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CN Milton Logistics Hub Final Infrastructure Protection Plan – Phase 1

Contract No: 60579933

Project Description: CN Milton Logistics Hub - Phase 1 Grading & Drainage

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CN Milton Logistics Hub - Infrastructure Protection Plan – Phase 1

Dufferin Construction ("Dufferin") intends to construct Phase 1 of a new intermodal terminal in Milton, Ontario, on behalf of the Canadian National Railway Company (CN). The overall project includes the construction of an administration/garage building, six new rail tracks and associated work pads, the realignment and extension of existing mainline tracks, a new grade separation on a lower baseline, a truck entrance, gate and queuing area, and an employee entrance, among other ancillary facilities. Phase one of this project includes environmental protection, grading, and stormwater management.

This Infrastructure Protection Plan (the "Plan") describes how Dufferin will maintain, inspect and monitor existing infrastructure and new infrastructure during phase one construction, scheduled to start in Q4 2021.

1.0 Infrastructure and Maintenance

1.1 Siltation & Erosion Control Measures

1.1.1 Infrastructure

The proposed infrastructure includes:

- Erosion control blankets over graded slopes for grading and drainage work, including Coir Matting, Jute Matting and Biodegradable Straw Matting
- Siltation & Erosion Control Fencing
- Straw Bale or Rock Check Dams
- Hydro Seeding
- Monitoring Wells

1.1.2 Maintenance

The Siltation & Erosion Control measures are to be maintained in accordance with OPSS 805 – Temporary Sediment Control such that they perform as intended. The following maintenance is proposed:

- Erosion Control blankets will be re-anchored with proper overlap if dislodged and replaced with new if damaged due to equipment or material placement or due to quality for the duration of construction within seven calendar days of discovery, including reinstatement of any surrounding eroded soils. To avoid reoccurrence, additional anchoring will be installed;
- Run-off from construction materials and any stockpiles shall be contained in designated areas using sediment basins away from watercourses. If run-off occurs, cleaning, repair, or additional sediment basins are to be installed;
- Siltation and Erosion Control Fencing toe will be inserted into the ground in accordance with OPSD 219.130. Siltation and Erosion Control Fencing to be replaced if damaged or torn due to equipment or material with proper overlap and anchors within seven calendar days of discovery;

- Remove silt or debris build-up from check dams every seven calendar days and after every major storm event by equipment on-site or labour. If check dams are inefficient or build-up is reoccurring, an additional check dam is to be installed;
- Install hydroseeding to protect exposed earth. If hydroseeding is washed away, reseed within 45 calendar days. If the area has reoccurrence, hydroseeding to be applied twice; and
- Improve visibility of monitoring wells to protect them from damage that would be caused by equipment and materials by installing reflective construction tape.

1.2 Temporary Access Roads

1.2.1 Infrastructure

The proposed infrastructure includes access roads constructed by Dufferin for the conveyance of all equipment, material, and labour necessary for their operations.

1.2.2 Maintenance

The following maintenance is proposed:

- Snow clearing – will be conducted after each snow event if 6" or more snow accumulates. The snow will be stockpiled in designated areas away from construction and train movements. The designated areas will be selected to ensure safety and to avoid washouts during spring melt;
- Dust control – dust suppressants such as water or granular material will be applied in accordance with best practices and as directed by the Contract Administrator or CN;
- Drainage – positive drainage will be maintained by keeping ditches defined and clear of debris using equipment to provide positive grading;
- Condition – potholes or washboards that develop will be graded with a grader within 14 calendar days of discovery to improve safety and avoid damage to vehicles; and
- Signage – any damages to traffic control or notification signs along the access road will be repaired within 7 calendar days.

1.3 Site Offices and Lay Downs

1.3.1 Infrastructure

The proposed infrastructure includes the orange construction fence, jersey barriers, signage, gravel base, utilities, including lights, power, and water services.

1.3.2 Maintenance

The following maintenance is proposed:

- Laydowns will be secured using fencing, jersey barrier, signage, and lights. Any repairs required will be completed within seven calendar days from the date the damages are discovered;

- Gravel base to provide a safe level area for walking and parking. If the gravel is not levelled, it will be graded within three calendar days from the date it is discovered. Future reoccurrence to be avoided by ensuring positive drainage;
- Snow to be removed and stockpiled after each storm event if more than 6" of snow accumulates, similar to access roads;
- Site Offices will be maintained in good working order in accordance with the Contract.

1.4 Permanent Culverts and Temporary Culverts

1.4.1 Infrastructure

The existing infrastructure includes:

- Culvert 1, and
- Culvert 2.

The proposed infrastructure includes:

- Culvert 7 south of Lower Baseline road;
- Temporary culvert south of Lower Baseline road;
- Culvert 3 north of Lower Baseline road;
- Culvert north of Lower Baseline road at Mile 40.59;
- Temporary culvert north of Lower Baseline road;
- Culvert 2A and other associated works; and
- Any additional temporary culverts installed for construction purposes.

1.4.2 Maintenance

The following maintenance is proposed:

- Debris blockage of 25% or more will be cleaned within seven calendar days of discovery or before a major forecasted storm by equipment on-site or labour. If the process is not effective, a vacuum truck with high-pressure water will be utilized to clear the culvert. Ditches to be cleared of debris to avoid reoccurrence;
- Repair damage from equipment or material within 14 calendar days of discovering the damage. Repairsinclude section replacement and crack or chip repairs to return the proposed culverts to new conditionand to return the existing culverts to pre-construction condition;
- Increase the visibility of structures by using reflective construction tape or fencing and keeping clear of snow, material, and equipment;
- Remove debris from inlet/outlet of ditches;
- Remove silt that is affecting flow around the inlet, outlet and along the embankments of the culvert within seven calendar days of discovery;

- Existing culverts to be maintained to pre-construction condition identified in a pre-construction survey to be conducted by Dufferin.

- Any open-cut installations are to be backfilled before the end of the construction day or protected with a highly visible orange snow fence.

1.5 Existing Main Line Track

1.5.1 Infrastructure

The proposed infrastructure includes existing track infrastructure, including rail, ballast, ties, switches, cross overs, and OTM between Mile 38.72 to 40.98 to be maintained during grading of the proposed rail bed and installation of culverts.

1.5.2 Maintenance

The following maintenance is proposed:

- Mainline track will be inspected as per Transport Canada's "Rules Respecting Track Safety";
- Repair any deviation of the existing ballast shoulder and embankment.

1.6 Temporary Road Crossings

1.6.1 Infrastructure

The proposed infrastructure includes:

- Gates and/or stop signs on each side of the tracks;
- Fencing and signage; and
- Ramps, culverts, and ditches on crossing approaches.

1.6.2 Maintenance

The following maintenance is proposed:

- Urgently repair fencing, signage (especially stop signs) and gates if they are not upright, visible, or may affect train operations;

- Repair ramps that are not solid or may affect train operations by providing a sound foundation and weighting or anchoring the ramp to avoid reoccurrence;

- Culverts immediately adjacent to the crossing with more than 10% blockage will be cleaned immediately. In addition, any damages affecting flow or may result in ponding will be repaired urgently. Cleaning to be completed by equipment on-site or by vacuum truck;

- Debris in ditches within 10m of inlet and outlet that is affecting flow will be cleared urgently. Debris will be stockpiled in designated areas away from operations then disposed of offsite regularly.

1.7 Stormwater Management Outlet Structures

1.7.1 Infrastructure

The proposed infrastructure includes:

- Precast Concrete Box Manholes
- Drain Pipes (Inlets)
- 600mm Concrete Storm Sewer
- 300mm PVC Reverse Slope Storm Sewer
- Rip Rap
- Sediment Drying Area Turfstone Pavers
- Outlet Headwalls

1.7.2 Maintenance

The following maintenance is proposed:

- Debris – use silt cloth or other erosion and sediment control materials at the inlet as a means to minimize silt build-up in the structure. If ESC materials are damaged, it will be fixed within seven calendar days of discovering the damage, and debris will beremoved from the structure by vacuum truck or a similar process;
- If infrastructure is not operating as intended or blockage is more than 25%, the debris will be cleaned within seven calendar days of discovering the damage or before a major forecasted storm;
- Damaged lids from equipment or material will be replaced within 28 calendar days of discovering the damage;
- Damaged infrastructure – concrete or PVC damages, if affecting the operation and not functioning as intended, will be repaired or replaced with 14 calendar days of discovering the damage;
- Increase the visibility of structures by using reflective construction tape or fencing and keeping clear of snow, material, and equipment;
- Maintain pavers clean and clear of material and equipment.

1.8 Extreme Weather Events

Dufferin will implement the following preventive and mitigation measures in the event of flooding, freezing rain, ice storm, or any other extreme weather event (e.g., earthquakes).

Section	Infrastructure	Before event	During	After
1.1	Siltation & Erosion Control Measures	Inspect to ensure will perform as intended Clean and clear debris	N/A	Inspect and repair any damages urgently
1.2	Temporary Access Roads	Clear ditches of debris Inspect snow piles to ensure adequate space.	Snow clearing if more 6" snow accumulates	Inspect and repair any damages urgently
1.3	Site Offices and Lay Downs	Close windows and doors of site offices Secure materials	Snow clearing if more 6" snow accumulates	Inspect and repair any damages urgently
1.4	Permanent Culverts and Temporary Culverts	Remove any debris or slit that may affect flow through the culvert	N/A	Inspect and repair any damages urgently
1.5	Existing Main Line Track	N/A	N/A	Inspect and report any track blockages to CN urgently. Track inspection to be completed by CN. Inspect and repair any damages to ballast shoulders and embankment urgently
1.6	Temporary Road Crossings	Clear ditches of debris and blockages from culverts Ensure signage is secured	N/A	Inspect and repair any damages urgently
1.7	Stormwater Management Outlet Structures	Clear debris and silt if likely to cause blockage	N/A	Inspect and repair any damages urgently

2.0 Inspection and Monitoring

Dufferin's Environmental Inspector will monitor weather forecasts on a daily basis using reliable government sources and subscribe to alerts for extreme weather events. In the event of an extreme weather event, Dufferin's Environmental Inspector will notify CN's Environmental Monitor of such an event and advise onsite personnel to commence pre-extreme weather event plans set out in Section 1.8. If weather that may cause damage to the infrastructure is forecasted, Dufferin will complete a site inspection on the next day that Dufferin will be on-site. Otherwise, the inspection and monitoring frequency is outlined below.

2.1 Frequency Based on Season

Season	Weekly	Every Other Week	Monthly	Daily
Spring / Fall	X			
Summer		X		
Winter			X	
Adverse Weather				X

2.2 Frequency Based on Construction Activity

In addition to Section 2.1, both existing and new infrastructure will be inspected as follows:

- Exposed grading: weekly from commencement to completion;
- Siltation and erosion control, structures culverts, lay down, road and crossings after installation;
- Existing track: Mainline track will be inspected as per Transport Canada's "Rules Respecting Track Safety".

3.0 Reporting

After each inspection, the routine inspection form (sample included in Appendix A) will be completed and submitted to CN's Environmental Monitor, CN, Contract Administrator or any combination thereof within seven calendar days.

CN's Environmental Monitor may review the inspection reports to verify that the measures setout in this Plan have been completed. If the CN's Environmental Monitor has any comments,Dufferin will respond to the comments within seven calendar days.

If the infrastructure is not performing or operating as intended, the infrastructure will be maintained as described herein.

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Appendix A
(Sample Inspection Checklist)

Location: .....
Time: .....
Weather Conditions: .....
Days since last rainfall event: .....

Element	**Present**		**Comments**	**Actions (refer to Corrective Actions for each element)**	**Action Completed (tick box and sign)**
	Yes	**No**			
Siltation & Erosion Control Measures					
Erosion control blankets over graded slopes					
Siltation & Erosion Control Fencing					
Straw Bale or Rock Check Dams					
Hydro Seeding					
Monitoring Wells					
Temporary Access Roads					
Access roads					
Site Offices and Lay Downs					
Orange Construction Fence					
Jersey Barriers					
Signage					
Gravel Base					
Utilities (including lights, power, water)					
Permanent Culverts and Temporary Culverts					
Culvert 1					
Culvert 2					
Culvert 7 south of Lower Baseline road;					
Temporary culvert south of Lower Baseline road;					
Culvert 3 north of Lower Baseline road;					
Culvert north of Lower Baseline road at Mile 40.59					

Temporary culvert north of Lower Baseline road;					
Culvert 2A					
Other temporary culverts installed for construction purposes.					
Existing Main Line Track					
Advise CN if any abnormalities are visible					
Temporary Crossings					
Gates and/or stop signs on each side of the tracks					
Fencing and Signage					
Ramps, culverts, and ditches on crossing approaches					
Stormwater Management Outlet Structures					
Precast Concrete Box Manholes					
Drain Pipes (Inlets)					
600mm Concrete Storm Sewer					
300mm PVC Reverse Slope Storm Sewer					
Rip Rap					
Sediment Drying Area Turfstone Pavers					
Outlet Headwalls					

Additional Comments:

Date Checked: .....

Inspector Signature: .....

Inspection conducted by:.....