DS CONSULTANTS LTD.
Geotechnical ◆ Environmental ◆ Materials ◆ Hydrogeology

Project: 21-122-100-R **June 6, 2023**

Neatt Communities

via email: Colin.Rauscher@neattcommunities.com

Re: Additional Comments Regarding Impact Slope Stabilization Methodology
150 Steeles Avenue East, Milton

Dear Colin:

Further to the recent comments from Conservation Halton (CH) and Halton Region (the Region) we extend the following comments in regards to the methodology/approach for stabilization of the eroded slope (Section B-B on attached Drawing 1) at subject site noted above.

Field measurements of the failed (eroded) slope area (must be confirmed by proper survey conducted by a licensed surveyor) were obtained by DS and are presented in plan and profile on attached Drawings 1, 2 and 3. The affected area measures approximately 17 m in length, 7.3 m in width and on a depth of about 5.0 m at its deepest point.

In the Slope Stability Assessment Report by DS (Project No. 21-122-103, January 17, 2023), Drawing 6 presents the proposed slope repair using rip-rap (2H:1V slope). In the attached Drawing 6A, slope repair using soil is shown by Line S2-B2 (2.5H:1V). For soil fill slope, an inclination of 2.5H:1V is required in order to achieve a factor of safety of FS=1.5 required by CH. In Drawing 6A, Point S2 represents the long-term stable top of slope at Section B-B with slope repair using soil. Accordingly, the long-term stable top of slope (LTSTOS) line (S1-S2-S3-S4) in Drawing 1B of the Slope Stability Assessment Report remains the same, regardless of whether rip-rap or soil is used.

The soil used for the slope repair should consist of inorganic soil material compacted to 98% SPMDD (Standard Proctor Maximum Dry Density). The soil type (sandy soil, clayey soil etc.) can be selected by others for vegetation requirements. A 200 to 300 mm thick layer of topsoil can be placed on the top of the repaired slope, if required.

To achieve a compaction requirement of 98% SPMDD, it is expected that large construction equipment including bull dozers, excavator and vibratory compactors will be required to enter the flood plain and access the slope to carry out the remedial works. At this time, there is no existing access point into the valley for this heavy machinery and a new cut along the valley wall, and associated vegetation removal, would be required to facilitate access. Staging areas will also be required at the top and bottom of the slope for this work. It is understood that the access route will be about 4 m wide path of travel with maximum 4H:1V surface profile sloping down from the top to

the bottom of the slope and 1H:1V side slopes. The staging areas are understood to be about 150 sq.m in area. The equipment used for the repair of the slope with soil, and construction of a new access route and staging areas, would introduce added vibration on the slope and disturbance to the vegetation along the slope/flood plain for a much more significant areas than the current eroded area to be repaired. Additionally, the new compacted fill for the slope repair must be keyed into the adjacent slope faces which will involve benching and extending excavations into that portion of the slope which has not subsided, and also resulting in a much wider area than the current eroded slope footprint. As noted before, the new access route and staging areas will include removal of surface vegetation and trees and placement of new compacted fill to achieve the required access route surface profiles and side slopes.

The Study Team considered using soil to repair the slope, as part of the first submission however, deemed it to be more impactful to the environment than using rock (rip rap). Rock stabilization can be completed entirely from the table lands, with no need for large equipment within the valley and little to no disturbance to the adjacent vegetation.

We trust that the information contained in this report is satisfactory. Should you have any questions, please do not hesitate to contact this office.

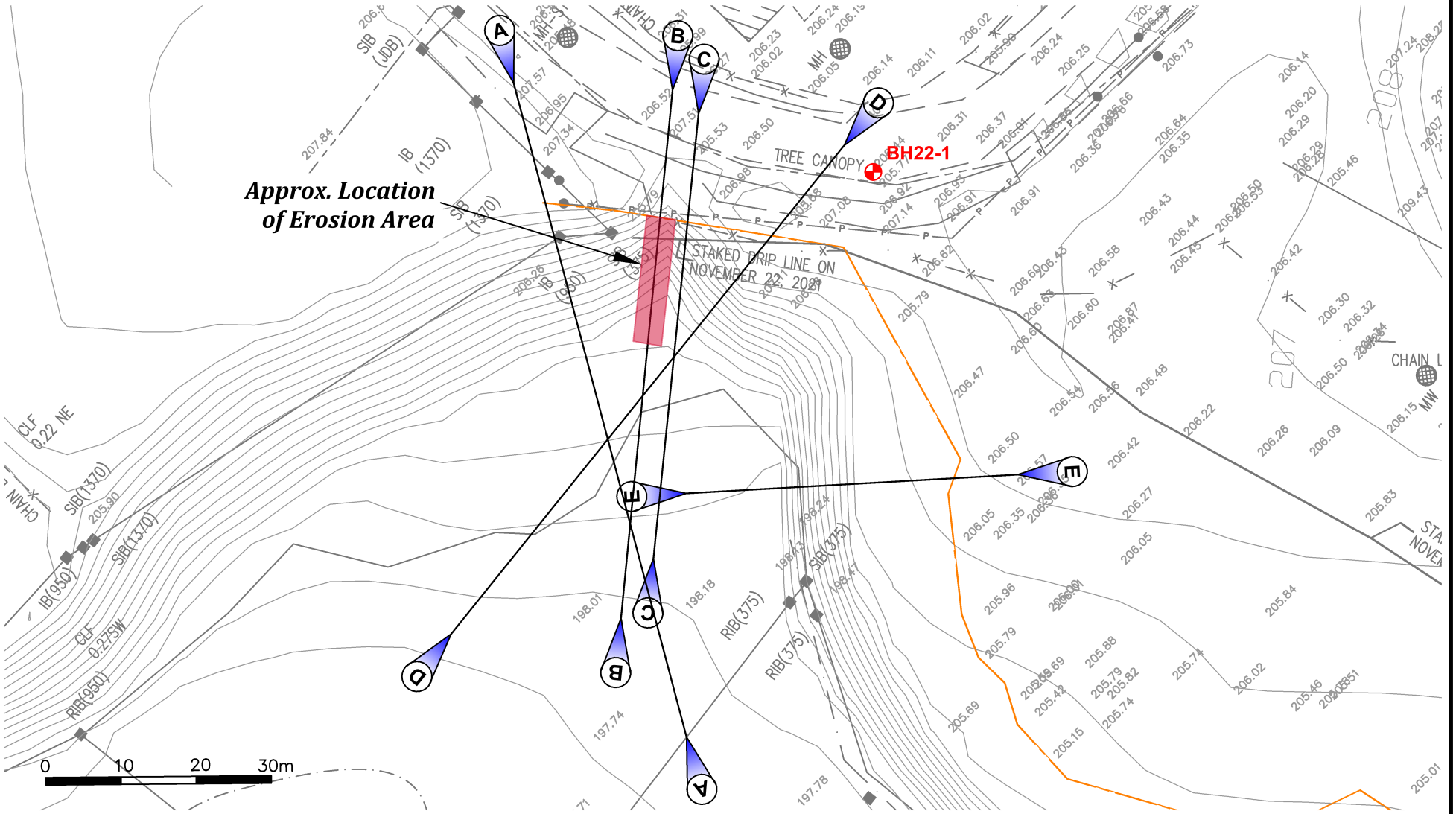
DS CONSULTANTS LTD

Osbert (Ozzie) Benjamin, P.Eng.
Senior Geotechnical Engineer

Fanyu Zhu, Ph.D., P.Eng.
Principal Engineer

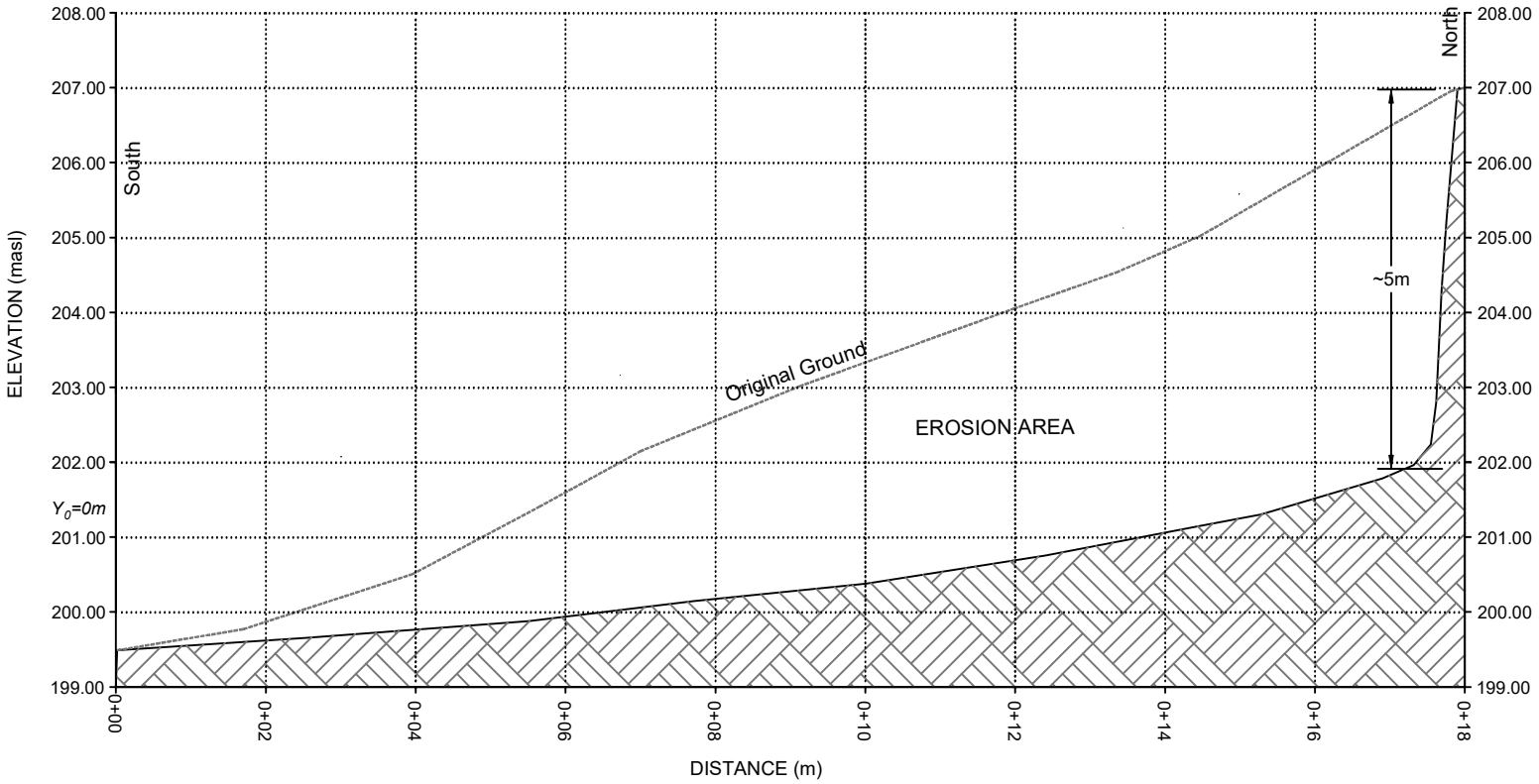
Enclosures: Drawing 1 to 3
Drawing 6 and 6A form DS Slope Stability Assessment Report

Path:j:\-gis\2021 projects\21-122-100 enviro geo investigations 150 steeles ave e\7-misc\cad\geo\drawing 1 - erosion location plan.dwg



DS CONSULTANTS LTD. 6221 Highway 7, UNIT 16 Vaughan, Ontario L4H 0K8 Telephone: (905) 264-9393 www.dsconsultants.ca	Project: SLOPE STABILITY ASSESSMENT 150 Steeles Avenue East, Milton, ON			
	Title: **EROSION LOCATION PLAN**			
Client: NEATT COMMUNITIES	Size: 8.5 x 11	Approved By: O.B	Drawn By: S.Y	Date: May 2023
	Rev.	Scale: As Shown	Project No: 21-122-103	Drawing No. 1

Path:j:\-gis\2021 projects\21-122-100 enviro geo investigations 150 steeles ave e\7-misc\cad\geo\drawing 2 - erosion.dwg



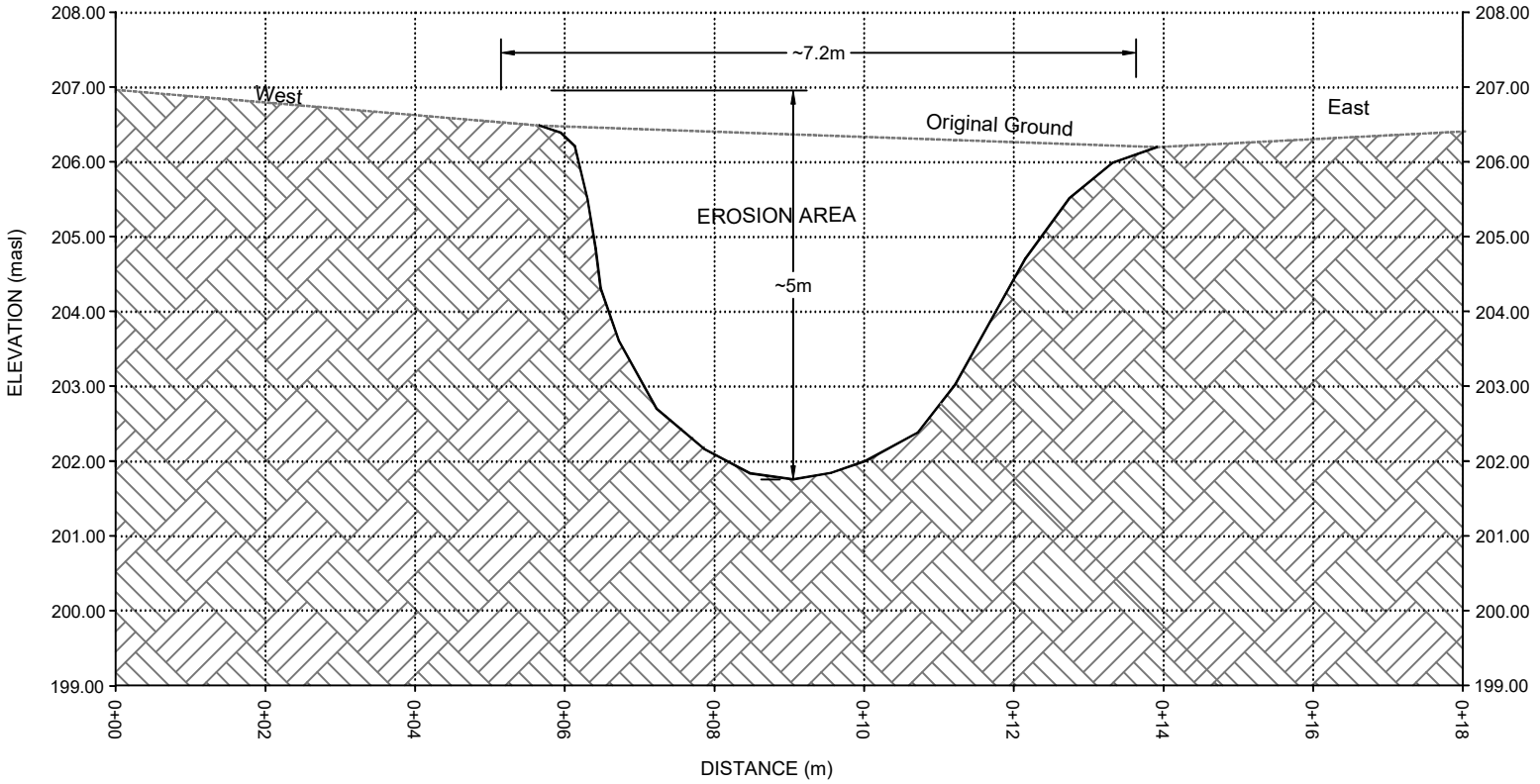
DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: SLOPE STABILITY ASSESSMENT
150 Steeles Avenue East, Milton, ON

Title: **EROSION PROFILE ALONG B-B**

Client:	Size:	Approved By:	Drawn By:	Date:
NEATT COMMUNITIES	8.5 x 11	O.B	S.Y	May 2023
	Rev.	Scale:	Project No:	Figure No.
		As Shown	21-122-103	**2**

Path:j:\-gis\2021 projects\21-122-100 enviro geo investigations 150 steeles ave e\7-misc\cad\geo\drawing 2 - erosion.dwg



DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

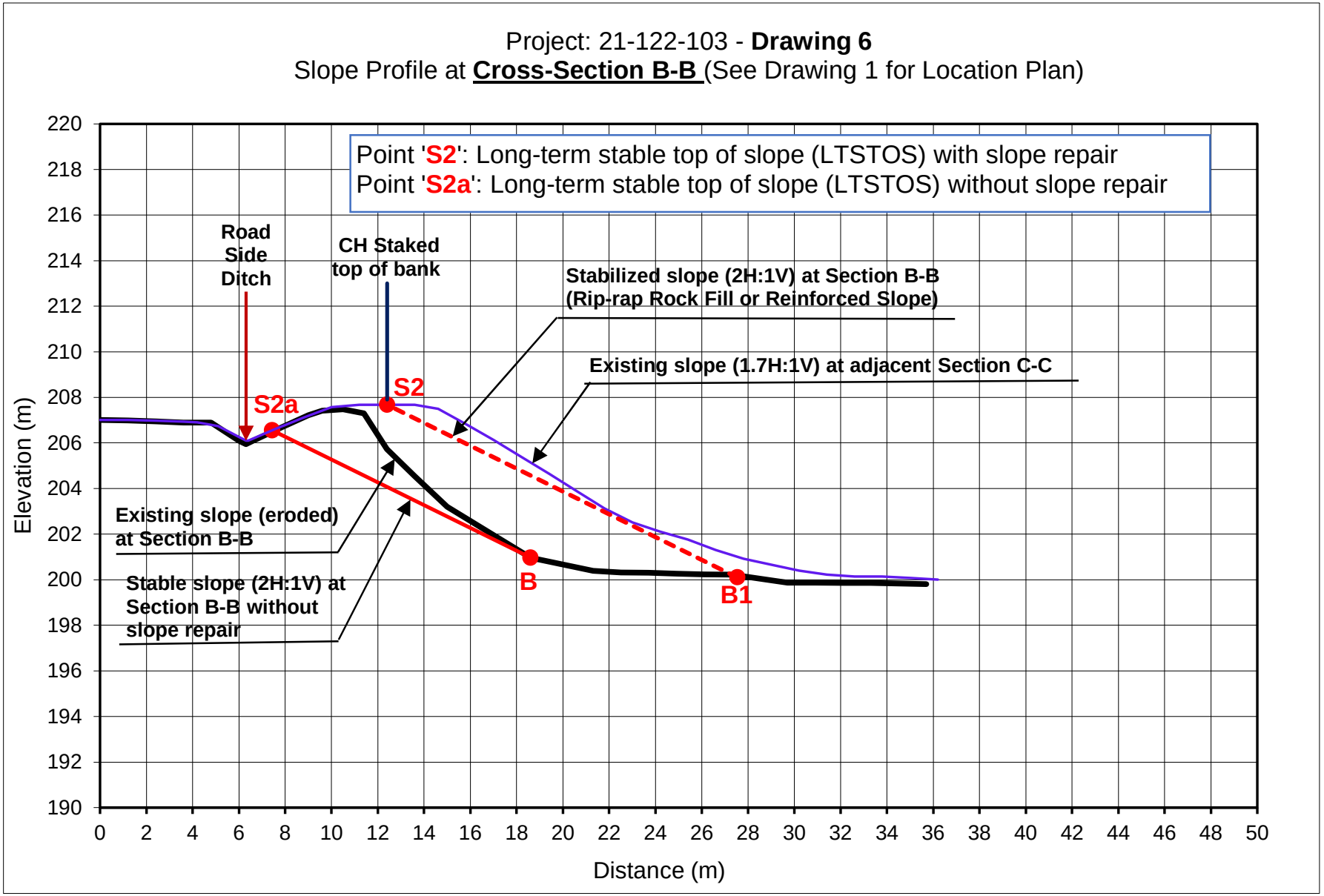
Project: SLOPE STABILITY ASSESSMENT
150 Steeles Avenue East, Milton, ON

Title: **SECTION ACROSS EROSION**

Client:	Size:	Approved By:	Drawn By:	Date:
NEATT COMMUNITIES	8.5 x 11	O.B	S.Y	May 2023
	Rev.	Scale: As Shown	Project No: 21-122-103	Figure No. 3

Project: 21-122-103 - **Drawing 6**

Slope Profile at **Cross-Section B-B** (See Drawing 1 for Location Plan)



Project: 21-122-103 - **Drawing 6A**

Slope Profile at **Cross-Section B-B** (See Drawing 1 for Location Plan)