

# Urbtech Engineering Inc.

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Telephone (905) 896 7364

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REPORT:

## FUNCTIONAL SERVICING REPORT

**CLIFFORD (PARK STREET) DEVELOPMENT INC.**

**41 PARK STREET WEST, TOWN OF MINTO**



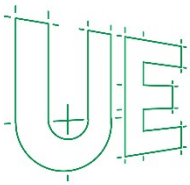
**Submitted by:**

**URBTECH ENGINEERING INC.**

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**Our Project No: 22-471**

*Date: ISSUED FOR FSR SUBMISSION DATED JUNE 24, 2024*



## TABLE OF CONTENTS

1.0	Introduction .....	1
2.0	Site Location and Topography .....	1
3.0	Servicing General .....	2
4.0	Sanitary Servicing.....	2
4.1	General.....	2
4.2	Design Criteria.....	2
4.3	Sanitary System.....	3
5.0	Water Supply and Distribution .....	3
5.1	General.....	3
5.2	Design Criteria.....	3
5.3	Water System.....	4
6.0	Storm Drainage and Stormwater Management .....	5
6.1	General.....	5
6.2	Water Quality.....	5
6.3	Water Quantity .....	8
6.4	Minor System .....	9
6.5	Major System .....	9
7.0	Sediment Control During Construction .....	9
8.0	Conclusion.....	10

### Appendix A

- Plan and Profile Plans

### Appendix B

- Table 3.2 and 6.3 of the Ministry of the Environment SWM Planning and Design Manual
- Watershed Parameters
- Pre-Development Drainage Plan (D1)
- Post-Development Drainage Plan (D2)
- SWMHYMO Printouts
- Stage Storage Curve
- Stormwater Management Pond (POND1)
- Quality Quantity SWM Pond Table

### Appendix C

- Site Servicing Plan (S1)
- Site Grading Plan (G1)
- Sediment Control Plan (SED1)
- Erosion & Sediment Control Details (SN1)

## 1.0 INTRODUCTION

Urbtech Engineering Inc. (UEI) was retained by Clifford (Park Street) Development Inc. (CDI) to assist in the development process of its lands located 41 Park St West, Village of Clifford, Town of Minto, County of Wellington.

This Report was prepared as per the recommendation from the reports and standards listed below:

- Geotechnical Investigation Report prepared by Soil-Mat Engineers and Consultants Ltd. (SMECL), dated April 28, 2022.
- Topographical Survey by J.D. Barnes (JDB), dated April 30, 2024.
- The Town of Minto Municipal Servicing and Design Standards (TMMSADS).
- Ministry of the Environment, Stormwater Management Planning and Design Manual (MESMPDM).
- Erosion & Sediment Control Guidelines for Urban Construction (ESCGUC).

## 2.0 SITE LOCATION AND TOPOGRAPHY

The proposed CDI site consists of approximately 10.65 ha, plus the external lands of approximately 0.39 ha, totaling 11.04 ha and is bounded by existing agricultural to the west, east and south and Park Street to the north.

The proposed development is comprised of single detached dwellings, street townhouses and a SWM block. The site topography consists of slopes, with a gradient between 0.9% to 11%, sloping towards the existing ditch, running along the east side of this proposed development into a small watercourse.

Some grading within the site and fill import will be required to achieve the proper sanitary sewer cover and to provide the overland flow route to the proposed SWM pond. Therefore, the adjacent agricultural lands to the west will be re-graded to optimize the agricultural viability of the lands, which has been discussed with the landowner. The fill generated from the grading of the agricultural lands to the west will be imported into the development lands and the excess topsoil generated from the development lands will be spread over the adjacent agricultural lands to the west.

### 3.0 SERVICING GENERAL

Servicing of this development will consist of the following.

- 200mm diameter sanitary sewer connected to the existing 200mm diameter sanitary at Ann and Park Street.
- 150mm diameter watermain connected to the existing 150mm and 200mm diameter watermain on Park Street.
- Proposed storm sewer connected to the proposed SWM pond discharging into the existing ditch along Town’s trail network and discharging into the small Coon Creek watershed.

The Plan and Profiles of the existing streets are attached in Appendix ‘A’. The Servicing Plan is attached in Appendix ‘C’. The service details will be discussed further in the sections below.

### 4.0 SANITARY SERVICING

#### 4.1 GENERAL

The sanitary sewer servicing in the subdivision will include a 200mm diameter sanitary sewer extension along Park Street and 200mm diameter sanitary within the proposed subdivision.

#### 4.2 DESIGN CRITERIA

As per the Town’s recommendations the following design criteria shall be used;

Average Day Flow (ADF)	450 l/capita/day
Infiltration	0.15 l/s/ha
Residential	3.0 p/u
Peaking Factor	$M = 1 + 14/4 + P^{0.5}$
Peak Population Flow	$Q(p) = PqM/86.4$
Peak Extraneous Flow	$Q(i) = 0.15l/s/ha$
Peak Design Flow	$Q(d) = Q(p) + Q(i)$

The proposed number of units for the CDI Development is 188 Therefore, the total population will be  $255 \times 3.0\text{ppu} = 564$ .

Thus, the allowable flows are as follows.

$$M = 1 + 14 / (4 + (564/1000)^{0.5}) = 3.95$$
$$Q_p = (450 \times (564/1,000) \times 3.95) / 86.4 = 11.6 \text{ l/s}$$
$$Q_i = 10.65 \text{ ha} \times 0.15 \text{ l/ha} = 1.6 \text{ l/s}$$
$$Q_d = Q_p + Q_i = 11.6 + 1.6 = 13.2 \text{ l/s}$$

### 4.3 SANITARY SYSTEM

The proposed sanitary sewers will consist of a 200mm diameter PVC, DR35 pipe. The minimum slope of the first upstream leg will be set at 1.0% and the full flow pipe velocity will be set at 0.60m/s minimum.

All sanitary manholes to be as per OPSD standards and specifications and will be spaced at 100m maximum and located at all bends and sewer deflections.

House services will consist of single services of 125mm diameter with a 2% slope minimum.

## 5.0 WATER SUPPLY AND DISTRIBUTION

### 5.1 GENERAL

A 150mm diameter watermain is proposed on all internal streets and connected to the existing 150mm and 200mm watermain within Park Street.

### 5.2 DESIGN CRITERIA

The water requirements for the proposed development have been calculated based on the TMMSADS and MOE design criteria and are listed below.

Average Day Demand (ADD)	450 L/capita/day
Maximum Day Factor (MDF)	2 (Appendix L of MOE Guidelines)
Peak Hour Factor	3 (Appendix L of MOE Guidelines)
Normal Operating Condition	275 kpa (40 psi)
Minimum Pressure under Fire Flow	140a (20 psi)

The domestic flows are as follows;

$$450 \text{ l/cap/day} \times 3\text{ppu} = 1,350 \text{ l/day}$$

$$\text{Maximum Day } 1,350 \times 2 = 2,700 \text{ l/day}$$

$$\text{Peak Hour } 1,350 \times 3 = 4,050 \text{ l/day}$$

$$\text{Peak Hour from subdivision } 4,050 \times 188 \text{ units} = 8.8 \text{ l/s}$$

Based on the Office of the Fire Marshall for Fire Protection Water Supply Guidelines for Part 3 of The Ontario Building Code, the following calculations can be used to determine the required fire flow:

$$Q = KVS_{\text{Tot}} \quad \text{where } Q = \text{minimum supply of water (L)}$$

$K = \text{water supply coefficient from Table}$

$V = \text{total building volume in cubic meters}$

$S_{\text{Tot}} = \text{total of spatial coefficients values from property line exposures on all sides obtained from the formula of}$

$$S_{\text{Tot}} = 1.0 + S1 + S2 + S3 + \text{etc}$$

$K = 23$  based on Table 1 of Water supply coefficient

$$V = 628 \text{ m}^3$$

$$S_{\text{Tot}} = 1.0 + 0.7 + 0.7 + 0 + 0 = 2.4$$

$$Q = 23 \times 628 \times 2.4 = 34,665.6$$

As per Table 2 if  $Q$  is less than 108,000 L then the required minimum water supply flow rate is 2,700 L/min or 45 l/s plus domestic flows of 8.8 l/s, totaling 53.8 l/s.

### 5.3 WATER SYSTEM

As noted in section 5.1, a 150mm diameter watermain is proposed on all of the internal streets and connected to the existing 150mm and 200mm watermain within Park Street.

Fire hydrants will be installed at a maximum spacing of 150 m to ensure the appropriate fire flow coverage. Single 25mm diameter copper type 'k' water services are proposed for all residential lots (singles and townhouse units).

The water distribution system is shown on the Servicing Plan, included in this report under Appendix 'C'.

## **6.0 STORM DRAINAGE AND STORMWATER MANAGEMENT**

### **6.1 GENERAL**

The existing drainage is from the center of this subject lands to the east and west and then to the existing ditch located along the Town's trail network and finally discharging to the Coon Creek tributary, through the existing 1200mm diameter culvert.

The proposed development area is 11.04 ha, including the external areas of 0.39 ha and will consist of 116 detached houses, 72 street townhouses, municipal ROW's, Park and SWM block.

To be consistent with the existing drainage pattern one central quality and quantity SWM pond for this development area and the external drainage areas is proposed.

This will provide enhanced (80%) water quality, decrease the erosion potential and reduce the peak flows in the downstream ditch and the receiving body of Coon Creek.

The proposed hydrologic model will be based on 3hr Chicago from MTO data.

The areas draining to the proposed Quality/Quantity Stormwater Management were delineated from the topographical survey prepared by JDB and the Town of Minto plan and profiles and storm sewer data and field investigation. These areas are shown on Plan D1 attached in Appendix 'D'.

### **6.2 WATER QUALITY**

The proposed quality pond sizing is as follows:

#### Permanent Storage Required

As per Table 3.2 of the Ministry of the Environment SWM Planning and Design Manual (copy attached in Appendix 'B') for a wet pond with enhanced 80% long-term S.S. removal and 65% Imperviousness, the required storage is:

$$(190 + ((225 - 190) / 15) \times 10) = 213 \text{ m}^3/\text{ha}$$

Thus the required storage volume =  $213\text{m}^3/\text{ha} - 40 \text{ m}^3 = 173 \text{ m}^3/\text{ha}$

Permanent storage required  $173 \text{ m}^3/\text{ha} * 10.65 \text{ ha} = \mathbf{1,846\text{m}^3}$

Permanent storage provided  $\mathbf{2,897 \text{ m}^3}$

### Active Storage Required

The erosion storage of 25mm with a detention time of 24 hours is necessary to protect the erosion potential for the downstream ditch and the receiving body of the creek.

From the SWMHYMO files for the 25mm storm the required storage volume is  $1,634 \text{ m}^3$ .

SWMHYMO storage required	= $1,634 \text{ m}^3$
Total Active storage provided	= $3,532 \text{ m}^3$

The storage volume provided in the proposed pond are shown in the Control Facility Table in Appendix 'E' and summarized in Table 6.2.1.

### Forebay

Settling calculation: (Ministry of the Environment, Stormwater Management Planning & Design Manual, Section 4.6.2, equation 4.5)

$\text{Dist} = \sqrt{\frac{r Q_p}{V_s}}$	Dist = Forebay length (m)
	r = L to W = 2:1
	$Q_p = 0.038 \text{ m}^3/\text{s}$
	(Peak flow rate from pond. See Control Facility Table)
Dist = 15.9 m	$V_s = 0.0003 \text{ m/s}$ (settling velocity)

### Dispersion Length

$L = \frac{8 Q}{d V_f}$	L = length of dispersion
	Q = $1.280 \text{ m}^3/\text{s}$ inlet flow rate from 5Yr storm SCS

$$L = 15.8 \text{ m} \quad \begin{array}{l} d = 1.30 \text{ permanent pool depth} \\ V_f = 0.5 \text{ m/s desired velocity} \end{array}$$

Based on the above the dispersion governs the length of the forebay, which requires a minimum length of 15.9 m.

**Bottom width:** (Ministry of the Environment, Stormwater Management Planning & Design Manual, Section 4.6.2, equation 4.7)

$$\text{Width} = \frac{\text{Dist}}{8} = \frac{15.9}{8} = 2 \text{ m}$$

$$\text{Velocity} = Q/A \quad \begin{array}{l} Q = 1.28 \text{ m}^3/\text{s} \text{ inlet flow rate from 5Yr storm} \\ A = 15.0 \text{ m}^2 \end{array}$$

$$\text{Velocity} = 0.085 \text{ ms} = 0.15 \text{ m/s permissible velocity to prevent erosion}$$

### Emergency Spillway

To allow the 100 year storm event flows to overpass from the pond

$$Q = 1.7 \times L \times H^{3/2} = 1.7 \times (10) \times 0.30^{3/2} = 2.793 \text{ m}^3/\text{s}$$

$$Q_{100\text{yr}} = 2.402 \text{ m}^3/\text{s} < \text{weir/spillway flow of } 2.793 \text{ m}^3/\text{s}$$

### Clean Out Frequency

Based on Table 6.3 of the Ministry of the Environment SWM Planning and Design Manual (copy attached in Appendix 'B') for 65% imperviousness:

$$\text{At 65\% impervious level - annual loading} = 2.5 \text{ m}^3/\text{ha}$$

Thus the annual loading is:

$$2.5 \text{ m}^3/\text{ha} \times 8.72 \text{ ha} = 21.8 \text{ m}^3 \text{ annually}$$

$$\text{Forebay volume} = 463 \text{ m}^3$$

$$(463 / 21.8 \text{ m}^3) \times 80\% \text{ removal efficiency} = 17 \text{ years}$$

Notwithstanding, the pond should be cleaned every 10 years

**TABLE 6.2.1 QUALITY/QUANTITY (SCS) POND 2 SUMMARY**

Stage		Storage Required	Storage Provided
Forebay Bottom	369.40		
Pond Bottom	369.70		
Permanent Pool	370.70	1,846 m <sup>3</sup>	2,897 m <sup>3</sup>
Active Storage	371.60	1,634 m <sup>3</sup>	3,532 m <sup>3</sup>
100 Yr Storage	371.72	4,087 m <sup>3</sup>	4,087m <sup>3</sup>
Spillway	372.10		5,941 m <sup>3</sup>
Pond Top	372.40		7,530 m <sup>3</sup>
Forebay Length		15.9 m	33.0 m
Forebay Width		2.0 m	17.0 m
Forebay Volume			463 m <sup>3</sup>

### 6.3 WATER QUANTITY

SWMHYMO model was used to generate the pre and post development flows and the output files are attached to this report in Appendix 'B' and the results are summarized in the table below.

**TABLE 6.3.1, PRE AND POST-DEVELOPMENT FLOWS 25MM, 2 TO 100 YEAR**

	3hr Chicago		
	Pre- dev.	Post-dev.	Storage
	m <sup>3</sup> /s	m <sup>3</sup> /s	m <sup>3</sup>
25mm Storm	0.217	0.217	1,187
2 Year	0.342	0.268	1,627
5 Year	0.576	0.369	2,301
10 Year	0.749	0.439	2,758
25 Year	0.989	0.535	3,369
50 Year	1.178	0.610	3,780
100 Year	1.369	0.680	4,087
Spillway			5,941
Pond Top			7,530

As can be noted the post-development flows will be reduced substantially from the pre-development levels and the required storage increased by 31% for the 100 year storm as required under severe weather conditions.

The Pond Hydraulic Table, the Stage/Storage Curve, the SWMHYMO Model Schematic and the SWMHYMO files are attached in Appendix 'B'.

#### **6.4 MINOR SYSTEM**

The minor storm drainage system for the 8.72 ha (areas 101, 102, 205 and 206) draining to the proposed SWM pond was designed to accommodate the 5 year peak flows and the remaining 2.32 ha (areas 201, 202, 203 and 204), draining sheet flow to the adjacent lands and then to the existing ditch within the Town of Minto trail network. The Minor Storm Drainage Plan D2 with the drainage area tables is attached in Appendix 'B'.

#### **6.5 MAJOR SYSTEM**

All major storm flows in excess of the 5 year storm event from the drainage area of 8.72ha (areas 101, 102, 205 and 206) will drain within the road allowance to the proposed SWM Pond and the remaining area of 2.32 ha will still sheet flow to the adjacent properties and then to the existing ditch within the Town of Minto trail network. The Major Storm Drainage Plan D2 with Drainage Area Tables is included in Appendix 'B'.

#### **7.0 SEDIMENT CONTROL DURING CONSTRUCTION**

Prior to any construction activities, sediment fence will be installed along the perimeter of the site. Catchbasins sediment protection and rock check dams within the existing ditches will be installed on Park Street and the existing ditch along Town of Minto trail network.

Once the site is stripped, cut off swales and temporary rock check dams will be constructed along the limits of construction together with temporary sediment basins as shown on the Sediment Control Plan.

These sediment basins will be sized based of 125 m<sup>3</sup>/ha of storage for each drainage area as required by the ESC Guideline for Urban Construction. More details and calculations will be provided at the Detailed Design stage. The Sediment Control Plan and the Sediment Details are included in Appendix 'C'.

## 8.0 CONCLUSION

On the basis of the investigation and analysis carried out and identified in this report, it is evident that the proposed Clifford (Park Street) Development Inc. residential development can be adequately serviced with full municipal services while abiding by all criteria as set out by the various regulatory agencies.

- Sanitary connection is available from the existing 200mm diameter sanitary at Park and Ann Street.
- Water connection is available from the existing 150mm and 200mm diameter watermain on Park Street.
- For the stormwater quality and erosion control a permanent pool and active storage will be provided and the flows from the active storage will be controlled by a 140mm orifice plate for the proposed development area and the external areas as shown on the Drainage Plan D2.
- For the water quantity, the post-development flows for all the storm events, including the 100year storm from this proposed subdivision and the external lands will be controlled to less than the predevelopment levels and an additional 31% of storage will be provided for the 100 year storm event.
- Sediment control during construction will be provided through the installation of sediment fence, cut off swales, rock check dams and sediment basins within the subdivision boundary.

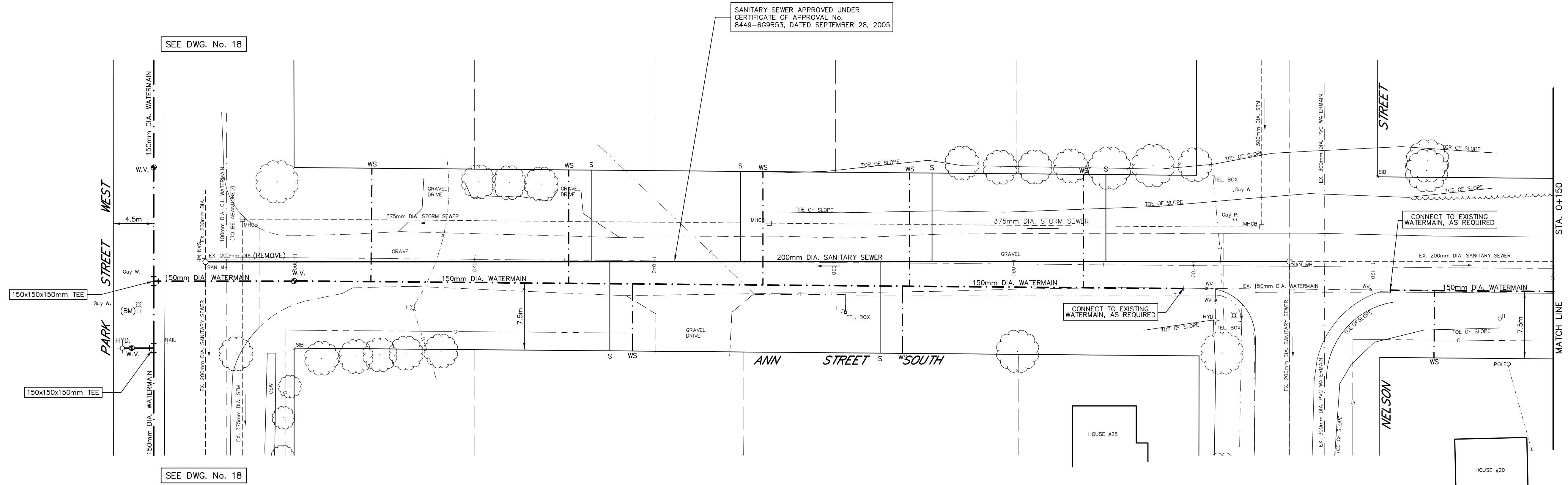
### URBTECH ENGINEERING INC.



Andrzej Jaworski, P.Eng.  
**Consulting Engineer**

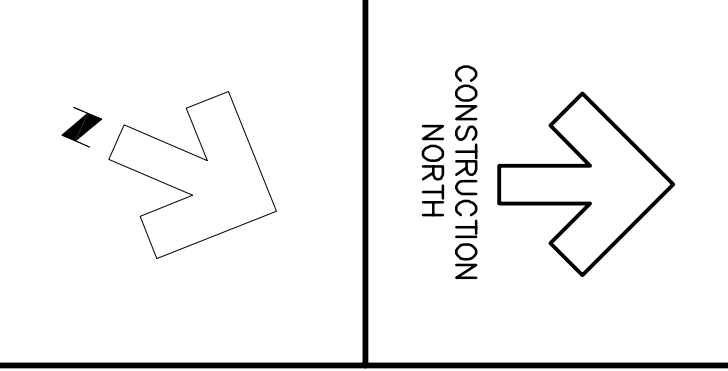
# APPENDIX A

- Plan and Profile Plans



**LEGEND**

---	SAN. or STM.	EXISTING SEWERS, SANITARY or STORM
○	MANHOLE and CATCHBASIN	
---	WATERMAIN	FIRE HYDRANT
---	UNDERGROUND TELEPHONE	
---	UNDERGROUND HYDRO	
---	UNDERGROUND T.V. CABLE	
H B T U-SB	UTILITY POLES	
⊗	GRUBBER	REMOVE EXISTING CONC. SIDEWALK AND DRIVES
▨		REMOVE AND PLACE CONC. SIDEWALK AND DRIVES
▨		PLACE CONC. SIDEWALK AND DRIVES
▨		REMOVE EXISTING ASPHALT PAVT
▨		PLACE HOT MIX ASPHALT DRIVE (50mm 4:3 HOT MIX MIBC)
▨		REMOVE EXISTING CONC. CURB
W		WATER SERVICE - NEW AND/OR RECONNECT
WS		NEW WATER SERVICE SHUT-OFF



**NOTE:**  
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

**Benchmark Information**  
B.M. ELEVATION - 373.280  
MAG NAIL AND FLAG IN NORTH-WEST FACE OF HYDRO POLE AT EAST CORNER OF ANN STREET AND PARK STREET.

**Benchmark Information**  
B.M. ELEVATION - 369.536  
MAG NAIL AND FLAG IN NORTH-WEST FACE OF HYDRO LIGHT POLE AT SOUTH CORNER OF PARK STREET AND CLARKE STREET.

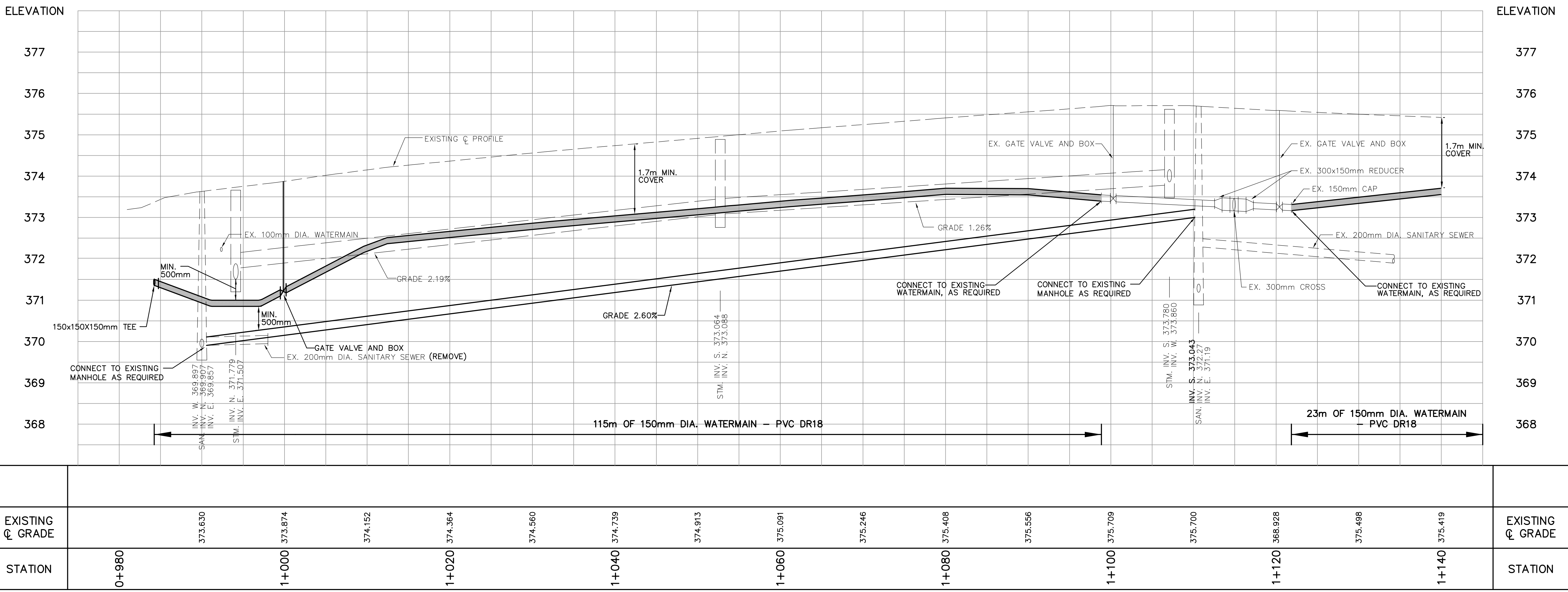
Design By: G.A.F. Checked By: F.C.V.

No.	DATE	REVISION
1	Jan. 19, 2006	Updated Watermain Design
2	Apr. 13, 2006	Updated as per Client Comments
3	Apr. 17, 2006	Issued for Approval



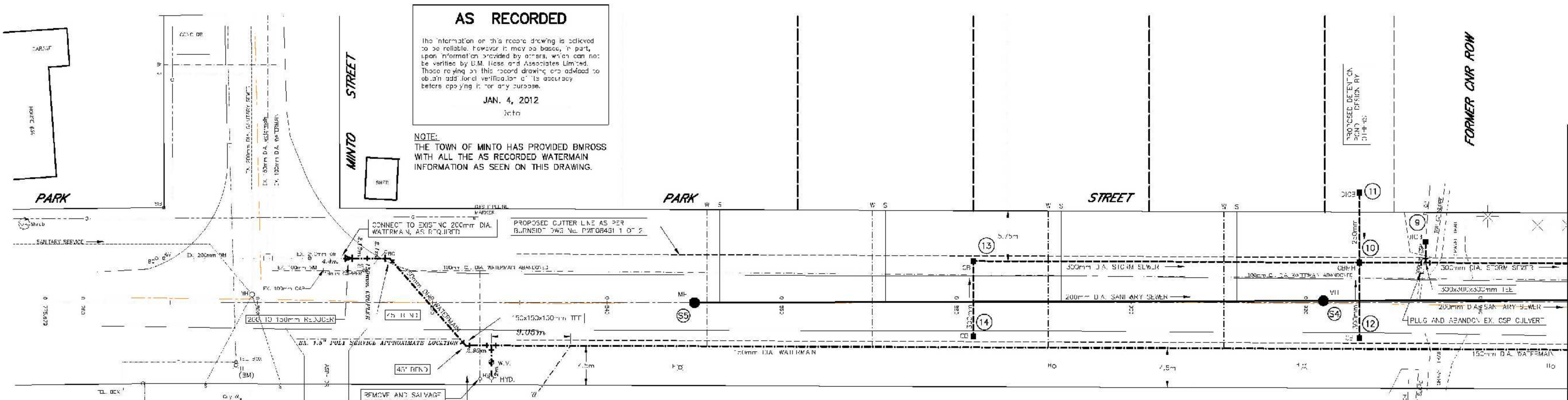
Goderich (519) 524-2641 Mount Forest (519) 323-2945

**TOWN OF MINTO (CLIFFORD)**  
**ANN STREET**  
Plan and Profile  
From Park Street West to Sta. 1+140



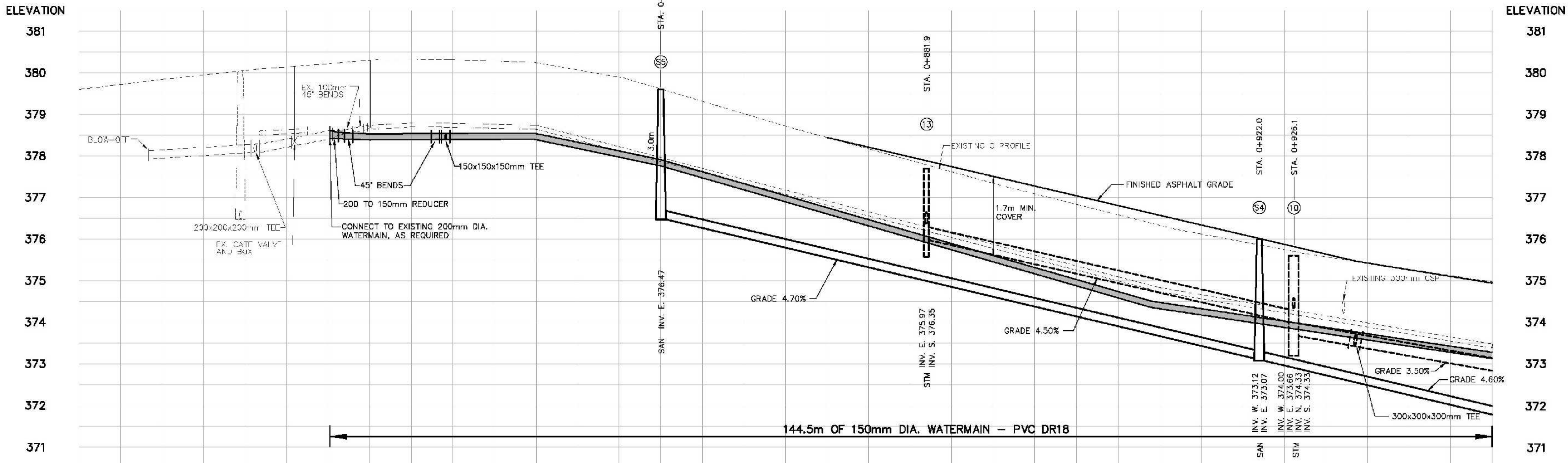
EXISTING $\phi$ GRADE		373.630	373.874	374.152	374.364	374.560	374.739	374.913	375.091	375.246	375.408	375.556	375.709	375.700	368.928	375.498	375.419	EXISTING $\phi$ GRADE
STATION		0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140								STATION

Project No.	01161
Drawing No.	10 of 25
Scale	Horizontal: 1:250 Vertical: 1:50



MANHOLE AND CATCHBASIN DATA							
No	Station	O/S	Desc.	Grate	Inverts	T/Cover	Remarks
9	0+933.7	LT	705.040	403.010	S. 473.44	LOW 474.50	3:1 GRATE
10	0+926.1	LT	705.010	400.110	N. 374.181 E. 374.33	LOW 375.60	3:1 GRATE
11	0+926.1	LT	705.040	403.010	S. 374.38	LOW 375.60	
12	0+926.1	RT	705.010	400.110	E. 374.37	LOW 375.60	
13	0+881.9	LT	705.010	400.110	S. 374.01 E. 374.39	LOW 377.70	
14	0+881.9	RT	705.010	400.110	N. 374.89	LOW 377.70	
S4	0+922.0	CL	701.010	400.010A	W. 373.10 E. 373.10	LOW 376.00	
S5	0+850.0	CL	701.010	400.010A	E. 374.50	LOW 379.60	

SEWER DATA						
No to No	Size	Type	Class	Length	Grade	Remarks
14 - 13	300	Conc.	CL3	5.5	0.40%	
13 - 10	300	Conc.	CL3	44.2	4.50%	
12 - 10	300	Conc.	CL3	8.5	0.40%	
11 - 10	250	Conc.	CL3	8.0	0.70%	
10 - 7	300	Conc.	CL3	59.5	3.50%	
9 - TEE	300	Conc.	CL3	2.4	0.50%	
S5 - S4	200	PVC	SDR35	72.0	4.70%	
S4 - S3	200	PVC	SDR35	68.4	4.60%	



EXISTING G GRADE	STATION	EXISTING G GRADE	STATION
378.596	780	374.975	950
378.838	790	375.273	940
380.052	0+800	375.574	930
380.217	810	375.874	920
380.318	820	376.174	910
380.279	830	376.474	900
380.065	840	376.774	890
379.608	850	377.074	880
379.014	860	377.374	870
378.439	870	377.674	860
377.891	880	377.974	850
377.343	890	378.274	840
376.833	0+900	378.574	830
376.331	910	378.874	820
375.934	920	379.174	810
375.574	930	379.474	800
375.273	940	379.774	790
374.975	950	380.074	780

**LEGEND**

**NOTE:**  
 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

**NOTE:**  
 THE PROPOSED WATERMAIN ON PARK STREET AND AVE STREET HAS BEEN APPROVED BY THE MOC UNDER CERTIFICATE APPROVAL No. 3445 BRSLIF (AUGUST 16, 2006).

**Benchmark Information**  
 B.M. Elev. 373.290  
 MAG Nail and Plug in north-west face of HP at the east corner of Ann Street and Park Street

Design By: G.A.F. Checked By: F.C.V.

No.	DATE	REVISION
0	JULY 30, 2008	ISSUED FOR TOWN REVIEW
1	JULY 31, 2008	ISSUED TO MOC FOR APPROVALS
2	JAN. 4, 2012	AS RECORDED

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 engineering better communities  
 Goderich (819) 624-2841 Mount Forest (819) 925-2942

**Town of Minto**  
 Make Your Today Better

**TOWN OF MINTO (CLIFFORD)**  
**PARK STREET**  
 Plan and Profile  
 From Minto Street Sta. 0+950

<b>Contract No.</b> 08108	<b>Project No.</b> 08108
<b>Scale</b> Horizontal: 1:250 Vertical: 1:50	<b>Drawing No.</b> 2 of 4

## APPENDIX B

- Table 3.2 and 6.3 of the Ministry of the Environment SWM Planning and Design Manual
  - Watershed Parameters
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  - Post-Development Drainage Plan (D2)
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-

### 3.3.2 Water Quality Sizing Criteria

The volumetric water quality criteria are presented in Table 3.2. The values are based on a 24 hour drawdown time and a design which conforms to the guidance provided in this manual. Requirements differ with SWMP type to reflect differences in removal efficiencies. Of the specified storage volume for wet facilities, 40 m<sup>3</sup>/ha is extended detention, while the remainder represents the permanent pool.

**Table 3.2 Water Quality Storage Requirements based on Receiving Waters<sup>1, 2</sup>**

Protection Level	SWMP Type	Storage Volume (m <sup>3</sup> /ha) for Impervious Level			
		35%	55%	70%	85%
<i>Enhanced</i> 80% long-term S.S. removal	Infiltration	25	30	35	40
	Wetlands	80	105	120	140
	Hybrid Wet Pond/Wetland	110	150	175	195
	Wet Pond	140	190	225	250
<i>Normal</i> 70% long-term S.S. removal	Infiltration	20	20	25	30
	Wetlands	60	70	80	90
	Hybrid Wet Pond/Wetland	75	90	105	120
	Wet Pond	90	110	130	150
<i>Basic</i> 60% long-term S.S. removal	Infiltration	20	20	20	20
	Wetlands	60	60	60	60
	Hybrid Wet Pond/Wetland	60	70	75	80
	Wet Pond	60	75	85	95
	Dry Pond (Continuous Flow)	90	150	200	240

<sup>1</sup>Table 3.2 does not include every available SWMP type. Any SWMP type that can be demonstrated to the approval agencies to meet the required long-term suspended solids removal for the selected protection levels under the conditions of the site is acceptable for water quality objectives. The sizing for these SWMP types is to be determined based on performance results that have been peer-reviewed. The designer and those who review the design should be fully aware of the assumptions and sampling methodologies used in formulating performance predictions and their implications for the design.

<sup>2</sup>Hybrid Wet Pond/Wetland systems have 50-60% of their permanent pool volume in deeper portions of the facility (e.g., forebay, wet pond).

These graphs can be used to determine the required sediment removal frequency given the SWMP type, storage volume, and imperviousness level of catchment basin.

Figures 6.1 to 6.4 also indicate that increased storage capacity increases the maintenance interval (i.e., less frequent maintenance required). These curves are based on the assumption of 5% loss of performance and should not be used for over-sized facilities. In order to allow users to calculate the required maintenance frequency for an oversized SWMP, annual suspended solids loadings in runoff from catchments with different levels of imperviousness and estimated sediment density are provided in Table 6.3.

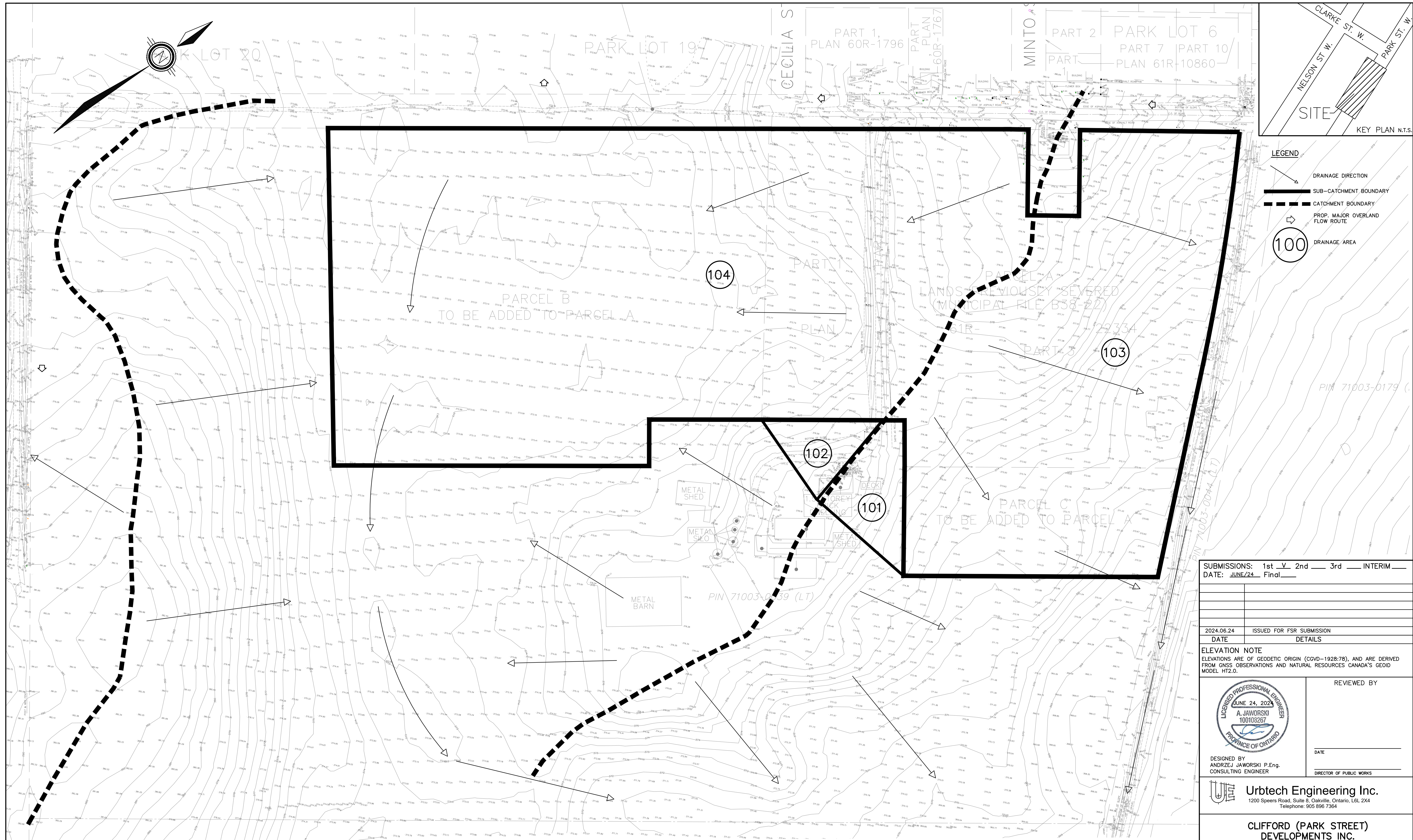
The values of suspended solids loadings in Table 6.3 were derived from US Environmental Protection Agency (EPA) Stormwater Management Model (SWMM) simulation results and are only intended to be used as estimates for planning purposes. The density of suspended solids was based on a review of the literature of stormwater sediment characteristics and recent pond sediment removal data. The following methodology should be used to calculate the maintenance frequency if storage for the SWMP is oversized (calculation can be easily automated in a spreadsheet format):

1. Determine the appropriate total suspended solid (TSS) removal efficiency based on level of protection required for receiving stream (See Table 3.2).
2. Subtract 5% to obtain the target maintenance removal efficiency.
3. Determine the projected TSS removal efficiency based on the storage provided.
4. Calculate the loss in removal performance and loss in storage for each year based on the removal performance at the start of the year, the suspended solids loading rate, and the sediment density. The removal efficiency at the start of the next year will be based on the resulting available storage volume at the end of the year. These calculations are continued until the removal efficiency of the facility at the start of the year is equal to the target maintenance removal efficiency.

**Table 6.3: Annual Sediment Loadings**

<b>Catchment Imperviousness</b>	<b>Annual Loading (kg/ha)</b>	<b>Wet Density (kg/m<sup>3</sup>)</b>	<b>Annual Loading (m<sup>3</sup>/ha)</b>
35%	770	1,230	0.6
55%	2,300	1,230	1.9
70%	3,495	1,230	2.8
85%	4,680	1,230	3.8





SUBMISSIONS: 1st    2nd    3rd    INTERIM     
 DATE: JUNE/24 Final   

2024.06.24 ISSUED FOR FSR SUBMISSION  
 DATE DETAILS

ELEVATION NOTE  
 ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928:78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL HT2.0.

	REVIEWED BY
	DATE
DESIGNED BY ANDRZEJ JAWORSKI P.Eng. CONSULTING ENGINEER	DIRECTOR OF PUBLIC WORKS

**Urtech Engineering Inc.**  
 1200 Speers Road, Suite 8, Oakville, Ontario, L6L 2X4  
 Telephone: 905 896 7364

**CLIFFORD (PARK STREET) DEVELOPMENTS INC.**  
 41 PARK STREET WEST  
 TOWN OF MINTO

**TOWN OF MINTO**

DRAWING NAME:  
**PRE-DEVELOPMENT DRAINAGE PLAN**

SCALE: 1:1000 AREA: MINTO PROJECT No.: 22-471  
 DRAWN BY: G.J. CHECKED BY: A.J. PLAN No.: **D1**

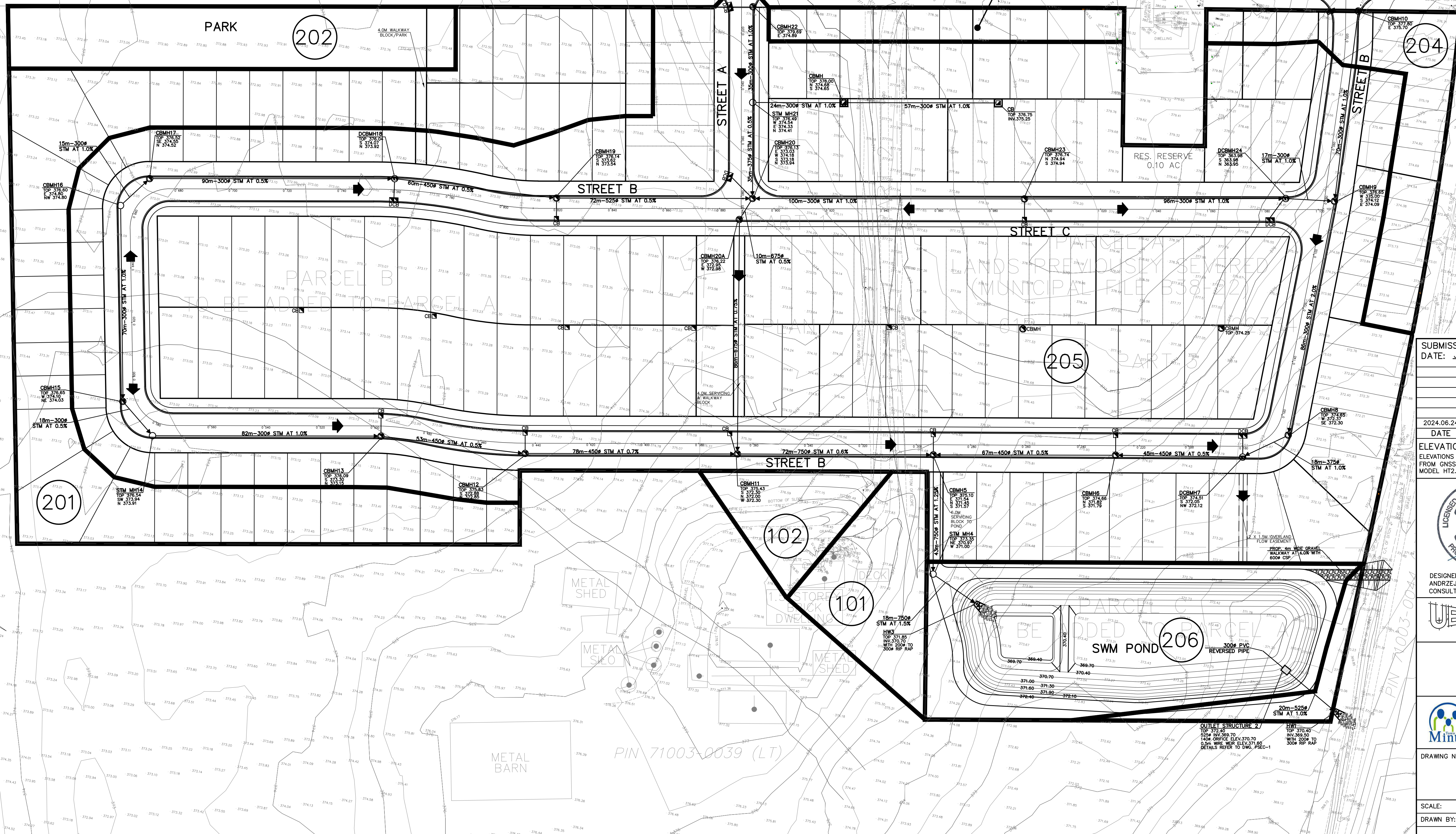
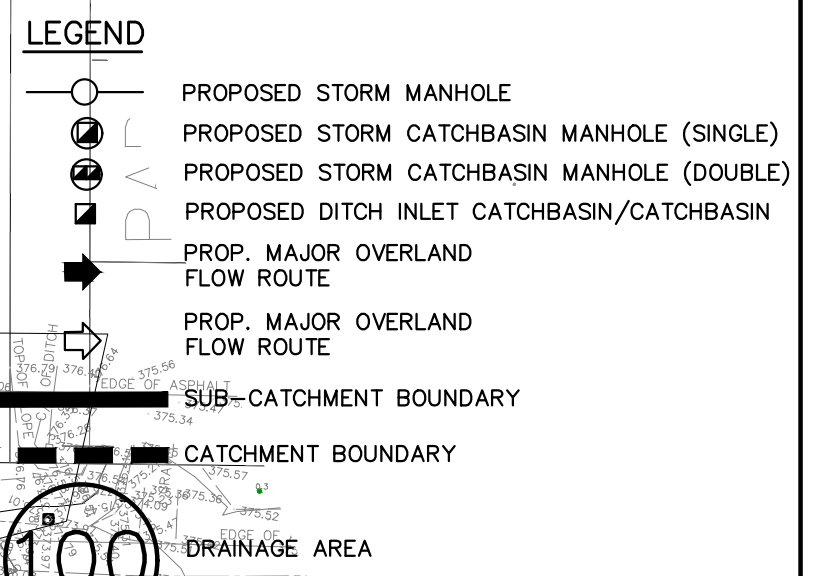
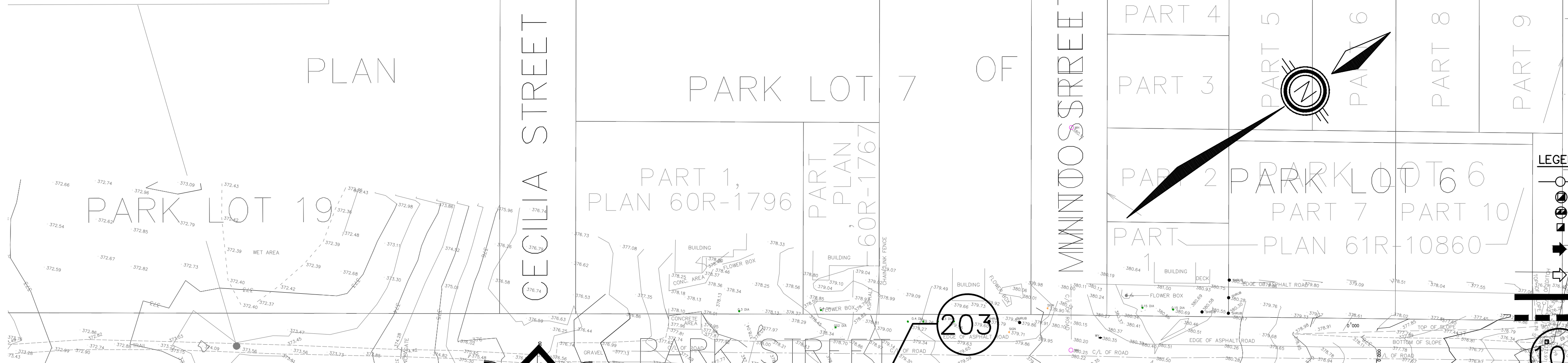
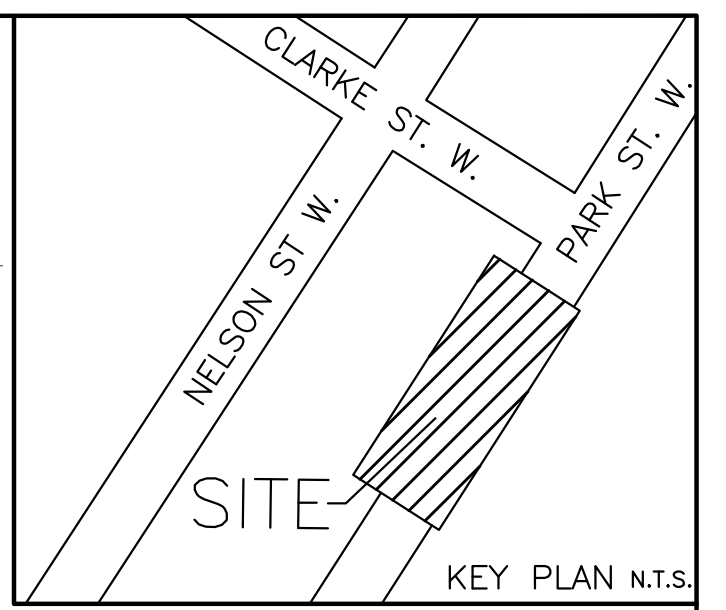
EXISTING DRAINAGE AREAS

Drainage Area Outlet Location	Drainage Area No.	Area in hectares	tp in hr.
External	101	0.23	0.03
External	102	0.16	0.03
To Existing Trail Ditch	103	3.63	0.09
To Existing low lands west and south of the site	104	7.02	0.31
<b>Total</b>		<b>11.04</b>	

MINOR/MAJOR DRAINAGE AREAS

Drainage Area Outlet Location	Drainage Area No.	Area in hectares	% Imperviousness
To Proposed SWM Pond	101	0.23	20
	102	0.16	20
	205	7.52	65
SWM Pond	206	0.81	90
Sub-total		8.72	65
To West	201	1.37	65
To Park Street	202	0.38	20
To Park Street	203	0.16	65
To East	204	0.41	65
Sub-total		2.32	
Total Area		11.04	

S PARK STREET)  
OTS 60 AND 61, CONCESSION D)  
3-0064 (LT)



SUBMISSIONS: 1st V 2nd     3rd     INTERIM  
DATE: JUNE/24 Final    

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DESIGNED BY  
ANDRZEJ JAWORSKI P.Eng.  
CONSULTING ENGINEER

REVIEWED BY  
DATE  
DIRECTOR OF PUBLIC WORKS

Urbtech Engineering Inc.  
1200 Speers Road, Suite 8, Oakville, Ontario, L6L 2K4  
Telephone: 905 896 7364

CLIFFORD (PARK STREET)  
DEVELOPMENTS INC.  
41 PARK STREET WEST  
TOWN OF MINTO

Minto  
TOWN OF MINTO

DRAWING NAME:  
POST-DEVELOPMENT  
DRAINAGE PLAN

SCALE: 1:750 AREA: MINTO PROJECT No.: 22-471  
DRAWN BY: G.J. CHECKED BY: A.J. PLAN No.: D2

```

00001> =====
00002>
00003> SSSSS  W  W  M  M  H  H  Y  Y  M  M  000      222  000  11  77777 =====
00004> S      W W W  MM MM  H  H  Y  Y  MM MM  O  O      2  0  0  11  7  7
00005> SSSSS  W W W  M M M  HHHHH  Y  M M M  O  O      2  0  0  11  7  Ver4.05.0
00006> S      W W  M  M  H  H  Y  M  M  O  O      222  0  0  11  7  APR 2017
00007> SSSSS  W W  M  M  H  H  Y  M  M  000      2  0  0  11  7  =====
00008>
00009> StormWater Management Hydrologic Model      222  000  11  7  =====
00010>
00011> *****
00012> ***** SWMHYMO Ver4.05.0 *****
00013> ***** A single event and continuous hydrologic simulation model *****
00014> ***** based on the principles of HYMO and its successors *****
00015> ***** OTTHYMO-83 and OTTHYMO-89. *****
00016> *****
00017> ***** Distributed by: J.F. Sabourin and Associates Inc. *****
00018> ***** Ottawa, Ontario: (613) 836-3884 *****
00019> ***** Gatineau, Quebec: (819) 243-6858 *****
00020> ***** E-Mail: swmhymo@jfsa.com *****
00021> *****
00022>
00023> ++++++
00024> ++++++ Licensed user: Urbtech Engineering Inc. ++++++
00025> ++++++ Oakville SERIAL#:3556752 ++++++
00026> ++++++
00027>
00028> *****
00029> ***** ++++++ PROGRAM ARRAY DIMENSIONS ++++++ *****
00030> ***** Maximum value for ID numbers : 11 *****
00031> ***** Max. number of rainfall points: 105408 *****
00032> ***** Max. number of flow points : 105408 *****
00033> *****
00034>
00035>
00036> ***** S U M M A R Y O U T P U T *****
00037> *****
00038> * RUN DATE: 2024-05-15 TIME: 14:19:44 RUN COUNTER: 000007 *
00039> *****
00040> * Input file: D:\22-471 Town of Minto\FSR\SWMHYMO 2\Clifford MTO CHI Pre 25mm up to 100yr .DAT *
00041> * Output file: D:\22-471 Town of Minto\FSR\SWMHYMO 2\Clifford MTO CHI Pre 25mm up to 100yr .out *
00042> * Summary file: D:\22-471 Town of Minto\FSR\SWMHYMO 2\Clifford MTO CHI Pre 25mm up to 100yr .sum *
00043> * User comments: *
00044> * 1: *
00045> * 2: *
00046> * 3: *
00047> *****
00048>
00049>
00050> #*****
00051> # Project Name: [Town of Clifford] Project Number: [22-471]
00052> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00053> # Date : [May, 2024]
00054> # Modeller : [A.J.]
00055> # Company : Urbtech Engineering Inc.
00056> # License # : 3556752
00057> #*****
00058> RUN#:COMMAND#
00059> R0001:C00001-----
00060> START
00061> [TZERO = .00 hrs on 0]
00062> [METOUT= 2 (1=imperial, 2=metric output)]
00063> [NSTORM= 1 ]
00064> [NRUN = 0001 ]
00065> R0001:C00002-----
00066> READ STORM
00067> Filename = storm.001
00068> Comment = 25mm storm
00069> [SDT= 5.00:SDUR= 3.92:PTOT= 24.78]
00070> R0001:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00071> * DESIGN NASHYD 1.0 01:101 .23 .009 No_date 2:00 5.71 .230 .000
00072> [CN= 78.0: N= 3.00: Tp= .03]
00073> R0001:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00074> * DESIGN NASHYD 1.0 02:102 .16 .007 No_date 2:00 5.71 .230 .000
00075> [CN= 78.0: N= 3.00: Tp= .03]
00076> R0001:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00077> ADD HYD 1.0 01:101 .23 .009 No_date 2:00 5.71 n/a .000
00078> + 1.0 02:102 .16 .007 No_date 2:00 5.71 n/a .000
00079> SUM= 1.0 03:External .39 .016 No_date 2:00 5.71 n/a .000
00080> R0001:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms

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00081> DESIGN NASHYD          1.0 04:103          3.63      .103 No_date    2:06    5.71 .230    .000
00082> [CN= 78.0: N= 3.00: Tp= .09]
00083> R0001:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00084> DESIGN NASHYD          1.0 05:104          7.02      .106 No_date    2:24    5.71 .230    .000
00085> [CN= 78.0: N= 3.00: Tp= .31]
00086> R0001:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00087> ADD HYD                  1.0 03:External      .39       .016 No_date    2:00    5.71 n/a     .000
00088> +                        1.0 04:103          3.63      .103 No_date    2:06    5.71 n/a     .000
00089> SUM=                     1.0 06:To Pond      4.02      .113 No_date    2:06    5.71 n/a     .000
00090> ** END OF RUN :      1
00091>
00092> *****
00093>
00094>
00095>
00096>
00097>
00098> RUN#:COMMAND#
00099> R0002:C00001-----
00100> START
00101> [TZERO = .00 hrs on      0]
00102> [METOUT= 2 (1=imperial, 2=metric output)]
00103> [NSTORM= 1 ]
00104> [NRUN = 0002 ]
00105> #*****
00106> # Project Name: [Town of Clifford] Project Number: [22-471]
00107> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00108> # Date : [May, 2024]
00109> # Modeller : [A.J.]
00110> # Company : Urbtech Engineering Inc.
00111> # License # : 3556752
00112> #*****
00113> R0002:C00002-----
00114> READ STORM
00115> Filename = storm.001
00116> Comment = Chicago Storm
00117> [SDT=10.00:SDUR= 3.00:PTOT= 32.33]
00118> R0002:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00119> * DESIGN NASHYD          1.0 01:101          .23       .016 No_date    1:00    9.27 .287    .000
00120> [CN= 78.0: N= 3.00: Tp= .03]
00121> R0002:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00122> * DESIGN NASHYD          1.0 02:102          .16       .011 No_date    1:00    9.27 .287    .000
00123> [CN= 78.0: N= 3.00: Tp= .03]
00124> R0002:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00125> ADD HYD                  1.0 01:101          .23       .016 No_date    1:00    9.27 n/a     .000
00126> +                        1.0 02:102          .16       .011 No_date    1:00    9.27 n/a     .000
00127> SUM=                     1.0 03:External      .39       .027 No_date    1:00    9.27 n/a     .000
00128> R0002:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00129> DESIGN NASHYD          1.0 04:103          3.63      .170 No_date    1:03    9.27 .287    .000
00130> [CN= 78.0: N= 3.00: Tp= .09]
00131> R0002:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00132> DESIGN NASHYD          1.0 05:104          7.02      .155 No_date    1:21    9.27 .287    .000
00133> [CN= 78.0: N= 3.00: Tp= .31]
00134> R0002:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00135> ADD HYD                  1.0 03:External      .39       .027 No_date    1:00    9.27 n/a     .000
00136> +                        1.0 04:103          3.63      .170 No_date    1:03    9.27 n/a     .000
00137> SUM=                     1.0 06:To Pond      4.02      .187 No_date    1:02    9.27 n/a     .000
00138> ** END OF RUN :      2
00139>
00140> *****
00141>
00142>
00143>
00144>
00145>
00146> RUN#:COMMAND#
00147> R0003:C00001-----
00148> START
00149> [TZERO = .00 hrs on      0]
00150> [METOUT= 2 (1=imperial, 2=metric output)]
00151> [NSTORM= 1 ]
00152> [NRUN = 0003 ]
00153> #*****
00154> # Project Name: [Town of Clifford] Project Number: [22-471]
00155> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00156> # Date : [May, 2024]
00157> # Modeller : [A.J.]
00158> # Company : Urbtech Engineering Inc.
00159> # License # : 3556752
00160> #*****

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00161> R0003:C00002-----
00162>   READ STORM
00163>   Filename = storm.001
00164>   Comment = Chicago Storm
00165>   [SDT=10.00:SDUR= 3.00:PTOT= 43.06]
00166> R0003:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00167> * DESIGN NASHYD      1.0 01:101      .23      .026 No_date  1:00  15.26 .354  .000
00168>   [CN= 78.0: N= 3.00: Tp= .03]
00169> R0003:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00170> * DESIGN NASHYD      1.0 02:102      .16      .018 No_date  1:00  15.26 .354  .000
00171>   [CN= 78.0: N= 3.00: Tp= .03]
00172> R0003:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00173>   ADD HYD            1.0 01:101      .23      .026 No_date  1:00  15.26 n/a  .000
00174>   +                  1.0 02:102      .16      .018 No_date  1:00  15.26 n/a  .000
00175>   SUM=               1.0 03:External  .39      .045 No_date  1:00  15.26 n/a  .000
00176> R0003:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00177>   DESIGN NASHYD      1.0 04:103      3.63     .286 No_date  1:03  15.26 .354  .000
00178>   [CN= 78.0: N= 3.00: Tp= .09]
00179> R0003:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00180>   DESIGN NASHYD      1.0 05:104      7.02     .261 No_date  1:20  15.26 .354  .000
00181>   [CN= 78.0: N= 3.00: Tp= .31]
00182> R0003:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00183>   ADD HYD            1.0 03:External  .39      .045 No_date  1:00  15.26 n/a  .000
00184>   +                  1.0 04:103      3.63     .286 No_date  1:03  15.26 n/a  .000
00185>   SUM=               1.0 06:To Pond  4.02     .315 No_date  1:02  15.26 n/a  .000
00186>   ** END OF RUN :    3
00187>
00188> *****
00189>
00190>
00191>
00192>
00193>
00194> RUN#:COMMAND#
00195> R0004:C00001-----
00196>   START
00197>   [TZERO = .00 hrs on 0]
00198>   [METOUT= 2 (1=imperial, 2=metric output)]
00199>   [NSTORM= 1 ]
00200>   [NRUN = 0004 ]
00201> #*****
00202> # Project Name: [Town of Clifford] Project Number: [22-471]
00203> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00204> # Date : [May, 2024]
00205> # Modeller : [A.J.]
00206> # Company : Urbtech Engineering Inc.
00207> # License # : 3556752
00208> #*****
00209> R0004:C00002-----
00210>   READ STORM
00211>   Filename = storm.001
00212>   Comment = Chicago Storm
00213>   [SDT=10.00:SDUR= 3.00:PTOT= 49.95]
00214> R0004:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00215> * DESIGN NASHYD      1.0 01:101      .23      .034 No_date  1:00  19.55 .391  .000
00216>   [CN= 78.0: N= 3.00: Tp= .03]
00217> R0004:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00218> * DESIGN NASHYD      1.0 02:102      .16      .024 No_date  1:00  19.55 .391  .000
00219>   [CN= 78.0: N= 3.00: Tp= .03]
00220> R0004:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00221>   ADD HYD            1.0 01:101      .23      .034 No_date  1:00  19.55 n/a  .000
00222>   +                  1.0 02:102      .16      .024 No_date  1:00  19.55 n/a  .000
00223>   SUM=               1.0 03:External  .39      .058 No_date  1:00  19.55 n/a  .000
00224> R0004:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00225>   DESIGN NASHYD      1.0 04:103      3.63     .373 No_date  1:02  19.55 .391  .000
00226>   [CN= 78.0: N= 3.00: Tp= .09]
00227> R0004:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00228>   DESIGN NASHYD      1.0 05:104      7.02     .339 No_date  1:20  19.55 .391  .000
00229>   [CN= 78.0: N= 3.00: Tp= .31]
00230> R0004:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00231>   ADD HYD            1.0 03:External  .39      .058 No_date  1:00  19.55 n/a  .000
00232>   +                  1.0 04:103      3.63     .373 No_date  1:02  19.55 n/a  .000
00233>   SUM=               1.0 06:To Pond  4.02     .410 No_date  1:02  19.55 n/a  .000
00234>   ** END OF RUN :    4
00235>
00236> *****
00237>
00238>
00239>
00240>

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00241>
00242> RUN#:COMMAND#
00243> R0005:C00001-----
00244> START
00245> [TZERO = .00 hrs on 0]
00246> [METOUT= 2 (1=imperial, 2=metric output)]
00247> [NSTORM= 1 ]
00248> [NRUN = 0005 ]
00249> #*****
00250> # Project Name: [Town of Clifford] Project Number: [22-471]
00251> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00252> # Date : [May, 2024]
00253> # Modeller : [A.J.]
00254> # Company : Urbtech Engineering Inc.
00255> # License # : 3556752
00256> #*****
00257> R0005:C00002-----
00258> READ STORM
00259> Filename = storm.001
00260> Comment = Chicago Storm
00261> [SDT=10.00:SDUR= 3.00:PTOT= 58.89]
00262> R0005:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00263> * DESIGN NASHYD 1.0 01:101 .23 .045 No_date 1:00 25.52 .433 .000
00264> [CN= 78.0: N= 3.00: Tp= .03]
00265> R0005:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00266> * DESIGN NASHYD 1.0 02:102 .16 .031 No_date 1:00 25.52 .433 .000
00267> [CN= 78.0: N= 3.00: Tp= .03]
00268> R0005:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00269> ADD HYD 1.0 01:101 .23 .045 No_date 1:00 25.52 n/a .000
00270> + 1.0 02:102 .16 .031 No_date 1:00 25.52 n/a .000
00271> SUM= 1.0 03:External .39 .076 No_date 1:00 25.52 n/a .000
00272> R0005:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00273> DESIGN NASHYD 1.0 04:103 3.63 .494 No_date 1:02 25.52 .433 .000
00274> [CN= 78.0: N= 3.00: Tp= .09]
00275> R0005:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00276> DESIGN NASHYD 1.0 05:104 7.02 .447 No_date 1:19 25.52 .433 .000
00277> [CN= 78.0: N= 3.00: Tp= .31]
00278> R0005:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00279> ADD HYD 1.0 03:External .39 .076 No_date 1:00 25.52 n/a .000
00280> + 1.0 04:103 3.63 .494 No_date 1:02 25.52 n/a .000
00281> SUM= 1.0 06:To Pond 4.02 .542 No_date 1:02 25.52 n/a .000
00282> ** END OF RUN : 5
00283>
00284> *****
00285>
00286>
00287>
00288>
00289>
00290> RUN#:COMMAND#
00291> R0006:C00001-----
00292> START
00293> [TZERO = .00 hrs on 0]
00294> [METOUT= 2 (1=imperial, 2=metric output)]
00295> [NSTORM= 1 ]
00296> [NRUN = 0006 ]
00297> #*****
00298> # Project Name: [Town of Clifford] Project Number: [22-471]
00299> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00300> # Date : [May, 2024]
00301> # Modeller : [A.J.]
00302> # Company : Urbtech Engineering Inc.
00303> # License # : 3556752
00304> #*****
00305> R0006:C00002-----
00306> READ STORM
00307> Filename = storm.001
00308> Comment = Chicago Storm
00309> [SDT=10.00:SDUR= 3.00:PTOT= 65.41]
00310> R0006:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00311> * DESIGN NASHYD 1.0 01:101 .23 .053 No_date 1:00 30.13 .461 .000
00312> [CN= 78.0: N= 3.00: Tp= .03]
00313> R0006:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00314> * DESIGN NASHYD 1.0 02:102 .16 .037 No_date 1:00 30.13 .461 .000
00315> [CN= 78.0: N= 3.00: Tp= .03]
00316> R0006:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00317> ADD HYD 1.0 01:101 .23 .053 No_date 1:00 30.13 n/a .000
00318> + 1.0 02:102 .16 .037 No_date 1:00 30.13 n/a .000
00319> SUM= 1.0 03:External .39 .090 No_date 1:00 30.13 n/a .000
00320> R0006:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms

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00321> DESIGN NASHYD          1.0 04:103          3.63      .589 No_date      1:02    30.13 .461      .000
00322> [CN= 78.0: N= 3.00: Tp= .09]
00323> R0006:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00324> DESIGN NASHYD          1.0 05:104          7.02      .532 No_date      1:19    30.13 .461      .000
00325> [CN= 78.0: N= 3.00: Tp= .31]
00326> R0006:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00327> ADD HYD                  1.0 03:External      .39       .090 No_date      1:00    30.13 n/a      .000
00328> +                        1.0 04:103          3.63      .589 No_date      1:02    30.13 n/a      .000
00329> SUM=                     1.0 06:To Pond      4.02      .646 No_date      1:02    30.13 n/a      .000
00330> ** END OF RUN :      6
00331>
00332> *****
00333>
00334>
00335>
00336>
00337>
00338> RUN#:COMMAND#
00339> R0007:C00001-----
00340> START
00341> [TZERO = .00 hrs on      0]
00342> [METOUT= 2 (1=imperial, 2=metric output)]
00343> [NSTORM= 1 ]
00344> [NRUN = 0007 ]
00345> #*****
00346> # Project Name: [Town of Clifford] Project Number: [22-471]
00347> # [Pre-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00348> # Date : [May, 2024]
00349> # Modeller : [A.J.]
00350> # Company : Urbtech Engineering Inc.
00351> # License # : 3556752
00352> #*****
00353> R0007:C00002-----
00354> READ STORM
00355> Filename = storm.001
00356> Comment = Chicago Storm
00357> [SDT=10.00:SDUR= 3.00:PTOT= 71.71]
00358> R0007:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00359> * DESIGN NASHYD          1.0 01:101          .23       .061 No_date      1:00    34.75 .485      .000
00360> [CN= 78.0: N= 3.00: Tp= .03]
00361> R0007:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00362> * DESIGN NASHYD          1.0 02:102          .16       .043 No_date      1:00    34.75 .485      .000
00363> [CN= 78.0: N= 3.00: Tp= .03]
00364> R0007:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00365> ADD HYD                  1.0 01:101          .23       .061 No_date      1:00    34.75 n/a      .000
00366> +                        1.0 02:102          .16       .043 No_date      1:00    34.75 n/a      .000
00367> SUM=                     1.0 03:External      .39       .104 No_date      1:00    34.75 n/a      .000
00368> R0007:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00369> DESIGN NASHYD          1.0 04:103          3.63      .685 No_date      1:02    34.75 .485      .000
00370> [CN= 78.0: N= 3.00: Tp= .09]
00371> R0007:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00372> DESIGN NASHYD          1.0 05:104          7.02      .618 No_date      1:19    34.75 .485      .000
00373> [CN= 78.0: N= 3.00: Tp= .31]
00374> R0007:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00375> ADD HYD                  1.0 03:External      .39       .104 No_date      1:00    34.75 n/a      .000
00376> +                        1.0 04:103          3.63      .685 No_date      1:02    34.75 n/a      .000
00377> SUM=                     1.0 06:To Pond      4.02      .751 No_date      1:01    34.75 n/a      .000
00378> R0007:C00002-----
00379> FINISH
00380>
00381> *****
00382> WARNINGS / ERRORS / NOTES
00383> -----
00384> R0001:C00003 DESIGN NASHYD
00385> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00386> R0001:C00004 DESIGN NASHYD
00387> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00388> R0002:C00003 DESIGN NASHYD
00389> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00390> R0002:C00004 DESIGN NASHYD
00391> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00392> R0003:C00003 DESIGN NASHYD
00393> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00394> R0003:C00004 DESIGN NASHYD
00395> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00396> R0004:C00003 DESIGN NASHYD
00397> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00398> R0004:C00004 DESIGN NASHYD
00399> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00400> R0005:C00003 DESIGN NASHYD

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00001> =====
00002>
00003> SSSSS  W  W  M  M  H  H  Y  Y  M  M  000      222      000      11  77777 =====
00004> S      W W W  MM MM  H  H  Y  Y  MM MM  O  O      2      0  0      11  7  7
00005> SSSSS  W W W  M M M  HHHHH  Y  M M M  O  O      2      0  0      11  7 Ver4.05.0
00006> S      W  W  M  M  H  H  Y  M  M  O  O      222      0  0      11  7 APR 2017
00007> SSSSS  W  W  M  M  H  H  Y  M  M  000      2      0  0      11  7 =====
00008>
00009> StormWater Management HYdrologic Model      222      000      11  7 =====
00010>
00011> *****
00012> ***** SWMHYMO Ver4.05.0 *****
00013> ***** A single event and continuous hydrologic simulation model *****
00014> ***** based on the principles of HYMO and its successors *****
00015> ***** OTHYMO-83 and OTTHYMO-89. *****
00016> *****
00017> ***** Distributed by: J.F. Sabourin and Associates Inc. *****
00018> ***** Ottawa, Ontario: (613) 836-3884 *****
00019> ***** Gatineau, Quebec: (819) 243-6858 *****
00020> ***** E-Mail: swmhymo@jfsa.com *****
00021> *****
00022>
00023> ++++++
00024> ++++++ Licensed user: Urbtech Engineering Inc. ++++++
00025> ++++++ Oakville SERIAL#:3556752 ++++++
00026> ++++++
00027>
00028> *****
00029> ***** ++++++ PROGRAM ARRAY DIMENSIONS ++++++ *****
00030> ***** Maximum value for ID numbers : 11 *****
00031> ***** Max. number of rainfall points: 105408 *****
00032> ***** Max. number of flow points : 105408 *****
00033> *****
00034>
00035>
00036> ***** S U M M A R Y O U T P U T *****
00037> *****
00038> * RUN DATE: 2024-05-16 TIME: 10:18:54 RUN COUNTER: 000001 *
00039> *****
00040> * Input file: D:\22-471 Town of Minto\FSR\SWMHYMO 2\Clifford MTO CHI RR 25mm up to 100yr .DAT *
00041> * Output file: D:\22-471 Town of Minto\FSR\SWMHYMO 2\Clifford MTO CHI RR 25mm up to 100yr .out *
00042> * Summary file: D:\22-471 Town of Minto\FSR\SWMHYMO 2\Clifford MTO CHI RR 25mm up to 100yr .sum *
00043> * User comments: *
00044> * 1: *
00045> * 2: *
00046> * 3: *
00047> *****
00048>
00049>
00050> #*****
00051> # Project Name: [Town of Clifford ] Project Number: [22-471]
00052> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00053> # Date : [May, 2024]
00054> # Modeller : [A.J.]
00055> # Company : Urbtech Engineering Inc.
00056> # License # : 3556752
00057> #*****
00058> RUN#:COMMAND#
00059> R0001:C00001-----
00060> START
00061> [TZERO = .00 hrs on 0]
00062> [METOUT= 2 (1=imperial, 2=metric output)]
00063> [NSTORM= 1 ]
00064> [NRUN = 0001 ]
00065> R0001:C00002-----
00066> READ STORM
00067> Filename = storm.001
00068> Comment = 25mm storm
00069> [SDT= 5.00:SDUR= 3.92:PTOT= 24.78]
00070> R0001:C00003-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00071> * DESIGN NASHYD 1.0 01:101 .23 .009 No_date 2:00 5.71 .230 .000
00072> [CN= 78.0: N= 3.00: Tp= .03]
00073> R0001:C00004-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00074> * DESIGN NASHYD 1.0 02:102 .16 .007 No_date 2:00 5.71 .230 .000
00075> [CN= 78.0: N= 3.00: Tp= .03]
00076> R0001:C00005-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00077> ADD HYD 1.0 01:101 .23 .009 No_date 2:00 5.71 n/a .000
00078> + 1.0 02:102 .16 .007 No_date 2:00 5.71 n/a .000
00079> SUM= 1.0 03:External .39 .016 No_date 2:00 5.71 n/a .000
00080> R0001:C00006-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms

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00081> DESIGN STANDHYD 1.0 04:205 7.52 .626 No_date 2:02 15.34 .619 .000
00082> [XIMP=.55:TIMP=.65]
00083> [SLP=2.00:DT= 1.00]
00084> [LOSS= 2 :CN= 68.0]
00085> R0001:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00086> DESIGN STANDHYD 1.0 05:206 .81 .041 No_date 2:26 21.77 .879 .000
00087> [XIMP=.90:TIMP=.90]
00088> [SLP= .00:DT= 1.00]
00089> [LOSS= 2 :CN= 50.0]
00090> R0001:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00091> ADD HYD 1.0 03:External .39 .016 No_date 2:00 5.71 n/a .000
00092> + 1.0 04:205 7.52 .626 No_date 2:02 15.34 n/a .000
00093> + 1.0 05:206 .81 .041 No_date 2:26 21.77 n/a .000
00094> SUM= 1.0 06:201 8.72 .653 No_date 2:02 15.51 n/a .000
00095> R0001:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00096> ROUTE RESERVOIR -> 1.0 06:201 8.72 .653 No_date 2:02 15.51 n/a .000
00097> out <= 1.0 07: 501 8.72 .021 No_date 4:01 15.51 n/a .000
00098> {MxStoUsed=.1187E+00 m3}
00099> R0001:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00100> DESIGN STANDHYD 1.0 08:201 1.37 .136 No_date 2:00 15.34 .619 .000
00101> [XIMP=.55:TIMP=.65]
00102> [SLP=2.00:DT= 1.00]
00103> [LOSS= 2 :CN= 68.0]
00104> R0001:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00105> DESIGN STANDHYD 1.0 09:202 .38 .015 No_date 2:00 7.83 .316 .000
00106> [XIMP=.20:TIMP=.20]
00107> [SLP=3.00:DT= 1.00]
00108> [LOSS= 2 :CN= 68.0]
00109> R0001:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00110> DESIGN STANDHYD 1.0 10:203 .16 .017 No_date 2:00 15.34 .619 .000
00111> [XIMP=.55:TIMP=.65]
00112> [SLP=2.00:DT= 1.00]
00113> [LOSS= 2 :CN= 68.0]
00114> R0001:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00115> DESIGN STANDHYD 1.0 01:204 .41 .043 No_date 2:00 15.34 .619 .000
00116> [XIMP=.55:TIMP=.65]
00117> [SLP=2.00:DT= 1.00]
00118> [LOSS= 2 :CN= 68.0]
00119> R0001:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00120> ADD HYD 1.0 07: 501 8.72 .021 No_date 4:01 15.51 n/a .000
00121> + 1.0 08:201 1.37 .136 No_date 2:00 15.34 n/a .000
00122> + 1.0 09:202 .38 .015 No_date 2:00 7.83 n/a .000
00123> + 1.0 10:203 .16 .017 No_date 2:00 15.34 n/a .000
00124> + 1.0 01:204 .41 .043 No_date 2:00 15.34 n/a .000
00125> SUM= 1.0 02: 401 11.04 .217 No_date 2:00 15.21 n/a .000
00126> ** END OF RUN : 1
00127>
00128> *****
00129>
00130>
00131>
00132>
00133>
00134> RUN#:COMMAND#
00135> R0002:C00001-----
00136> START
00137> [TZERO = .00 hrs on 0]
00138> [METOUT= 2 (1=imperial, 2=metric output)]
00139> [NSTORM= 1 ]
00140> [NRUN = 0002 ]
00141> #*****
00142> # Project Name: [Town of Clifford ] Project Number: [22-471]
00143> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00144> # Date : [May, 2024]
00145> # Modeller : [A.J.]
00146> # Company : Urbtech Engineering Inc.
00147> # License # : 3556752
00148> #*****
00149> R0002:C00002-----
00150> READ STORM
00151> Filename = storm.001
00152> Comment = Chicago Storm
00153> [SDT=10.00:SDUR= 3.00:PTOT= 32.33]
00154> R0002:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00155> * DESIGN NASHYD 1.0 01:101 .23 .016 No_date 1:00 9.27 .287 .000
00156> [CN= 78.0: N= 3.00: Tp= .03]
00157> R0002:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00158> * DESIGN NASHYD 1.0 02:102 .16 .011 No_date 1:00 9.27 .287 .000
00159> [CN= 78.0: N= 3.00: Tp= .03]
00160> R0002:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms

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00161> ADD HYD 1.0 01:101 .23 .016 No_date 1:00 9.27 n/a .000
00162> + 1.0 02:102 .16 .011 No_date 1:00 9.27 n/a .000
00163> SUM= 1.0 03:External .39 .027 No_date 1:00 9.27 n/a .000
00164> R0002:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00165> DESIGN STANDHYD 1.0 04:205 7.52 .853 No_date 1:00 20.86 .645 .000
00166> [XIMP=.55:TIMP=.65]
00167> [SLP=2.00:DT= 1.00]
00168> [LOSS= 2 :CN= 68.0]
00169> R0002:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00170> DESIGN STANDHYD 1.0 05:206 .81 .059 No_date 1:19 28.71 .888 .000
00171> [XIMP=.90:TIMP=.90]
00172> [SLP= .00:DT= 1.00]
00173> [LOSS= 2 :CN= 50.0]
00174> R0002:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00175> ADD HYD 1.0 03:External .39 .027 No_date 1:00 9.27 n/a .000
00176> + 1.0 04:205 7.52 .853 No_date 1:00 20.86 n/a .000
00177> + 1.0 05:206 .81 .059 No_date 1:19 28.71 n/a .000
00178> SUM= 1.0 06:201 8.72 .904 No_date 1:00 21.07 n/a .000
00179> R0002:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00180> ROUTE RESERVOIR -> 1.0 06:201 8.72 .904 No_date 1:00 21.07 n/a .000
00181> out <= 1.0 07: 501 8.72 .025 No_date 3:09 21.07 n/a .000
00182> {MxStoUsed=.1627E+00 m3}
00183> R0002:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00184> DESIGN STANDHYD 1.0 08:201 1.37 .169 No_date 1:00 20.86 .645 .000
00185> [XIMP=.55:TIMP=.65]
00186> [SLP=2.00:DT= 1.00]
00187> [LOSS= 2 :CN= 68.0]
00188> R0002:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00189> DESIGN STANDHYD 1.0 09:202 .38 .018 No_date 1:00 11.36 .351 .000
00190> [XIMP=.20:TIMP=.20]
00191> [SLP=3.00:DT= 1.00]
00192> [LOSS= 2 :CN= 68.0]
00193> R0002:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00194> DESIGN STANDHYD 1.0 10:203 .16 .020 No_date 1:00 20.86 .645 .000
00195> [XIMP=.55:TIMP=.65]
00196> [SLP=2.00:DT= 1.00]
00197> [LOSS= 2 :CN= 68.0]
00198> R0002:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00199> DESIGN STANDHYD 1.0 01:204 .41 .051 No_date 1:00 20.86 .645 .000
00200> [XIMP=.55:TIMP=.65]
00201> [SLP=2.00:DT= 1.00]
00202> [LOSS= 2 :CN= 68.0]
00203> R0002:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00204> ADD HYD 1.0 07: 501 8.72 .025 No_date 3:09 21.07 n/a .000
00205> + 1.0 08:201 1.37 .169 No_date 1:00 20.86 n/a .000
00206> + 1.0 09:202 .38 .018 No_date 1:00 11.36 n/a .000
00207> + 1.0 10:203 .16 .020 No_date 1:00 20.86 n/a .000
00208> + 1.0 01:204 .41 .051 No_date 1:00 20.86 n/a .000
00209> SUM= 1.0 02: 401 11.04 .268 No_date 1:00 20.70 n/a .000
00210> ** END OF RUN : 2
00211>
00212> *****
00213>
00214>
00215>
00216>
00217>
00218> RUN#:COMMAND#
00219> R0003:C00001-----
00220> START
00221> [TZERO = .00 hrs on 0]
00222> [METOUT= 2 (1=imperial, 2=metric output)]
00223> [NSTORM= 1 ]
00224> [NRUN = 0003 ]
00225> #*****
00226> # Project Name: [Town of Clifford ] Project Number: [22-471]
00227> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00228> # Date : [May, 2024]
00229> # Modeller : [A.J.]
00230> # Company : Urbtech Engineering Inc.
00231> # License # : 3556752
00232> #*****
00233> R0003:C00002-----
00234> READ STORM
00235> Filename = storm.001
00236> Comment = Chicago Storm
00237> [SDT=10.00:SDUR= 3.00:PTOT= 43.06]
00238> R0003:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00239> * DESIGN NASHYD 1.0 01:101 .23 .026 No_date 1:00 15.26 .354 .000
00240> [CN= 78.0: N= 3.00: Tp= .03]

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00241> R0003:C00004-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00242> * DESIGN NASHYD          1.0 02:102          .16      .018 No_date    1:00    15.26 .354    .000
00243> [CN= 78.0: N= 3.00: Tp= .03]
00244> R0003:C00005-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00245> ADD HYD                    1.0 01:101          .23      .026 No_date    1:00    15.26 n/a     .000
00246> +                          1.0 02:102          .16      .018 No_date    1:00    15.26 n/a     .000
00247> SUM=                        1.0 03:External    .39      .045 No_date    1:00    15.26 n/a     .000
00248> R0003:C00006-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00249> DESIGN STANDHYD          1.0 04:205          7.52     1.196 No_date    1:00    29.10 .676    .000
00250> [XIMP=.55:TIMP=.65]
00251> [SLP=2.00:DT= 1.00]
00252> [LOSS= 2 :CN= 68.0]
00253> R0003:C00007-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00254> DESIGN STANDHYD          1.0 05:206          .81      .086 No_date    1:16    38.62 .897    .000
00255> [XIMP=.90:TIMP=.90]
00256> [SLP= .00:DT= 1.00]
00257> [LOSS= 2 :CN= 50.0]
00258> R0003:C00008-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00259> ADD HYD                    1.0 03:External    .39      .045 No_date    1:00    15.26 n/a     .000
00260> +                          1.0 04:205          7.52     1.196 No_date    1:00    29.10 n/a     .000
00261> +                          1.0 05:206          .81      .086 No_date    1:16    38.62 n/a     .000
00262> SUM=                        1.0 06:201          8.72     1.280 No_date    1:00    29.36 n/a     .000
00263> R0003:C00009-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00264> ROUTE RESERVOIR ->      1.0 06:201          8.72     1.280 No_date    1:00    29.36 n/a     .000
00265> out <=                    1.0 07:           501      8.72     .031 No_date    3:09    29.36 n/a     .000
00266> {MxStoUsed=.2301E+00 m3}
00267> R0003:C00010-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00268> DESIGN STANDHYD          1.0 08:201          1.37     .231 No_date    1:00    29.10 .676    .000
00269> [XIMP=.55:TIMP=.65]
00270> [SLP=2.00:DT= 1.00]
00271> [LOSS= 2 :CN= 68.0]
00272> R0003:C00011-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00273> DESIGN STANDHYD          1.0 09:202          .38      .026 No_date    1:00    17.03 .395    .000
00274> [XIMP=.20:TIMP=.20]
00275> [SLP=3.00:DT= 1.00]
00276> [LOSS= 2 :CN= 68.0]
00277> R0003:C00012-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00278> DESIGN STANDHYD          1.0 10:203          .16      .027 No_date    1:00    29.09 .676    .000
00279> [XIMP=.55:TIMP=.65]
00280> [SLP=2.00:DT= 1.00]
00281> [LOSS= 2 :CN= 68.0]
00282> R0003:C00013-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00283> DESIGN STANDHYD          1.0 01:204          .41      .070 No_date    1:00    29.10 .676    .000
00284> [XIMP=.55:TIMP=.65]
00285> [SLP=2.00:DT= 1.00]
00286> [LOSS= 2 :CN= 68.0]
00287> R0003:C00014-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00288> ADD HYD                    1.0 07:           501      8.72     .031 No_date    3:09    29.36 n/a     .000
00289> +                          1.0 08:201          1.37     .231 No_date    1:00    29.10 n/a     .000
00290> +                          1.0 09:202          .38      .026 No_date    1:00    17.03 n/a     .000
00291> +                          1.0 10:203          .16      .027 No_date    1:00    29.09 n/a     .000
00292> +                          1.0 01:204          .41      .070 No_date    1:00    29.10 n/a     .000
00293> SUM=                        1.0 02:           401     11.04     .369 No_date    1:00    28.89 n/a     .000
00294> ** END OF RUN :      3
00295>
00296> *****
00297>
00298>
00299>
00300>
00301>
00302> RUN#:COMMAND#
00303> R0004:C00001-----
00304> START
00305> [TZERO = .00 hrs on      0]
00306> [METOUT= 2 (1=imperial, 2=metric output)]
00307> [NSTORM= 1 ]
00308> [NRUN = 0004 ]
00309> #*****
00310> # Project Name: [Town of Clifford ] Project Number: [22-471]
00311> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00312> # Date : [May, 2024]
00313> # Modeller : [A.J.]
00314> # Company : Urbtech Engineering Inc.
00315> # License # : 3556752
00316> #*****
00317> R0004:C00002-----
00318> READ STORM
00319> Filename = storm.001
00320> Comment - Chicago Storm

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00321> [SDT=10.00:SDUR= 3.00:PTOT= 49.95]
00322> R0004:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00323> * DESIGN NASHYD 1.0 01:101 .23 .034 No_date 1:00 19.55 .391 .000
00324> [CN= 78.0: N= 3.00: Tp= .03]
00325> R0004:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00326> * DESIGN NASHYD 1.0 02:102 .16 .024 No_date 1:00 19.55 .391 .000
00327> [CN= 78.0: N= 3.00: Tp= .03]
00328> R0004:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00329> ADD HYD 1.0 01:101 .23 .034 No_date 1:00 19.55 n/a .000
00330> + 1.0 02:102 .16 .024 No_date 1:00 19.55 n/a .000
00331> SUM= 1.0 03:External .39 .058 No_date 1:00 19.55 n/a .000
00332> R0004:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00333> DESIGN STANDHYD 1.0 04:205 7.52 1.428 No_date 1:00 34.59 .692 .000
00334> [XIMP=.55:TIMP=.65]
00335> [SLP=2.00:DT= 1.00]
00336> [LOSS= 2 :CN= 68.0]
00337> R0004:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00338> DESIGN STANDHYD 1.0 05:206 .81 .106 No_date 1:14 45.01 .901 .000
00339> [XIMP=.90:TIMP=.90]
00340> [SLP= .00:DT= 1.00]
00341> [LOSS= 2 :CN= 50.0]
00342> R0004:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00343> ADD HYD 1.0 03:External .39 .058 No_date 1:00 19.55 n/a .000
00344> + 1.0 04:205 7.52 1.428 No_date 1:00 34.59 n/a .000
00345> + 1.0 05:206 .81 .106 No_date 1:14 45.01 n/a .000
00346> SUM= 1.0 06:201 8.72 1.538 No_date 1:00 34.89 n/a .000
00347> R0004:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00348> ROUTE RESERVOIR -> 1.0 06:201 8.72 1.538 No_date 1:00 34.89 n/a .000
00349> out <= 1.0 07: 501 8.72 .034 No_date 3:10 34.88 n/a .000
00350> {MxStoUsed=.2758E+00 m3}
00351> R0004:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00352> DESIGN STANDHYD 1.0 08:201 1.37 .274 No_date 1:00 34.59 .692 .000
00353> [XIMP=.55:TIMP=.65]
00354> [SLP=2.00:DT= 1.00]
00355> [LOSS= 2 :CN= 68.0]
00356> R0004:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00357> DESIGN STANDHYD 1.0 09:202 .38 .033 No_date 1:00 21.01 .421 .000
00358> [XIMP=.20:TIMP=.20]
00359> [SLP=3.00:DT= 1.00]
00360> [LOSS= 2 :CN= 68.0]
00361> R0004:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00362> DESIGN STANDHYD 1.0 10:203 .16 .032 No_date 1:00 34.59 .692 .000
00363> [XIMP=.55:TIMP=.65]
00364> [SLP=2.00:DT= 1.00]
00365> [LOSS= 2 :CN= 68.0]
00366> R0004:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00367> DESIGN STANDHYD 1.0 01:204 .41 .083 No_date 1:00 34.59 .692 .000
00368> [XIMP=.55:TIMP=.65]
00369> [SLP=2.00:DT= 1.00]
00370> [LOSS= 2 :CN= 68.0]
00371> R0004:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00372> ADD HYD 1.0 07: 501 8.72 .034 No_date 3:10 34.88 n/a .000
00373> + 1.0 08:201 1.37 .274 No_date 1:00 34.59 n/a .000
00374> + 1.0 09:202 .38 .033 No_date 1:00 21.01 n/a .000
00375> + 1.0 10:203 .16 .032 No_date 1:00 34.59 n/a .000
00376> + 1.0 01:204 .41 .083 No_date 1:00 34.59 n/a .000
00377> SUM= 1.0 02: 401 11.04 .439 No_date 1:00 34.35 n/a .000
00378> ** END OF RUN : 4
00379>
00380> *****
00381>
00382>
00383>
00384>
00385>
00386> RUN#:COMMAND#
00387> R0005:C00001-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00388> START
00389> [TZERO = .00 hrs on 0]
00390> [METOUT= 2 (1=imperial, 2=metric output)]
00391> [NSTORM= 1 ]
00392> [NRUN = 0005 ]
00393> #*****
00394> # Project Name: [Town of Clifford ] Project Number: [22-471]
00395> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00396> # Date : [May, 2024]
00397> # Modeller : [A.J.]
00398> # Company : Urbtech Engineering Inc.
00399> # License # : 3556752
00400> #*****

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00401> R0005:C00002-----
00402>   READ STORM
00403>   Filename = storm.001
00404>   Comment = Chicago Storm
00405>   [SDT=10.00:SDUR= 3.00:PTOT= 58.89]
00406> R0005:C00003-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00407> * DESIGN NASHYD      1.0 01:101      .23      .045 No_date  1:00  25.52 .433  .000
00408>   [CN= 78.0: N= 3.00: Tp= .03]
00409> R0005:C00004-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00410> * DESIGN NASHYD      1.0 02:102      .16      .031 No_date  1:00  25.52 .433  .000
00411>   [CN= 78.0: N= 3.00: Tp= .03]
00412> R0005:C00005-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00413>   ADD HYD            1.0 01:101      .23      .045 No_date  1:00  25.52 n/a   .000
00414>   +                  1.0 02:102      .16      .031 No_date  1:00  25.52 n/a   .000
00415>   SUM=                1.0 03:External .39      .076 No_date  1:00  25.52 n/a   .000
00416> R0005:C00006-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00417>   DESIGN STANDHYD    1.0 04:205      7.52     1.724 No_date  1:00  41.90 .711  .000
00418>   [XIMP=.55:TIMP=.65]
00419>   [SLP=2.00:DT= 1.00]
00420>   [LOSS= 2 :CN= 68.0]
00421> R0005:C00007-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00422>   DESIGN STANDHYD    1.0 05:206      .81      .130 No_date  1:13  53.34 .906  .000
00423>   [XIMP=.90:TIMP=.90]
00424>   [SLP= .00:DT= 1.00]
00425>   [LOSS= 2 :CN= 50.0]
00426> R0005:C00008-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00427>   ADD HYD            1.0 03:External .39      .076 No_date  1:00  25.52 n/a   .000
00428>   +                  1.0 04:205      7.52     1.724 No_date  1:00  41.90 n/a   .000
00429>   +                  1.0 05:206      .81      .130 No_date  1:13  53.34 n/a   .000
00430>   SUM=                1.0 06:201      8.72     1.867 No_date  1:00  42.23 n/a   .000
00431> R0005:C00009-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00432>   ROUTE RESERVOIR -> 1.0 06:201      8.72     1.867 No_date  1:00  42.23 n/a   .000
00433>   out <=             1.0 07:         501      8.72     .037 No_date  3:11  42.23 n/a   .000
00434>   {MxStoUsed=.3369E+00 m3}
00435> R0005:C00010-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00436>   DESIGN STANDHYD    1.0 08:201      1.37     .332 No_date  1:00  41.90 .711  .000
00437>   [XIMP=.55:TIMP=.65]
00438>   [SLP=2.00:DT= 1.00]
00439>   [LOSS= 2 :CN= 68.0]
00440> R0005:C00011-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00441>   DESIGN STANDHYD    1.0 09:202      .38      .043 No_date  1:00  26.51 .450  .000
00442>   [XIMP=.20:TIMP=.20]
00443>   [SLP=3.00:DT= 1.00]
00444>   [LOSS= 2 :CN= 68.0]
00445> R0005:C00012-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00446>   DESIGN STANDHYD    1.0 10:203      .16      .040 No_date  1:00  41.90 .711  .000
00447>   [XIMP=.55:TIMP=.65]
00448>   [SLP=2.00:DT= 1.00]
00449>   [LOSS= 2 :CN= 68.0]
00450> R0005:C00013-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00451>   DESIGN STANDHYD    1.0 01:204      .41      .100 No_date  1:00  41.90 .711  .000
00452>   [XIMP=.55:TIMP=.65]
00453>   [SLP=2.00:DT= 1.00]
00454>   [LOSS= 2 :CN= 68.0]
00455> R0005:C00014-----DTmin-ID:NHYD-----AREAh-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.----DWFcms
00456>   ADD HYD            1.0 07:         501      8.72     .037 No_date  3:11  42.23 n/a   .000
00457>   +                  1.0 08:201      1.37     .332 No_date  1:00  41.90 n/a   .000
00458>   +                  1.0 09:202      .38      .043 No_date  1:00  26.51 n/a   .000
00459>   +                  1.0 10:203      .16      .040 No_date  1:00  41.90 n/a   .000
00460>   +                  1.0 01:204      .41      .100 No_date  1:00  41.90 n/a   .000
00461>   SUM=                1.0 02:         401     11.04     .535 No_date  1:00  41.63 n/a   .000
00462>   ** END OF RUN :    5
00463>
00464> *****
00465>
00466>
00467>
00468>
00469>
00470> RUN#:COMMAND#
00471> R0006:C00001-----
00472>   START
00473>   [TZERO = .00 hrs on 0]
00474>   [METOUT= 2 (1=imperial, 2=metric output)]
00475>   [NSTORM= 1 ]
00476>   [NRUN = 0006 ]
00477> #*****
00478> # Project Name: [Town of Clifford ] Project Number: [22-471]
00479> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00480> # Date : [May, 2024]

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00481> # Modeller      : [A.J.]
00482> # Company       : Urbtech Engineering Inc.
00483> # License #     : 3556752
00484> #*****
00485> R0006:C00002-----
00486>   READ STORM
00487>   Filename = storm.001
00488>   Comment = Chicago Storm
00489>   [SDT=10.00:SDUR= 3.00:PTOT= 65.41]
00490> R0006:C00003-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00491> * DESIGN NASHYD      1.0 01:101      .23      .053 No_date  1:00  30.13 .461  .000
00492>   [CN= 78.0: N= 3.00: Tp= .03]
00493> R0006:C00004-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00494> * DESIGN NASHYD      1.0 02:102      .16      .037 No_date  1:00  30.13 .461  .000
00495>   [CN= 78.0: N= 3.00: Tp= .03]
00496> R0006:C00005-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00497>   ADD HYD              1.0 01:101      .23      .053 No_date  1:00  30.13 n/a  .000
00498>   +                    1.0 02:102      .16      .037 No_date  1:00  30.13 n/a  .000
00499>   SUM=                 1.0 03:External  .39      .090 No_date  1:00  30.13 n/a  .000
00500> R0006:C00006-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00501>   DESIGN STANDHYD     1.0 04:205      7.52     1.959 No_date  1:00  47.35 .724  .000
00502>   [XIMP=.55:TIMP=.65]
00503>   [SLP=2.00:DT= 1.00]
00504>   [LOSS= 2 :CN= 68.0]
00505> R0006:C00007-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00506>   DESIGN STANDHYD     1.0 05:206      .81      .150 No_date  1:12  59.44 .909  .000
00507>   [XIMP=.90:TIMP=.90]
00508>   [SLP= .00:DT= 1.00]
00509>   [LOSS= 2 :CN= 50.0]
00510> R0006:C00008-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00511>   ADD HYD              1.0 03:External  .39      .090 No_date  1:00  30.13 n/a  .000
00512>   +                    1.0 04:205      7.52     1.959 No_date  1:00  47.35 n/a  .000
00513>   +                    1.0 05:206      .81      .150 No_date  1:12  59.44 n/a  .000
00514>   SUM=                 1.0 06:201      8.72     2.129 No_date  1:00  47.70 n/a  .000
00515> R0006:C00009-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00516>   ROUTE RESERVOIR ->  1.0 06:201      8.72     2.129 No_date  1:00  47.70 n/a  .000
00517>   out <=              1.0 07:      501      8.72     .066 No_date  3:05  47.70 n/a  .000
00518>   {MxStoUsed=.3780E+00 m3}
00519> R0006:C00010-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00520>   DESIGN STANDHYD     1.0 08:201      1.37     .378 No_date  1:00  47.35 .724  .000
00521>   [XIMP=.55:TIMP=.65]
00522>   [SLP=2.00:DT= 1.00]
00523>   [LOSS= 2 :CN= 68.0]
00524> R0006:C00011-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00525>   DESIGN STANDHYD     1.0 09:202      .38      .051 No_date  1:00  30.73 .470  .000
00526>   [XIMP=.20:TIMP=.20]
00527>   [SLP=3.00:DT= 1.00]
00528>   [LOSS= 2 :CN= 68.0]
00529> R0006:C00012-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00530>   DESIGN STANDHYD     1.0 10:203      .16      .045 No_date  1:00  47.35 .724  .000
00531>   [XIMP=.55:TIMP=.65]
00532>   [SLP=2.00:DT= 1.00]
00533>   [LOSS= 2 :CN= 68.0]
00534> R0006:C00013-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00535>   DESIGN STANDHYD     1.0 01:204      .41      .114 No_date  1:00  47.35 .724  .000
00536>   [XIMP=.55:TIMP=.65]
00537>   [SLP=2.00:DT= 1.00]
00538>   [LOSS= 2 :CN= 68.0]
00539> R0006:C00014-----DTmin-ID:NHYD-----AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00540>   ADD HYD              1.0 07:      501      8.72     .066 No_date  3:05  47.70 n/a  .000
00541>   +                    1.0 08:201      1.37     .378 No_date  1:00  47.35 n/a  .000
00542>   +                    1.0 09:202      .38      .051 No_date  1:00  30.73 n/a  .000
00543>   +                    1.0 10:203      .16      .045 No_date  1:00  47.35 n/a  .000
00544>   +                    1.0 01:204      .41      .114 No_date  1:00  47.35 n/a  .000
00545>   SUM=                 1.0 02:      401     11.04     .610 No_date  1:00  47.06 n/a  .000
00546>   ** END OF RUN :    6
00547>
00548> *****
00549>
00550>
00551>
00552>
00553>
00554> RUN#:COMMAND#
00555> R0007:C00001-----
00556>   START
00557>   [TZERO = .00 hrs on      0]
00558>   [METOUT= 2      (1=imperial, 2=metric output)]
00559>   [NSTORM= 1 ]
00560>   [NRUN = 0007 ]

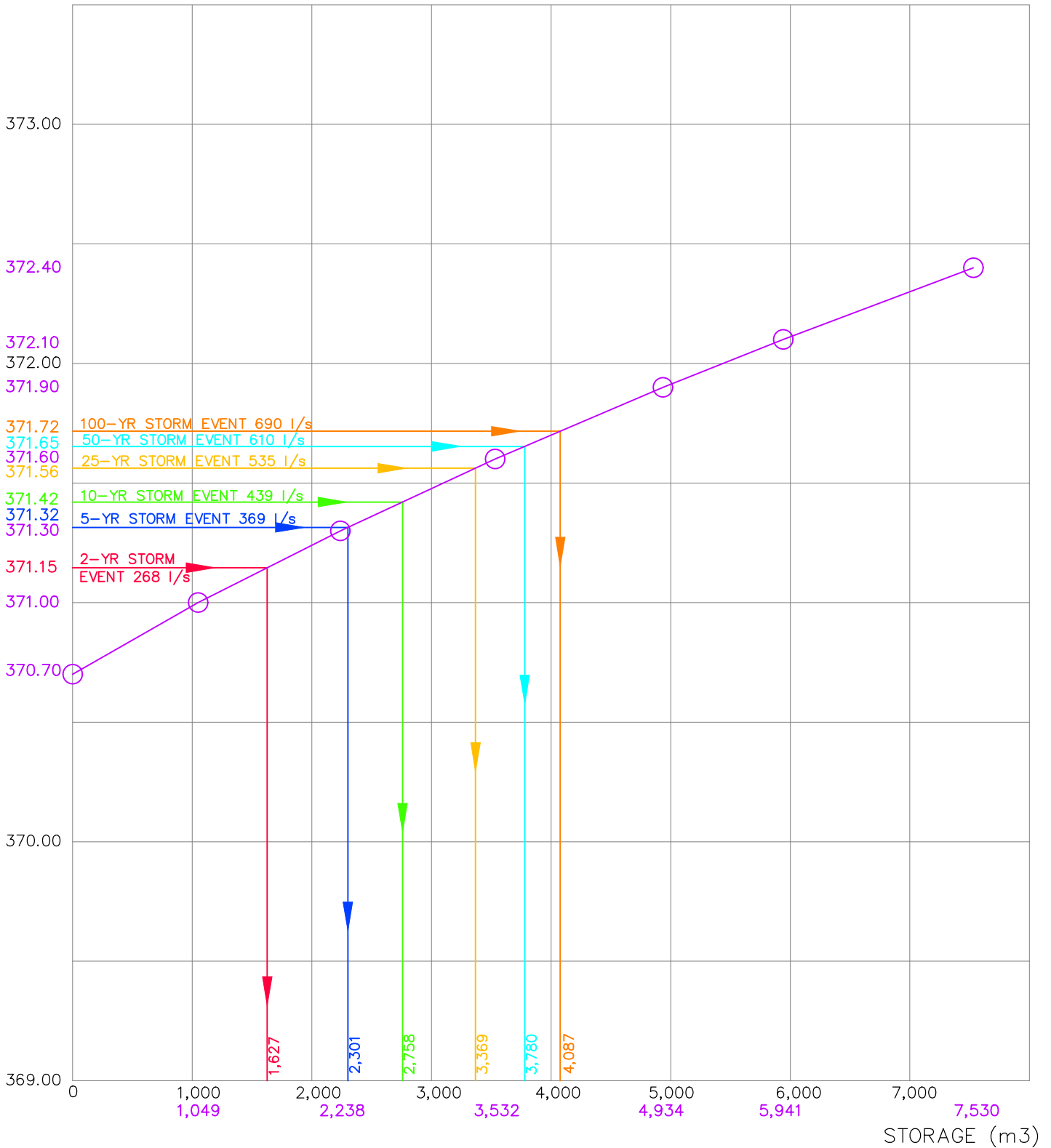
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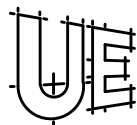
00561> #*****
00562> # Project Name: [Town of Clifford ] Project Number: [22-471]
00563> # [Post-development flows, FIRST FLUSH AND 2yr to 100yr] MTO 3hr Ch]
00564> # Date : [May, 2024]
00565> # Modeller : [A.J.]
00566> # Company : Urbtech Engineering Inc.
00567> # License # : 3556752
00568> #*****
00569> R0007:C00002-----
00570> READ STORM
00571> Filename = storm.001
00572> Comment = Chicago Storm
00573> [SDT=10.00:SDUR= 3.00:PTOT= 71.71]
00574> R0007:C00003-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00575> * DESIGN NASHYD 1.0 01:101 .23 .061 No_date 1:00 34.75 .485 .000
00576> [CN= 78.0: N= 3.00: Tp= .03]
00577> R0007:C00004-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00578> * DESIGN NASHYD 1.0 02:102 .16 .043 No_date 1:00 34.75 .485 .000
00579> [CN= 78.0: N= 3.00: Tp= .03]
00580> R0007:C00005-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00581> ADD HYD 1.0 01:101 .23 .061 No_date 1:00 34.75 n/a .000
00582> + 1.0 02:102 .16 .043 No_date 1:00 34.75 n/a .000
00583> SUM= 1.0 03:External .39 .104 No_date 1:00 34.75 n/a .000
00584> R0007:C00006-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00585> DESIGN STANDHYD 1.0 04:205 7.52 2.202 No_date 1:00 52.69 .735 .000
00586> [XIMP=.55:TIMP=.65]
00587> [SLP=2.00:DT= 1.00]
00588> [LOSS= 2 :CN= 68.0]
00589> R0007:C00007-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00590> DESIGN STANDHYD 1.0 05:206 .81 .170 No_date 1:11 65.34 .911 .000
00591> [XIMP=.90:TIMP=.90]
00592> [SLP= .00:DT= 1.00]
00593> [LOSS= 2 :CN= 50.0]
00594> R0007:C00008-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00595> ADD HYD 1.0 03:External .39 .104 No_date 1:00 34.75 n/a .000
00596> + 1.0 04:205 7.52 2.202 No_date 1:00 52.69 n/a .000
00597> + 1.0 05:206 .81 .170 No_date 1:11 65.34 n/a .000
00598> SUM= 1.0 06:201 8.72 2.402 No_date 1:00 53.07 n/a .000
00599> R0007:C00009-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00600> ROUTE RESERVOIR -> 1.0 06:201 8.72 2.402 No_date 1:00 53.07 n/a .000
00601> out <= 1.0 07: 501 8.72 .101 No_date 3:03 53.06 n/a .000
00602> {MxStoUsed=.4087E+00 m3}
00603> R0007:C00010-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00604> DESIGN STANDHYD 1.0 08:201 1.37 .420 No_date 1:00 52.69 .735 .000
00605> [XIMP=.55:TIMP=.65]
00606> [SLP=2.00:DT= 1.00]
00607> [LOSS= 2 :CN= 68.0]
00608> R0007:C00011-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00609> DESIGN STANDHYD 1.0 09:202 .38 .058 No_date 1:00 34.96 .488 .000
00610> [XIMP=.20:TIMP=.20]
00611> [SLP=3.00:DT= 1.00]
00612> [LOSS= 2 :CN= 68.0]
00613> R0007:C00012-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00614> DESIGN STANDHYD 1.0 10:203 .16 .050 No_date 1:00 52.69 .735 .000
00615> [XIMP=.55:TIMP=.65]
00616> [SLP=2.00:DT= 1.00]
00617> [LOSS= 2 :CN= 68.0]
00618> R0007:C00013-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00619> DESIGN STANDHYD 1.0 01:204 .41 .128 No_date 1:00 52.69 .735 .000
00620> [XIMP=.55:TIMP=.65]
00621> [SLP=2.00:DT= 1.00]
00622> [LOSS= 2 :CN= 68.0]
00623> R0007:C00014-----DTmin-ID:NHYD-----AREaha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00624> ADD HYD 1.0 07: 501 8.72 .101 No_date 3:03 53.06 n/a .000
00625> + 1.0 08:201 1.37 .420 No_date 1:00 52.69 n/a .000
00626> + 1.0 09:202 .38 .058 No_date 1:00 34.96 n/a .000
00627> + 1.0 10:203 .16 .050 No_date 1:00 52.69 n/a .000
00628> + 1.0 01:204 .41 .128 No_date 1:00 52.69 n/a .000
00629> SUM= 1.0 02: 401 11.04 .680 No_date 1:00 52.38 n/a .000
00630> R0007:C00002-----
00631> FINISH
00632> -----
00633> *****
00634> WARNINGS / ERRORS / NOTES
00635> -----
00636> R0001:C00003 DESIGN NASHYD
00637> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00638> R0001:C00004 DESIGN NASHYD
00639> *** WARNING: Time step is too large for value of TP. RV may be ok. Peak flow could be off.
00640> R0002:C00003 DESIGN NASHYD

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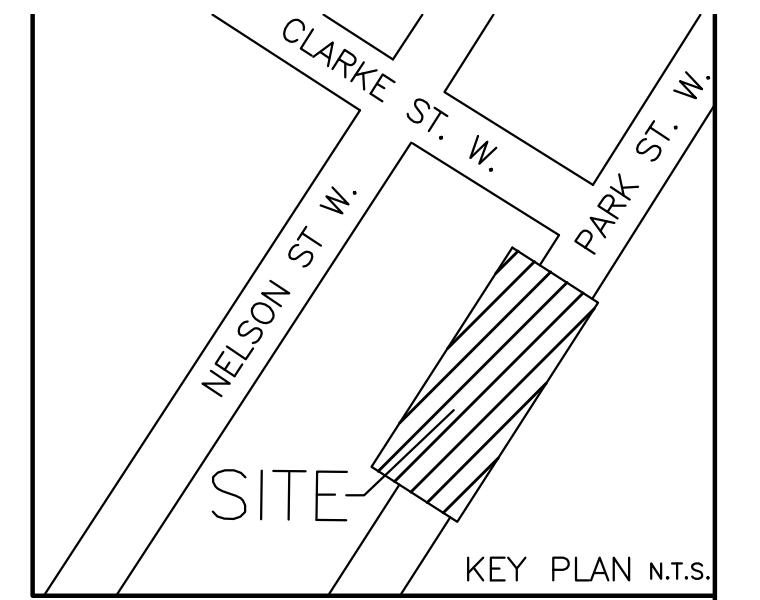
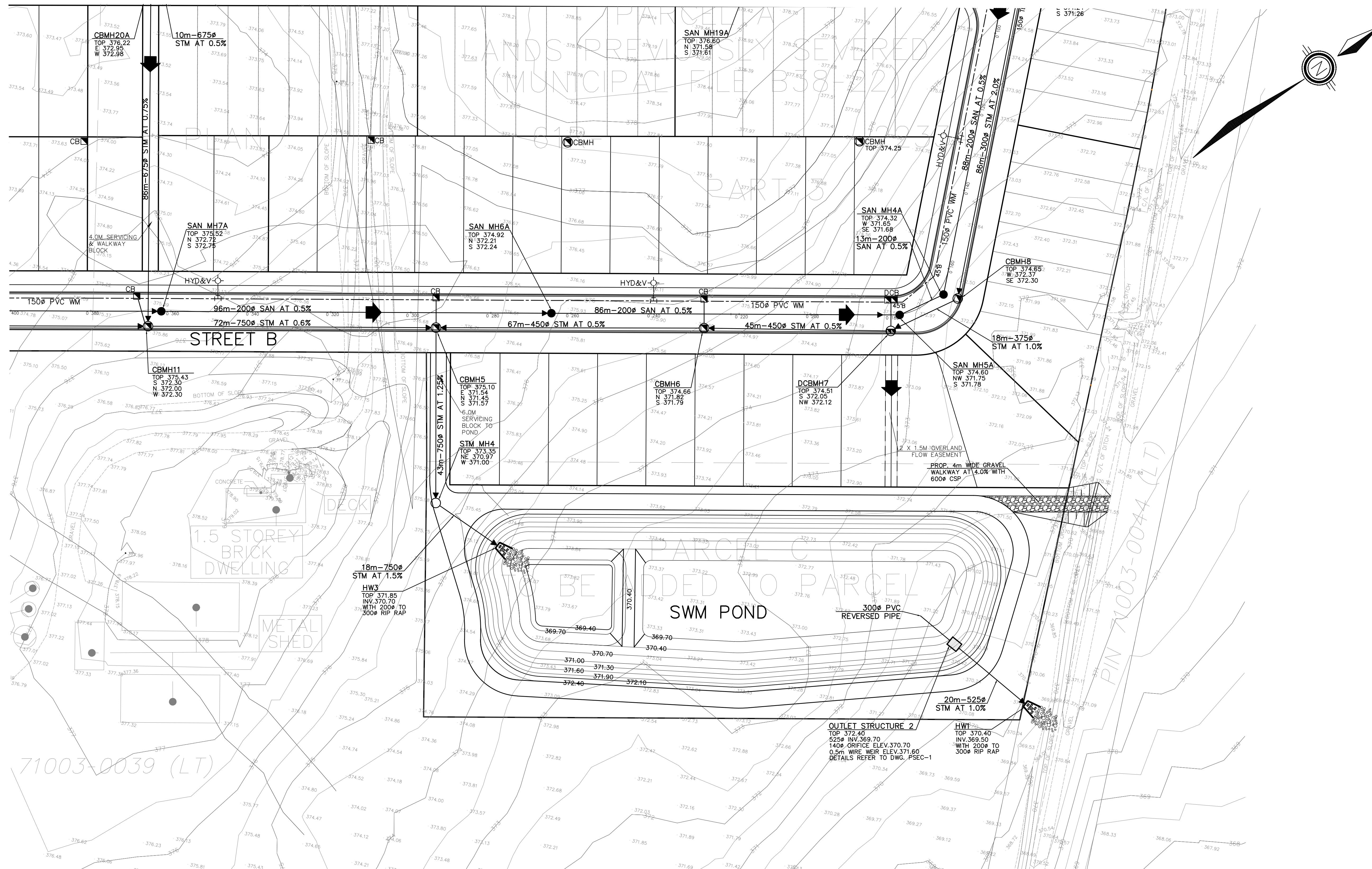
STAGE (m)



**STAGE STORAGE CURVE**  
41 PARK ST WEST  
CLIFFORD  
JUNE 24, 2024



**Urbtech Engineering Inc.**  
1200 Speers , Suite 8, Oakville, Ontario, L6L 2X4  
Telephone: 905 896 7364

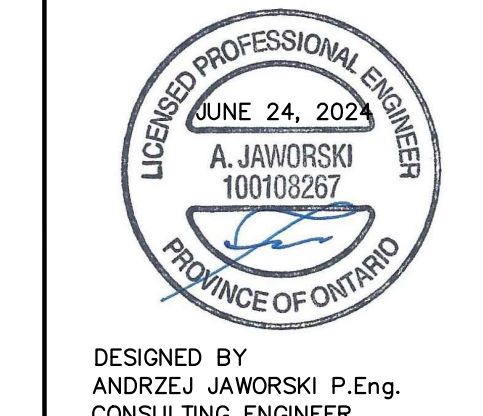


- LEGEND**
- EXISTING WATERMAIN
  - EXISTING STORM MANHOLE
  - PROPOSED STORM MANHOLE
  - PROPOSED SANITARY MANHOLE
  - PROPOSED STORM CATCHBASIN MANHOLE (SINGLE)
  - PROPOSED STORM CATCHBASIN MANHOLE (DOUBLE)
  - PROPOSED DITCH INLET CATCHBASIN/CATCHBASIN
  - PROPOSED VALVE AND BOX
  - PROPOSED FIRE HYDRANT
  - OVERLAND FLOW ROUTE
  - PROPOSED WM CONN. WITH CURB STOP
  - PROPOSED SAN CONNECTION
  - PROPOSED STM CONNECTION
  - GROUNDWATER CONTOURS

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**ELEVATION NOTE**  
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REVIEWED BY  
 DATE: \_\_\_\_\_  
 DIRECTOR OF PUBLIC WORKS

**Urbtech Engineering Inc.**  
 1200 Speers Road, Suite 8, Oakville, Ontario, L6L 2X4  
 Telephone: 905 896 7364

**CLIFFORD (PARK STREET) DEVELOPMENTS INC.**  
 41 PARK STREET WEST  
 TOWN OF MINTO



DRAWING NAME: **STORMWATER MANAGEMENT POND**

SCALE: 1:500 AREA: MINTO PROJECT No.: 22-471  
 DRAWN BY: G.J. CHECKED BY: A.J. PLAN No.: **POND1**

Stage	Storage	Storage Provided
Forebay Bottom	369.40	
Pond Bottom	369.70	
Permanent Pool	370.70	1,846 m <sup>3</sup>
Active Storage	371.60	1,634 m <sup>3</sup>
100 Yr Storage	371.72	4,087 m <sup>3</sup>
Spillway	372.10	5,941 m <sup>3</sup>
Pond Top	372.40	7,530 m <sup>3</sup>
Forebay Length	15.9 m	33.0 m
Forebay Width	2.0 m	17.0 m
Forebay Volume		463 m <sup>3</sup>

**QUALITY QUANTITY SWM POND**  
**TOWN OF CLIFFORD**  
**URBTECH ENGINEERING INC.**

Date: 25-Jun-24  
 Prepared By: A.J.

$$Q = C * A * (h * 9.81 * 2)^{0.5}$$

Orifice 1 Diameter 140 mm  
 A 0.0154 m<sup>2</sup>  
 Orifice Plate Elevation 370.70 m  
 C 0.62

$$Q = C * L * H^{3/2}$$

Weir Width 0.50 m  
 Weir Elevation 371.60 m  
 C 1.84

$$Q = C * L * H^{3/2}$$

L 10.00 m  
 Spillway Elevation 372.10 m  
 C 1.7

Elevation m	Depth at Orifice 1 m	Depth at Weir m	Depth at Spillway m	Orifice 1 Flow m <sup>3</sup> /s	Weir Flow m <sup>3</sup> /s	Spillway Flow m <sup>3</sup> /s	Pond Area m <sup>2</sup>	Pond Volume m <sup>3</sup>	Total Flow m <sup>3</sup> /s	Emptying Time hr	Cumm. Time hr	
369.40							313					
369.70							1,803	463				
370.40							2,644	2,019				463m <sup>3</sup> Forebay
<b>370.70</b>							<b>3,203</b>	2,897				Permanent Pool
371.00	0.23			0.020			3,789	1,049	0.020	24	24	
371.30	0.53			0.031			4,136	2,238	0.031	14	37	
<b>371.60</b>	0.83			0.038			<b>4,492</b>	<b>3,532</b>	<b>0.038</b>	11	48	Active Storage
371.90	1.13	0.30		0.045	0.151		4,858	4,934	0.196			
372.10	1.33	0.50		0.049	0.325		5,106	5,941	0.374			Spillway
372.40	1.63	0.80	0.30	0.054	0.658	2.793	5,487	7,530	3.506			Pond top

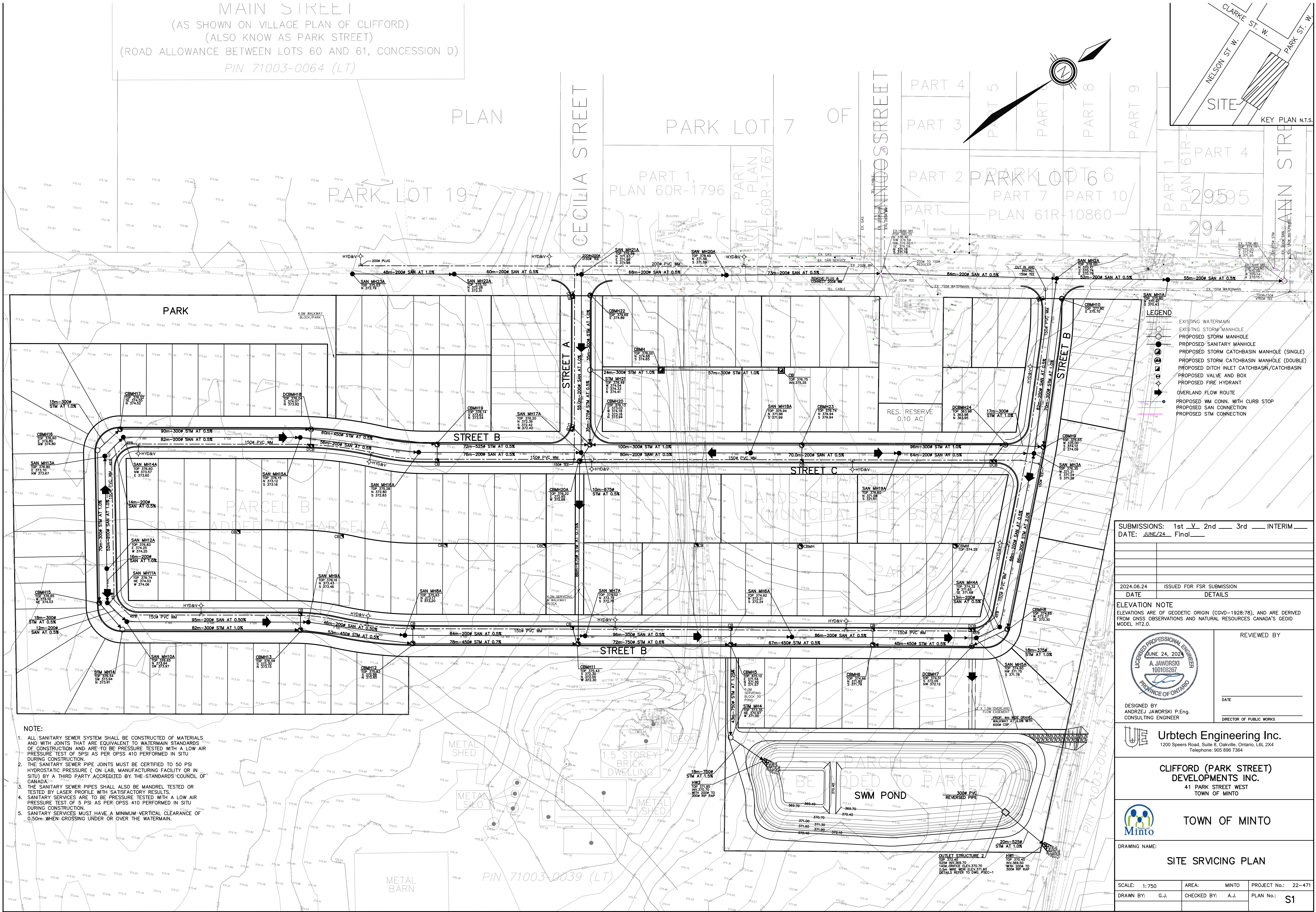
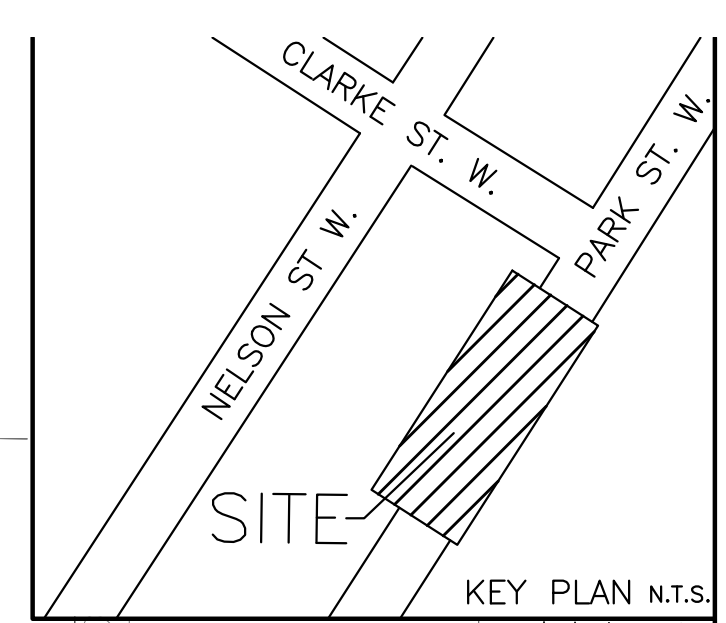
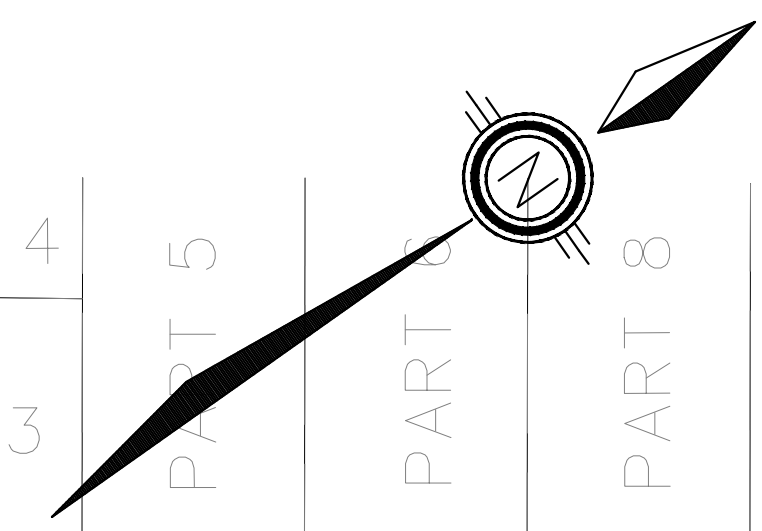
## APPENDIX C

- Site Servicing Plan (S1)
  - Site Grading Plan (G1)
  - Sediment Control Plan (SED1)
  - Erosion & Sediment Control Details (SN1)
-

MAIN STREET  
 (AS SHOWN ON VILLAGE PLAN OF CLIFFORD)  
 (ALSO KNOWN AS PARK STREET)  
 (ROAD ALLOWANCE BETWEEN LOTS 60 AND 61, CONCESSION D)  
 PIN 71003-0064 (LT)

PLAN

PARK LOT 7 OF



- LEGEND**
- EXISTING WATERMAIN
  - EXISTING STORM MANHOLE
  - PROPOSED STORM MANHOLE
  - PROPOSED SANITARY MANHOLE
  - PROPOSED STORM CATCHBASIN MANHOLE (SINGLE)
  - PROPOSED STORM CATCHBASIN MANHOLE (DOUBLE)
  - PROPOSED DITCH/INLET CATCHBASIN/CATCHBASIN
  - PROPOSED VALVE AND BOX
  - PROPOSED FIRE HYDRANT
  - OVERLAND FLOW ROUTE
  - PROPOSED WM CONN. WITH CURB STOP
  - PROPOSED SAN CONNECTION
  - PROPOSED STM CONNECTION

SUBMISSIONS: 1st    2nd    3rd    INTERIM     
 DATE: JUNE/24 Final   

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**ELEVATION NOTE**  
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 DIRECTOR OF PUBLIC WORKS

**Urbtech Engineering Inc.**  
 1200 Speers Road, Suite 8, Oakville, Ontario, L6L 2X4  
 Telephone: 905 896 7364

**CLIFFORD (PARK STREET) DEVELOPMENTS INC.**  
 41 PARK STREET WEST  
 TOWN OF MINTO



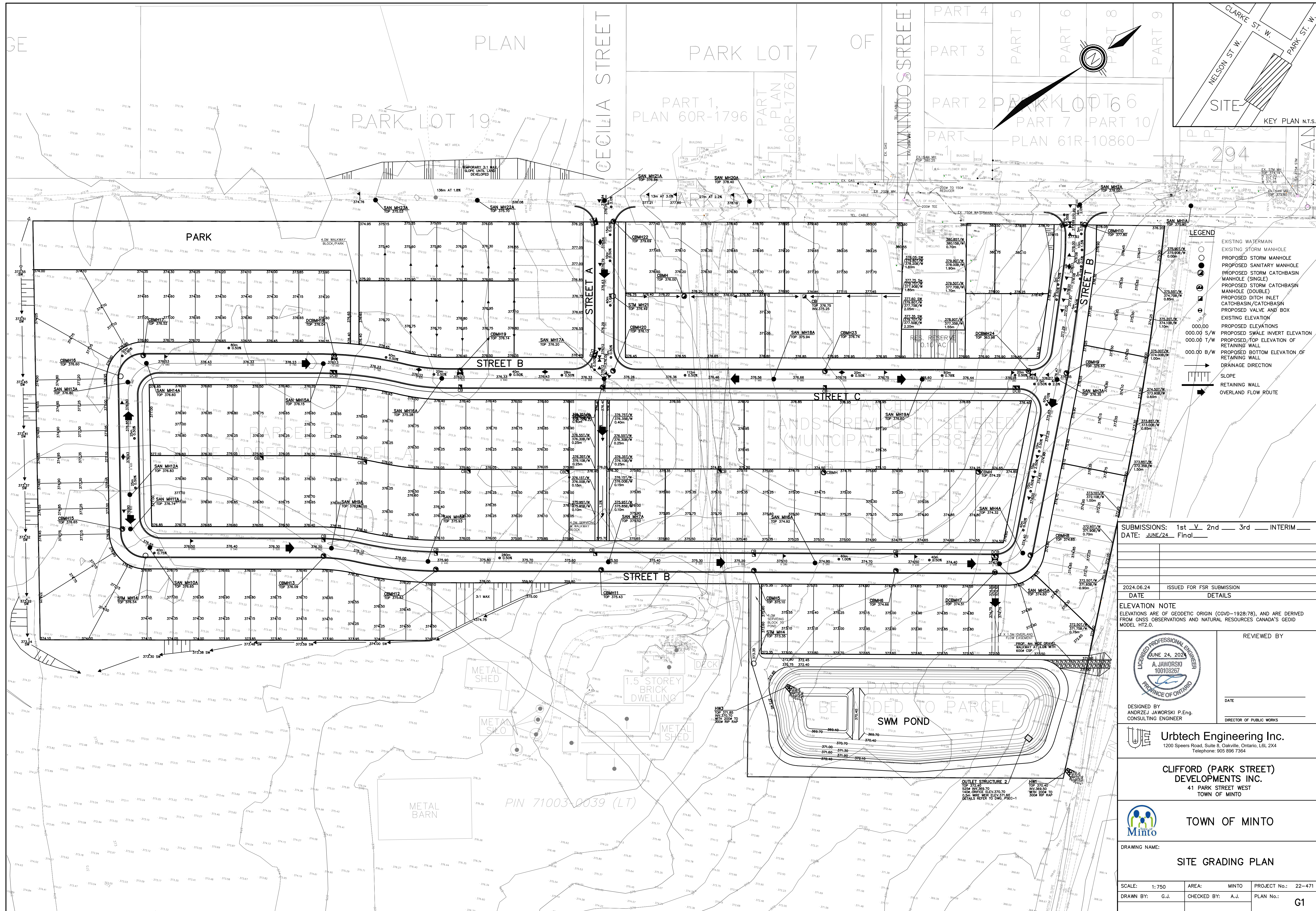
TOWN OF MINTO

DRAWING NAME:  
**SITE SRVICING PLAN**

SCALE: 1:750 AREA: MINTO PROJECT No.: 22-471  
 DRAWN BY: G.J. CHECKED BY: A.J. PLAN No.: S1

- NOTE:**
1. ALL SANITARY SEWER SYSTEM SHALL BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION AND ARE TO BE PRESSURE TESTED WITH A LOW AIR PRESSURE TEST OF 5 PSI AS PER OPSS 410 PERFORMED IN SITU DURING CONSTRUCTION.
  2. THE SANITARY SEWER PIPE JOINTS MUST BE CERTIFIED TO 50 PSI HYDROSTATIC PRESSURE ( ON LAB, MANUFACTURING FACILITY OR IN SITU) BY A THIRD PARTY ACCREDITED BY THE STANDARDS COUNCIL OF CANADA.
  3. THE SANITARY SEWER PIPES SHALL ALSO BE MANDREL TESTED OR TESTED BY LASER PROFILE WITH SATISFACTORY RESULTS.
  4. SANITARY SERVICES ARE TO BE PRESSURE TESTED WITH A LOW AIR PRESSURE TEST OF 5 PSI AS PER OPSS 410 PERFORMED IN SITU DURING CONSTRUCTION.
  5. SANITARY SERVICES MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.50m WHEN CROSSING UNDER OR OVER THE WATERMAIN.

PIN 71003-0039 (LT)



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DESIGNED BY  
**ANDRZEJ JAWORSKI P.Eng.**  
 CONSULTING ENGINEER

REVIEWED BY  
 \_\_\_\_\_  
 DATE  
 \_\_\_\_\_  
 DIRECTOR OF PUBLIC WORKS

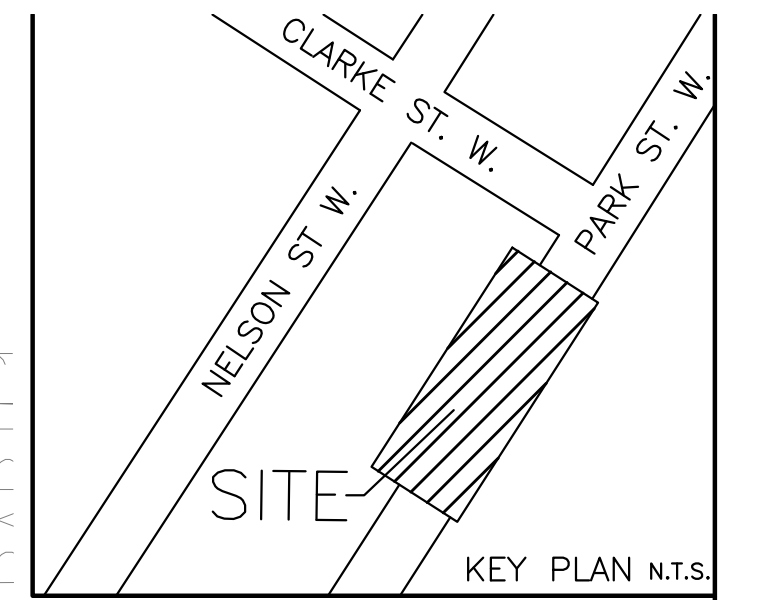
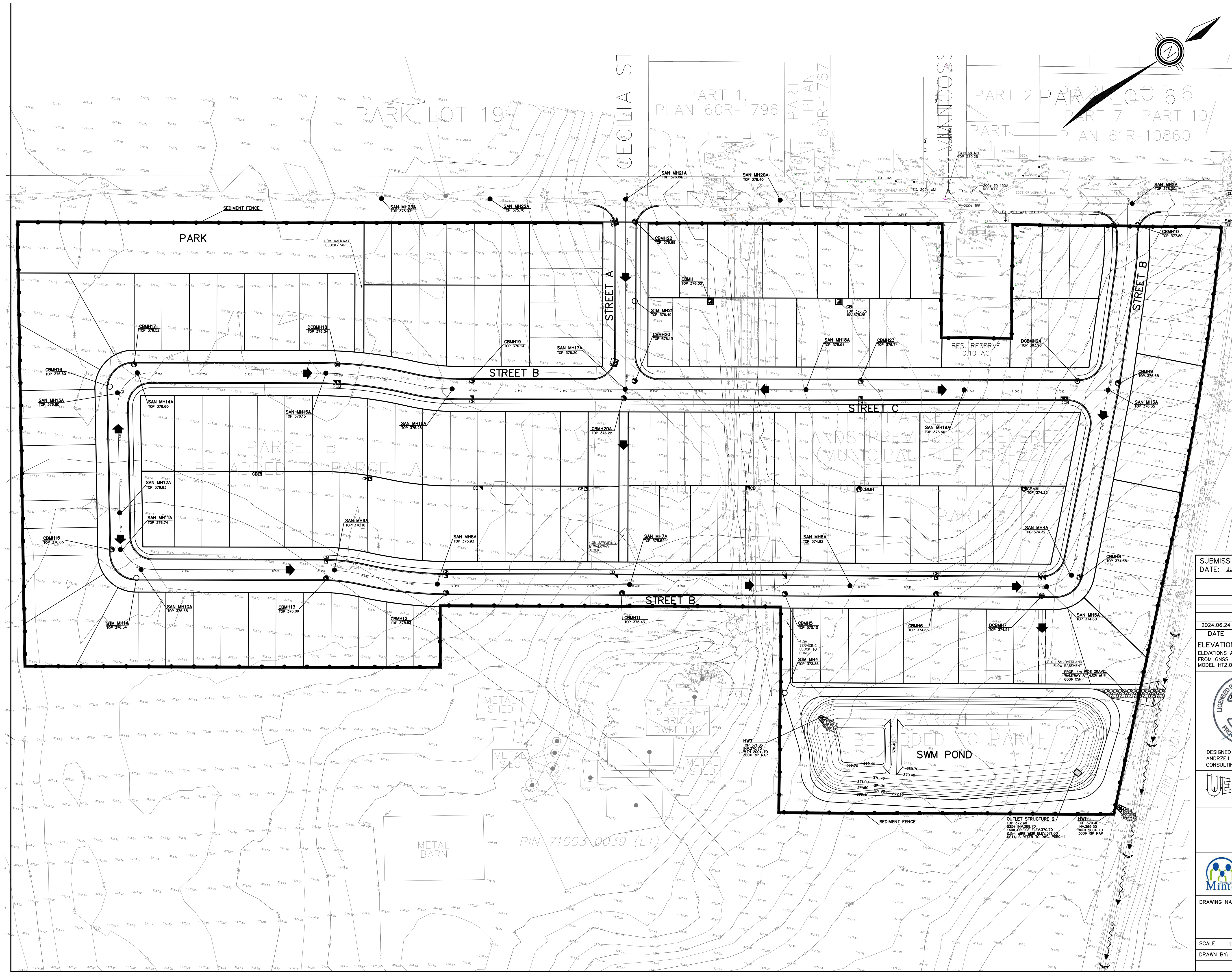
**Urbtech Engineering Inc.**  
 1200 Speers Road, Suite B, Oakville, Ontario, L6L 2X4  
 Telephone: 905 896 7364

**CLIFFORD (PARK STREET) DEVELOPMENTS INC.**  
 41 PARK STREET WEST  
 TOWN OF MINTO

**TOWN OF MINTO**

DRAWING NAME:  
**SITE GRADING PLAN**

SCALE: 1:750	AREA: MINTO	PROJECT No.: 22-471
DRAWN BY: G.J.	CHECKED BY: A.J.	PLAN No.: <b>G1</b>



- LEGEND**
- OVERLAND FLOW ROUTE
  - EXISTING CONTOURS
  - HEAVY DUTY SILT FENCE BARRIER AS PER DETAIL ON DWG. SNI
  - CB PROTECTION AS PER DETAIL ON DWG. SNI
  - TEMPORARY MUD MAT TO BE MAINTAINED WEEKLY AS PER DETAIL ON DWG. SNI
  - CUT-OFF-SWALE
  - ROCK CHECK DAM AS PER DETAIL ON DWG. SNI

SUBMISSIONS: 1st    V 2nd    3rd    INTERIM     
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DESIGNED BY  
**ANDRZEJ JAWORSKI P.Eng.**  
 CONSULTING ENGINEER

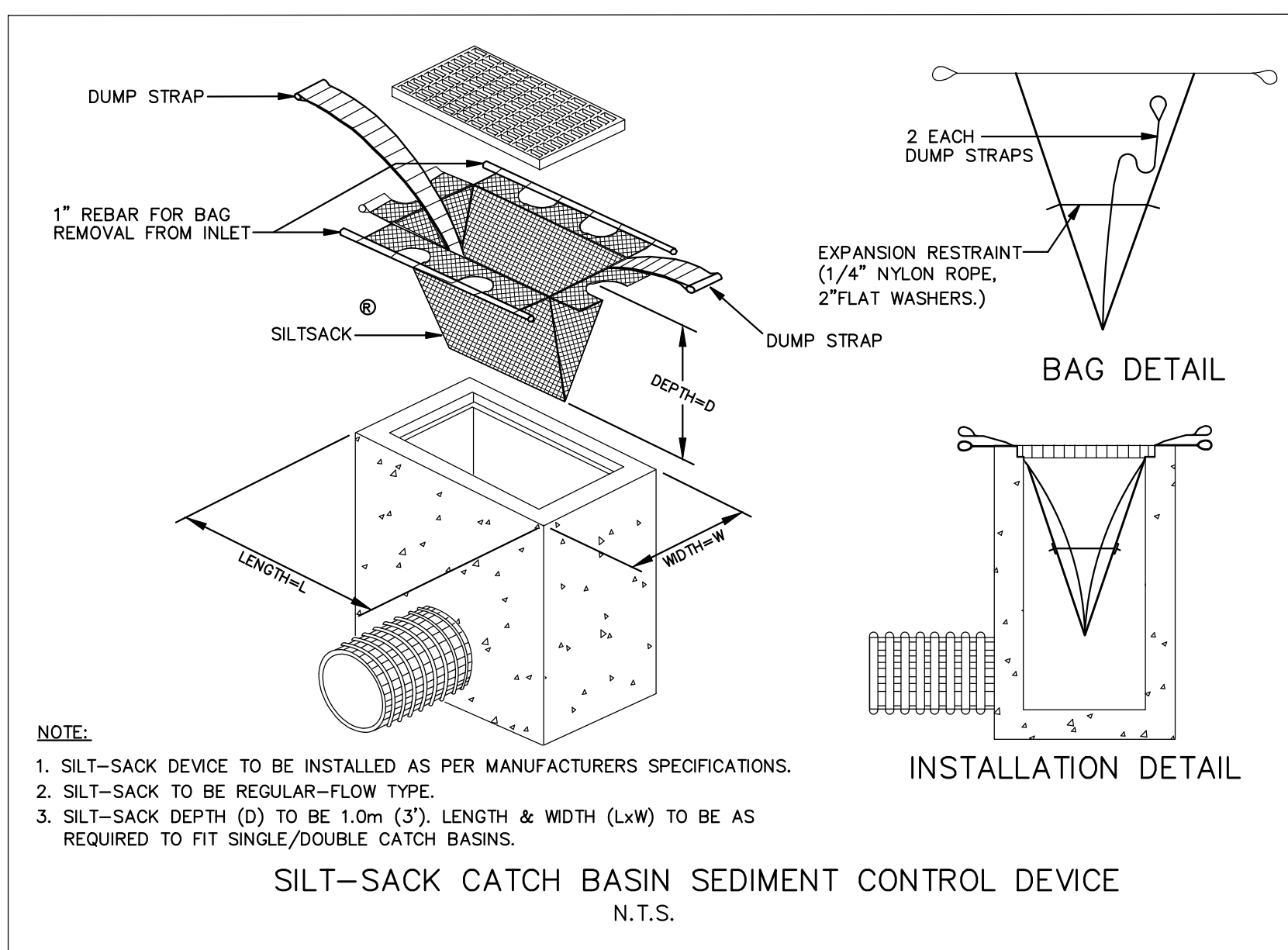
**Urbtech Engineering Inc.**  
 1200 Speers Road, Suite 8, Oakville, Ontario, L6L 2X4  
 Telephone: 905 896 7364

**CLIFFORD (PARK STREET) DEVELOPMENTS INC.**  
 41 PARK STREET WEST  
 TOWN OF MINTO

**TOWN OF MINTO**

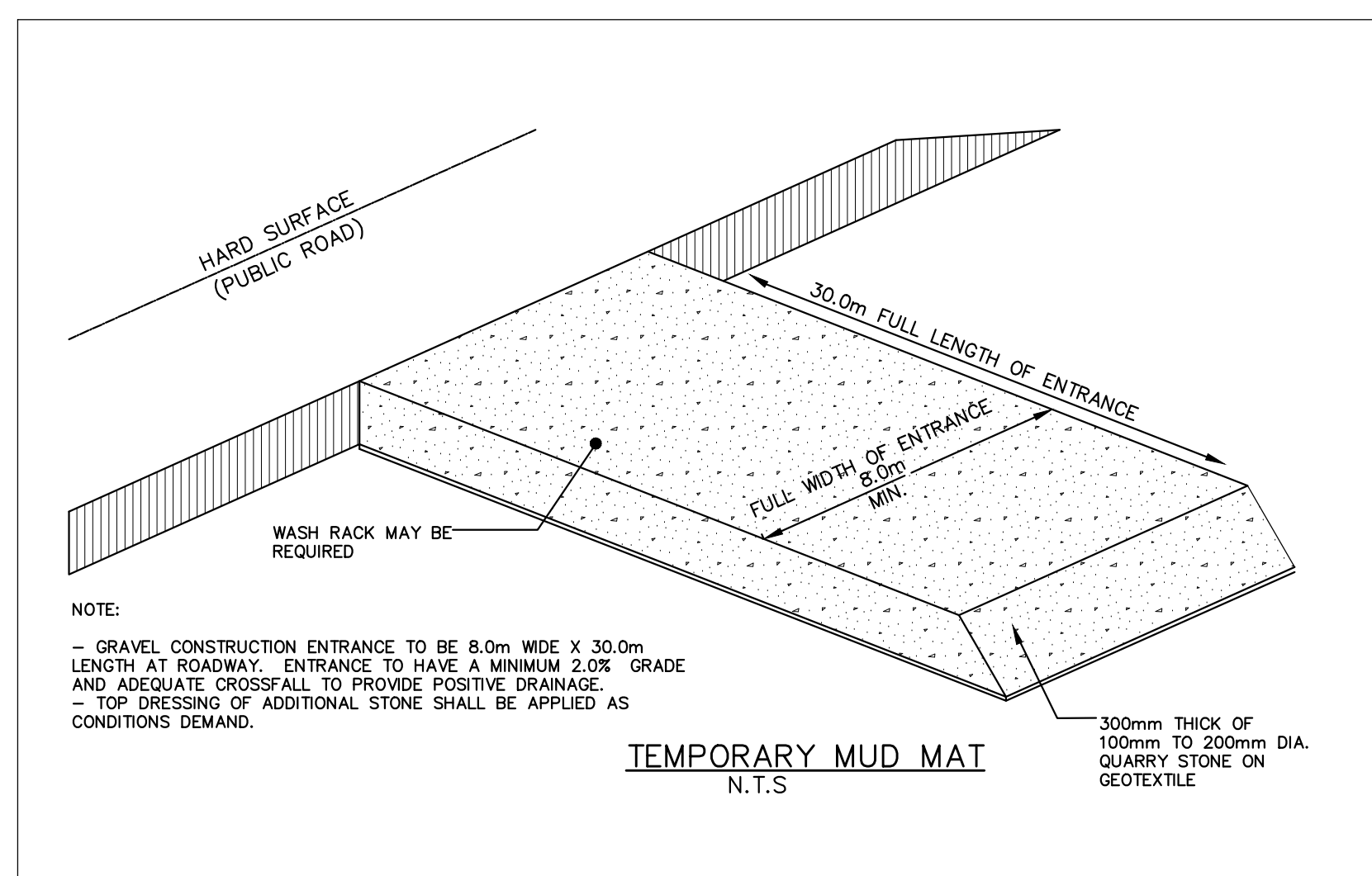
DRAWING NAME:  
**SEDIMENT CONTROL PLAN**

SCALE: 1:750 AREA: MINTO PROJECT No.: 22-471  
 DRAWN BY: G.J. CHECKED BY: A.J. PLAN No.: SED1

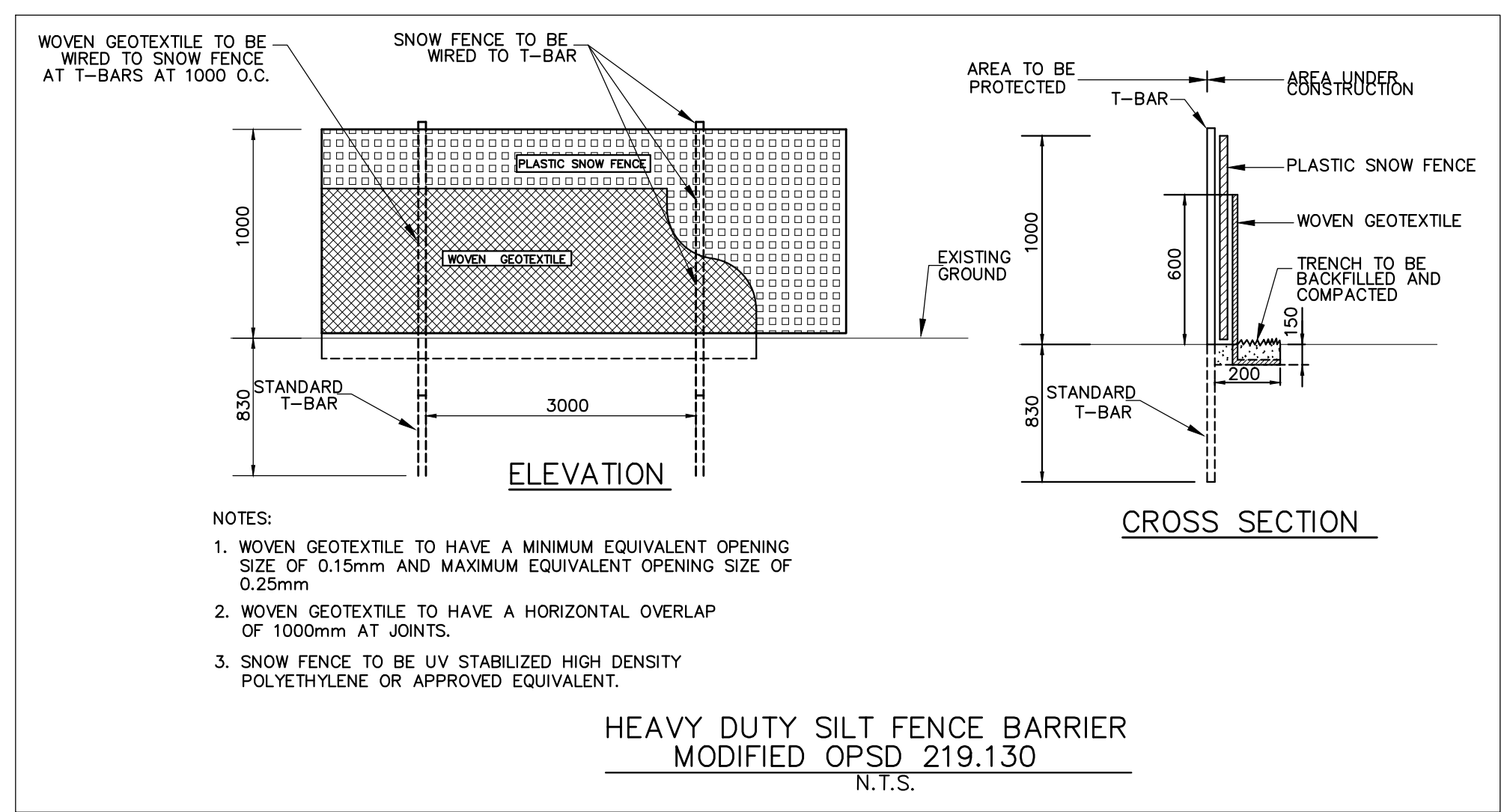


- NOTE:**
1. SILT-SACK DEVICE TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS.
  2. SILT-SACK TO BE REGULAR-FLOW TYPE.
  3. SILT-SACK DEPTH (D) TO BE 1.0m (3'). LENGTH & WIDTH (LxW) TO BE AS REQUIRED TO FIT SINGLE/DOUBLE CATCH BASINS.

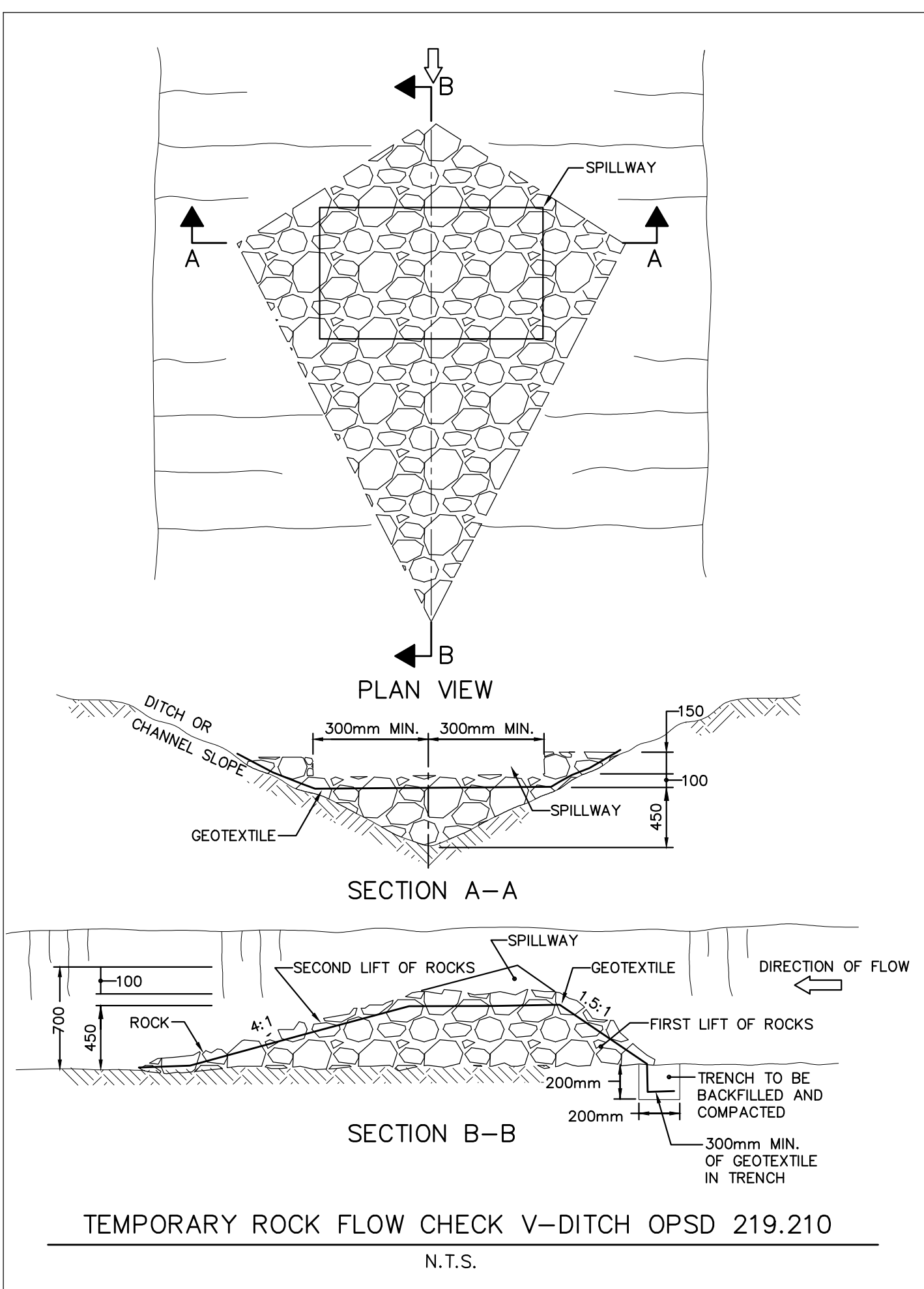
**SILT-SACK CATCH BASIN SEDIMENT CONTROL DEVICE**  
N.T.S.



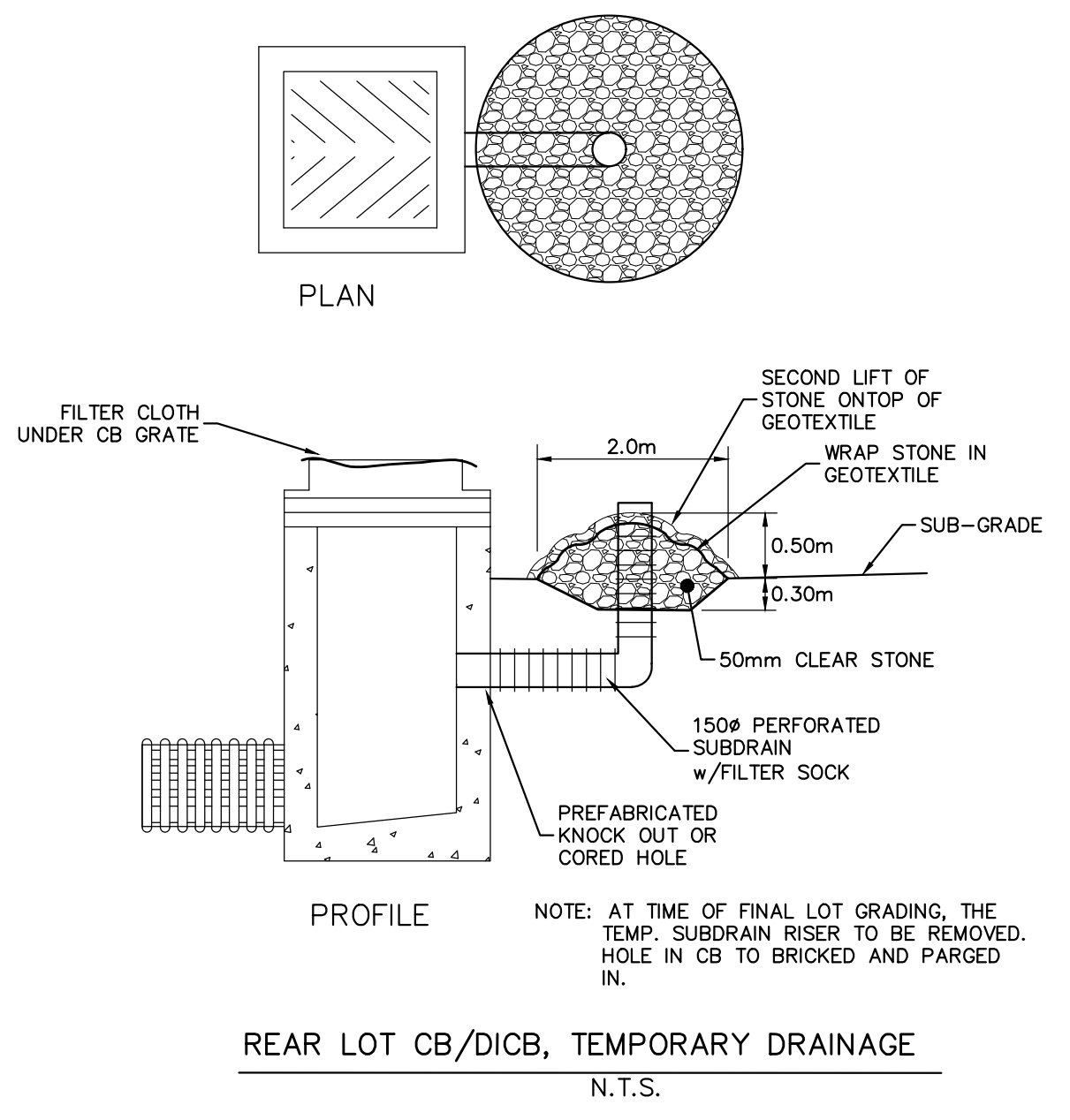
**TEMPORARY MUD MAT**  
N.T.S.



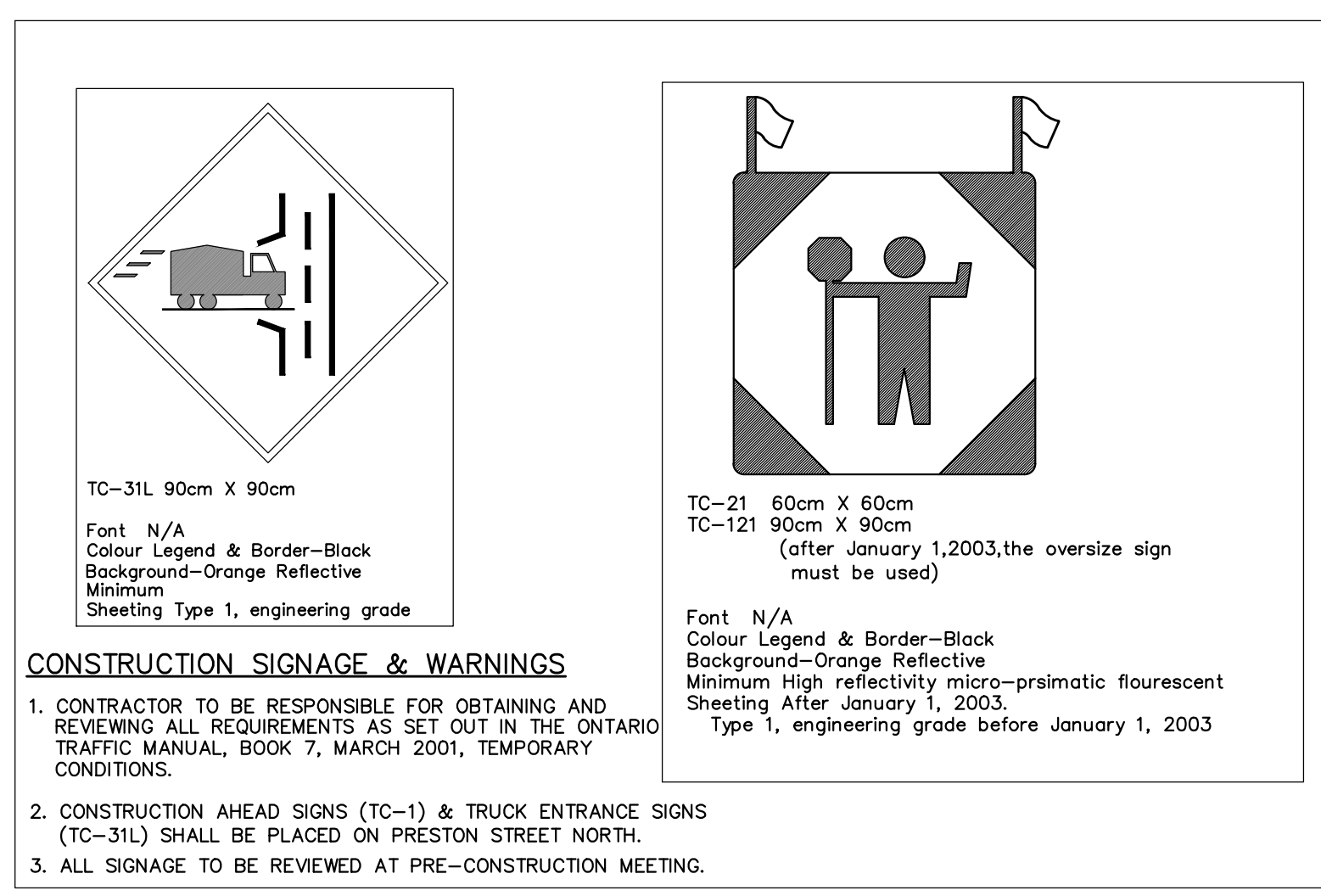
**HEAVY DUTY SILT FENCE BARRIER MODIFIED OPSD 219.130**  
N.T.S.



**TEMPORARY ROCK FLOW CHECK V-DITCH OPSD 219.210**  
N.T.S.

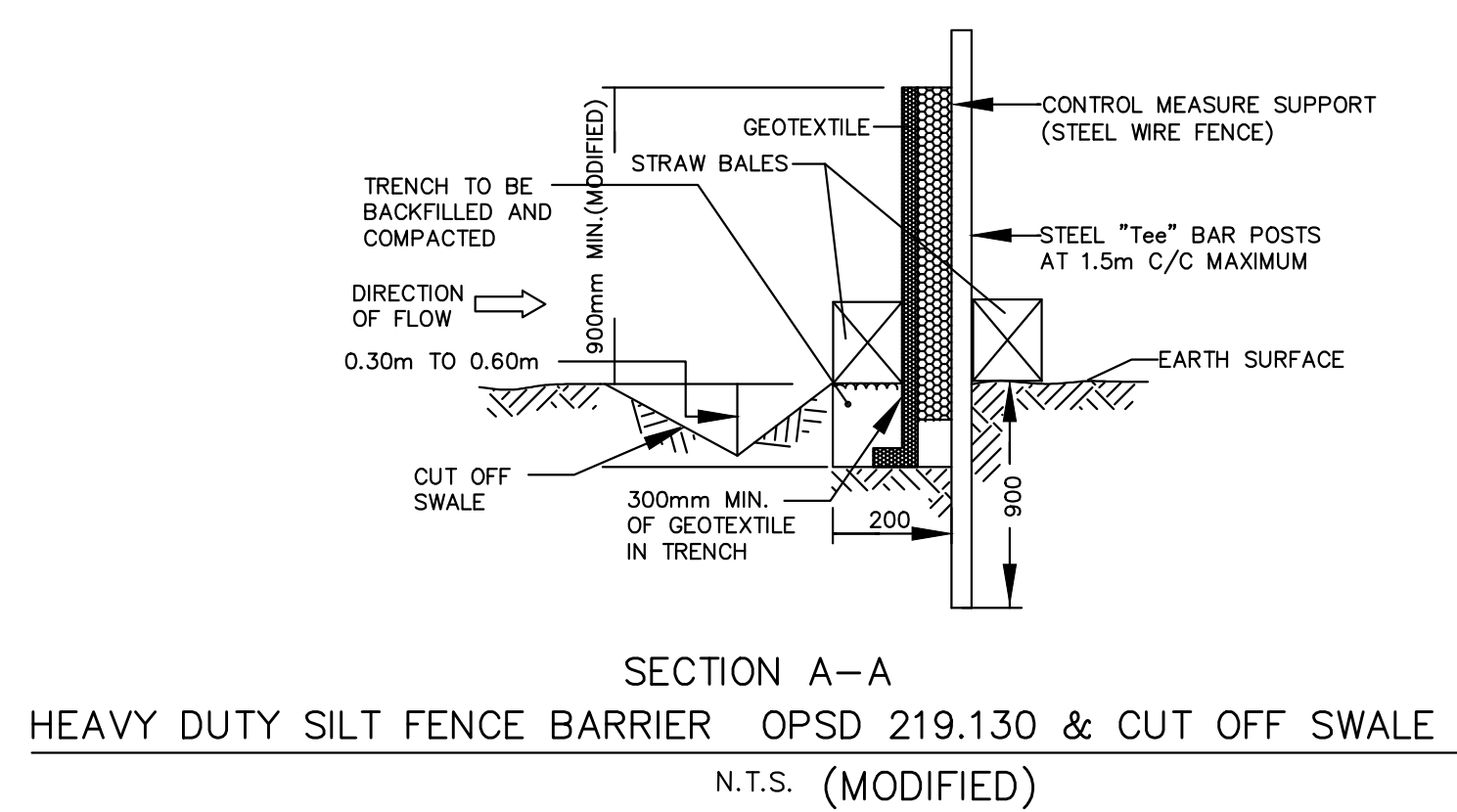


**REAR LOT CB/DICB, TEMPORARY DRAINAGE**  
N.T.S.

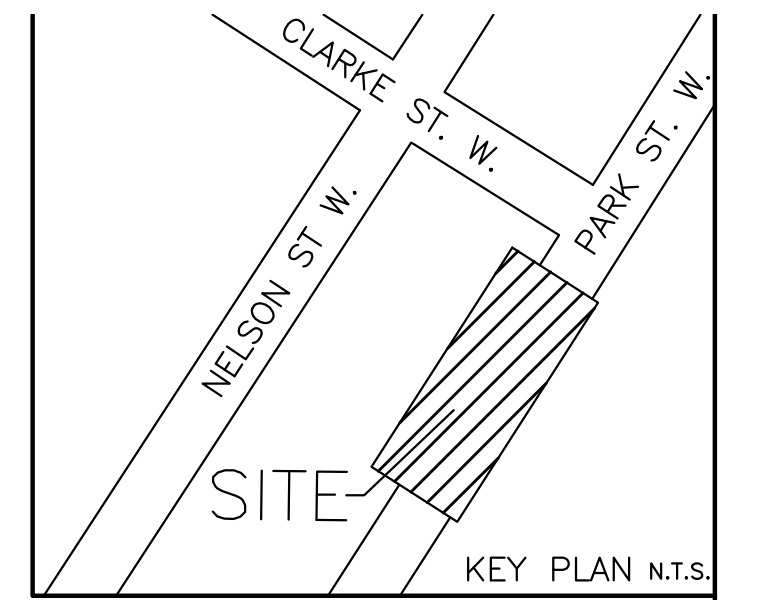


- GENERAL NOTES:**
1. QUALIFIED PERSONS AND PROTOCOLS ARE TO PROVIDE CONFIRMATION/SUPERVISION ON SITE TO ENSURE THAT ONLY TESTED/ACCEPTABLE MATERIAL IS BEING RECEIVED.
  2. FILL BEING BROUGHT TO SITE IS TO BE FROM A LICENSED PIT AND/OR MEET TABLE 2 OF THE SOIL, GROUND WATER AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 OF THE ENVIRONMENTAL PROTECTION ACT.
  3. ANY DISTURBED AREAS THAT REMAIN INACTIVE FOR MORE THAN 90 DAYS ARE TO BE STABILIZED WITH TOPSOIL AND VEGETATION.

- NOTES:**
1. EROSION AND SEDIMENT CONTROL (ESC) PLAN IS A DYNAMIC DOCUMENT, WHICH MAY BE SUBJECT TO CHANGE OR MODIFICATIONS AS A RESULT OF SITE DEVELOPMENTS OR CHANGES ON SITE. ANY DEVIATION FROM APPROVED PLANS MUST BE DESIGNED BY A QUALIFIED PROFESSIONAL.
  2. IT IS EVERYONE'S RESPONSIBILITY TO PREVENT CONSTRUCTION RELATED SEDIMENT FROM IMPACTING AQUATIC RESOURCES AND OTHER NATURAL FEATURES.
  3. PLEASE REFER TO ESC GUIDELINE FOR URBAN CONSTRUCTION (DECEMBER 2006) FOR THE DESIGN AND DESIGN ALTERATION OF ESC.
  4. NO PUMPING OF SEDIMENT LADEN RUNOFF FROM CONSTRUCTION AREA TO THE WETLAND/REGULATED FEATURE IS ALLOWED AT ANY TIME.
  5. AN AFTER-HOURS CONTACT NUMBER IS TO BE VISIBLY POSTED ON-SITE FOR EMERGENCIES. ALL THE PLANS SHOULD HAVE NAME AND CONTACT INFO OF THE PERSON RESPONSIBLE FOR ESC MEASURES.
  6. ANY SEDIMENT SPILL FROM THE SITE SHOULD BE REPORTED TO MINISTRY OF ENVIRONMENTAL (SPILL ACTION CENTER) AT 1-800-268-6060.
  7. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE EVALUATED ON A WEEKLY BASIS AND AFTER ANY STORM EVENT, ANY REPAIRS REQUIRED ARE TO BE RECTIFIED WITHIN 48HR.
  8. PERIMETER FENCING ALONG NORTH WEST EAST AND SOUTH SIDE OF SITE TO BE EXTENDED TO MINIMIZE IMPACT ON EXISTING RESIDENCES.
  9. IN THE EVENT OF HIGH WINDS, EARTHWORKS WILL BE SUSPENDED AND CONTRACTOR WILL BE REQUIRED TO CONFINE ALL ACTIVITIES TO DUST CONTROL UNTIL FURTHER NOTICE. THE TOWNSHIP WILL DETERMINE WHEN THE CONDITION WILL BE INVOKED.
  10. PRIOR TO ANY WORK BEGINNING ON THE SITE, THE CONTRACTOR WILL CALL TOWNSHIP OF WELLINGTON NORTH TO ARRANGE A PRE-START UP MEETING TO REVIEW THE CONSTRUCTION PLAN, SEDIMENT AND EROSION CONTROL MAY BEGIN AFTER THAT TIME AS DIRECTED BY THE TOWNSHIP. SERVICING AND OTHER WORK WILL NOT BEGIN UNTIL THE TOWNSHIP HAS INSPECTED AND APPROVED ALL SEDIMENT AND EROSION CONTROL MEASURES ON AND OFF THE SITE. MEASURES WILL INCLUDE THOSE SHOWN ON THE PLAN AS WELL AS A STREET SWEEPING PROGRAM AND ANY DIRECTION THAT MAY BE PROVIDED BY THE TOWNSHIP AT THAT TIME.
  11. QUALIFIED PERSONS AND PROTOCOLS ARE TO PROVIDE CONFIRMATION/SUPERVISION ON SITE TO ENSURE THAT ONLY TESTED/ACCEPTABLE MATERIAL IS BEING RECEIVED.
  12. FILL BEING BROUGHT TO SITE IS TO BE FROM A LICENSED PIT AND/OR MEET TABLE 2 OF THE SOIL, GROUND WATER AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 OF THE ENVIRONMENTAL PROTECTION ACT.
  13. ANY DISTURBED AREAS THAT REMAIN INACTIVE FOR MORE THAN 90 DAYS ARE TO BE STABILIZED WITH TOPSOIL AND VEGETATION.

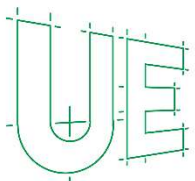


**SECTION A-A HEAVY DUTY SILT FENCE BARRIER OPSD 219.130 & CUT OFF SWALE**  
N.T.S. (MODIFIED)



**KEY PLAN N.T.S.**

SUBMISSIONS: 1st <u>  </u> V 2nd <u>  </u> 3rd <u>  </u> INTERIM <u>  </u>			
DATE: JUNE/24 Final <u>  </u>			
2024.06.24		ISSUED FOR FSR SUBMISSION	
DATE		DETAILS	
<b>ELEVATION NOTE</b>			
ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928/78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL HT2.0.			
		REVIEWED BY	
		DATE	
DESIGNED BY ANDRZEJ JAWORSKI P.Eng. CONSULTING ENGINEER		DIRECTOR OF PUBLIC WORKS	
<b>Urbtech Engineering Inc.</b> 1200 Speers Road, Suite 8, Oakville, Ontario, L6L 2K4 Telephone: 905 896 7364			
<b>CLIFFORD (PARK STREET) DEVELOPMENTS INC.</b> 41 PARK STREET WEST TOWN OF MINTO			
<b>TOWN OF MINTO</b>			
DRAWING NAME:			
<b>EROSION &amp; SEDIMENT CONTROL DETAILS</b>			
SCALE: AS NOTED	AREA: MINTO	PROJECT No.: 22-471	
DRAWN BY: G.J.	CHECKED BY: A.J.	PLAN No.: SN1	



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