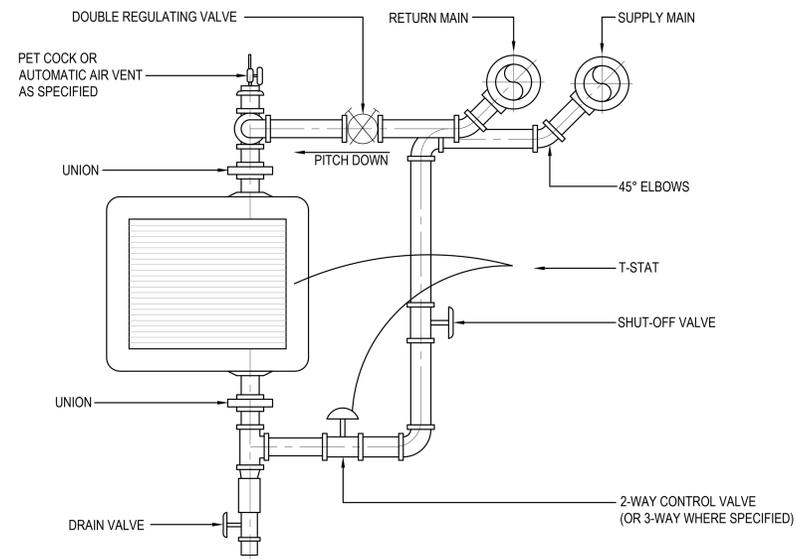
VAV BOX DETAIL

SCALE: N.T.S. 03



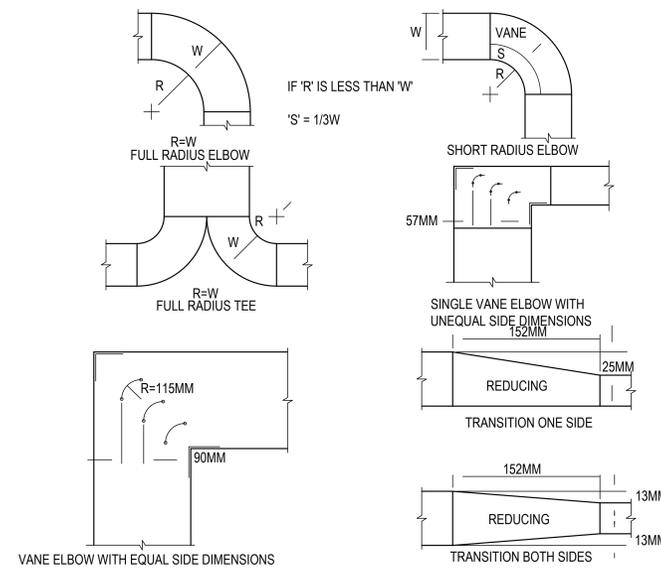
VENT C/W GOOSENECK

SCALE: N.T.S. 04



TYPICAL CONNECTIONS TO HOT WATER UNIT HEATER

SCALE: N.T.S. 05

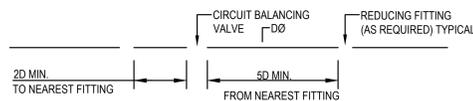


SQUARE AND RADIUS ELBOW DETAILS

SCALE: N.T.S. 06

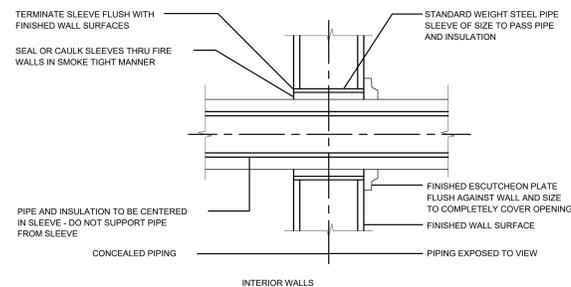
CIRCUIT BALANCING VALVE SCHEDULE (IMPERIAL)			CIRCUIT BALANCING VALVE SCHEDULE (METRIC)		
SIZE	NOM FLOW (GPM)	MAX. GPM	SIZE	NOM FLOW (GPM)	MAX. L/S
1/2"	UP TO 3	4.3	15	UP TO 0.20	0.27
3/4"	3	6.9	20	0.19	0.44
1"	6.9	10.1	25	0.43	0.91
1 1/2"	10.2	16.2	30	0.64	1.02
2"	15	24	40	0.95	1.51
2 1/2"	25	40	50	1.58	2.52
3"	40	100	65	2.52	6.3
3 1/2"	95	145	75	5.99	9.1
4"	145	235	100	9.15	15
5"	230	300	125	14.51	20
6"	320	490	150	20.19	31
8"	500	900	200	31.55	57

NOTE:
1. ABOVE SELECTION BASED ON TOUR & ANDERSSON: 1FT ΔP @ MIN. 1 PSI (6.9KPa) NOMINAL & 2 PSI (13.8 KPa) MAX. AT FULL OPEN.
2. MECHANICAL CONTRACTOR MUST SIZE AND PROVIDE WATER CIRCUIT BALANCING VALVE AS PER SCHEDULE AND DETAIL.



CIRCUIT BALANCING VALVE DETAIL/SCHEDULE

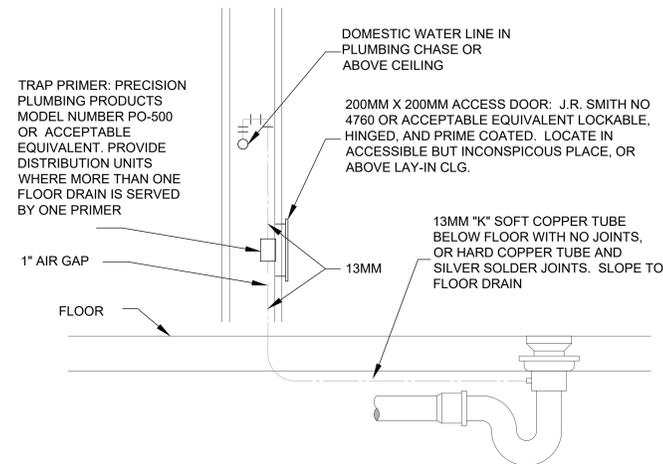
SCALE: N.T.S. 07



NOTE:
UTILIZE APPROVED ULC ASSEMBLY FOR FIRE WALLS.

PIPE SLEEVE THROUGH WALL DETAIL

SCALE: N.T.S. 08



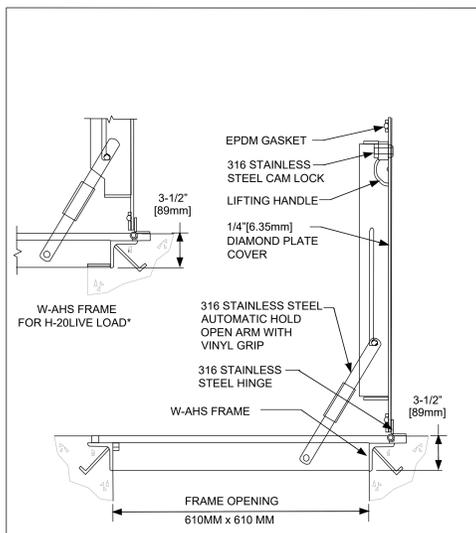
TRAP SEAL PRIMER DETAIL

SCALE: N.T.S. 09

NO.	DESCRIPTION	DATE
1	Issued for Addendum M-03	2024.11.12
2	Issued for Addendum M-02	2024.11.08
3	Issued for Addendum M-01	2024.10.29
4	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.27
6	Issued for 90% CD	2024.09.09
7	Issued for 50% CD - Permit	2024.08.02
8	Issued for 100% CD	2024.05.10
9	Issued for Design Development Progress	2024.04.09

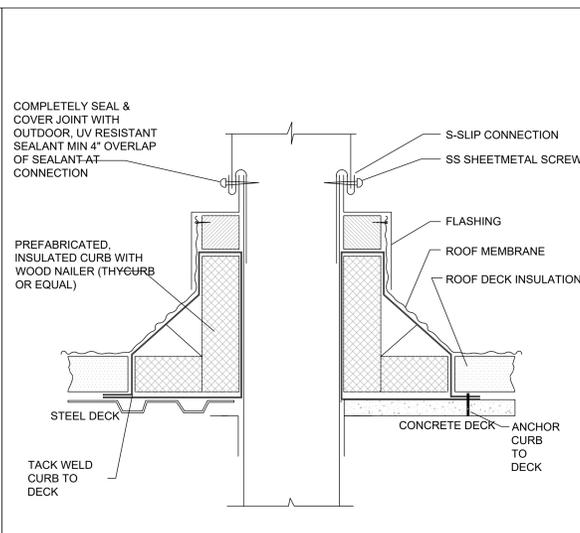
PROJECT:
Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
TYPICAL DETAILS - 3



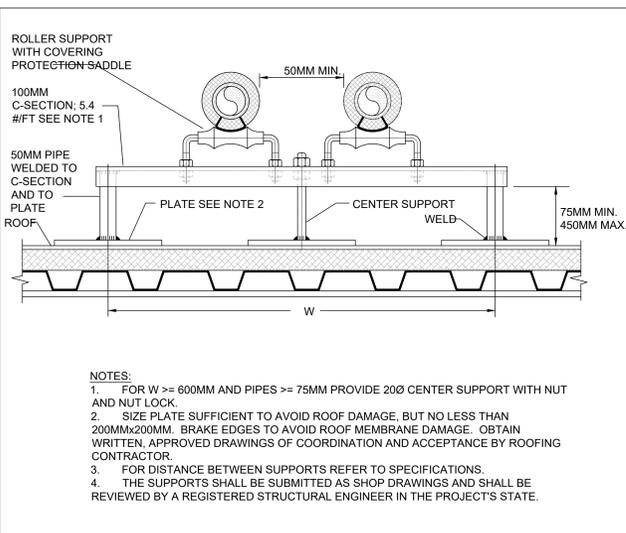
SUMP PITS COVER DETAIL

SCALE: 01
N.T.S.



DUCT PENETRATION THROUGH ROOF DETAIL

SCALE: 02
N.T.S.



ROOF PIPING SUPPORT FOR GREATER THAN 75MM PIPE

SCALE: 03
N.T.S.

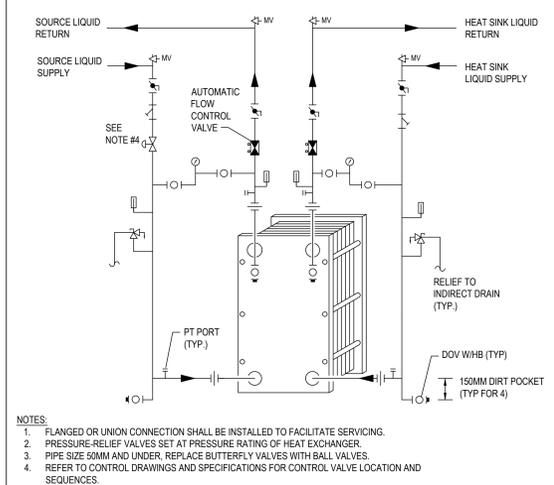
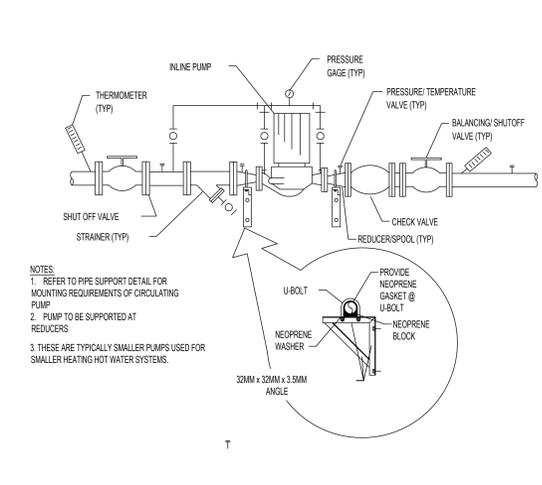


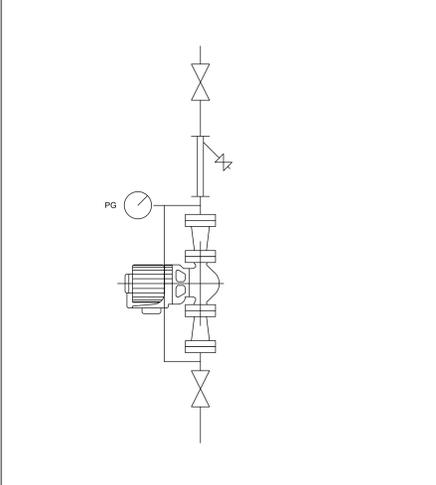
PLATE AND FRAME HEAT EXCHANGER PIPING

SCALE: 04
N.T.S.



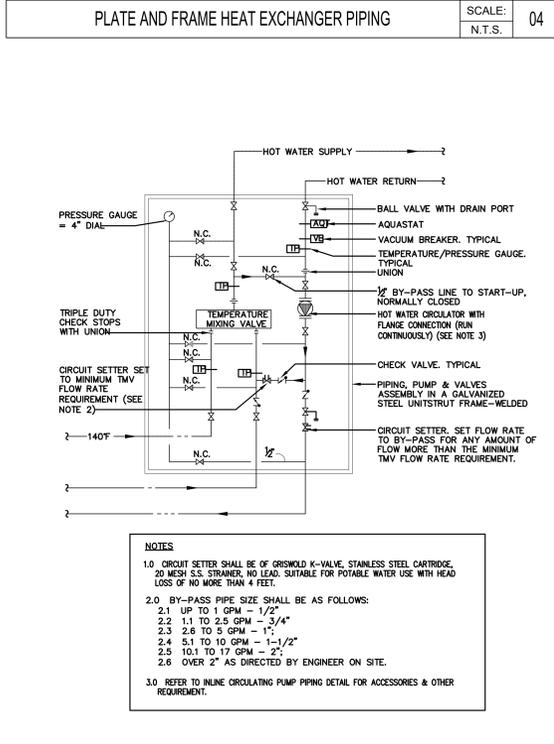
IN-LINE CIRCULATING PUMP DETAIL

SCALE: 05
N.T.S.



IN-LINE CIRCULATING PUMP

SCALE: 06
N.T.S.



THERMOSTATIC MIXING VALVE STANDARD DETAIL

SCALE: 07
N.T.S.

CLIENT: University Health Network
Toronto Western Hospital
399 Bathurst Street
Toronto ON M5T 2S8
www.uhn.ca

ARCHITECT: CUMULUS ARCHITECTS INC.
160 Pears Ave. - Suite 300
Toronto, ON M5R 3P8
416-539-0763
www.cumulusarch.com

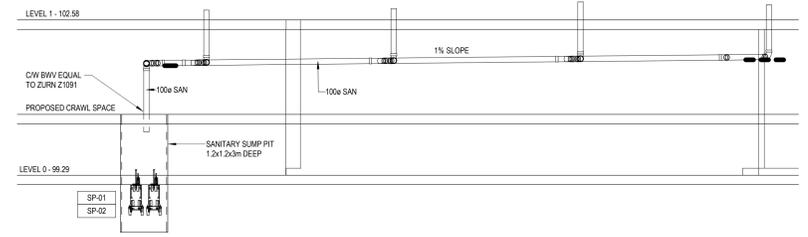
CONSULTANT: exp.
1-800-665-2077 / 1-800-665-0167
5200 Cummer Valley Drive West, Suite 1110
Markham, ON L3T 0A8
Canada
www.exp.com
• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
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NO.	DESCRIPTION	DATE
1	Issued for Design Development Progress	2024.04.09
2	Issued for 100 DD	2024.05.10
3	Issued for 90% CD / Permit	2024.08.02
4	Issued for 90% CD	2024.09.06
5	Issued for 100% CD	2024.09.27
6	Issued for Tender	2024.10.11
7	Issued for Addendum M-01	2024.10.29
8	Issued for Addendum M-02	2024.11.06
9	Issued for Addendum M-03	2024.11.19

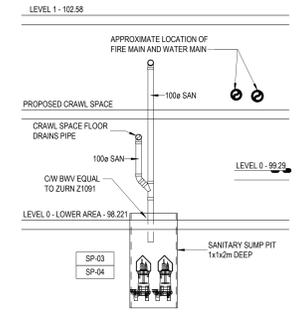
PROJECT: Seniors Emergency Medicine Centre (SEMC) & External Corridor
Toronto Western Hospital
399 Bathurst Street Toronto, ON, M5T 2S8

TITLE: TYPICAL DETAILS - 4

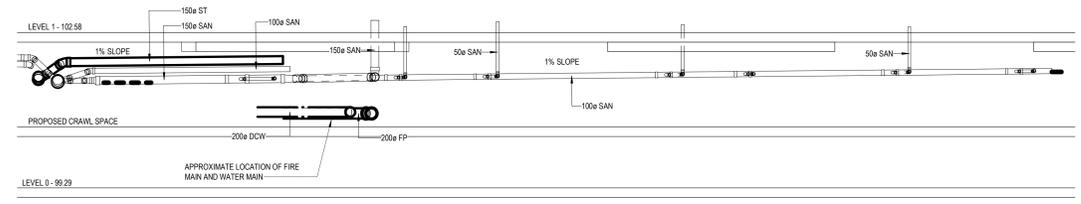
PROJECT NO: MRK-23004289
DRAWING NO: M-904
CHECKED: S.S.



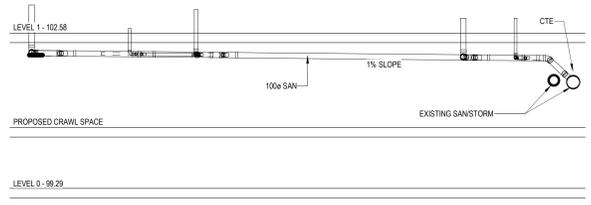
1 SECTION 1
1:50



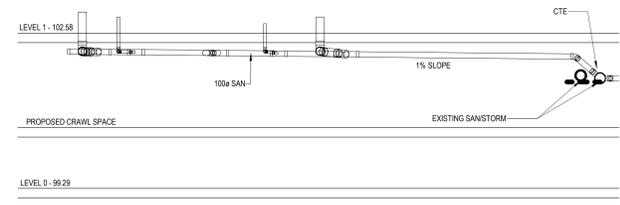
2 SECTION 2
1:50



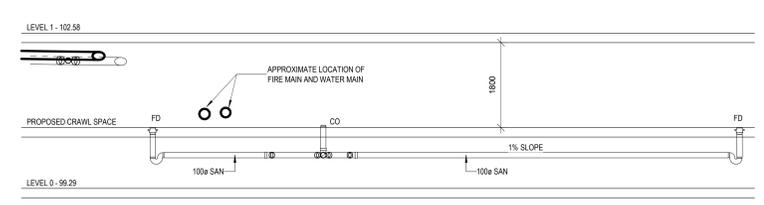
3 SECTION 3
1:50



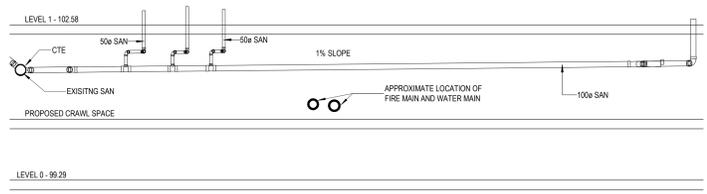
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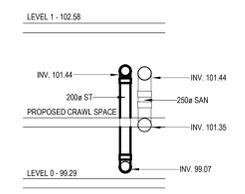
5 SECTION 5
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6 SECTION 6
1:50



7 SECTION 7
1:50



8 SECTION 8
1:50

NO	DESCRIPTION	DATE
9	Issued for Addendum M-03	2024.11.12
8	Issued for Addendum M-02	2024.11.04
7	Issued for Addendum M-01	2024.10.25
6	Issued for Tender	2024.10.11
5	Issued for 100% CD	2024.09.26
4	Issued for 90% CD	2024.09.05
3	Issued for 50% CD (Permit)	2024.08.02
2	Issued for 100 DD	2024.05.10
1	Issued for Design Development Program	2024.04.05

PROJECT:
Seniors Emergency Medicine Centre (BEMC) & External Corridor
 Toronto Western Hospital
 399 Bathurst Street Toronto, ON, M5T 2S8

TITLE:
PLUMBING SECTIONS

PROJECT NO: MRK-23004289
 DRAWING NO: **M-1001**
 CHECKED: FR