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 – August 6, 2021
Our File Reference: 20-261

First Submission
October 12, 2020

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APPENDIX TABLE

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 and 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 drain 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 amities 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 drain to the Rideau River which mainly consist 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 covey 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 **19.81 L/s**. See also the Storm Sewer Design Sheet in Appendix 'A'.

Allowable Release Rate (Q) =	**2.78CIA (L/s)**
I_5 =	**$998.071 / (Tc + 6.053)^{0.814}$**
C =	0.48
I =	104.2 mm/hr
Tc =	10 min
Total =	0.130 ha
Allowable Release Rate=	**19.81 L/s**

3.4 Proposed Stormwater Quantity Control

The proposed stormwater management for the site will be achieve 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 cathcbasins 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 directed 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 102mm diameter orifice plate will release a total of **14.72 L/s** with a maximum head of 1.66m (HWL = 87.82) during the 100 year event. As the flow will be restricted, 34.18m^3 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 22.05 m^3 with a HWL of 87.82 and the underground pipes/ structures and chambers will store up to 15.82 m^3. 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. This area will generate a maximum **5.09L/s** under a 100 year storm event before being capture by the nearest city road catchbasin located at the south corner of the property.

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. Only the affected 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 removed from the calculations.

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 =	**520.63**	L/min
Maximum Daily =	**1301.56**	L/d
Maximum Hourly =	**2863.44**	L/d
Total Domestic Flow =	**0.80**	**L/s**
Total Fire Flow =	**141.67**	**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 **141.67L/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 130.3 m for the water main elevation at 91.6m and a maximum pressure estimate of 55.1 psi.

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 577. 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 **19.81 L/s** thought undersizing the outlet to the sewer main on Manotick Main. Stormwater quantity control will be achieved with 15.82m^3 underground pipes/structures and 22.05m^3 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 services 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 **0.80L/s** and the fire flow demand **141.67L/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 Developement.**, 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.

Benjamin Falconer, E.I.T.

APPENDIX "A"
Stormwater Management Design

BLANCHARD LETENDRE
ENGINEERING

File No. 20-261
Project: Proposed Multipurpose Building
Project Address: 5497 Manotick Main, Manotick
Client: Bridor Development

Date: August 06 - 2021
Designed: Benjamin Falconer
Checked: Guillaume Brunet
Drawing Reference: C300

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	450	PVC	0.25%	12.2	142.6	0.90	0.23	**0.22**
	CB02	MH01	0.000	0.000	0.000	0.00	0.30	10.23	103.01	30.84	250	PVC	0.25%	8.6	29.7	0.61	0.24	**1.04**
	MH01	STREET	0.000	0.000	0.000	0.00	0.30	10.46	101.81	30.48	250	PVC	0.20%	16.1	26.6	0.54	0.50	**1.15**

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

BLANCHARD LETENDRE
ENGINEERING

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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	86.26	86.23	87.55	87.55	0.84	0.87	0.84	1.94	1.94	1.20	0.84	0.84	1.20	1.20
CB02	MH01	86.20	86.18	87.55	87.81	1.10	1.38	1.10	-	-	1.20	1.10	1.10	1.58	1.58
MH01	STREET	86.15	86.12	87.81	87.70	1.41	-	1.41	-	-	1.20	1.40	1.41	-	-
									1.94	**1.94**				**2.78**	**2.78**

HWL (5 Year)		87.55
HWL (100 Year)		87.80
TOTAL STORAGE - 5 YEAR		4.72
TOTAL STORAGE - 100 YEAR		4.72

BLANCHARD LETENDRE
ENGINEERING

File No.	20-261	**Date:**	August 06 - 2021
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 = 0.30	C = 0.80	C = 0.90		
E-01 - Un-affected	0.065	0.000	0.006	0.071	0.35
E-02 - Affected	0.085	0.000	0.058	0.143	0.54
TOTAL	0.150	0.000	0.064	0.214	0.48

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

BLANCHARD LETENDRE
ENGINEERING

File No.	20-261	**Date:**	August 06 - 2021
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STORM WATER MANAGEMENT DESIGN SHEET
5 YEAR STORM EVENT

PRE-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			$\sum R_5$
Un-Controlled	EWS-01	0.071	ha	R=	0.35
Controlled	EWS-02	0.143	ha	R=	0.54
	Total Uncontrolled =	**0.214**	ha	**$\sum$R=**	**0.48**

PRE-DEVELOPMENT ALLOWABLE RELEASE RATE

Q = 2.78CIA (L/s)

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

C =	0.48	up to a maximum of 0.5 as per City of Ottawa Sewer Design Guidelines
I =	104.2	mm/hr
Tc =	10	min
Total =	0.143	ha
Allowable Release Rate=	**19.81**	L/s

POST-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			$\sum R_5$	$\sum R_{100}$
Controlled	WS-01	0.061	ha	R=	0.82	1.00
	WS-02	0.004	ha	R=	0.90	1.00
	WS-03	0.064	ha	R=	0.90	1.00
	Total Contolled =	**0.130**	**ha**	**$\sum$R=**	**0.86**	**1.00**
Un-controlled	WS-04	0.013	ha	R=	0.63	0.79
	WS-05 - Un-Affected	0.071	ha	R=	0.26	0.32
	Total Un-Controlled =	**0.084**	**ha**	**$\sum$R=**	**0.32**	**0.40**

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

		REQUIRED STORAGE					
Time (min)	**Intensity (mm/hr)**	**Controlled Runoff (L/s)**	**Storage Volume (m^3)**	**Controlled Release Rate (L/s)**	**Uncontrolled Runoff (L/s)**	**Total Release Rate (L/s)**	**Height on Roof (m)**
10	104.2	32.36	10.58	14.72	5.33	20.05	0.043
15	83.6	25.95	10.11	14.72	4.27	18.99	0.049
20	70.3	21.82	8.52	14.72	3.59	18.31	0.052
25	60.9	18.91	6.29	14.72	3.11	17.83	0.054
30	53.9	16.75	3.65	14.72	2.76	17.48	0.055
35	48.5	15.07	0.73	14.72	2.48	17.20	0.055
40	44.2	13.72	0.00	14.72	2.26	16.98	0.055
50	37.7	11.69	0.00	14.72	1.93	16.64	0.054
60	32.9	10.23	0.00	14.72	1.69	16.40	0.053
80	26.6	8.25	0.00	14.72	1.36	16.08	0.051
90	24.3	7.54	0.00	14.72	1.24	15.96	0.049

STORMATER STORAGE REQUIREMENTS

Total Storage Required =	**10.58 m^3**	
Pipe Storage =	1.94 m^3	refer to Storm Sewer Design Sheet
CB/MH Storage =	2.78 m^3	refer to Storm Sewer Design Sheet
Underground Storage =	11.10 m^3	
Surface Storage =	22.05 m^3	
Total Available Storage =	**37.87 m^3**	

BLANCHARD LETENDRE
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Client:	Bridor Development	**Drawing Reference:**	C300

STORM WATER MANAGEMENT DESIGN SHEET
100 YEAR STORM EVENT

PRE-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			$\sum R_5$
Un-Affected	EWS-01	0.071	ha	R=	0.35
Affected	EWS-02	0.143	ha	R=	0.54
	Total Area =	**0.214**	ha	**∑R=**	**0.48**

PRE-DEVELOPMENT ALLOWABLE RELEASE RATE

Q = 2.78CIA (L/s)

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

C =	0.48	up to a maximum of 0.5 as per City of Ottawa Sewer Design Guidelines
I =	104.2	mm/hr
Tc =	10	min
Total =	0.143	ha
Allowable Release Rate=	**19.81**	**L/s**

POST-DEVELOPMENT STORMATER MANAGEMENT

POST-DEVELOPMENT STORMATER MANAGEMENT

Runoff	Catchment Area	Area			$\sum R_5$	$\sum R_{100}$
Controlled	WS-01	0.061	ha	R=	0.90	1.00
	WS-02	0.004	ha	R=	0.90	1.00
	WS-03	0.064	ha	R=	0.90	1.00
	Total Contolled =	**0.130**	**ha**	**∑R=**	**0.90**	**1.00**
Un-controlled	WS-04	0.013	ha	R=	0.63	0.79
	WS-05 - Un-Affected	0.071	ha	R=	0.26	0.32
	Total Un-Controlled =	**0.084**	**ha**	**∑R=**	**0.32**	**0.40**

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

		REQUIRED STORAGE				
Time (min)	**Intensity (mm/hr)**	**Controlled Runoff** (L/s)**	**Storage Volume (m^3)**	**Controlled Release Rate (L/s)**	**Uncontrolled Runoff (L/s)**	**Total Release Rate (L/s)**
10	178.6	64.32	29.76	14.72	5.09	19.81
15	142.9	51.47	33.08	14.72	4.07	18.79
20	120.0	43.21	34.18	14.72	3.42	18.14
25	103.8	37.41	34.03	14.72	2.96	17.68
30	91.9	33.09	33.07	14.72	2.62	17.34
35	82.6	29.74	31.55	14.72	2.35	17.07
40	75.1	27.07	29.64	14.72	2.14	16.86
50	64.0	23.04	24.95	14.72	1.82	16.54
60	55.9	20.13	19.49	14.72	1.59	16.31
70	49.8	17.93	13.50	14.72	1.42	16.14
90	41.1	14.81	0.48	14.72	1.17	15.89
100	37.9	13.65	0.00	14.72	1.08	15.80
110	35.2	12.68	0.00	14.72	1.00	15.72
120	32.9	11.85	0.00	14.72	0.94	15.66

STORMATER STORAGE REQUIREMENTS

Total Storage Required =	**34.18**	**m^3**	
Pipe Storage =	1.94	m^3	refer to Storm Sewer Design Sheet
CB/MH Storage =	2.78	m^3	refer to Storm Sewer Design Sheet
Underground Storage =	11.10	m^3	
Surface Storage =	22.05	m^3	
Total Available Storage =	**37.87**	**m^3**	

Inlet Control Device Parameters

Product	**Orifice Plate**		
HWL =	87.50	m (highest HWL)	at CB02
Grate Level =	87.55	m	from inv.
Invert Level =	86.23	m	
Outlet Pipe Dia. =	300	mm	
Max. Flow =	14.72	L/s	
ICD Centerline =	86.38		
HWL Head =	1.12	m (from centerlin	from centerline
C=	1.00		
Orifice Area =	0.008	m2	
Orifice Diameter =	**102**	mm (min. 75mm)	

APPENDIX "B"
Sanitary Design

BLANCHARD LETENDRE
ENGINEERING

File No. 20-261
Project: Proposed Multipurpose Building
Project Address: 5497 Manotick Main, Manotick
Client: Bridor Development

Date: August 06 - 2021
Designed: Benjamin Falconer
Checked: Guillaume Brunet
Drawing Reference: C300

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 AREA (Ha)	CUMMULATIVE POP.	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)		LENGTH (m)	DIA. (mm)	MATERAIL	SLOPE (%)	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)	UP INVERT (m)	DOWN INVERT (m)
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	5.8	150	PVC	1.00%	15.23	0.86	84.95	84.56

DESIGN PARAMETERS NOTES

Average Daily Flow =	350	L/p/day
Commercial and Institutional Flow =	50000	L/ha/da
Industrial Flow =	35000.00	L/ha/da
Maximum Resedential Peak Flow =	4	
Commection and Intitutional Peak Factor =	1.5	

Industrial Peak Factor =	7	as per Appendix 4-B
Extraneous Flow =	0.28	L/s/ha
Minimum Velocity =	0.76	m/s
Mannings n =	0.013	

Appartments:	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

BLANCHARD LETENDRE
ENGINEERING

File No.	20-261	**Date:**	August 06 - 2021
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 =	**688**	m^2	
Site Total Area =	**0.214**	ha	
Total Population =	35.7	ea.	
Average Demand Per People =	350	L/c/d	
Average Water Demand =	**12495.00**	L/d	0.14
Maximum Daily Peak Factor =	2.5	* As per City of Ottawa	
Maximum Daily =	**31237.50**	L/d	0.36
Maximum Hourly Peak Factor =	2.2	* As per City of Ottawa	
Maximum Hourly =	**68722.50**	L/d	0.80
Total Domestic Flow =	**0.80**	**L/s**	
Total Fire Flow =	**141.67**	**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

Appartments:	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			35.7

BLANCHARD LETENDRE
ENGINEERING

File No.	20-261	**Date:**	August 06 - 2021
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		3	floor	
	Floor space per unit	varies	688	688	sq.m.	
Required fire flow	**Fire Flow = 220 x C x Area$^{0.5}$**				L/min	**7,996**
					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			L/min	**6,797**
	Rapid burning	0.25			L/s	113
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	**6,797**
	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	**8,496**
	West side	10.1 to 20m	0.15	0.25	L/s	142
			Minimum required fire flow rate (rounded to nearest 100)		L/min	**8,500**
			Minimum required fire flow rate		L/s	**142**
			Required duration of fire flow		min	**30**

APPENDIX "D"
Underground Chambers & Stormwater Treatment Unit

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	HAIDER NASRULLAH 647-850-9417 HAIDER.NASRULLAH@ADS-PIPE.COM
ADS SALES REP:	MICHAEL REID 613-882-4186 MICHAEL.REID@ADS-PIPE.COM
PROJECT NO:	S251568

Advanced Drainage Systems, Inc.

SiteASSIST™
FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

5497 MANOTICK MAIN STREET

MANOTICK,ON

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) 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 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. 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 F2418 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.

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

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 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 20-50 mm (3/4-2").
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-740 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-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 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT

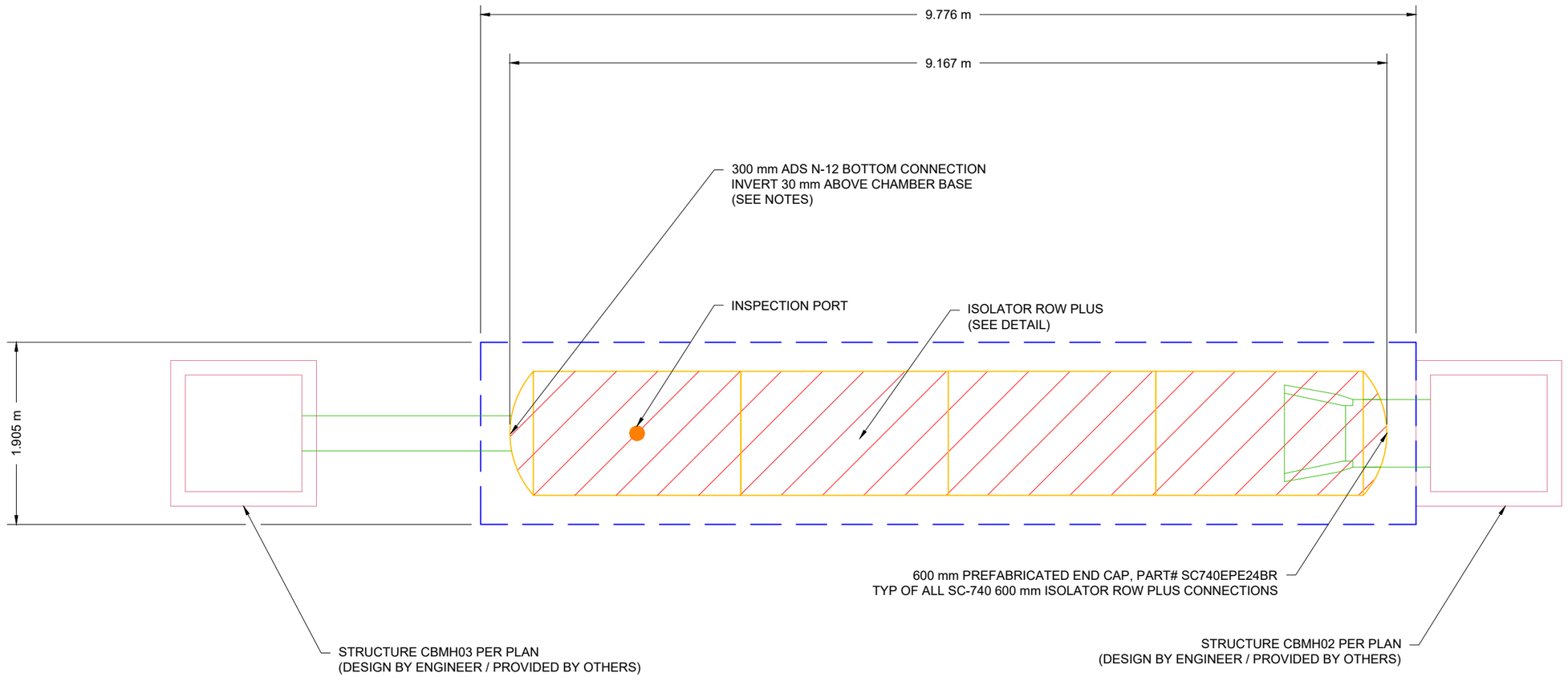
4	STORMTECH SC-740 CHAMBERS
2	STORMTECH SC-740 END CAPS
152	STONE ABOVE (mm)
152	STONE BELOW (mm)
40	% STONE VOID
11.1	**INSTALLED SYSTEM VOLUME (m^3) (PERIMETER STONE INCLUDED)**
18.6	SYSTEM AREA (m^2)
23.4	SYSTEM PERIMETER (m)

PROPOSED ELEVATIONS

89.427	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):
87.599	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):
87.446	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):
87.446	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):
87.446	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):
87.141	TOP OF STONE:
86.989	TOP OF SC-740 CHAMBER:
86.257	300 mm BOTTOM CONNECTION INVERT:
86.230	600 mm ISOLATOR ROW PLUS INVERT:
86.227	BOTTOM OF SC-740 CHAMBER:
86.075	BOTTOM OF STONE:

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL 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.



5497 MANOTICK MAIN STREET
MANOTICK,ON

DATE: 08/02/21 | DRAWN: BRE | CHECKED: JPR
PROJECT #: S251568

DATE	DRWN	CHKD	DESCRIPTION

StormTech®
Chamber System
888-892-2694 | WWW.STORMTECH.COM

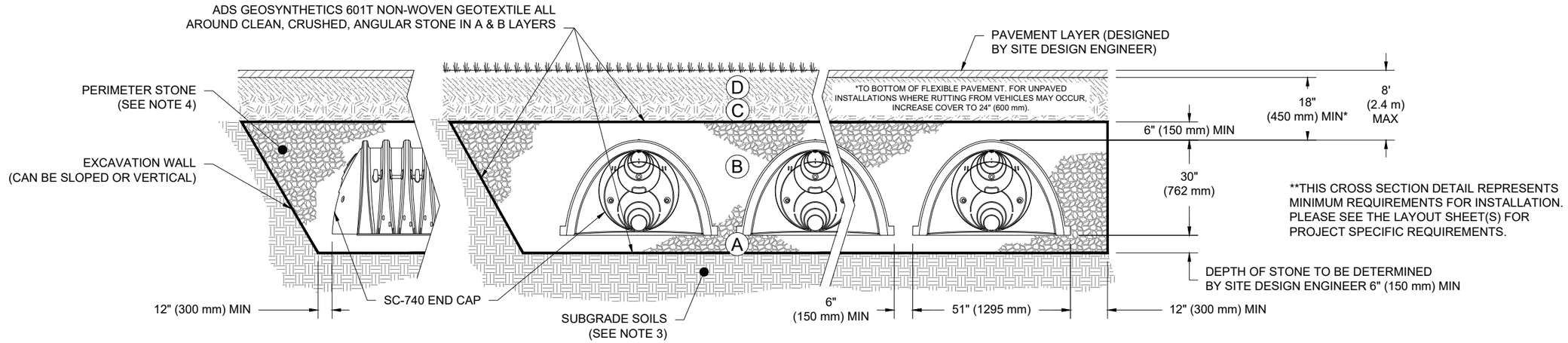
4640 TRUEMAN BLVD
HILLIARD, OH 43026

SCALE = 1 : 50

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:
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.



NOTES:

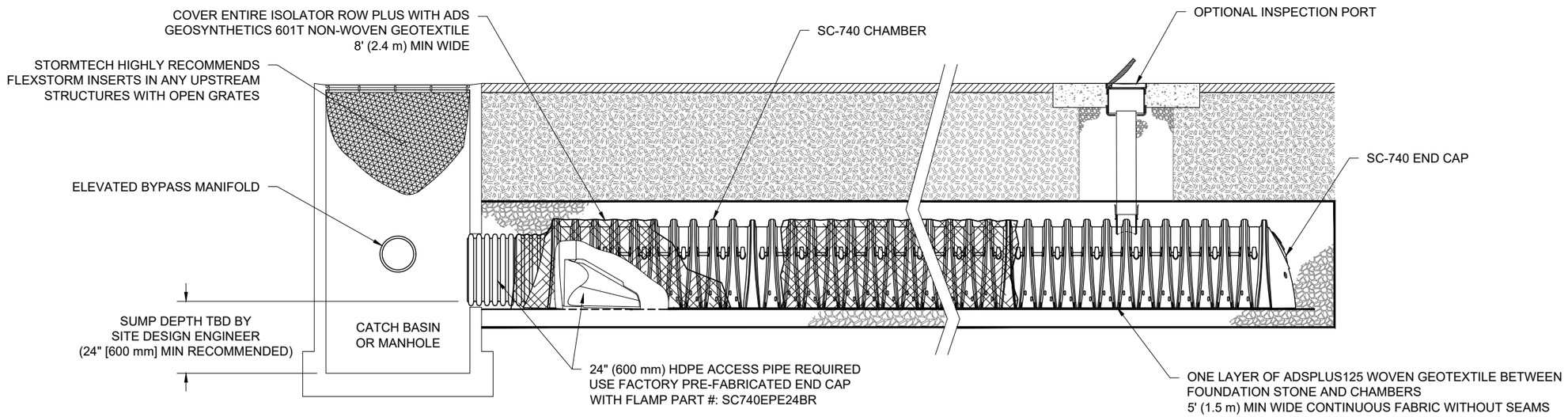
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER 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.
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 AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. 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
MANOTICK,ON
DATE: 08/02/21 | DRAWN: BRE | CHECKED: JPR
PROJECT #: S251568

DATE	DRWN	CHKD	DESCRIPTION

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026



SC-740 ISOLATOR ROW PLUS DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW 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 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 ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW 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 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

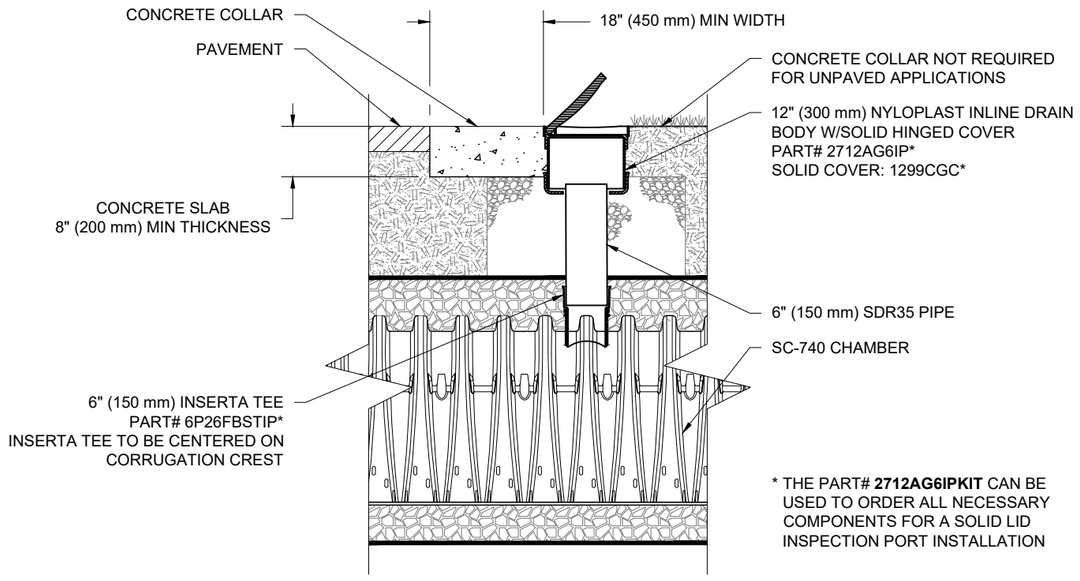
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

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.



SC-740 6" (150 mm) INSPECTION PORT DETAIL

NTS

5497 MANOTICK MAIN STREET
MANOTICK,ON

DATE: 08/02/21 | DRAWN: BRE | CHECKED: JPR
PROJECT #: S251568

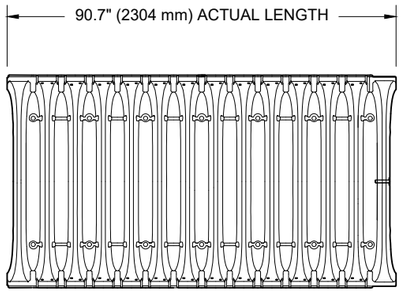
DATE	DRWN	CHKD	DESCRIPTION

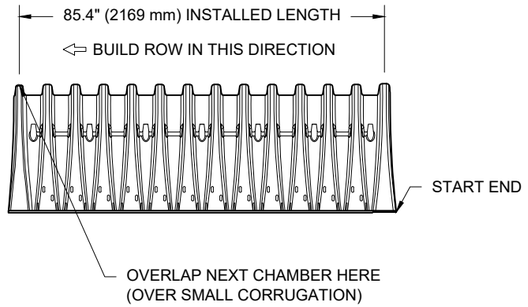
StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

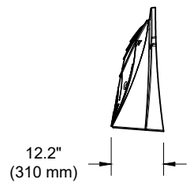
4640 TRUEMAN BLVD
HILLIARD, OH 43026

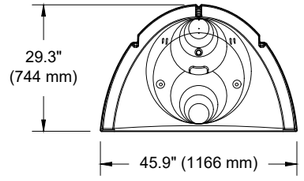
SC-740 TECHNICAL SPECIFICATION

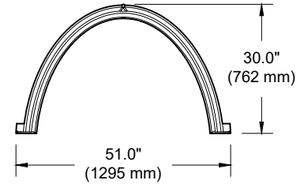
NTS







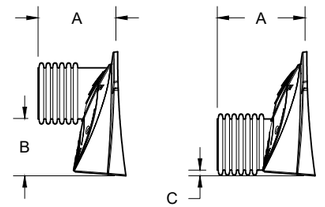




NOMINAL CHAMBER SPECIFICATIONS

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 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
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)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)
SC740EPE24BR*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B/SC740EPE24BR 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 SC740EPE24B/SC740EPE24BR 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,ON

DATE: 08/02/21 | DRAWN: BRE | CHECKED: JPR
PROJECT #: S251568

DATE	DESCRIPTION	CHKD	DRWN

StormTech®
Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026

CBMH03
= 87.70
= 86.26

Ø PVC DR-35 @0.25%

STM
SAN
WTR
CB
T\G=87.56
T\G=87.55

Project: **5497 Manotick Main Street**

Chamber Model -	SC-740	
Units -	**Metric**	Click Here for Imperial
Number of chambers -	4	
Voids in the stone (porosity) -	40	%
Base of Stone Elevation -	86.08	m
Amount of Stone Above Chambers -	152	mm
Amount of Stone Below Chambers -	152	mm

☑ Include Perimeter Stone in Calculations

18.62418 sq.meters Min. Area - 12.56 sq.meters

Height of System *(mm)*	Incremental Single Chamber *(cubic meters)*	Incremental Total Chamber *(cubic meters)*	Incremental Stone *(cubic meters)*	Incremental Ch & St *(cubic meters)*	Cumulative Chamber *(cubic meters)*	Elevation *(meters)*
1067	0.00	0.00	0.19	0.19	11.050	87.14
1041	0.00	0.00	0.19	0.19	10.860	87.12
1016	0.00	0.00	0.19	0.19	10.670	87.09
991	0.00	0.00	0.19	0.19	10.490	87.07
965	0.00	0.00	0.19	0.19	10.300	87.04
940	0.00	0.00	0.19	0.19	10.110	87.01
914	0.00	0.01	0.19	0.19	9.920	86.99
889	0.00	0.02	0.18	0.20	9.730	86.96
864	0.01	0.03	0.18	0.21	9.530	86.94
838	0.02	0.07	0.16	0.23	9.320	86.91
813	0.02	0.09	0.15	0.24	9.090	86.89
787	0.03	0.11	0.15	0.25	8.850	86.86
762	0.03	0.12	0.14	0.26	8.590	86.84
737	0.03	0.13	0.14	0.27	8.330	86.81
711	0.04	0.14	0.13	0.27	8.060	86.79
686	0.04	0.15	0.13	0.28	7.790	86.76
660	0.04	0.16	0.12	0.29	7.510	86.74
635	0.04	0.17	0.12	0.29	7.220	86.71
610	0.04	0.18	0.12	0.30	6.930	86.68
584	0.05	0.19	0.11	0.30	6.630	86.66
559	0.05	0.19	0.11	0.30	6.330	86.63
533	0.05	0.20	0.11	0.31	6.020	86.61
508	0.05	0.20	0.11	0.31	5.720	86.58
483	0.05	0.21	0.10	0.31	5.410	86.56
457	0.05	0.21	0.10	0.32	5.090	86.53
432	0.05	0.22	0.10	0.32	4.770	86.51
406	0.06	0.22	0.10	0.32	4.450	86.48
381	0.06	0.23	0.10	0.33	4.130	86.46
356	0.06	0.23	0.10	0.33	3.800	86.43
330	0.06	0.24	0.09	0.33	3.480	86.41
305	0.06	0.24	0.09	0.33	3.150	86.38
279	0.06	0.24	0.09	0.33	2.820	86.35
254	0.06	0.24	0.09	0.34	2.480	86.33
229	0.06	0.25	0.09	0.34	2.150	86.30
203	0.06	0.25	0.09	0.34	1.810	86.28
178	0.06	0.25	0.09	0.34	1.470	86.25
152	0.00	0.00	0.19	0.19	1.130	86.23
127	0.00	0.00	0.19	0.19	0.940	86.20
102	0.00	0.00	0.19	0.19	0.760	86.18
76	0.00	0.00	0.19	0.19	0.570	86.15
51	0.00	0.00	0.19	0.19	0.380	86.13
25	0.00	0.00	0.19	0.19	0.190	86.10

Stormceptor®

FORTERRA

Stormceptor Net Annual Sediment Load Reduction Sizing Tool

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 (%)

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

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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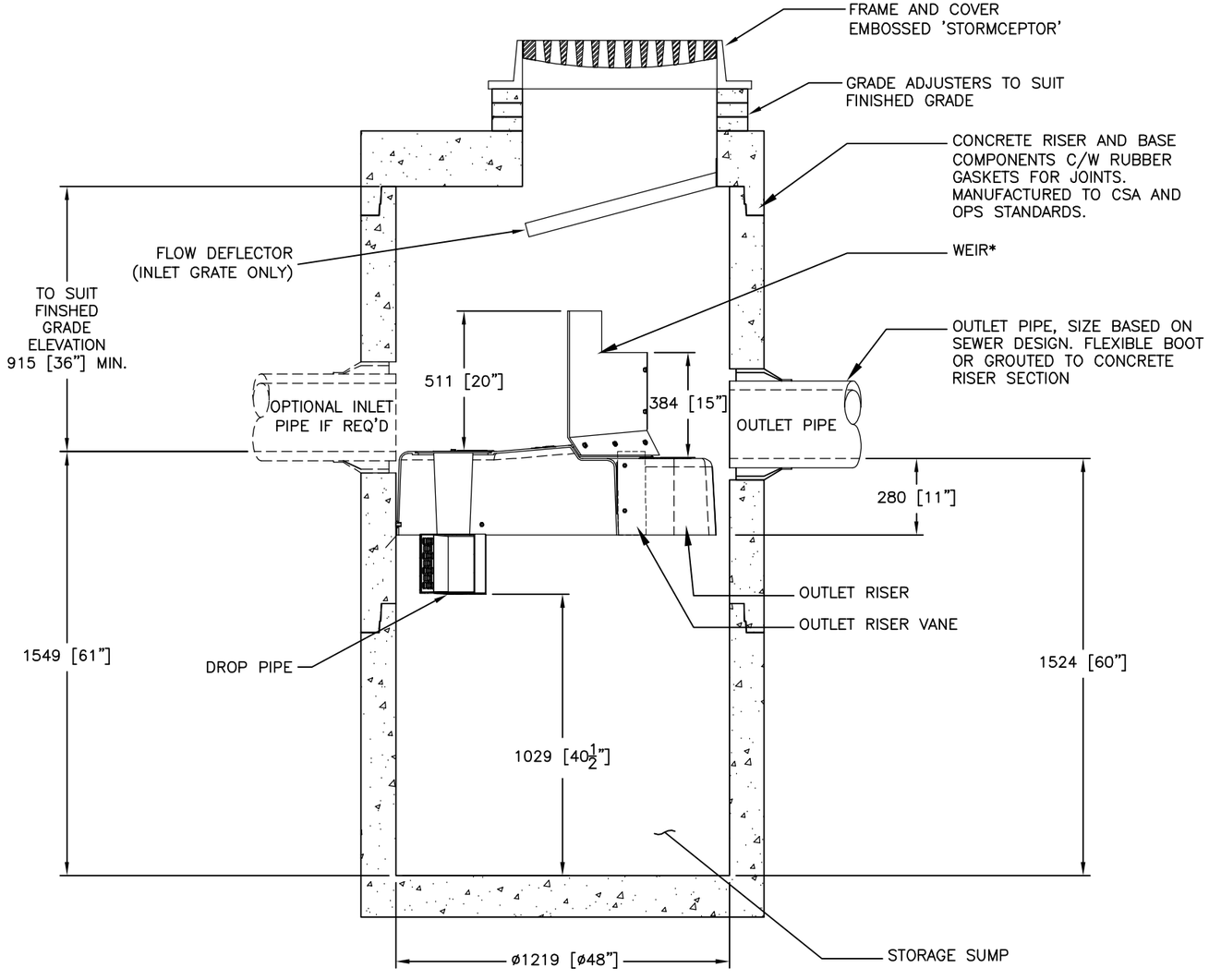
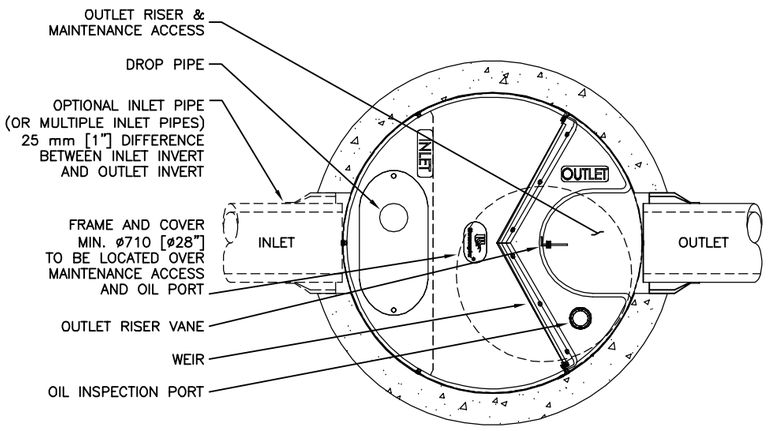
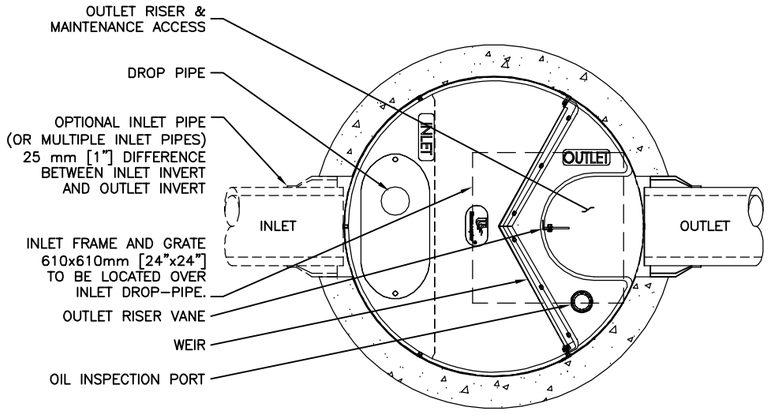
< Back Cancel Save Sizing Report



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/m^2 (27.9 gpm/ft^2) FOR STORMCEPTOR EF4 AND 535 L/min/m^2 (13.1 gpm/ft^2) 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

MARK	DATE	REVISION DESCRIPTION	BY
####	####	####	####
####	####	####	####
1	6/8/18	UPDATES	JSK
0	5/26/17	INITIAL RELEASE	JSK

Stormceptor® EF

SCALE = NTS

imbrium®
7007 RIDGE ROAD, SUITE 350, HANOVER, MD 21076
USA: 888-279-9828 CA: 800-386-4801 INTL: +1-416-960-9900

DATE: 5/26/2017

DESIGNED:	DRAWN:
JSK	JSK
CHECKED:	APPROVED:
BSF	SP
PROJECT No.:	SEQUENCE No.:
EF4	*

SHEET: 1 OF 1

APPENDIX “E”
Boundary Conditions

Boundary Conditions
5497 Manotick Main

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	6.60	0.11
Maximum Daily Demand	16.20	0.27
Peak Hour	35.40	0.59
Fire Flow Demand 1	8,500.20	141.67

Location

Results – Existing Conditions

Connection 1 – Manotick Main St.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	155.7	96.5
Peak Hour	138.5	72.1
Max Day plus Fire 1	114.2	37.6

[1] Ground Elevation = 87.8 m

Results – SUC Zone Reconfiguration

Connection 1 – Manotick Main St.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.2	84.5
Peak Hour	142.3	77.5
Max Day plus Fire 1	123.9	51.4

[1] Ground Elevation = 87.8 m

Notes

1. A second connection to the watermain is required to decrease vulnerability of the water system in case of breaks.
2. 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 GEOSOCK INSERTS WITH AN OVERFLOW IN ALL THE DOWNSTREAM CATCH BASINS AND MANHOLES.
- 1.1.3. INSTALL SILTSACK FILTERS IN ALL CONCRETE CATCH BASIN STRUCTURES.
- 1.1.4. INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.

2. DURING CONSTRUCTION:

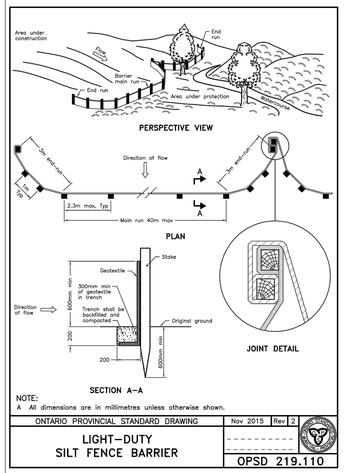
2.1. WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY TO SEPTEMBER ONLY.
2.2. MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE.
2.3. PROTECT DISTURBED AREAS FROM RUNOFF.
2.4. PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILIATED WITHIN 30 DAYS.
2.5. INSPECT SILT FENCE, FILTER CLOTHS, AND CATCH BASIN SUMPS 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 SEEDED 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 CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING ETC, AT THE END OF EACH WORK DAY.
2.13. PROVIDE GRAVEL ENTRANCE WHEREVER EQUIPMENT LEAVES THE SITE TO PREVENT MUD TRACKING ONTO PAVED SURFACES. GRAVEL BED SHALL BE A MINIMUM OF 15m LONG. 4m WIDE AND 0.3m DEEP AND SHALL CONSIST OF COARSE (50mm CRUSHER-RUN LIMESTONE). MAINTAIN GRAVEL ENTRANCE IN CLEAN CONDITION.
2.14. DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED.
2.15. ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
2.16. TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ABUTTING 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. REMOVE STRAW BALE FLOW CHECK DAMS, SILT FENCES AND FILTER CLOTHS ON CATCH BASINS AND MANHOLE COVERS AFTER DISTURBED AREAS HAVE BEEN REHABILITATED AND STABILIZED.
3.3. INSPECT AND CLEAN CATCH BASIN SUMPS AND STORM SEWERS.

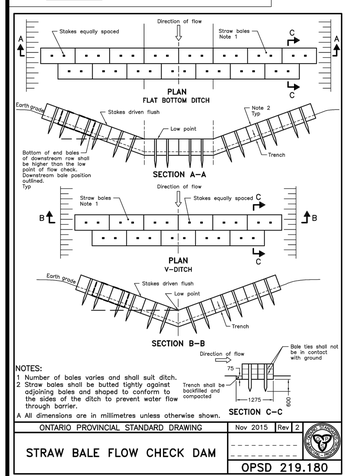
LEGEND:

- 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
- +50.00EX MATCH INTO EXISTING ELEVATION
- - 70.19 EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM PROPOSED STORM SEWER
- SAN PROPOSED SANITARY SEWER
- WTR PROPOSED WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED CURB STOP
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- WS-XX WATERSHED NAME
- CONTROLLER
- AREA RUNOFF RUNOFF COEFFICIENT
- AREA IN HECTARES
- PROPOSSED 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 GROWING FIELD



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

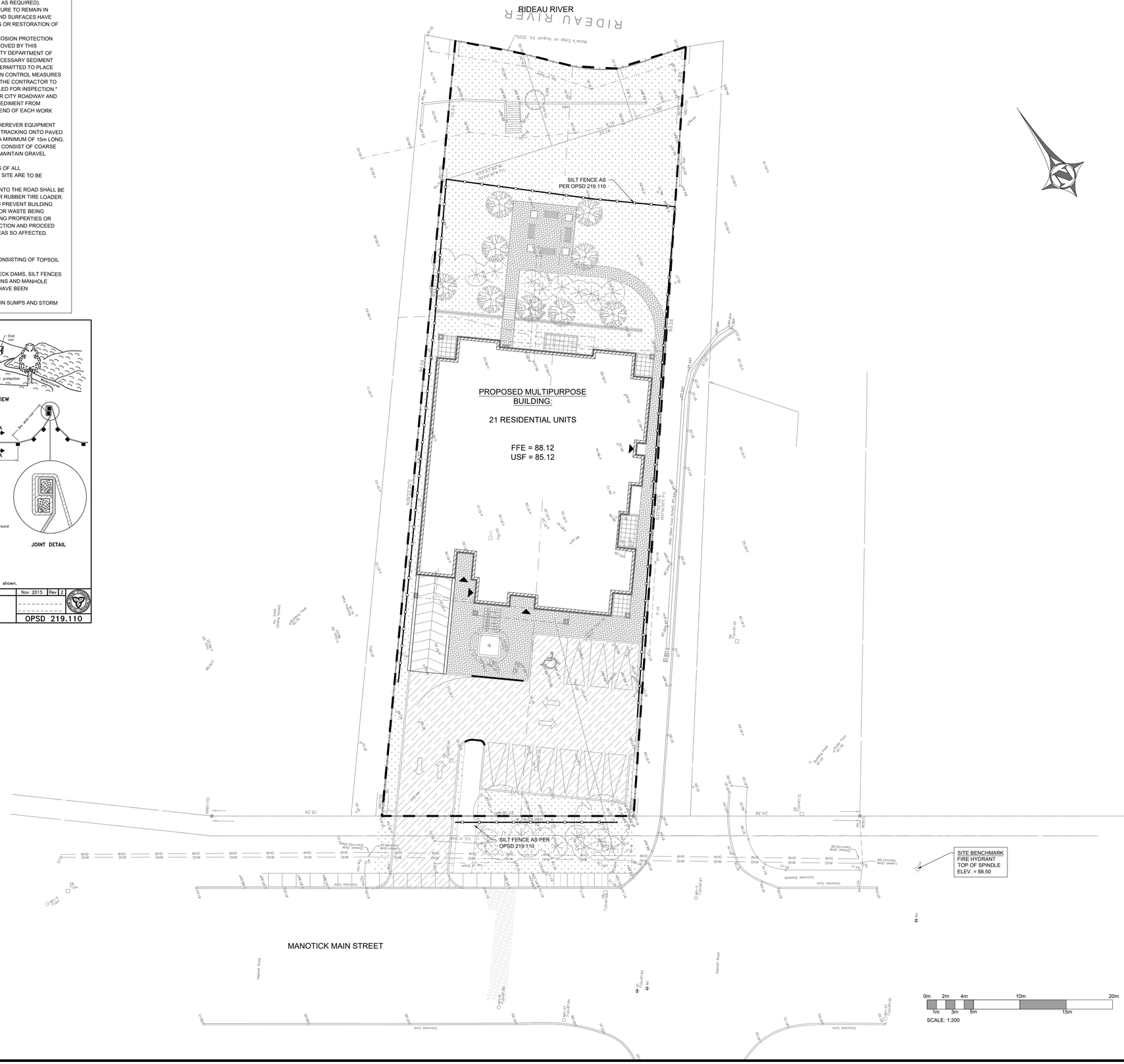
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
LIGHT–DUTY SILT FENCE BARRIER		
	OPSD 219.110	



NOTES:
1 Number of bales varies and shall suit ditch.
2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
STRAW BALE FLOW CHECK DAM		
	OPSD 219.180	



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100191036
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CLIENT:
OLIGO DEVELOPMENT
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
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SCALE:	1:200
PROJECT NUMBER:	20-261

PAGE: C100

LEGEND:

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- PROPOSED DOOR ENTRANCE/EXIT
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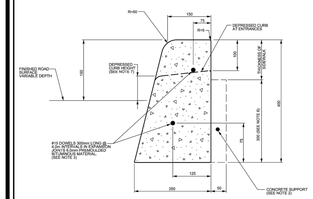
- PROPOSED RIP RAP AS PER OPSD 810.010
- M PROPOSED WATER METER
- PROPOSED ACCESS GATE
- PROPOSED GROWING FIELD

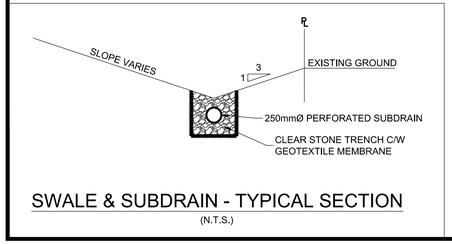


CONCRETE BARRIER CURB

NOTES:
1. THE FULL CURB DEPTH SHALL BE CARRIED THROUGH THE DEPRESSED ACCESS CROSSING.
2. A CONCRETE SUPPORT IS REQUIRED WHEN BUILT ADJACENT TO THE SIDEWALK.
3. IF AN EXTRUSION CURBING MACHINE IS USED, THE #15 DOWELS ARE TO BE PLACED AT THE END OF THE EXTRUSION.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
5. DUMMY JOINTS SHALL BE 25mm DEEP, FRONT, BACK AND TOP OF SECTION AT 2m SPACING.
6. FOR DEPRESSED CURB AT ENTRANCES USE 250.
7. DEPRESSED CURB HEIGHT - FOR PEDESTRIAN CURB RAMPS 0 TO 6 mm AND FOR PRIVATE ENTRANCES 0 TO 25mm.

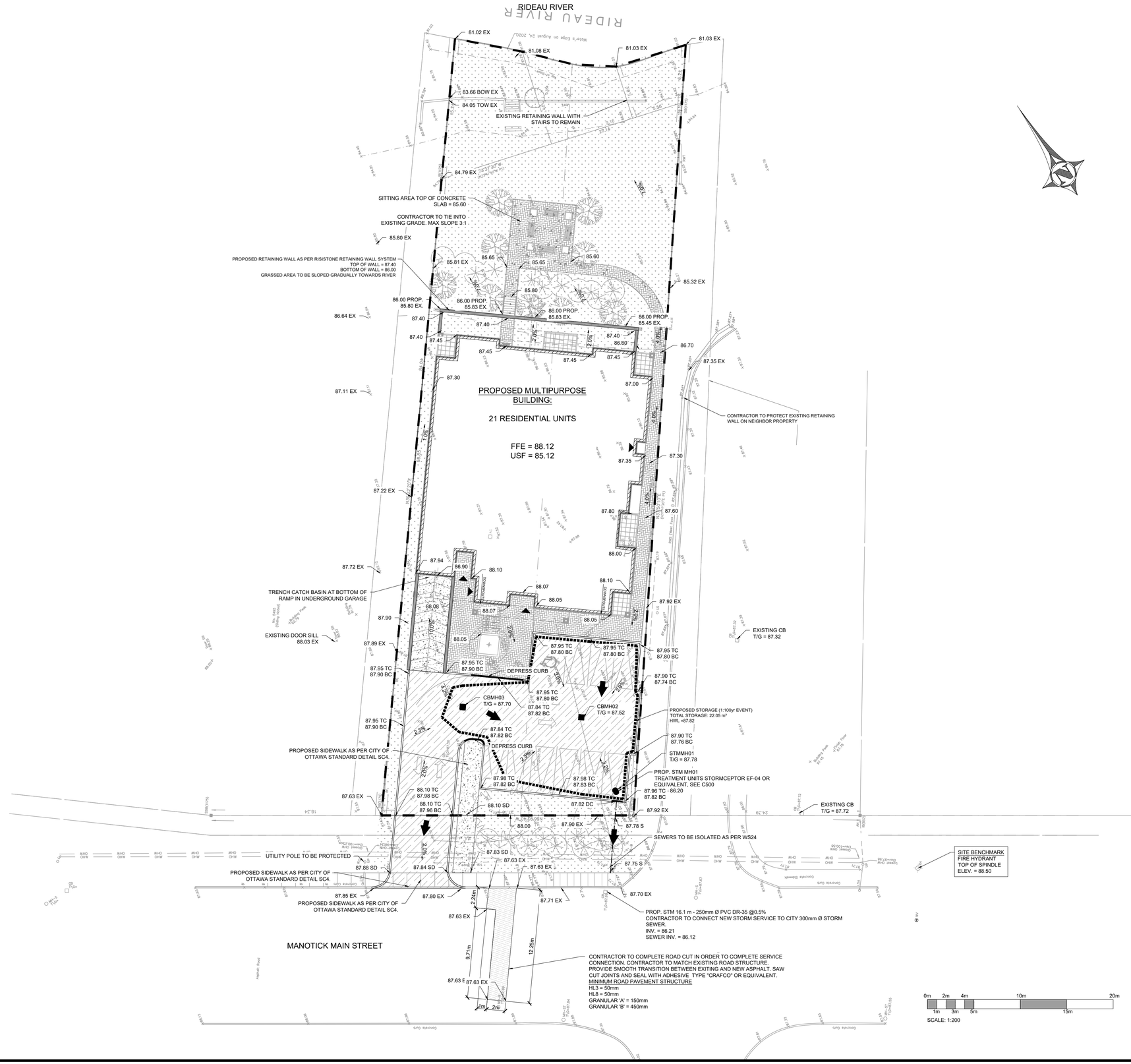
N.T.S.

Ottawa	CONCRETE BARRIER CURB FOR GRANULAR BASE PAVEMENT (MODIFIED OPSD-600.110)	DATE:	JANUARY 2003
		REV. DATE:	MARCH 2014
		DWG. No.:	SC1.1



SWALE & SUBDRAIN - TYPICAL SECTION

(N.T.S.)



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CLIENT:

OLIGO DEVELOPMENT
996-B ST. AUGUSTIN RD.
EMBRUN, ON

PROJECT:

NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST,
MANOTICK, ON

DRAWING:

SITE GRADING PLAN

PAPER FORMAT:	24x36
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RIDEAU RIVER

PROPOSED MULTIPURPOSE BUILDING:

21 RESIDENTIAL UNITS

FFE = 88.12
USF = 85.12

WATER PRESSURE REDUCING VALVE TO BE INSTALLED IMMEDIATLY DOWNSTREAM OF THE WATER METER AND ISOLATION VALVE

FOUNDATION INVERT INV. = 84.99

TRENCH CATCH BASIN AT BOTTOM OF RAMP IN UNDERGROUND GARAGE

PIPE CROSSING.
STORM INV = 86.20
PROPOSED SANITARY INV = 85.05
PROPOSED WATERMAIN INV = 85.10

PROP. CBMH03
T/G = 87.70
S. INV. = 86.26

PROP. STM 12.2m - 450mm Ø PVC DR-35 @0.25%

PROP. UNDERGROUND STORM CHAMBERS
TOTAL STORAGE: 11.1m3
REFER TO DETAILS

PROP. CBMH02
T/G = 87.55
N. INV. = 86.23
SW. INV = 86.20
OUTLET PIPE C/W 102mm Ø ORIFICE PLATE
TOTAL RELEASE RATE = 13.90 L/s

PROP. STM SERVICE 12.5m - 135mm Ø PVC DR-35 FOR FOUNDATION DRAIN. CONNECTION TO BE COMPLETED DOWNSTREAM OF MANHOLE. LINK TO SUMP PUMP
E INV. = 86.21

PROP. STM 8.6m - 250mm Ø PVC DR-35 @0.25%

PROP. STM MH01
TREATMENT UNITS STORMCEPTOR EF-04 OR EQUIVALENT, SEE C500
INV. = 86.20

PROP. 21.2m- 50mm Ø WATER SERVICE TO SERVICE BOTH NEW BUILDING. NEW CURBSTOP VALVE TO BE INSTALLED AT PROPERTY LINE. SERVICE TO BE INSTALLED AT MINIMUM 2.4m

SEWERS TO BE ISOLATED AS PER WS24

EXISTING SANITARY MANHOLE
INV = 81.65

PIPE CROSSING.
STORM INV = 86.15
PROPOSED SANITARY INV = 84.85

SITE BENCHMARK
FIRE HYDRANT
TOP OF SPINDLE
ELEV. = 88.50

EXISTING 300mm Ø STORM SEWER

EXISTING 600mm Ø CONCRETE SANITARY SEWER

PROP. SAN 14m -150mm Ø SERVICE AT MINIMUM 1.00%. CONTRACTOR TO CONNECT TO EXISTING SANITARY SEWER
INV. = 84.56

PIPE CROSSING:
SAN INV. = 84.60
STORM INV. = 86.18
WATERMAIN INV. = 85.37

PROP. STM 16.1 m - 250mm Ø PVC DR-35 @0.5%
CONTRACTOR TO CONNECT NEW STORM SERVICE TO CITY 300mm Ø STORM SEWER.
INV. = 86.21
SEWER INV. = 86.12

EXISTING SANITARY MANHOLE
UPSTREAM INV = 81.78

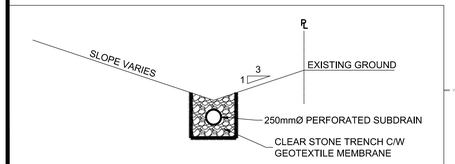
MANOTICK MAIN STREET

EXISTING 406mm Ø WATERMAIN

PROP.WATERMAIN CONNECITON TO EXISTING 406mm CITY WATERMAIN
INV. = 85.30

EXISTING STORM MANHOLE
APPROX. INV = 85.96

0m 2m 4m 10m 20m
1m 3m 5m 15m
SCALE: 1:200



SWALE & SUBDRAIN - TYPICAL SECTION
(N.T.S.)

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CLIENT:
OLIGO DEVELOPMENT
996-B ST. AUGUSTIN RD.
EMBRUN, ON

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

DRAWING:
SITE SERVICING PLAN

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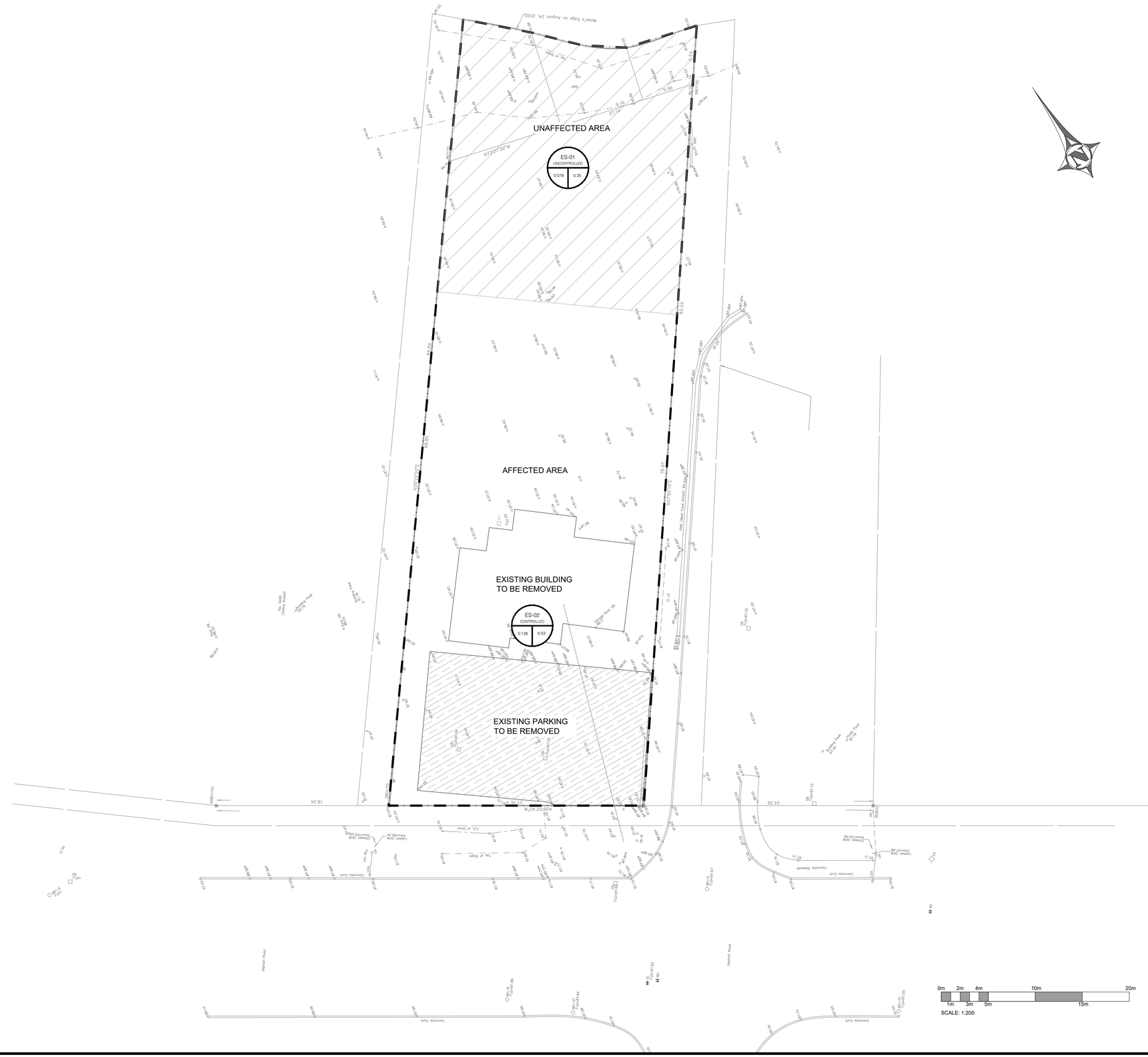

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EMBRUN, ON

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NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST,
MANOTICK, ON

DRAWING:
PRE-DEVELOPMENT DRAINANGE

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WS-XX (WATERSHED NAME) — RUNOFF COEFFICIENT / AREA (HA)

- PROPOSSED GRASS AREA
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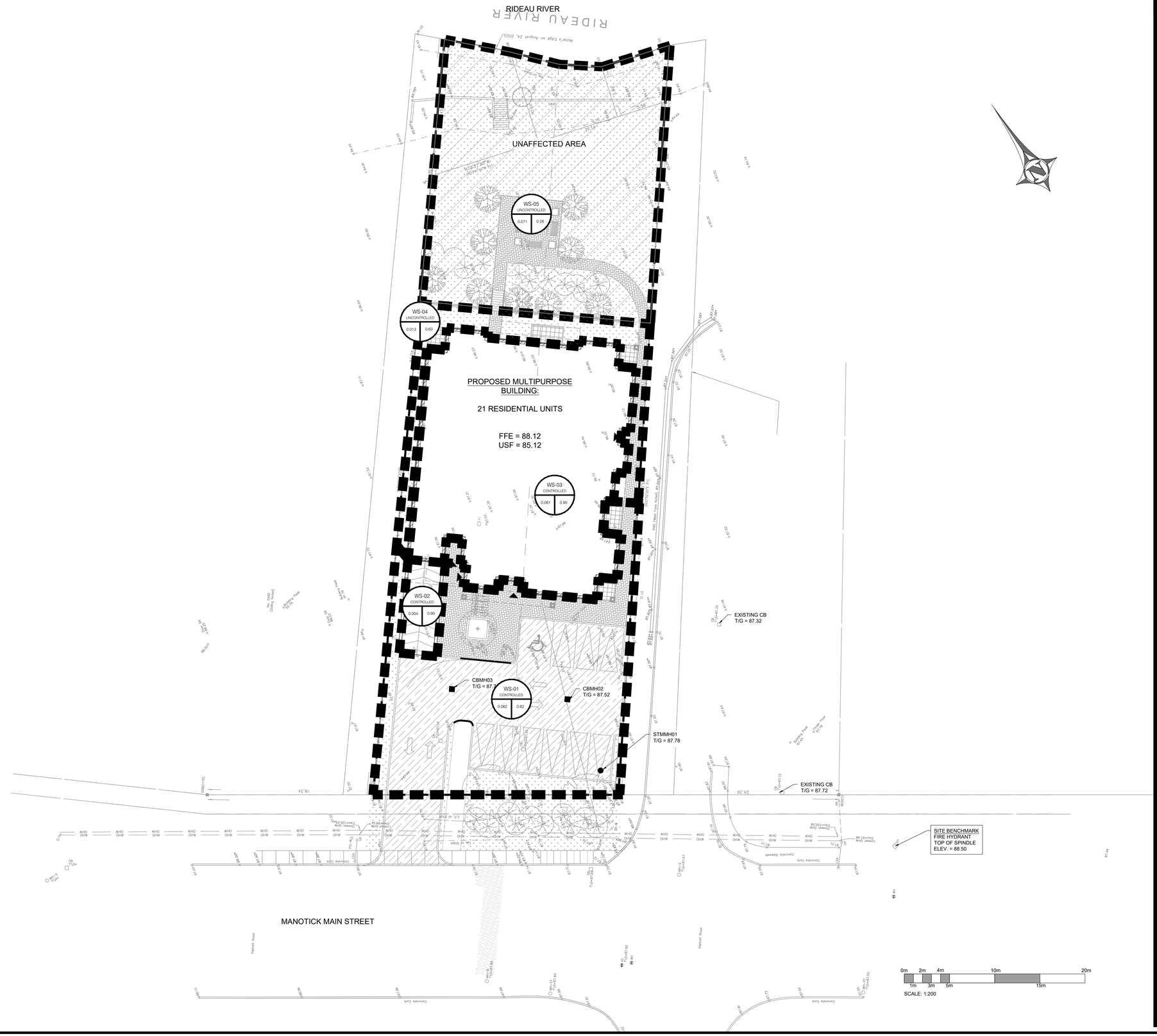

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996-B ST. AUGUSTIN RD.
EMBRUN, ON

PROJECT:

NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST,
MANOTICK, ON

DRAWING:

POST DEVELOPMENT STORAGE AREA

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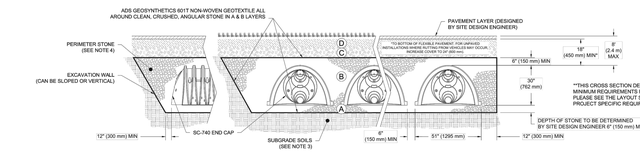
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	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*: A-1, A-2-4, A-3 OR AASHTO M43*: 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*: 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*: 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.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a. "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 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.
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 AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. 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.

PROPOSED LAYOUT

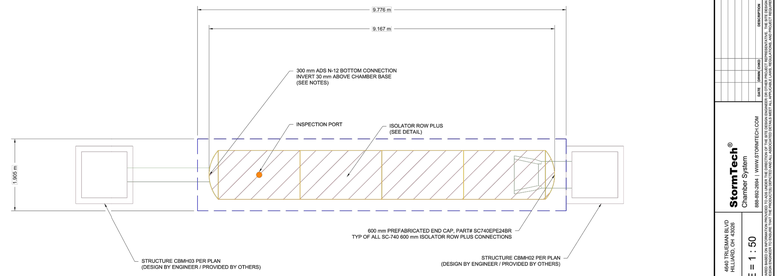
4	STORMTECH SC-740 CHAMBERS
2	STORMTECH SC-740 END CAPS
152	STONE ABOVE (mm)
152	STONE BELOW (mm)
40	% STONE VOID
11.1	**INSTALLED SYSTEM VOLUME (m³) (PERIMETER STONE INCLUDED)**
18.6	SYSTEM AREA (m²)
23.4	SYSTEM PERIMETER (m)

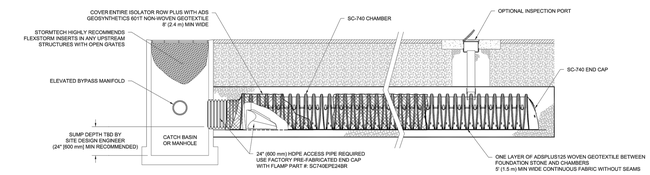
PROPOSED ELEVATIONS

89.427	MINIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
87.599	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):
87.446	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
87.446	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):
87.446	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):
87.141	TOP OF STONE:
86.989	TOP OF SC-740 CHAMBER:
86.257	300 mm BOTTOM CONNECTION INVERT:
86.230	600 mm ISOLATOR ROW PLUS INVERT:
86.227	BOTTOM OF SC-740 CHAMBER:
86.075	BOTTOM OF STONE:

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL 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.
- IF THE 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 IN-SITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.





SC-740 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW 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 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 ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW 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.

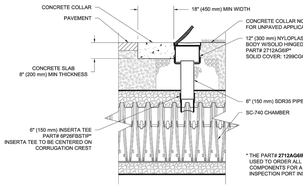
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

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.



SC-740 6" (150 mm) INSPECTION PORT DETAIL
NTS

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 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	79.0 lbs.	(33.6 kg)

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

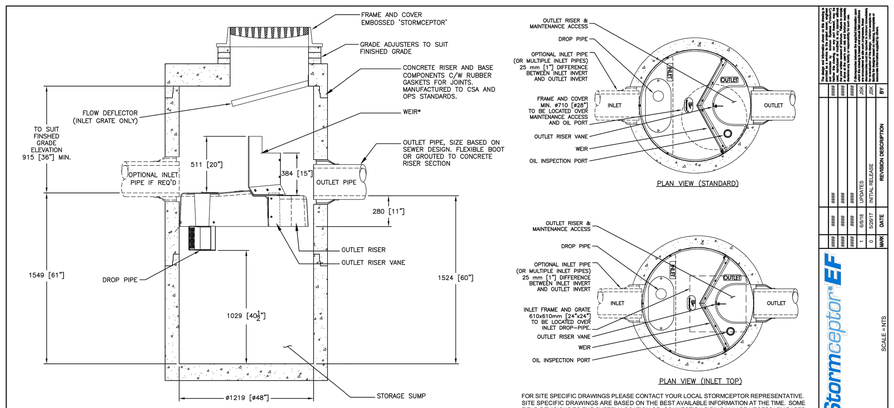
PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-COREX END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	0.3" (13 mm)
SC740EPE08B / SC740EPE08BPC	---	---	16.5" (419 mm)	
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	---	0.6" (15 mm)
SC740EPE08B / SC740EPE08BPC	---	---	14.5" (368 mm)	
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	---	0.7" (18 mm)
SC740EPE10B / SC740EPE10BPC	---	---	12.5" (318 mm)	
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	---	1.2" (30 mm)
SC740EPE12B / SC740EPE12BPC	---	---	9.0" (229 mm)	
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	---	1.3" (33 mm)
SC740EPE15B / SC740EPE15BPC	---	---	5.0" (127 mm)	
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	---	1.6" (41 mm)
SC740EPE18B / SC740EPE18BPC	---	---	---	
SC740EPE24BR*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)
SC740EPE24BR*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B/SC740EPE24BR 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 SC740EPE24B/SC740EPE24BR 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



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:

1. 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 EF04 (OIL CAPTURE CONFIGURATION). WEIR HEIGHT IS 150 mm (6 INCH) FOR EF4.
2. ALL DIMENSIONS INDICATED ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SPECIFIED.
3. STORMCEPTOR STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
4. 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.
5. DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEER'S SITE/UTILITY PLAN FOR STRUCTURE ORIENTATION.
6. 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.

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

STANDARD DETAIL
NOT FOR CONSTRUCTION

NO.	REVISION	DATE (DD/MM/YYYY)
#1	ISSUED FOR SPA	10 / 03 / 2021
#2	ISSUED FOR SPA	06 / 08 / 2021
#3	ISSUED FOR SPA	12 / 10 / 2021
#4		
#5		
#6		
#7		
#8		

StormceptorEF — SCALE = NTS

imbrium — POWERED BY EXPERIENCE

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

ENGINEERING STAMP

BLANCHARD LETENDRE ENGINEERING
757, Notre Dame, Local 42, Embrun, Ontario, K0A 1W1
(6 1 3) 6 9 3 - 0 7 5 0
blengineering.ca

CLIENT:

OLIGO DEVELOPMENT
996-B ST. AUGUSTIN RD.
EMBRUN, ON

PROJECT:

NEW MULTIPURPOSE DEVELOPMENT
5497 MANOTICK MAIN ST,
MANOTICK, ON

DRAWING:

DETAILS

PAPER FORMAT:	24x36
DRAWN BY:	BF + GB
CHECKED BY:	GB
DATE:	07-2021
SCALE:	1:250
PROJECT NUMBER:	20-261

PAGE:

C500