

## 1. EROSION PREVENTION & SEDIMENT CONTROL NARRATIVE

### 1.1. PROJECT DESCRIPTION

- 1.1.1. Scope of Work. Lincoln BRO 1445(25) will replace Bridge 48 on Town Highway 9 over the New Haven River in the Town of Lincoln on existing alignment. The new bridge will be a two lane, single span, concrete deck and steel girder bridge. The project will maintain traffic during construction on a temporary bridge 15 m upstream of the existing bridge.
- 1.1.2. Length. The total length of roadway work, including both approaches, drives and existing roadway is approximately 100 m.
- 1.1.3. Area. The total disturbed area (excluding waste, borrow and staging areas) is approx. 0.17 ha (0.42 ac.). The disturbed area for the temporary bridge is approx. 0.02 hectares (0.05 ac.).
- 1.1.4. Duration. This project should last one construction season. This Erosion Prevention and Sediment Control Plan is intended for use during the construction season. A separate winter plan shall be submitted for approval if work is to occur from Oct 15th to April 15th, or if vegetation has not been sufficiently established after the completion of construction and by Oct 15th.

### 1.2. SITE INVENTORY & ANALYSIS

- 1.2.1. Off Site Drainage Characteristics (Up And Down Gradient). The project site lies within the village of Lincoln. Much of the surrounding area consists of paved roads and buildings. The area is relatively flat with little vegetation except along the river banks.
- 1.2.2. Drainage, Waterways, Bodies of Water. The New Haven River is located within the project area. The New Haven River is described as semi-alluvial, straight and not braided or anabranching. The streambed is made up primarily of cobblestones. The banks along both sides of the river both upstream and downstream are high and appear to be stable. They are well protected with vegetation consisting of grass, ferns, low growing shrubbery and some small deciduous trees and boulders. The watershed area is 77 sq km.
- 1.2.3. Topography, Existing Roads, Buildings, Utilities.
- 1.2.3.1. Topography. The project site is a quiet village center. It has clapboarded cape buildings from the 1800s on a relatively level land.
- 1.2.3.2. Existing Roads. The project site is on TH 9, a paved Class III town highway, leading to the intersection of TH 1 & 3, paved Class II town highways.
- 1.2.3.3. Buildings. Four homes, a store, fire station, and town hall are near the project.
- 1.2.3.4. Utilities. Power and Utility poles run along the mainline from 1+050 to 1+045 right.
- 1.2.4. Vegetation. The vegetation along T.H. 9 is a mix of grass, small shrubs and a few small deciduous trees. The majority of the vegetation present on the site is grass and ferns mixed in with small shrubs.
- 1.2.5. Soils. The USDA Natural Resources Conservation Service identifies two soil types in the project site.
- 1.2.5.1. Adams loamy fine sand. This soil is on the north side of the river. It is described as very deep, strongly sloping, 0-70%, and excessively drained soil. The soil profile is typically: 0-100 mm black humus in a mat of soil; 100-200 mm pinkish gray sand; 200-350 mm brown loamy sand; 350-1800 mm brown sand. Its erodibility rating is low (kw = 0.17) suggesting low erodibility.
- 1.2.5.2. Limerick silt loam. This soil is on the south side of the river. It is described as very deep, poorly drained soils on flood plains with a slope from 0-3%. The soil profile is typically: 0-200 mm dark grayish brown silt loam; 200-900 mm olive gray silt loam; 900-1625 mm dark greenish gray silt loam. Its erodibility rating is high (kw = 0.49) suggesting high erodibility.
- 1.2.6. Sensitive Resource Areas
- 1.2.6.1. Waterways. The New Haven River runs through the project area. The project impacts it at the existing bridge and eastern detour. A Stream Alteration Permit (#HD-1-0296) dated 06/25/01 has been issued for this project.
- 1.2.6.2. Wetlands. Not Present
- 1.2.6.3. Archaeological Sites. A terrace near Sta 1+120 Right 30 on the northeast side of the bridge is Archaeologically Sensitive. The project will avoid this area. BARRIER FENCE & SPECIAL PROVISION (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED) protect this area.
- 1.2.6.4. Historic Features. The project is located centrally in the Lincoln Village Historic District. The project will avoid historic features.
- 1.2.6.5. Critical Habitat. Not Present
- 1.2.6.6. Threatened & Endangered Species. Not Present
- 1.2.6.7. Prime Agricultural Land. Not Present

### 1.3. RISK EVALUATION

- 1.3.1. The project area is less than 1 acre. Therefore the project does not fall under the jurisdiction of Construction General Permit 3-9020.
- 1.3.2. Should changes prior to or during construction result in one or more acres of earth disturbance or should the project become part of a larger plan of development then the selected contractor will be responsible for additional permitting with VANR via filing of the appropriate Notice Of Intent under the Construction General Permit process.

### 1.4. EROSION PREVENTION & SEDIMENT CONTROL

- 1.4.1. Mark Site Boundaries
- 1.4.1.1. BARRIER FENCE will delineate the construction area for construction equipment. This measure limits the area that can be disturbed and exposed to erosion.
- 1.4.2. Limit Disturbance Area
- 1.4.2.1. BARRIER FENCE will delineate the construction area for construction equipment. These measures limit the area that can be disturbed and exposed to erosion. Use BARRIER FENCE within 30 m upslope of receiving waters and to protect sensitive areas.
- 1.4.3. Stabilize Construction Entrance
- 1.4.3.1. VEHICLE TRACKING PAD will control tracking of sediment transport on to public roads. The entrance is a stabilized pad of crushed stone located wherever construction vehicles leave construction areas. The sites include: the project site; staging areas; and waste and borrow areas. The minimum area is 3700 x 15 000 (12' x 50'). Pipe all surface water flowing to or diverted towards a construction entrance under the stone. Size pipes for their watersheds. The minimum pipe diameter is 150 mm.
- 1.4.4. Install Silt Fence
- 1.4.4.1. SILT FENCE and GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED placed level on slopes will control sheet flow sediment transport. Place silt fences level and 1500 to 3000 mm (5'-10') from the toe of slopes. Turn the ends of silt fence slightly uphill to stop concentrated water from flowing around the ends. The maximum slope length between separate runs of silt fence is 30 000 (100'). Place silt fence before beginning upslope earthwork. Use GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED for silt fence within 30 m upslope of receiving waters.
- 1.4.5. Divert Upland Runoff
- 1.4.6. Slow Down Channelized Runoff
- 1.4.6.1. GEOTEXTILE FOR FILTER CURTAIN will control concentrated flow sediment transport around abutments and piers.
- 1.4.7. Construct Permanent Controls
- 1.4.7.1. Roadway Typical Section
- 1.4.7.1.1. SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) on the road surface will prevent erosion.
- 1.4.7.1.2. AGGREGATE SURFACE COURSE on the shoulder will allow runoff to infiltrate and prevent erosion.
- 1.4.7.2. Channel Typical Section
- 1.4.7.2.1. STONE FILL, TYPE I at the ends of the wing walls will prevent erosion and control sediment transport.
- 1.4.7.2.2. STONE FILL, TYPE III around the abutments on slopes greater than 66% will prevent erosion and control sediment transport.
- 1.4.7.2.3. GEOTEXTILE UNDER STONE FILL will prevent erosion and control sediment transport.
- 1.4.8. Stabilize Exposed Soils
- 1.4.8.1. TRACKING & MULCHING will temporarily stabilize slopes. Use tracking for short term (two weeks) exposed slopes. Drive heavy equipment up and down slopes to leave level tracks (small check dams) that will catch water flow. Stabilize slopes within 48 hours or sooner considering rain.
- 1.4.8.2. SEEDING & MULCHING will establish vegetation on side slopes less than 66% that will prevent erosion and control sediment transport. Add TEMPORARY EROSION MATTING (with 100% natural fibers) to slopes ranging from 33% to 66%.
- 1.4.9. Winter Stabilization
- 1.4.10. Stabilize Soil at Final Grade
- 1.4.10.1. SEEDING & MULCHING will stabilize slopes ranging from 0% to 66%. Add TEMPORARY EROSION MATTING (with 100% natural fibers) to slopes ranging from 33% to 66%. Use seeding for long term exposed slopes. Allow Grass 2 weeks to establish itself. Stabilize slopes within 48 hours or sooner considering rain.
- 1.4.11. Dewatering Activities
- 1.4.11.1. COFFERDAMS will separate exposed earth and the waterway.
- 1.4.11.2. A Sediment Basin at Sta 1+110 Left will intercept, trap and retain sediment laden runoff from cofferdams.
- 1.4.12. Inspect your Site
- 1.4.12.1. Inspect all control measures weekly and after each rainfall event. Repair measures promptly once damage is discovered.
- 1.4.12.2. Note any changes on the plans, in the weekly inspection report, and report them to the appropriate authority in a timely manner.
- 1.4.12.3. Check temporary measures regularly for accumulation of sediment. Remove sediment build-up when the level of sediment reaches one-half the height of the control measure. Dispose of sediments in an approved area where they will not be subject to erosion.