

KEY PLAN  
SCALE: N.T.S.

GENERAL ABBREVIATIONS

°F	DEGREES FAHRENHEIT	MFR	MANUFACTURER
°C	DEGREES CELSIUS	MIN	MINIMUM
Ø	DIAMETER	MTD	MOUNTED
AD	ACCESS DOOR	N/A	NOT APPLICABLE
ADJ	ADJUSTABLE	NC	NORMALLY CLOSED OR NOISE CRITERIA
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AFG	ABOVE FINISHED GRADE	NO	NORMALLY OPEN OR NUMBER
BFF	BELOW FINISHED FLOOR	NOM	NOMINAL
BHP	BRAKE HORSEPOWER	NTS	NOT TO SCALE
BDD	BOTTOM OF DUCT	OB	OCTAVE BAND
BMS	BUILDING MANAGEMENT CONTROL SYSTEM	OC	ON CENTER
BOP	BOTTOM OF PIPE	OD	OUTSIDE DIAMETER
BTU	BRITISH THERMAL UNIT	OV	OUTLET VELOCITY
BTUH	BRITISH THERMAL UNIT PER HOUR	PD	PRESSURE DROP
CLG	CEILING	PH	PHASE
COL	COLUMN	POC	POINT OF CONNECTION
CIE	CONNECT TO EXISTING	POD	POINT OF DEMARCACTION
DB	DRY BULB TEMPERATURE	POS	POSITION OR POSITIVE
DN	DOWN	PSG	POUNDS PER SQUARE INCH GAUGE
DP	DIFFERENTIAL PRESSURE	QTY	QUANTITY
DWG	DRAWING	RC	ROOM CRITERIA (NOISE)
EA	EACH	RET	RETURN
EFF	EFFICIENCY	REQD	REQUIRED
ELEV	ELEVATION	RH	RELATIVE HUMIDITY
ENT	ENTERING	RM	ROOM
EQUIP	EQUIPMENT	RPM	REVOLUTIONS PER MINUTE
EXH	EXHAUST	SCH	SCHEDULE
EXP	EXPANSION	SHT	SHEET
(E)	EXISTING	SPEC	SPECIFICATION
EXTRM	EXISTING TO BE REMOVED	SQ	SQUARE
ETR	EXISTING TO REMAIN	SQFT	SQUARE FEET
FA	FIRE ALARM	STD	STANDARD
FD	FLOOR DRAIN	SUP	SUPPLY
FLR	FLOOR	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TOP	TOP OF DUCT
FT	FEET	TON	TONS OF REFRIGERATION
FT/SEC	FEET PER SECOND	TOP	TOP OF PIPE
GA	GAUGE	TYP	TYPICAL
GAL	GALLONS	UNO	UNLESS NOTED OTHERWISE
GPH	GALLONS PER HOUR	UTR	UP THROUGH ROOF
GPM	GALLONS PER MINUTE	V	VENT
HP	HORSEPOWER	VAV	VARIABLE AIR VOLUME
HR	HOUR	VEL	VELOCITY
HZ	HERTZ	VFD	VARIABLE FREQUENCY DRIVE
ID	INSIDE DIAMETER	VOL	VOLUME
IN	INCHES	VTR	VENT THROUGH ROOF
KW	KILOWATT	W	WIDTH
LB	POUND	W/	WITH
LF	LINEAR FEET	W/O	WITHOUT
LVG	LEAVING	WB	WET BULB TEMPERATURE
MAX	MAXIMUM	WF	WIDE FLANGE
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR	WG	WATER GAUGE
MEZZ	MEZZANINE	WT	WEIGHT

PLUMBING PIPING LEGEND

DCW	DOMESTIC COLD WATER	IW	INDUSTRIAL WASTE ABOVE FLOOR OR GROUND
DHW	DOMESTIC HOT WATER	IWB	INDUSTRIAL WASTE BELOW FLOOR OR GROUND
HTWS	HIGH TEMPERATURE WATER SUPPLY	C	COMPRESSED AIR
HTWR	HIGH TEMPERATURE WATER RETURN	CG	NATURAL GAS
DHWTR	DOMESTIC HOT WATER RETURN	SD	STORM DRAIN ABOVE FLOOR/GROUND
SAN	SANITARY SEWER ABOVE FLOOR/GROUND	SD	STORM DRAIN BELOW FLOOR/GROUND
SAN	SANITARY SEWER BELOW FLOOR/GROUND	SSD	SECONDARY STORM DRAIN ABOVE
V	SANITARY SEWER VENT		

PLUMBING SYMBOL LEGEND

○	PIPING TURN DOWN OR DROP	⊕	WALL HYDRANT
○	PIPING TURN UP OR RISE	∪	UNION
○	PIPING TEE DOWN OR DROP	∩	FLOW SWITCH
○	PIPING TEE UP OR RISE	⊞	PRESSURE SWITCH
○	GATE VALVE	⊞	EXPANSION JOINT
○	CHECK VALVE	⊞	AUTOMATIC AIR VENT
○	BALL VALVE	⊞	PRESSURE GAUGE WITH GAUGE COCK
○	MIXING VALVE	⊞	VALVE ON PIPING RISE OR DROP
○	BUTTERFLY VALVE	⊞	TRAP PRIMER
○	GLOBE VALVE	⊞	THERMOMETER
○	PRESSURE REDUCING VALVE	⊞	WATER HAMMER ARRESTOR
○	BACKFLOW PREVENTER	⊞	DIRECTION OF FLOW
○	BALANCING VALVE	⊞	SLOPE & DIRECTION OF FALL
○	FLOW CONTROL VALVE	⊞	REDUCER OR INCREASER
○	TEMP. & PRESSURE RELIEF VALVE	⊞	POINT OF CONNECTION
○	PRESSURE RELIEF VALVE	⊞	POINT OF DEMARCACTION
○	MOTORIZED SHUT-OFF VALVE	⊞	DIAMETER
○	SOLENOID VALVE	⊞	SQUARE FEET
○	STRAINER	⊞	DRAIN RECEPTOR
○	FLOOR CLEAN OUT	⊞	FLOOR DRAIN (ROUND)
○	WALL CLEAN OUT	⊞	FLOOR DRAIN (RECTANGULAR)
○	EXTERIOR CLEAN OUT	⊞	PUMP
○	CAPPED PIPE / CLEAN OUT	⊞	FLEXIBLE CONNECTION (PIPE)
○		⊞	HOSE BIBB

TAGS & CALLOUTS

	EQUIPMENT REQUIRING ELECTRICAL SERVICE. REFER TO SCHEDULES FOR PERFORMANCE REQUIREMENTS.		REVISION CALLOUT
	EQUIPMENT NOT REQUIRING ELECTRICAL SERVICE. REFER TO SCHEDULES FOR PERFORMANCE REQUIREMENTS.		KEYNOTE CALLOUT
	SECTION CALLOUT SHEET NUMBER		POINT OF CONNECTION
	DETAIL CALLOUT SHEET NUMBER		POINT OF DEMARCACTION
	HEAT TRACE CIRCUIT START AND END		FURNISHED & INSTALLED BY ELECTRICAL
			FURNISHED & INSTALLED BY MECHANICAL
			FURNISHED AND INSTALLED BY PLUMBING
			HEAT TRACE CIRCUIT START AND END

DEMOLITION

< X >	EXISTING TO REMAIN	//////	DEMOLITION PIPING
< R >	EXISTING TO BE RELOCATED	//////	DEMOLITION EQUIPMENT
< R >	EXISTING TO BE REMOVED	< C >	CAP EXISTING
< N >	EXISTING - NEW LOCATION		

GENERAL NOTES

- ALL DRAWINGS ARE DIAGRAMMATIC ONLY. THE ARRANGEMENTS OF EQUIPMENT SHOWN ARE APPROXIMATIONS ONLY AND MAY BE ALTERED BY THE ENGINEERS TO MEET THE REQUIREMENTS OF THE PROJECT. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECT'S, INTERIOR DESIGNER, AND MECHANICAL DRAWINGS FOR LOCATION OF ALL LUMINAIRES, SWITCHES, DEVICES, OUTLETS, FURNITURE FEEDING POINTS, DIMENSIONS, MOUNTING HEIGHTS, AND CONSTRUCTION DETAILS.
- IN EVERY INSTANCE WHERE IT IS REQUIRED IN THE SPECIFICATION OR ON DRAWING THAT EQUIPMENT AND MATERIALS BE REMOVED FROM EXISTING LOCATIONS AND RE-INSTALLED, EITHER IN WHOLE OR IN PART IN NEW LOCATIONS, ALL SUCH EQUIPMENT AND MATERIALS SHALL BE THOROUGHLY CLEANED AND WHERE NECESSARY PUT INTO GOOD OPERATING CONDITION BEFORE BEING RE-INSTALLED IN THE NEW LOCATION. TEST ALL PARTS OF THE RE-USED OR RELOCATED ELECTRICAL EQUIPMENT AND CORRECT ALL FAULTS AND GROUNDS.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DEPARTMENT REPRESENTATIVE'S GUIDELINES AND SHALL ADHERE TO THE REQUIREMENTS STATED IN THE BASE BUILDING CONSTRUCTION MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK WITH ALL OTHER TRADES, CONSULTANTS & DEPARTMENT REPRESENTATIVE. ALL WORK SHALL BE SCHEDULED AND CARRIED OUT IN SUCH A MANNER TO ENSURE CONTINUED AND NON-INTERRUPTED OPERATION OF EXISTING FACILITY.
- ALL PIPE PENETRATIONS THROUGH FIRE RATED WALLS & FLOORS SHALL BE SEALED WITH FIRE STOP MATERIAL. FIRE STOP MATERIAL SHALL BE THAT WHICH IS APPROVED BY THE DEPARTMENT REPRESENTATIVE FOR USE IN THE BUILDING. REFER TO BASE BUILDING CONSTRUCTION MANUAL FOR FIRE STOPPING REQUIREMENTS.
- SEAL AIR-TIGHT AROUND ALL PIPE, CONDUIT & WIRE PENETRATIONS THROUGH PARTITIONS, Baffles ABOVE CEILINGS & THROUGH FLOORS THAT ARE NOT FIRE RATED.
- COORDINATE WITH DEPARTMENT REPRESENTATIVE TO CONFIRM EQUIPMENT, SYSTEMS & DEVICES TO REMAIN.
- PROVIDE TEMPORARY FILTERS ON ALL BASE BUILDING RETURN AIR OPENINGS, AND TRANSFER DUCTS CONNECTING TO THE ADJACENT DEPARTMENT REPRESENTATIVE SPACE THAT REMAIN OPERATIONAL DURING CONSTRUCTION. FILTERS SHALL HAVE A MERV RATING OF 13. FILTERS SHALL BE REPLACED WEEKLY & SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.
- ALL FILTERS IN BASE BUILDING AIR HANDLING EQUIPMENT SERVING THE CONSTRUCTION AREA SHALL BE REPLACED UPON COMPLETION OF CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REFINISHING OF DAMAGED BUILDING AREAS AND FINISHES AFFECTED BY THE WORK AS OUTLINED UNDER SCOPE OF WORK OF THIS PROJECT.
- ALL INSTALLATIONS WITHIN EXISTING AREAS SHALL BE COORDINATED WITH DEPARTMENT REPRESENTATIVE AND BASE BUILDING MANAGEMENT. INSTALLATION MUST BE PERFORMED IN A MANNER TO ELIMINATE ANY INTERFERENCES TO STAFF AND NORMAL OPERATION OF THE FACILITY.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND DISTRIBUTION OF TEMPORARY POWER WITHIN THE PREMISES DURING THE CONSTRUCTION PERIOD. EXPOSED ELECTRICAL CORDS OUTSIDE THE LEASED PREMISES SHALL NOT BE PERMITTED.
- DIMENSIONS ON DRAWINGS ARE EXPRESSED IN METRIC UNITS AND FLOWS ON DRAWINGS ARE EXPRESSED IN IMPERIAL UNITS.
- ALL TESTING, ADJUSTING, AND BALANCING (TAB) WORK SHALL BE PERFORMED BY AN INDEPENDENT WATER BALANCING CONTRACTOR APPROVED TO DO WORK IN THE BUILDING. REFER TO DEPARTMENT REPRESENTATIVE DESIGN AND CONSTRUCTION MANUAL.
- ANY SHUTDOWN, DRAINAGE, AND/OR FILLING OF BASE BUILDING SYSTEMS AND/OR SERVICES SHALL BE DONE BY THE DEPARTMENT REPRESENTATIVE'S BUILDING MANAGEMENT STAFF. SCHEDULE & COORDINATE ANY SHUTDOWNS WITH THE DEPARTMENT REPRESENTATIVE AT LEAST 120 HOURS IN ADVANCE. CONTRACTOR SHALL FOLLOW ALL DEPARTMENT REPRESENTATIVE'S INSTRUCTIONS, & SHALL CARRY ALL COSTS ASSOCIATED WITH THIS WORK IN THE TENDER PRICE.
- ALL NOISY WORK (CORE DRILLING, ETC) SHALL BE PERFORMED AFTER HOURS AND SHALL BE COORDINATED WITH THE DEPARTMENT REPRESENTATIVE & THE FACILITY AT LEAST 120 HOURS IN ADVANCE OF THE WORK TAKING PLACE.
- SUBMIT TO DEPARTMENT REPRESENTATIVE OPERATIONS & MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT PROVIDED UNDER THIS CONTRACT. OPERATION & MAINTENANCE MANUALS SHALL INCLUDE DATA SHEETS, BROCHURES, MAINTENANCE INFORMATION, RECOMMENDED SPARE PARTS LISTS, LUBRICATION INSTRUCTIONS, & START-UP CERTIFICATES.
- ALL NOISY WORK (CORE DRILLING, ETC) SHALL BE PERFORMED AFTER HOURS AND SHALL BE COORDINATED WITH THE DEPARTMENT REPRESENTATIVE & THE FACILITY AT LEAST 120 HOURS IN ADVANCE OF THE WORK TAKING PLACE.
- SUBMIT TO DEPARTMENT REPRESENTATIVE A COMPLETE SET OF AS-BUILT RECORD DRAWINGS. AS-BUILT DRAWINGS SHALL BE PREPARED USING CAD SOFTWARE (I.E. AUTOCAD) & SUBMITTED IN DIGITAL PDF & DWG FORMATS, AND AS A HARD COPY TO THE DEPARTMENT REPRESENTATIVE. SCANNED REDLINE MARKED-UP DRAWINGS ARE NOT ACCEPTABLE.

DRAWING LIST

M01	MECHANICAL NOTES, LEGENDS, AND KEY PLAN
M02	MECHANICAL SCHEDULES, DETAILS, AND SPECIFICATIONS
M03	MECHANICAL SPECIFICATIONS
M04	MECHANICAL - BUILDING 128
M05	MECHANICAL - BUILDING 129
M06	MECHANICAL - BUILDING 130
M07	MECHANICAL - BUILDING 138
M08	MECHANICAL - BUILDING 141
M09	MECHANICAL - BUILDING 142
M10	MECHANICAL - BUILDING 158
M11	MECHANICAL - BUILDING 169
M12	MECHANICAL - BUILDING 201 - WATER ENTRY A
M13	MECHANICAL - BUILDING 201 - WATER ENTRY B
M14	MECHANICAL - BUILDING 206
M15	MECHANICAL - BUILDING 210
M16	MECHANICAL - BUILDING 211
M17	MECHANICAL - BUILDING 220
M18	MECHANICAL - BUILDING CENTRAL PLANT
M19	MECHANICAL - BUILDING GUARDHOUSE

CLIENT

Canadian Food Inspection Agency  
(CFIA)

PROJECT NORTH

03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

ISSUE DESCRIPTION DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

PROFESSIONAL STAMP



EXP Services Inc.  
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100 - 2650 Queensview Drive  
Ottawa, ON K2B 8H6  
Canada



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

PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

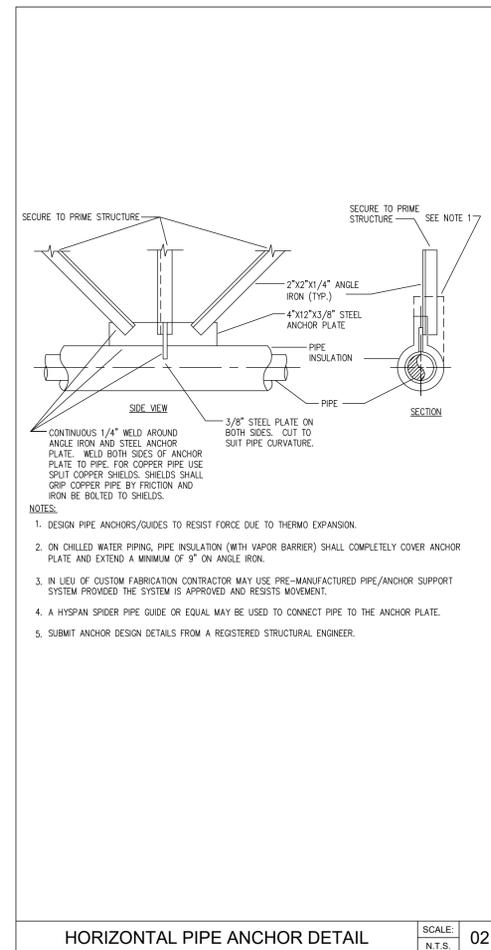
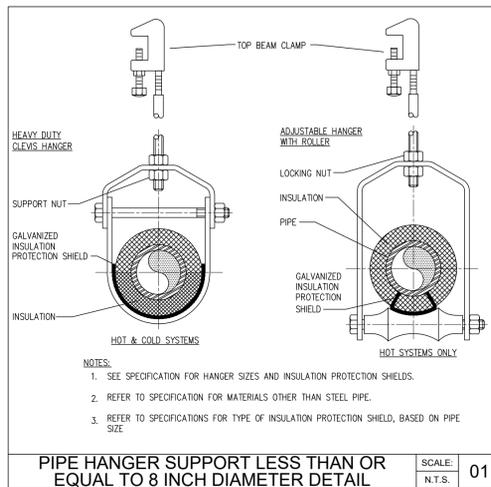
MECHANICAL NOTES  
LEGENDS, AND  
KEY PLAN

PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

BACKFLOW PREVENTER DEVICES							
TAG	LOCATION	TYPE OF BFP	MAKE	MODEL NO.	INSTALLATION ORIENTATION	SIZE [INCHES]	REMARKS
BFP-CHP	CENTRAL HEATING PLANT	RP	WATTS	LF909-QT-S-FS	VERTICAL	2	C/W 909EL SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-G	GUARDHOUSE	DCVA	WATTS	LF790-QT-S-C&T	HORIZONTAL	3/4	C/W TESTCOCK CAPS AND TETHERS, STRAINER
BFP-128	BUILDING 128	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-129	BUILDING 129	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-130	BUILDING 130	RP	WATTS	LF909-QT-S-FS	VERTICAL	1-1/2	C/W 909EL SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-138	BUILDING 138	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-141	BUILDING 141	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-142	BUILDING 142	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	1-1/2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-158	BUILDING 158	RP	WATTS	LF909-QT-S-FS	VERTICAL	2	C/W 909EL SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-169	BUILDING 169	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-201A	BUILDING 201	RP	WATTS	LF909-NRS-S-ALERT	HORIZONTAL	6	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-201B	BUILDING 201	RP	WATTS	LF909-NRS-S-ALERT	HORIZONTAL	6	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-210	BUILDING 210	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	1-1/2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-211	BUILDING 211	RP	WATTS	LF909M1-QT-S-FS	HORIZONTAL	1	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION
BFP-220	BUILDING 220	RP	WATTS	LF909-QT-S-FS	HORIZONTAL	1-1/2	C/W 909AG SERIES AIR GAP, STRAINER, FLOOD DETECTION

EXPANSION TANKS								
TAG	LOCATION	MAKE	MODEL NO.	INLET SIZE [INCHES]	TANK VOLUME [GALLONS]	ACCEPTANCE VOLUME [GALLONS]	MAXIMUM WORKING PRESSURE [PSI]	MAXIMUM OPERATING TEMPERATURE [°F]
ET-CHP	CENTRAL HEATING PLANT	WATTS	DETA-30	1	15	10	150	240
ET-G	GUARDHOUSE	WATTS	DETA-5	3/4	3.5	2.3	150	240
ET-128	BUILDING 128	WATTS	DETA-12	3/4	5.0	3.3	150	240
ET-129	BUILDING 129	WATTS	DETA-12	3/4	5.0	3.3	150	240
ET-130	BUILDING 130	WATTS	DETA-12	3/4	5.0	3.3	150	240
ET-138	BUILDING 138	WATTS	DETA-12	3/4	5.0	3.3	150	240
ET-141	BUILDING 141	WATTS	DETA-5	3/4	3.5	2.3	150	240
ET-142	BUILDING 142	WATTS	DETA-12	3/4	5.0	3.3	150	240
ET-158	BUILDING 158	WATTS	DETA-20	3/4	8.0	5.3	150	240
ET-169	BUILDING 169	WATTS	DETA-20	3/4	8.0	5.3	150	240
ET-201A	BUILDING 201-A	WATTS	DETA-160	1-1/2	70	47	150	240
ET-201B	BUILDING 201-B	WATTS	DETA-160	1-1/2	70	47	150	240
ET-206	BUILDING 206	WATTS	DETA-20	3/4	8.0	5.3	150	240
ET-210	BUILDING 210	WATTS	DETA-12	3/4	5.0	3.3	150	240
ET-211	BUILDING 211	WATTS	DETA-20	3/4	8.0	5.3	150	240
ET-220	BUILDING 220	WATTS	DETA-5	3/4	3.5	2.3	150	240

NOTES:  
1. ASME TANK.  
2. HEAVY DUTY DIAPHRAGM TYPE SUITABLE FOR POTABLE WATER INSTALLATION



## GENERAL

- GENERAL REQUIREMENTS
  - THE WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE, THE MINISTRY OF LABOUR, THE CITY AND ALL CODES HAVING JURISDICTION, WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION & PROVIDE REPAIR OF ADJACENT EXISTING SURFACES, EQUIPMENT, AREAS & PROPERTY THAT MAY BE DAMAGED AS A RESULT OF ANY DEMOLITION AND / OR NEW WORK.
  - CONTRACTOR SHALL PAY FOR AND OBTAIN ALL REQUIRED PERMITS, FEES, LICENSES, CERTIFICATES OF INSPECTION, ETC. PROVIDE AND SUBMIT REQUIRED DRAWINGS TO THE AUTHORITIES HAVING JURISDICTION.
  - THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION & SERVICES NECESSARY FOR COMPLETION OF THE WORK. ITEMS NOT EXPLICITLY ILLUSTRATED ON THE DRAWINGS ARE NOT TO BE EXCLUDED FROM THE SCOPE OF WORK IF REQUIRED AS PART OF A PROPER INSTALLATION, PERMITS, REGISTRATIONS, TESTING AND BALANCING. ALL MATERIALS & WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES & GOVERNING REGULATIONS & SHALL MEET WITH THE APPROVAL OF THE CITY & PROVINCIAL FIRE MARSHAL.
  - ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW & COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION, INCLUDING ARCHITECTURAL, STRUCTURAL, AIR CONDITIONING, PLUMBING & ELECTRICAL. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION MAY BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE, & AT NO EXPENSE TO THE DEPARTMENT REPRESENTATIVE.
  - DO NOT SCALE DRAWINGS - ALL DIMENSIONS & JOB SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF CONSTRUCTION AND / OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
  - CONTRACTOR TO PROVIDE ANY TEMPORARY HEATING AND OR COOLING MEASURES FOR SPACES THAT REQUIRE THE SHUTDOWN OF AN EQUIPMENT SERVING MULTIPLE AREAS.
  - CONTRACTOR TO KEEP A RECORD SET OF DRAWINGS ON SITE AT ALL TIMES. ANY CHANGES SHALL BE RECORDED ON THIS SET FOR AS-BUILT DRAWINGS.
  - PROVIDE SEISMIC BRACING FOR MECHANICAL EQUIPMENT BASED ON APPROPRIATE SEISMIC ZONE REQUIREMENTS PER LOCAL AND NATIONAL CODES. CONTRACTOR'S RESPONSIBILITY INCLUDES STRUCTURAL ENGINEER'S CERTIFICATION ON DETAILS SUBMITTED FOR PERMITTING.
  - NOTE THAT THE DESIGN AND DRAWINGS ARE BASED ON THE FIRST MANUFACTURER SHOWN. IF THE CONTRACTOR'S CHOICE IS OTHER THAN THE FIRST INDICATED THEN IT IS HIS RESPONSIBILITY TO IMMEDIATELY, AFTER CONTRACT AWARD, INFORM ALL AFFECTED TRADES SUCH AS ARCHITECTURAL, STRUCTURAL, ELECTRICAL, ETC. SINCE CHARACTERISTICS WILL DIFFER FROM EQUIPMENT INCLUDING SIZE, ROOF OPENINGS, HEIGHTS, ELECTRICAL CHARACTERISTICS ETC. COSTS ASSOCIATED WITH THIS SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. NO EXTRAS WILL BE ACCEPTED.
  - ENSURE PRIOR TO THE INSTALLATION THAT ALL EQUIPMENT FIXTURES, PIPING ETC. WILL FIT INTO ALLOTTED SPACE. IMMEDIATELY INFORM THE ENGINEER IF THE INSTALLATION AS SHOWN IS NOT POSSIBLE.
  - ALL EQUIPMENT, FIXTURES, AND MATERIALS ARE TO BE NEW AND FREE OF DEFECTS.
- INTERRUPTION OF SERVICES
  - ALL INTERRUPTIONS OF EXISTING MECHANICAL SYSTEMS MUST BE APPROVED BY AND CO-ORDINATED WITH THE DEPARTMENT REPRESENTATIVE.
  - ONLY ONE SERVICE OR BUILDING CAN BE WORKED ON AT ONCE. WORK MUST BE COMPLETED PRIOR TO MOVING TO NEXT BACKFLOW PREVENTER.
  - BUILDING B201 REQUIRES THAT WATER SERVICE SHUT DOWN BE CARRIED OUT OVER THE WEEKEND, LIMIT WATER SHUT DOWN TO 8 HOURS.
  - DISRUPTION OF NORMAL OPERATIONS WILL NOT BE ALLOWED. ALL INTERRUPTIONS SHALL OCCUR AFTER THE CLOSE OF NORMAL HOURS. PREMIUM TIME TO BE INCLUDED IN THE TENDER PRICE.
- CONTRACTOR TO ARRANGE WITH THE DEPARTMENT REPRESENTATIVE FOR NECESSARY SHUTDOWNS FOR ALL SYSTEMS THAT REQUIRE TIE-INS AND WORK WITHIN OTHER DEPARTMENT REPRESENTATIVE SPACES. SCHEDULING OF THIS WORK TO BE COORDINATED WITH THE DEPARTMENT REPRESENTATIVE.
- SHOP DRAWINGS
  - SUBMIT SHOP DRAWINGS FOR THE FOLLOWING MAJOR EQUIPMENT:
    - BACKFLOW PREVENTERS
    - EXPANSION TANKS
  - ALTERNATE EQUIPMENT MAY BE SPECIFIED, PROVIDED THAT THE SPACE REQUIREMENTS, QUALITY AND PERFORMANCE CHARACTERISTICS, AIR AND FLUID FLOW REQUIREMENTS, HEIGHTS AND POWER REQUIREMENTS ARE EQUAL TO THE SPECIFIED EQUIPMENT. ACCEPTANCE OF ANY ALTERNATE EQUIPMENT SHALL BE BY THE CONSULTANT.
  - SEND ALL SHOP DRAWINGS FOR APPROVAL IN ONE PACKAGE.
- COORDINATION
  - COORDINATE AND VERIFY EXACT LOCATIONS, SIZES, POINTS OF CONNECTION AND INVERT ELEVATIONS OF NEW AND EXISTING BUILDING PLUMBING SERVICE LATERALS ON SITE PRIOR TO PERFORMING WORK. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES. MAKE FINAL CONNECTIONS TO LATERALS.
  - COORDINATE ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR INCLUDING POWER LOADS OF NEW EQUIPMENT, FIXTURES AND APPLIANCES.
  - COORDINATE ACCESS PANEL REQUIREMENTS WITH THE ARCHITECT. PROVIDE PANEL SIZES, FINISH, ELEVATIONS AND LOCATIONS.
  - COORDINATE LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES AND PENETRATIONS THRU WALLS, FLOORS, BEAMS (INCLUDING GRADE BEAMS/FOOTINGS) AND SLABS WITH THE ARCHITECT AND STRUCTURAL ENGINEER.
  - COORDINATE AND PROVIDE PIPING ROUGH-INS AND CONNECTIONS TO EQUIPMENT, FIXTURES AND APPLIANCES THRU PRE MANUFACTURED CABINET FRAMING SYSTEMS (CHASES).
  - THE LOCATION, QUANTITIES AND SIZES OF EXISTING PIPING, FIXTURES, EQUIPMENT, SHUT-OFF VALVES, ETC. INDICATED ON THE PLANS HAS BEEN DERIVED FROM AVAILABLE RECORD DRAWINGS AND FIELD INVESTIGATIONS AND ARE SHOWN DIAGMATICALLY. THE CONTRACTOR SHALL VERIFY ALL SUCH ITEMS PRIOR TO INSTALLATION OF NEW WORK.
  - WHERE EXISTING/UNDOCUMENTED PIPING SYSTEMS ARE INSTALLED IN WALLS THAT ARE TO BE REMOVED OR REMODELED, THE CONTRACTOR SHALL IMMEDIATELY IDENTIFY SUCH SYSTEMS TO THE ARCHITECT FOR REVIEW PRIOR TO DEMOLITION OR REROUTE. IF REROUTE IS DEEMED NECESSARY TO MAINTAIN OTHER BUILDING SYSTEM OPERATIONS, THE CONTRACTOR SHALL PROVIDE A SOLUTION TO THE REROUTE FOR REVIEW BY THE ARCHITECT.
  - CONTRACTOR SHALL COORDINATE ALL PIPE AND EQUIPMENT LOCATIONS WITH ELECTRICAL, STRUCTURAL, PLUMBING AND ALL OTHER TRADES.
  - ALL OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED SO AS TO PERMIT EASY CONNECTION. COORDINATE DUCTWORK, STRUCTURAL CONDITIONS AND ARCHITECTURAL LAYOUT.
- SLEEVES, CUTTING AND PATCHING
  - INSTALL SLEEVES AND FRAMES FOR PIPING AND SIMILAR EQUIPMENT TO BE BUILT INTO THE BUILDING AS THE CONSTRUCTION PROGRESSES. IF THESE ARE NOT INSTALLED AT THE TIME OF CONSTRUCTION, THE COST OF CUTTING AND PATCHING AT A LATER DATE, WILL BE AT THE EXPENSE OF THIS CONTRACTOR.
  - THE PRIME MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE CUTTING AND PATCHING OF ALL HOLES AND OPENINGS UP TO AND INCLUDING 200 mm (8") DIAMETER.
  - THE PRIME MECHANICAL CONTRACTOR IS TO LOCATE THE EXACT POSITIONS AND DIMENSIONS OF LARGER OPENINGS FOR CUTTING BY THE GENERAL DIVISION.
  - SEAL AROUND SERVICES PASSING THROUGH CUT OPENINGS WITH MATERIALS EQUIVALENT TO THE FIRE RATING OF THE WALL FLOOR OR ROOF. ENSURE SEALING IS WEATHERPROOF FOR OPENINGS THROUGH EXTERIOR WALLS AND ROOFS. PROVIDE ANY PAINTING ON REPAIRED SURFACES IF REQUIRED BEFORE SEALING.
  - PROVIDE SLEEVES FOR ALL NEW PIPING PASSING THROUGH FLOOR AND ROOF SLABS, BEAMS, CONCRETE WALLS AND SLAB TO SLAB PARTITIONS, ETC.
  - SEAL TO BE AIR-TIGHT AROUND ALL PIPING PENETRATIONS THROUGH PARTITIONS, BAFFLES ABOVE CEILINGS, AND THROUGH FLOORS THAT ARE NOT FIRE RATED.
  - PROVIDE ALL SLEEVES REQUIRED FOR PIPING AND ACCESS OPENINGS.
  - FOR INTERIOR WALLS, EXTERIOR WALLS ABOVE GRADE, NON WATERPROOF FLOORS, PROVIDE SCHEDULE 40 STEEL PIPE, MEDIUM CAST IRON OR 18 GAUGE GALVANIZED STEEL.
- COMMISSIONING AND CLOSEOUT
  - CONTRACTOR SHALL PROVIDE COMMISSIONING AND REPORT FOR ALL THE NEW EQUIPMENT AND ANY ON-SITE TRAINING REQUIRED FOR OPERATION.
  - CLEAN ALL EQUIPMENT AND THE OVERALL INSTALLATION. FOLLOW INITIAL MAINTENANCE INSTRUCTIONS FROM THE MANUFACTURER.
  - GUARANTEE IN WRITING FOR THE MATERIAL AND WORKMANSHIP INCLUDING THE MANUFACTURER'S GUARANTEE FOR THE PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE.
  - PROVIDE ALL DOCUMENTATION REQUIRED CLOSEOUT DOCUMENTATION (AIR/WATER BALANCE REPORT, NFPA 13 COMPLIANCE LETTER, TEST CERTIFICATES, ETC.) PRIOR TO PROJECT CLOSEOUT & CLOSE OF BUILDING PERMIT.
  - CERTIFY IN WRITING FOR ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
  - SUBMIT TO DEPARTMENT REPRESENTATIVE OPERATIONS & MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT PROVIDED UNDER THIS CONTRACT. OPERATION & MAINTENANCE MANUALS SHALL INCLUDE DATA SHEETS, BROCHURES, MAINTENANCE INFORMATION, RECOMMENDED SPARE PARTS LISTS, LUBRICATION INSTRUCTIONS, & START-UP CERTIFICATES.
  - SUBMIT TO DEPARTMENT REPRESENTATIVE A REVIEWED SET OF ALL SHOP DRAWINGS CLEARLY MARKED WITH "REVIEWED" BY THE INSTALLING CONTRACTOR & THE ENGINEER.
  - SUBMIT TO DEPARTMENT REPRESENTATIVE A COMPLETE SET OF AS-BUILT RECORD DRAWINGS. AS-BUILT DRAWINGS SHALL BE PREPARED USING CAD SOFTWARE (I.E. AUTOCAD) & SUBMITTED IN DIGITAL PDF & DWG FORMATS, AND AS A HARD COPY TO THE DEPARTMENT REPRESENTATIVE. SCANNED REDLINE MARKED-UP DRAWINGS ARE NOT ACCEPTABLE.
- DOMESTIC WATER PIPING AND VALVES ARE TO COMPLY WITH FOLLOWING CODES, REGULATIONS AND STANDARDS (AS APPLICABLE):
  - APPLICABLE LOCAL CODES AND REGULATIONS;
  - CAN/CSA B125.1, PLUMBING SUPPLY FITTINGS;
  - CAN/CSA B125.3, PLUMBING FITTINGS;
  - CAN/CSA B137 SERIES, THERMOPLASTIC PRESSURE PIPING COMPENDIUM;
  - NSF/ANSI 14, PLASTICS PIPING SYSTEM COMPONENTS AND RELATED MATERIALS;
  - NSF/ANSI 61, DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS;
  - NSF/ANSI 372, DRINKING WATER SYSTEM COMPONENTS - LEAD CONTENT.

CLIENT

**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

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PROJECT

**Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON**

DRAWING

**MECHANICAL SCHEDULES,  
DETAILS, AND SPECIFICATIONS**

PROJECT No:	MRK-22022713-A0	REVISION:
DRAWN:	V. HATAI	DATE: JUNE 2023
APPROVED:	B. BROWN	SCALE: AS SHOWN

DRAWING No: **M-02**

8. PIPE, FITTINGS AND JOINTS
- 8.1. SOFT COPPER, TYPE "K" SOFT COPPER TO ASTM B88, SUPPLIED IN A CONTINUOUS COIL WITH NO JOINTS IF POSSIBLE, AND COMPLETE WITH, IF JOINTS ARE REQUIRED, COMPRESSION TYPE FLARED JOINT COUPLINGS.
- 8.2. COPPER PRESSURE COUPLED JOINT, TYPE "L" HARD DRAWN SEAMLESS COPPER TO ASTM B88 WITH "PROGRESS WITH SMART CONNECT FEATURE" COPPER FITTINGS WITH EDM SLAMS, AND PRESSURE TYPE CRIMPED JOINTS MADE BY USE OF A RIGID TOOL CO. MODEL RP 330 OR MODEL RP 210 ELECTRO-HYDRAULIC CRIMPING TOOL.
- 8.3. SEMI-RIGID POLYETHYLENE TUBING: VERSA FITTINGS AND MFG. INC. 3/4" DIA., HIGH DENSITY, SEMI-RIGID POLYETHYLENE TUBING, 200 PSI RATED CROSS-LINKED POLYETHYLENE (PEX) TUBING: NON-BARRIER TYPE PEX PIPING IN ACCORDANCE WITH CAN/CSA B137.5, ASTM F876 AND TESTED FOR COMPLIANCE BY AN INDEPENDENT THIRD-PARTY AGENCY, 25/40 FLAME SPREAD/SMOKE DEVELOPED RATED WHEN TESTED TO CAN/ULC S102.2 AND COMPLETE WITH BRASS INSERTS AND CRIMP-RING OR COLD-EXPANSION JOINT FITTINGS AND COUPLINGS.
9. SHUT-OFF VALVES
- 9.1. BALL VALVES: CLASS 600, 400 PSI WOG RATED FULL PORT BALL TYPE VALVES, EACH COMPLETE WITH A FORGED BRASS BODY WITH SOLDER ENDS, FORGED BRASS CAP, AND BLOWOUT-PROOF STEM, SOLID FORGED BRASS CHROME PLATED BALL, "TEFLON" OR "PIPE" SEAT, AND A REMOVABLE LEVER HANDLE. VALVES IN INSULATED PIPING ARE TO BE COMPLETE WITH STEM EXTENSIONS. ACCEPTABLE PRODUCTS ARE:
- 9.1.1. TOYO VALVE CO. FIG. 5049A;  
 9.1.2. MILWAUKEE VALVE CO. #B4-155;  
 9.1.3. KITZ CORPORATION CODE 59;  
 9.1.4. APOLLO VALVES # 77-200;  
 9.1.5. WATTS INDUSTRIES (CANADA) INC. #BVS-3.
10. CHECK VALVES
- 10.1. HORIZONTAL: CLASS 125, BRONZE 200 PSI WOG RATED HORIZONTAL SWING TYPE CHECK VALVES WITH SOLDER ENDS. ACCEPTABLE PRODUCTS ARE:
- 10.1.1. TOYO VALVE CO. FIG. 237;  
 10.1.2. MILWAUKEE VALVE CO. #S10;  
 10.1.3. KITZ CORPORATION CODE 23;  
 10.1.4. APOLLO VALVES # 61-600.
- 10.2. VERTICAL: EQUAL TO KITZ CORP. CODE 26, BRONZE, 250 PSI WOG RATED VERTICAL LIFT CHECK VALVE WITH SOLDERING ENDS.
11. DRAIN VALVES
- 11.1. MINIMUM 300 PSI WATER RATED, 3/4" DIA., STRAIGHT PATTERN FULL PORT BRONZE BALL VALVES, EACH COMPLETE WITH A THREADED OUTLET SUITABLE FOR COUPLING CONNECTION OF 3/4" DIA. GARDEN HOSE, AND A CAP AND CHAIN. ACCEPTABLE PRODUCTS ARE:
- 11.1.1. TOYO VALVE CO. FIG. 5046;  
 11.1.2. DAHL BROTHERS CANADA LTD. FIG. NO. 50. 430;  
 11.1.3. KITZ CORPORATION CODE 58CC;  
 11.1.4. APOLLO VALVES # 78-104-01;  
 11.1.5. WATTS INDUSTRIES (CANADA) INC. #B600-CC.
12. PIPING INSTALLATION REQUIREMENTS
- 12.1. PROVIDE ALL REQUIRED DOMESTIC WATER PIPING.
- 12.2. PIPING, UNLESS OTHERWISE SPECIFIED, IS TO BE AS FOLLOWS:
- 12.2.1. FOR UNDERGROUND PIPING LESS THAN 100 MM (4") DIA. INSIDE BUILDING - TYPE "K" SOFT COPPER;  
 12.2.2. FOR 12 MM (3/8") DIA. TRAP SEAL PRIMER TUBING LOCATED UNDERGROUND OR IN CONCRETE OR MASONRY CONSTRUCTION - SEMI-RIGID POLYETHYLENE;  
 12.2.3. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES TO 100 MM (4") DIA., EXCEPT IN VERTICAL SHAFTS AND THROUGH FIRE BARRIERS - RIGID CPVC;  
 12.2.4. FOR BRANCH HOT AND COLD PIPING ABOVEGROUND FROM MAINS AND RISERS TO FIXTURES, FITTINGS, AND EQUIPMENT WHERE FIRE RATED CONSTRUCTION IS NOT PENETRATED - AT YOUR OPTION, PEX TUBING INSTALLED AND JOINED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS;  
 12.2.5. FOR UNDERGROUND PIPING OUTSIDE BUILDING TO FIXTURES/OUTLETS AT GRADE LEVEL - FLEXIBLE POLYETHYLENE, SNAKE IN THE TRENCH AND IN A CONTINUOUS LENGTH WHEREVER POSSIBLE;  
 12.2.6. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES TO 100 MM (4") DIA. - TYPE "L" HARD COPPER WITH SOLDER JOINTS OR TYPE "L" HARD COPPER WITH PRESSURE COUPLED MECHANICAL JOINTS.
13. FLUSHING AND DISINFECTING PIPING
- 13.1. FLUSH AND DISINFECT ALL NEW AND/OR REWORKED DOMESTIC WATER PIPING AFTER LEAKAGE TESTING IS COMPLETE.

**DOMESTIC WATER PIPING SPECIALTIES**

14. SHOP DRAWINGS/PRODUCT DATA: SUBMIT SHOP DRAWINGS/PRODUCT DATA SHEETS FOR ALL PRODUCTS SPECIFIED IN THIS SECTION
15. BACKFLOW PREVENTER INSPECTION/TEST RESULTS: SUBMIT SIGNED TEST RESULTS AND INSPECTION AND TEST LOG CARDS FOR EACH BACKFLOW PREVENTER AS SPECIFIED IN THIS SECTION.
16. BACKFLOW PREVENTERS
- 16.1. DOUBLE CHECK VALVE ASSEMBLY
- 16.1.1. MINIMUM 1205 KPA (175 PSI) RATED LEAD-FREE DUAL CHECK VALVE ASSEMBLY BACKFLOW PREVENTER TO CAN/CSA B64 (INCLUDING SUPPLEMENTS), COMPLETE WITH TIGHT-CLOSING RESILIENT SEATED SHUT-OFF VALVES, TEST COOKS AND STRAINER.
- 16.1.2. ACCEPTABLE MANUFACTURERS ARE:
- 16.1.2.1. WATTS INDUSTRIES CANADA;  
 16.1.2.2. ZURN/WILKINS;  
 16.1.2.3. APOLLO VALVES (CONBRACO INDUSTRIES).
- 16.2. REDUCED PRESSURE ZONE ASSEMBLY
- 16.2.1. LEAD-FREE REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER IN ACCORDANCE WITH CAN/CSA B64 (INCLUDING SUPPLEMENTS), EACH OF BRONZE OR EPOXY COATED CAST IRON BRONZE FITTED CONSTRUCTION DEPENDING ON SIZE, AND COMPLETE WITH INLET STRAINER, INLET AND OUTLET SHUT-OFF VALVES, AN INTERMEDIATE RELIEF VALVE, BALL VALVE TYPE TEST COOKS, AND A PROPER AIR GAP FITTING.
- 16.2.2. ACCEPTABLE PRODUCTS ARE:
- 16.2.2.1. WATTS INDUSTRIES #F90901-S FOR 12 MM (3/8") SIZE, #F90901-S FOR 20 MM TO 50 MM (3/4" TO 2") SIZE, AND #F909-NRS-S FOR 65 MM (2-1/2") AND LARGER SIZE;  
 16.2.2.2. ZURN/WILKINS 975X2 AND 375 SERIES;  
 16.2.2.3. "APOLLO" VALVES MANUFACTURED BY CONBRACO INDUSTRIES INC. SERIES 4ALF;  
 16.2.2.4. DANFOSS FLOMATIC CORP. SERIES RPZ.
- 16.3. INSTALLATION OF BACKFLOW PREVENTERS
- 16.3.1. PROVIDE A REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER ON INCOMING COW SERVICE AND IN EACH DIRECT DOMESTIC WATER CONNECTION TO EQUIPMENT OTHER THAN PLUMBING FIXTURES AND FITTINGS WHERE INDICATED.
- 16.3.2. PROVIDE A DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTER ON INCOMING COW SERVICE WHERE INDICATED. PROVIDE A REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER IN EACH DIRECT DOMESTIC WATER CONNECTION TO EQUIPMENT OTHER THAN PLUMBING FIXTURES AND FITTINGS.
- 16.3.3. LOCATE EACH BACKFLOW PREVENTER ON FLOOR OR WALL BETWEEN 765 MM AND MAXIMUM 1.5 M (30" AND 60") ABOVE FLOOR SUCH THAT IT IS EASILY ACCESSIBLE FOR MAINTENANCE AND TESTING. EQUIP EACH BACKFLOW PREVENTER WITH AN AIR GAP FITTING AND PIPE THE REDUCED PRESSURE ZONE WATER OUTLET TO DRAIN.
- 16.3.4. TEST OPERATION OF EACH BACKFLOW PREVENTER IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA B64 BY PERSONNEL CERTIFIED FOR SUCH TESTING BY GOVERNING AUTHORITIES, AND SUBMIT SIGNED TEST RESULTS AND A PROPERLY AND CLEARLY IDENTIFIED AND MARKED INSPECTION AND TEST RECORD CARD FOR EACH BACKFLOW PREVENTER.
17. DOMESTIC WATER THERMAL EXPANSION TANK
- 17.1. PRE-CHARGED DOMESTIC WATER THERMAL EXPANSION TANK IN ACCORDANCE WITH SECTION VIII OF THE ASME BOILER AND PRESSURE CODE, CARBON STEEL OUTER SHELL CONSTRUCTION AND COMPLETE WITH FIXED BUTYR RUBBER BLENDER TO PREVENT WATER FROM CONTACTING SHELL INTERIOR, TOP NPT STAINLESS STEEL SYSTEM CONNECTION, 7.6 MM TO 813 MM (0.301" TO 32") CHARGING VALVE CONNECTION AND PRIME PAINTED EXTERIOR.
- 17.2. ACCEPTABLE PRODUCTS ARE:
- 17.2.1. WATTS INDUSTRIES (CANADA) INC. SERIES DETA;  
 17.2.2. ZURN/WILKINS MODEL WTTA.
- 17.3. INSTALLATION OF DOMESTIC WATER THERMAL EXPANSION TANK
- 17.3.1. PROVIDE WATER THERMAL EXPANSION TANKS IN DOMESTIC WATER PIPING WHERE SHOWN.
- 17.3.2. UNLESS OTHERWISE SPECIFIED, MOUNT AT LEAST 18" FROM THE COLD WATER INLET TO DOMESTIC WATER HEATER.
- 17.3.3. ADJUST PRE-CHARGE TO MATCH INCOMING WATER PRESSURE AFTER INSTALLATION.
- 17.3.4. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND AS PER LOCAL GOVERNING CODES AND REGULATIONS.
18. HEAT TRACING CABLE
- 18.1. GENERAL
- 18.1.1. HEAT TRACING SHALL BE RAYCHEM BTV SELF-REGULATING HEATING CABLE ATTACHED WITH GT-66 FOR METAL PIPES, ETL-ENGLISH LABEL, NVENT RAYCHEM JBS-100 POWER CONNECTION KIT (INCLUDES END SEAL).
- 18.1.2. CENTRAL THERMAL MANAGEMENT REQUIRES THE USE OF 6PS WITH 30MA TRIP ON ALL CIRCUITS.
- 18.1.3. ADD ADDITIONAL 3 FEET OF CABLE TO TOTAL LENGTH FOR CONNECTIONS.
- 18.1.4. SPECIFICATION: NVENT RAYCHEM BTV SELF-REGULATING HEATING CABLE.
- 18.1.5. FURNISH AND INSTALL A COMPLETE UL LISTED, CSA CERTIFIED, OR FM APPROVED SYSTEM OF HEATING CABLES, COMPONENTS, AND CONTROLS TO PREVENT PIPES FROM FREEZING.

- 18.2. MATERIALS
- 18.2.1. THE SELF-REGULATING HEATING CABLE SHALL CONSIST OF TWO (2) 16 AWG NICKEL-COPPER BUS WIRES EMBEDDED IN PARALLEL IN A SELF-REGULATING POLYMER CORE THAT VARIES ITS POWER OUTPUT TO RESPOND TO
- 18.2.2. TEMPERATURE ALL ALONG ITS LENGTH, ALLOWING THE HEATING CABLE TO BE CUT TO LENGTH IN THE FIELD. THE HEATING CABLE SHALL BE COVERED BY A RADIATION-CROSSLINKED, MODIFIED POLYOLEFIN DIELECTRIC JACKET.
- 18.2.3. TO PROVIDE A ROUND PATH AND TO ENHANCE THE HEATING CABLE'S RUGGEDNESS, THE HEATING CABLE SHALL HAVE A BRAID OF TINNED COPPER AND AN OUTER JACKET OF MODIFIED POLYOLEFIN (-OR), AS REQUIRED PER SECTION 427-23 OF THE NEC-1996.
- 18.2.4. IN ORDER TO CONSERVE ENERGY AND TO PREVENT OVERHEATING, THE HEATING CABLE SHALL HAVE A SELF-REGULATING FACTOR OF AT LEAST 90 PERCENT. THE SELF-REGULATING FACTOR IS DEFINED AS THE PERCENTAGE REDUCTION, WITHOUT THERMOSTATIC CONTROL, OF THE HEATING CABLE OUTPUT GOING FROM 40 F PIPE TEMPERATURE OPERATION TO 150 F PIPE TEMPERATURE OPERATION.
- 18.2.5. THE HEATING CABLE SHALL OPERATE ON LINE VOLTAGES OF 120 VOLTS WITHOUT THE USE OF TRANSFORMERS. POWER SUPPLY BY DIV. 16. COORDINATE EXACT LOCATION ON SITE WITH DEPARTMENT REPRESENTATIVE.
- 18.2.6. THE HEATING CABLE FOR METAL PIPE FREEZE PROTECTION SHALL BE SIZED ACCORDING TO THE TABLE BELOW. THE REQUIRED HEATING CABLE OUTPUT RATING IS IN WATTS PER FOOT AT 50F. (HEATING CABLE IS SECTION BASED ON 1 INCH FIBERGLASS INSULATION ON METAL PIPING.)
- | PIPE SIZE (INCHES)<br>3 OR LESS | MINIMUM TEMPERATURE(0T) | AMBIENT TEMPERATURE(20T) | 5 WATTS          | 8 WATTS |
|---------------------------------|-------------------------|--------------------------|------------------|---------|
| 4                               | 5 WATTS                 | 5 WATTS                  | 8 WATTS          | 8 WATTS |
| 6                               | 8 WATTS                 | 8 WATTS                  | 8 WATTS          | 8 WATTS |
| 8                               | 8 WATTS                 | 8 WATTS                  | 2 STRIPS-5 WATTS | 8 WATTS |

- 18.2.7. POWER CONNECTION, END SEAL, SPLICE/TEE KIT COMPONENTS AND MOUNTING BRACKETS SHALL BE APPLIED IN THE FIELD.
- 18.2.8. HEATING CABLE CIRCUIT SHALL BE PROTECTED BY A GROUND-FAULT DEVICE FOR EQUIPMENT PROTECTION. THIS REQUIREMENT IS IN ACCORDANCE WITH SECTION 427-22 OF THE NEC-1996.
- 18.3. COMPONENTS
- 18.3.1. ALL HEATING-CABLE COMPONENTS SHALL BE UL LISTED, CSA CERTIFIED, OR FM APPROVED FOR USE AS PART OF THE SYSTEM TO PROVIDE (CHOOSE ONE): PIPE FREEZE PROTECTION, FLOW MAINTENANCE) COMPONENT
- 18.3.2. ENGLISHES SHALL BE RATED NEMA 4X TO PREVENT WATER INGRESS AND CORROSION. INSTALLATION SHALL NOT REQUIRE THE INSTALLING CONTRACTOR TO CUT INTO THE HEATING-CABLE CORE TO EXPOSE THE BUS WIRES.
- 18.4. SYSTEM CONTROL
- 18.4.1. ELECTRONIC THERMOSTATIC CONTROL WITH AMBIENT SENSING
- 18.4.2. THE SYSTEM SHALL BE CONTROLLED BY AN ELECTRONIC THERMOSTAT WITH AMBIENT SENSOR AND MOUNTING BRACKET; NVENT RAYCHEM AMC-F 57 40Z EITHER DIRECTLY OR THROUGH AN APPROPRIATE CONTRACTOR. COORDINATE EXACT LOCATION ON SITE.
- 18.1. INSTALLATION OF HEAT TRACING CABLE
- 18.1.1. SYSTEM MUST BE SUPPLIED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS, INCLUDING ALL REQUIRED OPTIONS AND ACCESSORIES OVER AND ABOVE THOSE LISTED IN THE SPECIFICATION.
- 18.1.2. APPLY THE HEATING CABLE LINEARLY ON THE PIPE AFTER PIPING HAS BEEN SUCCESSFULLY PRESSURE-TESTED. SECURE THE HEATING CABLE TO PIPING WITH CABLE TIES OR FIBERGLASS TAPE.
- 18.1.3. APPLY "ELECTRIC TRACED" LABELS TO THE OUTSIDE OF THE THERMAL INSULATION.
- 18.1.4. MANUFACTURER TO PROVIDE COMMISSIONING, COMPLETE WITH REPORT, BY A FACTORY REPRESENTATIVE. MECHANICAL CONTRACTOR TO SUBMIT TO ENGINEER.

**DRAINAGE, WASTE & VENT PIPING & VALVES**

19. DRAIN AND VENT PIPING INSTALLATION REQUIREMENTS
- 19.1. PROVIDE ALL REQUIRED DRAINAGE AND VENT PIPING. PIPE, UNLESS OTHERWISE SPECIFIED, IS TO BE AS FOLLOWS:
- 19.1.1. FOR UNDERGROUND PIPE INSIDE BUILDING AND TO POINTS 1.5 M (5') OUTSIDE BUILDING LINES -RIGID PVC SEWER PIPE, MINIMUM 75 MM (3") DIA.;
- 19.1.2. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES LESS THAN OR EQUAL TO 65 MM (2-3/4") DIA. -TYPE DWV COPPER;
- 19.1.3. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN SIZES GREATER THAN OR EQUAL TO 75 MM (3") DIA. -CLASS 4000 CAST IRON;
- 19.1.4. FOR PIPE INSIDE BUILDING AND ABOVEGROUND IN LIEU OF TYPE DWV COPPER AND CAST IRON, AT YOUR OPTION AND WHERE PERMITTED BY GOVERNING CODES AND REGULATIONS -RIGID PVC DWV;
- 19.1.5. FOR DRAINAGE PUMP DISCHARGE PIPE CONNECTIONS FROM PUMP TO AND INCLUDING SHUT-OFF AND CHECK VALVE CONNECTIONS -TYPE "DWV" COPPER WITH VICTAULIC "COPPER CONNECTION" FITTINGS AND COUPLINGS, OR SCHEDULE 40 GALVANIZED STEEL WITH VICTAULIC FITTINGS AND COUPLINGS.
- 19.2. UNLESS OTHERWISE SPECIFIED, SLOPE HORIZONTAL DRAINAGE PIPING ABOVEGROUND IN SIZES TO AND INCLUDING 75 MM (3") DIA. 25 MM (1") IN 1.2 M (4'), AND PIPE 100 MM (4") DIA. AND LARGER 25 MM (1") IN 2.4 M (8').
- 19.3. INSTALL AND SLOPE UNDERGROUND DRAINAGE PIPING TO INVERTS OR SLOPES INDICATED ON DRAWINGS TO FACILITATE STRAIGHT AND TRUE GRADIENTS BETWEEN POINTS SHOWN. VERIFY AVAILABLE SLOPES BEFORE INSTALLING PIPES.
- 19.4. UNLESS OTHERWISE SPECIFIED, SLOPE HORIZONTAL BRANCHES OF VENT PIPING DOWN TO FIXTURE OR PIPE TO WHICH THEY CONNECT WITH A MINIMUM PITCH OF 25 MM (1") IN 1.2 M (4').
- 19.5. EXTEND VENT STACKS UP THROUGH ROOF GENERALLY WHERE SHOWN BUT WITH EXACT LOCATIONS TO SUIT SITE CONDITIONS AND IN ANY CASE A MINIMUM OF 3 M (10') FROM FRESH AIR INTAKES. TERMINATE VENT STACKS A MINIMUM OF 330 MM (13") ABOVE ROOF (INCLUDING ROOF PARAPETS) IN VENT STACK COVERS, WHERE NOT SHOWN ON DRAWINGS, ROUTE VENT PIPING FROM SOURCE TO BUILDING EXTERIOR AS REQUIRED IN ORDER TO SATISFY LOCAL GOVERNING CODES AND AUTHORITY. COORDINATE VENT ROUTING WITH OTHER BUILDING SERVICES AND ENSURE THERE IS NO ARCHITECTURAL IMPACT.
- 19.6. PROVIDE CAST BRASS DIELECTRIC UNIONS AT CONNECTIONS BETWEEN COPPER PIPE AND FERROUS PIPE OR EQUIPMENT.

**PLUMBING FIXTURES AND FITTINGS**

20. GENERAL RE: PLUMBING FIXTURES AND FITTINGS
- 20.1. FIXTURES AND FITTINGS, WHERE APPLICABLE, ARE TO BE IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA B45 SERIES, GENERAL REQUIREMENTS FOR PLUMBING FIXTURES, INCLUDING SUPPLEMENTS, ASME A112.1.18.1/CSA B125.1, PLUMBING SUPPLY FITTINGS, AND CSA B125.3, PLUMBING FITTINGS.
- 20.2. EXPANSION TANKS ARE TO BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S REQUIREMENTS AND COMPLETE WITH SEISMIC RESTRAINTS IF REQUIRED, AS PER ASCE/SEI 07-10.
- 20.3. EXPOSED TRAPS FOR FIXTURES NOT EQUIPPED WITH INTEGRAL TRAPS, SUCH AS LAVATORIES, ARE TO BE ADJUSTABLE CHROME PLATED CAST BRASS "P" TRAPS WITH CLEANOUTS, MINIMUM #7 GAUGE CHROME PLATED TUBULAR EXTENSIONS, AND CHROME PLATED ESCUTCHEONS, ALL TO SUIT FIXTURE TYPE AND DRAIN CONNECTION.
- 20.4. CONCEALED TRAPS FOR FIXTURES NOT EQUIPPED WITH INTEGRAL TRAPS, SUCH AS COUNTER SINKS, ARE TO BE ADJUSTABLE CAST BRASS WITH CLEANOUT PLUGS, ALL TO SUIT FIXTURE TYPE AND DRAIN CONNECTION.
- 20.5. EXPOSED SUPPLIES FOR FIXTURES WHICH DO NOT HAVE SUPPLY TRIM/FITTINGS WITH INTEGRAL STOPS, I.E. LAVATORIES, ARE TO BE SOLID CHROME PLATED BRASS ANGLE VALVES WITH SCREWDRIVER STOPS FOR PUBLIC AREAS, WHEEL HANDLE STOPS FOR PRIVATE AREAS, FLEXIBLE STAINLESS STEEL RISERS, AND STAINLESS STEEL OR CHROME PLATED STEEL ESCUTCHEONS, ALL ARRANGED AND SIZED TO SUIT FIXTURE.
- 20.6. WATER PIPING AS SPECIFIED, COMPLETE WITH BALL TYPE SHUT-OFF VALVES AS SPECIFIED WITH WATER PIPING, OR DAHL BROS. CANADA LTD. 1/4 TURN MINI BALL VALVES.

**INSULATION**

21. PIPE INSULATION MATERIALS
- 21.1. PREMOULDED MINERAL FIBRE: RIGID, SECTIONAL, SLEEVE TYPE INSULATION TO ASTM STANDARD C 547-00, WITH A FACTORY APPLIED VAPOUR BARRIER JACKET. ACCEPTABLE PRODUCTS ARE:
- 21.1.1. JOHNS MANVILLE INC. "MICRO-LOK AP-T PLUS";  
 21.1.2. KNAUF FIBER GLASS "PIPE INSULATION" WITH "ASA-SSL" JACKET;  
 21.1.3. MANSION INSULATION INC. "ALLEY K APT";  
 21.1.4. OWENS CORNING FIBERGLAS PIPE INSULATION.
- 21.2. PIPE INSULATION REQUIREMENTS - MINERAL FIBRE
- 21.1. INSULATE THE FOLLOWING PIPE INSIDE THE BUILDING AND ABOVE GROUND WITH MINERAL FIBRE INSULATION OF THE THICKNESS INDICATED:
- 21.1.1. DOMESTIC COLD WATER PIPING TO AND INCLUDING 100 MM (4") DIA. -25 MM (1") THICK;  
 21.1.2. DOMESTIC HOT WATER PIPING, TO AND INCLUDING 40 MM (1 1/2") DIA. -25 MM (1") THICK;

**TESTING, ADJUSTING, AND BALANCING**

28. APPLICATION
- 28.1. THIS SECTION SPECIFIES MECHANICAL SYSTEM TESTING, ADJUSTING, AND BALANCING REQUIREMENTS THAT ARE COMMON TO MECHANICAL WORK SECTIONS OF THE SPECIFICATION AND IT IS A SUPPLEMENT TO EACH SECTION AND IS TO BE READ ACCORDINGLY.
29. SUBMITTALS
- 29.1. NAME AND QUALIFICATIONS OF TESTING AND BALANCING AGENCY: WITHIN THIRTY DAYS OF WORK COMMENCING AT THE SITE, SUBMIT THE NAME AND QUALIFICATIONS OF THE PROPOSED TESTING AND BALANCING AGENCY IN ACCORDANCE WITH REQUIREMENTS OF THE ARTICLE ENTITLED QUALITY ASSURANCE BELOW.
- 29.2. SAMPLE TEST FORMS: SUBMIT SAMPLE TEST FORMS, IF OTHER THAN THOSE STANDARD FORMS PREPARED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) ARE PROPOSED FOR USE.
- 29.3. DRAWING EVALUATION REPORT: SUBMIT A REPORT BY THE AGENCY TO INDICATE THE AGENCY'S EVALUATION OF THE MECHANICAL DRAWINGS WITH RESPECT TO SERVICE ROUTING AND LOCATION OR LACK OF BALANCING DEVICES. INCLUDE THE SET OF DRAWINGS USED AND MARKED-UP BY THE AGENCY TO PREPARE THE REPORT.
- 29.4. SITE VISIT REPORTS: SUBMIT A REPORT BY THE AGENCY AFTER EACH SITE VISIT MADE BY THE AGENCY DURING THE CONSTRUCTION PHASE OF THIS PROJECT.
- 29.5. DRAFT REPORT: SUBMIT A DRAFT REPORT, AS SPECIFIED IN PART 3 OF THIS SECTION.
- 29.6. FINAL REPORT: SUBMIT A FINAL REPORT, AS SPECIFIED IN PART 3 OF THIS SECTION.
- 29.7. WARRANTY: SUBMIT A TESTING AND BALANCING WARRANTY AS SPECIFIED IN PART 3 OF THIS SECTION.
- 29.8. POST CONSTRUCTION SITE VISIT REPORTS: SUBMIT REPORTS LISTING OBSERVATIONS AND RESULTS OF POST CONSTRUCTION SITE VISITS AS SPECIFIED IN PART 3 OF THIS SECTION.
30. DEFINITIONS
- 30.1. THE FOLLOWING ARE DEFINITIONS OF WORDS USED IN THIS SECTION:
- 30.1.1. "TAB" - MEANS TESTING, ADJUSTING AND BALANCING TO DETERMINE AND CONFIRM QUANTITATIVE PERFORMANCE OF EQUIPMENT AND SYSTEMS AND TO REGULATE THE SPECIFIED FLUID FLOW RATE AND AIR PATTERNS AT THE TERMINAL EQUIPMENT, I.E., REDUCE FAN SPEED, THROTTLING, ETC.;
- 30.1.2. "HYDRONIC SYSTEMS" - INCLUDES HEATING WATER, CHILLED WATER, GLYCOL-WATER SOLUTION, CONDENSER WATER, AND ANY SIMILAR SYSTEM;
- 30.1.3. "AIR SYSTEMS" - INCLUDES ALL OUTSIDE AIR, SUPPLY AIR, RETURN AIR, EXHAUST AIR, AND RELIEF AIR SYSTEMS;
- 30.1.4. "FLOW RATE TOLERANCE" - MEANS THE ALLOWABLE PERCENTAGE VARIATION, PLUS OR MINUS, OF ACTUAL FLOW RATE VALUES IN THE CONTRACT DOCUMENTS.
- 30.1.5. "REPORT FORMS" - MEANS TEST DATA SHEETS ARRANGED FOR COLLECTING TEST DATA IN LOGICAL ORDER FOR SUBMISSION AND REVIEW, AND THESE FORMS, WHEN REVIEWED AND ACCEPTED, SHOULD ALSO FORM THE PERMANENT RECORD TO BE USED AS THE BASIS FOR REQUIRED FUTURE TESTING, ADJUSTING AND BALANCING;
- 30.1.6. "TERMINAL" - MEANS THE POINT WHERE THE CONTROLLED FLUID ENTERS OR LEAVES THE DISTRIBUTION SYSTEM, AND THESE ARE SUPPLY INLETS ON WATER TERMINALS, SUPPLY OUTLETS ON AIR TERMINALS, RETURN OUTLETS ON WATER TERMINALS, AND EXHAUST OR RETURN INLETS ON AIR TERMINALS SUCH AS REGISTERS, GRILLS, DIFFUSERS, LOUVERS, AND HOODS;
- 30.1.7. "MAIN" - MEANS THE PIPE CONTAINING THE SYSTEM'S MAJOR OR ENTIRE FLUID FLOW;
- 30.1.8. "SUBMAIN" - MEANS THE PIPE CONTAINING PART OF THE SYSTEM'S CAPACITY AND SERVING TWO OR MORE BRANCH MAINS;
- 30.1.9. "BRANCH MAIN" - MEANS PIPE SERVICING TWO OR MORE TERMINALS;
- 30.1.10. "BRANCH" - MEANS PIPE SERVICING A SINGLE TERMINAL.
31. QUALITY ASSURANCE
- 31.1. TESTING AND BALANCING AGENCY: EMPLOY THE SERVICES OF AN INDEPENDENT TESTING, ADJUSTING, AND BALANCING AGENCY MEETING THE QUALIFICATIONS SPECIFIED BELOW, TO BE THE SINGLE SOURCE OF RESPONSIBILITY TO TEST, ADJUST, AND BALANCE THE BUILDING MECHANICAL SYSTEMS TO PRODUCE THE

- DESIGN OBJECTIVES. THE TESTING, ADJUSTING AND BALANCING AGENCY IS TO HAVE SUCCESSFULLY COMPLETED TESTING, ADJUSTING AND BALANCING OF MECHANICAL SYSTEMS FOR A MINIMUM OF FIVE PROJECTS SIMILAR TO THIS PROJECT WITHIN THE PAST THREE YEARS, AND IS TO BE CERTIFIED AS AN INDEPENDENT AGENCY IN ALL REQUIRED CATEGORIES BY ONE OF THE FOLLOWING:
- 31.1.1. AABC - ASSOCIATED AIR BALANCE COUNCIL;  
 31.1.2. NEBB - NATIONAL ENVIRONMENTAL BALANCING BUREAU;
- 31.2. STANDARDS: TESTING, ADJUSTING AND BALANCING OF THE COMPLETE MECHANICAL SYSTEMS IS TO BE PERFORMED OVER THE ENTIRE OPERATING RANGE OF EACH SYSTEM IN ACCORDANCE WITH ONE OF THE FOLLOWING PUBLICATIONS:
- 31.2.1. NATIONAL STANDARDS FOR A TOTAL SYSTEM BALANCE PUBLISHED BY THE ASSOCIATED AIR BALANCE COUNCIL;  
 31.2.2. PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS PUBLISHED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU;
32. ACCEPTABLE LIST OF TAB FIRMS:
- 32.1. AIR & WATER PRECISION BALANCING;  
 32.2. DESIGNTEST & BALANCING CO LTD.;  
 32.3. FLOWSET BALANCING LTD.;  
 32.4. DYNAMIC FLOW BALANCING.
33. SCOPE OF WORK
- 33.1. PERFORM TOTAL MECHANICAL SYSTEMS TESTING, ADJUSTING, AND BALANCING. REQUIREMENTS INCLUDE MEASUREMENT AND ESTABLISHMENT OF THE FLUID QUANTITIES OF THE MECHANICAL SYSTEMS AS REQUIRED TO MEET DESIGN SPECIFICATIONS AND COMFORT CONDITIONS, AND RECORDING AND REPORTING THE RESULTS.
- 33.2. MECHANICAL SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED INCLUDE:
- 33.2.1. DOMESTIC WATER SYSTEMS: TAB OF DOMESTIC WATER SYSTEMS (ALL PIPING EXTENDED FROM THE MUNICIPAL MAIN) IS TO INCLUDE:  
 33.2.1.1. TEMPERED WATER PIPING FLOWS  
 33.2.1.2. DOMESTIC HOT WATER RECIRCULATION PIPING;  
 33.2.2. EXISTING SYSTEMS: ALL OF THE EXISTING SYSTEMS REVISED AS PART OF THE MECHANICAL WORK, ARE TO BE TESTED, ADJUSTED AND BALANCED AS FOR NEW SYSTEMS.

34. TESTING, ADJUSTING AND BALANCING
- 34.1. GENERAL REQUIREMENTS: CONFORM TO THE FOLLOWING REQUIREMENTS:
- 34.1.1. AS SOON AS POSSIBLE AFTER AWARD OF CONTRACT, THE AGENCY IS TO CAREFULLY EXAMINE A WHITE PRINT SET OF MECHANICAL DRAWINGS WITH RESPECT TO ROUTING OF SERVICES AND LOCATION OF BALANCING DEVICES, AND IS TO ISSUE A REPORT LISTING THE RESULTS OF THE EVALUATION;
- 34.1.2. THE SET OF DRAWINGS EXAMINED BY THE AGENCY IS TO BE RETURNED WITH THE EVALUATION REPORT, WITH RED LINE MARK-UPS TO INDICATE LOCATIONS FOR DUCT SYSTEM TEST PLUGS, AND REQUIRED REVISION WORK SUCH AS RELOCATION OF BALANCING DEVICES AND LOCATIONS FOR ADDITIONAL DEVICES;
- 34.1.3. AFTER REVIEW OF THE MECHANICAL WORK DRAWINGS AND SPECIFICATION, THE AGENCY IS TO VISIT THE SITE AT FREQUENT, REGULAR INTERVALS DURING CONSTRUCTION OF THE MECHANICAL SYSTEMS, TO OBSERVE ROUTINGS OF SERVICES, LOCATIONS OF TESTING AND BALANCING DEVICES, WORKMANSHIP, AND ANYTHING ELSE THAT WILL AFFECT TESTING, ADJUSTING AND BALANCING;
- 34.1.4. AFTER EACH SITE VISIT, THE AGENCY IS TO REPORT RESULTS OF THE SITE VISIT INDICATING THE DATE AND TIME OF THE VISIT, AND DETAILED RECOMMENDATIONS FOR ANY CORRECTIVE WORK REQUIRED TO ENSURE PROPER ADJUSTING AND BALANCING;
- 34.1.5. TESTING, ADJUSTING AND BALANCING IS NOT TO BEGIN UNTIL:  
 34.1.5.1. BUILDING CONSTRUCTION WORK IS SUBSTANTIALLY COMPLETE AND DOORS HAVE BEEN INSTALLED;  
 34.1.5.2. MECHANICAL SYSTEMS ARE COMPLETE IN ALL RESPECTS, AND HAVE BEEN CHECKED, STARTED, ADJUSTED, AND THEN SUCCESSFULLY PERFORMANCE TESTED.
- 34.1.6. ALL MECHANICAL SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED ARE TO BE MAINTAINED IN FULL, NORMAL OPERATION DURING EACH DAY OF TESTING, ADJUSTING AND BALANCING.
- 34.1.7. OBTAIN COPIES OF REVIEWED SHOP DRAWINGS OF ALL APPLICABLE MECHANICAL PLANT EQUIPMENT AND TERMINALS, AND TEMPERATURE CONTROL DIAGRAMS AND SEQUENCES;
- 34.1.8. THE AGENCY IS TO WALK EACH SYSTEM FROM THE SYSTEM "HEAD END" EQUIPMENT TO TERMINAL UNITS TO DETERMINE VARIATIONS OF INSTALLATION FROM DESIGN, AND THE SYSTEM INSTALLATION TRADES WILL ACCOMPANY THE AGENCY;
- 34.1.9. THE AGENCY IS TO CHECK ALL VALVES AND DAMPERS FOR CORRECT AND LOCKED POSITION, AND TEMPERATURE CONTROL SYSTEMS FOR COMPLETENESS OF INSTALLATION BEFORE STARTING EQUIPMENT;
- 34.1.10. WHEREVER POSSIBLE, THE AGENCY IS TO LOCK ALL BALANCING DEVICES IN PLACE AT THE PROPER SETTING, AND PERMANENTLY MARK SETTINGS ON ALL DEVICES;
- 34.1.11. NOISE: THE AGENCY IS TO BALANCE ALL SYSTEMS WITH DUE REGARD TO OBJECTIONABLE NOISE WHICH IS TO BE A FACTOR WHEN ADJUSTING FAN SPEEDS AND PERFORMING TERMINAL WORK SUCH AS ADJUSTING AIR QUANTITIES, AND SHOULD OBJECTIONABLE NOISE OCCUR AT THE DESIGN CONDITIONS, THE AGENCY IS TO IMMEDIATELY REPORT THE PROBLEM AND SUBMIT DATA, INCLUDING SOUND READINGS, TO PERMIT AN ACCURATE ASSESSMENT OF THE NOISE PROBLEM TO BE MADE;
- 34.1.12. STRATIFICATION: THE AGENCY IS TO CHECK ALL SUPPLY AIR HANDLING SYSTEM MIXING PLENUMS FOR STRATIFICATION, AND WHERE THE VARIATION OF MIXED AIR TEMPERATURE ACROSS COILS IS FOUND TO BE IN EXCESS OF PLUS OR MINUS 5 PERCENT OF DESIGN REQUIREMENTS, THE AGENCY IS TO REPORT THE PROBLEM AND ISSUE A DETAIL SKETCH OF PLENUM Baffle(S) REQUIRED TO ELIMINATE THE STRATIFICATION;
- 34.1.13. TOLERANCES: THE AGENCY IS TO PERFORM TESTING, ADJUSTING AND BALANCING TO WITHIN PLUS OR MINUS 5% OF DESIGN VALUES, AND MAKE AND RECORD MEASUREMENTS USING INSTRUMENTS WITH MINIMUM ACCURACY WHICH ARE WITHIN PLUS OR MINUS 2% OF REQUIRED VALUES;
- 34.1.14. FILTERS FOR ALL AIR HANDLING SYSTEMS EQUIPPED WITH AIR FILTERS, TEST AND BALANCE THE SYSTEMS WITH SIMULATED 50% LOADED (DIRTY) FILTERS BY PROVIDING A FALSE PRESSURE DROP;
- 34.1.15. SEASONAL REQUIREMENTS: TEST, ADJUST AND BALANCE AIR CONDITIONING SYSTEMS DURING THE WARMER SEASON AND HEATING SYSTEMS DURING WINTER SEASON, INCLUDING AT LEAST A PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 2.9C (5F) WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 5.5C (10C) DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION, AND TAKE FINAL TEMPERATURE READINGS DURING SEASONAL OPERATION.

- 34.2. PREPARATION OF REPORTS: PREPARE REPORTS AS INDICATED BELOW.
- 34.2.1. DRAFT REPORTS: UPON COMPLETION OF TESTING, ADJUSTING, AND BALANCING PROCEDURES, PREPARE DRAFT REPORTS ON AABC OR NEBB FORMS. DRAFT REPORTS MAY BE HAND WRITTEN, BUT MUST BE COMPLETE, FACTUAL, ACCURATE, AND LEGIBLE. ORGANIZE AND FORMAT DRAFT REPORTS IN THE SAME MANNER SPECIFIED FOR THE FINAL REPORTS. SUBMIT TWO COMPLETE SETS OF DRAFT REPORTS. ONLY ONE COMPLETE SET OF DRAFT REPORTS WILL BE RETURNED.
- 34.2.2. FINAL REPORT: UPON VERIFICATION AND APPROVAL OF DRAFT REPORTS, PREPARE FINAL REPORTS, TYPE WRITTEN, AND ORGANIZED AND FORMATTED AS SPECIFIED BELOW. SUBMIT 2 COMPLETE SETS OF FINAL REPORTS. USE UNITS OF MEASUREMENT (SI OR IMPERIAL) AS USED ON THE PROJECT DOCUMENTS.
- 34.2.3. REPORT FORMAT: REPORT FORMS ARE TO BE THOSE STANDARD FORMS PREPARED BY THE REFERENCED STANDARD FOR EACH RESPECTIVE ITEM AND SYSTEM TO BE TESTED, ADJUSTED, AND BALANCED. BIND REPORT FORMS COMPLETE WITH SCHEMATIC SYSTEMS DIAGRAMS AND OTHER DATA IN REINFORCED VINYL THREE-RING BINDERS. PROVIDE BINDING EDGE LABELS WITH THE PROJECT IDENTIFICATION AND A TITLE DESCRIPTION OF THE CONTENTS. DIVIDE THE CONTENTS OF THE BINDER INTO THE DIVISIONS LISTED BELOW, SEPARATED BY DIVIDER TABS:
- 34.2.3.1. GENERAL INFORMATION AND SUMMARY;
- 34.2.3.2. REPORT CONTENTS: THE AGENCY IS TO PROVIDE THE FOLLOWING MINIMUM INFORMATION, FORMS AND DATA:
- 34.2.4.1. INSIDE COVER SHEET TO IDENTIFY THE AGENCY, THE CONTRACTOR, AND PROJECT, INCLUDING ADDRESSES, AND CONTACT NAMES AND TELEPHONE NUMBERS AND A LISTING OF THE INSTRUMENTATION USED FOR THE PROCEDURES ALONG WITH THE PROOF OF CALIBRATION;
- 34.2.4.2. THE REMAINDER OF THE REPORT IS TO CONTAIN THE APPROPRIATE FORMS CONTAINING AS A MINIMUM, THE INFORMATION INDICATED ON THE STANDARD AABC OR NEBB REPORT FORMS PREPARED FOR EACH RESPECTIVE ITEM AND SYSTEM;
- 34.2.4.3. THE AGENCY IS TO INCLUDE FOR EACH SYSTEM TO BE TESTED, ADJUSTED AND BALANCED, A NEATLY DRAWN, IDENTIFIED (SYSTEM DESIGNATION, PLANT EQUIPMENT LOCATION, AND AREA SERVED) SCHEMATIC "AS-BUILT" DIAGRAM INDICATING AND IDENTIFYING ALL EQUIPMENT, TERMINALS, AND ACCESSORIES;
- 34.2.4.4. THE AGENCY IS TO INCLUDE REPORT SHEETS INDICATING BUILDING COMFORT TEST READINGS FOR ALL ROOMS.

- 34.3. VERIFICATION OF REPORTS: AFTER THE FINAL TESTING AND BALANCING REPORT HAS BEEN SUBMITTED, THE AGENCY IS TO VISIT THE SITE WITH THE CONTRACTOR AND CONSULTANT TO SPOT CHECK RESULTS INDICATED ON THE BALANCING REPORT. THE AGENCY IS TO SUPPLY ALL LABOUR, LADDERS, AND INSTRUMENTATION TO COMPLETE THAT THE RESULTS OF SPOT CHECKS DO NOT, ON A CONSISTENT BASIS, AGREE WITH THE FINAL REPORT. THE SPOT CHECK PROCEDURES WILL STOP AND BE INCREASED TO THEN REBALANCE THE SYSTEMS INVOLVED, RESUBMIT THE FINAL REPORT, AND AGAIN PERFORM SPOT CHECKS WITH THE CONTRACTOR AND CONSULTANT.
- 34.4. CERTIFICATION AND WARRANTY: WHEN THE FINAL REPORT HAS BEEN ACCEPTED, THE CONTRACTOR IS TO SUBMIT TO THE DEPARTMENT REPRESENTATIVE, IN THE NAME OF THE DEPARTMENT REPRESENTATIVE, A CERTIFICATE EQUAL TO THE ASME NATIONAL GUARANTY CERTIFICATION OR A NEBB QUALITY ASSURANCE PROGRAM BOND, AND IN ADDITION, THE CONTRACTOR IS TO SUBMIT A WRITTEN EXTENDED WARRANTY FROM THE AGENCY COVERING ONE FULL HEATING SEASON AND ONE COOLING SEASON, DURING WHICH THE AGENCY WILL INVESTIGATE AND CORRECT ANY BALANCING PROBLEMS WHICH OCCUR, WITH THE EXCEPTION OF WORK DONE DURING SCHEDULED SITE VISITS, WILL, AT NO COST, BE INVESTIGATED BY THE AGENCY AND REPORTED ON TO THE DEPARTMENT REPRESENTATIVE, AND IF IT IS DETERMINED THAT THE PROBLEMS ARE A RESULT OF IMPROPER TESTING, ADJUSTING AND BALANCING, THEY ARE TO BE IMMEDIATELY CORRECTED WITHOUT ADDITIONAL COST TO THE DEPARTMENT REPRESENTATIVE.
- 34.5. POST BALANCING SITE VISITS: AFTER ACCEPTANCE OF THE FINAL REPORT, THE AGENCY IS TO PERFORM POST TESTING AND BALANCING SITE VISITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
- 34.5.1. POST TESTING AND BALANCING SITE VISITS ARE TO BE MADE:
- 34.5.1.1. ONCE DURING THE FIRST MONTH OF BUILDING OPERATION;
- 34.5.1.2. ONCE DURING THE THIRD MONTH OF BUILDING OPERATION;
- 34.5.1.3. ONCE BETWEEN THE FOURTH AND TENTH MONTHS IN A SEASON OPPOSITE TO THE FIRST AND THIRD MONTH VISIT.
- 34.5.2. DURING EACH RETURN VISIT AND ACCOMPANIED BY THE DEPARTMENT REPRESENTATIVE, THE AGENCY IS TO SPOT REBALANCE TERMINAL UNITS AS REQUIRED TO SUIT BUILDING OCCUPANTS AND ELIMINATE COMPLAINTS;
- 34.5.3. THE AGENCY IS TO SCHEDULE EACH VISIT WITH THE CONTRACTOR AND THE DEPARTMENT REPRESENTATIVE, AND INFORM THE CONSULTANT;
- 34.5.4. AFTER EACH FOLLOW-UP SITE VISIT, THE AGENCY IS TO ISSUE TO THE CONTRACTOR AND CONSULTANT A REPORT INDICATING ANY CORRECTIVE WORK PERFORMED DURING THE VISIT, ALL ABNORMAL CONDITIONS AND COMPLAINTS ENCOUNTERED, AND RECOMMENDED CORRECTIVE ACTION.

**DEMOLITION AND REVISION WORK**

35. DISCONNECTION AND REMOVAL OF EXISTING MECHANICAL WORK
- 35.1. WHERE INDICATED ON THE CONTRACT DOCUMENTS, DISCONNECT AND REMOVE EXISTING MECHANICAL WORK, INCLUDING HANGERS, SUPPORTS, INSULATION, ETC. DISCONNECT AT THE POINT OF SUPPLY, REMOVE OBSOLETE CONNECTING SERVICES AND MAKE THE SYSTEM SAFE. CUT BACK OBSOLETE PIPING BEHIND FINISHES AND CAP WATER-TIGHT UNLESS OTHERWISE SPECIFIED.
- 35.2. THE SCOPE AND EXTENT OF THE DEMOLITION OR REVISION WORK IS ONLY GENERALLY INDICATED ON THE CONTRACT DOCUMENTS. ESTIMATE THE SCOPE, EXTENT AND COST OF THE WORK AT THE SITE DURING THE BIDDING PERIOD. SITE VISIT(S). CLAIMS FOR EXTRA COSTS FOR DEMOLITION WORK NOT SHOWN OR SPECIFIED BUT CLEARLY VISIBLE OR ASCERTAINABLE AT THE SITE DURING BIDDING PERIOD SITE VISITS WILL NOT BE ALLOWED.
- 35.3. IF ANY RE-DESIGN IS REQUIRED DUE TO DISCREPANCIES BETWEEN THE MECHANICAL CONTRACT DOCUMENTS AND SITE CONDITIONS, NOTIFY THE CONSULTANT WHO WILL VISIT THE SITE IMMEDIATELY. IF, IN THE OPINION OF THE CONSULTANT, DISCREPANCIES BETWEEN THE MECHANICAL CONTRACT DOCUMENTS AND ACTUAL SITE CONDITIONS ARE OF A MINOR NATURE, THE REQUIRED MODIFICATIONS ARE TO BE DONE AT NO ADDITIONAL COST.
- 35.4. WHERE EXISTING MECHANICAL SERVICES EXTEND THROUGH OR OVER AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN THE SERVICES IN OPERATION INCLUDE FOR REROUTING SERVICES CONCEALED BEHIND EXISTING FINISHES AND WHICH BECAME EXPOSED DURING THE RENOVATION WORK, SO AS TO BE CONCEALED BEHIND NEW OR EXISTING FINISHES.
- 35.5. UNLESS OTHERWISE SPECIFIED, REMOVE FROM THE SITE AND DISPOSE OF ALL EXISTING MATERIALS WHICH HAVE BEEN REMOVED AND ARE NOT TO BE REUSED OR REUSED. REFER TO WASTE MANAGEMENT AND DISPOSAL REQUIREMENTS SPECIFIED IN THE MECHANICAL WORK SECTION ENTITLED BASIC MECHANICAL MATERIALS AND METHODS.
- 35.6. UNLESS OTHERWISE SPECIFIED, REMOVE FROM THE SITE AND DISPOSE OF ALL EXISTING MATERIALS WHICH HAVE BEEN REMOVED AND ARE NOT TO BE RELOCATED OR REUSED, EXCEPT FOR THE FOLLOWING WHICH ARE TO BE HANDLED OVER TO THE DEPARTMENT REPRESENTATIVE AT THE SITE:
- 35.6.1. PLUMBING FITTINGS IN GOOD CONDITION.

CLIENT

**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH

03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

ISSUE DESCRIPTION DATE

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

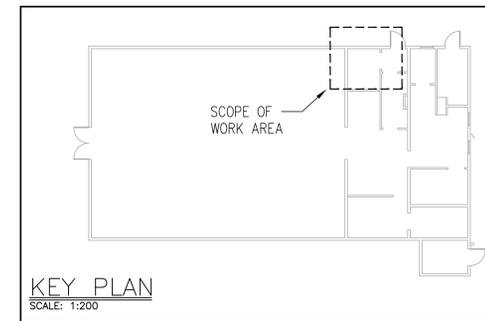
ALL WORK IS TO FOLLOW THE OBC 201

**GENERAL NOTES**

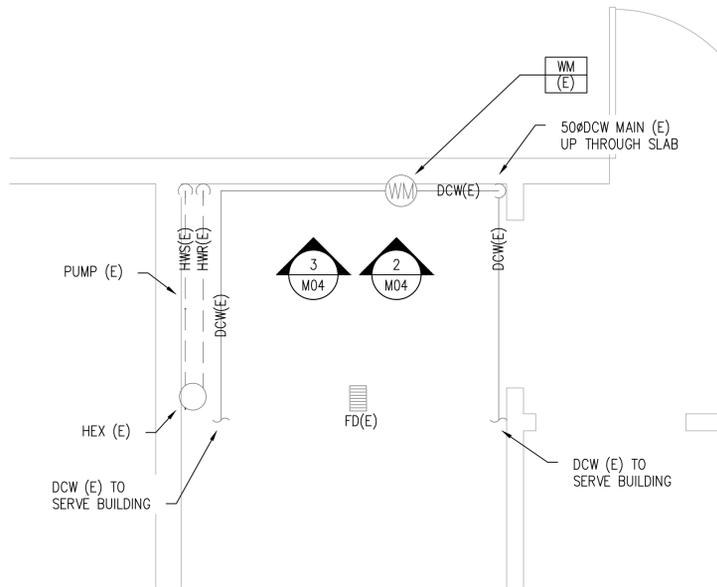
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
- PIPE ROUTING TO BE FULLY COORDINATED WITH EXISTING SERVICES ON SITE PRIOR TO FABRICATION OR INSTALLATION.
- PIPE SIZES TO BE CONFIRMED ON SITE PRIOR TO FABRICATION OR INSTALLATION OF NEW PIPING AND EQUIPMENT.
- ALL GIVEN DIMENSIONS ASSOCIATED WITH THE PLACEMENT OF THE BFP DEVICE ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED ON SITE BY CONTRACTOR TO SUITE SITE CONDITIONS.
- ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
- COORDINATE PIPE ROUTING WITH ELECTRICAL COMPONENTS AND STRUCTURE.
- ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
- REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.
- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

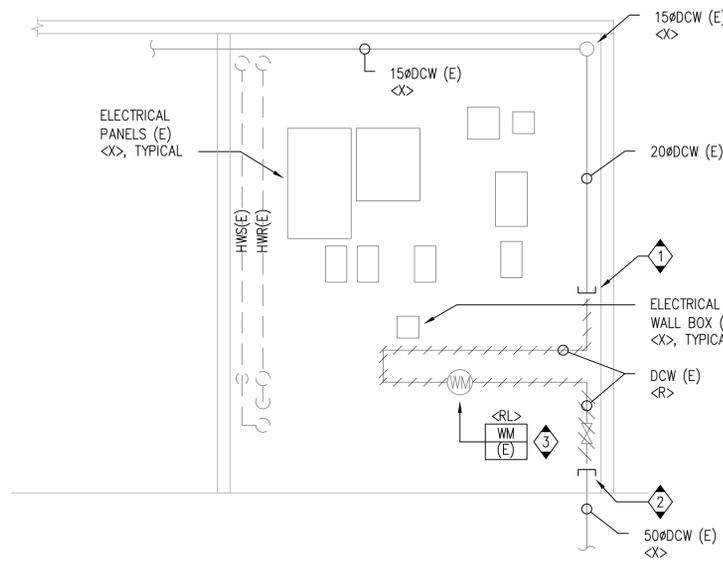
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 50ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05. COORDINATE EXACT LOCATION ON SITE.
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
- CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



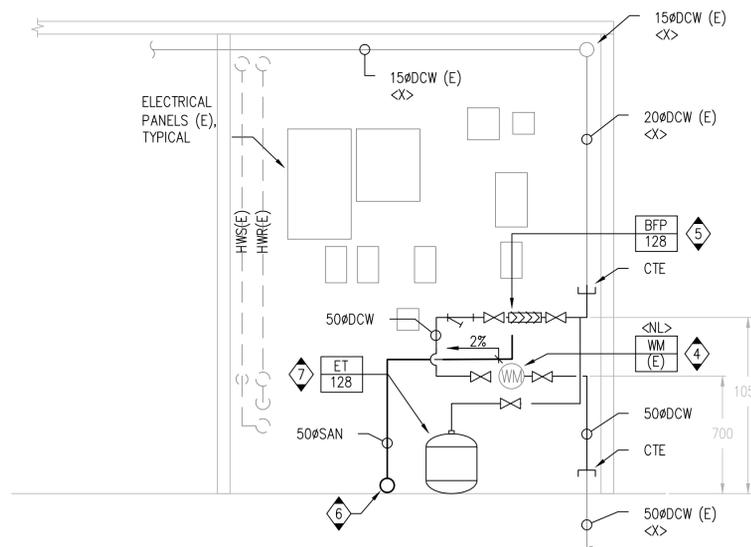
EXISTING SITE CONDITION: BLDG 128



1 WATER ENTRY ROOM – BUILDING 128  
M04 SCALE 1:20



2 ELEVATION – DEMOLITION  
M04 SCALE 1:20



3 ELEVATION – NEW WORK  
M04 SCALE 1:20

CLIENT  
**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

ALL WORK IS TO FOLLOW THE OBC 2012 AND ANY OTHER APPLICABLE CODES AND REGULATIONS.

DO NOT SCALE DRAWINGS.

PROFESSIONAL STAMP

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PROJECT  
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Canadian Food Inspection Agency  
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DRAWING  
**MECHANICAL PLANS  
BUILDING 128  
DEMOLITION & NEW WORK**

PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN

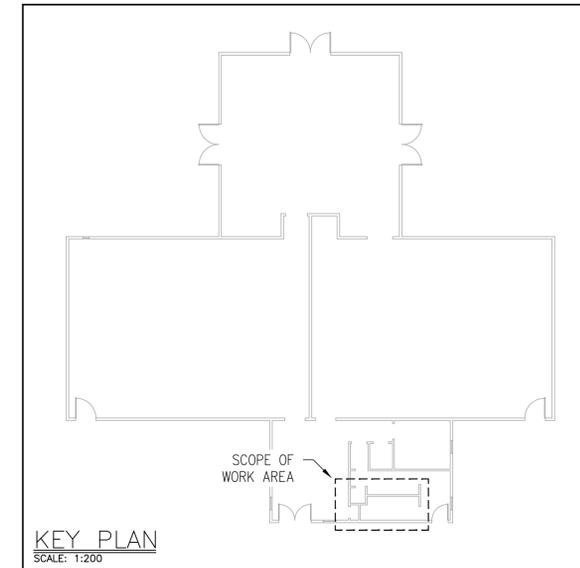
DRAWING No: **M-04**

**GENERAL NOTES**

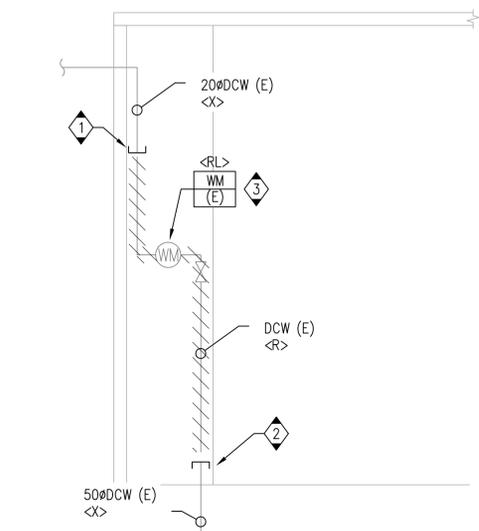
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
- PIPE ROUTING TO BE FULLY COORDINATED WITH EXISTING SERVICES ON SITE PRIOR TO FABRICATION OR INSTALLATION.
- PIPE SIZES TO BE CONFIRMED ON SITE PRIOR TO FABRICATION OR INSTALLATION OF NEW PIPING AND EQUIPMENT.
- ALL GIVEN DIMENSIONS ASSOCIATED WITH THE PLACEMENT OF THE BFP DEVICE ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED ON SITE BY CONTRACTOR TO SUITE SITE CONDITIONS.
- ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
- COORDINATE PIPE ROUTING WITH ELECTRICAL COMPONENTS AND STRUCTURE.
- ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
- REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.
- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

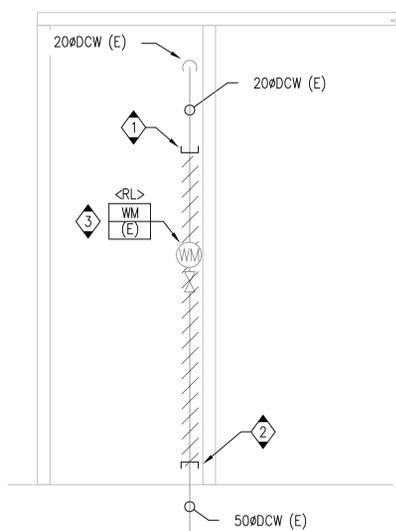
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 50ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- ROUTE NEW 50ØDCW CLOSE TO WALL TO SERVE THE NEW 'BFP-168'. REFER TO DETAIL 4/M-07
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO INSTALL EXPANSION TANK, COMPLETE WITH SEISMIC RESTRAINT SYSTEM, AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



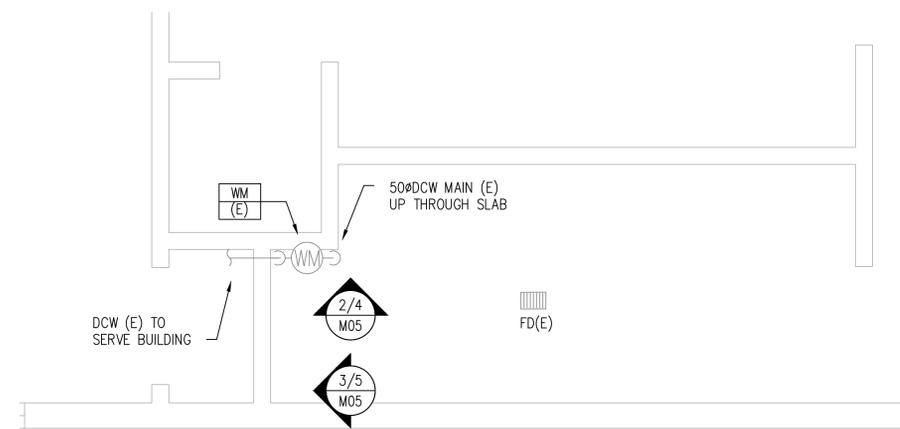
CLIENT		
Canadian Food Inspection Agency (CFIA)		
PROJECT NORTH		
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31
ISSUE	DESCRIPTION	DATE



**2 ELEVATION - DEMOLITION**  
M05 SCALE 1:20



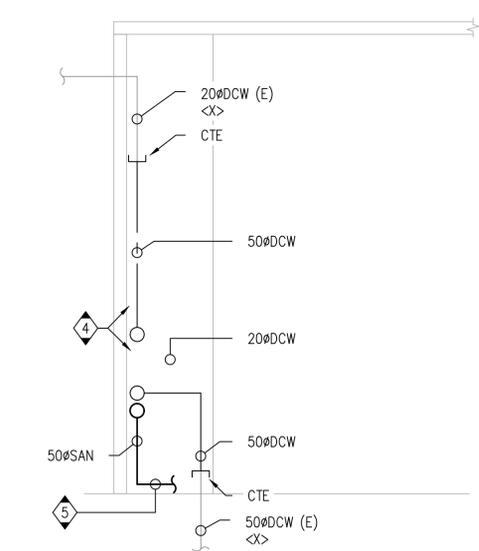
**3 ELEVATION - DEMOLITION**  
M05 SCALE 1:20



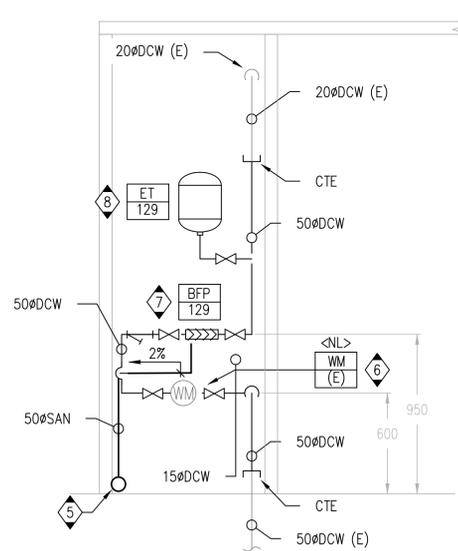
**1 WATER ENTRY ROOM - BUILDING 129**  
M05 SCALE 1:20



EXISTING SITE CONDITION: BLDG 129



**4 ELEVATION - NEW WORK**  
M05 SCALE 1:20



**5 ELEVATION - NEW WORK**  
M05 SCALE 1:20

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND PROMPTLY REPORT ALL ERRORS AND/OR OMISSIONS TO THE CONSULTANT BEFORE WORK COMMENCES.

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DO NOT SCALE DRAWINGS.

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PROJECT

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Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

**MECHANICAL PLANS  
BUILDING 129  
DEMOLITION & NEW WORK**

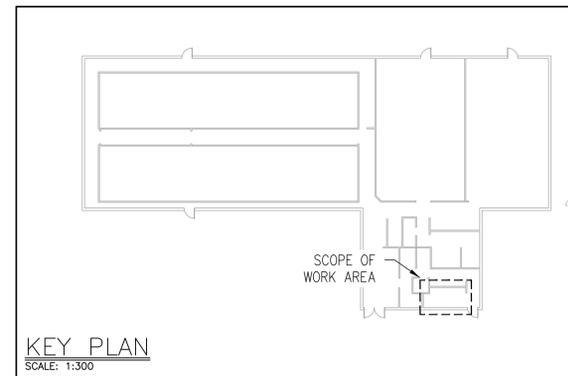
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

**GENERAL NOTES**

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
2. PIPE ROUTING TO BE FULLY COORDINATED WITH EXISTING SERVICES ON SITE PRIOR TO FABRICATION OR INSTALLATION.
3. PIPE SIZES TO BE CONFIRMED ON SITE PRIOR TO FABRICATION OR INSTALLATION OF NEW PIPING AND EQUIPMENT.
4. ALL GIVEN DIMENSIONS ASSOCIATED WITH THE PLACEMENT OF THE BFP DEVICE ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED ON SITE BY CONTRACTOR TO SUITE SITE CONDITIONS.
5. ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
6. COORDINATE PIPE ROUTING WITH ELECTRICAL COMPONENTS AND STRUCTURE.
7. ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
8. REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.
9. INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
10. CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

1. CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
2. CAP 50ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
3. CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
4. CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
5. CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



CLIENT

Canadian Food Inspection Agency (CFIA)

PROJECT NORTH


03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

ISSUE	DESCRIPTION	DATE
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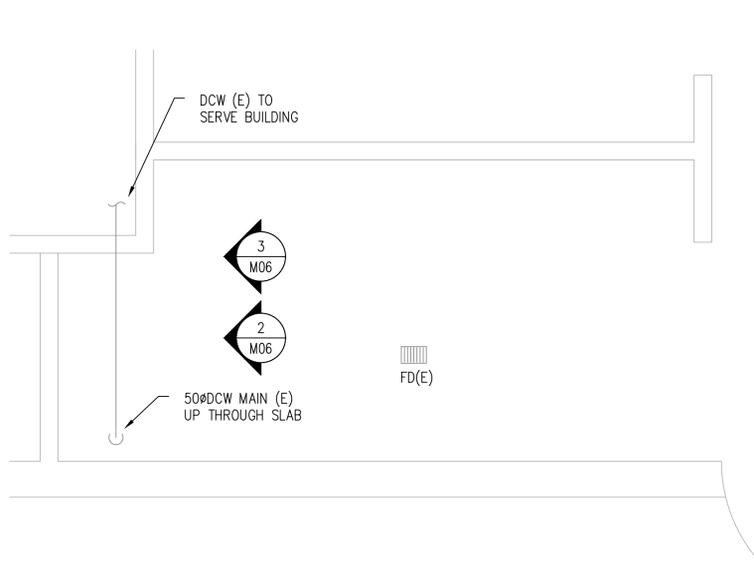
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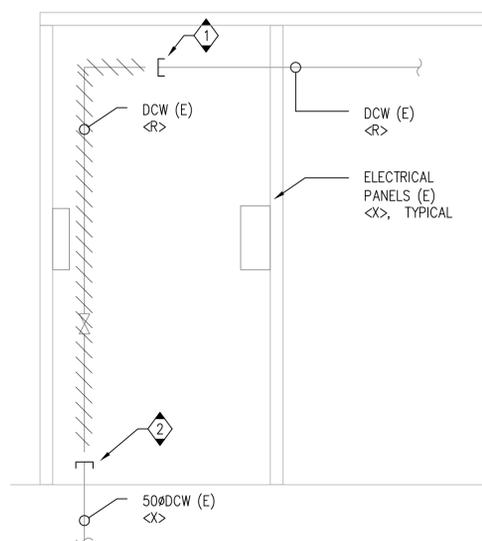
DO NOT SCALE DRAWINGS.



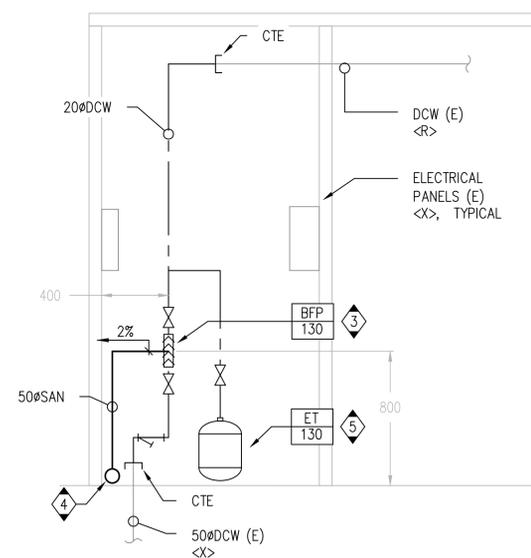
EXISTING SITE CONDITION: BLDG 130



1 WATER ENTRY ROOM – BUILDING 130  
M06 SCALE 1:20



2 ELEVATION – DEMOLITION  
M06 SCALE 1:20



3 ELEVATION – NEW WORK  
M06 SCALE 1:20

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PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 130  
DEMOLITION & NEW WORK

PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

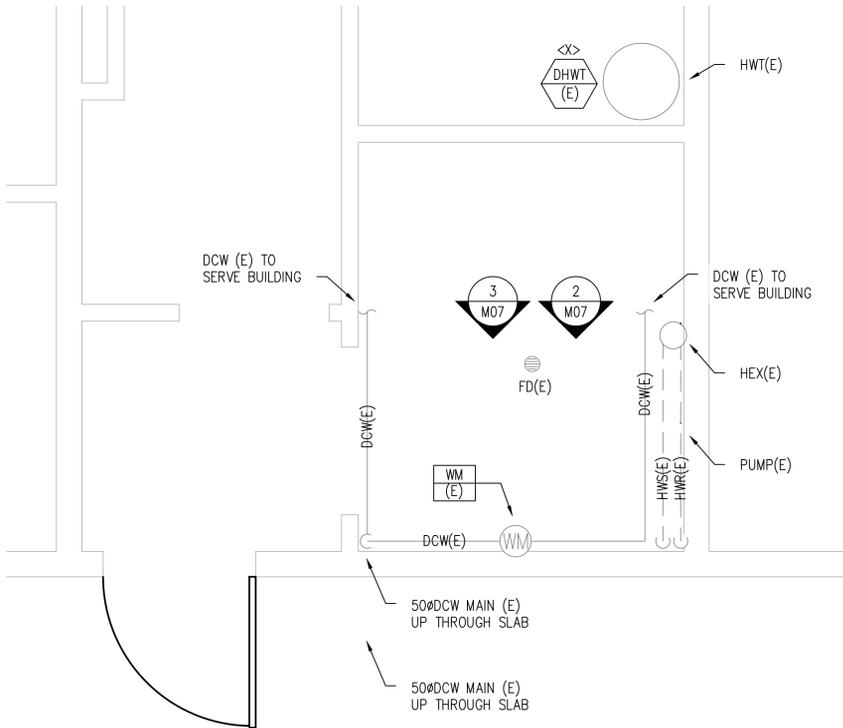
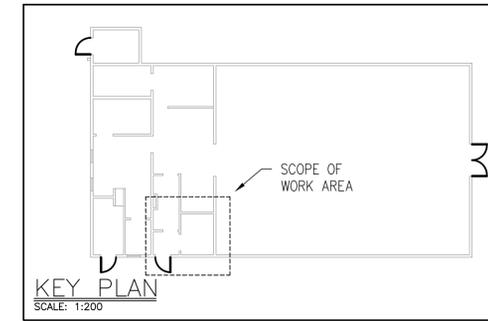
M-06

**GENERAL NOTES**

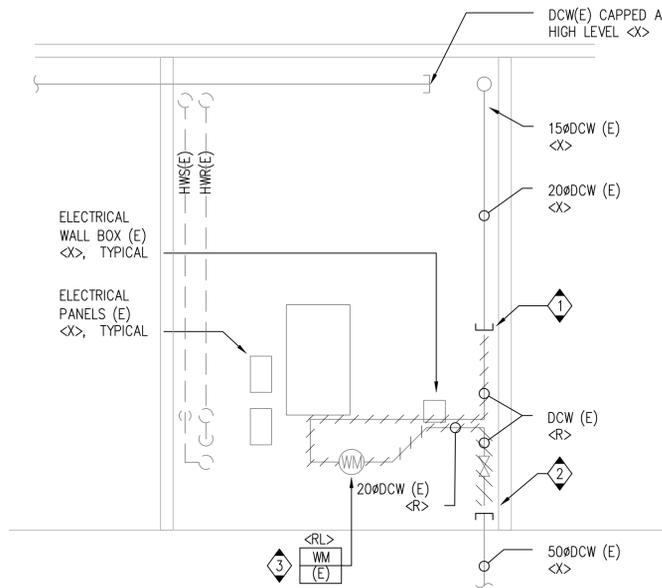
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- ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
- COORDINATE PIPE ROUTING WITH ELECTRICAL COMPONENTS AND STRUCTURE.
- ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
- REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.
- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

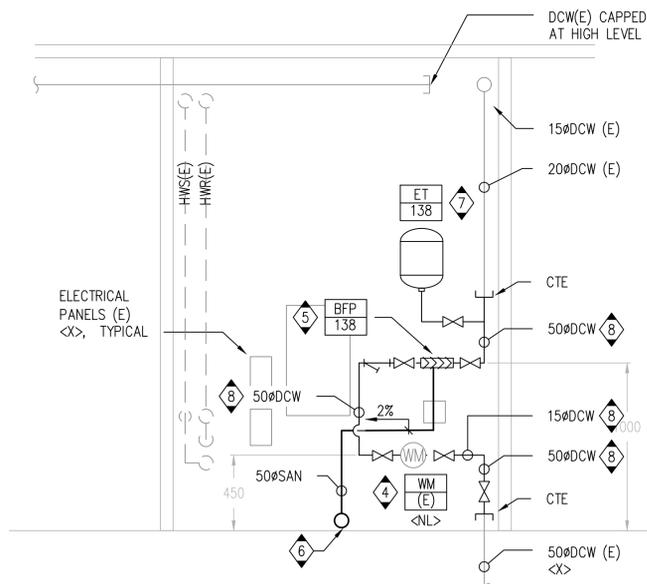
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 50ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
- CONTRACTOR TO INSTALL EXPANSION TANK, COMPLETE WITH SEISMIC RESTRAINT SYSTEM, AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.
- PROVIDE HEAT TRACING TO NEW DCW PIPE PORTION. CONTRACTOR TO PROVIDE PIPE HEAT TRACING DEVICE THAT MATCHES THE HEATING CAPACITY OF THE EXISTING ONE ON SITE. INSTALL HEAT TRACING, AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LENGTH AND LOCATION ON SITE.



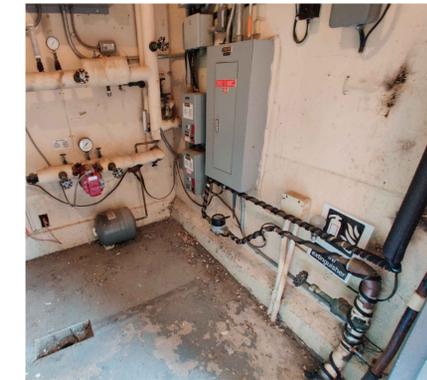
1 WATER ENTRY ROOM – BUILDING 138  
M07 SCALE 1:20



2 ELEVATION – DEMOLITION  
M07 SCALE 1:20



3 ELEVATION – NEW WORK  
M07 SCALE 1:20



EXISTING SITE  
CONDITION: BLDG 138

CLIENT

Canadian Food Inspection Agency  
(CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 138  
DEMOLITION & NEW WORK

PROJECT No:	MRK-22022713-A0	REVISION:
DRAWN:	V. HATAI	DATE: JUNE 2023
APPROVED:	B. BROWN	SCALE: AS SHOWN

DRAWING No:

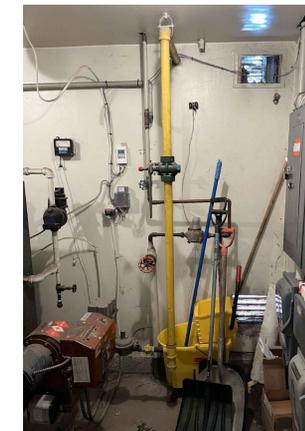
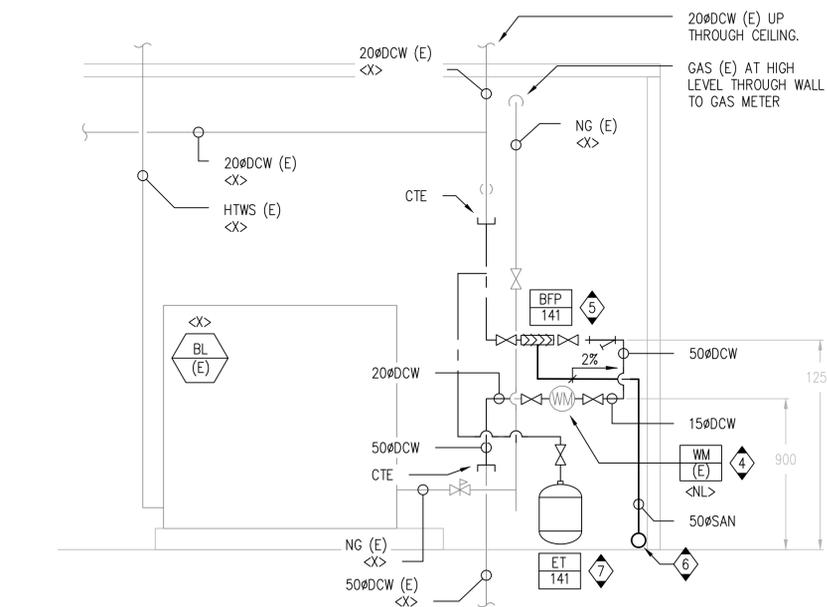
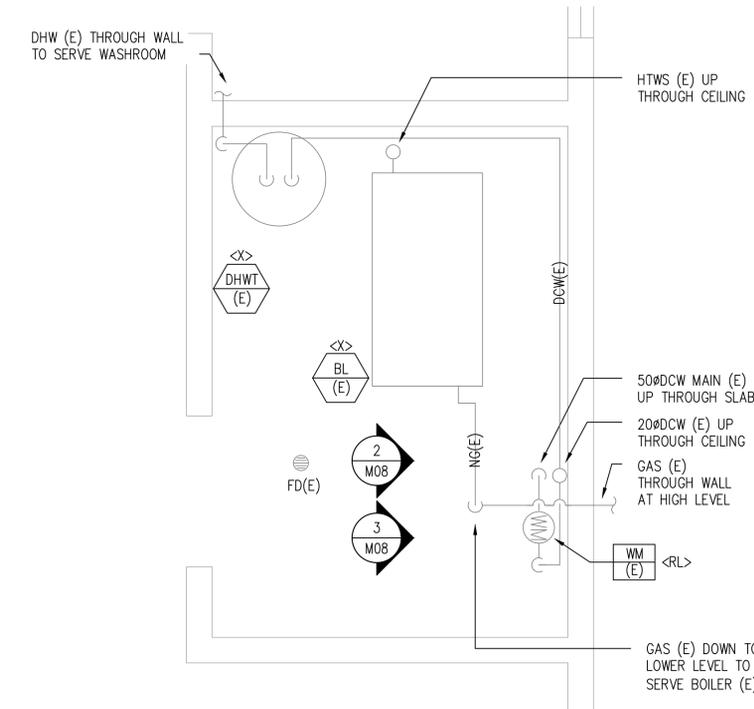
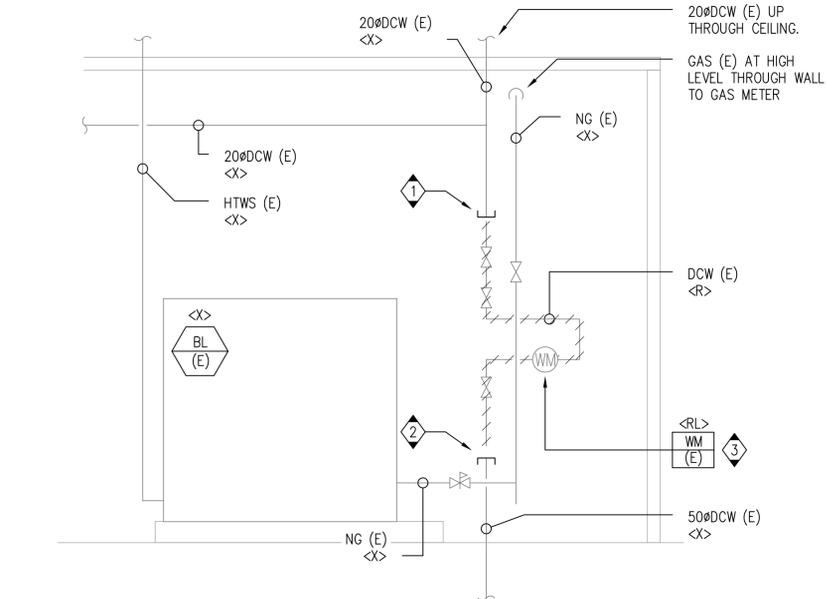
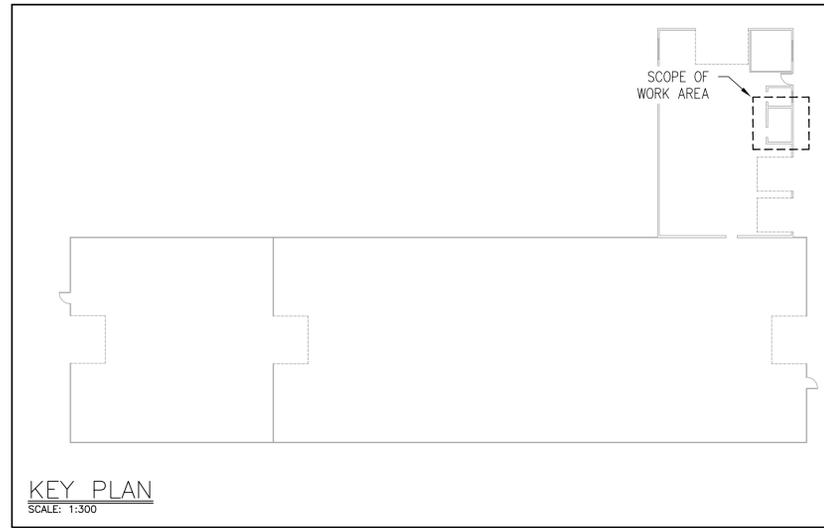
M-07

**GENERAL NOTES**

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- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 50#DCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
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- CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



EXISTING SITE  
CONDITION: BLDG 141

CLIENT  
**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT  
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Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON**

DRAWING  
**MECHANICAL PLANS  
BUILDING 141  
DEMOLITION & NEW WORK**

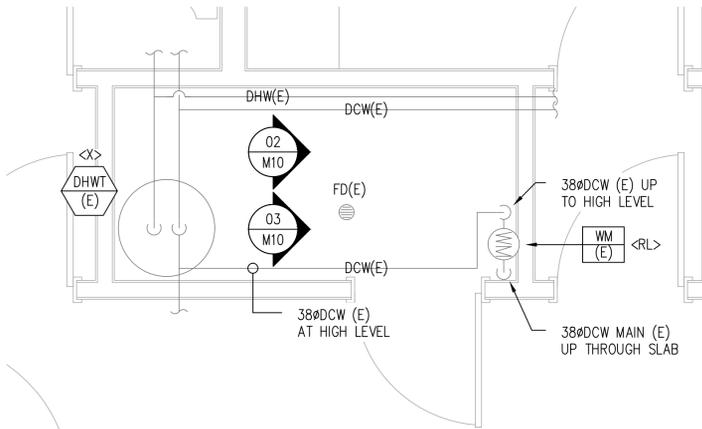
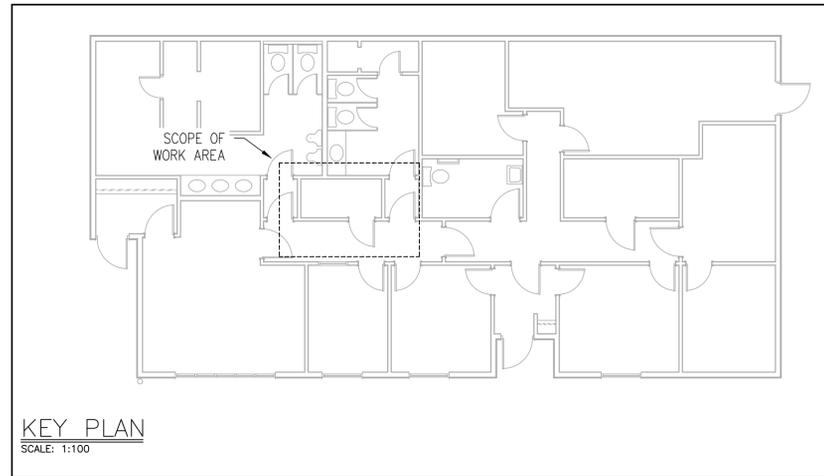
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

**GENERAL NOTES**

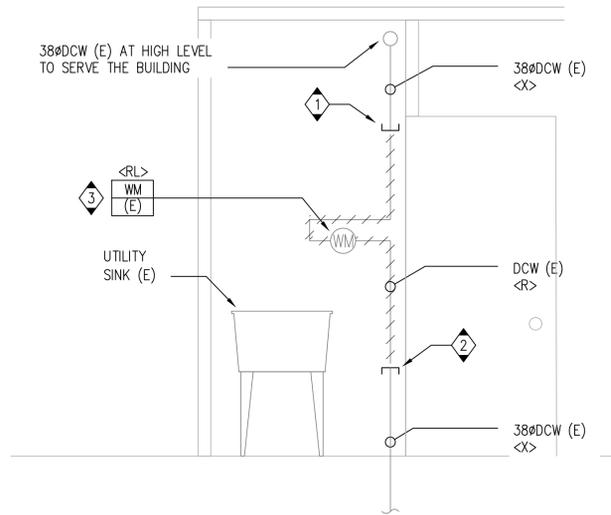
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**KEYNOTES**

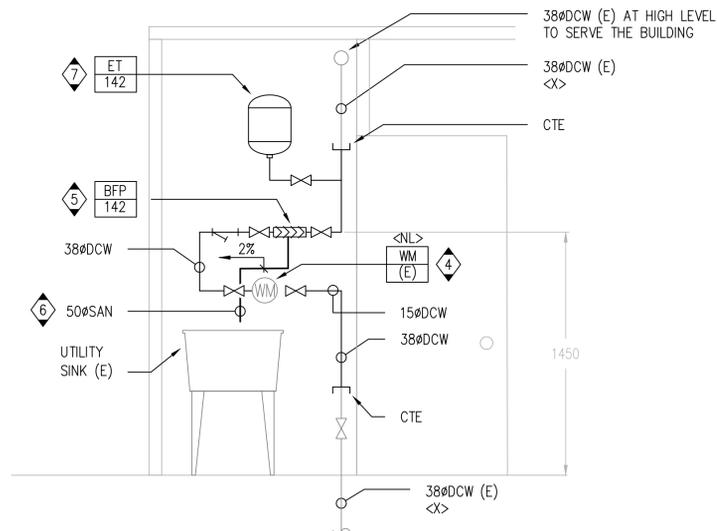
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 38ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE AT EXISTING UTILITY SINK. ROUTE NEW SAN PIPE CLOSE TO WALL AT 2% SLOPE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
- CONTRACTOR TO INSTALL EXPANSION TANK, COMPLETE WITH SEISMIC RESTRAINT SYSTEM, AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



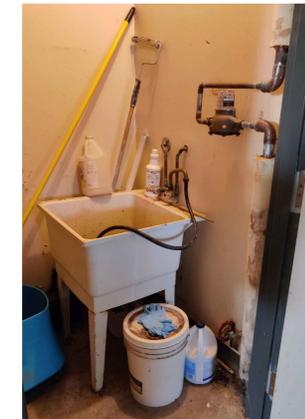
1 JANITOR ROOM - BUILDING 142  
M09 / SCALE 1:20



2 ELEVATION - DEMOLITION  
M09 / SCALE 1:20



3 ELEVATION - NEW WORK  
M09 / SCALE 1:20



EXISTING SITE  
CONDITION: BLDG 142

CLIENT

Canadian Food Inspection Agency (CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 142  
DEMOLITION & NEW WORK

PROJECT No:	MRK-22022713-A0	REVISION:
DRAWN:	V. HATAI	DATE: JUNE 2023
APPROVED:	B. BROWN	SCALE: AS SHOWN
DRAWING No:		

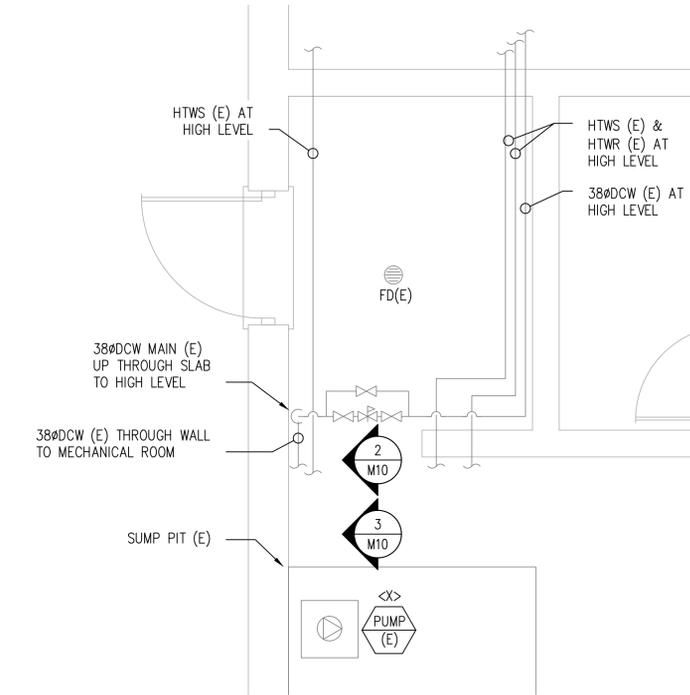
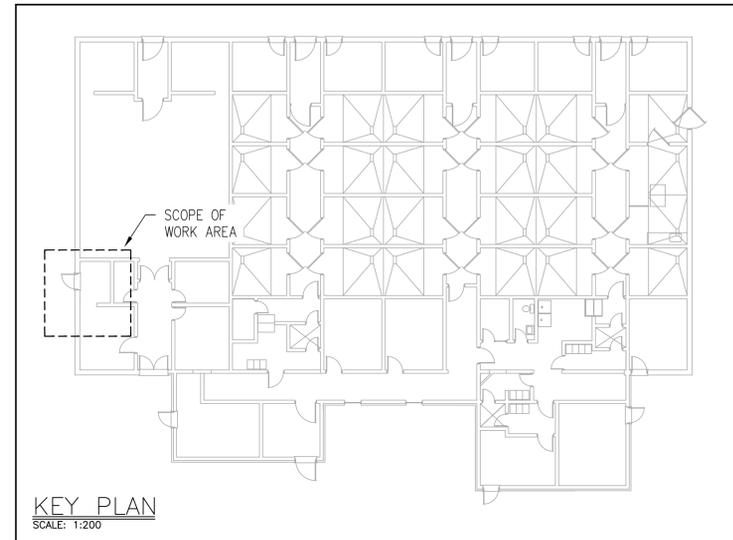
M-09

**GENERAL NOTES**

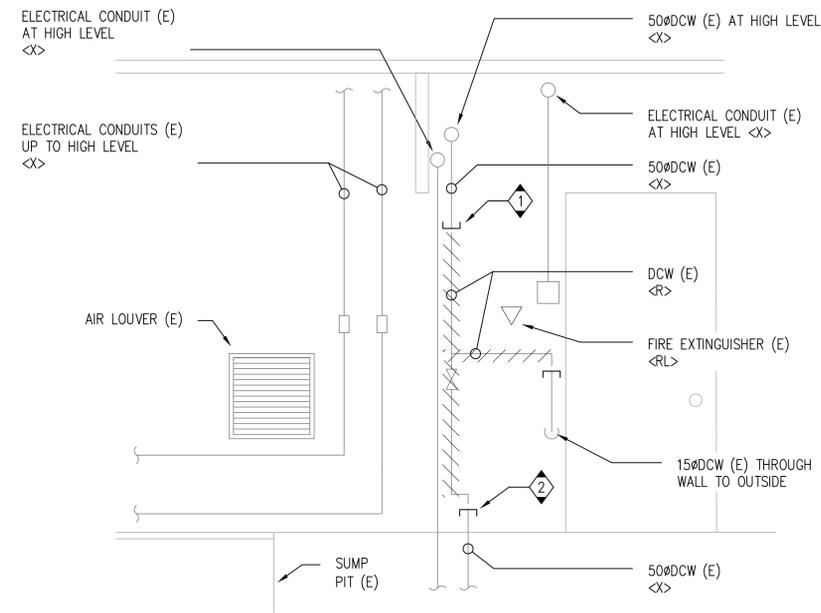
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
2. PIPE ROUTING TO BE FULLY COORDINATED WITH EXISTING SERVICES ON SITE PRIOR TO FABRICATION OR INSTALLATION.
3. PIPE SIZES TO BE CONFIRMED ON SITE PRIOR TO FABRICATION OR INSTALLATION OF NEW PIPING AND EQUIPMENT.
4. ALL GIVEN DIMENSIONS ASSOCIATED WITH THE PLACEMENT OF THE BFP DEVICE ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED ON SITE BY CONTRACTOR TO SUITE SITE CONDITIONS.
5. ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
6. COORDINATE PIPE ROUTING WITH ELECTRICAL COMPONENTS AND STRUCTURE.
7. ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
8. REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.
9. INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
10. CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

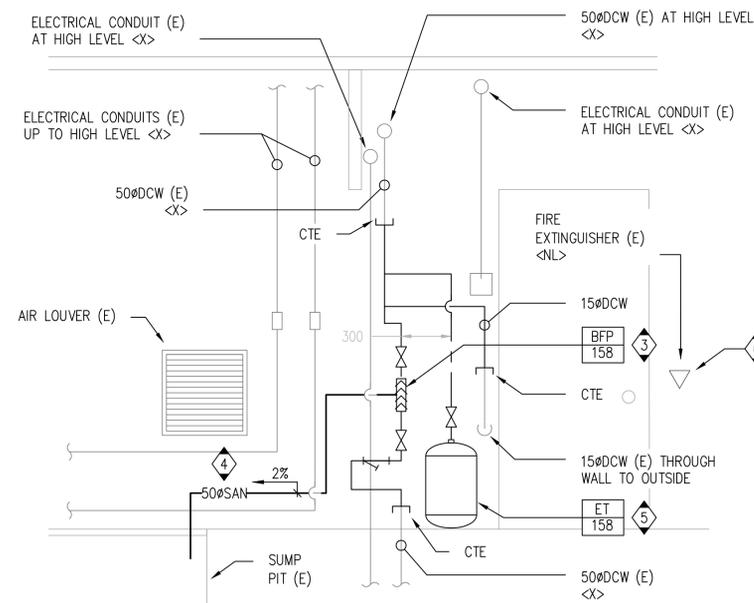
1. CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
2. CAP 50#DCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
3. CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
4. CONTRACTOR TO PROVIDE AND ROUTE NEW 50#SAN TO DISCHARGE AT SUMP PIT. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
5. CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.
6. CONTRACTOR TO RELOCATE FIRE EXTINGUISHER WHILE MEETING NFPA 10 REQUIREMENTS. COORDINATE EXACT LOCATION ON SITE.



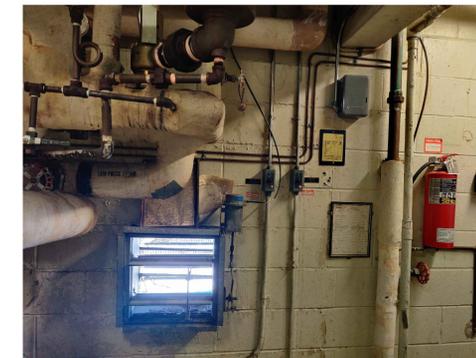
1 WATER ENTRY ROOM – BUILDING 158  
M10 SCALE 1:25



2 ELEVATION – DEMOLITION  
M10 SCALE 1:20



3 ELEVATION – NEW WORK  
M10 SCALE 1:20



EXISTING SITE  
CONDITION: BLDG 158

CLIENT

Canadian Food Inspection Agency  
(CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 158  
DEMOLITION & NEW WORK

PROJECT No:	MRK-22022713-A0	REVISION:
DRAWN:	V. HATAI	DATE: JUNE 2023
APPROVED:	B. BROWN	SCALE: AS SHOWN

DRAWING No:

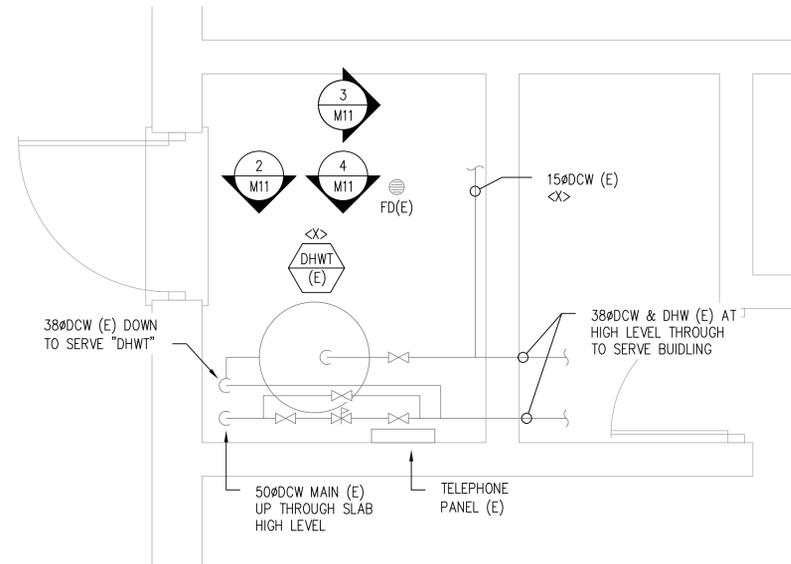
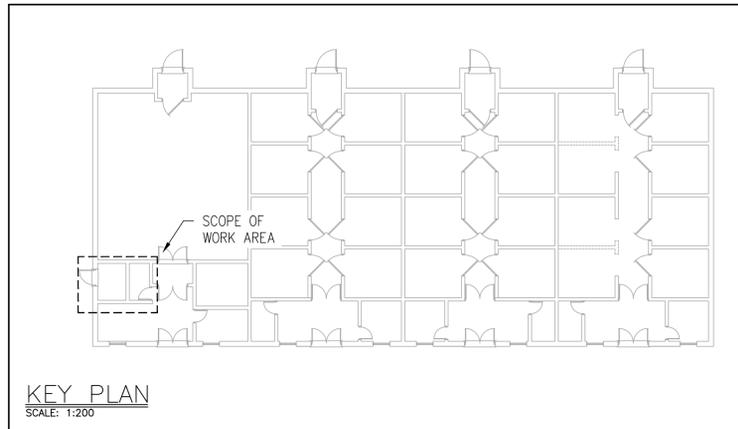
M-10

**GENERAL NOTES**

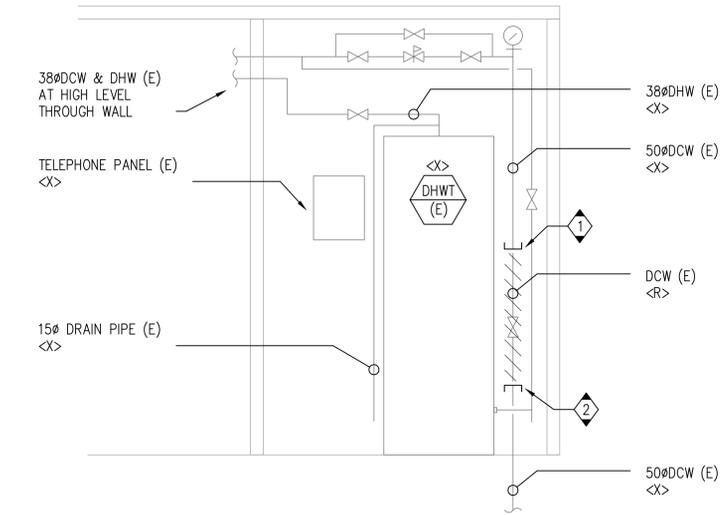
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- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

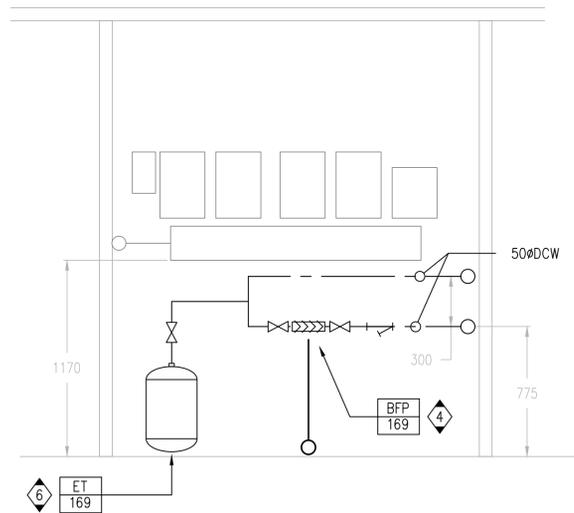
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 50ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- ROUTE NEW 50ØDCW CLOSE TO WALL TO SERVE THE NEW 'BFP-168'. REFER TO DETAIL 4/M-13
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
- CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



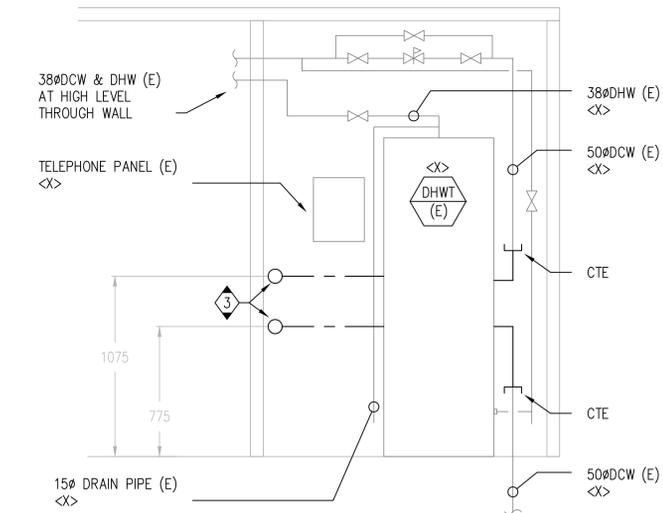
1 WATER ENTRY ROOM – BUILDING 169  
M11 SCALE 1:20



2 ELEVATION – DEMOLITION  
M11 SCALE 1:20



3 ELEVATION – NEW WORK  
M11 SCALE 1:20



4 ELEVATION – NEW WORK  
M11 SCALE 1:20



EXISTING SITE CONDITION: BLDG 169



EXISTING SITE CONDITION: BLDG 169

CLIENT		
Canadian Food Inspection Agency (CFIA)		
PROJECT NORTH		
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31
ISSUE	DESCRIPTION	DATE

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PROJECT

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Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 169  
DEMOLITION & NEW WORK

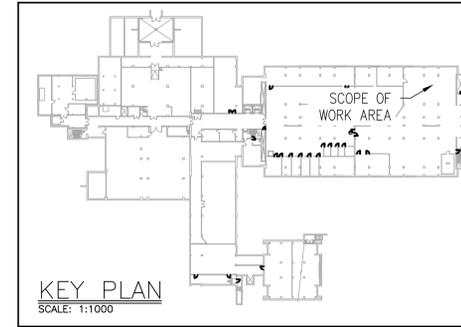
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

**GENERAL NOTES**

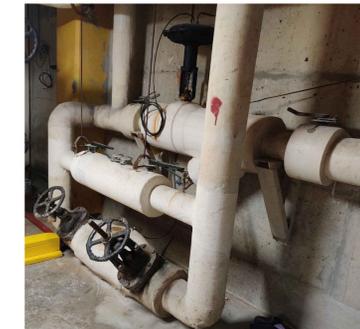
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- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

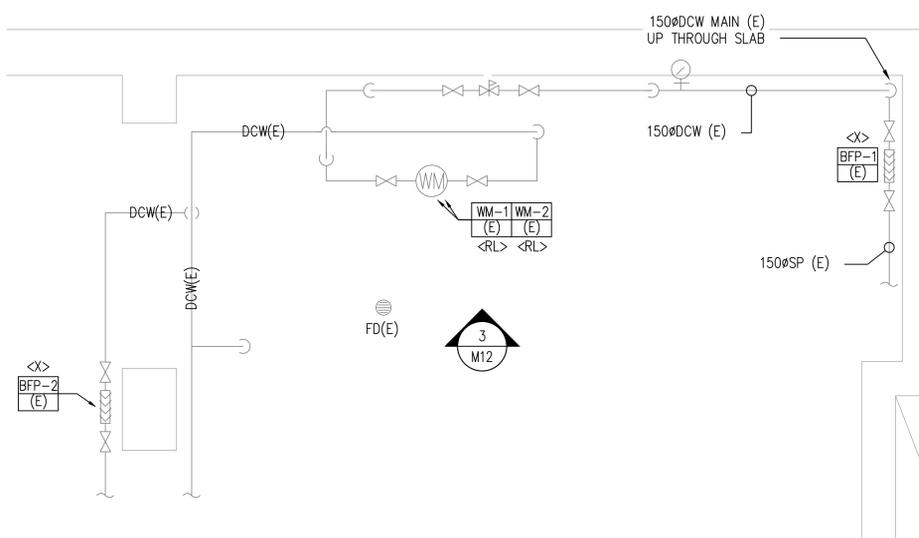
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO PROVIDE AND ROUTE NEW 75ØSAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
- CONTRACTOR TO INSTALL EXPANSION TANK, COMPLETE WITH SEISMIC RESTRAINT SYSTEM AND HOUSING KEEPING PAD, AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.
- MOVE ENTIRE DCW SECTION & ASSOCIATED COMPONENTS TO MAKE ENOUGH ROOM FOR THE INSTALLATION OF NEW EXPANSION TANK. COORDINATE NEW ROUTING ON SITE.



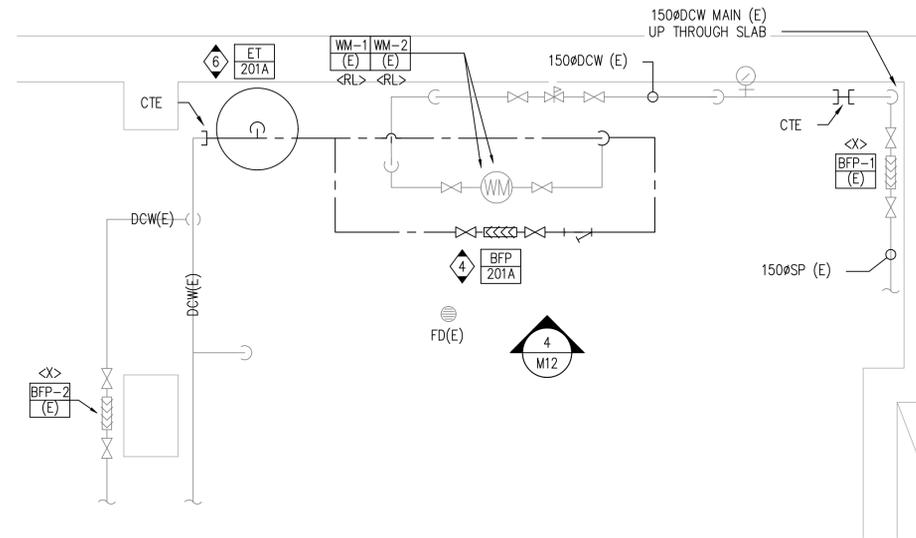
EXISTING SITE CONDITION: BLDG 201-A



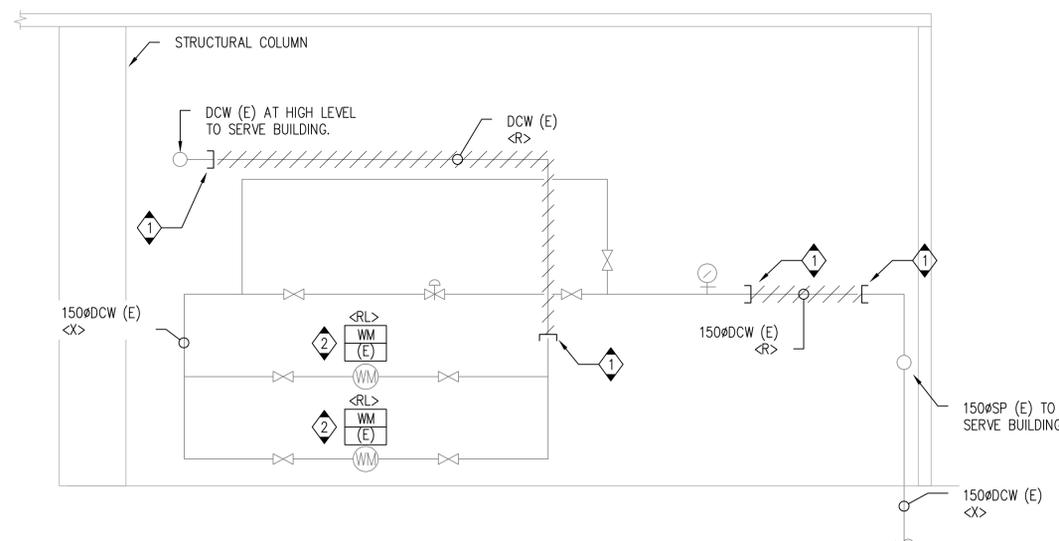
EXISTING SITE CONDITION: BLDG 201-A



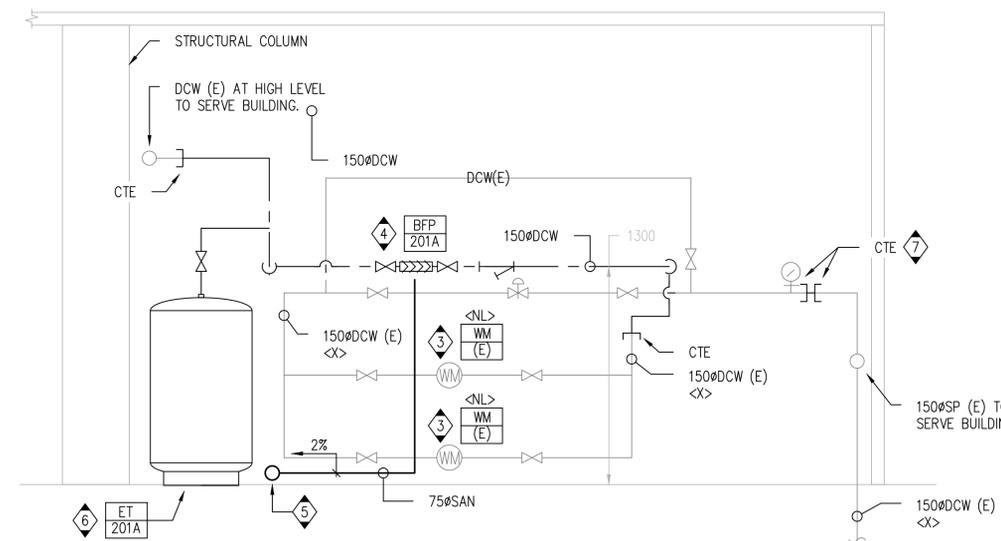
1 WATER ENTRY ROOM - BUILDING 201  
M12 SCALE 1:25



2 WATER ENTRY ROOM - BUILDING 201 - NEW WORK  
M12 SCALE 1:25



3 ELEVATION - DEMOLITION  
M12 SCALE 1:20



4 ELEVATION - NEW WORK  
M12 SCALE 1:20

CLIENT

Canadian Food Inspection Agency (CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
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Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING  
MECHANICAL PLANS  
BUILDING 201 - WATER ENTRY A  
DEMOLITION & NEW WORK

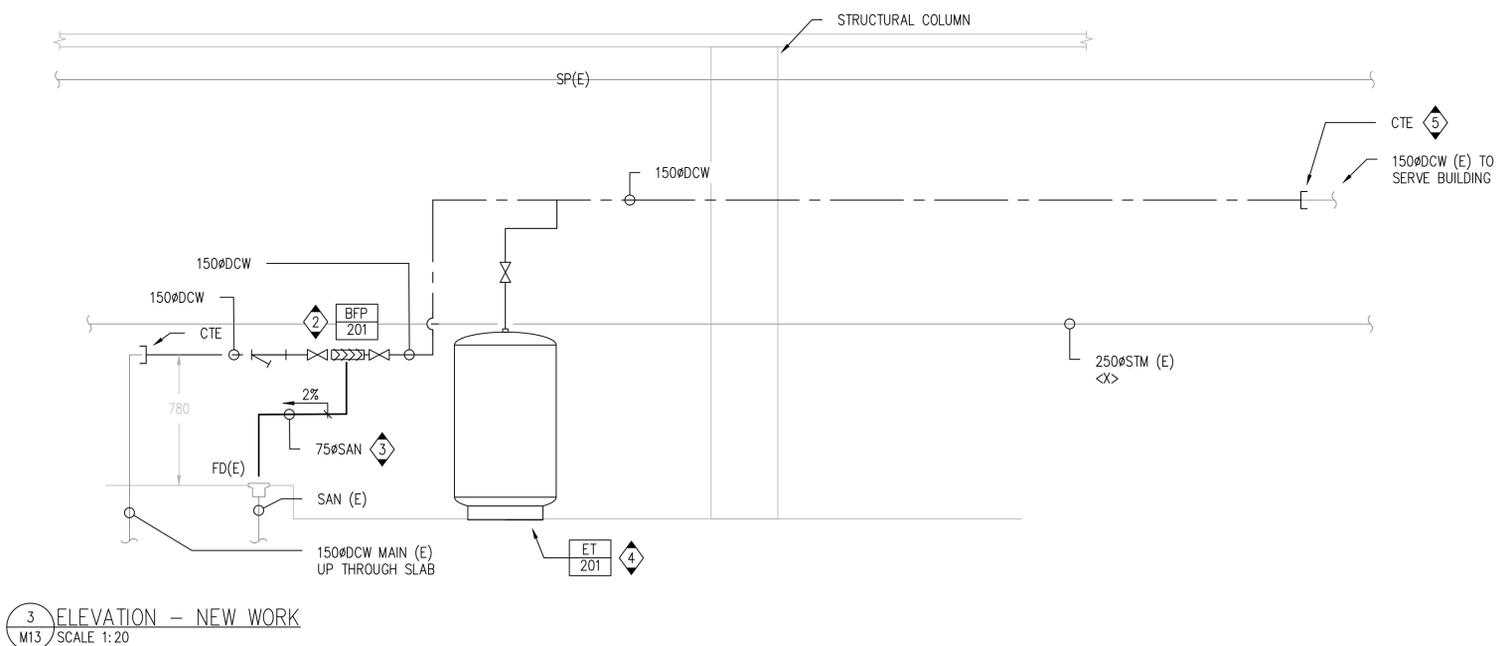
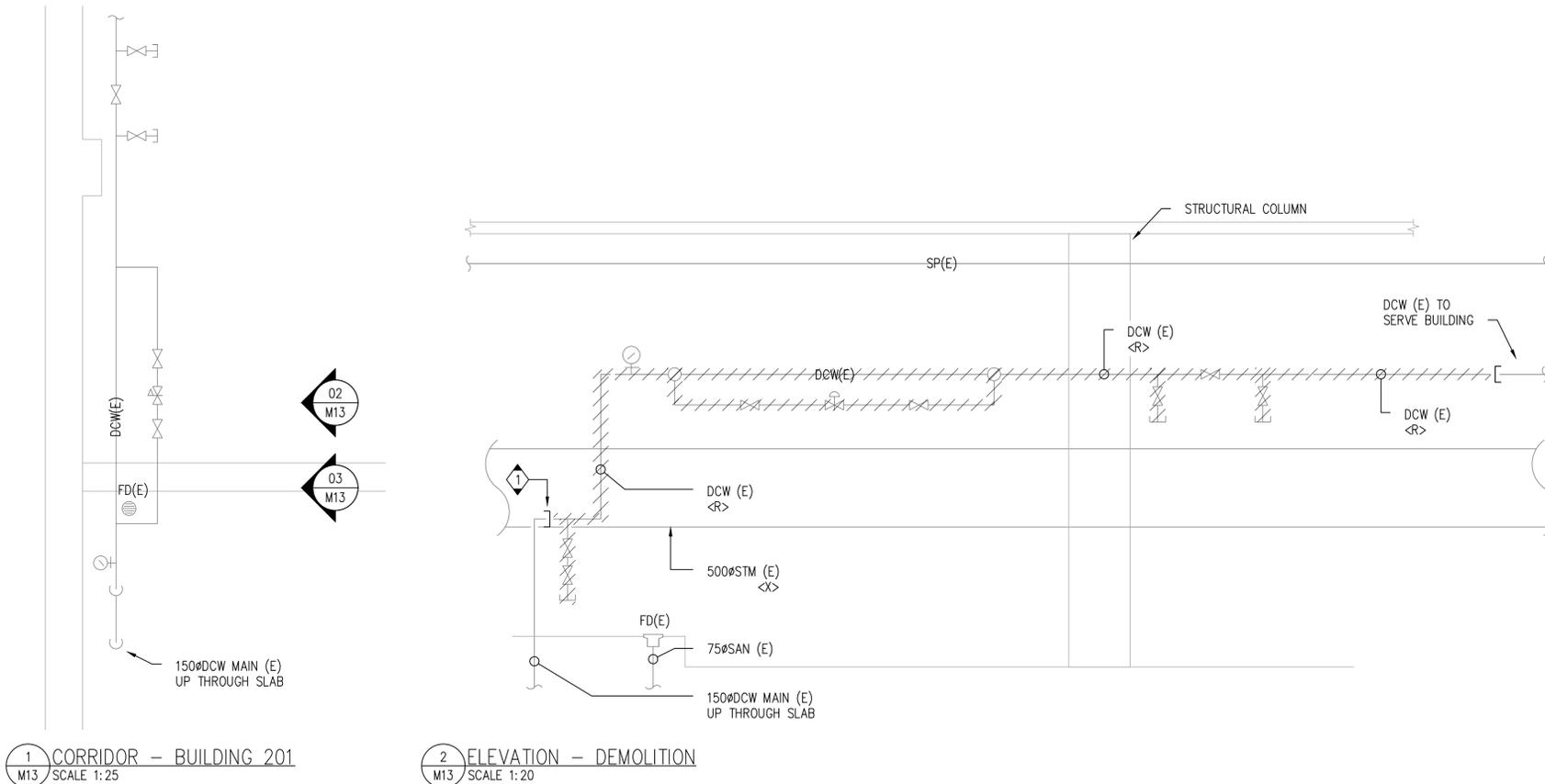
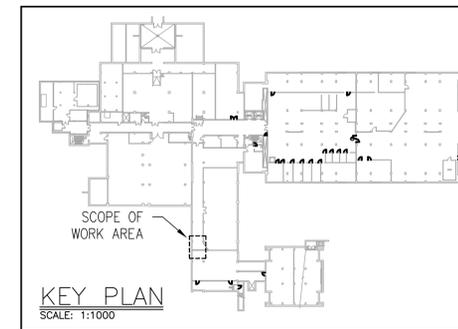
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

**GENERAL NOTES**

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**KEYNOTES**

- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
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- MOVE ENTIRE DCW SECTION & ASSOCIATED COMPONENTS TO MAKE ENOUGH ROOM FOR THE INSTALLATION OF NEW EXPANSION TANK. COORDINATE NEW ROUTING ON SITE.



EXISTING SITE CONDITION:  
BLDG 201-B



EXISTING SITE  
CONDITION: BLDG 201-B

CLIENT

Canadian Food Inspection Agency  
(CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
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3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 201 - WATER ENTRY B  
DEMOLITION & NEW WORK

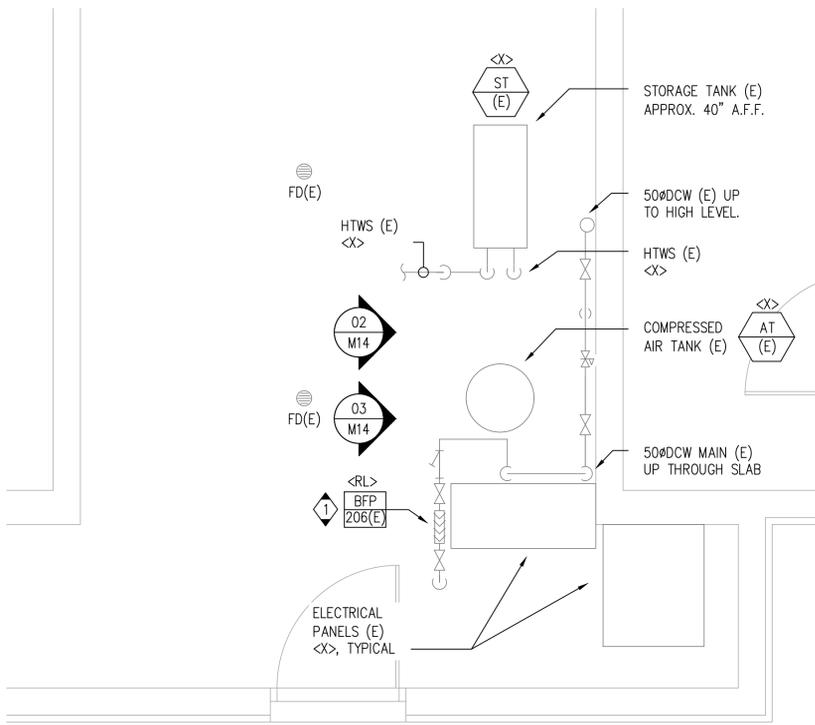
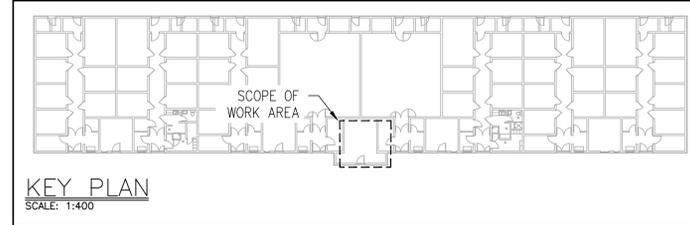
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DRAWN:	V. HATAI	DATE:	JUNE 2023
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DRAWING No:			

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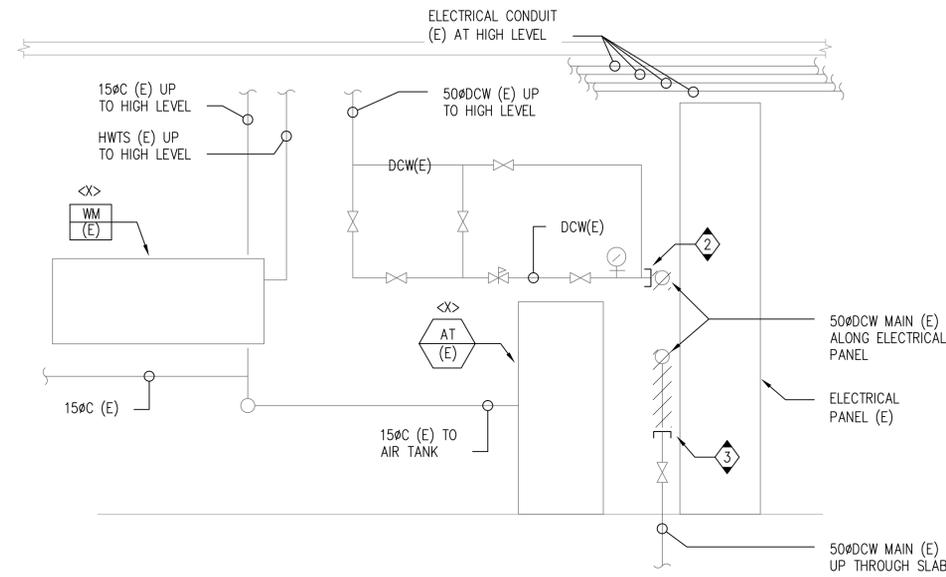
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**KEYNOTES**

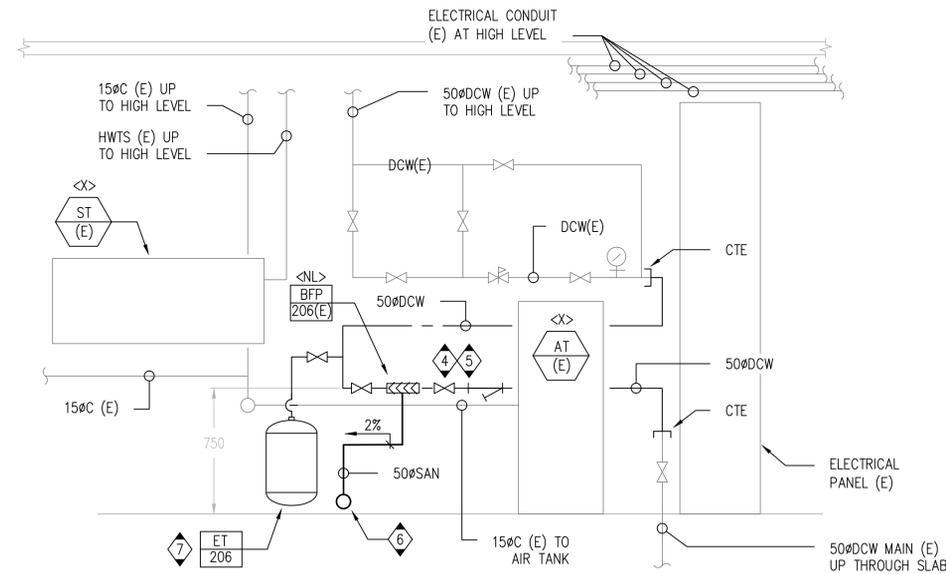
- REMOVE AND PROPERLY STORE BFP-206 (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 50ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF BFP-206 (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
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- CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



1 WATER ENTRY ROOM – BUILDING 206  
M14 SCALE 1:25



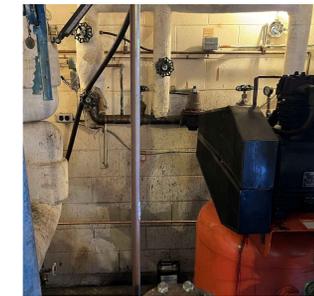
2 ELEVATION – DEMOLITION  
M14 SCALE 1:20



3 ELEVATION – NEW WORK  
M14 SCALE 1:20



EXISTING SITE CONDITION:  
BLDG 206



EXISTING SITE CONDITION:  
BLDG 206

CLIENT  
**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
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Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON**

DRAWING  
**MECHANICAL PLANS  
BUILDING 206  
DEMOLITION & NEW WORK**

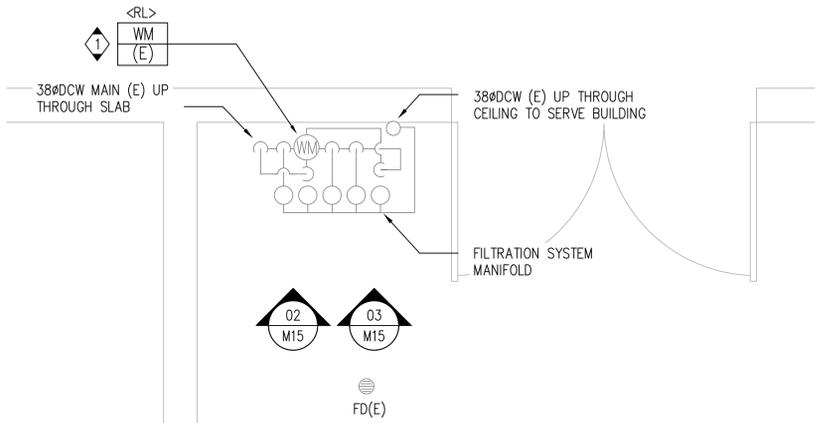
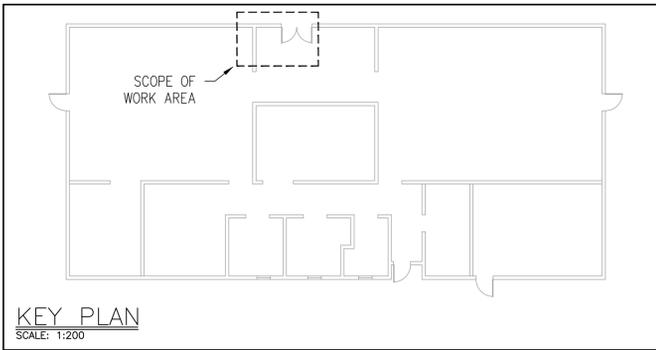
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

**GENERAL NOTES**

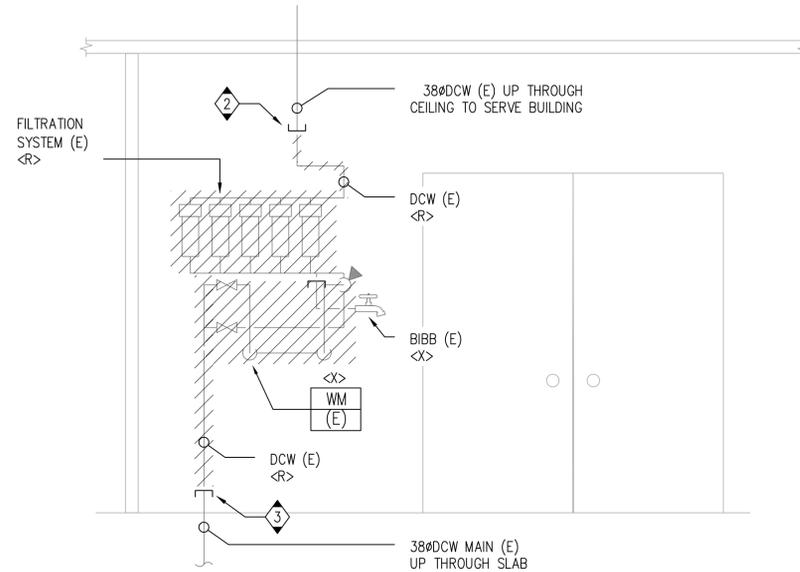
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- ALL CUTTING AND PATCHING OF FLOORS AND WALLS BY GENERAL CONTRACTOR.
- COORDINATE PIPE ROUTING WITH ELECTRICAL COMPONENTS AND STRUCTURE.
- ENSURE MATERIALS AND INSTALLATION ARE COMPLIANT WITH ONTARIO BUILDING CODE REQUIREMENTS.
- REFER TO DETAILS AND SPECIFICATIONS FOR EQUIPMENT & PIPING INSTALLATION REQUIREMENTS.
- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

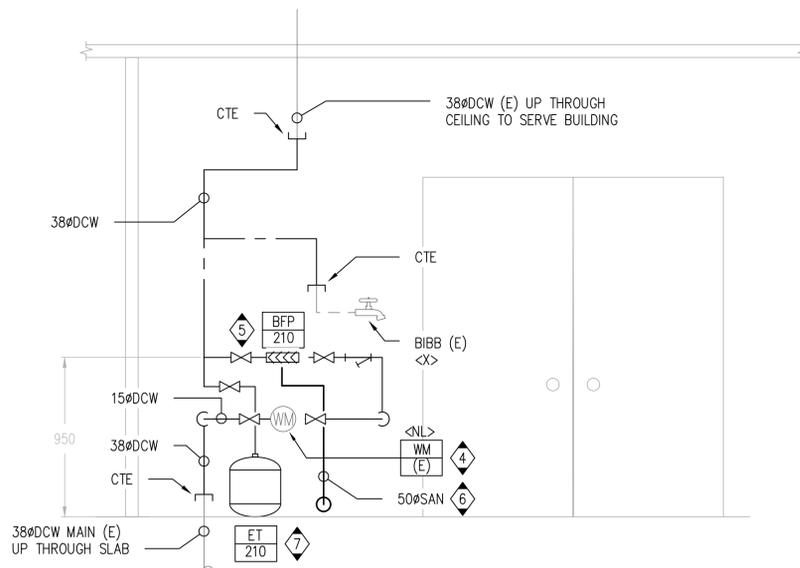
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 38ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
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- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
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- CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



**1 WATER ENTRY ROOM - BUILDING 210**  
M15 SCALE 1:20



**2 ELEVATION - DEMOLITION**  
M15 SCALE 1:20



**3 ELEVATION - NEW WORK**  
M15 SCALE 1:20



EXISTING SITE CONDITION:  
BLDG 210

CLIENT

Canadian Food Inspection Agency  
(CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

**MECHANICAL PLANS  
BUILDING 210  
DEMOLITION & NEW WORK**

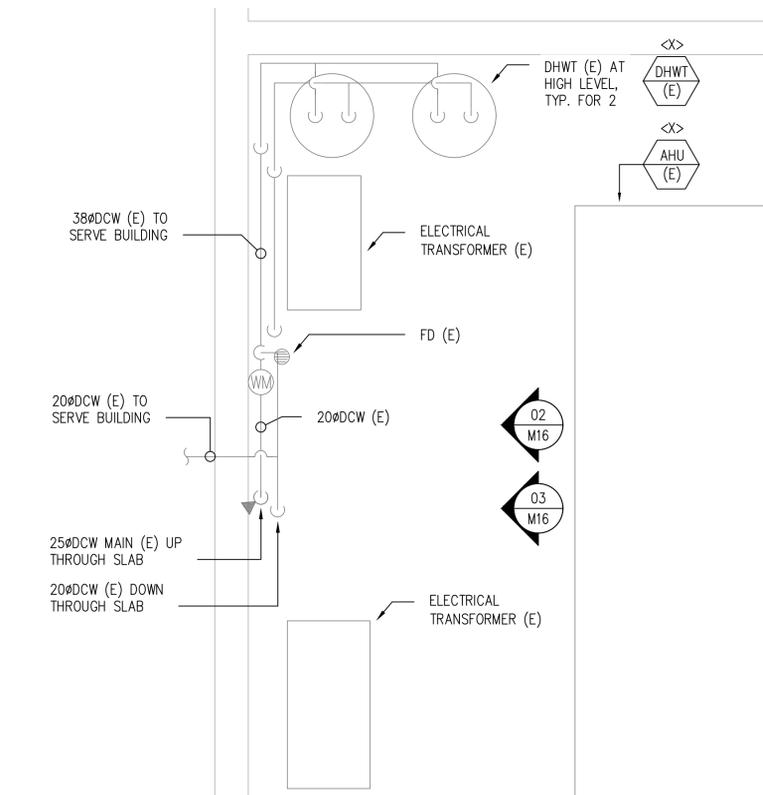
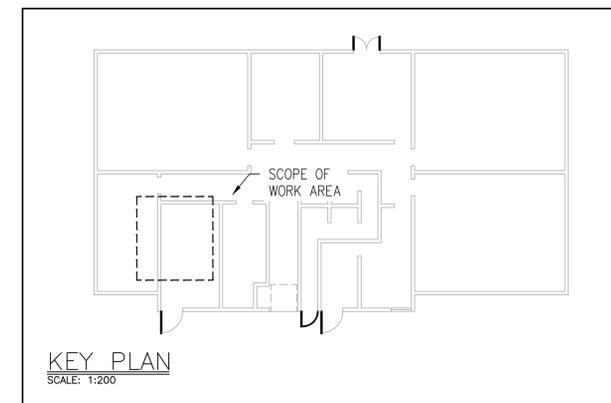
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

**GENERAL NOTES**

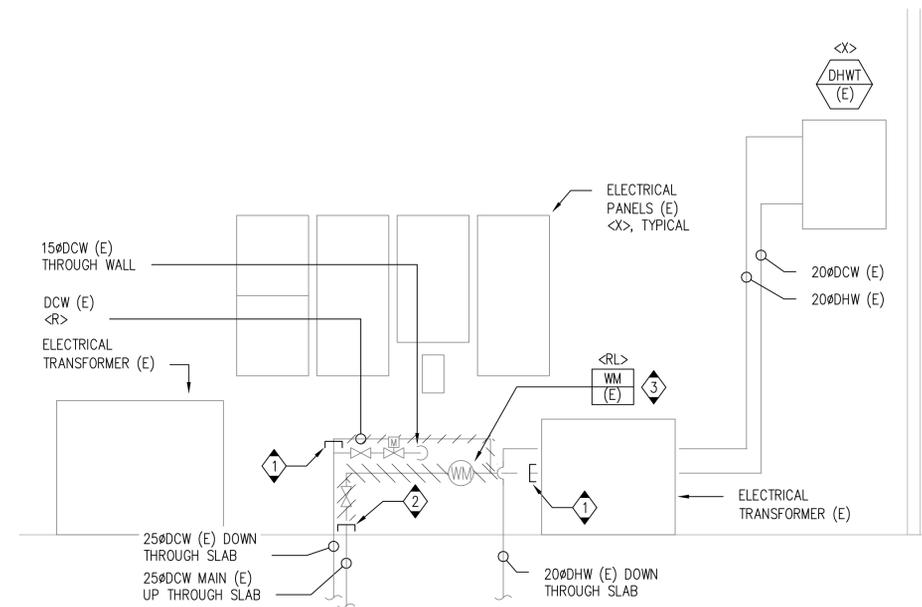
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- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

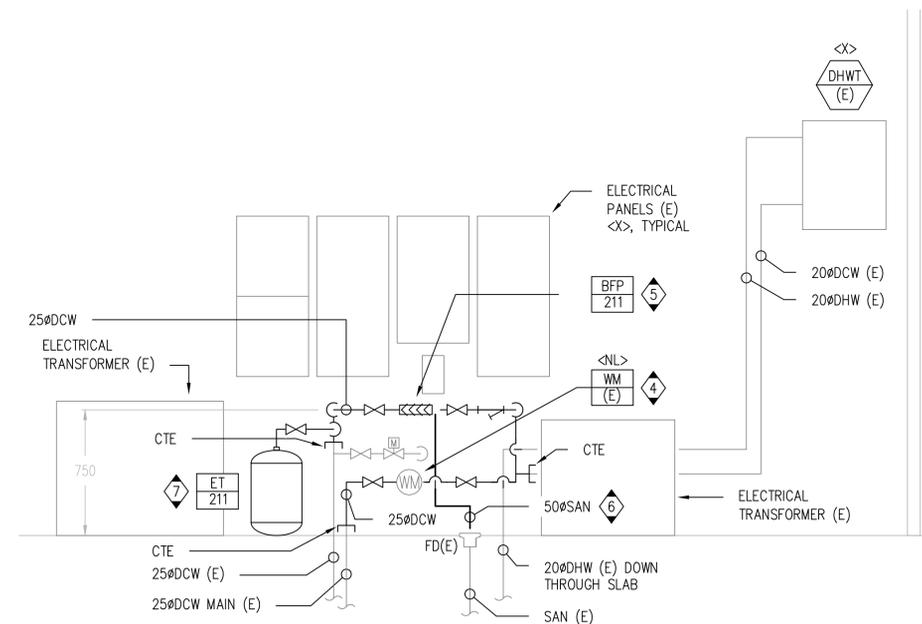
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 25ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
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- CONTRACTOR TO INSTALL EXPANSION TANK AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



1 MECHANICAL ROOM – BUILDING 211  
M16 / SCALE 1:20



2 ELEVATION – DEMOLITION  
M16 / SCALE 1:20



3 ELEVATION – NEW WORK  
M16 / SCALE 1:20



EXISTING SITE CONDITION:  
BLDG 211

CLIENT

Canadian Food Inspection Agency  
(CFIA)

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT

Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING

MECHANICAL PLANS  
BUILDING 211  
DEMOLITION & NEW WORK

PROJECT No: MRK-22022713-A0 REVISION:

DRAWN: V. HATAI DATE: JUNE 2023

APPROVED: B. BROWN SCALE: AS SHOWN

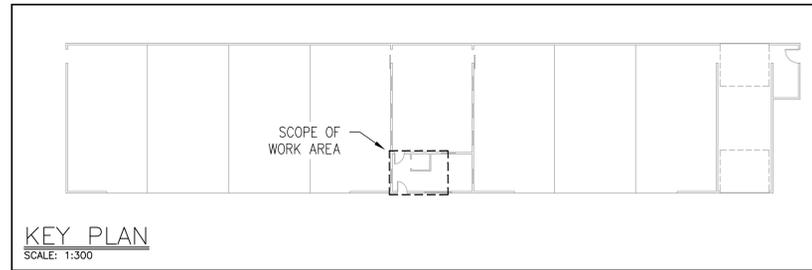
DRAWING No:

**GENERAL NOTES**

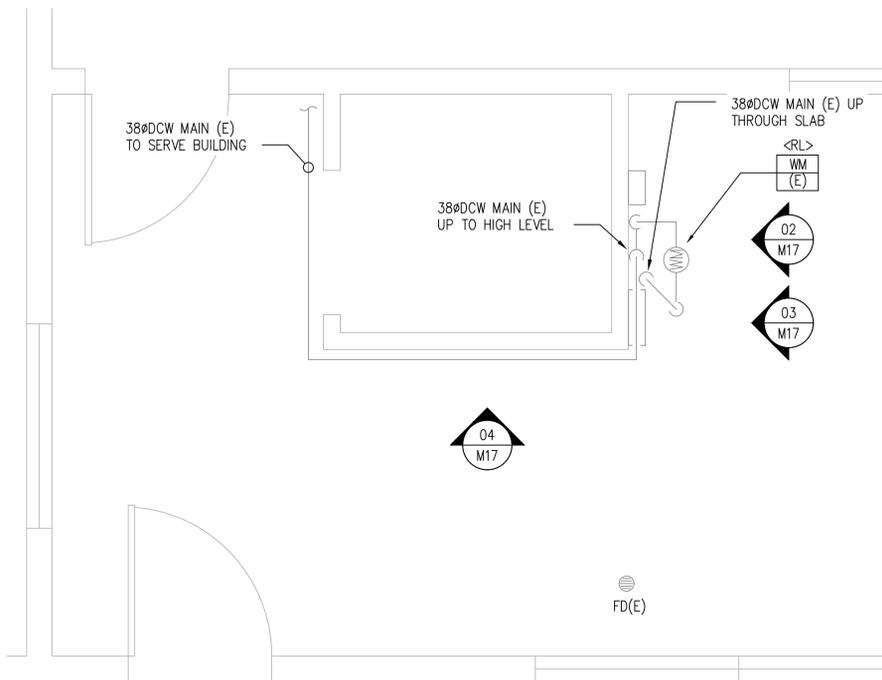
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- INSULATE COLD WATER PIPING AS PER MECHANICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

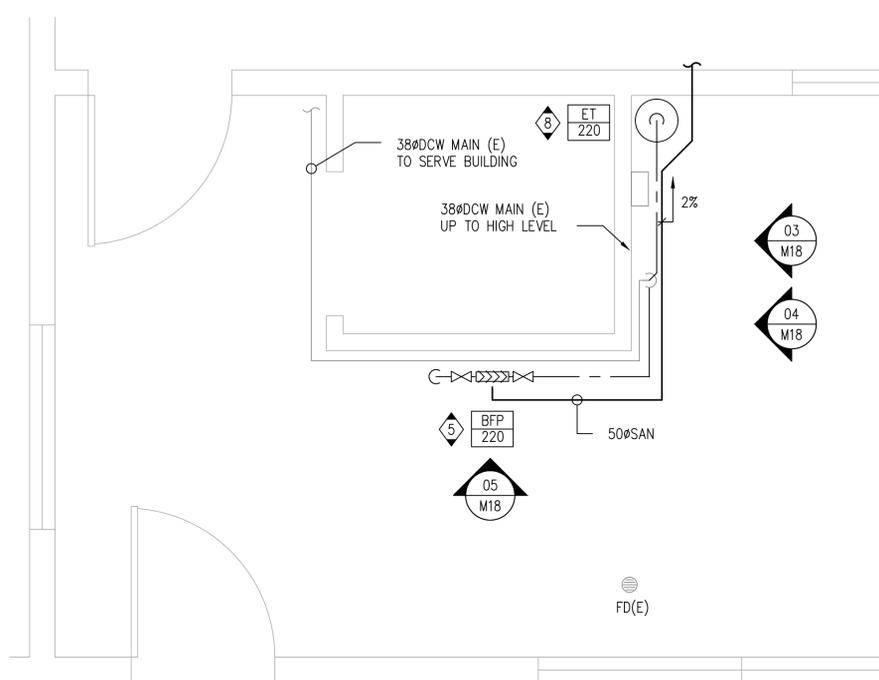
- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 38ØDCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- REMOVE AND PROPERLY STORE WM (E) DURING DEMOLITION PHASE AND MAKE IT READY TO BE USED WITH NEW DCW PIPING.
- ROUTE NEW 38ØDCW CLOSE TO WALL TO SERVE THE NEW 'BFP-220'. REFER TO DETAIL 4/M-13
- CONTRACTOR TO PROVIDE REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF WM (E) WITH THE NEW DCW PIPE. INSTALLATION OF WM (E) SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50ØSAN TO DISCHARGE THROUGH WALL IN THE ADJACENT GARAGE. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
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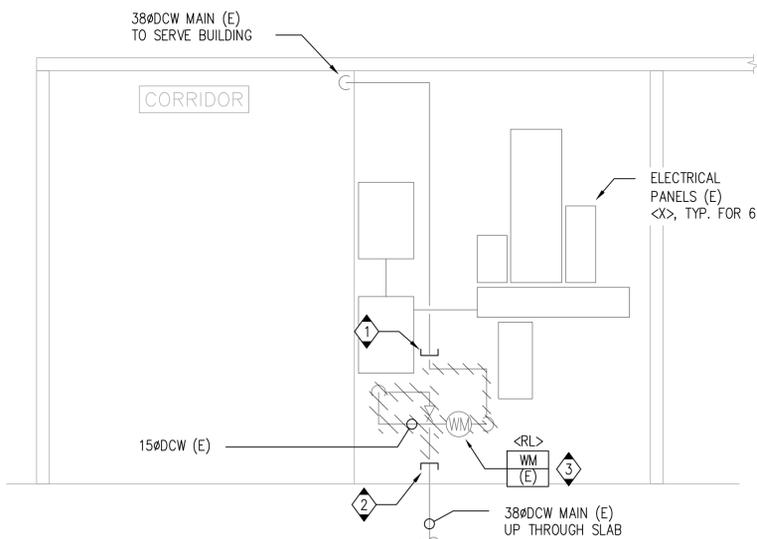
EXISTING SITE CONDITION:  
BLDG 220



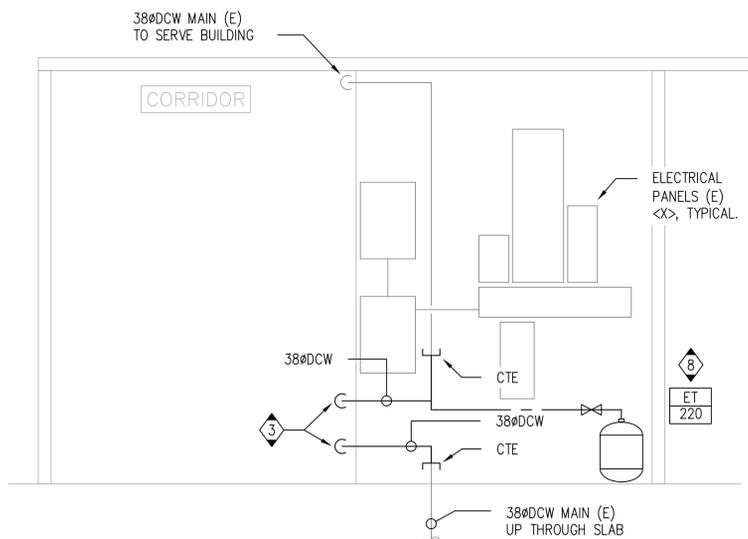
1 WATER-ENTRY ROOM - BUILDING 220  
M17 SCALE 1:20



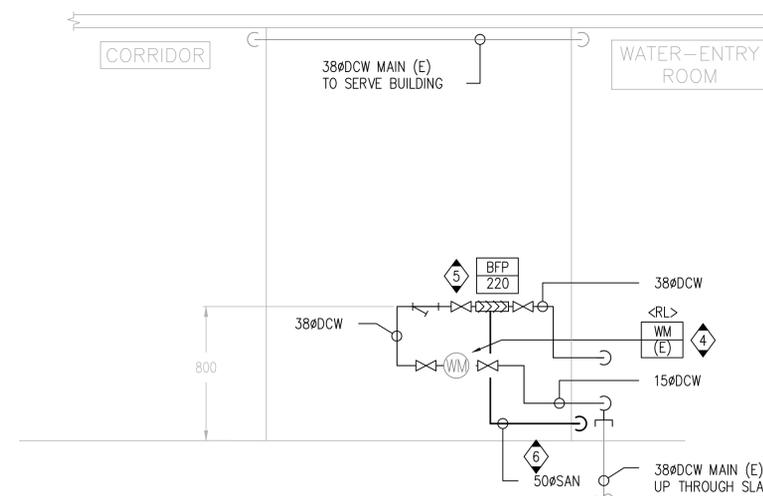
2 WATER-ENTRY ROOM - BUILDING 220  
M17 SCALE 1:20



3 ELEVATION - DEMOLITION  
M17 SCALE 1:20



4 ELEVATION - NEW WORK  
M17 SCALE 1:20



5 ELEVATION - NEW WORK  
M17 SCALE 1:20

CLIENT

Canadian Food Inspection Agency (CFIA)

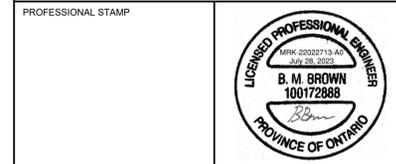
PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
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01	ISSUED FOR CLIENT REVIEW	2023-03-31

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PROJECT  
Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON

DRAWING  
MECHANICAL PLANS  
BUILDING 220  
DEMOLITION & NEW WORK

PROJECT No:	MRK-22022713-A0	REVISION:
DRAWN:	V. HATAI	DATE: JUNE 2023
APPROVED:	B. BROWN	SCALE: AS SHOWN

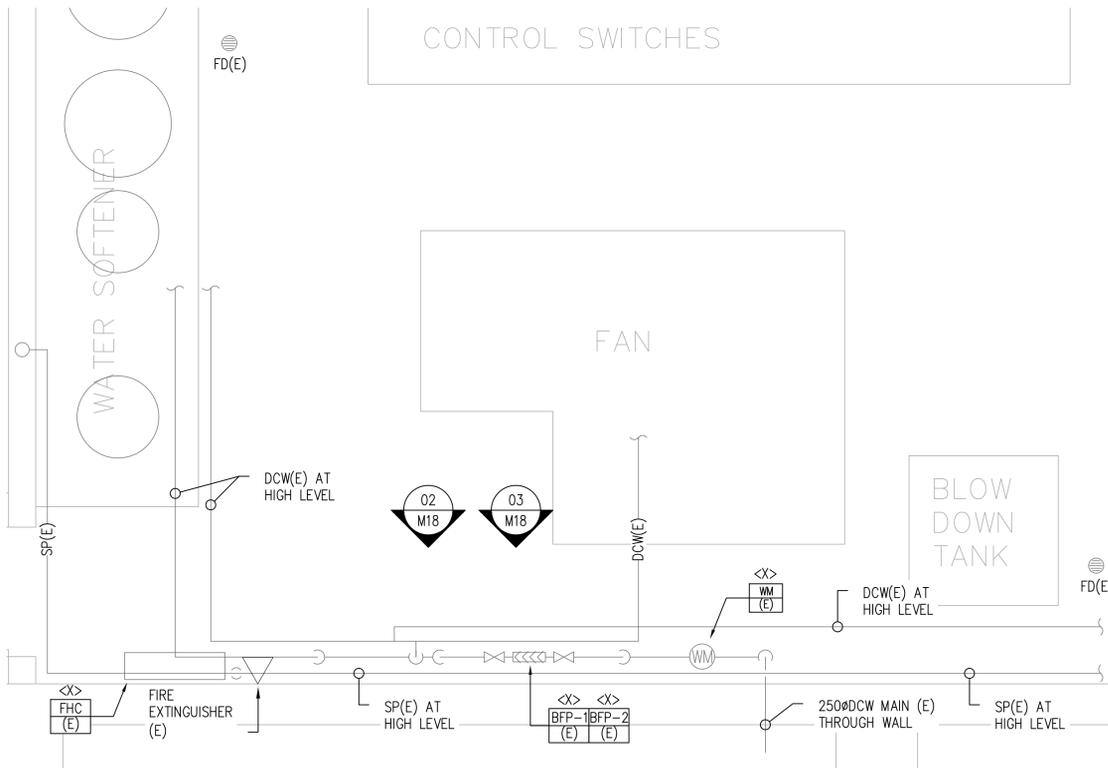
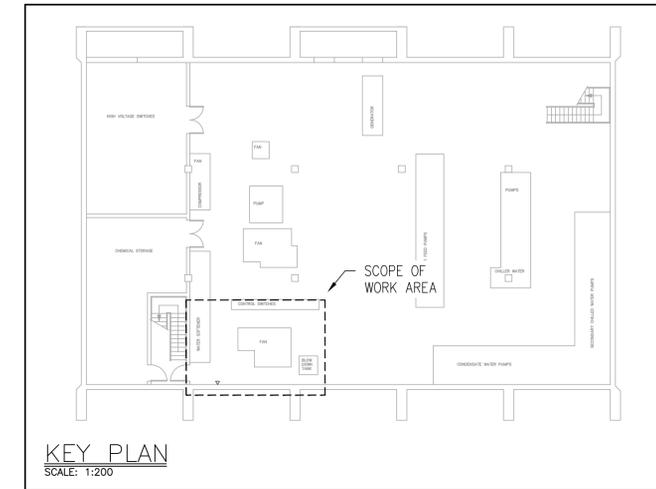
DRAWING No: M-17

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- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

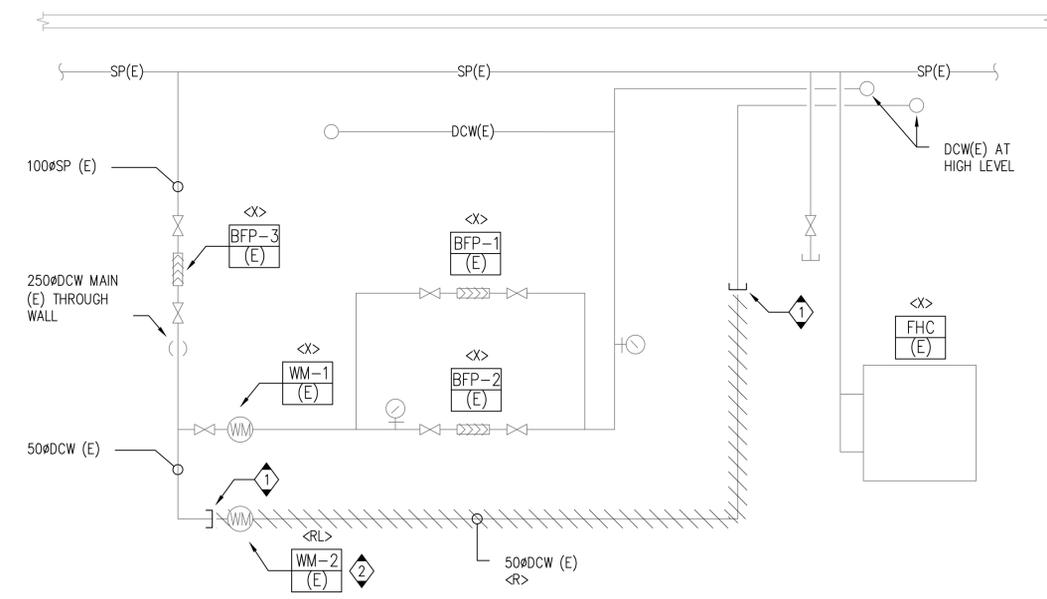
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- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO PROVIDE AND ROUTE NEW 50#SAN TO DISCHARGE AT NEAREST FLOOR DRAIN. ROUTE NEW SAN PIPE AT A 2% SLOPE AND CLOSE TO WALL WHENEVER POSSIBLE. COORDINATE EXACT ROUTING OF NEW SAN PIPE ON SITE TO ENSURE IT DOES NOT IMPEDE ACCESS TO OR PROPER OPERATION OF EXISTING EQUIPMENT.
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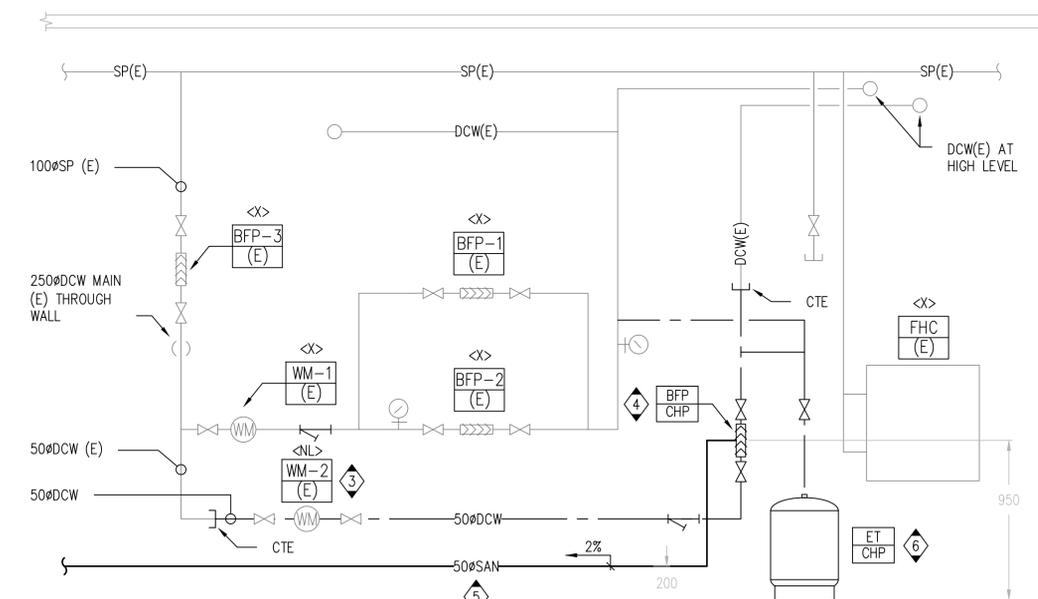
**1 BASEMENT – CENTRAL HEATING PLANT**  
SCALE 1:25



EXISTING SITE CONDITION:  
CENTRAL PLANT



**2 ELEVATION – DEMOLITION**  
SCALE 1:20



**3 ELEVATION – NEW WORK**  
SCALE 1:20

CLIENT  
**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH

ISSUE	DESCRIPTION	DATE
03	ISSUED FOR TENDER	2023-07-28
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PROJECT  
**Premises Isolation Backflow Prevention  
Canadian Food Inspection Agency  
3851 Fallowfield Road  
Nepean, ON**

DRAWING  
**MECHANICAL PLANS  
CENTRAL HEATING PLANT  
DEMOLITION & NEW WORK**

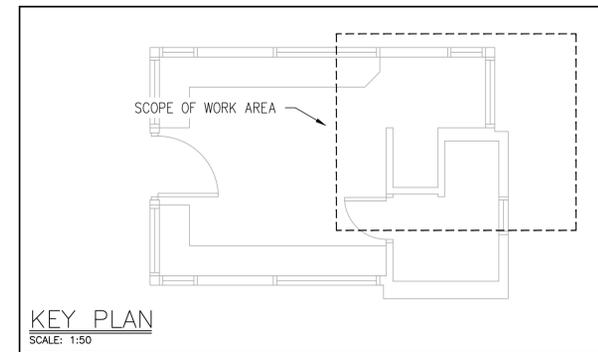
PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			

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- CONTRACTOR TO PROVIDE VALVES AND PLUMBING ACCESSORIES AS REQUIRED.

**KEYNOTES**

- CAP DCW (E) AND MAKE IT READY FOR FUTURE CONNECTION
- CAP 20#DCW (E) CLOSE TO FINISHED FLOOR AND MAKE IT READY FOR FUTURE CONNECTION
- CONTRACTOR TO PROVIDE ALL REQUIRED ADAPTERS AND CONNECTORS TO ENSURE PROPER INSTALLATION OF NEW 'WM-G'. INSTALLATION OF NEW 'WM-G' SHALL CONFORM WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR TO INSTALL BACKFLOW PREVENTER DEVICE AS PER CSA 64.10 CLEARANCE REQUIREMENTS. REFER TO DETAIL 1/M-05
- CONTRACTOR TO INSTALL EXPANSION TANK, COMPLETE WITH SEISMIC RESTRAINT SYSTEM, AS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE EXACT LOCATION ON SITE.



CLIENT

**Canadian Food Inspection Agency (CFIA)**

PROJECT NORTH


03	ISSUED FOR TENDER	2023-07-28
02	ISSUED FOR PERMIT	2023-06-05
01	ISSUED FOR CLIENT REVIEW	2023-03-31

ISSUE	DESCRIPTION	DATE
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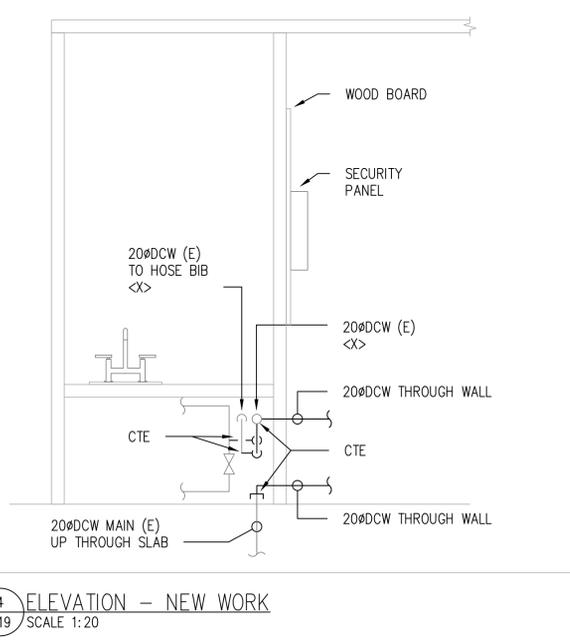
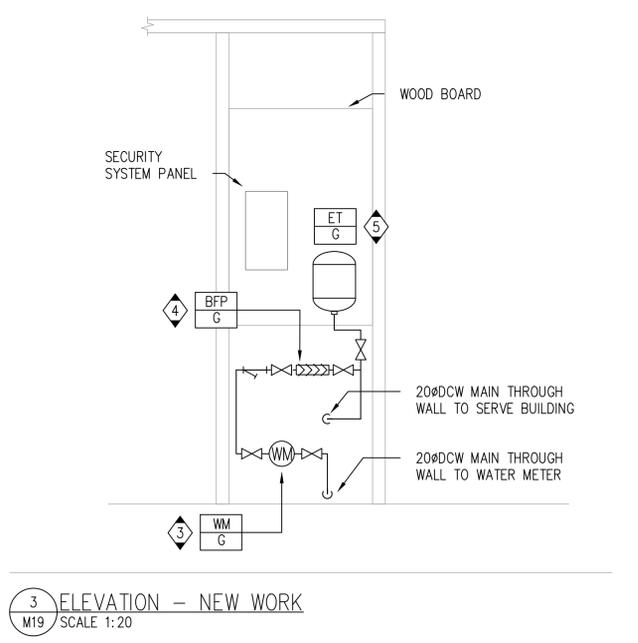
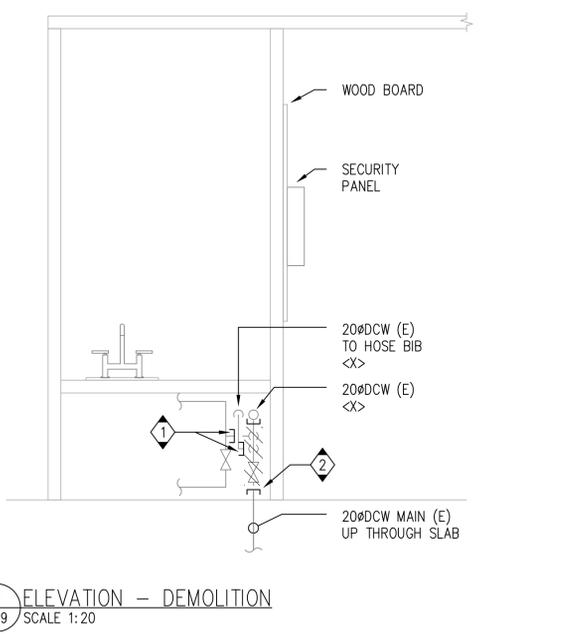
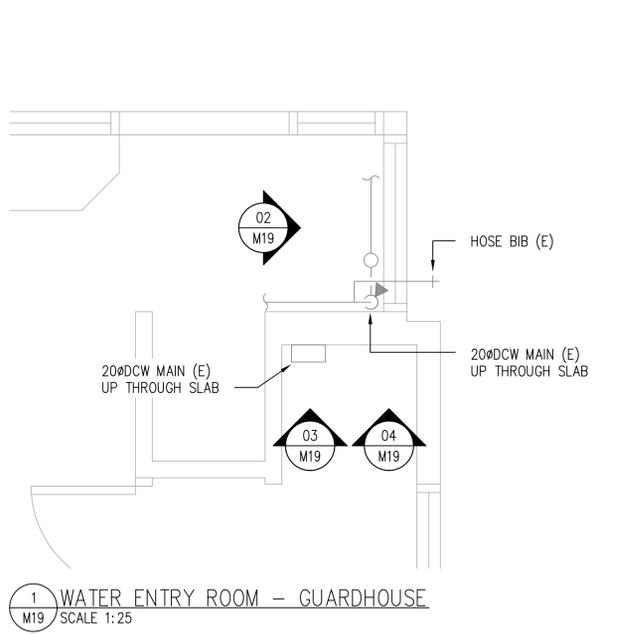
PROJECT

**Premises Isolation Backflow Prevention  
 Canadian Food Inspection Agency  
 3851 Fallowfield Road  
 Nepean, ON**

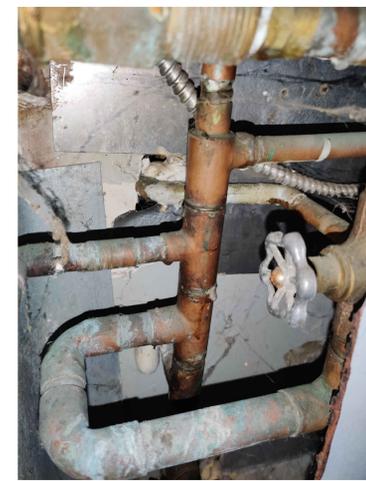
DRAWING

**MECHANICAL PLANS  
 GUARDHOUSE  
 DEMOLITION & NEW WORK**

PROJECT No:	MRK-22022713-A0	REVISION:	
DRAWN:	V. HATAI	DATE:	JUNE 2023
APPROVED:	B. BROWN	SCALE:	AS SHOWN
DRAWING No:			



EXISTING SITE CONDITION:  
GUARDHOUSE



EXISTING SITE CONDITION:  
GUARDHOUSE