Residential Development – Apartment Building
801 Sarnia Road
City of London, Ontario
Stormwater Management Addendum

November 2021

Revised October 2024

Prepared for:
Western Prestige Village
801 Sarnia Road
London, Ontario

Prepared by:
Eng Plus Ltd.
100-609 William Street
London, ON
N6N 3G1

1.0 INTRODUCTION

This Stormwater Management Addendum is to support the proposed 10 storey apartment building at 801 Sarnia Road. The proposed building has changed from the approved site plan (5-storey, 69 units) to a 10-storey building with 182 units.

This is the addendum to the approved "Stormwater Management Plan – Residential Development, 801 Sarnia Road, and Revised May 31th, 2016" by Eng Plus Ltd.

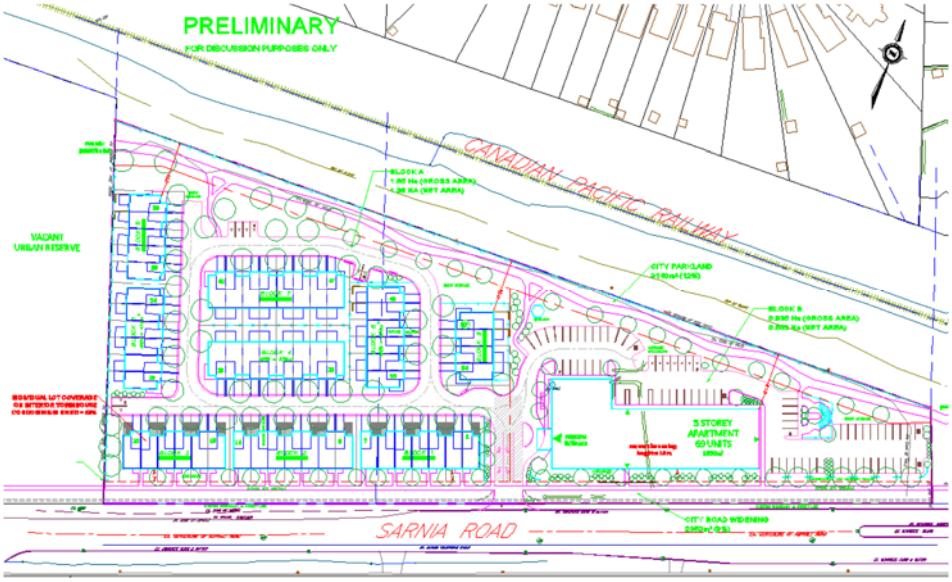
The purposes of the addendum is to provide additional design, calculations, to address the City comments dated July 26, 2021, and to address changes in the design of the site plan due to additional lands acquired.

2.0 STORMWATER MANAGEMENT

2.1 Background, Approved plan

The proposed apartment building development is part of an approved site plan number SP15-036107, comprised of medium density residential townhouses to be registered as Vacant Land Condominiums on the west portion of the subject lands and an apartment building on the east portion of the subject lands, identified as Block A (west) and Block B (east), Block A is approximately 1.65 ha. and Block B is approximately 0.94ha. as shown in Figure 1 below:

Figure 1: Site Plan illustrates the proposed development at 801 Sarnia Road, Approved Plan SP15-036107



Block A, condominium townhouse block, consists of 9 building blocks totaling 57 townhouse units had been fully developed as per the approved site plan SP15-036107.

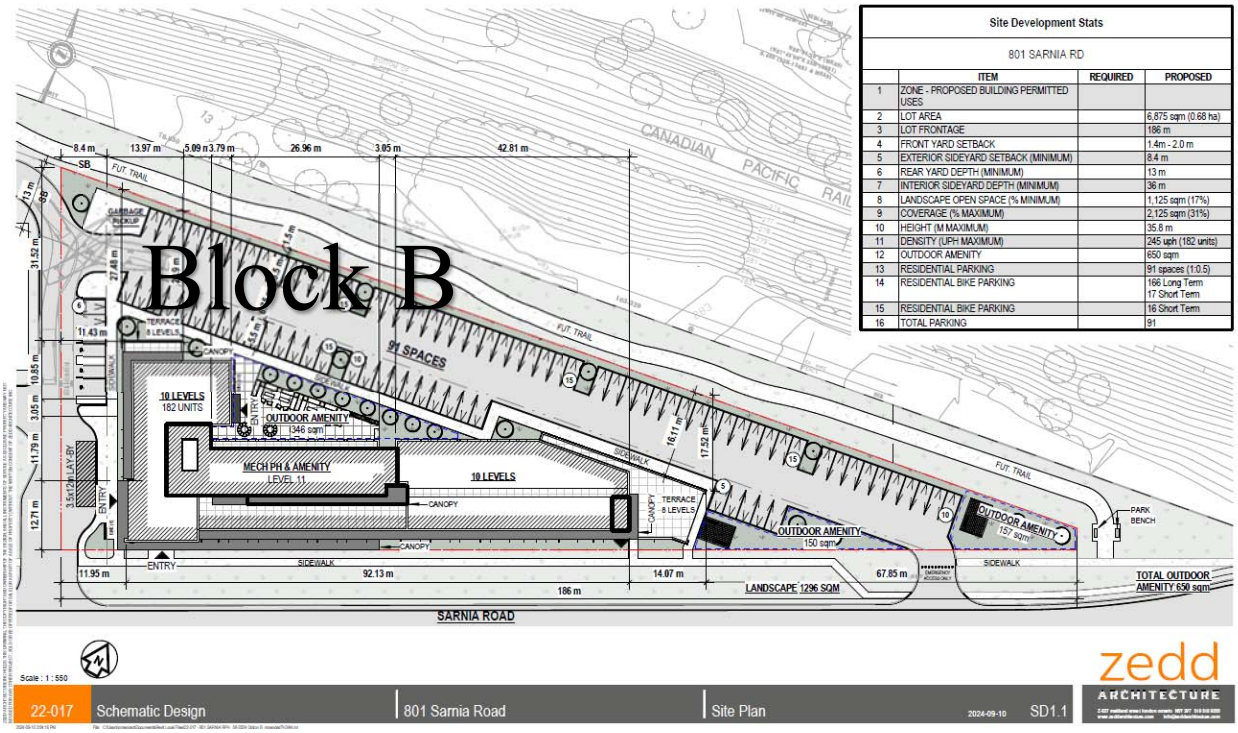
As per the approved "Stormwater Management Plan – Residential Development, 801 Sarnia Road, Revised May 31th, 2016", the stormwater runoff of Block B, apartment building block, is divided into two post development catchment areas (B1 = 0.5 ha. and B2 = 0.16 ha.), and outlet to two separate outlets in the post-development conditions.

Low impact development, bio retention system, were proposed to address water quality and quantity for the site.

2.2 Proposed Development for Apartment Building Block

The client had acquired some additional land east of the site (approximately 0.16 ha.) and included in the development of Block B. The additional land has enable the client to have more density for the development, especially, increase the proposed apartment building to 10-storey building with total of 182 units. The site plan for Block B has changed slightly to accommodate more parking spaces for the proposal. The new proposed site plan for Block B is shown in Figure 2 below:

Figure 2: Site Plan illustrates the proposed development at 801 Sarnia Road, Apartment Building



The post-development drainage areas for Block B is attached in the appendix. The proposed new site plan lay-out has removed the bioretention/storage areas for post-development stormwater management control. Below are the new proposed stormwater management plan for the development:

2.2.1 Building Area B1a, 0.206 hectares, C=0.9

Roof top storage is proposed to control post-development flows to pre-development conditions. As per calculation attached, pre-development flows for the area B1a, 0.206 hectares, are 9.2 l/s and 21.4 l/s for 2-year and 100-year storm respectively. It is proposed to control rooftop flow to 2-year pre-development flow of 9.2 l/s. The required storage are 22 cu.m and 80.0 cu.m for 2-year and 100-year post-development conditions respectively.

The available roof top storage is approximately 82 m^3 (= (2062 m^2 x 0.15m) /3 x 80%)), at maximum 0.15m depth and 80% volume.

Therefore, there is enough capacity on the roof top to attenuate the post-development flow rates to 2-year pre-development flow rate of 9.2 l/s for all storm events up to 100-year storm. During a 250-year storm event extra stormwater over the storage requirement will overflow the rooftop.

Flow control roof drain to be specified by building mechanical engineer for the restricted flow of 9.2 l/s.

Runoff water from roof top areas are considered clean, quality treatment is not required.

2.2.2 Block B, Areas B2 (0.310 Ha.) & B3 (0.131 Ha.), C=0.8

The area B2 and B3 are the surface and parking areas, approximately 0.441 hectares at runoff coefficient of C=0.8. On-site storage is required to control peak post development discharge rates to pre-development discharge rates for the 2-year to 250-year storm events and are provided in table below:

Storm Frequency	**Pre-Development Discharge (Q_{peak_pre})**	**Post-Development Discharge (Q_{peak_post})**	**Required Storage Volume (m^3)**
2 year	0.020 m^3/s	0.064 m^3/s	40.0 m^3
100 year	0.046 m^3/s	0.147 m^3/s	95.5 m^3
250 year	0.054 m^3/s	0.171 m^3/s	110.4 m^3

To provide the required storage volume above for areas B2 & B3 in the post-development conditions, an underground storage system is proposed. Stormwater runoff is directed to the underground storage system though the catchbasins and underground sewer system.

The underground storage system is proposed to have storage volume for quantity control of 2-year design storm, or 40 cubic meters so that there will not be any surface ponding during 2-year storm events. The StormTech system attached (or approved equal) can provide 30 cu.m of storage underground, and another 10 cu.m is provided in the ~140m-300mm diameter underground sewers system.

During major storm events, excess stormwater runoff will temporary pond on top of the catchbasins in the parking areas up to the depth of 0.25m for quantity storage until capacity in the sewer system available.

Our grading plan provide approximate 125 cu.m up to the depth of 0.3m on top of the catchbasins. Total storage volume provided is 165 cu.m (= 40 + 125), meets the required storage of 110 cu.m for 250-year storm event.

The stage/storage as per the following table:

STAGE-STORAGE VOLUME FOR AREAS B2 & B3

Contour Elevation (m)	Contour Area (sq. m)	Depth (m)	Incremental Volume Avg. End (cu. m)	Cumulative Volume Avg. End (cu. m)	
283.40		0.00	0	0	
283.45	28	0.05	1	1	
283.50	113	0.10	6	7	
283.55	254	0.15	13	20	
283.60	451	0.20	20	40	
283.65	697	0.25	35	75	100-Year storage
283.70	993	0.30	50	125	250-Year storage

An overflow route is provide at the north boundary to safely direct overland flow for up to 250-year storm events.

An orifice of 100mm diameter is proposed at the outlet pipe to control the maximum flow from the site to 23 l/s.

For quality control, an oil/grit separator ADS model FD-4HC (or approved equal) is proposed at the outlet, before the underground storage tank. The proposed OGS is capable of remove up to 94% TSS of runoff water, archiving MOE Enhanced Protection level of 80% TSS removal. Detail calculation is attached.

2.2.1 Block B: Area B4, 0.018 hectares, C=0.25

The additional area acquired is located east of the site with the area of 0.16 hectares. The majority of this area is dedicated to the City as road widening and park land for the multi trail along the north of the site. The remainder area of approximately 0.018 hectares is added to the site development as landscape area.

Based on the topography, this area is gently draining to the north and east toward the existing railway land. We are proposing to maintain the existing drainage patterns for this area. Grading for this area is generally direct to the north match existing ground elevations. This new area will be grass/ landscape. Post development runoff coefficient for this area B3 is unchanged (C=0.25).

Since the pre- and post- development runoff coefficients are the same and approximately 1/3 of the land (road widening dedication) will be regraded to direct the drainage to the road allowance per City's standards, the stormwater runoff draining to the north will be less in the post-development conditions.

Therefore quantity control and quality control for post-development are not required.

3.0 CONCLUSIONS

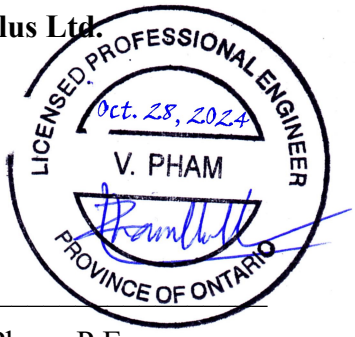
This addendum is provided to address the proposed changes in the approved site plan plan number SP15-036107 due to additional land acquired east of the site. This is to supplement to the approved "Stormwater Management Plan – Residential Development, 801 Sarnia Road, Revised May 31th, 2016" by this office.

New oil/grit separator and underground storage system, together with roof top storage are proposed to address quality and quantity post-development conditions for drainage areas B1-B3. Additional landscape area B4 is graded following the existing drainage pattern of the site and match into existing ground along the boundary.

We trust the information presented in this addendum address your concerns on stormwater management and meets your current requirements. Please do not hesitate to contact us should you have any questions or concerns.

All of which is respectfully submitted,

Eng Plus Ltd.



Vinh Pham, P.Eng.

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APPENDIX A

CALCULATIONS - ATTACHMENTS

DATA SHEET

BLOCK B1 Areas - A = 0.206 Ha.

Pre-development Flow Calculation

2-Year Pre-development Flow

Q= 2.78CIA

C=	0.25		Pre-development Run-off Coefficient
I=	64.03	mm/h	Rainfall intensity, Time to Peak = 15 minutes
A=	0.206	ha	Proposed Building area

Q = 9.2 l/sec

100-Year Pre-development Flow

Q= 2.78CIA

I=	149.56	mm/h	Rainfall intensity, Time to Peak = 15 minutes

Q = 21.4 l/sec

250-Year Pre-development Flow

Q= 2.78CIA

I=	174.67	mm/h	Rainfall intensity, Time to Peak = 15 minutes

Q = 25.0 l/sec

DATA SHEET

BLOCK B1 - Building Area, A = 0.206Ha.

STORAGE REQUIREMENT

Design Criteria:

Lot Area	A=	0.206	ha
Post-Development	C=	0.90	
Flow	Q=	2.78CIA	m^3

Storm	2 Year
a	754.36
b	6.01
c	0.81

Q_{pre_2} = **9.2 l/s**

Duration (minute)	Intensity mm/hr	Peak Runoff m^3/s		Storm runoff m^3	Release Flow m^3	Req'd Storage m^3
5	108.1	0.056		16.71	2.75	13.96
10	79.8	0.041		24.68	5.50	19.18
15	64.0	0.033		29.70	8.25	21.45
20	53.9	0.028		33.31	11.00	22.31
25	46.7	0.024		36.12	13.75	**22.36**
30	41.4	0.021		38.40	16.50	21.90

Storm	100 Year
a	2619.36
b	10.50
c	0.88

Q_{pre_2} = **9.2 l/s**

Duration (minute)	Intensity mm/hr	Peak Runoff m^3/s		Storm runoff m^3	Release Flow m^3	Req'd Storage m^3
5	232.2	0.120		35.91	2.75	33.16
10	181.4	0.093		56.09	5.50	50.59
15	149.6	0.077		69.38	8.25	61.13
30	99.4	0.051		92.18	16.50	75.68
40	81.7	0.042		101.12	22.00	79.12
50	69.7	0.036		107.75	27.50	**80.24**
55	65.0	0.033		110.49	30.25	80.23

Storm	250 Year
a	3048.22
b	10.03
c	0.89

Q_{pre_250} = **25.0 l/s**

Duration (minute)	Intensity mm/hr	Peak Runoff m^3/s		Storm runoff m^3	Release Flow m^3	Req'd Storage m^3
5	274.7	0.142		42.48	7.50	34.98
10	212.9	0.110		65.84	15.00	50.83
15	174.7	0.090		81.02	22.51	58.52
30	115.1	0.059		106.80	45.01	**61.78**
40	94.4	0.049		116.81	60.02	56.80
50	80.3	0.041		124.20	75.02	49.18

DATA SHEET

Block B2 & Block B3 Parking Area - A = 0.310 + 0.131 Ha.

Pre-development Flow Calculation

2-Year Pre-development Flow

Q= 2.78CIA

C=	0.25		Pre-development Run-off Coefficient
I=	65.07	mm/h	Rainfall intensity, Time to Peak = 15 minutes
A=	0.441	ha	Drainage area

Q = 19.9 l/sec

100-Year Pre-development Flow

Q= 2.78CIA

I=	149.56	mm/h	Rainfall intensity, Time to Peak = 15 minutes

Q = 45.8 l/sec

250-Year Pre-development Flow

Q= 2.78CIA

I=	174.67	mm/h	Rainfall intensity, Time to Peak = 15 minutes

Q = 53.5 l/sec

DATA SHEET

BLOCK B2 (0.310 Ha.) & BLOCK B3 (-.131Ha.) Parking Areas

STORAGE REQUIREMENT

Design Criteria:

Lot Area	A=	0.441	ha
Post-Development	C=	0.80	
Flow	Q=	2.78CIA	m^3

Storm	2 Year
a	724.69
b	5.50
c	0.80

Q_{pre_2} = 19.9 l/s

Duration (minute)	Intensity mm/hr	Peak Runoff m^3/s		Storm runoff m^3	Release Flow m^3	Req'd Storage m^3
5	111.0	0.109		32.65	5.98	26.67
10	81.3	0.080		47.86	11.97	35.90
15	65.1	0.064		57.44	17.95	39.49
20	54.7	0.054		64.34	23.93	**40.41**
25	47.4	0.046		69.72	29.91	39.80
30	42.0	0.041		74.12	35.90	38.22
35	37.8	0.037		77.84	41.88	35.96
40	34.4	0.034		81.07	47.86	33.20

Storm	100 Year
a	2619.36
b	10.50
c	0.88

Q_{pre_100} = 45.8 l/s

Duration (minute)	Intensity mm/hr	Peak Runoff m^3/s		Storm runoff m^3	Release Flow m^3	Req'd Storage m^3
5	232.2	0.228		68.33	13.75	54.58
15	149.6	0.147		132.02	41.26	90.76
25	111.6	0.109		164.23	68.76	**95.47**
30	99.4	0.097		175.41	82.51	92.90
35	89.6	0.088		184.63	96.26	88.37
40	81.7	0.080		192.43	110.01	82.41
45	75.2	0.074		199.15	123.77	75.38

Storm	250 Year
a	3048.22
b	10.03
c	0.89

Q_{pre_250} = 53.5 l/s

Duration (minute)	Intensity mm/hr	Peak Runoff m^3/s		Storm runoff m^3	Release Flow m^3	Req'd Storage m^3
5	274.7	0.269		80.84	16.06	64.77
15	174.7	0.171		154.18	48.18	106.00
25	129.6	0.127		190.65	80.30	**110.35**
30	115.1	0.113		203.22	96.36	106.86
35	103.7	0.102		213.56	112.42	101.14
40	94.4	0.093		222.29	128.48	93.80
45	86.8	0.085		229.79	144.54	85.25

Orifice Calculation

BLOCK B1a and Block B1b

Orifice Size required - 2 year pre-development, = 7.7 l/s + 14.8 l/s = 22.5 l/s

$Q=KA(2gh)^{1/2}$

Q=	0.0225	m^3/sec	Restricted Flow
K=	0.6		Coefficient
A=	?		Orifice Size
h=	1.2	m	Max. height from top of ponding to orifice
g=	9.81	m/sec^2	Gravity

A= 0.007728428 m^2

$A=3.14d^2/4$

d= **0.099222632** m

or 99.22 mm

say 100 mm

A= 0.00785

Q= $KA(2gh)^{1/2}$ 0.022853937 m^3/sec

Q= **0.023** m^3/sec

ADS OGS Sizing Summary

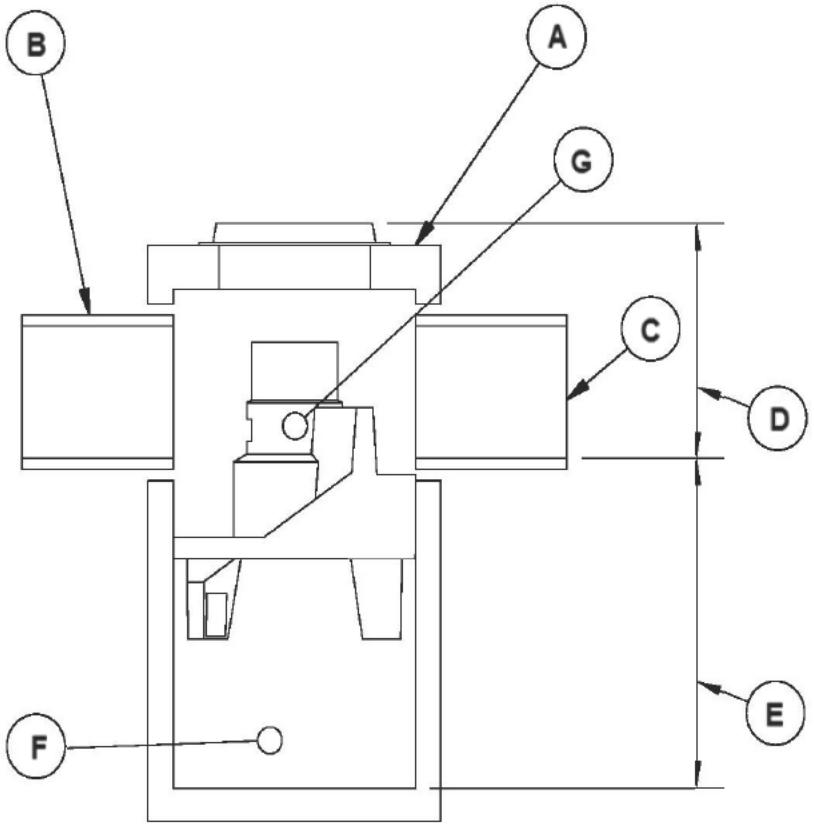
Project Name:	801 Sarnia Road		
Consulting Engineer:	Eng Plus Ltd.		
Location:	London, Ontario		
Sizing Completed By:	Haider Nasrullah	**Email:**	haider.nasrullah@adspipe.com

Treatment Requirements		
Treatment Goal:	Enhanced (MOE)	
Selected Parameters:	80% TSS	90% Volume
Selected Unit:	**FD-4HC**	

Site Details	
Site Area:	0.441 ha
% Impervious:	-
Rational C:	0.80
Rainfall Station:	London Intl Airport, ON
Particle Size Distribution:	Fine
Peak Flowrate:	---

Summary of Results		
Model	**TSS Removal**	**Volume Treated**
FD-4HC	92.0%	>90%
FD-5HC	95.0%	>90%
FD-6HC	96.0%	>90%
FD-8HC	98.0%	>90%
FD-10HC	99.0%	>90%

FD-4HC Specification	
Unit Diameter (A):	1,200 mm
Inlet Pipe Diameter (B):	300 mm
Outlet Pipe Diameter (C):	300 mm
Height, T/G to Outlet Invert (D):	1320 mm
Height, Outlet Invert to Sump (E):	1515 mm
Sediment Storage Capacity (F):	0.78 m³
Oil Storage Capacity (G):	723 L
Recommended Sediment Depth for Maintenance:	440 mm
Max. Pipe Diameter:	600 mm
Peak Flow Capacity:	510 L/s



Site Elevations:	
Rim Elevation:	283.40
Inlet Pipe Elevation:	282.13, 282.13
Outlet Pipe Elevation:	282.08

Notes:

Removal efficiencies are based on NJDEP Test Protocols and independently verified.

All units supplied by ADS have numerous local, provincial, and international certifications (copies of which can be provided upon request). The design engineer is responsible for ensuring compliance with applicable regulations.

Project Name: 801 Sarnia Road

Consulting Engineer: Eng Plus Ltd.

Location: London, Ontario

Net Annual Removal Efficiency Summary: FD-4HC

Rainfall Intensity[1]	Fraction of Rainfall[1]	FD-4HC Removal Efficiency[2]	Weighted Net-Annual Removal Efficiency
mm/hr	%	%	%
0.50	0.2%	100.0%	0.2%
1.00	13.7%	100.0%	13.7%
1.50	17.3%	100.0%	17.3%
2.00	13.5%	97.7%	13.2%
2.50	2.7%	95.7%	2.6%
3.00	2.3%	94.1%	2.1%
3.50	8.5%	92.7%	7.9%
4.00	4.7%	91.6%	4.3%
4.50	1.5%	90.6%	1.3%
5.00	5.2%	89.7%	4.7%
6.00	4.1%	88.2%	3.6%
7.00	4.4%	86.9%	3.9%
8.00	3.3%	85.9%	2.8%
9.00	2.4%	84.9%	2.0%
10.00	2.3%	84.1%	2.0%
20.00	9.2%	78.9%	7.2%
30.00	2.5%	75.9%	1.9%
40.00	1.1%	73.9%	0.8%
50.00	0.4%	72.4%	0.3%
100.00	0.6%	67.9%	0.4%
		Total Net Annual Removal Efficiency:	92%
		Total Runoff Volume Treated:	>90%

Notes:

(1) Rainfall Data: 1960:2002, HLY03, London AP, ONT, 6144475.

(2) Based on third party verified data and appoximating the removal of a PSD similar to the STC Fine distribution

(3) Rainfall adjusted to 5 min peak intensity based on hourly average.

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

Advanced Drainage Systems, Inc.

ADS SiteAssist
FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

801 SARNIA ROAD

LONDON, ON, CANADA

SC-310 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-310.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
3. CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

1. STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

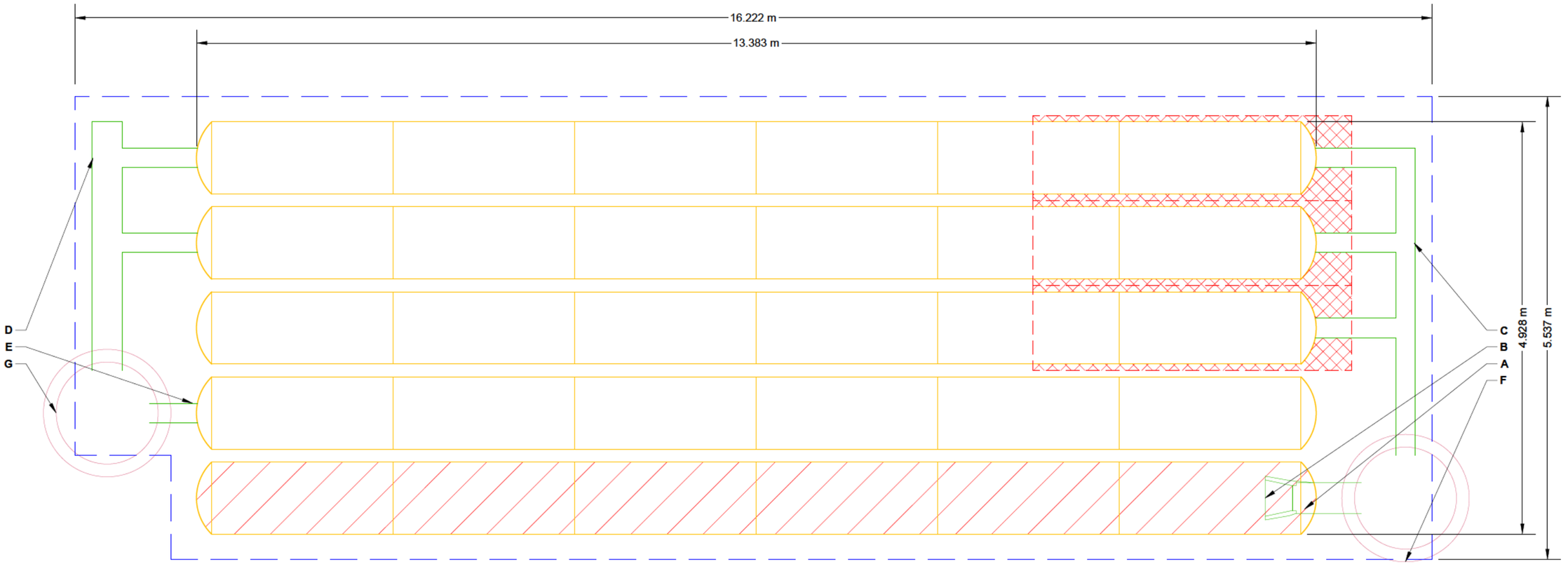
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		PROPOSED ELEVATIONS:	
30	STORMTECH SC-310 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	284.867
10	STORMTECH SC-310 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	283.038
152	STONE ABOVE (mm)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	282.886
152	STONE BELOW (mm)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	282.886
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	282.886
32.7	INSTALLED SYSTEM VOLUME (m³) BELOW ELEVATION 282.581 (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	282.581
		TOP OF SC-310 CHAMBER:	282.429
		200 mm x 200 mm TOP MANIFOLD INVERT:	282.111
		300 mm ISOLATOR ROW PLUS INVERT:	282.045
		300 mm x 200 mm BOTTOM MANIFOLD INVERT (200 mm PIPE):	282.038
88.4	SYSTEM AREA (m²)	200 mm BOTTOM CONNECTION INVERT:	282.038
43.5	SYSTEM PERIMETER (m)	BOTTOM OF SC-310 CHAMBER:	282.022
		300 mm x 200 mm BOTTOM MANIFOLD INVERT (300 mm PIPE):	281.930
		BOTTOM OF STONE:	281.870

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED EZ END CAP	A	300 mm BOTTOM PREFABRICATED EZ END CAP, PART#: SC310ECEZ / TYP OF ALL 300 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	23 mm	
FLAMP	B	INSTALL FLAMP ON 300 mm ACCESS PIPE / PART#: SC31012RAMP		
MANIFOLD	C	200 mm x 200 mm TOP MANIFOLD, MOLDED FITTINGS	89 mm	
MANIFOLD	D	300 mm x 200 mm REDUCING CONCENTRIC MOLDED FITTINGS (300 mm PIPE) 300 mm x 200 mm REDUCING CONCENTRIC MOLDED FITTINGS (200 mm PIPE)	-93 mm 15 mm	
PIPE CONNECTION	E	200 mm BOTTOM CONNECTION	15 mm	
CONCRETE STRUCTURE	F	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		65 L/s IN
CONCRETE STRUCTURE	G	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		59 L/s OUT



ISOLATOR ROW PLUS
(SEE DETAIL)

PLACE MINIMUM 3.810 m OF ADSPLUS625 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION**: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

801 SARNIA ROAD
LONDON, ON, CANADA

DATE: 09/24/2024 | DRAWN: HN | CHECKED: N/A

PROJECT #:

DATE	DRW	CHK	DESCRIPTION

StormTech®
Chamber System

1-800-821-6710 | WWW.STORMTECH.COM

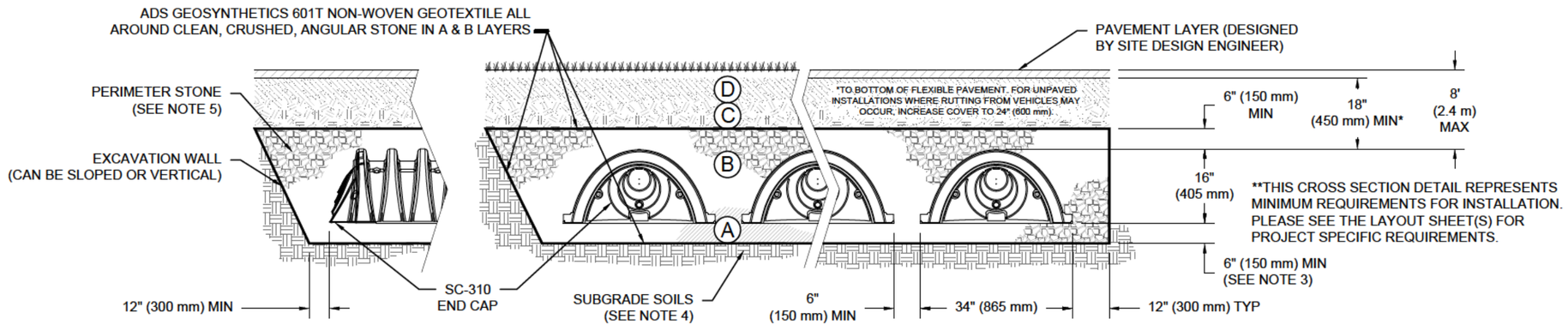
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

SCALE = 1 : 50

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE5	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE5	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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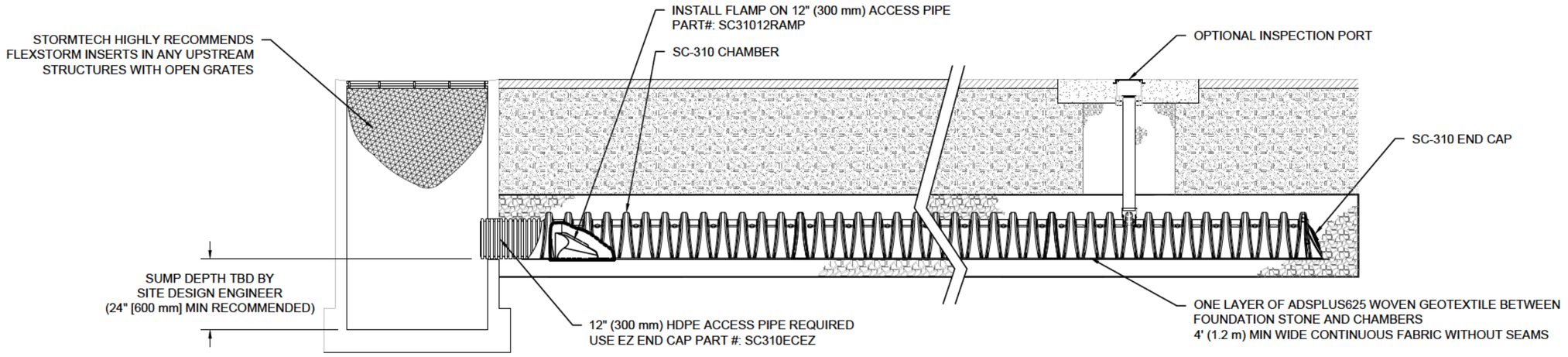

SC-310 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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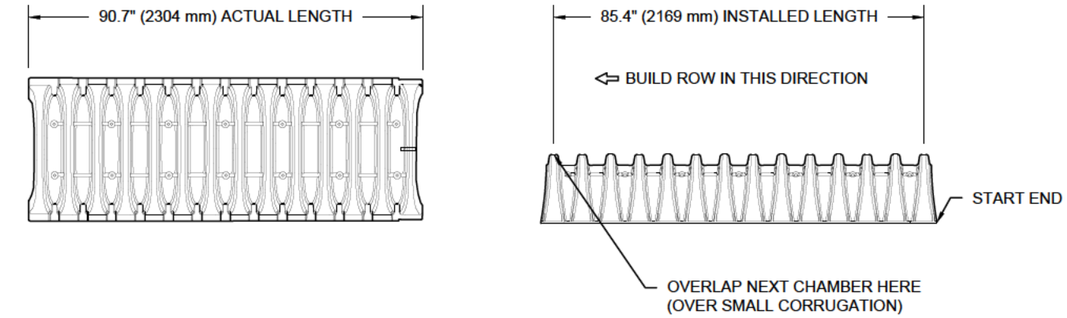
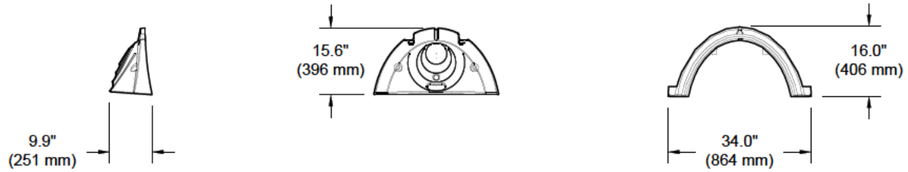
SC-310 TECHNICAL SPECIFICATION

NTS

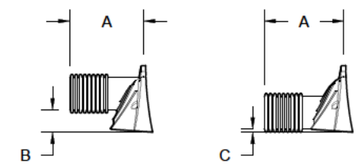




NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET	(0.88 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC			---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE08B / SC310EPE08BPC			---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC			---	0.7" (18 mm)
SC310ECEZ*	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-800-821-6710.

* FOR THE SC310ECEZ THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

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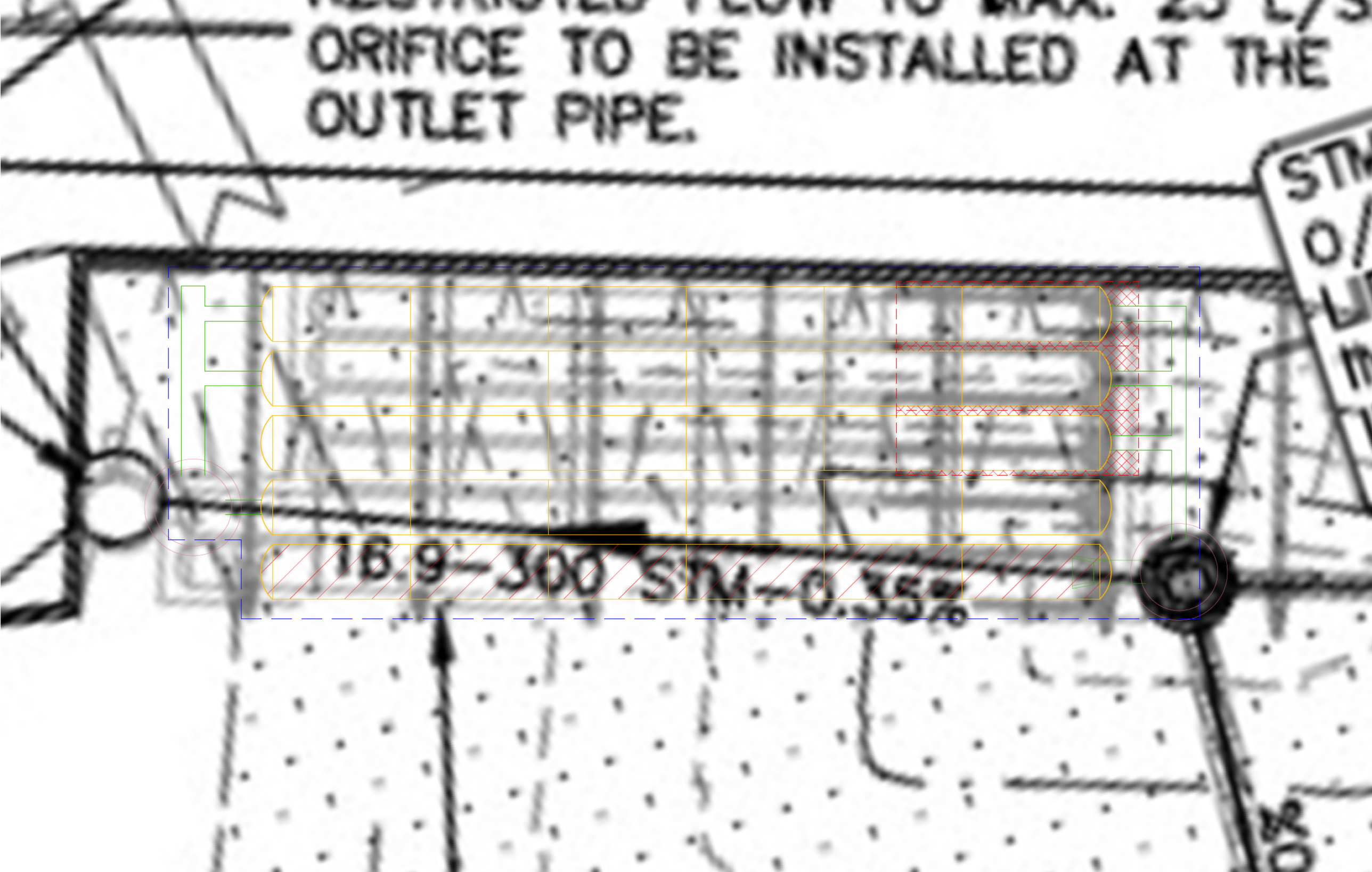
RESTRICTED FLOW TO MAX. 25 L/S
ORIFICE TO BE INSTALLED AT THE
OUTLET PIPE.



AS PER SECTION B-3.1.19.1 OF THE ONTARIO BUILDING CODE, THIS BUILDING WILL NOT BE CONSTRUCTED IN CLOSE PROXIMITY TO ANY ABOVE GROUND ELECTRICAL CONDUCTORS.

RESTORATION NOTES:

ALL SURFACES WITHIN THE CITY ROAD ALLOWANCE WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION AT LEAST AS GOOD AS ORIGINAL, TO THE SATISFACTION OF THE ENGINEER, ALL AT NO COST TO THE CITY. THE CONTRACTOR IS REQUIRED TO OBTAIN AND PAY FOR PERMIT TO WORK IN CITY R.O.W.

ASPHALT AREAS:
SAWCUT AND REMOVE EXISTING ASPHALT AS INDICATED ON THE DRAWINGS. TAKE PRECAUTIONS TO AVOID UNDERMINING OR DAMAGING EXISTING SERVICES OR EXISTING CURB & GUTTER. RESTORE EXISTING ROAD AS PER CITY OF LONDON STANDARDS. ALL ASPHALT CUTS ARE TO BE MILLED 50mm DEEP x 500mm WIDE TO CREATE A LAP JOINT FOR NEW ASPHALT AS PER SR-13.1. APPLY ASPHALT TACK COAT PRIOR TO PLACEMENT OF SURFACE COURSE.

CURB AREAS:
SAWCUT AND REMOVE EXISTING CURB AS INDICATED ON THE DRAWINGS. MATCH EXISTING CURB DETAILS. ALL DAMAGED CURBS TO BE RESTORED TO AS NEW CONDITION. EXCAVATIONS IN WHICH EXISTING CURBS ARE AFFECTED, THE GRANULAR 'B' SHALL BE EXTENDED 300mm BEHIND BACK OF CURBS AS PART OF RESTORATION.

SIDEWALK AREAS:
SAWCUT AND REMOVE EXISTING SIDEWALK. ALL CITY SIDEWALKS TO BE 100mm THICK IN ACCORDANCE WITH CITY OF LONDON STANDARD SR-1.0. INCREASE THICKNESS TO 150mm MIN. ACROSS DRIVEWAYS.

BOULEVARD AREAS:
ALL DISTURBED BOULEVARDS TO BE RESTORED TO AS NEW CONDITION WITH MIN. 100mm TOPSOIL & SOD.

PARK / PATHWAY CORRIDOR AREAS:
ALL DISTURBED AREA TO BE RESTORED TO AS NEW CONDITION WITH MIN. 100MM TOPSOIL & SOD.

LEGEND

- EXISTING ELEVATIONS & CONTOURS
- EXISTING ELEVATIONS TO REMAIN
- PROPOSED ELEVATIONS
- PROPOSED SURFACE FLOW
- PROPOSED SWALE
- EXISITNG VEGATATION
- SILT/SEDIMENT FENCE
- TREE PROTECTION FENCE
- FR3 FIRE ROUTE SIGNAGE
- PROPOSED CANADA POST BOX
- OVERLAND FLOW ROUTE
- PRINCIPAL FIRE FIGHTER / BARRIER FREE ENTRY
- ENTRY

GRADING NOTES

1. EXISTING DRAINAGE OF ABUTTING LANDS IS NOT TO BE DISTURBED.
2. BASEMENT OPENINGS TO BE MINIMUM 300mm ABOVE CENTRELINE OF ROAD UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. BUILDING OPENING ELEVATIONS ADJACENT TO OVERLAND FLOW ROUTES SHALL BE AT LEAST 450mm ABOVE THE OVERLAND FLOW ROUTE ELEVATION (NO WINDOW WELLS).
4. GROUND ELEVATIONS AT BUILDINGS ABUTTING OVERLAND FLOW ROUTES ARE TO BE 225mm ABOVE OVERLAND FLOW ROUTE.
5. SUMP PUMPS AND ROOF WATER DOWNSPOUTS SHALL DISCHARGE TO THE GROUND SURFACE.

TOPOGRAPHICAL PLAN OF SURVEY
of part of
LOTS 4 AND 13
REGISTERED PLAN N° 48(C)
in the
CITY OF LONDON
COUNTY OF MIDDLESEX

NOTES

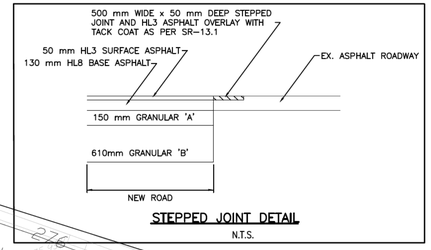
BEARINGS HEREON ARE UTM GRID AND ARE DERIVED FROM SPECIFIED CONTROL POINT N° 028942017 AND SPECIFIED CONTROL POINT N° 028943043, UTM ZONE 17, (NAD83) ORIGINAL

SPECIFIED CONTROL POINTS (SCP's) AND OBSERVED REFERENCE POINTS (ORP's): UTM ZONE 17, NAD83 (ORIGINAL) COORDINATES TO URBAN ACCURACY PER SEC. 14 (2) OF O.REG. 216/10

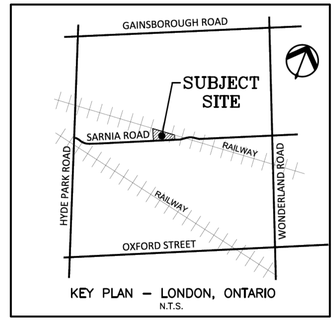
POINT ID	NORTHING	EASTING
SCP 028942017	4766770.654	484448.898
SCP 028943043	4750671.637	489296.522
ORP 1	4759924.801	474510.887
ORP 2	4759817.087	474231.506

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

DISTANCES SHOWN ON THIS PLAN ARE ADJUSTED GROUND LEVEL DISTANCES AND CAN BE USED TO COMPUTE GRID CO-ORDINATES BY MULTIPLYING THE DISTANCES BY A COMBINED SCALE FACTOR OF 0.999569425



STEPPED JOINT DETAIL
N.T.S.



KEY PLAN - LONDON, ONTARIO
N.T.S.

BENCHMARKS

BENCHMARK INFORMATION VCM No. V94-11; 1.52m IRON BAR WITH BRASS CAP, ON ALDERSBROOK ROAD, 21.1m NORTH OF C/L OF SARNIA ROAD, 11.6m WEST C/L ALDERSBROOK ROAD, 2.75m SOUTHEAST OF A BRICK WALL. ELEVATION=279.401m	BENCHMARK INFORMATION VCM No. V9010886687; BRONZE CAP IN CONCRETE ON BRIDGE CARRYING HYDE PARK ROAD OVER CNR TRACKS, ON THE VERTICAL FACE OF THE CONCRETE RAILING ON THE SOUTHWEST CORNER OF BRIDGE, 0.33m ABOVE GROUND LEVEL ELEVATION=275.689m

RESTORATION NOTES:

ASPHALT AREAS:
SAWCUT AND REMOVE EXISTING ASPHALT AND CURB & GUTTER AS INDICATED. TAKE PRECAUTIONS TO AVOID UNDERMINING OR DAMAGING EXISTING SERVICES OR EXISTING CURB & GUTTER. RESTORE EXISTING PAVEMENT STRUCTURE AS PER CITY OF LONDON STANDARDS OR MATCH EXISTING, WHICHEVER IS GREATER. PARTIAL DEPTH (50mm) MILL EXISTING ASPHALT 0.5m AROUND PERIMETER AND APPLY ASPHALT TACK COAT PRIOR TO PLACEMENT OF SURFACE COURSE AS PER CITY OF LONDON STANDARD DRAWING SR-13.1.

BOULEVARD AREAS:
ALL DISTURBED BOULEVARDS TO BE RESTORED TO AS NEW CONDITION WITH MIN. 100mm TOPSOIL & SOD.

CURBS:
CURB AT THE EXISTING DRIVEWAY TO BE RESTORED TO MATCH EXISTING CURB ON SARNIA ROAD.

NOTE:

SURVEY INFORMATION FROM HOLSTEAD & REDMOND LIMITED ONTARIO LAND SURVEYORS

FILE No: 14-0107
DATE: 23/09/14

GRADING CERTIFICATE

I HEREBY CERTIFY THAT THE PROPOSED GRADING AND APPURTENANT DRAINAGE WORKS COMPLY WITH SOUND ENGINEERING DESIGN AND THAT THE PROPOSED GRADING IS COMPATIBLE WITH THE EXISTING DRAINAGE PATTERNS ON AND ACROSS THESE LANDS AND THE ADJOINING LANDS OR APPLICABLE MUNICIPAL BY-LAWS.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS		No.	REVISIONS	DATE	CONSULTANT
DESIGN	VP/TK	1	BLOCK B - APARTMENT BUILDING REVISED	NOV. 16, 2021	ENG PLUS LTD.
DRAWN BY	CAD	2	PER CITY COMMENTS - FEB. 19, 2022	JUNE 29, 2022	ENG PLUS LTD.
CHECKED	VP	3	PER CITY COMMENTS - FEB. 07, 2023	MAR. 07, 2023	ENG PLUS LTD.
APPROVED	VP	4	PER CITY COMMENTS - APRIL 06, 2023	MAY 08, 2023	ENG PLUS LTD.
DATE	OCT. 2024	5	APARTMENT BUILDING REVISED, 10 STOREY	OCT. 28, 2024	ENG PLUS LTD

CONSULTANT
ENG PLUS
Engineers
Landscape Architects
and Building Designers
100-609 WILLIAM STREET, LONDON, ON. N6B 3G1
tel. 519.438.6994 fax. 519.438.7052
email. engplus@engplusltd.com

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
OCT. 28, 2024
V. PHAM
PROVINCE OF ONTARIO

CLIENT
2425293 ONTARIO INC.

SCALE
SCALE - 1 : 300
3m 0 6m

PROJECT
WESTERN PRESTIGE VILLAGE
801 & 811 SARNIA ROAD, LONDON, ON

TITLE
BLOCK B - APARTMENT BUILDING
PROPOSED GRADING PLAN

PROJECT No. 14.102
SHEET No. 2 of 5
PLAN FILE No. 14.102 Site Plan

PRINTED ON: Oct 29, 2024 TO Plan FILE NAME: X:\Engineering\14.102 801 Sarnia Road\Site Plan\14.102 801 Site Plan - Apartment Building.dwg LAYOUT: 2 GRADING

TOPOGRAPHICAL PLAN OF SURVEY
of part of
LOTS 4 AND 13
REGISTERED PLAN N° 48(C)
in the
CITY OF LONDON
COUNTY OF MIDDLESEX

NOTES

BEARINGS HEREON ARE UTM GRID AND ARE DERIVED FROM SPECIFIED CONTROL POINT N° 028942017 AND SPECIFIED CONTROL POINT N° 028943043, UTM ZONE 17, (NAD83) ORIGINAL

SPECIFIED CONTROL POINTS (SCP's) AND OBSERVED REFERENCE POINTS (ORP's): UTM ZONE 17, NAD83 (ORIGINAL) COORDINATES TO URBAN ACCURACY PER SEC. 14 (2) OF O.REG. 216/10

POINT ID	NORTHING	EASTING
SCP 028942017	4766770.654	484448.898
SCP 028943043	4750671.637	489296.522
ORP 1	4759924.801	474510.887
ORP 2	4759817.087	474231.506

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

DISTANCES SHOWN ON THIS PLAN ARE ADJUSTED GROUND LEVEL DISTANCES AND CAN BE USED TO COMPUTE GRID CO-ORDINATES BY MULTIPLYING THE DISTANCES BY A COMBINED SCALE FACTOR OF 0.999569425

NOTE

EXISTING WATER SERVICES (FOR THE EXISTING SINGLE FAMILY HOME) MUST BE DECOMMISSIONED AT THE WATERMAIN TO CITY OF LONDON STANDARDS

DETAILS		No.	REVISIONS	DATE	CONSULTANT
DESIGN	VP/TK	1	BLOCK B – APARTMENT BUILDING REVISED	NOV. 17, 2021	ENG PLUS LTD.
DRAWN BY	CAD		PER CITY COMMENTS – FEB. 18, 2022	JUNE 29, 2022	ENG PLUS LTD.
CHECKED	VP	3	PER CITY COMMENTS – FEB. 07, 2023	MAR. 07, 2023	ENG PLUS LTD.
APPROVED	VP	4	PER CITY COMMENTS – APRIL 06, 2023	MAY 08, 2023	ENG PLUS LTD.
DATE	OCT. 2024	5	APARTMENT BUILDING REVISED, 10 STOREY	OCT. 28, 2024	ENG PLUS LTD

EXISTING SERVICES | DRAWING #, SOURCE | DATE | CONSTRUCTED SERVICES | COMPLETION

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ENGINEER'S STAMP: LICENSED PROFESSIONAL ENGINEER, OCT. 28, 2024, V. PHAM, PROVINCE OF ONTARIO

CLIENT: 2425293 ONTARIO INC.

SCALE – 1 : 300

PROJECT: WESTERN PRESTIGE VILLAGE
801 & 811 SARNIA ROAD, LONDON, ON

TITLE: BLOCK B - APARTMENT BUILDING PROPOSED SERVICING PLAN

PROJECT No. 14.102

PLAN FILE No. 14.102 Site Plan