

File Name: U:\FMS\19-1538-003\19-1538-003 G102.dwg - Tab: LAYOUT Plotted By: JCorias 19/09/09 [Mon 12:37pm]
24"x36"/PLOT SCALE: 1"=1'

GENERAL NOTES

1. ALL DIMENSIONS AND INFORMATION SHALL BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING THE WORK.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME INFORMED OF THE EXACT LOCATION AND ASSUME ALL RESPONSIBILITY FOR DAMAGE TO ALL UTILITIES, SERVICES AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GROUND BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWINGS, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.
3. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER, TO THE COMPLETE SATISFACTION OF ENGINEER.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT THE EXISTING INSTRUMENTATIONS (PIEZOMETERS & SLOPE INCLINOMETERS) FROM DAMAGE DURING CONSTRUCTION.

EXCAVATION

1. UNSUITABLE MATERIAL SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS, OR AS REQUIRED TO COMPLETE THE WORK.
2. CONTRACTOR SHALL CARRY OUT EXCAVATION OPERATIONS IN AN ORDERLY MANNER AND SHALL TAKE SUCH MEASURES AS ARE NECESSARY TO KEEP THE AREAS BEING EXCAVATED AND WORKED FREE FROM STANDING WATER. SUCH MEASURES SHALL INCLUDE BUT MAY NOT BE LIMITED TO SLOPING THE EXCAVATION TO DRAIN, AND TO PROVIDING DRAINS, DITCHES, AND OTHER TEMPORARY DIVERSION AND PROTECTIVE WORKS. SURFACE FLOWS SHALL BE DIVERTED AWAY FROM EXCAVATIONS. SUBSURFACE FLOWS ENTERING THE EXCAVATION SHALL BE SATISFACTORILY CONTROLLED AND PUMPED OUT BY METHODS ACCEPTABLE TO THE ENGINEER.
3. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PRESERVE IN A SOUND, UNDISTURBED CONDITION ALL MATERIAL BELOW AND BEYOND THE LIMITS OF EXCAVATIONS.
4. AT ALL TIMES DURING CONSTRUCTION, CONTRACTOR SHALL ADOPT EXCAVATION PROCEDURES SUCH THAT THE STABILITY OF ANY SLOPE IS NOT IMPAIRED. THE ENGINEER'S ACCEPTANCE OF EXCAVATION PROCEDURES SHALL IN NO WAY RELIEVE CONTRACTOR OF ITS RESPONSIBILITY FOR SAFEGUARDING THE STABILITY OF ALL SLOPES EXCAVATED.
5. NO EXCAVATION WITH A DEPTH GREATER THAN 500 mm SHALL BE LEFT UNATTENDED, OR UNPROTECTED AT ANY TIME DURING THE PERFORMANCE OF THE WORK.
6. EXCAVATED MATERIAL MAY BE USED IN THE CONSTRUCTION OF THE WORK, IF, IN THE OPINION OF THE ENGINEER, THE MATERIAL SATISFIES THE REQUIREMENTS OF THE SPECIFICATIONS.

SHEET PILE

1. SHEET PILE TO COMPLY WITH:
 - a. STEEL - ASTM A328, HOT ROLLED AND MINIMUM FLANGE & WEB THICKNESS OF 9.5mm.
2. CONTRACTOR TO PROVIDE MILL CERTIFICATE TO THE ENGINEER INDICATING THE STEEL MEETS THE REQUIREMENTS.
3. LOCATIONS IDENTIFIED FOR SHEET PILE SHALL USE 7m AND 9m LENGTHS INSTALLED WITH TOP ELEVATION AS SPECIFIED IN THE CONTRACT DRAWINGS.
4. WELDING, IF REQUIRED, SHALL BE IN ACCORDANCE WITH CSA W59 AND SHALL FORM A CONTINUOUS WATERTIGHT SEAM.
5. ALTERNATE METHODS OF CONNECTING SHEET PILE EXTENSION TO EXISTING SHEET PILES ARE PERMITTED UPON REVIEW AND APPROVAL OF THE ENGINEER.
6. TOP OF SHEET PILE SHALL BE COVERED BY GRANULAR MATERIAL OR RIP RAP, DEPENDING ON LOCATION, AND TO THE SATISFACTION OF THE ENGINEER.
7. THE ALIGNMENT AND EXTENT OF THE SHEET PILE TO BE REVISED AS NECESSARY BASED ON OBSERVED FIELD CONDITIONS.

STRIPPING AND DISPOSING OF MATERIAL

1. ADEQUATE MEASURES SHALL BE TAKEN TO PROVIDE PROPER DRAINAGE OF SURFACE WATER FROM STRIPPED AREAS AND TO PREVENT PONDING.
2. TEMPORARY TOPSOIL STOCKPILES MAY BE CONSTRUCTED AS PART OF THE WORK UNDER THIS ITEM AND SHALL BE MAINTAINED AT ALL TIMES IN A CONDITION ACCEPTABLE TO THE ENGINEER. STOCKPILES SHALL BE SLOPED SUFFICIENTLY FOR STABILITY. STOCKPILED MATERIAL SHALL NOT BLOCK DRAINAGE OF NATURAL EXISTING DRAINAGE COURSES.
3. STRIPPED MATERIAL NOT SUITABLE FOR RE-USE ON THIS PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE, AT AN APPROVED AREA.

GABION DISPOSAL

1. REMOVE AND DISPOSE OF WIRE FROM BASKETS INCLUDING METAL BRACKETS AND DETERIORATED WOOD POSTS EXPOSED AT EDGE OF CANAL
2. SALVAGE STONE AND RELOCATE/RESHAPE WITH EXISTING RIP RAP ON WET SIDE SLOPE TO ACHIEVE DESIGN SLOPE. SMOOTH AND MAKE UNIFORM SO NO PROTRUDING (>150 mm) PIECES ABOVE NOMINAL SURFACE OF PLACED MATERIAL.

RIP-RAP

1. WITHIN 7 DAYS OF AWARD OF CONTRACT, CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAME OF SOURCE PIT AND SIEVE TEST DATA FOR RIP RAP MATERIAL SPECIFIED. ADDITIONAL TESTING OF THE MATERIAL MAY BE REQUIRED DURING THE WORK TO DEMONSTRATE CONFORMANCE TO THE SPECIFIED GRADATIONS.
2. RIP RAP MATERIALS SHALL BE HARD, DENSE AND DURABLE LIMESTONE FROM APPROVED QUARRIES. RIP RAP SHALL BE CLEAN AND FREE FROM CRACKS, SEAMS AND INCLUSIONS OF DIRT, SAND, SILT, CLAY AND OTHER DELETERIOUS MATTER AS DETERMINED BY INDIVIDUAL PIECES OF RIP RAP SHALL BE GENERALLY EQUIDIMENSIONAL IN SHAPE WITH THE LARGEST DIMENSION NOT MORE THAN TWICE THE SMALLEST.
3. AFTER PLACEMENT, RIP RAP MATERIAL SHALL BE WELL GRADED WITHIN THE GRADATION LIMITS PROVIDED IN THE CONTRACT DRAWINGS.
4. THE STOCKPILING OF RIP RAP MATERIALS WILL GENERALLY BE PERMITTED. SEGREGATION OF PARTICLE SIZES IN THE STOCKPILE SHALL BE PREVENTED AND THE RIP RAP MATERIALS SHALL MEET THE GRADATIONS. RIP RAP MATERIALS SHALL ONLY BE STOCKPILED IN AREAS APPROVED BY THE ENGINEER, RIP RAP MATERIALS SHALL BE PLACED IN THE STOCKPILES IN HORIZONTAL LAYERS.
5. RIP RAP MATERIALS SHALL NOT BE DUMPED ON THE SLOPES AND PUSHED INTO PLACE. RIP RAP MATERIAL SHALL NOT BE DROPPED FROM A HEIGHT GREATER THAN 1.5 m.
6. RIP RAP SHALL BE PLACED SO THAT SEGREGATION OF SIZES DOES NOT THE LARGER ROCK PARTICLES SHALL BE UNIFORMLY DISTRIBUTED WITH THE ZONE WITH THE SMALLER ROCK PARTICLES FILLING THE VOIDS BETWEEN THE LARGER PARTICLES TO PRODUCE A UNIFORM ZONE OF INTERLOCKING PARTICLES. RIP RAP SHALL BE LEVELED AND DRESSED TO ENSURE THAT THE RIP RAP ZONE IS STABLE, WITH NO TENDENCY TO SLIDE
7. BREAKING OF INDIVIDUAL PIECES AFTER PLACEMENT WILL NOT BE PERMITTED.
8. RIP RAP SHALL BE PLACED TO ITS FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISTURBANCE OR DISPLACEMENT OF THE UNDERLYING MATERIAL.
9. DRY SIDE SLOPE RIP RAP WHERE REQUIRED TO BE WELL GRADED.
10. THE ROCK FILL RIPRAP ($D_{50} = 300\text{mm}$) SHALL MEET THE GRADATION REQUIREMENTS SHOWN IN TABLE BELOW:

GRADATION REQUIREMENT FOR RIPRAP	
NOMINAL SIZE (mm)	GRADATION, % PASSING
380	70
300	50-70
250	35-50
75	2-10

GRANULAR MATERIAL

1. PLACING AND SPREADING OF GRANULAR MATERIAL IN ACCORDANCE WITH THESE SPECIFICATIONS SHALL BE PERFORMED IN SUCH A MANNER AS TO AVOID SEGREGATION OF SIZES AND OBTAIN A HOMOGENEOUS MASS.
2. THE SELECTION OF COMPACTION EQUIPMENT SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND TO CONTINUING SATISFACTORY PERFORMANCE.
3. WHERE NECESSARY TO ACHIEVE THE SPECIFIED COMPACTION, WATER SHALL BE APPLIED BY CONTROLLED SPRINKLING TO THE GRANULAR FILL MATERIALS IN AMOUNTS AS APPROVED BY THE ENGINEER.
4. GRANULAR MATERIALS SHALL CONSIST OF CRUSHED, CLEAN, SOUND, MINERAL PARTICLES FREE FROM ROOTS, TOPSOIL OR OTHER DEBRIS. MATERIALS CONTAINING QUANTITIES OF ORGANIC MATTER, FLAT OR ELONGATED PARTICLES, DELETERIOUS MATERIAL, SILT, CLAY OR ROCK FINES, WHICH, IN THE OPINION OF THE ENGINEER, ARE UNACCEPTABLE WILL BE REJECTED.
5. MATERIAL SHALL BE SUPPLIED IN ACCORDANCE WITH CONTRACT DRAWINGS.
6. WITHIN 5 DAYS OF AWARD OF CONTRACT, SUBCONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAME OF SOURCE PIT AND SIEVE TEST DATA FOR ALL GRANULAR FILL MATERIALS SPECIFIED. ADDITIONAL TESTING OF THE MATERIAL MAY BE REQUIRED DURING THE WORK TO DEMONSTRATE CONFORMANCE TO THE SPECIFIED GRADATIONS.
7. THE STOCKPILING OF GRANULAR FILL WILL BE PERMITTED BY THE ENGINEER, AT APPROVED LOCATIONS, PROVIDED THAT SUBCONTRACTOR EXERCISES EVERY PRECAUTION NECESSARY TO PREVENT SEGREGATION OF PARTICLE SIZES. THE STOCKPILED MATERIAL SHALL MEET THE GRADATION REQUIREMENTS SPECIFIED ABOVE. PROCESSED GRANULAR FILL MATERIALS SHALL BE PLACED IN STOCKPILES IN LAYERS NOT EXCEEDING 2 m IN THICKNESS.
8. THE PLACING OF GRANULAR FILL MATERIALS SHALL BE DIRECTED AT OBTAINING A STABLE AND HOMOGENEOUS FILL WHICH IS FREE OF HORIZONTAL STRATIFICATIONS AND LENSES OR POCKETS OF MATERIALS WHICH DO NOT SATISFY THE REQUIREMENTS OF THESE SPECIFICATIONS.
9. GRANULAR FILL MATERIAL SHALL NOT BE CONTAMINATED BY MIXING WITH ADJACENT MATERIALS. MATERIALS WHICH HAVE BECOME CONTAMINATED SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST.
10. AFTER DUMPING, GRANULAR FILL MATERIAL SHALL BE SPREAD AND COMPACTED IN CONTINUOUS AND APPROXIMATELY HORIZONTAL LAYERS OF UNIFORM THICKNESS. EACH LAYER OF GRANULAR FILL MATERIAL SHALL BE NOT MORE THAN 200 mm THICK BEFORE COMPACTION.
11. GRANULAR MATERIALS SHALL BE PLACED, SPREAD AND COMPACTED IN A MANNER TO PREVENT SLIDING OR DESEGREGATION OF PLACED MATERIAL.

12. GRANULAR MATERIALS PLACED ON GENERALLY FLAT AREAS SHALL BE COMPACTED BY A SMOOTH STEEL DRUM VIBRATORY ROLLER WITH A CENTRIFUGAL FORCE. DEVELOPMENT OF NOT LESS THAN 5 t OR OTHER COMPACTION EQUIPMENT APPROVED BY THE ENGINEER.
13. EACH LAYER OF MATERIAL SHALL BE COMPACTED BY NOT LESS THAN FOUR COMPLETE PASSES OF THE ACCEPTED COMPACTION EQUIPMENT TO 98% SPMD.
14. THE 19mm CLEAR STONE TYPE 1 SHALL MEET THE PHYSICAL PROPERTIES REQUIREMENTS AS PER OPSS AND THE GRADATION REQUIREMENTS SHOWN IN TABLE BELOW:

GRADATION REQUIREMENT FOR 19mm CLEAR STONE	
SIEVE SIZE (mm)	GRADATION, PERCENT PASSING
26.5	100
19.0	90-100
9.5	0-55
4.75	0-10
75µm	0-2

CONCRETE

1. CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CAN/CSA-A23.1-04. SEE BELOW FOR MIX REQUIREMENTS.
2. PROVIDE ADEQUATE COLD/HOT WEATHER PROTECTION AS REQUIRED DURING CURING PERIOD.
3. CONCRETE MIX DESIGN
28 DAY COMP. STRENGTH..... 32 MPa
W/C RATIO (MAX) 0.40
AGGREGATE SIZE (MAX.) 19mm
ENTRAINED AIR 5%-8%

REINFORCING STEEL

1. REINFORCING STEEL TO BE NEW DEFORMED BILLET STEEL BARS CONFORMING TO CAN/CSA-G30.18-M92 GRADE 400 MPa. DEFORMED STEEL WIRE CONFORMING TO CAN/CSA-G30.14.
2. DETAIL, FABRICATE AND PLACE REINFORCING IN ACCORDANCE WITH CSA-A23.1, CSA-A23.3 AND ACI 315-80 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" EXCEPT AS NOTED.
3. HOOKS AND BENDS IN REINFORCEMENT SHALL BE DEFINED IN CSA A23.1 LATEST EDITION.
4. REINFORCING STEEL SHALL BE CLEAN, FREE OF RUST, DIRT, LOOSE SCALE, OIL, GREASE OR ANY OTHER MATERIAL WHICH WOULD REDUCE BOND WITH THE CONCRETE.
5. TIE, SUPPORT AND SPACE ALL REINFORCING STEEL WITH PROPER APPROVED DEVICES DESIGNED FOR USE IN REINFORCED CONCRETE, TO PREVENT DISPLACEMENT OF REINFORCING AND ENSURE SPECIFIED CONCRETE COVER.
6. PROVIDE 50mm MINIMUM CONCRETE COVER FOR REINFORCING STEEL.

GEOTEXTILE

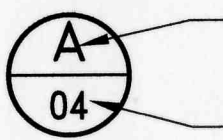
1. THESE SPECIFICATIONS APPLY TO NON-WOVEN GEOTEXTILES.
2. EACH GEOTEXTILE ROLL SHALL BE LABELED OR TAGGED TO PROVIDE PRODUCT IDENTIFICATION SUFFICIENT FOR INVENTORY AND QUALITY CONTROL PURPOSES.
3. GEOTEXTILE ROLLS SHALL BE FURNISHED WITH SUITABLE WRAPPING FOR PROTECTION AGAINST MOISTURE AND EXTENDED ULTRA-VIOLET EXPOSURE PRIOR TO PLACEMENT. IF STORED OUTDOORS, THEY SHALL BE ELEVATED AND PROTECTED WITH A WATERPROOF COVER.
4. GEOTEXTILE FABRIC SHALL MEET OR EXCEED THE FOLLOWING REQUIREMENTS:

GEOTEXTILE		
PARAMETER	MINIMUM CRITERIA NON-WOVEN	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D4632	690 N - (MIN)
CBR PUNCTURE	ASTM D4833	400 N - (MIN)
TRAPEZOID TEAR	ASTM D4533	275 N - (MIN)
APPARENT OPENING SIZE	ASTM D751	0.212mm - (MAX)
PERMATIVITY	ASTM D4491	1.6 sec ⁻¹ - (MIN)
FLOW RATE	ASTM D4991	4480 l/min/m ² - (MIN)
U.V. RESISTANCE	ASTM D4355	70% PER 500 hrs - (MIN)

TURF REINFORCEMENT MAT (TRM)

1. TRM SHALL BE TERRAFIX COIRMAT 700 OR EQUIVALENT.
2. TRM INSTALLATION SHALL BE AS PER MANUFACTURER'S SPECIFICATION.

DRAWING SYMBOLS AND LABELS





SECTION LETTER OR DETAIL NUMBER

DRAWING WHERE SECTION OR DETAIL IS DRAWN

OR

DRAWING WHERE SECTION OR DETAIL WAS INDICATED

0	19/09/09	ISSUED FOR TENDER	8	SW	DA
NO.	YY/MM/DD	DESCRIPTION	DESIGN BY	DESIGN CHECK	
REVISIONS / ISSUE					
CLIENT:  Parks Canada Parks Canada					
PROJECT: UPPER WEST BANK REHABILITATION PETERBOROUGH LIFT LOCK					
DWG. DESCRIPTION: GENERAL NOTES					
AUTHENTICATION FOR CURRENT REVISION		DESIGN BY: SG		DATE (YY/MM/DD): 19/08/26	
ENG. STAMP 		DESIGN CHECK: SK for DA		DATE: 19/09/09	
		DRAWN BY: JTC		DATE: 19/08/27	
		DWG CHECK: [Signature]		DATE: 19109109	
DWG. NO. 19-1538-003 G102					REV: 0