

1 SEPTIC FIELD LAYOUT
M5.1 SCALE: 1:250

LEGEND	
	SILT FENCE
	STRAW BALE BARRIER
	PIPING
	INFILTRATOR CHAMBERS

ON-SITE SEWAGE DISPOSAL SYSTEM DESIGN

SEPTIC BED SIZING FOR A PUMPED (DOSED) SEPTIC FIELD

- ESTIMATED DAILY SEWAGE FLOW
 - BUILDING OCCUPANCY = 400 VISITORS PER DAY (OCCUPANCY RECEIVED FROM OWNER)
 - VISITORS CENTER OCCUPANCY
 - PEAK FLOW = 30 LPD / PERSON
 - ESTIMATED DAILY SEWAGE FLOW = 12,000 LPD
- AREA REQUIRED
 - INFILTRATION RATE = 48 L/M² / DAY
 - AREA REQUIRED = 250 M²
- INFILTRATORS REQUIRED
 - INFILTRATOR WIDTH = 0.864 M (34")
 - INFILTRATOR LENGTH = 1.219 M (4')
 - INFILTRATOR HEIGHT = 0.356 M (14")
 - INFILTRATOR AREA = 1.053 M²
 - # OF INFILTRATORS REQUIRED = 237
- DOSE
 - DOSE DEPTH = 0.01 M
 - DOSE TIME = 15 MIN
 - DOSE VOLUME = 2.5 M³ (661 GAL)
 - DOSE RATE = 2.78 L/S (44 GPM)

ON-SITE SEWAGE DISPOSAL SYSTEMS SCOPE OF WORK

THIS CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS, TOOLS AND EQUIPMENT REQUIRED FOR THE INSTALLATION OF A NEW ON-SITE SEWAGE DISPOSAL SYSTEM AS SHOWN ON THE PLANS. THE SYSTEM SHALL BE INSTALLED BY A CONTRACTOR LICENSED BY THE NEW BRUNSWICK DEPARTMENT OF HEALTH. THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- AFTER AWARD OF CONTRACT AND PRIOR TO CONSTRUCTION, THE SUCCESSFUL BIDDER SHALL SUBMIT THE COMPLETED APPLICATION TO INSTALL AN ON-SITE SEWAGE DISPOSAL SYSTEM TO THE NB HEALTH PROTECTION BRANCH, INCLUDING ANY APPLICABLE FEES.
- THE WASTEWATER DISPOSAL SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS ON THE DRAWINGS AND IN COMPLIANCE WITH NEW BRUNSWICK REGULATIONS.
- THE PROPOSED AND FINAL INSTALLATION SHALL BE REVIEWED AND APPROVED BY SERVICES IN THE CONSTRUCTION AREA PRIOR TO DIGGING (CALL BEFORE YOU DIG).
- THE CONTRACTOR SHALL CONTACT LOCAL UTILITIES TO LOCATE ANY BURIED SERVICES IN THE CONSTRUCTION AREA PRIOR TO DIGGING (CALL BEFORE YOU DIG).
- FURNISH AND INSTALL ONE NEW PRE-CAST CONCRETE DUAL-CHAMBER SEPTIC TANK IN ACCORDANCE WITH DRAWINGS AND THE FOLLOWING SPECIFICATIONS. MAKE ALL NECESSARY CONNECTIONS TO THE EXISTING BUILDING SEWER LINES.
 - WORKING CAPACITY OF 18,000L
 - TONGUE AND GROOVE DESIGN FIELD SEALED WITH A FIBROUS MASTIC SEALANT TO MAKE WATERTIGHT
 - TANK SHALL BE CAST WITH 35MPA STRENGTH CONCRETE AT 7DAYS WITH 5-7% AIR
 - CONCRETE SHALL BE STEEL REINFORCED WITH 10M REBAR SPACED AT 400MM EACH DIRECTION
 - REBAR COVER TO ME 25MM
 - TANK TO CONFIRM TO NATIONAL STANDARDS OF CANADA CAN/CSA B66
 - NON SULPHATE RESISTANT CONCRETE
 - CHAMBER DIVIDER MONOLITHICALLY CAST WITH STRUCTURE
 - MINIMUM TWO 100 X 150MM PARTITION FLOW THROUGH
 - INLET AND OUTLETS SIZES TO MATCH LINE SIZES ON DRAWINGS
 - DESIGNED FOR 1M BURIAL DEPTH OVER TOP OF TANK
 - TWO 610MM ID RISERS / MANWAYS WITH LIDS
- PUMPING SYSTEM (PRE-ENGINEERED PUMP STATION)
 - PUMP CHAMBER
 - PRE ENGINEERED FIBERGLASS PUMP STATION 1828MM (6') DIAMETER BY 6248MM (10') DEEP
 - FRP FILAMENT WOUND SHELL SECTION JOINED TO BASIN
 - SANITARY WHITE CORROSION LINER, 110 MIL THICK
 - SYRACUSE ALUMINUM TOP C/W LOCKABLE SAFE-HATCH BOLTED AND SEALED TO SHELL FLANGE
 - ONE LEVEL REGULATOR HANGER BOLTED TO ACCESS HATCH
 - TWO ANTI-SWAY RINGS BOLTED TO THE SIDE OF THE TANK
 - 316 STAINLESS STEEL GUIDE RAILS
 - SS GUIDE RAIL BRACKETS UPPER AND INTERMEDIATE AS NEEDED
 - FRP PIPE INLET
 - GELCOAT ON TOP 600MM (2') OF SHELL FOR UV PROTECTION
 - ALL BOLTING PENETRATIONS THROUGH SHELL TO BE LAMINATED OVER
 - ALL PIPING PROJECTIONS TO BE 175MM (7") IN LENGTH
 - 51MM (2") DRAIN CONNECTION FROM VAULT C/W PVC FLAPPER CHECK VALVE
 - BULKHEAD STYLE PVC ELECTRICAL CONNECTIONS
 - 100MM SS CANDY CANE OR MUSHROOM STYLE VENT
 - ALL PIPE AND FITTINGS IN WET WELL ARE SS
 - HDL CHECK VALVES IN SINGLE DISCHARGE APPLICATIONS
 - PLUG VALVES IN SINGLE DISCHARGE APPLICATIONS
 - UNION OR FLANGED CONNECTION BEFORE ALL FORCE MAIN EXIT POINTS
 - FRP FORCE MAIN CONNECTIONS LAMINATED TO TANK
 - SS BOLTING HARDWARE AND GASKETS FOR FLANGED CONNECTIONS
 - SS SUPPORT ANGLES AND HARDWARE FOR PIPING AND GUIDE RAILS AS NEEDED
 - DISCHARGE CONNECTIONS BOLTED AND SEALED TO BASIN

- PROVIDE 400mm X 300mm CONCRETE RING BALLAST PER PUMP MANUFACTURER'S RECOMMENDATION.
- PUMPS
 - QUANTITY 2
 - FLYGT MODEL MP-3085 SUBMERSIBLE PUMP
 - 2.77 L/S (44 GPM) @ 9.1M (30') HEAD
 - 230 VOLT 1/60 3HP/2.2KW
 - 3520 RPM
 - EXPLOSION PROOF
 - LIFT CHAINS 9/32" S/S 316 GR 50 COMPATIBLE WITH HOIST
 - 4 PUMP FLOATS (PUMP OFF (150mm ABOVE PUMP SUCTION), LEAD PUMP ON (1000mm BELOW PIPE INLET), LAG PUMP ON (600mm BELOW PIPE INLET), HIGH LEVEL ALARM (300mm BELOW PIPE INLET))
- PUMP CONTROL PANEL
 - PAINTED STEEL ENCLOSURE, C/W INNER INNER MOUNTING PANEL AND THERMAL INSULATION
 - SINGLE POINT POWER CONNECT & MAIN CIRCUIT BREAKER, C/W HANDLE/SHAFT, INTERLOCKED WITH INNER DOOR
 - FULL VOLTAGE NON-REVERSING STARTERS FOR TWO PUMPS
 - SINGLE-PHASE STARTING KITS
 - SURGE PROTECTOR
 - CONTROL TRANSFORMER C/W FUSING
 - XYLEM MULTISMART PUMP CONTROLLER
 - ANTI-CONDENSATION HEATER C/W THERMOSTAT
 - ILLUMINATED H-O-A SWITCH FOR EACH PUMP
 - "RUN" AND "FAULT" LIGHT FOR EACH PUMP
 - PUMP FAULT RESET PUSH BUTTON
 - ALARM STROBE LIGHT C/W WIRE GUARD
 - INTRINSICALLY SAFE RELAY FOR FOUR FLOAT LEVEL REGULATORS
 - 24VDC POWER SUPPLY
 - DUPLEX GFCI CONVENIENCE RECEPTACLE C/W 120V CIRCUIT BREAKER
 - TIMING RELAY TO PREVENT PUMPS STARTING SIMULTANEOUSLY
 - CONTROL RELAYS AND BASES AS REQUIRED
 - TERMINAL BLOCKS AND ACCESSORIES AS REQUIRED
 - WIRING DUCT AND DIN RAIL AS REQUIRED
- STANDARD OF ACCEPTANCE
 - XYLEM PRE-ENGINEERED PUMP STATION
 - ALTERNATE ACCEPTANCE
 - PRE-CAST CONCRETE PUMPING CHAMBER ASSEMBLY WITH PUMPS, GUIDE RAILS, COVERS, PUMP CONTROLLERS AS DESCRIBED ABOVE. PROVIDE ALTERNATE ASSEMBLIES FOR REVIEW AND APPROVAL PRIOR TO CLOSE OF TENDER.
- FURNISH AND INSTALL INFILTRATIVE CHAMBERS IN ACCORDANCE WITH THE PLANS. INFILTRATORS SHALL BE INFILTRATOR WATER TECHNOLOGIES MODEL QUICK4 PLUS HIGH CAPACITY OR APPROVED ALTERNATE. PROVIDE MANUFACTURES END CAPS AT ENDS OF EACH ROW. INSTALL THREE BEDS, TWO WITH 7 ROWS OF 12 INFILTRATORS AND ONE BED WITH 6 ROWS OF 12 INFILTRATORS AS SHOWN ON DRAWINGS. INSTALL CONTINUOUS 38MM SUSPENDED PVC PIPE WITH 6MM HOLES AS DESCRIBED ON SUSPENDED PVC PIPE DETAIL.
- FURNISH AND INSTALL NEW FORCE MAIN PIPING FROM PUMP TO THE DISPOSAL FIELD. ALL NEW PIPE AND FITTINGS SHALL BE PVC SDR-26 FORCE MAIN. FORCE MAIN WASTE PIPE SHALL CONFORM TO CAN/CSA B137.3, "RIGID PVC PIPE FOR PRESSURE APPLICATIONS", ASTM D2241, "PVC PRESSURE RATED PIPE", AND LOCAL REGULATIONS. PVC GASKETED FITTINGS SHALL CONFORM TO CSA B137.2, "PVC INJECTION MOULDED GASKETED FITTINGS FOR PRESSURE APPLICATIONS." PIPING SHALL BE IPEX CYCLE TOUGH PVC SERIES PIPE AND FITTINGS (IPSD) OR APPROVED ALTERNATE.
- FURNISH NEW SAND FOR SEPTIC FIELD AS NECESSARY AND GRADE. PROVIDE 150MM TOPSOIL AND SOD OVER COMPLETED WORK. ALL IMPORTED FILL SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND THE NEW BRUNSWICK TECHNICAL GUIDELINES FOR ON-SITE SEWAGE DISPOSAL SYSTEMS LATEST EDITION.
- EXCAVATION & BACKFILLING
 - EXCAVATE FOR NEW SEPTIC TANK AND PUMP CHAMBER DOWN TO IN SITU SOILS. ENSURE THAT A MINIMUM OF 150MM LAYER OF SAND (SHOULD WATER CONDITIONS ALLOW) COMPACTED TO 95% STANDARD PROCTOR DENSITY OR CRUSHED GRAVEL IS TO BE LEVELLED ON THE BOTTOM OF THE EXCAVATION TO PROVIDE A PROPER BEDDING FOR THE BOTTOM OF THE TANKS. INSTALL A FILTER FABRIC BETWEEN THE SELECTED BACKFILL AND THE NATIVE SOIL.
 - INSTALL ANTI-FLOTATION CONCRETE BALLAST PER PUMP CHAMBER MANUFACTURES RECOMMENDATIONS. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 25 MPA AND ALL REINFORCING SHALL BE ASTM A 8 15 GRADE 6 0. ENSURE THAT CONCRETE EXTENDS AT LEAST 150MM ABOVE ANTI-FLOTATION FLANGE. NOTE: PLACE CONCRETE USING A TREMIE FOR FREE FALL DISTANCES GREATER THAN 1M IF WATER PRESENT.
 - BACKFILL SEPTIC TANK AND PUMP CHAMBER WITH A WELL-GRADED SAND (SHOULD WATER CONDITIONS ALLOW) COMPACTED TO 95% STANDARD PROCTOR DENSITY, OR CRUSHED STONE OR PEA GRAVEL WITH SIZE RANGING FROM 6MM TO 19MM. INSTALL A FILTER FABRIC BETWEEN THE SELECTED BACKFILL AND THE NATIVE SOIL. DO NOT BACKFILL UNTIL CONCRETE BALLAST HAS GAINED SUFFICIENT STRENGTH TO PROVIDE RIGID SUPPORT FOR BOTH PUMP STATION AND BACKFILL (TYPICALLY 1 TO 2 DAYS). ADD BACKFILL IN 150MM LIFTS FOR PROPER COMPACTION EVENLY ALL AROUND PUMP STATION TO AVOID UNEVEN BACKFILL LOADS. CARE MUST BE TAKEN TO PROPERLY COMPACT THE BACKFILL UNDER ALL PIPES TO PREVENT THEM FROM COLLAPSING AND SUSTAINING DAMAGE. USE HAND COMPACTION ALONG THE SIDES OF TANKS AS THEY ARE NOT DESIGNED TO RESIST MACHINE COMPACTION.

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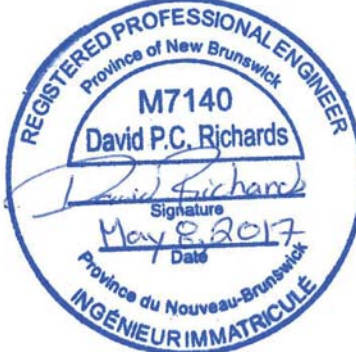
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68 Ferry Street
P.O. Box 1775
Charlottetown PE
Canada C1A 1R4
Ph: (822) 566-4446
Fax: (822) 566-1232
info@bgj.com
www.bgj.com

FUNDY Engineering

27 Wellington Row
P.O. Box 6026
Saint John, NB
E2L 4S1
Tel: (506) 635-1566
Fax: (506) 635-0206
fundy@fundyeng.com
www.fundyeng.com
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WEST GATE ENTRANCE
VISITOR RECEPTION CENTER
WOLFE LAKE
FUNDY, NB
ALBERT COUNTY

drawing dessin
SEPTIC FIELD LAYOUT

designed conçu

date

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date

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Tender Soumission

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