1. SCOPE

1.1. THIS SPECIFICATION PROVIDES THE REQUIREMENTS FOR VARIOUS GEOSYNTHETIC MATERIALS INCLUDING GEOTEXTILE, GEOMEMBRANE, GEOGRID, GEOCELLS, AND GEOSYNTHETIC CLAY LINER.

1.2. RELATED EARTHWORKS SPECIFICATIONS ARE PROVIDED ON OTHER DRAWINGS.

2. GENERAL REQUIREMENTS

2.1. GEOSYNTHETICS SHALL BE INSTALLED BY THE MANUFACTURER, DEALER, OR CONTRACTOR WITH APPROPRIATE TRAINING IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

2.2. TRIM GEOSYNTHETICS AT THE REQUIRED LIMITS OF INSTALLATION. DO NOT PLACE EXCESS MATERIAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

2.3. PLACE ONLY THAT AMOUNT OF GEOSYNTHETIC MATERIAL IN ONE DAY THAT CAN BE COVERED BY OTHER REQUIRED GEOSYNTHETICS AND/OR THE REQUIRED THICKNESS OF BACKFILL.

2.4. CONTINUOUSLY EXAMINE GEOSYNTHETIC MATERIALS FOR THE PRESENCE OF DEFECTS, PROTRUDING AND PENETRATING OBJECTS, TEARS OR PUNCTURES.

2.5. CREATE ANCHOR TRENCHES AS REQUIRED TO ANCHOR GEOSYNTHETIC MATERIALS. TRENCHES SHALL HAVE ROUNDED TOP EDGES TO AVOID SHARP BENDS IN THE GEOSYNTHETIC MATERIAL. ANCHOR TRENCHES SHALL BE ADEQUATELY DRAINED TO PREVENT STANDING WATER AND SOFTENING OF THE SOIL IN THE TRENCH. BACKFILL ANCHOR TRENCHES WITH THE SPECIFIED MATERIAL IN THE SPECIFIED MANNER.

2.6. PRIOR TO PLACEMENT OF MATERIAL, THE SUBGRADE SHALL BE COMPACTED AND LEVELLED AS NECESSARY TO PROVIDE A FIRM SURFACE WITH NO SHARP PROTRUSIONS OF LOOSE SOIL AND INSPECTED BY THE ENGINEER.

2.7. PROTECT GEOSYNTHETICS FROM DAMAGE. REPAIR OR REPLACE DAMAGED MATERIALS. DO NOT ALLOW ANY CONSTRUCTION EQUIPMENT TO OPERATE DIRECTLY ON GEOSYNTHETIC MATERIALS AND ONLY OVER THE AREA ONCE THE NECESSARY MINIMUM THICKNESS OF BACKFILL IS PLACED.

3. SUBMITTALS

3.1. SUBMIT THE FOLLOWING IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND SCHEDULE:

3.1.1. GEOSYNTHETIC WORK PLAN INCLUDING MANUFACTURER'S SPECIFICATIONS, INSTALLATION INSTRUCTIONS, AND MATERIAL DATA FOR PRODUCT(S) TO BE USED.

3.1.2. REDLINE DRAWINGS DRAWING INDICATING LOCATION AND EXTENT OF MATERIALS USED.

3.2. DO NOT PROCEED WITH WORK ASSOCCIATED WITH A SUBMITTAL UNTIL REVIEWED BY THE ENGINEER.

3.3. SUBMITTAL REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FROM THE FULL RESPONSIBILITY OF THE WORK.

4. GEOMEMBRANE

4.1. GEOMEMBRANE SHALL BE HIGH–DENSITY POLYETHYLENE (HDPE), PVC OR LINEAR LOW–DENSITY POLYETHYLENE (LLDPE).

4.2. GASKET MATERIAL SHALL BE NEOPRENE, CLOSED CELL MEDIUM, 6 mm THICK, 50 mm WIDE WITH ADHESIVE ON ONE SIDE, OR OTHER COMPATIBLE GASKET MATERIALS AS REQUIRED.

4.3. METAL BATTENS OR BANDING AND HARDWARE SHALL BE STAINLESS STEEL.

4.4. WATER CUT–OFF MASTIC SHALL BE NEOPRENE FLASHING CEMENT BY POLY–FLEX, INC.

4.5. SEALANT SHALL BE GENERAL ELECTRIC SILICONE, RTV 103.

5. GEOTEXTILE

5.1. NON–WOVEN GEOTEXTILE SHALL BE NILEX 4510.

5.2. WOVEN GEOTEXTILE SHALL BE NILEX 2019 OR LAYFIELD HP370

5.3. ROLLS SHALL BE AT LEAST 4 m WIDE AND 50 m LONG TO AVOID EXCESSIVE JOINTS AND/OR OVERLAPS USING PARTIAL ROLLS,

5.4. PLACE GEOTEXTILE IN A SMOOTH, WRINKLE–FREE AND SLACK CONDITION TO CONFORM TO THE CONTOUR OF THE SUBGRADE WITHOUT BECOMING TAUT WHEN COVERED WITH THE SPECIFIED MATERIAL.

5.5. TEMPORARILY ANCHOR GEOTEXTILE WITH SANDBAGS OR WEIGHTS PLACED AT THE OUTER EDGES, ALONG SEAMS, AND AT OTHER INTERMEDIATE POINTS AS REQUIRED, TO PREVENT DISPLACEMENT.

5.6. PROVIDE A MINIMUM OVERLAP OF 600 mm AT FIELD SEAMS, INCLUDING THOSE OF PATCHES AND REPAIR AREAS.

6. GEOGRID

6.1. UNIAXIAL GEOGRID SHALL BE LAYFIELD E'GRID UNIAXIAL GEOGRID 65R, WIDE WIDTH TENSILE STRENGTH = 90 kN/m, CREEP STRENGTH = 36 kN/m.

6.2. BIAXIAL GEOGRID SHALL BE LAYFIELD E'GRID BIAXIAL GEOGRID 3030, WIDE WIDTH TENSILE STRENGTH = 30 kN/m, STRENGTH AT 2% STRAIN = 11 kN/m.

6.3. GEOGRID SHALL BE PLACED WITH THE STRONG AXIS PERPENDICULAR TO THE WALL, SLOPE, ROAD AXIS, OR AS OTHERWISE SHOWN ON THE DRAWINGS.

6.4. GEOGRID SHALL BE PLACED TO LAY FLAT, PULLED TIGHT, AND HELD IN PLACE BY SUITABLE MEANS UNTIL A SUBSEQUENT SOIL LAYER IS PLACED.

7. GEOSYNTHETIC CLAY LINER (GCL)

7.1. GCL SHALL HAVE A MINIMUM TENSILE GRAB STRENGTH OF 5.0 kN/m MEASURED IN ACCORDANCE WITH ASTM D6768.

7.2. GCL SHALL HAVE A MAXIMUM HYDRATED INTERNAL SHEAR STRENGTH OF 30 kPa AT 500 kPa NORMAL STRESS VERIFIED BY TESTING IN ACCORDANCE WITH ASTM D6243.

7.3. ACCEPTABLE PRODUCT IS CETCO BENTOMAT® 200R.

7.4. PLACE AND SUPPORT GCL IN ACCORDANCE WITH ANY APPLICABLE MANUFACTURER'S WRITTEN INSTRUCTIONS.

7.5. PROVIDE A MINIMUM OF 300 mm OVERLAP.

8. GEOCELL

8.1. GEOCELL SHALL BE PRESTO PRODUCTS GW20V, 100 mm HIGH, 250 mm X 250 mm NOMINAL CELL AREA, 50 MIL MATERIAL THICKNESS, WITH MINIMUM SEAM STRENGTH OF 1420 N.

8.2. SECTION CONNECTORS SHALL BE ATRA POLYETHYLENE CONNECTION KEYS.

8.3. SLOPE ANCHORS SHALL BE ATRA GFRP ANCHORS OR 10M REBAR WITH ATRA CLIPS AS SHOWN ON THE DRAWINGS.

8.4. TENDONS SHALL BE AS SHOWN ON THE DRAWINGS.

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature
Date 2023-06-16
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
A.G. COMPTON
LICENSEE
NT/NU
#L5296
2023-06-16

Growler Energy

Landsvirkjun Power

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
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Canadian Projects Limited
A TETRA TECH COMPANY

NNC

FOR CONSTRUCTION

NUNAVUT NUKKIKSAUTIIT CORP

ANURIQJUAK NUKKIKSAUTIIT PROJECT
CIVIL - PROJECT
GEOSYNTHETICS
SPECIFICATIONS

PROJECT NUMBER 1096-003
CADD NUMBER 4.3.017
DRAWING NUMBER 2124