

SITE SERVICING AND STORMWATER MANAGEMENT REPORT

Project Address – 5497 Manotick Main, Manotick, On

Owner/Client: Oligo Development
Address: 996-B St-Augustin Rd, Embrun ON
City file Number:

By Blanchard Letendre Engineering Ltd.
Date – September 20, 2022
Our File Reference: 20-261

First Submission
October 12, 2020

TABLE OF CONTENTS

Table of Contents	2
Appendix Table.....	3
1.0 Introduction.....	4
2.0 Site Plan	4
3.0 STORM WATER MANAGEMENT.....	5
3.1 Existing Site Condition	5
3.2 Proposed Storm Water Management.....	5
3.3 Proposed Storm Water Management.....	6
3.4 Proposed Stormwater Quantity Control	6
3.4.1 Roof Drainage.....	7
3.5 Proposed Stormwater Quality Control.....	7
4.0 SANITARY SEWER DESIGN	7
4.1 Existing Site Conditions	7
4.2 Existing Site Conditions	7
5.0 WATER CONNECTION DESIGN.....	8
5.1 Existing Site Conditions	8
5.2 Proposed Domestic Water Service.....	8
5.3 Proposed Fire Demand.....	9
5.4 Water Capacity Comments	9
6.0 EROSION AND SEDIMENT CONTROL	9
7.0 CONCLUSION AND LIMITATION OF REPORT	9
7.1 Stormwater Management	9
7.2 Sanitary Service	9
7.3 Water Service.....	10
8.0 Limitation.....	10

APPENDIX TABLE

Appendix A – Stormwater Design

Appendix B – Sanitary Design

Appendix C – Watermain Design

Appendix D – Stormwater Underground Chamber & Stormwater Treatment Unit

Appendix E – Boundary Conditions

Appendix F – Engineering Drawings

1.0 INTRODUCTION

Blanchard Letendre Engineering Ltd. (BLEL) was retained by Bridor Development. to complete their site servicing and stormwater management for the new proposed site located at 5497 Manotick Main Road in Manotick. This report summarized proposed site servicing and stormwater management and should be read in conjunction with the engineering drawings prepare by BLEL. This report and site servicing plan have been prepared based on the site plan proposed by P-Square Concepts and the site survey completed by Annis O’Sullivan Vollebekk. The information contained herein is based on the provided drawings and if there is any discrepancy with the survey or site plan, BLEL should be informed in order to verify the information and complete the changes if required.

2.0 SITE PLAN

The proposed site is to be located at 5497 Manotick Main in Manotick, Ontario. As per the aerial picture in figure 1, the existing site (0.214ha) consist of and green space area at the rear of the property and an existing commercial building with a paved parking at the front of the property. The existing building and parking area will be demolished prior to construction. The land will be developed with a new mix use commercial and residential building with a new parking area at the behind the proposed building.



Figure 1- Existing site at 5497 Manotick Main, Manotick, Ontario

3.0 STORM WATER MANAGEMENT

3.1 Existing Site Condition

The existing site currently has an existing parking area at the front of the property with some storm sewers that collect and convey the stormwater to the existing storm sewer on Manotick Main. The existing property has a split drainage where half the property drains towards the street and the other portion naturally grades towards the Rideau River. The property is bounded by an existing residential home (north-west) and a commercial development (south-east). Refer to BL Engineering drawing C400 for the pre-development drainage area and existing grading showing the current drainage of the site.

3.2 Proposed Storm Water Management

The development of the site will consist of adding a new residential apartment building, which will have twenty-one (21) residential units. The site will be modified by adding a total of 629 square meter building, asphalt parking and driving area and amenities at the rear. As the runoff coefficient will increase due to addition of hard surfaces, post-development stormwater quantity and quality will be implemented.

The site stormwater management has been prepared in correlation with the existing site grading. To minimize the fill and site work required, the stormwater management has been developed to follow the existing site grading which has a split drainage pattern. A portion of the property naturally drains to the Rideau River which mainly consists of grass area and will be left uncontrolled as no work is proposed in that area. The front portion of the property which already has some development drains towards Manotick Main Street. The affected area stormwater management will outlet to City storm sewer on Manotick Main Road whereas the overland flow route has also been designed to convey the storm runoff towards the city right away.

The stormwater generated by the new hard surfaces will be directed to a series of catchbasins which will capture and convey the water runoff to existing city storm sewer. The catchment areas have been delineated as per the proposed grading plan. Refer to Appendix 'A', for the catchment area and runoff coefficient. In order to respect the 5 year pre-development allowable release rate, the outlets will be controlled by undersized 200mm diameter storm pipe which will act as an orifice and limit the flow outletting to City storm sewer on Manotick Main Street. By throttling the flow, stormwater retention will be completed with the use of overland ponding and underground storage which was designed to hold the 100 year storm event. Refer to Appendix 'A' for the stormwater flow and storage calculations.

3.3 Proposed Storm Water Management

The pre-development flow of the 5-year storm was calculated using a 5-year storm and a 10-minute time of concentration for the affected area. The pre-development flow of the 100-year storm was calculated using a 5-year storm and a 10-minute time of concentration for the affected area. From intensity duration curves established for the Ottawa area, the intensity was evaluated at of 104.2 mm/hr for the 5yr predevelopment flow and 178.6mm/hr for the 100-year predevelopment flow. A run-off coefficient of 0.46 was used as per the evaluated pre-development runoff coefficient, see Appendix 'A' – Pre-Development Drainage Area table.

Using the Rational Method and considering the tributary areas of the affected area by the proposed (see Appendix 'A'), the pre-development allowable release rate for the site was evaluated at **25.32 L/s**. See also the Storm Sewer Design Sheet in Appendix 'A'.

$$\begin{aligned}\text{Allowable Release Rate (Q)} &= 2.78CIA \text{ (L/s)} \\ I_5 &= 998.071 / (Tc + 6.053)^{0.814} \\ C &= 0.48 \\ I &= 104.2 \text{ mm/hr} \\ Tc &= 10 \text{ min} \\ \text{Total} &= 0.143 \text{ ha} \\ \text{Allowable Release Rate} &= 25.32 \text{ L/s}\end{aligned}$$

3.4 Proposed Stormwater Quantity Control

The proposed stormwater management for the site will be achieved primarily through the use of overland surface ponding and underground pipe storage. The grading of the site has been designed to direct the stormwater towards the series of catchbasins connected to the underground stormwater sewers before outleting south into the 350mm diameter storm city sewer. The proposed underground stormwater sewers and catchbasins are shown on the attached drawings in Appendix 'E'.

The proposed site affected area has been graded to outlet overland onto Manotick Main on the south-west side of the property. As the site affected area is graded from the north side to the south side, the grades have been adjusted to suit this profile to minimize the grade raise of the site. All catchment areas were designed to direct the stormwater overland to the south-west corner and will be captured through a series of parking catchbasins.

The stormwater generated from site affected area will be discharged to the existing storm sewer on Manotick Main and be controlled using an orifice plate which will throttle the flow direct to the municipal sewer. The proposed 95mm diameter orifice plate will release a total of **6.64 L/s** with a maximum head of 1.22m (HWL = 87.70) during the 100 year event. As the flow will be restricted, 46.96m³ of stormwater storage will be required for this area. This storage will be provided with overland parking ponding and underground sewers/ structures and chambers. The

overland storage will hold up to 12.45 m³ with a HWL of 87.71 and the underground pipes/ structures and chambers will store up to 35.00 m³. Therefore with the outlet restriction and the provided stormwater storage, the post-development will meet the pre-development flow to the city main storm sewer on Manotick Main.

Area WS-04 which mainly consist of unit pavers, will be drained uncontrolled towards the city right away as there is no room to install a sewer between the building and the property line. As the un-affected area (WS-05) naturally grades towards the Rideau River, the stormwater generated from this area will remain uncontrolled as it flows to the river. This area has been accounted for in the design of the stormwater management to limit the water runoff directed to the existing city storm sewer. As the river is the main stormwater receiver for the rear of the property, this area has been maintained in the calculation which makes the calculations more conservative as the uncontrolled flow is more than 50% of the allowable release rate. These area will generate a maximum **18.72L/s** under a 100 year storm event before being capture by the nearest city road catchbasin located at the south corner of the property.

3.4.1 Roof Drainage

The proposed roofs are flat roof with roof drains. Drain and scuppers will be installed to drain the water onto the pavement area.

3.5 Proposed Stormwater Quality Control

A water quality control requirement of 80% TSS removal was set by the City of Ottawa. In order to meet the requirements, a storm treatment unit will be installed and the downstream end of the system. Using the Stormceptor sizing software, the EF04 was selected. The software generated report has been attached (See Appendix "D").

4.0 SANITARY SEWER DESIGN

4.1 Existing Site Conditions

The existing site is currently being service by an existing 135mm diameter service that is connected to the existing 600mm diameter sanitary main on Manotick Main Road. The existing connection will be removed and reinstated with a new connection that will service the new building.

4.2 Existing Site Conditions

The new mix use building, will discharge to the city via a new 150mm diameter sanitary service. The service will be located on the south face of the buildings and will discharge to the existing

600mm diameter city sewer running along Manotick Main road. The proposed 150mm diameter service will be installed at a minimum of 1.00% slope directly to the city sewer. No monitoring manhole is proposed for the new connections. Refer to drawing C300 – Site Servicing Plan for the proposed sanitary service.

Based on the City of Ottawa Sanitary Design Guidelines, the sanitary peak loads were evaluated at **0.64 L/s**. As per the City specific design parameters, the sanitary flow was evaluated based on the residential unit counts, new building footprint and the total site area. Refer to Appendix ‘B’ for the sanitary sewer design calculation and design parameters set by the City of Ottawa.

5.0 WATER CONNECTION DESIGN

5.1 Existing Site Conditions

The existing site is currently being service by a 19mm diameter water house service which services the existing house and is connected to the existing 406mm diameter watermain on Manotick Main. The existing connection will be removed and reinstated with a new connection that will service the new building. There is currently one (1) city fire hydrant at the front of the property. The hydrant is located on the east side of Manotick Main within the 90m radius from the building main entrance. Refer to drawing C300 – Site Servicing Plan for the existing and proposed water services and city existing infrastructure.

5.2 Proposed Domestic Water Service

The new mix-use buildings water services were sized based on the City of Ottawa Design Guidelines. Based on the number of fixtures proposed and on the average water demand for the developments the daily water consumption was evaluated for the proposed building. As per the city guidelines, the average water demand per fixtures unit is **3.79L/min** per fixture was applied to the fixtures proposed in the new building. The daily and hourly peak factor of **2.5** and **2.2** respectively were applied to the water demand as stated in the City of Ottawa guideline. By using the average demand and peaking factors, the daily water demand for the new buildings were evaluated as follow:

	UNITS	
Average Water Demand =	0.12	L/s
Maximum Daily =	0.29	L/s
Maximum Hourly =	0.64	L/s
Total Domestic Flow =	0.64	L/s
Total Fire Flow =	150.00	L/s

Refer to Appendix ‘C’ for the water flow calculation sheet.

5.3 Proposed Fire Demand

As the new mix use building will not have a fire suppression sprinkler system, the new service was sized to supply the daily water demand. Based on the Ontario building code calculations, the water flow was evaluated at **150.00L/s**. Refer to Appendix 'C' for the fire flow calculation sheet.

The proposed buildings will be serviced with a new 50mm water service which will connect to the existing 405mm diameter watermain on Manotick Main. The new services will be installed at the south elevation of the new buildings and be placed in the same trench as the other services.

5.4 Water Capacity Comments

The boundary conditions and HGL for hydraulic analysis for 5497 Manotick Main were requested to the city but not provided. obtained from the city, see attached copy in Appendix 'E'. From the boundary conditions, we noted that we have a minimum HGL of 146.6 m for the water main elevation at 87.8m and a maximum pressure estimate of 83.6 psi. As requested by the City, a water pressure reducing valve will be installed on the water service.

6.0 EROSION AND SEDIMENT CONTROL

During the construction, sediment and erosion protect will be implemented around the property to prevent any sediments from leaching off site. The construction and maintenance of the sediment controls must comply with the Ontario Provision Standard Specification OPSS 805. Refer to drawing C100 – Erosion and Sediment Control for the perimeter fence proposed.

7.0 CONCLUSION AND LIMITATION OF REPORT

7.1 Stormwater Management

The stormwater management proposed for the site will maintain the site to its pre-development release rate conditions and meet the requirements from the City of Ottawa. The post development release rate of the affected area will be maintained to its pre-development rate of **25.34 L/s** through an inlet control device to the sewer main on Manotick Main. Stormwater quantity control will be achieved with 35.00m³ underground pipes/structures and 12.45m³ overland. The stormwater quality control will be met through the use of a stormwater treatment unit.

7.2 Sanitary Service

The current site will be serviced with a new 150mm sanitary connection onto Manotick Main. The estimated sanitary flow of **0.64 L/s** will be directed to the existing 600mm sanitary sewer along Manotick Main.

7.3 Water Service

Currently the existing building on site is serviced with an existing 19mm diameter water service that will be replaced with a new 50mm diameter water services to be connected to the existing 406mm diameter main on Manotick Main. The existing connection will be replaced with a new 50mm water service. The water demand for the building was evaluated at **0.64L/s** and the fire flow demand **150.00L/s**. Sprinkler system is not proposed for the site. There is also one (1) fire located around the property within 90m from every entrance doors.

8.0 LIMITATION

This report was prepared for **Bridor Development.**, and is only applicable for the property at 5497 Manotick Main, Ottawa.

Any changes to the existing site may require a review by Blanchard Letendre engineering Ltd. to ensure all information is consistent with the proposed design.

Should you have any questions, please do not hesitate to contact the undersigned.

Sincerely Yours,



Guillaume Brunet, P. Eng.

APPENDIX “A”

Stormwater Management Design



BLANCHARD LETENDRE
ENGINEERING

File No.	20-261	Date:	September 11 - 2022
Project:	Proposed Multipurpose Building	Designed:	Benjamin Falconer
Project Address:	5497 Manotick Main, Manotick	Checked:	Guillaume Brunet
Client:	Bridor Development	Drawing Reference:	C300

PRE-DEVELOPMENT DRAINAGE AREA

Catchment Area	Runoff Coefficient			Total Area (ha)	Combined C
	C = 0.20	C = 0.80	C = 0.90		
E-01 - Un-affected	0.065	0.000	0.006	0.071	0.26
E-02 - Affected	0.085	0.000	0.058	0.143	0.48
TOTAL	0.150	0.000	0.064	0.214	0.41

POST-DEVELOPMENT DRAINAGE AREA

Catchment Area	Runoff Coefficient			Total Area (ha)	Combined C
	C = 0.20	C = 0.80	C = 0.90		
WS-01	0.007	0.000	0.054	0.061	0.82
WS-02 RAMP	0.000	0.000	0.004	0.004	0.90
WS-03	0.000	0.000	0.064	0.064	0.90
WS-04	0.005	0.000	0.008	0.013	0.63
WS-05	0.065	0.000	0.006	0.071	0.26
TOTAL	0.007	0.000	0.137	0.214	0.56

RUNOFF COEFFICIENT (C)

Grass	0.20
Gravel	0.80
Asphalt / rooftop	0.90

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STORM WATER MANAGEMENT DESIGN SHEET
SEWER DESIGN

LOCATION			AREA (ha)			FLOW					STORM SEWER DATA								
WATERSHED / STREET	From MH	To MH	C = 0.20	C = 0.80	C = 0.90	Indiv. 2.78AC	Accum. 2.78AC	Time of Conc. (min.)	Rainfall Intensity (mm/hr)	Peak Flow Q (l/s)	Pipe Diameter (mm)	Type	Slope (%)	Length (m)	Capacity Full (L/s)	Velocity Full (m/s)	Time of Flow (min.)	Ratio (Q/Q _{FULL})	
WS-01, WS-03	CB03	CB02	0.007	0.000	0.118	0.30	0.30	10.00	104.19	31.19	300	PVC	0.25%	12.2	48.4	0.68	0.30	0.65	
WS-01, WS-03	CB02	MH01	0.000	0.000	0.000	0.00	0.30	10.30	102.65	30.73	300	PVC	0.25%	7.7	48.4	0.68	0.19	0.64	
	MH01	STREET	0.000	0.000	0.000	0.00	0.30	10.48	101.70	30.45	250	PVC	0.25%	10.2	29.7	0.61	0.28	1.02	

DESIGN PARAMETERS NOTES

Runoff Coefficient (C)
 Grass 0.2
 Gravel 0.80
 Asphalt / rooftop 0.90

Q = 2.78 AIC, where
 Q = Peak flow in Litres per second (L/s)
 A = Area in hectares (ha)
 I = Rainfall Intensity (mm/hr)
 C = Runoff Coefficient

Ottawa Macdonald-Cartier International Airport IDF curve
 $I_5 = 998.071 / (T_c + 6.053)^{0.814}$
 Min. velocity = 0.76 m/s
 Manning's "n" = 0.013

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STORM WATER MANAGEMENT DESIGN SHEET

SEWER DESIGN

LOCATION		MANHOLE INFORMATION							AVAILABLE STORAGE						
From MH	To MH	Up Invert (m)	Down Invert (m)	T/G Up Stream (m)	T/G Down Stream	Up Depth obv (m)	Down Depth obv (m)	Up Depth inv (m)	Pipe Storage 5 Year (m ³)	Pipe Storage 100 year (m ³)	Upstream CB/MH Size (m)	Water Depth 5 year (m)	Water Depth 100 year (m)	CB/MH Storage 5 year (m ³)	CB/MH Storage 100 year (m ³)
CB03	CB02	86.38	86.34	87.55	87.55	0.87	0.91	0.87	0.86	0.86	1.20	0.87	0.87	1.26	1.26
CB02	MH01	86.34	86.33	87.55	87.81	0.91	1.18	0.91	-	-	1.20	0.91	0.91	1.30	1.30
MH01	STREET	86.30	86.27	87.81	87.70	1.26	-	1.26	-	-	1.20	1.25	1.26	-	-
									0.86	0.86				2.56	2.56

HWL (5 Year)	87.55
HWL (100 Year)	87.80
TOTAL STORAGE - 5 YEAR	3.43
TOTAL STORAGE - 100 YEAR	3.43

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STORM WATER MANAGEMENT DESIGN SHEET
5 YEAR STORM EVENT

PRE-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			ΣR ₅
Un-Controlled	EWS-01	0.071	ha	R=	0.26
Controlled	EWS-02	0.143	ha	R=	0.48
Total Uncontrolled =		0.214	ha	ΣR=	0.41

PRE-DEVELOPMENT ALLOWABLE RELEASE RATE

$$Q = 2.78CIA \text{ (L/s)}$$

$$I_5 = 998.071 / (Tc + 6.053)^{0.814}$$

C =	0.41	up to a maximum of 0.5 as per City of Ottawa Sewer Design Guidelines
I =	104.2	mm/hr
Tc =	10	min
Total =	0.214	ha
Allowable Release Rate=	25.34	L/s

POST-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			ΣR ₅	ΣR ₁₀₀
Controlled	WS-01	0.061	ha	R=	0.82	1.00
	WS-03	0.064	ha	R=	0.90	1.00
	Total Contolled =		0.125	ha	ΣR=	0.86
Un-controlled	WS-04	0.013	ha	R=	0.63	0.79
	WS-02	0.004	ha	R=	0.90	1.00
	WS-05 - Un-Affected	0.071	ha	R=	0.26	0.32
	Total Un-Controlled =		0.088	ha	ΣR=	0.30

$$I_5 = 998.071 / (Td + 6.053)^{0.814}$$

Time (min)	Intensity (mm/hr)	REQUIRED STORAGE			Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
		Controlled Runoff (L/s)	Storage Volume (m ³)	Controlled Release Rate (L/s)		
10	104.2	31.19	14.74	6.62	5.33	11.95
15	83.6	25.02	16.55	6.62	4.27	10.90
20	70.3	21.03	17.29	6.62	3.59	10.22
25	60.9	18.23	17.41	6.62	3.11	9.74
30	53.9	16.14	17.14	6.62	2.76	9.38
35	48.5	14.53	16.60	6.62	2.48	9.10
40	44.2	13.23	15.85	6.62	2.26	8.88
50	37.7	11.27	13.95	6.62	1.93	8.55
60	32.9	9.86	11.66	6.62	1.69	8.31
80	26.6	7.95	6.38	6.62	1.36	7.98
90	24.3	7.27	3.50	6.62	1.24	7.86

STORMATER STORAGE REQUIREMENTS

Total Storage Required =	17.41 m³	
Pipe Storage =	0.86 m ³	refer to Storm Sewer Design Sheet
CB/MH Storage =	2.56 m ³	refer to Storm Sewer Design Sheet
Underground Storage =	35.00 m ³	
Surface Storage =	12.45 m ³	
Total Available Storage =	50.88 m³	

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STORM WATER MANAGEMENT DESIGN SHEET
100 YEAR STORM EVENT

PRE-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			ΣR_5
Un-Affected	EWS-01	0.071	ha	R=	0.26
Affected	EWS-02	0.143	ha	R=	0.48
Total Area =		0.214	ha	$\Sigma R=$	0.41

PRE-DEVELOPMENT ALLOWABLE RELEASE RATE

$$Q = 2.78CIA \text{ (L/s)}$$

$$I_5 = 998.071 / (Tc + 6.053)^{0.814}$$

C =	0.41	up to a maximum of 0.5 as per City of Ottawa Sewer Design Guidelines
I =	104.2	mm/hr
Tc =	10	min
Total =	0.214	ha
Allowable Release Rate=	25.34	L/s
Allowable Release Rate=	12.67	L/s * 50% of Pre-Development Flow due to underground storage

POST-DEVELOPMENT STORMATER MANAGEMENT

POST-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			ΣR_5	ΣR_{100}
Controlled	WS-01	0.061	ha	R=	0.90	1.00
	WS-03	0.064	ha	R=	0.90	1.00
	Total Controlled =		0.125	ha	$\Sigma R=$	0.90
Un-controlled	WS-04	0.013	ha	R=	0.63	0.79
	WS-02	0.004	ha	R=	0.90	1.00
	WS-05 - Un-Affected	0.071	ha	R=	0.26	0.32
	Total Un-Controlled =		0.088	ha	$\Sigma R=$	0.35

$$I_{100} = 1735.688 / (Td + 6.014)^{0.820}$$

Time (min)	Intensity (mm/hr)	REQUIRED STORAGE		Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
		Controlled Runoff** (L/s)	Storage Volume (m ³)		
10	178.6	62.10	33.29	6.62	18.72
15	142.9	49.70	38.77	6.62	14.98
20	120.0	41.72	42.11	6.62	12.58
25	103.8	36.12	44.24	6.62	10.89
30	91.9	31.95	45.59	6.62	9.63
35	82.6	28.72	46.40	6.62	8.66
40	75.1	26.13	46.83	6.62	7.88
50	64.0	22.24	46.86	6.62	6.71
60	55.9	19.44	46.14	6.62	5.86
70	49.8	17.32	44.91	6.62	5.22
90	41.1	14.30	41.45	6.62	4.31
100	37.9	13.18	39.36	6.62	3.97
110	35.2	12.24	37.09	6.62	3.69
120	32.9	11.44	34.69	6.62	3.45

STORMATER STORAGE REQUIREMENTS

Total Storage Required =	46.96 m³	
Pipe Storage =	0.86 m ³	refer to Storm Sewer Design Sheet
CB/MH Storage =	2.56 m ³	refer to Storm Sewer Design Sheet
Underground Storage =	35.00 m ³	
Surface Storage =	12.45 m ³	
Total Available Storage =	50.88 m³	

Inlet Control Device Parameters

Product	Orifice Plate	at CB02
HWL =	87.71	m (highest HWL)
Grate Level =	87.55	m from inv.
Invert Level =	86.34	m
Outlet Pipe Dia. =	300	mm
Max. Flow =	6.62	L/s
ICD Centerline =	86.49	
HWL Head =	1.22	m (from centerlin from centerline)
C =	1.00	
Orifice Area =	0.006	m ²
Orifice Diameter =	93	mm (min. 75mm)

APPENDIX “B”

Sanitary Design

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SANITARY DESIGN SHEET
SEWER DESIGN

LOCATION			RESIDENTIAL AREA AND POPULATION						COMMERCIAL		INDUSTRIAL			INSTITUTIONAL		C+I-I	INFILTRATION			TOTAL FLOW (l/s)	PIPE					MANHOLE		
STREET	FROM MH	TO MH	AREA (Ha)	POP.	CUMMULATIVE		PEAK FACT.	PEAK FLOW (l/s)	AREA (Ha)	ACCU. AREA (Ha)	AREA (Ha)	ACCU. AREA (Ha)	PEAK FACT.	AREA (Ha)	ACCU. AREA (Ha)	PEAK FLOW (l/s)	TOTAL AREA (Ha)	ACCU. AREA (Ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	DIA. (mm)	MATERAIL	SLOPE (%)	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)	UP INVERT (m)	DOWN INVERT (m)
					AREA (Ha)	POP.																						
SITE	PROP. BLDG	CITY	0.214	35.7	0.21	35.7	4.0	0.58	0.000	0.000	0.00	0.00	7.0	0.0	0.0	0.00	0.21	0.21	0.06	0.64	33.2	150	PVC	1.00%	15.23	0.86	84.95	82.90

DESIGN PARAMETERS NOTES

Average Daily Flow = 280 L/p/day
 Commercial and Institutional Flow = 50000 L/ha/da
 Industrial Flow = 35000.00 L/ha/da
 Maximum Resedential Peak Flow = 4
 Connection and Intitutional Peak Factor = 1.5

Industrial Peak Factor = 7 as per Appendix 4-B
 Extraneous Flow = 0.33 L/s/ha
 Minimum Velocity = 0.76 m/s
 Mannings n = 0.013

Apartments:	Person Per Unit	Appartment	Total
Bachelor =	1.4	0	0
1 Bedroom =	1.4	12	16.8
2 Bedroom =	2.1	9	18.9
3 Bedroom =	3.1	0	0

APPENDIX “C”

Watermain Design

File No.	20-261	Date:	September 11 - 2022
Project:	New Residential - Commercial Building	Designed:	Guillaume Brunet
Project Address:	5497 Manotick	Checked:	Guillaume Brunet
Client:	Oligo Development	Drawing Reference:	

WATER CONSUMPTION CALCULATION

Total Building Floor Area =	663	m ²	
Site Total Area =	0.214	ha	
Total Population =	35.7	ea.	
Average Demand Per People =	280	L/c/d	
Average Water Demand =	9996.00	L/d	0.12 L/s
Maximum Daily Peak Factor =	2.5	* As per City of Ottawa	
Maximum Daily =	24990.00	L/d	0.29 L/s
Maximum Hourly Peak Factor =	2.2	* As per City of Ottawa	
Maximum Hourly =	54978.00	L/d	0.64 L/s
Total Domestic Flow =	0.64	L/s	
Total Fire Flow =	150.00	L/s	

	Unit Counts	WSFU	Total
Unrinal Flush Tank	21	2	42
Sinks	42	1	42
Bathub	21	4	84
Diswasher	21	1.5	31.5
Washing Machine	21	2	42
Total			241.5

Apartments:	Person Per Unit	Appartment	Total
Bachelor =	1.4	0	0
1 Bedroom =	1.4	12	16.8
2 Bedroom =	2.1	9	18.9
3 Bedroom =	3.1	0	0
Total		21	35.7


BLANCHARD LETENDRE
 ENGINEERING

File No.	20-261	Date:	September 11 - 2022
Project:	New Residential - Commercial Building	Designed:	Guillaume Brunet
Project Address:	5497 Manotick	Checked:	Guillaume Brunet
Client:	Oligo Development	Drawing Reference:	

Term	Options	Multiplier	Choose:	Value	unit	Fire Flow
Coefficient C related to the type of construction	Wood Frame	1.5	Non-combustible construction	0.8		
	Ordinary Construction	1.0				
	Non-combustible construction	0.8				
	Fire resistive construction <2 hrs	0.7				
	Fire resistive construction >2 hrs	0.6				
Type of housing	Single family dwelling	0	Building - no. of units per floor	8	unit	
	Townhouse - no. of units	0				
	Building - no. of units per floor	7				
	Number of floors excluding the basement	3				
	Floor space per unit	varies				
Required fire flow	Fire Flow = 220 x C x Area^{0.5}				L/min	8,000
					L/s	133
Occupancy hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15		
	Limited combustible	-0.15				
	Combustible	0				
	Free burning	0.15				
	Rapid burning	0.25				
Sprinkler reduction	Sprinklers (NFPA13)	-0.30	False	0		
	Water supply is standard for both the system and fire department hose lines	-0.10	False	0	L/min	6,800
	Fully supervised system	-0.10	False	0	L/s	113
Exposure distance between units	North side	Over 45m	0			
	East side	20.1 to 30m	0.1			
	South side	Over 45m	0		L/min	8,500
	West side	10.1 to 20m	0.15	0.25	L/s	142
Minimum required fire flow rate (rounded to nearest 1000)					L/min	9,000
Minimum required fire flow rate					L/s	150
Required duration of fire flow					min	30

APPENDIX “D”

Underground Chambers & Stormwater Treatment Unit

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



5497 MANOTICK MAIN STREET

MANOTICK, CANADA

SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- 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.
- 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.
- 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 F2418 SHALL BE GREATER THAN OR EQUAL TO 550 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.
- 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 F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

- STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- 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.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 20-50 mm (3/4-2").
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- 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.

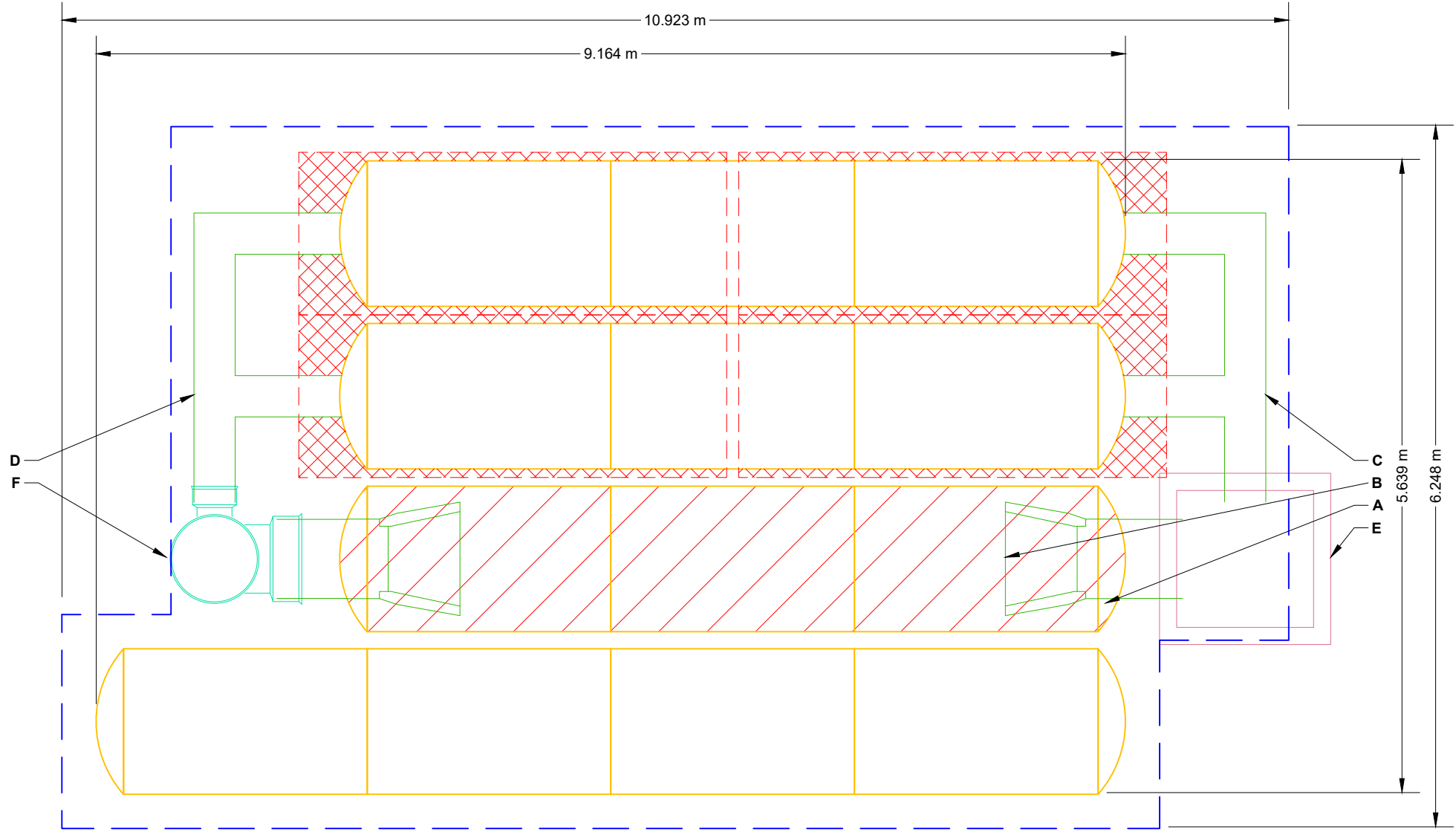
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER 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".
- 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 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		PROPOSED ELEVATIONS		*INVERT ABOVE BASE OF CHAMBER				
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
13	STORMTECH SC-740 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	89.578					
8	STORMTECH SC-740 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	87.749					
152	STONE ABOVE (mm)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	87.596	PREFABRICATED EZ END CAP	A	600 mm BOTTOM PREFABRICATED EZ END CAP, PART#: SC740ECEZ / TYP OF ALL 600 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	3 mm	
152	STONE BELOW (mm)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	87.596	FLAMP	B	INSTALL FLAMP ON 600 mm ACCESS PIPE / PART#: SC74024RAMP (TYP 2 PLACES)		
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	87.596	MANIFOLD	C	300 mm x 300 mm TOP MANIFOLD, ADS N-12	318 mm	
36.7	INSTALLED SYSTEM VOLUME (m ³) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	87.292	MANIFOLD	D	300 mm x 300 mm TOP MANIFOLD, ADS N-12	318 mm	
		TOP OF SC-740 CHAMBER:	87.139	CONCRETE STRUCTURE	E	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		130 L/s IN
		300 mm x 300 mm TOP MANIFOLD INVERT:	86.695	NYLOPLAST (INLET W/ ISO PLUS ROW)	F	750 mm DIAMETER (610 mm SUMP MIN)		130 L/s IN
62.1	SYSTEM AREA (m ²)	600 mm ISOLATOR ROW PLUS INVERT:	86.380					
34.3	SYSTEM PERIMETER (m)	600 mm ISOLATOR ROW PLUS INVERT:	86.380					
		BOTTOM OF SC-740 CHAMBER:	86.377					
		BOTTOM OF STONE:	86.225					



- ISOLATOR ROW PLUS (SEE DETAIL)
- PLACE MINIMUM 3.810 m OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
- BED LIMITS

NOTES

- 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.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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MANOTICK, CANADA

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SCALE = 1 : 50

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2 OF 6

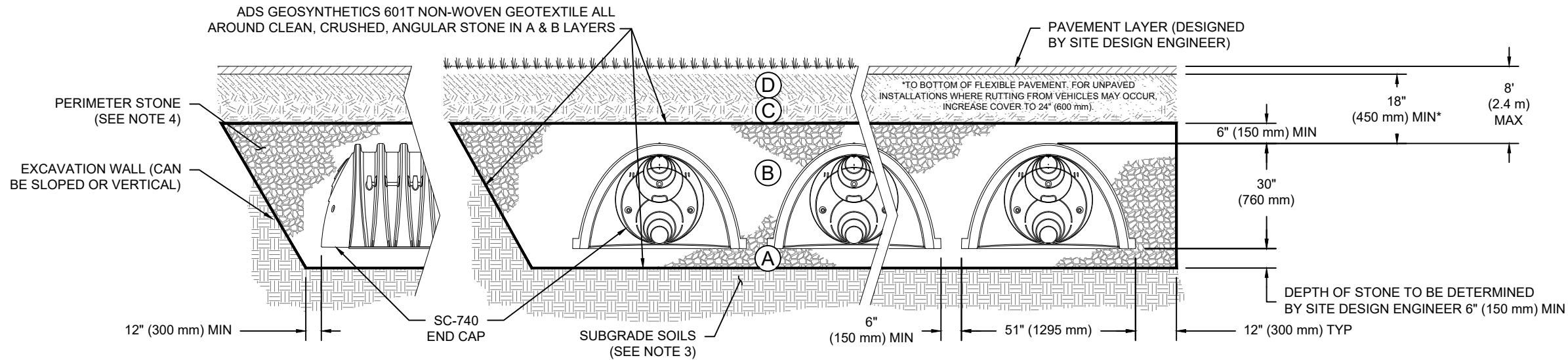
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

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	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	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

- 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".
- 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.
- 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.
- 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.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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 550 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.

5497 MANOTICK MAIN STREET
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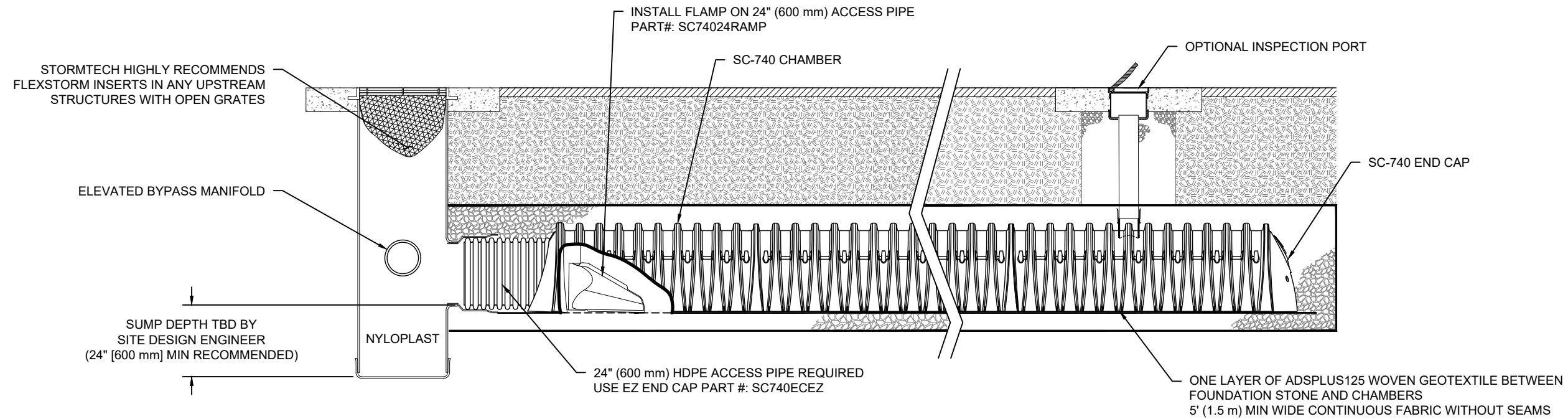
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SHEET
3 OF 6



SC-740 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.

5497 MANOTICK MAIN STREET
MANOTICK, CANADA
DATE: _____ DRAWN: HN
PROJECT #: _____ CHECKED: N/A

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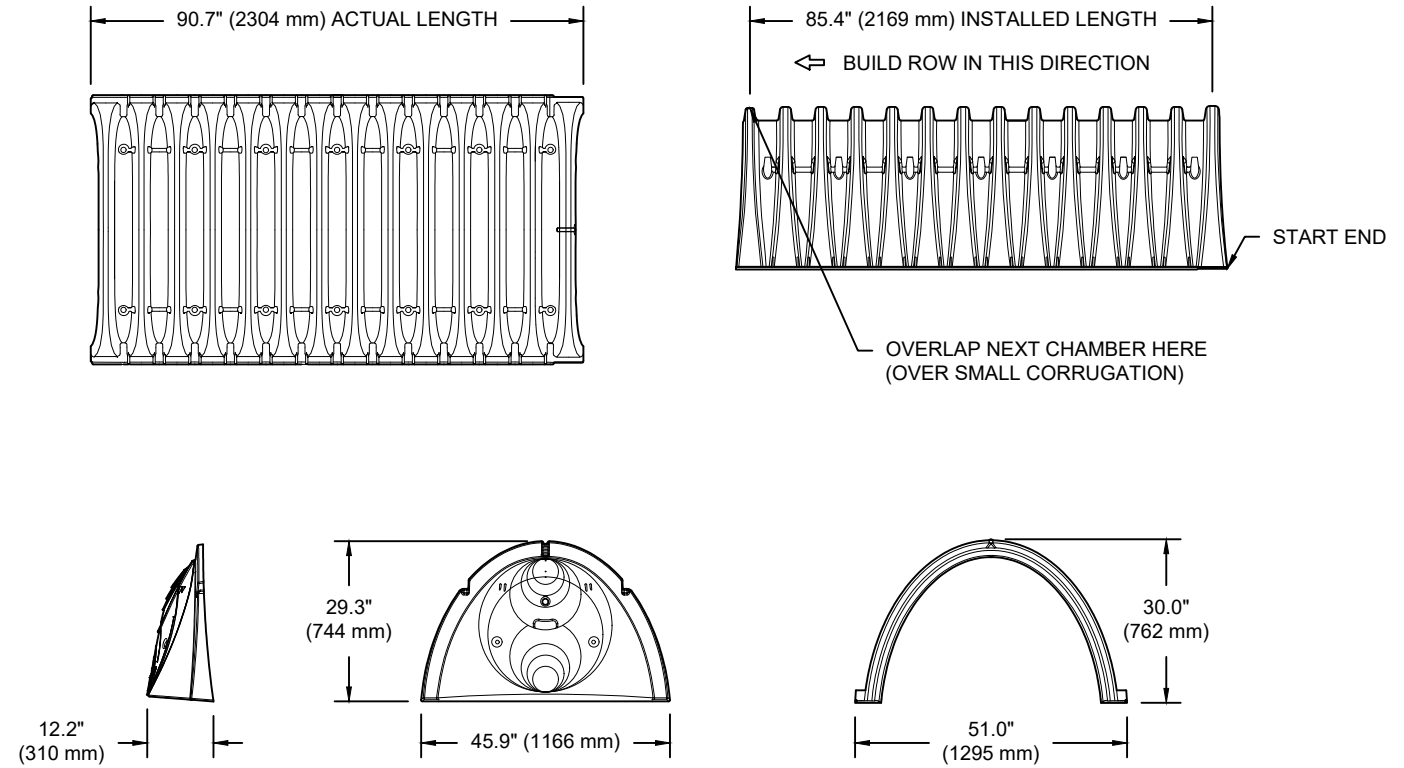
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SC-740 TECHNICAL SPECIFICATION

NTS

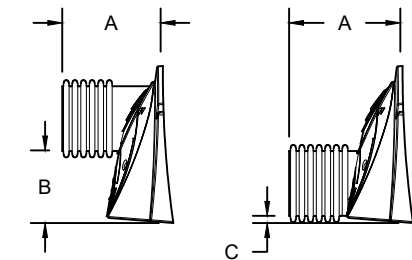


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m ³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m ³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE 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
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC	---	---	---	0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC	---	---	---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC	---	---	---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC	---	---	---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC	---	---	---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC	---	---	---	1.6" (41 mm)
SC740ECEZ*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740ECEZ 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 1-888-892-2694.

* FOR THE SC740ECEZ THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

5497 MANOTICK MAIN STREET
 MANOTICK, CANADA
 DATE: _____ DRAWN: HN
 PROJECT #: _____ CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

StormTech[®]
 Chamber System

888-892-2694 | WWW.STORMTECH.COM

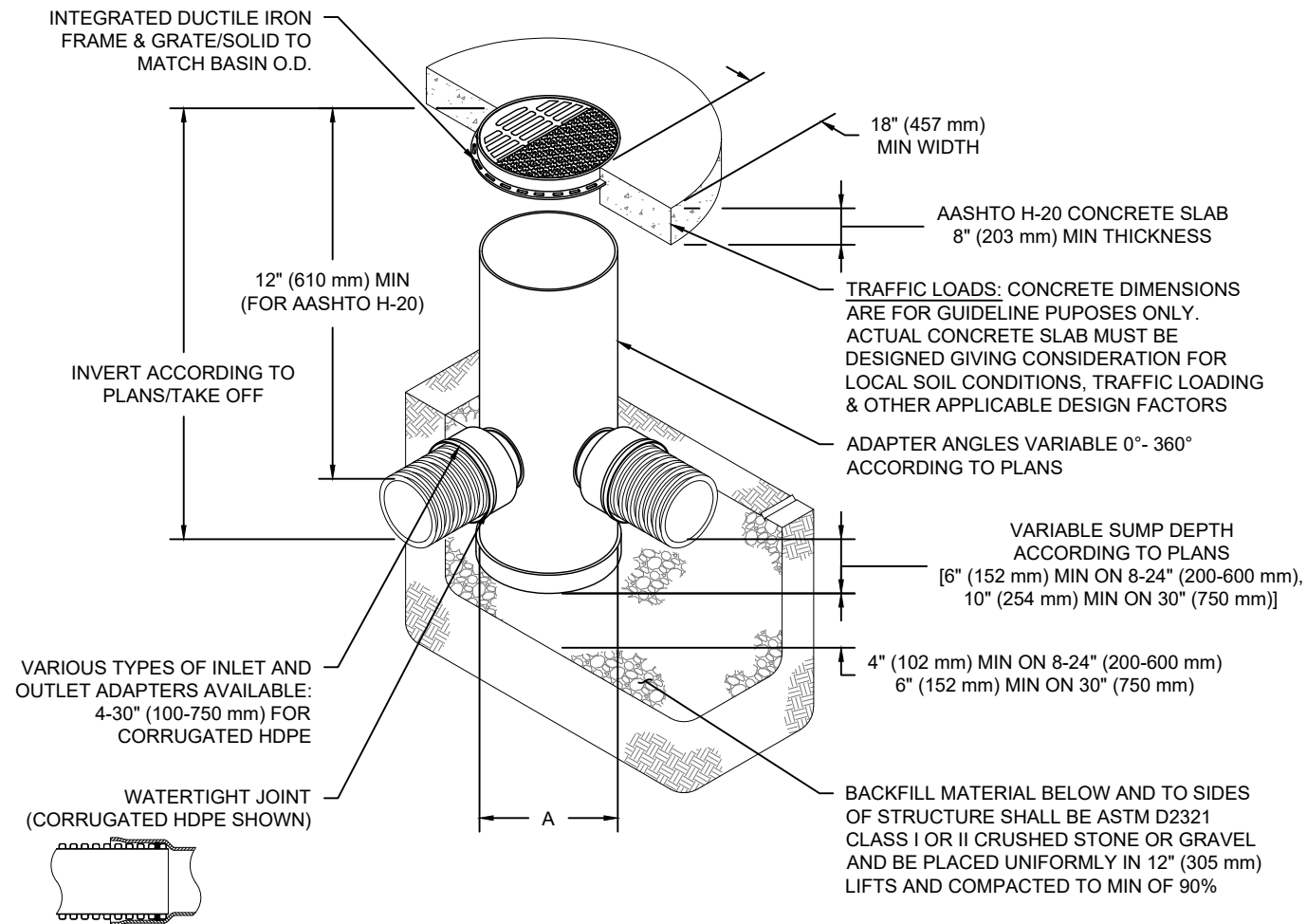
4640 TRUEMAN BLVD
 HILLIARD, OH 43026
 1-800-733-7473



THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

NYLOPLAST DRAIN BASIN

NTS



NOTES

- 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
- DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION: WWW.NYLOPLAST-US.COM
- TO ORDER CALL: 800-821-6710

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

5497 MANOTICK MAIN STREET
MANOTICK, CANADA

DATE	DESCRIPTION

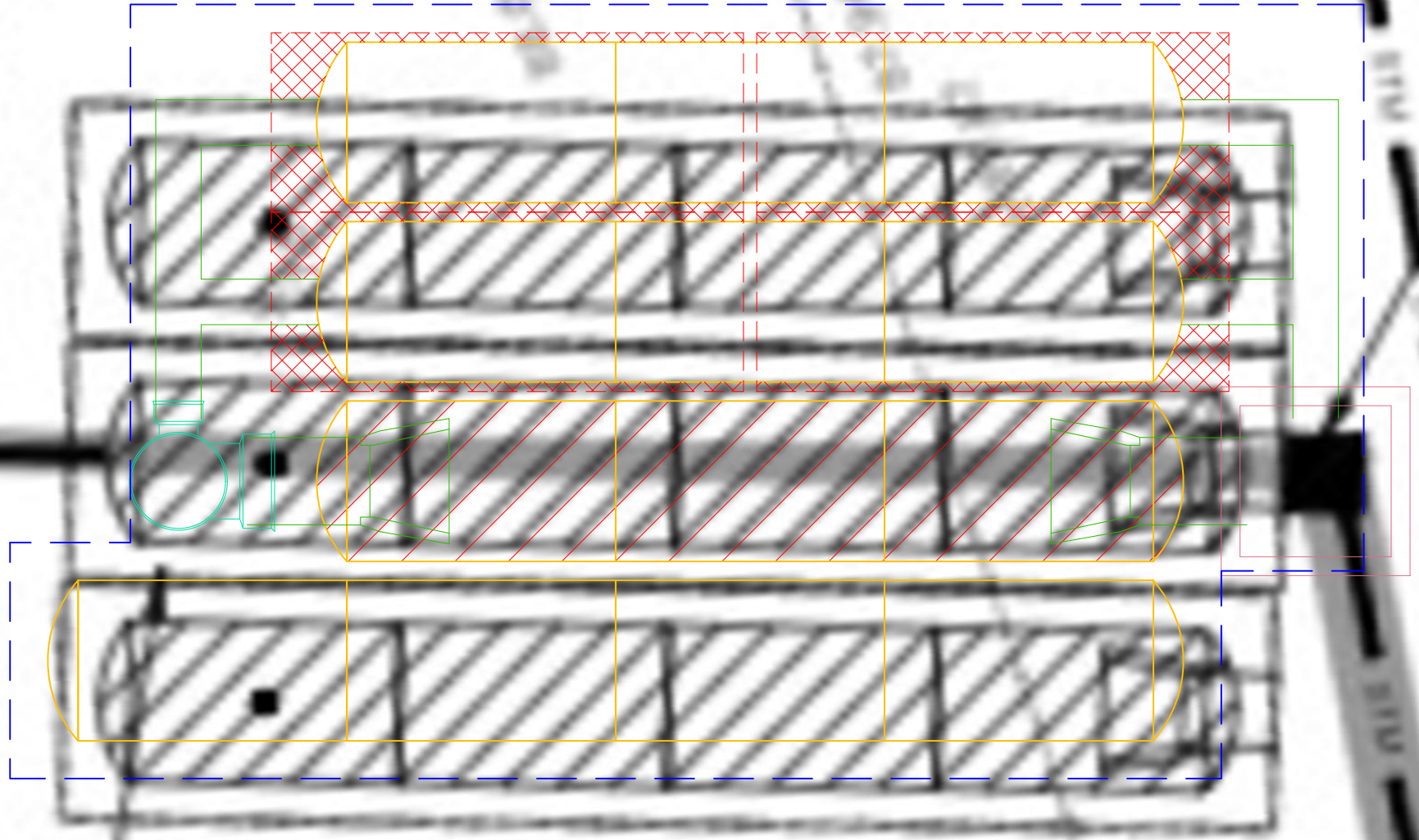
Nyloplast[®]
770-932-2443 | WWW.NYLOPLAST-US.COM

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

ADS

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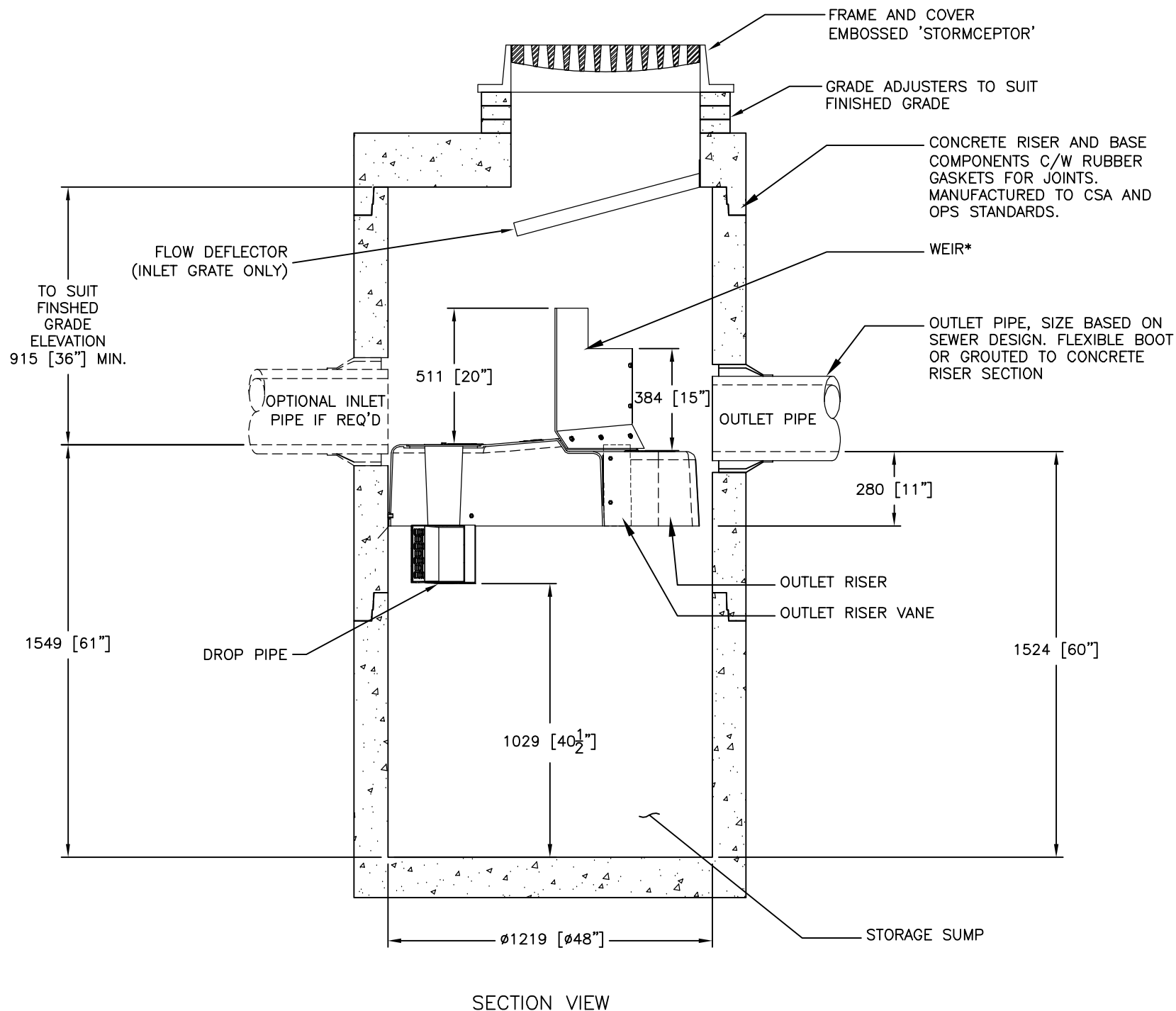


PROP. UNDERGROUND
STORM CHAMBERS
TOTAL STORAGE: 35m³
REFER TO DETAILS FOR

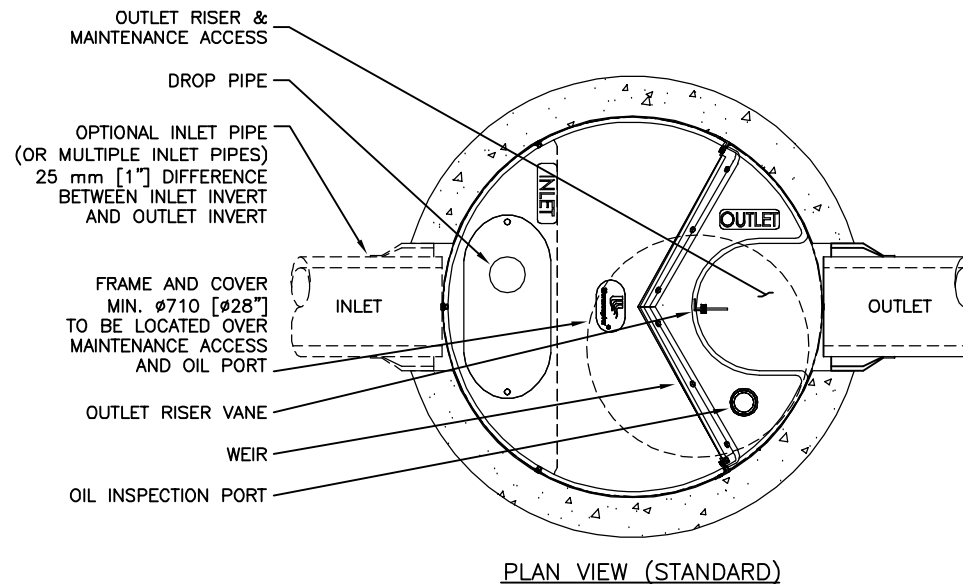
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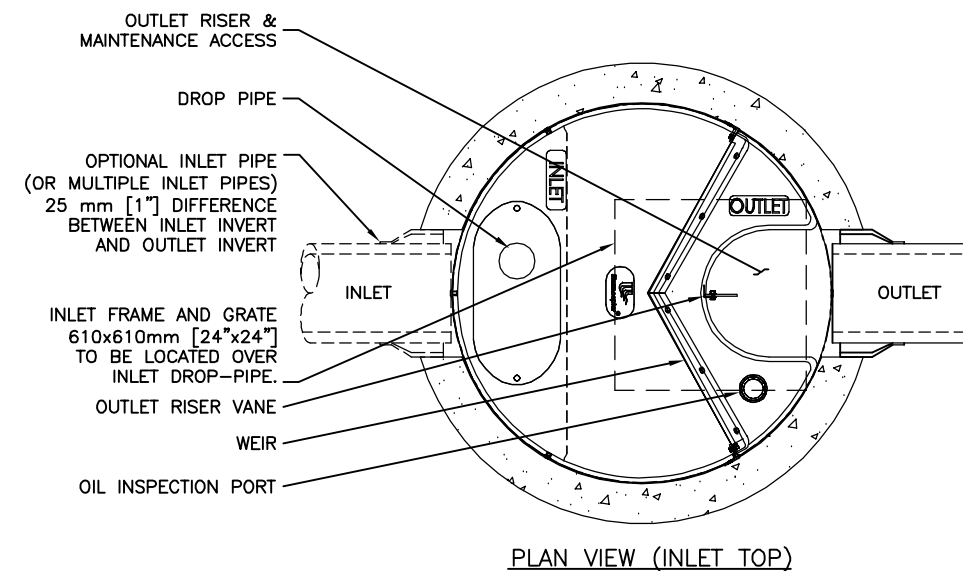
PROJ
M-10-7-10



SECTION VIEW



PLAN VIEW (STANDARD)



PLAN VIEW (INLET TOP)

FOR SITE SPECIFIC DRAWINGS PLEASE CONTACT YOUR LOCAL STORMCEPTOR REPRESENTATIVE. SITE SPECIFIC DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME. SOME FIELD REVISIONS TO THE SYSTEM LOCATION OR CONNECTION PIPING MAY BE NECESSARY BASED ON AVAILABLE SPACE OR SITE CONFIGURATION REVISIONS. ELEVATIONS SHOULD BE MAINTAINED EXCEPT WHERE NOTED ON BYPASS STRUCTURE (IF REQUIRED).

GENERAL NOTES:

- * MAXIMUM SURFACE LOADING RATE (SLR) INTO LOWER CHAMBER THROUGH DROP PIPE IS 1135 L/min/m² (27.9 gpm/ft²) FOR STORMCEPTOR EF4 AND 535 L/min/m² (13.1 gpm/ft²) FOR STORMCEPTOR EFO4 (OIL CAPTURE CONFIGURATION). WEIR HEIGHT IS 150 mm (6 INCH) FOR EF04.
- 1. ALL DIMENSIONS INDICATED ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SPECIFIED.
- 2. STORMCEPTOR STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
- 3. UNLESS OTHERWISE NOTED, BYPASS INFRASTRUCTURE, SUCH AS ALL UPSTREAM DIVERSION STRUCTURES, CONNECTING STRUCTURES, OR PIPE CONDUITS CONNECTING TO COMPLETE THE STORMCEPTOR SYSTEM SHALL BE PROVIDED AND ADDRESSED SEPARATELY.
- 4. DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEER'S SITE/UTILITY PLAN FOR STRUCTURE ORIENTATION.
- 5. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
- C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
- D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT THE DEVICE FROM CONSTRUCTION-RELATED EROSION RUNOFF.
- E. DEVICE ACTIVATION, BY CONTRACTOR, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE STORMCEPTOR UNIT IS CLEAN AND FREE OF DEBRIS.

**STANDARD DETAIL
NOT FOR CONSTRUCTION**

SITE SPECIFIC DATA REQUIREMENTS					
STORMCEPTOR MODEL	EF4				
STRUCTURE ID	*				
WATER QUALITY FLOW RATE (L/s)	*				
PEAK FLOW RATE (L/s)	*				
RETURN PERIOD OF PEAK FLOW (yrs)	*				
DRAINAGE AREA (HA)	*				
DRAINAGE AREA IMPERVIOUSNESS (%)	*				
PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*
* PER ENGINEER OF RECORD					

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MARK	DATE	REVISION DESCRIPTION	BY
###	###	INITIAL RELEASE	JSK
###	###	UPDATES	JSK

Stormceptor® EF

SCALE = NTS

imbrium
7037 RIDGE ROAD, SUITE 300, HANOVER, MD 21076
USA 888-276-8828 CA 800-568-4801 INTL. +1-410-960-9600
THE ENGINEER/OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE INSTALLATION OF THIS PRODUCT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE INSTALLATION OF THIS PRODUCT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE INSTALLATION OF THIS PRODUCT.

DATE:	5/26/2017	
DESIGNED:	JSK	DRAWN:
CHECKED:	BSF	APPROVED:
PROJECT No.:	EF4	SEQUENCE No.:
SHEET:	1	OF
		1



Stormceptor Net Annual Sediment Load Reduction Sizing Tool

Project Summary Site Details Sizing Result

< Back Cancel Save Sizing Report

Project Name: 5497 Manotick Main, On **Site Name:** Manotick Main **Location:** Manotick / ON

Site has been saved successfully.

[Download Stormceptor Specifications & Drawings](#)

[Download Stormceptor EFO Sizing Report](#)

Design Summary

Net Annual Sediment (TSS) Load Reduction Sizing Summary	
Stormceptor Model	TSS Removal Provided (%)
EFO4	90
EFO6	92
EFO8	93
EFO10	93
EFO12	93

Recommended Stormceptor EFO Model: EFO4

Estimated Net Annual Sediment (TSS) Load Reduction (%): 90

Water Quality Runoff Volume Capture (%): > 90

Upstream Flow Controlled Results

Rainfall Intensity (mm/hr)	Percent Rainfall Volume	Cumulative Rainfall Volume	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m ²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)

CreateProjectWithNetAnnual

1	51.3%	51.3%	0.21	12.6	10.5	93	47.7	47.7
2	8.7%	60.0%	0.42	25.2	21.0	93	8.1	55.8
3	5.8%	65.8%	0.63	37.8	31.5	93	5.4	61.2
4	4.6%	70.4%	0.84	50.4	42.0	93	4.3	65.5
5	4.2%	74.6%	1.05	63.1	52.5	92	3.9	69.3
6	3.2%	77.8%	1.26	75.7	63.1	91	2.9	72.2
7	2.6%	80.4%	1.47	88.3	73.6	90	2.3	74.6
8	2.4%	82.8%	1.68	100.9	84.1	89	2.1	76.7
9	1.9%	84.7%	1.89	113.5	94.6	88	1.7	78.4
10	1.6%	86.3%	2.10	126.1	105.1	87	1.4	79.8
11	1.3%	87.6%	2.31	138.7	115.6	86	1.1	80.9
12	1.1%	88.7%	2.52	151.3	126.1	85	0.9	81.8
13	1.3%	90.0%	2.73	163.9	136.6	84	1.1	82.9
14	1.1%	91.1%	2.94	176.5	147.1	83	0.9	83.8
15	0.6%	91.7%	3.15	189.2	157.6	81	0.5	84.3
16	0.8%	92.5%	3.36	201.8	168.1	80	0.6	85.0
17	0.7%	93.2%	3.57	214.4	178.6	79	0.6	85.5
18	0.5%	93.7%	3.78	227.0	189.2	77	0.4	85.9
19	0.6%	94.3%	3.99	239.6	199.7	76	0.5	86.4
20	0.5%	94.8%	4.20	252.2	210.2	75	0.4	86.7
21	0.2%	95.0%	4.41	264.8	220.7	74	0.1	86.9
22	0.4%	95.4%	4.62	277.4	231.2	73	0.3	87.2
23	0.5%	95.9%	4.83	290.0	241.7	72	0.4	87.5
24	0.4%	96.3%	5.04	302.6	252.2	72	0.3	87.8
25	0.1%	96.4%	5.25	315.3	262.7	71	0.1	87.9
26	0.3%	96.7%	5.46	327.9	273.2	70	0.2	88.1
27	0.4%	97.1%	5.67	340.5	283.7	69	0.3	88.4
28	0.2%	97.3%	5.88	353.1	294.2	68	0.1	88.5
29	0.2%	97.5%	6.09	365.7	304.7	67	0.1	88.6
30	0.2%	97.7%	6.31	378.3	315.3	66	0.1	88.8
31	0.1%	97.8%	6.52	390.9	325.8	65	0.1	88.8
32	0.2%	98.0%	6.73	403.5	336.3	64	0.1	89.0
33	0.1%	98.1%	6.94	416.1	346.8	63	0.1	89.0
34	0.1%	98.2%	7.15	428.7	357.3	63	0.1	89.1
35	0.1%	98.3%	7.36	441.4	367.8	62	0.1	89.2
36	0.2%	98.5%	7.57	454.0	378.3	61	0.1	89.3
37	1.5%	100.0%	7.78	466.6	388.8	60	0.9	90.2
38	0.1%	100.1%	7.99	479.2	399.3	58	0.1	90.2
39	0.1%	100.2%	8.20	491.8	409.8	58	0.1	90.3
40	0.1%	100.3%	8.41	504.4	420.3	57	0.1	90.3

CreateProjectWithNetAnnual

41	0.1%	100.4%	8.62	517.0	430.8	57	0.1	90.4
42	0.1%	100.5%	8.83	529.6	441.4	57	0.1	90.5
43	0.2%	100.7%	9.04	542.2	451.9	57	0.1	90.6
44	0.1%	100.8%	9.25	554.8	462.4	56	0.1	90.6
45	0.1%	100.9%	9.46	567.5	472.9	56	0.1	90.7
46	-0.9%	100.0%	9.67	580.1	483.4	56	N/A	N/A
47	0.1%	100.1%	9.88	592.7	493.9	55	0.1	90.2
48	-0.1%	100.0%	10.09	605.3	504.4	55	N/A	N/A
49	0.0%	100.0%	10.30	617.9	514.9	55	0.0	90.2
50	0.0%	100.0%	10.51	630.5	525.4	54	0.0	90.2

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APPENDIX “E”

Boundary Conditions

Boundary Conditions 5497 Manotick Main Street

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	7	0.12
Maximum Daily Demand	17	0.29
Peak Hour	38	0.64
Fire Flow Demand #1	9,000	150.00

Location



Results – Existing Conditions

Connection 1 – Manotick Main St.

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	156.9	98.3
Peak Hour	140.3	74.6
Max Day plus Fire 1	127.1	55.9

Ground Elevation = 87.8 m

Results – SUC Zone Reconfiguration

Connection 1 – Manotick Main St.

Demand Scenario	Head (m)	Pressure¹ (psi)
Maximum HGL	146.6	83.6
Peak Hour	141.0	75.7
Max Day plus Fire 1	121.0	47.2

Ground Elevation = 87.8 m

Notes

1. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
 - a. If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
 - b. Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

APPENDIX “F”

Engineering Drawings

EROSION AND SEDIMENT CONTROL MEASURES:

** CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES **

1. PRIOR TO START OF CONSTRUCTION:

- 1.1. PRIOR TO THE REMOVAL OF ANY VEGETATIVE COVER, MOVING OF ANY SOIL, AND CONSTRUCTION:
 - 1.1.1. INSTALL SILT FENCE IMMEDIATELY DOWNSTREAM FROM AREAS TO BE DISTURBED (SEE PLAN FOR LOCATION).
 - 1.1.2. INSTALL INSERTS WITH AN OVERFLOW IN ALL THE DOWNSTREAM CATCH BASINS AND MANHOLES, GEOSOCK AS REQUESTED BY THE CITY.
 - 1.1.3. INSTALL FILTERS IN ALL CONCRETE CATCH BASIN STRUCTURES.
 - 1.1.4. INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.

2. DURING CONSTRUCTION:

- 2.1. WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY TO SEPTEMBER ONLY.
- 2.2. MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE.
- 2.3. PROTECT DISTURBED AREAS FROM RUNOFF.
- 2.4. PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
- 2.5. INSPECT SILT FENCE, FILTER CLOTHS, AND CATCH BASIN SLUMPS WEEKLY AND AFTER EVERY MAJOR STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
- 2.6. PLAN TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
- 2.7. EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
- 2.8. DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDDED IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (30 DAYS).

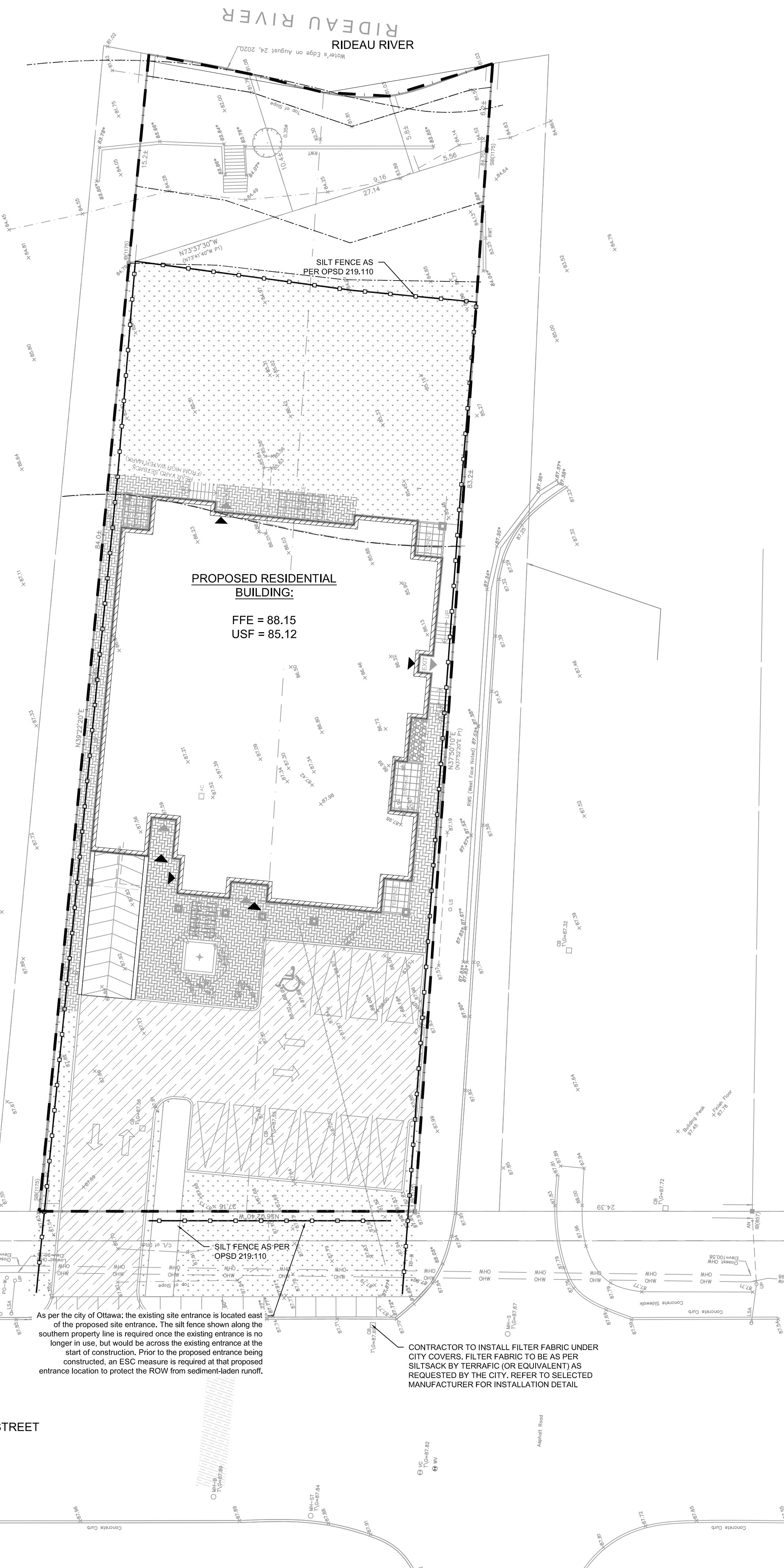
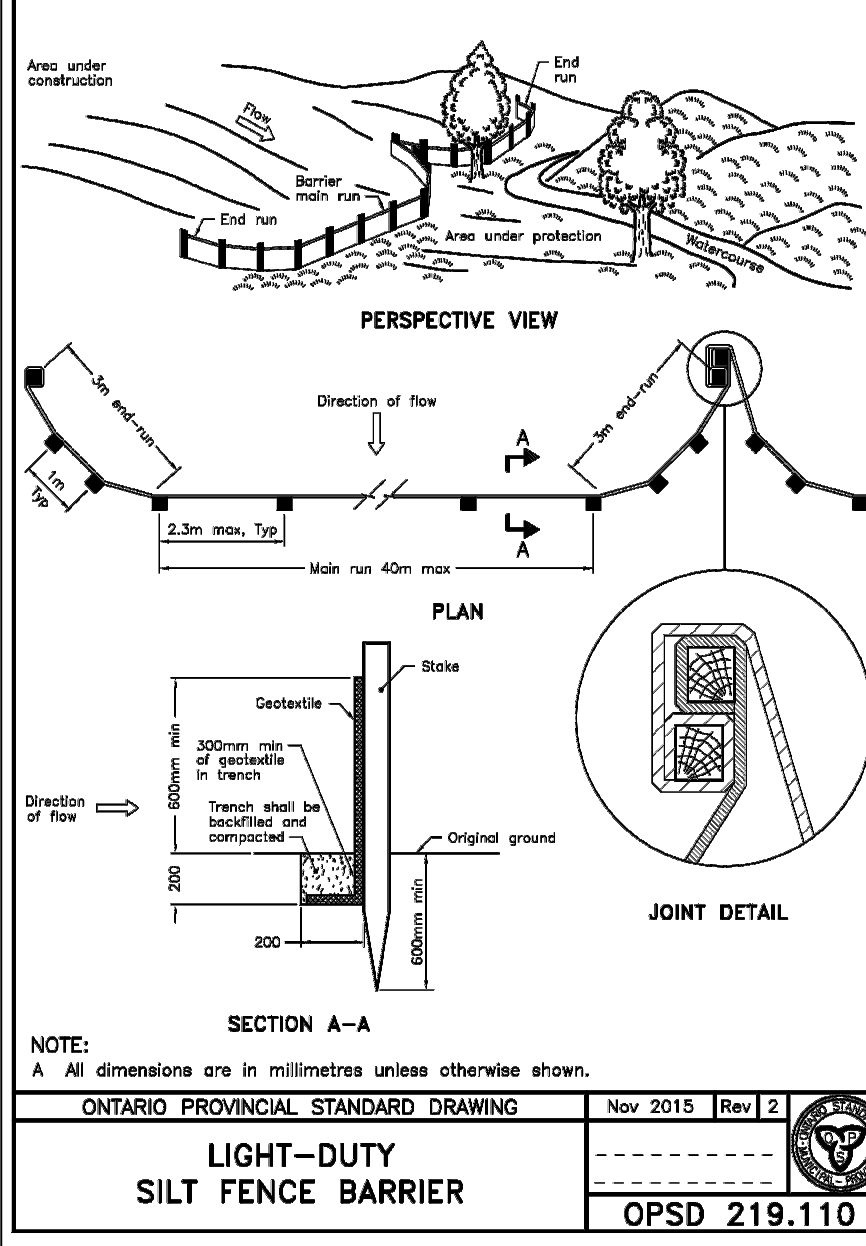
- 2.9. CONTROL WIND-BLOWN DUST OFF SITE TO ACCEPTABLE LEVELS BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED).
- 2.10. ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
- 2.11. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THIS CONSULTING ENGINEER AND THE CITY DEPARTMENT OF PUBLIC WORKS. TO PREVENT UNNECESSARY SEDIMENT DISCHARGE, THE CONTRACTOR IS PERMITTED TO PLACE ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES IN A TIMELY MANNER, IF REQUIRED, THE CONTRACTOR TO ADVISE CONSULTANT ONCE INSTALLED FOR INSPECTION.
- 2.12. CONTRACTOR RESPONSIBLE FOR CITY ROADWAY AND SIDEWALK TO BE CLEARED OF ALL SEDIMENT FROM VEHICULAR TRACKING ETC, AT THE END OF EACH WORK DAY.
- 2.13. DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED.
- 2.14. ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
- 2.15. TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.

3. AFTER CONSTRUCTION:

- 3.1. PROVIDE PERMANENT COVER CONSISTING OF TOPSOIL AND SEED TO DISTURBED AREA.
- 3.2. INSPECT AND CLEAN CATCH BASIN SLUMPS AND STORM SEWERS.

LEGEND:

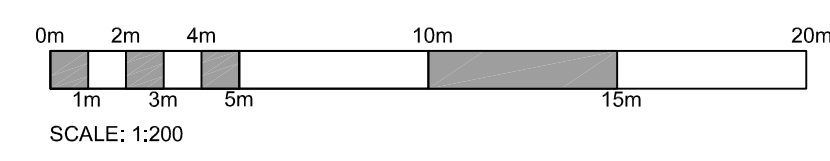
- EXISTING PROPERTY LINE TO REMAIN
- - - PROPOSED EASEMENT
- PROPOSED TERRACING (3:1 MIN)
- ▽ PROPOSED DOOR ENTRANCE EXIT
- +50.00 PROPOSED ELEVATION
- +50.00HP PROPOSED HIGH POINT ELEVATION
- +50.00SW PROPOSED SWALE ELEVATION
- +50.00SD PROPOSED SIDEWALK ELEVATION
- +50.00EX MATCH INTO EXISTING ELEVATION
- +50.00BW PROPOSED BOTTOM OF WALL
- +50.00TW PROPOSED TOP OF WALL
- X0.19 EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED 100mm PERFORATED SUBDRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- PROPOSED CATCH BASIN/MANHOLE/CATCH BASIN
- PROPOSED CURB STOP
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- WGS-XX WATERSHED NAME
- COEFF. RUNOFF COEFFICIENT
- AREA AREA IN HECTARES
- PROPOSED GRASS AREA
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED GRAVEL AREA
- PROPOSED RIP RAP AS PER OPSD 810.010
- PROPOSED WATER METER
- PROPOSED ACCESS GATE
- PROPOSED GROUND FIELD



As per the city of Ottawa: the existing site entrance is located east of the proposed site entrance. The silt fence shown along the southern property line is required once the existing entrance is no longer in use, but would be across the existing entrance at the start of construction. Prior to the proposed entrance being constructed, an ESC measure is required at that proposed entrance location to protect the ROW from sediment-laden runoff.

CONTRACTOR TO INSTALL FILTER FABRIC UNDER CITY COVERS. FILTER FABRIC TO BE AS PER SILTSACK BY TERRAFIC (OR EQUIVALENT) AS REQUESTED BY THE CITY. REFER TO SELECTED MANUFACTURER FOR INSTALLATION DETAIL.

SITE BENCHMARK
FIRE HYDRANT
TOP OF SPINDLE
ELEV. = 88.50



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ENGINEERING STAMP

LICENSED PROFESSIONAL ENGINEER
G. L. BRUNET
100191036
11/08/2022
PROVINCE OF ONTARIO

#8	
#7	
#6	
#5	
#4	ISSUED AS PER CITY COMMENTS 11/08/2022
#3	ISSUED FOR SPA 12/10/2021
#2	ISSUED FOR SPA 06/08/2021
#1	ISSUED FOR SPA 10/03/2021
NO. REVISION	DATE (DDMMYYYY)

B
BLANCHARD LETENDRE ENGINEERING
767, Avenue D'Orléans, Local 42, Embrun, Ontario, K0A 1W1
(613) 693-0700 blanchardletendre.com

CLIENT:
12213559 CANADA INC.
996-B ST. AUGUSTIN RD.
EMBRUN, ON

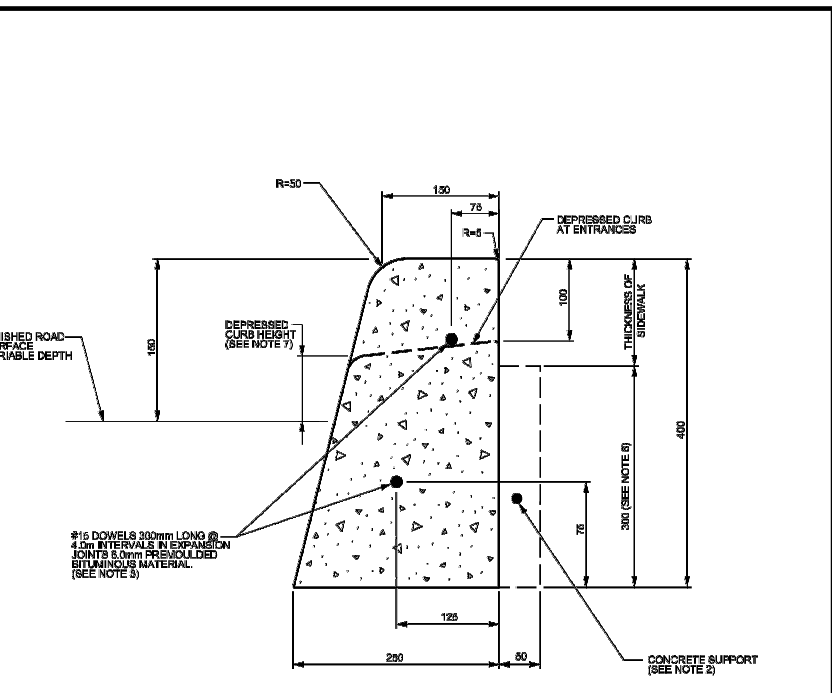
PROJECT:
NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST.
MANOTICK, ON

DRAWING:
SEDIMENT & EROSION CONTROL PLAN

PAPER FORMAT:	24x36	PAGE: C100
DRAWN BY:	BF + GB	
CHECKED BY:	GB	
DATE:	09-2022	
SCALE:	1:200	
PROJECT NUMBER:	20-261	

LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- - - PROPOSED EASEMENT
- PROPOSED TERRACING (3:1 MIN)
- ▽ PROPOSED DOOR ENTRANCE/EXIT
- +50.00 PROPOSED ELEVATION
- +50.00HP PROPOSED HIGH POINT ELEVATION
- +50.00SW PROPOSED SWALE ELEVATION
- +50.00SD PROPOSED SIDEWALK ELEVATION
- +50.00EX MATCH INTO EXISTING ELEVATION
- +50.00BW PROPOSED BOTTOM OF WALL
- +50.00TW PROPOSED TOP OF WALL
- X.XX EX EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED SILT FENCE AS PER OPSD 215.1.10
- PROPOSED 100mmØ PERFORATED SUBDRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
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- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED GRAVEL AREA
- PROPOSED RIP RAP AS PER OPSD 810.010
- PROPOSED WATER METER
- PROPOSED ACCESS GATE
- PROPOSED GROWING FIELD



CONCRETE BARRIER CURB

NOTES:

1. THE FULL CURB DEPTH SHALL BE CHECKED THROUGH THE DEPRESSED ACCESS CROSSING.
2. A CONCRETE SUPPORT IS REQUIRED WHEN PLACED TO THE SIDEWALK.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
4. CURBARY CONTROL SHALL BE 200mm FRONT BACK AND TOP OF SECTION AT 2m SPACING.
5. FOR DEPRESSED CURB AT ENTRANCES USE 200.
6. DEPRESSED CURB HEIGHT - CONCRETE CURB SHALL BE 100mm FOR PRIVATE ENTRANCES & 150mm.

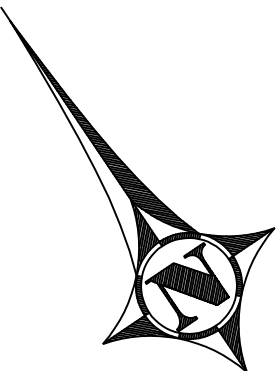
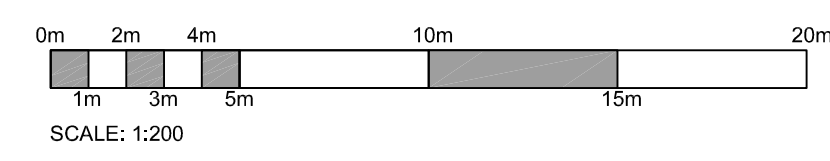
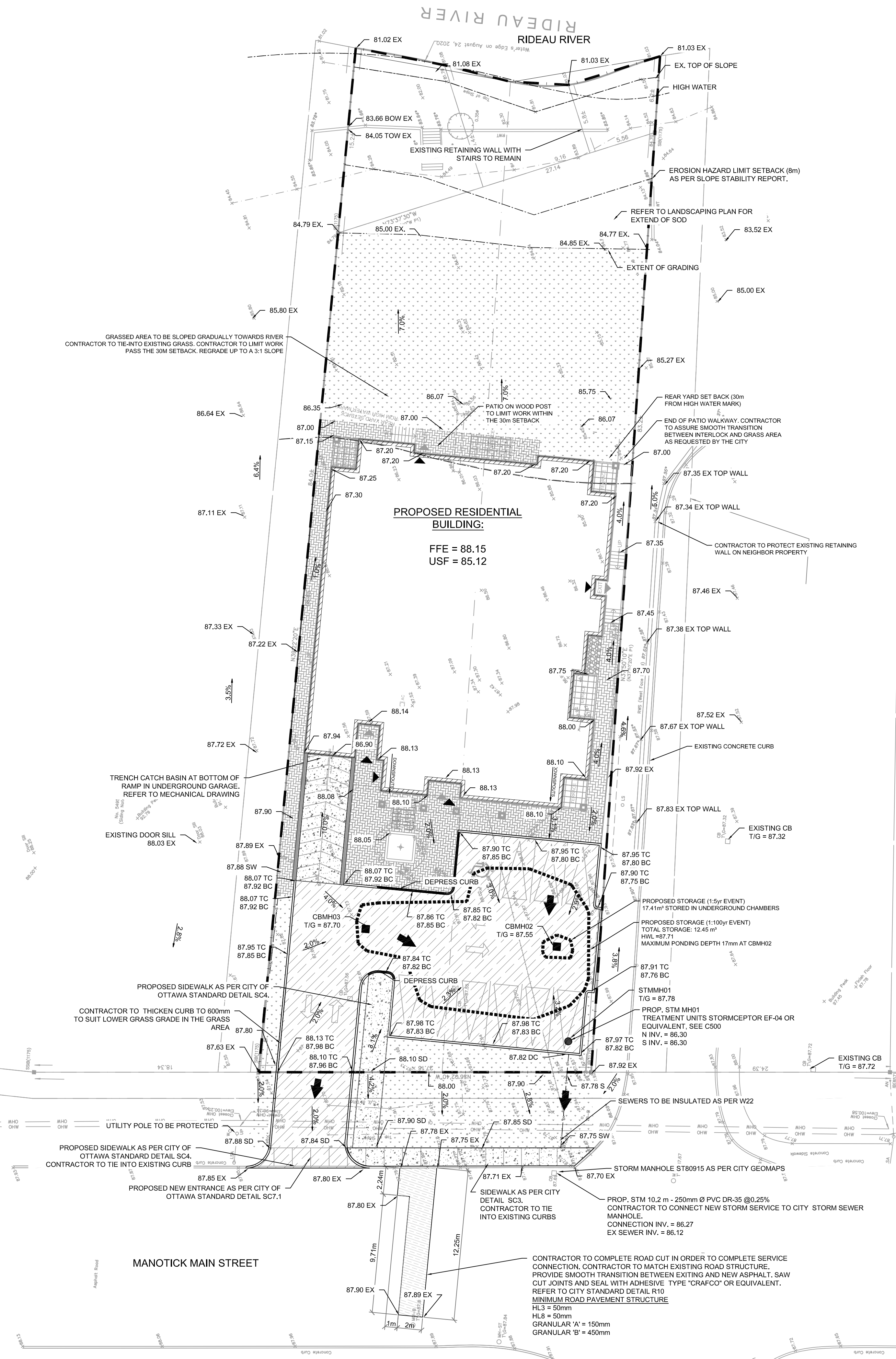
N.T.S.

CONCRETE BARRIER CURB FOR GRANULAR BASE PAVEMENT (MODIFIED OPSD-800.110)	DATE: JANUARY 2024
	REVISED: MARCH 2024
	CHG. No. SC1.1



COURSE	MATERIAL	THICKNESS (mm)	
		AUTOMOBILE PARKING	TRUCK ROUTE (HEAVY TRAFFIC)
SURFACE	HL.3 A/C (PG 58-28)	50	40
BINDER	HL.8 A/C (PG 58-28)	--	50
BASECOURSE	GRANULAR "A"	150	150
SUBBASE	GRANULAR "B" TYPE II	350	450

NOTE:
IN PREPARATION FOR PAVEMENT CONSTRUCTION AT THIS SITE, ANY SURFICIAL OR NEAR SURFACE/SUBGRADE LEVEL TOPSOIL AND ANY SOFT, WET OR DELETERIOUS MATERIALS SHOULD BE REMOVED FROM THE PROPOSED PAVED AREAS. THE EXPOSED SUBGRADE SHOULD BE INSPECTED AND APPROVED BY GEOTECHNICAL PERSONNEL AND ANY SOFT AREAS EVIDENT SHOULD BE SUBGRAVATED AND REPLACED WITH SUITABLE EARTH BORROW APPROVED BY THE GEOTECHNICAL ENGINEER. THE SUBGRADE SHOULD BE SHAPED AND CROWNED TO PROMOTE DRAINAGE OF THE SITE DRAINAGE STRUCTURES. FOLLOWING APPROVAL OF THE PREPARATION OF THE SUBGRADE, THE PAVEMENT GRANULARS MAY BE PLACED.



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NO. REVISION		DATE (DDMMYYYY)

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767, Notre Dame, Local 42, Embrun, Ontario, K0A 1W1
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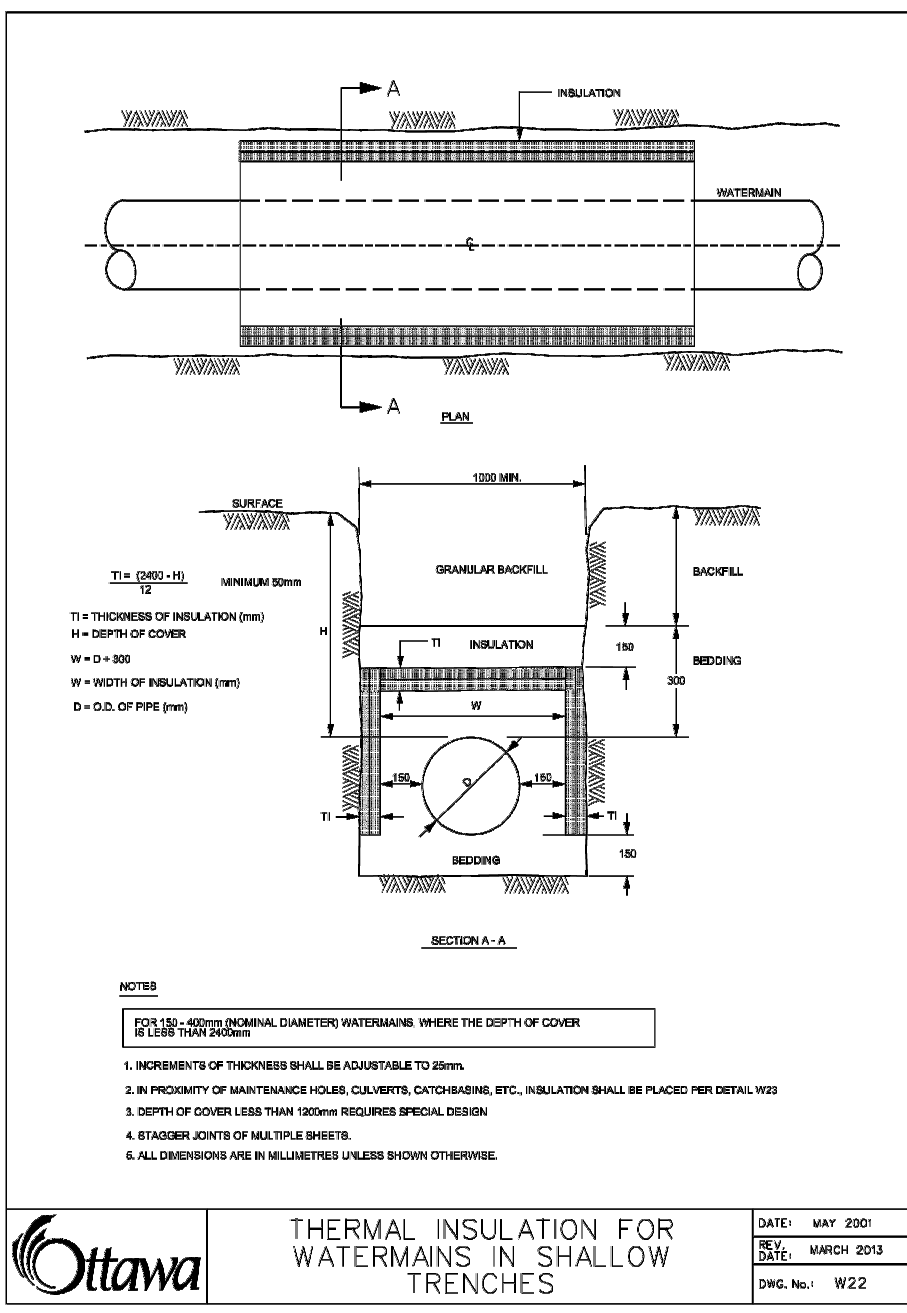
CLIENT:
12213559 CANADA INC.
996-8 ST. AUGUSTIN RD.
EMBRUN, ON

PROJECT:
NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST.
MANOTICK, ON

DRAWING:
SITE GRADING PLAN

PAPER FORMAT: 24x36	C200
DRAWN BY: BF + GB	
CHECKED BY: GB	
DATE: 09-2022	
SCALE: 1:200	
PROJECT NUMBER: 20-261	PAGE: 20-261

- LEGEND:**
- EXISTING PROPERTY LINE TO REMAIN
 - PROPOSED EASEMENT
 - PROPOSED TERRACING (3:1 MN)
 - PROPOSED DOOR ENTRANCE/EXT
 - PROPOSED ELEVATION
 - PROPOSED HIGH POINT ELEVATION
 - PROPOSED SWALE ELEVATION
 - PROPOSED SIDEWALK ELEVATION
 - MATCH INTO EXISTING ELEVATION
 - PROPOSED BOTTOM OF WALL
 - PROPOSED TOP OF WALL
 - EXISTING ELEVATION
 - PROPOSED OVERLAND MAJOR FLOW ROUTE
 - PROPOSED SILT FENCE AS PER OPSD 218.110
 - PROPOSED 100mmØ PERFORATED SUBDRAIN
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
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 - PROPOSED CONCRETE FEATURES/SLAB
 - PROPOSED HEAVY DUTY ASPHALT
 - PROPOSED LIGHT DUTY ASPHALT
 - PROPOSED GRAVEL AREA
 - PROPOSED RIP RAP AS PER OPSD 810.010
 - PROPOSED WATER METER
 - PROPOSED ACCESS GATE



Ottawa THERMAL INSULATION FOR WATERMANS IN SHALLOW TRENCHES



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ENGINEERING STAMP

LICENSED PROFESSIONAL ENGINEER
 G. L. BRUNET
 100191036
 11/08/2022
 PROVINCE OF ONTARIO

#8		
#7		
#6		
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#1	ISSUED FOR SPA	10/03/2021
NO. REVISION		DATE (DDMMYYYY)

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BLANCHARD LETENDRE
 ENGINEERING
 757, Ave. Drape, Local 42, Embury, Ontario, K0A 1W1
 (613) 693-0700 blanchardletendre.com

CLIENT:
 12213559 CANADA INC.
 996-8 ST. AUGUSTIN RD.
 EMBURY, ON

PROJECT:
 NEW MULTIPURPOSE DEVELOPMENT
 5497 MANOTICK MAIN ST.
 MANOTICK, ON

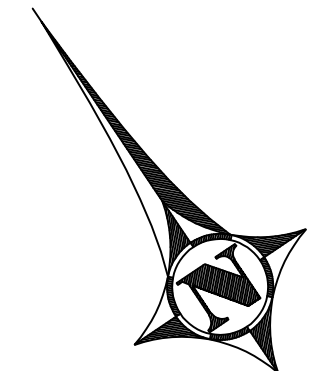
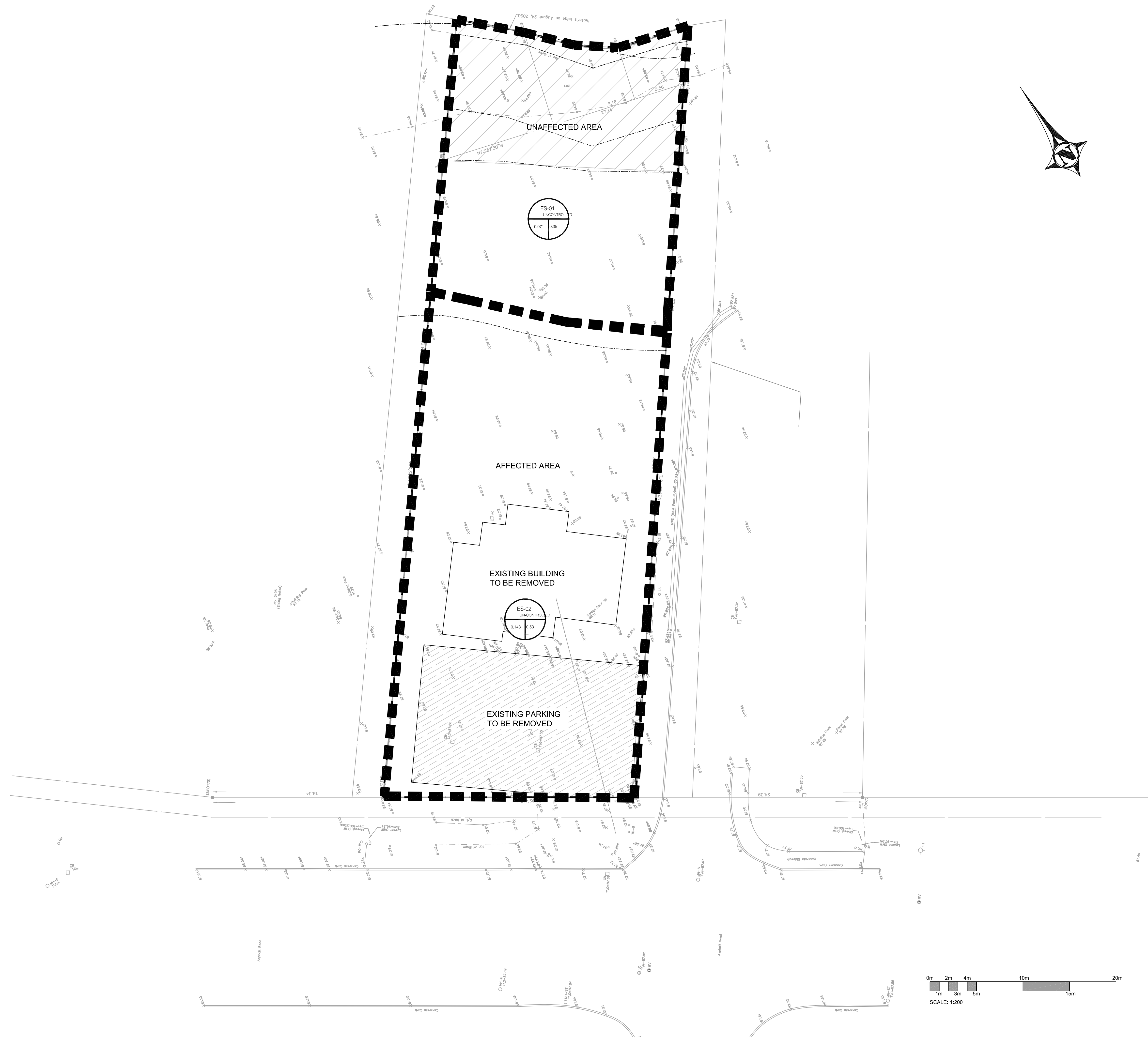
DRAWING:
 SITE SERVICING PLAN

PAPER FORMAT:	24x36
DRAWN BY:	BF + GB
CHECKED BY:	GB
DATE:	09-2022
SCALE:	1:200
PROJECT NUMBER:	20-261

PAGE:
 C300

LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- - - PROPOSED EASEMENT
- PROPOSED TERRACING (0.1 MIN.)
- ▽ PROPOSED DOOR ENTRANCE/EXIT
- +50.00 PROPOSED ELEVATION
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- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED GRAVEL AREA
- PROPOSED RIP RAP AS PER OPSD 610.010
- PROPOSED WATER METER
- PROPOSED ACCESS GATE
- PROPOSED CROWNING FIELD



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NO.	REVISION	DATE (DDMMYYYY)

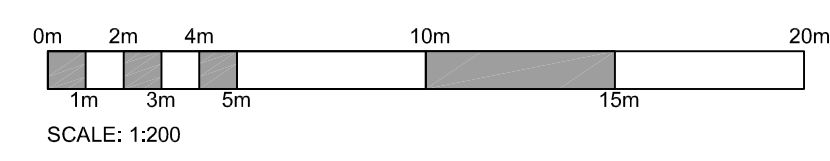
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767, Avenue D'Orléans, Local 40, Embury, Ontario, K0A 1W1
(613) 693-0700 blanchardletendre.ca

CLIENT:
12213559 CANADA INC.
996-B ST. AUGUSTIN RD.
EMBRUN, ON

PROJECT:
NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST.
MANOTICK, ON

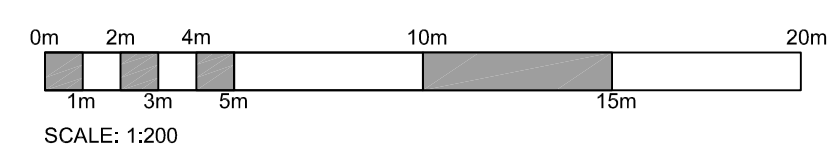
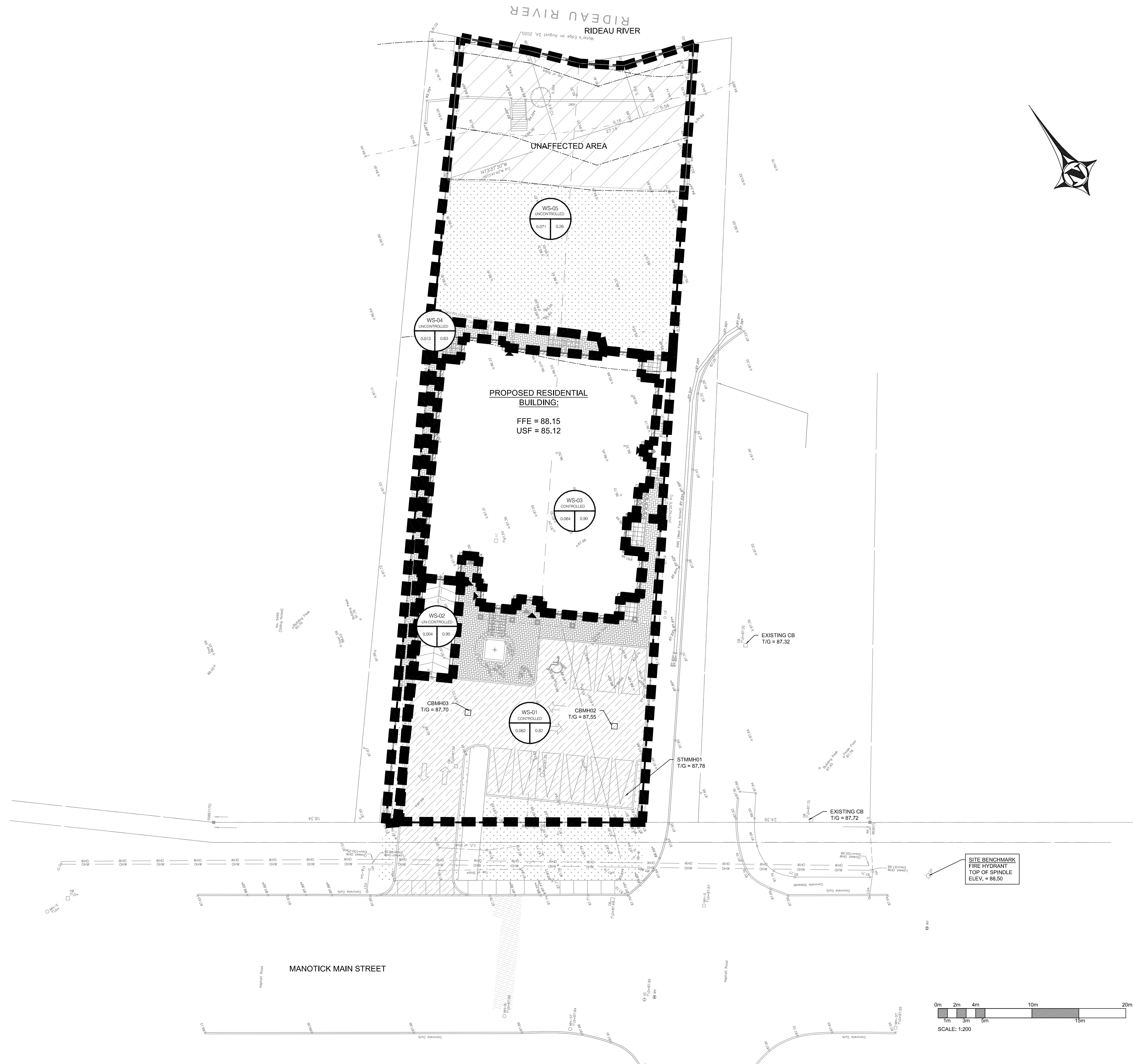
DRAWING:
PRE-DEVELOPMENT DRAINAGE

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SCALE:	1:200	
PROJECT NUMBER:	20-261	



LEGEND:

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	PROPOSED EASEMENT
	PROPOSED TERRACING (0.1 MIN)
	PROPOSED DOOR ENTRANCE/EEXIT
	PROPOSED ELEVATION
	PROPOSED HIGH POINT ELEVATION
	PROPOSED SWALE ELEVATION
	PROPOSED SIDEWALK ELEVATION
	MATCH INTO EXISTING ELEVATION
	PROPOSED BOTTOM OF WALL
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	PROPOSED OVERLAND MAJOR FLOW ROUTE
	PROPOSED BILT FENCE AS PER OPSD 210-110
	PROPOSED 100mmØ PERFORATED SUBDRYAN
	PROPOSED STORM SEWER
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	PROPOSED WATER METER
	PROPOSED ACCESS GATE
	PROPOSED CROPPING FIELD



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767, Avenue D'Orléans, Local 40, Embrun, Ontario, K0A 1W1
(613) 693-0700 | blengr@btel.net

CLIENT:
12213559 CANADA INC.
996-B ST. AUGUSTIN RD.
EMBRUN, ON

PROJECT:
NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST.
MANOTICK, ON

DRAWING:
POST DEVELOPMENT STORAGE AREA

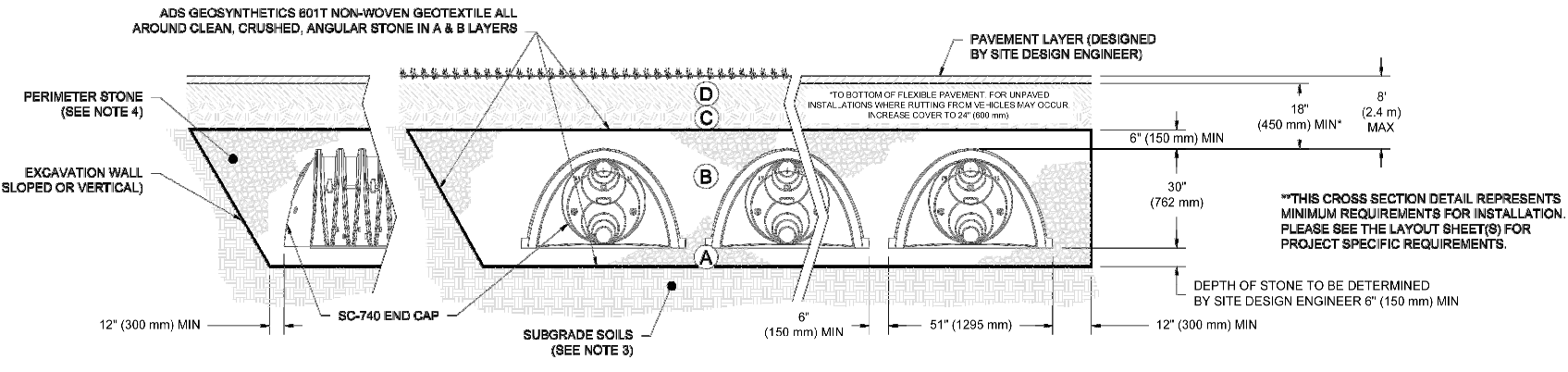
PAPER FORMAT: 24x36
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DATE: 09-2022
SCALE: 1:200
PROJECT NUMBER: 20-261

PAGE:
C401

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

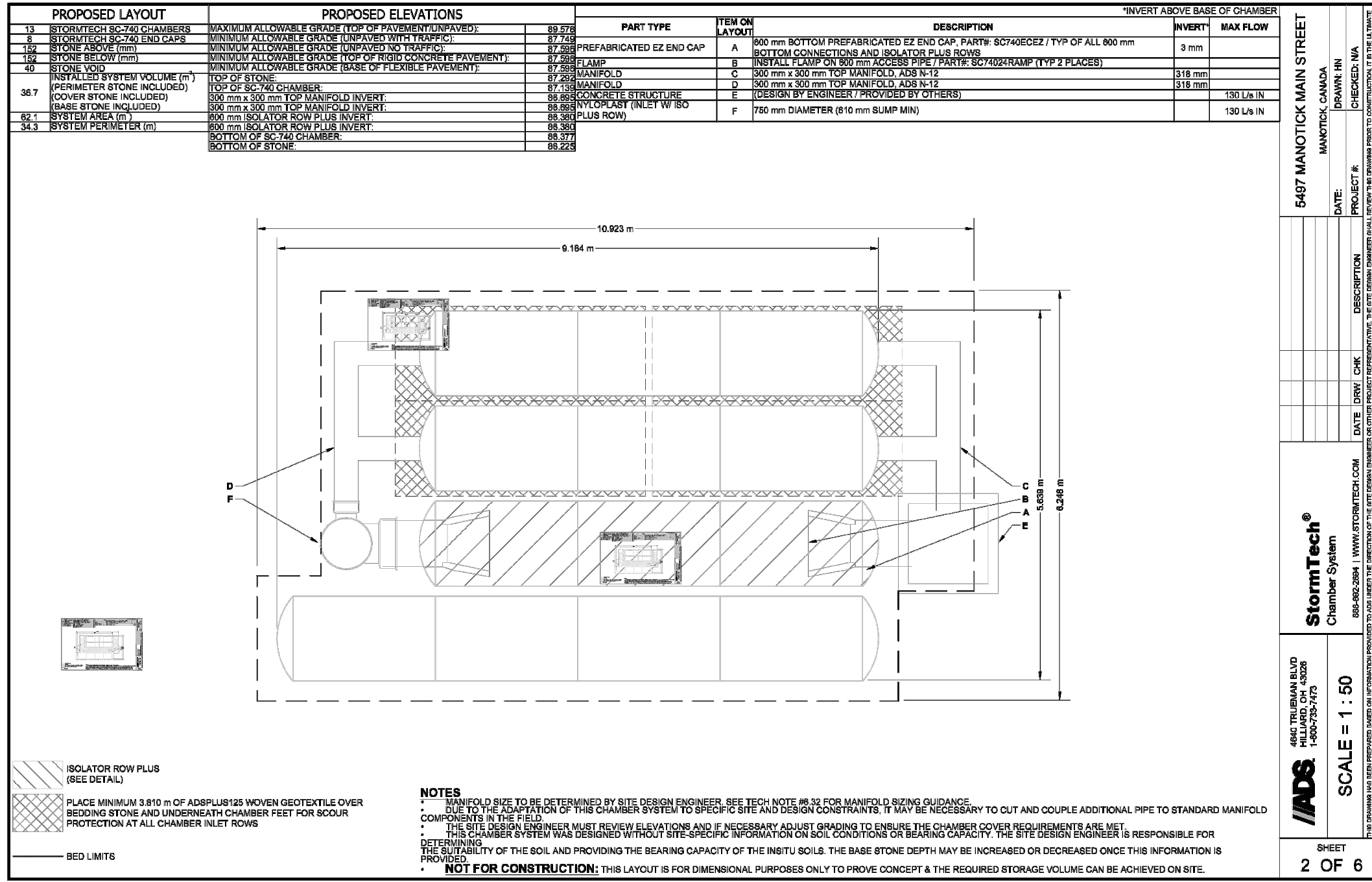
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL MATERIAL FOR LAYER 12 STARTS FROM THE TOP OF THE LAYER TO THE BOTTOM OF FINISHED GRADE OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE "C" LAYER.	ANY SOURCE MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBBASE REQUIREMENTS.	N/A
C	INITIAL FILL MATERIAL FOR LAYER 12 STARTS FROM THE TOP OF THE EMBANKMENT STONE TO THE TOP OF THE FINISHED GRADE OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE "C" LAYER.	AASHTO M44 ¹ A.1, A.2, A.3 OR AASHTO M47 ²	BEGIN COMPACTIONS AFTER 12" (305 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 4" (102 mm) MAX LIFTS TO A MIN. 98% PROCTOR DENSITY FOR PROCESSED AGGREGATE MATERIALS. COLLAR GROUND WILL BE COMPACTED TO 98% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. COLLAR GROUND VEHICLE WEIGHT NOT TO EXCEED 30,000 LB (13,608 kg).
B	EMBANKMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (LAYER 10) TO THE "C" LAYER ABOVE.	AASHTO M47 ² 3, 307, 4, 487, 5, 58, 57, 5, 57, 8, 7, 8, 8, 8, 9, 10	NO COMPACTION REQUIRED.
A	FOUNDATION STONE FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M47 ² 3, 307, 4, 487, 5, 58, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{1,2}

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 BE "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M47) STONE".
 2. BENEATH COMPACTION REQUIREMENTS ARE MET FOR A LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 4" (102 mm) MAX LIFTS AND TWO FULL COVERS WITH A VIBRATORY COMPACTOR.
 3. WHERE INFILTRATION PLACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY AVOIDING OR REDUCING VIBRATORY COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGN, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 4. ONCE LAYER 12 IS PLACED, ANY SOLAR MATERIAL CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 10 OR 12 AT THE SITE DESIGN ENGINEER'S DISCRETION.



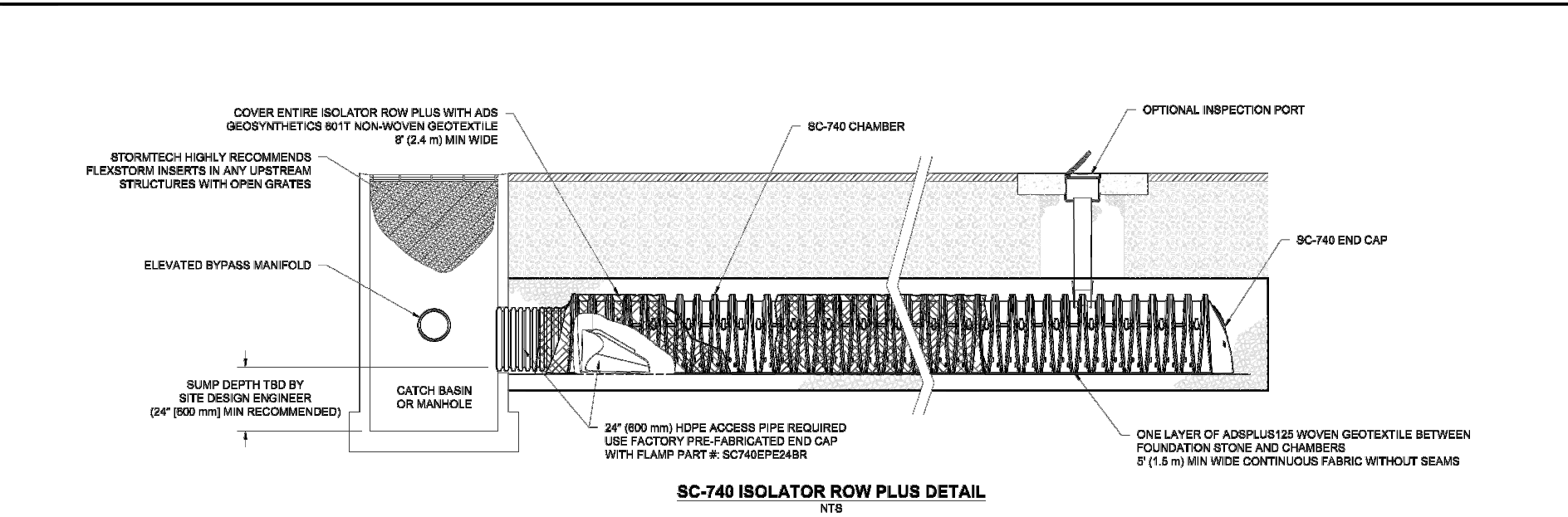
- NOTES:**
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F474-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2187 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING CAPACITY OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - FOUNDATION STONE MUST BE EXTENDED HORIZONTALLY TO THE EMBANKMENT WALLS FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LOGS.
 - 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 ANCHOR BARS DURING INSTALLATION, THE ANCHOR STRENGTH CONSTANT AS SHOWN IN SECTION 8.03 SHALL BE GREATER THAN OR EQUAL TO 350 LB/INCH. AND 10) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION, THE ALLOWED TENSILE STRAIN SHALL BE 7.7% (2" / 26") CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

5497 MANOTICK MAIN STREET
 MANOTICK, ONTARIO
 DATE: 11/08/2022
 PROJECT #: 12213559
 SHEET 3 OF 5
StormTech
 Chamber System
 440 TULLAM ROAD
 MISSISSAUGA, ONTARIO L4W 5G4
 WWW.STORMTECH.COM



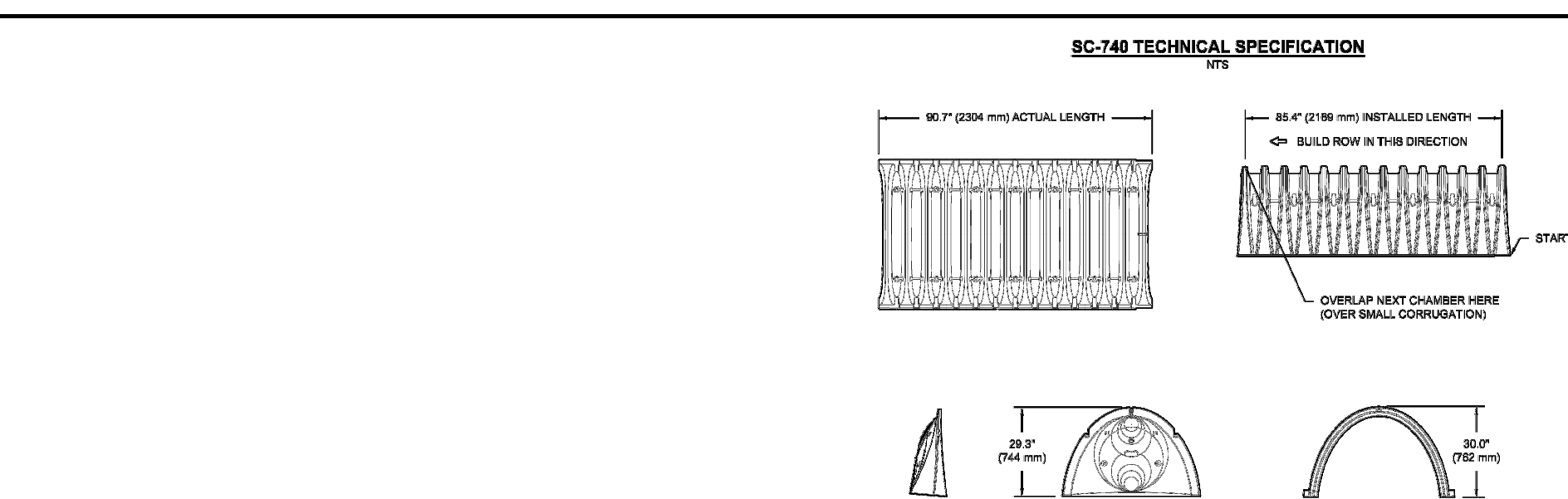
NOTES:
 1. THE CHAMBER SYSTEM SHALL BE DESIGNED BY THE DESIGN ENGINEER. SEE EACH NOTE FOR MAINTENANCE GUIDANCE.
 2. THE CHAMBER SYSTEM SHALL BE DESIGNED BY THE DESIGN ENGINEER. SEE EACH NOTE FOR MAINTENANCE GUIDANCE.
 3. THE CHAMBER SYSTEM SHALL BE DESIGNED BY THE DESIGN ENGINEER. SEE EACH NOTE FOR MAINTENANCE GUIDANCE.
 4. THE CHAMBER SYSTEM SHALL BE DESIGNED BY THE DESIGN ENGINEER. SEE EACH NOTE FOR MAINTENANCE GUIDANCE.
NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVIDE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

5497 MANOTICK MAIN STREET
 MANOTICK, ONTARIO
 DATE: 11/08/2022
 PROJECT #: 12213559
 SHEET 2 OF 6
StormTech
 Chamber System
 440 TULLAM ROAD
 MISSISSAUGA, ONTARIO L4W 5G4
 WWW.STORMTECH.COM



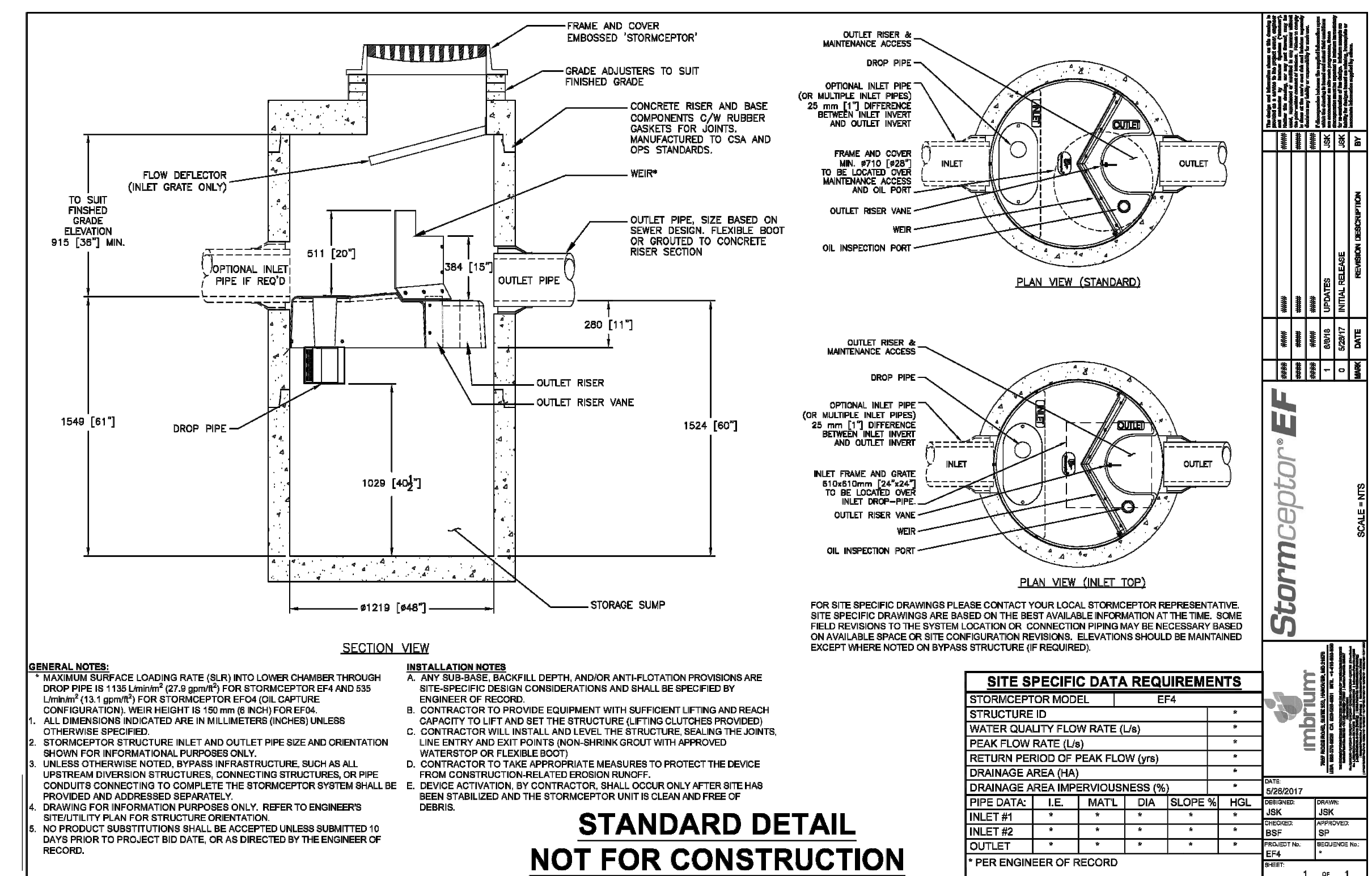
- INSPECTION & MAINTENANCE**
- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT**
- REMOVE COVER ON INLET.
 - REMOVE AND CLEAN LUMPY FILTER IF INSTALLED.
 - USE A CAMERA TO INSPECT ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL).
 - SEGMENT A, B, OR ABOVE, 3" (76 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETTING PROCESS**
- ATTACHED CLEANING NOZZLE WITH REAR FACING AREA OF 42" (1067 mm) OR MORE IS PREFERRED.
 - APPLY MULTIPLE PASSES OF JETTING FROM DOWNSTREAM TO UPSTREAM.
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE.
 - IF SEGMENT IS AT, OR ABOVE, 3" (76 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS AND LOGS. RECORD OBSERVATIONS AND ACTIONS.**
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.**
- NOTES**
- INSPECT EVERY 8 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
 - CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

5497 MANOTICK MAIN STREET
 MANOTICK, ONTARIO
 DATE: 11/08/2022
 PROJECT #: 12213559
 SHEET 4 OF 5
StormTech
 Chamber System
 440 TULLAM ROAD
 MISSISSAUGA, ONTARIO L4W 5G4
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PART #	STUB	A	B	C
SC-740-100	100 (2540)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-120	120 (3048)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-140	140 (3540)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-160	160 (4064)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-180	180 (4572)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-200	200 (5080)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-220	220 (5588)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-240	240 (6096)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-260	260 (6604)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-280	280 (7112)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)
SC-740-300	300 (7620)	18.0" (457 mm)	18.0" (457 mm)	3.0" (76 mm)

5497 MANOTICK MAIN STREET
 MANOTICK, ONTARIO
 DATE: 11/08/2022
 PROJECT #: 12213559
 SHEET 5 OF 6
StormTech
 Chamber System
 440 TULLAM ROAD
 MISSISSAUGA, ONTARIO L4W 5G4
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SITE SPECIFIC DATA REQUIREMENTS

STORMCEPTOR MODEL	EF4
STRUCTURE ID	-
WATER QUALITY FLOW RATE (L/s)	-
PEAK FLOW RATE (L/s)	-
RETURN PERIOD OF PEAK FLOW (yrs)	-
DRAINAGE AREA (HA)	-
IMPERVIOUSNESS (%)	-
INLET #1	-
INLET #2	-
OUTLET	-

STANDARD DETAIL
NOT FOR CONSTRUCTION

5497 MANOTICK MAIN STREET
 MANOTICK, ONTARIO
 DATE: 11/08/2022
 PROJECT #: 12213559
 SHEET 2 OF 6
Stormceptor EF
 Chamber System
 440 TULLAM ROAD
 MISSISSAUGA, ONTARIO L4W 5G4
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ENGINEERING STAMP
 LICENSED PROFESSIONAL ENGINEER
 G. L. BRUNET
 100191036
 11/08/2022
 PROVINCE OF ONTARIO

CLIENT:
 12213559 CANADA INC.
 996-8 ST. AUGUSTIN RD.
 EMBURON, ON

PROJECT:
 NEW MULTIPURPOSE DEVELOPMENT
 5497 MANOTICK MAIN ST.
 MANOTICK, ON

DRAWING:
 DETAILS

PAPER FORMAT: 24x36
 DRAWN BY: BF + GB
 CHECKED BY: GB
 DATE: 09-2022
 SCALE: 1:50
 PROJECT NUMBER: 20-261

SCALE: 1:50

1 OF 1