COMMITTEE OF ADJUSTMENT
City Hall, 5th floor, 71 Main Street West, Hamilton, ON L8P 4Y5
Telephone (905) 546-2424, ext. 4221, 3935 Fax (905) 546-4202
E-mail: cofa@hamilton.ca

NOTICE OF PUBLIC HEARING

Application for Consent/Land Severance

APPLICATION NUMBER: FL/B-22:11

SUBJECT PROPERTY: 1430 Concession 6 West, Flamborough

You are receiving this notice because you are either:

- Assessed owner of a property located within 60 metres of the subject property
- Applicant/agent on file, or
- Person likely to be interested in this application

APPLICANT(S):	Agent Canacre – M. Wood Owner Enbridge – T. Semashkewich
PURPOSE OF APPLICATION:	To establish a long-term lease with Part 5 of the attached sketch and to use a parcel of land which uses Enbridge Westover Terminal. To be heard in conjunction with application FL.B.22.10. **Leased lands:** N/A m± x Irregular Shape m± and an area of 0.026 ha± **Retained lands:** 456m± x 957m± and an area of 53.8 ha±

The Committee of Adjustment will hear this application on:

DATE:	**Thursday, March 17th , 2022**
TIME:	**2:55 p.m.**
PLACE:	**Via video link or call in (see attached sheet for details)** **To be streamed at www.hamilton.ca/committeeofadjustment for viewing purposes only**

PUBLIC INPUT

Written: If you would like to submit written comments to the Committee of Adjustment you may do so via email or hardcopy. Please see attached page for complete instructions, including deadlines for submitting to be seen by the Committee.

Orally: If you would like to speak to this item at the hearing you may do so via video link or by calling in. Please see attached page for complete instructions, including deadlines for registering to participate.

…/2

MORE INFORMATION

For more information on this matter, including access to drawings illustrating this request:

- Visit www.hamilton.ca/committeeofadjustment
- Call 905-546-CITY (2489) or 905-546-2424 extension 4221, 4130, or 3935
- Email Committee of Adjustment staff at cofa@hamilton.ca

DATED: March 1st, 2022

_____

Jamila Sheffield,
Secretary-Treasurer
Committee of Adjustment

Information respecting this application is being collected under the authority of the Planning Act, R.S.O., 1990, c. P. 13. All comments and opinions submitted to the City of Hamilton on this matter, including the name, address, and contact information of persons submitting comments and/or opinions, will become part of the public record and will be made available to the Applicant and the general public.

Key Map NTS.

Legend

- Existing Deciduous Tree
- Existing Coniferous Tree
- Existing Dead Standing Tree
- 0000 Tree to be Removed Identification Tag
- 0000 Tree to be Retained Identification Tag
- Existing Vegetation Unit to be Removed
- Existing Vegetation Unit to be Retained
- Project Boundary
- Tree Protection Fence
- Temporary Workspace (Non-Vegetated)
- Temporary Workspace (Vegetated)
- Permanent Westover Facility Footprint

NOTE: All overhanging trees are to be trimmed back to the edge of temporary workspace.

2 ISSUED FOR SUBMISSION	JL	GG	2021.10.12
1 REVISED PER UPDATED SITE PLAN	JL	GG	2021.10.05
2021 ISSUED FOR CLIENT REVIEW	JJ	GG	2020.11.13
Revision/Issue	By	Appd	YYYY.MM.DD
File Name: 160951192_L-TM	JJ	GG	2021.10.05
	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit-Seal

CERTIFIED ARBORIST ISA
GARY GREWAL
ON-2174A

Client/Project

ENBRIDGE PIPELINES INC.

WESTOVER FACILITY
LINE 10 CARVE OUT PROJECT
1460 CONCESSION ROAD 6 WEST

HAMILTON, ON

Title

TREE PROTECTION PLAN:
OVERALL SITE

Project No. 160951192

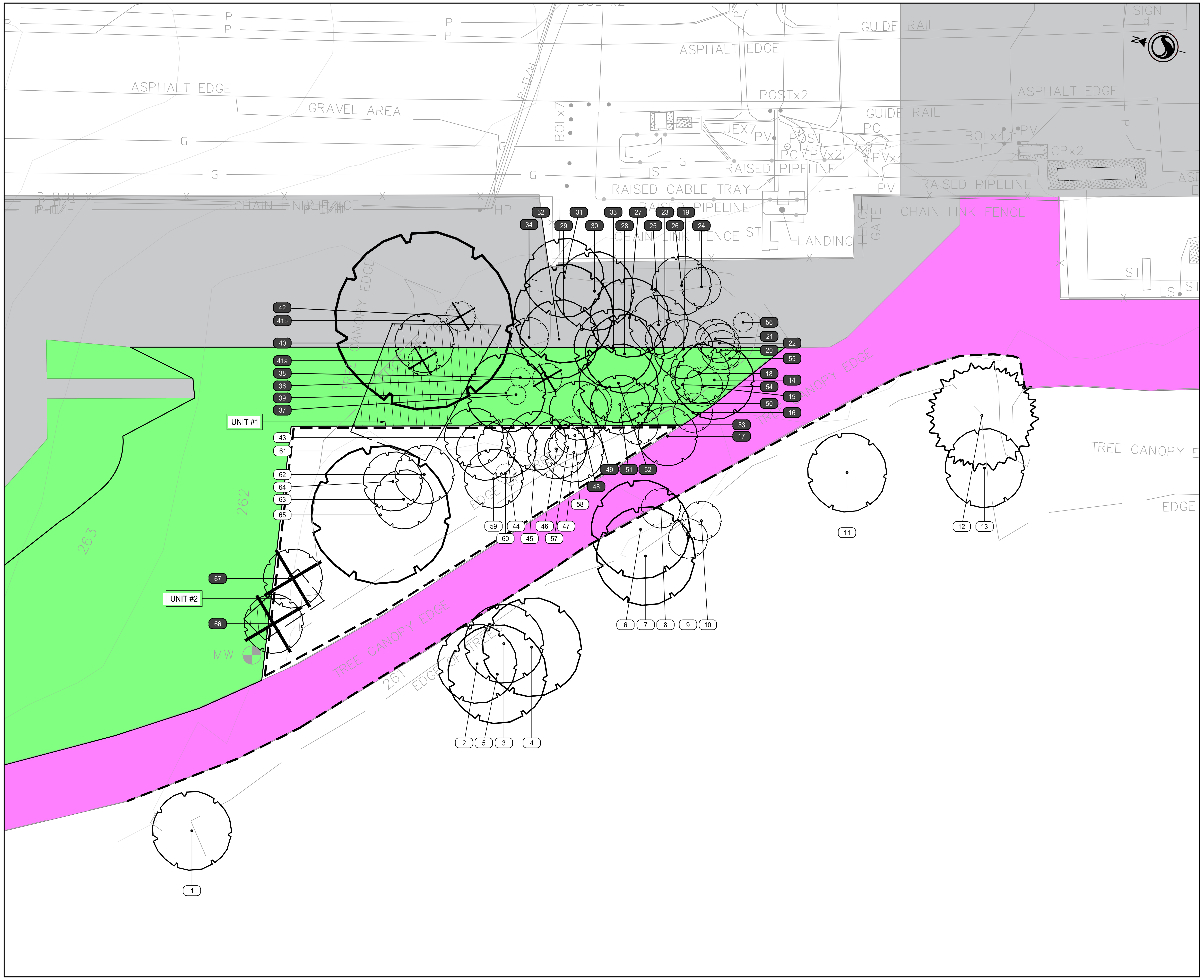
Scale 1:750 (0, 7.5, 22.5, 37.5m)

Revision 2

Sheet 1 of 3

Drawing No. L-900

Stantec
Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo ON N2L 0A4
Tel: (519) 579-4410
www.stantec.com



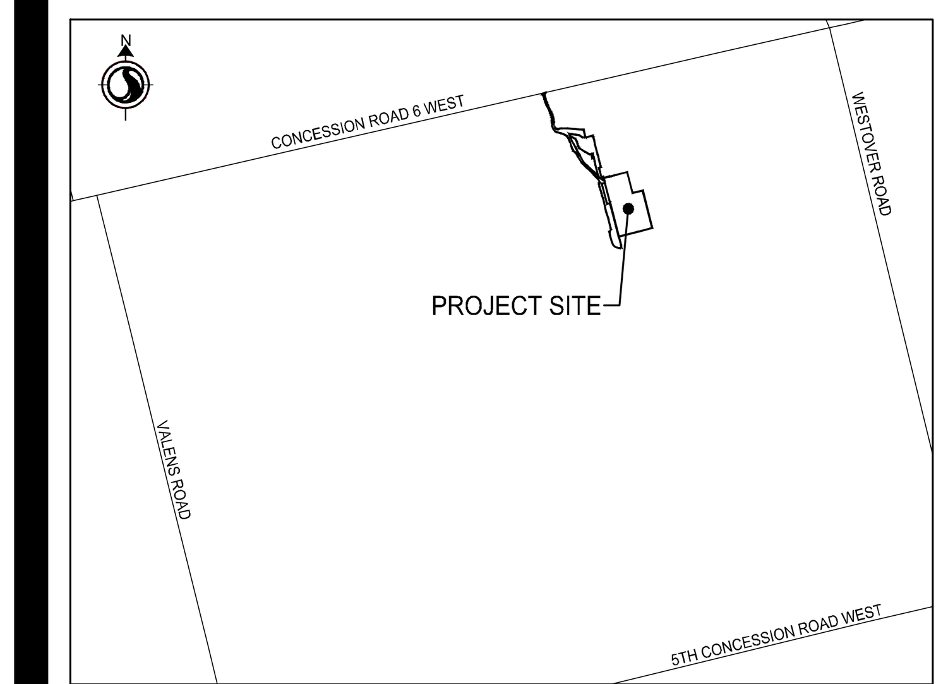
WINDOW #1

1:200 0 2 6 10m

Stantec

Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo ON N2L 0A4
Tel: (519) 579-4410
www.stantec.com

Key Map NTS.



Legend

- Existing Deciduous Tree
- Existing Coniferous Tree
- Existing Dead Standing Tree
- 0000 Tree to be Removed Identification Tag
- 0000 Tree to be Retained Identification Tag
- Existing Vegetation Unit to be Removed
- Existing Vegetation Unit to be Retained
- Project Boundary
- Tree Protection Fence
- Temporary Workspace (Non-Vegetated)
- Temporary Workspace (Vegetated)
- Permanent Westover Facility Footprint

NOTE: All overhanging trees are to be trimmed back to the edge of temporary workspace.

Revision/Issue		By	Appd	YYYY.MM.DD
2	ISSUED FOR SUBMISSION	JL	GG	2021.10.12
1	REVISED PER UPDATED SITE PLAN	JL	GG	2021.10.05
	ISSUED FOR CLIENT REVIEW	JJ	GG	2020.11.13

File Name: 160951192_L-TM	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
	JJ		GG	2021.10.05

Permit-Seal

CERTIFIED ARBORIST
ISA
GARY GREWAL
ON-2174A

Client/Project

ENBRIDGE PIPELINES INC.

WESTOVER FACILITY
LINE 10 CARVE OUT PROJECT
1460 CONCESSION ROAD 6 WEST

HAMILTON, ON

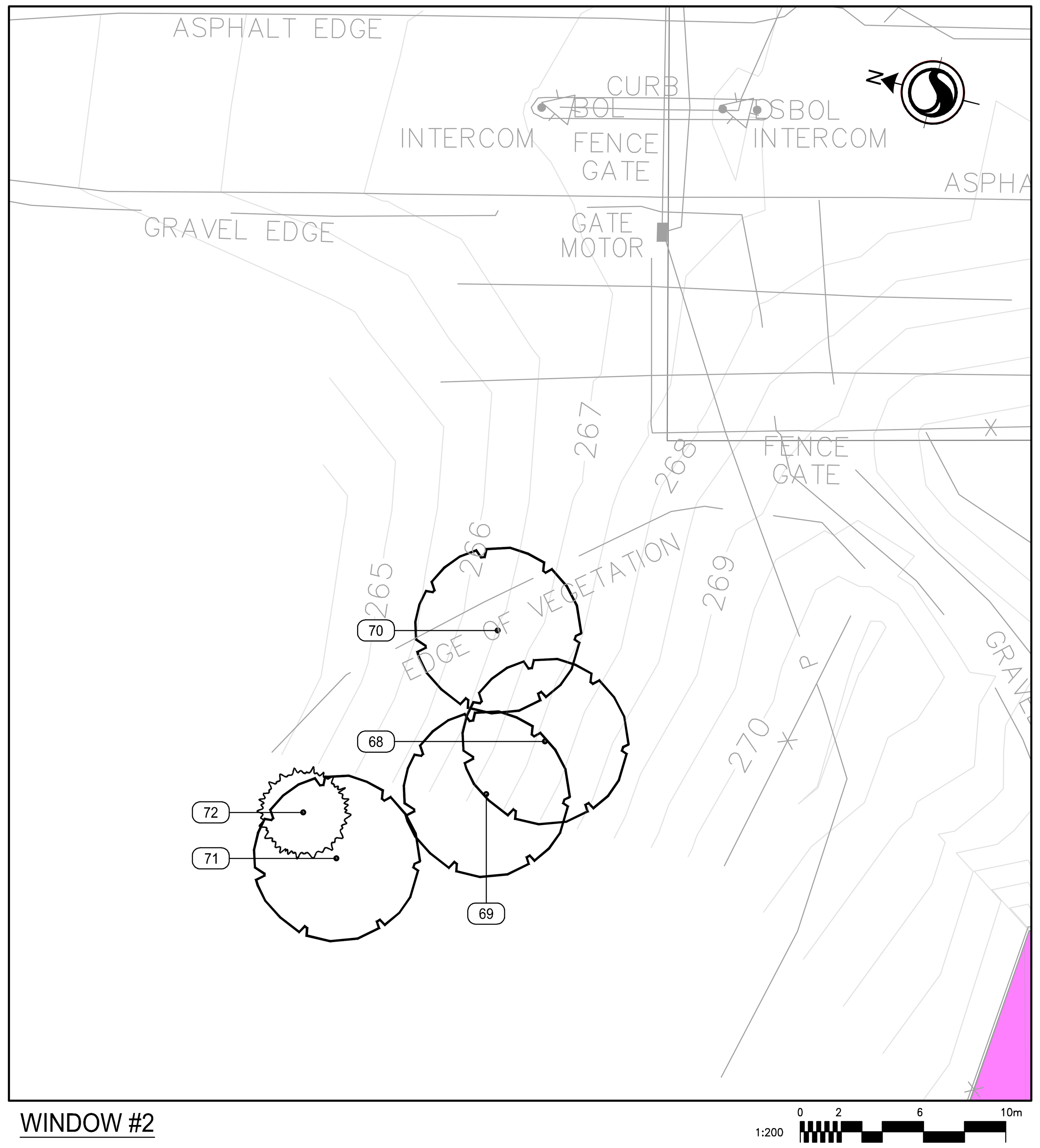
Title

TREE PROTECTION PLAN: DETAILED PLAN

Project No. 160951192 | Scale AS NOTED

Revision 2 | Sheet 2 of 3 | Drawing No. L-901

ORIGINAL SHEET - ARCH D



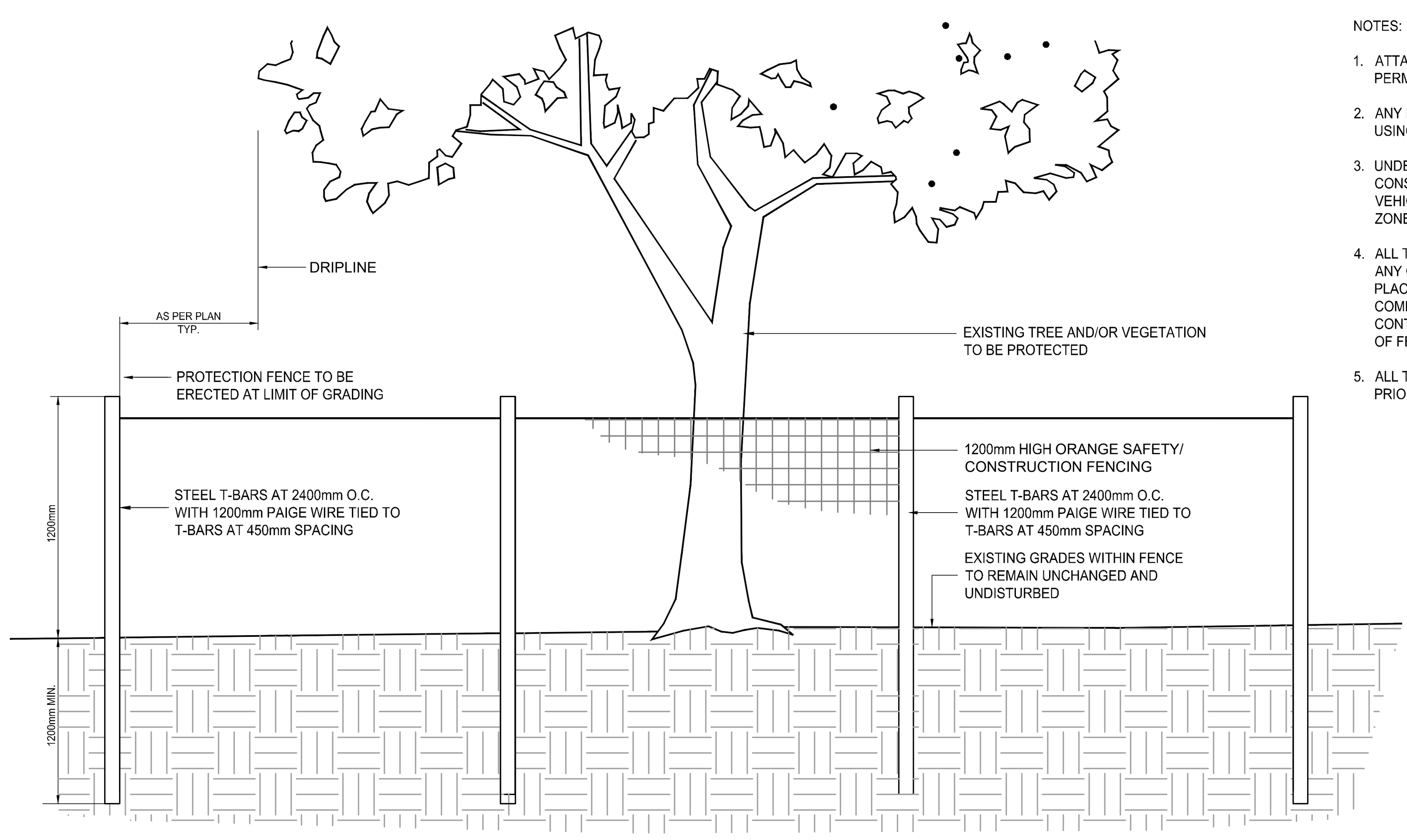
WINDOW #2

TABLE A Detailed Tree Inventory - Enbridge Pipelines Inc., Hamilton, Ontario
Westover Facility - Line 10 Carve Out Project
Data collected: October 16, 2020

1	*Ostrya virginiana*	Ironwood	22	4	Good	Poor	Poor	Poor	Dieback	Retain and Protect	
2	*Populus tremuloides*	Trembling Aspen	22	4	Good	Good	Good	Good		Retain and Protect	
3	*Populus tremuloides*	Trembling Aspen	22	4	Good	Good	Good	Good		Retain and Protect	
4	*Populus tremuloides*	Trembling Aspen	35	5	Good	Good	Good	Good		Retain and Protect	
5	*Populus tremuloides*	Trembling Aspen	35	5	Good	Good	Good	Good	Prune	Retain and Protect	
6	*Populus tremuloides*	Trembling Aspen	35	5	Good	Good	Good	Good		Retain and Protect	
7	*Populus tremuloides*	Trembling Aspen	35	5	Good	Good	Good	Good	Prune	Retain and Protect	
8	*Populus tremuloides*	Trembling Aspen	15	2	Good	Good	Good	Good		Retain and Protect	
9	*Populus tremuloides*	Trembling Aspen	15	2	Good	Good	Good	Good		Retain and Protect	
10	*Populus tremuloides*	Trembling Aspen	15	2	Good	Good	Good	Good		Retain and Protect	
11	*Rhamnus cathartica*	European Buckthorn	12, 20, 15, 16, 15, 18	4	Fair	Good	Good	Good	Union at grade	Retain and Protect	
12	*Pinus strobus*	White Pine	45	5	Good	Good	Good	Good		Retain and Protect	
13	*Populus tremuloides*	Trembling Aspen	22	4	Good	Good	Good	Good		Retain and Protect	
14	*Populus tremuloides*	Trembling Aspen	26	4	Fair	Fair	Good	Fair	Trunk wounds, lopsided crown	Remove - Construction	Within Construction Boundary
15	*Populus tremuloides*	Trembling Aspen	18	2	Fair	Good	Good	Good	Trunk wounds	Remove - Construction	Within Construction Boundary
16	*Populus tremuloides*	Trembling Aspen	18, 9	2	Fair	Good	Good	Good	Trunk wounds, union below grade	Remove - Construction	Within Construction Boundary
17	*Populus tremuloides*	Trembling Aspen	30	3	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
18	*Populus tremuloides*	Trembling Aspen	30	3	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
19	*Prunus serotina*	Black Cherry	22	3	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
20	*Rhamnus cathartica*	European Buckthorn	12, 20	2	Good	Good	Good	Good	Union at grade	Remove - Construction	Within Construction Boundary
21	*Populus tremuloides*	Trembling Aspen	22	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
22	*Quercus macrocarpa*	Bur Oak	11	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
23	*Populus tremuloides*	Trembling Aspen	15	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
24	*Quercus macrocarpa*	Bur Oak	18	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
25	*Populus tremuloides*	Trembling Aspen	25, 20	3	Good	Good	Good	Good	Union above grade	Remove - Construction	Within Construction Boundary
26	*Populus tremuloides*	Trembling Aspen	30	3	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
27	*Populus sp.*	Poplar sp.	39	0	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
28	*Populus sp.*	Poplar sp.	34	0	Good	Good	Good	Good	Co-dominant	Remove - Construction	Within Construction Boundary
29	*Populus tremuloides*	Trembling Aspen	30	5	Good	Good	Good	Good	Co-dominant	Remove - Construction	Within Construction Boundary
30	*Quercus macrocarpa*	Bur Oak	25	4	Good	Fair	Good	Good		Remove - Construction	Within Construction Boundary
31	*Quercus macrocarpa*	Bur Oak	25	4	Good	Fair	Good	Good		Remove - Construction	Within Construction Boundary
32	*Populus tremuloides*	Trembling Aspen	32	4	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
33	*Populus tremuloides*	Trembling Aspen	35	4	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
34	*Populus tremuloides*	Trembling Aspen	15	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
36	-	-	25	0	Dead	Dead	Dead	Dead		Remove - Dead	Dead
37	*Populus tremuloides*	Trembling Aspen	11	1	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
38	*Populus tremuloides*	Trembling Aspen	18, 16	1	Good	Good	Good	Good	Union below grade	Remove - Construction	Within Construction Boundary
39	*Populus tremuloides*	Trembling Aspen	28	4	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
40	*Rhamnus cathartica*	European Buckthorn	28	3	Good	Good	Good	Good		Remove - Dead	Dead
41a	-	-	35	0	Dead	Dead	Dead	Dead		Remove - Construction	Within Construction Boundary
41b	*Quercus macrocarpa*	Bur Oak	70	9	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
42	-	-	20	0	Dead	Dead	Dead	Dead		Remove - Dead	Dead
43	*Populus tremuloides*	Trembling Aspen	22	3	Good	Good	Good	Good		Retain and Protect	
44	*Populus tremuloides*	Trembling Aspen	28	3	Good	Good	Good	Good		Retain and Protect	
45	*Populus tremuloides*	Trembling Aspen	33	3	Good	Good	Good	Good	Trunk wounds	Retain and Protect	
46	*Populus tremuloides*	Trembling Aspen	33	3	Good	Good	Good	Good	Trunk wounds	Retain and Protect	
47	*Populus tremuloides*	Trembling Aspen	33	3	Good	Good	Good	Good	Trunk wounds	Retain and Protect	
49	*Populus tremuloides*	Trembling Aspen	11	2	Good	Good	Good	Good	Trunk wounds	Remove - Construction	Within Construction Boundary
48	*Populus tremuloides*	Trembling Aspen	33	3	Good	Good	Good	Good	Trunk wounds	Remove - Construction	Within Construction Boundary
50	*Populus tremuloides*	Trembling Aspen	20	2	Good	Good	Good	Good	Trunk wounds	Remove - Construction	Within Construction Boundary
51	*Populus tremuloides*	Trembling Aspen	24	3	Good	Good	Good	Good	Trunk wounds	Remove - Construction	Within Construction Boundary
52	*Populus tremuloides*	Trembling Aspen	31	4	Good	Good	Good	Good	Trunk wounds	Remove - Construction	Within Construction Boundary
53	*Prunus serotina*	Black Cherry	14	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
54	*Populus tremuloides*	Trembling Aspen	10	2	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
55	*Quercus macrocarpa*	Bur Oak	10	1	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
56	*Quercus macrocarpa*	Bur Oak	15	1	Good	Good	Good	Good		Remove - Construction	Within Construction Boundary
57	*Populus tremuloides*	Trembling Aspen	22	2	Good	Good	Good	Good		Retain and Protect	
58	*Populus tremuloides*	Trembling Aspen	36	2	Good	Good	Good	Good		Retain and Protect	
59	*Populus tremuloides*	Trembling Aspen	24	3	Good	Good	Good	Good		Retain and Protect	
60	*Quercus macrocarpa*	Bur Oak	15	1	Good	Good	Good	Good		Retain and Protect	
61	*Populus tremuloides*	Trembling Aspen	13	3	Good	Good	Good	Good		Retain and Protect	
62	*Populus tremuloides*	Trembling Aspen	13	3	Good	Good	Good	Good		Retain and Protect	
63	*Quercus macrocarpa*	Bur Oak	14	3	Good	Good	Good	Good		Retain and Protect	
64	*Quercus macrocarpa*	Bur Oak	14	3	Good	Good	Good	Good		Retain and Protect	
65	*Fraxinus pennsylvanica*	Green Ash	38, 20	7	Fair	Good	Good	Good	Union above grade, trunk lean	Retain and Protect	
66	*Fraxinus pennsylvanica*	Green Ash	25, 20	3	Fair	Dead	Dead	Dead	Co-dominant	Remove - Dead	Dead
67	*Fraxinus pennsylvanica*	Green Ash	20, 13	3	Fair	Dead	Dead	Dead	Co-dominant	Remove - Dead	Dead
68	*Robinia pseudoacacia*	Black Locust	22, 26	4	Fair	Good	Good	Good	Union above grade	Protect - No Hoarding	
69	*Robinia pseudoacacia*	Black Locust	28	4	Fair	Good	Good	Good	Co-dominant	Protect - No Hoarding	
70	*Robinia pseudoacacia*	Black Locust	10	4	Good	Good	Good	Good		Protect - No Hoarding	
71	*Robinia pseudoacacia*	Black Locust	15	4	Good	Good	Good	Good	Co-dominant	Protect - No Hoarding	
72	*Thuja occidentalis*	Eastern White Cedar	11	2	Good	Good	Good	Good		Protect - No Hoarding	

TABLE B Detailed Tree Inventory - Enbridge Pipelines Inc., Hamilton, Ontario
Westover Facility - Line 10 Carve Out Project
Data collected: October 16, 2020

1	*Rhamnus cathartica*	European Buckthorn	15	11 - 40 cm	Fair to Good		Partial Removal	Within Construction Boundary
2	*Rhamnus cathartica*	European Buckthorn	5	<10 cm	Fair to Good		Partial Removal	Within Construction Boundary



TD 1 PROPOSED TREE PROTECTION FENCING
N.T.S.

NOTES:

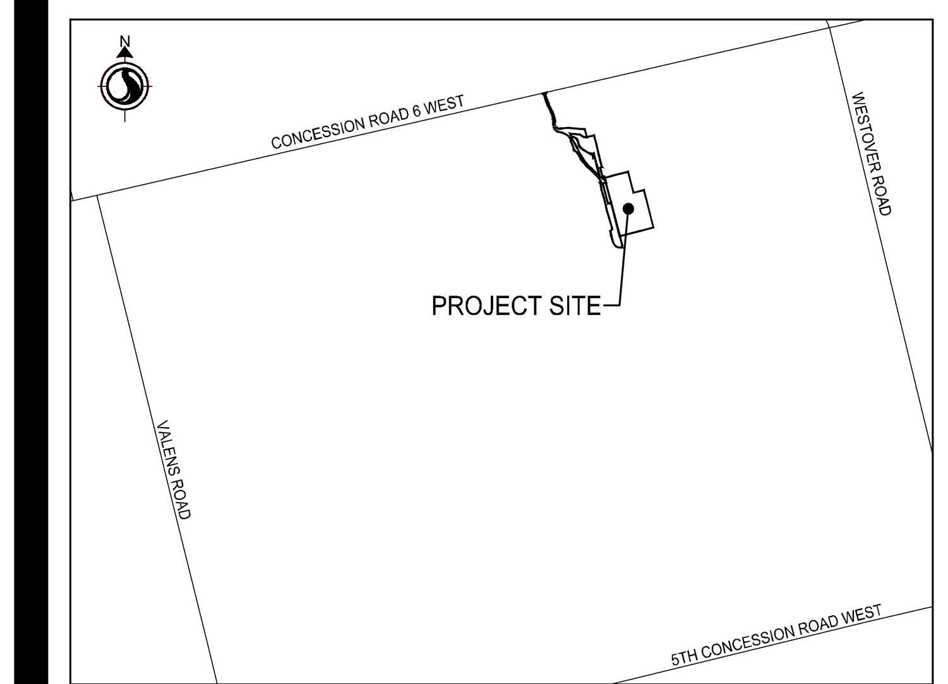
1. ATTACHMENT OF FENCE TO TREES WILL NOT BE PERMITTED.
2. ANY EXPOSED ROOTS ARE TO BE HAND PRUNED USING PROPER ARBORICULTURAL PRACTICES.
3. UNDER NO CIRCUMSTANCES SHALL ANY CONSTRUCTION MATERIALS, EQUIPMENT OR VEHICLES BE PLACED WITHIN THE TREE PROTECTION ZONE.
4. ALL TREE PROTECTION TO BE ERECTED PRIOR TO ANY CONSTRUCTION ACTIVITY AND IS TO REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS BEEN COMPLETED. OBTAIN WRITTEN APPROVAL FROM CONTRACT ADMINISTRATOR PRIOR TO REMOVAL OF FENCING.
5. ALL TREE PROTECTION FENCING SHALL BE REMOVED PRIOR TO PROJECT FINAL ACCEPTANCE.

ORIGINAL SHEET - ARCH D

Stantec

Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo ON N2L 0A4
Tel: (519) 579-4410
www.stantec.com

Key Map NTS.



Legend

- Existing Deciduous Tree
- Existing Coniferous Tree
- Existing Dead Standing Tree
- 0000 Tree to be Removed Identification Tag
- 0000 Tree to be Retained Identification Tag
- Existing Vegetation Unit to be Removed
- Existing Vegetation Unit to be Retained
- Project Boundary
- Tree Protection Fence

NOTE: All overhanging trees are to be trimmed back to the edge of temporary workspace.

		By	Appd	YYYY.MM.DD
2	ISSUED FOR SUBMISSION	JL	GG	2021.10.12
1	REVISED PER UPDATED SITE PLAN	JL	GG	2021.10.05
	ISSUED FOR CLIENT REVIEW	JJ	GG	2020.11.13

Revision/Issue

File Name: 160951192_L-TM	JJ		GG	2021.10.05
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit-Seal
CERTIFIED ARBORIST ISA
GARY GREWAL
ON-2174A

Client/Project
ENBRIDGE PIPELINES INC.

WESTOVER FACILITY
LINE 10 CARVE OUT PROJECT
1460 CONCESSION ROAD 6 WEST

HAMILTON, ON

Title
TREE PROTECTION PLAN:
DETAILED PLAN AND CHART

Project No. 160951192
Scale AS NOTED
Revision 2
Sheet 3 of 3
Drawing No. **L-902**

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham, ON, L3R 0B8

August 19, 2021
File: 160951192

Attention: Mark Looker
Ministry of the Environment, Conservation and Parks
Hamilton District Office
Ellen Fairclough Building, 9th Floor
119 King Street West
Hamilton, ON L8P 4Y7

Dear Mark Looker,

Reference: Line 10 Westover Facility Project Water Quality Management Plan

This letter is to acknowledge the July 19, 2021 memo received from the Ministry of the Environment, Conservation and Parks (MECP) Hamilton District Office accepting the proposed Line 10 Westover Facility Project Water Quality Management Plan submitted on July 8, 2021. It is acknowledged that the MECP identified that the proposed Water Quality Management Plan is acceptable and should provide a high level of protection to the adjacent Sheffield Rockton Wetland Complex Provincially Significant Wetland.

In response to Comment 5 of your review memo regarding the proposed effluent monitoring conditions, it is proposed to specify the monitoring timeframe in Point 1a of the effluent monitoring text to identify that:

> "the works shall be operated using Best Management Practices and in compliance with the established effluent objectives in Table 4, as confirmed on a **semi-annual basis**, by recorded self-monitoring data".

This specification of "semi-annual" monitoring frequency is proposed based on experience with similar effluent monitoring systems at other Westover Express Pipeline facilities. This monitoring frequency is more specific than the previously proposed schedule of "from time to time". This frequency specification will ensure self-monitoring data will be collected on an appropriate schedule to monitor the works for operation under Best Management Practices and per the established effluent objectives.

With the inclusion of this monitoring frequency clarification, we understand that the Line 10 Westover Facility Project Water Quality Management Plan dated July 8, 2021 is satisfactory to the MECP and as such it will be executed as written.

Reference: **Line 10 Westover Facility Project Water Quality Management Plan**

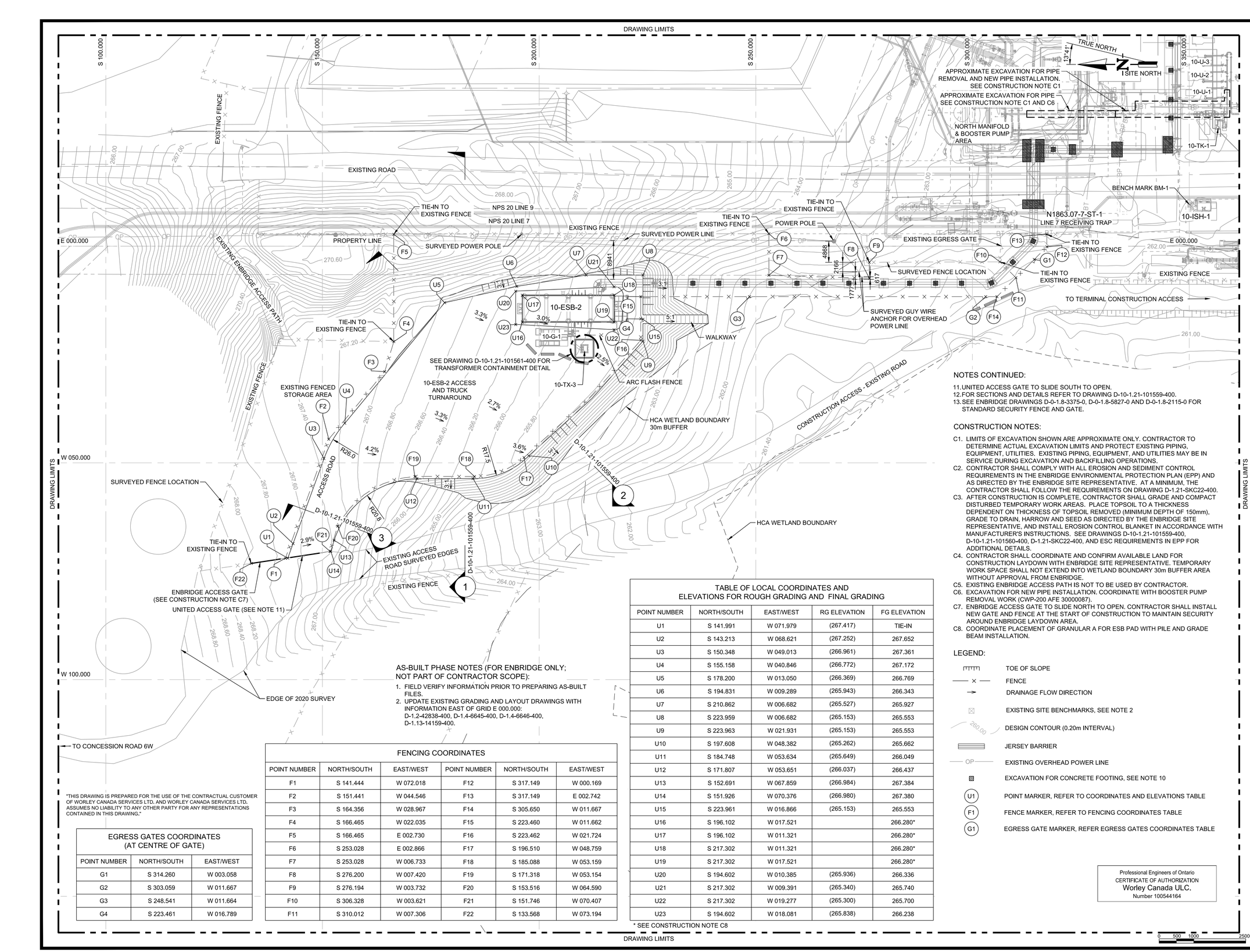
If you have any questions or concerns please do not hesitate to contact the undersigned.

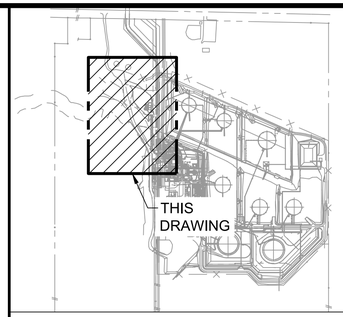
Sincerely,

Stantec Consulting Ltd.

Sheldon Smith MES, P.Geo.
Principal, Senior Hydrologist
Phone: 416-618-0561
Fax: 905-474-9889
Sheldon.Smith@stantec.com

pk \\cd1215-f01\work_group\01609\active\160951192\05_report_deliv\deliverable\swq wmp\responseletter\let_160951192_wex_wcmp_acknowledgement_20210819_fnl.docx





LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-1.0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES WITHIN WORK BOUNDARIES PRIOR TO COMMENCING THE WORK.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL SITE CONDITIONS, COORDINATES, LINES, GRADES AND ELEVATIONS PRIOR TO STARTING WORK.
6. HAND EXCAVATION IS REQUIRED WITHIN 1m OF EXISTING UNDERGROUND CABLES, PIPES, UTILITIES, AND EXISTING FOUNDATIONS.
7. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION, AS REQUIRED, TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES, PIPELINES, BUILDINGS, FENCES, CULVERT, VALVES, ETC.
8. REFERENCE STANDARDS AND DOCUMENTS
   - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002, FCS004, FCS006 AND FCS018.
   - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
9. CONTRACTOR SHALL REFER TO FINAL GEOTECHNICAL REPORT PREPARED BY STANTEC, DATED MAY 6, 2021.
10. APPROXIMATE EXTENT OF EXCAVATION FOR CABLE TRAY SUPPORTS. FOR CONCRETE FOOTING DETAILS SEE DRAWING D-10-2.21-101416-400.

NOTES CONTINUED:

11. UNITED ACCESS GATE TO SLIDE SOUTH TO OPEN.
12. FOR SECTIONS AND DETAILS REFER TO DRAWING D-10-1.21-101559-400.
13. SEE ENBRIDGE DRAWINGS D-0-1.8-3375-0, D-0-1.8-5827-0 AND D-0-1.8-2115-0 FOR STANDARD SECURITY FENCE AND GATE.

CONSTRUCTION NOTES:

C1. LIMITS OF EXCAVATION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE ACTUAL EXCAVATION LIMITS AND PROTECT EXISTING PIPING, EQUIPMENT, UTILITIES. EXISTING PIPING, EQUIPMENT, AND UTILITIES MAY BE IN SERVICE DURING EXCAVATION AND BACKFILLING OPERATIONS.
C2. CONTRACTOR SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REQUIREMENTS IN THE ENBRIDGE ENVIRONMENTAL PROTECTION PLAN (EPP) AND AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE. AT A MINIMUM, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS ON DRAWING D-1.21-SKC22-400.
C3. AFTER CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL GRADE AND COMPACT DISTURBED TEMPORARY WORK AREAS. PLACE TOPSOIL TO A THICKNESS DEPENDENT ON THICKNESS OF TOPSOIL REMOVED (MINIMUM DEPTH OF 150mm), GRADE TO DRAIN, HARROW AND SEED AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE, AND INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEE DRAWINGS D-10-1.21-101559-400, D-10-1.21-101560-400, D-1.21-SKC22-400, AND ESC REQUIREMENTS IN EPP FOR ADDITIONAL DETAILS.
C4. CONTRACTOR SHALL COORDINATE AND CONFIRM AVAILABLE LAND FOR CONSTRUCTION LAYDOWN WITH ENBRIDGE SITE REPRESENTATIVE. TEMPORARY WORK SPACE SHALL NOT EXTEND INTO WETLAND BOUNDARY 30m BUFFER AREA WITHOUT APPROVAL FROM ENBRIDGE.
C5. EXISTING ENBRIDGE ACCESS PATH IS NOT TO BE USED BY CONTRACTOR.
C6. EXCAVATION FOR NEW PIPE INSTALLATION. COORDINATE WITH BOOSTER PUMP REMOVAL WORK (CWP-200 AFE 30000087).
C7. ENBRIDGE ACCESS GATE TO SLIDE NORTH TO OPEN. CONTRACTOR SHALL INSTALL NEW GATE AND FENCE AT THE START OF CONSTRUCTION TO MAINTAIN SECURITY AROUND ENBRIDGE LAYDOWN AREA.
C8. COORDINATE PLACEMENT OF GRANULAR A FOR ESB PAD WITH PILE AND GRADE BEAM INSTALLATION.

LEGEND:

- TOE OF SLOPE
- FENCE
- DRAINAGE FLOW DIRECTION
- EXISTING SITE BENCHMARKS, SEE NOTE 2
- 260.00 DESIGN CONTOUR (0.20m INTERVAL)
- JERSEY BARRIER
- OP EXISTING OVERHEAD POWER LINE
- EXCAVATION FOR CONCRETE FOOTING, SEE NOTE 10
- (U1) POINT MARKER, REFER TO COORDINATES AND ELEVATIONS TABLE
- (F1) FENCE MARKER, REFER TO FENCING COORDINATES TABLE
- (G1) EGRESS GATE MARKER, REFER EGRESS GATES COORDINATES TABLE

AS-BUILT PHASE NOTES (FOR ENBRIDGE ONLY; NOT PART OF CONTRACTOR SCOPE):

1. FIELD VERIFY INFORMATION PRIOR TO PREPARING AS-BUILT FILES.
2. UPDATE EXISTING GRADING AND LAYOUT DRAWINGS WITH INFORMATION EAST OF GRID E 000.000: D-1.2-42838-400, D-1.4-6645-400, D-1.4-6646-400, D-1.13-14159-400.

TABLE OF LOCAL COORDINATES AND ELEVATIONS FOR ROUGH GRADING AND FINAL GRADING

POINT NUMBER	NORTH/SOUTH	EAST/WEST	RG ELEVATION	FG ELEVATION
U1	S 141.991	W 071.979	(267.417)	TIE-IN
U2	S 143.213	W 068.621	(267.252)	267.652
U3	S 150.348	W 049.013	(266.961)	267.361
U4	S 155.158	W 040.846	(266.772)	267.172
U5	S 178.200	W 013.050	(266.369)	266.769
U6	S 194.831	W 009.289	(265.943)	266.343
U7	S 210.862	W 006.682	(265.527)	265.927
U8	S 223.959	W 006.682	(265.153)	265.553
U9	S 223.963	W 021.931	(265.153)	265.553
U10	S 197.608	W 048.382	(265.262)	265.662
U11	S 184.748	W 053.634	(265.649)	266.049
U12	S 171.807	W 053.651	(266.037)	266.437
U13	S 152.691	W 067.859	(266.984)	267.384
U14	S 151.926	W 070.376	(266.980)	267.380
U15	S 223.961	W 016.866	(265.153)	265.553
U16	S 196.102	W 017.521		266.280*
U17	S 196.102	W 011.321		266.280*
U18	S 217.302	W 011.321		266.280*
U19	S 217.302	W 017.521		266.280*
U20	S 194.602	W 010.385	(265.936)	266.336
U21	S 217.302	W 009.391	(265.340)	265.740
U22	S 217.302	W 019.277	(265.300)	265.700
U23	S 194.602	W 018.081	(265.838)	266.238

* SEE CONSTRUCTION NOTE C8

FENCING COORDINATES

POINT NUMBER	NORTH/SOUTH	EAST/WEST	POINT NUMBER	NORTH/SOUTH	EAST/WEST
F1	S 141.444	W 072.018	F12	S 317.149	W 000.169
F2	S 151.441	W 044.546	F13	S 317.149	E 002.742
F3	S 164.356	W 028.967	F14	S 305.650	W 011.667
F4	S 166.465	W 022.035	F15	S 223.460	W 011.662
F5	S 166.465	E 002.730	F16	S 223.462	W 021.724
F6	S 253.028	E 002.866	F17	S 196.510	W 048.759
F7	S 253.028	W 006.733	F18	S 185.088	W 053.159
F8	S 276.200	W 007.420	F19	S 171.318	W 053.154
F9	S 276.194	W 003.732	F20	S 153.516	W 064.590
F10	S 306.328	W 003.621	F21	S 151.746	W 070.407
F11	S 310.012	W 007.306	F22	S 133.568	W 073.194

EGRESS GATES COORDINATES (AT CENTRE OF GATE)

POINT NUMBER	NORTH/SOUTH	EAST/WEST
G1	S 314.260	W 003.058
G2	S 303.059	W 011.667
G3	S 248.541	W 011.664
G4	S 223.461	W 016.789

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.C	LINE 10 CARVE OUT	C15

AFE:	20020043	PROJ NO:	2000186
WP NO:		DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	MK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.C	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

D-0-1.8-2115-0	STANDARD PORTABLE SECURITY FENCE
D-0-1.8-5827-0	STANDARD EMERGENCY EVACUATION GATE
D-0-1.8-3375-0	STANDARD SECURITY FENCE
D-10-1.21-101561-400	TRANSFORMER CONTAINMENT PLAN, SECTIONS AND DETAILS
D-10-2.21-101416-400	SECTIONS AND DETAILS
D-10-1.21-101559-400	FINAL GRADING SECTIONS AND DETAILS
D-1.0-SKC100-400	CONSTRUCTION ACCESS PLAN

REFERENCE DRAWINGS

REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

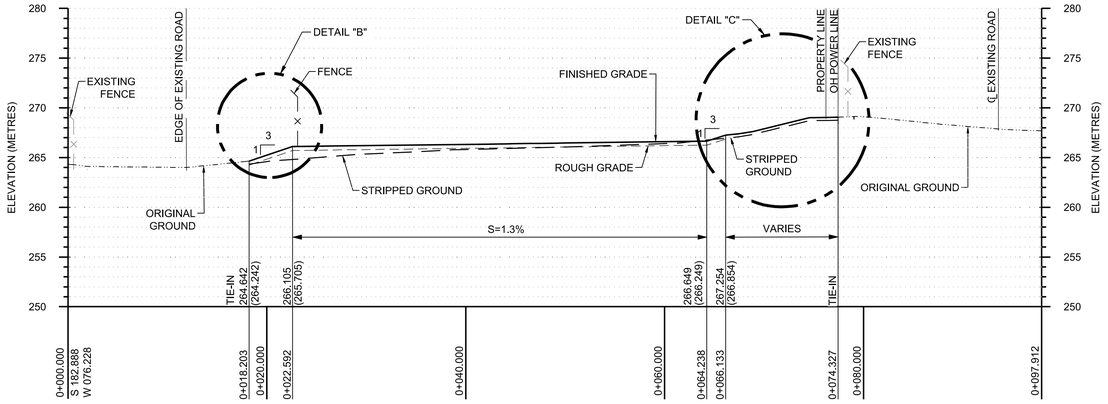
ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
FINAL GRADING
PLAN

BY: MP	CHK: DK	ENG, :DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-14		SCALE: 1:400	STATUS: CONSTRUCTION
DWG NO.: D-10-1.21-101558-400			REV NO: 0.C

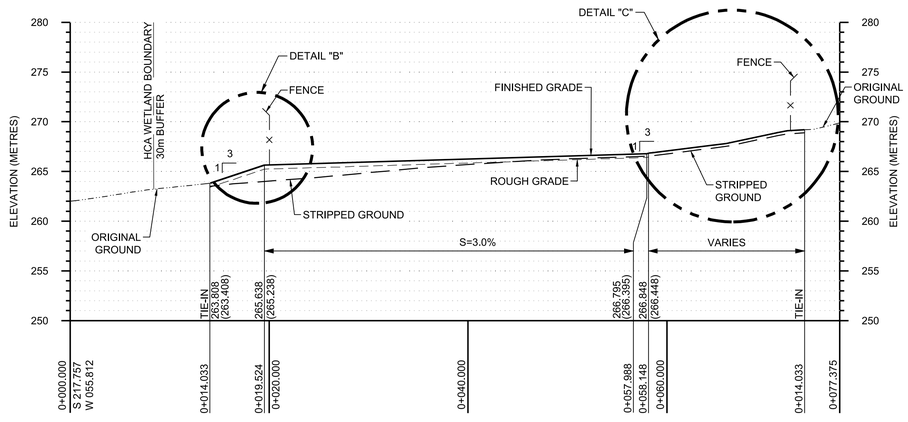
Professional Engineers of Ontario
CERTIFICATE OF AUTHORIZATION
Worley Canada ULC.
Number 100544164

0 500 1000 25000



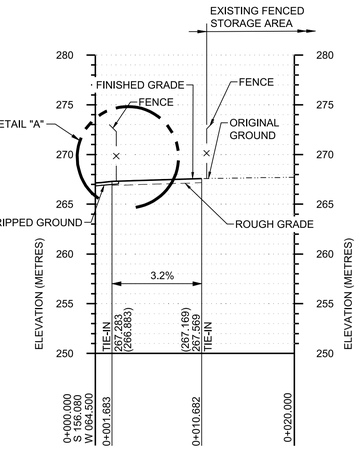
1 SECTION 1 (LOOKING NORTH)

D-10-1.21-101558-400
SCALE - 1:300



2 SECTION 2 (LOOKING WEST)

D-10-1.21-101558-400
SCALE - 1:300



3 SECTION 3 (LOOKING WEST)

D-10-1.21-101558-400
SCALE - 1:300

LEGEND:

———	FINAL GRADE
- - - - -	ROUGH GRADE
—·—·—	ORIGINAL GROUND
— — —	STRIPPED GROUND
TIE-IN	FINAL GRADE ELEVATION TO BE DETERMINED IN FIELD
264.470	FINISHED GRADE ELEVATION
(263.970)	ROUGH GRADE ELEVATION

Professional Engineers of Ontario
CERTIFICATE OF AUTHORIZATION
Worley Canada ULC.
Number 100544164

NOTES CONTINUED:

13. UNSUITABLE MATERIAL IS ORGANIC MATERIAL SUCH AS TOPSOIL, PEATMOSS, ORGANIC SOIL UNDERLYING THE TOPSOIL, ROCKS, DEBRIS AND OTHER MATERIAL THAT IS IN THE OPINION OF ENBRIDGE REPRESENTATIVE, NOT SUITABLE FOR CONSTRUCTION OF THE SITE.
14. REUSE OF EXISTING MATERIALS SHALL BE APPROVED BY GEOTECHNICAL ENGINEER AND THE ENBRIDGE SITE REPRESENTATIVE.
15. ALL FILL MATERIALS IMPORTED TO THE SITE MUST MEET ALL APPLICABLE GUIDELINES AND REQUIREMENTS ASSOCIATED WITH ENVIRONMENTAL CHARACTERIZATION OF THE MATERIALS, SEE EPP FOR FURTHER DETAILS,
16. ALL TOPSOIL REMOVED FROM SITE SHALL COMPLY WITH ONTARIO PROVINCIAL MANAGEMENT OF EXCESS SOIL REQUIREMENTS.
17. ALL FILL MATERIALS FOR ROUGH GRADE SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 150mm AND UNIFORMLY COMPACTED TO AT LEAST 97% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
18. COMMON FILL:
    - EXCAVATED SOIL FROM SITE THAT DOES NOT CONTAIN UNSUITABLE MATERIAL.
    - PLACE COMMON FILL TO MAINTAIN POSITIVE DRAINAGE.
19. GRANULAR A AND GRANULAR B TYPE I AGGREGATE SHALL COMPLY WITH ONTARIO PROVINCIAL STANDARD SPECIFICATION OPSS.PROV 1010.
20. EROSION CONTROL BLANKET SHALL BE CURLEX NET FREE (100% BIODEGRADABLE).
21. SEED MIX SHALL COMPLY WITH ENBRIDGE REQUIREMENTS IN THE EPP.
22. DRAINAGE STONE SHALL BE CLEAN HARD DURABLE CRUSHED STONE WITH >95% TWO CRUSHED FACES AND SHALL MEET THE FOLLOWING GRADATION:

METRIC SIEVE, mm	% PASSING
40	100
37.5	95-100
25	50-80
19	5-20
10	0-5

23. MECHANICAL PROTECTION COVER FOR BURIED CABLES SHALL BE 50mm THICK CONCRETE AND EXTEND 50mm BEYOND THE CABLES ON EACH SIDE. THE CONCRETE COVER MAY BE CAST IN PLACE OR PRECAST TILES.
24. AFTER TYPE 1 AND TYPE 2 FINAL GRADE IS COMPLETED, PLACE A 50mm LAYER OF DRAINAGE STONE ON THE SURFACE FOR EROSION RESISTANCE.
25. TYPICAL DETAILS FOR BACKFILLING EXCAVATIONS NEAR MAINLINE PUMPS WHERE EXISTING BURIED CABLES ARE EXPOSED. PLACE AND COMPACT GRANULAR A TO MATCH EXISTING GRADES AND DRAINAGE.
26. TYPICAL DETAIL FOR BACKFILLING EXCAVATIONS NEAR MAINLINE PUMPS AFTER PIPE IS REMOVED. PLACE AND COMPACT GRANULAR A TO MATCH EXISTING GRADES AND DRAINAGE.
27. TYPICAL DETAILS FOR BACKFILLING EXCAVATIONS NEAR MAINLINE PUMPS AFTER NEW PIPE IS INSTALLED. PLACE AND COMPACT GRANULAR A TO MATCH EXISTING GRADES AND DRAINAGE.

NOTES:

1. STATIONS, COORDINATES AND ELEVATIONS ARE IN METRES.
2. ALL DIMENSIONS, COORDINATES AND ELEVATIONS SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
3. FOR GRADING PLAN REFER TO DRAWING D-10-1.21-101558-400.
4. SURFACING TYPES:

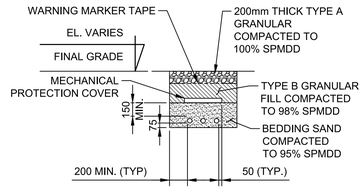
   TYPE 1:
   - 50mm DRAINAGE STONE (FINAL GRADE ELEVATIONS ARE TOP OF GRANULAR A LAYER)
   - 150mm THICK GRANULAR A COMPACTED TO 100% SPMDD
   - 250mm THICK GRANULAR B COMPACTED TO 100% SPMDD
   - TERRAFIX COMBIGRID 30/30 Q1
   - ROUGH GRADE

   TYPE 2:
   - 50mm DRAINAGE STONE (FINAL GRADE ELEVATIONS ARE TOP OF GRANULAR A LAYER)
   - 300mm THICK GRANULAR A COMPACTED TO 97% SPMDD (THICKNESS OF GRAVEL SHALL BE EQUAL TO DEPTH OF TOPSOIL REMOVED TO MAINTAIN POSITIVE DRAINAGE)
   - COMPACTED SUBGRADE TO 95% SPMDD

   TYPE 3:
   - EROSION CONTROL BLANKET, SEED, 300mm TOPSOIL (TOPSOIL THICKNESS SHALL EQUAL THE DEPTH OF TOPSOIL REMOVED TO MAINTAIN PROPER DRAINAGE)

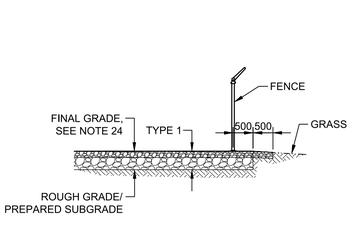
   TYPE 4:
   - 150mm THICK GRANULAR A COMPACTED TO 100% SPMDD
   - 250mm THICK GRANULAR B COMPACTED TO 100% SPMDD
   - ROUGH GRADE

5. CONTRACTOR SHALL ENSURE THAT ALL EXISTING PIPELINES AND OTHER UNDERGROUND FACILITIES ARE LOCATED PRIOR TO CONSTRUCTION AND SHALL COMPLY WITH ENBRIDGE GROUND DISTURBANCE GUIDELINE.
6. CONSTRUCTION EQUIPMENT SHALL BE OPERATED IN A CONTROLLED MANNER TO PREVENT ANY DAMAGE TO EXISTING ABOVE AND BELOW GROUND UTILITY LINES AND STRUCTURES.
7. ALL WORK SHALL BE DONE TO THE LINES, GRADES AND ELEVATIONS SHOWN ON THE DESIGN DRAWINGS.
8. PRIOR TO COMMENCING ANY EARTHWORK, ALL VEGETATION, ORGANICS AND OTHER NON-SUITABLE MATERIAL SHALL BE STRIPPED FROM THE GROUND SURFACE, AND REMOVED FROM SITE AS DIRECTED BY OWNER.
9. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE, WHERE REQUIRED, TEMPORARY PROTECTION TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES AND FENCES.
10. TEMPORARY EXCAVATION MUST BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE OCCUPATIONAL HEALTH AND SAFETY ACT (OHSA) AND GEOTECHNICAL REPORT.
11. REFERENCE STANDARDS AND DOCUMENTS
    - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002 AND FCS004.
    - STANTEC GEOTECHNICAL REPORT, MAY 6, 2021.
    - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
12. SUB-GRADE PREPARATION:
    - CUT AREAS: SCARIFY CUT SURFACE TO A DEPTH OF 200mm AND COMPACT TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (S.P.M.D.D.) WITHIN 2% OF OPTIMAL MOISTURE CONTENT (O.M.C.).
    - FILL AREAS: SCARIFY EXISTING SUB-GRADE SURFACE TO A DEPTH OF 200mm AND COMPACT TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (S.P.M.D.D.) WITHIN 2% OF OPTIMAL MOISTURE CONTENT (O.M.C.).



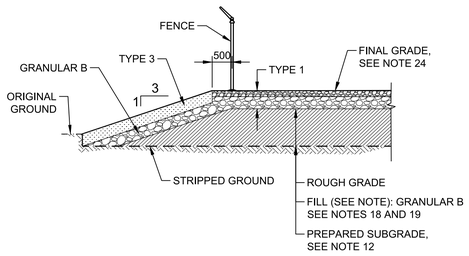
F CABLE TRENCH DETAIL

NTS
SEE NOTES 23 AND 25



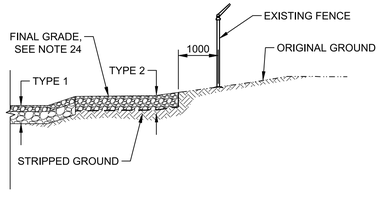
A SITE GRADING DETAIL - CUT

NTS



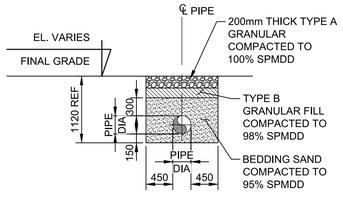
B TYPICAL SITE GRADING DETAIL - FILL

NTS



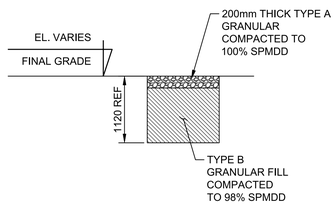
C TYPICAL SURFACING DETAIL

NTS



D PIPE BACKFILL DETAIL

NTS
SEE NOTE 27



E TYPICAL BACKFILL DETAIL

NTS
SEE NOTE 26

0 3000 6000 9000 15000

"THIS DRAWING IS PREPARED FOR THE USE OF THE CONTRACTUAL CUSTOMER OF WORLEY CANADA SERVICES LTD. AND WORLEY CANADA SERVICES LTD. ASSUMES NO LIABILITY TO ANY OTHER PARTY FOR ANY REPRESENTATIONS CONTAINED IN THIS DRAWING."

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.C	LINE 10 CARVE OUT	C16

AFE:	20020043	PROJ NO.:	2000186
WP NO.:		DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	MK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.C	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

D-10-1.21-101558-400 FINAL GRADING PLAN

REFERENCE DRAWINGS

REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
FINAL GRADING
SECTIONS AND DETAILS

BY: MP	CHK: DK	ENG. :DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-15		SCALE: AS SHOWN	STATUS: CONSTRUCTION
DWG NO.: D-10-1.21-101559-400			REV NO: 0.C

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham, ON, L3R 0B8

July 8, 2021
File: 160951192

Attention: Mark Looker
Ministry of the Environment, Conservation and Parks
Hamilton District Office
Ellen Fairclough Building, 9th Floor
119 King Street West
Hamilton, ON L8P 4Y7

Dear Mark Looker,

Reference: Line 10 Westover Facility Project Water Quality Management Plan

1 INTRODUCTION

Enbridge Pipelines Inc. on behalf of Westover Express Pipeline (WEX) is submitting an industrial sewage works (ISW) environmental compliance approval (ECA) for the proposed construction of a gravel pad, electrical switchgear building, tie-in to existing substation, station service transformer, and associated site infrastructure to support the separation of Line 10 assets operationally from the existing Enbridge Pipeline Inc. (Enbridge) mainline assets. The Line 10 WEX Facility Project ("the Project") is located northwest of the existing Enbridge Westover Terminal, located at 1430 6th Concession Road West, in Hamilton, Ontario (Figure 1) and will have no pipelines or product transmission located on site.

In a pre-consultation meeting with the MECP on June 10, 2021, further information and clarification was requested to support proposed effluent objectives and monitoring for the ISW ECA at the WEX site.

2 ENVIRONMENTAL SENSITIVITIES

The existing facility is directly adjacent to the Sheffield Rockton Wetland Complex (Figure 1) which is classified as a provincially significant wetland (PSW) located with the Westover local assessment area. Within the PSW, the wetland is composed of open aquatic marsh (MAMM1-3 and MASO1-1) and swamp (SWDM3-3 and SWDM4-5) habitat. Descriptions of the wetland ecological land classification (ELC) include the following:

- SWDM3-3 (Swamp Maple Mineral Deciduous Swamp) is the largest wetland feature within the Westover local assessment area and contains a large flooded area with young Freeman's maple (*Acer freemanii)* the dominant species within the canopy. The wetland was flooded on a site visit conducted on June 15, 2020 but was dry on August 7, 2020. There was abundant leaf litter throughout the wetland with red osier dogwood (*Cornus stolonifera*) the dominant species in the sub-canopy.

- SWDM4-5 (Poplar Mineral Deciduous Swamp) bisects two sections of the SWDM3-3 swamp, directly west of the existing Westover Facility. Aspen (*Populus tremuloides*) was the dominant species in the canopy.

- MAMM1-3 (Reed-canary Grass Graminoid Mineral Meadow Marsh) is complexed together with SWDM3-3, to the north and is directly adjacent to an existing access road proposed for used during construction. This section of the wetland is dominated by reed canary grass (*Phalaris arundinacea*).

- MASO1-1 (Cattail Organic Shallow Marsh) is part of a larger open aquatic complex located south and west of the existing Westover Facility.

HCA (2011) indicates that the Sheffield-Rockton Wetland Complex PSW is part of the West Spencer Creek subwatershed which contains some large forested areas and wetlands. The system appears to be predominantly surface-water driven because many of the upper reaches of tributaries are intermittent. The wetlands serve an important hydrological function by retaining runoff, contributing to stream baseflow, and maintaining surface water quality in the headwaters of these watersheds.

A meeting was held with the Hamilton Conservation Authority (HCA) on May 4th, 2021 to discuss permitting requirements and timelines for the Project. Comments with respect to the wetland centered on maintaining the features and functions of the wetland and that site drainage will have no adverse effect on the health and ecological function or integrity of the wetland. In addition, if vegetation is to be removed as part of the development, there will be a need to demonstrate that removal won't impact the wetland features and functions.

3 GENERAL SITE STORMWATER DRAINAGE

3.1 GRAVEL PAD

The Project infrastructure will be built on top of a raised gravel pad with an area of approximately 0.235 ha west of the existing access road for the Enbridge Westover Terminal (Figure 1). The gravel pad will have a mild slope of 2.5% to 4.2% (Figure 2) towards the Sheffield Rockton Wetland Complex to the south (Figure 3). Along the south and southwest perimeter of the gravel pad, approximately 95 m in length, a 3:1 (33.5%) slope will be constructed to merge the raised gravel pad to the existing ground elevations.

3.2 WATER QUALITY

Precipitation from the 0.235 ha gravel pad is expected to flow southward as sheet flow due to the uniform gravel pad surface area and mild constructed slopes. As no pipelines or product transmission will be located on site, discharge from the gravel pad is not expected to have elevated water quality parameters. However, due to the wetland downgradient of the gravel pad acting as the receiver for runoff, a treatment train is proposed to reduce the potential for water quality concerns.

The treatment train will consist of three main processes:

1. Estimating the particle mobilization size of the stormwater runoff design storm. Based on the use of Granular A and Granular B in the gravel pad, we estimated the largest gravel particle the design event could mobilize to understand the potential for particle movement and erosion from the gravel pad.

2. Seepage of infiltrated water into the gravel pad. We anticipate that due to grain size of the proposed gravel pad a significant amount of design storm precipitation will infiltrate the gravel pad and wash fines into the gravel matrix of the gravel pad. Infiltrated runoff will then migrate through the gravel pad toward the gravel pad embankment under reduced groundwater flow conditions further immobilizing particulate.

3. Flow over and through the soil and vegetated layer of the proposed filter strip along the gravel pad embankment. The portion of gravel pad sheet flow that does not infiltrate will flow over the embankment crest and down the embankment slope through the vegetated filter strip. Infiltrated runoff migrating through the gravel pad to the embankment will seep through the topsoil base of the filter strip and then over the vegetated embankment.

When considered as a whole, the approach to stormwater runoff from the gravel pad included lot level controls in the form of surface materials with low potential for entrainment of suspended solids and promoting infiltration, a key element of low impact development guidance. The vegetated filter strip as the last step in the treatment train will behave as an “end of pipe” or end of train control to further filter and polish entrained sediment in runoff before release to the adjacent wetland complex buffer zone.

3.3 WATER QUANTITY

Peak rainfall intensity from the 100-year design storm was estimated using the 10-minute peak intensity assuming a 10-minute time of concentration over the gravel pad. Mount Hope intensity-duration-frequency (IDF) parameters were used as inputs to the peak intensity as recommended by the City of Hamilton Criteria and Guidelines for Stormwater Infrastructure Design (2007).

The estimated peak rainfall intensities were used in the Rational Method (equation 1) to find the peak flow. A runoff coefficient of 0.7 was selected for the gravel pad drainage area to be conservative, while the area of the gravel pad draining over the proposed vegetated filter strip and ultimately to the wetland was found to be approximately 0.235 ha (Figure 2). The Mount Hope 100-year, 10-minute intensity was 177.8 mm/hr. The estimated peak flow for the 100-year storm event was found to be 0.081 m^3/s (Attachment B).

$$Q = \frac{CiA}{360} \qquad \text{Equation 1}$$

Where:

C - Runoff coefficient (unitless) *Q – Peak flow (m^3/s)*

i - Rainfall intensity (mm/hr) *A - Drainage area (ha)*

Flow depth over the gravel pad was estimated using Manning’s equation for open channel flow (equation 2), with the hydraulic radius broken down to length and depth. Input parameters included a roughness coefficient of 0.04 (Chow, 1959), slope of 0.03 m/m, and 95 m length. The flow depth was based on the peak flow estimated from Equation 1, which was found to be 6 mm.

$$Q = \frac{LD\left(\frac{LD}{L+2D}\right)^{\frac{2}{3}}\sqrt{S}}{n} \qquad \text{Equation 2}$$

Where:

L – Flow length (m) *D – Flow depth (m)*

S - Slope (m/m) *n – Roughness coefficient (unitless)*

Using the peak flow, flow length, and flow depth determined from Equation 1 and Equation 2, the design velocity could be found using the continuity equation (Equation 3). The 100-year flow design velocity was found to be 0.144 m/s.

$$Q = VA \quad \text{Equation 3}$$

Where:

A – Cross sectional flow area (m^2) *V – velocity (m/s)*

The critical shear stress, or the stress required to mobilize sediment, was calculated to determine the minimum acceptable grain size for the gravel pad and vegetated filter strip. The equations, input parameters, and values used for the critical shear stress are presented in Attachment B for clay, silt/sand, and gravel/cobble. The critical shear stress for silt and sand was found to be 0.73 Pa, or 1.46 Pa with the applied factor of safety.

3.4 STONE SIZING

The design velocity and critical shear stress presented in Section 3.3 were converted from SI units to US Customary units to compare to the permissible shear stress and permissible velocity presented by Fischenich (2001) for a selection of channel lining materials (Attachment B). The design velocity was found to be less than the permissible velocity for the listed lining materials, while the critical shear stress for silt and sand was found to be just within the permissible shear stress range for fine colloidal sand. Therefore, to be conservative it was assumed that very fine sand (typical grain size diameter of 0.076 mm) may be mobilized by the 100-year design event.

Granular A and Granular B Type I as specified by OPSS 1010 are proposed to be used as top and under layers, respectively for the gravel pad. As per Table 2 of OPSS 1010, the range of material potentially subject to mobilization is the 0.075 mm particle size, of which Granular A has 2-8% and Granular B Type I has 0-8% 0.075 mm particles. As Granular A gravel will form the top layer of the pad, its grain size distribution is critical to understanding the potential for overland sheet flow to mobilize gravel particles. As such on 2 – 8% of the Granular A pad surface are in a gradation class potentially subject to mobilization and 92 - 98% of the gravel pad surface is not subject to erosion and particle entrainment.

In addition, because the fill material (Granular A and Granular B Type I) have a high infiltration capacity and high surface roughness, we anticipate that most runoff will have the potential to infiltrate the gravel pad. With a typical granular porosity ranging from 32% to 40% (Liu et al. 2020) and 500 mm proposed of granular gravel pad, it is anticipated to have the capacity to conservatively store approximately 160 mm of rainfall. As water is expected to infiltrate the gravel pad and there is the potential for a small percentage of fines (<0.076 mm) to be mobilized, it is anticipated that the rainfall and infiltration will wash the fines into the granular base.

Therefore, the silt class fines that may be mobilized by the 100-year design event may be present in the proposed fill material in small quantities but is expected to be washed down into the granular base and not contribute to increased total suspended solids (TSS) in the effluent water quality.

3.5 FILTER STRIP DESIGN

As indicated in the Stormwater Management Planning and Design Manual (MOE 2003), vegetated filter strips have a high suitability for water balance, medium suitability for water quality management and erosion prevention, and a low suitability for water quantity reduction.

The design area for the vegetated filter strips of 0.235 ha meets the small drainage area requirement of less than 2 ha (MOE 2003). The mild slope of the proposed gravel pad of 2.5% to 4.2% also meets the topography requirement of less than 10% to promote sheet flow and maximize filtration potential. However, the recommended width of the filter strip in the direction of flow is 10 m – 20 m, which will not be accommodated in the Project site as the design of the gravel pad has a slope length between 4.5 to 8 m.

A level spreader was not included in the design of the filter strip as the gravel pad has a moderately uniform and mild slope that promotes sheet flow. Additionally, the gravel pad itself is anticipated to have the capacity to store approximately 160 mm of rainfall as indicated in Section 3.4. The water that infiltrates into the granular base will seep out of the filter strip (which will have a soil layer as detailed below) prior to flowing down the vegetated layer.

Without accounting for infiltration and seepage attenuation of flows, the flow depth of the vegetated filter strip is expected to be 6 mm as indicated in Section 3.3 for the 100-year 10-minute peak intensity Rational Method peak flow. The 6 mm water depth is less than the 50-100 mm maximum recommended water depth in MOE (2003).

As indicated in Figure 4, a 300 mm layer of topsoil (Type 3 Surfacing) is proposed over the granular material to promote seed mix establishment. The HCA recommended Upland Native Meadow Mix should be used at 22 kg/ha – 25 kg/ha, with a cover crop mix of *Avena sativa* and *Elymus canadensis* at an additional 22 kg/ha – 25 kg/ha if seeded in spring, summer, or early autumn. If seeding occurs in late autumn a cover crop of winter wheat should be used.

Table 1 Upland Native Meadow Mix

Common Name	Latin Name	City of Hamilton Status	% of Mix
Common Evening Primrose	*Oenothera biennis*	Common	25
Canada Anemone	*Anemonastrum canadense*	Common	1
Common Milkweed	*Asclepias syriaca*	Common	2
Heart Leaved Aster	*Symphyotrichum cordifolium*	Common	1
New England Aster	*Symphyotrichum novae-angliae*	Common	1
Granular Sedge	*Carex granularis*	Common	15
Virginia Virgin's-bower	*Clematis virginiana*	Common	1
Virginia Wildrye	*Elymus virginicus var. virginicus*	Common	40
Grass-leaved Goldenrod	*Euthamia graminifolia*	Common	1
Wild Bergamot	*Monarda fistulosa*	Common	1
Black-eyed Susan	*Rudbeckia hirta*	Common	10
Canada Goldenrod	*Solidago canadensis*	Common	2
		Total	**100**

An erosion control blanket (ECB) should be used as per OPSS Prov. 804 standards, which includes:

- Consistent thickness with 100% biodegradable, even fibre distribution.
- Covered on top with a non-plastic biodegradable mesh or sewn together with biodegradable thread.
- Overlapped a minimum of 300 mm along parallel runs and on adjoining end runs.
- Uppermost edge of ECB to be extended 1 m beyond crest of slope and anchored in a 150 mm wide by 150 mm deep trench excavation, backfilled with excavated native material and compacted.

Once the filter strip has been installed, vehicular traffic, foot traffic, material storage, or heavy equipment should not be used within 3 m of the filter strip to allow it to grow. The vegetation should not be mowed or otherwise maintained and allowed to grow naturally.

4 TRANSFORMER CONTAINMENT

A station service transformer is proposed to be built on the south side of the 0.235 ha gravel pad (Figure 2). A 0.35 m high concrete containment curb will be constructed around the transformer, with a 4 m width and 4 m length (Figure 5). The transformer containment area was designed to contain 100% of the transformer oil (1160 L) and the 4-hour 1:50 year storm, of 105.4 mm. The storage volume required for the 50-year storm and 1160 L oil is 2.85 m^3 while the storage capacity in the containment area is 4.7 m^3.

The 300 kVA transformer will have its own stormwater management infrastructure in addition to that of the gravel pad and vegetated filter strip. The finished grade of the transformer containment area will be sloped at 1% with leveling sand towards the south side of the concrete curb. Two polyvinyl chloride (PVC) pipes will be constructed through the south side of the concrete curb and sealed to a geomembrane and Q-Max high efficiency hydrocarbon filter. The filters will pass water through the outer shell and polymer liner into the inner core, while hydrocarbons will congeal on the polymer liner, sealing the layer. The hydrocarbon filter will therefore become plugged with high volumes of oil and prevent the passage of contaminated water. The Q-Max hydrocarbon filter will discharge onto drainage stone (gradation 19 mm to 37.5 mm stone size) on the gravel pad. Sampling of the proposed Q-Max hydrocarbon filter effluent has shown no total oil and grease with a detection limit of 0.5 mg/L (Attachment C).

An alarm system (common trouble alarm) that is triggered by a transformer failure will notify site staff to inspect the transformer and associated containment area in the event of a failure. The transformer design includes a programmable logic controller (PLC) that receives temperature feedback from the transformer. The PLC can be utilized for tripping the transformer feeder and isolating the transformer. If the transformer were leaking oil and would result in overheating, this would cause a general alarm which would trigger inspection.

The transformer containment inspection procedure will include regular inspections, inspections following rainfall events, and inspections following transformer alarm triggers. The action items in Table 2 will be followed during each of the inspection events.

Table 2 General Transformer Containment Inspection

Responsibility	Action
Westover Station Employee	1. Visually inspect transformer for indications of damage or safety hazards. 2. Inspect containment area for indications of a possible transformer insulating oil release (e.g., staining). 3. Note presence of standing water in containment area. If standing water is present, hydrocarbon stop valves (i.e. Q-Max hydrocarbon filter) may be obstructed with hydrocarbon and/or debris. 4. Verify no release has occurred prior to inspecting hydrocarbon stop valves. 5. Routinely inspect hydrocarbon stop valves according to manufacturer specifications and replace if required. 6. Log condition of containment area and hydrocarbon stop valves in the containment logbook.

If evidence of a potential release is present, examine the conditions of the transformer and containment and verify that the area is safe to work in and around. Next, observe the transformer for indications of an active or past release. Place hydrocarbon absorbent booms around the effluent outfalls immediately following the steps in Table 3 and notify the supervisor making sure to communicate the observations and actions taken.

Table 3 Potential Release Action Items

Responsibility	Action
Westover Station Employee	1. Ensure area is safe to work in. 2. Observe transformer to determine whether the suspected release is active. 3. Place hydrocarbon absorbent boom around effluent outfall locations. 4. Notify all appropriate pipeline manager. 5. Log the suspected release and actions taken in containment logbook.
WEX Supervisor	6. Execute response, containment, and cleanup measures as appropriate. 7. Once area is remediated, ensures the hydrocarbon stop valves are functional. 8. Notify appropriate personnel that the transformer and containment area are repaired, cleaned, and inspected.

5 PROPOSED EFFLUENT OBJECTIVES

As indicated in Section 3, a sedimentation treatment train approach has been applied to the assessment of stormwater runoff from the gravel pad area, which considered collectively will mitigate against elevated concentrations of suspended solids. As indicated in Section 4, the transformer pad has containment capacity for a design storm in excess of the 50-year event as per MECP guidance for non-flowthrough transformer containment design. That said, the transformer containment pad will be serviced by a hydrocarbon filter which selectively absorbs hydrocarbons until the filter capacity is reached at which time the filter ceases to pass liquid and becomes plugged. Under the plugged condition, the transformer containment pad has storage capacity for greater than the 50-year storm event. Effluent objectives in Table 4 have been proposed to be protective of the environment and considering the possible parameters of concern. The effluent objectives in Table 4 are derived from other recent MECP approvals for TSS in stormwater runoff and hydrocarbon constituents in recent Hydro One Networks Inc. transformer ISW ECAs.

Table 4 Proposed Effluent Objectives

Parameter	Proposed Effluent Objective
Total Suspended Solids	15 mg/L
Oil and Grease	15 mg/L
Phenols	0.02 mg/L

6 PROPOSED EFFLUENT MONITORING

As indicated under Section 3.2, the stormwater management design for the WEX site is based on a treatment chain of the gravel pad design for particle mobilization, infiltration and seepage through the gravel, and flow over the vegetated filter strip. As per the Stormwater Management Planning and Design Manual (Ministry of the Environment, Conservation and Parks 2003) for treatment trains, TSS removal thresholds are accommodated in the design of the treatment train.

The following effluent monitoring text is proposed for use in the ISW ECA:

1. The Owner is exempted from the requirement of a regular, Approval-imposed effluent monitoring program for the herein approved Works under the following conditions:

    a. The Works shall be operated using Best Management Practices and in compliance with the established effluent objectives in Table 4, as confirmed, from time to time, by recorded self-monitoring data;

    b. Ministry staff may enter the site of the Works at any reasonable time to inspect the Works which can include, but not be limited to, the taking of samples and copying of monitoring information from the station record; and

    c. The monitoring requirements as described under Subsection (2) below will be undertaken directly following a spill and continue for a period after the spill to be determined by the District Manager.

2. The Owner shall carry out the following effluent monitoring program immediately after a spill:

    a. The Owner shall sample the effluent at the outlet pipes, during a time period when there is a representative effluent flow moving through the outlet pipes, and shall analyze the sample for the parameters named in Table 4, unless otherwise required in writing by this Approval or by the District Manager.

7 SUMMARY AND CONCLUSION

The MECP requested clarification and information on the runoff from the construction of the gravel pad and related infrastructure to operationally separate the WEX site Line 10 assets from the existing Enbridge Westover Terminal. A three-step treatment train has been proposed to address these concerns by reducing TSS, flow velocities, and potential erosion to the adjacent wetland through the design of the gravel pad specifications and the use of a vegetated filter strip.

Clarification was also requested regarding the transformer containment area alarm system and stormwater management system. Details have been provided for the design of the containment area and specifications for the Q-Max high efficiency hydrocarbon filter. Water quality monitoring parameters and frequencies have been proposed for the discharge of the transformer containment area to support the submission of the ISW ECA for the WEX site.

8 CLOSURE

This document is intended to provide an outline of the proposed water quality management plan for the WEX site and the associated effluent parameters, objectives, and monitoring frequencies. This water quality management plan is provided to support the ISW ECA application detailing the separation of Line 10 assets operationally from the existing Enbridge mainline assets. If you have any questions or concerns please do not hesitate to contact the undersigned.

Sincerely,

Stantec Consulting Ltd.

Sheldon Smith MES, P.Geo.
Principal, Senior Hydrologist
Phone: 416-618-0561
Fax: 905-474-9889
Sheldon.smith@stantec.com

Attachments: A – Figures
B – Calculations
C – Q-Max hydrocarbon filter specification sheet

pk \\cd1215-f01\work_group\01609\active\160951192\05_report_deliv\deliverable\swq wmp\let_160951192_wex_wcmp_20210708_fin.docx

REFERENCES

Fischenich, C. 2001. Stability Thresholds for Stream Restoration Materials.

Hamilton Conservation Authority (HCA). 2011. Westover Creek Subwatershed, Stewardship Action Plan 2011. Available online at: https://conservationhamilton.ca/wp-content/uploads/2015/07/3_WESTOVER-SAP-Final-March-2011.pdf. Accessed May 2021.

Liu, Y., Li, M., Su, P., Ma, B., You, Zhanping. 2020. Porosity Prediction of Granular Materials Through Discrete Element Method and Back Propagation Neural Network Algorithm. *Appl. Sci.* 10(5), 1693.

Ministry of the Environment (MOE). 2003. Stormwater Management Planning and Design Manual. PIBS 4329e.

Philips Engineering Ltd. 2007. City of Hamilton Criteria and Guidelines for Stormwater Infrastructure Design.

Attachment A

Figures

573000 573250 573500 573750

4797750 4797500

LOT 28 CON 6 BEVERLY

CONCESSION 6 WEST

N

Sheffield Rockton Wetland Complex

CITY OF HAMILTON

LOT 29 CON 5 BEVERLY

LOT 27 CON 5 BEVERLY

LOT 28 CON 5 BEVERLY

Stantec

Legend

- Proposed New Permanent Westover Express Facility Footprint
- Temporary Work Space (Non-Vegetated)
- Temporary Work Space (Vegetated)
- Wetland, Provincially Significant (PSW LIO)

HCA Regulation Mapping (Aug 30, 2013)

- General Regulation
- PSW

Stantec Field Data

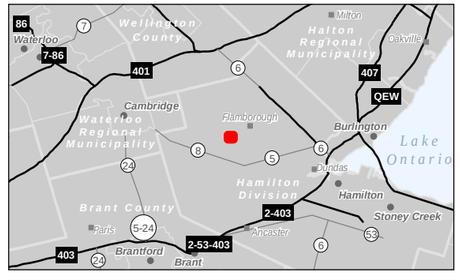
- HCA Field Deliniated Wetland Boundary (Stantec, 2020)
- HCA Field Delineated Wetland Boundary Buffer 30m

0 75 150 metres

1:3,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.
3. Enbridge data downloaded from CORE Nov 28, 2017.
4. Orthoimagery © First Base Solutions, 2020. Imagery Date, 2019.
5. HCA Mapping provided Aug 30, 2018.
6. Figure to support Water Quality Management Plan letter to MECP.



Project Location
City of Hamilton

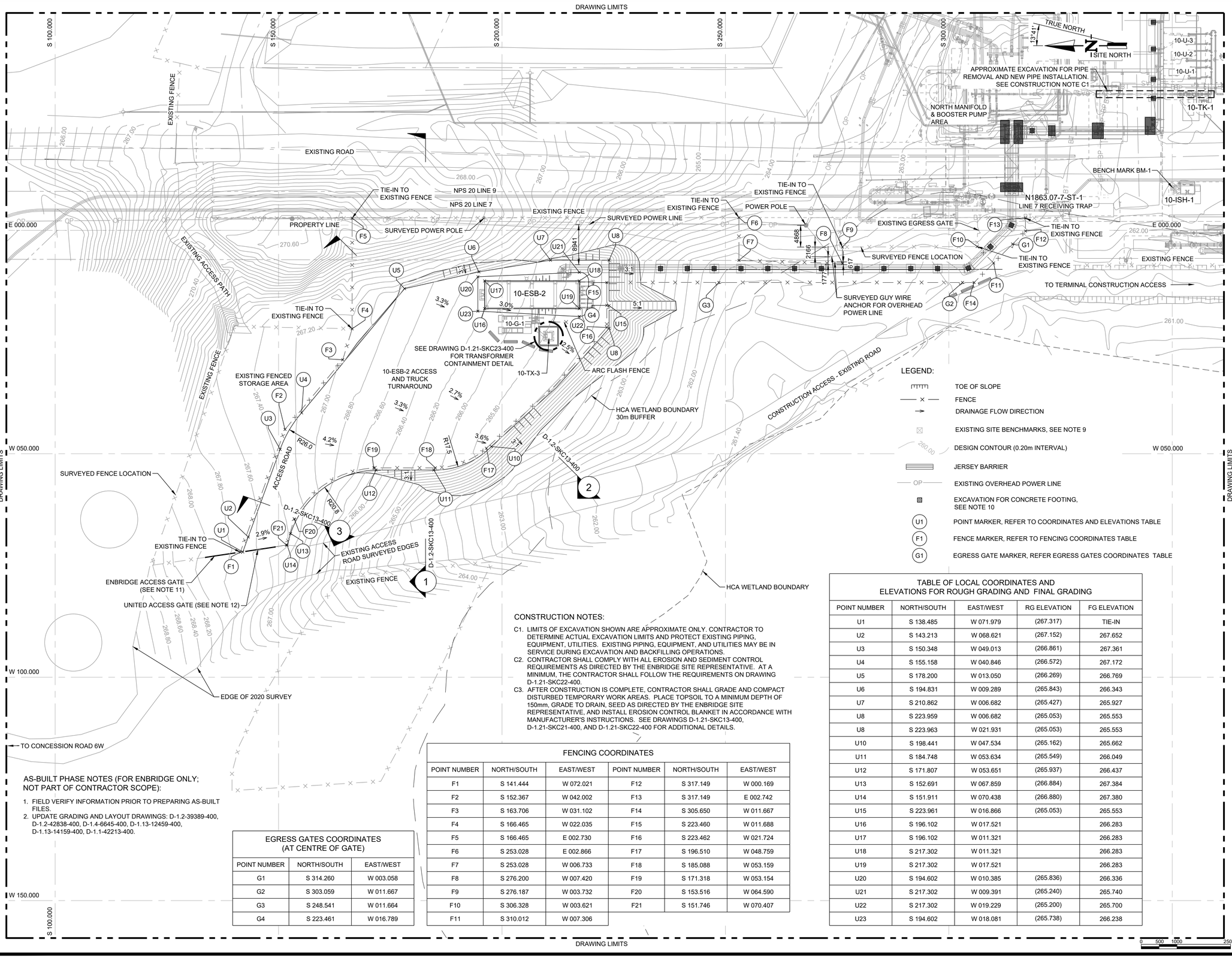
160951192 REVA
Prepared by SW on 2021-06-29
Technical Review by BCC on 2021-06-29

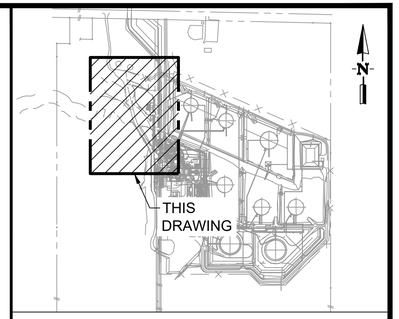
Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT

Figure No.
1

Title
Proposed New Permanent Westover Express Facility Footprint

\\Cd2215-f01\work_group\10\160951192\Active\160951192_003_data\gis_cad\arcmxd\surface_water\report_figures\WQMP\160951192_Fig01_HCA_Protected.mxd - Revised: 2021-06-29 By: ak.arora





LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES WITHIN WORK BOUNDARIES PRIOR TO COMMENCING THE WORK.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL SITE CONDITIONS, COORDINATES, LINES, GRADES AND ELEVATIONS PRIOR TO STARTING WORK.
6. HAND EXCAVATION IS REQUIRED WITHIN 1m OF EXISTING UNDERGROUND CABLES, PIPES, UTILITIES, AND EXISTING FOUNDATIONS.
7. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION, AS REQUIRED, TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES, PIPELINES, BUILDINGS, FENCES, CULVERT, VALVES, ETC.
8. REFERENCE STANDARDS AND DOCUMENTS
   - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002 AND FCS004.
   - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
9. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT PREPARED BY STANTEC, DATED APRIL 9, 2021.
10. APPROXIMATE EXTENT OF EXCAVATION FOR CABLE TRAY SUPPORTS. FOR CONCRETE FOOTING DETAILS SEE DRAWING D-10-2.21-101416-400.
11. ENBRIDGE ACCESS GATE TO SLIDE NORTH TO OPEN.
12. UNITED ACCESS GATE TO SLIDE SOUTH TO OPEN.
13. FOR SECTIONS AND DETAILS REFER TO DRAWING D-1.21-SKC13-400.

LEGEND:

- TOE OF SLOPE
- FENCE
- DRAINAGE FLOW DIRECTION
- EXISTING SITE BENCHMARKS, SEE NOTE 9
- 260.00 DESIGN CONTOUR (0.20m INTERVAL)
- JERSEY BARRIER
- OP EXISTING OVERHEAD POWER LINE
- EXCAVATION FOR CONCRETE FOOTING, SEE NOTE 10
- U1 POINT MARKER, REFER TO COORDINATES AND ELEVATIONS TABLE
- F1 FENCE MARKER, REFER TO FENCING COORDINATES TABLE
- G1 EGRESS GATE MARKER, REFER EGRESS GATES COORDINATES TABLE

CONSTRUCTION NOTES:

C1. LIMITS OF EXCAVATION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE ACTUAL EXCAVATION LIMITS AND PROTECT EXISTING PIPING, EQUIPMENT, UTILITIES. EXISTING PIPING, EQUIPMENT, AND UTILITIES MAY BE IN SERVICE DURING EXCAVATION AND BACKFILLING OPERATIONS.
C2. CONTRACTOR SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REQUIREMENTS AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE. AT A MINIMUM, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS ON DRAWING D-1.21-SKC22-400.
C3. AFTER CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL GRADE AND COMPACT DISTURBED TEMPORARY WORK AREAS. PLACE TOPSOIL TO A MINIMUM DEPTH OF 150mm, GRADE TO DRAIN, SEED AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE, AND INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEE DRAWINGS D-1.21-SKC13-400, D-1.21-SKC21-400, AND D-1.21-SKC22-400 FOR ADDITIONAL DETAILS.

AS-BUILT PHASE NOTES (FOR ENBRIDGE ONLY; NOT PART OF CONTRACTOR SCOPE):

1. FIELD VERIFY INFORMATION PRIOR TO PREPARING AS-BUILT FILES.
2. UPDATE GRADING AND LAYOUT DRAWINGS: D-1.2-39389-400, D-1.2-42838-400, D-1.4-6645-400, D-1.13-12459-400, D-1.13-14159-400, D-1.1-42213-400.

EGRESS GATES COORDINATES (AT CENTRE OF GATE)

POINT NUMBER	NORTH/SOUTH	EAST/WEST
G1	S 314.260	W 003.058
G2	S 303.059	W 011.667
G3	S 248.541	W 011.664
G4	S 223.461	W 016.789

FENCING COORDINATES

POINT NUMBER	NORTH/SOUTH	EAST/WEST	POINT NUMBER	NORTH/SOUTH	EAST/WEST
F1	S 141.444	W 072.021	F12	S 317.149	W 000.169
F2	S 152.367	W 042.002	F13	S 317.149	E 002.742
F3	S 163.706	W 031.102	F14	S 305.650	W 011.667
F4	S 166.465	W 022.035	F15	S 223.460	W 011.688
F5	S 166.465	E 002.730	F16	S 223.462	W 021.724
F6	S 253.028	E 002.866	F17	S 196.510	W 048.759
F7	S 253.028	W 006.733	F18	S 185.088	W 053.159
F8	S 276.200	W 007.420	F19	S 171.318	W 053.154
F9	S 276.187	W 003.732	F20	S 153.516	W 064.590
F10	S 306.328	W 003.621	F21	S 151.746	W 070.407
F11	S 310.012	W 007.306			

TABLE OF LOCAL COORDINATES AND ELEVATIONS FOR ROUGH GRADING AND FINAL GRADING

POINT NUMBER	NORTH/SOUTH	EAST/WEST	RG ELEVATION	FG ELEVATION
U1	S 138.485	W 071.979	(267.317)	TIE-IN
U2	S 143.213	W 068.621	(267.152)	267.652
U3	S 150.348	W 049.013	(266.861)	267.361
U4	S 155.158	W 040.846	(266.572)	267.172
U5	S 178.200	W 013.050	(266.269)	266.769
U6	S 194.831	W 009.289	(265.843)	266.343
U7	S 210.862	W 006.682	(265.427)	265.927
U8	S 223.959	W 006.682	(265.053)	265.553
U8	S 223.963	W 021.931	(265.053)	265.553
U10	S 198.441	W 047.534	(265.162)	265.662
U11	S 184.748	W 053.634	(265.549)	266.049
U12	S 171.807	W 053.651	(265.937)	266.437
U13	S 152.691	W 067.859	(266.884)	267.384
U14	S 151.911	W 070.438	(266.880)	267.380
U15	S 223.961	W 016.866	(265.053)	265.553
U16	S 196.102	W 017.521		266.283
U17	S 196.102	W 011.321		266.283
U18	S 217.302	W 011.321		266.283
U19	S 217.302	W 017.521		266.283
U20	S 194.602	W 010.385	(265.836)	266.336
U21	S 217.302	W 009.391	(265.240)	265.740
U22	S 217.302	W 019.229	(265.200)	265.700
U23	S 194.602	W 018.081	(265.738)	266.238

90% REVIEW ISSUE

REV:	PROJECT TITLE:	SEQ #:
0.B	LINE 10 - CARVE OUT	C15

AFE:	20020043	PROJ NO:	PR000134
WP NO:	CWP-100	DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	DK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK

D-1.21-SKC23-400	TRANSFORMER CONTAINMENT PLAN, SECTIONS AND DETAILS
D-1.2-42838-400	LAYOUT PLAN
D-10-2.21-101416-400	SECTIONS AND DETAILS
D-1.21-SKC13-400	SECTIONS AND DETAILS
D-0-SKC100-400	OVERALL PLAN

REFERENCE DRAWINGS

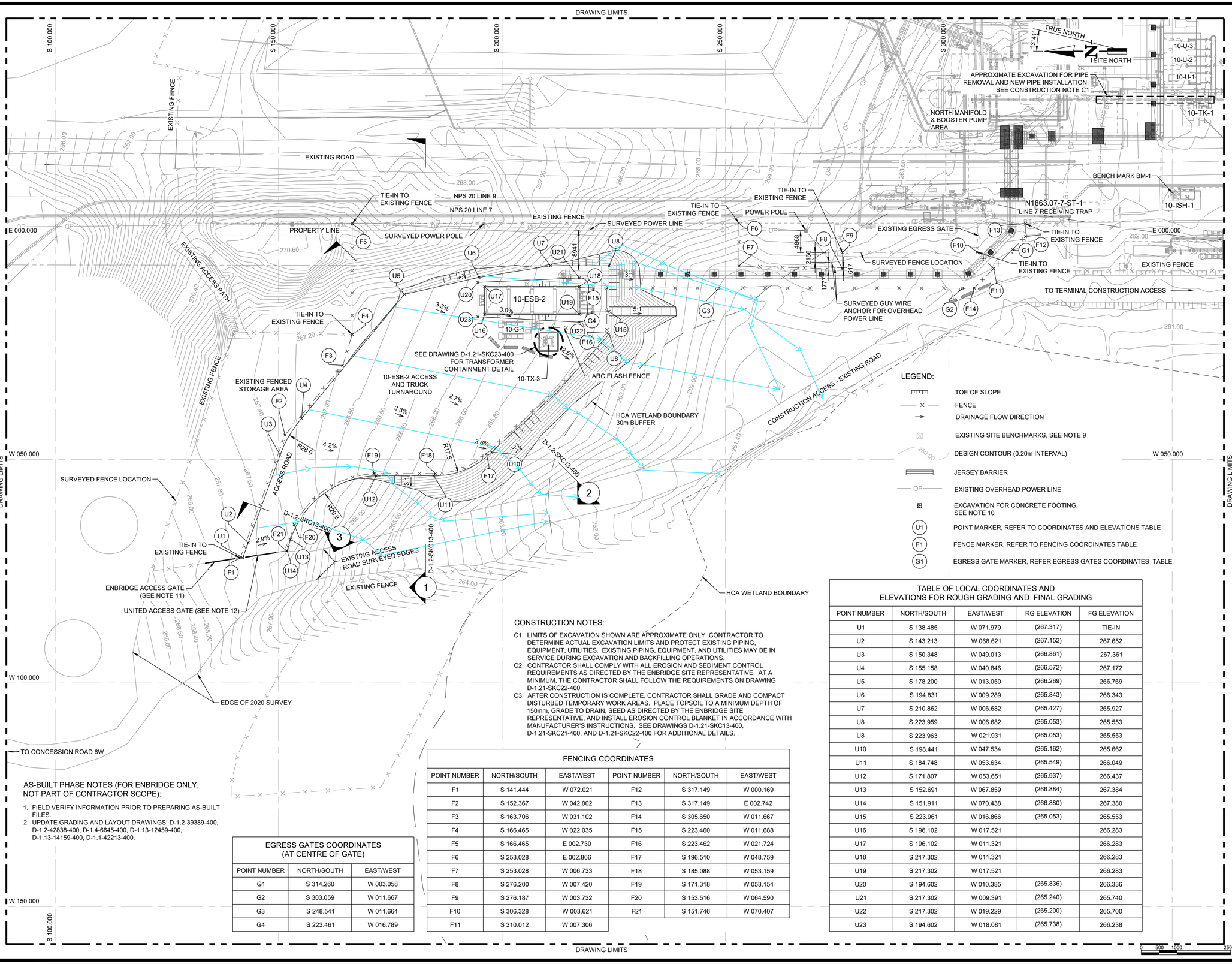
REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

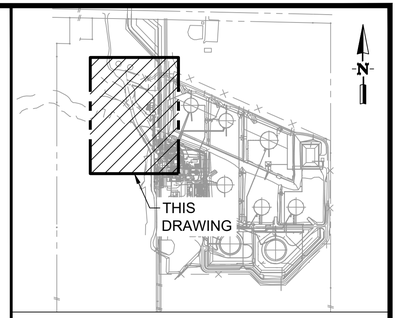
ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
GRADING PLAN

BY: MP	CHK: DK	ENG. : DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-14		SCALE: 1:400	STATUS: DESIGN

DWG NO.: D-1.21-SKC12-400 REV NO: 0.B





LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES WITHIN WORK BOUNDARIES PRIOR TO COMMENCING THE WORK.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL SITE CONDITIONS, COORDINATES, LINES, GRADES AND ELEVATIONS PRIOR TO STARTING WORK.
6. HAND EXCAVATION IS REQUIRED WITHIN 1m OF EXISTING UNDERGROUND CABLES, PIPES, UTILITIES, AND EXISTING FOUNDATIONS.
7. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION, AS REQUIRED, TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES, PIPELINES, BUILDINGS, FENCES, CULVERT, VALVES, ETC.
8. REFERENCE STANDARDS AND DOCUMENTS
   - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002 AND FCS004.
   - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
9. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT PREPARED BY STANTEC, DATED APRIL 9, 2021.
10. APPROXIMATE EXTENT OF EXCAVATION FOR CABLE TRAY SUPPORTS. FOR CONCRETE FOOTING DETAILS SEE DRAWING D-10-2.21-101416-400.
11. ENBRIDGE ACCESS GATE TO SLIDE NORTH TO OPEN.
12. UNITED ACCESS GATE TO SLIDE SOUTH TO OPEN.
13. FOR SECTIONS AND DETAILS REFER TO DRAWING D-1.21-SKC13-400.

LEGEND:

- TOE OF SLOPE
- FENCE
- DRAINAGE FLOW DIRECTION
- EXISTING SITE BENCHMARKS, SEE NOTE 9
- DESIGN CONTOUR (0.20m INTERVAL)
- JERSEY BARRIER
- OP — EXISTING OVERHEAD POWER LINE
- EXCAVATION FOR CONCRETE FOOTING, SEE NOTE 10
- (U1) POINT MARKER, REFER TO COORDINATES AND ELEVATIONS TABLE
- (F1) FENCE MARKER, REFER TO FENCING COORDINATES TABLE
- (G1) EGRESS GATE MARKER, REFER EGRESS GATES COORDINATES TABLE

CONSTRUCTION NOTES:

C1. LIMITS OF EXCAVATION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE ACTUAL EXCAVATION LIMITS AND PROTECT EXISTING PIPING, EQUIPMENT, UTILITIES. EXISTING PIPING, EQUIPMENT, AND UTILITIES MAY BE IN SERVICE DURING EXCAVATION AND BACKFILLING OPERATIONS.
C2. CONTRACTOR SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REQUIREMENTS AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE. AT A MINIMUM, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS ON DRAWING D-1.21-SKC22-400.
C3. AFTER CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL GRADE AND COMPACT DISTURBED TEMPORARY WORK AREAS. PLACE TOPSOIL TO A MINIMUM DEPTH OF 150mm, GRADE TO DRAIN, SEED AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE, AND INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEE DRAWINGS D-1.21-SKC13-400, D-1.21-SKC21-400, AND D-1.21-SKC22-400 FOR ADDITIONAL DETAILS.

AS-BUILT PHASE NOTES (FOR ENBRIDGE ONLY; NOT PART OF CONTRACTOR SCOPE):

1. FIELD VERIFY INFORMATION PRIOR TO PREPARING AS-BUILT FILES.
2. UPDATE GRADING AND LAYOUT DRAWINGS: D-1.2-39389-400, D-1.2-42838-400, D-1.4-6645-400, D-1.13-12459-400, D-1.13-14159-400, D-1.1-42213-400.

EGRESS GATES COORDINATES (AT CENTRE OF GATE)

POINT NUMBER	NORTH/SOUTH	EAST/WEST
G1	S 314.260	W 003.058
G2	S 303.059	W 011.667
G3	S 248.541	W 011.664
G4	S 223.461	W 016.789

FENCING COORDINATES

POINT NUMBER	NORTH/SOUTH	EAST/WEST	POINT NUMBER	NORTH/SOUTH	EAST/WEST
F1	S 141.444	W 072.021	F12	S 317.149	W 000.169
F2	S 152.367	W 042.002	F13	S 317.149	E 002.742
F3	S 163.706	W 031.102	F14	S 305.650	W 011.667
F4	S 166.465	W 022.035	F15	S 223.460	W 011.688
F5	S 166.465	E 002.730	F16	S 223.462	W 021.724
F6	S 253.028	E 002.866	F17	S 196.510	W 048.759
F7	S 253.028	W 006.733	F18	S 185.088	W 053.159
F8	S 276.200	W 007.420	F19	S 171.318	W 053.154
F9	S 276.187	W 003.732	F20	S 153.516	W 064.590
F10	S 306.328	W 003.621	F21	S 151.746	W 070.407
F11	S 310.012	W 007.306			

TABLE OF LOCAL COORDINATES AND ELEVATIONS FOR ROUGH GRADING AND FINAL GRADING

POINT NUMBER	NORTH/SOUTH	EAST/WEST	RG ELEVATION	FG ELEVATION
U1	S 138.485	W 071.979	(267.317)	TIE-IN
U2	S 143.213	W 068.621	(267.152)	267.652
U3	S 150.348	W 049.013	(266.861)	267.361
U4	S 155.158	W 040.846	(266.572)	267.172
U5	S 178.200	W 013.050	(266.269)	266.769
U6	S 194.831	W 009.289	(265.843)	266.343
U7	S 210.862	W 006.682	(265.427)	265.927
U8	S 223.959	W 006.682	(265.053)	265.553
U8	S 223.963	W 021.931	(265.053)	265.553
U10	S 198.441	W 047.534	(265.162)	265.662
U11	S 184.748	W 053.634	(265.549)	266.049
U12	S 171.807	W 053.651	(265.937)	266.437
U13	S 152.691	W 067.859	(266.884)	267.384
U14	S 151.911	W 070.438	(266.880)	267.380
U15	S 223.961	W 016.866	(265.053)	265.553
U16	S 196.102	W 017.521		266.283
U17	S 196.102	W 011.321		266.283
U18	S 217.302	W 011.321		266.283
U19	S 217.302	W 017.521		266.283
U20	S 194.602	W 010.385	(265.836)	266.336
U21	S 217.302	W 009.391	(265.240)	265.740
U22	S 217.302	W 019.229	(265.200)	265.700
U23	S 194.602	W 018.081	(265.738)	266.238

0 500 1000 2500

90% REVIEW ISSUE

REV:	PROJECT TITLE:	SEQ #:
0.B	LINE 10 - CARVE OUT	C15

AFE:	20020043	PROJ NO.:	PR000134
WP NO.:	CWP-100	DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	DK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK

D-1.21-SKC23-400	TRANSFORMER CONTAINMENT PLAN, SECTIONS AND DETAILS
D-1.2-42838-400	LAYOUT PLAN
D-10-2.21-101416-400	SECTIONS AND DETAILS
D-1.21-SKC13-400	SECTIONS AND DETAILS
D-0-SKC100-400	OVERALL PLAN

REFERENCE DRAWINGS

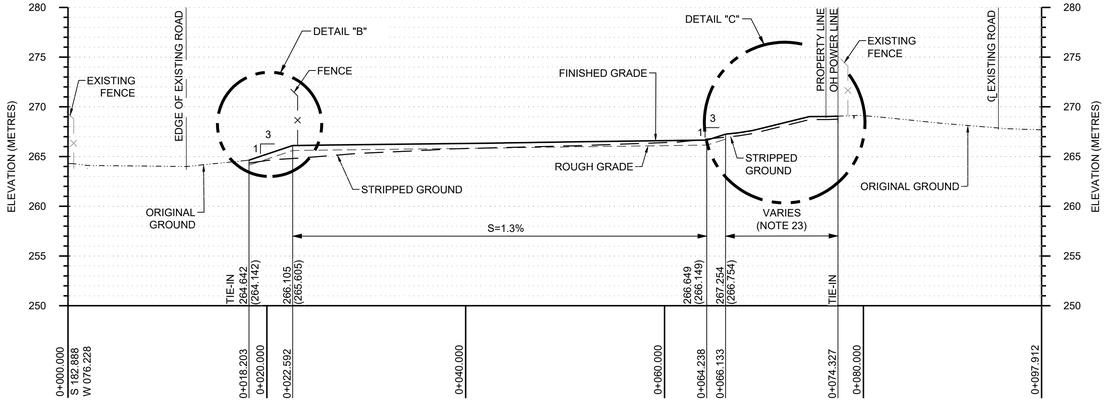
REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

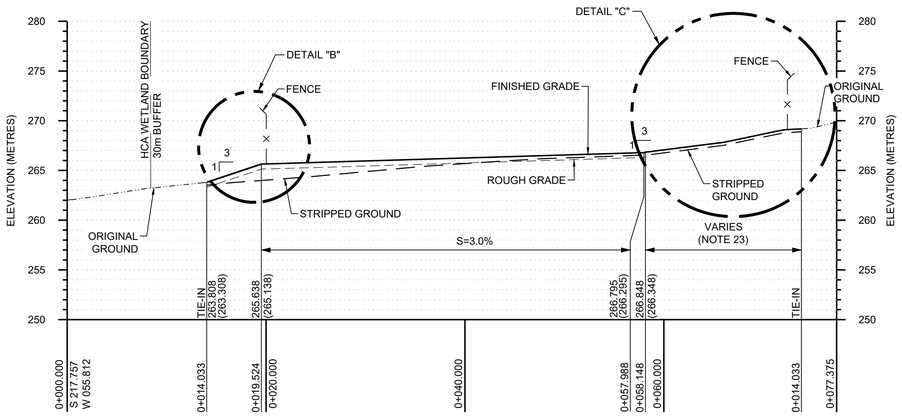
WESTOVER (ON) TERMINAL
UNITED AREA
GRADING PLAN

BY:MP	CHK:DK	ENG. :DKNAPIK	ENB APPR:SAHMADIAN
DATE: 2020-12-14		SCALE: 1:400	STATUS: DESIGN

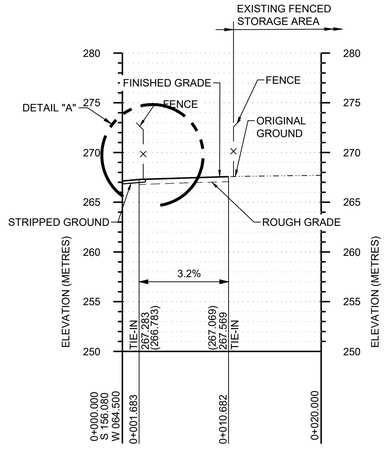
DWG NO.: D-1.21-SKC12-400 REV NO: 0.B



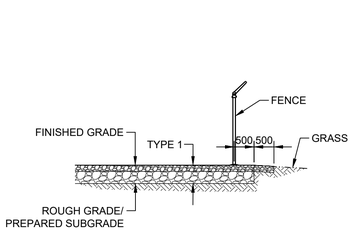
1 SECTION 1 (LOOKING NORTH)
D-1.21-SKC12-400
SCALE - 1:300



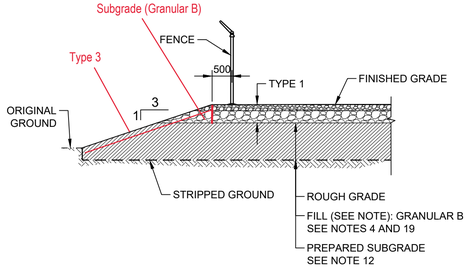
2 SECTION 2 (LOOKING WEST)
D-1.21-SKC12-400
SCALE - 1:300



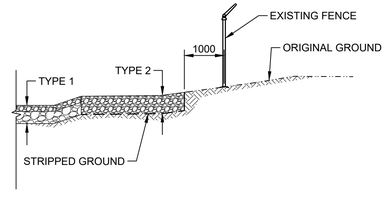
3 SECTION 3 (LOOKING WEST)
D-1.21-SKC12-400
SCALE - 1:300



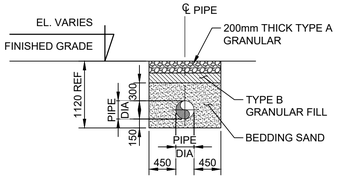
A SITE GRADING DETAIL - CUT
NTS



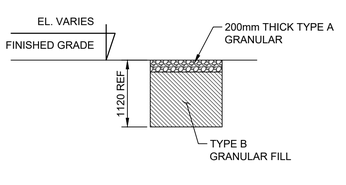
B TYPICAL SITE GRADING DETAIL - FILL
NTS



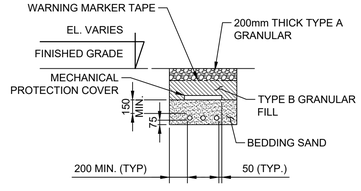
C TYPICAL SURFACING DETAIL
NTS



D PIPE BACKFILL DETAIL
NTS



E TYPICAL BACKFILL DETAIL
NTS



F CABLE TRENCH DETAIL
NTS

NOTES CONTINUE:

16. ALL TOPSOIL REMOVED FROM SITE SHALL COMPLY WITH ONTARIO PROVINCIAL MANAGEMENT OF EXCESS SOIL REQUIREMENTS.
17. ALL MATERIALS PLACED AS ENGINEERING FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 150mm. EACH LIFT SHOULD BE UNIFORMLY COMPACTED TO ACHIEVE A MINIMUM OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
18. COMMON FILL:
    - EXCAVATED SOIL FROM SITE THAT DOES NOT CONTAIN UNSUITABLE MATERIAL.
    - PROVIDE SUFFICIENT COMMON FILL TO MAINTAIN POSITIVE DRAINAGE.
19. GRANULAR A AND GRANULAR B TYPE I AGGREGATE SHALL COMPLY WITH ONTARIO PROVINCIAL STANDARD SPECIFICATION OPSS.PROV 1010.
20. EROSION CONTROL BLANKET SHALL BE NILEX S32BD (100% BIODEGRADABLE DOUBLE NET STRAW).
21. SEED MIX SHALL COMPLY WITH HAMILTON CONSERVATION AUTHORITY AND ENBRIDGE REQUIREMENTS.
22. DRAINAGE STONE SHALL BE CLEAN HARD DURABLE CRUSHED STONE WITH >95% TWO FRACTURED FACES AND SHALL MEET THE FOLLOWING GRADATION:

METRIC SIEVE, mm	% PASSING
40	100
37.5	95-100
25	50-80
19	5-20
10	0-5

23. MECHANICAL PROTECTION COVER SHALL BE 50mm THICK CONCRETE AND EXTEND 50mm BEYOND THE CABLES ON EACH SIDE. THE CONCRETE COVER MAY BE CAST IN PLACE OR PRECAST TILES.
24. PLACE AND COMPACT SURFACE GRAVEL TO ENSURE POSITIVE DRAINAGE.

LEGEND:

———	FINAL GRADE
– – – –	ROUGH GRADE
—·—·—	ORIGINAL GROUND
— — —	STRIPPED GROUND
TIE-IN	FINAL GRADE ELEVATION TO BE DETERMINED IN FIELD
264.470	FINISHED GRADE ELEVATION
(263.970)	ROUGH GRADE ELEVATION

NOTES:

1. STATIONS, COORDINATES AND ELEVATIONS ARE IN METRES.
2. ALL DIMENSIONS, COORDINATES AND ELEVATIONS SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
3. FOR GRADING PLAN REFER TO DRAWING D-1.21-SKC12-400.
4. SURFACING TYPES:

   TYPE 1:
   - 200mm THICK GRANULAR A COMPACTED TO 98% SPMDD
   - 300mm THICK GRANULAR B COMPACTED TO 98% SPMDD
   - PREPARED SUBGRADE

   TYPE 2:
   - 300mm THICK GRANULAR A COMPACTED TO 97% SPMDD (THICKNESS OF GRAVEL SHALL BE EQUAL TO DEPTH OF TOPSOIL REMOVED TO MAINTAIN POSITIVE DRAINAGE)
   - COMPACTED SUBGRADE TO 95% SPMDD

   TYPE 3:
   - EROSION CONTROL BLANKET, SEED, 300mm TOPSOIL (TOPSOIL THICKNESS SHALL EQUAL THE DEPTH OF TOPSOIL REMOVED TO MAINTAIN PROPER DRAINAGE)

5. CONTRACTOR SHALL ENSURE THAT ALL EXISTING PIPELINES AND OTHER UNDERGROUND FACILITIES ARE LOCATED PRIOR TO CONSTRUCTION AND SHALL COMPLY WITH ENBRIDGE GROUND DISTURBANCE GUIDELINE.
6. CONSTRUCTION EQUIPMENT SHALL BE OPERATED IN A CONTROLLED MANNER TO PREVENT ANY DAMAGE TO EXISTING ABOVE AND BELOW GROUND UTILITY LINES AND STRUCTURES.
7. ALL WORK SHALL BE DONE TO THE LINES, GRADES AND ELEVATIONS SHOWN ON THE DESIGN DRAWINGS.
8. PRIOR TO COMMENCING ANY EARTHWORK, ALL VEGETATION, ORGANICS AND OTHER NON-SUITABLE MATERIAL SHALL BE STRIPPED FROM THE GROUND SURFACE, AND REMOVED FROM SITE AS DIRECTED BY OWNER.
9. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE, WHERE REQUIRED, TEMPORARY PROTECTION TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES AND FENCES.
10. TEMPORARY EXCAVATION MUST BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE OCCUPATIONAL HEALTH AND SAFETY ACT (OHSA) AND GEOTECHNICAL REPORT.
11. REFERENCE STANDARDS AND DOCUMENTS
    - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002 AND FCS004.
    - STANTEC GEOTECHNICAL REPORT, APRIL 2021.
    - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
12. SUB-GRADE PREPARATION:
    - CUT AREAS: SCARIFY CUT SURFACE TO A DEPTH OF 200mm AND COMPACT TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (S.P.M.D.D.) WITHIN 1% OF OPTIMAL MOISTURE CONTENT (O.M.C.).
    - FILL AREAS: SCARIFY EXISTING SUB-GRADE SURFACE TO A DEPTH OF 200mm AND COMPACT TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (S.P.M.D.D.) WITHIN 1% OF OPTIMAL MOISTURE CONTENT (O.M.C.).
13. UNSUITABLE MATERIAL IS ORGANIC MATERIAL SUCH AS TOPSOIL, PEATMOSS, ORGANIC SOIL UNDERLYING THE TOPSOIL, ROCKS, DEBRIS AND OTHER MATERIAL THAT IS IN THE OPINION OF ENBRIDGE REPRESENTATIVE, NOT SUITABLE FOR CONSTRUCTION OF THE SITE.
14. REUSE OF EXISTING MATERIALS SHALL BE APPROVED BY GEOTECHNICAL ENGINEER AND THE ENBRIDGE SITE REPRESENTATIVE.
15. ALL FILL MATERIALS IMPORTED TO THE SITE MUST MEET ALL APPLICABLE MUNICIPAL, PROVINCIAL, AND FEDERAL GUIDELINES AND REQUIREMENTS ASSOCIATED WITH ENVIRONMENTAL CHARACTERIZATION OF THE MATERIALS.

90% REVIEW ISSUE

REV:	PROJECT TITLE:	SEQ #:
0.B	LINE 10 - CARVE OUT	C16

AFE:	20020043	PROJ NO:	PR000134
WP NO:	CWP-100	DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	DK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK

D-1.21-SKC12-400 GRADING PLAN

REFERENCE DRAWINGS

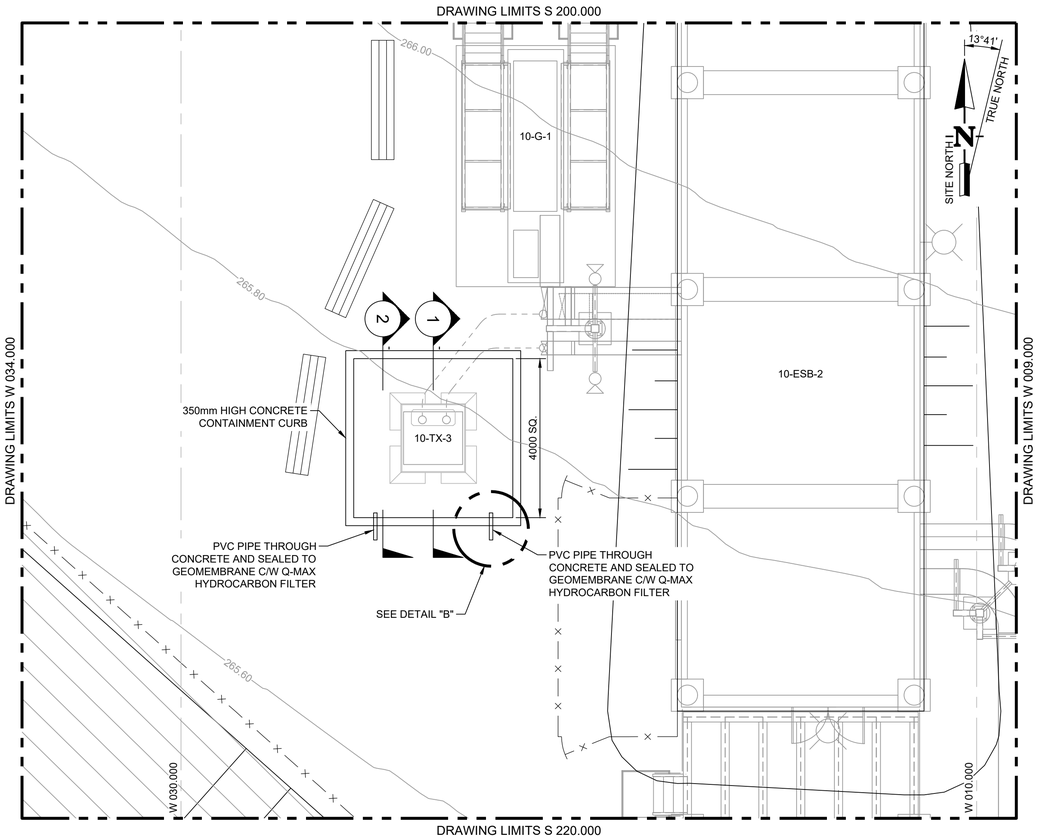
REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
SECTIONS AND DETAILS

BY: MP	CHK: DK	ENG. : DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-15		SCALE: AS SHOWN	STATUS: DESIGN
DWG NO.: D-1.21-SKC13-400			REV NO: 0.B

0 3000 6000 9000 15000

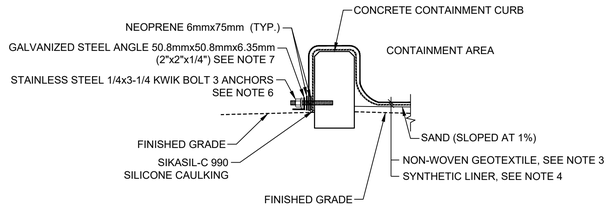


CONTAINMENT PLAN

SCALE - 1:75

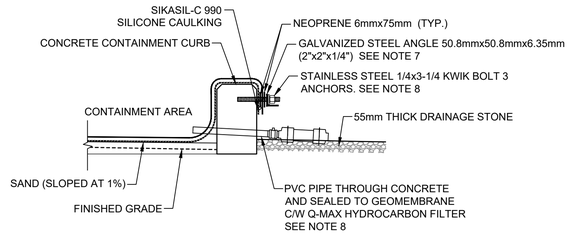
PARTS LIST

ITEM	QUANTITY	DESCRIPTION
1	2	3 1/2" SCH. 40 PVC PIPE, 350mm LONG
2	2	3 1/2" PVC BALL VALVE
3	2	3 1/2" SCH. 40 PVC PIPE, 75mm LONG
4	2	Q-MAX HF HIGH EFFICIENCY HYDROCARBON FILTER FROM ALBARRIE.COM SUITABLE FOR NON-PCB, CLASS B, TYPE 2, TRANSFORMER MINERAL OIL
5	24m	50.8x50.8x6.35 (2"x2"x1/4") ANGLE, HOT DIP GALVANIZED
6	48	HILTI KWIK BOLT 3 SS304 WEDGE ANCHOR, 1/4" x 3 /14" C/W 2" THREAD LENGTH



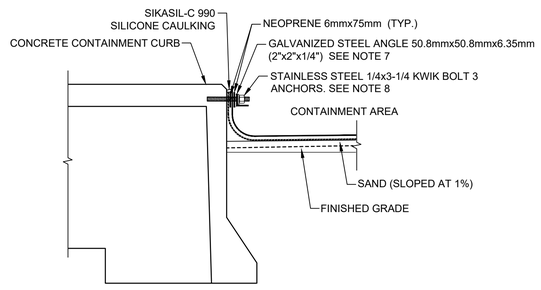
A LINER ATTACHMENT DETAIL (EXCEPT OUTFALL SIDE)

NTS



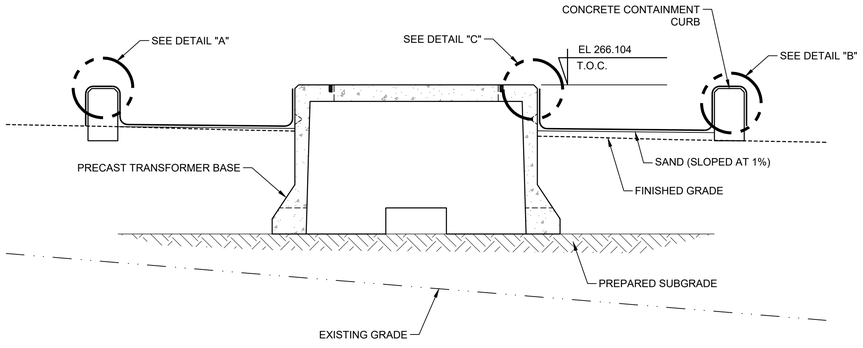
B LINER ATTACHMENT AND OUTFALL DETAIL (2 LOC.)

NTS



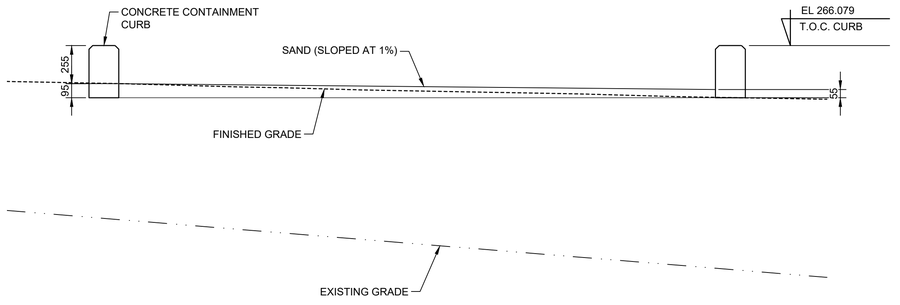
C ANCHORS INTO PRECAST CONCRETE

NTS



1 SECTION

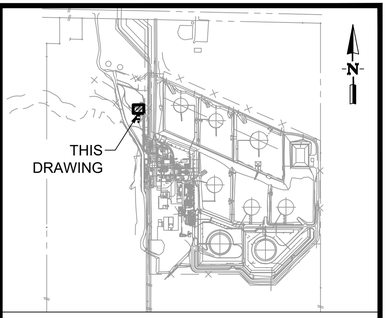
NTS



2 SECTION

NTS

0 500 1000 2500



LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-0-SKC100-400.
3. FOR CONTAINMENT CURB CONCRETE DETAILS SEE DRAWING D-10-2.21-101470-400.
4. LAYFIELD LP12 NON-WOVEN GEOTEXTILE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
5. LAYFIELD LLDPE ENVIRO LINER 6240 (TEXTURED BOTH SIDES) INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
6. INSTALL HILTI KWIK BOLT 3 ANCHORS PER MANUFACTURER'S INSTRUCTIONS. MINIMUM EDGE DISTANCE FROM AND BOTTOM OF CONCRETE CURB SHALL BE 75mm. INSTALL ANCHORS 500mm ON CENTRE AND 250mm FROM EDGE OF EACH SIDE OF CONCRETE CONTAINMENT CURB; 8 BOLTS ON EACH SIDE OF CONTAINMENT CURB. INSTALL 4 ANCHORS ON EACH SIDE OF PRECAST CONCRETE TRANSFORMER SUPPORT.
7. CONTRACTOR SHALL ENSURE AT LEAST TWO ANCHORS ARE USED TO SECURE EACH PIECE OF ANGLE TO THE CONCRETE.
8. Q-MAX HYDROCARBON FILTER SHALL BE SUPPLIED BY ALBARRIE CANADA LIMITED (WWW.ALBARRIE.COM). CONTRACTOR SHALL ENSURE Q-MAX HYDROCARBON FILTER MATERIAL IS SUITABLE FOR ACTUAL TRANSFORMER OIL USED IN 10-TX-3.

90% REVIEW ISSUE

REV:	PROJECT TITLE:	SEQ #:
0.A	LINE 10 - CARVE OUT	C19

AFE:	20020043	PROJ NO.:	PR000134
WP NO.:	CWP-100	DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	DK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 90% REVIEW	2021-04-16 HH	DK

D-1.21-SKC12-400 GRADING PLAN
D-10-2.21-101470-440 PLANS AND SECTIONS

REFERENCE DRAWINGS

REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
10-TX-3 TRANSFORMER CONTAINMENT
PLAN, SECTIONS AND DETAILS

BY: MP	CHK: DK	ENG. : DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-14		SCALE: AS SHOWN	STATUS: DESIGN

DWG NO.: D-1.21-SKC23-400 REV NO: 0.A

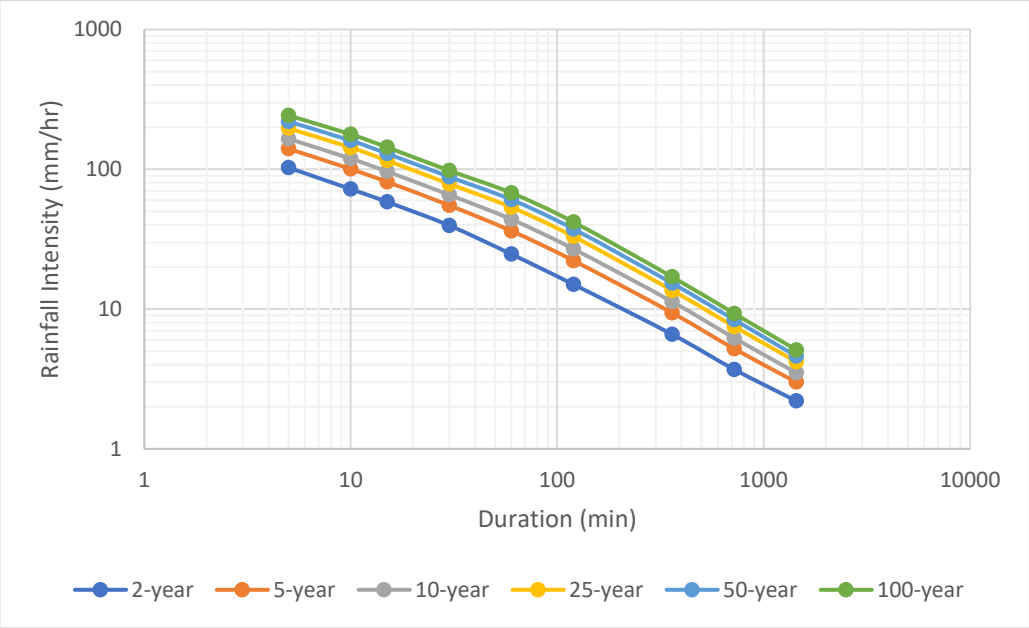
Attachment B

Calculations

Stantec

Table B.1: IDF Values - Mount Hope

Duration (min)	Rainfall Intensity (mm/hr)					
	2	5	10	25	50	100
5	102.7	140.1	165	196.3	219.6	242.4
10	72.1	100.4	119.1	142.8	160.4	177.8
15	58.4	81.2	96.3	115.4	129.5	143.6
30	39.6	55.2	65.6	78.6	88.3	97.9
60	24.7	36.2	43.8	53.4	60.6	67.7
120	15	22.2	26.9	33	37.4	41.9
360	6.6	9.4	11.3	13.6	15.3	17
720	3.7	5.2	6.2	7.5	8.4	9.3
1440	2.2	3	3.5	4.2	4.6	5.1



Stantec

Table B.2: Peak Flow, Flow Depth, and Velocity Calculations

Return Period	**Find peak flow from rainfall (50 year)** Rational Method $Q = \frac{CiA}{360}$			**Find water depth from Manning's equation** Manning's equation $Q = \frac{AR^{\frac{2}{3}}\sqrt{S}}{n}$ Rearrange A and R for D $Q = \frac{LD(\frac{LD}{L+2D})^{\frac{2}{3}}\sqrt{S}}{n}$			**Find velocity using Manning's equation** Q= VA A= LD		
	0.7	C (unitless)	runoff coefficient	0.04	n (unitless)	Roughness coefficient (Chow, 1959)			
	160.4	i (mm/h)	rainfall intensity	95	L (m)	Embankment Length	0.534	A (m2)	Flow Area
	0.235	A (ha)	drainage area	0.03	S (m/m)	Channel slope			
				0.0056	R (m)	Hydraulic Radius $\frac{LD}{L+2D}$			
50-year	Qpeak =	0.073	m3/s	D=	0.0056	m Qpeak= 0.073 m3/s	V	0.137	m/s
	0.7	C (unitless)	runoff coefficient	0.04	n (unitless)	Roughness coefficient (Chow, 1959)			
	177.8	i (mm/h)	rainfall intensity	95	L (m)	Embankment Length	0.570	A (m2)	Flow Area
	0.235	A (ha)	drainage area	0.03	S (m/m)	Channel slope			
				0.0060	R (m)	Hydraulic Radius $\frac{LD}{L+2D}$			
100-year	Qpeak =	0.081	m3/s	D=	0.0060	m Qpeak= 0.081 m3/s	V	0.143	m/s

Stantec

Table B.3: Average Boundary Shear Stress and Critical Shear Stress Calculations

Average Boundary Shear Stress

$$\tau_0 = \gamma D S_f$$

50-year	100-year		
1.65	1.77	τ_0	Shear stress (Pa)
9810	9810	γ	Specific weight of water (N/m3)
0.0056	0.0060	D	Flow depth (m)
0.03	0.03	S_f	Friction slope (m/m)

Critical Shear Stress

For clay $\tau_{cr} = 0.5(\lambda_s - \lambda_w)dTan\emptyset$

For silt/sand $\tau_{cr} = 0.25{d_*}^{-0.6}(\lambda_s - \lambda_w)dTan\emptyset$

For gravel/cobble $\tau_{cr} = 0.06(\lambda_s - \lambda_w)dTan\emptyset$

$$d_* = d[\frac{(G-1)g}{v^2}]^{\frac{1}{3}}$$

Clay	Silt/Sand	Gravel/cobble		
0.008	0.73	45.2	τ_{cr}	Critical shear stress (Pa)
17000	15000	16000	λ_s	unit weight of sediment (N/m3)
18000	19000	21000	λ_w	unit weight of water/sediment mixture (N/m3)
0.0000025	0.000062	0.002	d	soil grain diameter (m)
-	0.4	-	d*	
30	30	33	$\emptyset$	angle of repose (˚)
-	2.65	-	G	Specific gravity of sediment (kg/m3)
-	9.81	-	g	Gravitational acceleration (m/s2)
-	8.953E-06	-	v	Kinematic viscosity of water/sediment mixture (m2/s)

Table B.4: Limiting Shear Stress and Velocity for Uniform Noncohesive Sediments (Fischenich, 2001)

Class name	d_s (in)	ϕ (deg)	τ_c	τ_{cr} (lb/sf)	V_{*c} (ft/s)
Boulder					
Very large	>80	42	0.054	37.4	4.36
Large	>40	42	0.054	18.7	3.08
Medium	>20	42	0.054	9.3	2.20
Small	>10	42	0.054	4.7	1.54
Cobble					
Large	>5	42	0.054	2.3	1.08
Small	>2.5	41	0.052	1.1	0.75
Gravel					
Very coarse	>1.3	40	0.050	0.54	0.52
Coarse	>0.6	38	0.047	0.25	0.36
Medium	>0.3	36	0.044	0.12	0.24
Fine	>0.16	35	0.042	0.06	0.17
Very fine	>0.08	33	0.039	0.03	0.12
Sands					
Very coarse	>0.04	32	0.029	0.01	0.070
Coarse	>0.02	31	0.033	0.006	0.055
Medium	>0.01	30	0.048	0.004	0.045
Fine	>0.005	30	0.072	0.003	0.040
Very fine	>0.003	30	0.109	0.002	0.035
Silts					
Coarse	>0.002	30	0.165	0.001	0.030
Medium	>0.001	30	0.25	0.001	0.025

Conversion from SI to US Customary: **2 x Factor of Safety**

100 year	0.73	Pa =	0.015	lb/ft2	**0.030**	lb/ft2
100 year	0.14	m/s=	0.468	ft/sec	**0.935**	ft/sec

Table B.5: Permissible Shear and Velocity for Selected Lining Materials (Fischenich, 2001)

Boundary Category	Boundary Type	Permissible Shear Stress (lb/sq ft)	Permissible Velocity (ft/sec)	Citation(s)
Soils	Fine colloidal sand	0.02 - 0.03	1.5	A
	Sandy loam (noncolloidal)	0.03 - 0.04	1.75	A
	Alluvial silt (noncolloidal)	0.045 - 0.05	2	A
	Silty loam (noncolloidal)	0.045 - 0.05	1.75 – 2.25	A
	Firm loam	0.075	2.5	A
	Fine gravels	0.075	2.5	A
	Stiff clay	0.26	3 – 4.5	A, F
	Alluvial silt (colloidal)	0.26	3.75	A
	Graded loam to cobbles	0.38	3.75	A
	Graded silts to cobbles	0.43	4	A
	Shales and hardpan	0.67	6	A
Gravel/Cobble	1-in.	0.33	2.5 – 5	A
	2-in.	0.67	3 – 6	A
	6-in.	2.0	4 – 7.5	A
	12-in.	4.0	5.5 – 12	A
Vegetation	Class A turf	3.7	6 – 8	E, N
	Class B turf	2.1	4 - 7	E, N
	Class C turf	1.0	3.5	E, N
	Long native grasses	1.2 – 1.7	4 – 6	G, H, L, N
	Short native and bunch grass	0.7 - 0.95	3 – 4	G, H, L, N
	Reed plantings	0.1-0.6	N/A	E, N
	Hardwood tree plantings	0.41-2.5	N/A	E, N
Temporary Degradable RECPs	Jute net	0.45	1 – 2.5	E, H, M
	Straw with net	1.5 – 1.65	1 – 3	E, H, M
	Coconut fiber with net	2.25	3 – 4	E, M
	Fiberglass roving	2.00	2.5 – 7	E, H, M
Non-Degradable RECPs	Unvegetated	3.00	5 – 7	E, G, M
	Partially established	4.0-6.0	7.5 – 15	E, G, M
	Fully vegetated	8.00	8 – 21	F, L, M
Riprap	6 – in. d_{50}	2.5	5 – 10	H
	9 – in. d_{50}	3.8	7 – 11	H
	12 – in. d_{50}	5.1	10 – 13	H
	18 – in. d_{50}	7.6	12 – 16	H
	24 – in. d_{50}	10.1	14 – 18	E
Soil Bioengineering	Wattles	0.2 – 1.0	3	C, I, J, N
	Reed fascine	0.6-1.25	5	E
	Coir roll	3 - 5	8	E, M, N
	Vegetated coir mat	4 - 8	9.5	E, M, N
	Live brush mattress (initial)	0.4 – 4.1	4	B, E, I
	Live brush mattress (grown)	3.90-8.2	12	B, C, E, I, N
	Brush layering (initial/grown)	0.4 – 6.25	12	E, I, N
	Live fascine	1.25-3.10	6 – 8	C, E, I, J
	Live willow stakes	2.10-3.10	3 – 10	E, N, O
Hard Surfacing	Gabions	10	14 – 19	D
	Concrete	12.5	>18	H

† Ranges of values generally reflect multiple sources of data or different testing conditions.

A. Chang, H.H. (1988).
B. Florineth. (1982)
C. Gerstgraser, C. (1998).
D. Goff, K. (1999).
E. Gray, D.H., and Sotir, R.B. (1996).
F. Julien, P.Y. (1995).
G. Kouwen, N.; Li, R. M.; and Simons, D.B., (1980).
H. Norman, J. N. (1975).
I. Schiechtl, H. M. and R. Stern. (1996).
J. Schoklitsch, A. (1937).
K. Sprague, C.J. (1999).
L. Temple, D.M. (1980).
M. TXDOT (1999)
N. Data from Author (2001)
O. USACE (1997).

Reference:

Fischenich, Craig. 2001. Stability Thresholds for Stream Restoration Materials.

Attachment C

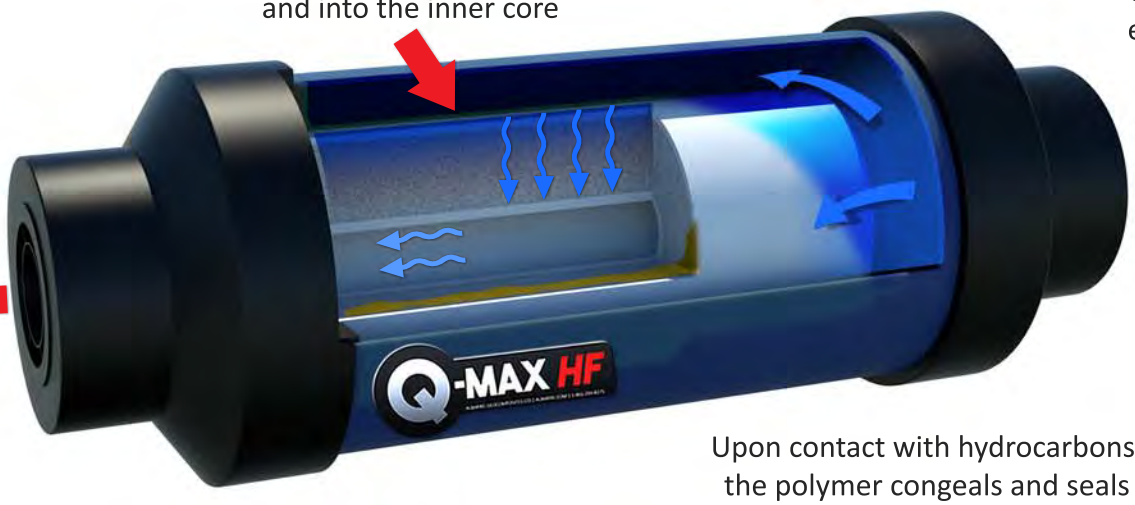
Q-Max hydrocarbon filter specification sheet

Q-MAX HF

High Efficiency Hydrocarbon Filter

Water flows through the outer shell, passes through the polymer and into the inner core

Contaminated Fluid enters here



Clean Water exits

Upon contact with hydrocarbons, the polymer congeals and seals preventing the hydrocarbons from passing through

Applications

Features

- ✓360° of filtration surface area gives Q-Max the highest flow rates in the industry and a longer filter life
- ✓Designed to capture hydrocarbons like Diesel, Gasoline Transformer oil and much more
- ✓Larger surface area for water and oil to filter through
- ✓Up to 300% higher flow rates than similar products currently on the market
- ✓ Allows water to pass through freely

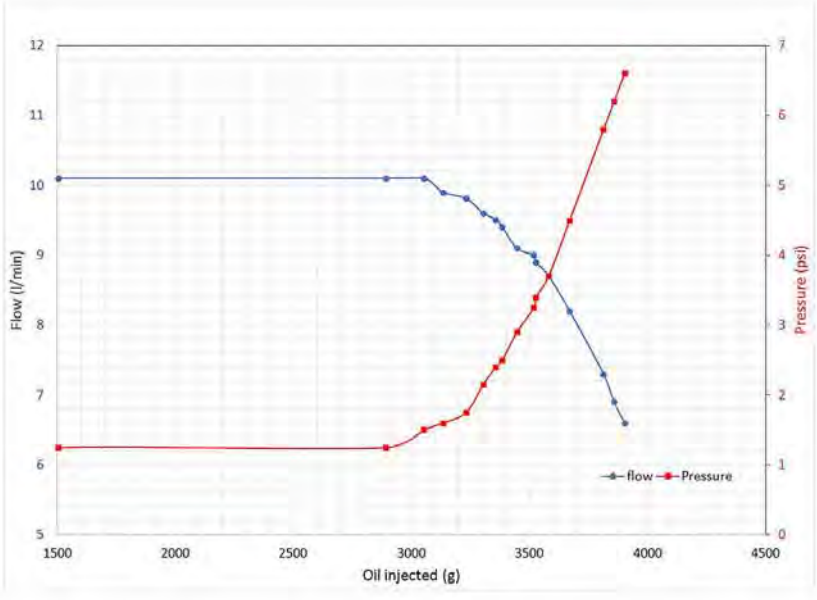
Q-MAX *HF*

High Efficiency Hydrocarbon Filter

Flow Performance

Vertical configuration			
Head Pressure (Inches)	Flow (GPM)	Head Pressure (cm)	Flow (LPM)
0	6.9	0	26
2	8.0	5	30
4	8.9	10	34
6	9.7	15	37
8	10.4	20	39
12	12.0	30	45
Horizontal configuration			
Head Pressure (Inches)	Flow (GPM)	Head Pressure (cm)	Flow (LPM)
0	0.0	0	0
2	0.8	5	3
4	1.6	10	6
6	2.5	15	9
8	3.3	20	12
12	4.9	30	19

Flow & Pressure vs Oil Intake

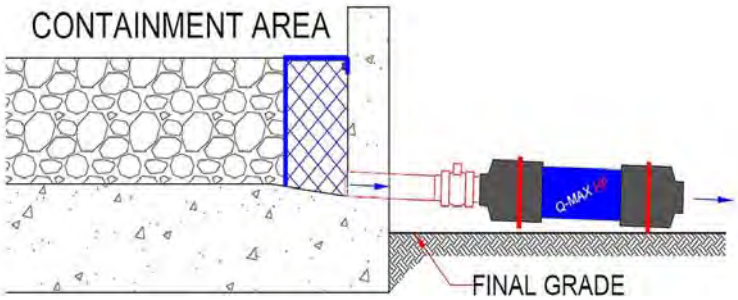


Specifications

Inlet ID (dia., in.)	Filter OD (dia., in.)	Inlet ID (dia., cm)	Filter OD (dia., cm)
2	8	5.08	20.32
4	8	10.16	20.32
6	8	15.24	20.32

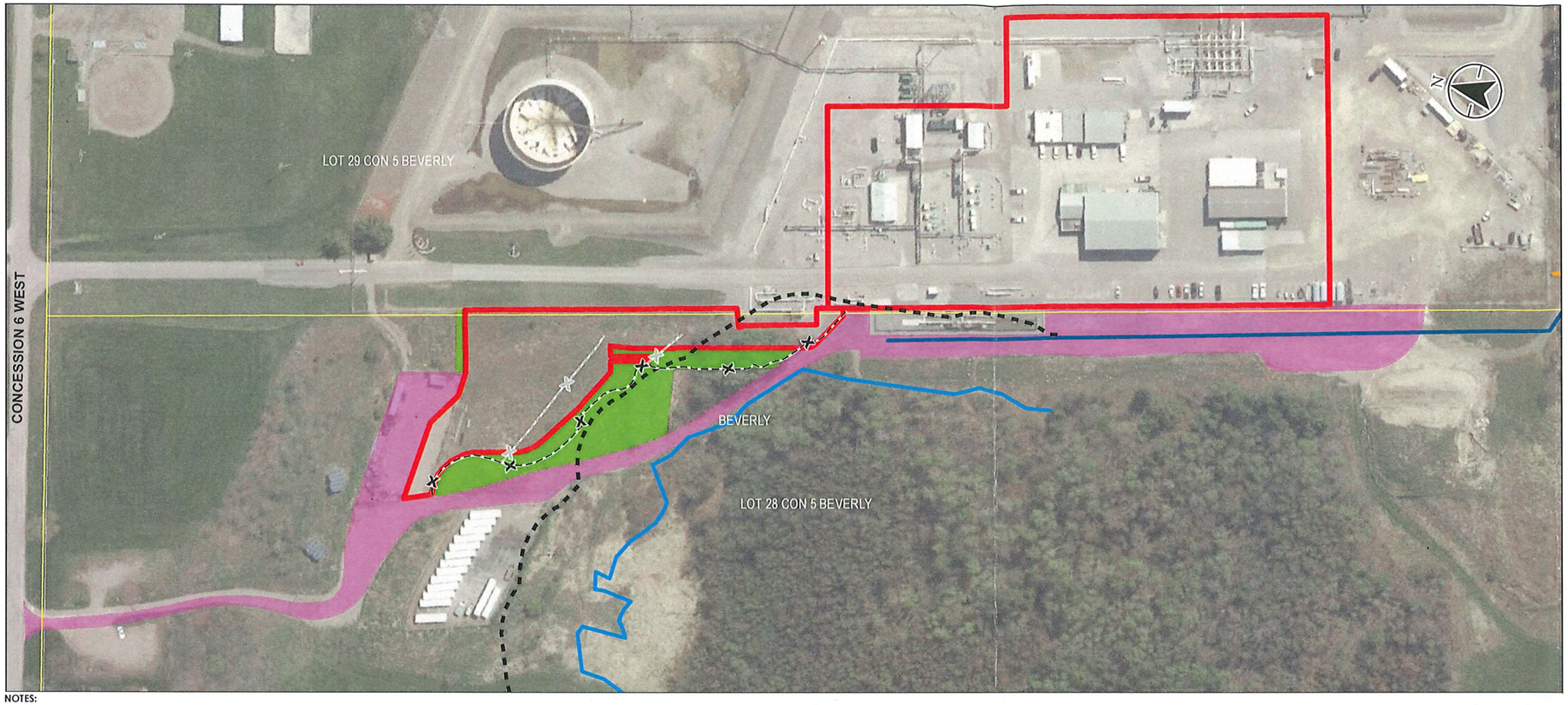
The size of the Inlet ID does not affect the flow rate performance of the Q-Max *HF*

Third party lab tests performed showed no total oil and grease mineral percentage detected in water with a detection limit of 0.5 mg/L (PPM) in the effluent.



Installation & Maintenance

Visit our website at www.albarrie.com for Installation & Maintenance Manuals



Stantec

Legend

- Permanent Westover Facility Footprint
- Temporary Work Space (Non-Vegetated)
- Temporary Work Space (Vegetated)
- HCA Field Delineated Wetland Boundary Buffer 30m
- HCA Field Delineated Wetland Boundary (Stantec, 2020)

Enbridge Pipelines Data

- Line 10
- Line 11
- Property Boundary

Fencing

- Intermediate Silt Fence
- Main Silt Fence

APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

0 50 100 metres
1:2,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Enbridge data downloaded from CORE Nov 28, 2017.
4. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2019.

Project Location
City of Hamilton

160951192 REVA
Prepared by SW on 2021-09-07
Technical Review by SPE on 2021-07-28

Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT

Figure No.
3

Title
Erosion and Sediment Control Drawing

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. THE CONSTRUCTION OF THIS SITE COMPLY WITH THE REQUIREMENTS OUTLINED IN PROVINCIAL AND HCA BYLAWS AND REGULATIONS AND THE PROJECT EPP. ALL STORM WATER PUMPING TO FOLLOW THE REQUIREMENTS OF THE EPP FOLLOWING STRATEGIES ARE THE MINIMUM EFFORTS THAT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR SUBCONTRACTOR.
5. ALL WORK IS TO BE UNDERTAKEN AND COMPLETED BY CONTRACTOR IN SUCH A MANNER AS TO PREVENT THE RELEASE OF SEDIMENT LADEN WATER, CONCRETE LEACHATE, OR OTHER DELETERIOUS SUBSTANCES OFF THE CONSTRUCTION SITE.
6. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO LIMIT THE TRANSPORT OF SEDIMENT AND DEBRIS OFFSITE.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN MUST BE INSTALLED AND IN PLACE UNTIL THE PROJECT IS ACCEPTED AS SUBSTANTIALLY COMPLETE AND ENBRIDGE PROVIDES WRITTEN AUTHORIZATION TO REMOVE EROSION AND SEDIMENT CONTROLS MEASURES.
8. EXCAVATE BEDROCK AND UNDERTAKE SECONDARY PROCESSING OF MATERIALS AS NECESSARY FOR REUSE AS ENGINEERED FILL ON SITE PER GEOTECHNICAL SPECIFICATIONS.
9. CONTROL AND CONVEY STORM WATER RUNOFF IN AN ENVIRONMENTALLY SENSITIVE MANNER AND ONLY RELEASE STORM WATER THAT MEETS QUALITY REQUIREMENTS IN THE EPP.
10. CONTRACTOR SHALL COORDINATE ALL RUN-OFF TESTING, AND DAILY WATER VOLUME INSPECTIONS, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL WORKS WITH ENBRIDGE SITE REPRESENTATIVE.
11. THE CONTRACTOR, OR HIS AGENT SHALL SAMPLE AND ANALYZE THE WATER BEING DISCHARGED FROM THE SITE AND SUBMIT WEEKLY REPORTS TO THE ENBRIDGE SITE REPRESENTATIVE IN ACCORDANCE WITH THE EPP.
12. CONTRACTOR SHALL MANAGE DUST EMISSIONS (NUISANCE DUST) AND MINIMIZE DUSTING FROM CONSTRUCTION TRAFFIC DURING CONSTRUCTION. DUST SUPPRESSION SHALL BE AS REQUIRED BY ENBRIDGE SITE REPRESENTATIVE.
13. CONTRACTOR SHALL INSTALL AND MAINTAIN A FODS VEHICLE TRACKOUT CONTROL AT THE ENTRANCE TO THE CONSTRUCTION AREA. SEE HTTPS://GETFODS.COM FOR PRODUCT DETAILS. THE TRACKOUT SYSTEM SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PREVENT SITE SOILS CONTAMINATING THE CONSTRUCTIONW 050.000 ACCESS ROAD AND COUNTY ROADS.
14. MAINTENANCE SHALL INCLUDE REPAIRING OR REPLACING SILT FENCING AND CLEANING / REPAIRING FODS TRACKOUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
15. SILT FENCE SHALL BE INSTALLED AT THE BASE OF ANY SLOPE WHICH IS DISTURBED THROUGH THE COURSE OF CONSTRUCTION AS WELL AS AROUND THE BASE OF ANY STOCKPILES OF EARTH MATERIALS. SHOULD THE SILT FENCE BE REMOVED TO FACILITATE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE PRIOR TO REMOVING THE SILT FENCE AND SHALL INSTALL SUFFICIENT DOWNSTREAM MEASURES TO CONTAIN THE MOVEMENT OF SILT TO THE SATISFACTION OF THE ENBRIDGE SITE REPRESENTATIVE. THE SILT FENCE SHALL BE REINSTATED AT THE END OF EACH WORKDAY AND IN ADVANCE OF ANY INCLEMENT WEATHER. THE BOTTOM OF THE SILT FENCE SHALL BE ANCHORED IN ACCORDANCE WITH MTO STANDARD DETAIL FOR HEAVY DUTY SILT FENCE (PROVINCIAL STANDARD DRAWING OPSD 219.130) IN ACCORDANCE WITH THE EPP.
16. ALL EARTH MATERIAL STOCKPILES SHALL BE COVERED WITH 6 MIL POLY AND ADEQUATELY SECURED EITHER BY WEIGHTING OR STAPLING TO MINIMIZE THE MOVEMENT OF SEDIMENT DURING RAIN EVENTS AND SILT FENCE SHALL BE INSTALLED AROUND STOCKPILE PERIMETERS. STOCKPILE MATERIAL IS TO STAY OUTSIDE OF THE 30 M HCA BUFFER AREA.
17. SILT FENCES ARE TO BE INSPECTED AND REPAIRED PRIOR TO FORECAST RAIN EVENTS. FOLLOWING ALL SIGNIFICANT STORM EVENTS OR PERIODS OF EXTENDED RAIN, AND WHEN ACCUMULATED SEDIMENTS ARE GREATER THAN 150 mm ABOVE THE INSIDE TOE OF THE FENCE.
18. ALL CONCRETE SUPPLY TRUCKS SHALL BE EQUIPPED WITH WASH BUCKET SYSTEM FOR THE FLUSHING OF THE FLUME. ALL WASTE FROM THE FLUSHING OF THE FLUME SHALL BE RE-CIRCULATED INTO THE MIXING DRUM. UNDER NO CIRCUMSTANCES SHALL EXCESS CONCRETE FROM THE FLUME AND/OR TRUCK BE FLUSHED ONTO THE SITE. ROADS, OR ANY SURFACE WHICH MAY LEAD INTO A WETLAND, STORM SEWER SYSTEM, OR WATERCOURSE.
19. AN ADEQUATE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS SHALL BE MAINTAINED ON SITE, SUFFICIENT FOR EMERGENCY RESPONSE TO ONSITE BREACHES, REPAIRS, AND SPILLAGE OF SEDIMENT OR CONTAMINANTS.

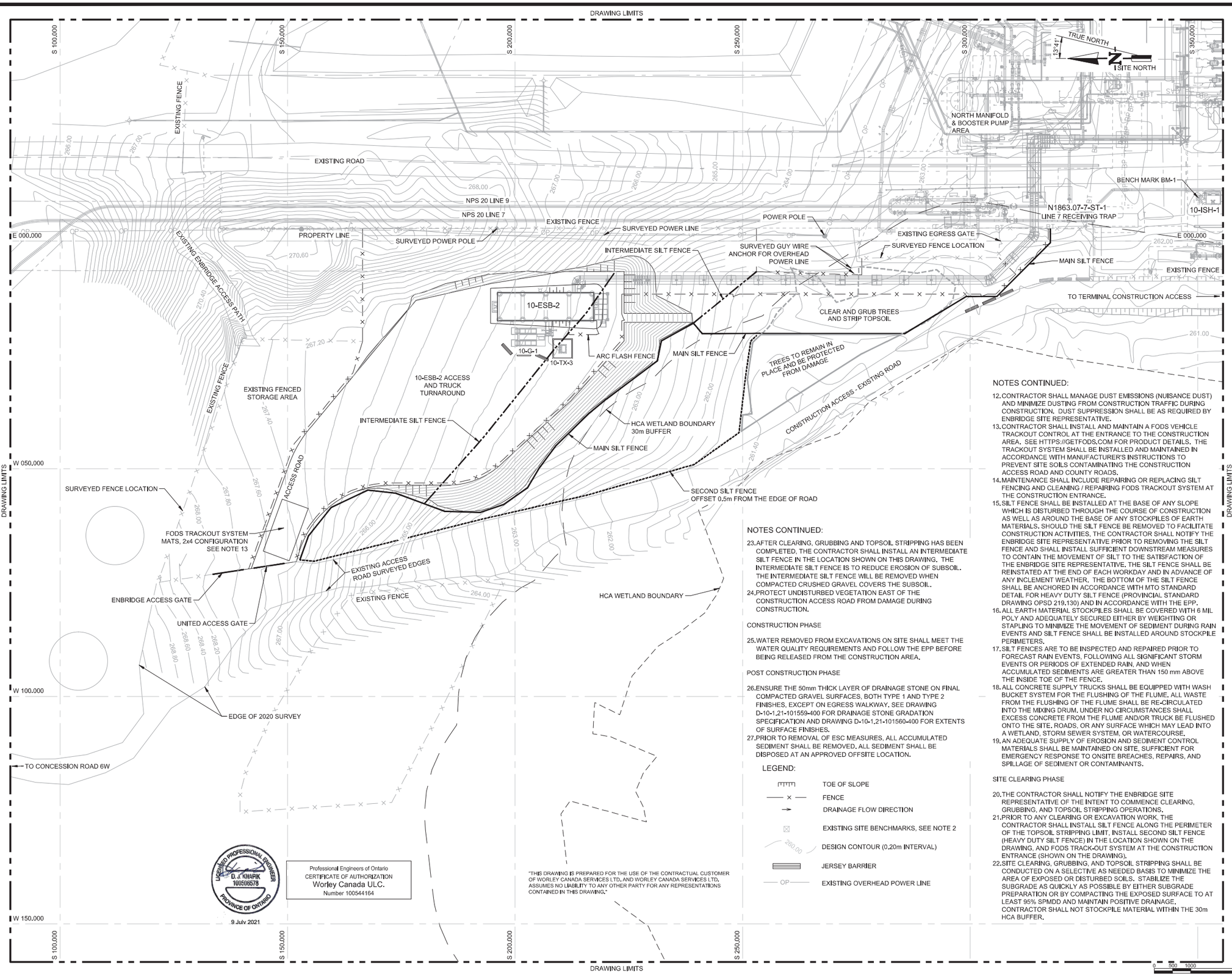
SITE CLEARING PHASE

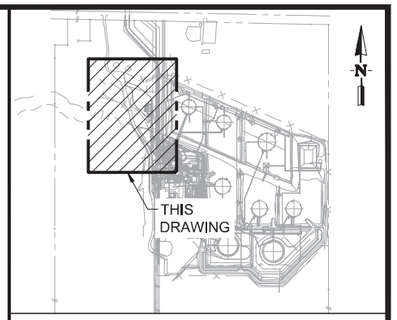
20. THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE OF THE INTENT TO COMMENCE CLEARING, GRUBBING, AND TOPSOIL STRIPPING OPERATIONS.
21. PRIOR TO ANY CLEARING OR EXCAVATION WORK, THE CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE TOPSOIL STRIPPING LIMIT, INSTALL SAR EXCLUSION FENCING (HEAVY DUTY SILT FENCE) IN THE LOCATION SHOWN ON THE EPP, AND FODS TRACK-OUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
22. SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE CONDUCTED ON A SELECTIVE AS NEEDED BASIS TO MINIMIZE THE AREA OF EXPOSED OR DISTURBED SOILS. STABILIZE THE SUBGRADE AS QUICKLY AS POSSIBLE BY EITHER SUBGRADE PREPARATION OR BY COMPACTING THE EXPOSED SURFACE TO AT LEAST 95% SPMDD AND MAINTAIN POSITIVE DRAINAGE.
23. AFTER CLEARING, GRUBBING AND TOPSOIL STRIPPING HAS BEEN COMPLETED, THE CONTRACTOR SHALL INSTALL AN INTERMEDIATE SILT FENCE IN THE LOCATION SHOWN ON THIS DRAWING. THE INTERMEDIATE SILT FENCE IS TO REDUCE EROSION OF SUBSOIL. THE INTERMEDIATE SILT FENCE WILL BE REMOVED WHEN COMPACTED CRUSHED GRAVEL COVERS THE SUBSOIL.

CONSTRUCTION PHASE

24. PLACE A 50mm THICK LAYER OF DRAINAGE STONE ON FINISHED COMPACTED GRAVEL SURFACES, BOTH TYPE 1 AND TYPE 2 FINISHES. SEE DRAWING D-1.21-SKC13-400 FOR DRAINAGE STONE GRADATION SPECIFICATION AND DRAWING D-1.21-SKC21-400 FOR EXTENTS OF SURFACE FINISHES AND FOLLOW THE EPP.
25. PRIOR TO REMOVAL OF ESC MEASURES, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED. THE ONSITE STORM SEWER SHALL BE FLUSHED WITH ALL SEDIMENT BEING CAPTURED AND REMOVED. ALL SEDIMENT SHALL BE DISPOSED AT AN APPROVED OFFSITE LOCATION.
26. PRECEDING NOTES ARE AS PER THE WESTOVER (ON) TERMINAL EROSION AND SEDIMENT CONTROL PLAN (D-1.21-SKC22-400) DATED APRIL 4, 2021 (WORLEY 2021). DISCREPANCIES BETWEEN THE FINAL DESIGN WILL BE IDENTIFIED PRIOR TO CONSTRUCTION AND THE MORE STRINGENT OPTION OR REGULATORY REQUIREMENTS WILL APPLY.

\\cd1215-f01\work_group\01609\active\160951192\03_data\gis_cad\gis\mxd\current figures\HCA\160951192_Fig03_ESC.mxd Revised: 2021-09-07 By: svandamme





LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-1.0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-00.
4. THE CONSTRUCTION OF THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OUTLINED IN PROVINCIAL AND HCA BYLAWS AND REGULATIONS AND THE PROJECT EPP. ALL STORM WATER PUMPING TO FOLLOW THE REQUIREMENTS OF THE EPP. THE FOLLOWING STRATEGIES ARE THE MINIMUM EFFORTS THAT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR SUBCONTRACTORS.
5. ALL WORK IS TO BE UNDERTAKEN AND COMPLETED BY CONTRACTOR IN SUCH A MANNER AS TO PREVENT THE RELEASE OF SEDIMENT LADEN WATER, CONCRETE LEACHATE, OR OTHER DELETERIOUS SUBSTANCES OFF THE CONSTRUCTION SITE.
6. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO LIMIT THE TRANSPORT OF SEDIMENT AND DEBRIS OFFSITE.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN MUST BE INSTALLED AND IN PLACE UNTIL THE PROJECT IS ACCEPTED AS SUBSTANTIALLY COMPLETE AND ENBRIDGE PROVIDES WRITTEN AUTHORIZATION TO REMOVE EROSION AND SEDIMENT CONTROLS MEASURES.
8. EXCAVATE BEDROCK AND UNDERTAKE SECONDARY PROCESSING OF MATERIALS AS NECESSARY FOR REUSE AS ENGINEERED FILL ON SITE PER GEOTECHNICAL SPECIFICATIONS.
9. CONTROL AND CONVEY STORM WATER RUNOFF IN AN ENVIRONMENTALLY SENSITIVE MANNER AND ONLY RELEASE STORM WATER THAT MEETS QUALITY REQUIREMENTS IN THE EPP.
10. CONTRACTOR SHALL COORDINATE ALL RUN-OFF TESTING, DAILY WATER VOLUME TRACKING, INSPECTIONS, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL WORKS WITH ENBRIDGE SITE REPRESENTATIVE.
11. THE CONTRACTOR, OR HIS AGENT SHALL SAMPLE AND ANALYZE THE WATER BEING DISCHARGED FROM THE SITE AND SUBMIT WEEKLY REPORTS TO THE ENBRIDGE SITE REPRESENTATIVE IN ACCORDANCE WITH THE EPP.

NOTES CONTINUED:

12. CONTRACTOR SHALL MANAGE DUST EMISSIONS (NUISANCE DUST) AND MINIMIZE DUSTING FROM CONSTRUCTION TRAFFIC DURING CONSTRUCTION. DUST SUPPRESSION SHALL BE AS REQUIRED BY ENBRIDGE SITE REPRESENTATIVE.
13. CONTRACTOR SHALL INSTALL AND MAINTAIN A FODS VEHICLE TRACKOUT CONTROL AT THE ENTRANCE TO THE CONSTRUCTION AREA. SEE HTTPS://GETFODS.COM FOR PRODUCT DETAILS. THE TRACKOUT SYSTEM SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PREVENT SITE SOILS CONTAMINATING THE CONSTRUCTION ACCESS ROAD AND COUNTY ROADS.
14. MAINTENANCE SHALL INCLUDE REPAIRING OR REPLACING SILT FENCING AND CLEANING / REPAIRING FODS TRACKOUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
15. SILT FENCE SHALL BE INSTALLED AT THE BASE OF ANY SLOPE WHICH IS DISTURBED THROUGH THE COURSE OF CONSTRUCTION AS WELL AS AROUND THE BASE OF ANY STOCKPILES OF EARTH MATERIALS. SHOULD THE SILT FENCE BE REMOVED TO FACILITATE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE PRIOR TO REMOVING THE SILT FENCE AND SHALL INSTALL SUFFICIENT DOWNSTREAM MEASURES TO CONTAIN THE MOVEMENT OF SILT TO THE SATISFACTION OF THE ENBRIDGE SITE REPRESENTATIVE. THE SILT FENCE SHALL BE REINSTATED AT THE END OF EACH WORKDAY AND IN ADVANCE OF ANY INCLEMENT WEATHER. THE BOTTOM OF THE SILT FENCE SHALL BE ANCHORED IN ACCORDANCE WITH MTO STANDARD DETAIL FOR HEAVY DUTY SILT FENCE (PROVINCIAL STANDARD DRAWING OPSD 219.130) AND IN ACCORDANCE WITH THE EPP.
16. ALL EARTH MATERIAL STOCKPILES SHALL BE COVERED WITH 6 MIL POLY AND ADEQUATELY SECURED EITHER BY WEIGHTING OR STAPLING TO MINIMIZE THE MOVEMENT OF SEDIMENT DURING RAIN EVENTS AND SILT FENCE SHALL BE INSTALLED AROUND STOCKPILE PERIMETERS.
17. SILT FENCES ARE TO BE INSPECTED AND REPAIRED PRIOR TO FORECAST RAIN EVENTS, FOLLOWING ALL SIGNIFICANT STORM EVENTS OR PERIODS OF EXTENDED RAIN, AND WHEN ACCUMULATED SEDIMENTS ARE GREATER THAN 150 mm ABOVE THE INSIDE TOE OF THE FENCE.
18. ALL CONCRETE SUPPLY TRUCKS SHALL BE EQUIPPED WITH WASH BUCKET SYSTEM FOR THE FLUSHING OF THE FLUME. ALL WASTE FROM THE FLUSHING OF THE FLUME SHALL BE RE-CIRCULATED INTO THE MIXING DRUM. UNDER NO CIRCUMSTANCES SHALL EXCESS CONCRETE FROM THE FLUME AND/OR TRUCK BE FLUSHED ONTO THE SITE. ROADS, OR ANY SURFACE WHICH MAY LEAD INTO A WETLAND, STORM SEWER SYSTEM, OR WATERCOURSE.
19. AN ADEQUATE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS SHALL BE MAINTAINED ON SITE, SUFFICIENT FOR EMERGENCY RESPONSE TO ONSITE BREACHES, REPAIRS, AND SPILLAGE OF SEDIMENT OR CONTAMINANTS.

SITE CLEARING PHASE

20. THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE OF THE INTENT TO COMMENCE CLEARING, GRUBBING, AND TOPSOIL STRIPPING OPERATIONS.
21. PRIOR TO ANY CLEARING OR EXCAVATION WORK, THE CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE TOPSOIL STRIPPING LIMIT, INSTALL SECOND SILT FENCE (HEAVY DUTY SILT FENCE) IN THE LOCATION SHOWN ON THE DRAWING, AND FODS TRACK-OUT SYSTEM AT THE CONSTRUCTION ENTRANCE (SHOWN ON THE DRAWING).
22. SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE CONDUCTED ON A SELECTIVE AS NEEDED BASIS TO MINIMIZE THE AREA OF EXPOSED OR DISTURBED SOILS. STABILIZE THE SUBGRADE AS QUICKLY AS POSSIBLE BY EITHER SUBGRADE PREPARATION OR BY COMPACTING THE EXPOSED SURFACE TO AT LEAST 95% SPMDD AND MAINTAIN POSITIVE DRAINAGE. CONTRACTOR SHALL NOT STOCKPILE MATERIAL WITHIN THE 30m HCA BUFFER.

NOTES CONTINUED:

23. AFTER CLEARING, GRUBBING AND TOPSOIL STRIPPING HAS BEEN COMPLETED, THE CONTRACTOR SHALL INSTALL AN INTERMEDIATE SILT FENCE IN THE LOCATION SHOWN ON THIS DRAWING. THE INTERMEDIATE SILT FENCE IS TO REDUCE EROSION OF SUBSOIL. THE INTERMEDIATE SILT FENCE WILL BE REMOVED WHEN COMPACTED CRUSHED GRAVEL COVERS THE SUBSOIL.
24. PROTECT UNDISTURBED VEGETATION EAST OF THE CONSTRUCTION ACCESS ROAD FROM DAMAGE DURING CONSTRUCTION.

CONSTRUCTION PHASE

25. WATER REMOVED FROM EXCAVATIONS ON SITE SHALL MEET THE WATER QUALITY REQUIREMENTS AND FOLLOW THE EPP BEFORE BEING RELEASED FROM THE CONSTRUCTION AREA.

POST CONSTRUCTION PHASE

26. ENSURE THE 50mm THICK LAYER OF DRAINAGE STONE ON FINAL COMPACTED GRAVEL SURFACES, BOTH TYPE 1 AND TYPE 2 FINISHES, EXCEPT ON EGRESS WALKWAY, SEE DRAWING D-10-1.21-101559-400 FOR DRAINAGE STONE GRADATION SPECIFICATION AND DRAWING D-10-1.21-101560-400 FOR EXTENTS OF SURFACE FINISHES.
27. PRIOR TO REMOVAL OF ESC MEASURES, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED, ALL SEDIMENT SHALL BE DISPOSED AT AN APPROVED OFFSITE LOCATION.

LEGEND:

- TOE OF SLOPE
- FENCE
- DRAINAGE FLOW DIRECTION
- EXISTING SITE BENCHMARKS, SEE NOTE 2
- 260.00 DESIGN CONTOUR (0.20m INTERVAL)
- JERSEY BARRIER
- OP EXISTING OVERHEAD POWER LINE

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.B	LINE 10 CARVE OUT	C18

AFE: 20020043		PROJ NO: 2000186	
WP NO:		DATE: 2020-08-18	
BY: MP		ENG: DKNAPIK	
CHK: MK		ENB APPR: SAHMADIAN	

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 90% REVIEW	2021-04-16 HH	DK
0.B	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

D-10-1.21-101559-400	FINAL GRADING SECTIONS AND DETAILS
D-10-1.21-101560-400	SURFACE EXTENTS PLAN

REFERENCE DRAWINGS

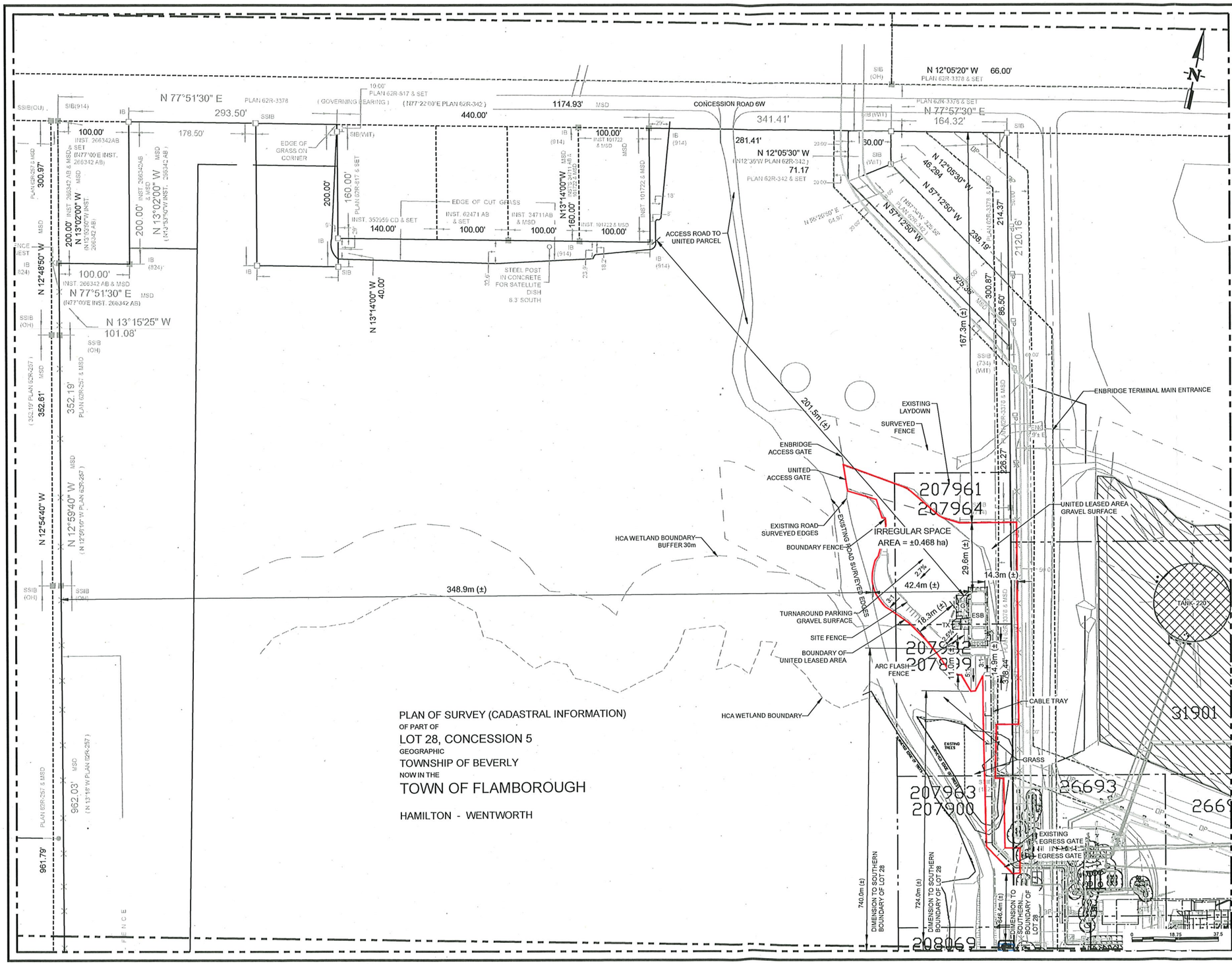
REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
EROSION AND SEDIMENT CONTROL PLAN

BY: MP	CHK: DK	ENG.: DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-14		SCALE: 1:400	STATUS: CONSTRUCTION

DWG NO.: D-1.21-SKC22-400 REV NO.: 0.B



LOCATION PLAN

NOTES:

1. CADASTRAL SURVEY INFORMATION SHOWN ON THIS DRAWING IS FROM ENBRIDGE DRAWING 0-1.11-6851-400.
2. DIMENSIONS ARE IN METRES AND SHOWN THUS 201.5m (+/-). DIMENSIONS FROM ORIGINAL SURVEY DRAWING ARE SHOWN AS 60.00'.

LEGEND:

	UNITED LEASE PARCEL BOUNDARY
ESB	ELECTRICAL SWITCHGEAR BUILDING (21.2m x 6.2m BUILDING)
G	GENERATOR c/w ACCESS PLATFORM
TX	TRANSFORMER

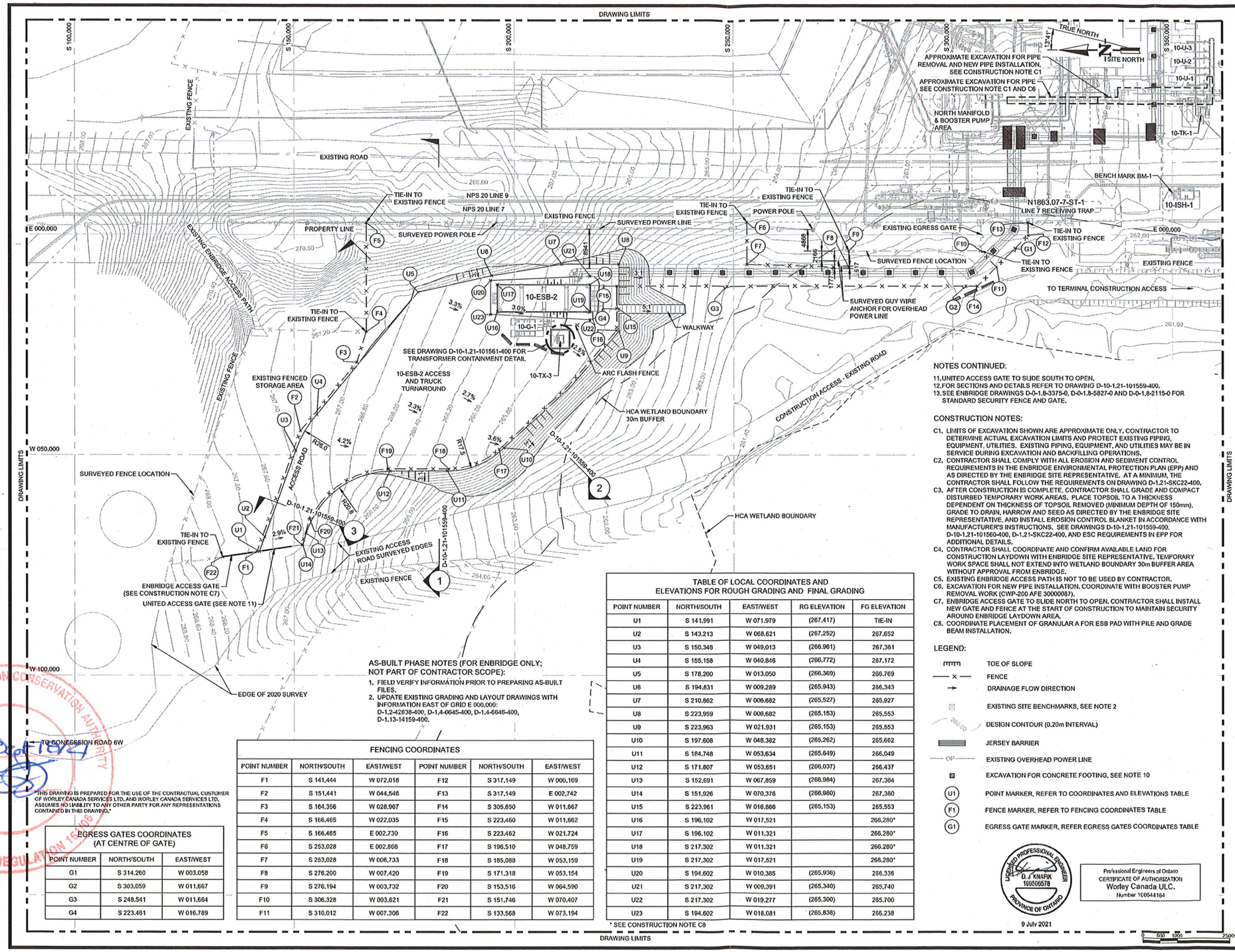
APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

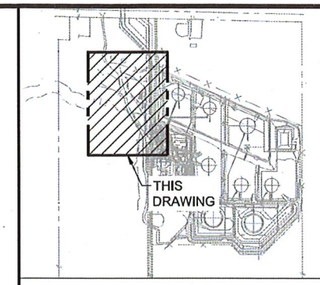
PLAN OF SURVEY (CADASTRAL INFORMATION)
OF PART OF
LOT 28, CONCESSION 5
GEOGRAPHIC
TOWNSHIP OF BEVERLY
NOW IN THE
TOWN OF FLAMBOROUGH

HAMILTON - WENTWORTH

SKETCH 203_REV 03

UNITED PARCEL DEVELOPMENT PLAN
(FOR PLANNING APPLICATION PURPOSES)
2021-SEP-07





LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-1.0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES WITHIN WORK BOUNDARIES PRIOR TO COMMENCING THE WORK.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL SITE CONDITIONS, COORDINATES, LINES, GRADES AND ELEVATIONS PRIOR TO STARTING WORK.
6. HAND EXCAVATION IS REQUIRED WITHIN 1m OF EXISTING UNDERGROUND CABLES, PIPES, UTILITIES, AND EXISTING FOUNDATIONS.
7. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION, AS REQUIRED, TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES, PIPELINES, BUILDINGS, FENCES, CULVERT, VALVES, ETC.
8. REFERENCE STANDARDS AND DOCUMENTS
   - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002, FCS004, FCS006 AND FCS018.
   - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
9. CONTRACTOR SHALL REFER TO FINAL GEOTECHNICAL REPORT PREPARED BY STANTEC, DATED MAY 6, 2021.
10. APPROXIMATE EXTENT OF EXCAVATION FOR CABLE TRAY SUPPORTS, FOR CONCRETE FOOTING DETAILS SEE DRAWING D-10-2.21-101416-400.

NOTES CONTINUED:

11. UNITED ACCESS GATE TO SLIDE SOUTH TO OPEN.
12. FOR SECTIONS AND DETAILS REFER TO DRAWING D-10-1,21-101559-400.
13. SEE ENBRIDGE DRAWINGS D-0-1,8-3375-0, D-0-1,8-5827-0 AND D-0-1,8-2115-0 FOR STANDARD SECURITY FENCE AND GATE.

CONSTRUCTION NOTES:

C1. LIMITS OF EXCAVATION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE ACTUAL EXCAVATION LIMITS AND PROTECT EXISTING PIPING, EQUIPMENT, UTILITIES. EXISTING PIPING, EQUIPMENT, AND UTILITIES MAY BE IN SERVICE DURING EXCAVATION AND BACKFILLING OPERATIONS.
C2. CONTRACTOR SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REQUIREMENTS IN THE ENBRIDGE ENVIRONMENTAL PROTECTION PLAN (EPP) AND AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE. AT A MINIMUM, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS ON DRAWING D-1,21-SKC22-400.
C3. AFTER CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL GRADE AND COMPACT DISTURBED TEMPORARY WORK AREAS, PLACE TOPSOIL TO A THICKNESS DEPENDENT ON THICKNESS OF TOPSOIL REMOVED (MINIMUM DEPTH OF 150mm), GRADE TO DRAIN, HARROW AND SEED AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE, AND INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEE DRAWINGS D-10-1,21-101559-400, D-10-1,21-101560-400, D-1,21-SKC22-400, AND ESC REQUIREMENTS IN EPP FOR ADDITIONAL DETAILS.
C4. CONTRACTOR SHALL COORDINATE AND CONFIRM AVAILABLE LAND FOR CONSTRUCTION LAYDOWN WITH ENBRIDGE SITE REPRESENTATIVE. TEMPORARY WORK SPACE SHALL NOT EXTEND INTO WETLAND BOUNDARY 30m BUFFER AREA WITHOUT APPROVAL FROM ENBRIDGE.
C5. EXISTING ENBRIDGE ACCESS PATH IS NOT TO BE USED BY CONTRACTOR.
C6. EXCAVATION FOR NEW PIPE INSTALLATION. COORDINATE WITH BOOSTER PUMP REMOVAL WORK (CWP-200 AFE 30000087).
C7. ENBRIDGE ACCESS GATE TO SLIDE NORTH TO OPEN. CONTRACTOR SHALL INSTALL NEW GATE AND FENCE AT THE START OF CONSTRUCTION TO MAINTAIN SECURITY AROUND ENBRIDGE LAYDOWN AREA.
C8. COORDINATE PLACEMENT OF GRANULAR A FOR ESB PAD WITH PILE AND GRADE BEAM INSTALLATION.

LEGEND:

- TOE OF SLOPE
- FENCE
- DRAINAGE FLOW DIRECTION
- EXISTING SITE BENCHMARKS, SEE NOTE 2
- 260.00 DESIGN CONTOUR (0.20m INTERVAL)
- JERSEY BARRIER
- OP EXISTING OVERHEAD POWER LINE
- EXCAVATION FOR CONCRETE FOOTING, SEE NOTE 10
- (U1) POINT MARKER, REFER TO COORDINATES AND ELEVATIONS TABLE
- (F1) FENCE MARKER, REFER TO FENCING COORDINATES TABLE
- (G1) EGRESS GATE MARKER, REFER EGRESS GATES COORDINATES TABLE

AS-BUILT PHASE NOTES (FOR ENBRIDGE ONLY; NOT PART OF CONTRACTOR SCOPE):

1. FIELD VERIFY INFORMATION PRIOR TO PREPARING AS-BUILT FILES.
2. UPDATE EXISTING GRADING AND LAYOUT DRAWINGS WITH INFORMATION EAST OF GRID E 000.000: D-1.2-42838-400, D-1,4-6645-400, D-1,4-6646-400, D-1.13-14159-400.

TABLE OF LOCAL COORDINATES AND ELEVATIONS FOR ROUGH GRADING AND FINAL GRADING

POINT NUMBER	NORTH/SOUTH	EAST/WEST	RG ELEVATION	FG ELEVATION
U1	S 141.991	W 071.979	(267.417)	TIE-IN
U2	S 143.213	W 068.621	(267.252)	267.652
U3	S 150.348	W 049.013	(266.961)	267.361
U4	S 155.158	W 040.846	(266.772)	267.172
U5	S 178.200	W 013.050	(266.369)	266.769
U6	S 194.831	W 009.289	(265.943)	266.343
U7	S 210.862	W 006.682	(265.527)	265.927
U8	S 223.959	W 006.682	(265.153)	265.553
U9	S 223.963	W 021.931	(265.153)	265.553
U10	S 197.608	W 048.382	(265.262)	265.662
U11	S 184.748	W 053.634	(265.649)	266.049
U12	S 171.807	W 053.651	(266.037)	266.437
U13	S 152.691	W 067.859	(266.984)	267.384
U14	S 151.926	W 070.376	(266.980)	267.380
U15	S 223.961	W 016.866	(265.153)	265.553
U16	S 196.102	W 017.521		266.280*
U17	S 196.102	W 011.321		266.280*
U18	S 217.302	W 011.321		266.280*
U19	S 217.302	W 017.521		266.280*
U20	S 194.602	W 010.385	(265.936)	266.336
U21	S 217.302	W 009.391	(265.340)	265.740
U22	S 217.302	W 019.277	(265.300)	265.700
U23	S 194.602	W 018.081	(265.838)	266.238

* SEE CONSTRUCTION NOTE C8

FENCING COORDINATES

POINT NUMBER	NORTH/SOUTH	EAST/WEST	POINT NUMBER	NORTH/SOUTH	EAST/WEST
F1	S 141.444	W 072.018	F12	S 317.149	W 000.169
F2	S 151.441	W 044.546	F13	S 317.149	E 002.742
F3	S 164.356	W 028.997	F14	S 305.650	W 011.667
F4	S 166.465	W 022.035	F15	S 223.460	W 011.662
F5	S 166.465	E 002.730	F16	S 223.462	W 021.724
F6	S 253.028	E 002.866	F17	S 196.510	W 048.759
F7	S 253.028	W 006.733	F18	S 185.088	W 053.159
F8	S 276.200	W 007.420	F19	S 171.318	W 053.154
F9	S 276.194	W 003.732	F20	S 153.516	W 064.590
F10	S 306.328	W 003.621	F21	S 151.746	W 070.407
F11	S 310.012	W 007.306	F22	S 133.568	W 073.194

EGRESS GATES COORDINATES (AT CENTRE OF GATE)

POINT NUMBER	NORTH/SOUTH	EAST/WEST
G1	S 314.260	W 003.058
G2	S 303.059	W 011.667
G3	S 248.541	W 011.664
G4	S 223.461	W 016.789

APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

"THIS DRAWING IS PREPARED FOR THE USE OF THE CONTRACTUAL CUSTOMER OF WORLEY CANADA SERVICES LTD. AND WORLEY CANADA SERVICES LTD. ASSUMES NO LIABILITY TO ANY OTHER PARTY FOR ANY REPRESENTATIONS CONTAINED IN THIS DRAWING."

LICENSED PROFESSIONAL ENGINEER D. J. KNAPIK 100506578 PROVINCE OF ONTARIO

9 July 2021

Professional Engineers of Ontario CERTIFICATE OF AUTHORIZATION Worley Canada ULC. Number 100544164

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.C	LINE 10 CARVE OUT	C15

AFE: 20020043		PROJ NO: 2000186	
WP NO:		DATE: 2020-08-18	
BY: MP		ENG: DKNAPIK	
CHK: MK JA		ENB APPR: SAHMADIAN	

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.C	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

D-0-1,8-2115-0	STANDARD PORTABLE SECURITY FENCE
D-0-1,8-5827-0	STANDARD EMERGENCY EVACUATION GATE
D-0-1,8-3375-0	STANDARD SECURITY FENCE
D-10-1,21-101561-400	TRANSFORMER CONTAINMENT PLAN, SECTIONS AND DETAILS
D-10-2,21-101416-400	SECTIONS AND DETAILS
D-10-1,21-101559-400	FINAL GRADING SECTIONS AND DETAILS
D-1,0-SKC100-400	CONSTRUCTION ACCESS PLAN

REFERENCE DRAWINGS

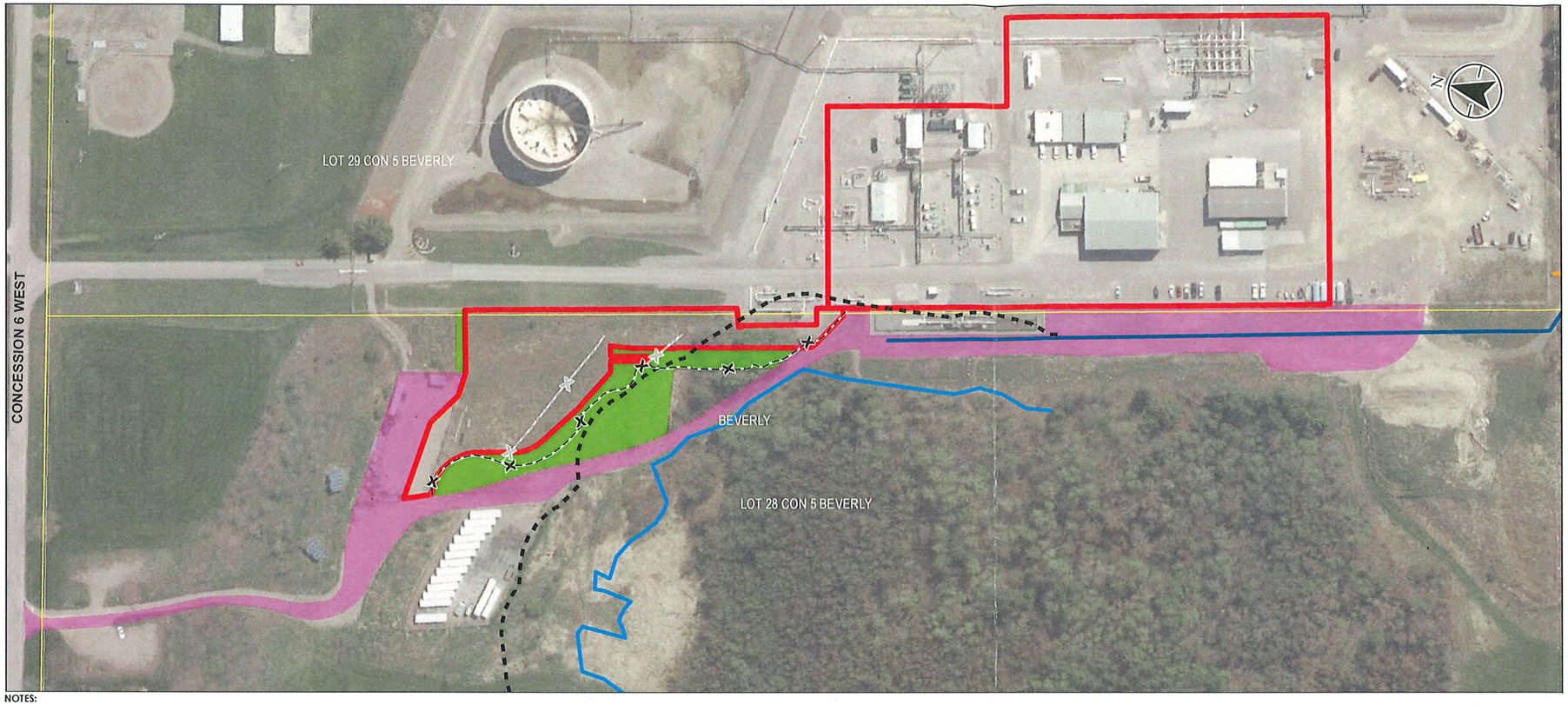
REV NO.	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
FINAL GRADING PLAN

BY: MP	CHK: DK	ENG: DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-14	SCALE: 1:400		STATUS: CONSTRUCTION

DWG NO.: D-10-1.21-101558-400 REV NO.: 0.C



Stantec

Legend

- Permanent Westover Facility Footprint
- Temporary Work Space (Non-Vegetated)
- Temporary Work Space (Vegetated)
- HCA Field Delineated Wetland Boundary Buffer 30m
- HCA Field Delineated Wetland Boundary (Stantec, 2020)

Enbridge Pipelines Data

- Line 10
- Line 11
- Property Boundary

Fencing

- Intermediate Silt Fence
- Main Silt Fence

APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

0 50 100 metres
1:2,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Enbridge data downloaded from CORE Nov 28, 2017.
4. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2019.

Project Location
City of Hamilton

160951192 REVA
Prepared by SW on 2021-09-07
Technical Review by SPE on 2021-07-28

Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT

Figure No.
3

Title
Erosion and Sediment Control Drawing

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. THE CONSTRUCTION OF THIS SITE COMPLY WITH THE REQUIREMENTS OUTLINED IN PROVINCIAL AND HCA BYLAWS AND REGULATIONS AND THE PROJECT EPP. ALL STORM WATER PUMPING TO FOLLOW THE REQUIREMENTS OF THE EPP FOLLOWING STRATEGIES ARE THE MINIMUM EFFORTS THAT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR SUBCONTRACTOR.
5. ALL WORK IS TO BE UNDERTAKEN AND COMPLETED BY CONTRACTOR IN SUCH A MANNER AS TO PREVENT THE RELEASE OF SEDIMENT LADEN WATER, CONCRETE LEACHATE, OR OTHER DELETERIOUS SUBSTANCES OFF THE CONSTRUCTION SITE.
6. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO LIMIT THE TRANSPORT OF SEDIMENT AND DEBRIS OFFSITE.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN MUST BE INSTALLED AND IN PLACE UNTIL THE PROJECT IS ACCEPTED AS SUBSTANTIALLY COMPLETE AND ENBRIDGE PROVIDES WRITTEN AUTHORIZATION TO REMOVE EROSION AND SEDIMENT CONTROLS MEASURES.
8. EXCAVATE BEDROCK AND UNDERTAKE SECONDARY PROCESSING OF MATERIALS AS NECESSARY FOR REUSE AS ENGINEERED FILL ON SITE PER GEOTECHNICAL SPECIFICATIONS.
9. CONTROL AND CONVEY STORM WATER RUNOFF IN AN ENVIRONMENTALLY SENSITIVE MANNER AND ONLY RELEASE STORM WATER THAT MEETS QUALITY REQUIREMENTS IN THE EPP.
10. CONTRACTOR SHALL COORDINATE ALL RUN-OFF TESTING, AND DAILY WATER VOLUME INSPECTIONS, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL WORKS WITH ENBRIDGE SITE REPRESENTATIVE.
11. THE CONTRACTOR, OR HIS AGENT SHALL SAMPLE AND ANALYZE THE WATER BEING DISCHARGED FROM THE SITE AND SUBMIT WEEKLY REPORTS TO THE ENBRIDGE SITE REPRESENTATIVE IN ACCORDANCE WITH THE EPP.
12. CONTRACTOR SHALL MANAGE DUST EMISSIONS (NUISANCE DUST) AND MINIMIZE DUSTING FROM CONSTRUCTION TRAFFIC DURING CONSTRUCTION. DUST SUPPRESSION SHALL BE AS REQUIRED BY ENBRIDGE SITE REPRESENTATIVE.
13. CONTRACTOR SHALL INSTALL AND MAINTAIN A FODS VEHICLE TRACKOUT CONTROL AT THE ENTRANCE TO THE CONSTRUCTION AREA. SEE HTTPS://GETFODS.COM FOR PRODUCT DETAILS. THE TRACKOUT SYSTEM SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PREVENT SITE SOILS CONTAMINATING THE CONSTRUCTIONW 050.000 ACCESS ROAD AND COUNTY ROADS.
14. MAINTENANCE SHALL INCLUDE REPAIRING OR REPLACING SILT FENCING AND CLEANING / REPAIRING FODS TRACKOUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
15. SILT FENCE SHALL BE INSTALLED AT THE BASE OF ANY SLOPE WHICH IS DISTURBED THROUGH THE COURSE OF CONSTRUCTION AS WELL AS AROUND THE BASE OF ANY STOCKPILES OF EARTH MATERIALS. SHOULD THE SILT FENCE BE REMOVED TO FACILITATE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE PRIOR TO REMOVING THE SILT FENCE AND SHALL INSTALL SUFFICIENT DOWNSTREAM MEASURES TO CONTAIN THE MOVEMENT OF SILT TO THE SATISFACTION OF THE ENBRIDGE SITE REPRESENTATIVE. THE SILT FENCE SHALL BE REINSTATED AT THE END OF EACH WORKDAY AND IN ADVANCE OF ANY INCLEMENT WEATHER. THE BOTTOM OF THE SILT FENCE SHALL BE ANCHORED IN ACCORDANCE WITH MTO STANDARD DETAIL FOR HEAVY DUTY SILT FENCE (PROVINCIAL STANDARD DRAWING OPSD 219.130) IN ACCORDANCE WITH THE EPP.
16. ALL EARTH MATERIAL STOCKPILES SHALL BE COVERED WITH 6 MIL POLY AND ADEQUATELY SECURED EITHER BY WEIGHTING OR STAPLING TO MINIMIZE THE MOVEMENT OF SEDIMENT DURING RAIN EVENTS AND SILT FENCE SHALL BE INSTALLED AROUND STOCKPILE PERIMETERS. STOCKPILE MATERIAL IS TO STAY OUTSIDE OF THE 30 M HCA BUFFER AREA.
17. SILT FENCES ARE TO BE INSPECTED AND REPAIRED PRIOR TO FORECAST RAIN EVENTS. FOLLOWING ALL SIGNIFICANT STORM EVENTS OR PERIODS OF EXTENDED RAIN, AND WHEN ACCUMULATED SEDIMENTS ARE GREATER THAN 150 mm ABOVE THE INSIDE TOE OF THE FENCE.
18. ALL CONCRETE SUPPLY TRUCKS SHALL BE EQUIPPED WITH WASH BUCKET SYSTEM FOR THE FLUSHING OF THE FLUME. ALL WASTE FROM THE FLUSHING OF THE FLUME SHALL BE RE-CIRCULATED INTO THE MIXING DRUM. UNDER NO CIRCUMSTANCES SHALL EXCESS CONCRETE FROM THE FLUME AND/OR TRUCK BE FLUSHED ONTO THE SITE. ROADS, OR ANY SURFACE WHICH MAY LEAD INTO A WETLAND, STORM SEWER SYSTEM, OR WATERCOURSE.
19. AN ADEQUATE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS SHALL BE MAINTAINED ON SITE, SUFFICIENT FOR EMERGENCY RESPONSE TO ONSITE BREACHES, REPAIRS, AND SPILLAGE OF SEDIMENT OR CONTAMINANTS.

SITE CLEARING PHASE

20. THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE OF THE INTENT TO COMMENCE CLEARING, GRUBBING, AND TOPSOIL STRIPPING OPERATIONS.
21. PRIOR TO ANY CLEARING OR EXCAVATION WORK, THE CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE TOPSOIL STRIPPING LIMIT, INSTALL SAR EXCLUSION FENCING (HEAVY DUTY SILT FENCE) IN THE LOCATION SHOWN ON THE EPP, AND FODS TRACK-OUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
22. SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE CONDUCTED ON A SELECTIVE AS NEEDED BASIS TO MINIMIZE THE AREA OF EXPOSED OR DISTURBED SOILS. STABILIZE THE SUBGRADE AS QUICKLY AS POSSIBLE BY EITHER SUBGRADE PREPARATION OR BY COMPACTING THE EXPOSED SURFACE TO AT LEAST 95% SPMDD AND MAINTAIN POSITIVE DRAINAGE.
23. AFTER CLEARING, GRUBBING AND TOPSOIL STRIPPING HAS BEEN COMPLETED, THE CONTRACTOR SHALL INSTALL AN INTERMEDIATE SILT FENCE IN THE LOCATION SHOWN ON THIS DRAWING. THE INTERMEDIATE SILT FENCE IS TO REDUCE EROSION OF SUBSOIL. THE INTERMEDIATE SILT FENCE WILL BE REMOVED WHEN COMPACTED CRUSHED GRAVEL COVERS THE SUBSOIL.

CONSTRUCTION PHASE

24. PLACE A 50mm THICK LAYER OF DRAINAGE STONE ON FINISHED COMPACTED GRAVEL SURFACES, BOTH TYPE 1 AND TYPE 2 FINISHES. SEE DRAWING D-1.21-SKC13-400 FOR DRAINAGE STONE GRADATION SPECIFICATION AND DRAWING D-1.21-SKC21-400 FOR EXTENTS OF SURFACE FINISHES AND FOLLOW THE EPP.
25. PRIOR TO REMOVAL OF ESC MEASURES, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED. THE ONSITE STORM SEWER SHALL BE FLUSHED WITH ALL SEDIMENT BEING CAPTURED AND REMOVED. ALL SEDIMENT SHALL BE DISPOSED AT AN APPROVED OFFSITE LOCATION.
26. PRECEDING NOTES ARE AS PER THE WESTOVER (ON) TERMINAL EROSION AND SEDIMENT CONTROL PLAN (D-1.21-SKC22-400) DATED APRIL 4, 2021 (WORLEY 2021). DISCREPANCIES BETWEEN THE FINAL DESIGN WILL BE IDENTIFIED PRIOR TO CONSTRUCTION AND THE MORE STRINGENT OPTION OR REGULATORY REQUIREMENTS WILL APPLY.

\\cd1215-f01\work_group\01609\active\160951192\03_data\gis_cad\gis\mxd\current figures\HCA\160951192_Fig03_ESC.mxd Revised: 2021-09-07 By: svandamme

Seed mixes (see tables below) will be installed at areas of disturbance, unless otherwise requested by landowners or the appropriate land authority.

Notes:

1. Species cultivars, where applicable, will be determined at the time of procurement based on availability and suitability as determined by Enbridge.
2. Native seed species will be obtained from local genotypes where possible and to the extent feasible.
3. All seed mix species must have Certificates of Analysis to allow for the determination of weed and undesirable species content, and germination for each species seed lot in the mix.
4. Certificates of Analysis for each seed mix species will be reviewed by Enbridge prior to purchase. Any lot with unacceptable weed contamination or viability will be rejected.
5. Seed mix species that are unavailable in sufficient quantity or quality at a reasonable cost as determined by Enbridge at the time of procurement will be eliminated from the mix and the proportions of other species in the mix increased.
6. Drill seeding will be used on all segments to be seeded with the exception of slopes which are too steep to safely operate the seed drill equipment, areas too wet to access with seed drill equipment without causing rutting and poor seed placement, stony areas which may cause damage to the seed drill equipment or impede proper seed placement, and any other areas which cannot be feasibly reached with the seed drill equipment.
7. Broadcast seeding will be used on non-cultivated lands where drill seeding cannot be conducted.
8. All drill and broadcast seeding equipment will be calibrated for each seed mix using the manufacturer's recommended procedures; alternate calibration procedures may be used if approved by the Environmental Inspector.
9. The seeding contractor will develop appropriate seeding procedures to ensure even distribution of all species in each seed mix and have these procedures approved by the Environmental Inspector. This may involve, but not be limited to:
   - using seed box agitators to prevent stratification of large and small seeds;
   - seeding large and small seed species from separate seed boxes, or in separate passes with the seeder; or
   - using an inert filler agent with the seed mix.
10. Seeding depth with seed drills will target to be 1-2 cm in fine textured soils and 1-3 cm in sandy soils.
11. Where site and safety conditions allow, broadcast seed will be harrowed into a depth of 1-3 cm, using standard agricultural harrows or other approved equipment. Harrowing will be conducted immediately following broadcasting. Steep slopes that cannot be safely harrowed will be hand raked, if feasible, to incorporate seed.
12. Only the salvaged or cultivated width of the construction right-of-way will be seeded with minimal overlap onto undisturbed areas. Swing-out passes will be made to seed scalped areas adjacent to the cultivated portion as needed.
13. Complete coverage of the disturbed area will be ensured by using a sufficient number of passes. Damage to the native sod adjacent to the disturbed portion of the construction right-of-way will be avoided.
14. Broadcast seeding will be delayed during high wind conditions, as directed by the Environmental Inspector.
15. Seeding rates can vary by season (*i.e.*, spring versus fall). Seeding rates are to be confirmed by a Resource Specialist prior to seeding.

ENBRIDGE

MP Environmental

SEED MIXES

July 2021

573150 573300 573450 573600

4797900 4797750 4797600

N

Early Succession Dry Prairie Meadow Mix		
%	Common Name	Latin Name
2	Arrow Leaved Aster	*Aster sagittifolius*
15	Big Bluestem	*Andropgon gerarrdi*
6	Black Eyed Susan	*Rudbeckia hirta*
25	Canada Wild Rye	*Elymus canadensis*
5	Foxglove/Beardtongue	*Penstemon digitalis*
5	New England Aster	*Aster novae-anglaie*
25	Switchgrass	*Panicum virgatum*
15	Virginia Wild Rye	*Elymus virginicus*
2	Wild Bergamot	*Monarda fistulosa*
Seed mix should be applied at a rate of 25 kg/ha (23 lbs/acre) or at a rate of 500g/180 m² for smaller areas.		
Cover Crop A cover crop is a fast-germinating and establishing annual/biennial grass cereal or short-lived perennial grass species that is seeded to quickly stabilize topsoil, control erosion and limit weed growth while pre-disturbance vegetation is restored.		
Potential annual/biennial grass cereal grain or short-lived perennial grass cover crop species include oats, barley, winter wheat, fall rye, triticale, annual ryegrass, slender/awned wheatgrass or Canada wild rye.		

Native Prairie Meadow Mixture		
%	Common Name	Latin Name
7	Black Eyed Susan	*Rudbeckia hirta*
1	Early Goldenrod	*Solidago juncea*
25	Fowl Bluegrass/ Fowl Meadowgrass	*Poa palustris*
2	Foxglove/Beardtongue	*Penstemon digitalis*
20	Indiangrass	*Sorghastum nutans*
15	Little Blue Stem	*Schizachyrium scoparium*
1	New England Aster	*Aster novae-anglaie*
1	Showy Tick Trefoil	*Desmodium canadense*
25	Switchgrass	*Panicum virgatum*
1	White Vervain	*Verbena urticifolia*
2	Wild Bergamot	*Monarda fistulosa*
Seed mix should be applied at a rate of 25 kg/ha (23 lbs/acre) or at a rate of 500g/180 m² for smaller areas.		
Cover Crop A cover crop is a fast-germinating and establishing annual/biennial grass cereal or short-lived perennial grass species that is seeded to quickly stabilize topsoil, control erosion and limit weed growth while pre-disturbance vegetation is restored.		
Potential annual/biennial grass cereal grain or short-lived perennial grass cover crop species include oats, barley, winter wheat, fall rye, triticale, annual ryegrass, slender/awned wheatgrass or Canada wild rye.		

Stantec

Legend

- Permanent Westover Facility Footprint
- Temporary Work Space
- Re-vegetated area
- HCA Field Delineated Wetland Boundary Buffer 30m
- HCA Field Delineated Wetland Boundary (Stantec, 2020)

Enbridge Pipelines Data

- Line 10
- Property Boundary

Fencing

- Intermediate Silt Fence
- Main Silt Fence
- Recommended SAR Exclusion Fence

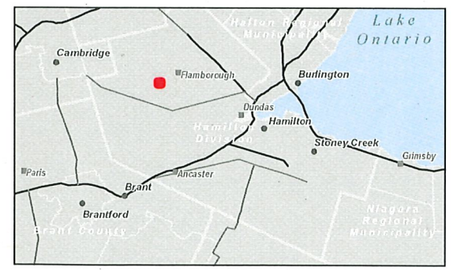
APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

0 50 100 metres

1:2,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Enbridge data downloaded from CORE Nov 28, 2017.
4. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2019.



Project Location
City of Hamilton

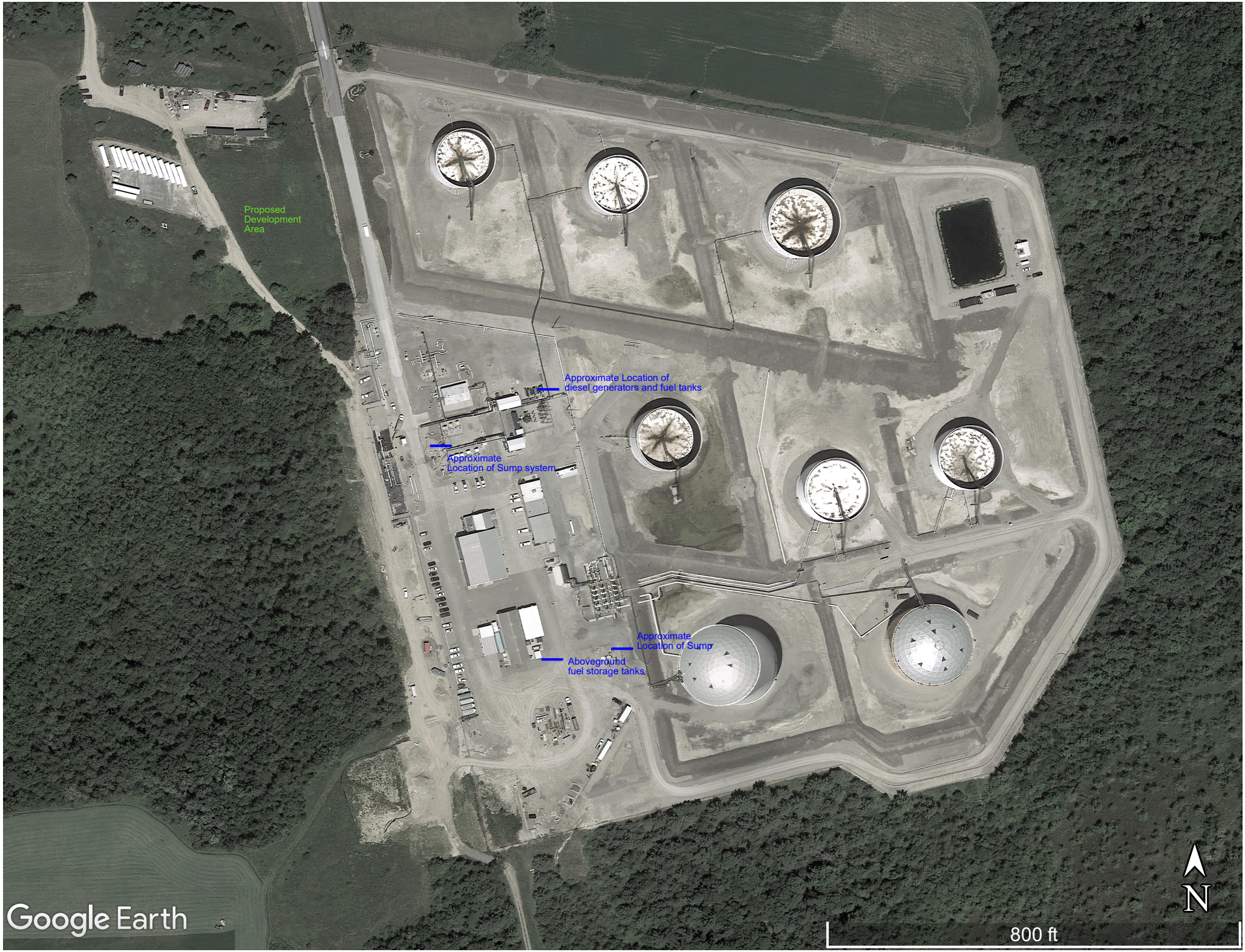
160951192 REVA
Prepared by SW on 2021-09-07
Technical Review by SPE on 2021-07-28

Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT

Figure No.
4

Title
Revegetation Drawing

K:\cd1215-01\work_group\01609\Active\160951192\03_data\gis_cad\gis\mxd\deliverable\report_figures\HCA\160951192_Fig04_Revegetation_Plan.mxd Revised: 2021-09-07 By: svandamme

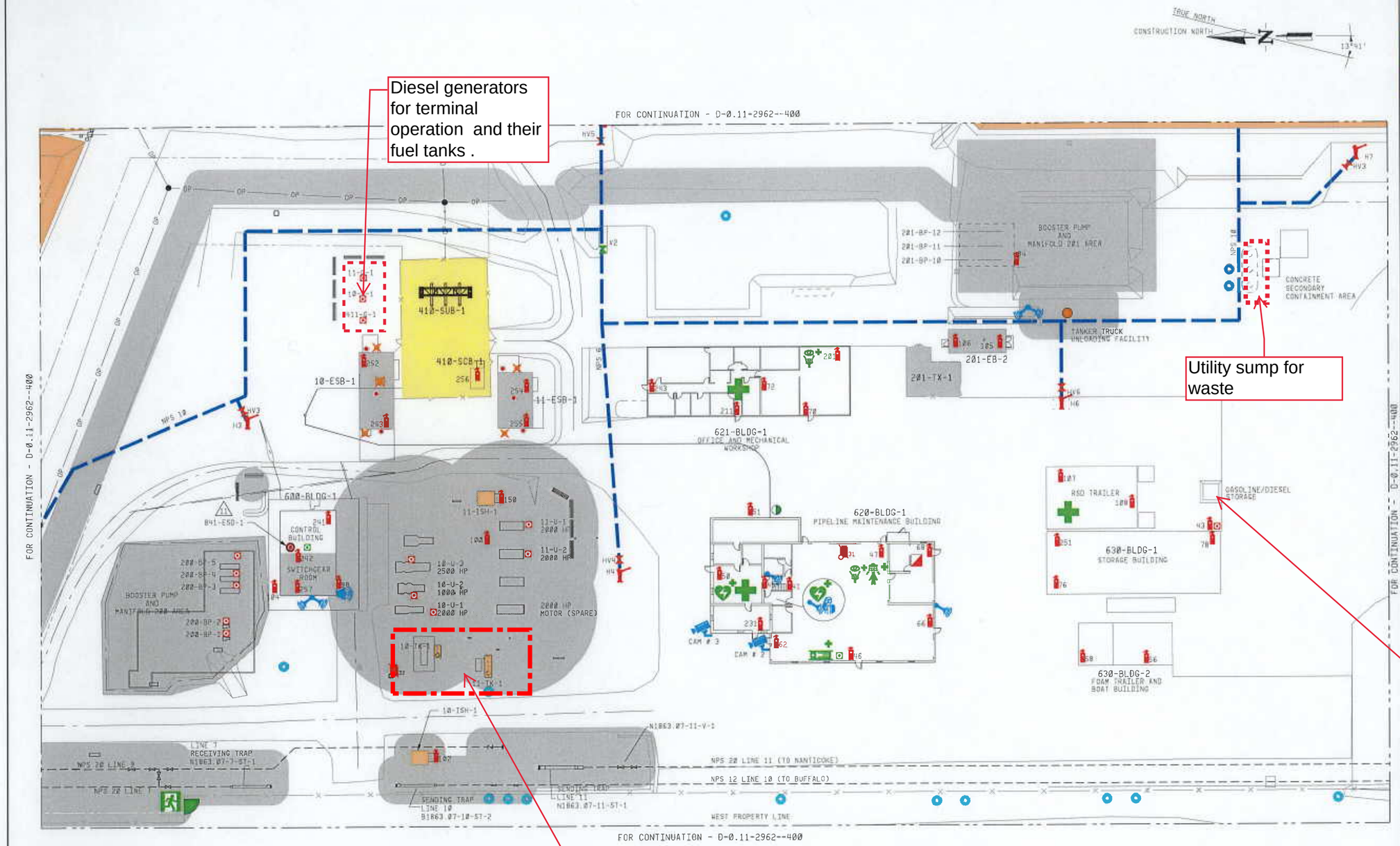

Proposed
Development
Area
Approximate Location of
diesel generators and fuel tanks
Approximate
Location of Sump system
Approximate
Location of Sump
Aboveground
fuel storage tanks
Google Earth
N
800 ft

Diesel generators for terminal operation and their fuel tanks .

Utility sump for waste

2 slip tanks (diesel and gas)

Lines 10-11 Sump system



LEGEND:

RESTRICTED AREA : This area has limited potential for flammable or toxic atmosphere to develop

HAZARDOUS AREA : This area has significant potential for flammable or toxic atmosphere to develop

SUBSTATION AREA : This area is a restricted area which require the presence of a QUALIFIED ELECTRICAL REPRESENTATIVE before or during any work that may be performed in this area.

MUSTER POINT
EMERGENCY EVACUATION GATE
EYE WASH STATION
WASH STATION
FIRST AID STATION KIT
DEFIBRILLATOR
STRETCHER
LIFE BUOY
EMERGENCY NATURAL GAS SHUT-OFF VALVE
GENERAL EVACUATION ALARM BUTTON
FIRE BLANKET
STATION EMERGENCY SHUTDOWN BUTTON (ESD)
UNIT/EQUIPMENT SHUTDOWN BUTTON (ESD)
WINDSOCK
FIRE HYDRANT
FIRE HYDRANT MONITOR
HYDRANT ISOLATING VALVE
FIRE WATER VALVE
FIRE EXTINGUISHERS
FIRE EXTINGUISHER
STROBE LIGHT (GAS ACTIVATED) (((WITH HORN
STROBE LIGHT (5KV SWITCHING ACTIVATED) (((WITH HORN
STROBE LIGHT (FIRE ACTIVATED) (((WITH HORN
TANK TRUCK UNLOADING SITE
EVACUATION SIREN P(PORTABLE) F(FIXED)
SECURITY CAMERA
SLUICE GATE
WATER MONITORING WELLS
SELF CONTAINED BREATHING APPARATUS
HELICOPTER LANDING AREA
TERMINAL/STATION ISOLATION SHUTDOWN SYSTEM (ESD)

NOTE:

1. ALL FIRE EXTINGUISHER NUMBERS PRE-FIXED WITH SYSTEM AND EQUIPMENT CODE "850-FIRE". (EG.850-FIRE-45)

NO	REVISION	DATE/BY	APPROVE
7	AS BUILT AFE 19410508032 (LNL)	08 APR 17 BANTREL	BANTREL
6	AS BUILT AS PER PSI FIELD VERIFICATION (DR JUL 2015)	14 AUG 14 PSI/JML	PSI/JML
5	REV2965 AS BUILT AS PER PSI REVIEW	18 DEC 14 JL/DE	JL/DE
4	AS BUILT AFE 41254782181 (DPS)	28 NOV 14 STANTEC	STANTEC
3	AS BUILT AFE 19410508082 (LNL)	05 NOV 14 STANTEC	STANTEC

ENBRIDGE
ENBRIDGE PIPELINES INC.
10201 JASPER AVENUE
EDMONTON ALBERTA CANADA

WESTOVER (ON) TERMINAL
STATION AREA
SITE SAFETY
PLOT PLAN

DRAWN	BGP	CHECK		APPROVE	
DATE	03 JUN 97	SCALE	1:350	APPROVE	

D-0.11-2963-11-400

1:350 m
FT
0
175
350

Ministry of Heritage, Sport, Tourism, and Culture Industries

Archaeology Program Unit
Programs and Services Branch
Heritage, Tourism and Culture Division
401 Bay Street, Suite 1700
Toronto ON M7A 0A7
Tel.: (416) 212-4019
Email: Zeeshan.Abedin@ontario.ca

Ministère des Industries du patrimoine, du sport, du tourisme et de la culture

Unité des programme d'archéologie
Direction des programmes et des services
Division du patrimoine, du tourisme et de la culture
401, rue Bay, bureau 1700
Toronto ON M7A 0A7
Tél. : (416) 212-4019
Email: Zeeshan.Abedin@ontario.ca

Ontario

Dec 17, 2020

Parker S. Dickson (P256)
Stantec Consulting
171 Queens London ON N6A 5J7

RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1-2 Archaeological Assessment: Enbridge Line 10 Westover Facility Project, Part of Lots 28 and 29, Concession 5, Geographic Township of Beverly, former Wentworth County, now City of Hamilton, Ontario ", Dated Dec 1, 2020, Filed with MHSTCI Toronto Office on N/A, MHSTCI Project Information Form Number P256-0648-2020, MHSTCI File Number 0003167

Dear Mr. Dickson:

The above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18, has been entered into the Ontario Public Register of Archaeological Reports without technical review.[1]

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require further information, please do not hesitate to send your inquiry to Archaeology@Ontario.ca

cc. Archaeology Licensing Officer
Mitch Yaremko,Enbridge Pipelines Inc.
TBD TBD,Canada Energy Regulator

1*In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

Stage 1-2 Archaeological Assessment: Enbridge Line 10 Westover Facility Project

Part of Lots 28 and 29, Concession 5,
Geographic Township of Beverly,
former Wentworth County,
now City of Hamilton, Ontario

December 1, 2020

Prepared for:

Enbridge Pipelines Inc.
10175 – 101 Street Northwest
Edmonton, Alberta T5J 3S4

Prepared by:

Stantec Consulting Ltd.
600-171 Queens Avenue
London, Ontario N6A 5J7

Licensee: Parker Dickson, MA
License Number: P256
PIF Number: P256-0648-2020
Project Number: 160951192

ORIGINAL REPORT

Table of Contents

LIST OF TABLES

LIST OF FIGURES

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Pipelines Inc. (Enbridge) to complete a Stage 1-2 archaeological assessment for the Line 10 Westover Facility Project (the Project). The Stage 1-2 archaeological assessment was completed to support the Environmental Impact Study required for the Project as part of a Section 214 application and approval from the Canada Energy Regulator (CER) under the *Canada Energy Regulator Act* (Government of Canada 2019), formerly the National Energy Board and *National Energy Board Act*, respectfully. The archaeology study area for the Stage 1-2 assessment of the Project comprises approximately 4.23 hectares and is located on part of Lots 28 and 29, Concession 5, Geographic Township of Beverly, former Wentworth County, now City of Hamilton, Ontario.

The Stage 1-2 archaeological assessment of the study area was conducted on October 26, 2020 under Project Information Form number P256-0648-2020 issued to Parker Dickson, MA of Stantec by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). The Stage 2 archaeological assessment of the study area resulted in the identification of two new archaeological locations: Location 1 and Location 2.

The cultural heritage value or interest of Location 1 and Location 2 is judged to be sufficiently documented. Location 1 and Location 2 do not fulfill the criteria for Stage 3 archaeological investigation as per the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologist*s (Government of Ontario 2011). Therefore, **no further archaeological assessment is recommended for Location 1 and Location 2.** Full and detailed recommendations are provided in the body of the report.

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Project Personnel

Project Managers:	Rooly Georgopoulos Laura Hill, M.Env.Sc.
Licensed Archaeologist:	Parker Dickson, MA (P256)
Field Director:	Christian Meier, MA (R1122)
Field Crew:	John Johnson, Stephen Thistle, Ben Arbon, Arie Sinke, Matt Seguin, MA (P1018)
Mapping:	Sean Earles, M.Sc.
Report Writer:	Parker Dickson, MA (P256)
Quality Review:	Colin Varley, MA, RPA (P002)
Independent Review:	Tracie Carmichael, BA, B.Ed. (R140)

Acknowledgements

Enbridge Pipelines Inc.:	Mitch Yaremko – Senior Advisor, LP CAN Projects Kevin Berube – Senior Advisor, Community & Indigenous Engagement
Mississaugas of the Credit First Nation:	Megan DeVries – Archaeological Operations Supervisor Joelle Williams – Field Coordinator Marlene Morton – Field Coordinator Fawn Sault – Consultation Coordinator Mark LaForme – Director, Department of Consultation and Accommodation
Six Nations of the Grand River:	Lonny Bomberry – Director, Lands & Resources Dawn LaForme – Secretary/Receptionist, Lands & Resources Tanya Hill-Montour – Archaeology Supervisor, Lands & Resources

Haudenosaunee Development Institute:	Wayne Hill – Archaeology Supervisor Todd Williams – Director
Ministry of Heritage, Sport, Tourism and Culture Industries:	Robert von Bitter – Archaeological Data Coordinator

1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Pipelines Inc. (Enbridge) to complete a Stage 1-2 archaeological assessment for the Line 10 Westover Facility Project (the Project). The Project proposes to construct new facilities and associated piping immediately west of Enbridge's existing terminal. The Stage 1-2 archaeological assessment was completed to support the Environmental Impact Study required for the Project as part of a Section 214 application and approval from the Canada Energy Regulator (CER) under the *Canada Energy Regulator Act* (Government of Canada 2019), formerly the National Energy Board and *National Energy Board Act*, respectfully. The archaeology study area for the Stage 1-2 assessment of the Project comprises approximately 4.23 hectares and is located on part of Lots 28 and 29, Concession 5, Geographic Township of Beverly, former Wentworth County, now City of Hamilton, Ontario (Figures 1 and 2).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 Archaeological Overview/Background Study are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions;
- To evaluate the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists employed the following research strategies:

- A review of archaeological, historical, and environmental literature pertaining to the study area;
- A review of the land use history, including historical atlases; and
- An examination of the *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.

In compliance with the provincial standards and guidelines set out in the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 2 Property Assessment are as follows:

- To document archaeological resources within the study area;
- To determine whether the study area contains archaeological resources requiring further assessment; and
- To recommend appropriate Stage 3 assessment strategies for archaeological sites identified.

Permission to enter the study area to conduct the archaeological assessment was provided by Enbridge.

1.2 HISTORICAL CONTEXT

1.2.1 Post-contact Indigenous Resources

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. The precise moment of contact is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

The post-contact Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York State Iroquois and the subsequent arrival of Algonkian speaking groups from northern Ontario at the end of the 17th century and the beginning of the 18th century (Konrad 1981; Schmalz 1991). By 1690, Ojibwa speaking people had begun moving south into the lower Great Lakes basin. The Indigenous economy since the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). Numerous Indigenous groups and communities are associated with the post-contact occupation of southern Ontario and the general area of the Project.

At the turn of the 17th century, the region of the study area was occupied by Iroquoian populations who are historically described as the *Neutre* (by the French) or the *Attiwandaron* (by the Huron-Wendat); their autonym is not conclusively known (Birch 2015). Claude Bernou's 1680 map indicates the then dispersed *Attiragenga* (near modern day Hamilton) and *Antouaronon* (west of the Grand River along the Lake Erie north shore) nations occupied the region of the study area (White 1978: Figure 2) and settlements dating to the 17th century have been identified in the Fairchild-Big Creeks, Upper Twenty Mile Creek, and Lower Grand River settlement clusters, near to the study area (Lennox and Fitzgerald 1990: Table 13.1). In 1649, the Seneca and the Mohawk led a campaign into southern Ontario and dispersed the Attiwandaron (Neutral) nations and the Seneca established dominance over the region (Heidenreich 1978; Konrad 1981). By 1690, Ojibwa speaking people had begun moving south into the lower Great Lakes basin (Konrad 1981; Rogers 1978); particularly, the Mississauga nations gained dominance in the region. The Indigenous economy since the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting.

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to no longer identify with either their paternal or maternal cultures, but instead as Métis. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2016; Stone and Chaput 1978:607-608).

The study area falls within the historical and traditional territory of a number of Indigenous communities, including but not limited to: the Mississaugas of the Credit First Nation (Mississaugas of the New Credit First Nation n.d.), the Six Nations of the Grand River, and the Haudenosaunee Confederacy. Since

contact with European explorers and immigrants, and, later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Though not an exhaustive list, Morris (1943) provides a general outline of some of the treaties within the Province of Ontario from 1783 to 1923. While it is difficult to exactly delineate treaty boundaries today, an approximate outline of the treaty lands described by Morris (1943) is provided in Figure 3. According to Morris (1943), the study area is situated within the described limits of the 1792 indenture of the 1784 Between the Lakes Purchase between the Crown and the Mississaugas. This treaty:

> *...was made with the Mississa[ug]a Indians 7th December, 1792, though purchased as early as 1784. This purchase in 1784 was to procure for that part of the Six Nation Indians coming into Canada a permanent abode.*
>
> *The area included in this Treaty is, Lincoln County excepting Niagara Township; Saltfleet, Binbrook, Barton, Glanford and Ancaster Townships, in Wentworth County; Brantford, Onondaga, Tusc[a]r[o]ra, Oakland and Burford Townships in Brant County; East and West Oxford, North and South Norwich, and Dereham Townships in Oxford County; North Dorchester Township in Middlesex County; South Dorchester, Malahide and Bayham Township in Elgin County; all Norfolk and Haldimand Counties; Pelham, Wainfleet, Thorold, Cumberland and Humberstone Townships in Welland County ... .*
>
> (Morris 1943:17-18)

As demonstrated above, the nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to…systems of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

1.2.2 Euro-Canadian Resources

At its inception, Upper Canada was only sparsely settled by Europeans and the land had not been officially surveyed to any great extent. Thus, there was an urgency, by the then Lieutenant Governor of Upper Canada John Graves Simcoe, to survey this new province in order to establish military roads and to prevent settlers from clearing and settling land not legally belonging to them. In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament (Craig 1963:17). At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement and establishing a constitutional government modelled after that of Britain (Coyne 1895). The change was affected at the behest of United Empire Loyalists, who wished to live under the British laws and customs they were familiar with in Great Britain and the former 13 Colonies (Craig 1963:10-11). John Graves Simcoe had ambitious plans to create a model British society in North America, stating a desire to

"inculcate British customs, manners, and principles in the most trivial, as well as most serious matters" in Upper Canada (Craig 1963:21). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously-settled lands, new lands opened for settlement, and lands not yet acquired by the Crown. These new counties stretched from Essex in the west to Glengarry in the east.

In 1792, at Simcoe's behest, the Eighth Act of the Upper Canada Parliament divided the province into four districts: Eastern, Midland, Home, and Western (Kernighan 1875:iii). The four districts were subdivided into 19 counties. The future location of Wentworth County was in the Home District, and was in parts of Haldimand, Lincoln, and York Counties. In 1816, the Gore District was created from lands in the Home and Niagara Districts, and the County of Wentworth was formed (Archives of Ontario 2015). Wentworth County was named in honour of John Wentworth, Royal Governor of New Hampshire from 1766-1775, and later a Lieutenant Governor of Nova Scotia (Johnston 1967:3-4). In 1849, the District System was abolished (Archives of Ontario 2015), and the Counties of Halton and Wentworth formed a single municipality. In 1853, the two counties were separated. Wentworth County totaled 272,000 acres (110,074.5 hectares) and comprised the City of Hamilton, Town of Dundas, and the Townships of Beverly, Binbrook, Barton, Ancaster, Saltfleet, East and West Flamborough (alternatively spelled Flamboro), and the Township of Glanford (Kernighan 1875:iii-iv).

Early 19th century communities in Wentworth County included Dundas, Ancaster, and Hamilton. The completion of the Burlington Bay Canal in 1832 (Craig 1963:158) and the opening of the Great Western Railway in 1853 led to Hamilton's ascent as the dominant settlement and place of trade in the county (Kernighan 1875:v). Hamilton developed into a major manufacturing centre of Ontario, while the rest of the county was primarily agricultural. Wentworth County was especially known for its orchards and vineyards and was an important part of the Niagara Fruit Belt (Johnston 1967:209). Other crops grown in Wentworth County included wheat, barley, and tobacco (Johnston 1967:205-206).

At the turn of the 20th century, Hamilton had a population of 50,000 (Johnston 1967:247). The widespread adoption of the automobile opened rural portions of Wentworth County to suburban development. As a result, the population of Wentworth's townships began to increase and the City of Hamilton annexed portions of Barton, Ancaster, and Saltfleet Townships. By the 1950s, the population of Wentworth not within the city of Hamilton was about 60,000 (Johnston 1967:288-289). The population of Hamilton had grown to nearly 300,000 by 1966 (Dominion Bureau of Statistics 1967:10-12). In 1973, Wentworth County was amalgamated into the new Regional Municipality of Hamilton-Wentworth, which was restructured into the single-tier City of Hamilton in 2001 (Archives of Ontario 2015).

1.2.2.1 Township of Beverly

Established in 1792, Beverly Township (alternatively spelled Beverley) took its name from the Town of Beverly, located in East Yorkshire, England. The first survey of the Township of Beverly was undertaken by Augustus Jones in 1794 and included Concessions 1 through 5. Large portions of the township were swampy and known as "Beverly Swamp". The remaining concessions, i.e., 6 through 10, were initially surveyed in 1797 by John Stegman, but due to the challenging landscape and Beverly swamp, the survey was completed again in 1832 by James Kirkpatrick (Collins 2001:7). The township was laid out in relation to the survey of the Governor's Road (Dundas Street), also completed by Jones from 1793 to 1795.

The majority of European settlement occurred after James Kirkpatrick's survey in 1832. The first European settlers in the Township of Beverly were Jacob Cope and George Jones, who arrived following the survey (Page & Smith 1875:x). The majority of early landowners in the township were absentee owners, which included merchants and officeholders in York (now Toronto), Niagara, and Montreal (Collins 2001:7).

Settlement in the Township of Beverly occurred primarily at road intersections and was influenced by the establishment of mills and railway development. In the 1820s, Governor's Road, south of the study area, was planked through the township, influencing the location of the settlements of Lynden and Copetown. The Dundas and Waterloo Road was opened in the township in the early 19th century and planked in 1837 from the Desjardins Canal to the Village of Waterloo to the northeast. The roadway, west of the study area, allowed for the settlement of Rockton, Romulus, and Sheffield (Collins 2001:8). By 1859, the Dumfries and Beverly Road was planked and connected to the Dundas and Waterloo Road from the adjacent Township of North Dumfries, in the County of Brant.

Settlement in the township was slow due to the challenging terrain composed of rock, swamps, and forests. The township remained an unbroken forest until 1810, when a portion of land was cleared near Sheffield (Cornell 1967:8). By 1820, the township had only a population of 81, with 1,883 acres of cultivated land, out of a total 70,200 acres (Page & Smith 1875:x). In the 1830s, settlers from the British Isles began to arrive in the township. The first settlements in the northern portion of the township in relation to the study area occurred in 1832 with the first settlers of John and William McKnight. They were followed soon after by John Valens, and the Pentland and Macdonald families (Irwin & Co. 1883:37).

In 1837, the community of Kirkwall commenced to settle, with the majority of settlers being of Scottish decent. After 1840, the settlement of the township grew quickly and by 1850 there was very little unclaimed land (Page & Smith 1875:x). In 1846, the township had 52,159 acres taken up, with 16,332 under cultivation. William Henry Smith described the township that year as well settled, with fine farms, and two or three excellent mill streams (Smith 1846:15).

In relation to the study area, the closest early settlement in the township is Kirkwall, which was established to the west at the present-day intersection of Kirkwall Road and Concession Road 8. Kirkwall, also known as "Little Scotland," was settled by six families from Scotland in 1832 (Collins 2001:35). A year later the settlers were joined by 12 additional families from Scotland, as well as an English family and four families from Northern Ireland (Collins 2001:35). Within three years of the arrival of the first European settlers, a log church was constructed to accommodate the growing congregation. In 1848, the log structure was replaced with a stone church (Collins 2001:35). In 1866, Kirkwall was a small post office village with a population of about 60. At the time the village had two stores, a church, a hotel, a blacksmith shop, and a boot and shoe shop (Mitchell & Co. 1866:343). Kirkwall remained a small village throughout the late 19th century, with a population of only 60 in 1886 (Irwin & Co. 1886:103).

The Great Western Railway (GWR) was constructed through the southern portion of the Township of Beverly between 1851 and 1853 (Page & Smith 1875:iv). The line opened in January 1854 operating between Windsor and Niagara Falls (Houghton 2008:88). Stations in the township were located in the

hamlets of Lynden and Copetown. In 1883, the Township of Beverly reached a population of 4,890 (Irwin & Co. 1883:38).

In discussing the late 19th century historical mapping it must be remembered that historical county atlases were produced primarily to identify factories, offices, residences and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, all structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Further, review of historical mapping, including treaty maps, also has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in "fixed" locations over time (e.g., road intersections), errors/difficulties of scale and the relative idealism of the historical cartography, historical maps may not translate accurately into real space points. This may provide obvious inconsistencies during the historical map review. Nonetheless, the majority of the study area has been subject to European-style agricultural practices for over 100 years, having been densely populated by Euro-Canadian farmers by the late 19th century.

A portion of the 1859 map of Wentworth County featuring Beverly Township is illustrated in Figure 4 (Surtees 1859). Based on the 1859 map, the entirety of Lot 28 was owned by Mrs. Frederick and the portion of Lot 29 associated with the study area was owned by Jas Wilson. No historical structures or other notations are illustrated on the 1859 map in association with the study area.

A portion of the 1875 map of Beverly Township is illustrated in Figure 5 (Page & Smith 1875). Based on the 1875 map, the entirety of Lot 28 continued to be owned by Mrs. Frederick and a structure is illustrated in the northern portion of the lot, west of the study area. Similarly, the portion of Lot 29 associated with the study area continued to be owned by J. Wilson and a structure, with an orchard/garden, is illustrated in the northern end of the lot, northeast of the study area, adjacent to the south side of the concession road.

During the 20th century, the study area continued to be part of a rural landscape, surrounded, primarily, by agricultural lands. The hamlets and villages in the township witnessed a decline in the early 20th century, influenced by the nearby larger markets and industries in Hamilton and Toronto. In 1974, with the creation of the Regional Municipality of Hamilton-Wentworth, the Township of Beverly was amalgamated with the Townships of West and East Flamborough, to form the Town of Flamborough. Later, in 2001, the Town of Flamborough was amalgamated into the new City of Hamilton (Hamilton Public Library 2017).

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area for the Project is located within the Flamborough Plain physiographic region. This region consists of:

> *An isolated tract of shallow drift on the Niagara cuesta…It is an area of about 150 square miles, bounded on the northwest by the Galt Moraine, and on the south by the silts and sands of glacial Lake Warren. A few drumlins are found scattered over this limestone plain and swamps are plentiful. The limestone has been swept bare in places…what little overburden there is on the bedrock, apart from the drumlins, is either bouldery glacial till or sand and gravel…Good soil is not plentiful in the little region: the soil is either wet or stony and shallow.*
>
> (Chapman and Putnam 1984:129-130)

Generally, two streams, i.e., Spencer Creek and small tributaries of Bronte Creek, serve to drain the Flamborough Plains physiographic region. A portion of Spencer Creek is located approximately 250 metres to the east of the study area. A smaller creek, Barlow Creek, is located approximately 600 metres to the west of the study area. Additional ancient and/or relic tributaries of water sources may have existed but are not identifiable today and are not indicated on historical mapping. As noted previously, much of the Geographic Township of Beverly comprises swampy soils. These swamps “serve as water reservoirs and produce cedar posts and other wood” (Chapman and Putnam 1984:130). Immediately southwest of the study area is the Sheffield Rockton Wetland Complex, which is identified by the Ministry of Natural Resources and Forestry as a Provincially Significant Wetland.

Soils within the region are generally of poor quality as they are often wet or stony and shallow (Chapman and Putnam 1984:130). However, these soils would be suitable for incipient Indigenous agricultural practices and, with 19th century tiling, would become suitable for large-scale agriculture.

1.3.2 Pre-contact Indigenous Resources

It has been demonstrated that Indigenous people began occupying southern Ontario as the Laurentide glacier receded, as early as 9000 BCE (Ellis and Ferris 1990:13). Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based on observed changes to formal lithic tools, and separated into the Early Paleo-Indian, Late Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic and Terminal Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. The current understanding of Indigenous archaeological culture is summarized in

Table 1, based on Ellis and Ferris (1990). The provided time periods are based on the "Common Era" calendar notation system, i.e., Before Common Era (BCE) and Common Era (CE).

Table 1: Generalized Cultural Chronology of the Study Area

Period	Characteristics	Time Period	Comments
Early Paleo-Indian	Fluted Projectiles	9000 – 8400 BCE	spruce parkland, caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 – 8000 BCE	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	slow population growth
Middle Archaic	Brewerton-like points	6000 – 2500 BCE	environment similar to present
Late Archaic	Narrow Points	2500 – 1800 BCE	increasing site size
	Broad Points	1800 – 1500 BCE	large chipped lithic tools
	Small Points	1500 – 1100 BCE	introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 BCE	emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 BCE	introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 BCE – 500 CE	increased sedentism
	Princess Point	550 – 900 CE	introduction of corn
Late Woodland	Early Ontario Iroquoian	900 – 1300 CE	emergence of agricultural villages
	Middle Ontario Iroquoian	1300 – 1400 CE	long longhouses (100m +)
	Late Ontario Iroquoian	1400 – 1650 CE	tribal warfare and displacement
Contact Indigenous	Various Algonkian Groups	1650 – 1875 CE	early written records and treaties
Late Historic	Euro-Canadian	1796 CE – present	European settlement

Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method of maintaining social ties was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

By approximately 8000 BCE, evidence exists, and becomes more common, for the production of ground-stone tools such as axes, chisels, and adzes. These tools themselves are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and arguably craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 BCE, of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. Since 8000 BCE, the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure1.1.C). It is presumed that the majority of human settlements would have been focused along these former shorelines. At approximately 6500 BCE the climate had warmed considerably since the recession of the glaciers and the environment had grown more similar to the present day. By approximately 4500 BCE, evidence exists from southern Ontario for the utilization of native copper (naturally occurring pure copper metal) (Ellis 2013:42). The known origin of this material along the north

shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point which significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French-Mattawa river valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin had changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis *et al.* 1990: Figure 4.1). Construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for permanence of settlement within the landscape. This period is also marked by further population increase and by 1500 BCE evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 BCE, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to seasonally exploit natural resources. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods such as goosefoot and knotweed as well as mast such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

By approximately 550 CE, evidence emergences for the introduction of maize into southern Ontario. This crop would have initially only supplemented Indigenous people's diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies and by approximately 900 CE permanent communities emerge which are primarily focused on agriculture and the storage of crops, with satellite locations oriented toward the procurement of other resources such as hunting, fishing, and foraging. By approximately 1250 CE, evidence exists for the common cultivation of historical Indigenous cultigens, including maize, beans, squash, sunflower and tobacco. The cultural affiliation of populations within the region of the study area at this time period is debated, whether they may have spoken a form of Iroquoian language or Algonquian (Murphy and Ferris 1990). The extant archaeological record demonstrates many cultural traits similar to historical Indigenous nations (Williamson 2013:55).

1.3.3 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the MHSTCI who maintain the *Ontario Archaeological Sites Database*. The study area is located within Borden block AhHa.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MHSTCI will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the *Ontario Archaeological Sites Database* has shown that there are two registered archaeological sites within one kilometre of the study area (Government of Ontario 2020a); neither are within 50 metres of the stud area. Table 2 provides a summary of the registered archaeological sites within one kilometre of the study area.

Table 2: Registered Archaeological Sites

Borden #	Site Name	Site Type	Cultural Affiliation
AhHa-321	Tract 3, Location 1	Camp	Indigenous
AhHa-322	Tract 1036, Location 1	Camp	Indigenous

A query of the *Ontario Public Register of Archaeological Reports* identified seven archaeological assessments which document archaeology survey work within the study area or within 50 metres of it (Government of Ontario 2020b). Table 3 provides a summary of the reports pertaining to previous archaeological work within the vicinity of the study area. Based on an examination of the queried reports, none document registered archaeological sites within 50 metres of the study area. However, two of the previous assessments overlap with the study area and one is immediately adjacent to the study area; these reports are discussed further below.

Table 3: Previous Archaeological Assessments

Year	Report	Author	Project Information Form (PIF) #
2014a	*The 2013 Stage 1 Archaeological Assessment of the Proposed Enbridge Pipelines Inc. Line 11 Westover Segment Replacement Project, City of Hamilton, Regional Municipality of Hamilton-Wentworth, Ontario*	D.R. Poulton & Associates Inc. (DPA)	P316-198-2013
2014b	*The 2014 Stage 2 Archaeological Assessment of the Enbridge Pipelines Inc. Line 11 Westover Segment Replacement Project, City of Hamilton, Regional Municipality of Hamilton-Wentworth, Ontario*	DPA	P316-0278-2013
2015	*The 2015 Stage 1 Archaeological Assessment of the Proposed Enbridge Pipelines Inc. Line 10 Westover Segment Replacement Project, City of Hamilton, Ontario*	DPA	P316-0306-2015
2015	***Stage 1-2 Archaeological Assessment: Proposed Temporary Access and Workspaces in Beverly Township (CWP 1436S), Enbridge Line 10, Parts of Various Lots and Concessions, Geographic Township of Beverly, former Wentworth Township, now City of Hamilton, Ontario***	**Stantec**	**P256-0308-2014**
2015	*Stage 2 Archaeological Assessment, Enbridge Pipelines Inc., Line 10 Westover Segment Replacement Project, Geotechnical Borehole Work Area and Access Routes, City of Hamilton, Ontario*	Timmins Martelle Heritage Consultants Inc. (TMHC)	P1075-0017-2015
2016	*Stage 2 Archaeological Assessment, Enbridge Pipelines Inc., Line 10 Westover Segment Replacement Project, 2015 Fieldwork, City of Hamilton, Ontario*	TMHC	P1075-0018-2016
2017	***Stage 2 Archaeological Assessment Enbridge Pipelines Inc. Line 10 Westover Segment Replacement Project Spring, Summer and Early Fall 2016 Fieldwork City of Hamilton, Ontario***	**TMHC**	**P324-0098-2016**

* **bolded** entries represent previous work which overlaps with the current study area

In 2013, DPA completed a Stage 1 archaeological assessment for Enbridge Pipeline Inc.'s proposed Line 11 Westover Segment Replacement project (DPA 2014a). Stage 2 archaeological assessment was recommended in advance of proposed construction impacts and was completed by DPA (2014b). A portion of DPA's (2014b) previous archaeological assessment is immediately adjacent to the southern end of the study area. No archaeological resources within the study area or within 50 metres of the study area were identified during DPA's Stage 2 assessment (DPA 2014b).

Also, in 2013, DPA completed a Stage 1 archaeological assessment for Enbridge Pipeline Inc.'s proposed Line 10 Westover Segment Replacement project (DPA 2015). Portions of Line 10 and 11 parallel each other in the same existing easement. The Stage 1 assessment determined that Stage 2 assessment is required in advance of proposed construction activities. Stage 2 archaeological assessment was recommended in advance of proposed construction impacts. Various Stage 2 archaeological assessments for the Line 10 Westover Segment Replacement project have been completed by TMHC. In addition, numerous Stage 3 assessments and Stage 4 mitigations were

completed by TMHC and other archaeological consultants in support of the Line 10 Westover Segment Replacement. However, no archaeological resources were identified within the study area or within 50 metres of the study area during the various Stage 2 assessments for the Line 10 Westover Segment Replacement project (i.e., TMHC 2015; TMHC 2016; TMHC 2017). However, a portion of TMHC's (2017) previous archaeological assessment overlaps with the study area and is illustrated on Figure 6.

In 2014, Stantec completed Stage 1-2 archaeological assessment for construction work package (CWP) 1436S as part of Enbridge's Integrity Dig program (Stantec 2015). No archaeological resources were identified by Stantec (2015). However, a portion of the access road for girth welds (GW) 390, 420, 610, 630, and 680 overlaps with the study area and is illustrated on Figure 6.

1.3.4 City of Hamilton's Archaeological Management Plan

The City of Hamilton's municipal archaeological management plan, entitled *The City of Hamilton Archaeology Management Plan* (AMP) was consulted and illustrates the study area as a locale of archaeological potential for Indigenous and Euro-Canadian archaeological resources (City of Hamilton 2016). To identify archaeological potential, an archaeological potential model was created using cultural and physiographic information, such as the presence of identified/registered sites or proximity to water. Generally, the AMP uses the following criteria to aid in the determination of archaeological potential of a property:

- 250 metre catchment area for registered archaeological sites;
- 250 metre catchment area for unregistered but known or reported archaeological sites;
- 300 metre catchment area for primary watercourses;
- 100 metre catchment area for historical activities;
- 100 metre catchment area for historical transportation corridors;
- 100 metre catchment area for unusual landforms;
- Areas within the historic urban boundary that have not been substantially disturbed;
- Rural historical settlements;
- Properties designated under the *Ontario Heritage Act* (Government of Ontario 1990a); and
- Modern and historical aerial photography.

Based on the criteria identified above, the AMP identifies the study area for the Project as having general archaeological potential (City of Hamilton 2016).

1.3.5 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the MHSTCI to determine areas of archaeological potential within the study area. These variables include proximity to registered archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. However, it is worth noting that extensive land disturbance can eradicate archaeological potential (Government of Ontario 2011).

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site locations. Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site location and type to varying degrees. The MHSTCI categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks;
- Secondary water sources: intermittent streams and creeks, springs, marshes and swamps;
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

As outlined in Section 1.3.1, the study area is in close proximity to Spencer Creek, Barlow Creek, and the Sheffield Rockton Wetland Complex. Much of the Geographic Township of Beverly comprises swampy soils. These swamps “serve as water reservoirs and produce cedar posts and other wood” (Chapman and Putnam 1984:130). The water sources and wetlands or swamps near the study area would have also provided faunal and floral resources for use. Additional ancient and/or relic tributaries of water sources may have existed but are not identifiable today and are not indicated on historical mapping. Further examination of the study area’s natural environment identified soil conditions suitable for Indigenous and Euro-Canadian agriculture, especially in the 19th and 20th centuries following the implementation of municipal drainage systems and agricultural field tiling.

An examination of the *Ontario Archaeological Sites Database* has shown that there are two registered Indigenous archaeological sites within one kilometre of the study area.

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990a) or property that local histories or informants have identified with possible historical events, activities, or occupations. Historical mapping demonstrates that the study area is in close proximity to early concession roads with structures illustrated as fronting these roads; particularly on the 1875 map of Beverly Township. Much of the established road and rail networks and agricultural settlement from the 19th century is still visible today.

The City of Hamilton's municipal archaeological management plan, entitled *The City of Hamilton Archaeology Management Plan* (AMP) was consulted and illustrates the study area as a locale of archaeological potential for Indigenous and Euro-Canadian archaeological resources (City of Hamilton 2016).

Based on publicly accessible aerial imagery, existing Enbridge infrastructure (specifically, the existing Westover Facility) and other buried public and private utility infrastructure are located within the study area. The buried public and private utility infrastructure was demarcated in the field through a utility locate request via Ontario1Call and a private utility locator.

A review of the *Ontario Public Register of Archaeological Reports* identified two previous archaeological assessments which overlap the study area. These overlapping areas are illustrated on Figure 6 and retain low to no archaeological potential as they have been subject to previous archaeological assessment.

When the above listed criteria are applied, a portion of the study area retains potential for the identification of Indigenous and Euro-Canadian archaeological resources. Thus, in accordance with Section 1.3.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), Stage 2 archaeological assessment is required.

1.4 EXISTING CONDITIONS

The Stage 1-2 archaeological assessment for the study area was conducted under PIF number P256-0648-2020 issued to Parker Dickson, MA, by the MHSTCI. Overall, the study area for the Project comprises approximately 4.23 hectares and is located on part of Lots 28 and 29, Concession 5, Geographic Township of Beverly, former Wentworth County, now City of Hamilton, Ontario. The study area comprises overgrown scrubland, sparse woodlot, and areas of modern disturbance.

2.0 FIELD METHODS

The Stage 2 archaeological assessment of the study area was conducted on October 26, 2020 under PIF number P256-0648-2020 issued to Parker Dickson, MA, of Stantec by the MHSTCI. The study area comprises approximately 4.23 hectares. Prior to the start of the Stage 2 archaeological assessment, Enbridge provided AutoCAD files which defined the study area. These files were then geo-referenced by Stantec's Geographic Information Services (GIS) team and a digital file (i.e., a shape file) was created of the Project's anticipated components and study area. The digital file was uploaded to handheld mobile/GPS devices for use in the field.

During the Stage 2 survey, field, weather, and lighting conditions were suitable for the identification and recovery of archaeological resources. At no time was the archaeological assessment conducted when the field, weather, or lighting conditions were detrimental to the recovery of archaeological material. The weather during the archaeological assessment was overcast and cool. Photographic documentation in Section 8.1 of this report confirms that field conditions met the requirements for a Stage 2 archaeological assessment, as per the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1a.; Government of Ontario 2011). Figure 6 provides an illustration of the Stage 1-2 assessment methods, as well as photograph locations and directions.

Approximately 11.0% of the study area had been previously assessed (i.e., Stantec 2015; TMHC 2017). Previously assessed portions of the study area were not re-surveyed by Stantec as part of this assessment.

Approximately 76.1% of the study area was identified as previously disturbed, including an extensive and artificial berm, existing gravel laneways and parking areas, buried utilities, and the existing Westover Facility and its associated infrastructure. While these areas were not surveyed, they were photographically documented in Section 8.1 to confirm that physical features affected the ability to survey portions of the study area in accordance with Section 7.8.6 Standard 1b of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

The remaining portion of the study area, approximately 12.9%, was inaccessible for ploughing (i.e., overgrown scrubland and sparse woodlot) and was assessed by test pit survey in accordance with Section 2.1.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Test pits were at least 30 centimetres in diameter and excavated five centimetres into sterile subsoil. The soils and test pits were then examined for stratigraphy, cultural features, or evidence of fill. The excavated soil was dry and friable, and screened well. Soil was screened through six millimetre mesh hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit.

In accordance with Section 2.1.3 Standard 1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), when archaeological resources were encountered during the Stage 2 test pit survey, the test pit excavation continued on the survey grid to

determine the extent of further positive test pits. Two archaeological locations were identified during the test pit survey of the study area, each comprising a single positive test pit containing one artifact. These archaeological locations were intensified in accordance with Section 2.1.3 Standard 2 (Option A) of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). None of the additional test pits excavated as part of the intensification process at either location recovered archaeological resources. A one-metre test unit was excavated over the initial positive test pit at each location and yielded no additional artifacts. Photographs illustrating the test pit survey of the study area and subsequent test pit survey intensification of the archaeological locations are provided in Section 8.1.

Universal Transverse Mercator (UTM) coordinates were taken for the positive test pits. The UTM coordinates were taken using ArcGIS Collector powered by ESRI, customized for archaeological survey and assessment, on a handheld mobile device paired with an R1 Receiver to an accuracy of less than one metre. The UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). A map illustrating the exact site location and a listing of UTM coordinates recorded during the assessment are provided in the Supplementary Documentation to this report.

During the Stage 2 survey, Stantec archaeologists were joined by representatives from Mississaugas of the Credit First Nation, Six Nations of the Grand River, and the Haudenosaunee Development Institute. Additional information on the Indigenous Engagement practices conducted during the Stage 2 archaeological assessment is provided in the Record of Indigenous Engagement. The Record of Indigenous Engagement is a separate document submitted to the MHSTCI which may include who was engaged, engagement procedures, dates of engagement, strategies to incorporate community input, and processes for providing results to the community. Similar to sensitive information documented in the Supplementary Documentation (e.g., exact site location, UTM coordinates, etc.), the Record of Indigenous Engagement is provided as a separate document and does not form a part of the *Ontario Public Register of Archaeological Reports*.

3.0 RECORD OF FINDS

The archaeological assessment of the study area was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 4. Two new archaeological locations were identified during the Stage 2 survey of the study area. In accordance with Section 7.12 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), Borden numbers were not assigned to the identified archaeological locations. Maps illustrating exact site locations do not form part of this public report; they may be found in the Supplementary Documentation.

Table 4: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
3 pages of field notes	Stantec office in London, Ontario	In original field book and scanned in project file
1 digital map and data files	Stantec GIS server in Markham, Ontario	Stored digitally on central GIS server
1 map provided by Enbridge	Stantec office in London, Ontario	Hard and digital copies in project file
41 digital photographs	Stantec office in London, Ontario	Stored digitally in project file

The material culture collected during the archaeological survey of the study area is contained in one Bankers box, labeled by location and artifact type. The box will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to a MHSTCI collections facility.

3.1 LOCATION 1

Location 1 was identified during the test pit survey of an area of scrubland. The artifact assemblage from Location 1 comprises one piece of chipping detritus. The artifact was recovered from a single positive test pit. Intensification around the positive pit included eight cardinal test pits and one one-metre test unit. Bedrock was encountered at the bottom of the test unit at Location 1. No further archaeological resources were identified. The recovered artifact from Location 1 is illustrated on Plate 1 in Section 8.2.

3.1.1 Chipping Detritus

The piece of chipping detritus recovered from Location 1 was subject to morphological analysis following the classification scheme described by Lennox *et al*. (1986) and expanded upon by Fisher (1997). Primary flakes feature dorsal surfaces that are either entirely covered with cortex or have substantial visible cortex present. Secondary flakes can also have a trace of cortex on the dorsal surface. Both varieties, along with shatter, are associated with early stages of lithic reduction as chert cores or flint nodules are converted into blanks or preforms. Tertiary flakes and micro flakes are produced during the further reduction of blanks and preforms into formal tool shapes. They are the result of precise flake removal through pressure flaking, where the maker applies direct pressure onto a specific part of the tool in order to facilitate flake removal. Pressure flaking generally produces smaller, thinner flakes than does

percussion flaking. Broadly, primary, secondary, and shatter flakes indicate early stages of lithic reduction, while tertiary and micro flakes indicate later stages of the reduction sequence. The piece of chipping detritus from Location 1 has been identified as a tertiary flake.

Chert type identification was accomplished visually using reference materials located in the Stantec London office. Chert is a naturally occurring mineral found in sedimentary rocks that is a granular crystalline form of quartz, composed of cryptocrystalline and microcrystalline crystals (Eley and von Bitter 1989). Raw material acquisition and procurement strategies have long been theorized in academic literature. Some researchers suggest that raw material choices are purely utilitarian (i.e., Deller 1979; Ellis 1989; Parker 1986), while others suggest non-utilitarian reasons (i.e., Hall 1993; Simmons *et al*. 1984). Regardless of the reason, chert type identification and their respective quantities within a particular assemblage provide an opportunity to evaluate numerous archaeological variables, including group mobility and sedentism, lithic reduction strategy and technique, transportation, trade, and symbolism.

The recovered tertiary flake from Location 1 is Onondaga chert. Onondaga formation chert is from the Middle Devonian age, with outcrops occurring along the north shore of Lake Erie between Long Point and the Niagara River (Eley and von Bitter 1989). It is a high-quality raw material frequently utilized by pre-contact people and often found at archaeological sites in southern Ontario. Onondaga chert occurs in nodules or irregular thin beds, it is a dense non-porous rock that may be light to dark grey, bluish grey, brown or black and can be mottled with a dull to vitreous or waxy lustre (Eley and von Bitter 1989).

3.1.2 Location 1 Artifact Catalogue

Table 5 provides the complete catalogue of the Stage 2 artifact assemblage recovered from Location 1.

Table 5: Location 1 Artifact Catalogue

Catalogue (Cat.) #	Context	Artifact	Quantity	Chert	Morphology
1	Test pit 1	Chipping detritus	1	Onondaga	Tertiary

3.2 LOCATION 2

Location 2 was identified during the test pit survey of an area of scrubland. The artifact assemblage from Location 2 comprises one piece of chipping detritus. The artifact was recovered from a single positive test pit. Intensification around the positive pit included eight cardinal test pits and one one-metre test unit. No further archaeological resources were identified. The recovered artifact from Location 2 is illustrated on Plate 2 in Section 8.2.

3.2.1 Chipping Detritus

The piece of chipping detritus recovered from Location 2 was subject to morphological analysis following the classification scheme described by Lennox *et al*. (1986) and expanded upon by Fisher (1997). It was identified as a broken flake of Onondaga chert.

3.2.2 Location 2 Artifact Catalogue

Table 6 provides the complete catalogue of the Stage 2 artifact assemblage recovered from Location 2.

Table 6: Location 2 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Morphology
1	Test pit 1	Chipping detritus	1	Onondaga	Broken

4.0 ANALYSIS AND CONCLUSIONS

Stantec was retained by Enbridge to conduct a Stage 1-2 archaeological assessment for the study area associated with the Project. The Stage 2 archaeological assessment was conducted between October 26, 2020. During the Stage 2 survey, two new archaeological locations were identified: Location 1 and Location 2.

4.1 LOCATION 1

The Stage 2 assessment of Location 1 resulted in the identification of a single isolated find – a tertiary flake of Onondaga chert. Chipping detritus is the waste product from the production of lithic tools and is the most often recovered artifact on Indigenous archaeological sites in southern Ontario. Chipping detritus is generally considered to be temporally non-diagnostic other than being produced by Indigenous peoples and cannot help place an archaeological site within a specific time period or cultural group. Given the temporally non-diagnostic and isolated nature of the recovered artifact, the cultural heritage value or interest of Location 1 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.2 LOCATION 2

The Stage 2 assessment of Location 2 resulted in the identification of a single isolated find – a broken piece of Onondaga chipping detritus. Chipping detritus is the waste product from the production of lithic tools and is the most often recovered artifact on Indigenous archaeological sites in southern Ontario. Chipping detritus is generally considered to be temporally non-diagnostic other than being produced by Indigenous peoples and cannot help place an archaeological site within a specific time period or cultural group. Given the temporally non-diagnostic and isolated nature of the recovered artifact, the cultural heritage value or interest of Location 2 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.3 PRELIMINARY INDICATION OF SITES POSSIBLY REQUIRING STAGE 4 ARCHAEOLOGICAL MITIGATION

This preliminary indication of whether any site could be eventually recommended for Stage 4 archaeological mitigation is required under the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* Section 7.8.3 Standard 2c (Government of Ontario 2011). Neither Location 1 or Location 2 are recommended for Stage 3 archaeological assessment as they do not meet the criteria as per Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Therefore, both Location 1 and Location 2 will not require Stage 4 archaeological mitigation.

5.0 RECOMMENDATIONS

5.1 LOCATION 1

Given the temporally non-diagnostic and isolated nature of the recovered artifact, the cultural heritage value or interest of Location 1 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1**.

5.2 LOCATION 2

Given the temporally non-diagnostic and isolated nature of the recovered artifact, the cultural heritage value or interest of Location 2 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 2**.

5.3 OTHER RECOMMENDATIONS

Aside from Locations 1 and 2, no other archaeological resources were identified during the Stage 2 survey of the study area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **no further archaeological assessment of the study area is required**.

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990a). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the study area of a development proposal have been addressed to the satisfaction of the MHSTCI, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a)

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a)

The *Funeral, Burial and Cremation Services Act,* 2002, S.O. 2002, c.33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Government and Consumer Services is also immediately notified.

7.0 BIBLIOGRAPHY AND SOURCES

Archives of Ontario. 2015. *The Changing Shape of Ontario.* Electronic Document: http://www.archives.gov.on.ca/en/maps/ontario-districts.aspx. Last accessed November 25, 2020.

Birch, Jennifer. 2015. Current Research on the Historical Development of Northern Iroquoian Societies. *Journal of Archaeological Research* 22(4):263-323.

Birch, Jennifer and Ronald F. Williamson. 2013. *The Mantle Site: An Archaeological History of an Ancestral Huron Wendat Community*. Lanham: Altamira Press.

Borden, Charles E. 1952. A Uniform Site Designation Scheme for Canada. *Anthropology in British Columbia*, No. 3, 44-48.

Caston, Wayne A. 1997. Evolution in the Mapping of Southern Ontario and Wellington County. *Wellington County History* 10:91-106.

Chapman, Lyman John and Donald F. Putnam 1984. *The Physiography of Southern Ontario*. 3rd ed. Ontario Geological Survey Special Volume 2. Ontario Ministry of Natural Resources, Toronto.

City of Hamilton. 2016. *City of Hamilton Archaeology Management Plan.* Electronic document: http://www2.hamilton.ca/NR/rdonlyres/F34C5182-DF62-4AB7-9E3E-32615E111D03/0/AMPDraftPolicies.pdf Last accessed November 25, 2020.

Collins, Viola M. Editor. 2001. *The Pioneers of Beverly, A Pictorial History*. Rockton: Beverly Heritage Society.

Cornell, John A. 1967. *The Pioneers of Beverly, Centennial Edition.* Dundas: Roy V. Somerville.

Coyne, J.H. 1895. *The County of the Neutrals (As Far as Comprised in the County of Elgin): From Champlain to Talbot.* St. Thomas: Times Print.

Craig, Gerald. 1963. *Upper Canada: The Formative Years.* Don Mills: Oxford University Press.

Deller, D.B. 1979. Paleo-Indian Reconnaissance in the Counties of Lambton and Middlesex County, Ontario. In *Ontario Archaeology* 32:3-20.

Dominion Bureau of Statistics. 1967. *1966 Census of Canada Incorporated Cities, Towns and Villages Population.* Electronic Document: http://publications.gc.ca/collections/collection_2017/statcan/CS92-607-1966.pdf. Last accessed November 25, 2020.

D.R. Poulton & Associates Inc. 2014a. *The 2013 Stage 1 Archaeological Assessment of the Proposed Enbridge Pipelines Inc. Line 11 Westover Segment Replacement Project, City of Hamilton,*

Regional Municipality of Hamilton-Wentworth, Ontario. Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P316-198-2013.

D.R. Poulton & Associates Inc. 2014b. *The 2014 Stage 2 Archaeological Assessment of the Enbridge Pipelines Inc. Line 11 Westover Segment Replacement Project, City of Hamilton, Regional Municipality of Hamilton-Wentworth, Ontario*. Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P316-0278-2013.

D.R. Poulton & Associates Inc. 2015. *The 2015 Stage 1 Archaeological Assessment of the Proposed Enbridge Pipelines Inc. Line 10 Westover Segment Replacement Project, City of Hamilton, Ontario*. Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P316-0306-2015.

Eley, B. E. and P. H. von Bitter. 1989. *Cherts of Southern Ontario*. Royal Ontario Museum, Toronto.

Ellis, C.J. 1989. The Explanation of Northeastern Paleoindian Lithic Procurement Patterns. In *Eastern Paleoindian Lithic Resource Use*, edited by C.J. Ellis and J. Lothrop. Pp. 139-164. Boulder, CO: Westview Press.

Ellis, Christopher J. 2013. Before Pottery: Paleoindian and Archaic Hunter-Gatherers. In *Before Ontario: The Archaeology of a Province.* Edited by Marit K. Munson and Susan M. Jamieson, pp. 35-47. Montreal and Kingston: McGill-Queen's University Press.

Ellis, Chris J. and Neal Ferris. 1990. *The Archaeology of Southern Ontario to A.D. 1650*. Occasional Publications of the London Chapter, Ontario Archaeological Society Inc., Publication Number 5.

Ellis, Chris J., Ian T. Kenyon, and Michael W. Spence. 1990. The Archaic. In Ellis and Ferris 1990, pp. 65-124.

Ferris, Neal. 2009. *The Archaeology of Native-Lived Colonialism: Challenging History in the Great Lakes*. Tucson: University of Arizona Press.

Fisher, J. A. 1997. *The Adder Orchard Site: Lithic Technology and Spatial Organization in the Broadpoint Late Archaic*. Occasional Publications of the London Chapter, OAS, Number 3.

Gentilcore, R. Louis and C. Grant Head. 1984. *Ontario's History in Maps*. Toronto: University of Toronto Press.

Government of Canada. 2019. *Canada Energy Regulator Act* (S.C. 2019, c. 28, s. 10). Electronic document: https://laws-lois.justice.gc.ca/eng/acts/C-15.1/. Last accessed November 25, 2020.

Government of Ontario. 1990a. *Ontario Heritage Act, R.S.O. 1990, CHAPTER O.18*. Electronic document: https://www.ontario.ca/laws/statute/90o18. Last accessed November 25, 2020.

Government of Ontario. 1990b. *Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c. F.31*. Electronic document: https://www.ontario.ca/laws/statute/90f31. Last accessed November 25, 2020.

Government of Ontario. 2002. *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33*. Electronic document: https://www.ontario.ca/laws/statute/02f33. Last accessed November 25, 2020.

Government of Ontario. 2011. *Standards and Guidelines for Consultant Archaeologists*. Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries.

Government of Ontario. 2020a. *Ontario Archaeological Sites Database Files.* Ministry of Heritage, Sport, Tourism and Culture Industries. Last accessed November 25, 2020.

Government of Ontario. 2020b. *Ontario Public Register of Archaeological Reports*. Ministry of Heritage, Sport, Tourism and Culture Industries. Last accessed November 25, 2020.

Hall, Robert L. 1993. A Pan-Continental Perspective on Red Ocher and Glacial Kame Ceremonialism. In *Lulu Linear Punctated: Essays in Honor of George Irving Quimby*. Edited by R.C. Dunnell and D.K. Grayson. Pp. 75-107. Anthropological Papers, Museum of Anthropology, University of Michigan, No. 72.

Hamilton Public Library. 2017. *Historical Flamborough.* Electronic Document: http://www.hpl.ca/articles/historical-flamborough Last accessed November 25, 2020.

Heidenreich, Conrad E. 1978. Huron. In *Handbook of North American Indians*. Volume 15, Northeast. Edited by Bruce G. Trigger, pp. 368-388. Washington: Smithsonian Institution Press.

Houghton, Margaret. 2008. *First Here: What Happened When in Hamilton*. Burlington: North Shore Publishing.

Irwin, W.H. & Co. 1883. *County of Wentworth Gazetteer and Directory.* Hamilton: W.H. Irwin & Co.

Irwin, W.H. & Co. 1886. *County of Wentworth Gazetteer and Directory.* Hamilton: W.H. Irwin & Co.

Johnston, C.M. 1967. *The Head of the Lake, A History of Wentworth County.* Hamilton: Wentworth County Council.

Kernighan, R.K. 1875. Historical Sketch of the County of Wentworth. In *Illustrated Historical Atlas of the County of Wentworth Ont.* pp. iii-xii. Toronto: Page and Smith.

Konrad, Victor. 1981. An Iroquois Frontier: the North Shore of Lake Ontario During the Late Seventeenth Century. *Journal of Historical Geography* 7(2).

Lennox, P.A. and W.R. Fitzgerald. 1990. The Culture History and Archaeology of the Neutral Iroquoians. In: Ellis and Ferris 1990.

Lennox, P., C. Dodd, and C. Murphy. 1986. *The Wiacek Site: A Late Middleport Component, Simcoe County*. Ontario Ministry of Transportation and Communications, London.

Loewen, Brad and Claude Chapdelaine (editors). 2016. *Contact in the 16th Century: Networks among Fishers, Foragers and Farmers.* Mercury Series Archaeology Paper 176. Ottawa: University of Ottawa Press.

Métis Nation of Ontario. 2016. *Métis Historic Timeline*. Electronic document: http://www.metisnation.org/culture-heritage/m%C3%A9tis-timeline/. Last accessed March 6, 2019.

Mississaugas of the New Credit First Nation. n.d. *The History of the Mississaugas of the New Credit First Nation*. Hagersville: Mississaugas of the New Credit First Nation.

Mitchell & Co. 1866. *Mitchell & Co.'s County of Wentworth and Hamilton City Directory.* Toronto: Mitchell & Co.

Morris, J.L. 1943. *Indians of Ontario*. 1964 reprint. Toronto: Department of Lands and Forests.

Murphy, Carl and Neil Ferris. 1990. The Late Woodland Western Basin Tradition in Southwestern Ontario. In Ellis and Ferris 1990, pp. 189-278.

Page & Smith. 1875. *Illustrated Historical Atlas of the County of Wentworth, Ontario*. Toronto: Page & Smith.

Parker, L. 1986. *Haldimand Chert and its Utilization During the Early Holocene Period in Southwestern Ontario*. Unpublished MA Thesis, Department of Geology, Brock University, St. Catherines, Ontario.

Rogers, E.S. 1978. Southeast Ojibwa. In *Handbook of North American Indians. Volume 15, Northeast,* edited by Bruce Trigger, pp. 760-771. Washington: Smithsonian Institute.

Schmalz, Peter S. 1991. *The Ojibwa of Southern Ontario*. Toronto: University of Toronto Press.

Simmons, D.L., M. Shott, and H.T. Wright. 1984. The Gainey Site: Variability in a Great lakes Paleo-Indian Assemblage. *Archaeology of Eastern North America* 12:266-279.

Smith, William Henry. 1846. *Smith's Canadian Gazetteer*. Toronto: H. & W. Rowsell.

Stantec Consulting Ltd. 2015. *Stage 1-2 Archaeological Assessment: Proposed Temporary Access and Workspaces in Beverly Township (CWP 1436S), Enbridge Line 10, Parts of Various Lots and Concessions, Geographic Township of Beverly, former Wentworth Township, now City of Hamilton, Ontario.* Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P256-0308-2014.

Stewart, Andrew M. 2013. Water and Land. In *Before Ontario: The Archaeology of a Province.* Edited by: Marit K. Munson and Susan M. Jamieson, pp. 24-34. Montreal and Kingston: McGill-Queen's University Press.

Stone, Lyle M. and Donald Chaput. 1978. Southeastern Ojibwa. In *Handbook of North American Indians*. *Volume 15, Northeast*. Edited by Bruce G. Trigger, pp. 602-609. Washington: Smithsonian Institution Press.

Surtees, Robert. 1859. *Map of the County of Wentworth.* Hamilton: Hardy Gregory.

Timmins Martelle Heritage Consultants Inc. 2015. *Stage 2 Archaeological Assessment, Enbridge Pipelines Inc., Line 10 Westover Segment Replacement Project, Geotechnical Borehole Work Area and Access Routes, City of Hamilton, Ontario.* Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P1075-0017-2015.

Timmins Martelle Heritage Consultants Inc. 2016. *Stage 2 Archaeological Assessment, Enbridge Pipelines Inc., Line 10 Westover Segment Replacement Project, 2015 Fieldwork, City of Hamilton, Ontario.* Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P1075-0018-2016.

Timmins Martelle Heritage Consultants Inc. 2017. *Stage 2 Archaeological Assessment Enbridge Pipelines Inc. Line 10 Westover Segment Replacement Project Spring, Summer and Early Fall 2016 Fieldwork City of Hamilton, Ontario.* Report on file, Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries. PIF P324-0098-2016.

White, Marian E. 1978. Neutral and Wenro. In *Handbook of North American Indians. Volume 15, Northeast,* edited by Bruce G. Trigger, pp. 407-411. Washington: Smithsonian Institution Press.

Williamson, Ronald F. 2013. The Woodland Period, 900 BCE to 1700 CE. In *Before Ontario: The Archaeology of a Province.* Edited by Marit K. Munson and Susan M. Jamieson, pp. 48-61. Montreal and Kingston: McGill-Queen's University Press.

8.0 IMAGES

8.1 PHOTOGRAPHS

Photo 1: View of existing disturbance (artificial berm), facing southwest

Photo 2: View of existing disturbance (laydown area), facing west

Photo 3: View of existing disturbance (artificial berm), facing north

Photo 4: View of existing disturbance (laydown area), facing east

Images
December 1, 2020

Photo 5: View of existing disturbance (access road), facing southeast

Photo 6: View of existing disturbance (access road), facing northwest

Photo 7: View of existing disturbance (access road and facility), facing north

Photo 8: View of existing disturbance (access road and facility), facing north

Images
December 1, 2020

Photo 9: View of existing disturbance (facility), facing northeast

Photo 10: View of existing disturbance (facility), facing northeast

Photo 11: Test pit survey in progress, facing north

Photo 12: Test pit survey in progress, facing south

Images
December 1, 2020

Photo 13: Test pit intensification in progress at Location 1, facing northwest

Photo 14: Plan view of Test Unit 1 at Location 1 illustrating bedrock, facing east

Photo 15: Plan view of Test Unit 1 at Location 2, facing north

Photo 16: Profile view of Test Unit 1 at Location 2, facing north

8.2 PLATES

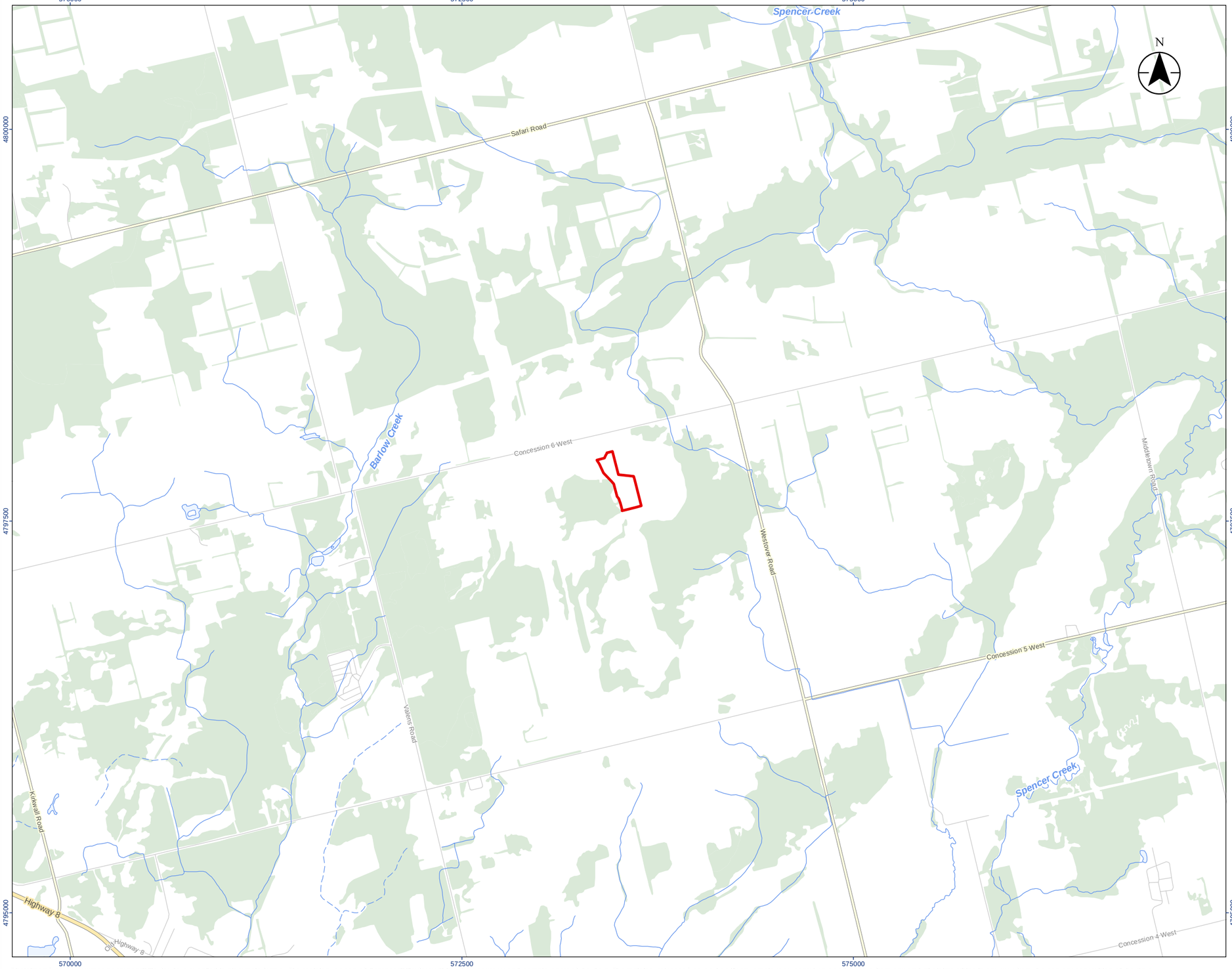
Plate 1: Artifact from Location 1

Plate 2: Artifact from Location 2

.

9.0 MAPS

General maps of the study area are provided on the following pages. Maps identifying exact archaeological site locations do not form part of this public report; they may be found in the Supplementary Documentation.



Stantec

Legend

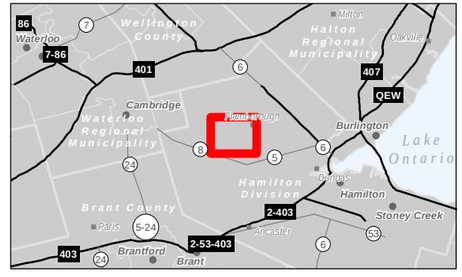
- Study Area
- Expressway / Highway
- Major Road
- Minor Road
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Waterbody
- Wooded Area

0 500 1,000 metres

1:25,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.



Project Location
City of Hamilton

160951192 REVA
Prepared by SPE on 2020-11-27
Technical Review by BCC on 2020-11-27

Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
1

Title
Location of the Project

Revised: 2020-11-27 By: seanles

\\Cd1215-f01\work_group\00609\Active\160951192\03_data\gis_cad\gis\mxds\archaeology\report_figures\fig1-2_160951192_stg1-2_fig01_Project_Loc.mxd

Westover Facility Expansion Proposal

City of Hamilton

Planning Justification Report

1. Purpose of Report

Cancare Ltd ("Canacre") has been retained by Enbridge Pipelines Inc. ("Enbridge") to prepare and process the required approvals for the development of a small crude oil handling facility at 1442 Concession 6 West, Flamborough, within the City of Hamilton (the "Subject Lands"). The proposed development is required to facilitate the mechanical and physical separation of assets to allow for the Line 10 Pipeline to operate independently of Enbridge's Westover Terminal.

The Subject Land is currently vacant, with some areas being used for temporary outdoor storage and parking for the adjacent parcel, also owned by Enbridge and containing the existing Westover Terminal. Enbridge is proposing to build a small crude oil handling facility on the Subject Lands, adjacent to the existing terminal (the "Project Area"). The facility will be approximately 0.6 ha in size, and will include an Electrical Switchgear Building ("ESB"), generator, and cable trays. Additionally, a lab building, ISH Building, and an Electrical Switchgear Building will be constructed within the existing terminal.

As part of the physical separation, the Project Area will be leased to the new Line 10 owner, Westover Express Pipeline Limited ("WEX"), a wholly owned subsidiary of United Refinery Company ("URC"). The Project Area will be leased to WEX for a term longer then 21 years, and thus will go through the Consent to Sever process to register the Project Area on title as confirmed by the City of Hamilton. This proposal will also be subject to Site Plan Control, and the City's Tree Removal By-laws. As the purpose of this application is to only create a long-term lease, no new parcel will be created, and a Minor Variance to recognize the lot size and setbacks will not be required.

This report will examine the proposed bylaws and subsequent consent, and evaluate the merits of the proposal against the applicable Provincial policies, and the City of Hamilton Official Plan and Zoning bylaws.

2. Background and Project Description

In May of 2020, Enbridge received approval from the Canada Energy Regulator ("CER") to sell their Line 10 pipeline to Westover Express Pipeline Limited a wholly owned subsidiary of United Refinery Company. The Line 10 pipeline starts at the Westover Terminal, within the City of Hamilton, and safely transports crude oil to URC's Kiantone Pipeline in West Seneca, New York. Approximately 105 km of Line 10 is located within Ontario.

The purpose of the Line 10 Westover Expansion Project (the "Project") is to mechanically and physically separate facility assets, enabling WEX to operate Line 10 independently of Enbridge's Westover Terminal.

The new facilities will include a small (approximately 0.6 ha) crude oil handling facility immediately west of the existing Westover Terminal on Enbridge-owned property. No public or third-party lands will be required for the Project, as all land and access routes are owned by Enbridge, and will be leased privately to WEX. As part of this application process, there will be 3 additional minor structures built within the existing facility. Development within the facility will be permitted by a site plan waiver, as confirmed by City staff in December 2021.

Construction for the Project is currently planned for March of 2022, with an in-service date of spring of 2023.

3. Location and Description of Subject Lands

The subject land is located at 1442 Concession 6 West, Flamborough, west of the community of Westover (Figure 1). The Subject Land is approximately 39 ha in size, and is mostly vacant in nature. The land is currently being used for minor storage and parking for the adjacent parcel to the east, that contains Enbridge's Westover Terminal Facility.

The southern portion of the land is mostly woodland, and is zoned mostly P6, P7, and P8. The northern portion of the land is zoned A2, and contains the existing storage and parking for the Westover Terminal (Please refer to Appendix 2: City of Hamilton Zoning).

The Project Area will be located within the rural zoning at the northern end of the parcel, and will contain an ESB (Concept photos located in Appendix 4), a generator with access platform, a cable tray (Concept photos located in Appendix 3) that connects the ESB to the main terminal, and site parking. A full site plan can be found in Appendix 1.

Adjacent land uses are similar in nature, with the south and western parcels being mostly vacant/woodland as well. To the north, there are a few residential parcels before the lands become wooded again. As noted, the parcel to the east is the existing Westover terminal, which will work in conjunction with the development proposed as part of this long-term lease.

Figure 1 - Project Location

4. Regulators

This project falls under the jurisdiction of the CER, with additional requirements from the Ontario Energy Board ("OEB") .

4.1 Provincial

The OEB has been notified of the Terminal Expansion proposal. OEB approval was required as part of the Project to allow Enbridge to become a private energy distributer for WEX's infrastructure. After consultation between Enbridge staff and the OEB, it was confirmed that Enbridge will be granted a licence to be a private energy distributer for infrastructure located within the Project Area.

4.2 National

This proposal falls under the jurisdiction of the CER. An application has been submitted to the CER, and is currently under review. As part of the regulator's requirements, public consultation for residents within 1500m of the subject lands has been completed.

A copy of the application can be viewed at the following link: https://apps.cer-rec.gc.ca/REGDOCS/Item/Filing/C14628

5. Pre-Submission Consultation & Required Approvals

A preliminary policy review by Canacre indicated that the proposed development is appropriate and permissible under the City of Hamilton Rural Official Plan and Zoning Bylaw.

5.1 City of Hamilton Planning Department

City staff were approached in the spring and summer of 2020 for project introduction and to review early location plans. The northeast corner of the property was identified as the preferred location for the Project. Further meetings were set up with City staff to identify planning requirements for the Project.

During these initial meetings with the City, it was determined that an Official Plan Amendment and Zoning Bylaw Amendment would not be required. City staff noted that, as the Project Area will be leased to a different entity, a consent to sever application would be the appropriate method to register the lease on title. Staff also noted that Site Plan Control and tree removal applications will be required.

Formal pre-submission consultation took place in July 2021 with City of Hamilton staff. City staff noted that the current lot configuration was not favourable, and should be revised. It was also noted that the applicant would need to provide documentation of mutual right-of-way agreements for the Project Area. The lot configuration has since been updated with approval from city staff.

After additional discussion with the City regarding the requirements for a Minor Variance, it was determined that the below applications would be required for application submission.

Table 1 – Required Approvals

Application	Requirement
Consent to Sever	A Consent to sever application will be required to facilitate a long-term lease for the proposal of 21+ years.
Site Plan Control	A Site Plan Control application will be required as part of the development approval.
Tree Removal	Tree removal applications will be submitted for the clearing of the Project Area.

5.2 City of Hamilton Council

Enbridge understands the importance of engaging major stakeholders early on in the development process. As such, Enbridge staff have informed all relevant City Councillors of the Project overview. Three Councillors have been included in the process, Councillor Arlene VanderBeek, Councillor Judi Partridge, and Councillor Brenda Johnson. They have been provided Project materials and site plans for their information. None of the above Councillors have had questions or further comments regarding the proposal at this time.

5.3 Hamilton Conservation Authority

The Hamilton Conservation Authority ("HCA") was approached by Enbridge staff in the spring and summer of 2020 for project introduction and to review early location plans. An application was submitted to the HCA in the summer of 2021, and permits were received for the proposal in October of 2021.

There are no outstanding requirements from the HCA at this time. The HCA permit can be found in Appendix 6 of this report.

6. Land Use Policies

The policy analysis below considers how the proposal can meet the land use policy provisions within the rural area of the City of Hamilton. This analysis will also consider Provincial polices, and why this location is appropriate for the proposed development.

6.1 Provincial Policy Statement

Under Section 3 of the Planning Act, all decisions by a planning authority shall be consistent with the Provincial Policy Statement ("PPS"). This proposal is located within additional provincial policy areas that will also be evaluated below, along with the City of Hamilton Rural Official Plan and Zoning Bylaw No. 05-200.

Table 2 – Provincial Policy Statement		
Section	**Policy**	**Evaluation**
1.0 Building Strong and Healthy Communities		
1.1 Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns		
1.1.5 Rural Lands in Municipalities		
1.1.5.2	On rural lands located in municipalities, permitted uses are: a) the management or use of resources; b) resource-based recreational uses (including recreational dwellings); c) residential development, including lot creation, that is locally appropriate; d) agricultural uses, agriculture-related uses, on-farm diversified uses and normal farm practices, in accordance with provincial standards; e) home occupations and home industries; f) cemeteries; and g) other rural land uses.	The proposed facility meets this policy as it is an appropriate rural land use. The Westover terminal is an existing use, and is therefore an appropriate location for the additional crude oil handling facility. The Project Area is separated from nearby residential land uses, and is an appropriate location for this type of development.
1.1.5.6	Opportunities should be retained to locate new or expanding land uses that require separation from other uses.	The proposed location allows for a separation from built up communities within the City of Hamilton.
1.2 Coordination		
1.2.6.1	Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.	This is an appropriate location for this proposal as the use is existing. The Project Area will be small, at approximately 0.6 ha, and thus will have very little impact on the community and nearby residents.
1.6 Infrastructure and Public Service Facilities		

1.6.11.1	Planning authorities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, district energy, and renewable energy systems and alternative energy systems, to accommodate current and projected needs.	This proposal will separate assets and allow for WEX to operate the Line 10 pipeline independently. This will help to accommodate current and future projected energy needs for the facility and infrastructure.
1.6.8 Transportation and Infrastructure Corridors		
1.6.8.1	Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.	This proposal will meet this policy as the facility is required to separate terminal assets and continue to operate the existing pipeline infrastructure within the existing right-of-way.
1.6.8.5	The co-location of linear infrastructure should be promoted, where appropriate.	This proposal will allow for the existing pipelines now owned by WEX, to continue the existing use under the new owner.

6.2 Growth Plan for the Greater Golden Horseshoe

This proposal is located within a Rural Area in the Growth Plan for the Greater Golden Horseshoe. As such, applicable policies have been evaluated below.

Table 3 – Growth Plan for the Greater Golden Horseshoe		
Section	**Policy**	**Evaluation**
2 Where and How to Grow		
2.2.9 Rural Areas		
2.2.9 (3)	Subject to the policies in Section 4, development outside of settlement areas may be permitted on rural lands for: a. the management or use of resources; b. resource-based recreational uses; and c. other rural land uses that are not appropriate in settlement areas provided they: i. are compatible with the rural landscape	The proposed location for the Project Area is an appropriate location for this development, as it allows for a separation from built up communities within the City of Hamilton, and is compatible with the rural landscape as it is located adjacent to existing Enbridge facilities.
3 Infrastructure to Support Growth		
3.2 Integrated Planning		
3.2.5 Infrastructure corridors		

3.2.5 (1) Infrastructure corridors	In planning for the development, optimization, or expansion of existing and planned corridors and supporting facilities, the Province, other public agencies and upper- and single-tier municipalities will: a. encourage the co-location of linear infrastructure where appropriate;	As Enbridge's Westover Terminal is currently an existing and permitted use, the location of the Project Area just outside of the existing facility meets this policy. Locating these similar uses within proximity will meet the intent of this policy.
4 Protecting What is Valuable		
4.2 Policies for Protecting What is Valuable		
4.2.4 Lands Adjacent to Key Hydraulic Features and Key Natural Heritage Features		
1.	Outside settlement areas, a proposal for new development or site alteration within 120 metres of a key natural heritage feature within the Heritage System for the Growth Plan or a key hydrologic feature will require a natural heritage evaluation or hydrologic evaluation that identifies a vegetation protection zone, which: a) is of sufficient width to protect the key natural heritage feature or key hydrologic feature and its functions from the impacts of the proposed change; c) for key hydrologic features, fish habitat, and significant woodlands, is no less than 30 metres measured from the outside boundary of the key natural heritage feature or key hydrologic feature	The proposed location for the terminal expansion is located within 120 m of a key hydrologic feature. Consultation was completed with the Hamilton Conservation authority to receive permitting for the Project Area and was approved in October of 2021. The proposed development is located more than 30 m from the natural features.

6.3 Greenbelt Plan

This proposal is located within the Protected Countryside of the Greenbelt Plan. As such, applicable policies have been evaluated below.

Table 4 – Greenbelt Plan		
Section	**Policy**	**Evaluation**
1.2 Vision and Goals		
1.2.2 Protected Countryside Goals		
Goal 5: Infrastructure and Natural Resources	a) Support for infrastructure which achieves the social and economic aims of the Greenbelt Plan and the Growth Plan	This proposal will support land use planning objectives and will minimize environmental impacts by locating similar uses within proximity to each

	and improves integration with land use planning while seeking to minimize environmental impacts;	other. The proposed development within the Project Area will allow for the separation of assets while co-locating similar uses and minimizing impacts to the community and environment.
4 General Policies for the Protected Countryside		
4.2 Infrastructure		
4.2.1 General Infrastructure Policies		
1.	All existing, expanded or new infrastructure subject to and approved under the Canadian Environmental Assessment Act, the Environmental Assessment Act, the Planning Act, the Aggregate Resources Act or the Telecommunications Act or by the National or Ontario Energy Boards, or which receives a similar environmental approval, is permitted within the Protected Countryside, subject to the policies of this section and provided it meets one of the following two objectives: b) It serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban centres and between these centres and Ontario's borders.	This proposal is subject to the CER, and is required to meet an appropriate and similar environmental approval. This proposal meets the objectives of this policy as Line 10 provides infrastructure connections out of Ontario.
2.	The location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to the following: d) New or expanding infrastructure shall avoid key natural heritage features, key hydrologic features or key hydrologic areas unless need has been demonstrated and it has been established that there is no reasonable alternative;	The proposed Project Area will be located outside of both key natural heritage and hydrologic features. The site is located adjacent to an area under Hamilton Conservation Authority jurisdiction and has completed conservation authority review and has received permits at this time.

	f) New or expanding infrastructure shall avoid specialty crop areas and other prime agricultural areas in that order of priority, unless need has been demonstrated and it has been established that there is no reasonable alternative;	The site is located in a rural area and will avoid taking any crop or prime agricultural lands out of practice.
4.6 Lot Creation		
1	Lot creation is discouraged and may only be permitted for: c) Acquiring land for infrastructure purposes, subject to the infrastructure policies of section 4.2;	As confirmed by the City, this proposal will go under the lot creation process for the purpose of a long-term lease. This policy is met as the purpose of the long-term lease is for expanded infrastructure purposes and will be subject to the above Section 4.2 Infrastructure.

6.4 City of Hamilton Official Plan

The subject lands are located within the City of Hamilton's Rural designation. The site is located outside of the Westover settlement boundary, as-such, applicable policies have been evaluated below.

Table 5 – City of Hamilton Rural Official Plan		
Section	**Policy**	**Evaluation**
A.3.0 Flamborough Rural Settlement Area Plans		
Volume 1 Parent Policies		
Chapter C – City Wide Systems and Designations		
C.2.0 Natural Heritage System		
2.4 Core Areas –Within the Greenbelt Plan Area		
2.4.1	Permitted uses within Core Areas located within the Greenbelt Natural Heritage System as identified on Schedule B – Natural Heritage System or within key hydrologic features anywhere in the Protected Countryside of the Greenbelt Plan as shown on Schedules B-1 to B-8 – Detailed Natural Heritage Features or identified by an Environmental Impact Statement, including any associated vegetation protection zone shall include:	The proposal is not located within the Core Area within the Greenbelt Natural Heritage System, or key hydrologic features.
2.10 Tree and Woodland Protection		

2.10.4	The City shall maintain and update as necessary a Woodland Conservation Bylaw and Street Tree Management policy. A Woodland Protection Strategy to protect tree cover on new development sites within Urban and Rural Settlement Areas and provides technical direction and practices to protect trees and other vegetation during construction will be prepared to minimize the impacts on trees and woodlands to be retained.	A Tree Protection Plan has been included as part of this application package.
C.3.0 General Land Use Provisions and Designations		
3.4 Utilities	It is the general intent of this Plan to ensure that utility uses are developed in an orderly manner consistent with the needs of the City. The planning, design and development of the utility uses shall complement the intent of policies for other land uses.	This proposal will create additional facilities for Enbridge's Westover Terminal in order to separate assets for WEX's use of the pipeline. This development will meet the intent of this policy as it will complement the existing land uses and is an appropriate development for the area.
3.4.3	Where municipal, provincial and other public agencies are undertaking Class Environmental Assessments under the Environmental Assessment Act, at the time of adoption of this Plan, the location and construction of new facilities and the expansion, extension and operations of existing facilities shall not require an amendment to this Plan. Class Environmental Assessments that commence after adoption of this Plan shall be required to undertake an Integrated Class Environmental Assessment and Planning process wherever practical.	This proposal has undertaken an Environmental Assessment as required by the CER.
3.4.7	Utilities shall be developed to integrate with the general character of the surrounding uses through the provision of landscaping, screening and buffering, siting of structures, height control, and any other measures as may be deemed to be appropriate by the City. For lands located in Rural Hamilton, proposed utilities shall	This proposal will integrate the proposed development with the surrounding area. The adjacent lands are used as part of the Enbridge Terminal, and thus this is an appropriate area for additional terminal uses.

	minimize the amount of agricultural land required and shall comply with Section C.2.0, Natural Heritage System of this Plan.	The proposed development will not take agricultural land out of operation, as the area to be developed is currently vacant and rural in nature. This proposal has met the policies for complying with C.2.0, Natural Heritage System. Part of this development is adjacent to an HCA regulated area. This proposal has since received all permits required by the HCA.

6.5 City of Hamilton Zoning Bylaw

The subject lands are zoned as A2 (Rural) in the City's Zoning Bylaw No. 05-200. The zoning by-law outlines the proposed Project as a utility use, and thus is permitted in all zones. The below provisions of the zoning by-law will be met by this Project.

Table 6 - City of Hamilton Zoning Bylaw No. 05-200		
Section	Policy	Evaluation
Section		
Section 4 General Provisions		
4.4 Public Uses Permitted in all Zones	Notwithstanding anything else in this By-law, a utility company, a communication company, the City or any of its local boards as defined in The Municipal Act, any communications or transportation system owned or operated by or for the City, and any agency of the Federal or Provincial Government, including Hydro One, may, for the purposes of the public service, use any land or erect or use any building in any zone subject to the use or building being in compliance with the most restrictive regulations contained in such zone for any use and the parking requirements of Section 5 of this By-law, for such use and subject to there being no outdoor storage of goods, materials or equipment in any yard abutting a	As a utility use, the proposed Project will follow the required regulations for rural zoning. The property is not adjacent to a Residential or a Downtown zone.

	Residential Zone or a Downtown D5 or Downtown D6 Zone or Settlement Residential (S1) Zone.	

Table 7 - City of Hamilton Zoning Bylaw No. 05-200 Provisions

	Required by By-law	**Provided**	**Conforms/Non-conforming**
Lot Area Minimum *Per Subsection 12.2.3.1 a) of the Hamilton Zoning By-Law No. 05-200.*	40.4 Hectares	Irregular Space Area = ± 0.468 Hectares	Conforms for the purpose of a long-term lease
Front Yard Minimum *Per Subsection 12.2.3.1 b) of the Hamilton Zoning By-Law No. 05-200*	15.0 m	± 196.9 m to the North	Conforms for the purpose of a long-term lease
Side Yard Minimum *Per Subsection 12.2.3.1 c) of the Hamilton Zoning By-Law No. 05-200.*	15.0 m	14.3 m to the East from the electrical switch gear building to the boundary of the united leased area shown in red.	Conforms for the purpose of a long-term lease
		±391.3 m to the West	Conforms for the purpose of a long-term lease
Rear Yard Minimum *Per Subsection 12.2.3.1 d) of the Hamilton Zoning By-Law No. 05-200.*	15.0 m	± 740.0 m to the South from the electrical switch gear building to the lot line. ± 646.4 m to the south from the cable tray that connects the electrical switch gear building to the main terminal to the lot line.	Conforms for the purpose of a long-term lease
Lot Coverage max. **Per Subsection 12.2.3.1 e) of the Hamilton Zoning By-Law No. 05-200.**	**i) 20%;** **Notwithstanding i) above, the maximum lot coverage for greenhouse operations shall be 70%.**	**5%**	**Conforms for the purpose of a long-term lease**

Outdoor Storage *Per Subsection 12.2.3.1 f) of the Hamilton Zoning By-Law No. 05-200.*	i) Shall not be permitted in any minimum front yard or minimum Flankage Yard; ii) Shall be located a minimum of 10.0 m from any lot line, and screened by visual barrier in accordance with Section 4.19 of this By-Law; iii) Sections i) and ii) above do not apply to the storage of parking of Agricultural vehicles or equipment	No outdoor storage	Conforms for the purpose of a long-term lease
Accessory Buildings *Per Subsection 12.2.3.1 g) and 4.8.4 b) of the Hamilton Zoning By-Law No. 05-200.*	In accordance with the requirements of Sections 4.8 abd 4.8.4 of this By-Law. b) In addition to Subsection 4.8 f), all accessory buildings having a Gross Floor Area greater than 18 m^2 shall conform to the regulations for the principal use.	No additional accessory buildings on site.	Conforms for the purpose of a long-term lease

Parking *Per Subsection 12.2.3.1 h) of the Hamilton Zoning By-Law No. 05-200.*	In accordance with the requirements of Section 5 of this By-Law	4 spaces are provided.	Conforms for the purpose of a long-term lease
Accessory Buildings in All Zones Section 4.8			
Accessory Buildings in All Zones *Per Subsection 4.8 f) of the Hamilton Zoning By-Law No. 05-200.*	Except as permitted in Subsection 4.18 a), an Accessory Building shall not be erected prior to the erection of the principal building or structure on the lot.	Public Use is being proposed	Conforms for the purpose of a long-term lease
Maximum Height *Per Subsection 4.8 g) of the Hamilton Zoning By-Law No. 05-200.*	All Accessory Buildings shall have a maximum height of 4.5 metres.	Building height is 5.43 m	Conforms for the purpose of a long-term lease
Eaves or Gutter *Per Subsection 4.8 h) of the Hamilton Zoning By-Law No. 05-200.*	Notwithstanding Subsection 4.6a), an eave or gutter of any Accessory Building may encroach into any required yard to a maximum of 0.45 metres.	Eave/gutter will not encroach into setbacks.	Conforms for the purpose of a long-term lease
Conservation/Hazard Land Rural "P7" and "P8" Zone Section 4.23 Special Setbacks			
Special Setbacks *Per Subsection 4.23 d) (General Provisions) of the Hamilton Zoning By-Law No. 05-200.*	All buildings or structures located on a property shall be setback a minimum of 7.5 m from a P5, P7 and P8 Zone boundary.	Site plan shows a 30m buffer from the HCA wetland boundary	Conforms for the purpose of a long-term lease

7. Public Consultation

Public consultation is required as part of the CER application. On behalf of Enbridge, Canacre commenced public consultation in December of 2020, with outreach programs for adjacent landowners and residents, as well as those within the larger community.

Two consultation radii were used for consultation purposes, (1) for landowners within 500 m of the Subject Lands, and (2) for landowners between 500 m - 1500 m of the Subject Lands.

For residents who lived within the first 500m, Land Agents completed in-person house visits to hand off the Project Notification Packages. Landowners between 500 m - 1500 m were mailed the Project Notification package that described the Project in detail and were provided with contacts if they would like to reach out to a Land Agent or representative for questions or comments. Public consultation was completed in December 2020.

8. Leasing of Project Area

The Subject Lands will be leased to WEX by Enbridge. In order to register the lease long term, a consent to sever will be used to register the Project Area on title.

The Project Area will consist of 0.6 ha of land, as seen in the site plan included in Appendix 1. The Project Area will include the ESB, generator with access platform, cable tray, site parking, and an access route. The existing access off Concession 6 West will be used for site access to the Project Area.

The Project Area will be leased in two parts to accommodate existing on-site uses. The access (Part 1) will be an non-exclusive lease, allowing for both Enbridge and WEX to mutually use the existing access. The Project Area (Part 2) will be leased to WEX exclusively, which will provide WEX exclusive right of access to the proposed development.

9. Conclusions

The proposed severance will allow for Westover Express Pipeline Limited to operate Line 10 independently from Enbridge's Westover Terminal, using the Crude Oil Handling Facility. The proposal for a long-term lease is consistent with Provincial and local land use policies including the City of Hamilton Rural Official Plan and Zoning Bylaw No. 05-200.

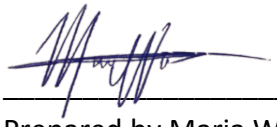
Given the analysis of the above report, it can be concluded that:

1. The proposed long-term lease is consistent with all applicable Provincial Plans and the policies of the City of Hamilton Rural Official Plan

2. The proposed long-term lease meets the zoning provisions for utility development within a rural area

3. The proposal represents appropriate land use planning principles

Respectfully Submitted,



Prepared by Maria Wood
Associate Project Manager
Canacre Ltd.

Approved by Haseeb Amirzada, MCIP, RPP
Sr. Director, Regulatory and Planning
Canacre Ltd.

Appendix 1: Site Plans

23 December 2021 7:19 AM

PLAN OF SURVEY OF

PART OF LOT 28 AND 29 CONCESSION 5

(GEOGRAPHIC TOWNSHIP OF BEVERLY)

CITY OF HAMILTON

Scale 1:500

10 0 10 20 30 METRES

Stantec Geomatics Ltd.

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE: _____

JEREMY C.E. MATTHEWS
ONTARIO LAND SURVEYOR

PLAN 62R-_____

RECEIVED AND DEPOSITED

DATE: _____

REPRESENTATIVE FOR THE LAND
REGISTRAR FOR THE LAND TITLES DIVISION
OF WENTWORTH (62).

SCHEDULE

PART	LOT	CONCESSION	PIN
1	PART OF 28	5	PART OF 17542-0012(LT)
2	PART OF 28	5	PART OF 17542-0012(LT)
3	PART OF 28	5	PART OF 17542-0012(LT)
4	PART OF 29	5	PART OF 17542-0013(LT)
5	PART OF 29	5	PART OF 17542-0013(LT)

PARTS 1, 2 AND 3 COMPRISE PART OF PIN 17542-0012(LT)
PARTS 4 AND 5 COMPRISE PART OF PIN 17542-0013(LT)

PART 3 IS SUBJECT TO EASEMENT AS IN CD47665
PART 4 IS SUBJECT TO EASEMENT AS IN CD52730

LOT 28, CONCESSION 6 (GEOGRAPHIC TOWNSHIP OF BEVERLY)

SIB (OU) — N76°49'40"E — 225.859 — IB (JDB) — 60.960 (P3M) — SIB (824) — (59.131 P3) 59.212 — SIB (824) — 346.031

PART 1 PLAN 62R-10673

KNOWN AS 6th CONCESSION ROAD

(ROAD ALLOWANCE BETWEEN CONCESSIONS 5 AND 6)

PIN 17537-0102(LT) (20.117 WIDE)

20.117 (3ET)

(N77°51'30"E P1) N76°49'40"E — SIB (OU) — PART 1 PLAN 62R-12394 — 132.010 (P2M) — SIB (OU) — PART 1 PLAN 62R-817 — 121.039 — Ⓐ PB — 7.569 — PB — 67.012 — 327.630 (P2M) — (N77°37'30"E P2) N77°43'00"E — 50.040 (P2S)

91°43'10" (P2S) — NORTHEAST CORNER LOT 28, CONCESSION 5

179°06'40" (P2S)

N20°55'40"W — N20°55'40"W

FENCE CORNER 5.31 EAST — FENCE 4.52 EAST — POST & WIRE FENCE — GATE — FENCE CORNER 1.26 EAST — POST & WIRE FENCE — FENCE CORNER 0.27 WEST

PART 3, PLAN 62R-12394

PART 1, PLAN 62R-20025 SUBJECT TO EASEMENT AS IN HL189668

PART 2, PLAN 62R-342

PART 2, PLAN 62R-3378

(N14°20'40"W P2) N14°00'10"W

PART 1, PLAN 62R-3378

65.280 (P2S) — (N14°20'40"W P2) N14°23'40"W — PART 2, PLAN 62R-20025

LOT LIMIT / PIN LIMIT — 101.007

PART 1, PLAN 62R - 12394

PIN 17542 - 0012(LT) — PIN 17542 - 0013(LT)

LOT 28 — LOT 29

76.741 — 76.842 — N03°54'30"W — N03°54'30"W — 28.355 — 27.431

N34°26'00"W 16.470 — N34°26'00"W 12.281 — N66°18'40"W 7.220 — N67°39'05"E 10.596 — N85°02'20"W 18.678 — FENCE CORNER 0.16 EAST

N66°18'40"W 12.549 — N52°59'10"W 9.786 — N70°00'40"W 13.852 — N58°47'40"W 9.910 — N35°39'34"W 4.235 — N88°30'05"W 9.937 — 31.985 — 11.782 — N22°43'00"W 30.203 — CHAIN LINK FENCE

FENCE 0.13 EAST — N83°29'35"W 29.205 — FENCE CORNER 1.34 NORTH 0.13 EAST — FENCE 1.00 NORTH — 12.778 — 22.715 — N30°59'55"W 13.000 — N63°06'35"W 19.046 — N87°21'05"W 8.543

CONCESSION (GEOGRAPHIC TOWNSHIP OF BEVERLY) 5

PART 1 — PART 2 — PART 3 — PART 4 — PART 5

N75°43'30"E 24.765 — 16.718 — 5.395 — 2.652 — SUBJECT TO EASEMENT AS IN CD47665 — SUBJECT TO EASEMENT AS IN CD52730

PART 1, PLAN 62R-3378 — PART 2, PLAN 62R-3378 — PART 9, PLAN 62R-20025 — PART 8, PLAN 62R-20025

N13°38'00"W (N12°26'30"W P4) — N14°21'55"W — 86.568 — 86.563 62R-3378 — 86.563 62R-20025 CD52730 — CD47665

N03°35'05"E 17.171 — R=16.000 A=20.457 C=19.092 N33°02'40"W — N69°40'25"W 10.478 — N59°16'10"W 11.316 — N50°30'35"W 14.932 — R=7.000 A=7.030 C=6.738 N79°16'45"W — N44°17'40"W 7.814 — N75°43'40"E 5.203 — N15°07'55"W 0.445 — 6.545 — N75°43'30"E 9.599 — N12°34'35"W 19.924 — 106.192 — 109°27'00"(P4S) — 69°17'20"(P2S) — 22.483 — 210.053 — (210.680 P2) — 23.182 — SIB (OH) — (N83°35'20"W P2) N83°41'00"W 7.280 (P2M) — N75°38'05"E 3.688 — N14°48'00"W — N14°23'40"W 30.573 — 66.647 — 29.863 — N76°07'35"E 6.448 — PB (WIT) — 3.826 — 41.590 — 11.017 — N13°48'20"W 10.784 — 2.622 — 2.520 — 16.345 N36°12'45"W — 0.561 — PB (WIT) Ⓑ — N70°49'05"E 3.081 — 2.609 — LOT LIMIT / PIN LIMIT

N

LEGEND

■	DENOTES	FOUND MONUMENTS
□	DENOTES	SET MONUMENTS
IB	DENOTES	IRON BAR
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
PB	DENOTES	PLASTIC BAR
WIT	DENOTES	WITNESS
PIN	DENOTES	PROPERTY IDENTIFICATION NUMBER
M	DENOTES	MEASURED
S	DENOTES	SET
STANTEC	DENOTES	STANTEC GEOMATICS LTD.
JDB	DENOTES	J.D. BARNES LTD
824	DENOTES	A.T. McLAREN LIMITED
OH	DENOTES	ONTARIO HYDRO
OU	DENOTES	ORIGIN UNKNOWN
P1	DENOTES	PLAN 62R-12394
P2	DENOTES	PLAN 62R-20025
P3	DENOTES	PLAN 62R-10673
P4	DENOTES	PLAN 62R-3378

METRIC CONVERSION

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

GRID SCALE CONVERSION

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999634.

BEARING NOTE

BEARINGS ARE UTM GRID, DERIVED FROM GPS OBSERVATIONS FROM MONUMENT A TO B, REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 17 (81° WEST LONGITUDE) NAD83 (CSRS) (2010.0).

OBSERVED REFERENCE POINTS DERIVED FROM GPS OBSERVATIONS USING THE CAN-NET VIRTUAL REFERENCE STATION NETWORK: UTM ZONE 17, NAD83 (CSRS)(2010.0). COORDINATES TO URBAN ACCURACY PER SEC 14(2) OF O.REG. 216/10

POINT ID	NORTHING	EASTING
Ⓐ	4798020.787	573289.420
Ⓑ	4797834.107	573401.376

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE

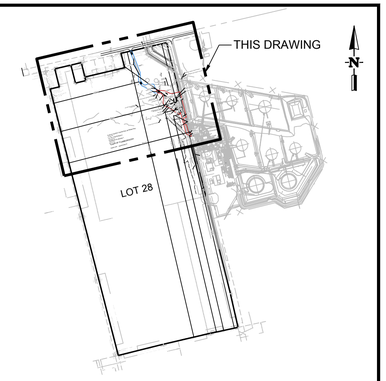
DATE

JEREMY C.E. MATTHEWS
ONTARIO LAND SURVEYOR

Stantec Geomatics Ltd.
CANADA LANDS SURVEYORS
ONTARIO LAND SURVEYORS
171 QUEENS AVENUE, SUITE 600
LONDON, ONTARIO, N6A 5J7
TEL. 519.645.2007
stantec.com

DRAWN: DL | CHECKED: JM | DATE: DEC 20 2021 | PROJECT No.: 121623543

M:\01616\Active__1216\121623543\drawing\121623543_V-SP_Westover_RPlan-CSRS.dwg



LOCATION PLAN

NOTES:

1. CADASTRAL SURVEY INFORMATION SHOWN ON THIS DRAWING IS FROM ENBRIDGE DRAWING D-1.11-6861-400.
2. DIMENSIONS ARE IN METRES AND SHOWN THUS 201.5m (+/-). DIMENSIONS FROM ORIGINAL SURVEY DRAWING ARE SHOWN AS 60.00'.
3. FIRE ROUTE IS THE SAME AS TRAFFIC CIRCULATION ON THE EXISTING ACCESS ROAD.

LEGEND:

- PART 1, ACCESS
- PART 2, UNITED LEASE PARCEL BOUNDARY
- WORKER PARKING
- FH_O EXISTING FIRE HYDRANT
- ESB ELECTRICAL SWITCHGEAR BUILDING (21.2m x 6.2m BUILDING)
- G GENERATOR c/w ACCESS PLATFORM
- TX TRANSFORMER
- CHAIN LINK FENCE, 2m + BARBED WIRE TOP
- DRAINAGE ARROW
- TRAFFIC CIRCULATION

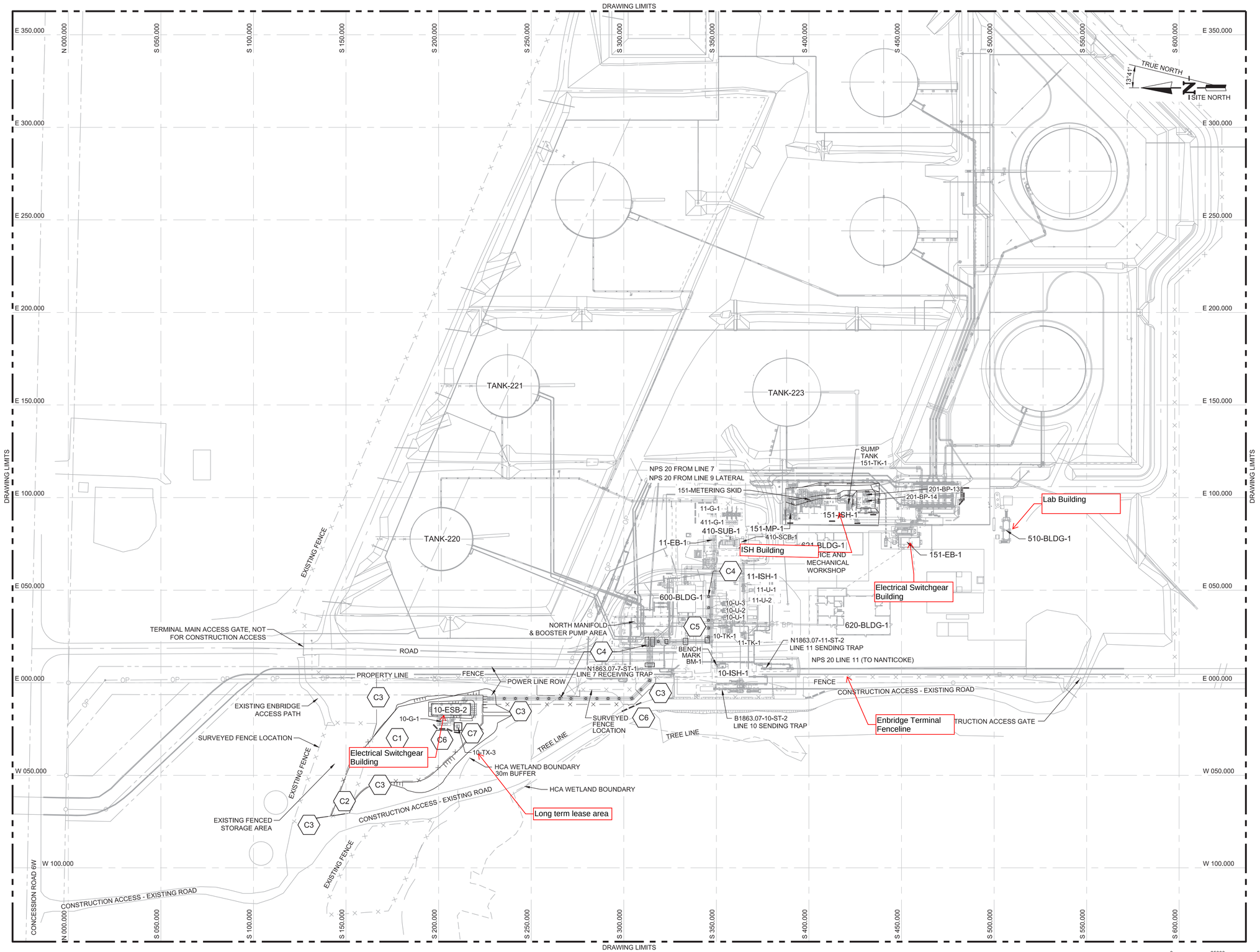
BUILDING DEVELOPMENT AREA - 254m²
DEVELOPMENT AREA - 0.468 ha
% BUILDING DEVELOPMENT AREA - 5%
BUILDING HEIGHT - 5.43m
PARKING - 4 SPACES (6m LONG x 3m WIDE)
LANDSCAPED AREA - 421.9m²
FLOOR ELEVATION - 266.3m (LOCAL ENBRIDGE BENCH MARK; 1.16m HIGHER THAN GEODETIC ELEVATIONS)
NO OUTDOOR STORAGE IS PROPOSED FOR THIS DEVELOPMENT

PLAN OF SURVEY (CADASTRAL INFORMATION)
OF PART OF
LOT 28, CONCESSION 5
GEOGRAPHIC
TOWNSHIP OF BEVERLY
NOW IN THE
TOWN OF FLAMBOROUGH

HAMILTON - WENTWORTH

SKETCH 203_REV 05

UNITED PARCEL DEVELOPMENT PLAN
(FOR PLANNING APPLICATION PURPOSES)
2021-DEC-17



C1 SITE GRADING

C2 ACCESS ROAD

C3 FENCING AND GATES

C4 EXCAVATE TO BEDROCK FOR CONCRETE FOOTINGS

C5 EXCAVATE FOR PIPE REMOVAL AND LINE 10 SUCTION HEADER

C6 PLACE JERSEY BARRIERS

C7 CONSTRUCT TRANSFORMER CONTAINMENT

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.D	LINE 10 CARVE OUT	C10

AFE:	20020043	PROJ NO:	2000186
WP NO:		DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	MK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 30% REVIEW	2020-10-16 MP	DK
0.B	ISSUED FOR 60% REVIEW	2021-01-11 DPP	DK
0.C	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.D	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

REFERENCE DRAWINGS

REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

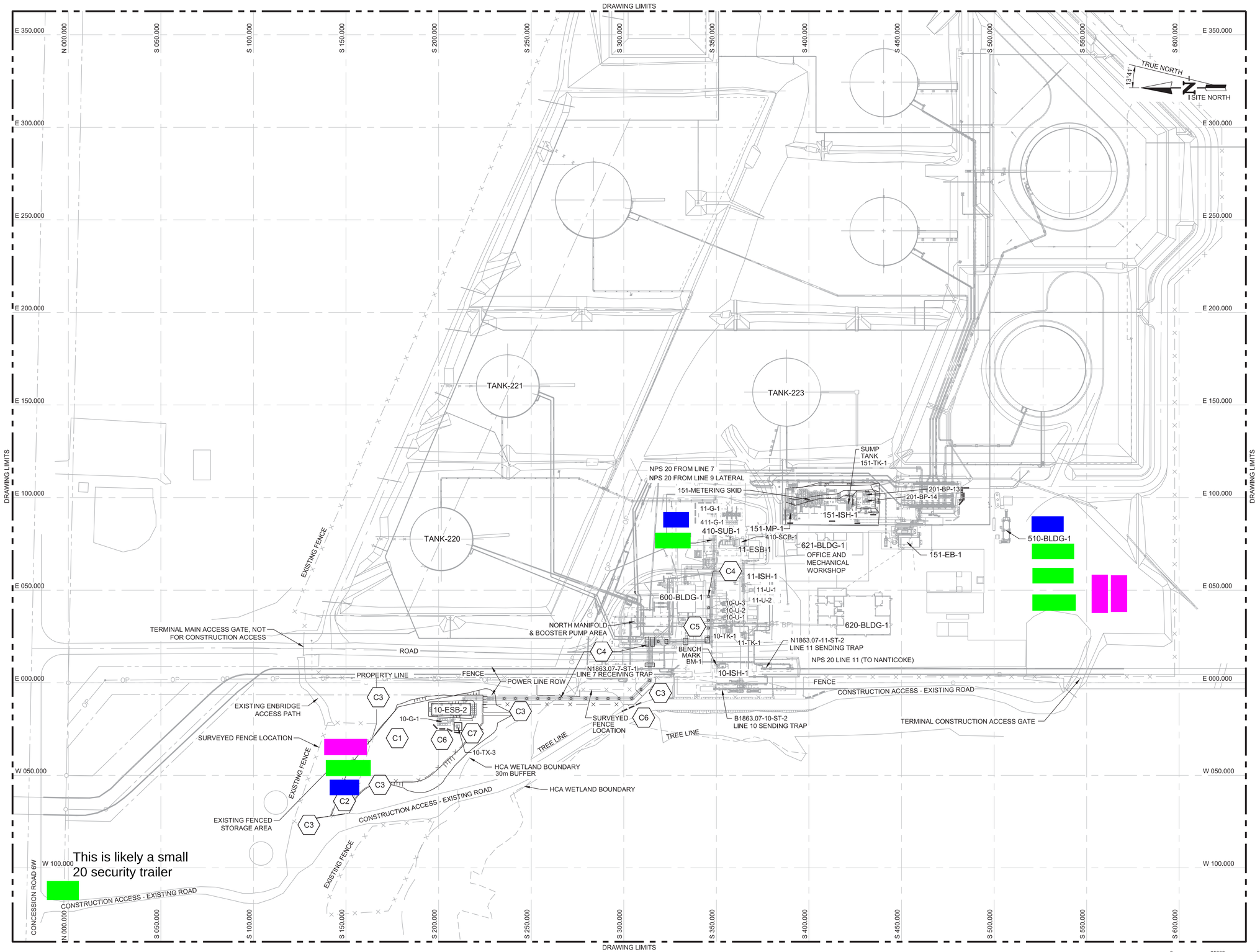
ENBRIDGE

WESTOVER (ON) TERMINAL
LINE 10 CARVE OUT
AFE 20020043
CIVIL SCOPE OF WORK - CWP 100

BY: MP	CHK: DK	ENG, : DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-10-05		SCALE: 1:1000	STATUS: CONSTRUCTION

DWG NO.: D-1.0-SKCSCOPE1-400

REV NO: 0.D



C1 SITE GRADING

C2 ACCESS ROAD

C3 FENCING AND GATES

C4 EXCAVATE TO BEDROCK FOR CONCRETE FOOTINGS

C5 EXCAVATE FOR PIPE REMOVAL AND LINE 10 SUCTION HEADER

C6 PLACE JERSEY BARRIERS

C7 CONSTRUCT TRANSFORMER CONTAINMENT

Washcar

Office/ Lunch Trailer

Seacan

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.D	LINE 10 CARVE OUT	C10

AFE:	20020043	PROJ NO:	2000186
WP NO:		DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	MK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 30% REVIEW	2020-10-16 MP	DK
0.B	ISSUED FOR 60% REVIEW	2021-01-11 DPP	DK
0.C	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.D	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

REFERENCE DRAWINGS

REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

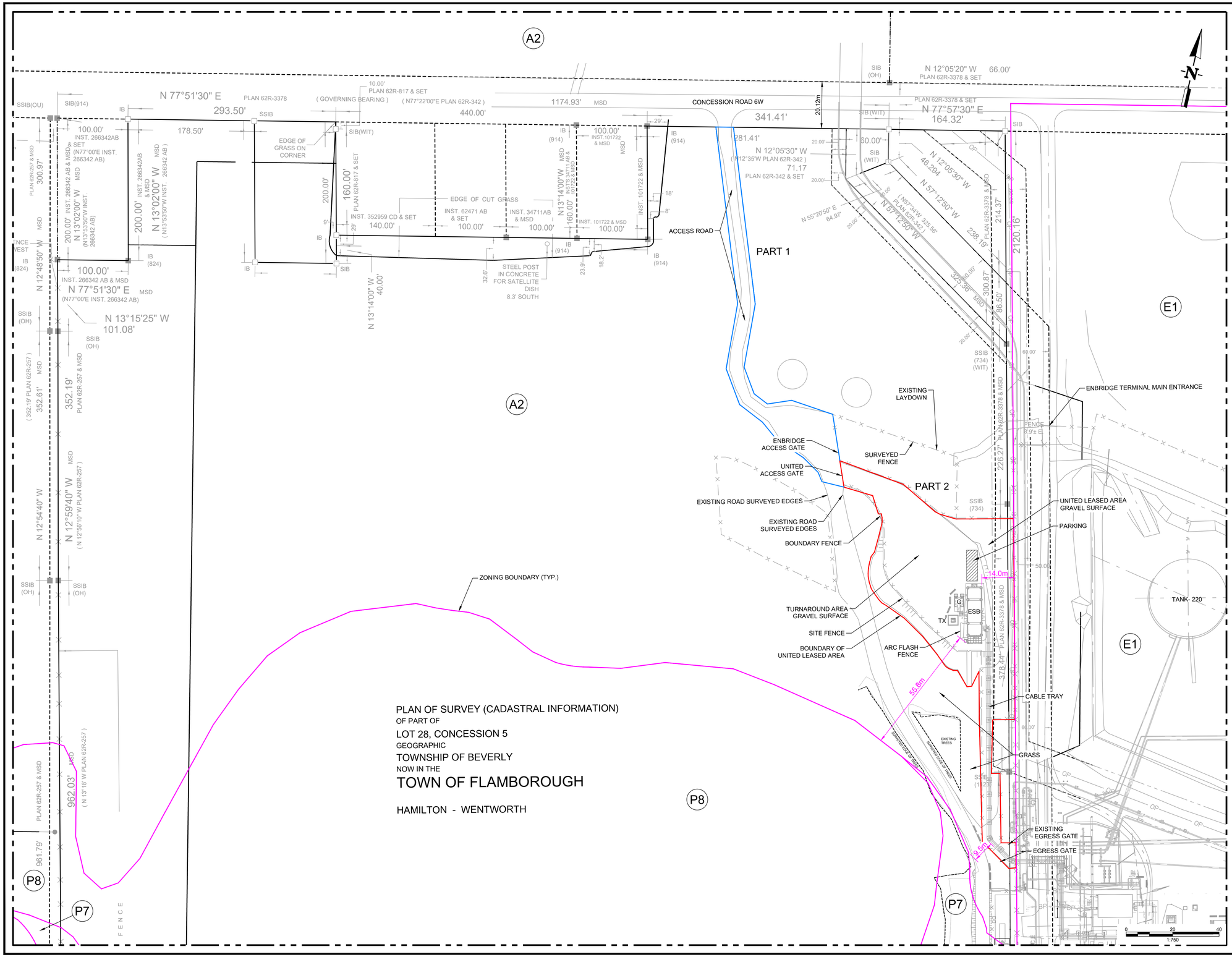
WESTOVER (ON) TERMINAL
LINE 10 CARVE OUT
AFE 20020043
CIVIL SCOPE OF WORK - CWP 100

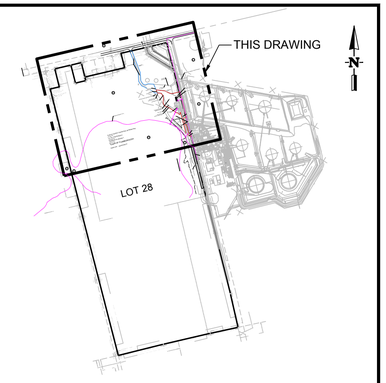
BY: MP	CHK: DK	ENG, :DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-10-05		SCALE: 1:1000	STATUS: CONSTRUCTION

DWG NO.: D-1.0-SKCSCOPE1-400

REV NO: 0.D

Appendix 2: City of Hamilton Zoning





LOCATION PLAN

NOTES:

1. CADASTRAL SURVEY INFORMATION SHOWN ON THIS DRAWING IS FROM ENBRIDGE DRAWING D-1.11-6861-400.
2. DIMENSIONS ARE IN METRES AND SHOWN THUS 201.5m (+/-). DIMENSIONS FROM ORIGINAL SURVEY DRAWING ARE SHOWN AS 60.00'.
3. FIRE ROUTE IS THE SAME AS TRAFFIC CIRCULATION ON THE EXISTING ACCESS ROAD.

LEGEND:

- ZONING BOUNDARY
- P8 — ZONING LABEL
- PART 1, ACCESS
- PART 2, UNITED LEASE PARCEL BOUNDARY
- WORKER PARKING
- ESB — ELECTRICAL SWITCHGEAR BUILDING (21.2m x 6.2m BUILDING)
- G — GENERATOR c/w ACCESS PLATFORM
- TX — TRANSFORMER
- CHAIN LINK FENCE, 2m + BARBED WIRE TOP

SKETCH 204_REV 00

UNITED PARCEL ZONING PLAN
(FOR PLANNING APPLICATION PURPOSES)
2021-DEC-17

Appendix 3: Cable Tray Concept Photos

Appendix 4: Electrical Switchgear Building Concept Photos


ENBRIDGE

Appendix 5: Site Photos

Project Site - Facing South

Project Site - Facing Southeast

Project Area - Facing Southwest

Appendix 6: Hamilton Conservation Authority Permit

Hamilton Conservation Authority

A Healthy Watershed for Everyone

F/F,C/21/70

October 18, 2021

Enbridge Pipelines Inc.
c/o Naomi Anton-Muskego
425 1 St SW
Calgary, AB T2P 3L8

Dear Ms. Anton-Muskego:

RE: Notice of Decision – Enbridge Pipelines Inc. c/o Naomi Anton-Muskego – for the construction of an electrical switching building with associated cable trays and the placement and grading of fill in a regulated area associated with the Sheffield – Rockton Wetland Complex at 1442 Concession 6 Road West, Part Lots 28 and 29, Concession 5, in the City of Hamilton (former Town of Flamborough)

Please be advised that Hamilton Conservation Authority staff approved the above noted proposal, subject to the following conditions:

1. The Owner shall retain a copy of the HCA permit and approved plans on-site at all times during construction;

2. The Owner shall adhere to the HCA permit and approved plans, documents and conditions, including HCA redline revisions, herein referred to as the "works", to the satisfaction of HCA. The Owner further acknowledges that all proposed revisions to the design of this project must be submitted for review and approval by HCA prior to implementation of the redesigned works;

3. The Owner shall notify the HCA Watershed Officer 48 hours prior to the commencement of any of the works referred to in this permit and within 48 hours upon completion of the works referred to herein;

4. The Owner shall arrange a final site inspection of the works with the HCA Watershed Officer prior to the expiration date on the permit to ensure compliance with terms and conditions of the permit to the satisfaction of the HCA;

5. THAT all erosion and sediment control measures be installed prior to development, and maintained throughout the construction process, until all disturbed areas have been restored;

6. THAT all erosion and sediment control measures be inspected after each rainfall to the satisfaction of Authority staff;

7. THAT any disturbed area not scheduled for further construction within 45 days be provided with a suitable temporary mulch and seed cover within 7 days of the completion of that particular phase of construction;

8. THAT all disturbed areas be re-vegetated with permanent cover immediately following completion of construction; and

9. THAT the works are undertaken in accordance with the approved drawings attached to this permit (Sketch 203_Rev 03, Final Grading Plan, Erosion and Sediment Control Drawing and the Revegetation Drawing).

Please find enclosed Permit #2021-78 issued under the Conservation Authorities Act, pursuant to Ontario Regulation 161/06 - Hamilton Conservation Authority Regulation Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Regulation. Should you have any questions, please contact the undersigned at 905-525-2181, ext. 130.

Yours sincerely,

T. Scott Peck, B.A., DPA, MCIP, RPP, CMMIII
Deputy Chief Administrative Officer/
Director, Watershed Planning and Engineering

TSP:vp
Enc. Permit 2021-78 and approved plans

cc. Rob Rowland, Stantec (email)

Hamilton
Conservation
Authority

A Healthy Watershed for Everyone

838 Mineral Springs Road, PO Box 81067
Ancaster, Ontario L9G 4X1
Telephone: 905-648-4427 Fax: 905-648-4622

PERMIT

Nº 2021-78

ISSUED UNDER THE CONSERVATION AUTHORITIES ACT, PURSUANT TO ONTARIO REGULATION 161/06 – HAMILTON CONSERVATION AUTHORITY DEVELOPMENT, INTERFERENCE WITH WETLANDS, AND ALTERATIONS TO SHORELINES AND WATERCOURSES REGULATION.

Permission has been granted to: **Enbridge Pipelines Inc. c/o Naomi Anton-Muskego**
Phone: **587-437-8642**
Mailing Address: **425 1 St SW, Calgary, AB T2P 3L8**
Location: **in a regulated area associated with the Sheffield – Rockton Wetland Complex, in the City of Hamilton (former Town of Flamborough)**
For the: **construction of an electrical switching building with associated cable trays and the placement and grading of fill in a regulated area associated with the Sheffield – Rockton Wetland Complex at 1442 Concession 6 Road West, Part Lots 28 and 29, Concession 5, in the City of Hamilton (former Town of Flamborough)**

on the above property during the period of **October 18, 2021** to **October 18, 2023** subject to the following conditions.

1. The Owner shall retain a copy of the HCA permit and approved plans on-site at all times during construction;

2. The Owner shall adhere to the HCA permit and approved plans, documents and conditions, including HCA redline revisions, herein referred to as the "works", to the satisfaction of HCA. The Owner further acknowledges that all proposed revisions to the design of this project must be submitted for review and approval by HCA prior to implementation of the redesigned works;

3. The Owner shall notify the HCA Watershed Officer 48 hours prior to the commencement of any of the works referred to in this permit and within 48 hours upon completion of the works referred to herein;

4. The Owner shall arrange a final site inspection of the works with the HCA Watershed Officer prior to the expiration date on the permit to ensure compliance with terms and conditions of the permit to the satisfaction of the HCA;

5. THAT all erosion and sediment control measures be installed prior to development, and maintained throughout the construction process, until all disturbed areas have been restored;

6. THAT all erosion and sediment control measures be inspected after each rainfall to the satisfaction of Authority staff;

7. THAT any disturbed area not scheduled for further construction within 45 days be provided with a suitable temporary mulch and seed cover within 7 days of the completion of that particular phase of construction;

8. THAT all disturbed areas be re-vegetated with permanent cover immediately following completion of construction; and

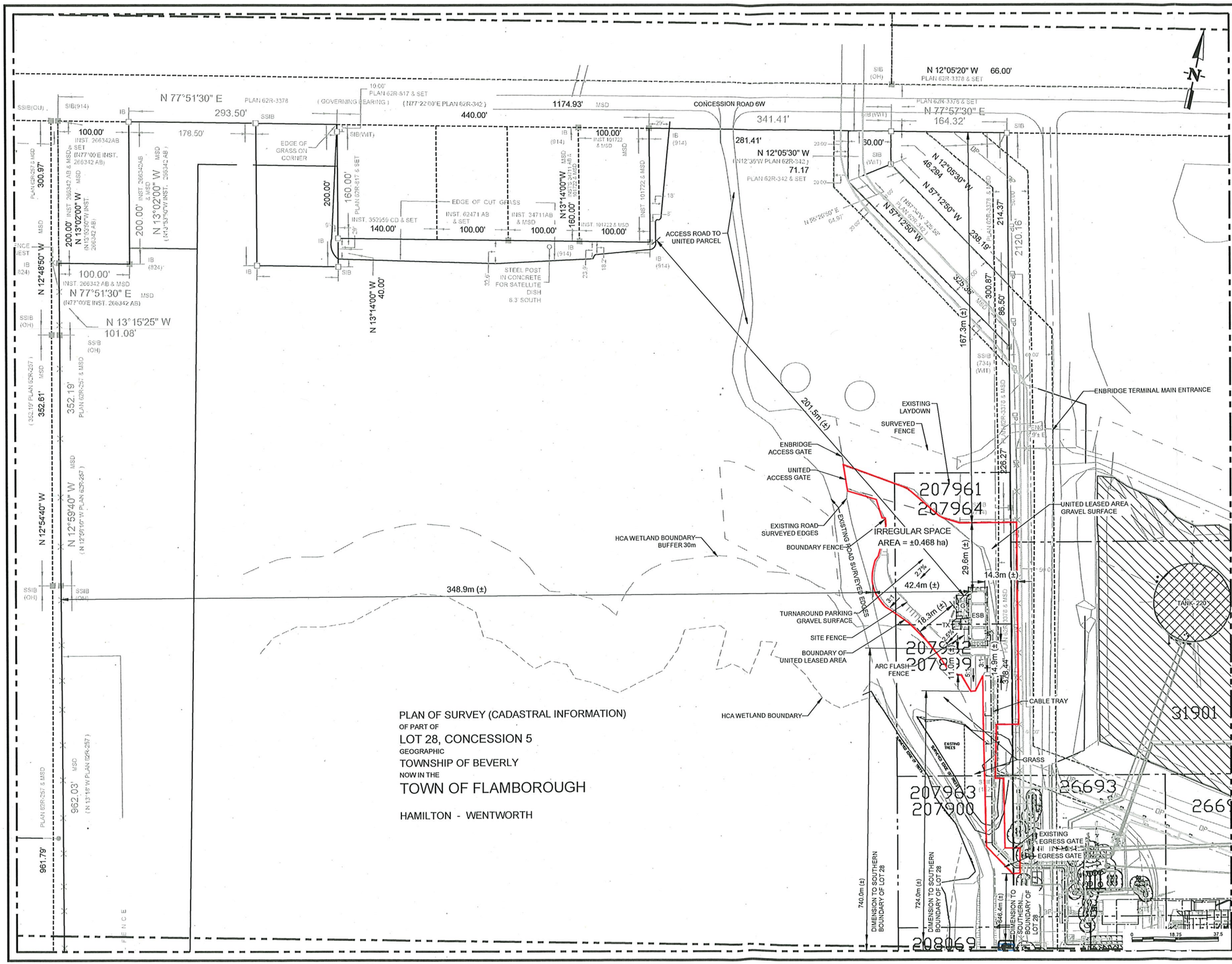
9. THAT the works are undertaken in accordance with the approved drawings attached to this permit (Sketch 203_Rev 03, Final Grading Plan, Erosion and Sediment Control Drawing and the Revegetation Drawing).

NOTE:

1) This permit may be withdrawn by the HCA if the works do not comply with the above noted conditions. Non-compliance with permit conditions also constitutes a violation of the regulation and may result in charges being laid.

2) The issuance of this permit does not abrogate the necessity of obtaining all other required permits for development and construction, i.e. permits required by the Niagara Escarpment Commission, Municipality, Ministry of Natural Resources and Forestry, Harbour Commissioners and any or all other agencies.

Enforcement Officer
T. Scott Peck, B.A., DPA, MCIP, RPP, CMMIII
Deputy Chief Administrative Officer/
Director, Watershed Planning & Engineering



LOCATION PLAN

NOTES:

1. CADASTRAL SURVEY INFORMATION SHOWN ON THIS DRAWING IS FROM ENBRIDGE DRAWING 0-1.11-6851-400.
2. DIMENSIONS ARE IN METRES AND SHOWN THUS 201.5m (+/-). DIMENSIONS FROM ORIGINAL SURVEY DRAWING ARE SHOWN AS 60.00'.

LEGEND:

	UNITED LEASE PARCEL BOUNDARY
ESB	ELECTRICAL SWITCHGEAR BUILDING (21.2m x 6.2m BUILDING)
G	GENERATOR c/w ACCESS PLATFORM
TX	TRANSFORMER

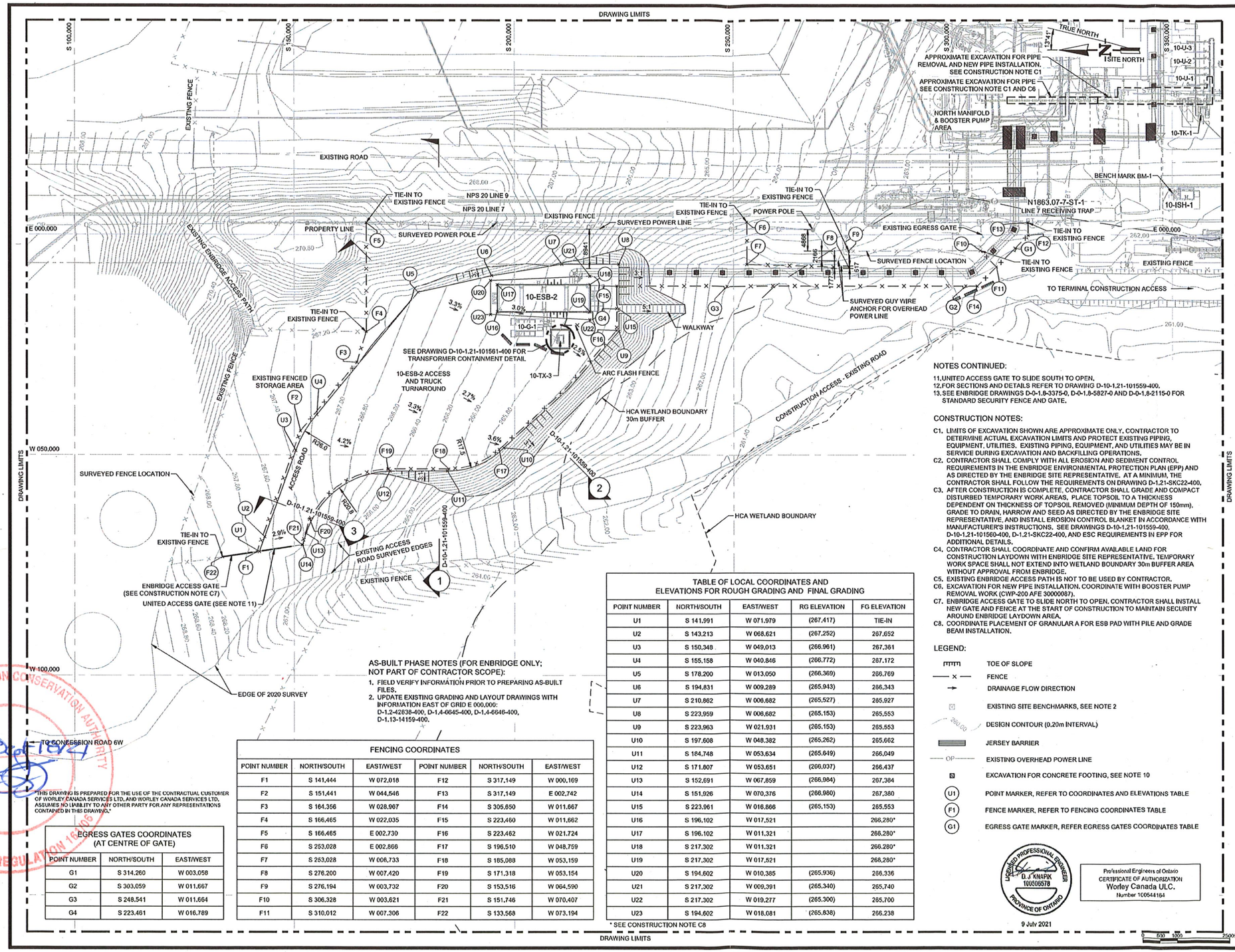
APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

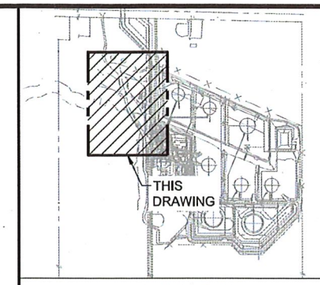
PLAN OF SURVEY (CADASTRAL INFORMATION)
OF PART OF
LOT 28, CONCESSION 5
GEOGRAPHIC
TOWNSHIP OF BEVERLY
NOW IN THE
TOWN OF FLAMBOROUGH

HAMILTON - WENTWORTH

SKETCH 203_REV 03

UNITED PARCEL DEVELOPMENT PLAN
(FOR PLANNING APPLICATION PURPOSES)
2021-SEP-07





LOCATION PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-1.0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES WITHIN WORK BOUNDARIES PRIOR TO COMMENCING THE WORK.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL SITE CONDITIONS, COORDINATES, LINES, GRADES AND ELEVATIONS PRIOR TO STARTING WORK.
6. HAND EXCAVATION IS REQUIRED WITHIN 1m OF EXISTING UNDERGROUND CABLES, PIPES, UTILITIES, AND EXISTING FOUNDATIONS.
7. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION, AS REQUIRED, TO PREVENT DAMAGE TO EXISTING UNDERGROUND SERVICES AND UTILITIES, PIPELINES, BUILDINGS, FENCES, CULVERT, VALVES, ETC.
8. REFERENCE STANDARDS AND DOCUMENTS
   - ENBRIDGE SPECIFICATION FOR FACILITY CONSTRUCTION (CANADA) FCS001, FCS002, FCS004, FCS006 AND FCS018.
   - ENBRIDGE GROUND DISTURBANCE GUIDELINES FOR CANADA, LATEST EDITION.
9. CONTRACTOR SHALL REFER TO FINAL GEOTECHNICAL REPORT PREPARED BY STANTEC, DATED MAY 6, 2021.
10. APPROXIMATE EXTENT OF EXCAVATION FOR CABLE TRAY SUPPORTS, FOR CONCRETE FOOTING DETAILS SEE DRAWING D-10-2.21-101416-400.

NOTES CONTINUED:

11. UNITED ACCESS GATE TO SLIDE SOUTH TO OPEN.
12. FOR SECTIONS AND DETAILS REFER TO DRAWING D-10-1,21-101559-400.
13. SEE ENBRIDGE DRAWINGS D-0-1,8-3375-0, D-0-1,8-5827-0 AND D-0-1,8-2115-0 FOR STANDARD SECURITY FENCE AND GATE.

CONSTRUCTION NOTES:

C1. LIMITS OF EXCAVATION SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE ACTUAL EXCAVATION LIMITS AND PROTECT EXISTING PIPING, EQUIPMENT, UTILITIES. EXISTING PIPING, EQUIPMENT, AND UTILITIES MAY BE IN SERVICE DURING EXCAVATION AND BACKFILLING OPERATIONS.
C2. CONTRACTOR SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REQUIREMENTS IN THE ENBRIDGE ENVIRONMENTAL PROTECTION PLAN (EPP) AND AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE. AT A MINIMUM, THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS ON DRAWING D-1,21-SKC22-400.
C3. AFTER CONSTRUCTION IS COMPLETE, CONTRACTOR SHALL GRADE AND COMPACT DISTURBED TEMPORARY WORK AREAS, PLACE TOPSOIL TO A THICKNESS DEPENDENT ON THICKNESS OF TOPSOIL REMOVED (MINIMUM DEPTH OF 150mm), GRADE TO DRAIN, HARROW AND SEED AS DIRECTED BY THE ENBRIDGE SITE REPRESENTATIVE, AND INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEE DRAWINGS D-10-1,21-101559-400, D-10-1,21-101560-400, D-1,21-SKC22-400, AND ESC REQUIREMENTS IN EPP FOR ADDITIONAL DETAILS.
C4. CONTRACTOR SHALL COORDINATE AND CONFIRM AVAILABLE LAND FOR CONSTRUCTION LAYDOWN WITH ENBRIDGE SITE REPRESENTATIVE. TEMPORARY WORK SPACE SHALL NOT EXTEND INTO WETLAND BOUNDARY 30m BUFFER AREA WITHOUT APPROVAL FROM ENBRIDGE.
C5. EXISTING ENBRIDGE ACCESS PATH IS NOT TO BE USED BY CONTRACTOR.
C6. EXCAVATION FOR NEW PIPE INSTALLATION. COORDINATE WITH BOOSTER PUMP REMOVAL WORK (CWP-200 AFE 30000087).
C7. ENBRIDGE ACCESS GATE TO SLIDE NORTH TO OPEN. CONTRACTOR SHALL INSTALL NEW GATE AND FENCE AT THE START OF CONSTRUCTION TO MAINTAIN SECURITY AROUND ENBRIDGE LAYDOWN AREA.
C8. COORDINATE PLACEMENT OF GRANULAR A FOR ESB PAD WITH PILE AND GRADE BEAM INSTALLATION.

LEGEND:

- TOE OF SLOPE
- FENCE
- DRAINAGE FLOW DIRECTION
- EXISTING SITE BENCHMARKS, SEE NOTE 2
- 260.00 DESIGN CONTOUR (0.20m INTERVAL)
- JERSEY BARRIER
- OP EXISTING OVERHEAD POWER LINE
- EXCAVATION FOR CONCRETE FOOTING, SEE NOTE 10
- (U1) POINT MARKER, REFER TO COORDINATES AND ELEVATIONS TABLE
- (F1) FENCE MARKER, REFER TO FENCING COORDINATES TABLE
- (G1) EGRESS GATE MARKER, REFER EGRESS GATES COORDINATES TABLE

AS-BUILT PHASE NOTES (FOR ENBRIDGE ONLY; NOT PART OF CONTRACTOR SCOPE):

1. FIELD VERIFY INFORMATION PRIOR TO PREPARING AS-BUILT FILES.
2. UPDATE EXISTING GRADING AND LAYOUT DRAWINGS WITH INFORMATION EAST OF GRID E 000.000: D-1.2-42838-400, D-1,4-6645-400, D-1,4-6646-400, D-1.13-14159-400.

TABLE OF LOCAL COORDINATES AND ELEVATIONS FOR ROUGH GRADING AND FINAL GRADING

POINT NUMBER	NORTH/SOUTH	EAST/WEST	RG ELEVATION	FG ELEVATION
U1	S 141.991	W 071.979	(267.417)	TIE-IN
U2	S 143.213	W 068.621	(267.252)	267.652
U3	S 150.348	W 049.013	(266.961)	267.361
U4	S 155.158	W 040.846	(266.772)	267.172
U5	S 178.200	W 013.050	(266.369)	266.769
U6	S 194.831	W 009.289	(265.943)	266.343
U7	S 210.862	W 006.682	(265.527)	265.927
U8	S 223.959	W 006.682	(265.153)	265.553
U9	S 223.963	W 021.931	(265.153)	265.553
U10	S 197.608	W 048.382	(265.262)	265.662
U11	S 184.748	W 053.634	(265.649)	266.049
U12	S 171.807	W 053.651	(266.037)	266.437
U13	S 152.691	W 067.859	(266.984)	267.384
U14	S 151.926	W 070.376	(266.980)	267.380
U15	S 223.961	W 016.866	(265.153)	265.553
U16	S 196.102	W 017.521		266.280*
U17	S 196.102	W 011.321		266.280*
U18	S 217.302	W 011.321		266.280*
U19	S 217.302	W 017.521		266.280*
U20	S 194.602	W 010.385	(265.936)	266.336
U21	S 217.302	W 009.391	(265.340)	265.740
U22	S 217.302	W 019.277	(265.300)	265.700
U23	S 194.602	W 018.081	(265.838)	266.238

* SEE CONSTRUCTION NOTE C8

FENCING COORDINATES

POINT NUMBER	NORTH/SOUTH	EAST/WEST	POINT NUMBER	NORTH/SOUTH	EAST/WEST
F1	S 141.444	W 072.018	F12	S 317.149	W 000.169
F2	S 151.441	W 044.546	F13	S 317.149	E 002.742
F3	S 164.356	W 028.997	F14	S 305.650	W 011.667
F4	S 166.465	W 022.035	F15	S 223.460	W 011.662
F5	S 166.465	E 002.730	F16	S 223.462	W 021.724
F6	S 253.028	E 002.866	F17	S 196.510	W 048.759
F7	S 253.028	W 006.733	F18	S 185.088	W 053.159
F8	S 276.200	W 007.420	F19	S 171.318	W 053.154
F9	S 276.194	W 003.732	F20	S 153.516	W 064.590
F10	S 306.328	W 003.621	F21	S 151.746	W 070.407
F11	S 310.012	W 007.306	F22	S 133.568	W 073.194

EGRESS GATES COORDINATES (AT CENTRE OF GATE)

POINT NUMBER	NORTH/SOUTH	EAST/WEST
G1	S 314.260	W 003.058
G2	S 303.059	W 011.667
G3	S 248.541	W 011.664
G4	S 223.461	W 016.789

APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

"THIS DRAWING IS PREPARED FOR THE USE OF THE CONTRACTUAL CUSTOMER OF WORLEY CANADA SERVICES LTD. AND WORLEY CANADA SERVICES LTD. ASSUMES NO LIABILITY TO ANY OTHER PARTY FOR ANY REPRESENTATIONS CONTAINED IN THIS DRAWING."

LICENSED PROFESSIONAL ENGINEER D. J. KNAPIK 100506578 PROVINCE OF ONTARIO

9 July 2021

Professional Engineers of Ontario CERTIFICATE OF AUTHORIZATION Worley Canada ULC. Number 100544164

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.C	LINE 10 CARVE OUT	C15

AFE: 20020043		PROJ NO: 2000186	
WP NO:		DATE: 2020-08-18	
BY: MP		ENG: DKNAPIK	
CHK: MK JA		ENB APPR: SAHMADIAN	

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 60% REVIEW	2021-01-11 MP	DK
0.B	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.C	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

D-0-1,8-2115-0	STANDARD PORTABLE SECURITY FENCE
D-0-1,8-5827-0	STANDARD EMERGENCY EVACUATION GATE
D-0-1,8-3375-0	STANDARD SECURITY FENCE
D-10-1,21-101561-400	TRANSFORMER CONTAINMENT PLAN, SECTIONS AND DETAILS
D-10-2,21-101416-400	SECTIONS AND DETAILS
D-10-1,21-101559-400	FINAL GRADING SECTIONS AND DETAILS
D-1,0-SKC100-400	CONSTRUCTION ACCESS PLAN

REFERENCE DRAWINGS

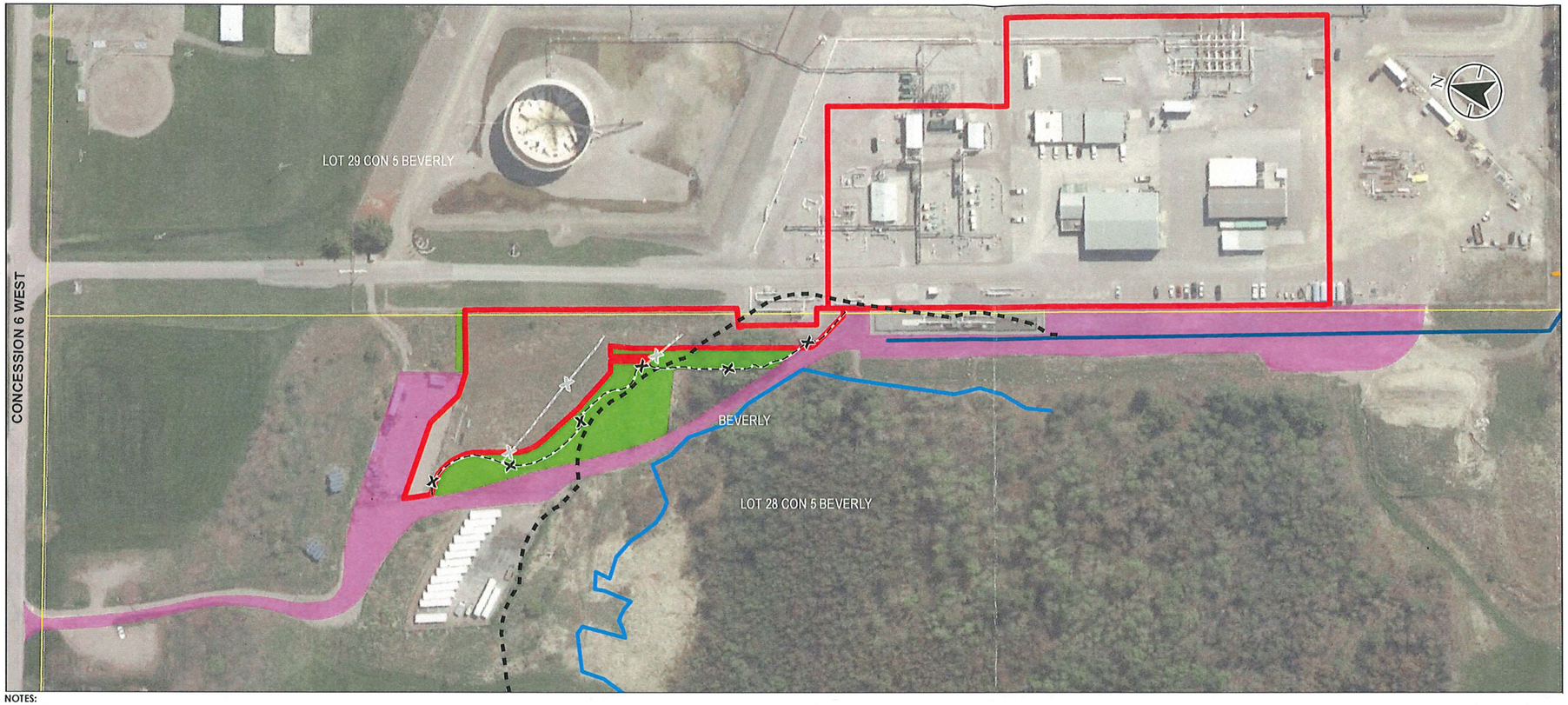
REV NO.	REVISION DESCRIPTION	DATE BY	CHK	APPR

ENBRIDGE

WESTOVER (ON) TERMINAL
UNITED AREA
FINAL GRADING PLAN

BY: MP	CHK: DK	ENG: DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-12-14	SCALE: 1:400		STATUS: CONSTRUCTION

DWG NO.: D-10-1.21-101558-400 REV NO.: 0.C



Stantec

Legend

- Permanent Westover Facility Footprint
- Temporary Work Space (Non-Vegetated)
- Temporary Work Space (Vegetated)
- HCA Field Delineated Wetland Boundary Buffer 30m
- HCA Field Delineated Wetland Boundary (Stantec, 2020)

Enbridge Pipelines Data

- Line 10
- Line 11
- Property Boundary

Fencing

- Intermediate Silt Fence
- Main Silt Fence

APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

0 50 100 metres
1:2,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Enbridge data downloaded from CORE Nov 28, 2017.
4. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2019.

Project Location
City of Hamilton

160951192 REVA
Prepared by SW on 2021-09-07
Technical Review by SPE on 2021-07-28

Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT

Figure No.
3

Title
Erosion and Sediment Control Drawing

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, COORDINATES AND ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATES ARE ENBRIDGE PLANT GRID COORDINATES AND ELEVATIONS ARE TIED TO LOCAL WESTOVER TERMINAL BENCHMARK, BM-1, WITH AN ELEVATION OF 262.640. LOCAL ELEVATIONS ARE 1.16m HIGHER THAN GEODETIC ELEVATIONS. FOR BENCHMARK COORDINATES AND ELEVATIONS, SEE BENCHMARK TABLE ON DRAWING D-0-SKC100-400.
3. TOPOGRAPHIC SURVEY AND CADASTRAL INFORMATION PROVIDED BY J.D. BARNES LIMITED ON DRAWING 17-12-012-90.
4. THE CONSTRUCTION OF THIS SITE COMPLY WITH THE REQUIREMENTS OUTLINED IN PROVINCIAL AND HCA BYLAWS AND REGULATIONS AND THE PROJECT EPP. ALL STORM WATER PUMPING TO FOLLOW THE REQUIREMENTS OF THE EPP FOLLOWING STRATEGIES ARE THE MINIMUM EFFORTS THAT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR SUBCONTRACTOR.
5. ALL WORK IS TO BE UNDERTAKEN AND COMPLETED BY CONTRACTOR IN SUCH A MANNER AS TO PREVENT THE RELEASE OF SEDIMENT LADEN WATER, CONCRETE LEACHATE, OR OTHER DELETERIOUS SUBSTANCES OFF THE CONSTRUCTION SITE.
6. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO LIMIT THE TRANSPORT OF SEDIMENT AND DEBRIS OFFSITE.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN MUST BE INSTALLED AND IN PLACE UNTIL THE PROJECT IS ACCEPTED AS SUBSTANTIALLY COMPLETE AND ENBRIDGE PROVIDES WRITTEN AUTHORIZATION TO REMOVE EROSION AND SEDIMENT CONTROLS MEASURES.
8. EXCAVATE BEDROCK AND UNDERTAKE SECONDARY PROCESSING OF MATERIALS AS NECESSARY FOR REUSE AS ENGINEERED FILL ON SITE PER GEOTECHNICAL SPECIFICATIONS.
9. CONTROL AND CONVEY STORM WATER RUNOFF IN AN ENVIRONMENTALLY SENSITIVE MANNER AND ONLY RELEASE STORM WATER THAT MEETS QUALITY REQUIREMENTS IN THE EPP.
10. CONTRACTOR SHALL COORDINATE ALL RUN-OFF TESTING, AND DAILY WATER VOLUME INSPECTIONS, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL WORKS WITH ENBRIDGE SITE REPRESENTATIVE.
11. THE CONTRACTOR, OR HIS AGENT SHALL SAMPLE AND ANALYZE THE WATER BEING DISCHARGED FROM THE SITE AND SUBMIT WEEKLY REPORTS TO THE ENBRIDGE SITE REPRESENTATIVE IN ACCORDANCE WITH THE EPP.
12. CONTRACTOR SHALL MANAGE DUST EMISSIONS (NUISANCE DUST) AND MINIMIZE DUSTING FROM CONSTRUCTION TRAFFIC DURING CONSTRUCTION. DUST SUPPRESSION SHALL BE AS REQUIRED BY ENBRIDGE SITE REPRESENTATIVE.
13. CONTRACTOR SHALL INSTALL AND MAINTAIN A FODS VEHICLE TRACKOUT CONTROL AT THE ENTRANCE TO THE CONSTRUCTION AREA. SEE HTTPS://GETFODS.COM FOR PRODUCT DETAILS. THE TRACKOUT SYSTEM SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO PREVENT SITE SOILS CONTAMINATING THE CONSTRUCTIONW 050.000 ACCESS ROAD AND COUNTY ROADS.
14. MAINTENANCE SHALL INCLUDE REPAIRING OR REPLACING SILT FENCING AND CLEANING / REPAIRING FODS TRACKOUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
15. SILT FENCE SHALL BE INSTALLED AT THE BASE OF ANY SLOPE WHICH IS DISTURBED THROUGH THE COURSE OF CONSTRUCTION AS WELL AS AROUND THE BASE OF ANY STOCKPILES OF EARTH MATERIALS. SHOULD THE SILT FENCE BE REMOVED TO FACILITATE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE PRIOR TO REMOVING THE SILT FENCE AND SHALL INSTALL SUFFICIENT DOWNSTREAM MEASURES TO CONTAIN THE MOVEMENT OF SILT TO THE SATISFACTION OF THE ENBRIDGE SITE REPRESENTATIVE. THE SILT FENCE SHALL BE REINSTATED AT THE END OF EACH WORKDAY AND IN ADVANCE OF ANY INCLEMENT WEATHER. THE BOTTOM OF THE SILT FENCE SHALL BE ANCHORED IN ACCORDANCE WITH MTO STANDARD DETAIL FOR HEAVY DUTY SILT FENCE (PROVINCIAL STANDARD DRAWING OPSD 219.130) IN ACCORDANCE WITH THE EPP.
16. ALL EARTH MATERIAL STOCKPILES SHALL BE COVERED WITH 6 MIL POLY AND ADEQUATELY SECURED EITHER BY WEIGHTING OR STAPLING TO MINIMIZE THE MOVEMENT OF SEDIMENT DURING RAIN EVENTS AND SILT FENCE SHALL BE INSTALLED AROUND STOCKPILE PERIMETERS. STOCKPILE MATERIAL IS TO STAY OUTSIDE OF THE 30 M HCA BUFFER AREA.
17. SILT FENCES ARE TO BE INSPECTED AND REPAIRED PRIOR TO FORECAST RAIN EVENTS. FOLLOWING ALL SIGNIFICANT STORM EVENTS OR PERIODS OF EXTENDED RAIN, AND WHEN ACCUMULATED SEDIMENTS ARE GREATER THAN 150 mm ABOVE THE INSIDE TOE OF THE FENCE.
18. ALL CONCRETE SUPPLY TRUCKS SHALL BE EQUIPPED WITH WASH BUCKET SYSTEM FOR THE FLUSHING OF THE FLUME. ALL WASTE FROM THE FLUSHING OF THE FLUME SHALL BE RE-CIRCULATED INTO THE MIXING DRUM. UNDER NO CIRCUMSTANCES SHALL EXCESS CONCRETE FROM THE FLUME AND/OR TRUCK BE FLUSHED ONTO THE SITE. ROADS, OR ANY SURFACE WHICH MAY LEAD INTO A WETLAND, STORM SEWER SYSTEM, OR WATERCOURSE.
19. AN ADEQUATE SUPPLY OF EROSION AND SEDIMENT CONTROL MATERIALS SHALL BE MAINTAINED ON SITE, SUFFICIENT FOR EMERGENCY RESPONSE TO ONSITE BREACHES, REPAIRS, AND SPILLAGE OF SEDIMENT OR CONTAMINANTS.

SITE CLEARING PHASE

20. THE CONTRACTOR SHALL NOTIFY THE ENBRIDGE SITE REPRESENTATIVE OF THE INTENT TO COMMENCE CLEARING, GRUBBING, AND TOPSOIL STRIPPING OPERATIONS.
21. PRIOR TO ANY CLEARING OR EXCAVATION WORK, THE CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE TOPSOIL STRIPPING LIMIT, INSTALL SAR EXCLUSION FENCING (HEAVY DUTY SILT FENCE) IN THE LOCATION SHOWN ON THE EPP, AND FODS TRACK-OUT SYSTEM AT THE CONSTRUCTION ENTRANCE.
22. SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE CONDUCTED ON A SELECTIVE AS NEEDED BASIS TO MINIMIZE THE AREA OF EXPOSED OR DISTURBED SOILS. STABILIZE THE SUBGRADE AS QUICKLY AS POSSIBLE BY EITHER SUBGRADE PREPARATION OR BY COMPACTING THE EXPOSED SURFACE TO AT LEAST 95% SPMDD AND MAINTAIN POSITIVE DRAINAGE.
23. AFTER CLEARING, GRUBBING AND TOPSOIL STRIPPING HAS BEEN COMPLETED, THE CONTRACTOR SHALL INSTALL AN INTERMEDIATE SILT FENCE IN THE LOCATION SHOWN ON THIS DRAWING. THE INTERMEDIATE SILT FENCE IS TO REDUCE EROSION OF SUBSOIL. THE INTERMEDIATE SILT FENCE WILL BE REMOVED WHEN COMPACTED CRUSHED GRAVEL COVERS THE SUBSOIL.

CONSTRUCTION PHASE

24. PLACE A 50mm THICK LAYER OF DRAINAGE STONE ON FINISHED COMPACTED GRAVEL SURFACES, BOTH TYPE 1 AND TYPE 2 FINISHES. SEE DRAWING D-1.21-SKC13-400 FOR DRAINAGE STONE GRADATION SPECIFICATION AND DRAWING D-1.21-SKC21-400 FOR EXTENTS OF SURFACE FINISHES AND FOLLOW THE EPP.
25. PRIOR TO REMOVAL OF ESC MEASURES, ALL ACCUMULATED SEDIMENT SHALL BE REMOVED. THE ONSITE STORM SEWER SHALL BE FLUSHED WITH ALL SEDIMENT BEING CAPTURED AND REMOVED. ALL SEDIMENT SHALL BE DISPOSED AT AN APPROVED OFFSITE LOCATION.
26. PRECEDING NOTES ARE AS PER THE WESTOVER (ON) TERMINAL EROSION AND SEDIMENT CONTROL PLAN (D-1.21-SKC22-400) DATED APRIL 4, 2021 (WORLEY 2021). DISCREPANCIES BETWEEN THE FINAL DESIGN WILL BE IDENTIFIED PRIOR TO CONSTRUCTION AND THE MORE STRINGENT OPTION OR REGULATORY REQUIREMENTS WILL APPLY.

\\cd1215-f01\work_group\01609\active\160951192\03_data\gis_cad\gis\mxd\current figures\HCA\160951192_Fig03_ESC.mxd Revised: 2021-09-07 By: svandamme

Seed mixes (see tables below) will be installed at areas of disturbance, unless otherwise requested by landowners or the appropriate land authority.

Notes:

1. Species cultivars, where applicable, will be determined at the time of procurement based on availability and suitability as determined by Enbridge.
2. Native seed species will be obtained from local genotypes where possible and to the extent feasible.
3. All seed mix species must have Certificates of Analysis to allow for the determination of weed and undesirable species content, and germination for each species seed lot in the mix.
4. Certificates of Analysis for each seed mix species will be reviewed by Enbridge prior to purchase. Any lot with unacceptable weed contamination or viability will be rejected.
5. Seed mix species that are unavailable in sufficient quantity or quality at a reasonable cost as determined by Enbridge at the time of procurement will be eliminated from the mix and the proportions of other species in the mix increased.
6. Drill seeding will be used on all segments to be seeded with the exception of slopes which are too steep to safely operate the seed drill equipment, areas too wet to access with seed drill equipment without causing rutting and poor seed placement, stony areas which may cause damage to the seed drill equipment or impede proper seed placement, and any other areas which cannot be feasibly reached with the seed drill equipment.
7. Broadcast seeding will be used on non-cultivated lands where drill seeding cannot be conducted.
8. All drill and broadcast seeding equipment will be calibrated for each seed mix using the manufacturer's recommended procedures; alternate calibration procedures may be used if approved by the Environmental Inspector.
9. The seeding contractor will develop appropriate seeding procedures to ensure even distribution of all species in each seed mix and have these procedures approved by the Environmental Inspector. This may involve, but not be limited to:
   - using seed box agitators to prevent stratification of large and small seeds;
   - seeding large and small seed species from separate seed boxes, or in separate passes with the seeder; or
   - using an inert filler agent with the seed mix.
10. Seeding depth with seed drills will target to be 1-2 cm in fine textured soils and 1-3 cm in sandy soils.
11. Where site and safety conditions allow, broadcast seed will be harrowed into a depth of 1-3 cm, using standard agricultural harrows or other approved equipment. Harrowing will be conducted immediately following broadcasting. Steep slopes that cannot be safely harrowed will be hand raked, if feasible, to incorporate seed.
12. Only the salvaged or cultivated width of the construction right-of-way will be seeded with minimal overlap onto undisturbed areas. Swing-out passes will be made to seed scalped areas adjacent to the cultivated portion as needed.
13. Complete coverage of the disturbed area will be ensured by using a sufficient number of passes. Damage to the native sod adjacent to the disturbed portion of the construction right-of-way will be avoided.
14. Broadcast seeding will be delayed during high wind conditions, as directed by the Environmental Inspector.
15. Seeding rates can vary by season (*i.e.*, spring versus fall). Seeding rates are to be confirmed by a Resource Specialist prior to seeding.

ENBRIDGE

MP Environmental

SEED MIXES

July 2021

573150 573300 573450 573600

4797900 4797750 4797600

N

Early Succession Dry Prairie Meadow Mix		
%	Common Name	Latin Name
2	Arrow Leaved Aster	*Aster sagittifolius*
15	Big Bluestem	*Andropgon gerarrdi*
6	Black Eyed Susan	*Rudbeckia hirta*
25	Canada Wild Rye	*Elymus canadensis*
5	Foxglove/Beardtongue	*Penstemon digitalis*
5	New England Aster	*Aster novae-anglaie*
25	Switchgrass	*Panicum virgatum*
15	Virginia Wild Rye	*Elymus virginicus*
2	Wild Bergamot	*Monarda fistulosa*
Seed mix should be applied at a rate of 25 kg/ha (23 lbs/acre) or at a rate of 500g/180 m² for smaller areas.		
Cover Crop A cover crop is a fast-germinating and establishing annual/biennial grass cereal or short-lived perennial grass species that is seeded to quickly stabilize topsoil, control erosion and limit weed growth while pre-disturbance vegetation is restored.		
Potential annual/biennial grass cereal grain or short-lived perennial grass cover crop species include oats, barley, winter wheat, fall rye, triticale, annual ryegrass, slender/awned wheatgrass or Canada wild rye.		

Native Prairie Meadow Mixture		
%	Common Name	Latin Name
7	Black Eyed Susan	*Rudbeckia hirta*
1	Early Goldenrod	*Solidago juncea*
25	Fowl Bluegrass/ Fowl Meadowgrass	*Poa palustris*
2	Foxglove/Beardtongue	*Penstemon digitalis*
20	Indiangrass	*Sorghastum nutans*
15	Little Blue Stem	*Schizachyrium scoparium*
1	New England Aster	*Aster novae-anglaie*
1	Showy Tick Trefoil	*Desmodium canadense*
25	Switchgrass	*Panicum virgatum*
1	White Vervain	*Verbena urticifolia*
2	Wild Bergamot	*Monarda fistulosa*
Seed mix should be applied at a rate of 25 kg/ha (23 lbs/acre) or at a rate of 500g/180 m² for smaller areas.		
Cover Crop A cover crop is a fast-germinating and establishing annual/biennial grass cereal or short-lived perennial grass species that is seeded to quickly stabilize topsoil, control erosion and limit weed growth while pre-disturbance vegetation is restored.		
Potential annual/biennial grass cereal grain or short-lived perennial grass cover crop species include oats, barley, winter wheat, fall rye, triticale, annual ryegrass, slender/awned wheatgrass or Canada wild rye.		

Stantec

Legend

- Permanent Westover Facility Footprint
- Temporary Work Space
- Re-vegetated area
- HCA Field Delineated Wetland Boundary Buffer 30m
- HCA Field Delineated Wetland Boundary (Stantec, 2020)

Enbridge Pipelines Data

- Line 10
- Property Boundary

Fencing

- Intermediate Silt Fence
- Main Silt Fence
- Recommended SAR Exclusion Fence

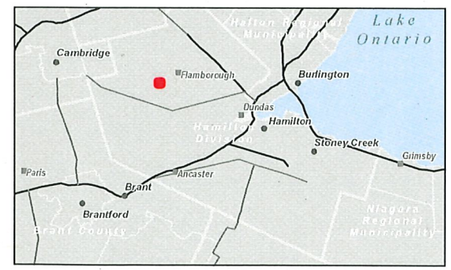
APPROVED BY THE HAMILTON CONSERVATION AUTHORITY
Date: Oct 18/21
Sig:
UNDER HCA REGULATION 161/06

0 50 100 metres

1:2,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Enbridge data downloaded from CORE Nov 28, 2017.
4. Orthoimagery © First Base Solutions, 2021. Imagery Date, 2019.



Project Location
City of Hamilton

160951192 REVA
Prepared by SW on 2021-09-07
Technical Review by SPE on 2021-07-28

Client/Project
ENBRIDGE PIPELINES INC.
LINE 10 WESTOVER FACILITY PROJECT

Figure No.
4

Title
Revegetation Drawing

K:\cd1215-01\work_group\01609\Active\160951192\03_data\gis_cad\gis\mxd\deliverable\report_figures\HCA\160951192_Fig04_Revegetation_Plan.mxd Revised: 2021-09-07 By: svandamme

Committee of Adjustment
City Hall, 5th Floor,
71 Main St. W.,
Hamilton, ON L8P4Y5

Phone: (905) 546-2424 ext. 4221
Email: cofa@hamilton.ca

APPLICATION FOR CONSENT TO SEVER LAND
UNDER SECTION 53 OF THE *PLANNING ACT*

Office Use Only

Date Application Received:	Date Application Deemed Complete:	Submission No.:	File No.:

1 APPLICANT INFORMATION

1.1, 1.2

	NAME	ADDRESS	
Registered Owners(s)	[redacted]		
Applicant(s)*			
Agent or Solicitor			

* Owner's authorisation required if the applicant is not the owner.

1.3 All correspondence should be sent to ☐ Owner ☐ Applicant ☒ Agent/Solicitor

2 LOCATION OF SUBJECT LAND

Complete the applicable lines

2.1 Area Municipality	Lot	Concession	Former Township
Town of Flamborough	28	5	Township of Beverly
Registered Plan N°.	Lot(s)	Reference Plan N°.	Part(s)
	28		1, 2, 3
Municipal Address			Assessment Roll N°.
1442 Concession 6 West			

2.2 Are there any easements or restrictive covenants affecting the subject land?
☐ Yes ☒ No
If YES, describe the easement or covenant and its effect:

3 PURPOSE OF THE APPLICATION

3.1 Type and purpose of proposed transaction: (check appropriate box)

a) Urban Area Transfer **(do not complete Section 10)**:

☐ creation of a new lot Other: ☐ a charge

☐ addition to a lot
☐ an easement
☐ a lease
☐ a correction of title

b) Rural Area / Rural Settlement Area Transfer **(Section 10 must be completed):**

☐ creation of a new lot
☐ creation of a new non-farm parcel
(i.e. a lot containing a surplus farm dwelling resulting from a farm consolidation)
☐ addition to a lot

Other: ☐ a charge
☒ a lease
☐ a correction of title
☐ an easement

Lease will include access and project area.

3.2 Name of person(s), if known, to whom land or interest in land is to be transferred, leased or charged:
Westover Express Pipeline Limited

3.3 If a lot addition, identify the lands to which the parcel will be added:

4 DESCRIPTION OF SUBJECT LAND AND SERVICING INFORMATION

4.1 Description of land intended to be **Severed**:

Frontage (m)	Depth (m)	Area (m² or ha)
7.6m	Irregular shape	0.611 ha

Land to undergo the long term lease will include the project area and access route.
Parts 1-5 (including land on Lot 29) of the attached R-Plan will be included in the lease.

Existing Use of Property to be severed:
☐ Residential ☐ Industrial ☐ Commercial
☐ Agriculture (includes a farm dwelling) ☐ Agricultural-Related ☒ Vacant
☐ Other (specify)

Proposed Use of Property to be severed:
☐ Residential ☒ Industrial ☐ Commercial
☐ Agriculture (includes a farm dwelling) ☐ Agricultural-Related ☐ Vacant
☐ Other (specify)

Building(s) or Structure(s):
Existing: N/A

Proposed: Electrical Switchgear Building, Generator with access platform, transformer, and cable tray

Type of access: (check appropriate box)
☐ provincial highway
☐ municipal road, seasonally maintained
☒ municipal road, maintained all year
☐ right of way
☐ other public road

Type of water supply proposed: (check appropriate box)
☐ publicly owned and operated piped water system
☐ privately owned and operated individual well
☐ lake or other water body
☒ other means (specify)
Site will not be serviced

Type of sewage disposal proposed: (check appropriate box)
☐ publicly owned and operated sanitary sewage system
☐ privately owned and operated individual septic system
☒ other means (specify) Site will not be serviced

4.2 Description of land intended to be **Retained**:

Frontage (m)	Depth (m)	Area (m² or ha)
±201 (irregular)	± 968	± 38 ha

Existing Use of Property to be retained:
☐ Residential ☒ Industrial ☐ Commercial
☐ Agriculture (includes a farm dwelling) ☐ Agricultural-Related ☐ Vacant
☐ Other (specify)

Proposed Use of Property to be retained:

☐ Residential ☒ Industrial ☐ Commercial
☐ Agriculture (includes a farm dwelling) ☐ Agricultural-Related ☐ Vacant
☐ Other (specify) _____

Building(s) or Structure(s):

Existing: N/A

Proposed: N/A

Type of access: (check appropriate box)

☐ provincial highway ☐ right of way
☐ municipal road, seasonally maintained ☐ other public road
☒ municipal road, maintained all year

Type of water supply proposed: (check appropriate box)

☐ publicly owned and operated piped water system ☐ lake or other water body
☐ privately owned and operated individual well ☒ other means (specify)
Site will not be serviced

Type of sewage disposal proposed: (check appropriate box)

☐ publicly owned and operated sanitary sewage system
☐ privately owned and operated individual septic system
☒ other means (specify) Site will not be serviced

4.3 Other Services: (check if the service is available)

☒ electricity ☒ telephone ☒ school bussing ☒ garbage collection

5 CURRENT LAND USE

5.1 What is the existing official plan designation of the subject land?

Rural Hamilton Official Plan designation (if applicable): Rural

Urban Hamilton Official Plan designation (if applicable) _____

Please provide an explanation of how the application conforms with a City of Hamilton Official Plan.

The in-effect City of Hamilton Official Plan identifies the Subject Land as being within the Rural land use designation. The severance of a lot for existing resource-based commercial and existing resource-based industrial uses may be considered in accordance with Section F.1.14.2, Lot Creation policies of the Official Plan:

"1.14.2.1 (g) Severances may be granted for the purposes of long-term lease agreements for petroleum resource works, mineral aggregate resource extraction, and infrastructure works provided a separate lot is not created for a dwelling or any non-farm use other than petroleum resource works, mineral aggregate resource extraction, and infrastructure works."

This application conforms with the City of Hamilton Official Plan.

5.2 What is the existing zoning of the subject land? A2 (Rural)
If the subject land is covered by a Minister's zoning order, what is the Ontario Regulation Number? N/A

5.3 Are any of the following uses or features on the subject land or within 500 metres of the subject land, unless otherwise specified. Please check the appropriate boxes, if any apply.

Use or Feature	On the Subject Land	Within 500 Metres of Subject Land, unless otherwise specified (indicate approximate distance)
An agricultural operation, including livestock facility or stockyard	☐	Approximately 350m to the subject land
A land fill	☐	
A sewage treatment plant or waste stabilization plant	☐	
A provincially significant wetland	☒	Located on retained lands

A provincially significant wetland within 120 metres	☒	Approximately 32m to the severed parcel
A flood plain	☐	
An industrial or commercial use, and specify the use(s)	☒	Used for Enbridge terminal station lands
An active railway line	☐	
A municipal or federal airport	☐	

6 PREVIOUS USE OF PROPERTY

☐ Residential ☒ Industrial ☐ Commercial
☐ Agriculture ☐ Vacant ☐ Other (specify)

6.1 If Industrial or Commercial, specify use Used for Enbridge terminal station lands

6.2 Has the grading of the subject land been changed by adding earth or other material, i.e., has filling occurred? Filling has not occurred, but the area will have a change of grade with a grading plan.
☐ Yes ☒ No ☐ Unknown

6.3 Has a gas station been located on the subject land or adjacent lands at any time?
☐ Yes ☒ No ☐ Unknown No gas station, but there are 2 aboveground 500 gallon fuel storage tanks onsite (gas and diesel) for equipment refueling.

6.4 Has there been petroleum or other fuel stored on the subject land or adjacent lands?
☒ Yes ☐ No ☐ Unknown The adjacent Westover terminal is a hydrocarbon storage facility.

6.5 Are there or have there ever been underground storage tanks or buried waste on the subject land or adjacent lands? There are two underground process sump tanks, and a "utility" sump used mostly to catch wash water from cleaning equipment and parts. No waste or flare pits have been located onsite.
☒ Yes ☐ No ☐ Unknown

6.6 Have the lands or adjacent lands ever been used as an agricultural operation where cyanide products may have been used as pesticides and/or biosolids was applied to the lands? No records have indicated Enbridge has ever used Cyanide products as a pesticide. Sewage/sludge is not applied to the surface at the Westover Terminal.
☐ Yes ☒ No ☐ Unknown

6.7 Have the lands or adjacent lands ever been used as a weapons firing range?
☐ Yes ☒ No ☐ Unknown The terminal has never been used as a weapons range.

6.8 Is the nearest boundary line of the application within 500 metres (1,640 feet) of the fill area of an operational/non-operational landfill or dump?
☐ Yes ☒ No ☐ Unknown No Dumps/landfills are located within 500 feet of the Westover Terminal.

6.9 If there are existing or previously existing buildings, are there any building materials remaining on site which are potentially hazardous to public health (e.g., asbestos, PCB's)?
☐ Yes ☒ No ☐ Unknown The proposed development area is undeveloped.

6.10 Is there reason to believe the subject land may have been contaminated by former uses on the site or adjacent sites? The adjacent Westover terminal is a hydrocarbon storage facility with the potential for hydrocarbon impacts, however no exceedance of applicable criteria were identified during recent groundwater monitoring data collected from monitoring wells located near the southeast and southwest edges of the proposed development area.
☐ Yes ☒ No ☐ Unknown

6.11 What information did you use to determine the answers to 6.1 to 6.10 above?

See notes next to each item. A map is attached to this application to show location of the above noted items.

6.12 If previous use of property is industrial or commercial or if YES to any of 6.2 to 6.10, a previous use inventory showing all former uses of the subject land, or if appropriate, the land adjacent to the subject land, is needed.
Is the previous use inventory attached?
☐ Yes ☒ No All items above are in regard to existing activities on-site. Enbridge was able to confirm the above from existing records. See map attached in reference to each above item.

7 PROVINCIAL POLICY

7.1 a) Is this application consistent with the Policy Statements issued under subsection of the *Planning Act*? (Provide explanation)

☒ Yes ☐ No

Under the Planning Act, the granting of a consent provisions apply to agreements, such as lease agreements, that have the effect of granting the use of land for a period of 21 years or more where the agreement may have the effect of creating a separate parcel of land.
This proposal will follow the consent to sever option for a long term lease of more than 21 years, and thus is consistent with the Planning Act.

b) Is this application consistent with the Provincial Policy Statement (PPS)?
☒ Yes ☐ No (Provide explanation)

This proposal is consistent with the PPS. The Subject Land is proposed to be used for Enbridge terminal station lands (industrial), constructing infrastructure/public utility. "Optimizing the long-term availability and use of land, resources, infrastructure and public service facilities" is a matter of supporting long-term economic prosperity as identified in Section 1.7.1(c) of the PPS.

c) Does this application conform to the Growth Plan for the Greater Golden Horseshoe?
☒ Yes ☐ No (Provide explanation)

This proposal is consistent with the Growth Plan. The policies surrounding the use of Rural Areas [Section 2.2.9(3)(c) notes "Development outside of settlement areas may be permitted on rural lands for: other rural land uses that are not appropriate in settlement areas provided they are compatible with the rural landscape and surrounding local land uses". The proposed uses are compatible with the surrounding and existing use.

d) Are the subject lands within an area of land designated under any provincial plan or plans? (If YES, provide explanation on whether the application conforms or does not conflict with the provincial plan or plans.)
☒ Yes ☐ No

The Subject Lands are within the Protected Countryside in the Greenbelt Area, subject to the Greenbelt Plan.
"Lot creation is discouraged and may only be permitted for (c) acquiring land for infrastructure purposes; and (e) minor lot adjustments or boundary additions, provided they do not create a separate lot for a residential dwelling in prime agricultural areas, including specialty crop areas, and there is no increased fragmentation of a key natural heritage feature or key hydrologic feature" as identified in Section 4.6 Lot Creation of the Greenbelt Plan.

e) Are the subject lands subject to the Niagara Escarpment Plan?
☐ Yes ☒ No

If yes, is the proposal in conformity with the Niagara Escarpment Plan?
☐ Yes ☐ No
(Provide Explanation)

f) Are the subject lands subject to the Parkway Belt West Plan?
☐ Yes ☒ No

If yes, is the proposal in conformity with the Parkway Belt West Plan?
☐ Yes ☐ No (Provide Explanation)

g) Are the subject lands subject to the Greenbelt Plan?
☒ Yes ☐ No

If yes, does this application conform with the Greenbelt Plan?
☒ Yes ☐ No (Provide Explanation)

The Subject Lands are within the Protected Countryside in the Greenbelt Area, subject to the Greenbelt Plan.
"Lot creation is discouraged and may only be permitted for (c) acquiring land for infrastructure purposes; and (e) minor lot adjustments or boundary additions, provided they do not create a separate lot for a residential dwelling in prime agricultural areas, including specialty crop areas, and there is no increased fragmentation of a key natural heritage feature or key hydrologic feature" as identified in Section 4.6 Lot Creation of the Greenbelt Plan.

8 HISTORY OF THE SUBJECT LAND

8.1 Has the subject land ever been the subject of an application for approval of a plan of subdivision or a consent under sections 51 or 53 of the *Planning Act*?
☐ Yes ☐ No ☒ Unknown

If YES, and known, indicate the appropriate application file number and the decision made on the application.

8.2 If this application is a re-submission of a previous consent application, describe how it has been changed from the original application.

N/A

8.3 Has any land been severed or subdivided from the parcel originally acquired by the owner of the subject land? ☐ Yes ☒ No

If YES, and if known, provide for each parcel severed, the date of transfer, the name of

the transferee and the land use.

8.4 How long has the applicant owned the subject land?
Approximately 40 years.

8.5 Does the applicant own any other land in the City? ☒ Yes ☐ No
If YES, describe the lands in "11 - Other Information" or attach a separate page.

9 OTHER APPLICATIONS

9.1 Is the subject land currently the subject of a proposed official plan amendment that has been submitted for approval? ☐ Yes ☒ No ☐ Unknown

If YES, and if known, specify file number and status of the application.

9.2 Is the subject land the subject of any other application for a Minister's zoning order, zoning by-law amendment, minor variance, consent or approval of a plan of subdivision? ☒ Yes ☐ No ☐ Unknown

If YES, and if known, specify file number and status of the application(s).

File number _____ Status _____

10 RURAL APPLICATIONS

10.1 **Rural Hamilton Official Plan Designation(s)**

☐ Agricultural ☒ Rural ☐ Specialty Crop
☐ Mineral Aggregate Resource Extraction ☐ Open Space ☐ Utilities
☐ Rural Settlement Area (specify) _____ _____
Settlement Area Designation

If proposal is for the creation of a non-farm parcel resulting from a farm consolidation, indicate the existing land use designation of the abutting or non-abutting farm operation.

10.2 **Type of Application** (select type and complete appropriate sections)

☐ Agricultural Severance or Lot Addition
☐ Agricultural Related Severance or Lot Addition
☒ Rural Resource-based Commercial Severance or Lot Addition
☐ Rural Institutional Severance or Lot Addition
☐ Rural Settlement Area Severance or Lot Addition
(Complete Section 10.3)

☐ Surplus Farm Dwelling Severance from an Abutting Farm Consolidation (Complete Section 10.4)

☐ Surplus Farm Dwelling Severance from a Non-Abutting Farm Consolidation (Complete Section 10.5)

10.3 **Description of Lands**

a) Lands to be Severed:

Frontage (m): (from Section 4.1)	Area (m^2 or ha): (from in Section 4.1)
7.6 m	±0.636 ha

Existing Land Use: Vacant/Industrial Proposed Land Use: Industrial

b) Lands to be Retained:

Frontage (m): (from Section 4.2)	Area (m² or ha): (from Section 4.2)
201.5 (irregular)	38.34 ha

Existing Land Use: Industrial Proposed Land Use: Industrial

10.4 **Description of Lands (Abutting Farm Consolidation)**

a) Location of abutting farm:

(Street) (Municipality) (Postal Code)

b) Description abutting farm:

Frontage (m):	Area (m² or ha):

Existing Land Use(s): _____ Proposed Land Use(s): _____

c) Description of consolidated farm (excluding lands intended to be severed for the surplus dwelling):

Frontage (m):	Area (m² or ha):

Existing Land Use: _____ Proposed Land Use: _____

d) Description of surplus dwelling lands proposed to be severed:

Frontage (m): (from Section 4.1)	Area (m² or ha): (from Section 4.1)

Front yard set back: _____

e) Surplus farm dwelling date of construction:

☐ Prior to December 16, 2004 ☐ After December 16, 2004

f) Condition of surplus farm dwelling:

☐ Habitable ☐ Non-Habitable

g) Description of farm from which the surplus dwelling is intended to be severed (retained parcel):

Frontage (m): (from Section 4.2)	Area (m² or ha): (from Section 4.2)

Existing Land Use: _____ Proposed Land Use: _____

10.5 **Description of Lands (Non-Abutting Farm Consolidation)**

a) Location of non-abutting farm

(Street) (Municipality) (Postal Code)

b) Description of non-abutting farm

Frontage (m):	Area (m² or ha):

Existing Land Use(s): _____ Proposed Land Use(s): _____

c) Description of surplus dwelling lands intended to be severed:

Frontage (m): (from Section 4.1)	Area (m² or ha): (from Section 4.1)

Front yard set back: _____

d) Surplus farm dwelling date of construction:

☐ Prior to December 16, 2004 ☐ After December 16, 2004

e) Condition of surplus farm dwelling:

☐ Habitable ☐ Non-Habitable

f) Description of farm from which the surplus dwelling is intended to be severed (retained parcel):

Frontage (m): (from Section 4.2)	Area (m² or ha): (from Section 4.2)

Existing Land Use: _____ Proposed Land Use: _____

11 OTHER INFORMATION

Is there any other information that you think may be useful to the Committee of Adjustment or other agencies in reviewing this application? If so, explain below or attach on a separate page.

Additional Enbridge-owned property in Hamilton
PIN 175820014
PIN 175420013
PIN 175420012
PIN 175370134
PIN 175370119

12 SKETCH (Use the attached Sketch Sheet as a guide)

12.1 The application shall be accompanied by a sketch showing the following in metric units:

(a) the boundaries and dimensions of any land abutting the subject land that is owned by the owner of the subject land;

(b) the approximate distance between the subject land and the nearest township lot line or landmark such as a bridge or railway crossing;

(c) the boundaries and dimensions of the subject land, the part that is intended to be severed and the part that is intended to be retained;

(d) the location of all land previously severed from the parcel originally acquired by the current owner of the subject land;

(e) the approximate location of all natural and artificial features (for example, buildings, barns, railways, roads, watercourses, drainage ditches, banks of rivers or streams, wetlands, wooded areas, wells and septic tanks) that,

i) are located on the subject land an on land that is adjacent to it, and
ii) in the applicant's opinion, may affect the application;

(f) the current uses of land that is adjacent to the subject land (for example, residential, agricultural or commercial);

(g) the location, width and name of any roads within or abutting the subject land, indicating whether it is an unopened road allowance, a public travelled road, a private road or a right of way;

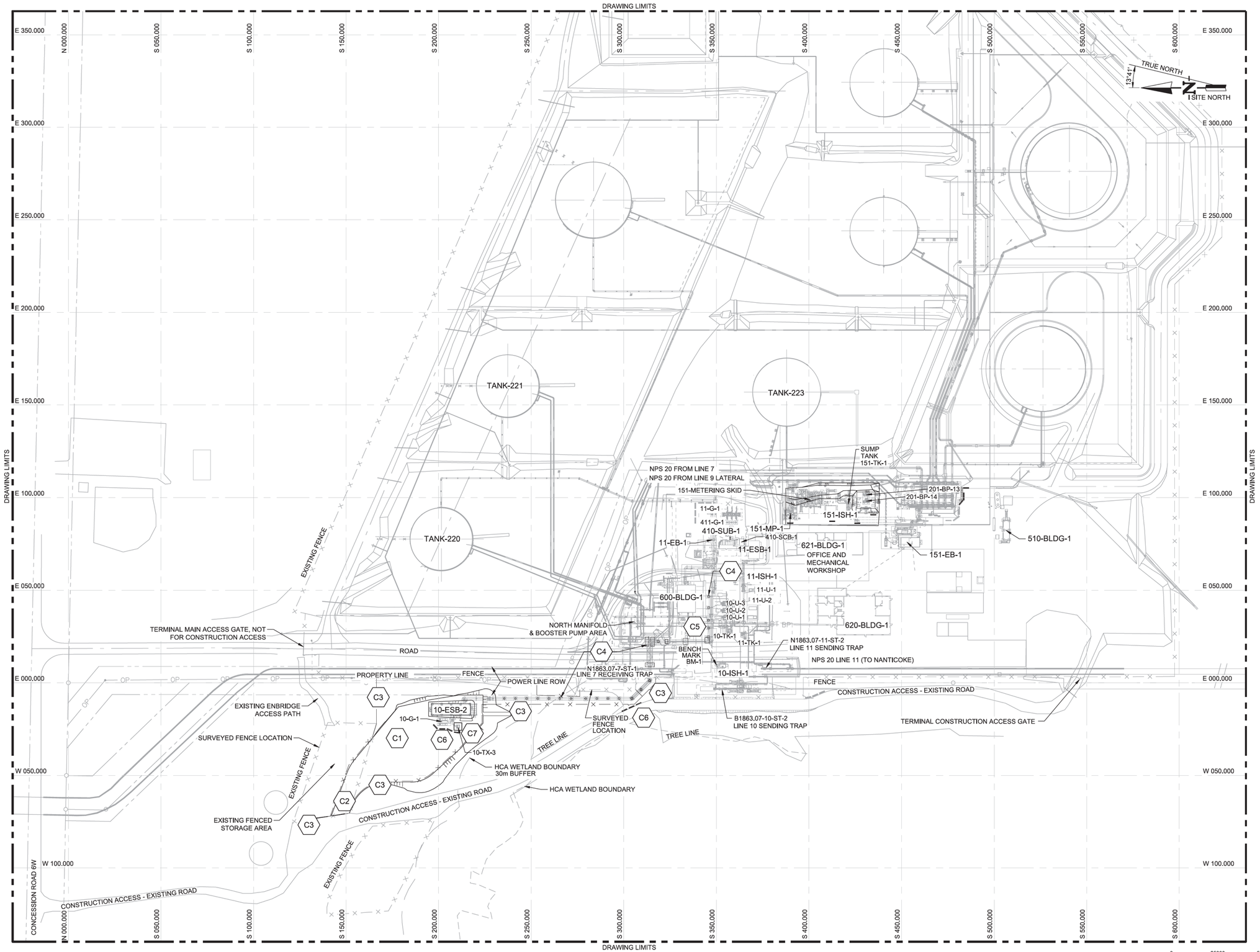
(h) the location and nature of any easement affecting the subject land.

13 ACKNOWLEDGEMENT CLAUSE

I acknowledge that The City of Hamilton is not responsible for the identification and remediation of contamination on the property which is the subject of this Application – by reason of its approval to this Application.

Jan 18, 2022
Date


Signature of Owner



C1 SITE GRADING

C2 ACCESS ROAD

C3 FENCING AND GATES

C4 EXCAVATE TO BEDROCK FOR CONCRETE FOOTINGS

C5 EXCAVATE FOR PIPE REMOVAL AND LINE 10 SUCTION HEADER

C6 PLACE JERSEY BARRIERS

C7 CONSTRUCT TRANSFORMER CONTAINMENT

ISSUED FOR CONSTRUCTION

REV:	PROJECT TITLE:	SEQ #:
0.D	LINE 10 CARVE OUT	C10

AFE:	20020043	PROJ NO:	2000186
WP NO:		DATE:	2020-08-18
BY:	MP	ENG:	DKNAPIK
CHK:	MK	ENB APPR:	SAHMADIAN

REV	SUBSEQUENT REVISION	DATE BY	APPR
0.A	ISSUED FOR 30% REVIEW	2020-10-16 MP	DK
0.B	ISSUED FOR 60% REVIEW	2021-01-11 DPP	DK
0.C	ISSUED FOR 90% REVIEW	2021-04-16 MP	DK
0.D	ISSUED FOR CONSTRUCTION	2021-07-12 HH	DK

REFERENCE DRAWINGS

REV NO	REVISION DESCRIPTION	DATE BY	CHK	APPR

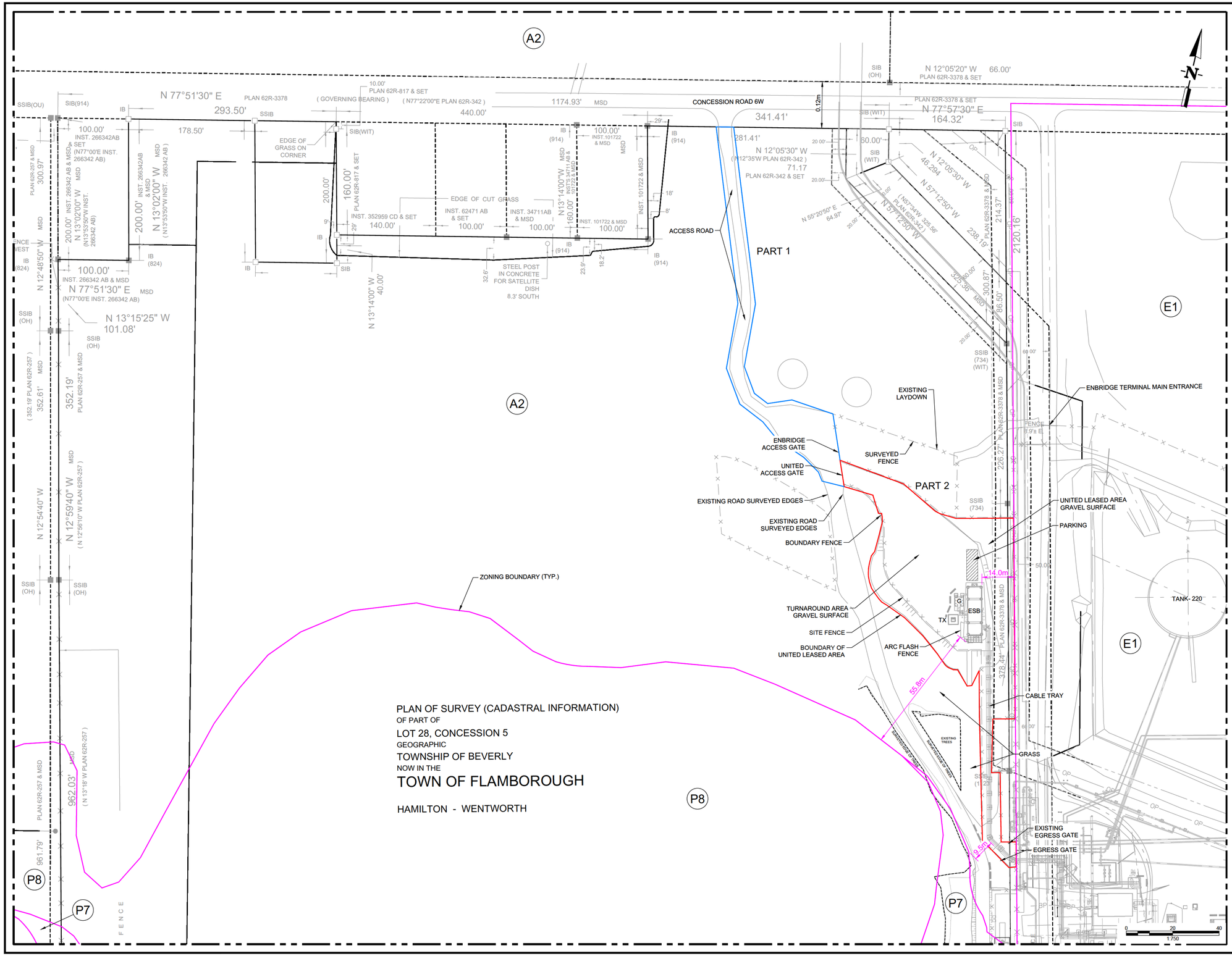
ENBRIDGE

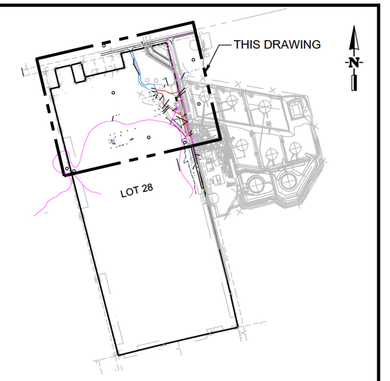
WESTOVER (ON) TERMINAL
LINE 10 CARVE OUT
AFE 20020043
CIVIL SCOPE OF WORK - CWP 100

BY: MP	CHK: DK	ENG, :DKNAPIK	ENB APPR: SAHMADIAN
DATE: 2020-10-05		SCALE: 1:1000	STATUS: CONSTRUCTION

DWG NO.: D-1.0-SKCSCOPE1-400

REV NO: 0.D





LOCATION PLAN

NOTES:

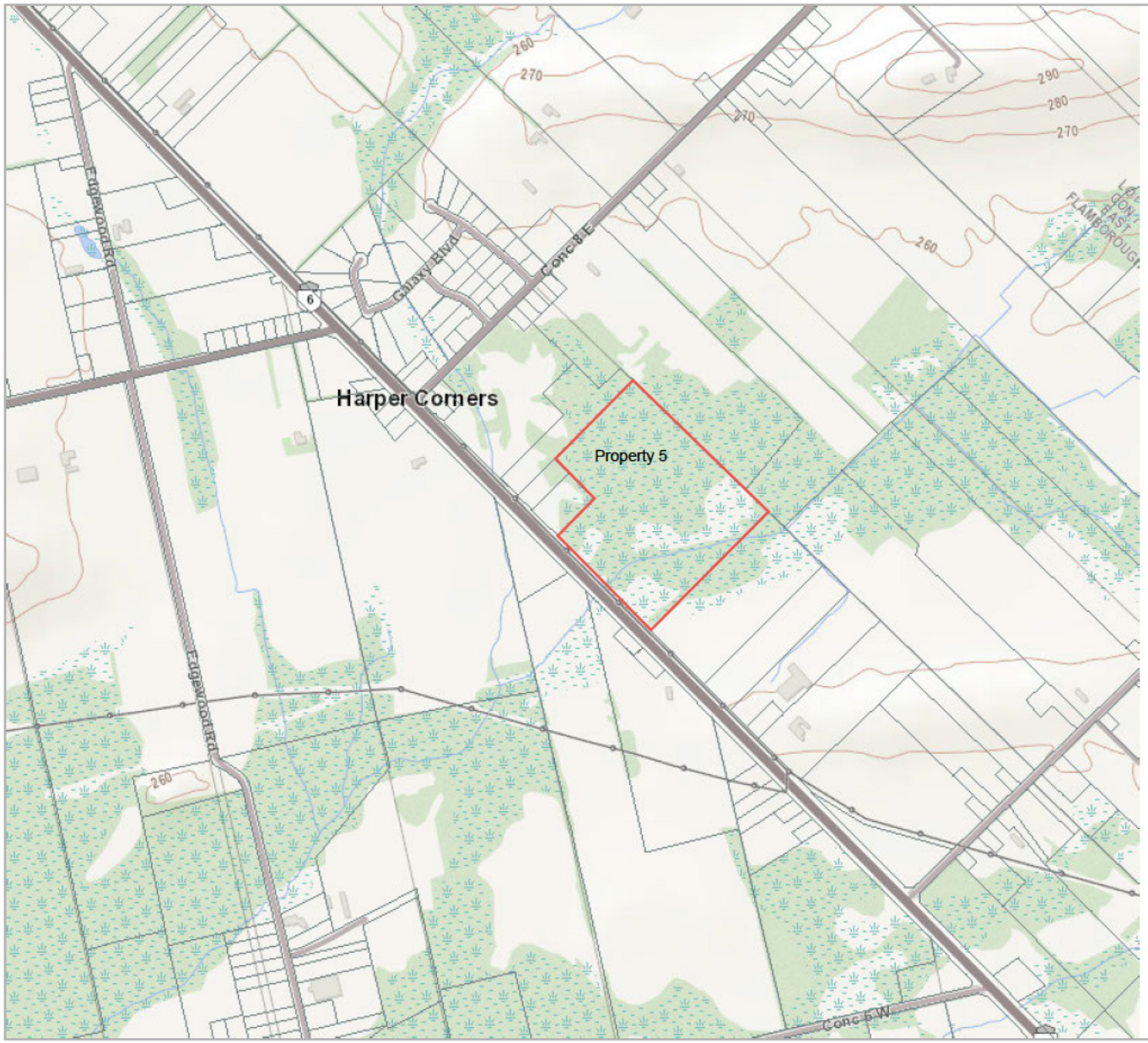
1. CADASTRAL SURVEY INFORMATION SHOWN ON THIS DRAWING IS FROM ENBRIDGE DRAWING D-1.11-6861-400.
2. DIMENSIONS ARE IN METRES AND SHOWN THUS 201.5m (+/-). DIMENSIONS FROM ORIGINAL SURVEY DRAWING ARE SHOWN AS 60.00'.
3. FIRE ROUTE IS THE SAME AS TRAFFIC CIRCULATION ON THE EXISTING ACCESS ROAD.

LEGEND:

- ZONING BOUNDARY
- P8 — ZONING LABEL
- PART 1, ACCESS
- PART 2, UNITED LEASE PARCEL BOUNDARY
- WORKER PARKING
- ESB — ELECTRICAL SWITCHGEAR BUILDING (21.2m x 6.2m BUILDING)
- G — GENERATOR c/w ACCESS PLATFORM
- TX — TRANSFORMER
- CHAIN LINK FENCE, 2m + BARBED WIRE TOP

SKETCH 204_REV 00

UNITED PARCEL ZONING PLAN
(FOR PLANNING APPLICATION PURPOSES)
2021-DEC-17



ENBRIDGE

Westover Terminal Expansion

Additional Enbridge Properties

N

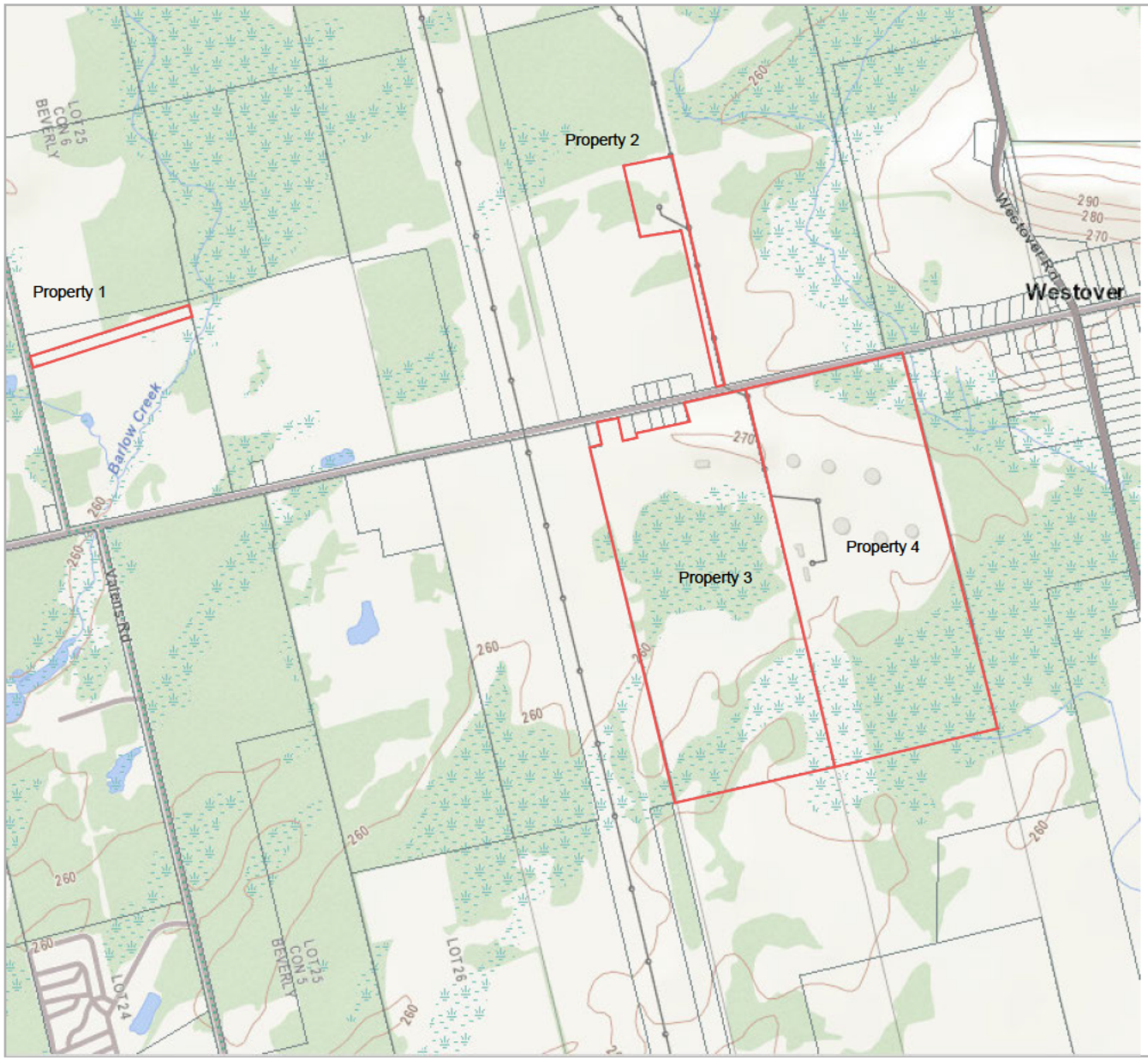
Parcel Boundary

Enbridge Property

Road

Enbridge Owned Properties:

Property 5: PIN 17582-0014



ENBRIDGE

Westover Terminal Expansion

Additional Enbridge Properties

N

Parcel Boundary

Enbridge Property

Road

Enbridge Owned Properties:

Property 1: PIN 17537-0119

Property 2: PIN 17537-0134

Property 3: PIN 17542-0012

Property 4: PIN 17542-0013