Ministry of Forests, Lands and Natural Resource Operations

SCHEDULE "C" – PROJECT SPECIFICATIONS

MAJOR WORKS CONTRACT – FOREST ROAD CONSTRUCTION

File: 10005-40/EN22TFH003

Attachment to the Agreement with Insert fully legal name as it appears on the Contract for Wardner South FSR Road Construction Project.

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1. LOCATION OF WORKS

The Works are located as follows:

- At the 21km "UP" on the TeePee Creek FSR turn right onto the Wardner TeePee Cutoff Road. Travel 2.9km north along the Wardner TeePee Cutoff to the POC of the re-construction section on Wardner South FSR on the left hand side.

2. SCOPE OF WORKS

- ***Conduct Road Re-Construction*** of approx. 3203 meters and 1714 meters of ***New Road Construction*** on the Wardner South FSR.
- This re-construction and new construction work includes:
  - right of way clearing / falling / Skidding / processing & hauling
  - road site preparation
  - road subgrade construction, sidecast construction
  - install drainage structures, culverts / cross drains
  - possible drill & blasting or other / surfacing
  - ditching
  - various finishing tasks described in the schedules of the contract
  - supply, deliver and install culverts at marked locations
- **The re-construction section is heavily grown in, narrow and accessible by 4x4 pickup only for approximately 1.4kms at this point the road is washed out, the remaining access is by foot to the start of the new construction. See attached pictures of 4x4 drivable section in Appendix II.**
- New Construction is ribboned with PINK ribbon printed "ROAD CENTERLINE"
- The contractor must supply and install geotextiles if, and when, required and have it delivered to the project site.
- Grading of the entire road system in contract and possibly additional road (to be determined).

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
None	N/A

4. CONSTRUCTION CONTROLS

Drawings

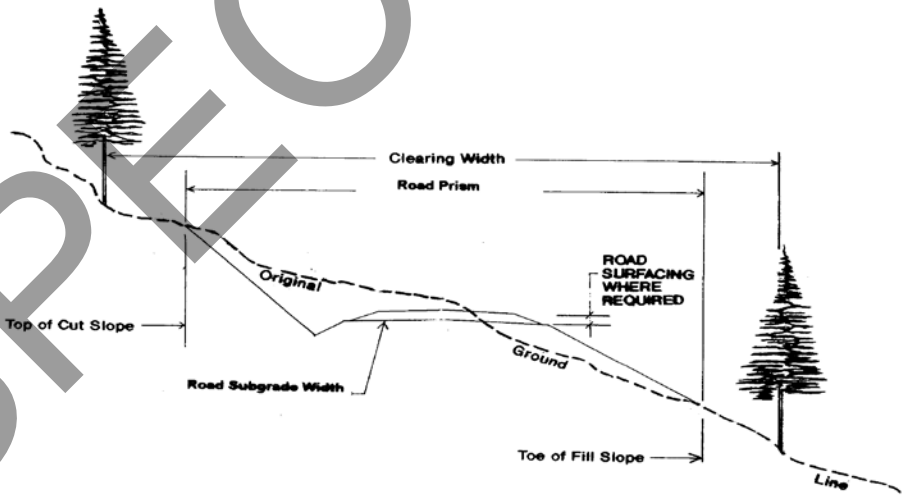
In addition to applicable requirements stipulated in Schedule D of this contract, the Contractor shall construct the works in accordance with the following drawings:

- ☐ Plan - drawing number N/A
- ☐ Plan and Profiles -drawing numbers N/A
- ☐ Detailed Cross Sections - drawing or sheet numbers N/A
- ☐ Drainage Structures (other than bridges) drawings and specifications - drawing or sheet numbers insert number(s) N/A
- ☐ Special Structures drawings and specifications - drawing or sheet numbers N/A
- ☒ Other (specify) – Road Site Plan

No Design

In addition to applicable requirements stipulated in Schedule D of this contract, the Contractor shall construct the works in accordance with the following diagram and accompanying tabular construction specifications:

Diagram 1.1 – Typical Cross-section



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Table 1.1 – Construction Specifications
See Appendix II – Road Site Plan & Maps

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.

	DISPOSAL METHOD				
Road Section	**Piling**	**Piling and Burning**	**Scattering**	**Burying**	**End Haul to a Disposal Site**
All Road – Includes New Construction & Re-Construction	N/A	X	N/A	X	X (site to be determined by Contract Officer)

6. ROADWAY AND DRAINAGE EXCAVATION

Embankments

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

  ☒ in accordance with the manufacturer's specifications, or

  ☒ in the following manner:

APPLICATION (location and type of installation)	MATERIALS SPECIFICATION
Location(s) to be determined during construction in the field.	Armtec 350 or equivalent non-woven geotextile.

- The entire roadway, shoulders, ditches and cut and fill slopes must be neatly trimmed to produce smooth surfaces, slopes and uniform cross-sections to the lines, grades and cross-sections that are within 100 millimetres of those shown on the Drawings.
- Ballast/gravel surfacing materials must be placed and compacted such that the road will support a fully loaded gravel truck without leaving ruts.

Ditches

- When constructing ditches in accordance with Schedule D, the ditch types required for this project are as follows:

Road Section	Ditch Type (mark with X as required for each section)			
	A **width = 1.0** **depth = 0.3**	**B** **width = N/A** **depth = N/A**	**C** **width = N/A** **depth = N/A**	**Outslope or Inslope**
All Road – Includes New Construction & Re-Construction	X	N/A	N/A	To be determined if needed.

- Insloping requirements:
  - If and where directed by the contract coordinator, inslope to a minimum of 3%.

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- Outsloping requirements:
  - Not Applicable.

Turnouts and Widenings

A. **Turnouts** are required for single lane roads and must be constructed such that the width of the turnout portion is 4 metres, in addition to the tangent road subgrade width.

The overall turnout length must be 30 metres, including a 7.5 metre taper at each end

B. **Widenings** of curves must be constructed in accordance with the following table:

Curve Widenings based on 5.0 metres
Single Lane Road

Radius of Curve in metres (m)	Minimum Subgrade Width in metres with widening (m)
180	5.3
90	6.3
60	6.8
45	7.0
35	7.5
25	8.5
20	9.0
15	10.0

Riprap – Not Applicable

- Riprap requirements include the placement of a geosynthetic underlay in accordance with the following specifications: N/A
- When developing and placing riprap in accordance with Schedule D, riprap requirements for this project are as follows:

	RIPRAP Class					
Road Section	RIPRAP CLASS 10	RIPRAP CLASS 25	RIPRAP CLASS 50	RIPRAP CLASS 100	RIPRAP CLASS 250	RIPRAP CLASS 500
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Excavation in Solid Rock

- Materials which cannot be ripped by the following equipment shall be considered Solid Rock.
  1. A crawler tractor with ripper with an operating horse power of 260-359.9 FWHP; or,
  2. An excavator rated at an operating weight of 51,000 to 58,999 lbs; equipped with maximum 36 inch digging bucket with sharp teeth.

7. CULVERTS

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

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LOCATION	SIZE	CULVERT TYPE		
		CORRUGATED METAL PIPE	POLYETHYLENE CORRUGATED DRAINAGE PIPE	WOOD BOX CULVERTS
All Road – Includes New Construction & Re-Construction	All Sizes	X	X	N/A

Fish Stream Crossing Installations

When installing fish stream crossings in accordance with Schedule D:

- The timing windows for fish stream crossings are: NOT APPLICABLE to this contract and no instream work may take place outside of those windows.
- Where authorized by Fisheries agencies, the timing windows for fish stream crossings are: N/A and no instream work may take place outside of those windows without employing an environmental monitor (the "Monitor") currently registered with the Ministry's Engineering Equipment System (EES). The cost of the Monitor is the contractor's cost and is included in the price for embankments.
- Stream protection, fish salvage, erosion and sediment control measures that are required for the fish stream crossing installations are: 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
As determined by C. Officer	X	N/A	N/A	N/A

***** WHERE PIT RUN AGGREGRATE IS SPECIFIED, THE PROPOSED PIT LOCATIONS ARE AS FOLLOWS:

Road Section	PIT RUN AGGREGATE LOCATION
To be determined by C. Officer	To be determined by Contract Officer.

- Placed pit-run Aggregate must have a maximum size of 100 millimetres, and placed in layers not exceeding 15 centimetres.
- The surfacing material must be placed so that the final depth is 15 centimetres.
- Surfacing materials must be compacted such that the road will support a loaded gravel truck without leaving wheel ruts deeper than 5 centimetres.

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Finished Surface

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

- Complete a final grade of the entire length of all the FSR, neatly trimming the shoulder and ditches to conform to the drawing-diagram 1.1 in schedule C. Multiply passes per contract appendices are required to achieve the compaction and grade of surface materials. Grading must occur under optimum conditions.

9. GRASS SEEDING – To be completed by BCTS

- When applying grass seeding in accordance with Schedule D, the mix design for this project must be: Trench Restoration Mix, and the application method(s) must be as per the following table:

	SEED APPLICATION METHOD		
Road Section	**DRY SEEDING**	**HYDRAULIC SEEDING**	**EROSION CONTROL BLANKET**
All Road – Includes New Construction & Re-Construction	X	N/A	N/A

- Seed application rate: 30 to 50 kg/ha
- Fertilizer application rate: provide fertilizer application rate – N/A
- Erosion control blankets must be used in the following manner, rather than the manufacturer's instructions:
  - N/A

10. SIGN INSTALLATION

NAME OF SIGN	LOCATION OF SIGN
Wardner South	POC of Reconstruction.

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