



SCHEDULE "C" – PROJECT SPECIFICATIONS

MAJOR WORKS CONTRACT – FOREST ROAD CONSTRUCTION

File: 10005-40/EN21TFD005

Attachment to the Agreement with _____ for Kokanee Spurs FSR Road
Construction.

1. LOCATION OF WORKS

The Works are located as follows:

- From Nelson Head Northeast for 22 kms towards Kaslo.
- Turn Left on Kokanee Glacier Park Road
- Follow Kokanee Glacier Park road for 8.5 km. POC for Kokanee 8500 is flagged in pink at right edge of road. POC for Kokanee 8510 is approx. 1 km on proposed road Kokanee 8500.

2. SCOPE OF WORKS

- NEW road construction including all phases of operations: felling and removal of right-of-way timber, grubbing, stripping, subgrade construction, end haul, drill and blast rock, installation of culverts.
- Additional Road Works, such as maintenance, upgrades and/or road deactivation may be assigned to this contract in accordance with Schedule A - Item #16.

Assignment of these works is subject to contractor performance and ability to provide suitable equipment and qualified personnel.

3. MATERIALS SUPPLIED BY THE PROVINCE

The Province shall supply at no cost to the Contractor the following materials to be utilized in the road contract, in a timely manner so as not to impede the progress of the Contractor in carrying out the contract. The contractor must protect the materials from damage or loss at all times while the materials are on site and, once the materials are on site, is solely responsible for any loss or damage to the Province's materials, and any costs required to repair or replace the materials to the satisfaction of the Province:

DESCRIPTION OF ITEM	SPECIAL HANDLING/TRANSPORTATION REQUIREMENTS
1 FSR road name sign and kilometer signs	BCTS to supply all signage to the work site

4. CONSTRUCTION CONTROLS

Drawings

In addition to applicable requirements stipulated in Schedule D of this contract, the Contractor shall construct the works in accordance with the following drawings:

- ☒ ROAD DESIGN SPECIFICATIONS – Appendix II
Sproulers' Enterprises Ltd.;
Kokanee 8500 & 8510 FSR Geometric Road design

Dated Jan 30, 2020

☒ CULVERT INSTALLATION - Appendix III

☒ ENGINEERED FILL - Appendix IV

5. SITE PREPARATION

Debris Disposal

When disposing of debris in accordance with Schedule D, debris must be disposed of in the following manner(s) for the designated sections of the road contract.

Road Section	DISPOSAL METHOD				
	Piling	Piling and Burning	Scattering	Burying	End Haul to a Disposal Site
All Linear Constructed Road Sections	YES Where <30% side slope	YES Where <30% side slope	YES if minimal wood material	ONLY >30% Side Slope	YES Where <30% side slope
Thru full or $\frac{3}{4}$ bench & End Haul and Placed Rock or Fill Sections	YES	YES	X if minimal wood material	NO	YES

6. ROADWAY AND DRAINAGE EXCAVATION

Embankments

- The geosynthetics that are required to be used in this contract must conform to the following specifications, installed:

☒ in accordance with the manufacturer's specifications

Ditches

- When constructing ditches in accordance with Schedule D, the ditch types required for this project are in accordance with the road design and cross sections.

Turnouts and Widenings

- Turnouts** are to be constructed in accordance with the road design.

Excavation in Solid Rock

- Materials which cannot be ripped by the following equipment shall be considered Solid Rock.
 - A crawler tractor with ripper with an operating horsepower of 260-359.9 FWHP; or,
 - An excavator rated at an operating weight of not less than 70,000 lbs; equipped with maximum 36 inch digging bucket with sharp teeth.
- When excavating Solid Rock in accordance with Schedule D, the required rock profiles for this project are:
 - 60% - 300mm minus, for use as road ballast and culvert armour
 - 30% - 600mm minus for use as structural fill material
 - 10% - 1000mm minus for use as a component of placed or keyed rock fills, where specified.

7. CULVERTS

- The cross drain and stream culverts on this project are to be located, sized and identified as to type as indicated below:

LOCATION	SIZE	CULVERT TYPE		
		CORRUGATED METAL PIPE	POLYETHYLENE CORRUGATED DRAINAGE PIPE	WOOD BOX CULVERTS
All Locations	All Sizes	X	X	N/A

8. ROAD SURFACING

Surfacing Materials

When surfacing the road in accordance with Schedule D:

- The material to be used for surfacing the road must be in accordance with the following:

Road Section	SURFACING MATERIAL/TREATMENT			
	PIT RUN AGGREGATE*	GRID ROLLED AGGREGATE	SCREENED AGGREGATE	CRUSHED AGGREGATE
Road sections as approved	To be determined by BCTS as additional payment unit	N/A	N/A	N/A

Finished Surface

When finishing the road surface in accordance with Schedule D, the contractor must:

- Graded to a smooth surface, shoulders and fills machine compacted; flat bottom ditch.

9. GRASS SEEDING

- When applying grass seeding in accordance with Schedule D, the mix design for this project must be:

10%	Rangeland Alfalfa
20%	Alsike Clover
15%	White Dutch Clover
20%	Red Creeping Fescue
10%	Hard Fescue
9%	Brome Grass
10%	Fall Fescue
3%	Red Top Fescue
3%	Canadian Blue Grass

Road Section	SEED APPLICATION METHOD		
	DRY SEEDING	HYDRAULIC SEEDING	EROSION CONTROL BLANKET
All disturbed area within the Contract project area	X	N/A	N/A

- Seed application rate: 30 to 50 kg/ha

10. SIGN INSTALLATION

NAME OF SIGN	LOCATION OF SIGN
Kokanee 8500 Kokanee 8510	POC FSRs on 4x4 post. All Km signage, to be marked on site; mounted on right of way trees wherever possible for on 4x4 posts, supplied by BCTS

11. SURVEY CONTROL

P-Line Hub Markers, and Right-Of-Way Boundaries referencing hub stationing, and road design chainage are established throughout all road sections located in the field.

Orange “Tick” Ribbons are hung at ground level to mark the top of cut.

“Pre-stakes” are installed, off-set 5 m outside of the r/w marking; Off-set stakes denote hub #, cut angle and distance to center line.

Additional Field Staking will be installed in road sections identified for Unit Based Payment. Each stake will denote the depth of cut (or fill) and distance to center line. The cut angle, hub reference and location line chainage will also be established on each stake.

Full Bench construction: *upon completion of pilot trail and confirmation of excavation conditions and material types. A joint field review with BCTS and the Contractor or his representative is required for this confirmation.*

Drill and Blast Rock: *upon completion of ripping phase and upon BCTS approval of drilling and blasting.*

The contractor shall ensure that all field markings and staking are preserved during operations. A minimum of 48 business hours is required to arrange for site review and for survey control or survey control revisions. All arrangements will be coordinated via the BCTS representative.

Linear Based Payment Sections will not be formally field staked except in the case that drill, and blast rock appears (as above) or another condition requiring significant unit-based payment.

12. RIGHT OF WAY CLEARING

The contractor shall clear right of way timber to the limits of flagged clearing boundaries. The flagged right-of-way width is approximately 18m, 9 meters either side of center line.

A minimum clearing width 1 meter beyond the top of cut, and 1 meter beyond the toe of fill shall be accommodated. The angle of repose for excavated cut and fill shall be in accordance with the design cross section for the excavated material type.

Some adjustments to the clearing boundary may be necessary and, wherever feasible, will be conducted concurrent with survey control requirement.

13. ROAD MAINTENANCE & SNOW PLOWING

- GRADING – See Schedule D, 8.3 and 8.4

- Kokanee Glacier Public Road: is managed by Ministry of Transportation and Highways (MoTI), however, the Contractor shall be responsible for all winter road maintenance.

The contractor is specifically responsible for:

- snow plowing of the Kokanee Glacier Public Road to a safe standard with expectation of facilitating both public and industrial traffic
- snowplowing to clear all turnouts and turn around's for unimpeded use
- ensuring INDUSTRIAL USE signage is erected when active
- breach of snow plow berms prior to winter exit

14. SEASONAL DEACTIVATION

Water bars must be installed at the following road sections, during suspended operations and also, prior to exit, at conclusion of project:

- ALL NEW Construction sections

-The water bars must be located upgrade of each culvert with surface water directed to the ditch. Water bar structures must be drivable with a pick-up truck.

-Cross ditches MAY be required where conditions warrant, such as unstable ditch line, raveling cut banks etc.

- width, ditch lines, cut angles and quality travel surface.