PDF – A17 ENGINEERING PLANS PREPARED BY VALDOR ENGINEERING, MARCH 1, 2024

Gmail

Grant Morris <grantmorris246@gmail.com>

e: Engineering Plans for 5329 Old Brock Road, Claremont, City of Pickering

Bill Coffey <BCoffey@valdor-engineering.com> 1 March 2024 at 16:00
To: Grant Morris <grantmorris246@gmail.com>
Cc: Oliver Beaudin <OBeaudin@valdor-engineering.com>

21130

Hi Grant,

Please find the attached the revised Post-Development Storm Drainage Plan, as requested. The plan has been revised to include the key plan and seal. Thank you.

Regards,

Bill Coffey, M.Sc., P.Eng.
Head of Water Resources

VALDOR ENGINEERING INC.

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580 The Queensway, Unit 1

Peterborough, Ontario, K9J 7H2

From: Grant Morris <grantmorris246@gmail.com>
Sent: Monday, February 19, 2024 8:06 AM
To: Bill Coffey <BCoffey@Valdor-Engineering.com>
Subject: Re: Engineering Plans for 5329 Old Brock Road, Claremont, City of Pickering

Good Morning Bill:

Please note the comments from the City. The Engineer's stamp and date are missing on Figure 1, SWM Drainage Plan Post-Development. Also show the attached key plan from the site plan on all your drawings.

Thank you,

[Quoted text hidden]

21130_Post-Development Drainage Plan.pdf
886K

VALDOR ENGINEERING INC.
File: 21130
Date: August 2023

TABLE: A.1

POST-DEVELOPMENT PEAK FLOW
(To Enhanced Grass Swale)

Surface Type	Area (ha)	R
Lawn	0.018	0.25
Forest	0.000	0.25
Roof	0.037	0.95
Impervious	0.145	0.95
Total:	0.200	**0.89**

25mm Storm

I = Rainfall Rate (mm/hr)

T =	10	minutes		
I =	41.67	mm/hr		
R =	0.89			
Area = A =	0.200	Ha		
N =	2.778			
Q = R x A x I x N			Q =	20.5 L/s

VALDOR ENGINEERING INC. **TABLE: A2**
File: 21130
August 2023

STORMWATER QUALITY CALCULATIONS

OVERALL TSS REMOVAL

Drainage to Enhanced Grass Swale LID (Catchment 101)

Surface Type	Area (Ha)	Effective TSS Removal	% Area	Weighted Overall TSS Removal
Roof Top (Before LID)	0.037	80%	18.5%	14.8%
Landscape Area (Before LID)	0.018	80%	9.0%	7.2%
Paved Area (Before LID)	0.145	0%	72.5%	0.0%
Total (Before LID)	0.200		100.0%	**22.0%**
Enhanced grass swale provides 76% removal rate to the remaining possible TSS removal of 78.4% (ie. 100%-21.6%)[1]		76%		**59.3%**
Total (After LID)	0.200		100.0%	**81.3%**

Total Drainage Within Development Boundary (Catchments 101 & 102)

Surface Type	Area (Ha)	Effective TSS Removal	% Area	Weighted Overall TSS Removal
Catchment 101 (After LID)	0.200	81.3%	64.3%	52.3%
Roof Top (Not to LID)	0.000	80%	0.0%	0.0%
Landscape Area (Not to LID)	0.080	80%	25.7%	20.6%
Paved Area (Not to LID)	0.031	0%	10.0%	0.0%
Total (Development Boundary)	0.311			**72.8%**

Notes:

1. Enhanced grass swales can achieve TSS removal rates of 76% (median) as per TRCA manual (*Low Development Stormwater Management* Planning and Design Guide V.1.0 2010)

Worksheet for 25mm_EGS

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	0.00500	m/m
Left Side Slope	3.00	m/m (H:V)
Right Side Slope	3.00	m/m (H:V)
Bottom Width	0.75	m
Discharge	0.021	m^3/s

Results

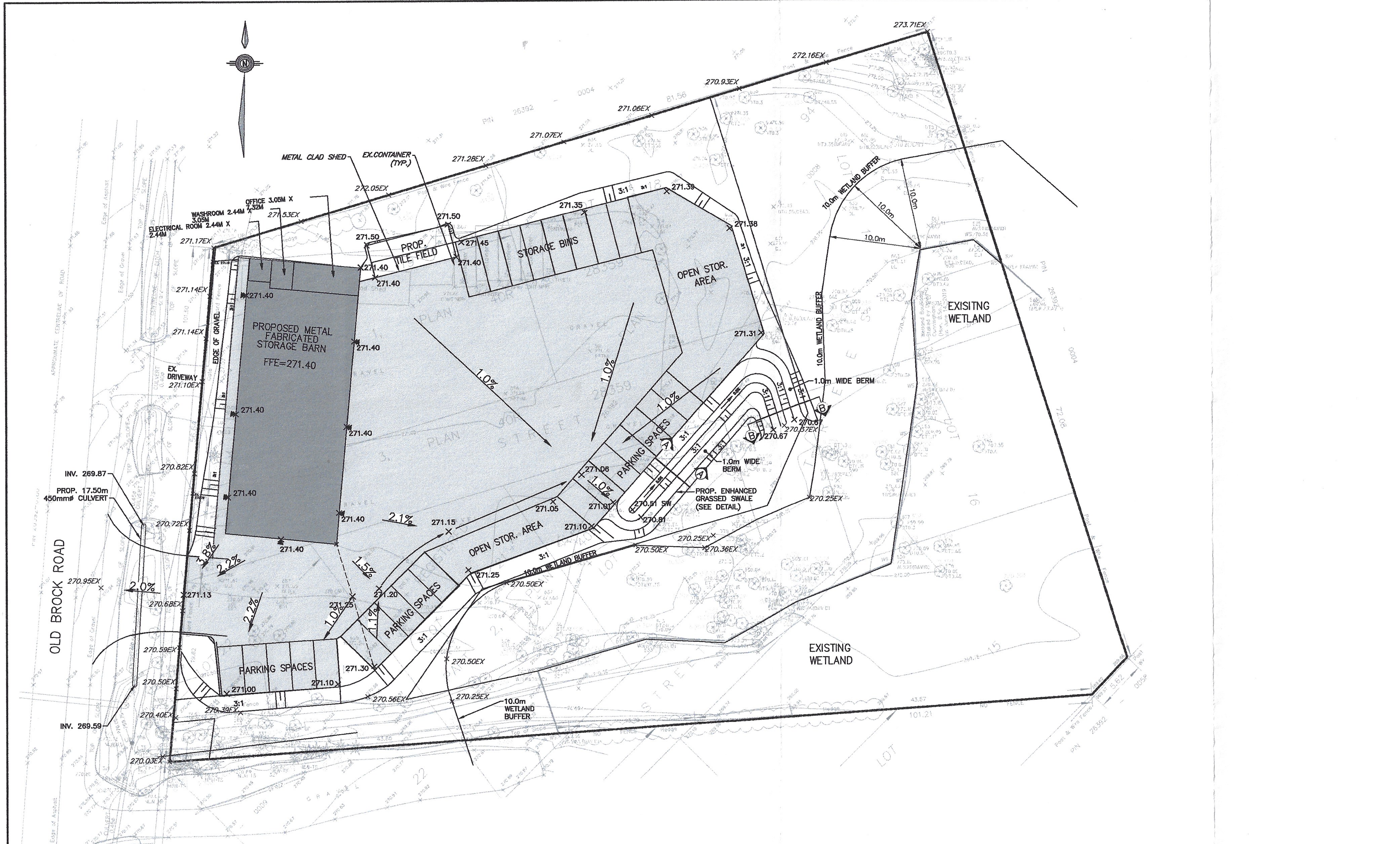
Normal Depth	0.07	m
Flow Area	0.07	m^2
Wetted Perimeter	1.21	m
Hydraulic Radius	0.06	m
Top Width	1.18	m
Critical Depth	0.04	m
Critical Slope	0.03712	m/m
Velocity	0.30	m/s
Velocity Head	0.00	m
Specific Energy	0.08	m
Froude Number	0.40	
Flow Type	Subcritical	

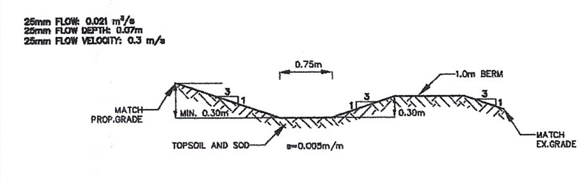
GVF Input Data

Downstream Depth	0.00	m
Length	0.00	m
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	m
Profile Description		
Profile Headloss	0.00	m
Downstream Velocity	Infinity	m/s
Upstream Velocity	Infinity	m/s
Normal Depth	0.07	m
Critical Depth	0.04	m
Channel Slope	0.00500	m/m

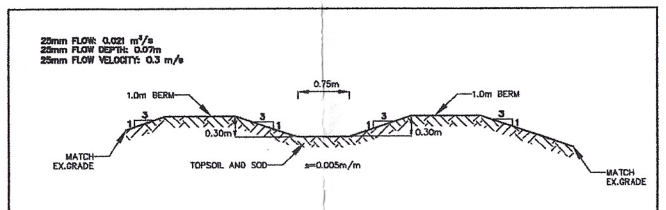




ENHANCED GRASSED SWALE

SECTION A–A

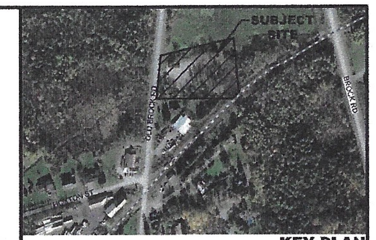
1:50



ENHANCED GRASSED SWALE

SECTION B–B

1:50



KEY PLAN
N.T.S.

LEGEND:

× 188.50EX	EXISTING ELEVATION
× 188.50	PROPOSED ELEVATION
2.0%	PROPOSED SLOPE
	PROPOSED SWALE
	PROPOSED OVERLAND FLOW DIRECTION
FFE	FINISHED GROUND FLOOR ELEVATION
DS	ROOF DOWNSPOUT
	SILTATION FENCE
	MUD MAT AT CONSTRUCTION ENTRANCE
	ROCK CHECK DAM

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

ELEVATION:
ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE CITY OF PICKERING BENCHMARK No.9-004 ELEVATION = 272.553m

No.	DATE	REVISION	BY
	08/30/2023	AS PER TRCA COMMENTS	DG

O. P. H. REAUME 100522083 AUG 23, 2023 PROVINCE OF ONTARIO LICENSED PROFESSIONAL ENGINEER

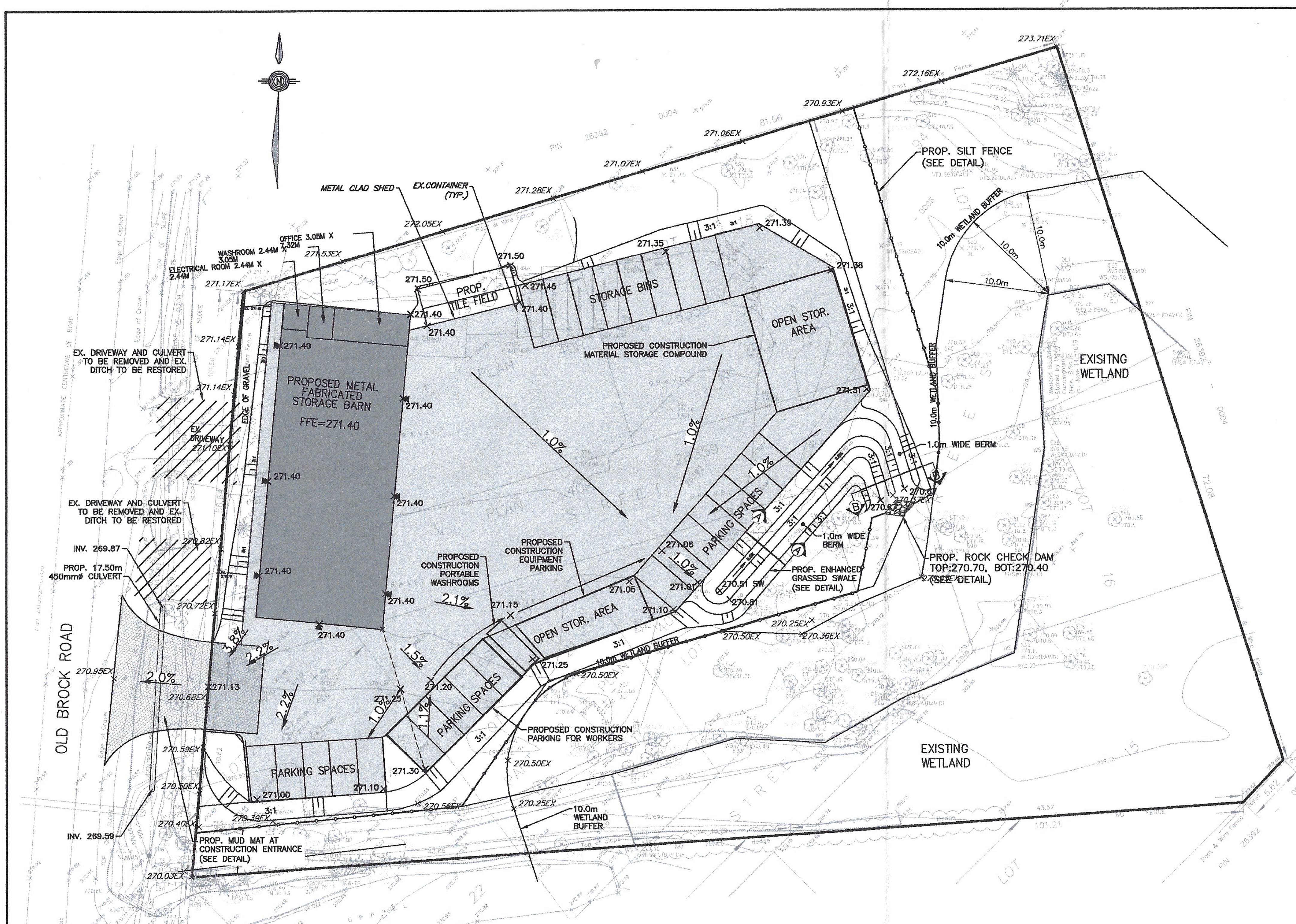
D. A. GIUDOVAZ AUG 23, 2023 PROVINCE OF ONTARIO LICENSED PROFESSIONAL ENGINEER

VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers

PROPOSED
CONTRACTOR'S YARD
5329 OLD BROCK ROAD
CITY OF PICKERING

SITE GRADING PLAN

SCALE	DATE OF DWG.	PROJECT NO.
1:200	AUG. 30, 2021	21130
DRAWN BY: P.Y.	DRAWING NO.	
CHKD BY: D.G.	SG–1	

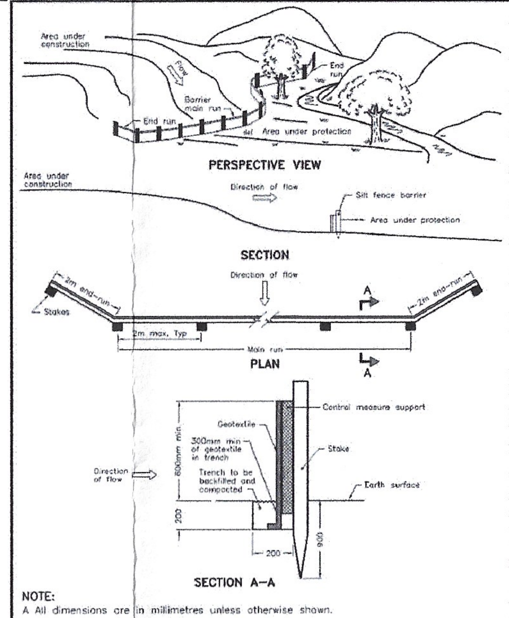


CONSTRUCTION MANAGEMENT NOTES:

1. ALL OF THE CONTRACTOR'S OPERATIONS AND ACTIVITIES SHALL BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF THE ONTARIO TRAFFIC MANUAL (OTM) FOR TEMPORARY CONDITIONS – BOOK 7, MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND AS PER THE OCCUPATIONAL HEALTH AND SAFETY ACT.
2. ALL CONSTRUCTION EQUIPMENT TO BE PARKED ON-SITE THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION. IN ADDITION, NO VEHICLE PARKING AND/OR EMPLOYEE PARKING ASSOCIATED WITH THE PROPOSED DEVELOPMENT WILL BE PERMITTED ALONG OLD BROCK ROAD.
3. HOURS OF OPERATION (INCLUDING ANY DELIVERY OF MATERIAL AND EQUIPMENT) SHALL BE AS PER CITY OF PICKERING NOISE BY-LAWS.
4. THE CONTRACTOR SHALL BE REQUIRED TO PREVENT DUST NUISANCE RESULTING FROM CONTRACTOR OPERATIONS. WHERE THE WORK WILL RESULT IN THE CREATION OF SUFFICIENT DUST TO IMPACT ADJACENT LANDOWNERS, ROADWAYS OR THE GENERAL PUBLIC, THE CONTRACTOR WILL BE RESPONSIBLE TO ENSURE DUST CONTROL MEASURES ARE IMPLEMENTED. THE COST OF ALL SUCH DUST CONTROL PREVENTATIVE MEASURES SHALL BE BORNE BY THE CONTRACTOR, INCLUDING THE PLACEMENT OF WATER OR CALCIUM CHLORIDE AS DIRECTED BY THE CONTRACT ADMINISTRATOR OR THE CITY OF PICKERING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIRT AND MUD THAT IS TRACKED ONTO THE ROADWAYS FROM VEHICLES ENTERING OR LEAVING THE SITE. THE CONTRACTOR SHALL, UPON REQUEST FROM THE CONTRACT ADMINISTRATOR, IMMEDIATELY PROCEED WITH A CLEAN-UP OPERATION AT HIS EXPENSE.
6. FOR STORMWATER RUN-OFF CONTROLS, DETAILS PERTAINING TO SILT FENCE, SEDIMENT BASIN AND MUD MAT, REFER TO THE EROSION & SEDIMENT CONTROL PLANS.
7. TEMPORARY LANE CLOSURES AND ENCROACHMENTS TRAFFIC CONTROL AND SIGNAGE DURING CONSTRUCTION, PERMANENT SIGNS AND LANE MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF THE ONTARIO TRAFFIC MANUAL (OTM) FOR TEMPORARY CONDITIONS – BOOK 7 AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
8. ALL PROPOSED TRAFFIC CONTROL DEVICES AND SIGNAGE MUST BE MAINTAINED IN THEIR PROPER LOCATION, CLEANED, WEIGHTED DOWN BY SANDBAGS ONLY AND MAINTAINED THROUGHOUT THE DURATION OF THE WORK.
9. NO LANE CLOSURES ARE PERMITTED ON WEEKDAYS BETWEEN THE HOURS OF 7:00 A.M. TO 9:30 A.M. AND 3:30 P.M. TO 6:00 P.M. THE CONTRACTOR MUST BE AWARE OF HEAVY TRAFFIC VOLUMES DURING THE MORNING AND EVENING RUSH HOURS. UNLESS OTHERWISE NOTED, WORK MUST BE SCHEDULED RESPECTING TRAFFIC FLOWS. TAKING PLACE BETWEEN 9:30AM AND 3:30PM ON WEEK-DAYS.
10. THE CONTRACTOR SHALL PROVIDE TO THE CITY, A 24-HOUR CONTACT, WHICH MUST BE MADE AVAILABLE THROUGHOUT THE DURATION OF THE PROJECT.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS IN ADVANCE OF COMMENCING WORK AS DETERMINED BY THE CITY (IE. ROAD OCCUPANCY PERMIT ETC.).

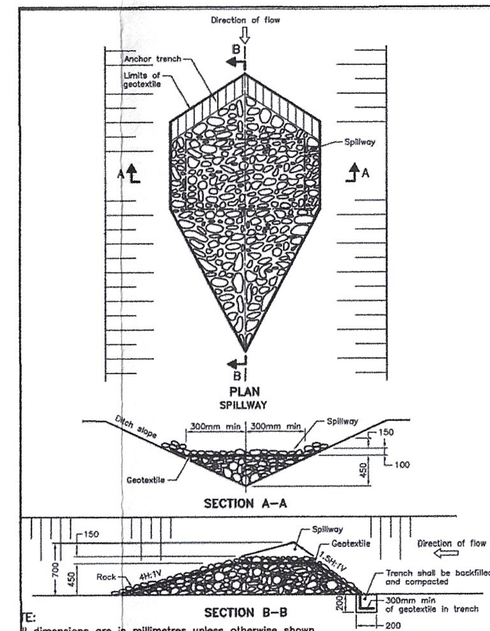
ESC NOTES AND GENERAL NOTES:

1. ALL SEDIMENT AND EROSION CONTROL MEASURES TO REMAIN THROUGHOUT THE DURATION OF THE SITE CONSTRUCTION UNLESS OTHERWISE NOTED.
2. ROUGH GRADE THE SITE BY PLACING CUT MATERIAL IN FILL AREAS. IMPORTED FILL TO BE PLACED AND COMPACTED IN FILL AREA.
3. ALL FILL TO BE PLACED AND COMPACTED TO 98% SPD ENGINEERED FILL STANDARDS WITH LIFTS NOT EXCEEDING 0.2m IN HEIGHT UNDER THE SUPERVISION AND TESTING BY THE GEOTECHNICAL ENGINEER.
4. MUD MAT TO BE REMOVED ONCE THE CONSTRUCTION IS COMPLETE.
5. SILT FENCE AND ROCK CHECK DAM TO BE INSPECTED REGULARLY AND REPAIRED/MAINTAINED AS NECESSARY
6. SILT FENCE AND ROCK CHECK DAM TO BE REMOVED UPON COMPLETION OF CONSTRUCTION AND STABILIZATION OF DISTURBED AREAS.
7. ROADS TO BE CLEANED PERIODICALLY TO AVOID ACCUMULATION OF MUD, AS REQUIRED.



NOTE:
A All dimensions are in millimetres unless otherwise shown.

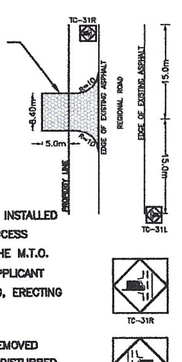
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1
HEAVY-DUTY SILT FENCE BARRIER	OPSD 219.130	



All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
TEMPORARY ROCK FLOW CHECK DAM V-DITCH	OPSD 219.210	

MINIMUM 450mm DEPTH OF 50mm CLEAR STONE OR 75mm ASPHALT ON MINIMUM 300mm DEPTH OF CRUSHER RUN LIMESTONE



NOTES

1. TEMPORARY "TRUCK ENTRANCE" SIGNS SHALL BE INSTALLED ON THE SHOULDER 150.0m IN ADVANCE OF THE ACCESS (NOTE:SEE DETAILS ON USE OF THESE SIGNES IN THE M.T.O. UNIFORM TRAFFIC CONTROL DEVICE MANUAL) THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF OBTAINING, ERECTING AND MAINTAINING THESE SIGNS.

2. TEMPORARY CONSTRUCTION ACCESS SHALL BE REMOVED FROM THE REGIONAL ROAD ALLOWANCE AND ALL UNDISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

TC-31R
TC-31L

MUD MAT FOR TEMPORARY CONSTRUCTION ACCESS
N.T.S.

KEY PLAN
N.T.S.

LEGEND:

×188.50EX	EXISTING ELEVATION
×188.50	PROPOSED ELEVATION
2.0%	PROPOSED SLOPE
	PROPOSED SWALE
	PROPOSED OVERLAND FLOW DIRECTION
FFE	FINISHED GROUND FLOOR ELEVATION
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METRIC:
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ELEVATION:
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No.	DATE	REVISION	BY
	08/30/2023	AS PER TRCA COMMENTS	DG

LICENSED PROFESSIONAL ENGINEER O. P. H. BEAUDIN 100522363 AUG 23, 2023 PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER D. A. GIUGOVAZ AUG 23, 2023 PROVINCE OF ONTARIO

VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
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E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

PROPOSED CONTRACTOR'S YARD
5329 OLD BROCK ROAD
CITY OF PICKERING

ESC+CONSTRUCTION MANAGEMENT PLAN

SCALE	DATE OF DWG.	PROJECT NO.
1:200	AUG. 30, 2021	21130
DRAWN BY P.Y.	DRAWING NO. ESC-1	
CHKD BY D.G.		

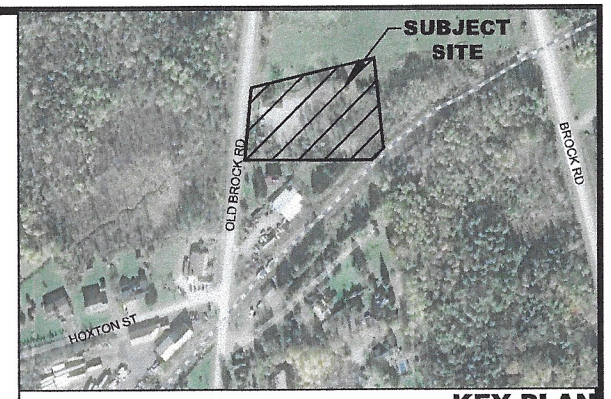
DEVELOPMENT BOUNDARY

101
0.200
TO ENHANCED GRASS SWALE

102
0.111
UNCONTROLLED

PROP. 17.50m
450mmø CULVERT

10.0m BUFFER FROM WETLAND



KEY PLAN
N.T.S.

LEGEND

101 — CATCHMENT ID
10.00 — AREA (HA)

DRAINAGE BOUNDARY

OVERLAND FLOW

LICENSED PROFESSIONAL ENGINEER
O. P. H. BEAUDIN
100522363
2023/03/01
PROVINCE OF ONTARIO

PROJECT
PROPOSED CONTRACTOR'S YARD
5329 OLD BROCK ROAD
CITY OF PICKERING

TITLE
SWM DRAINAGE PLAN POST-DEVELOPMENT

VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
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TEL (905)264-0054, FAX (905)264-0069
E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

PREPARED BY	CHECKED BY
P.Y.	O.B.
SCALE	DATE
1:400	MAR. 2024
PROJECT	
21130	**FIGURE 1**

ACAD File: S:\Projec 21\21130\Hydrotechnical\0-Working\Figures\21130_SWM Drainage Plan.dwg Layout: Pr Printed: Mar. 01, 2024