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GENERAL

1. THE SCOPE OF WORK IS TO ADD TO THE EXISTING FLOATING INTAKE PIPING AND PROVIDE A FULLY FUNCTIONAL TRUCK FILL MECHANISM.

2. THE FLOATING DOCK ADDITION WILL IMPROVE STABILITY FOR THE PIPE AND PUMP SUPPORT.

3. THE PUMPS WILL BE DUPLEXED AT THE POINT OF SUBMERGENCE AND ISOLATION VALVES WILL BE INSTALLED.

4. THE COMPLETE ELECTRICAL UPGRADE FOR HEAT TRACE AND PUMP CONTROL AS PER THE DRAWINGS TO HAVE AN OPERATIONAL SYSTEM.

5. INSTALLATION TO BE DONE WITH COORDINATION OF CGS AND HAMLET. AT NO TIME SHALL WATER QUALITY FOR THE DELIVERY BE COMPROMISED.

6. THE MECHANICAL INSTALLATION OF PIPING ON THE INTERIOR OF THE BUILDING TO BE COMPLETED IN THE SAME CONSTRUCTION SEQUENCE AS THE INTAKE AND ELECTRICAL UPDATES. SUBSTANTIAL COMPLETION IS TO BE CONSIDERED ONLY WHEN WATER DELIVERY TO THE TRUCKS HAS COMMENCED.

7. A PROJECT KICK-OFF MEETING WILL BE SCHEDULED AND WEEKLY PROGRESS MEETINGS WILL BE HELD FOR THE DURATION OF THE PROJECT.

8. SHOP DRAWING SUBMITTALS WILL BE PART OF THIS CONTRACT. A LIST OF EXPECTED SUBMITTALS WILL BE PROVIDED AT THE KICK-OFF MEETING.

INTAKE PIPE/DOCK EXTENSION

9. CGS WILL SUPPLY 340 ADDITIONAL CANADADOCK G2 MODULES. THESE ARE TO BE ADDED TO THE EXISTING AS PER THE DRAWINGS TO FACILITATE A STABLE PLATFORM FOR PIPE FORMING.

10. EXTENSION OF THE EXISTING 100MM HDPE WITH BUTT FUSION WELDING. HEAT TRACE AND INSULATION IS TO ALSO BE INCLUDED.

11. ADD TEE, VALVES AND ELBOWS AS INDICATED ON THE DRAWINGS.

12. INSTALL NEW PUMP AND SUPPORT SKID FOR SUSPENDED PUMPS.

INTERIOR PIPE AND DISINFECTION UPGRADES

13. SUPPLY AND INSTALL NEW PVC PIPING AND FITTINGS INSIDE BUILDING AND PRESSURE TEST.

14. SUPPLY AND INSTALL NEW DUPLEX CHLORINATION PUMPS.

15. TEST ENTIRE SYSTEM FOR PERFORMANCE AND OPERATION.

16. CLEAN ENTIRE SITE, REPAIRING ANY DAMAGE AND DISPOSING OF WASTE MATERIAL AT LOCAL LANDFILL.

17. CHLORINE PUMPS ARE TO BE ACTIVATED WHEN TRUCK FILL OPERATES. MANUAL SETTINGS ON THE CHLORINATION PUMPS ARE TO BE UTILIZED FOR CONTROLLING DOSING RATES. LEAD PUMP WITH INSTALLED STANDBY IS ACCEPTABLE OPERATION CONDITION.

18. PROVIDE HAMLET WITH TRAINING, SPARE PARTS AND O&M MANUAL.

ELECTRICAL

19. THE WORK INCLUDES, BUT IS NOT LIMITED TO: THE SUPPLY AND INSTALLATION OF SUPERVISION, LABOUR, PERMITS, EQUIPMENT, MATERIALS, AND CONSUMABLES NECESSARY TO PROVIDE THIS FACILITY WITH COMPLETE AND OPERABLE SYSTEMS AS LISTED BELOW, AS INDICATED ON DRAWINGS, AND AS DESCRIBED IN THE SPECIFICATIONS.

20. MODIFICATION OF EXISTING DISTRIBUTION SYSTEMS INCLUDING BUT NOT LIMITED TO EXTENDING EXISTING WIRING AND CONDUITS, TESTING EXISTING FEEDERS, RECONNECTING TO EXISTING CIRCUITS, ETC.

21. VERIFICATION OF ALL EXISTING EQUIPMENT LOADS AND CONNECTIONS AND COMPLETION OF NECESSARY REVISIONS TO EXISTING CIRCUITRY, WHERE APPLICABLE, TO ACCOMMODATE CANADIAN ELECTRICAL CODE REQUIREMENTS.

22. SUPPLY AND INSTALLATION OF ELECTRICAL CONNECTIONS TO NEW SUBMERSIBLE INTAKE PUMP AND EXTENSION TO THE EXISTING PUMP.

23. SUPPLY AND INSTALLATION OF HEAT TRACING SYSTEM FOR NEW PIPING INCLUDING HEATING CABLES, SENSORS, ELECTRONIC CONTROLLERS, TESTING AND COMMISSIONING, ETC.

24. SUPPLY AND INSTALLATION OF THE CONTROLS AND POWER SUPPLY FOR THE CHLORINATION EQUIPMENT.

ENVIRONMENTAL

25. THE INSTALLATION OF THE DOCK MAY RESULT IN THE STIRRING UP OF SILT FROM THE LAKE BOTTOM AND THE INTRODUCTION OF FILL WILL RESULT IN LOCALIZED TURBIDITY, MINIMIZING THIS DISTURBANCE IS KEY FOR THE SUCCESS OF THIS PROJECT.

26. DURING THIS PORTION OF THE WORK, THE POTABLE TRUCK FILL WILL BE RELOCATED TO SALMON CREEK INTAKE. THIS WILL BE OPERATED BY HAMLET AND CGS STAFF.

27. CLEANUP OF THE SITE IS PART OF THE CONTRACT, AS THE TRUCK FILL AREA IS TO BE LEFT WITH NO DEBRIS OR REFUSE, AND ALL SURFACES IN THE CONSTRUCTION AREA ARE TO BE GRADED/RESTORED TO MINIMIZE RUNOFF EFFECTS.

LOCATION PLAN

The location plan shows a topographic map with contour lines. A rectangular area is outlined, labeled "AREA OF WORK". Within this area, a small square is labeled "EXISTING TRUCK FILL STATION".



TEMPORARY INTAKE

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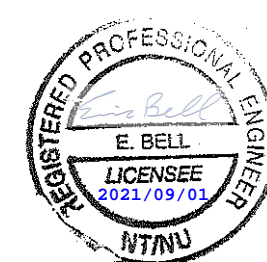
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1	ISSUED FOR CONSTRUCTION	2021.SEP.01
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ISSUED FOR CONSTRUCTION

Professional Seal(s)



Drawn By: ARL

Dwg Standards Ckd By:

Designed By: EAB

Design Checked By:

Scale: AS SHOWN

Project Title

GOVERNMENT
OF NUNAVUT
POND INLET NEW
TRUCK FILL
WATER INTAKE

Dwg. Title

TEMPORARY INTAKE SITE PLAN AND DETAILS

Project No.

FRE-00257777-A0

Dwg. No.

4-5

Rev. No.	
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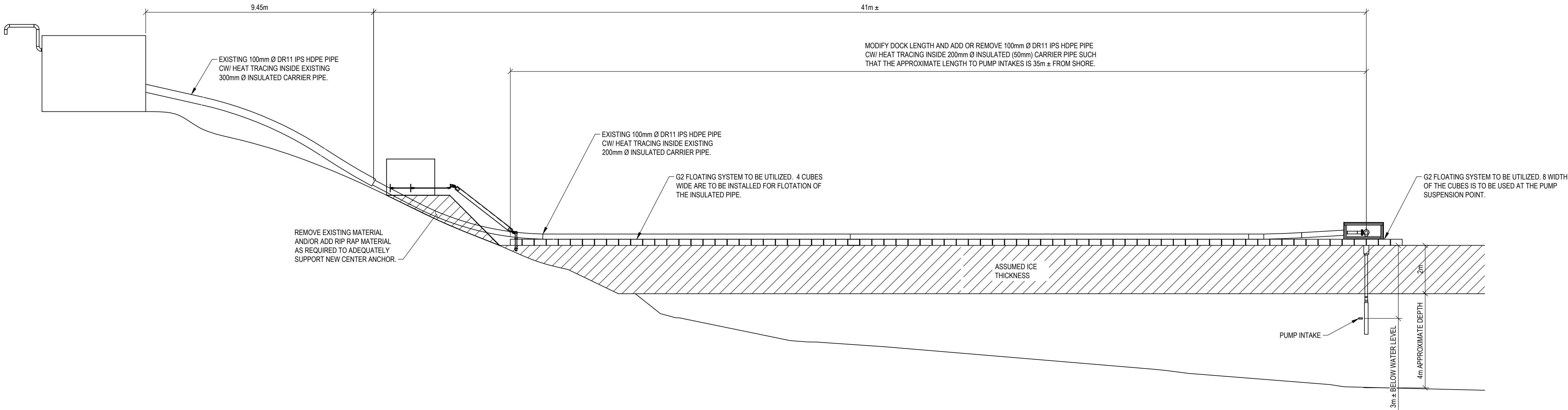
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Project Title
**GOVERNMENT
OF NUNAVUT
POND INLET NEW
TRUCK FILL
WATER INTAKE**

Dwg. Title
**TEMPORARY INTAKE
SECTION AND DETAILS**

Project No. **FRE-00257777-A0**

Dwg. No. **4-6** Rev. No. **1**

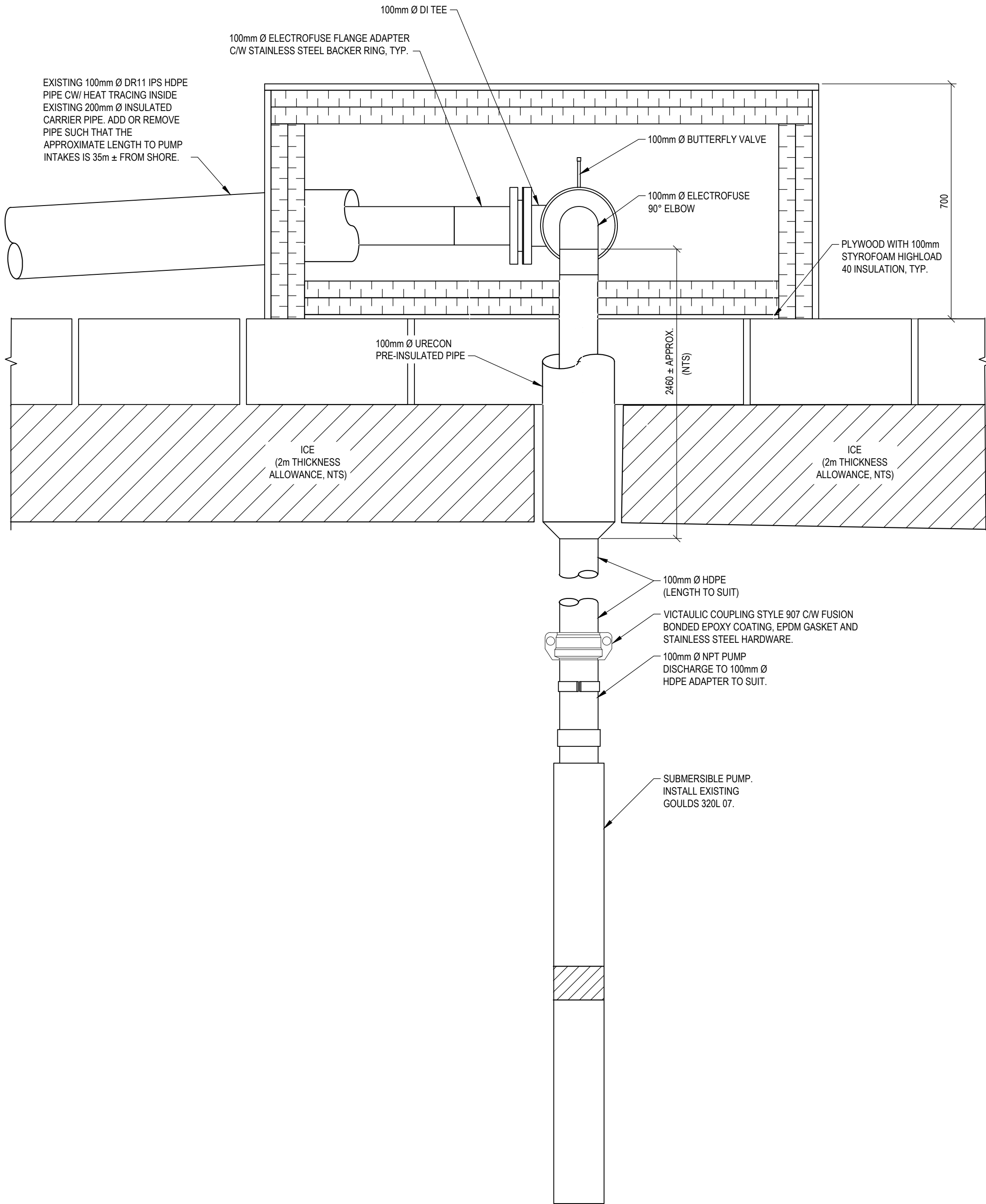
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SECTION
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Designed By:	EAB
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Project Title
**GOVERNMENT OF
NUNAVUT
POND INLET NEW
TRUCK FILL WATER
INTAKE**

Dwg. Title
**TEMPORARY INTAKE
SECTION**

Project No.
FRE-00257777-A0

Dwg. No. 4-8	Rev. No. 1
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EXP-00257777-A006 EXECUTIONS DRAWINGS 0021 DESIGN PLAN AND SECTIONS

KEYNOTES:

- 100 Ø 90° ELBOW, PVC/SCH 80.
- 100 Ø GATE VALVE.
- 100 Ø TEE, PVC/SCH 80.
- 100 Ø BUTTERFLY VALVE.
- 100 Ø CAM-LOCK FITTINGS.
- RED VALVE MODEL J-1W ARC EXPANSION JOINT OR EQUAL.
- EXISTING UPPER TERMINATION ASSEMBLY.
- EXISTING FLOOR BRACE.
- REINSTALL EXISTING HOSE BIB.
- REPLACE EXISTING PIPE SUPPORT HARDWARE AS REQUIRED.

PUMP SPECIFICATIONS:

1. THE PUMP WILL BE A SUBMERSIBLE WELL PUMP OF STAINLESS STEEL CONSTRUCTION WITH A DESIGN DUTY POINT OF 16.7 LPS AND TDH OF 22m (264 USGPM AND 72.2 FT).
2. THE DESIGN POINT OF THE PUMP MUST BE MET. THE PUMP IS NOT TO BE EQUIPPED WITH AN INTEGRAL CHECK VALVE TO ALLOW THE SUPPLY LINE TO DRAIN.
3. MOTOR TO BE 208V, 3 PHASE, 60Hz HIGH EFFICIENCY MOTOR.
4. PUMP & MOTOR TO BE A SINGLE UNIT FROM THE SAME MANUFACTURER.
5. PUMP/MOTOR MATERIALS SHALL BE APPROVED FOR POTABLE WATER SERVICE WITH NSF 61 CERTIFICATION.
6. ALL POINTS OF THE PUMP CURVE MUST BE COVERED BY THE MOTOR (HP) SUPPLIED.
7. STAINLESS STEEL IMPELLER, SHAFT AND CHAMBER (ANSI 304 OR BETTER).
8. DESIGN IS BASED ON THE USE OF 7.5 HP GOULDS, MODEL 320L07.

GENERAL SPECIFICATIONS:

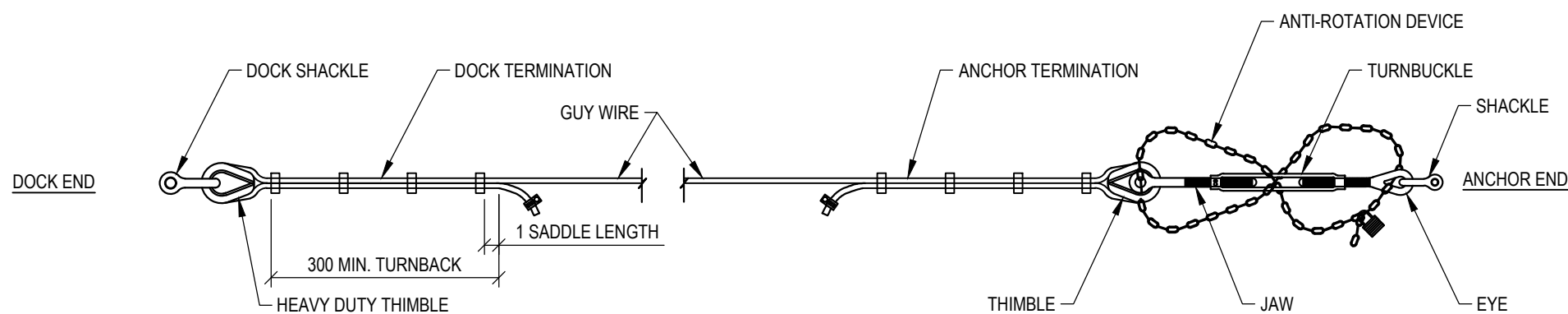
- HDPE PIPE AND FITTINGS
 - PIPE MATERIAL:
 - HDPE PIPE IS TO BE 100mm Ø R 11 IPS PREINSULATED WITH 50mm OF INSULATION AND OUTER PROTECTIVE JACKET.
 - THE HDPE PIPE IS TO BE INSTALLED IN ACCORDANCE WITH ASTM F744, ASTM D3350, AWWA C906 AND ASTM D3035.
 - MECHANICAL FITTINGS:
 - VICTAULIC STYLE 907 COUPLING.
 - HOUSING COATING: FUSION BONDED EPOXY.
 - COUPLING GASKET: GRADE 'E' EPDM.
 - HARDWARE: 316 STAINLESS STEEL.
 - BUTT FUSION FITTINGS:
 - FITTINGS SHALL BE MADE OF HDPE MATERIAL WITH A MINIMUM MATERIAL DESIGNATION OF PE 4710 AND WITH A MINIMUM CELL CLASSIFICATION OF 445474C. FITTINGS SHALL HAVE A MINIMUM PRESSURE RATING EQUAL TO OR GREATER THAN THE PIPE TO WHICH THEY ARE JOINED UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL FITTINGS SHALL MEET THE REQUIREMENTS OF AWWA C901 OR C906. THE RESIN MATERIAL SHALL MEET THE SPECIFICATIONS OF ASTM D 3350.
 - HDPE FITTINGS SHALL BE JOINED BY HEAT FUSION IN ACCORDANCE WITH AWWA C906 AND ASTM F2620, AND MANUFACTURER'S RECOMMENDATIONS.
 - THE CONTRACTOR MUST SUBMIT A PLAN FOR EXECUTION AND QUALITY CONTROL. DOCUMENTATION TO BE USED DURING ON SITE FUSION OF HDPE PIPE/FITTINGS FOR REVIEW BY THE ENGINEER. THE PLAN AND QUALITY CONTROL DOCUMENTATION MUST BE SUBMITTED PRIOR TO CONTRACT AWARD.
 - BACK-UP RING FLANGE:
 - BACK-UP RING FLANGES SHALL BE TYPE 304 STAINLESS STEEL OR BETTER WITH DIMENSIONS CONFORMING TO ANSI B16.1B16.5 AND SUITABLE FOR USE WITH HDPE FLANGE ADAPTOR AND AS RECOMMENDED BY THE PIPE MANUFACTURER. HARDWARE SHALL BE TYPE 304 STAINLESS STEEL OR BETTER AND SUITABLE FOR USE WITH HDPE FITTINGS. THE HARDWARE AND BACK-UP RING FLANGES SHALL HAVE A MINIMUM PRESSURE RATING EQUAL TO OR GREATER THAN THE PIPE TO WHICH THEY ARE JOINED. PROVIDE NSF-61 CERTIFIED EPDM GASKETS OR AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
 - ALTERNATIVES MAY BE CONSIDERED PENDING APPROVAL BY THE ENGINEER.
 - DUCTILE IRON FITTINGS:
 - FITTINGS TO ANSI A21.10/AWWA C110 AND ANSI A21.53/AWWA C153.
 - FLANGES TO BE FACED AND DRILLED TO CLASS 125 ANSI B16.1 STANDARD.
 - 15.1.2 GREY OR DUCTILE IRON MATERIAL.
 - 15.1.3 PRESSURE CLASS 125.
 - 15.1.4 CEMENT-MORTAR-LINED TO ANSI/AWWA C104/A21.4.
 - FITTING BOLTS:
 - FLANGE BOLTS, NUTS AND WASHERS: GALVANIZED CARBON STEEL, GRADE B, TO ASTM A307 AND ASTM A563.
 - 16.1.1 HEAVY HEX HEAD SERIES.
 - 16.1.2 SIZE, NUMBER AND LENGTH AS SHOWN IN AWWA C110 AND C115 FOR PLAIN FLANGE CONNECTIONS.
 - BOLTS, NUTS AND WASHERS FOR SPECIAL CONNECTIONS: TO MANUFACTURER'S REQUIREMENTS.
 - 16.2.1 WHERE NO REQUIREMENTS ARE MENTIONED USE FLANGE BOLTS, NUTS AND WASHERS OF SIZE, NUMBER AND LENGTH TO SUIT.
- GASKETS:
 - FLANGE GASKETS:
 - 17.1.1 1.6 MM PLAIN OR CLOTH INSERTED RED RUBBER TO ANSI/AWWA C111/A21.11 SUITABLE FOR USE IN WATER APPLICATIONS.
- POLYVINYL CHLORIDE (PVC) SCHEDULE 80:
 - PIPE:
 - 2.1.1 PVC, TYPE 1, GRADE 1, OR CLASS 12454-B; TO ASTM D1784, D1785 AND D2467 SCHEDULE 80 UNLESS NOTED OTHERWISE.
 - 2.1.2 PVC PIPE ARE MANUFACTURED FROM MATERIALS CERTIFIED NSF-61 FOR USE IN POTABLE WATER SERVICE.
 - FITTINGS:
 - 2.2.1 SOCKET AND THREADED TYPE TO ASTM D2467 AND D2466 TO MATCH PIPE.
 - FLANGES:
 - 2.3.1 CLASS 150 STANDARD WITH HOLE PATTERN TO ANSI B16.1; ASTM D4024 AND CONFORMING TO PIPE AND FITTINGS STANDARDS AS SPECIFIED ABOVE. VANSTONE TYPE EXCEPT WHERE INDICATED AS ONE-PIECE MOLDED HUB FLAT-FACED TYPE. INSTALL 304 STAINLESS STEEL SPLIT

- BACKING RINGS.
 - GASKETS:
 - 24.1. EPDM, ANSI CLASS 150, FULL-FACE TYPE WITH RAISED DOUBLE O-RING PROFILE FOR PLASTIC FLANGES OR EQUAL. WHEN MATING RAISED FACE FLANGES, PROVIDE FITTER GASKET BETWEEN OD OF RAISED FACE TO OD OF FLANGE. GASKETS MUST BE CERTIFIED NSF-61 FOR POTABLE WATER SERVICE.
 - FLANGE BOLTS, NUTS AND WASHERS:
 - 25.1. GALVANIZED CARBON STEEL, GRADE B, TO ASTM A307 AND ASTM A563.
 - 25.1.1 HEAVY HEX HEAD SERIES.
 - 25.1.2 SIZE, NUMBER AND LENGTH AS SHOWN IN AWWA C110 AND C115 FOR PLAIN FLANGE CONNECTIONS.
 - PRIMER AND SOLVENT CEMENT:
 - 25.2.1 TO ASTM 2664 AND MANUFACTURER'S RECOMMENDATIONS.
 - THREAD LUBRICANT:
 - 25.3.1 TEFLON TAPE.
 - GATE VALVES:
 - MUELLER MODEL R2361, OR EQUAL, RESILIENT WEDGE GATE VALVE CONFORMING TO ANSI/AWWA C515 AND THE FOLLOWING SPECIFICATIONS:
 - DUCTILE IRON BODY AND COVER, OS&Y CONFIGURATION.
 - CLASS 125 FLANGED CONNECTIONS TO ANSI B16.1.
 - DUCTILE IRON WEDGE COMPLETELY ENCAPSULATED WITH SBR ASTM D2000 OR EQUAL.
 - BODY AND BONNET SHALL BE COATED WITH A FUSION BONDED EPOXY ON BOTH THE INTERIOR AND EXTERIOR THAT COMPLIES WITH ANSI/AWWA C550.
 - CERTIFIED NSF 61.
 - HAND WHEEL ACTUATOR.
 - BUTTERFLY VALVES:
 - BUTTERFLY VALVE (LUGGED):
 - 4.1.1 STANDARD OF ACCEPTANCE: BRAY SERIES 31
 - 4.1.2 TYPE: LUG STYLE LINED
 - 4.1.3 BODY MATERIAL: DUCTILE IRON EPOXY COATED WITH EXPOSED HARDWARE SS.
 - DISC MATERIAL: 316 SS
 - SEATLINER MATERIAL: EPDM RESILIENT SEAT
 - SHAFT: 316 SS
 - ACTUATOR: MULTI-POSITION LEVEL LOCK
 - ENDS, CLASS: LUGGED, CLASS 125
 - SERVICE: WATER
 - CERTIFIED NSF-61
 - BALL VALVE (THREADED SS):
 - 5.1.1 STANDARD OF ACCEPTANCE: APOLLO 86-500 SERIES
 - 5.1.2 TYPE: SPLIT BODY, FULL PORT
 - 5.1.3 BODY MATERIAL: STAINLESS STEEL ASTM A351 GR. CF8M
 - 5.1.4 BALL MATERIAL: 316 SS
 - 5.1.5 SEAT MATERIAL: RPTFE
 - 5.1.6 STEM: 316 SS
 - 5.1.7 ACTUATOR: LEVER
 - 5.1.8 ENDS, CLASS: THREADED (NPT), 200WOG
 - 5.1.9 SERVICE: WATER
 - 5.1.10 SIZES: 13 TO 50 MM
 - 5.1.11 CERTIFIED NSF-61
- URECON PRE-INSULATED PIPE SYSTEM:
 - GENERAL:
 - 6.1.1 THE PIPE SHALL BE INSULATED USING THE UNIQUE TWO FILL U.I.P. FACTORY INSULATION PROCESS, AS SUPPLIED BY URECON LTD. COMPLETE WITH INTEGRAL CONDUIT(S) FOR ELECTRIC HEAT TRACE CABLE. THE INSULATION OF ASSOCIATED JOINTS, FITTINGS AND ACCESSORIES SHALL BE AS PER URECON'S RECOMMENDATIONS. THE PRODUCT SHALL BE MANUFACTURED IN ACCORDANCE TO ISO 9001 STANDARDS, OR APPROVED EQUAL.
 - PIPE PREPARATION:
 - 6.2.1 PIPE AND PE CASING JACKET SHALL BE CLEANED OF SURFACE DUST OR DIRT TO ENSURE ADHESION OF THE FOAM TO THE PIPE AND INNER JACKET SURFACE.
 - INSULATION:
 - 6.3.1 MATERIAL: RIGID POLYURETHANE FOAM, FACTORY APPLIED.
 - 6.3.2 THICKNESS: 50mm (2 IN).
 - 6.3.3 DENSITY: (ASTM D1622) 35 TO 48 Kg/m³ (2.2 TO 3.0 LBS/FT³)
 - 6.3.4 CLOSED CELL CONTENT: (ASTM D6226) 90%, MINIMUM.
 - 6.3.5 WATER ABSORPTION: (ASTM D2842) 4.0% BY VOLUME.
- AGGREGATE MATERIALS
 - SCREENED PIT RUN GRAVEL - PIPE BEDDING
 - 8.1.1 (MAXIMUM SIZE 25mm) FREE FROM CLAY LUMPS, CEMENTATION, ORGANIC MATERIAL, FROZEN MATERIAL, AND OTHER DELETERIOUS MATERIALS.
 - RIP RAP
 - 8.2.1 NOT MORE THAN 10% OF TOTAL VOLUME OF STONES WITH INDIVIDUAL VOLUME LESS THAN 0.12m³
 - 8.2.2 NOT LESS THAN 50% OF TOTAL VOLUME OF STONES WITH INDIVIDUAL VOLUME OF 0.35m³.
 - 8.2.3 REMAINING PERCENTAGE OR TOTAL VOLUME TO HAVE UNIFORM DISTRIBUTION OF STONES BETWEEN 0.12m³ AND 0.35m³.
- FOR ALL MATERIAL, SIEVE ANALYSIS IS TO BE SUPPLIED TO AND APPROVED BY ENGINEER PRIOR TO PLACEMENT.
- PRESSURE GAUGES
 - STANDARD OF ACCEPTANCE: ASHCROFT TYPE 1009SL OR APPROVED EQUAL.
 - FEATURES:
 - 9.2.1 DIAL SIZE: 100mm
 - 9.2.2 CASE: 304 SS OR BETTER
 - 9.2.3 RANGE: 0-150 PSI, DUAL SCALE (KPA/PSI).
 - 9.2.4 GAUGE FILL: GLYCERIN.
- TEMPERATURE GAUGES
 - STANDARD OF ACCEPTANCE: ASHCROFT TYPE CI BIMETAL OR APPROVED EQUAL.
 - FEATURES:
 - 10.2.1 DIAL SIZE: 75mm
 - 10.2.2 CASE: 304 SS OR BETTER
 - 10.2.3 RANGE: -20 °C TO +20°C, DUAL SCALE (F/C).
 - 10.2.4 THERMOWELL AS REQUIRED. 316 SS BODY.
- HDPE PIPE TESTING
 - PROVIDE EQUIPMENT AND MATERIALS REQUIRED IN PERFORMANCE OF HYDROSTATIC AND LEAKAGE TESTS. PROVIDE DIVERS, EQUIPMENT AND VESSELS AS REQUIRED FOR PROPER PERFORMANCE OF TESTING IN RIVER FOR REQUIRED INSTALLATION.
 - TESTING METHODS SHALL CONFORM TO THOSE RECOMMENDED BY THE PIPE MANUFACTURER. IN PARTICULAR, MAKE PROVISIONS FOR EXPANSION/RELAXING REQUIREMENTS OF HDPE PIPE UNDER TEST CONDITIONS. PROVIDE A WRITTEN PROPOSED METHOD OF TESTING AT LEAST TWO (2) WEEKS PRIOR TO TESTING WHICH WILL BE REVIEWED WITH COMMENTS FROM THE ENGINEER, OWNER AND HDPE PIPE MANUFACTURER.
 - EXAMINE EXPOSED PIPE, JOINTS, FITTINGS AND APPURTENANCES AFTER CONNECTIONS ARE MADE AND WHILE SYSTEM IS UNDER PRESSURE.
 - PRESSURE TESTING
 - 11.4.1 FOLLOWING FUSING AND COMPLETION OF 100 MM HDPE PUMP DISCHARGE PERFORM PRESSURE TESTING IN THE PRESENCE OF AND TO THE SATISFACTION OF THE CONSULTANT.
 - 11.4.2 PERFORM PRESSURE TEST AS RECOMMENDED BY THE PIPE MANUFACTURER, ASTM, CSA AND AWWA STANDARDS.
 - 11.4.3 REMOVE OR ISOLATE ANY DEVICE NOT RATED FOR TEST PRESSURE.
 - 11.4.4 RETEST IF NEEDED FOLLOWING REPAIRS AND MODIFICATIONS APPROVED BY THE CONSULTANT.
 - 11.4.5 PRESSURIZATION OF THE SYSTEM IS NOT TO EXCEED A TOTAL OF 8 HOURS. IF UNSUCCESSFUL, PIPING IS TO BE DEPRESSURIZED AND ALLOWED TO REST FOR A MINIMUM OF 8 HOURS BEFORE RETESTING.
 - 11.4.6 TEST PIPING TO NATIONAL BUILDING CODE AND
- GENERAL SITE PREPARATION:
 - REMOVE DEBRIS, OBSTRUCTIONS, ICE AND SNOW FROM SURFACES WHERE THE NEW INTAKE IS LOCATED.
 - ANY DAMAGE TO EXISTING BUILDING OR INTAKE PENETRATION IS CONSIDERED INCIDENTAL AND MUST BE REPAIRED OR REPLACED.
 - PROVIDE PROPER STORAGE AND PROTECTION FOR ALL PIPING AND EQUIPMENT PRIOR TO AND DURING INSTALLATION, AS RECOMMENDED BY THE MANUFACTURERS. EXTRA CARE MUST BE TAKEN WITH HDPE PIPE WHEN OUTSIDE TEMPERATURES ARE NEAR OR BELOW FREEZING. THE PIPE LOSES FLEXIBILITY IN LOWER TEMPERATURES. PROVIDE UV PROTECTION OF PIPE IF NEEDED.
 - INSPECT PIPE AND EQUIPMENT FOR DAMAGE PRIOR TO INSTALLATION.
- AGGREGATE MATERIALS
 - SCREENED PIT RUN GRAVEL - PIPE BEDDING
 - 8.1.1 (MAXIMUM SIZE 25mm) FREE FROM CLAY LUMPS, CEMENTATION, ORGANIC MATERIAL, FROZEN MATERIAL, AND OTHER DELETERIOUS MATERIALS.
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- HDPE PIPE TESTING
 - PROVIDE EQUIPMENT AND MATERIALS REQUIRED IN PERFORMANCE OF HYDROSTATIC AND LEAKAGE TESTS. PROVIDE DIVERS, EQUIPMENT AND VESSELS AS REQUIRED FOR PROPER PERFORMANCE OF TESTING IN RIVER FOR REQUIRED INSTALLATION.
 - TESTING METHODS SHALL CONFORM TO THOSE RECOMMENDED BY THE PIPE MANUFACTURER. IN PARTICULAR, MAKE PROVISIONS FOR EXPANSION/RELAXING REQUIREMENTS OF HDPE PIPE UNDER TEST CONDITIONS. PROVIDE A WRITTEN PROPOSED METHOD OF TESTING AT LEAST TWO (2) WEEKS PRIOR TO TESTING WHICH WILL BE REVIEWED WITH COMMENTS FROM THE ENGINEER, OWNER AND HDPE PIPE MANUFACTURER.
 - EXAMINE EXPOSED PIPE, JOINTS, FITTINGS AND APPURTENANCES AFTER CONNECTIONS ARE MADE AND WHILE SYSTEM IS UNDER PRESSURE.
 - PRESSURE TESTING
 - 11.4.1 FOLLOWING FUSING AND COMPLETION OF 100 MM HDPE PUMP DISCHARGE PERFORM PRESSURE TESTING IN THE PRESENCE OF AND TO THE SATISFACTION OF THE CONSULTANT.
 - 11.4.2 PERFORM PRESSURE TEST AS RECOMMENDED BY THE PIPE MANUFACTURER, ASTM, CSA AND AWWA STANDARDS.
 - 11.4.3 REMOVE OR ISOLATE ANY DEVICE NOT RATED FOR TEST PRESSURE.
 - 11.4.4 RETEST IF NEEDED FOLLOWING REPAIRS AND MODIFICATIONS APPROVED BY THE CONSULTANT.
 - 11.4.5 PRESSURIZATION OF THE SYSTEM IS NOT TO EXCEED A TOTAL OF 8 HOURS. IF UNSUCCESSFUL, PIPING IS TO BE DEPRESSURIZED AND ALLOWED TO REST FOR A MINIMUM OF 8 HOURS BEFORE RETESTING.
 - 11.4.6 TEST PIPING TO NATIONAL BUILDING CODE AND
- THermal CONDUCTIVITY: (ASTM C518) 0.020 TO 0.025 W/M°C (0.14 TO 0.17 BTU IN/FT² HR °F).
- TEMPERATURE RANGE: CRYOGENIC TO 93.3 °C (200 °F).
- PE CASING OUTER JACKET
- THE OUTER PROTECTIVE JACKET SHALL CONSIST OF BLACK PE, UV INHIBITED, FACTORY APPLIED WITH THE FOLLOWING SPECIFICATIONS:
 - 4.1.1 CASING SHALL BE EXTRUDED FROM POLYETHYLENE RESIN WITH CELL CLASS REQUIREMENTS 334360C AS DEFINED IN ASTM D3350-12.
 - 4.1.2 POLYETHYLENE COMPOUND SHALL BE OF COLOR AND UV STABILIZER CODE C (BLACK) AS SPECIFIED IN ASTM D3350, WITH A TARGET RANGE OF 2 TO 2.5% WELL DISPERSED CARBON BLACK (MAX. 2.8%).
 - 4.1.3 JACKET THICKNESS SHALL BE 3.81 MM (150 MILS) TO 7.62 mm (300 MILS) DEPENDING ON PIPE DIAMETER AND PE CASING AVAILABILITY FROM SUPPLIER.
- INSULATION KITS FOR FITTINGS
 - 6.5.1 INSULATION KITS FOR FITTINGS SHALL CONSIST OF RIGID POLYISOCYANURATE OR POLYURETHANE FOAM HALF SHELLS COMPLETE WITH A HEAVY POLYMER PROTECTIVE COATING ON THE OUTSIDE SURFACES. ALL INSULATION KITS SHALL BE SUPPLIED COMPLETE WITH SILICONE CAULKING, STAINLESS STEEL BANDS AND GEAR CLAMPS. IF THE INSULATION SHELLS ARE FORM HUGGING TO THE FITTING, 152.4 mm (6 IN.) WIDE PE COVER SHEETS WITH STAINLESS STEEL BANDS AND GEAR CLAMPS SHALL BE SUPPLIED FOR EACH END OF THE KIT, OR AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
 - RIGID POLYISOCYANURATE OR POLYURETHANE FOAM
 - 6.5.2.1 DENSITY: (ASTM D 1622) 32 Kg/m³ (2.0 LBS/FT³).
 - 6.5.2.2 COMPRESSIVE STRENGTH: (ASTM D1621) 124 TO 186kPa (18 TO 27 LBS/IN²).
 - 6.5.2.3 CLOSED CELL CONTENT: (ASTM D6226) 90%, MINIMUM.
 - 6.5.2.4 WATER ABSORPTION: (ASTM D2842) 2.0% BY VOLUME.
 - 6.5.2.5 K FACTOR: (ASTM C518) 0.027 W/M°C (0.19 BTU IN/FT² HR °F).
 - 6.5.2.6 THICKNESS: SHALL MATCH PIPE INSULATION THICKNESS.
 - POLYMER COATING, URECON BL-100-20EP
 - TWO COMPONENT HIGH DENSITY POLYURETHANE COATING, BLACK IN COLOUR
 - 6.5.3.2 DENSITY: 1170 Kg/m³ (73 LBS/FT³).
 - 6.5.3.3 DUROMETER D SCALE 60.
 - 6.5.3.4 TENSILE STRENGTH: 11.10 mPa (1610 LBS/IN²).
 - 6.5.3.5 TEAR STRENGTH: 26.5 N/mm (151 LBS/IN).
 - 6.5.3.6 THICKNESS: 2.54mm (100 MILS) OUTSIDE SURFACES, 0.51MM (20 MILS) INSIDE SURFACES.
- GENERAL SITE PREPARATION:
 - REMOVE DEBRIS, OBSTRUCTIONS, ICE AND SNOW FROM SURFACES WHERE THE NEW INTAKE IS LOCATED.
 - ANY DAMAGE TO EXISTING BUILDING OR INTAKE PENETRATION IS CONSIDERED INCIDENTAL AND MUST BE REPAIRED OR REPLACED.
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 - INSPECT PIPE AND EQUIPMENT FOR DAMAGE PRIOR TO INSTALLATION.
- AGGREGATE MATERIALS
 - SCREENED PIT RUN GRAVEL - PIPE BEDDING
 - 8.1.1 (MAXIMUM SIZE 25mm) FREE FROM CLAY LUMPS, CEMENTATION, ORGANIC MATERIAL, FROZEN MATERIAL, AND OTHER DELETERIOUS MATERIALS.
 - RIP RAP
 - 8.2.1 NOT MORE THAN 10% OF TOTAL VOLUME OF STONES WITH INDIVIDUAL VOLUME LESS THAN 0.12m³
 - 8.2.2 NOT LESS THAN 50% OF TOTAL VOLUME OF STONES WITH INDIVIDUAL VOLUME OF 0.35m³.
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- FOR ALL MATERIAL, SIEVE ANALYSIS IS TO BE SUPPLIED TO AND APPROVED BY ENGINEER PRIOR TO PLACEMENT.
- PRESSURE GAUGES
 - STANDARD OF ACCEPTANCE: ASHCROFT TYPE 1009SL OR APPROVED EQUAL.
 - FEATURES:
 - 9.2.1 DIAL SIZE: 100mm
 - 9.2.2 CASE: 304 SS OR BETTER
 - 9.2.3 RANGE: 0-150 PSI, DUAL SCALE (KPA/PSI).
 - 9.2.4 GAUGE FILL: GLYCERIN.
- TEMPERATURE GAUGES
 - STANDARD OF ACCEPTANCE: ASHCROFT TYPE CI BIMETAL OR APPROVED EQUAL.
 - FEATURES:
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 - 10.2.3 RANGE: -20 °C TO +20°C, DUAL SCALE (F/C).
 - 10.2.4 THERMOWELL AS REQUIRED. 316 SS BODY.
- HDPE PIPE TESTING
 - PROVIDE EQUIPMENT AND MATERIALS REQUIRED IN PERFORMANCE OF HYDROSTATIC AND LEAKAGE TESTS. PROVIDE DIVERS, EQUIPMENT AND VESSELS AS REQUIRED FOR PROPER PERFORMANCE OF TESTING IN RIVER FOR REQUIRED INSTALLATION.
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 - 6.5.2.4 WATER ABSORPTION: (ASTM D2842) 2.0% BY VOLUME.
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 - 6.5.3.2 DENSITY: 1170 Kg/m³ (73 LBS/FT³).
 - 6.5.3.3 DUROMETER D SCALE 60.
 - 6.5.3.4 TENSILE STRENGTH: 11.10 mPa (1610 LBS/IN²).
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 - RIP RAP
 - 8.2.1 NOT MORE THAN 10% OF TOTAL VOLUME OF STONES WITH INDIVIDUAL VOLUME LESS THAN 0.12m³
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-

ANCHOR (TYP.)



GUY WIRE ASSEMBLY

	GUY SIZE/TYPE	GUY TERM. TYPE (ANCHOR)	SHACKLE SIZE (ANCHOR)	TURNBUCKLE SIZE/TYPE	SHACKLE SIZE (TOWER)	GUY TERM. TYPE (TOWER)
GUY 1	1/2" EHS	(4) CROSBY CLIPS G-450	5/8"-CROSBY G-213/S-213	CROSBY EJ-7/8" x 12"	5/8"-CROSBY G-213/S-213	5/8"-CROSBY G-213/S-213
GUY 2	1/2" EHS	(4) CROSBY CLIPS G-450	5/8"-CROSBY G-213/S-213	CROSBY EJ-7/8" x 12"	5/8"-CROSBY G-213/S-213	5/8"-CROSBY G-213/S-213
GUY 3	1/2" EHS	(4) CROSBY CLIPS G-450	5/8"-CROSBY G-213/S-213	CROSBY EJ-7/8" x 12"	5/8"-CROSBY G-213/S-213	5/8"-CROSBY G-213/S-213

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

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No.	Issue	Date



PERMIT OF PRACTICE
EXP SERVICES INC.

Signature Brian A. Brown

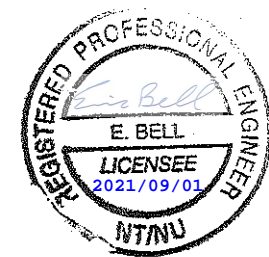
Date 2021-09-01

PERMIT NUMBER: P483
NT/NU Association of Professional
Engineers and Geoscientists

1	ISSUED FOR CONSTRUCTION	2021.SEP.01
0	ISSUED FOR TENDER	2021.JUL.26
No.	Revision	Date

ISSUED FOR CONSTRUCTION

Professional Seal(s)



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Dwg Standards Ckd By

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Design Checked By:

Scale: NOT TO SCALE

Project Title

GOVERNMENT
OF NUNAVUT
POND INLET
NEW TRUCK FILL
WATER INTAKE

Dwg. Title

ANCHOR DETAILS

Project No.

FRE-00257777-A0

Dwg. No.

4-11

Rev. No.

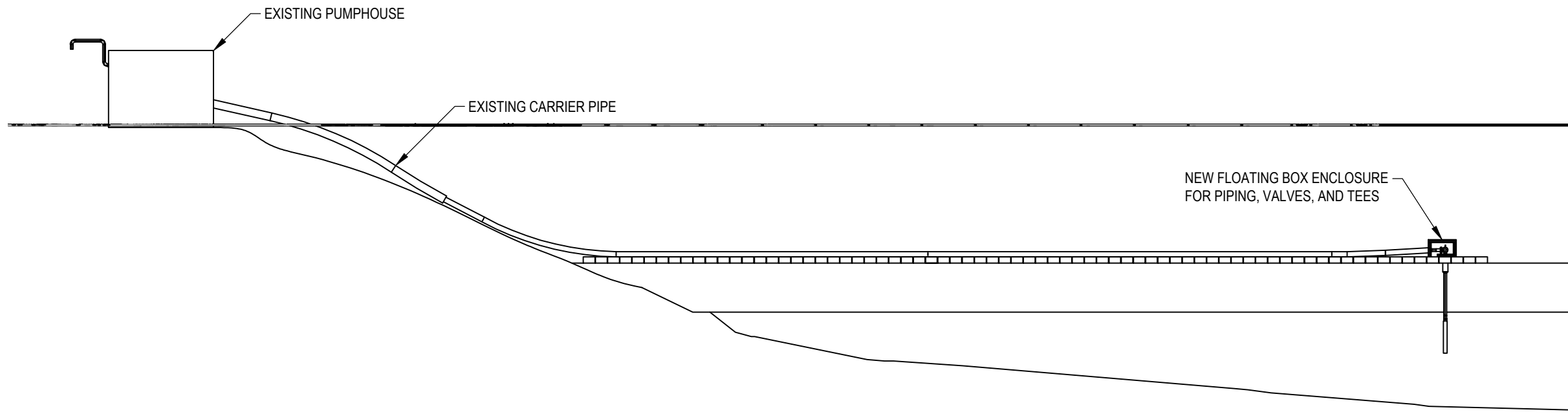
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NEP/CAT/PR/FRE-0025777-A/4680 EXECUTION/AS-BUILT DRAWINGS/2021 DESIGN/3.2 POWER DISTRIBUTION AND HEAT TRACE LAYOUT

BRANDON DRAKE

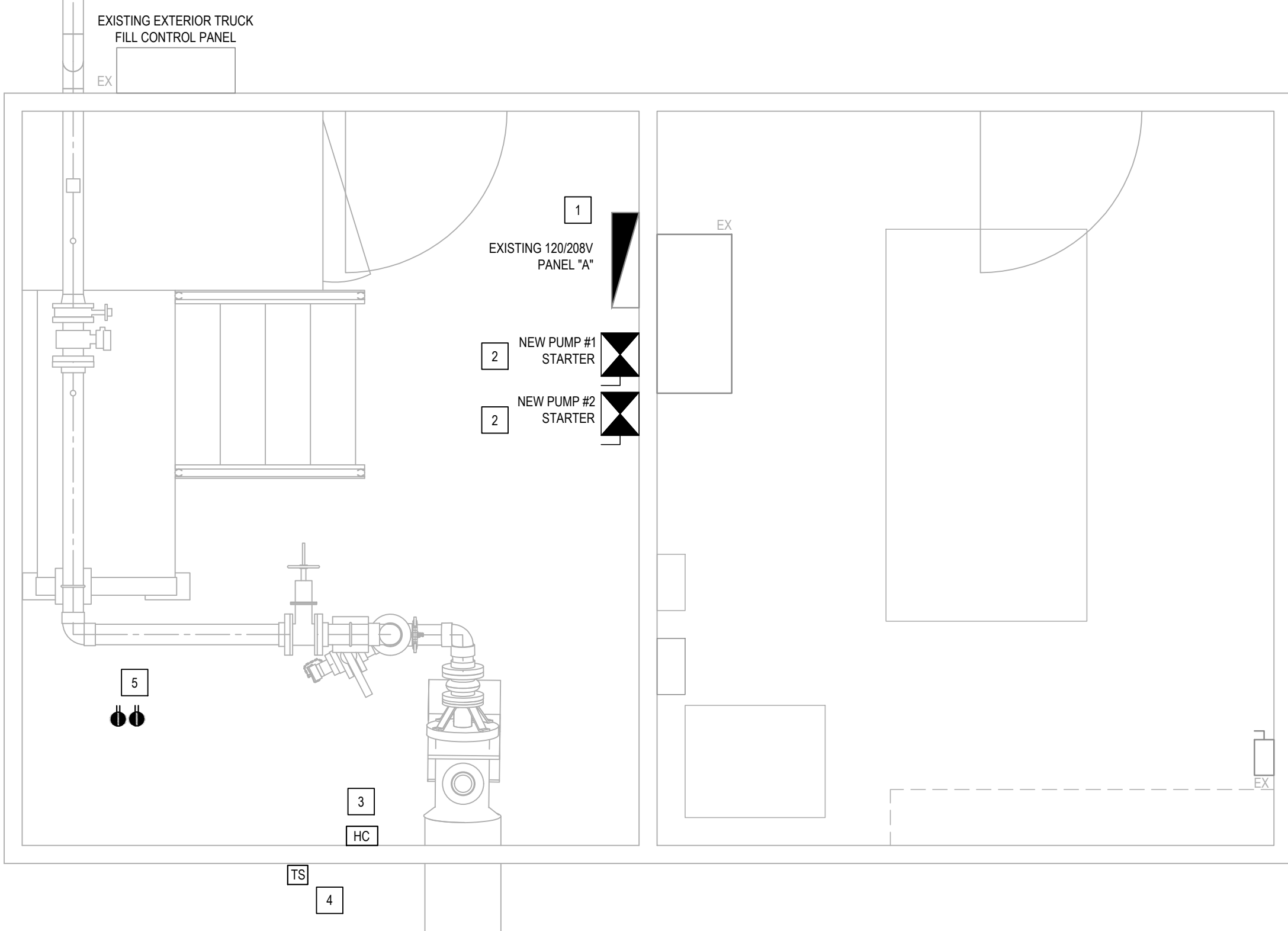
ELECTRICAL SPECIFICATIONS

1. **GENERAL**
 - 1.1. **GENERAL REQUIREMENTS**
 - 1.1.1. PERFORM THE WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL BUILDING CODE OF CANADA ADOPTED BY LOCAL AUTHORITIES HAVING JURISDICTION, CSA C22.18 24TH EDITION CANADIAN ELECTRICAL CODE 2018, AND OTHER CODES OF TERRITORIAL OR LOCAL APPLICATION, INCLUDING AMENDMENTS.
 - 1.1.2. THE ELECTRICAL CONTRACTOR SHALL MAKE A THOROUGH EXAMINATION OF THE SITE AND REVIEW OTHER TRADE'S DRAWINGS, SPECIFICATIONS, AND ADDENDUMS TO COORDINATE ASSOCIATED ELECTRICAL WORK. ADDITIONAL COSTS WILL NOT BE CONSIDERED DUE TO A FAILURE TO ADHERE TO THIS REQUIREMENT.
 - 1.1.3. DRAWINGS FOR THE ELECTRICAL WORK ARE SHOWN DIAGRAMMATICALLY. THEY ARE INTENDED TO CONVEY THE SCOPE OF WORK AND TO INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT.
 - 1.1.4. PAY FEES AND SUBMIT TO INSPECTION DEPARTMENTS NECESSARY NUMBER OF DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK. OBTAIN DEVIATION APPROVALS AS REQUIRED. FURNISH CERTIFICATES OF ACCEPTANCE FROM ELECTRICAL INSPECTION DEPARTMENT AND AUTHORITIES HAVING JURISDICTION UPON COMPLETION OF WORK TO ENGINEER.
 - 1.1.5. WORK SHALL BE WARRANTED FOR ONE (1) YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION.
 - 1.1.6. COMPLY WITH THE REQUIREMENTS OF WSCC.
 - 1.1.7. PLAN AND SCHEDULE SHUTDOWNS OF EXISTING SERVICES IN CONSULTATION WITH OWNER. MINIMIZE IMPACT AND DOWNTIME OF FACILITY OPERATIONS. OWNER'S DIRECTIVES TO BE STRICTLY FOLLOWED IN THIS REGARD.
 - 1.1.8. WHERE NEW WORK CONNECTS WITH EXISTING, AND WHERE EXISTING WORK IS ALTERED, CUT, PATCH, AND MAKE GOOD TO MATCH EXISTING WORK. THIS INCLUDES SECTIONS OF EXISTING WORK AFFECTED BY THE REMOVAL OF EXISTING SERVICES.
 - 1.1.9. WHERE UNKNOWN SERVICES ARE ENCOUNTERED, IMMEDIATELY ADVISE OWNER'S REPRESENTATIVE. CONFIRM FINDINGS IN WRITING.
 - 1.2. **SCOPE OF WORK**
 - 2.1. SUPPLY AND INSTALL BREAKERS, STARTERS AND FEEDERS FOR NEW SUBMERSIBLE PUMPS.
 - 2.2. SUPPLY AND INSTALL DUPLEX RECEPTACLES, BREAKERS, AND WIRING FOR CHLORINE PUMPS.
 - 2.3. SUPPLY AND INSTALLATION OF HEAT TRACING SYSTEM FOR NEW PIPING INCLUDING HEATING CABLES, SENSORS, ELECTRONIC THERMOSTAT, ETC.
 - 1.3. **SUBMITTALS**
 - 3.1. SUBMIT SHOP DRAWINGS ON SPECIFIED EQUIPMENT PRIOR TO ORDERING EQUIPMENT. PROVIDE ADDITIONAL SHOP DRAWINGS AS REQUESTED BY ENGINEER.
 - 3.2. OBTAIN ONE SET OF WHITE PRINTS AND KEEP THEM ON SITE FOR THE EXCLUSIVE PURPOSE OF RECORDING CHANGES OF THE CONDUIT, EQUIPMENT AND DEVICES, ETC. THESE DRAWINGS SHALL BE KEPT UP TO DATE AND TURNED OVER TO THE ENGINEER UPON COMPLETION THE CONTRACT. DRAWINGS SHALL BE STAMPED WITH THE CONTRACTORS SIGNATURE AND BE LABELED CLEARLY AS "AS-BUILT".
 - 3.3. PRESERVE OPERATION, MAINTENANCE AND INSTALLATION INSTRUCTIONS SUPPLIED WITH EQUIPMENT. THE INSTRUCTIONS WILL BE NEATLY BOUND IN A BINDER AND PRESENTED TO THE OWNERS AT THE TIME OF SUBSTANTIAL COMPLETION OF THE WORK.
 - 1.4. **GENERAL MATERIALS**
 - 4.1. **JUNCTION AND PULL BOXES**
 - 4.1.1. USE BOXES PVC CONSTRUCTION WITH SCREW-ON FLAT COVERS UNLESS INDICATED OTHERWISE.
 - 4.1.2. SHALL BE SURFACE MOUNTED, UNLESS OTHERWISE NOTED
 - 4.1.3. NEMA4X AS INDICATED.
 - 4.1.4. SUPPORT BOXES INDEPENDENTLY OF CONNECTING CONDUITS.
 - 4.2. **CONDUCTORS**
 - 4.2.1. USE COPPER CONDUCTORS WITH 600V INSULATION OF CHEMICALLY CROSS-LINKED THERMOSETTING POLYETHYLENE MATERIAL.
 - 4.2.2. USE TECK90 FOR EXTERIOR EQUIPMENT CONNECTIONS. TECK90 SHALL BE COLD BEND AND IMPACT RATED FOR -40°C. TECK90 CABLEING SHALL BE MEGGER TESTED UPON COMPLETION OF INSTALLATION. SUBMIT RESULTS FOR FINAL REVIEW.
 - 4.2.3. CONDUCTORS SHALL BE SIZED AS REQUIRED FOR THE AMPACITY OF THE BRANCH CIRCUIT AND IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE AND PER THE FOLLOWING SPECIFICATIONS.
 - 4.2.4. USE STRANDED CONDUCTORS FOR 8 AWG AND LARGER.
 - 4.2.5. MINIMUM SIZE OF CONDUCTORS FOR POWER: 12 AWG.
 - 1.5. **HEATING CABLE SYSTEM**
 - 5.1. **OVERVIEW:**
 - 5.1.1. SUBMERSED WATER PIPE SPECIFIC HEATING CABLE SYSTEM TO BE INSTALLED ALONG THE EXTERIOR OF PIPE AND COVERED BY THE PIPE INSULATION. SYSTEM TO BE COMPLETE WITH HEATING CABLES, CONTROLLER, TEMPERATURE SENSOR, POWER CONNECTIONS KIT, END TERMINATION KIT, JUNCTION BOX, POWER AND CONTROL WIRING, AND CONDUIT.
 - 5.2. **HEATING CABLE:**
 - 5.2.1. SELF-REGULATING HEATING CABLE: PARALLEL RESISTANCE TYPE C/W PARALLEL NICKLE PLATED COPPER BUS WIRES WITH SELF REGULATING CONDUCTIVE CORE AND A FLUOROPOLYMER OUTER JACKET. CABLE TO ALSO HAVE A TINNED COPPER GROUNDING BRAID. 208V/1PH, 13W/METER CABLEING. ACCEPTABLE MANUFACTURER OR APPROVED EQUAL: nVENT XL-TRACE, URECON, CHROMOLUX.
 - 5.3. **SPLICE AND TERMINATION KITS:**
 - 5.3.1. POWER FEED KIT: CONTAINS ALL MATERIAL TO BRING POWER TO HEATING CABLES. ACCEPTABLE MANUFACTURER OR APPROVED EQUAL: nVENT RAYCLIC-PC, URECON, CHROMOLUX.
 - 5.3.2. TERMINATION KIT: CONTAINS ALL MATERIALS TO TERMINATE HEATING CABLES. ACCEPTABLE MANUFACTURER OR APPROVED EQUAL: nVENT, URECON, CHROMOLUX.
 - 5.4. **CONTROLLER:**
 - 5.4.1. SINGLE POINT ELECTRONIC CONTROLLER C/W 125mm COLOUR TOUCH SCREEN, GROUND FAULT CIRCUITRY CAPABLE OF MULTIPLE HEATING CABLES UP TO 24A AND UP TO TWO (2) TEMPERATURE SENSORS. 208V/1PH. NEMA 4 STEEL ENCLOSURE. ACCEPTABLE MANUFACTURER OR APPROVED EQUAL: nVENT RAYCHEM 465, URECON, CHROMOLUX.
 - 5.5. **INSTALLATION:**
 - 5.5.1. COMPLETE HEATING CABLE SYSTEM INSTALLATION TO MEET CEC 2018 SECTION 62 INCLUDING GROUND FAULT EQUIPMENT PROTECTION.
 - 5.5.2. HEATING CABLE SHALL BE MEGGER TESTED WITH 500VDC MEGGER BEFORE, DURING AND AFTER INSTALLATION OF CABLEING. RESULTS FROM TESTING SHALL BE SUBMITTED FOR REVIEW.
 - 5.5.3. HEATING CABLE LAYOUT AND CONTROL SYSTEM SCHEMATIC ARE DESIGNED USING THE nVENT SELF REGULATING XL-TRACE HEATING CABLE SYSTEM. IF AN ALTERNATE MANUFACTURER OR ALTERNATE nVENT HEATING CABLE IS TO BE INSTALLED, CONTRACTOR SHALL REVISE BREAKER SIZES, WIRING, CONDUIT, LAYOUT OF CABLES, AND JUNCTION BOXES AND PROVIDE FOR REVIEW TO THE ENGINEER PRIOR TO INSTALLATION.
 - 5.5.4. INSTALL JUNCTION BOX SURFACE MOUNTED TO WALL AS PER PLANS.
 - 5.5.5. INSTALL HEATING CABLES TO MANUFACTURER'S INSTRUCTIONS.
 - 5.5.6. SUPPLY AND INSTALL ALL SPLICE KITS, TERMINATION KITS, POWER FEED KITS, AND END TERMINATION KITS AS REQUIRED TO COMPLETE HEATING CABLE INSTALLATION.
 - 5.5.7. WIRE HEATING CABLES THROUGH JUNCTION BOXES AND BACK TO POWER SOURCE.
 - 5.5.8. INSTALL INTERIOR WIRING AND CONDUIT SURFACE MOUNTED INSIDE TRUCK FILL BUILDING.
 - 5.5.9. INSTALL SENSORS AS PER MANUFACTURER'S INSTRUCTIONS.
 - 5.5.10. PAY FOR AND ARRANGE COMMISSIONING BY HEATING CABLE MANUFACTURER'S SERVICE REPRESENTATIVE AND PERFORM TESTS AND VERIFY HEATING CABLE SYSTEM OPERATION. SUBMIT TEST RESULTS AND INCLUDE IN O&M MANUAL.
 - 5.5.11. CONTRACTOR TO MAKE ADJUSTMENTS TO THE SYSTEM TO THE SATISFACTION OF THE OWNER INCLUDING BUT NOT LIMITED TO TIMER SETTINGS AND TEMPERATURE SETTINGS.
 - 5.5.12. SYSTEM TO BE COMPLETE WITH A MANUFACTURER'S TEN (10) YEAR WARRANTY.
 - 1.6. **STARTERS**
 - 6.1. **COMBINATION MAGNETIC STARTER:**
 - 6.1.1. COMBINATION TYPE FVNR MAGNETIC STARTER, SIZED FOR MOTOR CONTROLLER. NON-FUSIBLE DISCONNECT SWITCH, PROVISION FOR LOCKING IN ON/OFF POSITIONS.
 - 6.1.2. CONTACTOR SOLENOID OPERATING, RAPID ACTION TYPE.
 - 6.1.3. MOTOR OVERLOAD PROTECTIVE DEVICE IN EACH PHASE, MANUALLY RESET FROM OUTSIDE ENCLOSURE WITH FRONT DOOR CLOSED.
 - 6.1.4. WIRING AND SCHEMATIC DIAGRAM INSIDE STARTER ENCLOSURE IN VISIBLE LOCATION.
 - 6.1.5. IDENTIFY EACH WIRE TERMINAL FOR EXTERNAL CONNECTIONS, WITHIN STARTER, WITH PERMANENT NUMBER MARKING IDENTICAL TO DIAGRAM.
 - 6.1.6. ACCESSORIES:
 - 6.1.6.1. HAND/OFF/AUTO STANDARD, LABELLED AS INDICATED.
 - 6.1.6.2. INDICATING LIGHT.
 - 6.1.6.3. PHASE MONITORING RELAYS.
 - 6.1.6.4. OVERLOAD RELAYS MANUALLY RESET FROM FRONT WITH DOOR CLOSED.
 - 6.1.6.5. SINGLE PHASE, DRY-TYPE CONTROL TRANSFORMER WITH PRIMARY AND SECONDARY VOLTAGES AS INDICATED, COMPLETE WITH SECONDARY FUSE, INSTALLED IN WITH STARTER AS INDICATED. SIZE CONTROL TRANSFORMER FOR CONTROL CIRCUIT LOAD PLUS 20% SPARE CAPACITY.
 - 6.1.6.6. SPARE NO AND NC AUXILIARY CONTACTS
 - 6.1.6.7. LAMACOID LABEL INDICATING MOTOR CONTROLLED AND PANEL AND CIRCUIT NUMBER FEEDING STARTER.



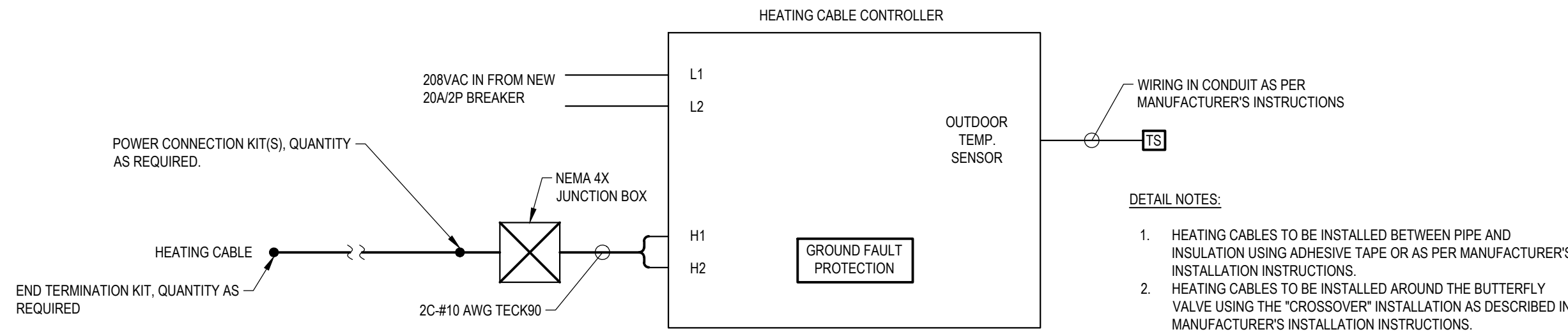
1 SECTION
- SITE PLAN

N.T.S



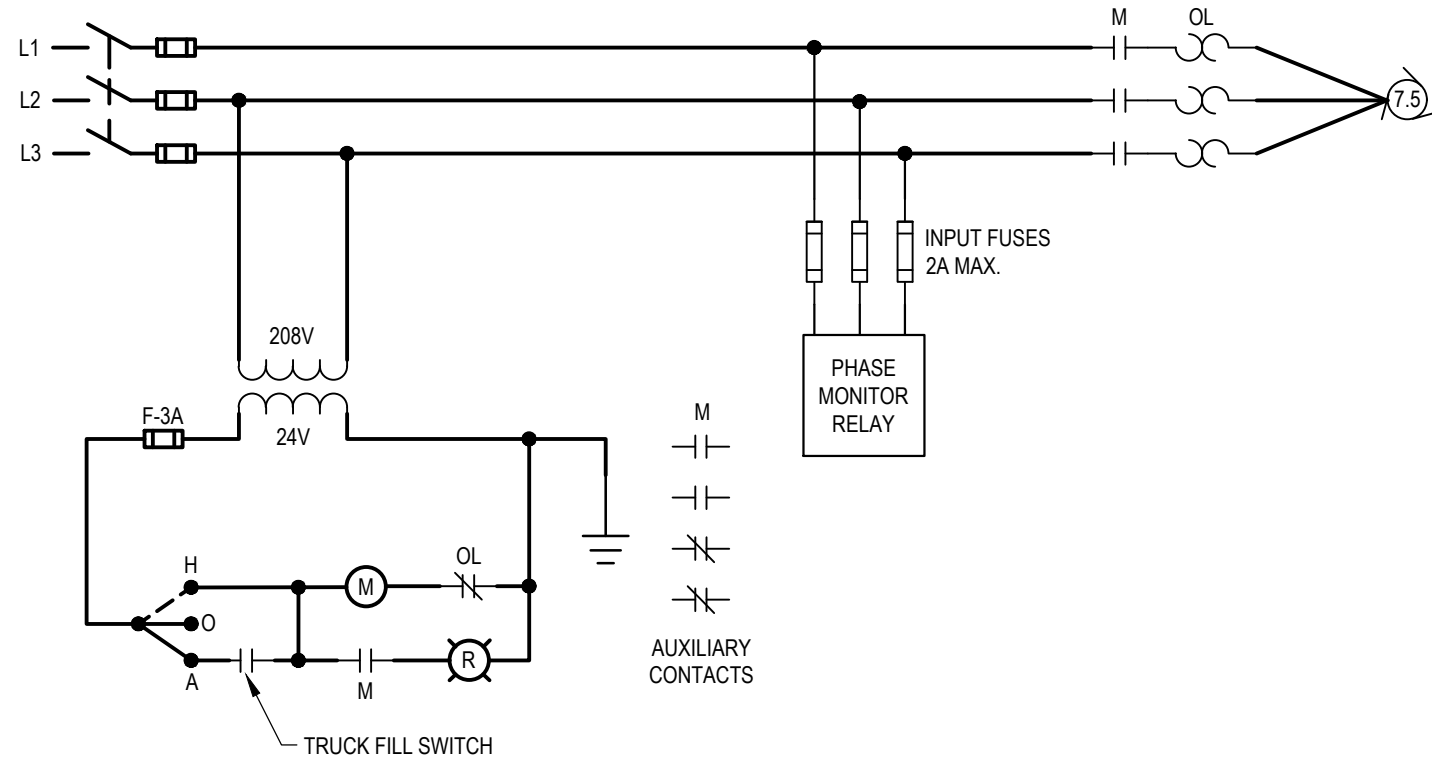
2 PLAN
- PUMPHOUSE ELECTRICAL

1:25



3 DETAIL
- HEATING CABLE SYSTEM WIRING SCHEMATIC

N.T.S



4 DETAIL
- MAGNETIC STARTER WIRING SCHEMATIC

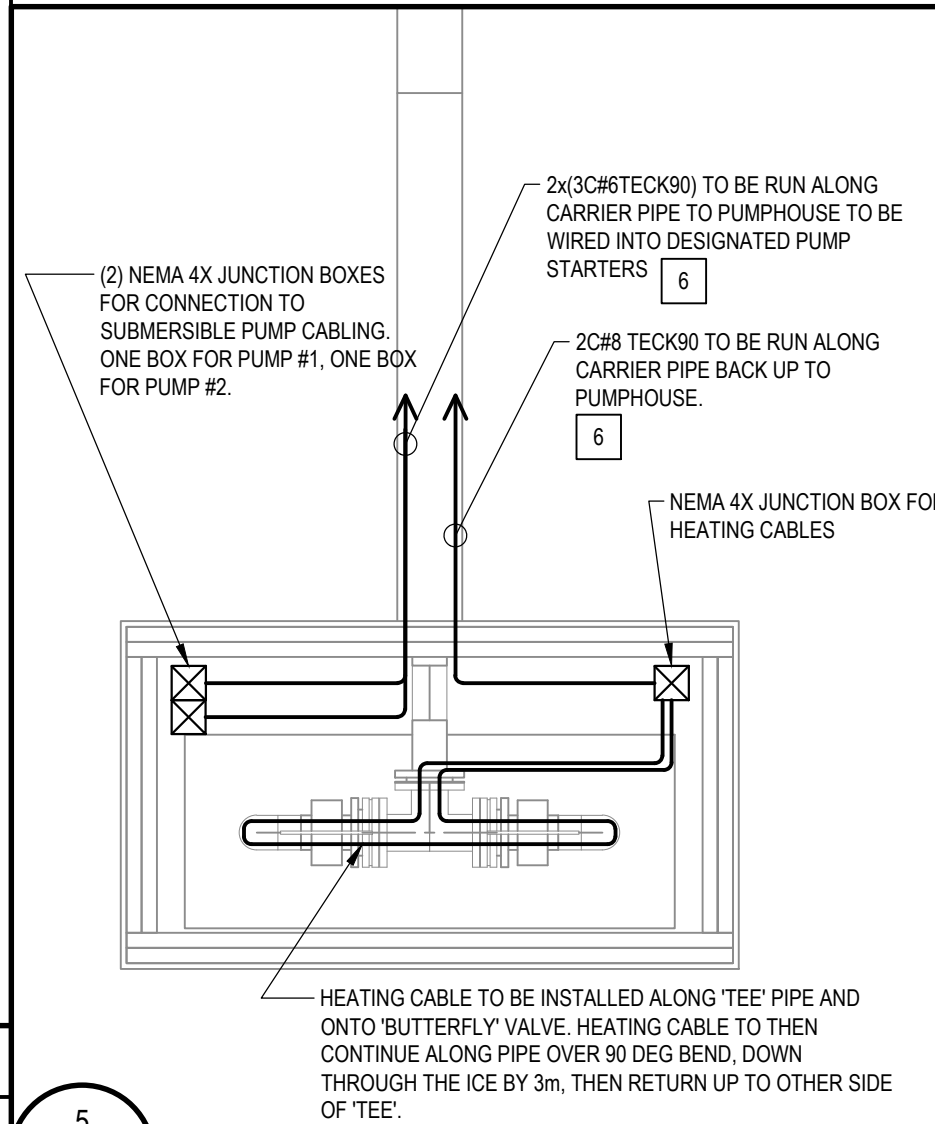
N.T.S

LEGEND

- LIGHT INDICATES EXISTING DEVICES TO REMAIN
- DARK INDICATES NEW WORK
- ☒ JUNCTION BOX
- ☒ SURFACE MOUNT PANELBOARD
- ☒ 20A GFCI DUPLEX RECEPTACLE
- ☒ COMBINATION MAGNETIC STARTER
- ☒ DISCONNECT
- ☒ DIRECT CONNECTION
- ☒ HEATING CABLE CONTROLLER
- EX INDICATES EXISTING TO REMAIN
- DEL INDICATES EXISTING DEVICE TO BE REMOVED

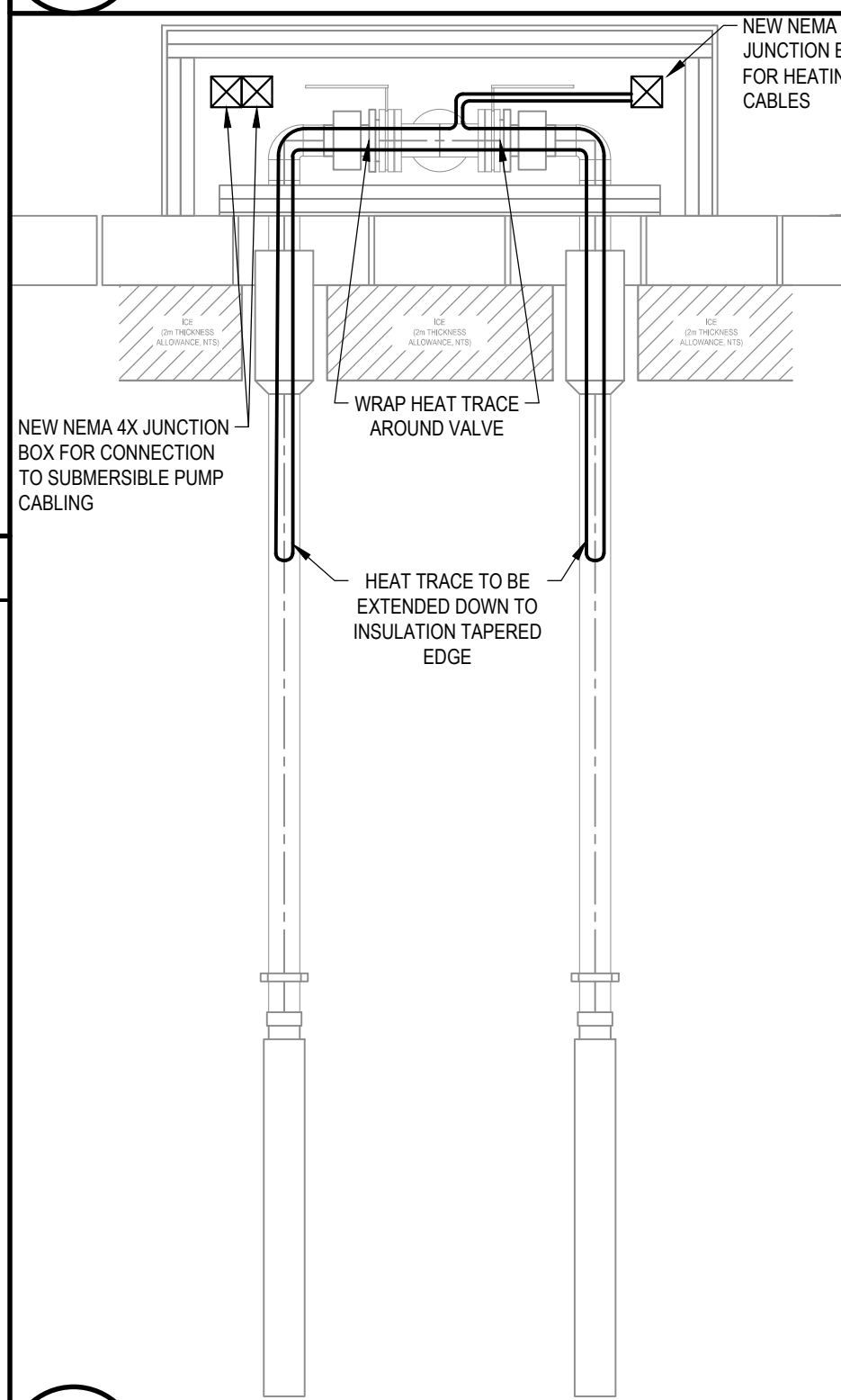
ELECTRICAL KEYNOTES:

- 1 SUPPLY AND INSTALL TWO (2) 60A, 3P BREAKERS TO FEED NEW 7.5HP SUBMERSIBLE PUMPS. WIRE BREAKERS TO COMBINATION MAGNETIC STARTS WITH 3C#6 TECK 90 CABLE.
- 2 SUPPLY AND INSTALL 3C-#6 AWG TECK90 FROM NEW 7.5HP PUMP STARTER TO NEW NEMA 4X JUNCTION BOX INSTALLED IN FLOATING DOCK BOX FOR CONNECTION WITH SUBMERSIBLE PUMP CABLEING SUPPLIED BY PUMP SUPPLIER.
- 3 SUPPLY AND INSTALL HEATING CABLE CONTROLLER, HEATING CABLES, AND TEMPERATURE SENSORS AS PER MANUFACTURER'S INSTRUCTIONS. SUPPLY AND INSTALL 208V/1PH POWER TO CONTROLLER FROM EXISTING PANEL 'A'. SUPPLY AND INSTALL NEW 20A/2P BREAKER IN PANEL. WIRE BREAKER TO CONTROLLER WITH 2-#8 AWG, 1-#10 AWG BOND IN 21mm CONDUIT.
- 4 SUPPLY AND INSTALL TEMPERATURE SENSOR ON EXTERIOR OF BUILDING. WIRE TEMPERATURE SENSOR TO HEATING CABLE CONTROLLER.
- 5 SUPPLY AND INSTALL TWO (2) DUPLEX RECEPTACLES FOR CHLORINE PUMPS. COORDINATE EXACT LOCATION WITH PUMP INSTALLER. WIRE RECEPTACLES TO NEW 20A, 1P BREAKER IN EXISTING PANEL.
- 6 PROVIDE 3m COILED EXTRA TECK90 CABLEING SLACK IN FLOATING BOX ENCLOSURE TO ALLOW FOR MOVEMENT OF FLOATING STRUCTURE.



5 FLOATING DOCK PLAN

1:25



6 FLOATING DOCK SECTION

1:25

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Project Title
**GOVERNMENT OF NUNAVUT
POND INLET NEW TRUCK FILL
WATER INTAKE**

Dwg. Title
**TEMPORARY INTAKE
ELECTRICAL AND HEAT
TRACE LAYOUT**

Project No. **FRE-00257777-A0**

Dwg. No. **26-2** Rev. No. **1**

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