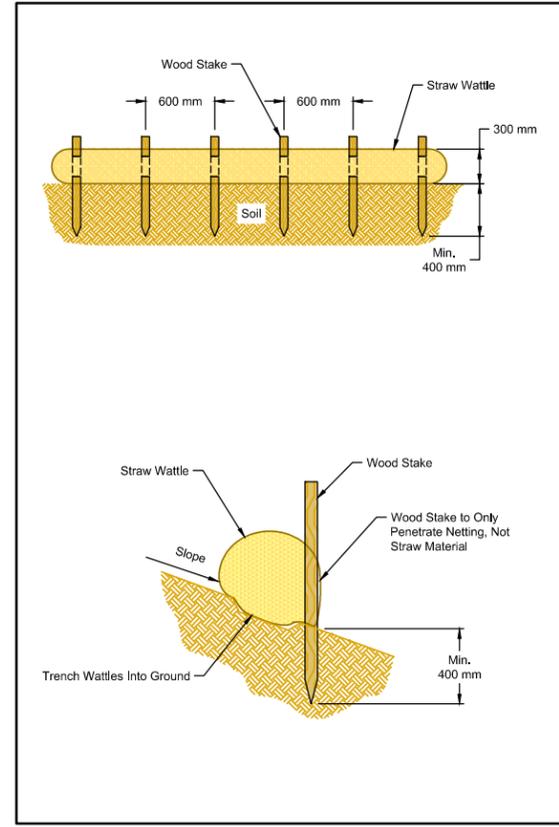
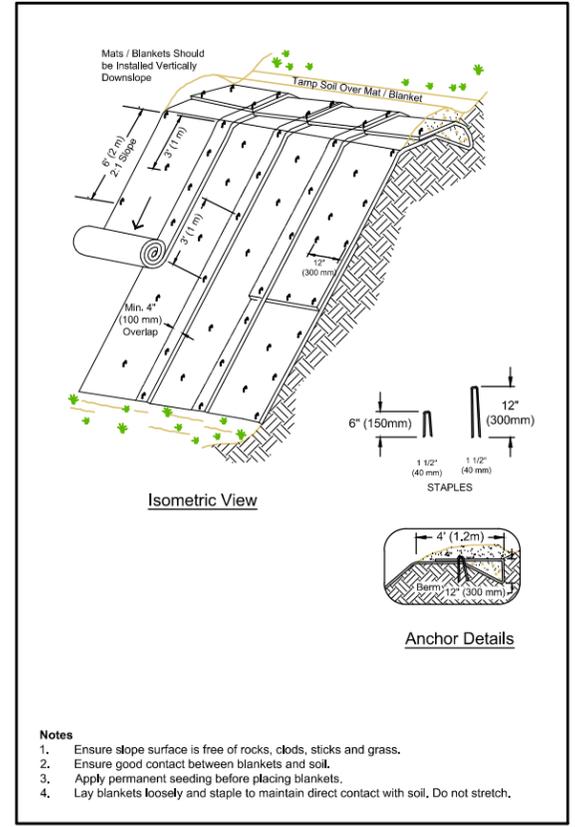


- Ground Contour (5.0 m Interval)
- Ground Contour (1.0 m Interval)
- Existing Top of Bank
- Existing Thalweg
- Proposed Top of Bank
- Straw Wattle
- Erosion Control Blanket
- Class I Riprap

- Notes:**
- 1.0 Temporary erosion and sediment control measures during construction should be addressed through an approved ECO Plan.
 - 2.0 Restore all disturbed areas to original contours as soon as practical using native topsoil.
 - 3.0 Install erosion and sediment control blanket on the reconstructed road embankment. Ensure adjoining blankets are lapped a minimum 0.3 m in the downhill direction. Key-in the top and bottom edges of the blanket. Install one 150 mm steel pin per 2 m x 2 m following a grid pattern.
 - 4.0 Erosion control blanket will be left to naturally degrade.
 - 5.0 Install straw wattles as shown. Ensure wattles are embedded into the ground and adjoining wattles are lapped and minimum of 0.3 m.
 - 6.0 Remove straw wattles following one complete growing season.
 - 7.0 Broadcast the approved seed mix below all erosion control blanket areas, and over all disturbed areas restored with native topsoil as soon as practical prior to demobilization.



Straw Wattle Staking Details (with Trench)
N.T.S.



Erosion Blanket Slope Installation
N.T.S.

Table 5 - Site Restoration Planting Plan

Area	Type of Planting	Plant Species	Density
[Blue Box]	Mixture of Live, Bare Root Stock Shrubs	Cornus stolonifera (red osier dogwood), Lonicera dioica (honeysuckle), Amelanchier alnifolia (Saskatoon berry), and Salix spp (willow)	1 plant / sq. m
	Broadcast Seeding	Approved Seed Mix for the Dry Mixedwood Natural Subregion	2 bag per ha
[Yellow Box]	Broadcast Seeding	Approved Seed Mix for the Dry Mixedwood Natural Subregion	2 bag per ha
[Red Box]	Forestry Stock About 0.25 m High	Populus balsamifera (balsam poplar)	1 tree / 2 sq. m
	Mixture of Live, Bare Root Stock Shrubs	Cornus stolonifera (red osier dogwood), Lonicera dioica (honeysuckle), Amelanchier alnifolia (Saskatoon berry), and Salix spp (willow)	1 plant / sq. m
[Green Box]	Broadcast Seeding	Approved Seed Mix for the Dry Mixedwood Natural Subregion	2 bags per ha
	Mixture of Forestry Plugs About 0.25 m Size	Populus tremuloides (trembling aspen), Populus balsamifera (balsam poplar), and Picea glauca (white spruce)	2000 stems/ha
	Broadcast Seeding	Approved Seed Mix for the Dry Mixedwood Natural Subregion	2 bags per ha

- Notes:**
1. Shrubby plant species may be substituted based on availability; substitutions will approved by Parkland County.
 2. Seed mix will be tested and free of weed seeds.
 3. Seed mix may vary based on native seed availability. If a seed mix for the Dry Mixedwood Natural Subregion is not available, substitutions may be made and approved by Parkland County.
 4. Seeding rate (kg of seed/ha) will be based on the timing of seeding (more seed if seeded in the fall versus spring).

Reference: Elevations based on Lidar data and topographic survey data provided by Parkland County on April 20, 2017. Bathymetry and slump area survey was conducted by Midwest Surveys Ltd. on May 11 and 12, 2017. 2015 Image provided by Parkland County and converted to UTM83-11 Datum.

STAMP

REVISION		BY	CHK.	DRN.
B	2017-08-08	Issued for Client Review	PS	MS ML
A	2017-08-01	Issued for Client Review	PS	MS ML
No.	DATE	DESCRIPTION	BY	CHK. DRN.

Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

Parkland County
Erosion Mitigation on Road Embankment Tomahawk Creek on Range Road 55, 05-08-051-05 W5M

Site Restoration and Erosion and Sediment Control Plan

Date: August 2017 Project: 24770-SP-17 Technical: P. Sandhu Reviewer: M. Shome Drawn: M. Lee

7