THORNY BRAE TOWNHOUSE DEVELOPMENT
1775 Thorny Brae Place
Mississauga, Ontario

Functional Servicing & Stormwater Management Report

Prepared for:

KINGRIDE DEVELOPMENTS

Prepared by:

MGM Consulting Inc.
555 Industrial Drive,
Suite 201
Milton, Ontario
L9T 5E1

File No. 2025-004

Date: June 24, 2025

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1 Introduction

MGM Consulting Inc. has been retained by Kingridge Developments to prepare a Functional Servicing & Stormwater Management Report in support of a Site Plan Approval submission for the proposed Thorny Brae Townhouse Development, located at 1775 Thorny Brae Place, Mississauga Ontario.

The proposed development includes for the construction of 11 stacked townhouse units, new asphalt access road connecting to Mississauga Road, concrete sidewalks, parking areas and grassed amenity areas. The primary fire route access is from Mississauga Road.

The objective of this report is to provide details on the required site servicing, grading and drainage and stormwater management features as required meet the objectives of the City and Region's design criteria.

The site is identified in the location plan in Figure 1.

2 Existing Conditions

The total site area is 1.53 ha with four vacant one-story residential buildings. The existing topography gradually slopes from west to east with steeper slopes in the east portion of the site. Elevations range from approximately 147.9m in the northwest, down to approximately 144.9 m in the east, approximately mid-lot.

The existing site is identified in Figure 2.

3 Proposed Site Grading

The proposed site grading will consider the existing topography, perimeter grades, the proposed vehicular access from Mississauga Road, provide sufficient frost cover for site servicing, and as required to meet the stormwater management and servicing objectives of the City and Municipal design criteria.

The proposed Grading Plan is indicated on the appended Drawing CV-2.

4 Existing Municipal Servicing

The existing municipal servicing include:

- A storm sewer located within the storm sewer easement bisecting the site, ranging in size from 675 to 750mm with and outlet invert of 140.28m,
- A 250mm sanitary sewer with an outlet invert of 143.52, located adjacent to the existing storm sewer easement within the site,
- A 400mm watermain located within the Mississauga Road right of way.

5 Proposed Storm Design

5.1 Minor Storm Servicing

Storm flows from the site will be conveyed to the existing storm sewer system located within the storm sewer easement which bisects the site. Site storm sewers are designed to convey the 10-year storm flows, without surcharging, using the City of Mississauga Intensity-Duration Frequency (IDF) curves. The internal storm system will consist of a series of underground storm sewers, manholes and catch basins as indicated on the appended Site Servicing Plan, Drawing CV-3.

The minor system is designed based on the Rational Method using a time of concentration of 10 minutes and the City of Mississauga's IDF curve with a 10-year return period.

The storm sewer design sheet has been included in Appendix A.

4.2 Major Storm Servicing

In the event of a major storm or the storm system becoming blocked, the proposed grading will be designed to ensure emergency overland flow is directed towards the Mississauga Road right of way, on the southwest side of the site.

The proposed overland spill elevation of 147.09 is 3.22m below the proposed lowest finished-floor elevation of the Townhouse Units.

5. Stormwater Management

5.1 Proposed Rate Controls

According to the City of Mississauga's Transportation and Works Development Requirements Manual, Section 8, the subject site is located in the Credit River Subwatershed. Per Section 8, sites located within the Credit River Subwatershed between Norval and Port Credit, no quantity stormwater management control is required. Therefore, no rate controls are to be implemented for this site.

However, despite no rate control imposed directly on the site, Low Impact Development (LID) measures such as 300mm deep topsoil layer will be implemented to reduce surface runoff and promote infiltration and rooftop rainwater leaders of the rear-draining building areas will be collectively directed to rear yard infiltration facilities.

5.2 Proposed Quality Control

Options for stormwater quality controls include wet ponds, wetlands, bio-treatment areas, flatly graded grass swales, and package treatment units. Given the nature of the development, the limited available areas for a quality control feature and the impact that a quality control feature would have on the use of the property, the required stormwater quality objectives will be achieved using a "treatment train" approach which includes the installation of catch basin shields installed in all catch basins and double catch basins and the installation of a HydroDome model HD 8 treatment unit, located at the downstream limit of the proposed internal storm system.

The proposed treatment unit will be installed at the outlet from the internal storm system, and as such, it will provide the required stormwater quality treatment for runoff from all areas of the site.

The combined treatment train consisting of catch basin shields and the OGS unit will provide an anticipated combined TSS removal of 80%.

Refer to Appendix B for the treatment unit sizing and for projected treatment train TSS removal calculation. Additionally, Appendix B includes the proposed OGS unit and Catch Basin Shield design specifications.

5.3 Proposed Runoff Volume Reduction

Current objectives are to retain 100% of runoff generated from a minimum 5 mm depth of rainfall from all impervious site surfaces through infiltration, evapotranspiration, water harvesting and reuse. Based on a proposed impervious area of 1.047 Ha, the required volume for infiltration is approximately 53.0 m^3.

The runoff volume will be provided by three GreenStorm Stormwater Crates which will collect roof runoff from Blocks 3,4,7,8,9 & 10.

Runoff volume reduction calculations are provided in Appendix C.

6. Sediment and Erosion Controls During Construction

In 2006, The Greater Golden Horseshoe Area Conservation Authorities prepared a guideline entitled "Erosion & Sediment Control Guideline for Urban Construction". Based on the guideline, all projects involving the removal of topsoil or site alteration requires an ESC (Erosion and Sediment Control) Plan in place prior to commencing construction. Failure to adhere to the plan could lead to the potential for prosecution under the various pieces of environmental legislation.

The following principles assist in creating an effective ESC Plan. (Ref. Erosion and Sediment Control Guidelines for Urban Construction)

Adopt a multi-barrier approach to provide erosion and sediment control through erosion controls first.

- Retain existing ground cover and stabilize exposed soils with vegetation where possible.
- Limit the duration of soil exposure and phase construction where possible.
- Limit the size of disturbed areas by minimizing nonessential clearing and grading.
- Minimize slope length and gradient of disturbed areas.
- Maintain overland sheet flow and avoid concentrated flows.
- Store/stockpile soil away (e.g. greater than 15 meters) from watercourses, drainage features and top of steep slopes.
- Ensure contractors and all involved in the ESC practices are trained in ESC Plan, implementation, inspections, maintenance, and repairs.
- Adjust ESC Plan at construction site to adapt to site features.
- Assess all ESC practices before and after all rainfall and significant snowmelt events.

Sediment and erosion controls proposed for the subject development include:

- Construction of a mud mat at the construction entrance, which will assist in the removal of mud from construction vehicle tires before they exist the site,
- The installation of catchbasin sediment protection on any existing catchbasins in the vicinity of the site,
- The installation of silt control fencing around the perimeter of the site
  The proposed Erosion & Sediment Control Plan Plan is indicated on the appended Drawing CV-1.

7. Sanitary Servicing

   Sanitary servicing for the proposed development will be provided by a proposed 250mm PVC sanitary sewer connecting to the existing sanitary manhole on the west side of the site which outlets to the existing 250mm sanitary sewer located withing the Mississauga Road right-of-way. Based on the available outlet elevation of 143.52, a gravity-based sanitary system that provides drainage from the proposed residential development can be provided.

   The maximum sanitary flow, including infiltration allowance & peaking factor is 7.9 L/s.

   Sanitary flow calculations are provided in Appendix D.
   The proposed sanitary servicing is indicated on Drawing CV-3.

8. Water Servicing

   Water servicing for the proposed development will include a 150mm PVC watermain which will provide firefighting protection and domestic use to Blocks 6 & 7. Three looped 50mm copper watermain services will also provide will provide domestic water supply to Blocks 1,2,3,4,5,8,9,10 & 11. The water service connection for the site is to be made to the existing 400mm watermain, east of the site within the Mississauga Road right of way.

   In accordance with Peel Region's Municipal Design Criteria, the peak hour demand is 3.16 l/sec.
   Fire Flow Calculations, included in Appendix E, indicate a minimum flow of 17000 L/minute, 283 l/sec is required to meet the fire flow demand.

   Based on the above, the total water demand, peak water demand per day plus fire flow for the school site is 286.6 l/sec.

   On June 14, 2024, hydrant flow testing has been conducted at the neighboring property, 4601 Mississauga Road which is included in Appendix F. Based on the test, the watermain has a theoretical flow of 383 L/s at 20 psi, therefore adequate water supply is available to meet the water demand of 286.6 l/sec.

   The proposed water servicing for the site is indicated on Drawing CV-3.

9. Summary

The following summarizes the findings and recommendations based on the preceding analyses;

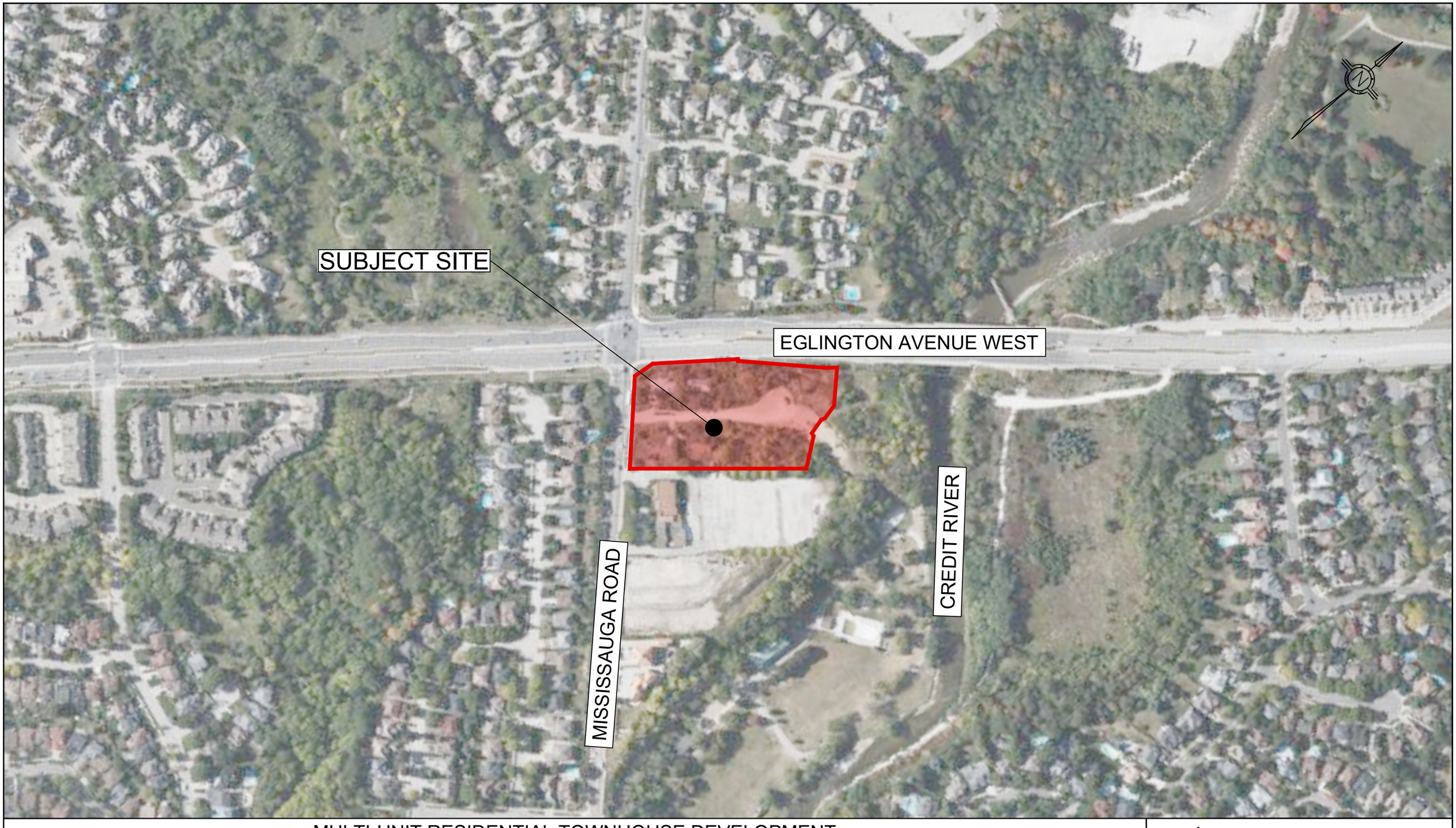
- An internal underground storm sewer system, designed to convey the 10-year storm without surcharging, is proposed, which will convey storm flows to the existing 750mm storm sewer within the storm sewer easement which bisects the site,
- Emergency storm flows are directed towards the Mississauga Road right of way at an elevation of 147.09,
- The proposed runoff volume reduction quantity will be provided by three GreenStorm Stormwater Crates which will collect roof runoff from Blocks 3,4,7,8,9 & 10,
- Sanitary servicing can be provided by connecting to the existing sanitary manhole, located at the west side of the site, adjacent to Mississauga Road,
- Water servicing as required for fire protection and domestic water supply can be provided from the existing 400 mm municipal watermain within the Mississauga Road right of way,
- Sediment and erosion controls as indicated on the Removals/Sediment and Erosion Control Plan are to be implemented prior to construction and maintained until the site is stabilized,

Prepared by:

MGM CONSULTING INC.

Blair Nock, CET

Figures



MULTI-UNIT RESIDENTIAL TOWNHOUSE DEVELOPMENT
1765, 1775 THORNY BRAE PLACE, MISSISSAUGA, ONTARIO

LOCATION PLAN

MGM CONSULTING INC.
Consulting Engineering & Project Management
555 Industrial Drive
Suite 201
Milton, Ontario
L9T 0H7
Tel: (905)567-8678
Fax: (905)875-1339
Email: mgm@mgm.on.ca
www.mgm.on.ca

FIGURE 1

DATE: JUNE 23, 2025
SCALE: 1:3000
DWG#: 2025-004

N: \PROJECTS \2025-004 \WORKING FOLDERS \DESIGN \FIGURES \2025-005 - C1 - LOCATION PLAN.DWG

MULTI-UNIT RESIDENTIAL TOWNHOUSE DEVELOPMENT
1765, 1775 THORNY BRAE PLACE, MISSISSAUGA, ONTARIO

EXISTING CONDITION

MGM CONSULTING INC.
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FIGURE 2

DATE: JUNE 23, 2025
SCALE: 1:750
DWG#: 2025-004

N:\PROJECTS\2025-004\WORKING FOLDERS\DESIGN\FIGURES\2025-005 - C1 - EXISTING CONDITIONS.DWG

FIGURE OBTAINED FROM CHAMBERLAIN ARCHITECTS

Chamberlain Architects Constructors Managers

Chamberlain Architect Services Limited

4671 Palladium Way (Unit 1)
Burlington, Ontario. L7M 0W9
CANADA

Phone: 905.631.7777

www.chamberlainIPD.com

NO.	ISSUED	DATE
1	CLIENT REVIEW	24-04-17
2	CLIENT REVIEW	24-08-14
3	CLIENT REVIEW	24-09-26
4	GARBAGE OPTIONS	24-09-27
5	CLIENT REVIEW	24-10-25
6	CLIENT REVIEW	25-01-15
7	CLIENT REVIEW	25-05-14
8	CLIENT REVIEW	25-05-27
9	CONSULANT COORDINATION	25-06-02
	OPA/ZBA SUBMISSION	25-06-13

DO NOT SCALE DRAWINGS. USE ONLY DRAWINGS MARKED "ISSUED FOR CONSTRUCTION". VERIFY CONFIGURATIONS AND DIMENSIONS ON SITE BEFORE BEGINNING WORK. NOTIFY ARCHITECT IMMEDIATELY OF ANY ERRORS, OMISSIONS OR DISCREPANCIES.

CHAMBERLAIN ARCHITECT SERVICES LIMITED AND CHAMBERLAIN CONSTRUCTION SERVICES LIMITED HAVE SIMILAR OWNERSHIP.

SEAL

CONSTRUCTION NORTH   TRUE NORTH

THORNY BRAE

1765, 1775 THORNY BRAE PLACE
MISSISSAUGA, ON

SHEET NAME

SITE PLAN

START DATE	APRIL 2024
DRAWN BY	MR/MW
CHECKED BY	CMC
SCALE	1 : 250
PROJECT NO	124015
DRAWING	A001

MULTI-UNIT RESIDENTIAL TOWNHOUSE DEVELOPMENT
1765, 1775 THORNY BRAE PLACE, MISSISSAUGA, ONTARIO

PROPOSED SITE PLAN

MGM CONSULTING INC.

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Email: mgm@mgm.on.ca
www.mgm.on.ca

FIGURE 3

DATE: JUNE 23, 2025
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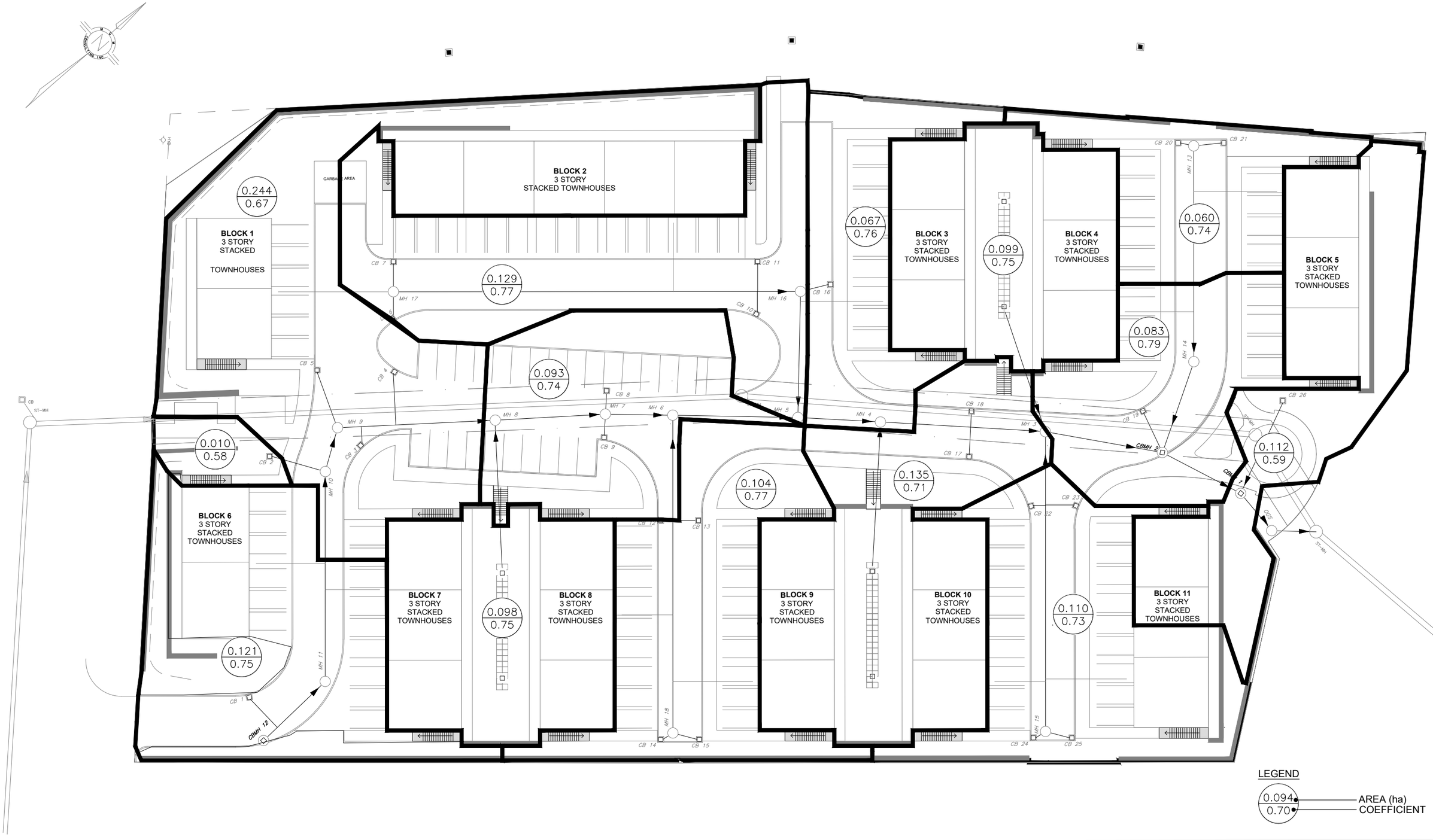
DWG#: 2025-004

N:\PROJECTS\2025-004\WORKING FOLDERS\DESIGN\FIGURES\2025-005 - C1 SITE PLAN.DWG



MULTI-UNIT RESIDENTIAL TOWNHOUSE DEVELOPMENT
1775 THORNY BRAE PLACE, MISSISSAUGA, ONTARIO

STORM DRAINAGE AREAS

MGM CONSULTING INC
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FIGURE 4

DATE: JUNE 23, 2025
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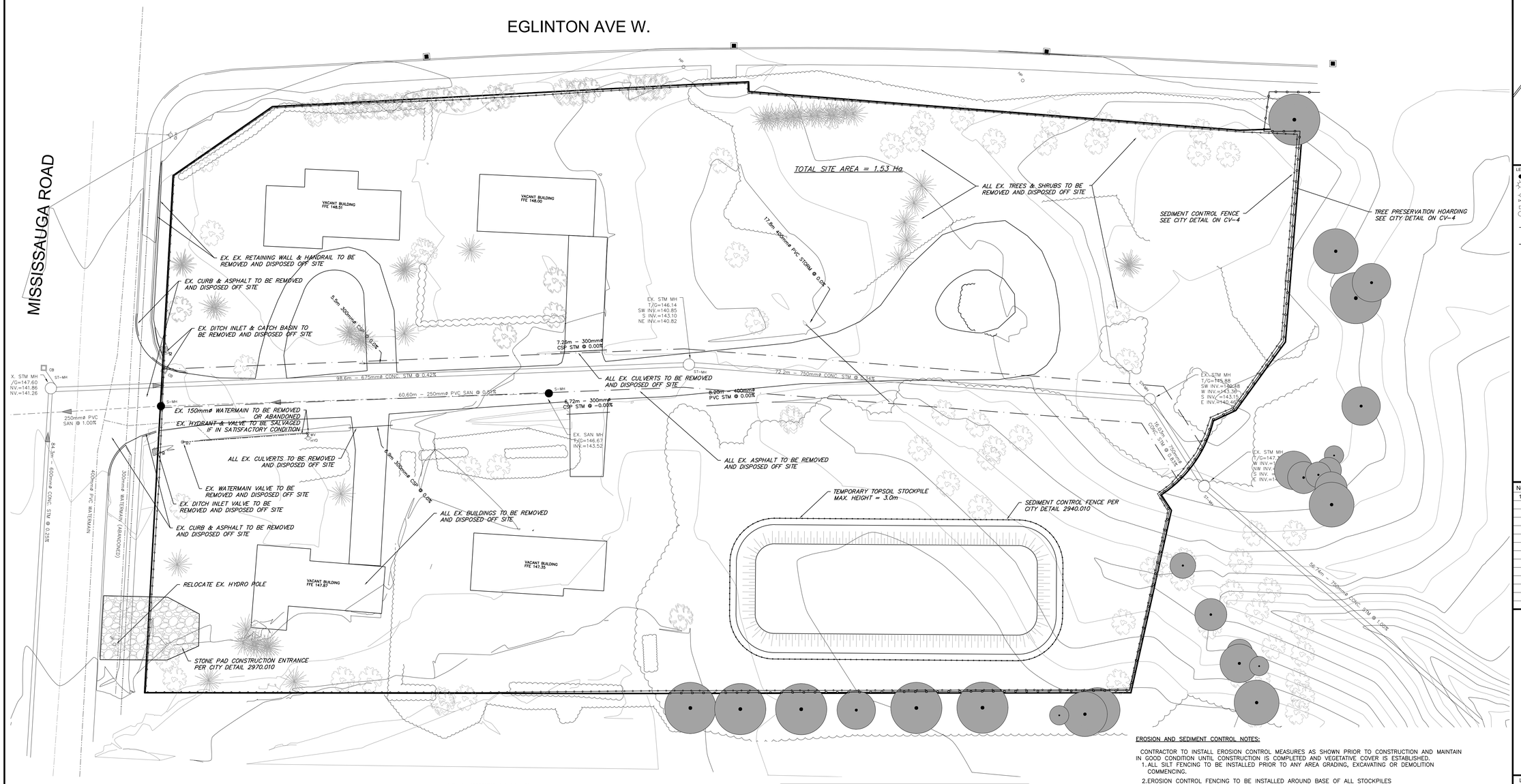
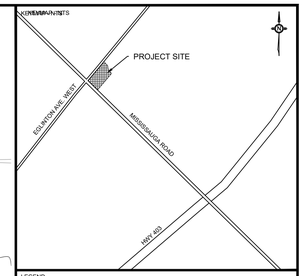
DWG#: 2025-004 C1

MGM CONSULTING INC.

Civil Drawings





LEGEND

- HP - EXISTING HYDRO POLE
- LS - EXISTING LIGHT STANDARD
- HYD - EXISTING FIRE HYDRANT
- WV - EXISTING WATER VALVE
- CB - EXISTING CATCHBASIN
- MH - EXISTING MANHOLE
- PROPOSED SILT FENCE
- PROPOSED TREE PRESERVATION HOARDING

No.	DATE	DRAWING ISSUE DESCRIPTION
1	2025 06 23	FIRST SUBMISSION

CITY OF MISSISSAUGA NOTES:

a) ALL SEDIMENT CONTROL FENCING IS TO BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY SITE GRADING OPERATIONS. AS PER CITY OF MISSISSAUGA STANDARD 2940.01
b) ALL CATCHBASINS WITHIN LANDSCAPED AREAS TO HAVE SEDIMENT BARRIER (CITY OF MISSISSAUGA STANDARD 2930.02 OR 2930.03) ERECTED IMMEDIATELY AFTER CATCHBASIN INSTALLATION. SEDIMENT PROTECTION BARRIER TO BE MAINTAINED ON A REGULAR BASIS OR TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
c) ALL ROADSIDE CATCHBASINS TO HAVE SEDIMENT PROTECTION AS PER CITY OF MISSISSAUGA STANDARD 2930.04 INSTALLED IMMEDIATELY AFTER CATCHBASIN INSTALLATION. SEDIMENT PROTECTION BARRIER TO BE MAINTAINED ON A REGULAR BASIS OR TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
d) CONSTRUCTION SEQUENCE:
   - INITIAL SEDIMENT CONTROL INSTALLATION
   - SITE GRADING OPERATIONS
   - UNDERGROUND SERVICING OPERATIONS
   - BUILDING CONSTRUCTION
   - FINAL GRADING OPERATIONS
e) IF SITE CONSTRUCTION ACTIVITIES ARE INTERRUPTED AND/OR INACTIVITY EXCEEDS 30 DAYS, ALL STRIPPED AND/OR BARE SOIL AREAS ARE TO BE STABILIZED BY SODDING/SEEDING/MULCHING OR OTHER APPROVED METHOD, TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
f) THIS CONTROL PLAN IS PREPARED FOR SUBMISSION TO THE CITY MISSISSAUGA IN CONJUNCTION WITH AN APPLICATION FOR EROSION AND SEDIMENT CONTROL PERMIT NO. ____UNDER THE EROSION AND SEDIMENT CONTROL BY-LAW NO 512-91, AS AMENDED.
g) ALL EROSION AND SEDIMENT CONTROL MEASURE ARE TO BE REGULARLY INSPECTED AND MAINTAINED, AS REQUIRED, TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
h) DURING ALL CONSTRUCTION PHASES, MUD TRACING CONTROL, CONSISTING OF FLUSHING AND SWEEPING ROADS, IS TO BE PROVIDED FOR ALL ROADS, AS WARRANTED, IN ACCORDANCE WITH THE CITY OF MISSISSAUGA MUD TRACKING CONTROL POLICY.

NOTE:

CONTRACTOR TO CONTACT MGM CONSULTING INC. IMMEDIATELY SHOULD THERE BE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND PROPOSED GRADING AND/OR SERVICING DESIGN, OR CONFLICTS IN CONSTRUCTING THE WORK AS PER THE INTENT OF THE APPROVED DESIGN PRIOR TO CONSTRUCTION.

NOTE:

1. ALL WORK TO CONFORM TO THE LATEST MUNICIPAL STANDARDS AND SPECIFICATIONS AS WELL AS THE LATEST ADOPTED ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER TO SATISFACTION OF THE MUNICIPALITY AND MGM CONSULTING INC.
3. CONTRACTOR TO LOCATE AND PROTECT ALL EXISTING SERVICES AND UTILITIES PRIOR TO AND DURING CONSTRUCTION
4. CONTRACTOR TO LOCATE AND CONFIRM ALL EXISTING UTILITIES AND SERVICE INFORMATION PRIOR TO CONSTRUCTION
5. CONTRACTOR TO ENSURE ADEQUATE CLEARANCE FROM ALL EXISTING SERVICES AND UTILITIES
6. CONTRACTOR TO CONFIRM ALL EXISTING INVERTS PRIOR TO INTERNAL SERVICING.
7. CONTRACTOR TO CONFIRM THE PAVEMENT STRUCTURE THICKNESS' BASED ON THE GEOTECHNICAL REPORT.

EROSION AND SEDIMENT CONTROL NOTES:

CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND VEGETATIVE COVER IS ESTABLISHED.

1. ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.
2. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES
3. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MANHOLE AND CATCHBASINS
4. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
5. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.
6. NO ALTERNATIVE METHODS OR EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER
7. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENT RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.
8. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.
9. FOR DETAILS OF ALL ELECTRICAL REMOVALS INCLUDING LIGHT STANDARDS, AND UNDERGROUND DUCT AND WIRING, REFER TO ELECTRICAL DRAWINGS
10. FOR DETAILS ON TREE REMOVALS, AND PROTECTION REFER TO LANDSCAPING DRAWNIGS

MAINTENANCE RECOMMENDATIONS

1. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.
2. OWNERS REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

EROSION & SEDIMENT CONTROL SEQUENCES:

1. INSTALL CONSTRUCTION ENTRANCE MUD MAT
2. INSTALL SILT FENCE AROUND THE SITE PERIMETER. SINGLE ROW SILT FENCE DETAIL AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN ATTACHED,
3. DURING THE SERVICING CONSTRUCTION, LIMIT OPEN TRENCH LENGTHS TO MINIMIZE EROSION POTENTIAL,
4. DURING WORK STOPPAGES OR INCLEMENT WEATHER, PLUG ENDS OF OPEN SEWERS TO PREVENT DOWNSTREAM SEDIMENTATION
5. PROVIDE CATCHBASIN SEDIMENT PROTECTION ON ALL CATCHBASIN AND CATCHBASIN MANHOLES FOR THE DURATION OF CONSTRUCTION,
6. ENSURE SILT LADEN WATER FROM TRUCK WASH AREAS ARE DIRECTED TO AREAS PROTECTED BY A FILTER RING AND AT LEAST 15 METERS FROM A WATERCOURSE,
7. ALL SILT LADEN WATER DURING DEWATERING OF TRENCHES TO BE DIRECTED TO AN AREA PROTECTED BY A FILTER RING OR TO A GEOTEXTILE FILTER BAG. FILTRATION TO BE A MINIMUM OF 15 METERS FROM A WATERCOURSE.
8. PROVIDE DUST CONTROL DURING DRY PERIODS AS DIRECTED BY THE SITE ENGINEER OR CONSERVATION
9. SWEEP EXTERNAL STREETS AS DIRECTED BY THE ENGINEER OR CONSERVATION.
10. FOLLOWING BASE COURSE ASPHALT, CATCHBASINS TO BE REWRAPPED WITH GEOTEXTILE.
11. PERIODIC STREET CLEANING AND CATCHBASIN CLEANOUT TO BE PERFORMED AS REQUIRED.

LEGAL AND TOPOGRAPHICAL SURVEY PROVIDED BY:

SCHAEFFER DZALDOV BENNETT LTD.
JOB NO. 15-155-01, DATED JULY 21, 2015.

SITE BENCHMARK:

ELEVATIONS SHOWN HEREON ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK No. 970, HAVING A PUBLISHED ELEVATION OF 148.702 METRES.

PROFESSIONAL ENGINEER
ANDREW J. HOLTZ
100517318
JUNE 23/2025
PROVINCE OF ONTARIO

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CLIENT:

KINGRIDGE DEVELOPMENTS

OWNER INFO:
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E-MAIL: dan@kingridgedevelopments.ca
MAIL ADDRESS: 1660 NORTH SERVICE Rd. EAST, SUITE 109-B
OAKVILLE ON L6H 7G3
PHONE: 416-277-7466

PROJECT:

THORNY BRAE TOWNHOUSE DEVELOPMENT
1775 THORNY BRAE PLACE MISSISSAUGA
ONTARIO

DRAWING:

REMOVALS & EROSION AND SEDIMENT CONTROL PLAN

DRAWN BY:	CHECKED BY:	JOB CAPTAIN:
BN	MLS	JB
SCALE: 1:300	PROJECT NO.: 2025-004	SHEET NO.: CV-1
CURRENT ISSUE: 1	CURRENT REV: -	

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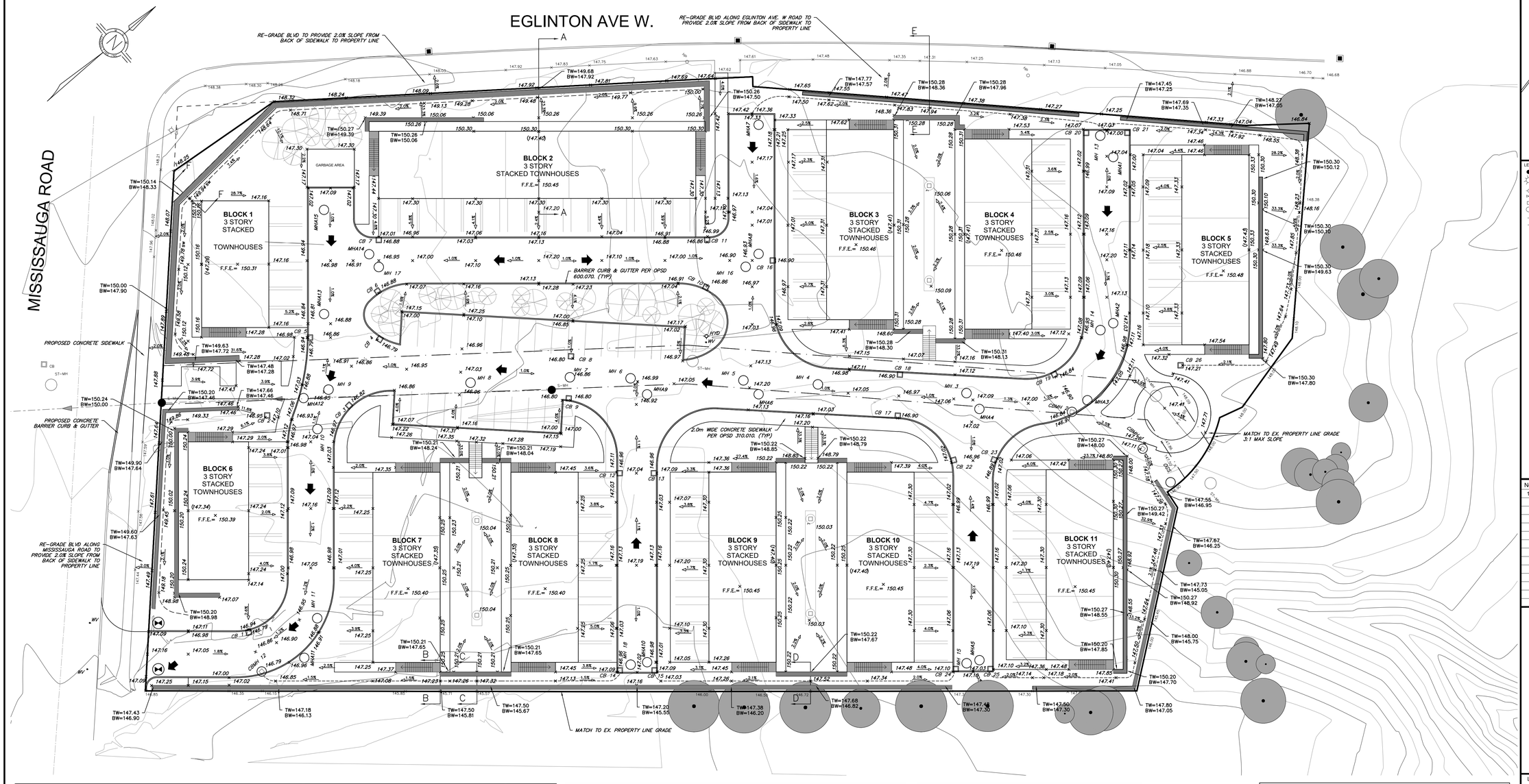

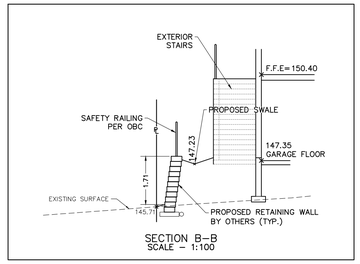

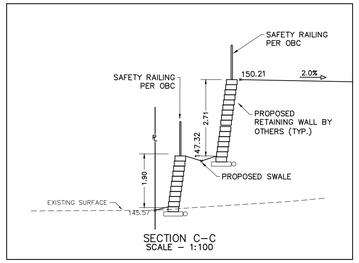

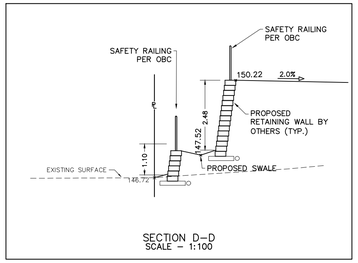

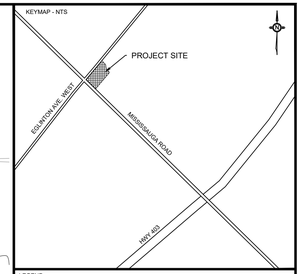

LEGEND

- HP - EXISTING HYDRO POLE
- LS - EXISTING LIGHT STANDARD
- FH - EXISTING FIRE HYDRANT
- WV - EXISTING WATER VALVE
- CB - EXISTING CATCHBASIN
- MH - EXISTING MANHOLE
- OH — OH — OH — OH — OH — EXISTING OVERHEAD HYDRO
- X — X — X — X — X — EXISTING FENCELINE
- CBMH - PROPOSED CB MANHOLE
- MH - PROPOSED STORM MANHOLE
- CB - PROPOSED CATCH BASIN
- MHA1 - PROPOSED SANITARY MANHOLE
- AD - PROPOSED AREA DRAIN
- 147.49 - PROPOSED GRADE ELEVATION
- 147.50 - EXISTING GRADE ELEVATION
- 2.0% - PROPOSED SLOPE
- PROPOSED MAJOR OVERLAND FLOW

No.	DATE	DRAWING ISSUE DESCRIPTION
1	2025 06 23	FIRST SUBMISSION

NOTE:

CONTRACTOR TO CONTACT MGM CONSULTING INC. IMMEDIATELY SHOULD THERE BE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND PROPOSED GRADING AND/OR SERVICING DESIGN, OR CONFLICTS IN CONSTRUCTING THE WORK AS PER THE INTENT OF THE APPROVED DESIGN PRIOR TO CONSTRUCTION.

NOTE:

1. ALL WORK TO CONFORM TO THE LATEST MUNICIPAL STANDARDS AND SPECIFICATIONS AS WELL AS THE LATEST ADOPTED ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER TO SATISFACTION OF THE MUNICIPALITY AND MGM CONSULTING INC.
3. CONTRACTOR TO LOCATE AND PROTECT ALL EXISTING SERVICES AND UTILITIES PRIOR TO AND DURING CONSTRUCTION
4. CONTRACTOR TO LOCATE AND CONFIRM ALL EXISTING UTILITIES AND SERVICE INFORMATION PRIOR TO CONSTRUCTION
5. CONTRACTOR TO ENSURE ADEQUATE CLEARANCE FROM ALL EXISTING SERVICES AND UTILITIES
6. CONTRACTOR TO CONFIRM ALL EXISTING INVERTS PRIOR TO INTERNAL SERVICING.
7. CONTRACTOR TO CONFIRM THE PAVEMENT STRUCTURE THICKNESS' BASED ON THE GEOTECHNICAL REPORT.

LEGAL AND TOPOGRAPHICAL SURVEY PROVIDED BY:

SCHAEFFER DZALDOV BENNETT LTD.
JOB NO. 15-155-01, DATED JULY 21, 2015.

SITE BENCHMARK:

ELEVATIONS SHOWN HEREON ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK No. 970, HAVING A PUBLISHED ELEVATION OF 148.702 METRES.

LICENSED PROFESSIONAL ENGINEER
CHAD D. ROZYN
100517316
JUNE 23/2025
PROVINCE OF ONTARIO

MGM CONSULTING INC
Consulting Engineering & Project Management
555 Industrial Drive
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L9T 5E1
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CLIENT:

KINGRIDGE DEVELOPMENTS

OWNER INFO:
NAME: DAN MARION
E-MAIL: dan@kingridgedevelopments.ca
MAIL ADDRESS: 1660 NORTH SERVICE Rd. EAST, SUITE 109-B
OAKVILLE ON L6H 7G3
PHONE: 416-277-7466

PROJECT:

THORNY BRAE TOWNHOUSE DEVELOPMENT
1775 THORNY BRAE PLACE MISSISSAUGA
ONTARIO

DRAWING:

GRADING PLAN

DRAWN BY:	CHECKED BY:	JOB CAPTAIN:
BN	MLS	JB
SCALE:	PROJECT NO.:	SHEET NO.:
1:300	2025-004	CV-2
CURRENT ISSUE:	CURRENT REV:	
1	-	

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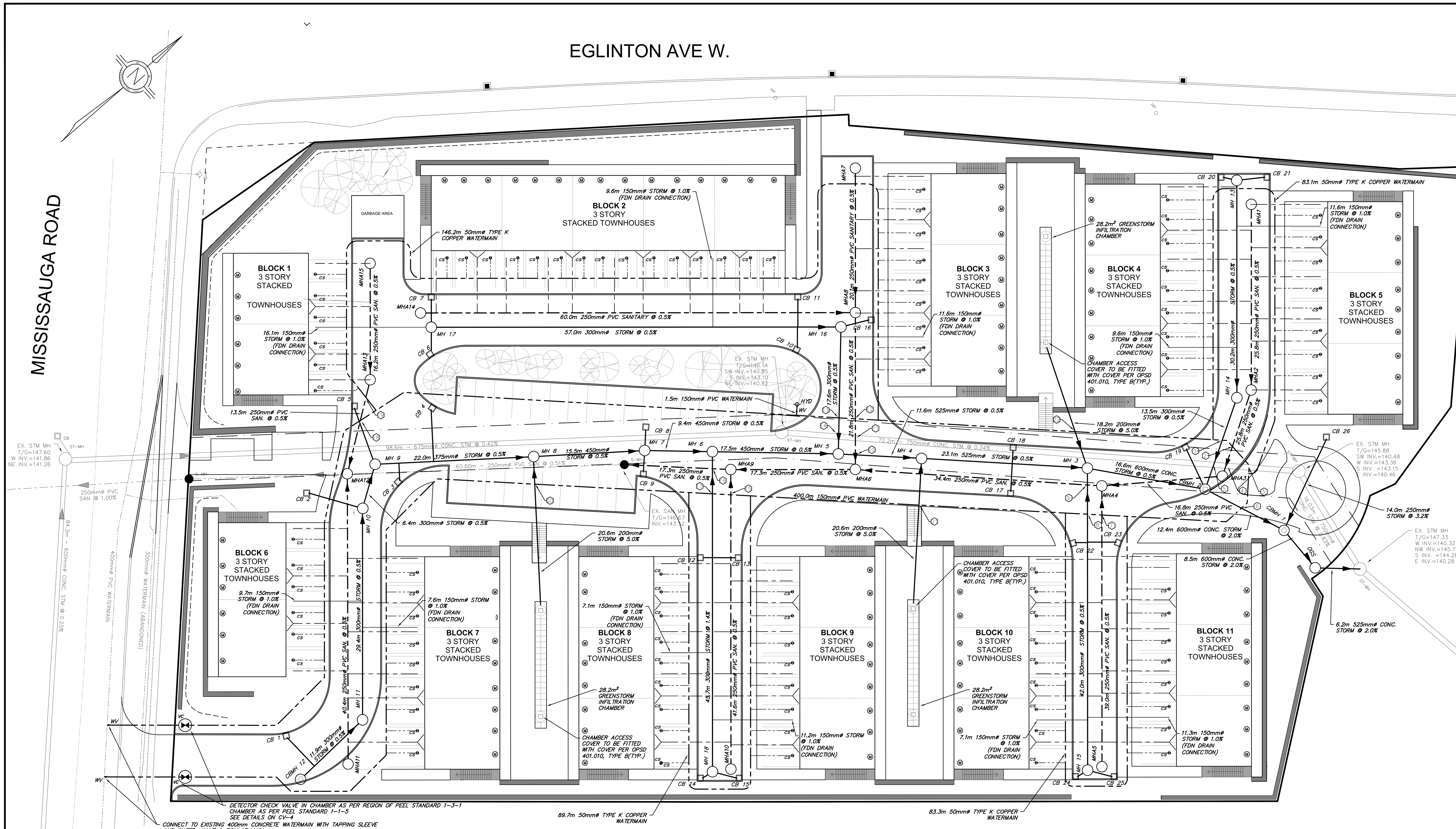

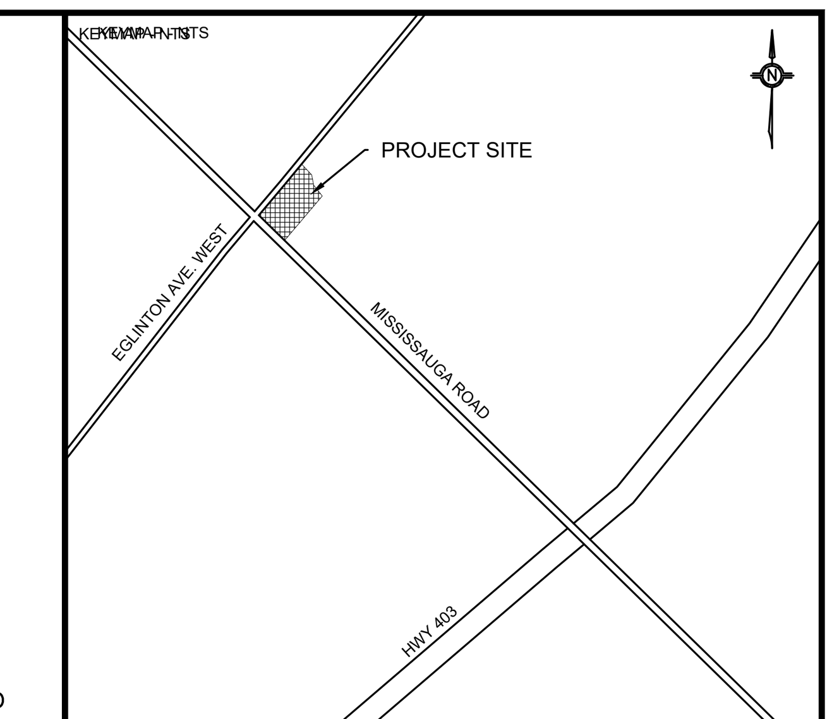

CITY OF MISSISSAUGA NOTES

(a) ALL SURFACE DRAINAGE WILL BE SELF–CONTAINED, COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.

(b) THE PORTIONS OF THE DRIVEWAY WITHIN THE MUNICIPAL BOULEVARD WILL BE PAVED BY THE APPLICANT.

(c) AT THE ENTRANCES TO THE SITE, THE MUNICIPAL CURB AND SIDEWALK WILL BE CONTINUOUS THROUGH THE DRIVEWAY AND A CURB DEPRESSION WILL BE PROVIDED FOR EACH ENTRANCE.

(d) ALL PROPOSED CURBING WITHIN THE MUNICIPAL BOULEVARD AREA FOR THE SITE IS TO SUIT AS FOLLOWS: I) FOR ALL SINGLE FAMILY RESIDENTIAL PROPERTIES INCLUDING ON STREET TOWNHOUSES, ALL CURBING IS TO STOP AT THE PROPERTY LIMIT OR THE BACK OF THE MUNICIPAL SIDEWALK, WHICHEVER IS APPLICABLE; OR II) FOR ALL OTHER PROPOSALS INCLUDING INDUSTRIAL, COMMERCIAL AND CONDOMINIUM DEVELOPMENTS, ALL ENTRANCES TO THE SITE ARE TO BE IN ACCORDANCE WITH OPSD 350.010 (SAVE AND ACCEPT DETAIL 'A' WHICH SHALL MATCH CITY OF MISSISSAUGA STANDARD 2240.031).

(e) ALL EXCESS EXCAVATED MATERIAL WILL BE REMOVED FROM THE SITE.

(f) THE EXISTING DRAINAGE PATTERN WILL BE MAINTAINED EXCEPT WHERE NOTED.

(g) THE APPLICANT WILL BE REQUIRED TO CONTACT ALL UTILITY COMPANIES TO OBTAIN ALL REQUIRED LOCATES PRIOR TO THE INSTALLATION OF HOARDING WITHIN THE MUNICIPAL RIGHT–OF–WAY.

(h) THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF ANY UTILITY RELOCATIONS NECESSITATED BY THE SITE PLAN.

(i) PRIOR TO COMMENCING CONSTRUCTION, ALL REQUIRED HOARDING IN ACCORDANCE WITH THE ONTARIO OCCUPATIONAL HEALTH & SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS, MUST BE ERECTED AND THEN MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION.

(j) SHOULD ANY WORKS BE REQUIRED WITHIN THE MUNICIPAL RIGHT–OF–WAY, A ROAD OCCUPANCY PERMIT WILL BE REQUIRED. PUCC APPROVAL WILL BE REQUIRED. FOR FURTHER INFORMATION PLEASE CONTACT THE PUCC/PERMIT TECHNOLOGIST, LOCATED AT 3185 MAVIS ROAD.

WATERMAIN LENGTHS	
WATERMAIN SIZE	LENGTH
150mmø PVC	400m
50mmø TYPE K COPPER	402m
19mmø POLYETHYLENE	377m

LEGEND

Symbol	Description
HP	- EXISTING HYDRO POLE
LS	- EXISTING LIGHT STANDARD
FH	- EXISTING FIRE HYDRANT
WV	- EXISTING WATER VALVE
CB	- EXISTING CATCHBASIN
MH	- EXISTING MANHOLE
	- EXISTING SANITARY SEWER
	- EXISTING WATERMAIN
	- EXISTING STORM SEWER
OH	- EXISTING OVERHEAD HYDRO
CBMH	- PROPOSED CB MANHOLE
MH	- PROPOSED STORM MANHOLE
CB	- PROPOSED CATCH BASIN
MHA1	- PROPOSED SANITARY MANHOLE
OGS	- PROPOSED TREATMENT UNIT
CS	- PROPOSED 19mm TYPE K SOFT COPPER WATER SERVICE
M	- PROPOSED WATER METER
	- PROPOSED 125mm PVC SANITARY SERVICE
	- PROPOSED STORM SEWER
	- PROPOSED SANITARY SEWER
	- PROPOSED WATERMAIN

No.	DATE	DRAWING ISSUE DESCRIPTION
1	2025 06 23	FIRST SUBMISSION

STORM STRUCTURE TABLE

STRUCTURE	STRUCTURE SIZE	STRUCTURE OPSD	FRAME/GRATE OPSD	RIM	INVERT
EX. MH	1800mm	701.012	401.010	147.04	W 140.32 SW 140.33 E 140.28
OGS	1200mm	701.010	400.010	147.00	NE 140.45 W 140.50
CBMH 1	1200mm	701.010	400.010	147.11 DROP	E 140.67 NW 144.54 NW 140.72 SW 141.85
CBMH 2	1200mm	701.010	400.010	146.84	NE 142.07 NW 143.27 W 143.27 SW 143.27
MH 3	1200mm	701.010	401.010	147.08	NE 143.34 SE 144.54 NW 144.54 SW 143.42
MH 4	1200mm	701.010	401.010	147.08	NE 143.56 SE 144.76 SW 143.58
MH 5	1200mm	701.010	401.010	147.18	NE 143.64 NW 144.50 SW 143.72
MH 6	1200mm	701.010	401.010	147.00	NE 143.81 SE 144.61 SW 143.84
MH 7	1200mm	701.010	401.010	147.00	NE 143.89 NW 145.09 SE 145.09 SW 143.97
MH 8	1200mm	701.010	401.010	147.00	NE 144.05 SE 145.25 SW 144.08
MH 9	1200mm	701.010	401.010	146.96	NE 144.19 NW 145.19 SE 144.24
MH 10	1200mm	701.010	401.010	146.96	NW 144.27 SW 145.27 SE 144.32
MH 11	1200mm	701.010	401.010	146.92	NW 144.47 SW 144.52
CBMH 12	1200mm	701.010	400.010	146.79	N 144.58

STORM STRUCTURE TABLE

STRUCTURE	STRUCTURE SIZE	STRUCTURE OPSD	FRAME/GRATE OPSD	RIM	INVERT
MH 13	1200mm	701.010	401.010	146.98	NE 143.55 SW 144.75 SE 144.75
MH 14	1200mm	701.010	401.010	147.05	NW 143.40 SE 143.35
MH 15	1200mm	701.010	401.010	147.03	NW 144.75 S 145.30 E 145.30
MH 16	1200mm	701.010	401.010	146.92	SE 144.44 SW 144.49 NE 145.35
MH 17	1200mm	701.010	401.010	146.92	NE 144.79 SE 144.49 NW 145.30
MH 18	1200mm	701.010	401.010	147.02	NW 144.84 S 145.45 NE 145.45
CB 1	600x600mm	705.010	400.010	146.79	145.34
CB 2	600x600mm	705.010	400.010	146.95	145.50
CB 3	600x600mm	705.010	400.010	146.82	145.37
CB 4	600x600mm	705.010	400.010	146.79	145.34
CB 5	600x600mm	705.010	400.010	146.79	145.34
CB 6	600x600mm	705.010	400.010	146.88	145.43
CB 7	600x600mm	705.010	400.010	146.88	145.43
CB 8	600x600mm	705.010	400.010	146.80	145.33
CB 9	600x600mm	705.010	400.010	146.80	145.33
CB 10	600x600mm	705.010	400.010	146.86	145.39
CB 11	600x600mm	705.010	400.010	146.86	145.39
CB 12	600x600mm	705.010	400.010	146.96	145.49
CB 13	600x600mm	705.010	400.010	146.96	145.49
CB 14	600x600mm	705.010	400.010	146.96	145.49
CB 15	600x600mm	705.010	400.010	146.96	145.49
CB 16	600x600mm	705.010	400.010	146.87	145.40
CB 17	600x600mm	705.010	400.010	146.90	145.43
CB 18	600x600mm	705.010	400.010	146.90	145.43
CB 19	600x600mm	705.010	400.010	146.84	145.37
CB 20	600x600mm	705.010	400.010	146.93	145.46
CB 21	600x600mm	705.010	400.010	146.93	145.46
CB 22	600x600mm	705.010	400.010	146.89	145.42
CB 23	600x600mm	705.010	400.010	146.89	145.42
CB 24	600x600mm	705.010	400.010	146.97	145.50
CB 25	600x600mm	705.010	400.010	146.97	145.50
CB 26	600x600mm	705.010	400.010	147.21	145.74

SEWER CROSSING TABLE

CROSSING #	INV. UPPER	OBV. LOWER	CLEARANCE
1	145.15–WM	143.61–STM	1.54m
2	145.10–WM	144.47–WM	0.63m
3	145.25–WM	141.36–STM	3.89m
4	144.26–SAN	141.37–STM	2.89m
5	143.31–STM	141.37–STM	1.94m
6	145.20–WM	142.72–STM	2.48m
7	145.15–WM	144.02–SAN	1.13m
8	145.15–WM	144.57–STM	0.58m
9	144.55–STM	143.95–SAN	0.60m
10	144.25–SAN	144.08–STM	0.17m
11	144.26–SAN	141.54–STM	2.72m
12	145.28–WM	144.53–SAN	0.75m
13	145.28–WM	144.82–STM	0.46m
14	144.51–STM	141.54–STM	2.97m
15	145.10–WM	144.52–SAN	0.58m
16	144.64–SAN	144.19–STM	0.45m
17	144.64–SAN	141.14–WM	0.50m
18	145.00–WM	143.65–SAN	1.35m
19	145.09–WM	143.68–SAN	1.41m
20	145.45–WM	144.95–WM	0.50m
21	145.09–STM	144.59–WM	0.50m
22	145.31–WM	145.01–STM	0.30m

NOTE:
ALL CATCH BASINS AND CATCH BASIN MANHOLES LOCATED IN ASPHALT AREAS TO BE FITTED WITH CATCH BASIN SHIELDS

SANITARY STRUCTURE TABLE

STRUCTURE	STRUCTURE SIZE	STRUCTURE OPSD	FRAME/GRATE OPSD	RIM	INVERT
MHA1	1200mm	701.010	401.010	147.02	SE 144.50
MHA2	1200mm	701.010	401.010	147.04	NW 144.37 SE 144.32
MHA3	1200mm	701.010	401.010	146.87	NW 144.25 SW 144.20
MHA4	1200mm	701.010	401.010	147.05	NE 144.10 SE 143.80 SW 143.74
MHA5	1200mm	701.010	401.010	147.05	NW 144.00
MHA6	1200mm	701.010	401.010	147.17	NE 143.76 SW 143.74
MHA7	1200mm	701.010	401.010	147.28	SE 144.47
MHA8	1200mm	701.010	401.010	147.17	NW 144.37 SW 144.40 SE 144.35
MHA9	1200mm	701.010	401.010	146.92	NE 143.65 SE 143.68 NW 143.63
MHA10	1200mm	701.010	401.010	146.95	NW 144.50
MHA11	1200mm	701.010	401.010	146.93	NW 143.57
MHA12	1200mm	701.010	401.010	146.90	SE 143.37 NE 143.32 SW 143.32 NW 143.37
MHA13	1200mm	701.010	401.010	146.91	SE 143.44 NW 143.49
MHA14	1200mm	701.010	401.010	146.90	NE 144.66
MHA15	1200mm	701.010	401.010	147.05	SE 143.57

REGIONAL MUNICIPALITY OF PEEL CONSTRUCTION STANDARDS

1. ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
2. WATERMAIN AND / OR WATER SERVICE MATERIALS 100 MM (4") AND LARGER MUST BE DR 18 PV.C. PIPE MANUFACTURED TO A.W.W.A. SPEC. C900–16 SPEC COMPLETE WITH TRACER WIRE. SIZE 50 MM (2") AND SMALLER MUST BE TYPE 'K' SOFT COPPER PIPE PER A.S.T.M. B88–49 SPECIFICATION.
3. WATERMAINS AND / OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 1.7 M (5'6") WITH A MINIMUM HORIZONTAL SPACING OF 1.2 M (4') FROM THEMSELVES AND ALL OTHER UTILITIES.
4. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED WITH AT LEAST A 50 MM (2") OUTLET ON 100 MM (4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. THEY MUST ALSO BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100 MM (4") DIAMETER MINIMUM ON A HYDRANT.
5. ALL CURB STOPS TO BE 3.0 M (10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
6. HYDRANT AND VALVE SET TO REGION STANDARD 1 – 6 – 1 DIMENSION A AND B, 0.7 M (2') AND 0.9 M (3') AND TO HAVE PUMPER NOZZLE.
7. WATERMAINS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SITE PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.
8. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3 M (12") OVER / 0.5 M (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
9. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.
10. ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.
11. LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
12. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF THEIR WORK WHETHER SHOWN ON THE PLANS OR NOT AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
13. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO THE UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION, WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
14. ALL PROPOSED WATER PIPING MUST BE ISOLATED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE CROSS–CONNECTION CONTROL DEVICE, CONSISTENT WITH THE DEGREE OF HAZARD, FOR BACKFLOW PREVENTION OF THE ACTIVE DISTRIBUTION SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1–7–7 OR 1–7–8.

NOTE:
CONTRACTOR TO CONTACT MGM CONSULTING INC. IMMEDIATELY SHOULD THERE BE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND PROPOSED GRADING AND/OR SERVICING DESIGN, OR CONFLICTS IN CONSTRUCTING THE WORK AS PER THE INTENT OF THE APPROVED DESIGN PRIOR TO CONSTRUCTION.

NOTE:
1. ALL WORK TO CONFORM TO THE LATEST MUNICIPAL STANDARDS AND SPECIFICATIONS AS WELL AS THE LATEST ADOPTED ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER TO SATISFACTION OF THE MUNICIPALITY AND MGM CONSULTING INC.
3. CONTRACTOR TO LOCATE AND PROTECT ALL EXISTING SERVICES AND UTILITIES PRIOR TO AND DURING CONSTRUCTION
4. CONTRACTOR TO LOCATE AND CONFIRM ALL EXISTING UTILITIES AND SERVICE INFORMATION PRIOR TO CONSTRUCTION
5. CONTRACTOR TO ENSURE ADEQUATE CLEARANCE FROM ALL EXISTING SERVICES AND UTILITIES
6. CONTRACTOR TO CONFIRM ALL EXISTING INVERTS PRIOR TO INTERNAL SERVICING.
7. CONTRACTOR TO CONFIRM THE PAVEMENT STRUCTURE THICKNESS' BASED ON THE GEOTECHNICAL REPORT.

CONSTRUCTION NOTES:

1. ALL SITE GRADING SHALL BE CARRIED OUT IN ACCORDANCE WITH OPSS 206.
2. ALL MATERIALS ENCOUNTERED DURING EXCAVATION THAT ARE NOT SUITABLE FOR USE AS EARTH FILL ARE TO BE REMOVED AND DISPOSED OFF SITE, IN ACCORDANCE WITH CURRENT REGULATIONS.
3. ALL GRANULAR MATERIALS SHALL CONFORM TO OPSS 1010 AND BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.
4. ALL ASPHALT MATERIALS SHALL BE IN ACCORDANCE WITH OPSS 1003, 1101, 1150 AND BE PLACED IN ACCORDANCE WITH OPSS 310.
5. ALL CONCRETE FOR SIDEWALKS SHALL BE IN ACCORDANCE WITH OPSS 351 AND AND CONSTRUCTED AS PER OPSD 310.010.
6. ALL CONCRETE FOR CURBING SHALL BE IN ACCORDANCE WITH OPSS 353. CONCRETE BARRIER CURB SHALL BE CONSTRUCTED AS PER OPSD 600.110. CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED AS PER OPSD 600.040.
7. CONCRETE CURBS ON THE INSIDE OF THE SITE TO BE CONSTRUCTED AS PER OPSD 600.110.
8. FOR EROSION AND SEDIMENT CONTROLS, REFER TO MGM DRAWING CV–1.
9. ALL DISTURBED GRASSED AREAS ARE TO BE RESTORED WITH 150mm DEPTH OF TOPSOIL AND SOD.
10. THE CONTRACT CONSISTS OF ALL WORK WITHIN THE PROPERTY LINE AND ANY WORK SPECIFICALLY NOTED OUTSIDE OF THE PROPERTY LINE
11. ALL AREAS AFFECTED BY THE PROPOSED WORKS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER.

LEGAL AND TOPOGRAPHICAL SURVEY PROVIDED BY:
SCHAEFFER DZALDOV BENNETT LTD.
JOB NO. 15–155–01, DATED JULY 21, 2015.

SITE BENCHMARK:
ELEVATIONS SHOWN HEREON ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK No. 970, HAVING A PUBLISHED ELEVATION OF 148.702 METRES.

LICENSED PROFESSIONAL ENGINEER
A. J. KOZYN
100517316
JUNE 23/2025
PROVINCE OF ONTARIO

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CLIENT:
KINGRIDGE DEVELOPMENTS

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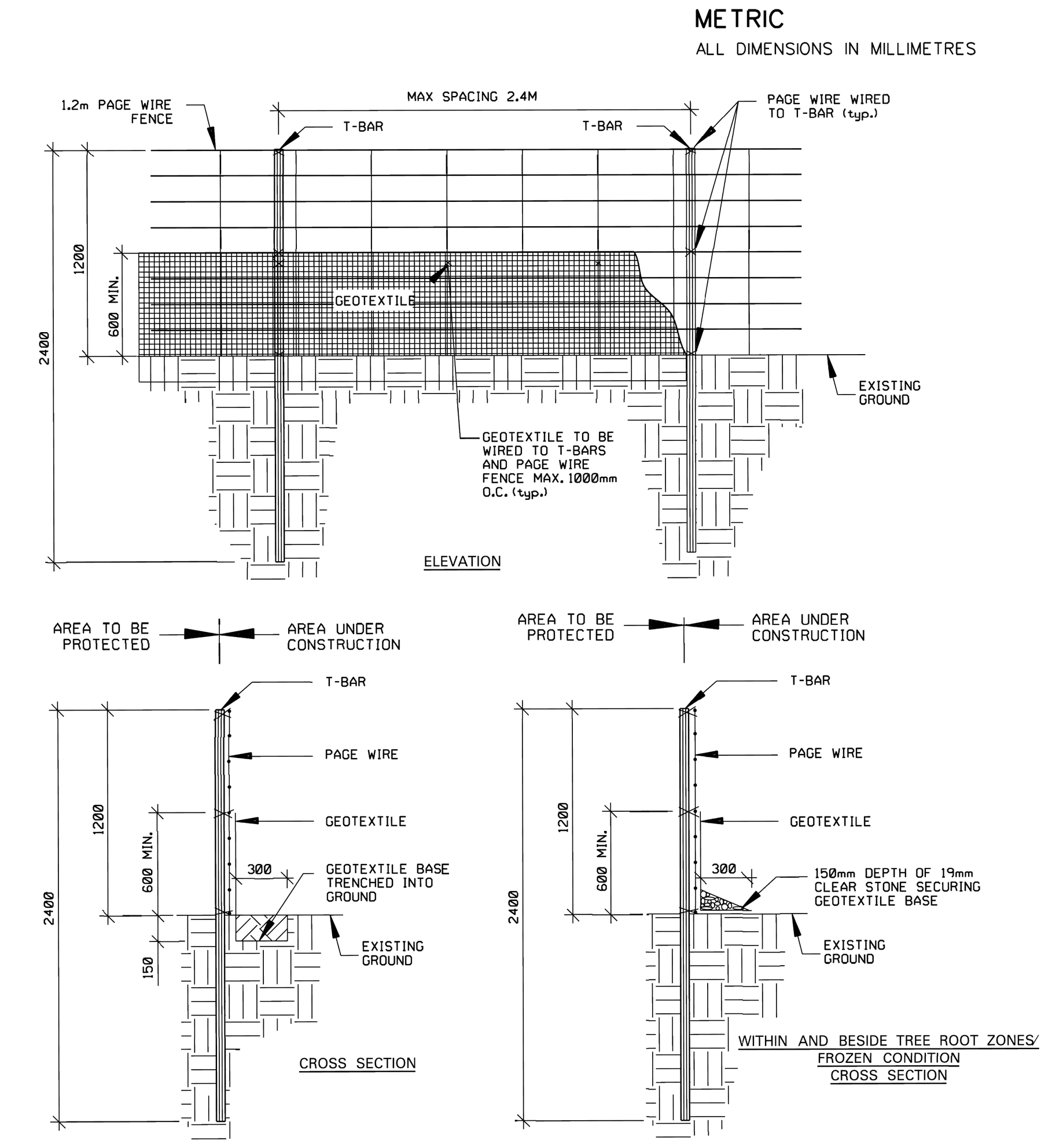
OAKVILLE ON L6H 7G3
PHONE: 416-277-7466

PROJECT:
THORNY BRAE TOWNHOUSE DEVELOPMENT
1775 THORNY BRAE PLACE MISSISSAUGA
ONTARIO

DRAWING:
SERVICING PLAN

DRAWN BY:	CHECKED BY:	JOB CAPTAIN:
BN	MLS	JB
SCALE: 1:300	PROJECT NO.: 2025-004	SHEET NO.: CV-3
CURRENT ISSUE: 1	CURRENT REV: -	



NOTES:

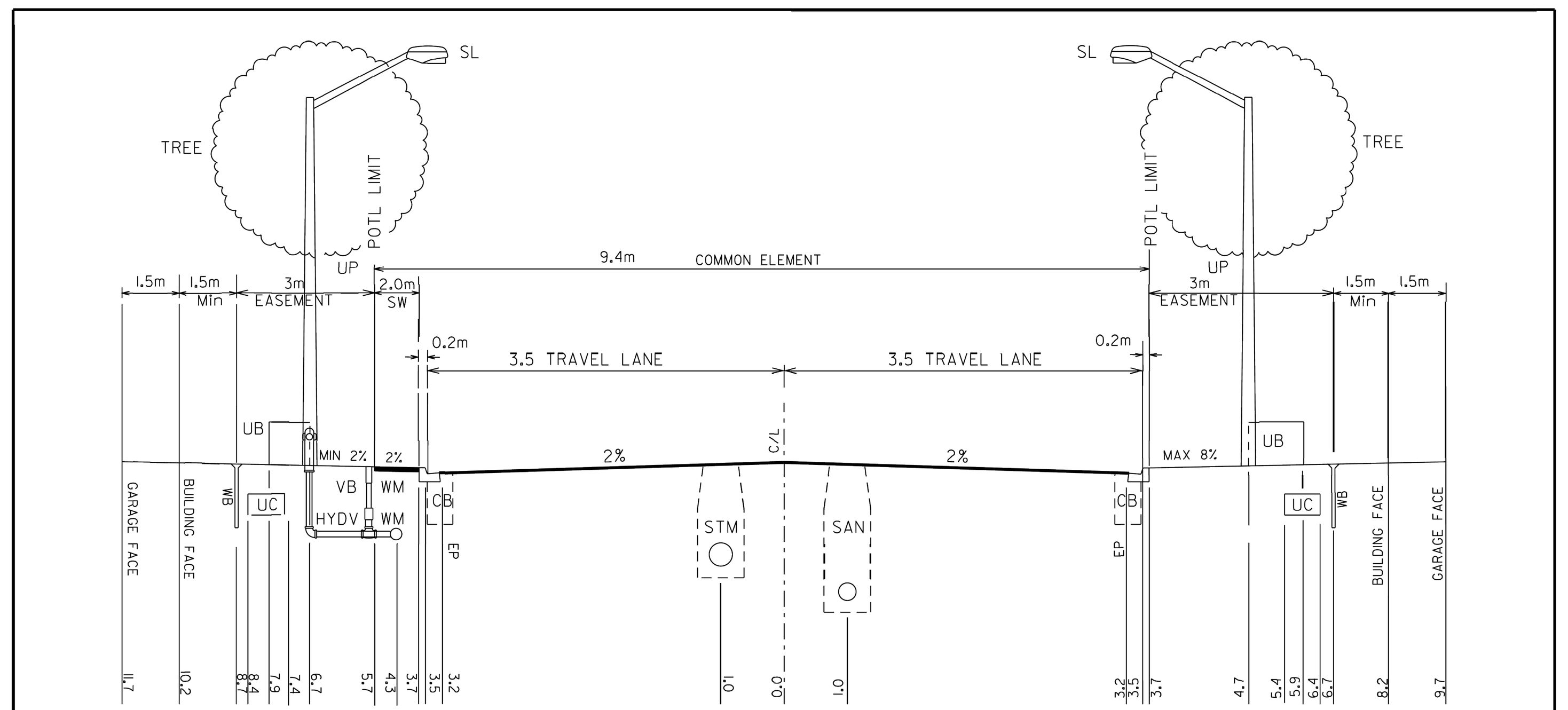
1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN LOCATES OF ALL EXISTING UTILITIES AND SERVICING PRIOR TO INSTALLING HOARDING.
3. DO NOT DAMAGE VISIBLE TREE ROOTS WHEN INSTALLING T-BARS.
4. GEOTEXTILE TO WOVEN OR NON WOVEN. MINIMUM EQUIVALENT OPENING SIZE IS 0.15mm AND MAXIMUM EQUIVALENT OPENING SIZE IS 0.25mm.
5. GEOTEXTILE TO HAVE HORIZONTAL OVERLAP OF 1000mm MINIMUM AT JOINTS.
6. HOARDING MUST BE MAINTAINED IN SOUND CONDITION THROUGH ALL PHASES OF CONSTRUCTION UNTIL APPROVAL TO REMOVE HOARDING IS OBTAINED FROM THE COMMUNITY SERVICES DEPARTMENT.

MISSISSAUGA Transportation and Works

STANDARD

SEDIMENT CONTROL FENCE

EFF. DATE	2002-01-01	SCALE	N.T.S.
REV.		STANDARD No.	2940.010



LEGEND

- EP - EDGE OF PAVEMENT
- CB - CATCH BASIN
- CURB - CURB OR CURB AND GUTTER
- C/L - CENTRELINE
- GAS - GAS MAIN
- HYD - FIRE HYDRANT
- HYDV - FIRE HYDRANT VALVE
- PWV - PRIVATE WATER VALVE
- PL - PROPERTY LINE
- POTL PARCEL OF TIED LAND
- SL - STREETLIGHT
- SW - SIDEWALK
- SAN - SANITARY SEWER
- STM - STORM SEWER
- UB - UTIITY BOX (HYDRO,TELECOMMUNICATIONS)
- UC - UTILITY CORRIDOR (HYDRO,TELECOMM,GAS,SL)
- UP - UTILITY POLE
- WM - WATERMAIN
- WB - WATERBOX
- VB - VALVEBOX

NOTES

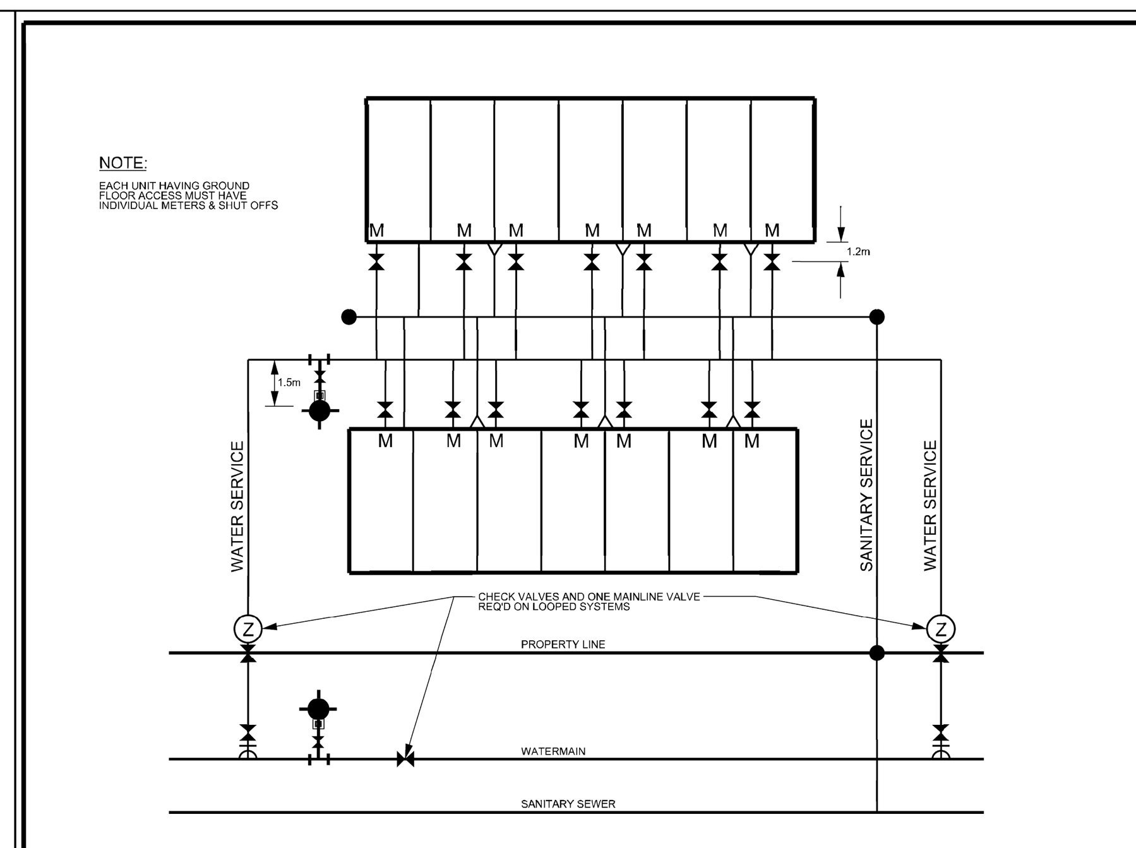
1. HYDRO, TELECOMMUNICATIONS, GAS AND SL CORRIDOR TO HAVE A MINIMUM COVER OF 0.965m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7m.
3. IF UTILITIES CANNOT BE INSTALLED ACCORDING TO THIS STANDARD THEY ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE PRESCRIBED LOCATION SUBJECT TO THE APPROVAL OF THE TRANSPORTATION AND WORKS DEPARTMENT OF THE CITY OF MISSISSAUGA
4. A 0.4m - 0.6m CLEARANCE MUST BE MAINTAINED BETWEEN CABLES AND HYDRANTS.
5. A 0.3m CLEARANCE MUST BE MAINTAINED BETWEEN WATERMAINS AND UTILITY POLES.
6. ROAD WIDTH IS MEASURED FROM FACE OF CURB TO FACE OF CURB AS DEFINED ON OPSD CURB & GUTTER STD. 600.040. PAVEMENT WIDTH IS MEASURED FROM EDGE OF PAVEMENT (EP) TO EDGE OF PAVEMENT (EP).
7. FOR LOCATION OF GAS MAIN WITHIN UTILITY CORRIDOR REFER TO STD. 2211.280
8. HYDRO TRANSFORMER MUST BE LOCATED AT A MINIMUM OF 3.1m FROM ANY DOORS AND/OR WINDOWS
9. SIDEWALK DETAIL MUST BE AODA COMPLIANT.
10. FOR DRIVEWAY ENTRANCE DETAIL REFER TO STD 2211.158.

METRIC
ALL DIMENSIONS IN METRES

MISSISSAUGA

PRIVATE ROAD CROSS SECTION FOR A COMMON ELEMENT CONDOMINIUM WITH OFF-STREET PARKING

EFF. DATE	Feb. 2011		SCALE	N.T.S.
REV.	1	Dec. 2015	STANDARD No.	2211.155



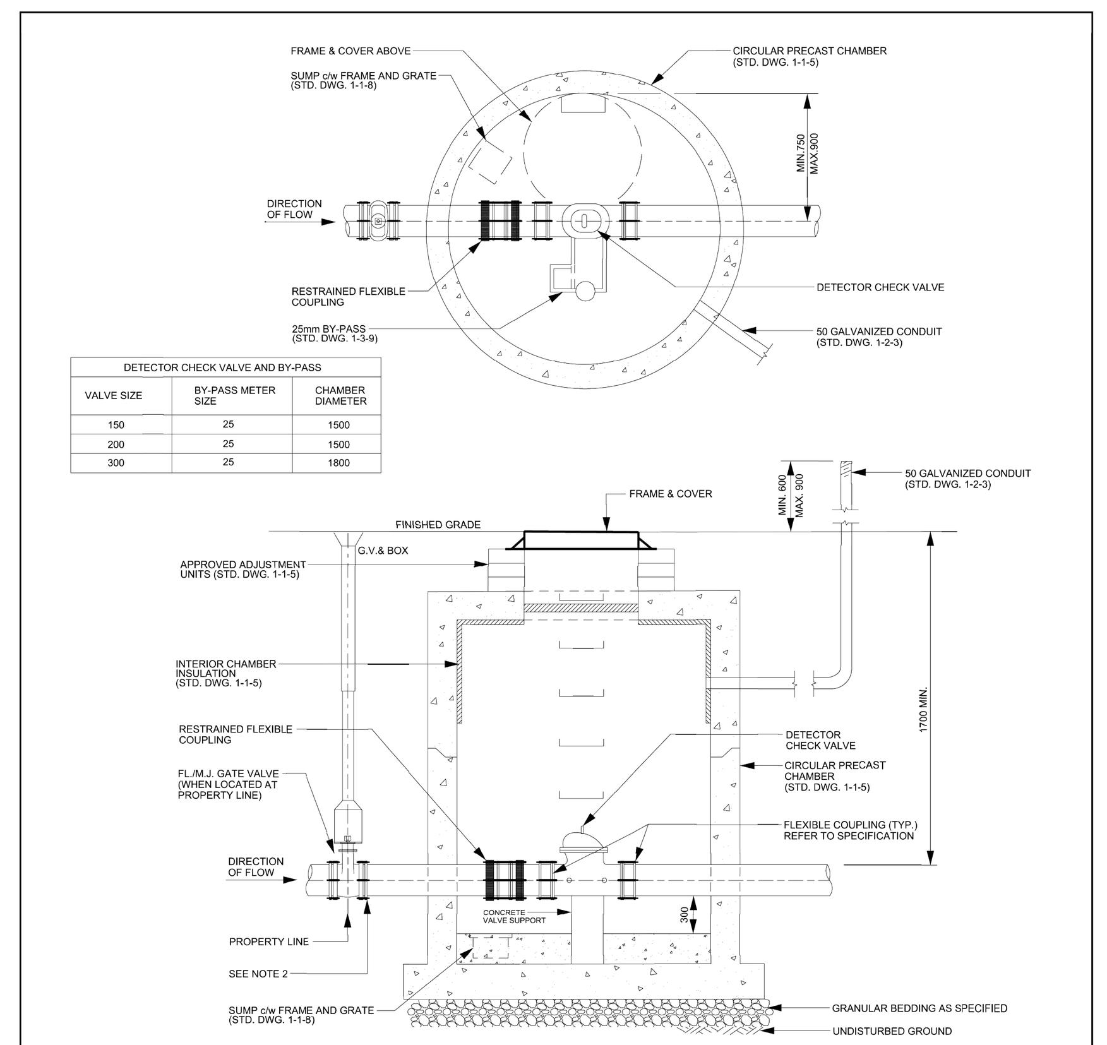
LEGEND

- VALVE & BOX
- DETECTOR CHECK VALVE IN CHAMBER
- CHECK VALVE IN CHAMBER
- TAPPING SLEEVE & VALVE & BOX
- TEE
- FIRE HYDRANT C/W VALVE & BOX
- DIRECTION OF PUMPER NOZZLE
- METER IN CHAMBER
- M METER
- NON SAMPLING SANITARY MAINTENANCE HOLE

Region of Peel Working for you — PUBLIC WORKS STANDARD DRAWING

SERVICING FOR TOWNHOUSE COMPLEX

REV. DATE: NOVEMBER 2011	
APPROVED BY: A.P.	DRAWN BY: AINLEY GROUP
STD. DWG. NUMBER: 1-8-2	SCALE: N.T.S.



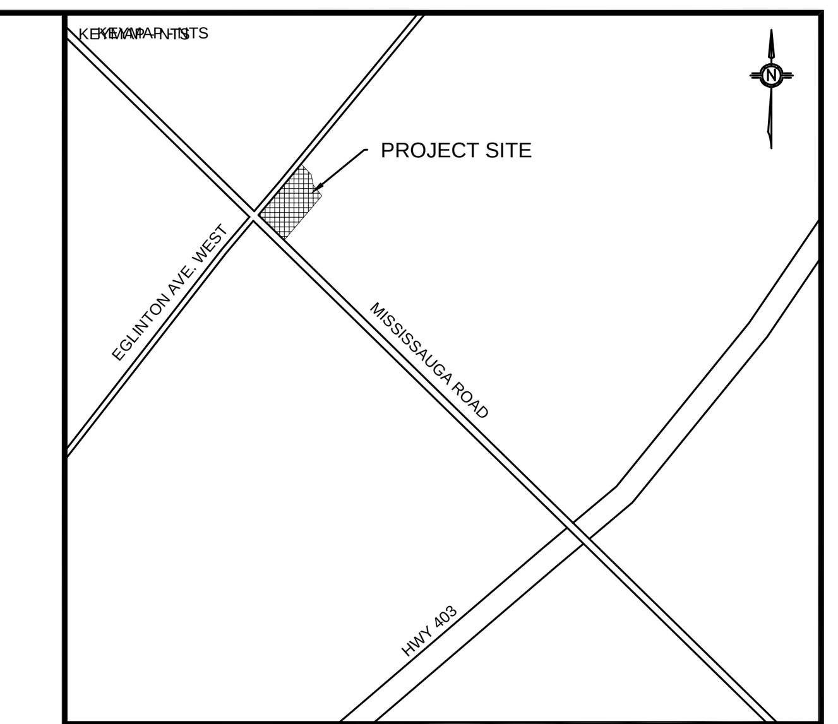
NOTE

1. INSTALL 50mm GALVANIZED CONDUIT FROM INSIDE CHAMBER WALL TO SUITABLE LOCATION 2000mm MIN. BEYOND TRAFFIC AREA.
2. GATE VALVE, FITTINGS AND PIPE SHALL BE RESTRAINED AS PER REGION OF PEEL REQUIREMENTS.
3. ALL PIPING, FITTINGS, VALVES, APPURTENANCES AND MECHANICAL RESTRAINTS TO BE c/w DENSO PASTE, DENSO MASTIC AND DENSO TAPE OR APPROVED EQUAL, APPLIED TO MANUFACTURER'S RECOMMENDATIONS.

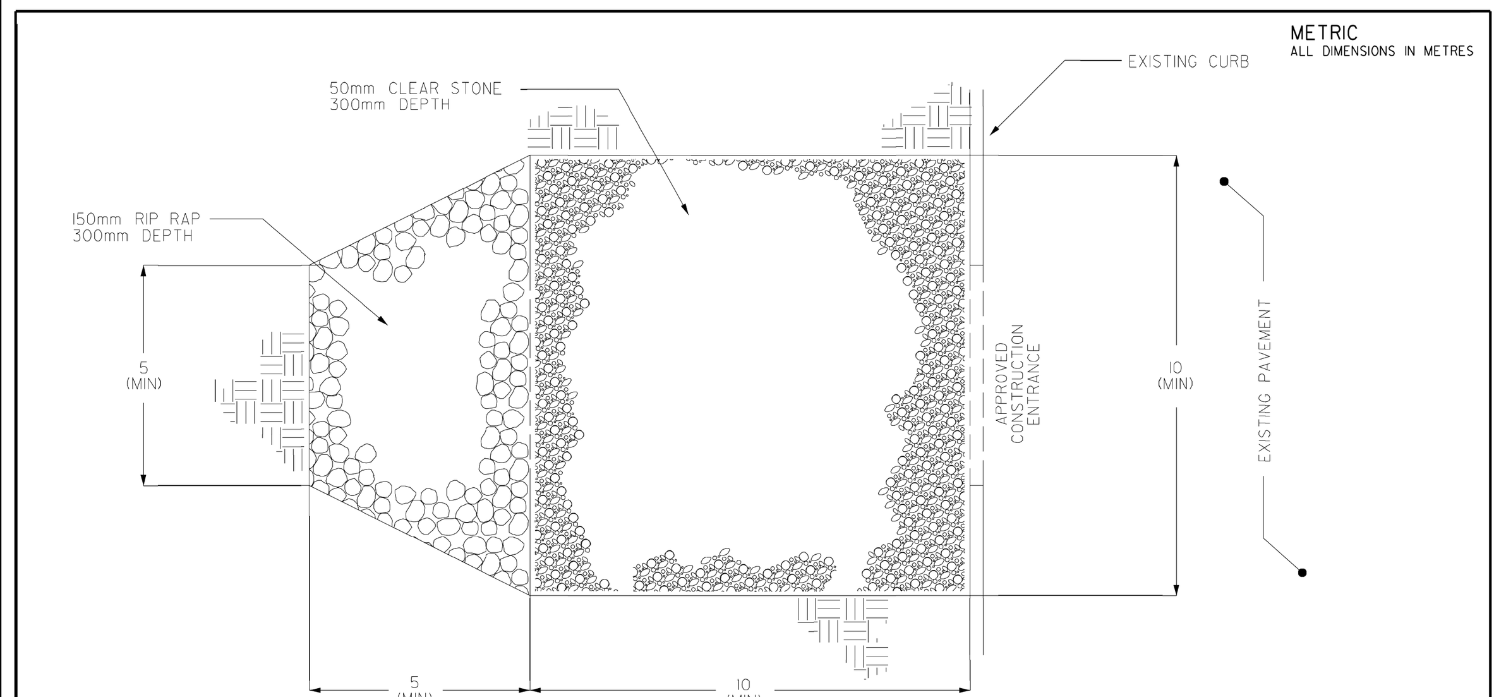
Region of Peel working with you — PUBLIC WORKS STANDARD DRAWING

DETECTOR CHECK VALVE IN CHAMBER

REV. DATE: APRIL 2014	
APPROVED BY: A.P.	DRAWN BY: AINLEY GROUP
STD. DWG. NUMBER: 1-3-1	SCALE: N.T.S.



No.	DATE	DRAWING ISSUE DESCRIPTION
1	2025 06 23	FIRST SUBMISSION



NOTES:

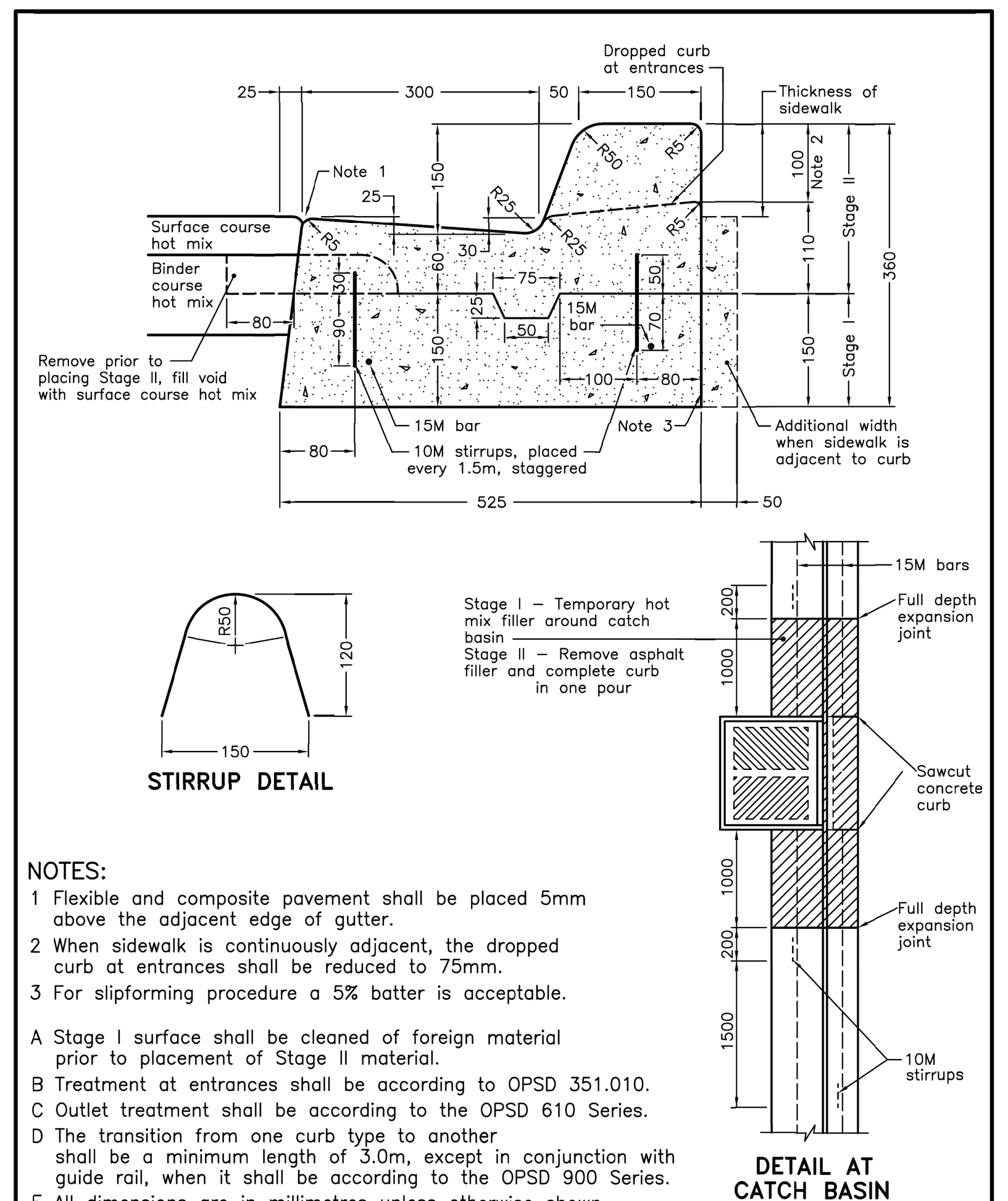
1. GRANULAR MATERIAL IS TO BE CLEAN APPROVED MATERIAL AND PLACED AT NOTED DIMENSIONS PRIOR TO LAND DISTURBANCE
2. GEOTEXTILE IS TO BE PLACED OVER THE ENTIRE AREA PRIOR TO STONE PLACEMENT
3. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL REDUCE TRACKING OR FLOWING OF SEDIMENT ONTO THE R.O.W. AND GRANULAR MATERIAL IS TO BE REPLACED AS WARRANTED OR DIRECTED BY THE TRANSPORTATION AND WORKS DEPARTMENT OF THE CITY OF MISSISSAUGA.
4. FOR SITE DEVELOPMENTS GREATER THAN 4.0ha IN SIZE 20m (MIN) IS REQUIRED FOR 50mm CLEAR STONE AND 10m (MIN) IS REQUIRED FOR 150mm RIP RAP.

MISSISSAUGA Transportation and Works

STANDARD

STONE PAD CONSTRUCTION ENTRANCE

EFF. DATE	2002-01-01	SCALE	N.T.S
REV.		STANDARD No.	2970.010



NOTES:

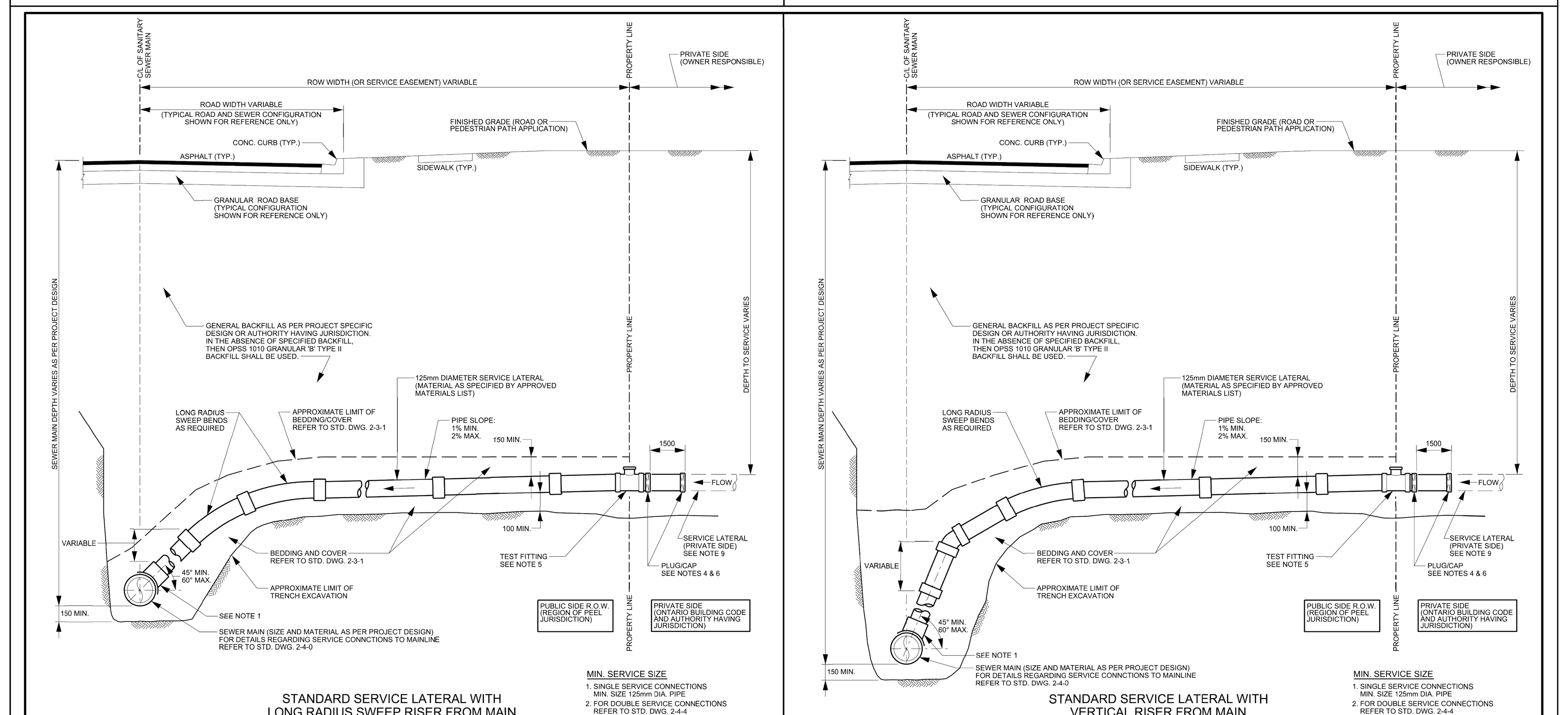
1 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
2 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
3 For slipforming procedure a 5% batter is acceptable.

A Stage I surface shall be cleaned of foreign material prior to placement of Stage II material.
B Treatment at entrances shall be according to OPSD 351.010.
C Outlet treatment shall be according to the OPSD 610 Series.
D The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail, when it shall be according to the OPSD 900 Series.
E All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2012 — Rev 2

CONCRETE BARRIER CURB WITH STANDARD GUTTER
TWO STAGE CONSTRUCTION

OPSD – 600.070



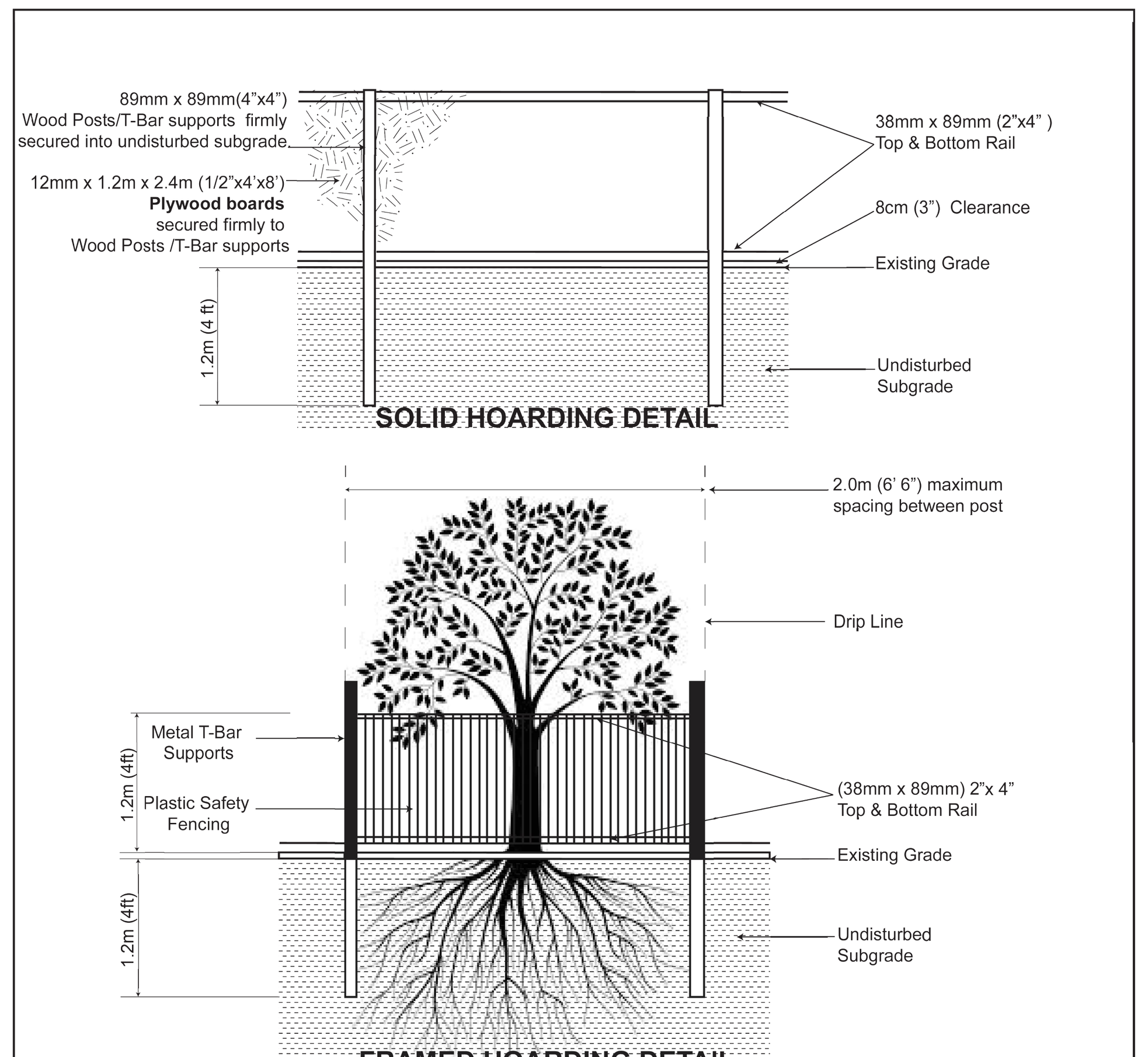
NOTE

1. FOR NEW MAINLINE SEWERS 375mm AND SMALLER, SERVICE LATERAL CONNECTIONS MUST BE MADE USING FACTORY MADE TEES AT MAIN.
2. NEW SERVICE CONNECTIONS TO EXISTING MAINS SHALL BE MADE USING AN APPROVED WATERTIGHT STRAP-ON SADDLE.
3. STRAP-ON SADDLES MUST BE INSTALLED ON THE MAIN AND AN APPROVED CUT-IN TOOL MUST BE USED FOR FIELD INSTALLED CONNECTIONS.
4. SERVICE CONNECTION MUST BE SECURELY PLUGGED AT PROPERTY LINE WITH A WATERTIGHT, FACTORY MANUFACTURED PLUG/CAP THAT WAS DESIGNED FOR USE ON SPECIFIED LATERAL MATERIAL AND DIAMETER. IF 1500mm EXTENSION IS USED (AS PER NOTE 6 AND SHOWN THIS DWG.) THEN PLUG SHALL BE INSTALLED AT THE DISTAL END.
5. AN APPROVED TEST FITTING TO BE INSTALLED AT PROPERTY LINE TO BE EQUIPPED WITH WATERTIGHT RUBBER GASKETS AT ALL CONNECTION AND INSPECTION POINTS.
6. SANITARY SEWER CONNECTIONS TO BE LAID TO THE PROPERTY LINE AS PER THE ABOVE STANDARD. REGION HAS NO OBJECTION TO THE EXTENSION OF THE SANITARY SEWER CONNECTIONS BEYOND THE PROPERTY LINE INTO THE PRIVATE SIDE. PRIVATE SIDE CONSTRUCTION IS UNDER LOCAL MUNICIPALITY JURISDICTION.
7. REFER TO STD. DWG. 2-4-4 FOR ADDITIONAL DETAILS.
8. SANITARY LATERALS TO BE PROPERLY ABANDONED AT THE MAIN WITH WATERTIGHT SEAL.
9. PRIVATE SIDE LATERAL TO CONNECT TO MUNICIPAL LATERAL USING A WATERTIGHT CONNECTION IN A CONFIGURATION THAT WILL NOT OBSTRUCT SANITARY FLOWS OR CAUSE ACCUMULATION OF DEBRIS FROM PRIVATE PLUMBING.
10. SANITARY SERVICE LATERAL PIPE TO BE GREEN IN COLOUR AND MINIMUM SDR 28.
11. NO SERVICE CONNECTION SHALL BE PERMITTED TO CONNECT TO THE MAIN AT LESS THAN 45 DEGREES.
12. LATERAL CONNECTIONS UNLESS OTHERWISE SPECIFIED BY PROJECT ENGINEER SHALL BE MADE WITH INVERT OF LATERAL TO ENTER MAINLINE SEWER ABOVE SPRINGLINE AND BELOW TOP DEAD CENTRE.

Region of Peel working with you — PUBLIC WORKS STANDARD DRAWING

SERVICE CONNECTIONS FOR FLEXIBLE PIPE (SINGLE RESIDENTIAL DWELLING INCLUDING SEMI-DETACHED)

REV. DATE: AUGUST 2020	
REVISION NUMBER: 2	FOR REVISION TRACKING REFER TO STD. DWG. 2-0-2
APPROVED BY: A.P.	DRAWN BY: AINLEY GROUP
STD. DWG. NUMBER: 2-4-2	SCALE: N.T.S.



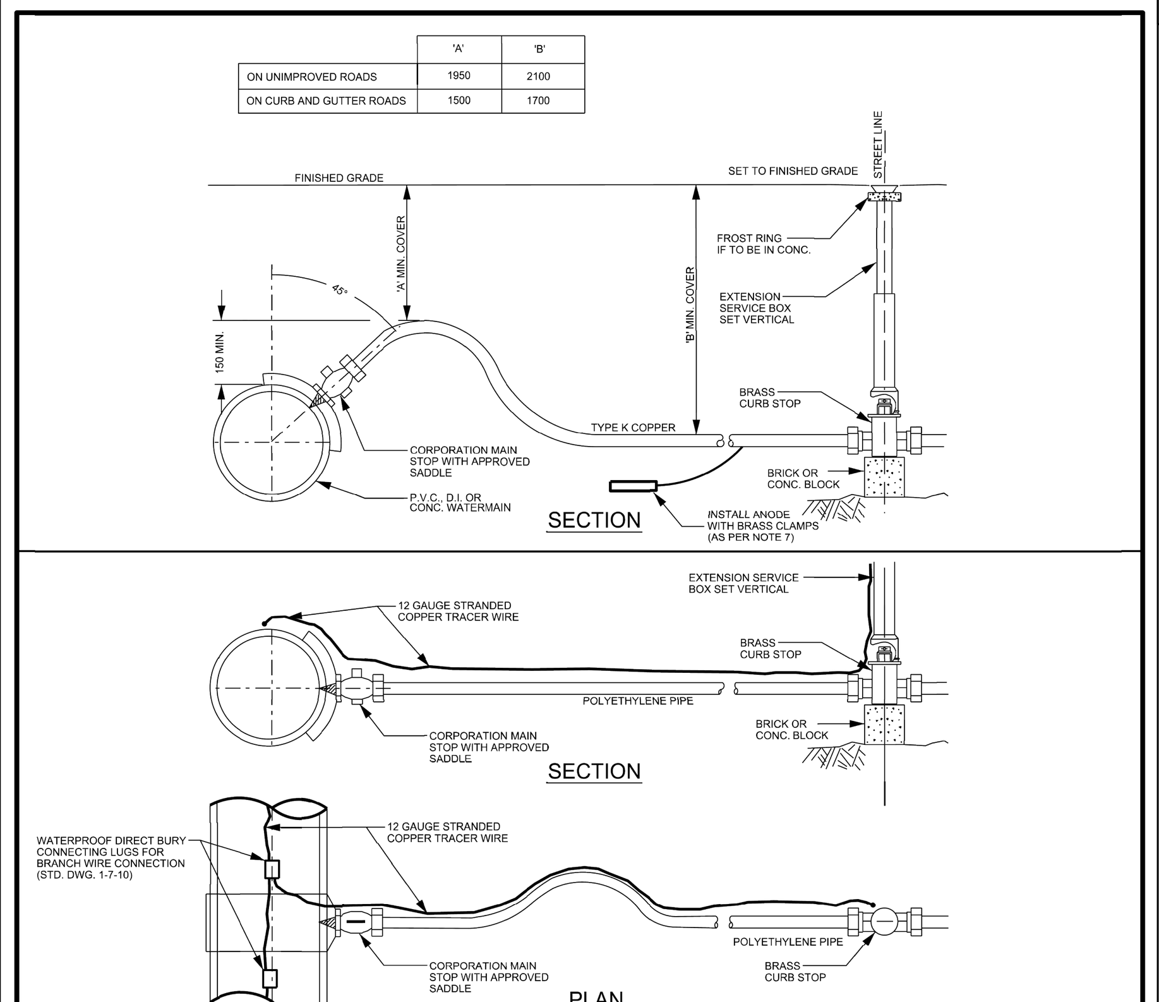
NOTES:

1. Hoarding details to be determined following initial site inspection.
2. Private tree hoarding to be approved by Development & Design ; City tree hoarding to be approved by Community Services Dept.
3. Hoarding must be supplied, installed and maintained by the applicant throughout all phases of construction. **Inspection must be conducted by the Development and Design Division prior to removing any/all private hoarding.**
4. Do not allow water to collect and pond behind or within hoarding.
5. **T-bar supports are acceptable alternative to 4x4 posts. U-shaped metal supports will not be accepted.**
6. **Plywood** must be utilized for 'solid' hoarding. OSB/Chipboard will not be accepted for solid hoarding. Plywood sheets must be installed on "construction" side of frame.
7. Applicant is responsible to ensure utility locates are completed within city boulevard prior to installing framed hoarding.

TREE PRESERVATION HOARDING — MISSISSAUGA

SCALE : N.T.S DATE : June 2017

	'A'	'B'
ON UNIMPROVED ROADS	1950	2100
ON CURB AND GUTTER ROADS	1500	1700



NOTE

1. ALL SERVICES TO BE AT 90° TO THE WATERMAIN UNLESS OTHERWISE SPECIFIED.
2. WATER SERVICE TO BE A MIN. OF 1100mm UNDER THE BOTTOM OF DITCH.
3. SERVICE BOX TO BE SET TO FINISH GRADE.
4. NO DIRECT TAPPING OF PVC WATERMAINS. ALL CONNECTIONS TO PVC PIPE TO BE MADE USING AN APPROVED WIDE-BAND SERVICE SADDLE.
5. TRACER WIRE TO BE INSTALLED AS PER REGION STANDARDS.
6. ALL WATER SERVICE MATERIALS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. ZINC ANODE (Z-12-24) TO BE INSTALLED 1000mm FROM CURB STOP AS PER OPSS 442.

Region of Peel working with you — PUBLIC WORKS STANDARD DRAWING

WATER SERVICE CONNECTION

REV. DATE: MAR. 2018	
APPROVED BY: E.O.	DRAWN BY: AINLEY GROUP
STD. DWG. NUMBER: 1-7-1	SCALE: N.T.S.

LEGAL AND TOPOGRAPHICAL SURVEY PROVIDED BY:
SCHAEFFER DZALDOV BENNETT LTD.
JOB NO. 15-155-01, DATED JULY 21, 2015.

SITE BENCHMARK:
ELEVATIONS SHOWN HEREON ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK No. 970, HAVING A PUBLISHED ELEVATION OF 148.702 METRES.

CONSULTANT:
MGM CONSULTING INC
Consulting Engineering & Project Management
555 Industrial Drive, Suite 201, Milton, Ontario L9T 5E1
Tel: (905)567-8678 Fax: (905)875-1339
Email: mgm@mgm.on.ca www.mgm.on.ca

CLIENT:
KINGRIDGE DEVELOPMENTS

OWNER INFO:
NAME: DAN MARION
E-MAIL: dan@kingridgedevelopments.ca
MAIL ADDRESS: 1660 NORTH SERVICE Rd. EAST, SUITE 109-B OAKVILLE ON L6H 7G3
PHONE: 416-277-7466

PROJECT:
THORNY BRAE TOWNHOUSE DEVELOPMENT
1775 THORNY BRAE PLACE MISSISSAUGA ONTARIO

DRAWING:
DETAILS PLAN

DRAWN BY:	CHECKED BY:	JOB CAPTAIN:
BN	MLS	JB
SCALE: -	PROJECT NO.: 2025-004	SHEET NO.: CV-4
CURRENT ISSUE: 1	CURRENT REV: -	

N:\Projects\2025-004\Working Folders\Drawings\2025-004 A1.dwg

Appendix A

Storm Sewer Design Sheet

MGM CONSULTING Inc.
STORM SEWER DESIGN SHEET

1775 Thorny Brae Place, Mississauga, ON.

By: AB
Date: June 2025

Location				Areas		A * C			Rainfall		Flow	Sewer Design						
Manhole from	Invert	Manhole to	Invert	Area	Cumulative Area	Weighted Coefficent	Incremental A * C	Cumulative A * C	Time	Intensity I10	Q	Pipe Size	Slope	Max. Flow Q max	Max Velocity V max	Length	Time in Section	Pipe Capacity
	m.		m.	ha	ha	C			min	mm/hr.	cms	mm.	%	cms	m./sec.	m.	min.	% full
CBMH12		MH11		0.121	0.121	0.75	0.091	0.091	10.0	124.8	0.031	300	0.50	0.068	0.97	11.9	0.20	46
MH11		MH10		0.000	0.121		0.000	0.091	10.2	123.4	0.031	300	0.50	0.068	0.97	29.4	0.51	45
MH10		MH9		0.010	0.131	0.58	0.006	0.097	10.7	120.2	0.032	300	0.50	0.068	0.97	6.4	0.11	47
MH9		MH8		0.244	0.375	0.67	0.163	0.260	10.8	119.6	0.086	375	0.50	0.124	1.12	22.0	0.33	70
MH8		MH7		0.093	0.468	0.74	0.069	0.329	11.1	117.6	0.107	450	0.50	0.202	1.27	15.5	0.20	53
MH7		MH6		0.096	0.564	0.69	0.067	0.395	11.4	116.5	0.128	450	0.50	0.202	1.27	9.4	0.12	63
MH18		MH6		0.104	0.104	0.77	0.081	0.081	10.0	124.8	0.028	300	0.50	0.068	0.97	45.7	0.79	41
MH6		MH5		0.000	0.668	0.00	0.000	0.476	11.5	115.8	0.153	450	0.50	0.202	1.27	17.5	0.23	76
MH17		MH16		0.131	0.131	0.77	0.100	0.100	10.0	124.8	0.035	300	0.50	0.068	0.97	57.0	0.98	51
MH16		MH5		0.067	0.198	0.76	0.051	0.151	11.0	118.6	0.050	300	0.50	0.068	0.97	17.6	0.30	73
MH5		MH4		0.000	0.866	0.00	0.000	0.627	11.7	114.5	0.200	525	0.50	0.305	1.41	11.6	0.14	66
MH4		MH3		0.135	1.001	0.71	0.096	0.723	11.8	113.7	0.229	525	0.50	0.305	1.41	23.1	0.27	75
MH15		MH3		0.110	0.110	0.73	0.080	0.080	10.0	124.8	0.028	300	0.50	0.068	0.97	42.0	0.72	41
MH3		CBMH2		0.099	1.210	0.75	0.074	0.878	10.7	120.2	0.293	600	0.50	0.435	1.54	16.6	0.18	67
MH13		MH14		0.060	0.060	0.74	0.044	0.044	10.9	119.1	0.015	300	0.50	0.068	0.97	30.2	0.52	21
MH14		CBMH2		0.000	0.060	0.00	0.000	0.044	11.4	116.1	0.014	300	0.50	0.068	0.97	13.5	0.23	21
CBMH2		CBMH1		0.083	1.354	0.79	0.065	0.988	10.9	119.1	0.327	600	2.00	0.869	3.08	11.2	0.06	38
CBMH1		OGS		0.112	1.526	0.28	0.032	1.064	11.4	116.1	0.343	600	2.00	0.869	3.08	8.5	0.05	39
OGS		EX. MH		0.000	1.526	0.00	0.000	1.064	11.7	114.8	0.339	600	2.00	0.869	3.08	6.2	0.03	39

n = 0.013

Note: Calculated as per City's 10yr storm IDF curve.

Appendix B

Oil and Grit Separator and Treatment Train Calculations

Hydroworks Sizing Summary

Thorny Brae Townhouse Development

Mississauga

06-19-2025

Recommended Size: HydroDome HD 8

Hydroworks Sizing Program Version 5.8.5

A HydroDome HD 8 is recommended to provide 80 % annual TSS removal based on a drainage area of 1.526 (ha) with an imperviousness of 69 % and Toronto Central, Ontario rainfall for the ETV particle size distribution.

The recommended HydroDome HD 8 treats 100 % of the annual runoff and provides 80 % annual TSS removal for the Toronto Central rainfall records and ETV particle size distribution.

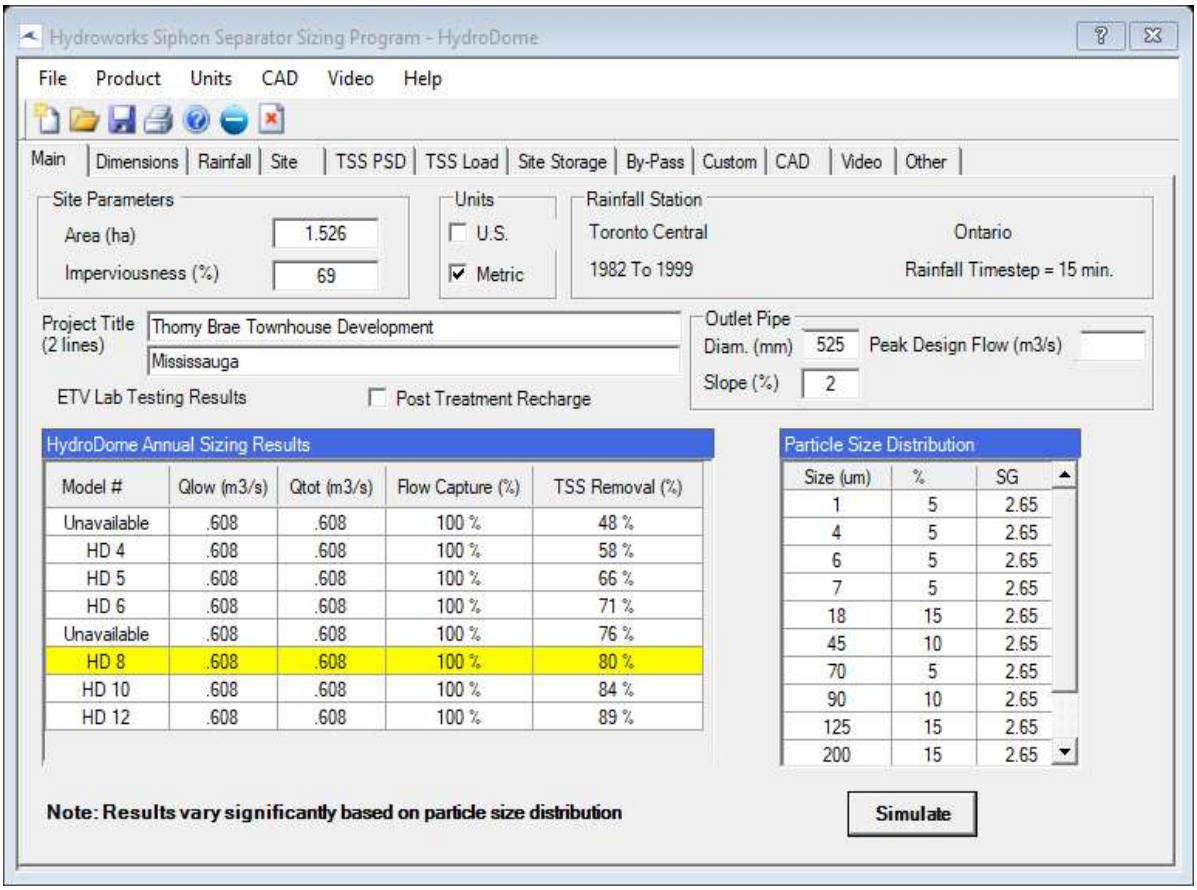
The HydroDome has a siphon which creates a discontinuity in headloss. Since a peak flow was not specified, headloss was calculated using the full pipe flow of .61 (m3/s) for the given 525 (mm) pipe diameter at 2% slope. The headloss was calculated to be 494 (mm) above the crown of the 525 (mm) outlet pipe.

This summary report provides the main parameters that were used for sizing. These parameters are shown on the summary tables and graphs provided in this report.

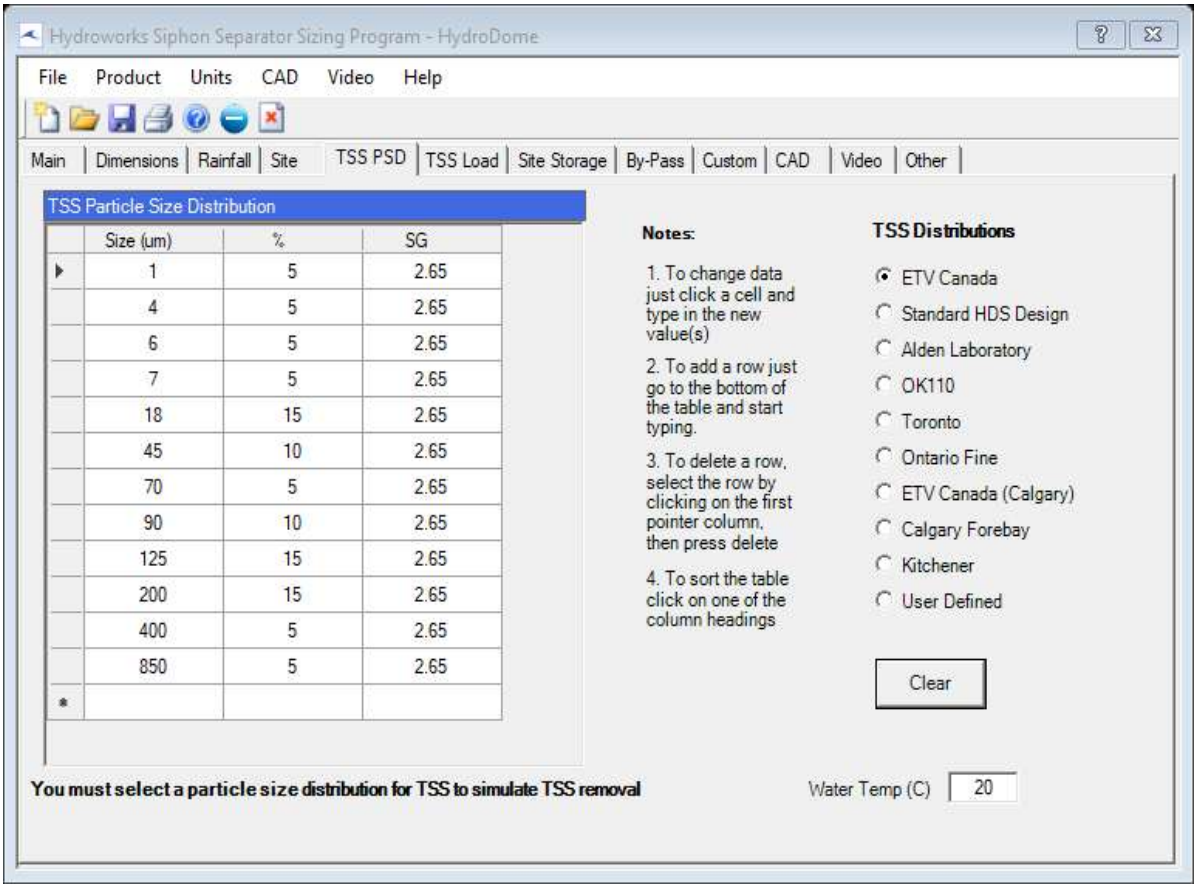
If you have any questions regarding this sizing summary please do not hesitate to contact Hydroworks at 888-290-7900 or email us at support@hydroworks.com.

The sizing program is for sizing purposes only and does not address any site specific parameters such as hydraulic gradeline, tailwater submergence, groundwater, soils bearing capacity, etc. Headloss calculations are not a hydraulic gradeline calculation since this requires a starting water level and an analysis of the entire system downstream of the HydroDome .

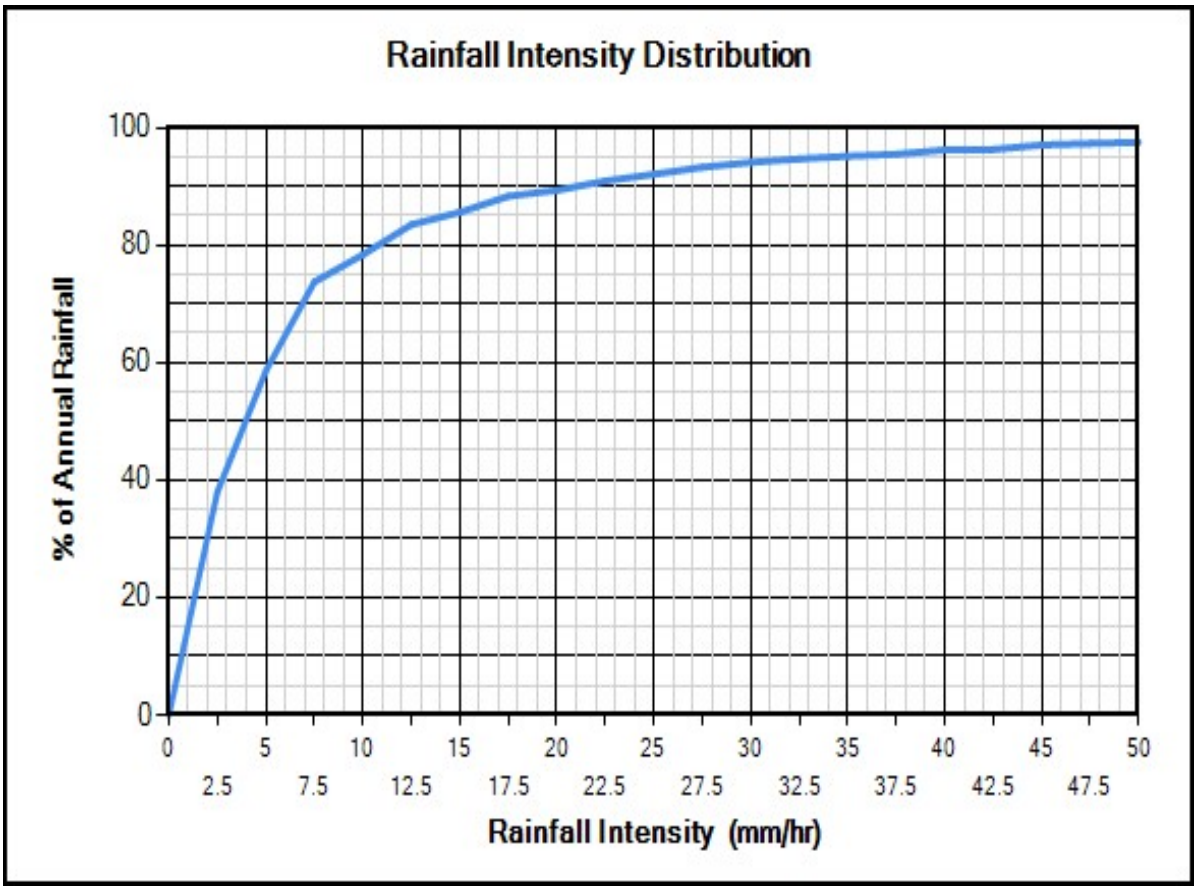
TSS Removal Sizing Summary



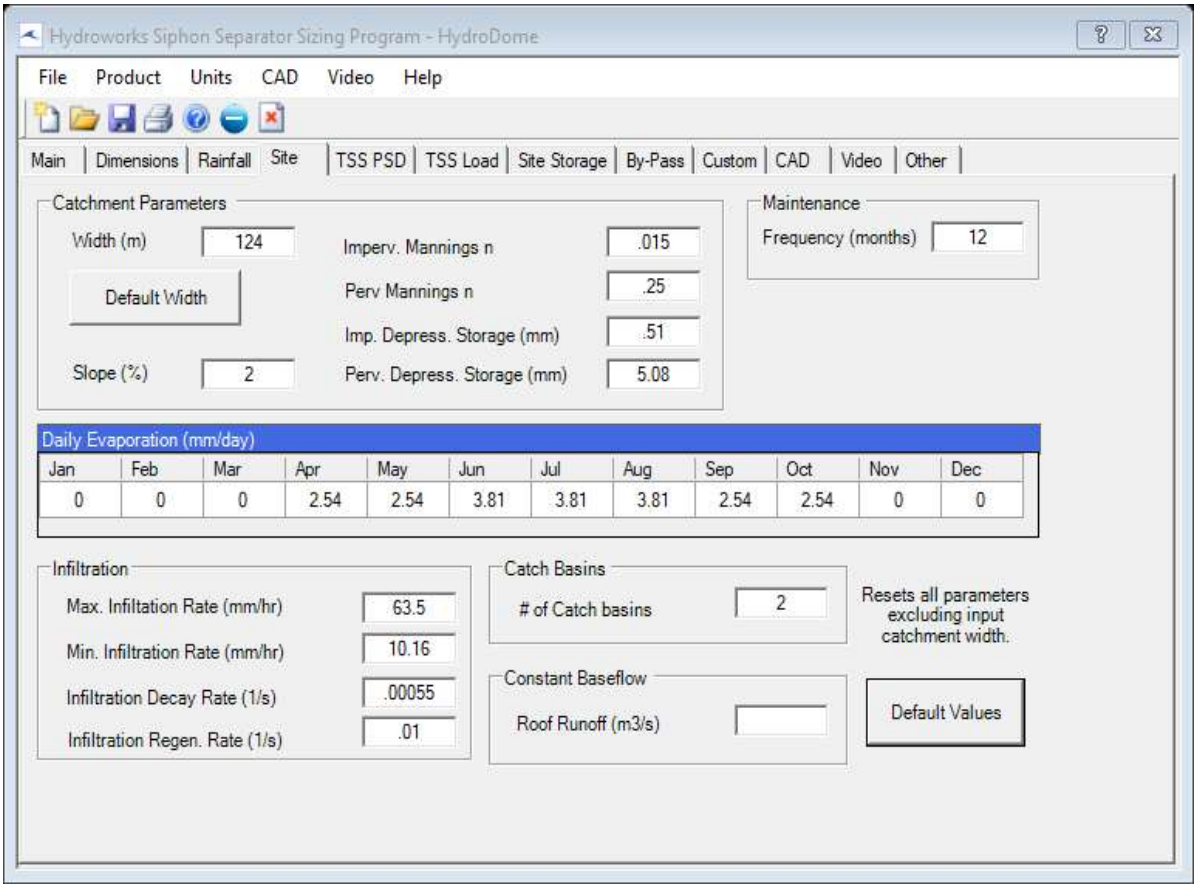
TSS Particle Size Distribution



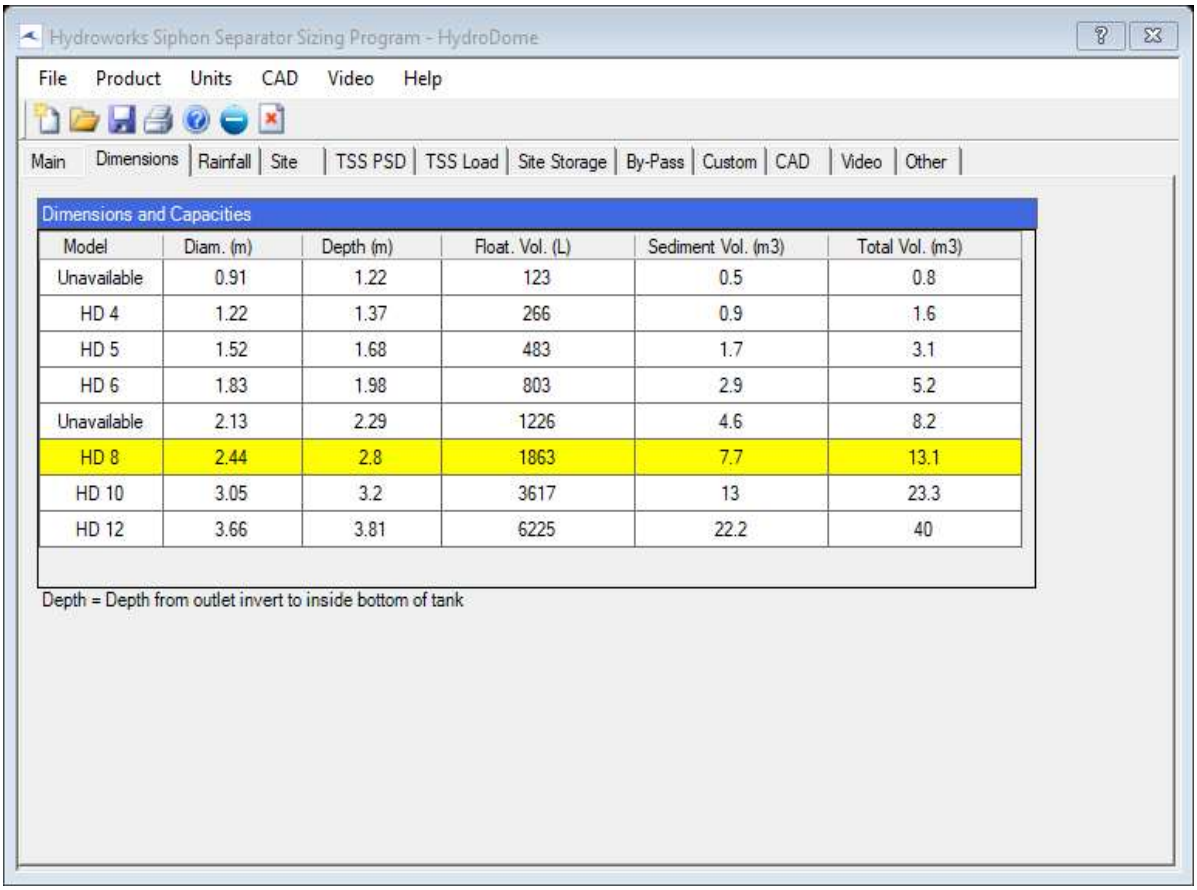
Rainfall Station - Toronto Central, Ontario(1982 To 1999)



Site Physical Characteristics



Dimensions And Capacities

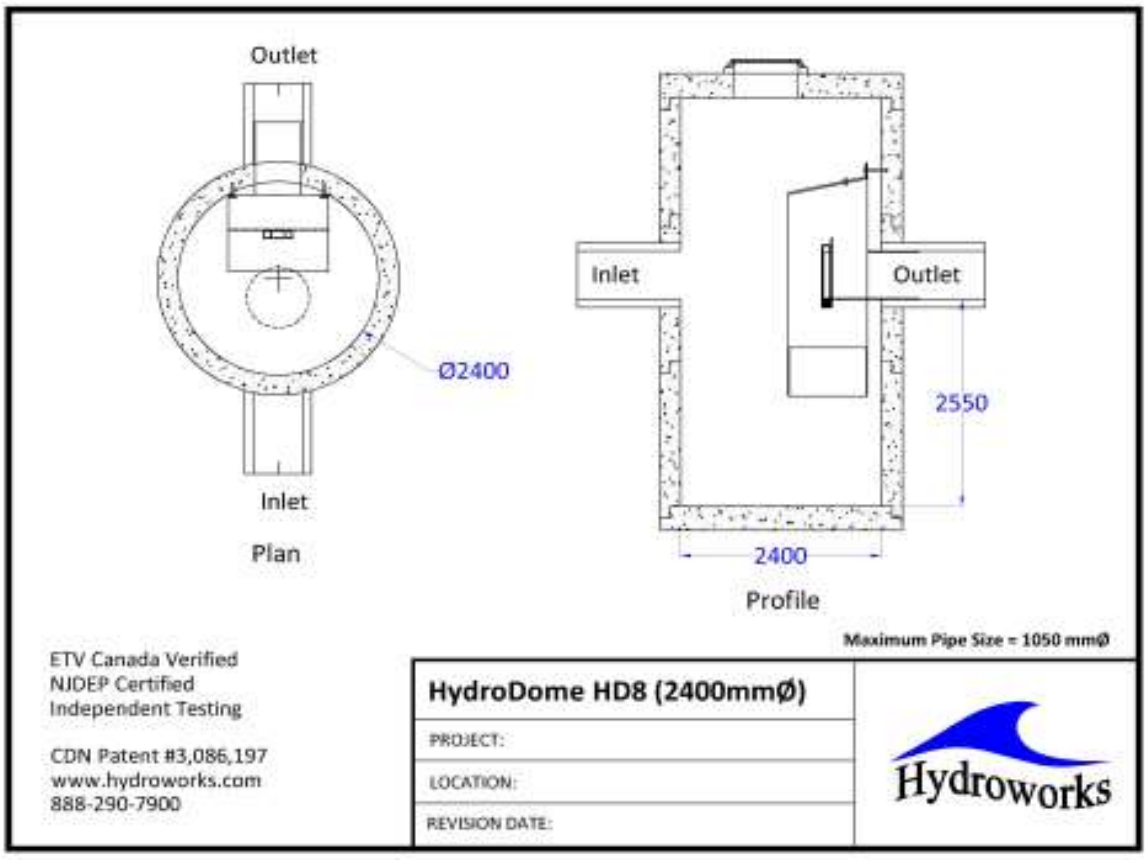


Dimensions and Capacities

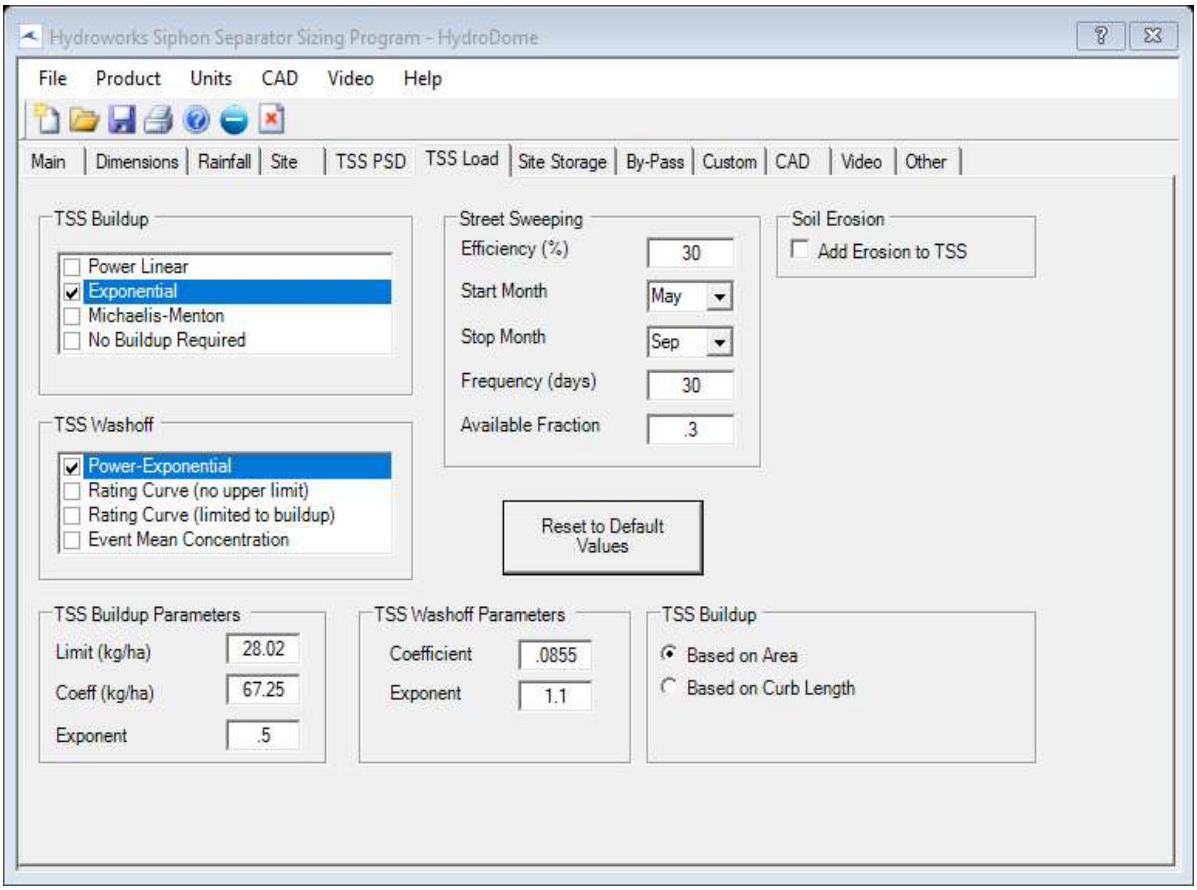
Model	Diam. (m)	Depth (m)	Float. Vol. (L)	Sediment Vol. (m3)	Total Vol. (m3)
Unavailable	0.91	1.22	123	0.5	0.8
HD 4	1.22	1.37	266	0.9	1.6
HD 5	1.52	1.68	483	1.7	3.1
HD 6	1.83	1.98	803	2.9	5.2
Unavailable	2.13	2.29	1226	4.6	8.2
HD 8	2.44	2.8	1863	7.7	13.1
HD 10	3.05	3.2	3617	13	23.3
HD 12	3.66	3.81	6225	22.2	40

Depth = Depth from outlet invert to inside bottom of tank

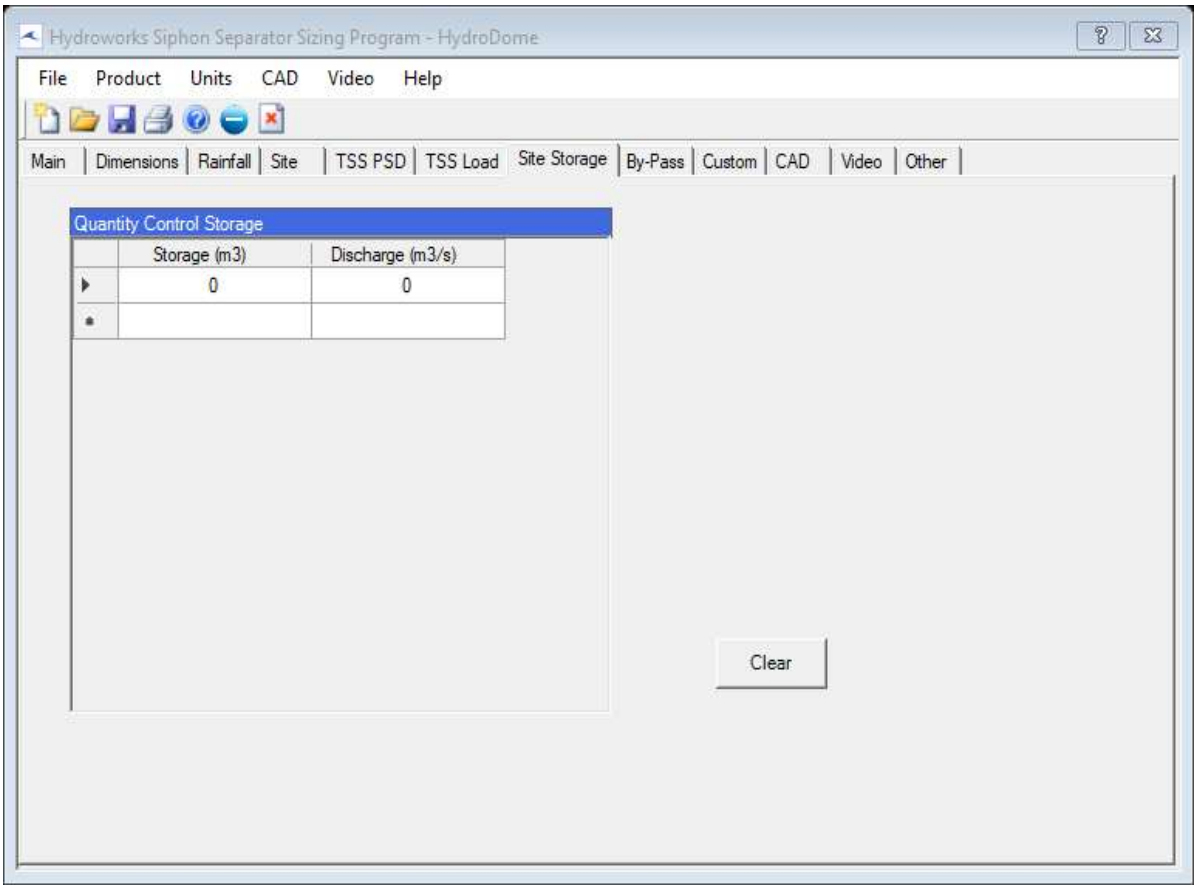
Generic HD 8 CAD Drawing



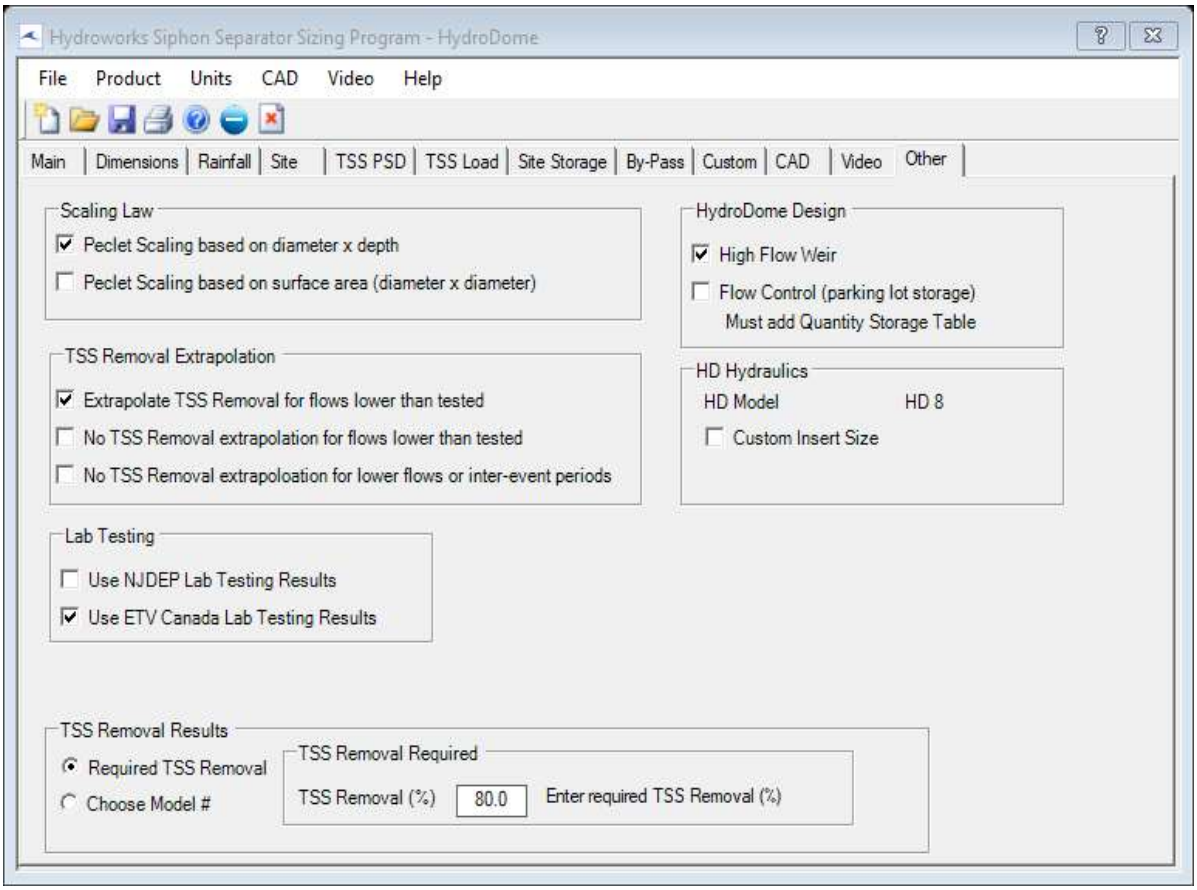
TSS Buildup And Washoff



Upstream Quantity Storage



Other Parameters



Flagged Issues

If there is underground detention storage upstream of the HydroDome please contact Hydroworks to ensure it has been modeled correctly.

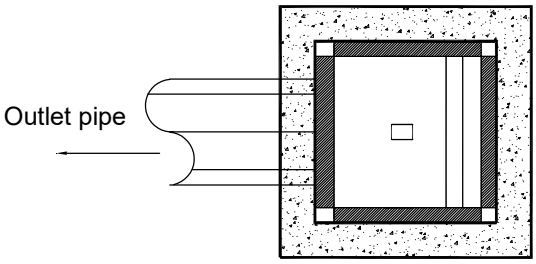
Hydroworks Sizing Program - Version 5.8.5

1-800-290-7900
www.hydroworks.com

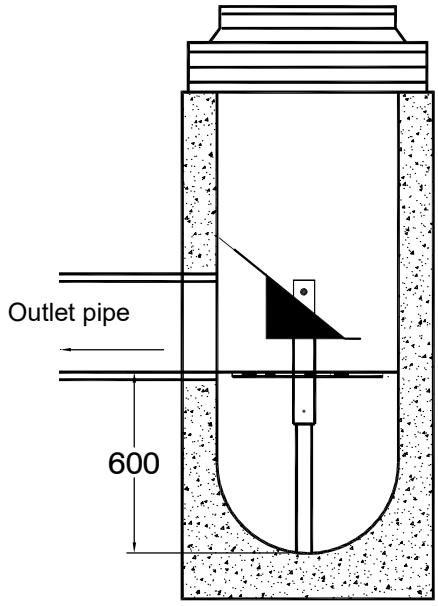
Notes

1 Recommended depth t/g - invert = 1.2m
Maximum depth t/g - invert = 2.4m

1. CB Shield to be installed in non frozen conditions.
2. The frame and cover should be well aligned with the catchbasin.
3. The sump must be clean before installation
4. The grate is at the same elevation as pipe invert.
5. Pipes must be cut flush with inside walls

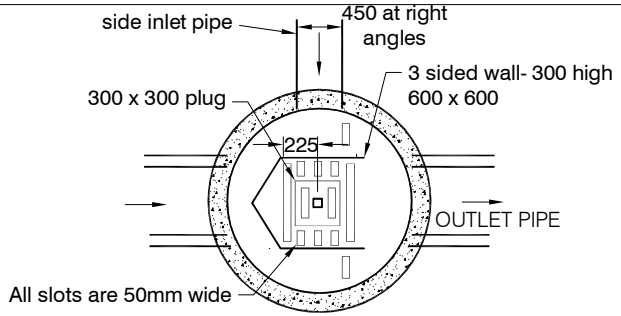


Top view

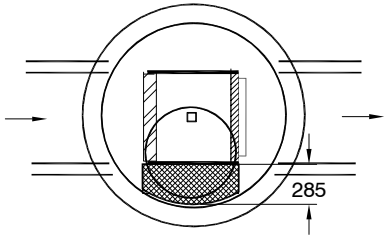


Profile view

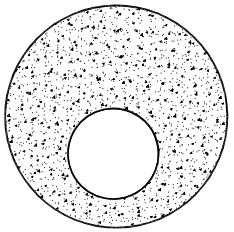
600 x 600 CB
CB Shield (600mm Sump)



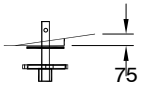
Grate plan view



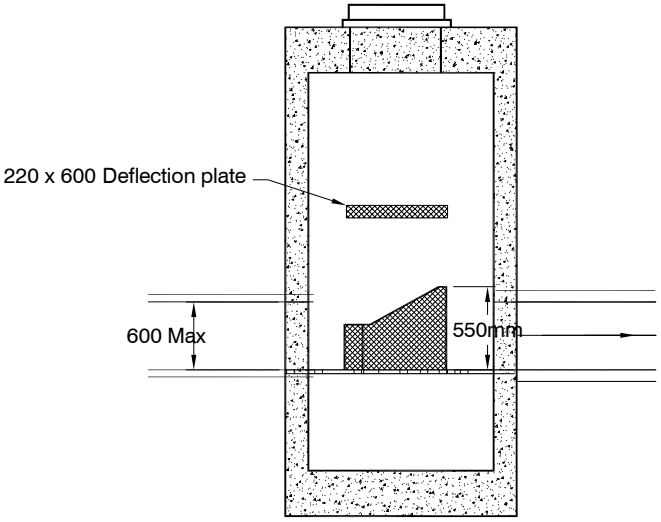
Inlet flow deflection plate attached to wall



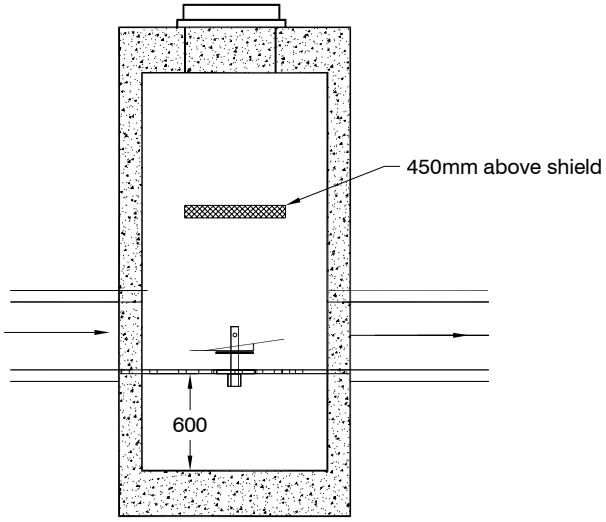
Standard Flat Cap



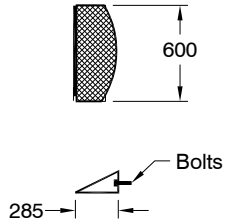
Shallow Sloped plate with flexible skirt.



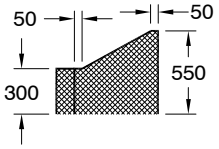
Side view of Deflection wall and Deflection Plate (above)



Side view of Sloped plate and Clean out plug



Deflection plate Detail



Deflection wall dimensions

CBMH Shield-1200mm -Generic Drawing

Date: June 24, 2025
Project Number: 2025-004

Treatment Train Performance Calculation

Combined TSS Removal Calculations for Treatment Options in Series (Point Source Inlet Flows)

R= A + B - [(AxB)/100]

A= OGS HydroDome
B= CB Shield

R= Total TSS Removal Rate
A= First Removal (upstream)
B= Second Removal (downstream)

A =	50	%
B =	60	%
Total TSS Removal Rate =	80	%

Appendix C

Runoff Volume Reduction Calculations

Water Balance

Runoff Volume Reduction

On-site stormwater retention is achieved equivelant to capturing 5mm over the impervious site area.

Description	Area (m^2)	Ruired Depth (m)	Volume (m^3)
Impervious Surfaces	10470	5	52.4
Total	10470		52.4

Equivalent Depth of the Site Area = **5.0** mm.

Infiltration Rate (mm/hr)	15	(assumed for native soils)
Depth of Tank (mm)	660	
Infiltration Time (hours)	44.0	

Infiltration Trench Storage Sizing

Area of Infiltration Tank	84.5	m^2
Depth of Tank	660.0	mm
Porosity	97.0	-
Available Volume for Infiltration	54.1	m^3

Appendix D

Sanitary Sewer Design Sheet

THE REGIONAL MUNICIPALITY OF PEEL

SANITARY SEWER DESIGN SHEET

Project No. 2025-004
Subdivision: ony Brae Place
Date: 13-Jun-25
Des. By: BN Chk. By: AK

Development Type	Persons/Unit	Daily per Capita Flow (l/cap/day)	Infiltration (l/s/Ha)
Residenttial (Townhouse)	3.4	290	0.26

		Tributary Area Hectare				Population Tributary				Average	Average					SEWER					PIPE			
		Increment			Total	Increment			Total	Increment	Total	Peaking	Max.	Infiltration	Max. Flow			Q	Capacity	V m/S				
		Res. ha	Comm. ha	Ind. ha	ha	Res. Units	Comm.	Ind.		L/s	L/s	Factor	L/s	L/s	L/s	mm.	%	L/s	%	Full Flow	Type	n	Class	**REMARKS**
MHA 1	MHA 2	0.203			0.203	18			61	0.205	0.205	4.000	0.822	0.053	0.874	250	0.50	42.067	2.1	0.86	PVC	0.013	SDR35	
MHA 2	MHA 3	0.053			0.256	0			0	0.000	0.205	0.000	0.000	0.067	0.941	250	0.50	42.067	2.2	0.86	PVC	0.013	SDR35	Conveyance
MHA 3	MHA 4	0.033			0.289	0			0	0.000	0.205	0.000	0.000	0.075	1.016	250	0.50	42.067	2.4	0.86	PVC	0.013	SDR35	Conveyance
MHA 5	MHA 4	0.118			0.118	18			61	0.205	0.205	4.000	0.822	0.031	0.852	250	0.50	42.067	2.0	0.86	PVC	0.013	SDR35	
MHA 4	MHA 6	0.063			0.471	0			0	0.000	0.205	0.000	0.000	0.122	1.991	250	0.50	42.067	4.7	0.86	PVC	0.013	SDR35	Conveyance
MHA 10	MHA 8	0.209			0.209	15			51	0.171	0.171	4.000	0.685	0.054	0.739	250	0.50	42.067	1.8	0.86	PVC	0.013	SDR35	
MHA7	MHA8	0.079			0.288	6			20	0.068	0.068	4.000	0.274	0.075	0.349	250	0.50	42.067	0.8	0.86	PVC	0.013	SDR35	
MHA8	MHA 6	0.039			0.326	3			10	0.034	0.034	4.000	0.137	0.085	1.309	250	0.50	42.067	3.1	0.86	PVC	0.013	SDR35	
MHA 6	MHA 9	0.048			0.845	60			204	0.685	1.301	4.000	2.739	0.562	3.862	250	0.50	42.067	9.2	0.86	PVC	0.013	SDR35	
MHA 8	MHA 9	0.221			0.221	18			61	0.205	0.205	4.000	0.822	0.057	0.879	250	0.50	42.067	2.1	0.86	PVC	0.013	SDR35	
MHA 9	EX. SAN. MH	0.042			1.108	78			265	0.890	0.890	4.000	3.5606	0.619	5.360	250	0.50	42.067	12.7	0.86	PVC	0.013	SDR35	
MH11 A	MH12 A	0.241			0.241	15			51	0.171	0.171	4.000	3.5606	0.619	5.980	250	0.50	42.067	14.2	0.86	PVC	0.013	SDR35	
MH14 A	MH13 A	0.094			0.094	6			20	0.068	0.068	4.000	0.8217	0.057	0.937	250	0.50	42.067	2.2	0.86	PVC	0.013	SDR35	
MH13 A	MH12 A	0.086			0.180	0			20	0.068	0.068	0.000	7.1211	0.047	0.983	250	0.50	42.067	2.3	0.86	PVC	0.013	SDR35	
MH12 A	EX SAN MH				1.53	99			337	1.130	1.130	4.000	4.3822	0.397	7.899	250	0.51	42.485	18.6	0.87	PVC	0.013	SDR35	

Appendix E

Fire Flow and Water Demand Calculations

Fire Flow Calculation

Thorny Brae Townhouse Development

The FUS requires that a minimum water supply source 'F' be provided at 140 kPa
The min flow 'F' can be calculated as such:

F=220CvA
where:
F- Required fire flow in L/min
C- Coefficient related to construction
A- Total area in sq.m

C = 1.5 (Wood frame construction)

For non-combustible construction, the area shall be a total of all floors (excluding basements at least 50 percent below grade) in the building being considered.

A = 1972.1 sq.m (Block 2)

Therefore,

F= 14654.75 L/min
= 15000 L/min (rounded to nearest 1000)

Reduction Factors:

F'=F*f1*f2

where:
f1- Occupancy factor
Limited combustion, f1 = 15%

Therefore, the reduction due to low hazard occupancy = 2250 l/min.
and F = 12750 l/min

f2- Sprinkler protection factor

Based on fully automated sprinkler system, maximum reduction = 0%

Reductior 0 L/min

Exposure Factors:
F'' = F'*f3

where:
f3- Exposure factor not to exceed 75%

Separation between subject building and other structures, and associated charges are as follows:

	Distance (m)	Charge
North Side	>45	0%
South Side	40	5%
East Side	20	15%
West Side	15	15%
Total		35%

The total increase for exposures is 35%
and the increase due to exposures = 4462.5

The resulting required minimum flow, F = 17212.5 l/min

Therefore a minimum flow of approximately 17000 l/min (283 l/sec must be available st the nearest hydrant with a minimum pressue of 140 kPa.

THE REGIONAL MUNICIPALITY OF PEEL

WATER DEMAND CALCULATIONS

Project No.	2025-004
Subdivision:	Thony Brae Place
Date:	13-Jun-25
Des. By:	BN
Chk. By:	AK

Development Type	Persons/Unit	Units	Max Day Factor	Peak Hour Factor	Average Consumption Rate (l/cap/day)
Residenttial (Townhouse)	3.4	99	1.8	3	270

1	Average Day Flow (L/s)	1.05
2	Maximum Day Flow (L/s)	1.89
3	Peak Hour Flow (L/s)	3.16
4	Fire Flow (L/s)	283
5	Maximum day plus fire flow (L/s)	283
6	Peak hour flow (L/s)	3.16
7	Maximum demand flow (L/s)	286.16

Appendix F

Hydrant Flow Test

Kingridge Developments

1786 Polaris Way, City of Mississauga

Functional Servicing and Stormwater Management Report (FSR/SWM)

March 26, 2025

Hydrant Flow Testing

NOTE: Hydrants tested according to NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants

Date of Testing	14-Jun-2024
Project Number:	145121
Test ID	H2024-028
Site Location / Address:	1786 Polaris Rd, Miss
Region / Municipality	Peel Region
Hydrants Opened By:	Peel Region
Tested by:	James W

HYDRANT TEST LOCATION - RESIDUAL HYDRANT=R, FLOW HYDRANT=F (NORTH AT TOP)

Test Data

Time of Test	11:11 AM
Pipe Size (mm)	-
Flow Hydrant Test Location (description)	4601 Mississauga Rd
Residual Hydrant Test Location (description)	4587 Mississauga Rd
Static Pressure (PSIG)	90

Q1 Test Data (1 Orifice)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
1	2.5	60	1300	88

QT Test Data (2 Orifices)

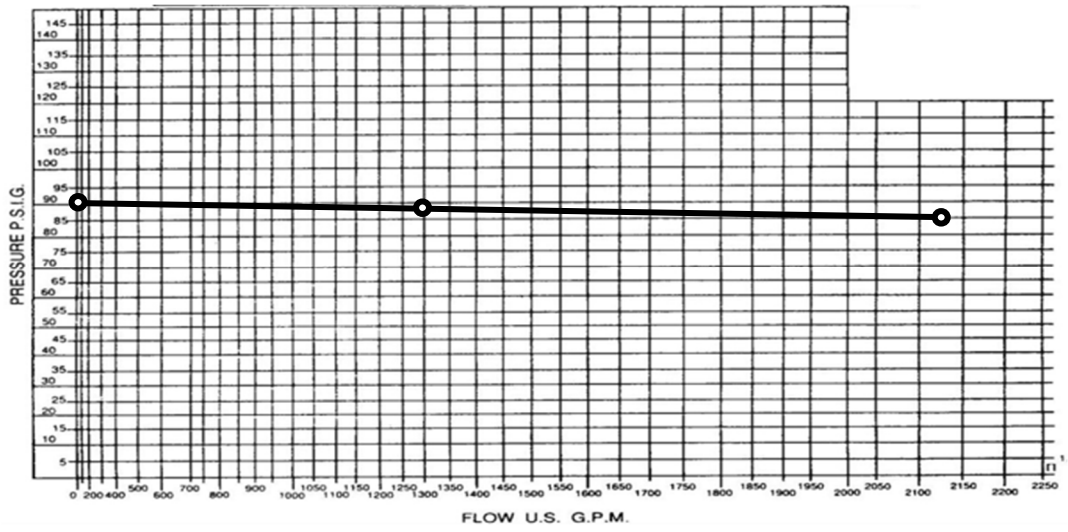
# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
2	2.5	40	2122	86

Calculations

FORMULA: Q= 29.83 cd^2√p.....Where: c- coefficient of discharge (1 in smooth pipe)
..... d- pipe diameter (inches)
.....p- pitot reading (psig)

Q1 - 1 Orifice(s)	Q1= (29.83)(0.9)(2.5)^2 √60=1300
QT - 2 Orifice(s)	QT= 2(29.83)(0.9)(2.5)^2 √40=2122
Static Pressure (PSIG)	90

Test Results Plot



Appendix D.2 Estimated Available Pressure at Water Service Connection on Mississauga Road

ARCADIS

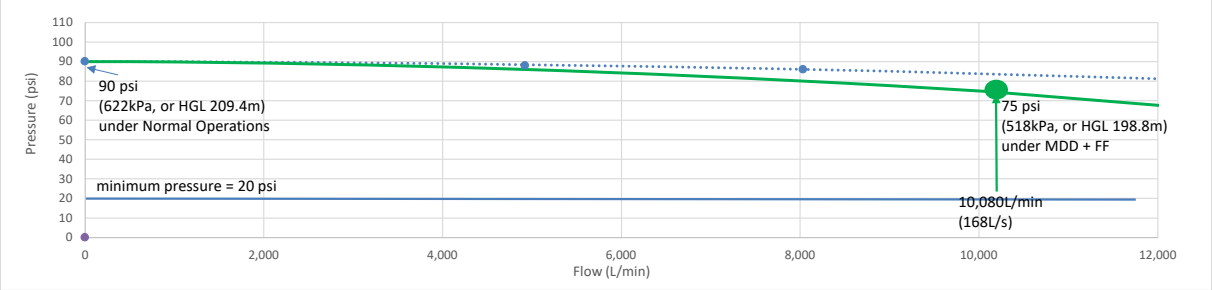
Project:	1786 Polaris Way, Mississauga	Proj.#	145121
Date:	2024-06-26		
Calc'ed by:	SK		

Hydrant Flow Test Results		
Flow Hydrant Test Location:	4587 Mississauga Rd	
Residual Hydrant Test Location:	4601 Mississauga Rd	
Main Size:	300mm Diameter	Test Time: 11:11 AM
Test Date:	2024-06-14	
Tested By:	Peel Region	

Elev.(m)
146.0

Number of Outlets & Orifice Size	Pilot Pressure (psi)	Flow (US GPM)	Flow (L/min)	Residual Pressure (psi)	Estimated Residual Pressure* (psi)	Estimated HGL(m)
0	0	0	0	90	90	209.4
1 x 2.5"	60	1,300	4,921	88	88	208.0
2 x 2.5"	40	2,122	8,033	86	**80**	206.6

*Estimated Residual Pressure: For a conservative design, it assumed that the residual pressure (at the maximum tested flow rate) would be reduced by 10 psi, which was used to estimate the available flow at 20 psi.



$$Q_R = Q_T\left(\frac{P_S - Pr}{P_S - Pt}\right)^{0.54}$$

Where,

Q_r = Projected Flow Rate

Q_t = Flow Rate from Flow Test = 8033 L/min

P_s = Static Pressure = 90 psi

P_r = Desired System Pressure

P_t = Residual Presure inTest = 80 psi

Pressure Under Fire Suppression (P_{r1}) =	20.0	psi		
Calculated Flow Rate (Q_{r1}) =	22,974	L/min	6,069	USGPM
			383	L/s
Pressure Under Normal Operation (P_{r2}) =	40.0	psi		
Calculated Flow Rate (Q_{r2}) =	19,157	L/min	5,061	USGPM
			319	L/s