EASTPOINT

Halifax
Regional Centre for Education

BROOKSIDE JR. HIGH BOILER REPLACEMENT

LOCATION: HATCHET LAKE
CLIENT: HRCE
JOB NUMBER: 382005
DATE: ARPIL 11, 2025
ISSUED FOR TENDER

DRAWING LIST

STRUCTURAL

S-401 STRUCTURAL DETAILS

MECHANICAL

M-101 MECHANICAL SITE PLAN

M-102 BOILER ROOM PLAN (DEMOLITION AND NEW CONSTRUCTION)

M-103 MECHANICAL VENTILATION PLAN GYNMASIUM (NEW CONSTRUCTION)

M-104 MECHANICAL CONTROLS PLAN (NEW CONSTRUCTION)

M-401 MECHANICAL DETAILS & SCHEMATICS

M-402 ROOF CURB PLAN & SECTION DETAILS

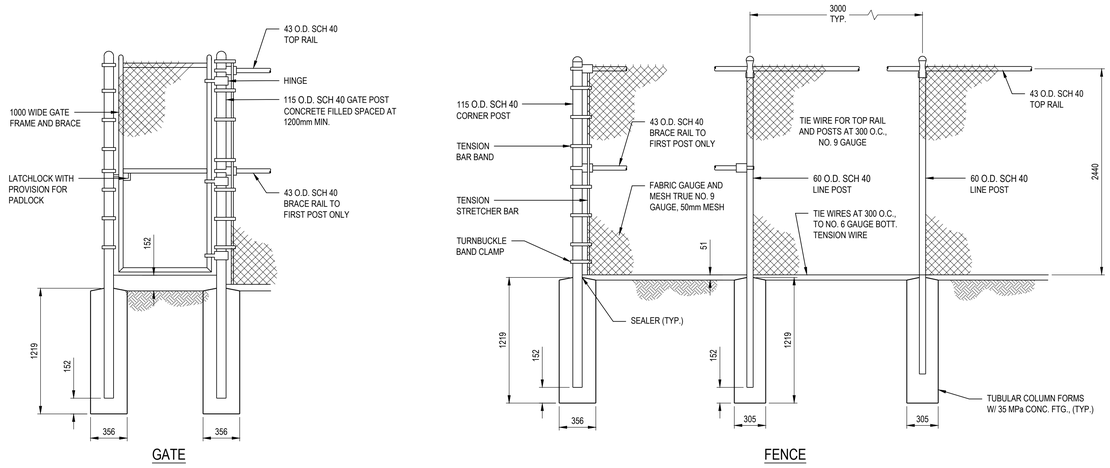
M-501 MECHANICAL SCHEDULES

ELECTRICAL

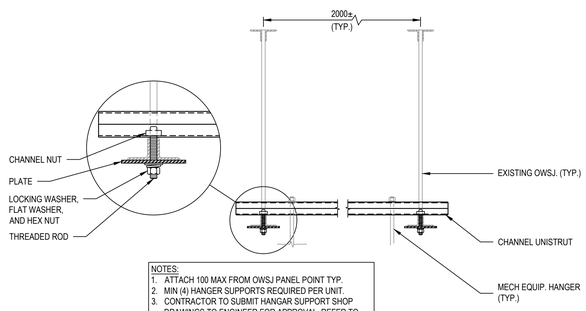
E-101 ELECTRICAL SITE PLAN

E-102 GYMNASIUM AND BOILER ROOM PLAN (DEMOLITION AND NEW CONSTRUCTION)

TITLE BLOCK @ 1:1 FULL SIZE = B1

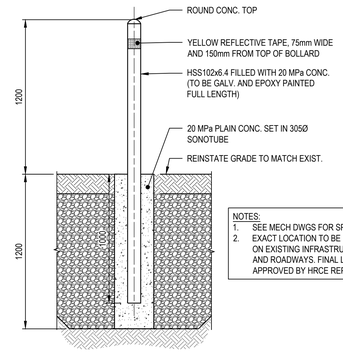


1 S-401 DETAIL - TYP. GATE AND FENCE
SCALE: 1:25



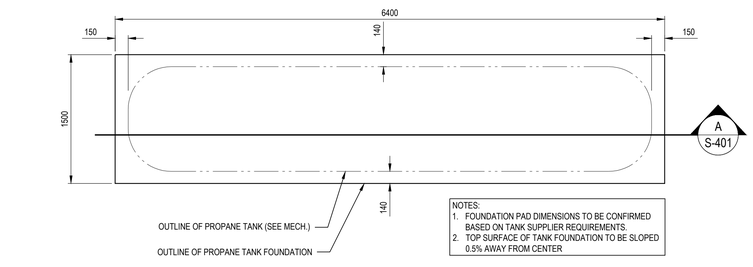
NOTES:
1. ATTACH 100 MAX FROM OWSJ PANEL POINT TYP.
2. MIN (4) HANGER SUPPORTS REQUIRED PER UNIT.
3. CONTRACTOR TO SUBMIT HANGAR SUPPORT SHOP DRAWINGS TO ENGINEER FOR APPROVAL. REFER TO MECHANICAL FOR EQUIPMENT WEIGHT REQUIREMENTS.

2 S-401 DETAIL - TYP. HANGER SUPPORT DETAIL
SCALE: 1:10



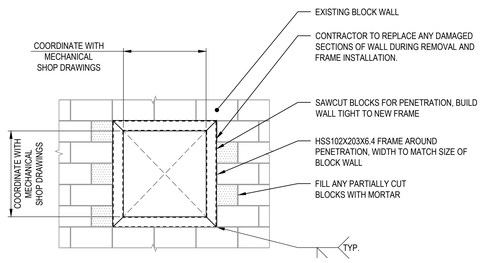
NOTES:
1. SEE MECH DWGS FOR SPACING.
2. EXACT LOCATION TO BE FIELD DETERMINED BASED ON EXISTING INFRASTRUCTURE, PARKING AREAS, AND ROADWAYS. FINAL LOCATIONS TO BE APPROVED BY HRCE REPRESENTATIVE.

3 S-401 TYP. BOLLARD DETAIL
SCALE: 1:20

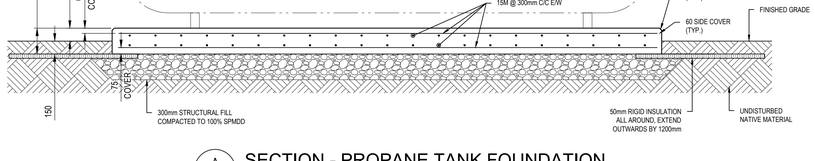


NOTES:
1. FOUNDATION PAD DIMENSIONS TO BE CONFIRMED BASED ON TANK SUPPLIER REQUIREMENTS.
2. TOP SURFACE OF TANK FOUNDATION TO BE SLOPED 0.5% AWAY FROM CENTER

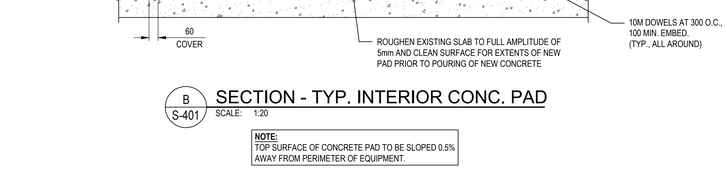
4 S-401 PLAN - PROPANE TANK FOUNDATION
SCALE: 1:20



5 401 DETAIL - WALL PENETRATION
SCALE: 1:25



A S-401 SECTION - PROPANE TANK FOUNDATION
SCALE: 1:20



B S-401 SECTION - TYP. INTERIOR CONC. PAD
SCALE: 1:20

NOTE:
TOP SURFACE OF CONCRETE PAD TO BE SLOPED 0.5% AWAY FROM PERIMETER OF EQUIPMENT.

GENERAL STRUCTURAL SPECIFICATIONS

1. DRAWINGS TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
2. DRAWINGS NOT TO BE SCALED. ONLY FIGURED DIMENSIONS TO BE FOLLOWED.
3. LINEAR DIMENSIONS SHOWN ON DRAWINGS ARE IN MILLIMETERS. ELEVATIONS ARE IN METERS.
4. PRIOR TO PROCEEDING WITH WORK, CONTRACTOR TO VERIFY ALL DIMENSIONS, ELEVATIONS AND ALIGNMENT OF THE NEW AND EXISTING WORK AND SUBMIT FOR REVIEW ANY INCONSISTENCIES AND ALTERATIONS TO THE WORK PRIOR TO COMMENCING CONSTRUCTION.
5. CO-ORDINATE WORK ON THESE DRAWINGS WITH MECHANICAL AND ELECTRICAL DRAWINGS AND REPORT ANY INCONSISTENCIES PRIOR TO PROCEEDING WITH THE WORK.
6. LOCATION OF SERVICES WHERE INDICATED ARE FOR GUIDANCE ONLY. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED.
7. THE CARRYING OUT OF ANY WORK PRIOR TO THE REVIEW AND ACCEPTANCE OF DETAILED SHOP DRAWINGS TO BE AT THE CONTRACTOR'S OWN RISK.
8. ALL WORK AND MATERIALS TO CONFORM TO THE REQUIREMENTS OF THE NATIONAL BUILDING CODE OF CANADA, 2020.
9. CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY FOR THE INTEGRITY OF THE STRUCTURES DURING ERECTION. CONTRACTOR IS TO PROVIDE ADEQUATE TEMPORARY BRACING SYSTEM TO MAINTAIN STRUCTURAL SAFETY, PLUMB AND IN TRUE ALIGNMENT UNTIL COMPLETION OF WORK.
10. CONTRACTOR TO REINSTATE ALL AREAS AFFECTED BY NEW CONSTRUCTION TO THEIR ORIGINAL CONDITION.
11. ALL STRUCTURAL DESIGN WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
    - NATIONAL BUILDING CODE OF CANADA 2020
    - CSA STANDARD A23.3:19 (CONCRETE)
    - CSA STANDARD CSA S16:19 (STRUCTURAL STEEL)

STRUCTURAL DESIGN CRITERIA AND LOADS

1. ANY INDICATED LOADS ARE UNFACTORED UNLESS NOTED OTHERWISE
2. UNIFORM FLOOR LOADS AS PER THE ORIGINAL BUILDING DESIGN.
3. FOR CONCENTRATED LOADS OF NEW EQUIPMENT, REFER TO MANUFACTURER DATA SHEETS.
4. HOURLY WIND PRESSURE q50: 0.58 kPa
5. SEISMIC LOAD FOR EQUIPMENT CONNECTIONS SHALL BE DETERMINED PER NBC 2020 USING THE FOLLOWING SITE SPECIFIC CRITERIA FOR 2%/50 YEARS PROBABILITY:
    a. IMPORTANCE FACTOR (Ie): 1.0
    b. SITE CLASS AND SPECTRAL RESPONSE VALUES TO BE DETERMINED BASED ON SITE SPECIFIC GEO-TECHNICAL PARAMETERS.
6. SUPPORTS AND ANCHORAGE FOR NEW EQUIPMENT, INCLUDING PROVISIONS FOR SEISMIC RESTRAINT, TO BE DETERMINED BY EQUIPMENT SUPPLIER. CONTRACTOR TO PROVIDE STAMPED DRAWINGS FOR REVIEW.

CONCRETE NOTES:

1. DO ALL CONCRETE WORK TO CSA A23.1-19/A23.2-19.
2. DELIVER CONCRETE TO SITE OF WORK AND DISCHARGE WITHIN 120 MINUTES MAXIMUM AFTER BATCHING.
3. PLACING CONCRETE DURING RAIN OR WEATHER EVENTS THAT COULD DAMAGE CONCRETE IS PROHIBITED. PROTECT NEWLY PLACED CONCRETE FROM RAIN OR WEATHER EVENTS PER CSA A23.1/A23.2. COLD AND HOT WEATHER CONCRETING PROCEDURES AND PROTECTION PER CSA A23.1/A23.2.
4. CONCRETE MIX SHALL BE IN ACCORDANCE WITH "ALTERNATIVE 1 - PERFORMANCE" TO CSA A23.1/A23.2, AND CONFORMING TO THE FOLLOWING REQUIREMENTS:

INTENDED APPLICATION	INTERIOR HOUSEKEEPING PADS	EXTERIOR FOUNDATIONS
CLASS OF EXPOSURE	N	C-1
COMPRESSIVE STRENGTH	25 MPa AT 28 DAYS	35 MPa AT 56 DAYS
MAXIMUM COARSE AGGREGATE SIZE	20 mm	20 mm
W/C RATIO	AS REQUIRED	0.4
AIR CONTENT	NONE	5-8%
SLUMP AT TIME AND POINT OF DISCHARGE	80 ± 20 mm	80 ± 20 mm

5. CONCRETE ADMIXTURES SHALL COMPLY WITH ASTM C494/C494M
6. REINFORCING STEEL SHALL BE BILLET STEEL, GRADE 400, DEFORMED BARS TO CSA G30.18 AND CSA A23.1/A23.2. REINFORCING STEEL DETAILING TO BE IN ACCORDANCE WITH RSIC REINFORCING STEEL MANUAL OF STANDARD PRACTICE.
7. CONCRETE COVER TO REINFORCING STEEL: AS INDICATED IN DRAWING DETAILS.
8. LAP SPLICES SHALL BE MINIMUM "CLASS B" TENSION LAP SPLICE IN ACCORDANCE WITH CSA A23.3-19.
9. ALL BENDS TO BE STANDARD BENDS UNLESS NOTED OTHERWISE. DO NOT FIELD BEND OR WELD REINFORCEMENT.
10. REINFORCING STEEL, EMBEDDED PARTS, ANCHOR RODS AND DOWELS, ETC. TO BE SECURED IN POSITION PRIOR TO PLACING CONCRETE AND HELD RIGIDLY DURING PLACEMENT OF CONCRETE. CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND VERIFICATION OF ANCHOR BOLTS AND OTHER HARDWARE BEFORE AND AFTER PLACING CONCRETE. COORDINATE WITH APPROVED EQUIPMENT DRAWINGS FOR LOCATIONS.
11. SLOPE TOP OF PADS AWAY FROM EQUIPMENT AS INDICATED
12. FINISH CONCRETE TO CSA A23.1/A23.2. PROVIDE 25mm CHAMFER ON EXTERIOR EDGES UNLESS SPECIFIED OTHERWISE. RUB EXPOSED SHARP EDGES OF CONCRETE WITH CARBORUNDUM TO PRODUCE 3 mm MINIMUM RADIUS EDGES UNLESS OTHERWISE INDICATED. SCREED TO PLANE SURFACES AND USE MAGNESIUM FLOATS. TROWEL SMOOTH.
13. LEAVE FORMWORK IN PLACE FOR 7 DAYS OR UNTIL CONCRETE HAS REACHED 70% OF ITS 28 DAY STRENGTH. REPLACE IMMEDIATELY WITH RESHORING OR BACKFILL AS INDICATED
14. SITE TESTS AS FOLLOWS: CONCRETE POURS, SLUMP, AIR CONTENT, COMPRESSIVE STRENGTH AT 7 AND 28 DAYS, AIR AND CONCRETE TEMPERATURE. INSPECTIONS AND TESTS TO BE CARRIED OUT BY TESTING LABORATORY DESIGNATED FOR REVIEW TO CSA A23.1/A23.2. CONTRACTOR WILL TAKE ADDITIONAL TEST CYLINDERS DURING COLD WEATHER CONCRETING. CURE CYLINDERS ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE WHICH THEY REPRESENT.

STRUCTURAL STEEL NOTES:

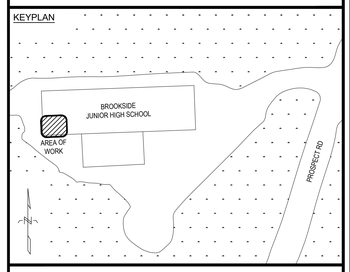
1. ALL STEEL SECTIONS ARE INDICATED IN THE S.I. SYSTEM OF UNITS.
2. STRUCTURAL STEEL MATERIALS, FABRICATION AND ERECTION TO CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING:
    a. CSA G40.20/G40.21 GRADE 350W FOR W SECTIONS, HSS SECTIONS, CHANNELS, ANGLES, AND PLATES.
    b. CSA W48 SERIES FOR WELDING ELECTRODES.
3. CONTRACTOR TO TAKE THOROUGH SITE MEASUREMENTS OF CRITICAL 'TIE-IN' DIMENSIONS TO PROVIDE TO STEEL FABRICATOR TO ENSURE PROPER FIT OF NEW WORK TO EXISTING. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF SUCH DIMENSIONS, AND FOR ASSOCIATED COORDINATION REQUIRED. SITE CUTTING OR ALTERING FABRICATED STEEL MEMBERS IS NOT PERMITTED UNLESS OTHERWISE APPROVED.
4. NO SHOP FABRICATED SPLICES PERMITTED IN STRUCTURAL STEEL MEMBERS.
5. UNLESS OTHERWISE INDICATED, ALL CONNECTIONS SHALL BE DESIGNED, AND CALCULATIONS AND DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF NOVA SCOTIA. SUBMIT SHOP DRAWINGS INCLUDING FABRICATION AND ERECTION DRAWINGS. SUBMIT SHOP DRAWINGS STAMPED AND SIGNED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF NOVA SCOTIA, CANADA. SUBMIT DRAWINGS INDICATING DETAILS AND INFORMATION NECESSARY FOR ASSEMBLY AND ERECTION PURPOSES AND FABRICATION DRAWINGS SHOWING DESIGNED ASSEMBLIES COMPONENTS AND CONNECTIONS.
6. ALL CONNECTIONS SHALL BE INSPECTED BY AN INDEPENDENT INSPECTIONS COMPANY ENGAGED AND PAID FOR BY THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE. INSPECTION AND TESTING OF MATERIALS AND WORKMANSHIP SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA S16:19 FOR BOLTED AND WELDED CONNECTIONS. SUBMIT TEST REPORTS TO CLIENT REPRESENTATIVE WITHIN 2 WEEKS OF COMPLETION OF INSPECTION.
7. WELDED CONNECTIONS SHALL BE MADE WITH BEVELLED WELDS. WELDS SHALL BE CONTINUOUS.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER
DATE 04/11/2025
J. M. Tucker
11796
PROVINCE OF NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

STRUCTURAL DETAILS

DRAWN	DESIGNED	CHECKED	PROJECT MGR
ACH	RPM	JMT	JRM

SCALE
AS NOTED

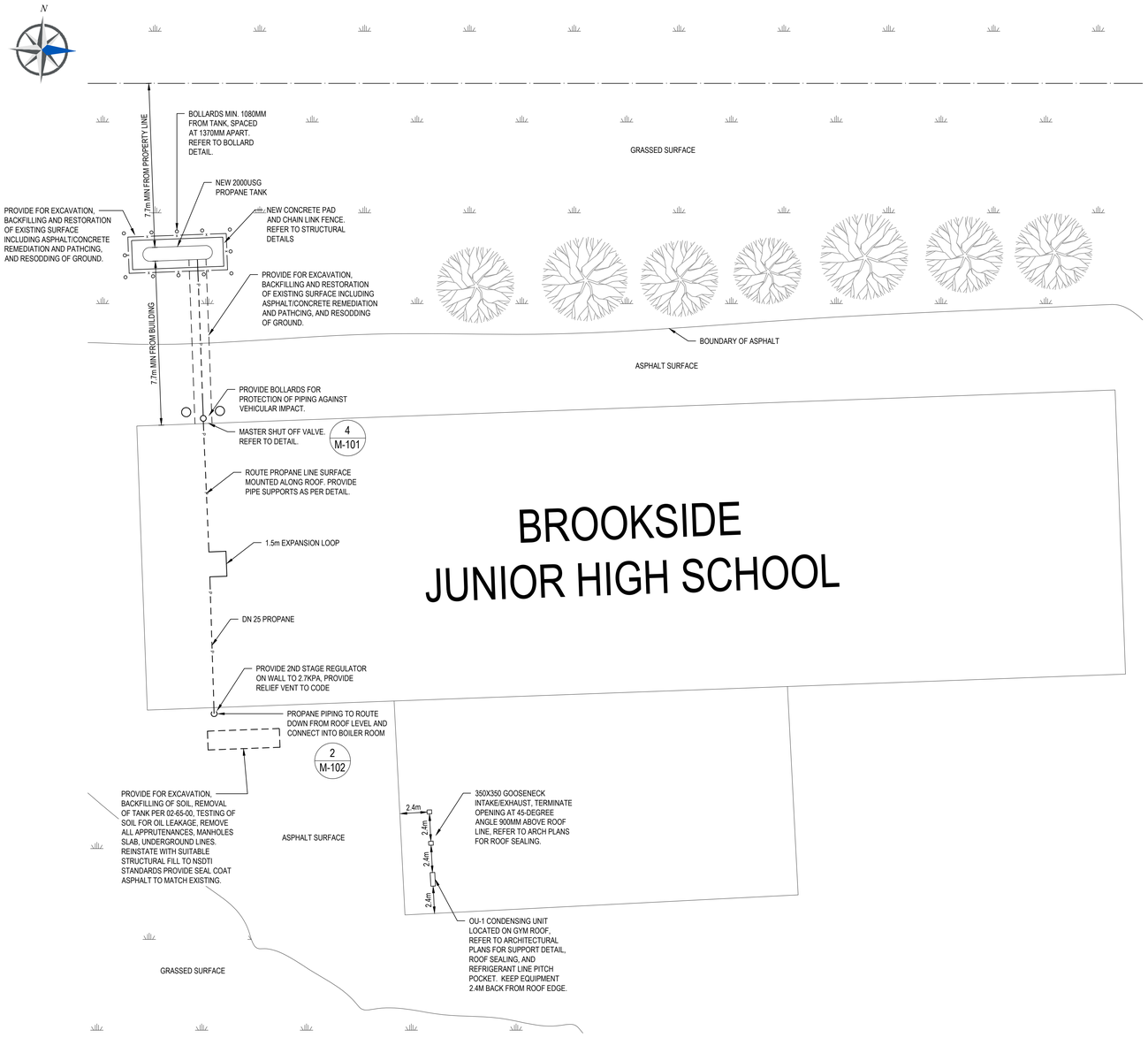
PROJECT NO. 382005

DWG. NO. S-401

SHEET SIZE: B1 (1000mm x 707mm)

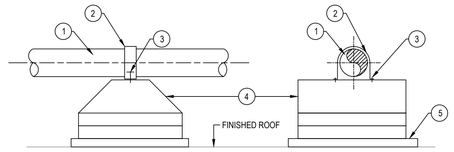
2025/April/11, 8:40am andrew.chow \\Ep-srv-fs01\cad\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_S-401.dwg

SHEET SIZE: B1 (1000mm x 707mm)



1 M-101 SITE PLAN - PROPANE TANK INSTALLATION

SCALE: 1:200



1. SCHEDULE 40 STEEL PIPE
2. STAINLESS STEEL STRAPS
3. WEATHER RESISTANT TYPE 12 LAG SCREWS
4. COPPER B-LINE DURA-BLOK RUBBER BLOCK SUPPORT OR SIMILAR
5. 600x600 CONCRETE PAD

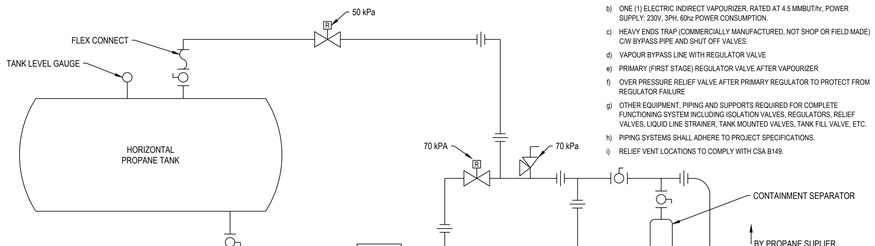
NOTE: ALL PIPING TO BE PAINTED YELLOW AS PER CAN/CSA-B149

2 M-101 DETAIL - ROOF-MOUNTED PROPANE PIPING

SCALE: N.T.S.

NOTES:

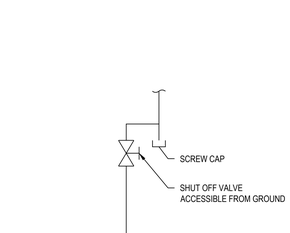
1. TANK AND VAPOURIZER: (BY IRVING)
   a) HORIZONTAL PROPANE TANK, 7500 LITRE (2000 USGAL), MAXIMUM 7300MM LONG
   b) ONE (1) ELECTRIC INDIRECT VAPOURIZER, RATED AT 4.5 MMBUT/hr, POWER SUPPLY: 230V, 3PH, 60hz POWER CONSUMPTION.
   c) HEAVY ENDS TRAP (COMMERCIALLY MANUFACTURED, NOT SHOP OR FIELD MADE) C/W BYPASS PIPE AND SHUT OFF VALVES.
   d) VAPOUR BYPASS LINE WITH REGULATOR VALVE
   e) PRIMARY (FIRST STAGE) REGULATOR VALVE AFTER VAPOURIZER
   f) OVER PRESSURE RELIEF VALVE AFTER PRIMARY REGULATOR TO PROTECT FROM REGULATOR FAILURE
   g) OTHER EQUIPMENT, PIPING AND SUPPORTS REQUIRED FOR COMPLETE FUNCTIONING SYSTEM INCLUDING ISOLATION VALVES, REGULATORS, RELIEF VALVES, LIQUID LINE STRAINER, TANK MOUNTED VALVES, TANK FILL VALVE, ETC.
   h) PIPING SYSTEMS SHALL ADHERE TO PROJECT SPECIFICATIONS.
   i) RELIEF VENT LOCATIONS TO COMPLY WITH CSA B149.



NOTE: DETAIL IS OF A TYPICAL VAPOURIZER INSTALLATION FOR REFERENCE ONLY. CONTRACTOR IS TO INSTALL VAPOURIZER TO MANUFACTURER'S WRITTEN INSTRUCTION AND TO LOCAL APPLICABLE CODES AND STANDARDS

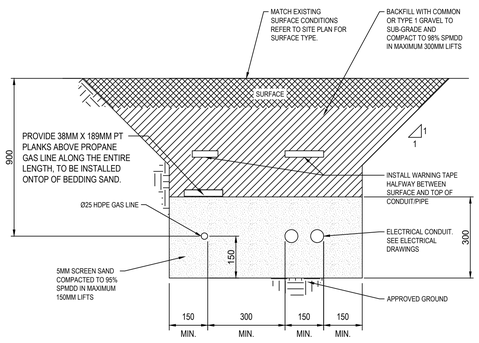
3 M-101 DETAIL - PROPANE VAPOURIZER

SCALE: N.T.S.



4 M-101 DETAIL - PROPANE MASTER SHUT-OFF

SCALE: N.T.S.



5 M-101 DETAIL - PROPANE PIPE TRENCH

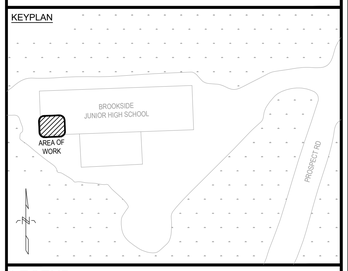
SCALE: N.T.S.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



LEGEND:

- EXISTING TO REMAIN
- NEW CONSTRUCTION
- UNDERGROUND PROPANE
- ABOVE GROUND PROPANE
- PRESSURE RELIEF
- BALL VALVE
- FLEX CONNECTION

PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER — DATE 04/11/2025 — R. L. Cooke — 20250176 — PROVINCE OF NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

MECHANICAL SITE PLAN

DRAWN	DESIGNED	CHECKED	PROJECT MGR
MMF	RLC	RLC	JRM

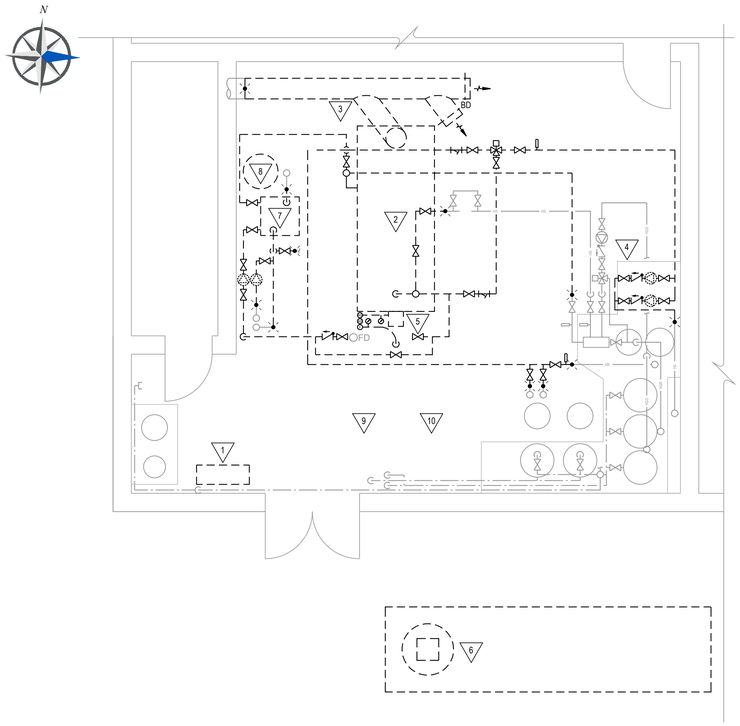
SCALE 1:200 — 5000 0 5000 10000 mm

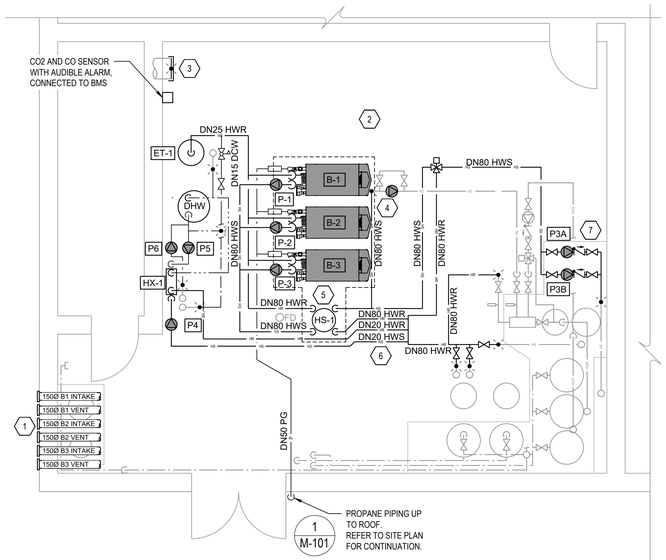
PROJECT NO. 382005

DWG. NO. M-101

2025/Apr/11, 8:32am Hunter.Freeman M-101 I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-101.dwg

SHEET SIZE: B1 (1000mm x 707mm)





1 M-102 PLAN - BOILER ROOM (DEMOLITION)

SCALE: 1:50

2 M-102 PLAN - BOILER ROOM (NEW CONSTRUCTION)

SCALE: 1:50

DEMOLITION KEYNOTES:

1. ONCE ALL DISTRIBUTED PNEUMATIC CONTROLS IN THE FACILITY HAVE BEEN DISCONNECTED, DEMOLISH THE EXISTING CONTROL AIR COMPRESSOR.
2. DEMOLISH EXISTING BOILER, KNOCKDOWN AS REQUIRED, ALLOW OWNER TO SALVAGE BURNER AND FUEL OIL DEAERATOR PRIOR TO REMOVAL.
3. DEMOLISH EXISTING BREECHING AND FLUE COMPONENTS (INCLUDING METAL STACK LINERS), PROVIDE CHIMNEY CAP PER DETAIL.
4. REMOVE EXISTING HYDRONIC CIRCULATOR PUMPS AND PIPING TO THE INDICATED POINT OF REMOVAL.
5. FOLLOWING REMOVAL OF FUEL OIL FROM THE SYSTEM, DEMOLISH ALL FUEL OIL LINES WITHIN ROOM AND UNDERGROUND TO TANK, INCLUDING SECONDARY CONTAINMENT. SECONDARY CONTAINMENT PIPING TO BE REMOVED TO THE FOUNDATION, CUT FLUSH, AND CUT FLUSH AT THE BOILER ROOM FLOOR, AND FILL SOLID WITH GROUT.
6. FUEL OIL TANK TO BE REMOVED PER SPECIFICATION SECTION 02-65-00, REMOVE OIL FROM TANKS AND TRANSFER TO AN OIL STORAGE TANK AT A FACILITY DESIGNATED BY THE OWNER WITHIN HALIFAX REGIONAL MUNICIPALITY.
7. DEMOLISH EXISTING INDIRECT DHW TANK, HEATING LINES, AND DOMESTIC RECIRCULATION PUMP, TRIM BACK DHW/DCW LINES BACK AS REQUIRED TO FACILITATE NEW INSTALLATION WORKS.
8. DEMOLISH EXISITNG EXPANSION TANKS INLCUDING THE FLOOR MOUNTED BLADDER TYPE AND CEILING HUNG COMPRESSED AIR TANK ALONG WITH ALL APPURTENANCES.
9. ALLOW FOR PATCHING OF GYPSUM CEILING WHERE HOLES ARE CREATED THROUGH EXECUTION OF THE WORKS.
10. PROVIDE FOR HAZARDOUS MATERIAL ABATEMENT OF INSUALTION EFFECTED BY THE WORKS.

NEW CONSTRUCTION KEYNOTES:

1. PROVIDE WALL VENTING KIT FOR EACH BOILER, CORE DRILL THROUGH WALL, PROVIDE SLEEVE. ROUTE ALONG CEILING TO BOILER LOCATION AND DROP TO CONNECTION POINTS. VENT TERMINATIONS TO EXIT THE BUILDING AS CLOSE TO THE LINE OF THE CEILING AS POSSIBLE AND BE A MINIMUM 2400MM ABOVE GRADE
2. PROVIDE HOUSEKEEPING PAD WITH APPROXIMATE EXTENTS SHOWN. REFER TO STRUCTURAL PLANS FOR CONSTRUCTION DETAILS.
3. CAP OPENING IN CHIMNEY. PROVIDE WEATHER HOOD AT TOP OF CHIMNEY
4. INSTALL BOILERS WHERE INDICATED, CONNECT TO SERVICES, ROUTE STACK DRAIN THROUGH CONDENSATE NEUTRALIZER. ROUTE BOILER DRAIN, CONDENSATE DRAIN, AND RELIEF DISCHARGE ALONG THE BACK OF THE HOUSEKEEPING PAD TO THE NEAREST FLOORDRAIN. AVOID ENCUMBERING THE WALKWAY AND CREATING TRIP HAZARDS.
5. INSTALL HYDRAULIC SEPARATOR ON HOUSEKEEPING PAD, ROUTE DRAINLINE DOWN ALONG PAD TO NEAREST FLOORDRAIN.
6. INSTALL ALL NEW PIPING AT HIGH ELEVATION IN ROOM DROPPING NEAR EQUIPMENT CONNECTIONS TO AVOID ENCUMBERING THE WALKWAYS.
7. INSTALL NEW VERTICAL INLINE CIRCULATOR PUMPS ON EXISTING HOUSEKEEPING PAD.
8. PROVIDE FOR REINSULATION OF ALL EXISTING HWS/HWR PIPING WITHIN BOILER ROOM, WITH THE EXCEPTION OF PIPNG RELATED TO THE AHU HEAT EXCHANGER.

EASTPOINT

CLIENT NAME / LOGO

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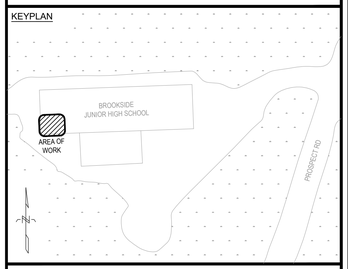
KEYPLAN



LEGEND:

	EXISTING TO REMAIN
	DEMOLITION
	NEW CONSTRUCTION
HS	HOT WATER SUPPLY
HR	HOT WATER RETURN
HGS	HEATED GLYCOL SUPPLY
HGR	HEATED GLYCOL RETURN
P	PROPANE
	POINT OF CONNECTION / REMOVAL
	ISOLATION VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	PUMP
F	FUEL FILTER
AS	AIR SEPARATOR
	THERMOMETER

PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER — GRANT OF APPROVAL — PROVINCE OF NOVA SCOTIA — DATE 04/11/2025 — R. L. Cooke — 20250176

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

BOILER ROOM PLAN (DEMOLITION AND NEW CONSTRUCTION)

DRAWN	DESIGNED	CHECKED	PROJECT MGR
HJF	RLC	RLC	JRM

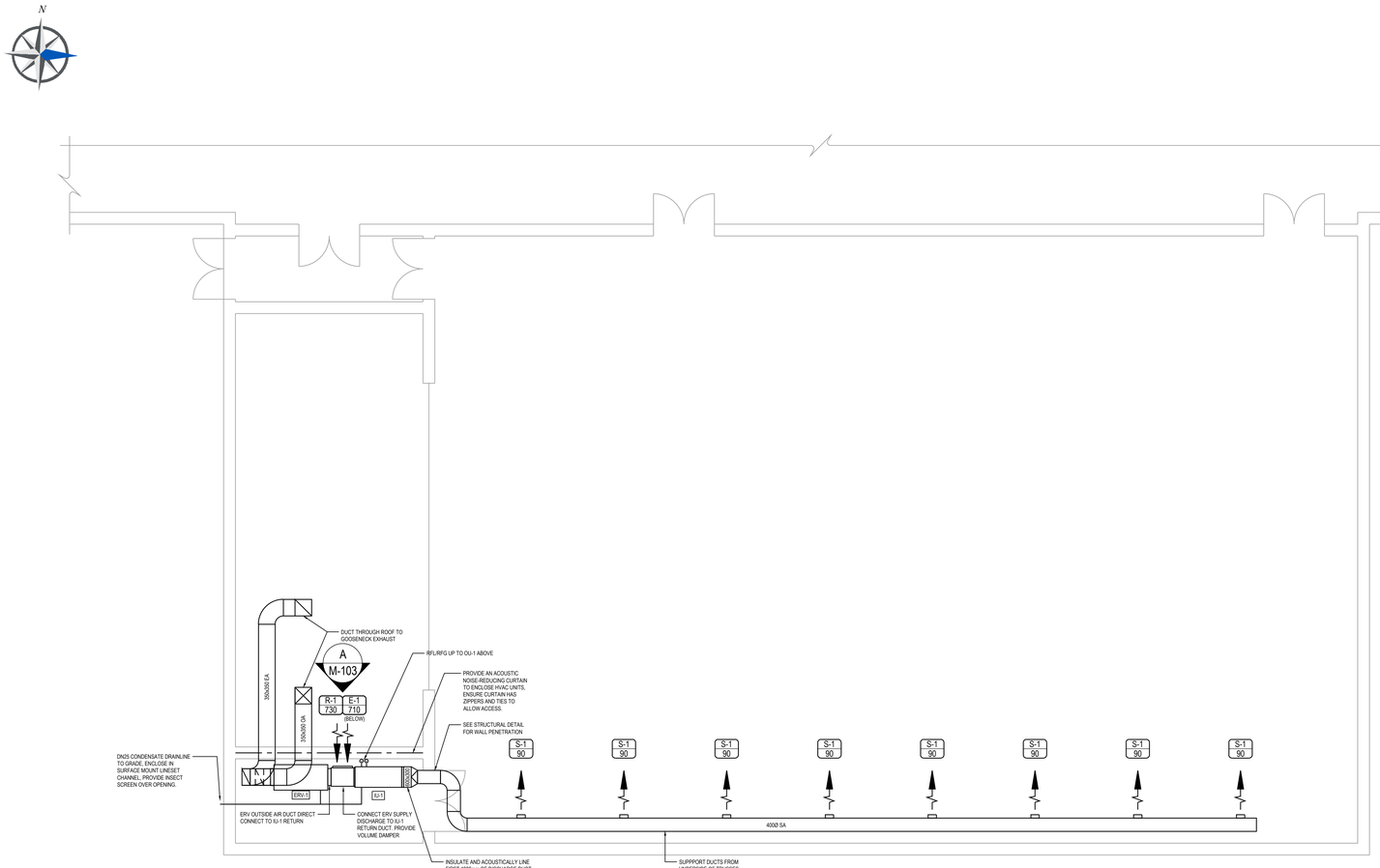
SCALE 1:50 — 500 0 500 1000 1500 2000 2500 3000 3500 mm

PROJECT NO. 382005

DWG. NO. M-102

2025/Apr/11, 8:35am Hunter.Freeman I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-102.dwg M-102

SHEET SIZE: B1 (1000mm x 707mm)



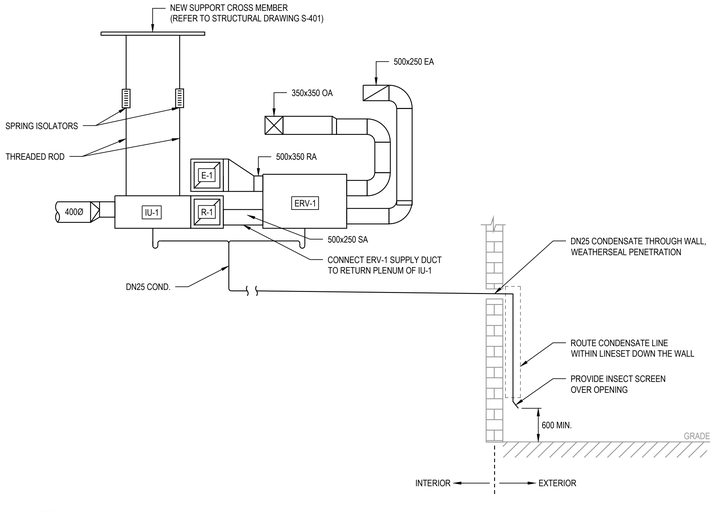
1 M-103 PLAN - GYMNASIUM (NEW CONSTRUCTION)

SCALE: 1:75

1:75

SEQUENCE OF OPERATION:

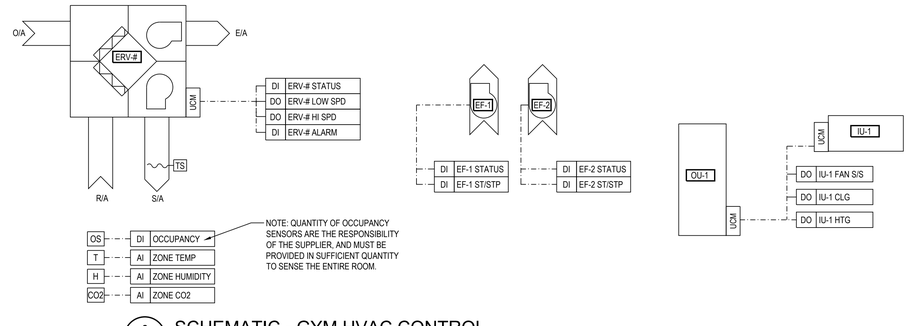
1. GYM HVAC CONTROL:
   - 1.1. THE BMS SHALL CONTROL THE FOLLOWING GYM HVAC DEVICES:
     - 1.1.1. TWO (2) EXHAUST FANS, AND ASSOCIATED MAKEUP AIR DAMPERS.
     - 1.1.2. FOUR (4) HYDRONIC UNIT HEATER FANS
     - 1.1.3. ONE (1) ENERGY RECOVERY VENTILATOR AND ASSOCIATED DAMPERS
     - 1.1.4. ONE (1) SPLIT HEAT PUMP WITH INDOOR FAN, HEATING AND COOLING.
   - 1.2. OCCUPANCY SCHEDULE:
     - 1.2.1. THE GYM HVAC RESPONSE SHALL BE IN ACCORDANCE WITH A FACILITY OCCUPANCY SCHEDULE, NOMINALLY:
       - 1.2.1.1. OCCUPIED: MONDAY-FRIDAY: 6AM-6PM (ADJ.)
       - 1.2.1.2. UNOCCUPIED OTHERWISE
       - 1.2.1.3. IF AN UNOCCUPIED OVERRIDE IS RECEIVED ANYWHERE AT THE ZONE SENSOR, THE HVAC SYSTEM SHALL REVERT TO OCCUPIED MODE FOR A PERIOD OF 3 HOURS (ADJ).
   - 1.3. ZONE SETPOINT CONTROL:
     - 1.3.1. THE ZONE SHALL BE EQUIPPED WITH A DDC SENSOR WHICH HAS THE FOLLOWING SENSING CAPABILITIES:
       - 1.3.1.1. TEMPERATURE
       - 1.3.1.2. HUMIDITY
       - 1.3.1.3. CO2
       - 1.3.1.4. OCCUPANCY
     - 1.3.2. THE ZONE TEMPERATURE SHALL BE MAINTAINED AS FOLLOWS:
       - 1.3.2.1. OCCUPIED MODE:
         - 1.3.2.1.1. HEATING SETPOINT: 20°C (ADJ.) ± 1°C (ADJ.)
         - 1.3.2.1.2. COOLING SETPOINT: 24°C (ADJ.) ± 1°C (ADJ.)
       - 1.3.2.2. UNOCCUPIED MODE:
         - 1.3.2.2.1. HEATING SETPOINT: 15°C (ADJ.) ± 1°C (ADJ.)
         - 1.3.2.2.2. COOLING SETPOINT: DISABLED, EXCEPT DEHUM. (24°C (ADJ.) FOR DEHUM).
       - 1.3.2.3. WHEN HEATING:
         - 1.3.2.3.1. START THE HEAT PUMP FAN AND CONDENSING UNIT IN HEATING,
           - 1.3.2.3.1.1. IF AFTER 20 MIN (ADJ.), THE ZONE IS 0.5°C (ADJ.) BELOW SETPOINT, START UNIT HEATERS. SHUTDOWN HEAT PUMP HEATING AND UNIT HEATERS AT SETPOINT.
         - 1.3.2.3.2. UNIT HEATERS TO BE LOCKED OUT AT OAT > 0°C (ADJ.)
       - 1.3.2.4. WHEN COOLING:
         - 1.3.2.4.1. START THE HEAT PUMP FAN AND CONDENSING UNIT IN COOLING
         - 1.3.2.4.2. HEAT PUMP COOLING TO BE LOCKED OUT AT OAT < 15°C
         - 1.3.2.4.3. IF COOLING IS REQUIRED BETWEEN OAT OF 5-15°C (ADJ.), START EXHAUST FANS AND OPEN DAMPERS.
         - 1.3.2.4.4. ALL COOLING DISABLED BELOW 5°C (ADJ.)
     - 1.3.3. THE ZONE HUMIDITY SHALL BE MAINTAINED AS FOLLOWS:
       - 1.3.3.1. MINIMUM HUMIDITY: NOT CONTROLLED
       - 1.3.3.2. MAXIMUM HUMIDITY: 60% RH @ 24°C. (ADJ.)
       - 1.3.3.3. DEHUMIDIFICATION PERMITTED ABOVE 15°C OAT (ADJ.)
       - 1.3.3.4. WHEN DEHUMIDIFYING, COOLING OPERATES TO THE LOWER END OF THE DEADBAND, THEN THE HEAT PUMP SWITCHES TO HEATING AND OPERATES TO THE UPPER END OF THE DEADBAND. A 5 MIN(ADJ.) ALTERNATION DEADBAND IS TO OCCUR BETWEEN MODES, THIS IS TO REPEAT UNTIL HUMIDITY IS 5% (ADJ.) LESS THAN THE MAXIMUM VALUE.
     - 1.3.4. THE ZONE CO2 IS TO BE MAINTAINED AS FOLLOWS:
       - 1.3.4.1. WHEN THE ERV STARTS, THE HEAT PUMP INDOOR FAN SHALL ALSO START.
       - 1.3.4.2. OCCUPIED MODE:
         - 1.3.4.2.1. WHEN CO2 > 800 PPM (ADJ.) FOR 10 MIN (ADJ.)
           - 1.3.4.2.1.1. START ERV AT LOW SPEED, STOP AT 600 PPM (ADJ.)
         - 1.3.4.2.2. WHEN CO2 > 1000 PPM (ADJ.) FOR 10 MIN (ADJ.)
           - 1.3.4.2.2.1. START ERV AT HIGH SPEED, REVERT TO LOW SPEED AT 800 PPM (ADJ.)
         - 1.3.4.2.3. WHEN CO2 > 1200 PPM (ADJ.) FOR 10 MIN (ADJ.)
           - 1.3.4.2.3.1. START EXHAUST FANS AND OPEN RELIEF DAMPERS, STOP FANS AT 1000 PPM (ADJ.)
       - 1.3.4.3. UNOCCUPIED MODE:
         - 1.3.4.3.1. NO VENTILATION RESPONSE.



A M-103 PLAN - GYMNASIUM ERV ELEVATION

SCALE: 1:50

1:50



2 M-103 SCHEMATIC - GYM HVAC CONTROL

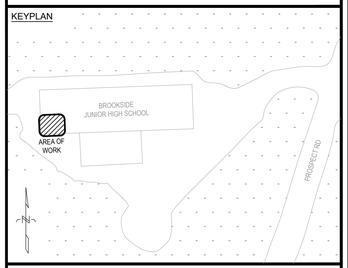
SCALE: N.T.S.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



LEGEND:

	EXISTING TO REMAIN
	DEMOLITION
	NEW CONSTRUCTION
HS	HOT WATER SUPPLY
HR	HOT WATER RETURN
HGS	HEATED GLYCOL SUPPLY
HGR	HEATED GLYCOL RETURN
P	PROPANE
	POINT OF CONNECTION / REMOVAL
	ISOLATION VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	PUMP

PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER — DATE 04/11/2025 — R. L. Coole — 20250176 — REGISTERED IN NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

MECHANICAL VENTILATION PLAN GYMNASIUM (NEW CONSTRUCTION)

DRAWN	DESIGNED	CHECKED	PROJECT MGR
MMF	RLC	RLC	JRM

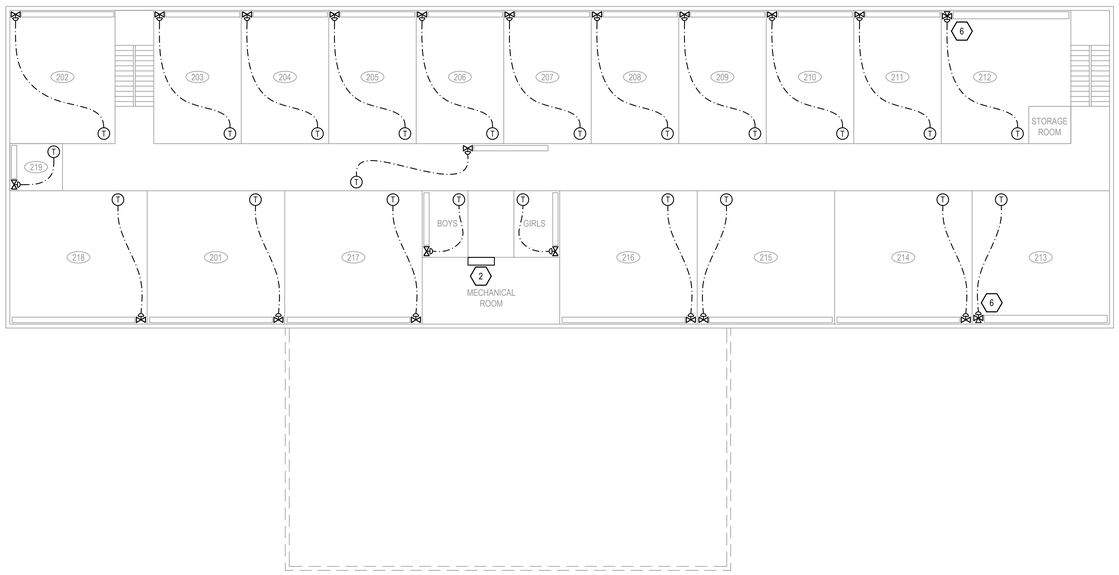
SCALE 1:50

PROJECT NO. 382005

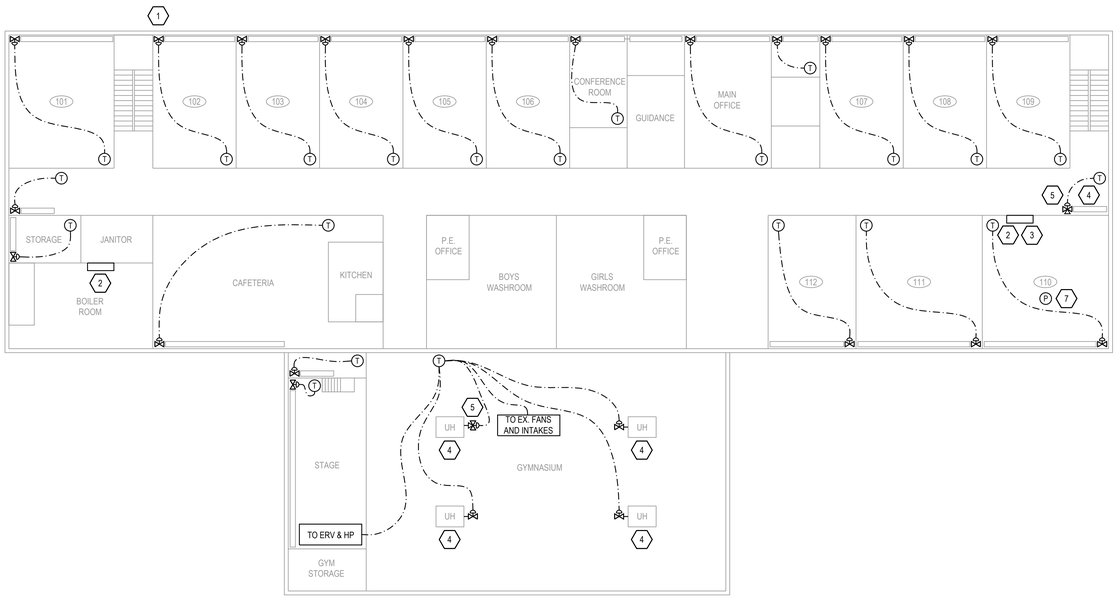
DWG. NO. M-103

2025/Apr/11, 8:38am Hunter.Freeman M-103 I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-103.dwg

SHEET SIZE: B1 (1000mm x 707mm)



1 M-104 LEVEL 2 - BUILDING CONTROLS PLAN
SCALE: N.T.S.



2 M-104 LEVEL 1 - BUILDING CONTROLS PLAN
SCALE: N.T.S.

KEY NOTES:

1. HEATING CONTROL VALVES TO BE 24VAC WITH ON/OFF CONTROL, FAIL OPEN, MAXIMUM CV=2.0, UNLESS NOTED OTHERWISE.
2. PROVIDE CONTROL TRANSFORMERS AND ENCLOSURES IN THIS LOCATION, COORDINATE WITH DIVISION 26 FOR 120V SOURCE POWER.
3. CONTROL PANEL TO BE SURFACE MOUNTED IN WOODSHOP CLASSROOM. PROVIDE MAINTENANCE LOCK ON PANEL.
4. PROVIDE RELAY TO START/STOP FAN.
5. CONTROL VALVE TO BE 3-WAY DIVERTING TYPE, 24VAC, FAIL OPEN TO UNIT HEATER, COMMON PORT TO HWS, CV=2.0.
7. CONTROL VALVE TO BE 3-WAY DIVERTING TYPE, 24 VAC, FAIL OPEN TO RADIATOR, COMMON PORT TO HWS, CV=2.0, ROUTE DN20 INSULATED RETURN LINE THROUGH CABINET OVER FINNED SECTION, PROVIDE RISER CLAMP SUPPORTS FROM WALL.
8. DIFFERENTIAL PRESSURE SENSOR TO BE INSTALLED APPROXIMATELY WHERE INDICATED BETWEEN THE SUPPLY AND RETURN MAINS.

GENERAL NOTES:

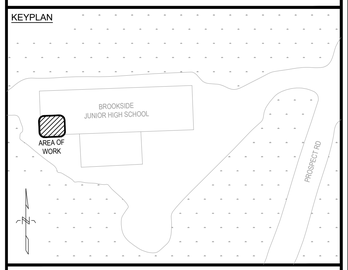
1. BMS TEMPERATURE SENSORS AND SOLENOID VALVES TO BE ADDED IN ALL ZONES.
2. EACH CLASSROOM IS INTENDED TO HAVE PLATE SPACE TEMPERATURE SENSORS THAT WILL CONTROL ELECTRONIC ACTUATORS. PLATE SENSOR READINGS TO BE INCORPORATED INTO HWS TEMPERATURE RESET FOR THE BOILERS.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



LEGEND:

- EXISTING
- NEW CONSTRUCTION
- CONTROL WIRE
- THERMOSTAT
- CONTROL VALVE
- 3-WAY CONTROL VALVE
- DIFFERENTIAL PRESSURE SENSOR

PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF NOVA SCOTIA
DATE 04/11/2025
R. L. Cooke
20250176

NO.	DATE	REVISION	APPR.
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PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

MECHANICAL CONTROLS PLAN (NEW CONSTRUCTION)

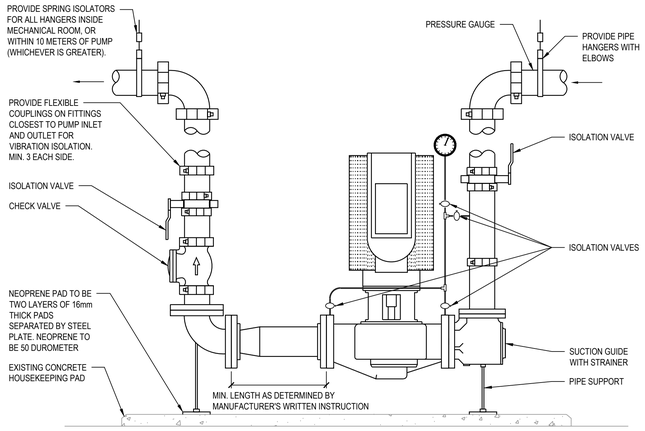
DRAWN	DESIGNED	CHECKED	PROJECT MGR
MMF	RLC	RLC	JRM

SCALE: N.T.S.

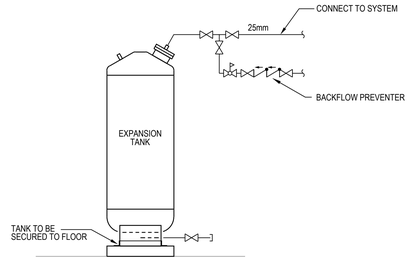
PROJECT NO. 382005

DWG. NO. M-104

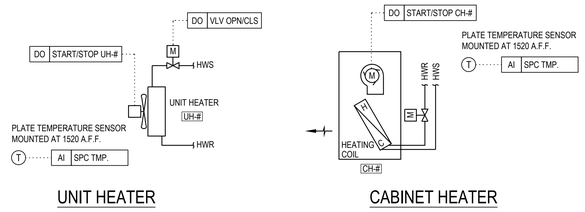
2025/Apr/11, 8:37am Hunter.Freeman M-104 I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-104.dwg



1 M-401 DETAIL - VERTICAL INLINE PUMP INSTALLATION
SCALE: N.T.S.



2 M-401 DETAIL - DIAPHRAGM EXPANSION TANK
SCALE: N.T.S.

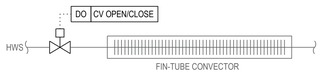


SEQUENCE OF OPERATIONS

HEATING MODE

1. HEATING IS TO BE CONTROLLED ACCORDING TO THE FACILITY OCCUPANCY SCHEDULE
2. ZONE SETPOINTS ARE TO BE RESET BY THE BMS TO DEFAULTS EACH MORNING AT 12AM
3. DEFAULT OCCCUPIED HEATING SETPOINT = 20C +/- 1C (15C +/- 1C IN VESTIBULES)
4. DEFAULT UNOCCUPIED HEATING SETPOINT = 15C +/- 1C (10C +/- 1C IN VESTIBULES)
5. VALVE TO OPEN, AND FAN SHALL ENERGIZE UNTIL SPACE TEMPERATURE SETPOINT IS MET.
6. IF P-4 A/B IS DISABLED, UNIT/CABINET HEATERS SHALL BE DISABLED, VALVE TO CLOSE, AND FAN OFF.

3 M-401 SCHEMATIC - UNIT/CABINET HEATER CONTROLS
SCALE: N.T.S.



SEQUENCE OF OPERATIONS

HEATING MODE

1. HEATING IS TO BE CONTROLLED ACCORDING TO THE FACILITY OCCUPANCY SCHEDULE
2. ZONE SETPOINTS ARE TO BE RESET BY THE BMS TO DEFAULTS EACH MORNING AT 12AM
3. OCCCUPIED HEATING SETPOINT = 20C +/- 1C (15C +/- 1C IN VESTIBULES)
4. UNOCCUPIED HEATING SETPOINT = 15C +/- 1C (10C +/- 1C IN VESTIBULES)
5. VALVE SHALL OPEN UNTIL SPACE TEMPERATURE SETPOINT IS MET.
6. IF P-4 A/B IS DISABLED, HEATERS SHALL BE DISABLED, AND VALVE CLOSED.

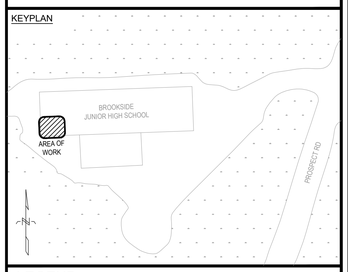
4 M-401 SCHEMATIC - FIN-TUBE CONVECTOR CONTROLS
SCALE: N.T.S.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



LEGEND:

	GATE VALVE
	CHECK VALVE
	BALL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BUTTERFLY VALVE
	STRAINER
	PRESSURE GAUGE
	TEMPERATURE SENSOR
	THERMOMETER
	UNION
	PUMP
	FLOOR DRAIN
	CONTROL WIRING
POINT NAME	SCHEMATIC POINT TAG
AO	ANALOG OUTPUT
AI	ANALOG INPUT
DO	DIGITAL OUTPUT
DI	DIGITAL INPUT

PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF NOVA SCOTIA
DATE 04/11/2025
R. L. Cooke
20250176

NO.	DATE	REVISION	APPR.
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PROJECT TITLE

BROOKSIDE JR. HIGH
BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

MECHANICAL
DETAILS & SCHEMATICS

DRAWN	DESIGNED	CHECKED	PROJECT MGR
MMF	RLC	RLC	JRM

SCALE
AS NOTED

PROJECT NO. 382005

DWG. NO. M-401

SHEET SIZE: B1 (1000mm x 707mm)

2025/Apr/11, 8:37am Hunter.Freeman M-401 I:\382-HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-401.dwg

SHEET SIZE: B1 (1000mm x 707mm)

MODIFIED BITUMINOUS MEMBRANE ROOFING GENERAL NOTES:

1. CONTRACTOR TO VERIFY ROOFING ASSEMBLY. THE ROOF IS TO BE REINSTATED TO EXISTING CONDITIONS OR BETTER. ALL MATERIALS TO BE COMPATIBLE WITH EXISTING ROOF ASSEMBLY MATERIALS. INSTALL AND JOIN TO EXISTING ROOF COMPONENTS AS PER MANUFACTURER RECOMMENDATIONS TO PROVIDE A CONTINUOUS WEATHERPROOF ASSEMBLY.
2. PERFORMANCE CRITERIA: MEMBRANES MUST MEET OR EXCEED REQUIREMENTS OF CSA A123.23, PRODUCT SPECIFICATION FOR POLYMER-MODIFIED BITUMEN SHEET, PREFABRICATED AND REINFORCED.
3. VAPOUR RETARDER: SELF-ADHESIVE MEMBRANE COMPOSED OF SBS MODIFIED BITUMEN AND A TRI-LAMINATED WOVEN POLYETHYLENE FACER.
4. POLYISOCYANURATE INSULATION : PRIMARY FLAT AND SLOPED INSULATION: CLOSED-CELL POLYISOCYANURATE FOAM CORE LAMINATED TO POLYMERS COATED GLASS FIBER FACERS, TO CAN/ULC-S704. OFFSET EDGES AND LAPS.
5. BASE SHEET PANEL: A HIGH DENSITY POLYISOCYANURATE INSULATION SUPPORT PANEL WITH BASE SHEET COMPOSED OF SBS MODIFIED BITUMEN MEMBRANE WITH A NON-WOVEN POLYESTER REINFORCEMENT AND A SURFACE COVERED WITH A THERMOFUSIBLE PLASTIC FILM. TO CSA CSA A123.23 TYPE B, GRADE 3.
6. CAP SHEET MEMBRANE: CAP SHEET MEMBRANE COMPOSED OF SBS MODIFIED BITUMEN AND A NON-WOVEN POLYESTER REINFORCEMENT. SURFACE PROTECTED BY COLOURED GRANULES AND UNDERFACE COVERED WITH A THERMOFUSIBLE PLASTIC FILM. TO ASTM 6162, AND CSA A1A23.23 TYPE B, GRADE 1.
7. ACCESSORIES: PROVIDE ALL ACCESSORIES AND MATERIALS TO CONSTRUCT A COMPLETE AND WEATHERPROOF ROOF AND SUPPORT SYSTEM.

GENERAL NOTES:

A. THIS PROJECT IS DESIGNED TO THE NOVA SCOTIA BUILDING CODE REGULATIONS, THE NATIONAL BUILDING CODE OF CANADA 2020. THE MOST STRINGENT COMPONENTS OF EACH STANDARD SHALL BE USED.

B. THE GENERAL CONTRACTOR & SUB-TRADES ARE ADVISED THAT EFFORTS HAVE BEEN MADE TO ACCURATELY PORTRAY EXISTING CONDITIONS. HOWEVER, SOME ELEMENTS INDICATED MAY NOT REFLECT THE ACTUAL ONSITE CONDITIONS. THE GENERAL CONTRACTOR & EACH SUB-TRADE IS RESPONSIBLE TO SITE VERIFY EXISTING DIMENSIONS, COMPONENT LOCATIONS & CONDITIONS.

C. ROOFING DRAWINGS ARE BASED ON STANDARD MODIFIED BITUMEN ROOFING ASSEMBLIES. CONTRACTOR TO VERIFY ROOFING ASSEMBLY. WHERE ASSEMBLIES DIFFER CONTRACTOR TO PROPOSE MODIFICATIONS TO THE PROVIDED DETAILS THAT MEET MANUFACTURER RECOMMENDATIONS AND THE INTENT OF THE DRAWINGS HEREIN.

D. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SUB-TRADES CLEAN ALL WORK AREAS ON A DAILY BASIS FROM GENERAL WASTE & CONSTRUCTION DEBRIS. REMOVE & DISPOSE OF ALL DEBRIS AS PER SPECIFICATION. ACCUMULATION OF COMPONENTS / DEBRIS, BURNING OF COMPONENTS / DEBRIS & ON SITE SALES OF COMPONENTS DEBRIS ARE NOT PERMITTED.

E. THE GENERAL CONTRACTOR IS TO COORDINATE WITH THE OWNER FOR FACILITY SHUTDOWNS OF BUILDING SERVICES PRIOR TO ANY MECHANICAL & ELECTRICAL REMOVALS. ENSURE ALL ELECTRICAL COMPONENTS ARE DE-ENERGIZE PRIOR TO REMOVALS. COORDINATE WITH MECHANICAL & ELECTRICAL DRAWINGS FOR LOCATIONS OF PERMANENT & TEMPORARY REMOVALS.

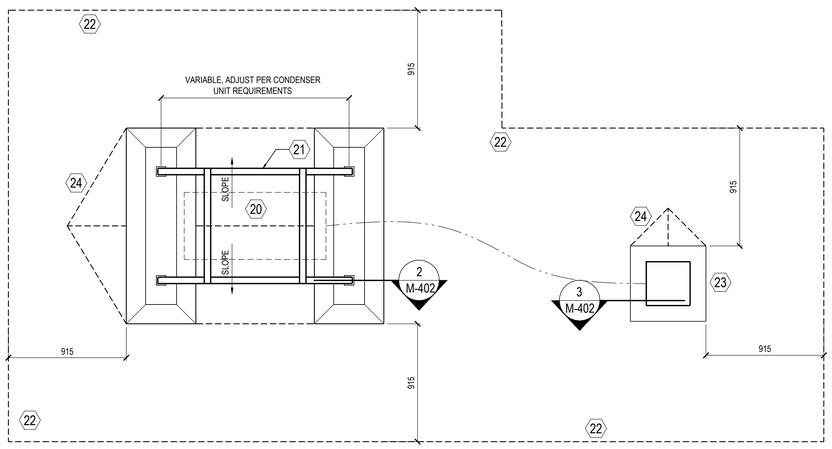
F. CONTRACTOR IS TO PROTECT ALL EXISTING COMPONENTS TO REMAIN. WHERE EXISTING COMPONENTS REQUIRE MODIFICATIONS TO COMPLETE THE PROJECT, CONTRACTOR TO.

SECTION LEGEND:

- INDICATES 13mm PROTECTION BOARD
- INDICATES 13mm ROOF DECK SHEATHING
- INDICATES PLYWOOD SHEATHING
- INDICATES 6mm PROTECTION BOARD
- HEAVY DASHED LINES INDICATE FULLY ADHERED VAPOUR RETARDER
- HATCHING INDICATES TAPERED ROOF INSULATION
- HATCHING INDICATES EXISTING COMPONENTS & ASSEMBLIES TO REMAIN
- INDICATES FULLY ADHERED ISOLATION GASKET

CONSTRUCTION KEY NOTES:

1. 100mm HIGH PRE-FABRICATED CANT STRIP.
2. 38 X 285 WOOD BLOCKING
3. PIPING, COORDINATE w/ MECH. DWGS FOR PIPE SIZE.
4. PRE-FABRICATED HOUSING BASE.
5. 6mm PROTECTION BOARD, MECHANICALLY FASTENED.
6. IN-FILL VOID SPACE w/ NON-COMBUSTIBLE SEMI-RIGID INSULATION. INSULATION NOT SHOWN TO PROVIDE CLARITY TO SECTION.
7. WEATHERTIGHT EXIT SEALS.
8. 13 x 305mm WIDE EXTERIOR GRADE PLYWOOD, TYPICAL AT PERIMETERS OF PARAPETS & ROOF CURBS.
9. SET FLANGES INTO COMPATIBLE BEDS OF CONTINUOUS PLASTIC CEMENT.
10. PRE-FABRICATED HEAVY GAUGE ALUMINIUM HOUSING ENCLOSURE, c/w STAINLESS STEEL SCREWS.
11. SEAL PENETRATIONS w/ CONTINUOUS EXTERIOR GRADE SEALANT.
12. LAP & SEAL SELF ADHERING VAPOUR RETARDER TO PIPING.
13. 38 X 89 WOOD PLATES
14. 13mm PROTECTION BOARD.
15. NON-WOVEN REINFORCED MEMBRANE, TYPICAL ALONG CANT STRIPS.
16. 13mm EXTERIOR GRADE PLYWOOD.
17. 6 mm PROTECTION BOARD.
18. 38 X 140 WOOD PLATES
19. CURB CAP FLASHING c/w FLASHING CLEATS. ALL FLASHING TO BE "S" LOCKED.
20. CONDENSER UNIT
21. 42 X 42 mm GALVANIZED STEEL UNISTRUT CHANNEL FOR UNIT MOUNTING. UNISTRUT TO SPAN DISTANCE BETWEEN SUPPORT CURBS.
22. ROOF MODIFICATION AREA.
23. POSITION PIPE PENETRATION CURB AS PER MECHANICAL REQUIREMENTS
24. PROVIDE CRICKETS AT LOCATIONS WHERE EXISTING SLOPES INTERSECT CURBING TO ALLOW WATER FLOW TO ROOF DRAIN. ADJUST AS NEEDED, NO PONDING PERMITTED.

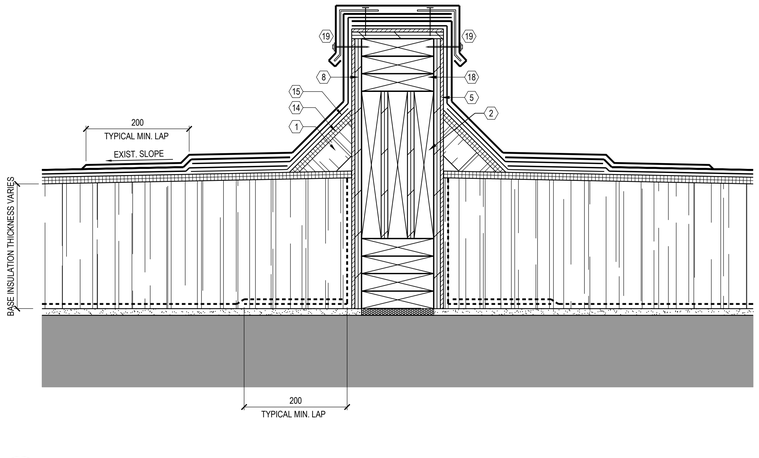


NOTE: CURBS MUST BE PERPENDICULAR TO THE STRUCTURAL ROOF MEMBERS BELOW

1 / M-402 PLAN - ROOF EQUIPMENT CURB

SCALE: 1:20

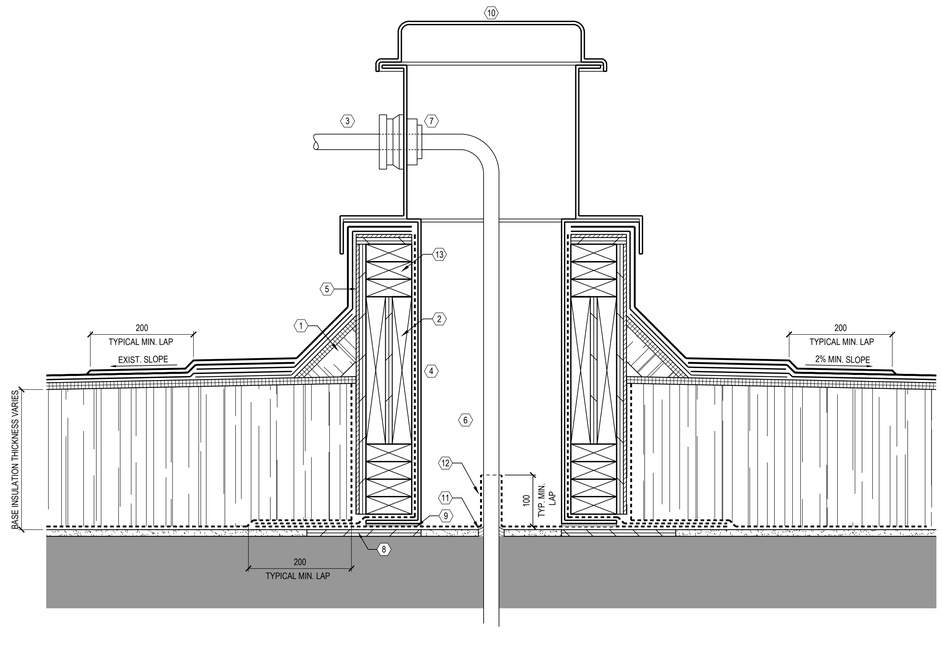
1:20



2 / M-402 SECTION DETAIL - ROOF EQUIPMENT CURB

SCALE: 1:5

1:5



3 / M-402 SECTION DETAIL - PRE FABRICATED PENETRATION HOUSING

SCALE: 1:5

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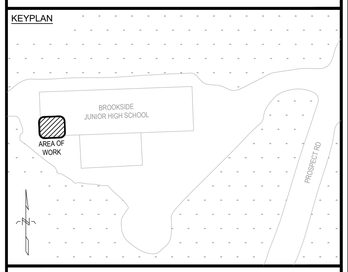
EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER
DATE 04/11/2025
J. W. L. Cooke
20250176
PROVINCE OF NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

ROOF CURB PLAN & SECTION DETAILS

DRAWN	DESIGNED	CHECKED	PROJECT MGR
BEH	BEH	JGM	JRM

SCALE

PROJECT NO. 382005

DWG. NO. M-402

2025/Apr/11, 8:38am Hunter.Freeman REV A I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-402.dwg

SHEET SIZE: B1 (1000mm x 707mm)

1. THREE BOILER SYSTEM

1.1. ANY VALUES PRESENTED IN THIS SEQUENCE FOLLOWED BY (ADJ.) SHALL BE USER ADJUSTABLE ON THE SYSTEM GRAPHICS.

1.2. FOR PURPOSES OF TRIM/RESPOND RESETS, THE AHU GLYCOL SETPOINT/DIFFERENTIAL, AND DHW SUPPLY SETPOINT & DIFFERENTIAL SHALL BE TREATED AS A 'ZONE' TEMPERATURE.
1.2.1. WHEN THE AHU IS DISABLED, THE GLYCOL SUPPLY TEMPERATURE DIFFERENTIAL SHALL BE REMOVED FROM THE TRIM/RESPOND SEQUENCING
1.2.2. DURING UNOCCUPIED PERIODS DHW SUPPLY TEMPERATURE SHALL BE REMOVED FROM THE TRIM/RESPOND SEQUENCING.
1.2.3. THE DHW SUPPLY TEMPERATURE SHALL BE REMOVED FROM SEQUENCING IF THE INDIRECT PUMPS ARE DISABLED.

1.3. MASTER OCCUPANCY SCHEDULE:
1.3.1. THE BOILER SYSTEM RESPONSE SHALL BE IN ACCORDANCE WITH A FACILITY OCCUPANCY SCHEDULE, NOMINALLY:
1.3.1.1. OCCUPIED: MONDAY-FRIDAY: 6AM-6PM (ADJ.)
1.3.1.2. UNOCCUPIED OTHERWISE
1.3.1.3. IF AN UNOCCUPIED OVERRIDE IS RECEIVED ANYWHERE IN THE FACILITY, THE BOILER SYSTEM SHALL REVERT TO OCCUPIED MODE FOR A PERIOD OF 3 HOURS (ADJ).

1.4. BOILER SYSTEM - RUN CONDITIONS:
1.4.1. OCCUPIED PERIODS:
1.4.1.1. DISABLE THE BOILER SYSTEM WHEN OAT > 15°C (ADJ.), FOR 30 MINS (ADJ.)
1.4.1.2. ENABLED OTHERWISE

1.4.2. UNOCCUPIED PERIODS:
1.4.2.1. DISABLE THE BOILER SYSTEM WHEN OAT > 5°C (ADJ.), FOR 30 MINS (ADJ.)
1.4.2.2. ENABLED OTHERWISE

1.4.3. ALARMS SHALL BE PROVIDED AS FOLLOWS:
1.4.3.1. BOILER ALARM (EACH BOILER)

1.5. FACILITY HEATING CIRCULATOR CONTROL:
1.5.1. THE FACILITY IS EQUIPPED WITH TWO VARIABLE SPEED CIRCULATORS OPERATING IN A LEAD/LAG FASHION.
1.5.1.1. THE LEAD PUMP SHALL RUN FIRST.
1.5.1.2. ON FAILURE OF THE LEAD PUMP, THE LAG PUMP SHALL RUN AND THE LEAD PUMP SHALL TURN OFF.
1.5.1.3. THE DESIGNATED LEAD PUMP SHALL ROTATE EVERY 100 HOURS (ADJ.)
1.5.1.4. WHEN THE BOILER SYSTEM IS DISABLED, THE CIRCULATORS SHALL BE OFF.

1.5.2. THE PUMPS ARE TO OPERATE TO MAINTAIN A SYSTEM DIFFERENTIAL PRESSURE (ΔP) CONTROL USING A TRIM/RESPOND RESET AS FOLLOWS:
1.5.2.1. THE BMS SHALL MONITOR ALL SPACE TEMPERATURES AND SPACE TEMPERATURE SETPOINTS AND CALCULATE THE DIFFERENCE (ΔTZ) BETWEEN THE SETPOINT AND ACTUAL TEMPERATURE FOR EACH ZONE, AND RESET AS FOLLOWS:
1.5.2.1.1. OCCUPIED PERIODS:
1.5.2.1.1.1. MAXIMUM ΔP SETPOINT = 70KPA (ADJ.)
1.5.2.1.1.2. MINIMUM ΔP SETPOINT = 20KPA (ADJ.)
1.5.2.1.1.3. WHEN THE GREATEST ΔTZ > -0.8°C (ADJ.), INCREMENTALLY ADJUST THE SETPOINT UPWARD.
1.5.2.1.1.4. WHEN THE GREATEST ΔTZ ≤ -0.2°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT DOWNWARD
1.5.2.1.2. UNOCCUPIED PERIODS:
1.5.2.1.2.1. MAXIMUM ΔP SETPOINT = 50KPA (ADJ.)
1.5.2.1.2.2. MINIMUM ΔP SETPOINT = 20KPA (ADJ.)
1.5.2.1.2.3. WHEN THE GREATEST ΔTZ > -1.5°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT UPWARD
1.5.2.1.2.4. WHEN THE GREATEST ΔTZ = -0.5°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT DOWNWARD

1.5.2.2. THE ΔP SETPOINT SHALL BE GRADUALLY ADJUSTED AT A RATE OF 10KPA (ADJ.) PER 1 MIN (ADJ.)
1.5.2.3. THE BMS SHALL MODULATE THE PUMP(S) TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT.

1.5.3. ALARMS SHALL BE PROVIDED AS FOLLOWS FOR EACH PUMP:
1.5.3.1. FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
1.5.3.2. RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
1.5.3.3. RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
1.5.3.4. VFD FAULT.
1.5.3.5. DIFFERENTIAL PRESSURE EXCEEDS SETPOINT BY 10 KPA (ADJ.) FOR 10 MINS (ADJ.)
1.5.3.6. DIFFERENTIAL PRESSURE BELOW SETPOINT BY 10 KPA (ADJ.) FOR 10 MINS (ADJ.)

1.6. FACILITY HOT WATER MIXING VALVE CONTROL
1.6.1. THE MIXING VALVE SHALL MODULATE TO MAINTAIN THE FACILITY HEATING DISTRIBUTION SETPOINT AS FOLLOWS:
1.6.1.1. SETPOINT LIMITS SHALL BE ADJUSTED AS FOLLOWS:
1.6.1.1.1. OCCUPIED PERIODS:
1.6.1.1.1.1. MAX: WHEN OAT ≤ -18°C (ADJ.); FWST = 80°C (ADJ.)
1.6.1.1.1.2. MIN: WHEN OAT ≤ -18°C (ADJ.); FWST = 50°C (ADJ.)
1.6.1.1.1.3. MAX: WHEN OAT ≥ 5°C (ADJ.); FWST = 60°C (ADJ.)
1.6.1.1.1.4. MIN: WHEN OAT ≥ 5°C (ADJ.); FWST = 30°C (ADJ.)
1.6.1.1.2. UNOCCUPIED PERIODS:
1.6.1.1.2.1. MAX: WHEN OAT ≤ -18°C (ADJ.); FWST = 60°C (ADJ.)
1.6.1.1.2.2. MIN: WHEN OAT ≤ -18°C (ADJ.); FWST = 45°C (ADJ.)
1.6.1.1.2.3. MAX: WHEN OAT ≥ 0°C (ADJ.); FWST = 50°C (ADJ.)
1.6.1.1.2.4. MIN: WHEN OAT ≥ 0°C (ADJ.); FWST = 30°C (ADJ.)
1.6.1.2. THE FWST SHALL MODULATE PROPORTIONALLY BETWEEN THE MIN AND MAX OAT THRESHOLDS.

1.6.1.3. FACILITY HOT WATER SETPOINT (FWST):
1.6.1.3.1. THE SETPOINT SHALL BE ADJUSTED INCREMENTALLY IN A TRIM/RESPOND FASHION RELATED TO ZONE HEATING SETPOINT DIFFERENTIALS AS FOLLOWS:
1.6.1.3.1.1. OCCUPIED PERIODS:
1.6.1.3.1.1.1. WHEN THE GREATEST ΔTZ = -0.8°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT UPWARD.
1.6.1.3.1.1.2. WHEN THE GREATEST ΔTZ = -0.2°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT DOWNWARD.
1.6.1.3.1.2. UNOCCUPIED PERIODS:
1.6.1.3.1.2.1. WHEN THE GREATEST ΔTZ = -1.5°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT UPWARD.
1.6.1.3.1.2.2. WHEN THE GREATEST ΔTZ = -0.5°C (ADJ.); INCREMENTALLY ADJUST THE SETPOINT DOWNWARD.

1.6.1.3.2. THE FWST SETPOINT SHALL BE GRADUALLY ADJUSTED AT A RATE OF 1°C (ADJ.) PER 30 SEC (ADJ.)
1.6.1.3.3. THE BOILER WATER HEATING SETPOINT (BWST) SHALL BE:
1.6.1.3.3.1. MAX BWST_SP = FWST_SP + 5°C (ADJ.)
1.6.1.3.3.2. MIN BWST_SP = FWST_SP
1.6.1.3.3.3. GRADUALLY INCREASE BWST_SP AT A RATE OF +0.5°C (ADJ.) PER 30 SEC (ADJ.) WHEN THE MIXING VALVE REACHES 80% (ADJ.) OPEN FOR 30 SEC (ADJ.)
1.6.1.3.3.4. GRADUALLY DECREASE BWST_SP AT A RATE OF -0.5°C PER 30 SEC (ADJ.) WHEN THE MIXING VALVE REACHES 30% (ADJ.) OPEN FOR 30 SEC (ADJ.)

1.7. BOILER AND CIRCULATION PUMP CONTROL
1.7.1. THE BMS SHALL COMMAND SETPOINT AND MASTER ENABLE/DISABLE TO THE BOILERS, OTHERWISE THE BOILERS SHALL OPERATE ACCORDING TO ONBOARD PACKAGE CONTROLS
1.7.2. THE BOILERS SHALL CONTROL THE ASSOCIATED VARIABLE SPEED CIRCULATOR PUMP.
1.7.3. THE BMS SHALL PROVIDE STATUS MONITORING OF THE BOILERS AND CIRCULATOR PUMPS INDICATING:
1.7.3.1. WHEN BOILERS ARE FIRING, AND % LOAD.
1.7.3.2. WHEN CIRCULATOR PUMPS ARE OPERATING.
1.7.3.3. NOTIFY THE OPERATOR WORKSTATION IF A BOILER ENTERS ALARM.

2. AHU GLYCOL HEATING COIL CONTROL:
2.1. UPDATE THE EXISTING AHU GLYCOL HEATING CONTROL AS FOLLOWS:
2.1.1. WHEN THE AHU IS IN OPERATION, OPERATE HX PUMPS AND MODULATE VALVES.
2.1.1.1. WHEN THE AHU IS NOT IN OPERATION, DISABLE PUMPS AND FULLY OPEN THE CONTROL VALVES.
2.1.2. AHU COIL VALVE IS TO MODULATE TO MAINTAIN THE HEATING SETPOINT OF THE AHU WHEN THE UNIT IS NOT IN ECONOMIZER COOLING, GENERALLY AS FOLLOWS:
2.1.2.1. WHEN OAT < 0°C (ADJ.); SAT_SP = 18°C (ADJ.)
2.1.2.2. WHEN OAT > 0°C (ADJ.); SAT_SP = 15°C (ADJ.), UNLESS ECONOMIZER COOLING IS ACTIVE.
2.1.2.3. COIL HEATING IS TO BE DISABLED AT OAT > 10°C (ADJ.)
2.2. THE GLYCOL HX VALVE IS TO MODULATE TO MAINTAIN THE GLYCOL SUPPLY TEMPERATURE SETPOINT.
2.2.1. THE GLYCOL SUPPLY TEMPERATURE (HGST) SETPOINT IS TO MODULATE IN A TRIM/RESPOND FASHION WHEN THE GLYCOL HEATING IS ACTIVE AS FOLLOWS:
2.2.1.1. THE HGST WILL HAVE THE LIMITS BELOW, AND WILL MODULATE TO ADJUST THE AHU VALVE (AHU_VLV)
2.2.1.2. MAX: HGST = 55°C (ADJ.)
2.2.1.3. MIN: HGST = 20°C (ADJ.)
2.2.1.4. WHEN AHU_VLV = 90%: OPEN; MODULATE HGST UPWARDS
2.2.1.5. WHEN AHU_VLV = 30% OPEN; MODULATE HGST DOWNWARDS
2.2.1.6. THE HGST MODULATION RATE TO BE LIMITED TO 1°C (ADJ.) PER 1 MIN (ADJ.),

3. INDIRECT DHW CONTROL:
3.1. THE BAS SHALL MONITOR THE OUTLET OF THE DHW SYSTEM AND RESPOND AS FOLLOWS:
3.1.1. WHEN THE BOILER SYSTEM IS DISABLED, NO RESPONSE:
3.1.2. IF THE BOILER SYSTEM IS ENABLED:
3.1.2.1. DHW OUTLET SP = 60°C (ADJ.)
3.1.2.2. IF DHW TEMP ≤ 50°C (ADJ.):
3.1.2.2.1. START INDIRECT HOT WATER HEATING PUMPS.
3.1.2.2.2. STOP PUMPS WHEN DHW TEMP = SETPOINT.

HEAT EXCHANGER SCHEDULE

GENERAL INFORMATION								HOT SIDE DATA						COLD SIDE DATA								
TAG	TYPE	SERVES	LOCATION	CAPACITY (kW)	HEIGHT (MM)	WIDTH (MM)	DEPTH (MM)	FLOWRATE (LPM)	FLUID MEDIUM	ELT (°C)	LLT (°C)	PD (kPa)	CONN SIZE	FLOWRATE (LPM)	FLUID MEDIUM	ELT (°C)	LLT (°C)	PD (kPa)	CONN SIZE	NOTES	SPECIFICATION SECTION
HX-1	BRAZED PLATE AND FRAME - POTABLE DUTY	DHW BOOSTER HEATING	BOILER ROOM	22	325	125	75	8	BOILER WATER	82	43	70	DN25	8	DCW	10	49	70	DN25	DOUBLE WALL, DESIGNED FOR USE WITH POTABLE WATER	23 57 00

HEAT PUMP SCHEDULE

TAG	REFRIGERANT	NOM CLG CAP (kW)	NOM HTG CAP (kW)	FLOWRATE (LPS)	ESP (Pa)	POWER (V/PH/HZ)	MCA (AMPS)	MOCP (AMPS)	MAKE	UNIT TYPE	MODEL NO.	HEIGHT (MM)	WIDTH (MM)	LENGTH (MM)	NOTES	SPEC SECTION
OU-1	R-32	16.8	16.7	-	-	208/1/60	34.6	35	DAIKIN	CONDENSING UNIT	RXTA60AAVJU	870	460	1100	-	23 81 40
IU-1	R-32	17.6	19.3	730	225	208/1/60	8.6	15	DAIKIN	MULTI-POSITION AHU	FXTA60AAVJUA	540	630	1475	MERV 8 FILTERS, PROVIDE 3RD PARTY COMMS ADAPTOR	23 81 40

ENERGY RECOVERY VENTILATOR (ERV) SCHEDULE

TAG	TYPE	FLOWRATE (LPS)	ESP (Pa)	SUMMER EFF. (%)	WINTER EFF. (%)	POWER (V/PH/HZ)	MOCP (AMPS)	HEIGHT (MM)	WIDTH (MM)	LENGTH (MM)	NOTES	SPEC SECTION
ERV-1	INDOOR CENTRAL STATION, STATIC PLATE HEAT & HUMIDITY TRANSFER	710	125.0	50%	55%	208/1/60	25	950	750	1600	FAN SHUTDOWN DEFROST, DRY CONTACT CONTROL, DAMPER END SWITCH START INTERLOCK, MERV 8 FILTERS	23 72 00

EXPANSION TANK SCHEDULE

TAG	TYPE	LOCATION	TOTAL VOLUME (L)	ACCEPTANCE VOLUME (L)	SET PRESS (kPa)	MAX PRESS (kPa)	MAX TEMP. (°C)	CONN SIZE	LENTH (MM)	DIAMETER (MM)	BASIS OF DESIGN	SPECIFICATION SECTION
ET-1	PARTIAL ACCEPTANCE DIAPHRAGM	BOILER ROOM	168.1	85.5	80	860	115	DN25	725	610	AMTROL AX-80 (V)	23 21 16

OPERABLE DAMPER SCHEDULE

TAG	TYPE	SERVES	SIZE L x H (mm)	DESIGN FLOW (LPS)	PD (Pa)	MAT'L	BASIS OF DESIGN	NOTES	SPECIFICATION SECTION
MD-1	INSULATED OPPOSED BLADE DAMPER, FLANGED DUCT CONNECTION, BARE SHAFT	ERV-1 OUTDOOR ISOLATION DAMPER	600 X 600	710	10	ALUMINUM	VENTEX 3960OB	ACTUATOR BY CONTROL SUBCONTRACT	23 33 15
MD-2	INSULATED OPPOSED BLADE DAMPER, FLANGED DUCT CONNECTION, BARE SHAFT	ERV-1 EXHAUST AIR ISOLATION DAMPER	600 X 600	710	10	ALUMINUM	VENTEX 3960OB	ACTUATOR BY CONTROL SUBCONTRACT	23 33 15

HYDRONIC BOILERS

TAG	TYPE	LOCATION	FUEL	INPUT (kW)	CAPACITY (kW)	POWER TYPE (V/PH/HZ)	DESIGN FLOW (LPM)	EWT (°C)	LWT (°C)	PD (kPa)	HEIGHT (MM)	WIDTH (MM)	LENGTH (MM)	CONN SIZE	BASIS OF DESIGN	NOTES	SPECIFICATION SECTION
B-1, B-2, B-3	PROPANE FIRED CONDENSING	BOILER ROOM	PROPANE GAS 2.7 kPa	295	245	120/1/60	210	65	82	30	1125	600	1550	DN50	LOCHINVAR KNIGHT XL KBX1000L	ONBOARD MICROPROCESSOR, BMS COMPATIBLE, BUILT IN DISCONNECT, PROVIDE CONDENSATE NEUTRALIZER	23 52 00

SCHEDULE OF GRILLES, REGISTERS AND DIFFUSERS

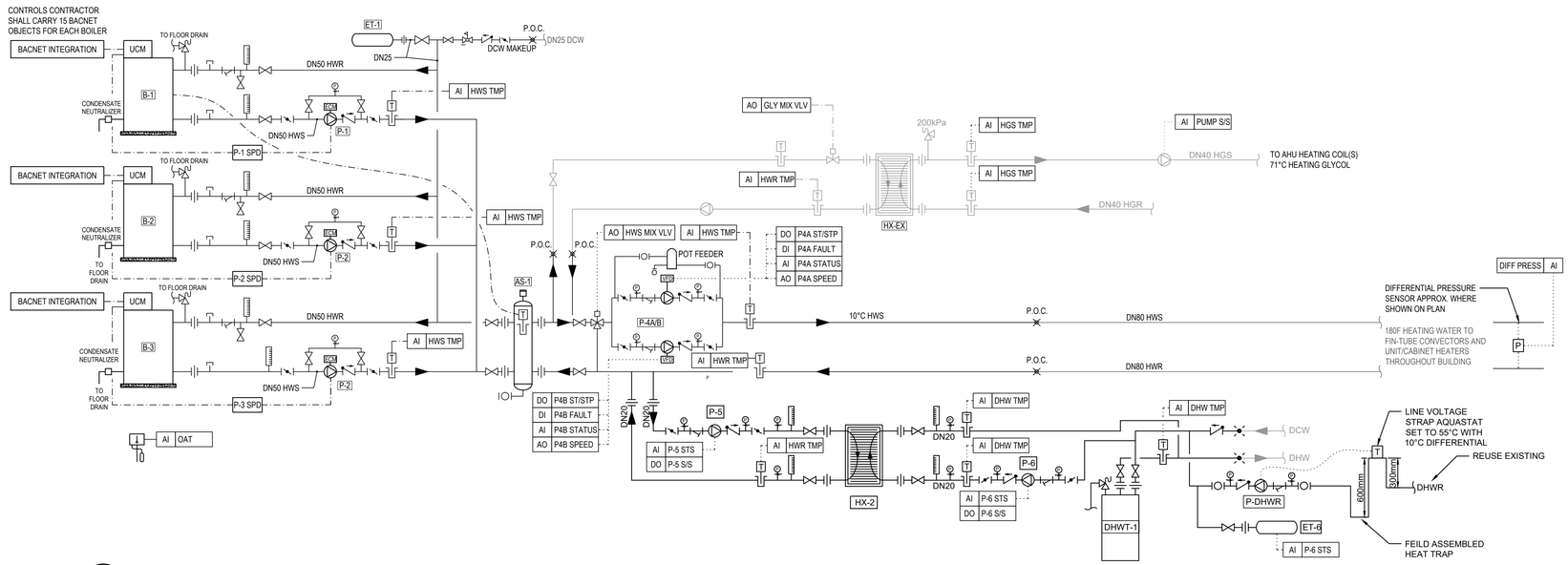
TAG	TYPE	SIZE L x H (mm)	DESIGN FLOW (LPS)	PD (Pa)	NC	MAT'L	BASIS OF DESIGN	NOTES	SPECIFICATION SECTION
S-1	SPIRAL DUCT MOUNT DUAL DEFLECTION GRILLE 20MM BLADE SPACING	250 X 100	90	80	30	STEEL	TITUS S300FL	DUCT MOUNTED, PROVIDE BALANCE DAMPER	23 37 13
R-1	SIDEWALL RETURN GRILLE SINGLE DEFLECTION 20MM SPACING	600 X 600	730	25	30	STEEL	TITUS 23RS	PROVIDE GYPSUM FRAME AS REQUIRED	23 37 13
E-1	SIDEWALL RETURN GRILLE SINGLE DEFLECTION 20MM SPACING	600 X 600	710	25	30	STEEL	TITUS 23RS	PROVIDE GYPSUM FRAME AS REQUIRED, PROVIDE BALANCE DAMPER	23 37 13

HYDRONIC PUMPS

TAG	TYPE	SERVES	FLUID	DESIGN FLOW (LPM)	HEAD (kPa)	POWER TYPE (V/PH/HZ)	MOTOR SIZE (kW)	BASIS OF DESIGN	NOTES	SPECIFICATION SECTION
P-1 / P-2 / P-3	INLINE CENTRIFUGAL, ECM MOTOR WITH 0-10V INPUT CONTACTS	BOILER 1 CIRCULATOR	BOILER WATER	210	45	120/1/60	0.4	ARMSTRONG H-53ECM	INTEGRAL ECM, CONTROLLED BY BOILER	23 21 23
P-4A/ P-4B	BASE MOUNTED CENTRIFUGAL, END SUCTION, INTEGRAL VFD	FACILITY HEATING CIRCULATOR	BOILER WATER	475	180	208/3/60	2.2	ARMSTRONG 4280DE	INTEGRAL VFD, BMS CONTROL	23 21 23
P-5	PERMANENTLY LUBRICATED DRY ROTOR CIRCULATOR	DHW HX HEAT SUPPLY	BOILER WATER	8	25	120/1/60	0.03	ARMSTRONG ASTRO 225SU	-	23 21 23
P-6	PERMANENTLY LUBRICATED DRY ROTOR CIRCULATOR	DHW HX CIRC. PUMP	DHW HEAT	8	25	120/1/60	0.03	ARMSTRONG ASTRO 225SU	STAINLESS STEEL WETTED PARTS FOR POTABLE DUTY	23 21 23
P-7	PERMANENTLY LUBRICATED DRY ROTOR CIRCULATOR	DHW HX CIRC. PUMP	DHW RECIRC	8	25	120/1/60	0.03	ARMSTRONG ASTRO 225SU	STAINLESS STEEL WETTED PARTS FOR POTABLE DUTY	23 21 23

DOMESTIC HOT WATER HEATER

TAG	TYPE	HTG. CAP. (kW)	VOLUME (LITRES)	SETPOINT (°C)	POWER (V/PH/HZ)	CONN SIZE	BASIS OF DESIGN	SPECIFICATION SECTION
DWH-1	ELECTRIC TANK TYPE	3	151	60	208/1/60	DN25	BRADFORD WHITE ELECTRIFLEX LD	22 33 00



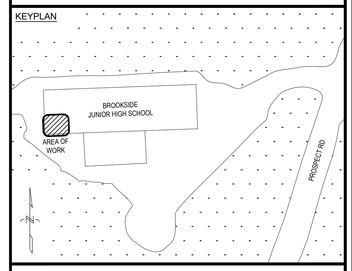
1 M-501 SCHEMATIC - BOILER PLANT PIPING AND CONTROLS
SCALE: N.T.S.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER
DATE 04/11/2025
N. L. Cooke
20250176
PROVINCE OF NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

MECHANICAL SCHEDULES

DRAWN	DESIGNED	CHECKED	PROJECT MGR
HJF	RLC	RLC	JRM

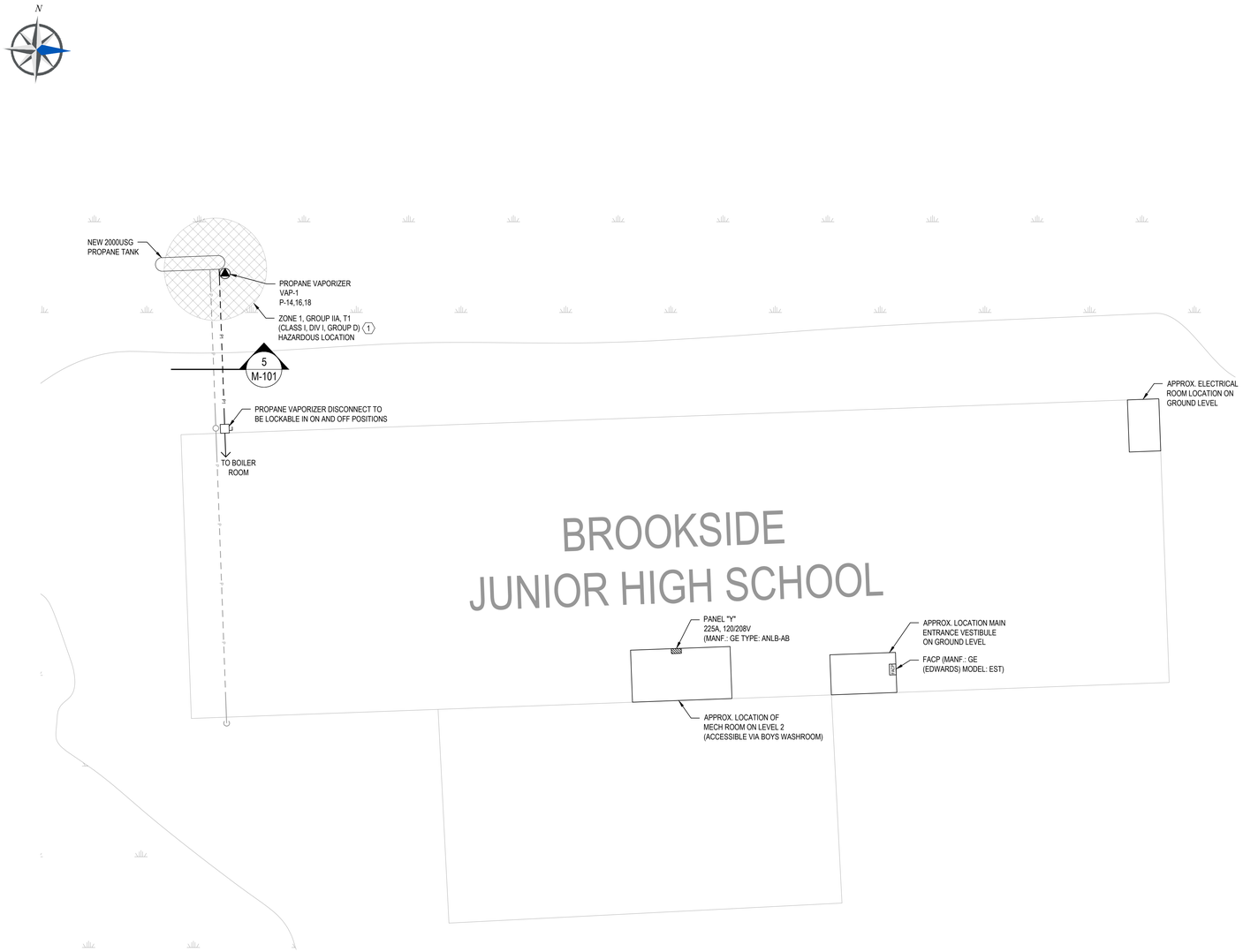
SCALE N.T.S.

PROJECT NO. 382005

DWG. NO. M-501

2025/Apr/11, 8:40am Hunter.Freeman I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_M-501.dwg

SHEET SIZE: B1 (1000mm x 707mm)



1 E-101 PLAN - ELECTRICAL SITE PLAN
SCALE: 1:200

LINE TYPES:

- EXISTING
- DEMOLITION
- NEW
- UNDERGROUND PROPANE
- ABOVE GROUND PROPANE
- UNDERGROUND ELECTRICAL FEED

LEGEND :

- ELECTRICAL PANEL
- DIRECT POWER CONNECTION
- DISCONNECT SWITCH
- RECEPTACLE

GENERAL NOTES:

1. ALL CONSTRUCTION TO COMPLY WITH THE 2020 NOVA SCOTIA BUILDING CODE ACT, NOVA SCOTIA OCCUPATIONAL HEALTH AND SAFETY ACT AND CSA/ASC STANDARD B651-23 ACCESSIBLE DESIGN FOR THE BUILT ENVIRONMENT.
2. THESE GENERAL NOTES APPLY TO ALL DRAWINGS, DESIGN, EQUIPMENT, FABRICATION, CONSTRUCTION AND ANY OTHER ASPECTS ASSOCIATED WITH THIS WORK.
3. THE CONTRACTOR IS TO CONSTRUCT BASED UPON THE DESIGN AND TYPICAL DETAILS PROVIDED HERE IN AND IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE. DEVIATIONS ARE TO BE APPROVED BY THE OWNER OR THEIR DESIGNATE. CONSTRUCTION THAT IS NOT DETAILED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND MUST MEET CANADIAN ELECTRICAL CODE (CEC), AND ACCEPTED INDUSTRIAL PRACTICES, SUBJECT TO THE APPROVAL OF THE OWNER. THE CONTRACTOR IS TO IDENTIFY ANY DISCREPANCIES BETWEEN THE DRAWINGS, CANADIAN ELECTRICAL CODE, OR ACCEPTED INDUSTRY PRACTICES TO THE OWNER FOR CLARIFICATION.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION, TESTING, AND COMMISSIONING OF ALL NEW ELECTRICAL EQUIPMENT INSTALLED UNDER THIS WORK SCOPE.
5. REMOVE ALL DEMOLISHED MATERIAL FROM SITE AND PAY ALL TRANSPORTATION, TIPPING AND OTHER FEES ASSOCIATED WITH MATERIAL DISPOSAL.
6. UNLESS SPECIFICALLY NOTED, DEMOLITION TO BE HANDLED BY CONTRACTOR.
7. LOCATION OF EQUIPMENT IS SHOWN APPROXIMATE. DO NOT SCALE LOCATION OFF DRAWINGS. SELECT THE FINAL LOCATION TO SUIT ACTUAL SITE SITUATION.
8. REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PLACING ORDERS AND PROCEEDING WITH THE CONSTRUCTION.
9. SUPPLY AND INSTALL ALL NEW ITEMS UNLESS SPECIFICALLY NOTED OTHERWISE.
10. PROVIDE ALL LIFTING, HOISTING, RIGGING, AERIAL ACCESS AND OTHER EQUIPMENT REQUIRED FOR PERFORMANCE OF WORK.
11. PROVIDE ALL NECESSARY EQUIPMENT, ANCILLARIES, LABOUR, WARRANTIES, CERTIFICATIONS AND LICENSES AS REQUIRED FOR A COMPLETE WORKING SYSTEM, REGARDLESS IF SPECIFICALLY LISTED.
12. RECORD THE ACTUAL INSTALLATION ON A SET OF CONSTRUCTION DRAWINGS AND RETURN TO THE OWNER UPON COMPLETION OF WORK.
13. PROVIDE THE OWNER WITH 12 MONTHS WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP. WITHIN THAT PERIOD, REPAIR AND REPLACE ALL DEFECTS AT NO ADDITIONAL COST TO THE OWNER.
14. DO NOT ALLOW CONSTRUCTION MATERIAL TO ACCUMULATE ON SITE. CLEAN UP AT THE END OF EACH DAY AND AT THE COMPLETION OF THE JOB.
15. THE CONTRACTOR IS TO REPAIR ANY DAMAGE TO THE EXISTING WALLS, CEILING, ROOF, OR FLOOR CAUSED BY THE WORK INVOLVED WITH THIS PROJECT AND FILL IN AND COVER IN KIND ANY HOLES THAT ARE LEFT FROM THE REMOVAL OF ANY WIRING, ELECTRICAL MATERIALS, OR ELECTRICAL EQUIPMENT.
16. CONTRACTOR TO PROVIDE AND INSTALL ULC S115 FIRE STOPPING WHERE CONDUITS PASS THROUGH FIRE WALLS AND PARTITIONS.
17. WIRE SIZE TO BE AS INDICATED ON THE DRAWINGS, INCREASE WIRE SIZE FOR VOLTAGE DROP IF REQUIRED.
18. ELECTRICAL CONTRACTOR IS TO VISIT SITE PRIOR TO BIDDING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AS THEY EFFECT THE ELECTRICAL INSTALLATION. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO PROVIDE A COMPLETE INSTALLATION. NO EXTRA MONEY CLAIMS WILL BE CONSIDERED FOR WORK RELATING TO THIS SECTION BECAUSE OF FAILURE TO THOROUGHLY EXAMINE THE SITE.
19. OBTAIN AND PAY FOR ALL FEES AND PERMITS AND C.S.A. APPROVALS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION.
20. ALL MATERIAL SHALL BE NEW AND C.S.A. APPROVED UNLESS OTHERWISE NOTED. ALL MODIFICATIONS TO BE C.S.A. APPROVED AS REQUIRED.
21. ALL WORK IN THIS CONTRACT TO BE COORDINATED WITH OTHER DISCIPLINE DRAWINGS TO DETERMINE EXACT LOCATIONS OF EQUIPMENT, ETC. REPORT ANY DISCREPANCIES TO THE OWNER REPRESENTATIVE.
22. PROVIDE AN INSPECTION CERTIFICATE BY ELECTRICAL INSPECTION AUTHORITY ON COMPLETION OF WORK.
23. ALL CONDUITS AND CABLES TO BE SECURELY FASTENED WITH APPROVED MOUNTING HARDWARE. ALL CONDUIT AND CABLING IS TO BE CONCEALED WITHIN WALLS OR ABOVE CEILING UNLESS OTHERWISE NOTED.
24. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE OWNER'S SAFE LOCK OUT PROCEDURES WHEN ISOLATING POWER CIRCUITS. ALL WORK AND POWER INTERRUPTIONS ARE TO BE COORDINATED WITH THE OWNER.
25. THE CONTRACTOR IS TO SUPPLY ALL NECESSARY EQUIPMENT, FIELD DEVICES, AND MATERIALS FOR THE INDICATED WORK.
26. THE CONTRACTOR IS TO PROVIDE A NEW TYPED PANEL SCHEDULE TO REFLECT NEW CIRCUITS.
27. COORDINATE THE PROVISION OF 120V, 15A CIRCUITS TO POWER BAS CONTROL TRANSFORMERS WITH THE CONTROLS CONTRACTOR. INCLUDE PROVISION OF THESE CIRCUITS IN THE BID PRICE.

KEYNOTES:

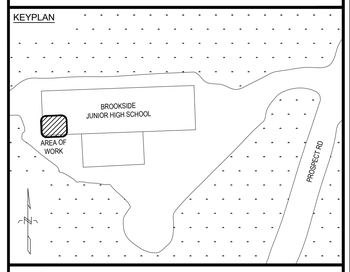
1. EQUIPMENT INSTALLED WITHIN HAZARD LOCATION SHALL INCLUDE EX, DB, T3, GB MARKINGS.

EASTPOINT

CLIENT NAME / LOGO

Halifax Regional Centre for Education

KEYPLAN



PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER
2025-04-11
T. P. Baker
12198
PROVINCE OF NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH
BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

ELECTRICAL
SITE PLAN

DRAWN	DESIGNED	CHECKED	PROJECT MGR
NAP	DEM	TPB	JRM

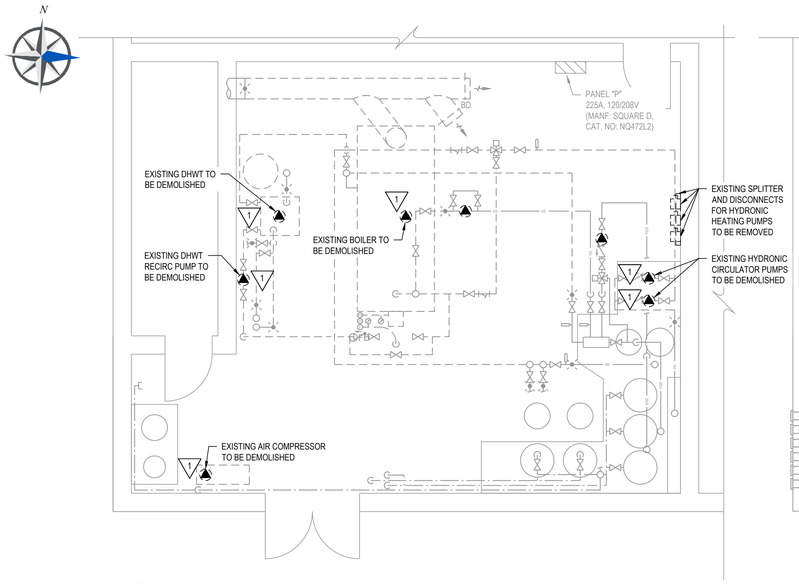
SCALE 1:200 — 5000 0 5000 10000 mm

PROJECT NO. 382005

DWG. NO. E-101

2025/April/11, 8:29am Hunter.Freeman REV 0 I:\382.HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_E-101.dwg

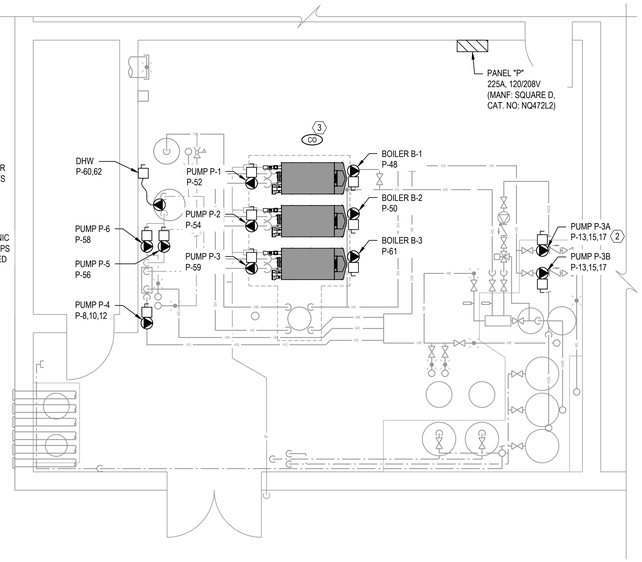
SHEET SIZE: B1 (1000mm x 707mm)



1 E-102 PLAN - BOILER ROOM (DEMOLITION)

SCALE: 1:50

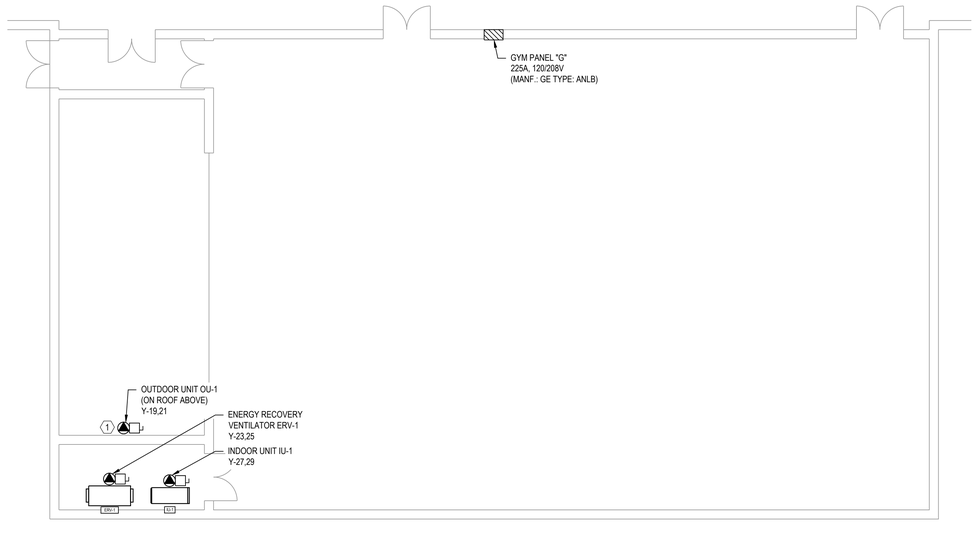
1:50 500 0 500 1000 1500 2000 2500 3000 3500 mm



2 E-102 PLAN - BOILER ROOM (NEW CONSTRUCTION)

SCALE: 1:50

1:50 500 0 500 1000 1500 2000 2500 3000 3500 mm



3 E-102 PLAN - GYMNASIUM (NEW CONSTRUCTION)

SCALE: 1:100

1:100 1000 0 1000 2000 3000 4000 5000 6000 7000 mm

DEMOLITION KEYNOTES:

1. CONTRACTOR TO DEMOLISH EXISTING ELECTRICAL FEED TO MECHANICAL EQUIPMENT BACK TO SOURCE PANEL INCLUDING DISCONNECT SWITCH, WIRING, CONDUIT, AND RELATED SUPPORTS.CIRCUIT BREAKER TO REMAIN IN PANEL AS SPARE.

NEW CONSTRUCTION KEYNOTES:

1. CONTRACTOR TO SUPPLY AND INSTALL NEW CSA 5-20R RECEPTACLE C/W GFCI FED FROM A DEDICATED 20A, 120V CIRCUIT WITHIN 7.5m OF OU-1 IN WEATHERPROOF ENCLOSURE MOUNTED TO PEDASTAL 750mm ABOVE ROOF.
2. RE-USE EXISTING 15A BREAKER IN PANEL "P" PREVIOUSLY USED FOR THE COMPRESSOR TO FEED NEW PUMPS P-3A/B.
3. CONTRACTOR TO TIE IN CARBON MONOXIDE DETECTOR TO FIRE ALARM INITIATING CIRCUIT.

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT					RATING				DISCONNECT SWITCH					SOURCE INFO.			
ID	LOCATION	DESCRIPTION	SUPPLIED BY	WIRED BY	FULL LOAD RATING	F.L.A. / kW / HP	VOLTAGE	PHASE	LOCATION	SUPPLIED BY	WIRED BY	ENCLOSURE	SWITCH RATING	PANEL	CIRCUIT BREAKER	FEEDER	CONDUIT
B1	BOILER ROOM	PROPANE BOILER	MECH	ELEC	7.0	FLA	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
B2	BOILER ROOM	PROPANE BOILER	MECH	ELEC	7.0	FLA	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
B3	BOILER ROOM	PROPANE BOILER	MECH	ELEC	7.0	FLA	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
VAP-1	EXTERIOR	PROPANE VAPORIZER	MECH	ELEC	8.9	kW	208	3	EXTERIOR	ELEC	ELEC	NEMA 3R	60A	PANEL P	35A / 3P	3 - #8 AWG + #10 BND	21mm to D/S 35mm U/G
P-1	BOILER ROOM	INLINE PUMP	MECH	ELEC	0.4	kW	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
P-2	BOILER ROOM	INLINE PUMP	MECH	ELEC	0.4	kW	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
P-3	BOILER ROOM	INLINE PUMP	MECH	ELEC	0.4	kW	120	1	BOILER ROOM	ELEC	ELEC	NEMA 2	15A	PANEL P	15A / 1P	3 - #12 AWG + #12 BND	21mm
P-4A	BOILER ROOM	INLINE PUMP	MECH	ELEC	2.2	kW	208	3	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 3P	3 - #12 AWG + #12 BND	21mm
P-4B	BOILER ROOM	INLINE PUMP	MECH	ELEC	2.2	kW	208	3	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 3P	3 - #12 AWG + #12 BND	21mm
P-5	BOILER ROOM	DHW HX SUPPLY PUMP	MECH	ELEC	2.2	kW	208	3	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 3P	3 - #12 AWG + #12 BND	21mm
P-6	BOILER ROOM	DHW HX CIRC PUMP	MECH	ELEC	0.03	kW	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
P-7	BOILER ROOM	DHW HX CIRC PUMP	MECH	ELEC	0.03	kW	120	1	BOILER ROOM	ELEC	ELEC	NEMA 1	15A	PANEL P	15A / 1P	2 - #12 AWG + #12 BND	21mm
DWH-1	BOILER ROOM	DOMWATER HEATER	MECH	ELEC	3.00	kW	208	1	BOILER ROOM	ELEC	ELEC	NEMA 1	30A	PANEL P	20A / 2P	2 - #12 AWG + #12 BND	21mm
ERV-1	GYM STAGE	ERV	MECH	ELEC	13.00	FLA	208	1	GYM STAGE	ELEC	ELEC	NEMA 1	30A	PANEL Y	25A / 2P	2 - #10 AWG + #12 BND	21mm
OU-1	GYM ROOF	CONDENSING UNIT	MECH	ELEC	27.00	FLA	208	1	GYM ROOF	ELEC	ELEC	NEMA 3R	60A	PANEL Y	35A / 3P	2 - #6 AWG + #10 BND	21mm
IU-1	GYM STAGE	INDOOR HEAT PUMP AHU	MECH	ELEC	6.88	FLA	208	1	GYM STAGE	ELEC	ELEC	NEMA 1	15A	PANEL Y	15A / 2P	2 - #12 AWG + #12 BND	21mm

EASTPOINT

CLIENT NAME / LOGO

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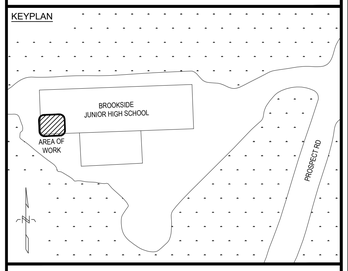
KEYPLAN



PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER
2025-04-11
T. P. Balkos
12198
PROVINCE OF NOVA SCOTIA

NO.	DATE	REVISION	APPR.
0	2025/04/11	ISSUED FOR TENDER	JRM

PROJECT TITLE

BROOKSIDE JR. HIGH BOILER REPLACEMENT

HATCHET LAKE, NOVA SCOTIA

DRAWING TITLE

GYMNASIUM AND BOILER ROOM PLAN (DEMOLITION AND NEW CONSTRUCTION)

DRAWN	DESIGNED	CHECKED	PROJECT MGR
NAP	DEM	TPB	JRM

SCALE: AS NOTED

PROJECT NO. 382005

DWG. NO. E-102

2025/April/11, 8:29am Hunter.Freeman REV 0 I:\382 HRCE\382005 Brookside Junior High Boiler Replacement\Drawings\382005_E-102.dwg