W. E. OUGHTRED and Associates Inc.
Real Estate Analysts / Development Consultants

March 16, 2026

Township of Puslinch
4704 Wellington Road 34
Puslinch, ON
N0B 2J0

Attention: Ms. Monika Farncombe
Planning and Corporate Services Coordinator

Dear Monika:

Re: Addendum to Planning Justification Report
Application for Zoning By-law Amendment D14-DAA
7456 McLean Road West and 197 Brock Road South

Siv-ik Planning and Design Inc. prepared a Planning Justification Report in September 2023 in support of the above-noted application to rezone the subject lands from IND (Industrial) to HC (Highway Commercial) to permit two gas bars including one for commercial trucks and one for passenger vehicles, a retail (convenience) store and a drive-through restaurant. The Siv-ik report evaluated the proposed development against policies of the Provincial Policy Statement 2020 and the County of Wellington Official Plan and found the proposal to be in conformity with the Provincial and County policies in effect at that time.

In October 2024, the Province of Ontario issued a new Provincial Planning Statement that replaced both the Provincial Policy Statement, 2020 and the Growth Plan for the Greater Golden Horseshoe, 2020. The purpose of this Addendum is to review the proposed development against the policies of the Provincial Planning Statement 2024 and confirm consistency with current Provincial policy. Further, in September 2025, the County of Wellington Official Plan was amended by Official Plan Amendment 123. OPA 123 revised the definition of Employment Area in the County's Official Plan and modified the policies for the Industrial and Rural Employment Area land use designations to address the change in the definition of "Area of Employment" under the Planning Act.. This Addendum will also evaluate the proposed development against policies for Rural Employment Areas in the current County of Wellington Official Plan, December 2025 Office Consolidation and will address a few policies, identified by County Planning staff, that were not adequately covered in the Siv-ik Planning Justification Report.

A. The Provincial Planning Statement, 2024

The Provincial Planning Statement, 2024, (PPS) sets the policy foundation for decisions related to development and use of land within Ontario. Section 3 of the Planning Act requires that all decisions on land use matters made by municipalities, planning boards, the Province or a commission or agency of the government be consistent with the Provincial Planning Statement.

Policies relevant to the proposed development are:

2.5 Rural Areas in Municipalities

1. Healthy, integrated and viable rural areas should be supported by:
   a) Building upon rural character, and leveraging rural amenities and assets;
   d) Using rural infrastructure and public service facilities efficiently;
   e) Promoting diversification of the economic base and employment opportunities through goods and services, including value-added products and the sustainable management or use of resources.
2. In rural areas, rural settlement areas shall be the focus of growth and development and their vitality and regeneration shall be promoted.

The subject properties are not located in a rural settlement area. However, the lands are located within a Rural Employment Area, as designated in Schedule B7 to the County of Wellington Official Plan. As such, the lands are specifically planned to accommodate dry industrial and commercial uses, which do not require significant amounts of water in their operation or produce significant amounts of effluent and can be accommodated by private services. The proposed development of convenience retail, drive-through restaurant and motor vehicle fuel sales will support the vitality of the broader Rural Employment Area and provide for the needs of the travelling public. The development can be accommodated by private services.

Section 2.5 also states, "Growth and development may be directed to rural lands in accordance with policy 2.6, including where a municipality does not have a settlement area. Section 2.6 provides policies for rural lands in municipalities. Specifically:

2. Development that can be sustained by rural service levels shall be promoted.
3. Development shall be appropriate to the infrastructure which is planned or available, and avoid the need for the uneconomical expansion of this infrastructure.

The proposed development can be adequately accommodated with private water, wastewater and sanitary services. Expansion of public water and sewer services is not required.

Section 2.8 of the PPS sets out policies for employment. The following policies are relevant to the proposed development:

2.8.1 Supporting A Modern Economy

1. Planning authorities shall promote economic development and competitiveness by:
   a) Providing for an appropriate mix and range of employment, institutional, and broader mixed uses to meet long-term needs;
   b) Providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses.

The proposed restaurant, convenience retail and gas bar uses should be considered ancillary uses that will be supportive of the Rural Employment Area and will help to meet the needs of the employees of existing and future businesses as well as the needs of the trucks and their drivers that provide transportation services to the Rural Employment Area.

2.8.2 Employment Areas

1. Planning authorities shall plan for, protect and preserve employment areas for current and future uses and ensure that the necessary infrastructure is provided to support current and projected needs.
2. Planning authorities shall protect employment areas that are located in proximity to major goods movement facilities and corridors, including facilities and corridors identified in provincial transportation plans, for employment area uses that require those locations.
4. Planning authorities shall designate, protect and plan for all employment areas in settlement areas by:
   a) Planning for employment area uses over the long-term that require these locations including manufacturing, research and development in connection with manufacturing, warehousing and goods movement, and associated retail and office uses and ancillary facilities;
   b) Prohibiting residential uses, commercial uses, public service facilities and other institutional uses;
   c) Prohibiting retail and office uses that are not associated with the primary employment use;
   d) Prohibiting other sensitive land uses that are not ancillary to uses permitted in the employment area; and
   e) Including an appropriate transition to adjacent non-employment areas to ensure land use compatibility and economic viability.

The subject lands are located in a designated Rural Employment Area that is not within a settlement area. The site is located approximately 1.25 km north of Highway 401 on Wellington Road 46 (Brock Road). Brock Road is an important north-south transportation corridor which accommodates substantial flows of traffic including heavy trucks. The proposal to develop the site for car and truck fuel sales, a drive through restaurant and convenience retail will support the shipment of goods and materials to and from the Rural Employment Area and the broader Puslinch community. The site will be a convenient location for trucks to refuel and for drivers to access convenience restaurant and retail services.

B. The County of Wellington Official Plan, Office Consolidation December 2025

The County of Wellington Official Plan is intended to give direction to the development of the County and its local municipalities over the next 20 years and to protect County resources for the long term. Public and private development proposals are required to conform with the policies of the Plan.

Policies relevant to the proposed development are:

4.9.7 Paris and Galt Moraine Policy Area

The subject lands are located within the Paris and Galt Moraine Policy Area as shown on Schedule C7-Source Water Protection. Section 4.9.7.2 of the County Official Plan provides policy direction for those lands within the Policy Area that are outside of Wellhead Protection Areas. As the subject property is located within Wellhead Protection Areas A &B, as shown on Schedule C7, Section 4.9.7.2 is not applicable.

4.10.1 Mill Creek Watershed

The development lands are within the Mill Creek watershed as shown on Appendix 1 to the Official Plan. Policies for protection of the watershed that are applicable to the subject site are:

a) The natural heritage features identified by the Mill Creek Watershed Study will be included within Wellington County's Greenland System and will be protected;
b) Infiltration levels will be maintained by:
    - limiting impervious cover (buildings & pavement) in a subcatchment area(s) to 20% requiring storm water best management practices to encourage infiltration and maintain water quality and quantity.

The subject lands are not included within Wellington County's Greenland System as shown on Schedule B7-Land Use Puslinch.

A Functional Servicing and Stormwater Management Report and a Hydrogeological Investigation have been prepared by C.F.Crozier and Associates Inc. A water balance calculation was included in the Hydrogeological Investigation and concluded that, post-development, there will be an infiltration deficit on the site. The Functional Servicing and Stormwater Management Report notes that Low Impact Development (LID) initiatives have not been proposed for the area of the site where fuel sales will occur due to the potential that LID techniques could cause hydrocarbons to infiltrate the ground water. An infiltration gallery has been proposed to infiltrate roof top drainage. The report also includes recommendations for stormwater quality controls. Please note that this is a best-efforts approach and it is recommended that the Township be consulted at the detailed design stage to discuss potential mitigation or compensation strategies for maintaining pre-to post water balance. Please see the Functional Servicing and Stormwater Management Report for further details.

6.8 Rural Employment Areas

The property is designated Rural Employment Area on Schedule B7 – Land Use Puslinch. Section 6.8.1 provides a definition of Rural Employment Areas as lands set aside for industrial and limited commercial uses which would benefit from a rural location due to a need for a relatively large site, or the need for access to major transportation routes, or the need to be close to rural resources. All uses will be "dry" industrial and limited commercial uses which do not use significant amounts of water in their operations or produce significant amounts of effluent, consistent with provision of private water and sewer systems.

Permitted uses, as discussed in Section 6.8.2 include dry industrial and commercial uses requiring large lots, major road access or proximity to rural resources. Such commercial uses will be service focused with limited accessory retail and may include small-scale restaurants and automobile sales and service. Retail commercial uses and service commercial uses normally found in primary and secondary urban centres are no allowed.

Section 6.8.3 discusses land use compatibility. Specifically, in considering rezoning applications, Councils shall ensure that existing and proposed uses are compatible and that sensitive land uses are adequately separated from industrial uses. The Zoning By-law may also limit the location and size of commercial uses.

The application to rezone the subject lands to HC (Highway Commercial) is consistent with the policies in Section 6.8 for Rural Employment Areas. All proposed uses are permitted including motor vehicle

services (fuel sales), accessory retail associated with fuel sales and a small-scale drive through restaurant. All of the proposed uses are dry and can be accommodated by private water and sewer services. Further, the proposed uses are not sensitive land uses and do not require separation from neighbouring industrial uses.

Section 9.8 Puslinch Local Policies

9.8.1 Wellington Road 46

Specific development policies have been established for Wellington Road 46 to ensure that proposed development will not interfere with the safe and efficient operation of this transportation corridor.

A Traffic Impact Study has been prepared by C. F. Crozier and Associates Inc. and considers all the specific development policies set out in Section 9.8.1 for proposed developments on Wellington Road 46 (Brock Road). In addition, the proponent continues to work with the County Roads Department to refine the plans for the proposed right-in/right-out access on Brock Road.

9.8.3 Puslinch Industrial Policy

a) Areas designated Rural Employment in Puslinch are permitted to have the following additional uses:
    - Complementary commercial uses such as automotive uses, restaurants, motels and limited retail
    - Offices, including head office and/or research centre

The proposed development includes automotive uses, a restaurant and a small convenience retail store that is associated with the automotive uses (fuel sales). Therefore, the proposed uses are consistent with the uses permitted within Rural Employment Areas in Puslinch.

C. Conclusion

The subject site is located within a Rural Employment Area that is planned to accommodate dry industrial and commercial uses. Puslinch Industrial Policy permits complementary commercial uses such as automotive uses, restaurants and limited retail. The proposed development of service commercial uses can be accommodated with private services and will help to meet the needs of current and future businesses in the Rural Employment Area. As such, the proposal to rezone the site to HC (Highway Commercial) is consistent with the Provincial Planning Statement 2024 and the current Wellington County Official Plan.

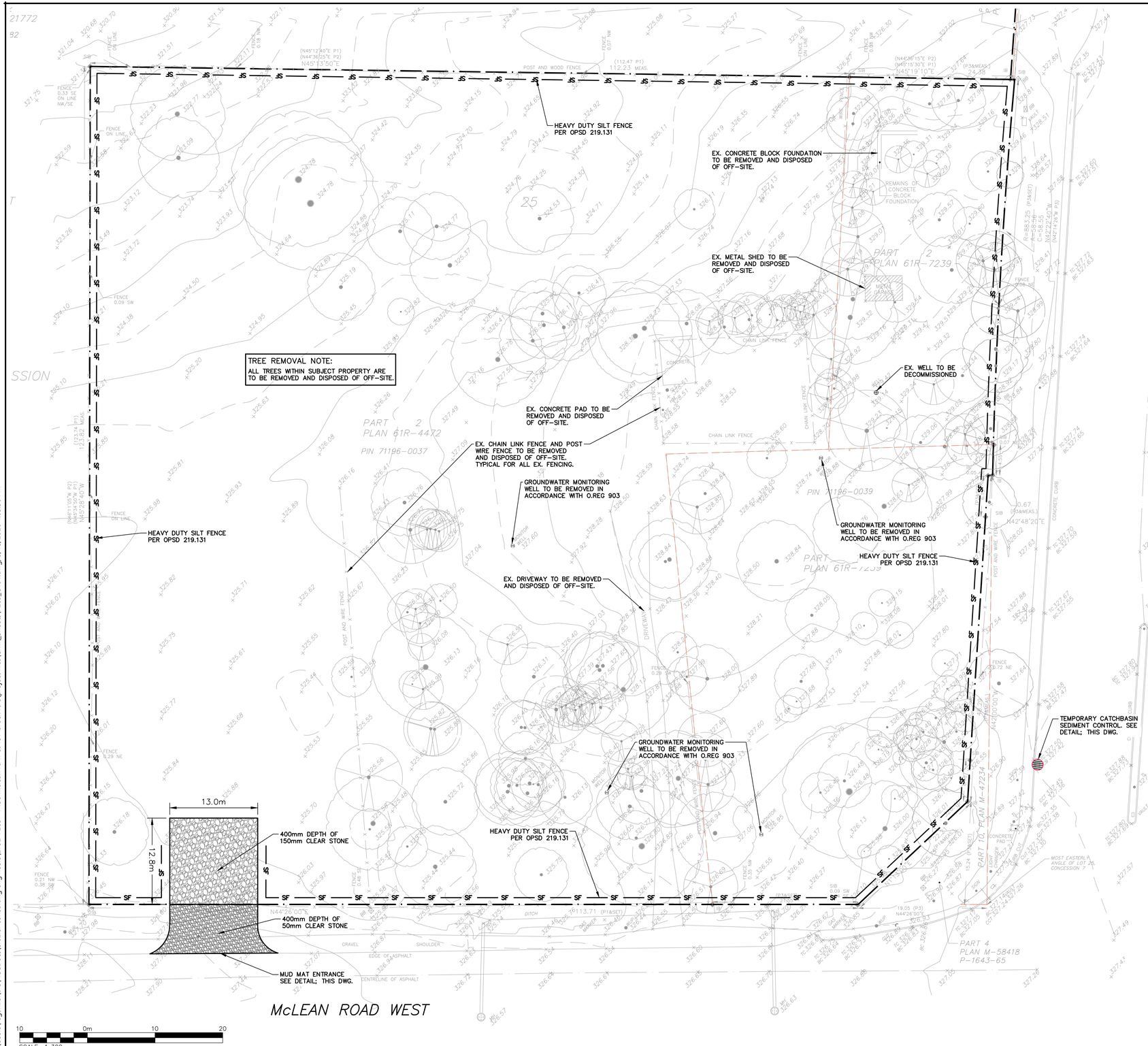
Yours truly,

W. E. Oughtred

Planner's Certificate:

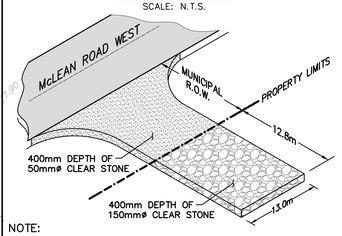
I hereby certify that this report was reviewed by Tracey Pillon-Abbs, a Registered Professional Planner, within the meaning of the Ontario Professional Planners Institute Act, 1994.

Tracey Pillon-Abbs, RPP
Principal Planner
Pillon Abbs Inc.



MUD-MAT DETAIL

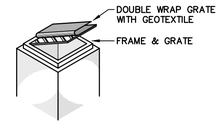
SCALE: N.T.S.



NOTE:
GEOTEXTILE (TERRAFIX 270R OR APPROVED EQUAL) TO BE PLACED AS SEPARATION BARRIER BETWEEN EXISTING GROUND AND CLEAR STONE.

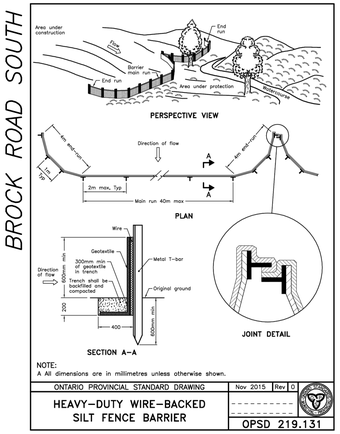
CATCHBASIN SEDIMENT CONTROL DETAIL

SCALE: N.T.S.



NOTES:
1. TO BE INSTALLED IN ALL AFFECTED EXISTING & PROPOSED CATCHBASIN & CATCHBASIN MANHOLES UNDER APPROPRIATE DRAINAGE CIRCUMSTANCES, BETWEEN APRIL AND DECEMBER.
2. WOVEN GEOTEXTILE TO HAVE A MINIMUM EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm OR A NON-WOVEN GEOTEXTILE TO BE CONSIDERED BASED ON SOIL PARAMETERS AND SITE CONDITIONS.
3. GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERE WITH DRAINAGE, OR AS DIRECTED BY THE MUNICIPALITY.

BROCK ROAD SOUTH



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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev	0
HEAVY-DUTY WIRE-BACKED SILT FENCE BARRIER		OPSD 219.131	

EROSION & SEDIMENT CONTROL NOTES:

1. EROSION & SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE WORKS.
2. EROSION & SEDIMENT CONTROLS MUST BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY RAIN FALL EVENT, AND MUST BE MAINTAINED AND REPAIRED IN A TIMELY MANNER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
3. EXISTING AND PROPOSED CATCHBASINS ARE TO BE PROTECTED WITH FILTER CLOTH AND 150mm OF 50mm STONE COVER DURING CONSTRUCTION.
4. IT IS REQUIRED TO STABILIZE ALL AREAS THAT WILL REMAIN DISTURBED FOR MORE THAN 30 DAYS.
5. MUD MAT, SILT FENCE, AND CATCHBASIN PROTECTION ARE NOT TO BE REMOVED UNTIL COMPLETION OF CONSTRUCTION.

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- EXISTING FENCE
- EXISTING GRADE
- MUD-MAT; SEE DETAIL
- HEAVY DUTY SILT FENCE; SEE DETAIL
- PROPOSED SEDIMENT CONTROL DEVICE IN EX. CATCHBASIN PER

No.	ISSUE / REVISION	YYYY/MMM/DD
4	ISSUED FOR FOURTH SUBMISSION (ZBA)	2026/MAR/13
3	ISSUED FOR THIRD SUBMISSION (ZBA)	2026/FEB/13
2	ISSUED FOR SECOND SUBMISSION (ZBA)	2025/AUG/01
1	ISSUED FOR COORDINATION	2025/JUL/18
0	ISSUED FOR FIRST SUBMISSION (ZBA)	2023/OCT/20

ELEVATION NOTE:
ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM CGVD28:78, AND WERE DERIVED FROM TOWNSHIP OF PUSLINCH BENCHMARK 0081968105, HAVING A PUBLISHED ELEVATION OF 317.592

BEARING NOTE:
BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHWESTERLY LIMIT OF McLEAN ROAD WEST AS SHOWN ON PLAN 61R-4472, HAVING A BEARING OF N44°26'00"E

SURVEY NOTES:
SURVEY COMPLETED BY TARASICK McMILLAN KUBICKI LIMITED.
PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:
DESIGN ELEMENTS ARE BASED ON SITE PLAN BY RICHARD ZIEGLER ARCHITECT INC.
DATED: MAR. 10, 2026
DRAWING No. A101

DRAWING NOTES:
THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART OF IT WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.

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THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project
7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing
PRELIMINARY EROSION, SEDIMENT CONTROL AND REMOVALS PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-675-4915 F
WWW.CFCROZIER.CA

Drawn	R.L.	Design	B.W.	Project No.	2792-7289
Check	S.C.	Check	B.W./K.R.	Scale	1:300
				Dwg.	C 101

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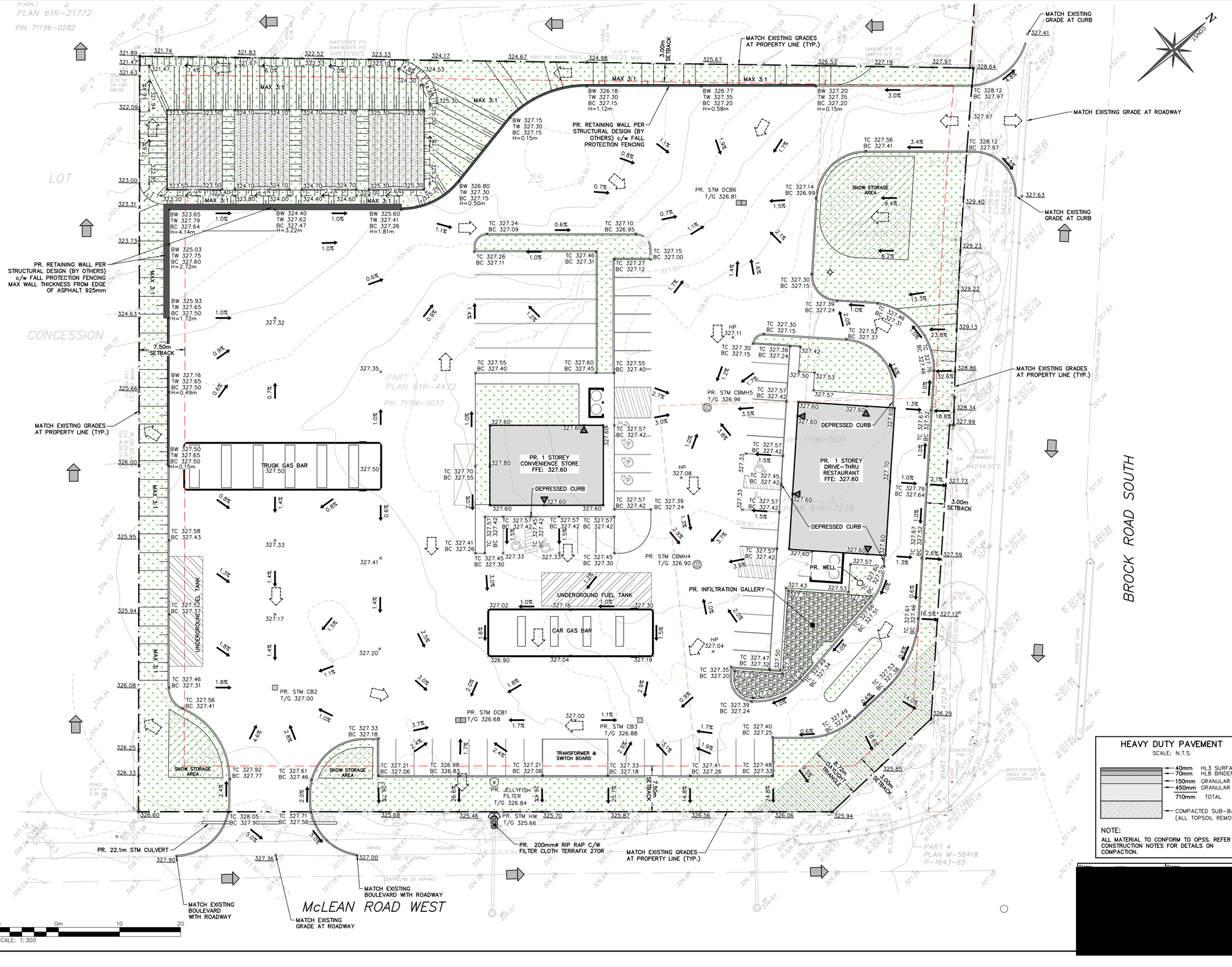

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- EXISTING DITCH
- EXISTING FENCE
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADE (TO MATCH EXISTING)
- PROPOSED MINOR FLOW DIRECTION
- PROPOSED GRASSED SWALE
- PROPOSED RETAINING WALL
- PROPOSED SLOPE (3:1 MAX.)
- PROPOSED MAJOR OVERLAND FLOW DIRECTION
- EXISTING OVERLAND FLOW DIRECTION
- PROPOSED DEPRESSED CURB
- SETBACK LIMIT
- PROPOSED LANDSCAPE AREA

HEAVY DUTY PAVEMENT

SCALE: N.T.S.

- 40mm HL3 SURFACE
- 70mm HL8 BINDER
- 150mm GRANULAR 'A'
- 450mm GRANULAR 'B'
- 710mm TOTAL
- COMPACTED SUB-BASE (ALL TOPSOIL REMOVED)

NOTE:
ALL MATERIAL TO CONFORM TO OPSS. REFER TO CONSTRUCTION NOTES FOR DETAILS ON COMPACTION.

No.	ISSUE / REVISION	YYYY/MMM/DD
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3	ISSUED FOR THIRD SUBMISSION (ZBA)	2026/FEB/13
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BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHWESTERLY LIMIT OF McLEAN ROAD WEST AS SHOWN ON PLAN 61R-4472, HAVING A BEARING OF N44°26'00"E

SURVEY NOTES:

SURVEY COMPLETED BY TARASICK McMILLAN KUBICKI LIMITED.
PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN BY RICHARD ZIEGLER ARCHITECT INC.
DATED: MAR. 10, 2026
DRAWING No. A101

DRAWING NOTES:

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ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project
7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing
PRELIMINARY SITE GRADING PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	R.L.	Design	B.W.	Project No.	2792-7289
Check	S.C.	Check	B.W./K.R.	Scale	1:300
				Dwg.	C 102

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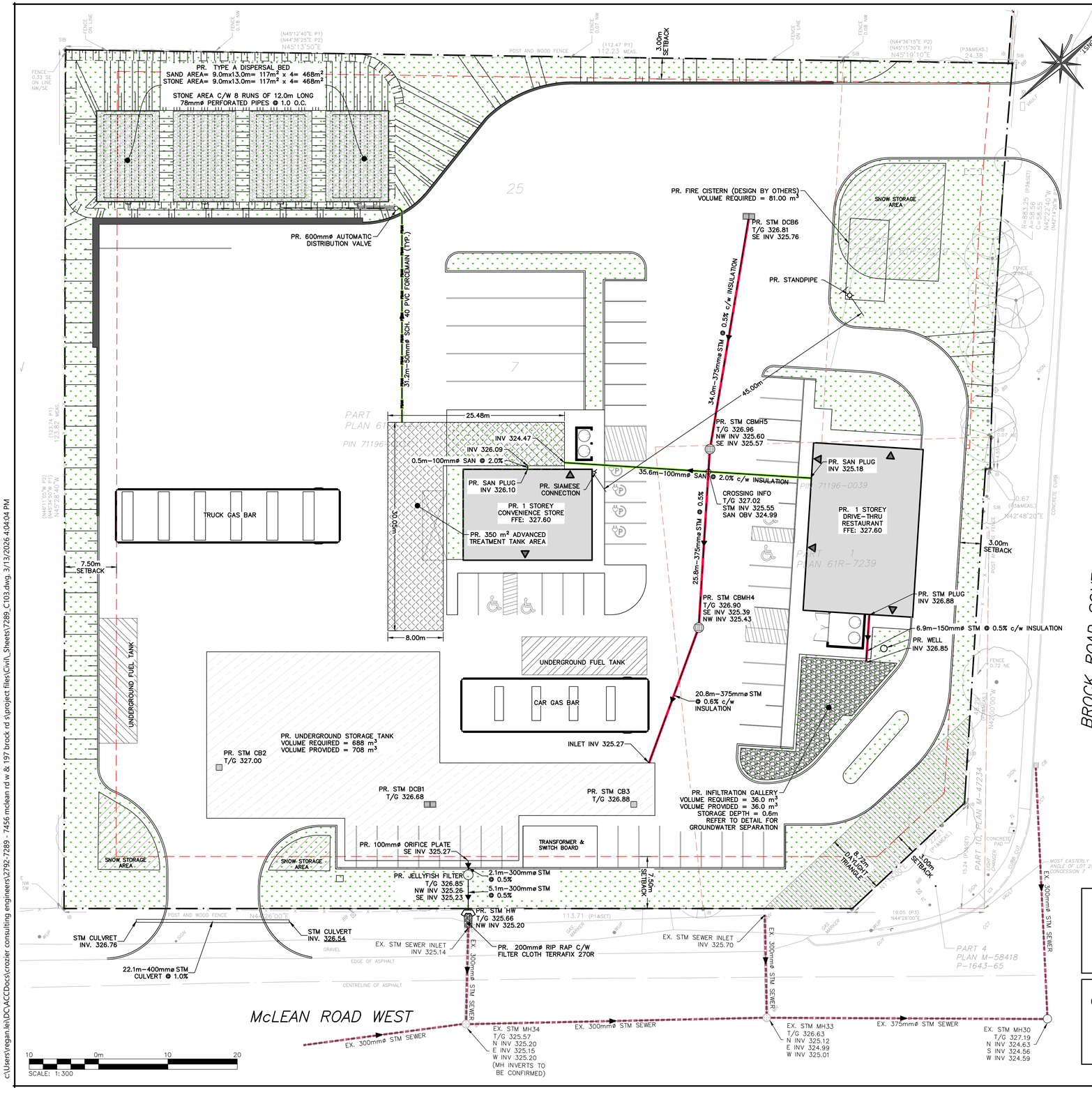


SEWAGE SYSTEM NOTES

1. PROPOSED SEWAGE SYSTEM CONSTRUCTION TO BE UNDERTAKEN IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, ONTARIO MINISTRY OF ENVIRONMENT, AND THE MANUFACTURER'S RECOMMENDATIONS.
2. INSTALLATION OF ALL COMPONENTS OF THE SEWAGE SYSTEM TO BE COMPLETED BY A LICENSED AND REGISTERED ONSITE SEWAGE SYSTEM INSTALLER IN THE PROVINCE OF ONTARIO.
3. THE CONTRACTOR SHALL COORDINATE AND PAY FOR ALL NECESSARY INSPECTIONS WITH THE TOWN AND OTHER AUTHORITIES PERTAINING TO THE INSTALLATION OF THEIR WORK.
4. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES AND EXISTING SEWAGE WORKS PRIOR TO CONSTRUCTION.
5. ALL COMPONENT LOCATIONS SHALL BE FIELD VERIFIED WITH THE ENGINEER PRIOR TO INSTALLATION.
6. ALL EARTHWORKS, INCLUDING PLACEMENT OF FILL ARE TO BE UNDERTAKEN WITH TRACK MOUNTED EQUIPMENT TO KEEP COMPACTION TO A MINIMUM. KEEP ALL TRAFFIC IN THE AREA OF THE PROPOSED LEACHING BED TO A MINIMUM.
7. ALL TOPSOIL AND ORGANICS TO BE REMOVED FROM LEACHING BED AREA.
8. IF HIGH GROUNDWATER CONDITIONS ARE EVIDENT AT THE TIME OF CONSTRUCTION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. ALL VERTICAL CLEARANCE DISTANCES AS REQUIRED BY THE ONTARIO BUILDING CODE MUST BE MAINTAINED.
9. GRAVITY SEWERS TO HAVE MINIMUM 0.6 M COVER AND SHALL BE INSULATED WHERE LESS THAN 1.2M COVER IS PROVIDED. FORCEMAIN SHALL BE INSULATED WHERE LESS THAN 1.5 M COVER IS PROVIDED. BEDDING, COVER AND BACKFILL TO BE IN ACCORDANCE WITH OPSS.
10. UNLESS OTHERWISE NOTED PE FORCEMAIN TO BE HDPE SERIES 100 OR DR 13.5 PE AND PVC FORCEMAIN TO BE SCHEDULE 40. GRAVITY SEWERS TO BE SDR-35. FORCE MAIN TO BE PROVIDED WITH TRACER WIRE, SECURED TO THE TOP OF THE PIPE WITH WATER PROOF TAPE OR ZIP TIES.
11. ALL PIPES SUBJECT TO VEHICULAR TRAFFIC SHALL BE ADEQUATELY PROTECTED.
12. ALL METAL IN TANKS OR PUMP CHAMBERS TO BE GLAVANIZED OR STAINLESS STEEL.
13. ALL JOINTS BELOW THE HIGH WATER LEVEL IN PRECAST TANKS TO BE SEALED WITH MASTIC SEALANT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS FOR WATERTIGHT SEAL. ALL TANK INLETS AND OUTLETS TO BE EQUIPPED WITH CAST IN RUBBER BOOT FOR WATER TIGHT SEAL. UNLESS OTHERWISE NOTED ALL TANK INLETS AND OUTLETS TO BE EQUIPPED WITH TEES.
14. ALL TANKS TO BE PROVIDED WITH PRECAST CONCRETE OR PVC ACCESS RISERS TO GRADE. HATCHES TO BE BOLTED AND GASKETED AND ACCESSIBLE AT GRADE. ALL CIRCULAR HATCHES TO BE 600 MM DIAMETER POLYLOK RISER WITH CAST IN ADAPTOR. ALL SQUARE ACCESS OPENINGS TO BE EQUIPPED WITH CONCRETE RISERS. VENTED HATCHES TO BE PROVIDED ON TANKS CONTAINING PUMPS.
15. A TANK SHALL NOT BE COVERED BY SOIL OR LEACHING BED FILL HAVING A DEPTH GREATER THAN THE MAXIMUM DEPTH OF BURIAL THAT THE TANK IS DESIGNED TO WITHSTAND.
16. EXISTING SOILS SHALL BE SCARIFIED AT A RIGHT ANGLE TO THE DIRECTION OF LATERAL SEWAGE FLOW IN THE LEACHING BED PRIOR TO IMPORTING FILL OR INSTALLING DISTRIBUTION PIPE STONE LAYER.
17. WHEN THE IMPORTATION OF FILL IS REQUIRED, FILL SHOULD BE END-DUMPED AND GRADED PROGRESSIVELY OVER THE PREPARED SITE AREA WITH TRACK MOUNTED EQUIPMENT.
18. ALL ELEVATIONS TO BE VERIFIED PRIOR TO BACKFILL
19. ALL FILL MATERIAL PLACED BENEATH TANKS TO BE COMPACTED TO 95%
20. ALL DISTURBED AREAS TO BE TOPSOILED (100MM MINIMUM) AND SEEDED COMPLETE WITH FERTILIZER AND MULCH IN ACCORDANCE WITH OPSS
21. THE INSTALLING CONTRACTOR SHALL INSTALL THE SEWAGE SYSTEM USING A TRANSIT/LEVEL AND SHALL PROVIDE SAME FOR INSPECTION OF ANY COMPONENT.
22. ALL TREATMENT UNITS THAT CONTAIN MECHANICAL COMPONENTS SHALL BE EQUIPPED WITH AN AUDIBLE AND VISUAL WARNING ALARM, LOCATED TO WARN THE OCCUPANTS OF THE BUILDING SERVED OR THE OPERATOR OF THE TREATMENT UNIT OF A MALFUNCTION IN THE OPERATION OF THE TREATMENT UNIT.
23. THE CONTRACTOR WILL ENSURE THAT EVERY OPERATOR OF A TREATMENT UNIT SHALL OBTAIN, FROM THE MANUFACTURER OR DISTRIBUTOR OF THE TREATMENT UNIT, LITERATURE THAT DESCRIBES THE UNIT IN DETAIL AND PROVIDES COMPLETE INSTRUCTIONS REGARDING THE OPERATION, SERVICING, AND MAINTENANCE REQUIREMENTS OF THE UNIT AND ITS RELATED COMPONENTS NECESSARY TO ENSURE THE CONTINUED PROPER OPERATION IN ACCORDANCE WITH THE ORIGINAL DESIGN AND SPECIFICATIONS.
24. ALL IMPORTED SAND FILL TO HAVE A T-TIME OF 6 TO 10 MIN/CM AND A SILT/CLAY CONTENT OF NO MORE THAN 5% AND SHALL BE VERIFIED IN WRITING BY A SOIL TESTING FIRM AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.
25. SEWAGE SYSTEM HAS BEEN DESIGNED TO RECEIVED DOMESTIC STRENGTH WASTEWATER. ALL SANITARY WASTEWATER FROM THE BUILDINGS MUST MEET THE APPLICABLE SEWER USE BYLAW LIMITS PRIOR TO DISCHARGE TO ADVANCED TREATMENT SYSTEM.

LEGEND

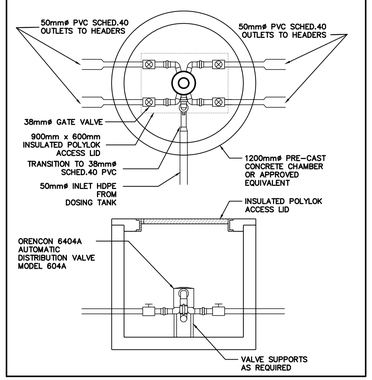
- PROPERTY LINE
- EXISTING STORM SEWER & MANHOLE
- EXISTING SINGLE / DOUBLE CATCHBASIN
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED STANDPIPE
- PROPOSED SIAMESE CONNECTION
- PROPOSED WELL
- PROPOSED STORM SEWER & MANHOLE
- PROPOSED SINGLE / DOUBLE CATCHBASIN
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY FORCEMAIN
- TP# TEST PIT LOCATION
- SETBACK LIMIT
- PROPOSED LANDSCAPE AREA

ON-SITE SEWAGE DESIGN

DAILY DESIGN FLOW REFER TO FSR REPORT FOR DETAILS	TOTAL DESIGN FLOW = 22,000 L/DAY
ADVANCED TREATMENT SYSTEM	TO BE DETERMINED DURING DETAILED DESIGN
SOIL PERCOLATION RATE	T = 15 min/cm (DETERMINED BY C.F. CROZIER)
TYPE A DISPESAL BED STONE AREA	Q/50 =22,000/50 REQUIRED = 440 m² PROVIDED = 468 m²
TYPE A DISPERSAL BED SAND AREA	QT/850= 22,000*15/850 REQUIRED = 389 m² PROVIDED = 468 m²

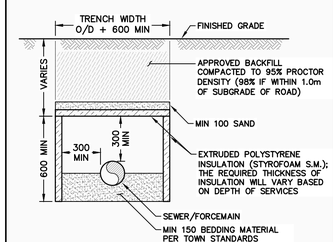
AUTOMATIC DISTRIBUTING VALVE DETAIL

SCALE: N.T.S.



INSULATION FOR SHALLOW SERVICES

SCALE: N.T.S.



NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. 50mm OF INSULATION IS REQUIRED FOR EVERY 600mm OF COVER DEFICIENCY.

SWM TANK SECTION

SCALE: N.T.S.

GROUND SURFACE=326.68
TOP OF TANK=325.87
BOTTOM OF TANK=325.27
GROUNDWATER=324.19

INFILTRATION GALLERY SECTION

SCALE: N.T.S.

GROUND SURFACE=327.30
TOP OF GALLERY=327.15
BOTTOM OF GALLERY=326.55
GROUNDWATER=321.48

No.	ISSUE / REVISION	YYYY/MMM/DD
4	ISSUED FOR FOURTH SUBMISSION (ZBA)	2026/MAR/13
3	ISSUED FOR THIRD SUBMISSION (ZBA)	2026/FEB/13
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1	ISSUED FOR COORDINATION	2025/JUL/18
0	ISSUED FOR FIRST SUBMISSION (ZBA)	2023/OCT/20

ELEVATION NOTE:

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BEARING NOTE:

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHWESTERLY LIMIT OF McLEAN ROAD WEST AS SHOWN ON PLAN 61R-4472, HAVING A BEARING OF N44°26'00"E

SURVEY NOTES:

SURVEY COMPLETED BY TARASICK McMILLAN KUBICKI LIMITED.
PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN BY RICHARD ZIEGLER ARCHITECT INC.
DATED: MAR. 10, 2026
DRAWING No. A101

DRAWING NOTES:

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Project

7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing

PRELIMINARY SITE SERVICING PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	B.W.	2792-7289	
Check	Check	Scale	Dwg.
S.C.	B.W./K.R.	1: 300	C 103

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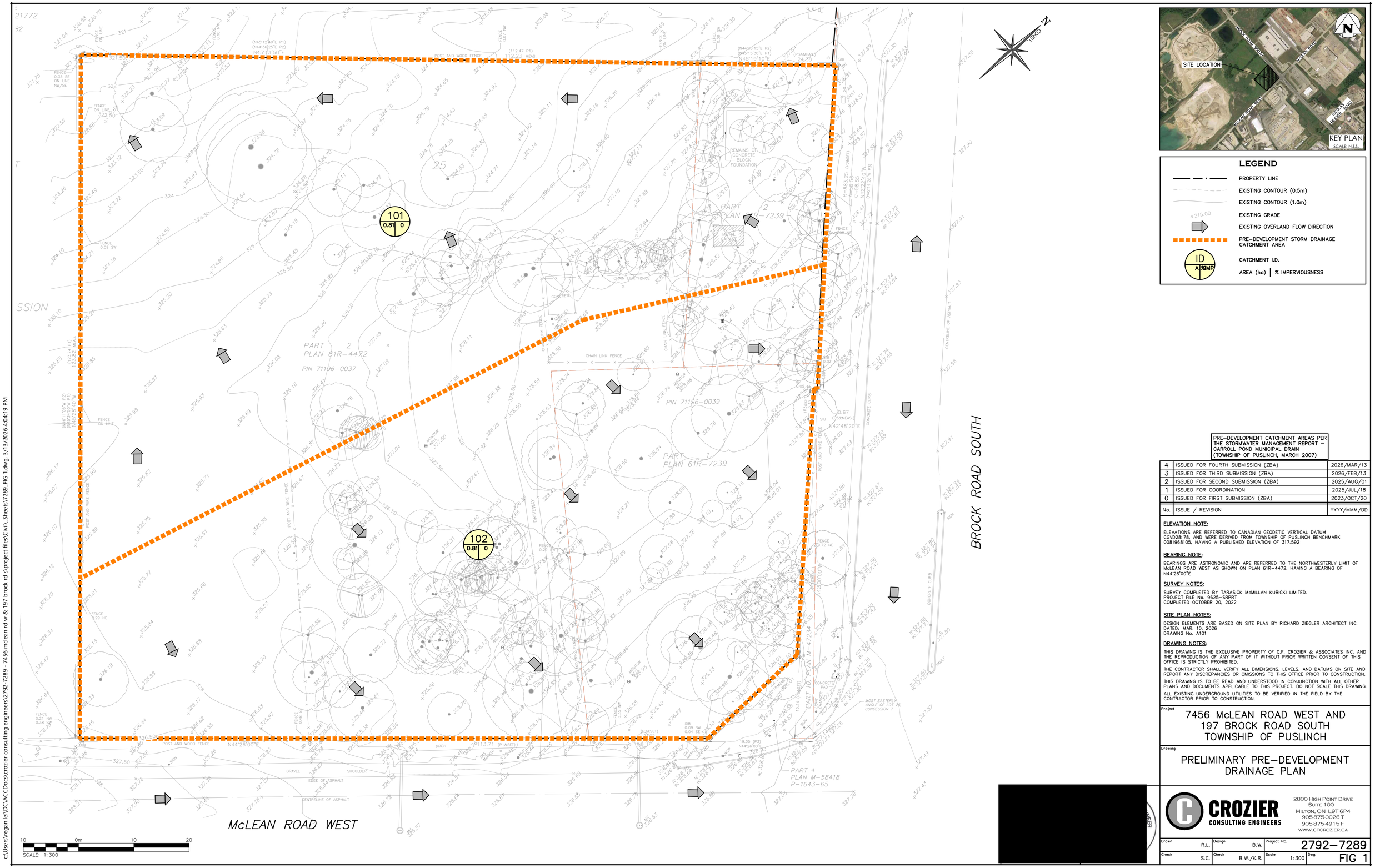

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- x 215.00 EXISTING GRADE
- EXISTING OVERLAND FLOW DIRECTION
- PRE-DEVELOPMENT STORM DRAINAGE CATCHMENT AREA
- ID — CATCHMENT I.D.
- A (ha) | 70MP (%) — AREA (ha) | % IMPERVIOUSNESS

PRE-DEVELOPMENT CATCHMENT AREAS PER THE STORMWATER MANAGEMENT REPORT - CARROLL POND MUNICIPAL DRAIN (TOWNSHIP OF PUSLINCH, MARCH 2007)

No.	ISSUE / REVISION	YYYY/MMM/DD
4	ISSUED FOR FOURTH SUBMISSION (ZBA)	2026/MAR/13
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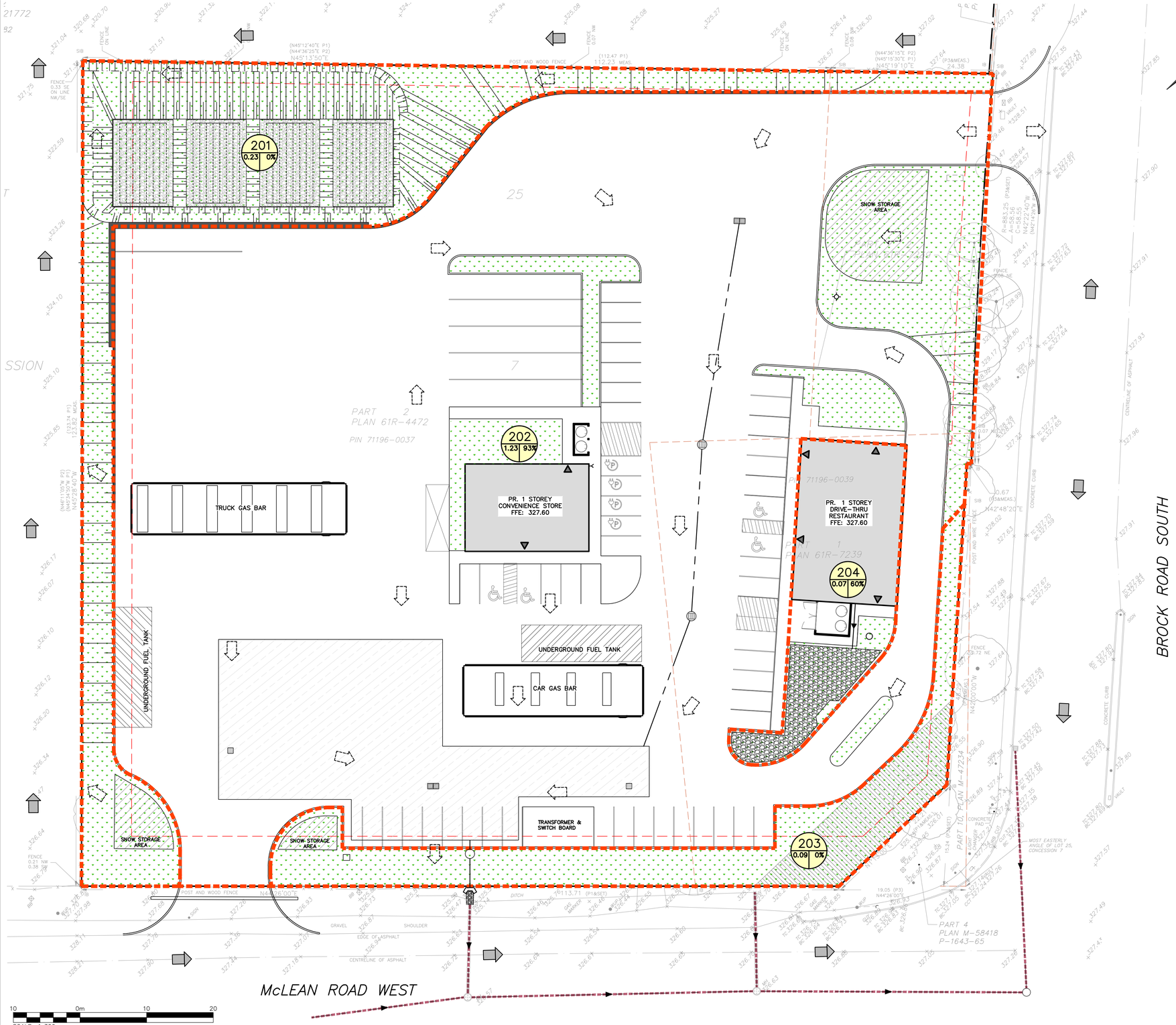
Project
7456 McLEAN ROAD WEST AND
197 BROCK ROAD SOUTH
TOWNSHIP OF PUSLINCH

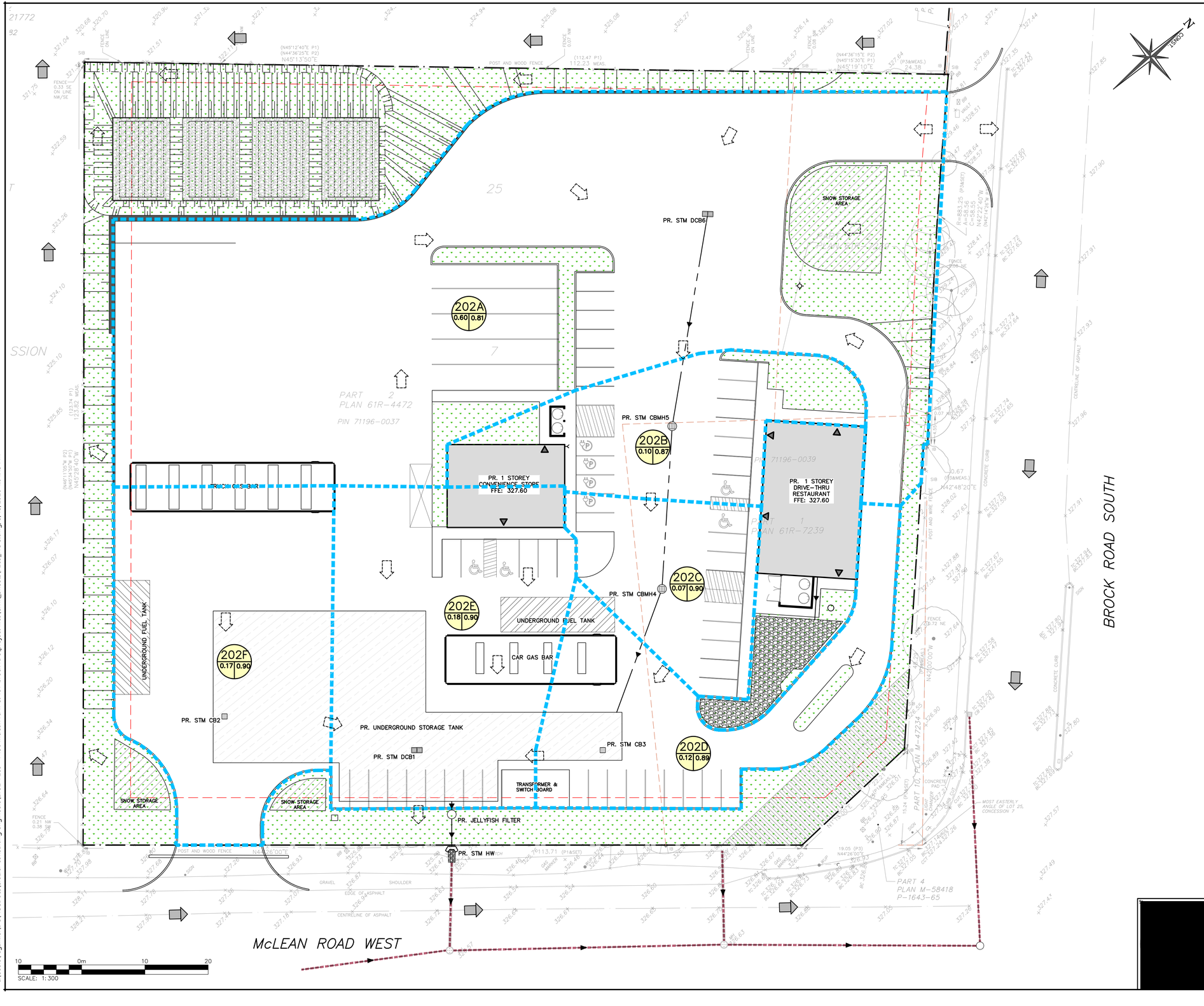
Drawing
PRELIMINARY PRE-DEVELOPMENT DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	B.W.	2792-7289	
Check	Check	Scale	Dwg.
S.C.	B.W./K.R.	1:300	FIG 1

C:\Users\regan.ke\DC\ACCDocs\crozier consulting engineers\2792-7289 - 7456 mclean rd w & 197 brock rd s\project files\Civil_Sheets\7289_FIG 1.dwg, 3/13/2026 4:04:19 PM


201
0.23 0%
202
1.23 93%
203
0.09 0%
204
0.07 60%
SNOW STORAGE AREA
PR. 1 STOREY CONVENIENCE STORE FFE: 327.60
PR. 1 STOREY DRIVE-THRU RESTAURANT FFE: 327.60
TRUCK GAS BAR
CAR GAS BAR
UNDERGROUND FUEL TANK
UNDERGROUND FUEL TANK
TRANSFORMER & SWITCH BOARD
SNOW STORAGE AREA
SNOW STORAGE AREA
PART 2 PLAN 61R-4472
PIN 71196-0037
PART 1 PLAN 61R-7239
PIN 71196-0039
PART 4 PLAN M-58418 P-1643-65
PART 10, PLAN M-47234
McLEAN ROAD WEST
BROCK ROAD SOUTH
POST AND WOOD FENCE
POST AND WIRE FENCE
CONCRETE CURB
GRAVEL SHOULDER
EDGE OF ASPHALT
CENTRELINE OF ASPHALT
DITCH
MOST EASTERLY ANGLE OF LOT 25, CONCESSION 7
SSION
(N45°12'40"E P1)
(N44°36'25"E P2)
N45°13'50"E
(112.47 P1)
112.23 MEAS
(N44°36'15"E P2)
(N45°15'30"E P1)
N45°19'10"E
(P3&MEAS.)
24.38
(N46°11'05"W P2)
(N45°28'40"W P1)
N45°28'40"W
(123.14 P1)
123.82 MEAS
(P3&MEAS.)
N42°48'20"E
(P3&MEAS.)
N44°26'00"W
(P3&MEAS.)
N44°26'00"W
(113.71 (P1&SET)
19.05 (P3)
N44°26'00"W
(P3&MEAS.)
N44°26'00"W
R=883.26
A=58.56
C=58.55
(P3&MEAS.)
(N42°22'40"W
N42°22'40"W
FENCE 0.21 NW 0.38 SE ON LINE NW/SE
FENCE 0.33 SE ON LINE NW/SE
FENCE ON LINE
FENCE 0.07 NW
FENCE 0.08 NW
FENCE 0.72 NE
FENCE 0.08 SE
FENCE 0.06 SE
FENCE 0.06 NW
SIB
IB
WALL
SIGN
HYDRO
TC 327.60 BC 327.51
TC 327.72 BC 327.63
TC 327.74 BC 327.64
TC 327.74 BC 327.65
TC 327.70 BC 327.59
TC 327.67 BC 327.55
TC 327.60 BC 327.50
TC 327.60 BC 327.50
TC 327.60 BC 327.50



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PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

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DRAWING No. A101

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Project

7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

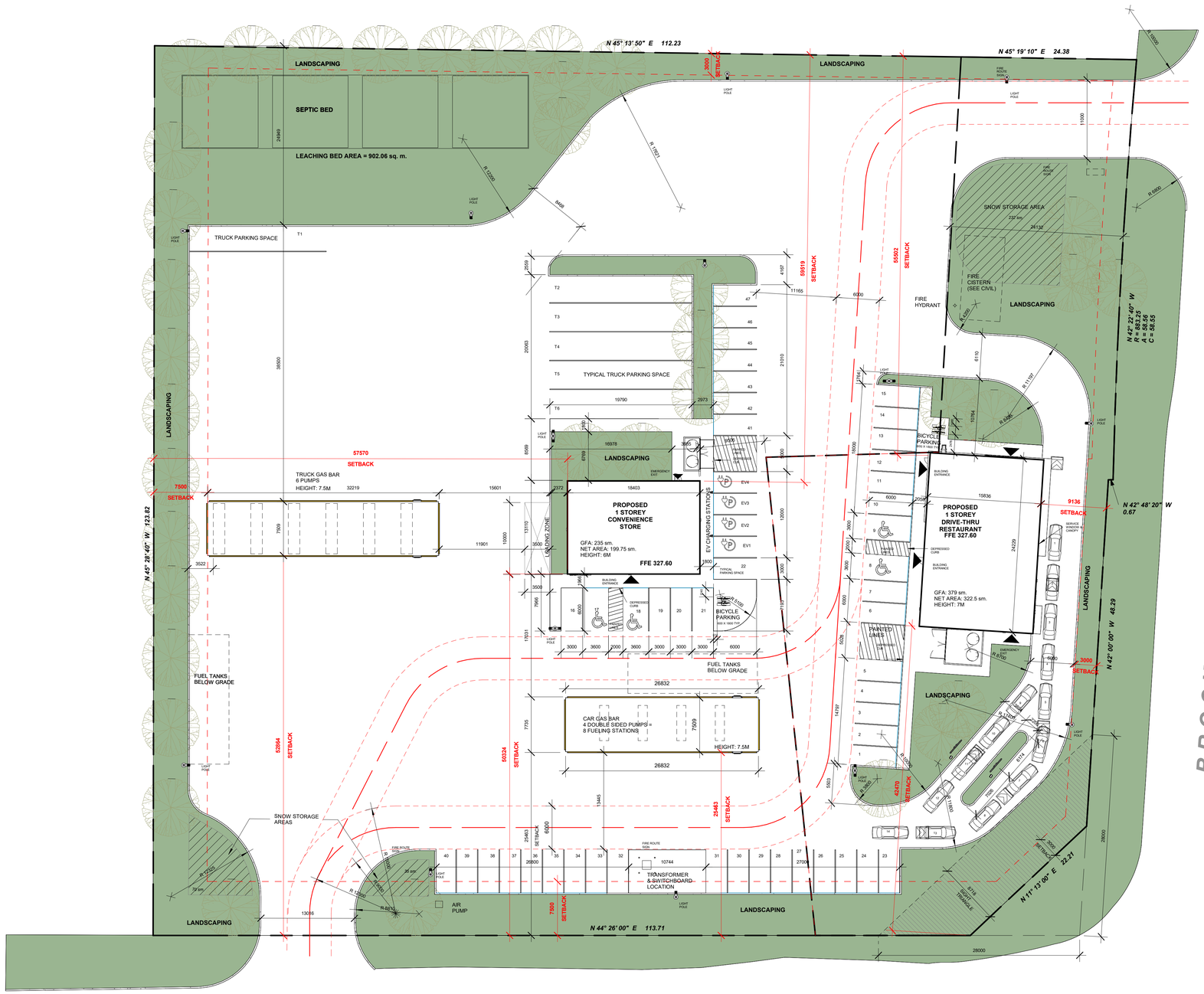
Drawing

PRELIMINARY STORM SEWER DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-675-4915 F
WWW.CFCROZIER.CA

Drawn	R.L.	Design	B.W.	Project No.	2792-7289
Check	S.C.	Check	B.W./K.R.	Scale	1: 300
				Dwg.	FIG 3

C:\Users\regan.lei\DCACCDocs\crozier consulting engineers\2792-7289 - 7456 mclean rd w & 197 brock rd s\project files\Civil_Sheets\7289_FIG 3.dwg, 3/13/2026 4:04:45 PM



HC ZONE REGULATIONS	REQUIRED	PROPOSED
PERMITTED USES	TABLE 8.1 ZONING BYLAW	GAS BAR(S), CONVENIENCE STORE AND RESTAURANT
LOT AREA (MIN)	0.4 HA	1.62 H
LOT FRONTAGE (MIN.)	20 M	101 M
FRONT YARD (MIN.)	3 M	9.13 M
INTERIOR SIDE YARD (MIN.)	3 M	7.5 M
EXTERIOR SIDE YARD (MIN.)	7.5 M	25.5 M
REAR YARD (MIN.)	3 M	55.5 M
RESTAURANT GFA		379 sm
RESTAURANT NET AREA		322.5 sm
CONVENIENCE STORE GFA		235 sm.
CONVENIENCE STORE NET...		199.75 sm.
GAS BAR CANOPY (CARS)		201 sm.
GAS BAR CANOPY (TRUCKS)		241 sm.
TOTAL BUILDING/STRUCTUR...		1,056 sm.
LOT COVERAGE (MAX.)	45%	6.50%
LANDSCAPED OPEN SPACE...	25%	27%

PARKING REQUIRED		
GAS BAR - CARS	(1 PER PUMP) = 8	SEE BELOW
GAS BAR - TRUCKS	(1 PER PUMP) = 6	6
CONVENIENCE STORE	(1 PER 20 sm.) = 10	SEE BELOW
RESTAURANT	(1 PER 10 sm.) = 33	SEE BELOW
TOTAL	57	57

VEHICLE PARKING SCHEDULE	
Per Table 5.3 of Zoning Bylaw	
TYPE OF PARKING SPACE	PROVIDED PARKING SPACE
ACCESSIBLE PARKING - TYP...	2
ACCESSIBLE PARKING - TYP...	2
TRUCK PARKING	6
TYPICAL PARKING SPACE	43
EV PARKING / CHARGING...	4
TOTAL	57

BICYCLE PARKING SCHEDULE	
Per Table 5.6 of Zoning Bylaw	
REQUIRED	PROVIDED
2 PER 1,000 sm. = 2	4

RICHARD ZIEGLER ARCHITECT INC.
39 POLSON STREET TORONTO, ONTARIO M5A 1A4
T: 416 461 1494 or 1 800 413 7992 F: 866 895 1488
www.rzarchitect.com E: mail @ rzarchitect.com

SITE CONTEXT

NO.	ISSUANCE	DATE
6	REV. & ISSUED FOR PLANNING APPROVALS	2025.03.10
5	REV. & ISSUED FOR PLANNING APPROVALS	2026.03.03
4	REV. & ISSUED FOR PLANNING APPROVALS	2026.02.11
3	REV. & ISSUED FOR PLANNING APPROVALS	2025.11.12
2	REV. & ISSUED FOR PLANNING APPROVALS	2025.08.08
1	ISSUED FOR PLANNING APPROVALS	2025.08.05

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

STAMP

PROPOSED COMMERCIAL DEVELOPMENT

7456 McLEAN ROAD WEST & 197 BROCK ROAD SOUTH
TOWN OF PUSLINCH

SITE PLAN

SCALE	1 : 300	PROJECT NUMBER
DATE	2026-03-10 2:50:51 PM	202436
DRAWN	REZ	
CHECKED	REZ	
SHEET		REVISION

A101

FILE NAME: Y:\2024 Projects\202436 - 7456 McLeane Road, Puslinch\2.0 Design and Construction Documents Phase\Revit\7456 McLean Road - 2026.03.09.rvt
PLOT DATE: 2026-03-10 2:50:53 PM

W. E. OUGHTRED and Associates Inc.
Real Estate Analysts / Development Consultants

March 20, 2026

Township of Puslinch
4704 Wellington Road 34
Puslinch, ON
N0B 2J0

Attention: Ms. Monika Farncombe
Planning and Corporate Services Coordinator

Dear Monika:

Re: Zoning By-law Amendment – 4th Submission
7456 McLean Road West and 197 Brock Road South
Puslinch, ON

We are pleased to submit revised plans and studies to address comments on the above-noted application that were issued on March16, 2026.

The following materials are being uploaded to Cloudpermit today:

1. Revised Draft Zoning By-law;
2. Addendum to the Planning Justification Report prepared by W.E. Oughtred and Associates Inc. and dated March 16, 2026;
3. Tree Inventory and Protection Plan prepared by Kuntz Forestry and dated March 18, 2026;
4. TIPP Figure 1 prepared by Kuntz Forestry and dated March 18, 2026;
5. TIPP Figure 2 prepared by Kuntz Forestry and dated March 18, 2026;
6. Owner's Undertaking not to remove trees prior to site plan approval;
7. Conceptual Site Plan prepared by Richard Ziegler Architect and dated March 10, 2026 (Drawing A101);
8. Main Floor Plans for the Restaurant and Convenience Store prepared by Richard Ziegler Architect and dated March 3, 2026 (Drawing A102);
9. Roof Plans for the Restaurant and Convenience Store prepared by Richard Ziegler Architect and dated March 3, 2026 (Drawing A103);
10. Elevations for Convenience Store prepared by Richard Ziegler Architect and dated March 3, 2026 (Drawing A201);
11. Elevations for the Restaurant prepared by Richard Ziegler Architect and dated March 3, 2026 (Drawing A202);
12. Transportation Impact Study prepared by C.F. Crozier and Associates Inc. and dated March 2026;
13. Vehicle Site Distance Analysis prepared by C.F. Crozier and Associates Inc. and dated March 2026;

14. Vehicle Maneuvering Analysis prepared by C.F. Crozier and Associates Inc. and dated March 2026;
15. Landscape Plan prepared by Marton Smith Landscape Architects and dated March 18, 2026;
16. Landscape Cost Estimate prepared by Marton Smith Landscape Architects and dated March 18, 2026;
17. Functional Servicing and Stormwater Management Report prepared by C.F. Crozier and Associates Inc. and dated March 2026;
18. Civil Engineering Plans including a Preliminary Erosion and Sediment Control Plan, Preliminary Site Grading Plan, Preliminary Site Servicing Plan, Preliminary Pre-Development Drainage Plan, Preliminary Post-Development Drainage Plan and Preliminary Storm Sewer Drainage Plan, prepared by C.F. Crozier and Associates Inc. and dated March 2026;
19. Comment response letter prepared by C.F. Crozier and Associates Inc. and dated March 20, 2026. This letter provides responses to all comments on the Transportation Impact Study, Hydrogeological Investigation, Functional Servicing and Stormwater Management Report and civil engineering plans.
20. Legal opinion from Rapinder Preet Minhas, dated March 11, 2026, with respect to the Restrictive Covenant registered against 197 Brock Road South and the status of the lots under Section 50 of the Planning Act.

The following plans and studies have NOT been revised and are NOT being included in the resubmission:

1. Elevations for the Truck Gas Bar prepared by Richard Ziegler Architect and dated February 11, 2026 (Drawing A203);
2. Elevations for the Car Gas Bar prepared by Richard Ziegler Architect and dated February 11, 2026 (Drawing A204);
3. Rendered Views of the Restaurant and Convenience Store prepared by Richard Ziegler Architect and dated February 11, 2026 (Drawing A205);
4. Gas Pump Plans prepared by Richard Ziegler Architect and dated February 11, 2026 (Drawing A206);
5. Geotechnical Investigation prepared by CMT Engineering Inc. and dated July 13, 2023;
6. Hydrogeological Investigation Report prepared by C.F. Crozier and Associates Inc. and dated February 2026;
7. Photometric and Lighting Plans prepared by Spline and dated January 27, 2025;
8. Topographic Survey prepared by TMK Surveyors and dated November 3, 2022.

Comments have been addressed as follows:

A. Comments from NPG Planning Solutions, dated March 5, 2026

1. Noted.
2. Noted.

3a. The two properties are under the same ownership and are not in a registered plan of subdivision. As such, under Section 50 of the Planning Act, the two parcels may be treated

as a single property as the lots cannot be sold separately without a consent. Please see the legal opinion included with this submission.

3b. At the present time, the property owner is not seeking removal of the restrictive covenant but may do so in the future. Please see the legal opinion included with this submission regarding the status of the restrictive covenant if the properties are merged.

3c. Under Section 3.1 (d) of the County of Wellington By-law 5115-09, Conservation and Sustainable Use of Woodlands, a Tree Clearing Permit is not required if the injury or destruction of trees is required as a condition of site plan approval. An application for site plan approval has been submitted to the Township. We expect site plan approval will follow after approval of the rezoning application. In addition, the property owner has provided an Undertaking to refrain from removing any trees from the site until site plan approval is finalized.

3d. i. The Addendum to the Planning Justification Report has now been signed by a Registered Professional Planner;

3d. ii. The Addendum now discusses how the proposed development is consistent with the PPS definition of "Employment Areas" and Policy 2.8.2.

3d. iii. The plan has been revised and the loading space is now adjacent to the convenience store. Only one loading space is required under the Zoning By-law and one space is proposed.

3e. i. Details for the proposed pavement for the driveway and parking areas are shown on drawing C102 in the civil drawings package.

3e. ii. The plan has been revised to increase the width of parking spaces #9 and #17 to meet the minimum width requirement for accessible spaces.

3e. iii Dimensions for the bicycle parking spaces and the loading space are now shown on the site plan drawing and meet the minimum By-law requirements.

3e. iv. The Zoning By-law does not require dedicated EV parking spaces, in this instance. As such, the EV parking spaces will be available for general parking use.

3e. v. The plan proposes 4 bicycle parking spaces. We understand that the Zoning By-law only requires 2 parking spaces.

3e. vi. The site plan now shows the setbacks of the buildings to all lot lines including the setback between the convenience store and the northern lot line.

3e. vii. The Zoning Matrix has now been revised to reflect the proposed setbacks to all buildings, as shown on the site plan, in the "Proposed" column.

3e. viii. The label "daylight triangle" have been revised to "sight triangle" and the dimensions of the sight triangle have been illustrated on the site plan.

3e. ix. The stacking lane has now been removed from the sight triangle.

3f. i. The Landscape Plan now shows all plant material in the sight triangle to be under 0.6 metres in height.

3f. ii. The label "daylight triangle" has been revised to "sight triangle" on the Landscape Plan.

3g.i-v. Please see the letter from C.F. Crozier dated March 20, 2026, advising how all comments on the Transportation Impact Study have been addressed.

3h. Noted.

B. Comments from Dougan Ecology, dated March 5, 2026

1. Noted.
2. As per Section 3.1.(d) of the Wellington Woodland Conservation By-law 5115-09, the by-law does not apply to injury or destruction of trees imposed after December 31, 2002 as a condition of the approval of a site plan, a plan of subdivision or a consent under Section 41, 51 or 53, respectively, of the Planning Act or as a requirement of a site plan agreement entered into under these sections. The development proposal will require Site Plan Approval and, as

such, a Clearing Permit should not be required. Further, the property owner has provided an Undertaking to refrain from removing trees until after site plan approval is finalized.

6. Technical Items – Tree Inventory and Preservation Plan
   (1) The report has been revised on page 4 to reference the revised tree removal window of December 1 to March 31.
   (2) As noted above, a clearing permit is not required when a development proposal is subject to Site Plan approval. A site plan application has been submitted and will be processed once the rezoning application is approved. Further, the property owner has provided an Undertaking to refrain from tree removal until site plan approval is issued by the Township.
7. Technical Comments – Landscape Plan
   The Landscape Plan has been revised to replace one non-native species with a suggested native species.

C. Comments from GEI Consultants, dated October 1, 2025

1. A Spills Management Plan will be provided with the site plan application;
2. An Itemized Cost Estimate for Site Servicing will be provided with the site plan application;
3. All technical comments are addressed in the comment response letter prepared by C.F. Crozier.

D. Comments from the Office of the County Engineer, County of Dufferin, dated September 22, 2025

We note the requirement for the centre median extension and will provide those details through the site plan application.

E. Comments from Salvini Consulting, dated September 9, 2025

Comments are addressed in the comment response letter prepared by C.F. Crozier. The number of parking spaces has been increased to meet the By-law requirement.

F. Comments from County of Wellington, Planning and Development Department, dated March 6, 2026

1. The number of parking spaces has been increased to 57 to meet the By-law requirement.
2. The Addendum to the Planning Justification Report has been revised to address the definition of Employment Areas and applicable policies as set out in the PPS 2024.
3. The Addendum has been revised to address the new definition of Employment Area and new policies for Rural Employment Areas implemented through OPA 123.
4. The Addendum also addresses policies in Section 4.9.7 (Paris Galt Moraine Policy Area), Section 4.10.11 (Mill Creek Watershed), Section 6.8 (Rural Employment Areas) and Section 9.8 (Puslinch Local Policies).
5. We have reviewed Section 9.8.4 Regional Significant Economic Development Study Area and understand that the subject property is included in the study area.
6. We also understand that the subject property is located within Policy Area 7-1 Puslinch Economic Development Area. However, the policies for PA 7-1 relate to after-uses on sites with extractive or aggregate-related activities and do not apply to the subject lands which were previously used for agricultural purposes.

G. Comments from Wellington Source Water Protection, dated February 27, 2026

1. The Winter Maintenance plan will be provided through the site plan application.
2. A liquid fuel handling, storage and spill response procedure will be provided through the site plan application.
3. Further discussion with the Township Hydrogeologist will take place through the site plan application.
4. Documentation with respect to the flow meter will be provide through the site plan application.
5. Documentation that the monitoring wells and unused well will be decommissioned will be provided through the site plan application.
6. Documentation on the ECA approval for sewage works will be provided once available.
7. Comments on the Hydrogeological Investigation have been addressed in the response letter prepared by C.F. Crozier.

H. Comments from Harden Environmental Services Ltd., received March 16, 2026

Comments are addressed in the comment response letter prepared by C.F. Crozier.

We look forward to having the rezoning application scheduled for a Council decision in March. In the meantime, please do not hesitate to contact me if you have any questions.

Yours truly,

[redacted]

Arlene Beaumont, M.Pl.

MARCH 20, 2026

PROJECT NO: 2792-7289

SENT VIA: EMAIL
ARLENE@WEOUGHTRED.CA

W.E. Oughtred & Associated Inc.
2140 Winston Park Drive, Suite 26 & 27
Oakville, ON L6H 5V5

Attention: **Arlene Beaumont**
Planner

RE: **COMMENT RESPONSE LETTER**
7456 MCLEAN ROAD WEST & 197 BROCK ROAD SOUTH
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

Dear Arlene,

We have received comments from NPG Planning Solutions (dated March 5, 2026), Harden Environmental Services Ltd (on March 16, 2026), Salvini Consulting (dated February 27, 2026), and GEI Consultants (dated March 9, 2026) in response to Crozier's 3rd submission package for a Zoning By-law Amendment Application for a site located at 7456 McLean Road West & 197 Brock Road South in the Township of Puslinch. The following letter has been prepared to provide responses to the Planner's comments. Responses are in bold for clarity.

Transportation Engineering Comments – NPG Planning Solutions, Jeremy Tran (March 5, 2026):

1. We note that the Township's traffic consultant commented that further information is required regarding the truck scale on the site. We will coordinate with the Township's traffic consultant to understand if there will be additional traffic demand and/or parking required for the truck scale use.

Noted. Please see updated Site Plan where truck scale has been removed.

2. The applicant should clarify if the required 31 parking spaces noted in the ITE's Parking Generation Manual is for 322.5 m2 of net floor area, i.e. a parking rate of 1 space per 10.4 m2 of net floor area. Additional analysis is required to justify the proposed rate of 13 m2 of net floor area for the restaurant use in the draft Zoning By-law based on the ITE's Parking Generation Manual.

Please see updated Site Plan and TIS where the provided parking meets zoning requirements.

3. We had previously requested additional examples of parking and stacking requirements for restaurant use in comparable municipalities. While the revised TIS now includes stacking lane requirements for Township of Centre Wellington and the Town of Milton in addition to the Township of Guelph/Eramosa, it still does not address the combined effect of both parking and stacking requirements for restaurant and drive-through facility from these municipalities. Both the Township of Centre Wellington and the Town of Milton seem to have higher parking requirements that the Township of Puslinch for restaurant use and these apply in addition to their stacking requirements.

Please see updated Site Plan and TIS where the provided parking meets zoning requirements.

4. The surrogate demand survey demonstrates that sufficient stacking spaces are provided. However, the selected sample sites provide conflicting findings as to whether the proposed number of parking spaces are sufficient. The analysis also does not account for the difference in floor areas between the proposed development and the sample sites, nor provide a discussion as to how this may impact the demand for parking spaces.

Please see updated Site Plan and TIS where the provided parking meets zoning requirements.

5. At this stage, we are not ready to support the requested amendment to the parking requirements under the Puslinch Zoning By-law. The applicant should consider providing adequate parking or revising the TIS to address our above concerns.

Noted. Please see updated TIS.

Transportation Engineering Comments – Salvini Consulting, Julia Salvini (February 27, 2026):

1. The site traffic generation has been updated for eight vehicle fueling positions at the gas bar as confirmed by the TIS and the site plan and is acceptable.

Noted.

2. The pass-by traffic has been updated. There is still a small discrepancy between the numbers in the report and the turning movement diagrams in the PM peak hour, but the discrepancy is not enough to change the recommendations of the study. The future total traffic volumes match the turning movement diagrams and I accept them for analysis purposes.

Noted.

3. The future total analysis suggests that the traffic can be accommodated at the Brock/McLean intersection with changes to the signal timing. I defer to the County to comment on whether or not the signal timing changes can be accommodated.

Noted.

4. The consultant confirmed 95th percentile queues at the Brock/McLean intersection using the Synchro methodology as requested. The analysis confirms that 95th percentile queues can generally be accommodated in the available storage for each of the auxiliary turn lanes in the study area.

Noted.

5. The study includes several diagrams that illustrate the paths of various vehicles throughout the site. It appears that the design vehicles are able to access and circulate the site appropriately. There is a truck scale on the site – I would like to have more information about how the scale operates and see a diagram showing how a truck would use the scale and also fuel to confirm there is appropriate room on-site for that circulation pattern if it is needed. This comment has not been addressed. It is not clear how a truck would use both the scale and refuel or if that is not a requirement.

Noted. Please see updated Site Plan where truck scale has been removed.

6. The survey data collected at the two proxy sites supports the 14 stacking/queuing spaces that have been proposed for the drive-thru restaurant. In addition, the site has been redesigned so that the entry to the drive-thru is further from the Brock Road driveway. The 14 stacking/queuing spaces are acceptable.

Noted.

7. The study provides some high level rationale for a parking provision that is seven (7) spaces less than what is required in the Township Zoning By-law along with proxy survey data for two comparable sites. One of the sites in Brantford found a parking demand that is less than the parking proposed for the site and the other site in Kitchener found a parking demand that was more. The proxy data was not factored by the consultant to the floor area of the site, but that does not change the results. The consultant discounted the Kitchener results because it is a multi-use site. I am very familiar with the Kitchener site. There is not any parking demand spilling over from adjacent uses. Moose Winooski's has access to a large parking lot and only the back service door faces the McDonald's and can only be opened from the inside. The data does not support the parking variance that the applicant is proposing, in my opinion. In addition, there appears to be room on the site to accommodate the seven spaces that are needed to meet the Zoning By-law requirements. The drive aisles are wide and there is space around the areas where the service vehicles have been shown to circulate. It appears there is room near the loading space adjacent to convenience store and/or the area identified for snow storage for additional passenger car parking to be provided.

Noted. Please see updated Site Plan and TIS where the provided parking meets zoning requirements.

8. The consultant previously provided information about sight distance at the proposed driveway connection to McLean Road West stating that there is more than 200 metres of sight distance in both directions. The assessment was updated in this report to suggest that only 145 metres of sight distance is available to the right (for the left turn out movement). There is adequate sight distance to the left looking toward Brock Road where traffic is also moving more slowly coming from the intersection. To the right, both cars and trucks need to be able to see oncoming traffic to make a safe left turn out. The consultant should confirm on a drawing what the available sight distance is for a passenger vehicle and for the design truck for the left turn from stop condition in the TAC manual – the passenger vehicle has a shorter intersection sight distance requirement but also a lower eye height. Both need to be illustrated on separate drawings for submission. The consultant is encouraged to reach out and confirm the approach to assessing sight distance with me.

Noted. A second site visit was conducted on March 16th, 2026 and the sight distances were taken for both passenger car and trucks. Please see updated TIS for results and requirements.

Hydrogeological Comments – Harden Environmental Services Ltd, Stan Denhoed (August 2025) & Wellington Source Water Protection, Danielle Fisher (August 2025)

1. Groundwater elevations obtained in December 2025 require an explanation. The water levels obtained are between 3.5 and 6.5 metres lower than those obtained in July of 2025. One of the wells (MW1-21) has a water level lower than the bottom of the well. The high groundwater elevations obtained in the spring of the year have been acknowledged and septic system will be designed accordingly.

Crozier acknowledges that the groundwater levels recorded in December 2025 are lower than those observed in July 2025. However, Crozier conducted groundwater monitoring at a separate project site located in close proximity to the subject property on the same day (December 11, 2025), where similarly low groundwater levels were observed. This correlation supports the validity of the December measurements and suggests they are representative of winter conditions. With respect to monitoring well MW1-21, the recorded water level being below the bottom of the well is considered anomalous and is likely attributable to measurement or recording error. To further assess and verify groundwater conditions, Crozier revisited the site on March 17, 2026, to re-measure groundwater levels and collect additional data. The results of this monitoring event will be included within the next submission.

2. The site development requires a) a sewage system that achieves a very high level of nitrate reduction and b) is located at the downgradient edge of the site. This provides little or no natural attenuation from within the site. BH4 drilled near to the septic system location finds silty sands overlying sand and gravel. We acknowledge that because of the high volume of effluent that this is a matter for the MECP, however, the Township has an interest in minimizing the impact on groundwater quality given the site location on the Galt Moraine. We will be pursuing the MECP to carefully address the fate of the effluent and we agree with Crozier that a monitoring plan may be required to verify off-site impacts.

Acknowledged.

Civil Engineering Comments – GEI Consultants, Andrea Reed (March 9, 2026)

1. "Type A" spaces are shown to be 3.0m wide. Per Township Zoning By-law, barrier free spaces shall be 3.6m wide. Also, the access aisles are shown to be 1.5m wide. Per County standards, access aisles shall be 2.0m wide. Proposed grades around the barrier-free spaces for the restaurant appear to result in slopes up to 5.6%. Per County standards, maximum running slope is 1.5% and max cross slope is 1% for accessible parking spaces. Please review and revise accessible parking space widths and grades. Tactile plates and signage to be reviewed at the time of site plan approval.

Noted. "Type A" and barrier free spaces have been updated to be 3.0m 3.6m wide, respectively, and access aisles have been updated to be 2.0m wide. Grading has been adjusted to meet County standards for accessible parking spaces. Refer to the Preliminary Site Grading Plan (C102).

2. The grading plan shows a "50.8%" slope against the eastern property limit at the end of the drive-through. Maximum slope without retaining walls is 3:1 per Township standards.

   Additionally, the retaining walls adjacent to the septic beds are shown to be only 0.3m in width while the height almost reaches 4m. If wider retaining walls are required, some of the asphalt area will be lost and vehicle maneuvering could be impacted (specifically the WB-20 truck).

Noted. Slopes have been adjusted to show a maximum slope of 3:1. Through correspondence with the retaining wall manufacturer, we have confirmed that the wall thickness will be a maximum of 925mm inclusive of the wall batter. This additional thickness will be on the outer side of the paved areas and will not impact the asphalt area or vehicle maneuvering. Refer to the Preliminary Site Grading Plan (C102). Exact sizing of the wall will be determined during detailed design when a product is selected.

Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.

[redacted]

Jordan Bieri, P.Eng.
Project Engineer, Land Development

C.F. CROZIER & ASSOCIATES INC.

[redacted]

Chris Gerrits, M.Sc., P.Eng.
Manager, Hydrogeology

C.F. CROZIER & ASSOCIATES INC.

[redacted]

Ian Lindley, P.Eng.
Project Engineer, Transportation

ZONING BY-LAW AMENDMENT to By-law 023/18

for

DAAZ Inc.
7456 Mclean Road West & 197 Brock Road South, Puslinch

Township Rezoning Application D14/DAZ

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

A BY-LAW TO AMEND BY-LAW NUMBER 023/18, AS AMENDED, BEING THE ZONING BY-LAW OF THE TOWNSHIP OF PUSLINCH

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-Law Number 023/18 pursuant to Sections 34 of the Planning Act, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH ENACTS AS FOLLOWS:

1. That Schedule "A" of By-law 023/18 is hereby amended by rezoning the lands municipally referred to as 7456 Mclean Road West and 197 Brock Road South, from a Special Provision Industrial (IND(sp54)) ZONE and Holding Industrial (IND(h5)) ZONE to a site specific **Highway Commercial (HC(sp_)) ZONE**, as shown on schedule "A" of this By-law.

2. That Section 14 Site-Specific Special Provisions is amended by adding the following site specific provision:

No.	Zone Designation	Permitted Uses	Prohibited Uses	Site Specific Special Provision
	HC	Gas Bar(s), Retail Store, Restaurant, Drive-through Service Facility.	N/A	N/A

3. That the subject land as shown on Schedule "A" to this By-Law shall be subject to all applicable regulations of Zoning By-Law 023/18, as amended.

4. This By-law shall become effective from the date of passage by Council and come into force in accordance with the requirements of the Planning Act, R.S.O. 1990, as amended.

READ A FIRST AND SECOND TIME THIS _____OF _____, 20__.

_____ _____
MAYOR CLERK

READ A THIRD TIME AND PASSED THIS _____OF _____, 20__.

_____ _____
MAYOR CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

Schedule "A"

INSERT MAP

Highlighted area to be rezoned from "**IND(sp54) & IND(h5)" Zone** to a site specific **"HC(sp_)" Zone**

This is Schedule "A" to By-law No._____

Passed this ____day of _____, 20__.

_____
MAYOR

_____

CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

EXPLANATION OF BY-LAW NO. _____

By-law Number _____amends the Township of Puslinch Zoning By-law 23/18 by rezoning the lands municipally referred to as 7456 Mclean Road West and 197 Brock Road South from a Special Provision Industrial (IND(sp54)) ZONE and a Holding Industrial (IND(h5)) ZONE to a Special Provision Highway Commercial (HC(sp_)) ZONE to permit a gas bar, associated retail/convenience store, and drive through restaurant.

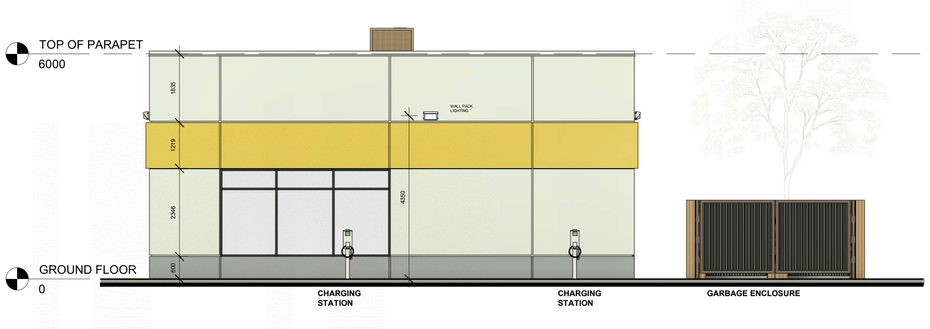
The subject property is approximately 1.62 hectares (4.0 acres) in size and is currently vacant/undeveloped.

Within the County's Official Plan, the subject lands are designated as "Rural Employment". This designation permits such commercial uses that will be service focused, with limited accessory retails, including both small scale restaurants and automobile services.

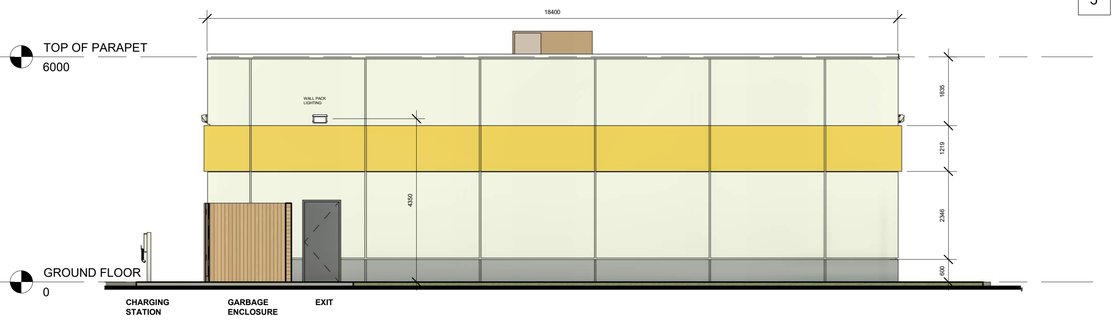
RICHARD ZIEGLER ARCHITECT INC.
39 POLSON STREET TORONTO, ONTARIO M5A 1A4
T: 416 461 1494 or 1 800 413 7992 F: 866 895 1488
www.rzarchitect.com E: mail @ rzarchitect.com

MATERIAL LEGEND

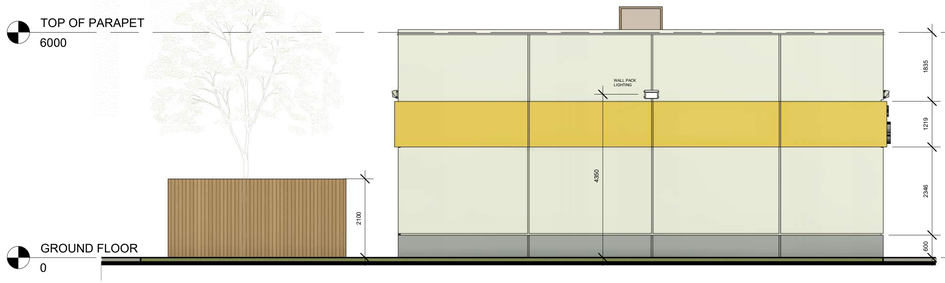
1		WHITE ACM
2		YELLOW ACM
3		GREY ACM
4		CLEAR ANODIZED STOREFRONT FRAMING
5		GLASS



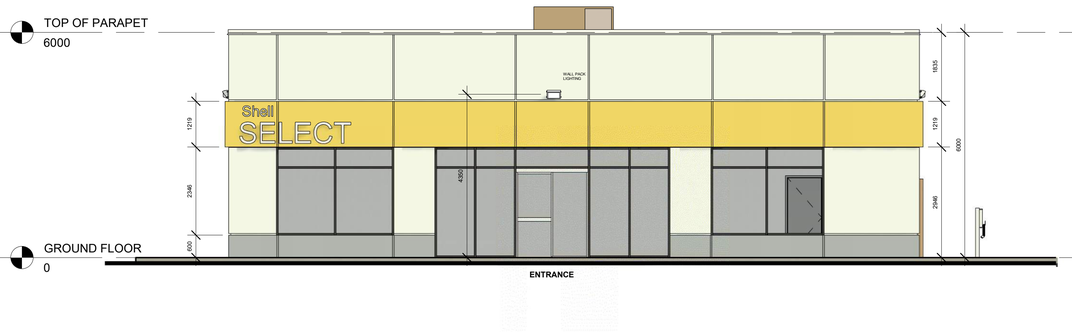
4 A201 **CONVENIENCE STORE - EAST ELEVATION**
1 : 75



2 A201 **CONVENIENCE STORE - NORTH ELEVATION**
1 : 75



3 A201 **CONVENIENCE STORE - WEST ELEVATION**
1 : 75



1 A201 **CONVENIENCE STORE - SOUTH ELEVATION**
1 : 75

NO.	ISSUANCE	DATE
2	REV. & ISSUED FOR PLANNING APPROVALS	2026.03.03
1	REV. & ISSUED FOR PLANNING APPROVALS	2026.02.11

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

PROPOSED COMMERCIAL DEVELOPMENT

7456 McLEAN ROAD WEST & 197 BROCK ROAD SOUTH
TOWN OF PUSLINCH

ELEVATIONS - CONVENIENCE STORE

SCALE	As indicated	PROJECT NUMBER
DATE	2026-03-10 2:50:54 PM	202436
DRAWN	SP	
CHECKED	REZ	

SHEET A201 REVISION

FILE NAME: Y:\2024 Projects\202436 - 7456 McLean Road, Puslinch\2.0 Design and Construction Documents Phase\Revit\7456 McLean Road - 2026.03.09.rvt
PLOT DATE: 2026-03-10 2:50:54 PM

3 / A202 **NORTH ELEV. @ RESTAURANT**

1 : 75

4 / A202 **SOUTH ELEV. @ RESTAURANT**

1 : 75

2 / A202 **WEST ELEV. @ RESTAURANT**

1 : 75

1 / A202 **EAST ELEV. @ RESTAURANT**

1 : 75

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MATERIAL LEGEND

1	GREY CORRUGATED METAL
2	GREY STONE
3	WOOD-LOOK HARDIE BOARD
4	CLEAR ANODIZED STOREFRONT FRAMING
5	GLASS
6	SILVER CLEAR ANODIZED ACM
7	RED ACM

NO.	ISSUANCE	DATE
3	REV. & ISSUED FOR PLANNING APPROVALS	2026.03.03
2	REV. & ISSUED FOR PLANNING APPROVALS	2026.02.11
1	ISSUED FOR PLANNING APPROVALS	2025.08.05

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

PROPOSED COMMERCIAL DEVELOPMENT

7456 McLEAN ROAD WEST & 197 BROCK ROAD SOUTH
TOWN OF PUSLINCH

ELEVATIONS - RESTAURANT

SCALE	As indicated	PROJECT NUMBER
DATE	2026-03-10 2:50:57 PM	202436
DRAWN	SP	
CHECKED	REZ	
SHEET		REVISION

A202

FILE NAME: Y:\2024 Projects\202436 - 7456 McLean Road, Puslinch\20 Design and Construction Documents Phase\Revit\7456 McLean Road - 2026.03.09.rvt
PLOT DATE: 2026-03-10 2:50:57 PM

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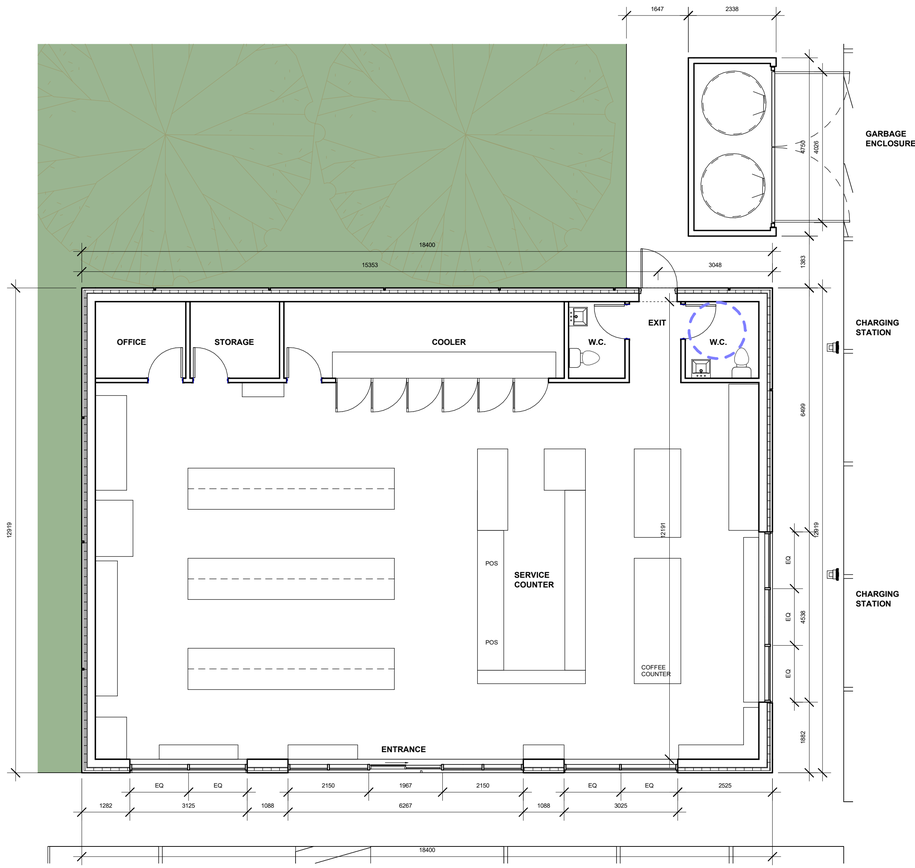
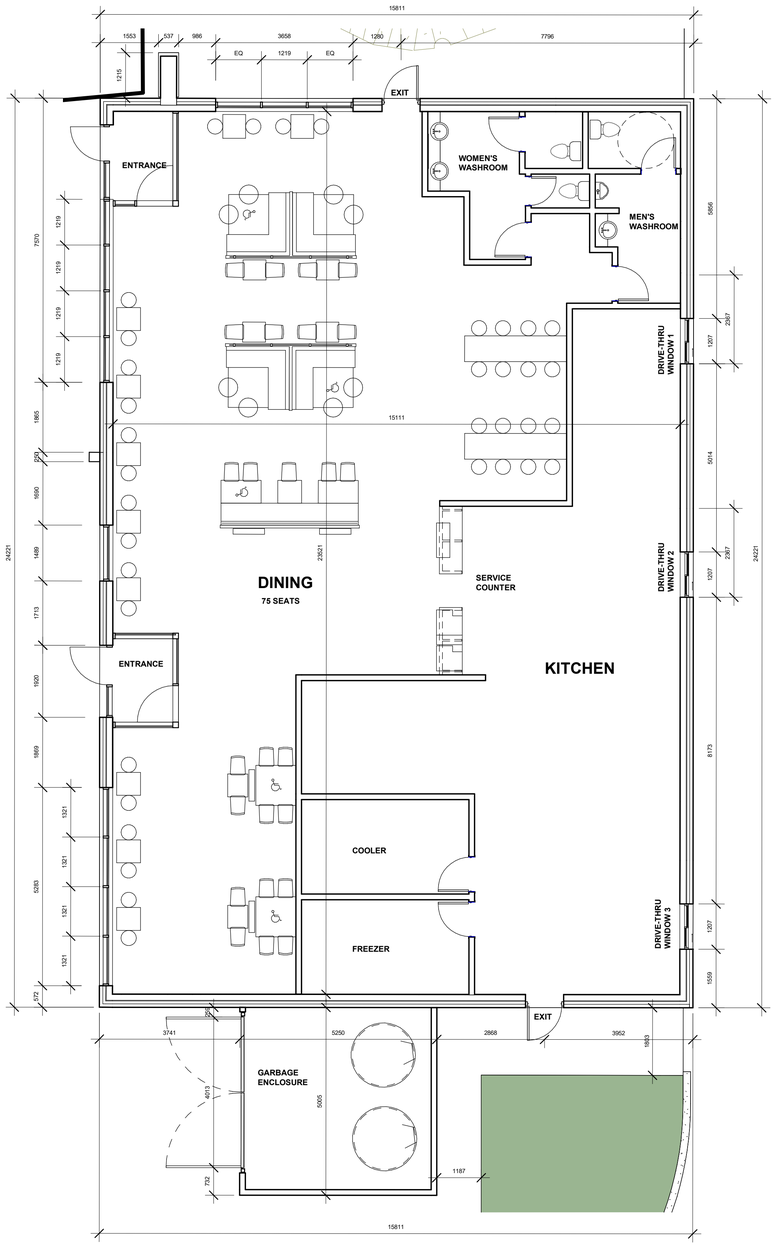


2 A102 **FLOOR PLAN @ CONVENIENCE STORE**
1 : 75



1 A102 **FLOOR PLAN @ RESTAURANT**
1 : 75

NO.	ISSUANCE	DATE
3	REV. & ISSUED FOR PLANNING APPROVALS	2026.03.03
2	REV. & ISSUED FOR PLANNING APPROVALS	2026.02.11
1	ISSUED FOR PLANNING APPROVALS	2025.08.05

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

STAMP

PROPOSED COMMERCIAL DEVELOPMENT

7456 McLEAN ROAD WEST & 197 BROCK ROAD SOUTH
TOWN OF PUSLINCH

FLOOR PLANS

SCALE	1 : 75	PROJECT NUMBER
DATE	2026-03-10 2:50:51 PM	202436
DRAWN	SP	
CHECKED	REZ	

SHEET A102 REVISION

FILE NAME: Y:\2024 Projects\202436 - 7456 McLaren Road, Puslinch\2.0 Design and Construction Documents Phase\Revit\7456 McLaren Road_2026.03.09.rvt
PLOT DATE: 2026-03-10 2:50:51 PM

FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT

7456 MCLEAN ROAD WEST & 197 BROCK ROAD SOUTH

TOWNSHIP OF PUSLINCH COUNTY OF WELLINGTON

PREPARED FOR:

DAAZ INC.

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
55 WYNDHAM STREET NORTH, SUITE 215
GUELPH, ON N1H 7T8

MARCH 2026

CFCA FILE NO. 2792-7289

The material in this report reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

CROZIER

Revision Number	Date	Comments
Rev. 0	October 2023	Issued for 1st Submission (ZBA)
Rev. 1	August 2025	Issued for 2nd Submission (ZBA)
Rev. 2	February 2026	Issued for 3rd Submission (ZBA)
Rev. 2	March 2026	Issued for 4th Submission (ZBA)

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1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by Daaz Inc. to prepare a Functional Servicing and Stormwater Management Report in support of the Zoning By-Law Amendment for the proposed mixed-use commercial development located at 7456 McLean Road West and 197 Brock Road South in the Township of Puslinch (the site). The purpose of this report is to demonstrate the proposed development is feasible from a servicing and stormwater management perspective and conforms with the requirements of the Township of Puslinch (Township) and County of Wellington (County).

This report has been completed in accordance with the appropriate design guidelines and Township of Puslinch Pre-consultation Comment Summary dated November 21, 2022. The relevant background studies and reports used in preparation of this report include:

- Geotechnical Investigation Report (CMT, July 2023) – Provided under separate cover.
- Ministry of the Environment Design Guidelines for Drinking-Water Systems (2008).
- Ministry of Environment Stormwater Management Planning and Design Manual (March 2003).
- The Ontario Building Code (2012).
- The City of Guelph – Development Engineering Manual (October 2023)
- The Township of Puslinch - Municipal Development Standards (September 2019).
- The Township of Puslinch - Stormwater Management Report Carroll Pond Municipal Drain (March 2007)
- The Ministry of Transportation Drainage Management Manual (1997).
- Topographic survey (Tarasick McMillan Kubicki Limited, November 2022).
- Well Record Database, Ministry of the Environment, Conservation and Parks, accessed July 2023.

This report has been prepared to address the third submission comments received from the reviewing agencies and to support the third submission of the Zoning By-Law Amendment for the proposed mixed-use commercial development.

2.0 Site Description

The site encompasses an area of approximately 1.62 ha and currently consists of two adjacent properties (7456 McLean Road and 197 Brock Road South). The site is comprised of vegetated/landscaped areas and is bounded by Dufferin Aggregates (aggregate pit) to the north, Brock Road South (Wellington Road 46) to the east, McLean Road West to the south, and St. Mary's Cement Inc. (aggregate pit) to the west. Per review of the Conservation Authority Regulation Mapping, the site is not located within a Grand River Conservation Authority regulated area.

According to the Site Plan prepared by Richard Ziegler Architect Inc. dated March 10, 2026, the proposed mixed-use commercial development will consist of the following elements:

- A 1-storey convenience store (235 m^2).
- A 1-storey drive-thru restaurant (379 m^2).
- A car gas bar with 4 double sided pumps and fueling stations.
- A Truck gas bar with 6 pumps.
- 44 standard parking spaces (including 4 accessible parking spaces and 4 electric vehicle charging spaces) and 6 transport truck parking spaces.
- Internal paved areas including access to McLean Road West and Brock Road South.

The existing vegetated and landscaped areas will be removed to accommodate the proposed mixed-use commercial development.

3.0 Soil and Groundwater Evaluation

- A Geotechnical Investigation was conducted by CMT Engineering Inc. (CMT) in April 2023, which included the advancement of seven (7) boreholes to depths between 5.18 to 12.19 meters below ground surface (mbgs). The following surficial materials (in stratigraphic order) were generally encountered onsite:
- Topsoil
- Fill on the eastern portion of the site, primarily consisting of sand, silty sand, and gravel fill with wood pieces.
- Sandy silt/silty sand
- Sand and gravel

Refer to the Geotechnical Investigation Report (CMT, September 2023) for additional details.

Monitoring wells were installed in three (3) of the boreholes (BH4/MW4-23, BH5/MW5-23, and BH6/MW6-23), and three (3) existing monitoring wells were identified at the time of the geotechnical investigation (MW1-21, MW2-21, and MW3-21). In general, groundwater level elevations ranged from approximately 0.38 to 5.47 mbgs (321.43 to 325.87 masl) in Spring 2023 to 7.51 to 10.75 mgs (316.85 to 321.37 masl) in Winter 2025. A Hydrogeological Investigation Report was prepared by Crozier (February 2026) to support the Zoning By-Law Amendment application for the site. Refer to this report for additional details and analyses regarding on-site groundwater.

In addition, Crozier completed a site investigation on June 7, 2023 to characterize the soil and groundwater conditions in potential areas for a leaching bed. A mini-excavator was used to install three (3) test pits to a maximum depth of 2.1 mbgs. The test pit locations are illustrated on the Preliminary Site Servicing Plan (**Drawing C103**)**.** The general soil stratigraphy encountered was consistent with the findings from the Geotechnical Investigation (CMT, September 2023). No free groundwater was encountered in TP-1 or TP-3 to the maximum depth of investigation (2.1 mbgs). Groundwater seepage was identified at approximately 1.2 mbgs at TP-2. Refer to the Hydrogeological Investigation Report (Crozier, February 2026) for additional details.

A representative sample was collected from TP-3 and submitted to Chung & Vander Doelen (CVD) Engineering Ltd. for a particle size distribution analysis. The laboratory test results are presented in **Appendix A**.

Referring to Supplementary Standard SB-6 of the 2012 Ontario Building Code (OBC) and the results of the particle size distribution analysis for the soil sample obtained from TP-3, the predominant soil is classified as SM soil as described by the Unified Soil Classification System. An SM soil is a silty sand, or sand silt mix with a percolation rate ranging from 8 min to 20 min/cm. Based on the percentage of sand in the soil sample, a percolation rate of 15 min/cm has been assigned for this sewage system design.

4.0 Water Servicing

4.1 Water Supply

The site is located in the Township of Puslinch, and there is no municipal water supply available to service the proposed development. Based on the review of the MECP Well Records, properties in the vicinity of the site are serviced with private water supply wells with similar anticipated demands. Therefore, the proposed development will be serviced with a water supply well.

The water demand for the proposed development was calculated from the maximum daily sewage flows as noted in Section 5.1 and using the appropriate MECP peaking factors. Table 1 summarizes the anticipated water demand and **Appendix B** contains the detailed water demand calculations.

Table 1: Estimated Daily Water Demand

Average Day Demand (L/min)	**Maximum Day Demand** (L/min)	**Peak Hour Demand** (L/min)
7.52	15.04	30.08

One (1) water supply well was identified on-site by Crozier. Refer to the Preliminary Site Servicing Plan (**Drawing C103**) for the well location. This well appears to be associated with the well record for Well ID 6707585. According to the well record, this well was installed in 1981 to a depth of 29 m below ground surface (mbgs) within limestone bedrock. The well is a 6-inch steel cased well in a well pit. Initial testing of the well indicated that the well could produce 8 gallons per minute (GPM) or 30.3 liters per minute (L/min).

As shown on the Preliminary Erosion, Sediment Control, and Removals Plan (Drawing C101), the well conflicts with the proposed development plans. Therefore, this well will be decommissioned, and a new well is proposed to service the development. The existing well will be decommissioned in accordance with Ontario Regulation (O. Reg.) 903 by a licensed Well Contractor. The well should be decommissioned prior to any site alteration activities.

A water supply assessment was completed as part of the Hydrogeological Investigation Report by Crozier (under separate cover) to assess if the proposed development can be serviced with a water supply well. The water supply assessment concluded that it is expected that there is sufficient groundwater supply in the area for a water supply well. Refer to the Hydrogeological Investigation Report (February 2026).

The proposed well location is shown on the Preliminary Site Servicing Plan (**Drawing C103**). The well will be constructed in accordance with O. Reg. 903.

4.2 Fire Flow Calculations

Preliminary calculations were completed to estimate the required fire storage volume for the proposed development, as there is no municipal water supply for firefighting purposes. The fire storage volume was calculated using the Ontario Fire Marshalls Fire Protection Water Supply Guideline (1999), as is required in Part 3 of the Ontario Building Code. The fire storage volume calculation was based on the following criteria which will be confirmed with the architect (Richard Ziegler Architect Inc.).

- Building type – E Classification
- Water Supply Coeff (k) – 17
    - Building is of non-combustible construction with fire separations and fire-resistance ratings provided in accordance with Subsection 3.2.2. of the OBC, including loadbearing walls, columns, and arches.
- Building Height – 6 meters

The estimated fire storage requirements are used to estimate the fire cistern size required to service the proposed development. Table 2 below summarizes the preliminary fire storage volumes calculated for the proposed development.

Table 2: Fire Storage Volume Requirements

Building Classification	**Total Area** (m^2)	**Height** (m)	**Volume** (m^3)	**K**[1]	**S_{Total}**	**Minimum Water Flow Supply Flow Rate (L/min)**[1]	**Required Fire Storage Volume** (L)
E	235	6.0	1,410	17	1.0	2,700	81,000

[1]Minimum fire protection water supply shall not be less than what is needed to provide the minimum flow rate for a duration of 30 minutes.

As outlined in Table 2, a storage volume of 81,000 L is the required minimum fire storage volume, and it must be supplied at a rate of 2700 L/min for a duration of 0.5 hours. Refer to **Appendix B** for preliminary fire storage volume calculations.

It should be noted the fire flows determined from the Ontario Building Code fire flow method is a conservative estimate for comparison purposes only. The Mechanical Engineer for the development will complete the required analysis for fire protection and the Architect will design fire separation methods per the determined fire flow rate at the Site Plan Approval and Building Permit stage.

A fire cistern has been provided to supply the required fire storage volumes for the proposed development similar to other developments in the area. The location of the fire cistern can be referenced on the Preliminary Site Servicing Plan (**Drawing C103**) and will be confirmed through consultation with the Fire Chief and the Township throughout the design process.

5.0 Sanitary Servicing

The site is located in the Township of Puslinch and there are no municipal sanitary services available to service the proposed development. Therefore, the proposed development will be serviced with an onsite sewage system.

5.1 Sanitary Design Flow

The total daily design sewage flow was calculated for the proposed development in accordance with Table 8.2.1.3.B of the Ontario Building Code (OBC), part 8, as shown below in Table 3. Detailed sewage flow calculations are included in **Appendix C**.

Table 3: Total Maximum Daily Design Sewage Flow

Establishment	**Area** (m^2)	**Unit**	**Unit Flow** (L/day)	**Number of Units**	**Total Flow** (L/day)
Convenience Store	235	per m^2 floor area, or	5	235	1,175
		per water closet	1,230	2	2,460
Restaurant, 24-hr	379	per seat	200	40	8,000
Car Gas Bar	n/a	fuel outlet	560	8[1]	4,480
Truck Gas Bar	n/a	fuel outlet	560	12	6,720
				Total Daily Design Sewage Flow:	21,660
				Design Sewage Flow:	**22,000**

[1.] Two (2) fuel outlets/nozzles per pump

As shown in Table 3, the total maximum day design sanitary sewage flow for the proposed development is 22,000 L/day. Properties with a total daily design sewage flow exceeding 10,000 L/day are subject to Section 53 of the Ontario Water Resources Act and require an Environmental Compliance Approval (ECA) issued by the Ministry of the Environment, Conservation and Parks (MECP). Given that the total daily design sewage flow is 22,000 L/day, an ECA will be required for the sewage works.

5.2 Proposed Sanitary Servicing

An onsite sewage system, consisting of an advanced treatment system with subsurface disposal via leaching bed is proposed for the site. Refer to the Preliminary Site Servicing Plan (**Drawing C103**) for the layout of the onsite sewage system.

5.2.1 Proposed Advanced Treatment System

As noted above, the total daily design sewage flow is 22,000 L/day. Given the relatively constrained space available for subsurface disposal, advanced treatment of the sewage prior to discharge to the leaching bed will be required. A Level IV treatment unit meeting the effluent objectives as noted in Table 8.6.2.2 of the OBC is recommended.

According to the Hydrogeological Investigation Report (Crozier, February 2026), significant denitrification of the effluent will also be required to meet the MECP's "Reasonable Use" guideline as outlined in Chapter 22 of the MECP Design Guidelines for Sewage Works (2008). An effluent objective of 3 mg/L is recommended for the advanced treatment system. Refer to the Hydrogeological Investigation Report for further details.

There are several technologies available on the market that can achieve the anticipated level of treatment required for this site, including Waterloo Biofilter, the MBBR-IQ system as designed and supplied by BNA Inc., and others. Design of the treatment system will be completed during detailed design stages. A preliminary location for the treatment tanks has been indicated on the Preliminary Site Servicing Plan (**Drawing C103**).

5.2.2 Proposed Leaching Bed

Treated effluent from the advanced treatment stage will be dosed to a Type A dispersal bed designed in accordance with the OBC for final polishing and dispersal of effluent. As described in Section 3.0, the soils in the proposed leaching bed are sandy soils with an anticipated T-time of 15 min/cm. The proposed Type A dispersal bed will include a sand and stone layer as sized and described below as per OBC 8.7.7.

A stone layer composed of septic stone meeting the criteria outlined in Table 8.7.3.3.A., Division B of the OBC will be installed to accommodate the effluent distribution piping. The minimum stone area is calculated using the following equation.

$$A = \frac{Q}{50}$$

Where:

A = the contact area between the base of the stone layer and the imported sand layer.

Q = the total design sewage flow in L/d.

Given a total daily design flow of 22,000 L/day, a minimum stone area of 440 m^2 is required. The proposed stone area is 468 m^2, which will be equipped with four (4) cells of distribution piping. Each cell will be equipped with eight (8) runs of 12 m length of 75 mm perforated distribution pipes placed at 1.0 m centers. Effluent will be conveyed to the proposed dispersal bed by a 50 mm sanitary force main and distributed to each of the cells in the leaching bed via an automatic distribution valve.

The minimum sand area is calculated using the formula below:

$$A = \frac{QT}{850}$$

Where:

A = the contact area in m^2 between the base of the sand layer and the native soil.

Q = the total design sewage flow in L/d.

T = the percolation time of the underlying soil in min/cm to a maximum of 15 min/cm.

Given a total daily design flow of 22,000 L/day and a percolation time of 15 min/cm for the underlying soils, the minimum size of the sand area required for the leaching bed is calculated to be 338 m^2. An area of 468 m^2 is proposed to ensure a consistent sand layer beneath the stone layer. The sand layer will be constructed of imported sand with a T-time of 6 – 10 min/cm and no more than 5% passing the No.200 sieve. The sand layer will be a minimum of 300 mm thick below the stone layer and in all other areas.

Refer to the Preliminary Site Servicing Plan (**Drawing C103**) for the layout, orientation, and details of the proposed leaching bed.

6.0 Existing Stormwater Servicing

The existing stormwater servicing infrastructure close to the site includes:

- A 300 mm diameter concrete storm sewer transitioning to a 375 mm diameter concrete sanitary sewer on McLean Road West running west to east at a minimum slope of approximately 0.3% (Reconstruction of Wellington Road 46 As-constructed Drawing No. 06).

- Two 300 mm diameter concrete storm sewers which daylight within the McLean Road West roadside ditch directly south of the site. These storm sewers collect runoff from the site and direct it the McLean Road West storm sewer network.

- A 300 mm diameter concrete storm sewer transitioning to a 375 mm diameter concrete storm sewer on Brock Road South running north to south at a minimum slope of approximately 0.75% (Reconstruction of Wellington Road 46 As-constructed Drawing No. 04).

Runoff from a portion of the proposed development (0.81 ha) collects in the McLean Road West storm sewer network and is directed to Brock Road South network prior to draining to Carroll Pond. Carroll Pond is located approximately 600 m south of the proposed development on Brock Road South and provides stormwater quantity and quality controls for the surrounding area. It should be noted the quantity and quality controls within Carroll Pond were designed for the site under pre-development conditions and any development will require on-site controls. Excerpts from the Stormwater Management Report Carroll Pond Municipal Drain (March 2007) have been provided in **Appendix D** along with the as-constructed drawings of the surrounding area.

7.0 Drainage Conditions

The drainage conditions for the site in both pre-development and post-development conditions are outlined in the following sections.

7.1 Existing Drainage Conditions

According to the topographic survey (Tarasick McMillan Kubicki Limited, November 3, 2022), the site currently consists of a vegetated greenfield with treed and brush areas. The site has a drainage split which divides the site into an eastern and western catchment based on the topographic survey.

The western catchment (Catchment 101) consists primarily of tree and brush areas and generally slopes east to west. Runoff from Catchment 101 is directed via sheet flow to the adjacent property to the west.

The eastern catchment (Catchment 102) consists primarily of tree and brush areas and generally slopes west to east. Runoff from Catchment 101 is directed via sheet flow to the McLean Road West ditch where it collects in two 300 mm diameter sewers on McLean Road West prior to draining to Carroll Pond.

Table 4 summarizes the pre-development catchment areas which were delineated based on the Stormwater Management Report - Carroll Pond Municipal Drain (Township of Puslinch, March 2007).

Table 4: Pre-Development Catchment Area Parameters

Catchment ID	Catchment Area (ha)	Land Use(s)	SCS Curve Number	Outlet
101	0.81	Treed and brush area	65 (CN)	Adjacent Western Lands
102	0.81	Treed and brush area	65 (CN)	McLean Road Sewer

Note: These CN Values have been converted to CN Values in Visual OTTHYMO model, which may lead to discrepancies.

Refer to the Preliminary Pre-Development Drainage Plan (**Figure 1**) for existing drainage patterns of the site.

7.2 Proposed Drainage Conditions

Based on the Site Plan (Richard Ziegler Architect Inc., February 10, 2026), the proposed development will consist of a one-storey convenience store, one-storey restaurant, car and truck gas bars, parking areas, site access from Brock Road South, and McLean Road West.

The proposed site grading divides the site into four (4) post-development drainage catchment areas with two outlets, as shown on the Post-Development Drainage Plan (**Figure 2**):

- Catchment 201 consists of uncontrolled drainage from the landscaped areas along the northern and western property boundaries of the site. All storm events from this catchment will continue to be conveyed overland via sheet flow to the neighbouring property to the west, consistent with pre-development conditions.

- Catchment 202 consists of drainage from the proposed gas bars, convenience store and internal paved areas, landscaped areas, and will be collected and conveyed via the internal storm sewer network to the McLean Road West ditch which drains to the storm sewer within Mclean Road West. The emergency overland flow for this catchment is directed towards the McLean Road West right-of-way.

- Catchment 203 consists of uncontrolled drainage from the landscaped areas along the southern and eastern property boundaries of the site. All storm events from this catchment will continue to be conveyed overland via sheet flow to the McLean Road West and Brock Road South rights-of-way; ultimately draining towards Carroll Pond, consistent with existing conditions.

- Catchment 204 consists of drainage from the rooftop of the proposed restaurant building and is to be conveyed towards an infiltration gallery within the landscaped areas to the south of the building, to promote infiltration and water balance for the site.

Table 5 provides details of the catchment areas and percent imperviousness/SCS Curve Numbers for the post-development conditions.

Table 5: Post-Development Catchment Parameters

Catchment ID	Catchment Area (ha)	Land Use(s)	SCS Curve Number / Percent Impervious[1]	Outlet
201	0.23	Landscaped areas	69 (CN)	Neighbouring Western Lands
202	1.23	Proposed truck gas bar, convenience store, landscaped areas, and paved areas.	93%	McLean Road West ditch
203	0.08	Landscaped areas	69 (CN)	McLean Road West and Brock Road South right-of-ways
204	0.08	Proposed restaurant, landscaped areas.	60%	Infiltration Gallery

[1]SCS Curve Numbers (CN) are used for pervious catchments (NASHYD) and % impervious is for mainly impervious catchments (STANHYD)
Note: These CN Values have been converted to CN Values in Visual OTTHYMO model, which may lead to discrepancies.

Refer to the Preliminary Post-Development Drainage Plan (**Figure 2**) and the Preliminary Site Grading Plan (**Drawing C102**) which illustrate the proposed site drainage and servicing plans.

8.0 Stormwater Management

Stormwater management and site drainage for the proposed development must adhere to the policies and standards of the Township of Puslinch and Ministry of Environment, Conservation, and Parks (MECP).

The stormwater management criteria for the development have been summarized below:

Water Quantity Control

According to the Township of Puslinch Municipal Development Standards (September 2019), water quantity controls are required for the site. The water quantity requirements include controlling the post-development peak runoff rates to the pre-development peak runoff rates for storms up to and including the 100-year event (i.e. 2, 5, 10, 50, 100-year return period).

Water Quality Control

At least 80% removal of Total Suspended Solids will be provided with "Enhanced Protection" as outlined in the Ministry of Environment Stormwater Management Planning and Design Manual (2003).

Water Balance

Infiltration facilities shall be designed to ensure that under post-development conditions, infiltration volumes match the pre-development condition.

8.1 Stormwater Quantity Control

As discussed in Section 8.0, stormwater quantity control requirements for the site should include on-site controls to control the post-development flows to the pre-development flows for storms up to and including the 100-year event (i.e. 2, 5, 10, 50, 100-year return period).

The Township of Puslinch Municipal Development Standards (September 2019) and the MTO Drainage Management Manual (1997) were referenced to determine the hydrologic parameters for the catchment areas within the site. The topographic survey prepared by Tarasick McMillan Kubicki Limited (November 3, 2022), was referenced to confirm the land cover and drainage patterns under the existing site conditions. The Geotechnical Report prepared by CMT (July 2023) was reviewed to determine the on-site soil conditions.

Based on the above, the hydrologic parameters for pre-development and post-development conditions were determined and are summarized in Tables 6 and Table 7 below. The detailed hydrologic parameter sheets for each catchment area are included in **Appendix E**.

Table 6: Pre-Development Hydrologic Parameters

Catchment Description	101	102
Drainage Area (ha)	0.81	0.81
Curve Number (CN)[1]	65	65
Time to peak (hrs)[2]	0.17	0.17

[1] These CN Values have been converted to CN* Values in Visual OTTHYMO model, which may lead to discrepancies.
[2] Time to peak used is a minimum of 10 minutes (0.17hrs)

Table 7: Post-Development Hydrologic Parameters

Catchment Description	201	202	203	204
Drainage Area (ha)	0.23	1.23	0.08	0.08
Total Imperviousness (%)	-	93	-	60
Directly Connected Imperviousness (%)	-	93	-	60
Curve Number (CN)[1]	69	-	69	-
Time to peak (hrs)[2]	0.17	-	0.17	-

[1] These CN Values have been converted to CN* Values in Visual OTTHYMO model, which may lead to discrepancies.
[2] Time to peak used is a minimum of 10 minutes (0.17hrs)

McLean Road West – Outlet

Visual OTTHYMO (VO) was used to create pre-development and post-development model scenarios for the hydrology of the existing and proposed site drainage based on the City of Guelph intensity-duration-frequency (IDF) data and hydrologic parameters outlined in Table 6 and 7. The pre-development and post-development stormwater flows directed to the McLean Road West sewer and the storage requirements are summarized below in Table 8. The VO model schematics, modelling results, and output files are included in **Appendix E**.

Table 8: Peak Flows and Target Flows Summary (Discharge Towards McLean Road Sewer)

Storm (Year)	**Pre-Dev. Peak Flow Rate[1]** (m^3/s)	**Post-Dev. Uncontrolled Peak Flow Rate[2]** (m^3/s)	**Post-Dev. Controlled Peak Flow Rate[2]** (m^3/s)	**Storage Volume Required** (m^3)	**Storage Volume Provided[3]** (m^3)
2	0.008	0.268	0.009	266	708
5	0.016	0.361	0.012	363	
10	0.023	0.420	0.013	434	
25	0.034	0.495	0.016	537	
50	0.043	0.548	0.017	611	
100	0.053	0.598	0.019	688	

Notes: 1. Includes runoff from Catchment 102.
2. Includes runoff from Catchment 203 and 204.
3. 708 m^3 of storage is available in the underground storage tank.

The Visual OTTHYMO results summarized in Table 8 indicate that water quantity controls are required to control the post-development peak flows to the pre-development flow rates for all storm events up to and including the 100-year event. A total storage volume of 688 m^3 will be required to provide quantity control for the 100-year storm event. An underground stormwater storage tank has been proposed to provide 708 m^3 of stormwater storage. Based on the orifice sizing calculations, a 100 mm orifice plate will be required. It is noted that the flows under the 2- year design storm increase slightly under post-development conditions, however this increase is considered negligible and will not impact the receiving storm sewer.

Storm Sewers have been sized to convey the 5-year design storm. Storm events exceeding the 5- year design storm will be conveyed overland towards the stormwater management tank and will be collected by the catchbasins which directly connect to the tank. The storm sewer design sheet and catchbasin inlet capacity calculation have been provided in **Appendix E,** and the storm sewer catchments are outlined in **Figure 3**.

Neighbouring Wheel King Trans Haul Inc. Site (7434 McLean Road West) - Outlet

The drainage from Catchment 201 consists of landscaped areas from the western and northern limits of the proposed development. Drainage from this catchment will be directed away from the site towards the neighbouring property surrounding the site. This runoff will drain uncontrolled, consistent with pre-development conditions.

Visual OTTHYMO (VO) was used to create pre-development and post-development model scenarios for the hydrology of the existing and proposed site drainage based on the City of Guelph intensity-duration-frequency (IDF) data and hydrologic parameters outlined in Table 6 and 7. The pre-development and post-development stormwater flows directed to the adjacent western lands are summarized below in Table 9. The VO model schematics, modelling results, and output files are included in **Appendix E**.

Table 9: Peak Flows and Target Flows Summary (Discharge Towards Adjacent Western Lands)

Storm Event (yr)	Pre-Development 101 (m^3/s)	Post-Development 201 (m^3/s)	Difference (m^3/s)
2	0.008	0.003	-(0.005)
5	0.016	0.006	-(0.010)
10	0.023	0.008	-(0.015)
25	0.034	0.012	-(0.022)
50	0.043	0.014	-(0.029)
100	0.053	0.017	-(0.036)

The Visual OTTHYMO results summarized in Table 9 indicate that water quantity controls are not required for Catchment 201 as post-development peak flow rates are less than the pre-development peak flow rates.

8.2 Stormwater Quality Control

Stormwater quality controls for the site must incorporate measures to provide "enhanced protection" as outlined by the Township of Puslinch Municipal Development Standards. Enhanced water quality protection involves the removal of at least 80% of the total suspended solids (TSS) from 90% of the annual runoff volume.

Water quality control for Catchments 202 will be provided using an online Jellyfish unit (to be sized at detailed design). An online Jellyfish unit is proposed downstream of the underground stormwater storage tank and will provide water quality before discharging to the McLean Road West ditch and storm sewer. The Jellyfish Filter has been verified through the ISO 14034 Environmental Management – Environmental Technology Verification (ETV) program and has proven to have a percent removal of 89% for TSS.

Refer to the Preliminary Site Servicing Plan (**Drawing C103**) for details on the Jellyfish layout and location.

Catchments 201, 203, and 204 will produce "clean runoff" from pervious landscaped areas and rooftop drainage. Therefore, quality controls have not been provided for these catchments.

8.3 Water Balance

Crozier completed a water balance as part of the Hydrogeological Investigation Report (submitted under separate cover) to determine the potential impact of the development on post-development infiltration. The water balance parameters were established based on the Kitchener/Waterloo climate normals (1991-2020), as well as the site-specific topography, soil type, and land cover infiltration factors. The results of the water balance indicate that there is an infiltration deficit of approximately 2042 m^3/yr or 126 mm/year due to an increase in impervious surfaces. The detailed water balance calculations can be referenced in Hydrogeological Investigation Report (Crozier, February 2026).

LID strategies have not been proposed for Catchment 202 as the major use of the proposed development will be a gas station and LID features could cause hydrocarbons to infiltrate into groundwater.

8.3.1 Mitigation

To promote post-development infiltration and mitigate this deficit, an infiltration gallery has been proposed to infiltrate all available rooftop drainage from Catchment 204. Table 10 below displays the mitigation volume by the infiltration gallery and the total infiltration volume available annually.

Table 10: Mitigation Volume Using LIDs

LID	Contributing Area (m^2)	Available Infiltration Volume (m^3/yr)	Storage Required (m^3)
Infiltration Gallery	757	266	16.6

There are approximately 40 events annually that produce runoff according to the MECP SWM Manual (2012). Given a storage capacity of 40% based on a void ratio of 0.4 and the available runoff volume to the infiltration gallery, the storage required by the infiltration gallery is 16.6 m^3. The proposed infiltration gallery has been sized to store 36 m^3 for stormwater quantity controls, therefore, the infiltration gallery will have sufficient capacity to infiltrate the available 266 m^3 of annually available infiltration volume.

Detailed calculations are provided in **Appendix E**.

This is a best effort approach to mitigate the infiltration deficit for the site. Should the Township require additional LID's to be implemented within the property to meet the infiltration deficit, the following LID opportunities will be assessed during the detailed design process:

Rainwater Harvesting

With minimal pre-treatment, the captured rainwater within an outdoor cistern can be used for outdoor non-potable water uses such as irrigation, or in the buildings as gray water.

Enhanced Topsoil

Enhanced topsoil provides water quality benefits in addition to water balance storage which will reduce the infrastructure required to store the required water balance volume. Enhanced topsoil's can be placed in all landscape area to help promote infiltration.

8.3.2 Regional Event (Hurricane Hazel)

The proposed stormwater management system is sized to convey up to the 100-year design event. Storm events larger than the 100-year design event will be conveyed overland and will bypass the proposed SWM Tank and outlet towards McLean Road, consistent with existing conditions. The emergency overland flow route is outlined on the Preliminary Site Grading Plan (**Drawing C102**). Ponding within the site has been limited to a maximum of 0.3m.

After drainage from the site sheets off the property, it will be conveyed along Brock Road South to Carroll Pond.

9.0 Erosion and Sediment Controls During Construction

The design of the erosion and sediment controls can be referenced on the Preliminary Erosion, Sediment Control, and Removals Plan (**Drawing C101**). The erosion and sediment controls will be required to be installed prior to the beginning of any construction activities. They will be maintained until the site is stabilized or as directed by the Site Engineer and/or Township of Puslinch. Controls will be inspected after each significant rainfall event and maintained in proper working condition.

Sediment Control Device in Catchbasins

A sediment control device will be installed in each new catchbasin as they are installed. This will provide sediment control by preventing silt and sediment from entering the stormwater system. They will also be installed in the existing catchbasins during construction to prevent sediment from entering the existing storm sewer.

Heavy-Duty Silt Fencing

Heavy-Duty Sediment Control Silt Fence will be installed along the perimeter of the site to intercept sheet flow. Additional Sediment Control Silt Fence may be added based on field decisions with the Site Engineer and Owner prior to, during, and following construction.

Mud Mat

A rock mud mat will be installed at the entrance to the construction zone to prevent mud tracking from the site onto surrounding lands and the perimeter roadway network. All construction traffic will be restricted to this access only.

The Removals, Erosion and Sediment Control Plan will be refined throughout the planning application process with consultation with the Township to ensure potential environmental hazards during construction are minimized.

10.0 Conclusions & Recommendations

This report was prepared in support of the Zoning By-Law Amendment for the property located at 7456 McLean Road and 197 Brock Road South in the Township of Puslinch. The proposed development can be serviced for water, sanitary, and stormwater management in accordance with the Township of Puslinch requirements and standards. Our conclusions and recommendations include:

Proposed Water Services

- The domestic peak hourly water demand for the proposed development is 30.08 L/min. Water servicing will be provided via a private water supply well.
- A minimum storage volume of 81,000 L is required for fire storage, and it must be supplied at a rate of 2700 L/min for a duration of 0.5 hours. The design/location of the fire cistern will be confirmed through consultation with the Fire Chief and the Township throughout the design process.

Proposed Sanitary Services

- The total daily design sewage flow for the proposed development is 22,000 L/day. Sanitary servicing will be provided via an onsite sewage system, consisting of an advanced treatment system with discharge of treated effluent to a Type A dispersal bed sized for 22,000 L/day.

Stormwater Management

- The site's drainage for the developable area will be split into four (4) catchments. Catchment 202 will be collected and conveyed to the McLean Road West drainage ditch. A proposed underground storage tank and Jellyfish filter will provide the required quantity and quality controls.

- Drainage from the rooftop of the proposed restaurant (Catchment 204) will be conveyed towards an infiltration gallery to promote infiltration and water balance. Catchments from undeveloped catchments (Catchment 201 and 203) will flow uncontrolled towards their respective outlet.

Erosion and Sediment Controls

- Erosion and sediment controls will be implemented prior to construction and maintain to the satisfaction of the Township and Site Engineer until the site is stabilized.

Based on the above conclusions, we recommend the approval of the Zoning By-Law Amendment for the proposed development from the perspective of servicing and stormwater management.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.

[redacted]

Cole Martin
Engineering Intern, Land Development

C.F. CROZIER & ASSOCIATES INC.

[redacted]

Jessica Doherty, P.Eng.
Project Manager, Land Development

C.F. CROZIER & ASSOCIATES INC.

[redacted]

Jordan Bieri, P.Eng.
Project Engineer, Land Development

[redacted]

CM/cj

J:\2700\2792 - Daaz Inc\7289 - 7456 McLean Rd W & 197 Brock Rd S\Reports\Civil\2026.02.13 _(2792-7289) _FSSWMR _Final.docx

APPENDIX A

Grain Size Analysis

CHUNG & VANDER DOELEN
ENGINEERING LTD.

311 VICTORIA STREET NORTH
KITCHENER / ONTARIO / N2H 5E1
519-742-8979

July 4, 2023
File No.: M22543 (2377-6556)

Attn: Katherine Rentsch, P.Eng.
Crozier Consulting Engineers
2800 High Point Drive, Suite 100
Milton, Ontario
L9T 6P4

RE: Grain Size Analysis Test Result
7456 Mclean Road
Puslinch, Ontario

Chung & Vander Doelen Engineering Ltd. (CVD) is pleased to submit the enclosed grain size analysis test results for the above noted project.

Should you have any questions, please contact our office at your convenience.

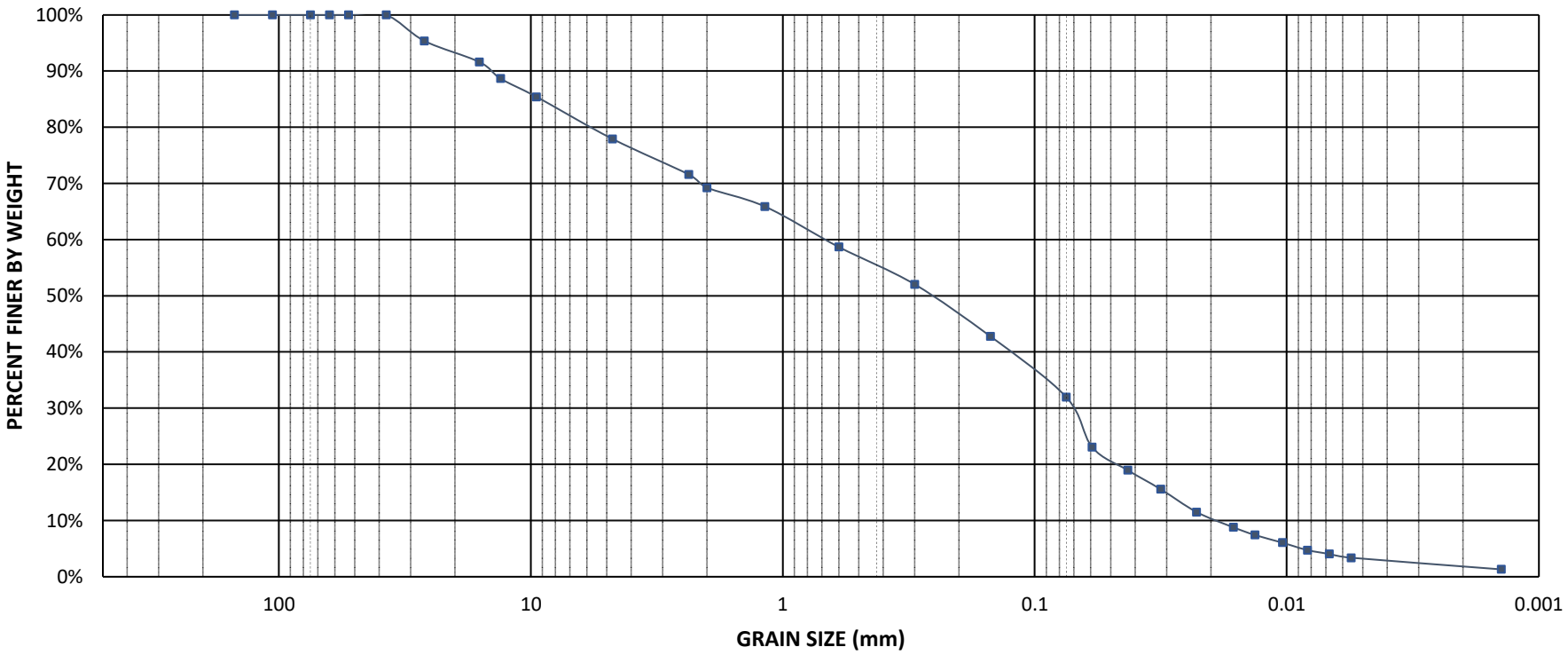
Yours truly,
CHUNG & VANDER DOELEN ENGINEERING LTD.

[redacted]

Hugh Arthur
Laboratory Supervisor

GRAIN SIZE DISTRIBUTION

Unified Soil Classification System						
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	



LL	PL	PI	Cc	Cu	D_{100}	D_{60}	D_{30}	D_{10}	% Gravel	% Sand	%Silt	%Clay
			0.39	35.8	37.5	0.68	0.071	0.019	22.1%	45.9%	32.0%	

CHUNG & VANDER DOELEN
ENGINEERING LTD.

SAMPLE INFORMATION

Material Type:	**Silty Gravelly Sand, trace Clay**
Lab No.:	771
Sampled From:	TP3B (0.7 m - 1.3 m)
Sample No.:	1
Date Sampled:	-
Sampled By:	Client
Date Tested:	Wednesday, June 21, 2023

PROJECT INFORMATION

Project:	7456 Mclean Road
Location:	Puslinch, Ontario
Client:	Crozier Consulting Engineers
File No.:	M22543 (2377-6556)
Encl. No.:	1

APPENDIX B

Water Servicing Calculations

Project: 7456 McLean Road W & 197 Brock Road S

Project No.: 2792-7289

Created By: JD **Date:** 2023.08.22

Checked By: JD **Updated:** 2026.02.13

Domestic Water Demand - Ontario Building Code

Maximum Day Sewage Flow		21,660	L/day
Avg. Daily Demand =		10830	L/day
		7.52	**L/min**
Peaking Factors			
Max Day =		2.00	
Peak Hour =		4.00	
Average Day =		**7.52**	L/min
Max Day =		**15.04**	L/min
Peak Hour =		**30.08**	L/min

Notes & References

Ontario Building Code - Table 8.2.1.3.B

24-hr day

Based on MECP suggested range between 2 and 4 for industrial uses.

Max Day = (Average Day Demand) * (Max Day Factor)

Peak Hour = (Average Day Demand) * (Peak Hour Factor)

Criteria	Average Daily Water Demand (L/min)	Max Day Demand (L/min)	Peak Hourly Demand (L/min)
OBC and MECP Design Guidelines	7.52	15.04	30.08

CROZIER CONSULTING ENGINEERS

Project: 7456 McLean Road W & 197 Brock Road S
Project NO.: 2792-7289
Date: 2026.02.13
Designed By: CM
Checked By: JB

Adequate Water Supply Calculations (OFM Version)
Part 3 Fire Protection, Occupant Safety and Accessibility of the Ontario Building Code

Building: E 235 m²

References

1. Part 3 of the Ontario Building Code (2012)
2. Fire Protection Water Supply Guideline For Part 3 Of The Ontario Building Code, TG-03-1999 (October 1999)
3. Site Plan, ATA Architects Inc. (October 4, 2023)
4. Building type and water supply coefficient confirm with ATA Architects Inc. via. email correspondence on July 19, 2023.

Equation

$$Q = KVS_{Total}$$

Q	Minimum supply of water in litres.
K	Water supply coefficient based upon building occupancy.
V	Total building volume in cubic metres.
S_{TOT}	Total of spatial coefficient values from property line exposures on all sides

Minimum Supply of Water

K = 17.0 E Classification (reference 1.)
V = 1410 m³
S_{TOT} = 1.0

Exposure	Distance (m)	S_{side}
North	N/A	0.0
East	12.0	0.0
South	17.0	0.0
West	31.0	0.0

Q = 23,970 L

Minimum Water Flow Supply Flow Rate

Required minimum water supply flow rate (L/min) (reference 2.)

Floor area ≤ 600 m²: No
2700 L/min Required flow rate
0.5 hr Required duration

Q = 81,000 L

Conclusion

Therefore, the minimum water supply for proposed Building is **81,000 L**

APPENDIX C

Sanitary Servicing Calculations

ONSITE SEWAGE SYSTEM NON-RESIDENTIAL CALCULATION SHEET

CROZIER CONSULTING ENGINEERS

Project Name: 7456 McLean Rd & 197 Brock Rd S
Project Number: 2792-7289
Date: 2026-02-13
Designed By: JD
Checked By: KR

PRELIMINARY FLOW ESTIMATES

input required

Description	Area (m^2)	Unit	Unit Flow	Number of Units	Total Flow (L/day)	References/Notes
Convenience Store	235	per m^2 floor area, or	5	235	1,175	
	n/a	water closet	1230	2	2,460	
Restaurant, 24-hr	379	per seat	200	40	8,000	
Service Station						
Car Gas Bar	n/a	fuel outlet	560	8	4,480	Assume 2 nozzles per pump
Truck Gas Bar	n/a	fuel outlet, and	560	12	6,720	Assume 1 nozzle per pump
					21,660	

Design Sewage Flow: 22,000

Pre-Treatment Options

Required septic tank size =	66000	L minimum
Propose Level IV Treatment (Y/N):	Y	
Native Percolation time, T =	15	min/cm
Imported Percolation time =	10	min/cm

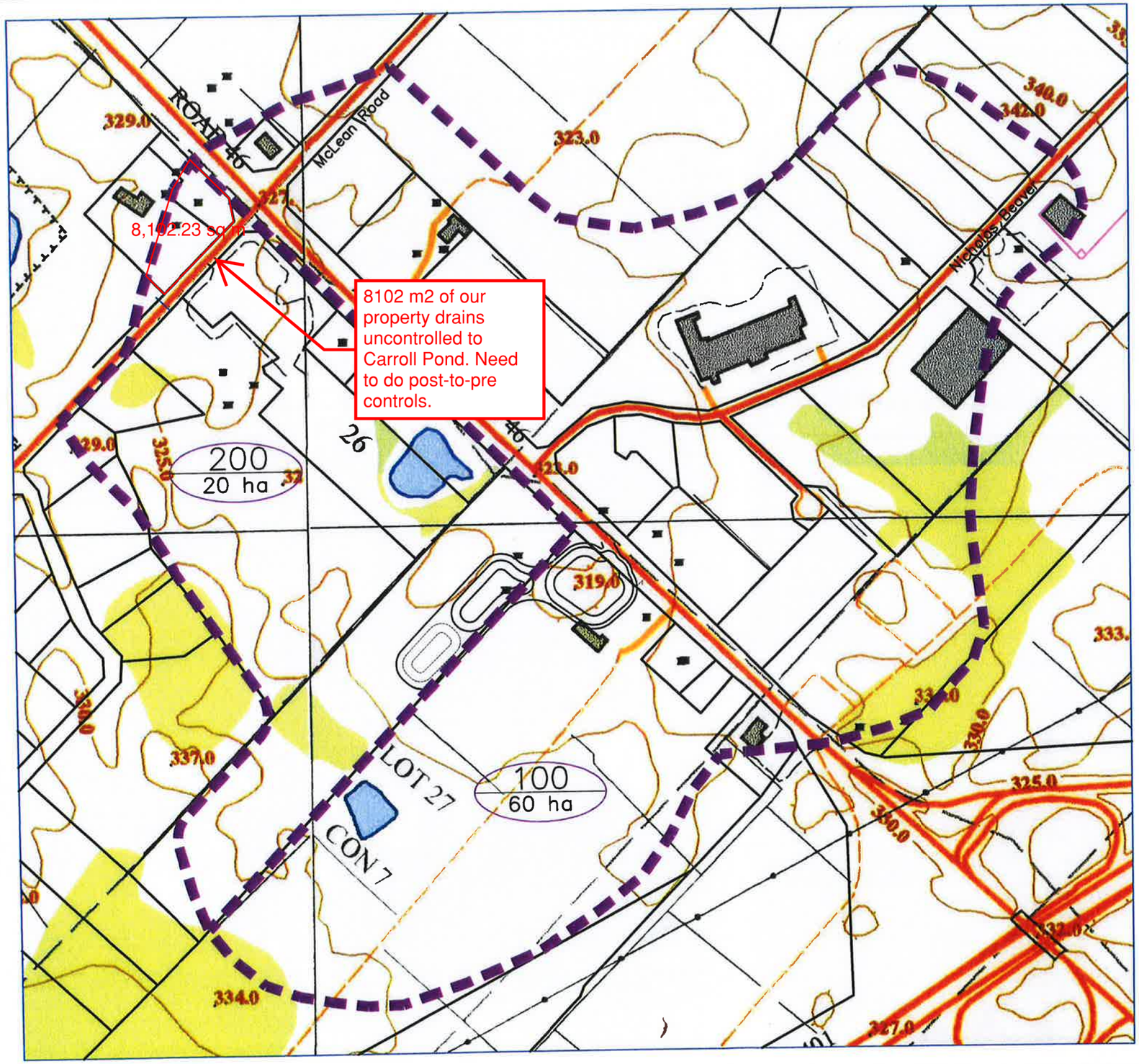
Type A Dispersal Bed

Stone area required =	440	m^2
Sand area required =	388	m^2

APPENDIX D

As-Constructed Drawings & Background Material

Carroll Pond Municipal Drain
Stormwater Management Report
Township of Puslinch



LEGEND

DRAINAGE CATCHMENT BOUNDARY

100 / 20.0 ha — CATCHMENT / APPROXIMATE DRAINAGE AREA

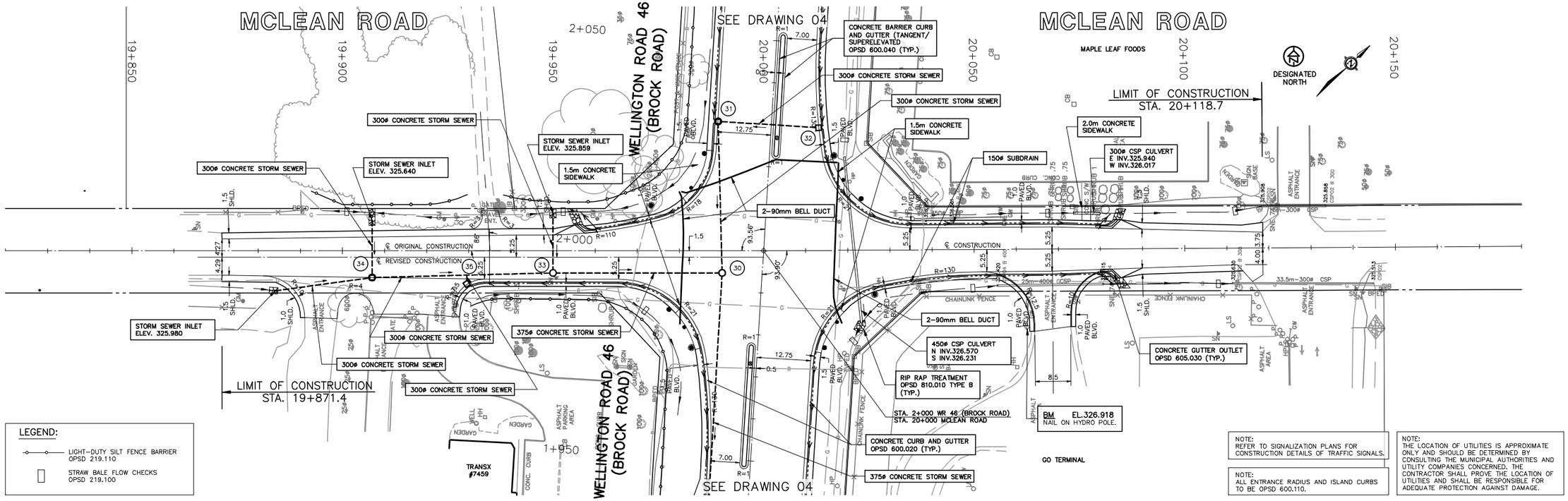
SCALE = 1:5000
MARCH 2007

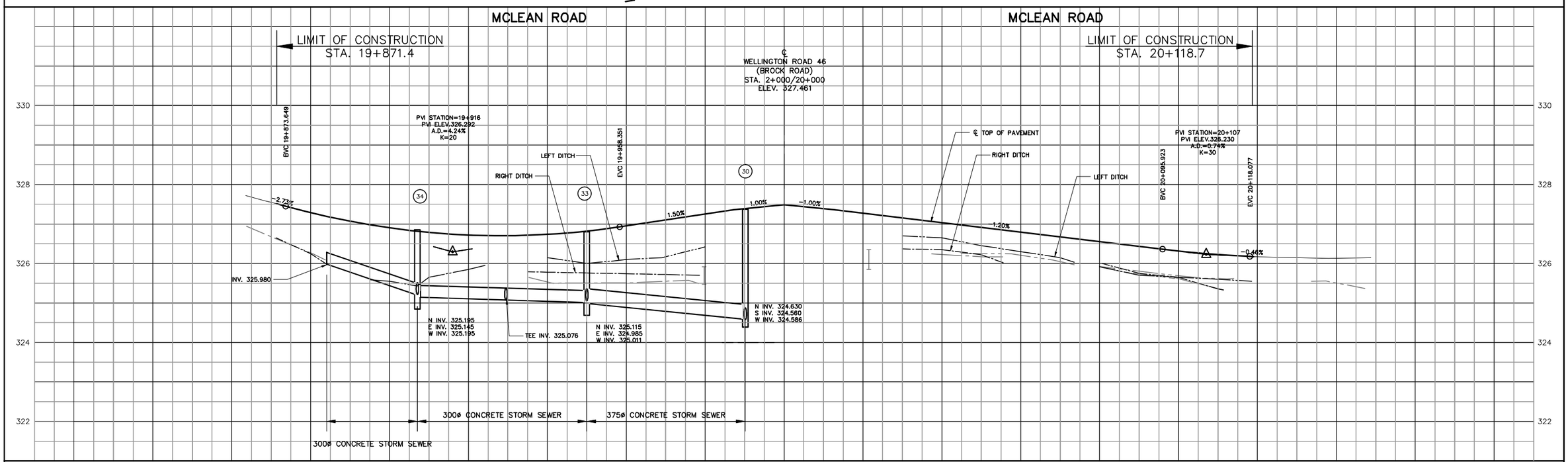
DRAINAGE CATCHMENTS

Figure No. 1

Gamsby and Mannerow ENGINEERS

Plotted On: MAR 22 2007 105026FIG-1.DWG





NOTES

No	DATE	REVISION	INITIAL
04	SEPT 2016	REVISED AS RECORDED	H.W.W.
03	FEB 2016	INTERSECTION REVISION MCLEAN WEST	H.W.W.
02	SEPT 2015	ISSUED FOR CONSTRUCTION	H.W.W.
01	JULY 2015	ISSUED FOR TENDER	H.W.W.

[redacted]

RECONSTRUCTION OF
WELLINGTON ROAD 46
FROM
Y 401 TO NORTH OF MCLEAN ROAD

COUNTY OF WELLINGTON
74 WOOLWICH STREET
GUELPH, ONTARIO N1H 3T9

CONSTRUCTION PLAN AND PROFILE
STA. 19+840 TO STA. 20+160

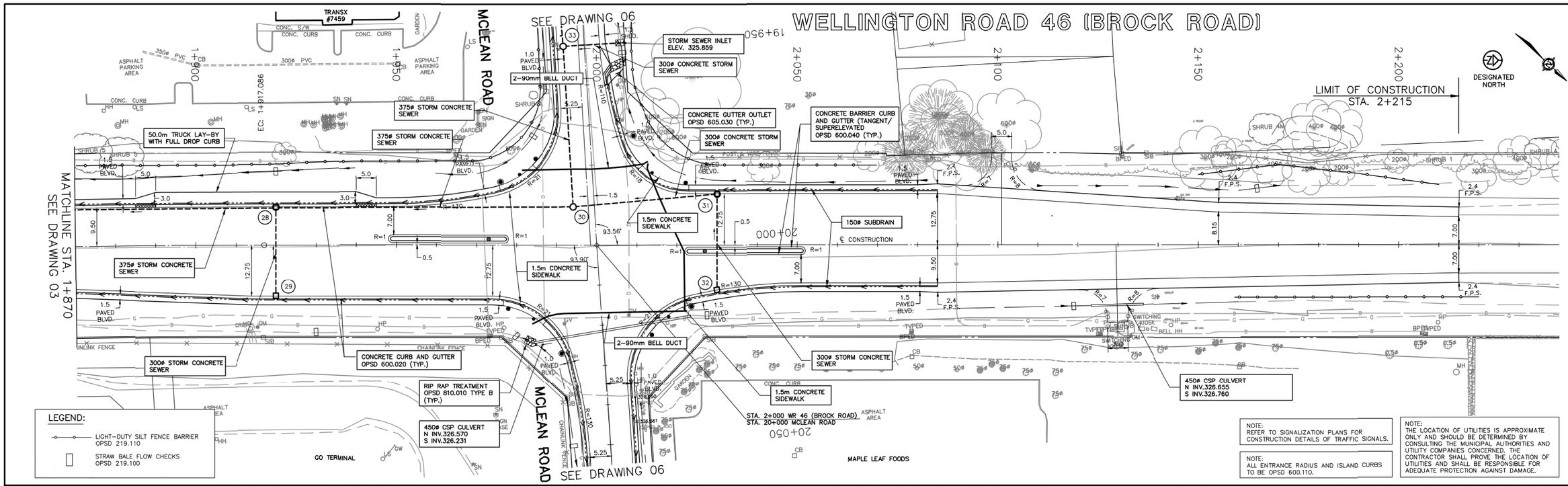
PROJECT No.	CW2015-039
TRITON FILE No.	M6386
DRAWN BY:	K.J.G.
CHECKED BY:	G.J.K.
APPROVED BY:	H.W.W.
DATE:	APRIL 2015

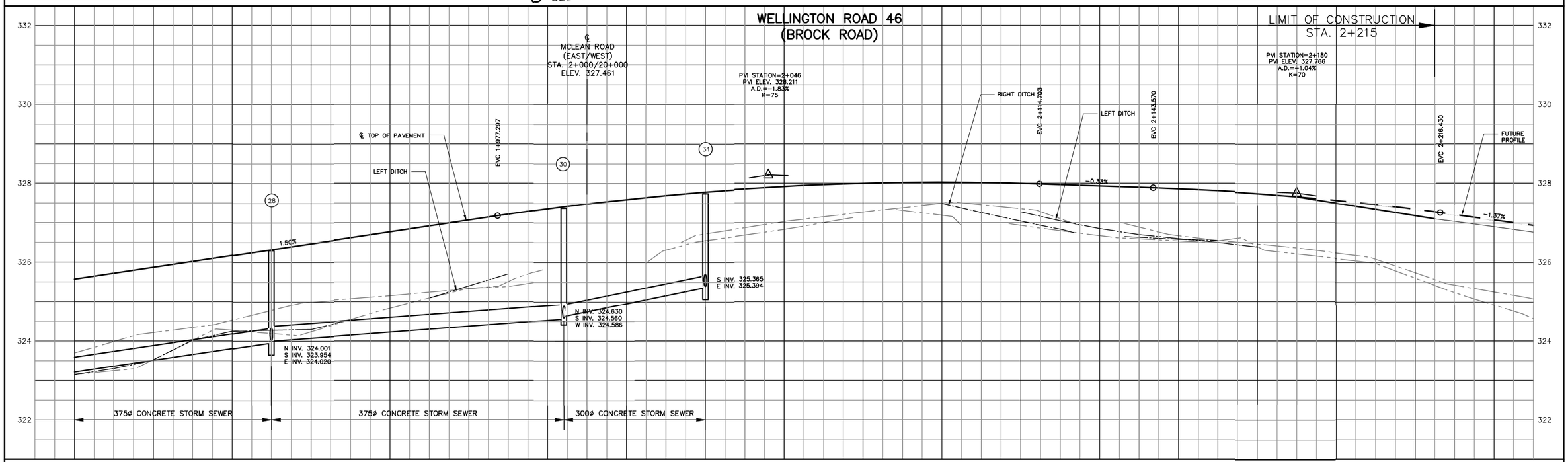
TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

SCALES
HORIZONTAL 1:500
VERTICAL 1:50

DRAWING NUMBER 06

WELLINGTON ROAD 46 (BROCK ROAD)





NOTES

No	DATE	REVISION	INITIAL
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02	SEPT 2015	ISSUED FOR CONSTRUCTION	H.W.W.
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RECONSTRUCTION OF
WELLINGTON ROAD 46
FROM
HWY 401 TO NORTH OF MCLEAN ROAD

COUNTY OF WELLINGTON
74 WOOLWICH STREET
GUELPH, ONTARIO N1H 3T9

CONSTRUCTION PLAN AND PROFILE
STA. 1+870 TO STA. 2+240

PROJECT No.	CW2015-039
TRITON FILE No.	M6386
DRAWN BY:	K.J.G.
CHECKED BY:	G.J.K.
APPROVED BY:	H.W.W.
DATE:	APRIL 2015

TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers

SCALES	
1:500	1:50
HORIZONTAL	VERTICAL

DRAWING NUMBER **04**

APPENDIX E

Stormwater Servicing Calculations

Project Name: 7456 McLean Road and 197 Brock Road South
Project Number: 2792-7289
Created By: MI
Reviewed By: CM

D.A. NAME 101
D.A. AREA (ha) 0.81

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment 101

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guelph Loam	GI	B	100	0.81
				0
				0
				0
Total Area				0.81

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		House		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI											0.00	0.00
Subtotal Area												

Pervious Landuses Present:												
	Woodland		Meadow		Dirt Area		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI			0.81	65						85	0.81	52.65
Subtotal Area												

	Composite Area Calculations	Total Pervious Area	0.81
		Total Impervious Area	0.00
		% Impervious	0.00%
		Composite Curve Number	65.0
		Total Area Check	0.81

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Guelph Loam		0		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0.00		0		0		0		0	0.00
Meadow	8	0.81	6.48	0.30	1		0		0		0	0
Dirt Area	3	0.00	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0
Cultivated	7	0.00	0		0		0		0		0	0
Impervious	2	0.00	0		0.00		0		0		0	0.00
Composite IA		0.81	8.00	Composite Runoff Coefficient								0.30

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	93.6	6.74	7.20%	2.3	0.62	0.04	0.03	0.03	0.06	0.04	0.22	0.15

Appropriate calculated time to peak:	0.17	Appropriate Method:	Airport

Project Name: 7456 McLean Road and 197 Brock Road South
Project Number: 2792-7289
Created By: MI
Reviewed By: CM

D.A. NAME 102
D.A. AREA (ha) 0.81

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment 102

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guelph Loam	GI	B	100	0.81
				0
				0
				0
Total Area				0.81

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		House		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI											0.00	0.00
Subtotal Area												

Pervious Landuses Present:												
	Woodland		Meadow		Dirt Area		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI			0.81	65						85	0.81	52.65
Subtotal Area												

	Composite Area Calculations	Total Pervious Area	0.81
		Total Impervious Area	0.00
		% Impervious	0.00%
		Composite Curve Number	65.0
		Total Area Check	0.81

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Guelph Loam		0		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0.00		0		0		0		0	0.00
Meadow	8	0.81	6.48	0.25	1		0		0		0	0
Dirt Area	3	0.00	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0
Cultivated	7	0.00	0		0		0		0		0	0
Impervious	2	0.00	0		0.00		0		0		0	0.00
Composite IA		0.81	8.00	Composite Runoff Coefficient								0.25

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	62.8	2.85	4.54%	2.3	0.49	0.04	0.02	0.02	0.05	0.03	0.22	0.15

Appropriate calculated time to peak:	0.17	Appropriate Method:	Airport

Project Name: 7456 McLean Road and 197 Brock Road South
Project Number: 2792-7289
Created By: MI
Reviewed By: CM

D.A. NAME 201
D.A. AREA (ha) 0.23

Hydrologic Parameters: CALIB NASHYD Command
Post Development Drainage Area: Catchment 201

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guelph Loam	GI	B	100	0.23
				0
				0
				0
Total Area				0.23

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		House		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI											0.00	0.00
Subtotal Area												

Pervious Landuses Present:												
	Woodland		Meadow		Dirt Area		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI							0.23	69			0.23	15.74
Subtotal Area												

Composite Area Calculations	Total Pervious Area	0.23	
	Total Impervious Area	0.00	
	% Impervious	0.00%	
	Composite Curve Number	69.0	
	Total Area Check	0.23	

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Guelph Loam		0		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0.00		0.00		0		0		0	0.00
Meadow	8	0.00	0		0.00		0		0		0	0
Dirt Area	3	0.00	0		0.00		0		0		0	0
Lawn	5	0.23	1.14	0.20	0.23		0		0		0	0
Cultivated	7	0.00	0		0.00		0		0		0	0
Impervious	2	0.00	0		0.00		0		0		0	0.00
Composite IA		0.23	5.00	Composite Runoff Coefficient								0.20

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	65.6	6.13	9.35%	2.3	0.70	0.03	0.02	0.02	0.05	0.03	0.19	0.13

Appropriate calculated time to peak:	0.17	Appropriate Method:	Airport

Project Name: 7456 McLean Road and 197 Brock Road South

Project Number: 2792-7289

Created By: MI

Reviewed By: CM

D.A. NAME 202

D.A. AREA (ha) 1.23

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 202

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guelph Loam	GI	B	100	1.23
				0
				0
				0
Total Area Check				1.23

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		Channel		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
GI					1.10	98	0.04	98			1.14	112.06
Subtotal Area												

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
GI							0.09	69			0.09	5.97
Subtotal Area												

	Pervious Area Calculations	Total Pervious Area	0.09
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	1.14
		Total Indirectly Connected Area	0.00
		Total Impervious Area	1.14
		% X imp	92.96
		% T imp	92.96
		Total Area Check	1.23

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	15	0	0
Lawn	5	0.09	0.43
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	9.40	24	0.25
Impervious	2.0	0.70	107	0.013

Project Name: 7456 McLean Road and 197 Brock Road South

Project Number: 2792-7289
Created By: MI
Reviewed By: CM

D.A. NAME 203

D.A. AREA (ha) 0.08

Hydrologic Parameters: CALIB NASHYD Command
Post Development Drainage Area: Catchment 203

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guelph Loam	GI	B	100	0.08
				0
				0
				0
Total Area				0.08

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		House		SWMF		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI											0.00	0.00
Subtotal Area												

Pervious Landuses Present:												
	Woodland		Meadow		Dirt Area		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
GI							0.08	69			0.08	5.59
Subtotal Area												

Composite Area Calculations		
Total Pervious Area		0.08
Total Impervious Area		0.00
% Impervious		0.00%
Composite Curve Number		69.0
Total Area Check		0.08

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Guelph Loam		0		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0.00		0.00		0		0		0	0.00
Meadow	8	0.00	0		0.00		0		0		0	0
Dirt Area	3	0.00	0		0.00		0		0		0	0
Lawn	5	0.08	0.41	0.20	0.08		0		0		0	0
Cultivated	7	0.00	0		0.00		0		0		0	0
Impervious	2	0.00	0		0.00		0		0		0	0.00
Composite IA		0.08	5.00	Composite Runoff Coefficient								0.20

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	11.8	1.25	10.58%	2.3	0.75	0.00	0.00	0.00	0.01	0.01	0.08	0.05

Appropriate calculated time to peak:	0.17	Appropriate Method:	Airport

Project Name: 7456 McLean Road and 197 Brock Road South
Project Number: 2792-7289
Created By: MI
Reviewed By: CM

D.A. NAME 204
D.A. AREA (ha) 0.08

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 204

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Guelph Loam	GI	B	100	0.08
				0
				0
				0
Total Area Check				0.08

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		Channel		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha	CN	Area (ha	CN	Area (ha)	CN	Area	A*CN
GI							0.05	98			0.05	4.47
Subtotal Area												

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha	CN	Area (ha	CN	Area (ha)	CN	Area	A*CN
GI							0.03	69			0.03	2.08
Subtotal Area												

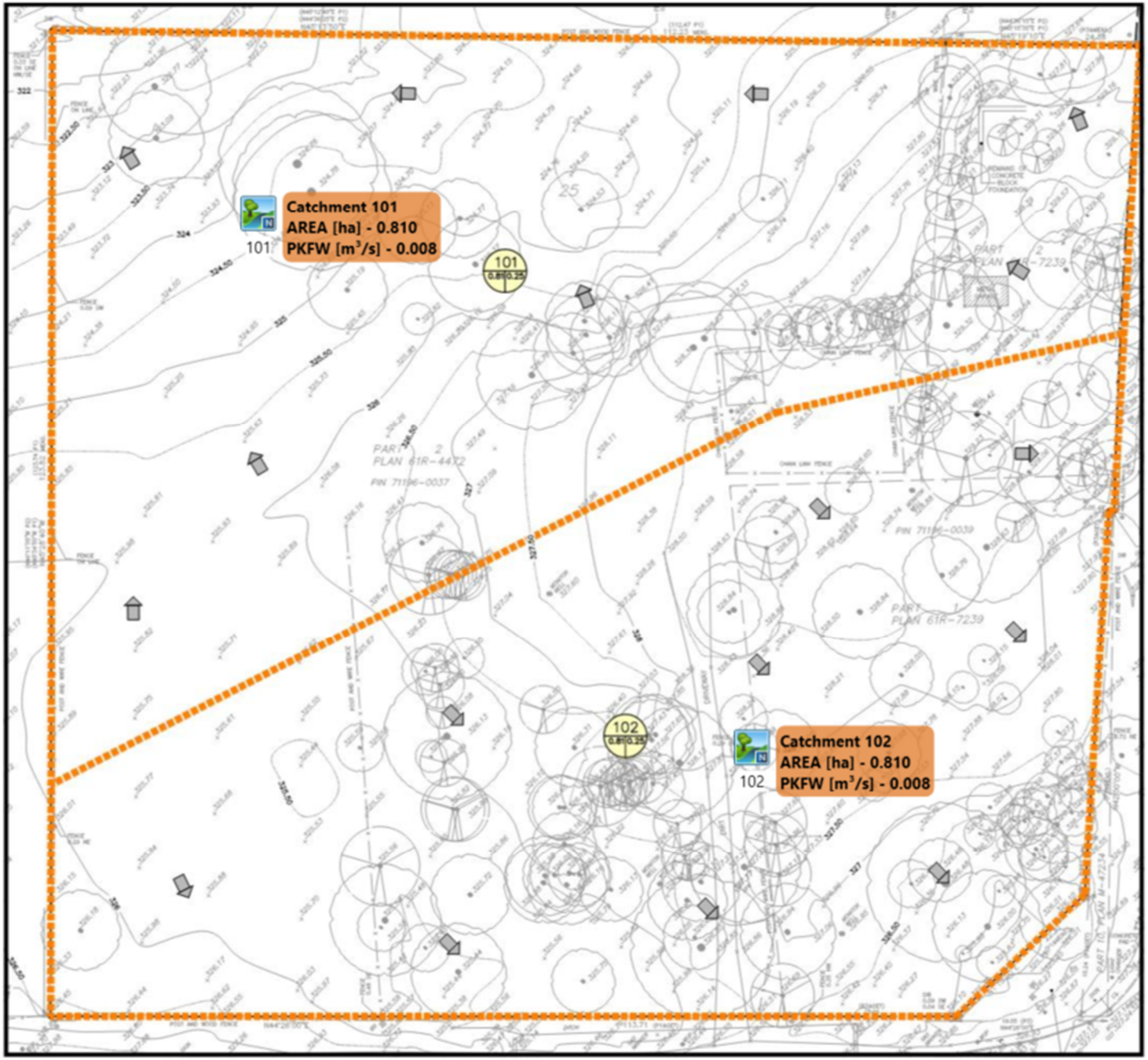
	Pervious Area Calculations	Total Pervious Area	0.03
		Composite Pervious Curve Number	69
	Impervious Area Calculations	Total Directly Connected Area	0.05
		Total Indirectly Connected Area	0.00
		Total Impervious Area	0.05
		% X imp	60.22
		% T imp	60.22
		Total Area Check	0.08

Initial Abstraction and Tp Calculations

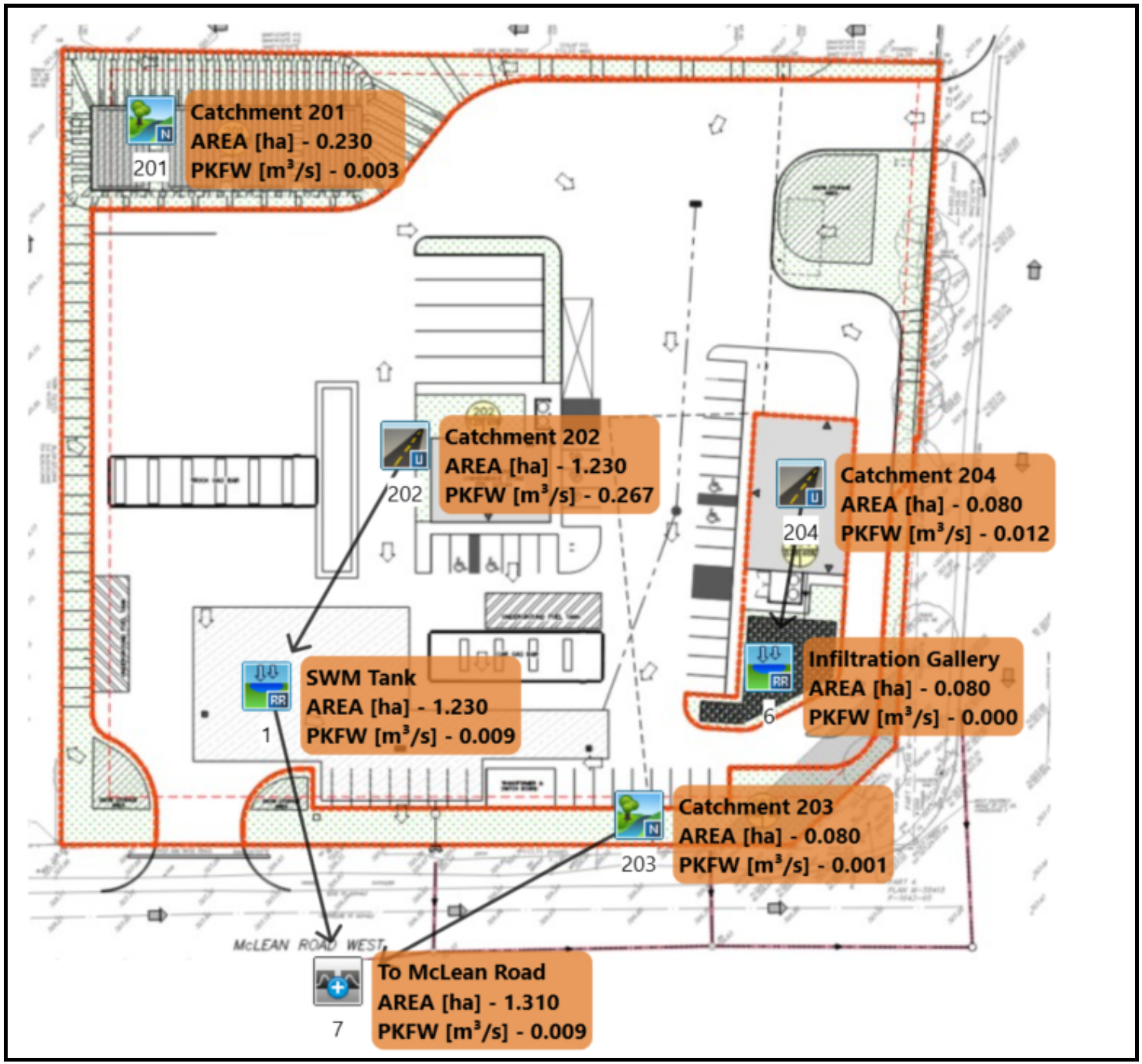
Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	15	0	0
Lawn	5	0.03	0.15
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	-	-	-	0.25
Impervious	2.0	1.00	25	0.013

Pre-Development Visual-Otthymo Schematic



Post-Development Visual-Otthymo Schematic



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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\620175ad-17
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\620175ad-17


DATE: 02-12-2025                          TIME: 10:26:49

USER:


COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 100yr 3hr 10min Chicago       **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 953.290
| Ptotal= 71.21 mm |                          B=   0.000
--------------------                          C=   0.711
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    8.02 |  0.83  185.45 |  1.67   12.53 |  2.50    7.73
                0.17    9.47 |  1.00   37.49 |  1.83   11.04 |  2.67    7.23
                0.33   11.77 |  1.17   23.45 |  2.00    9.92 |  2.83    6.80
                0.50   16.19 |  1.33   17.80 |  2.17    9.04 |
                0.67   30.45 |  1.50   14.61 |  2.33    8.32 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.083   8.02 | 0.833   30.45 | 1.583   14.61 |  2.33    9.04
                0.167   8.02 | 0.917  185.45 | 1.667   14.61 |  2.42    8.32
                0.250   9.47 | 1.000  185.45 | 1.750   12.53 |  2.50    8.32
                0.333   9.47 | 1.083   37.49 | 1.833   12.53 |  2.58    7.73
                0.417  11.77 | 1.167   37.49 | 1.917   11.04 |  2.67    7.73
                0.500  11.77 | 1.250   23.45 | 2.000   11.04 |  2.75    7.23
                0.583  16.19 | 1.333   23.45 | 2.083    9.92 |  2.83    7.23
                0.667  16.19 | 1.417   17.80 | 2.167    9.92 |  2.92    6.80
                0.750  30.45 | 1.500   17.80 | 2.250    9.04 |  3.00    6.80

    Unit Hyd Qpeak  (cms)=   0.182

    PEAK FLOW       (cms)=   0.053 (i)
    TIME TO PEAK    (hrs)=   1.083
    RUNOFF VOLUME    (mm)=  19.320
    TOTAL RAINFALL   (mm)=  71.214
    RUNOFF COEFFICIENT   =   0.271

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.083   8.02 | 0.833   30.45 | 1.583   14.61 |  2.33    9.04
                0.167   8.02 | 0.917  185.45 | 1.667   14.61 |  2.42    8.32
                0.250   9.47 | 1.000  185.45 | 1.750   12.53 |  2.50    8.32
                0.333   9.47 | 1.083   37.49 | 1.833   12.53 |  2.58    7.73
                0.417  11.77 | 1.167   37.49 | 1.917   11.04 |  2.67    7.73
                0.500  11.77 | 1.250   23.45 | 2.000   11.04 |  2.75    7.23
                0.583  16.19 | 1.333   23.45 | 2.083    9.92 |  2.83    7.23
                0.667  16.19 | 1.417   17.80 | 2.167    9.92 |  2.92    6.80
                0.750  30.45 | 1.500   17.80 | 2.250    9.04 |  3.00    6.80

    Unit Hyd Qpeak  (cms)=   0.182

    PEAK FLOW       (cms)=   0.053 (i)
    TIME TO PEAK    (hrs)=   1.083
    RUNOFF VOLUME    (mm)=  19.320
    TOTAL RAINFALL   (mm)=  71.214
    RUNOFF COEFFICIENT   =   0.271

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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DATE: 02-12-2025                          TIME: 10:26:49

USER:


COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 10yr 3hr 10min Chicago        **
  ************************************************
```

```
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 721.920
| Ptotal= 47.37 mm |                          B=   0.000
--------------------                          C=   0.736
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    4.90 |  0.83  132.58 |  1.67    7.77 |  2.50    4.72
               0.17    5.82 |  1.00   24.19 |  1.83    6.82 |  2.67    4.40
               0.33    7.29 |  1.17   14.88 |  2.00    6.10 |  2.83    4.13
               0.50   10.14 |  1.33   11.18 |  2.17    5.54 |
               0.67   19.52 |  1.50    9.12 |  2.33    5.09 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.90 | 0.833   19.52 | 1.583    9.12 |  2.33    5.54
              0.167    4.90 | 0.917  132.58 | 1.667    9.12 |  2.42    5.09
              0.250    5.82 | 1.000  132.58 | 1.750    7.77 |  2.50    5.09
              0.333    5.82 | 1.083   24.19 | 1.833    7.77 |  2.58    4.72
              0.417    7.29 | 1.167   24.19 | 1.917    6.82 |  2.67    4.72
              0.500    7.29 | 1.250   14.88 | 2.000    6.82 |  2.75    4.40
              0.583   10.14 | 1.333   14.88 | 2.083    6.10 |  2.83    4.40
              0.667   10.14 | 1.417   11.18 | 2.167    6.10 |  2.92    4.13
              0.750   19.52 | 1.500   11.18 | 2.250    5.54 |  3.00    4.13

    Unit Hyd Qpeak  (cms)=   0.182

    PEAK FLOW       (cms)=   0.023 (i)
    TIME TO PEAK    (hrs)=   1.083
    RUNOFF VOLUME    (mm)=   8.473
    TOTAL RAINFALL   (mm)=  47.366
    RUNOFF COEFFICIENT   =   0.179

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    4.90 | 0.833   19.52 | 1.583    9.12 |  2.33    5.54
              0.167    4.90 | 0.917  132.58 | 1.667    9.12 |  2.42    5.09
              0.250    5.82 | 1.000  132.58 | 1.750    7.77 |  2.50    5.09
              0.333    5.82 | 1.083   24.19 | 1.833    7.77 |  2.58    4.72
              0.417    7.29 | 1.167   24.19 | 1.917    6.82 |  2.67    4.72
              0.500    7.29 | 1.250   14.88 | 2.000    6.82 |  2.75    4.40
              0.583   10.14 | 1.333   14.88 | 2.083    6.10 |  2.83    4.40
              0.667   10.14 | 1.417   11.18 | 2.167    6.10 |  2.92    4.13
              0.750   19.52 | 1.500   11.18 | 2.250    5.54 |  3.00    4.13

    Unit Hyd Qpeak  (cms)=   0.182

    PEAK FLOW       (cms)=   0.023 (i)
    TIME TO PEAK    (hrs)=   1.083
    RUNOFF VOLUME    (mm)=   8.473
    TOTAL RAINFALL   (mm)=  47.366
    RUNOFF COEFFICIENT   =   0.179

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

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--------------------------------------------------------------------------------
================================================================================================================================

      V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                 *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
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DATE: 02-12-2025                          TIME: 10:26:49

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 25yr 3hr 10min Chicago        **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 822.740
| Ptotal= 57.15 mm |                          B=   0.000
--------------------                          C=   0.725
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    6.14 |  0.83  154.98 |  1.67    9.68 |  2.50    5.92
               0.17    7.28 |  1.00   29.61 |  1.83    8.51 |  2.67    5.53
               0.33    9.09 |  1.17   18.34 |  2.00    7.63 |  2.83    5.19
               0.50   12.58 |  1.33   13.85 |  2.17    6.94 |
               0.67   23.97 |  1.50   11.32 |  2.33    6.38 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                        ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    6.14 | 0.833   23.97 | 1.583   11.32 |  2.33    6.94
              0.167    6.14 | 0.917  154.98 | 1.667   11.32 |  2.42    6.38
              0.250    7.28 | 1.000  154.98 | 1.750    9.68 |  2.50    6.38
              0.333    7.28 | 1.083   29.61 | 1.833    9.68 |  2.58    5.92
              0.417    9.09 | 1.167   29.61 | 1.917    8.51 |  2.67    5.92
              0.500    9.09 | 1.250   18.34 | 2.000    8.51 |  2.75    5.53
              0.583   12.58 | 1.333   18.34 | 2.083    7.63 |  2.83    5.53
              0.667   12.58 | 1.417   13.85 | 2.167    7.63 |  2.92    5.19
              0.750   23.97 | 1.500   13.85 | 2.250    6.94 |  3.00    5.19

    Unit Hyd Qpeak  (cms)=   0.182
```

```
     PEAK FLOW       (cms)=   0.034 (i)
     TIME TO PEAK    (hrs)=   1.083
     RUNOFF VOLUME    (mm)=  12.536
     TOTAL RAINFALL   (mm)=  57.153
     RUNOFF COEFFICIENT   =   0.219

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    6.14 | 0.833   23.97 | 1.583   11.32 |  2.33    6.94
              0.167    6.14 | 0.917  154.98 | 1.667   11.32 |  2.42    6.38
              0.250    7.28 | 1.000  154.98 | 1.750    9.68 |  2.50    6.38
              0.333    7.28 | 1.083   29.61 | 1.833    9.68 |  2.58    5.92
              0.417    9.09 | 1.167   29.61 | 1.917    8.51 |  2.67    5.92
              0.500    9.09 | 1.250   18.34 | 2.000    8.51 |  2.75    5.53
              0.583   12.58 | 1.333   18.34 | 2.083    7.63 |  2.83    5.53
              0.667   12.58 | 1.417   13.85 | 2.167    7.63 |  2.92    5.19
              0.750   23.97 | 1.500   13.85 | 2.250    6.94 |  3.00    5.19

     Unit Hyd Qpeak  (cms)=   0.182

     PEAK FLOW       (cms)=   0.034 (i)
     TIME TO PEAK    (hrs)=   1.083
     RUNOFF VOLUME    (mm)=  12.536
     TOTAL RAINFALL   (mm)=  57.153
     RUNOFF COEFFICIENT   =   0.219

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
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  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\a4f56e50-9a


DATE: 02-12-2025                          TIME: 10:26:49

USER:


COMMENTS: _____


--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 2yr 3hr 10min Chicago         **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 475.610
| Ptotal= 30.88 mm |                          B=   0.000
--------------------                          C=   0.738
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  3.00 hrs
                          Storm time step    = 10.00 min
                          Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    3.17 |  0.83   86.95 |  1.67    5.04 |  2.50    3.05
               0.17    3.77 |  1.00   15.73 |  1.83    4.42 |  2.67    2.85
               0.33    4.72 |  1.17    9.66 |  2.00    3.95 |  2.83    2.67
               0.50    6.58 |  1.33    7.25 |  2.17    3.59 |
               0.67   12.69 |  1.50    5.91 |  2.33    3.30 |

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.17 | 0.833   12.69 | 1.583    5.91 |  2.33    3.59
              0.167    3.17 | 0.917   86.95 | 1.667    5.91 |  2.42    3.30
              0.250    3.77 | 1.000   86.95 | 1.750    5.04 |  2.50    3.30
              0.333    3.77 | 1.083   15.73 | 1.833    5.04 |  2.58    3.05
              0.417    4.72 | 1.167   15.73 | 1.917    4.42 |  2.67    3.05
              0.500    4.72 | 1.250    9.66 | 2.000    4.42 |  2.75    2.85
              0.583    6.58 | 1.333    9.66 | 2.083    3.95 |  2.83    2.85
              0.667    6.58 | 1.417    7.25 | 2.167    3.95 |  2.92    2.67
              0.750   12.69 | 1.500    7.25 | 2.250    3.59 |  3.00    2.67

     Unit Hyd Qpeak  (cms)=   0.182

     PEAK FLOW       (cms)=   0.008 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=   3.147
     TOTAL RAINFALL   (mm)=  30.883
     RUNOFF COEFFICIENT   =   0.102

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                              ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
              0.083    3.17 | 0.833   12.69 | 1.583    5.91 |  2.33    3.59
              0.167    3.17 | 0.917   86.95 | 1.667    5.91 |  2.42    3.30
              0.250    3.77 | 1.000   86.95 | 1.750    5.04 |  2.50    3.30
              0.333    3.77 | 1.083   15.73 | 1.833    5.04 |  2.58    3.05
              0.417    4.72 | 1.167   15.73 | 1.917    4.42 |  2.67    3.05
              0.500    4.72 | 1.250    9.66 | 2.000    4.42 |  2.75    2.85
              0.583    6.58 | 1.333    9.66 | 2.083    3.95 |  2.83    2.85
              0.667    6.58 | 1.417    7.25 | 2.167    3.95 |  2.92    2.67
              0.750   12.69 | 1.500    7.25 | 2.250    3.59 |  3.00    2.67

     Unit Hyd Qpeak  (cms)=   0.182

     PEAK FLOW       (cms)=   0.008 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=   3.147
     TOTAL RAINFALL   (mm)=  30.883
     RUNOFF COEFFICIENT   =   0.102

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
```

```
       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\27116e56-a8
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\27116e56-a8

DATE: 02-12-2025                          TIME: 10:26:49

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 50yr 3hr 10min Chicago        **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 893.800
| Ptotal= 64.05 mm |                          B=   0.000
--------------------                          C=   0.719
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    7.02 |  0.83  170.70 |  1.67   11.03 |  2.50    6.77
               0.17    8.31 |  1.00   33.42 |  1.83    9.71 |  2.67    6.33
               0.33   10.36 |  1.17   20.79 |  2.00    8.71 |  2.83    5.95
               0.50   14.30 |  1.33   15.73 |  2.17    7.93 |
               0.67   27.09 |  1.50   12.89 |  2.33    7.29 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.02 | 0.833   27.09 | 1.583   12.89 |  2.33    7.93
               0.167    7.02 | 0.917  170.70 | 1.667   12.89 |  2.42    7.29
               0.250    8.31 | 1.000  170.70 | 1.750   11.03 |  2.50    7.29
               0.333    8.31 | 1.083   33.42 | 1.833   11.03 |  2.58    6.77
               0.417   10.36 | 1.167   33.42 | 1.917    9.71 |  2.67    6.77
               0.500   10.36 | 1.250   20.79 | 2.000    9.71 |  2.75    6.33
               0.583   14.30 | 1.333   20.79 | 2.083    8.71 |  2.83    6.33
               0.667   14.30 | 1.417   15.73 | 2.167    8.71 |  2.92    5.95
               0.750   27.09 | 1.500   15.73 | 2.250    7.93 |  3.00    5.95

    Unit Hyd Qpeak  (cms)=   0.182

    PEAK FLOW       (cms)=   0.043 (i)
    TIME TO PEAK    (hrs)=   1.083
    RUNOFF VOLUME    (mm)=  15.738
    TOTAL RAINFALL   (mm)=  64.054
    RUNOFF COEFFICIENT   =   0.246

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area     (ha)=   0.81   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    7.02 | 0.833   27.09 | 1.583   12.89 |  2.33    7.93
               0.167    7.02 | 0.917  170.70 | 1.667   12.89 |  2.42    7.29
               0.250    8.31 | 1.000  170.70 | 1.750   11.03 |  2.50    7.29
               0.333    8.31 | 1.083   33.42 | 1.833   11.03 |  2.58    6.77
               0.417   10.36 | 1.167   33.42 | 1.917    9.71 |  2.67    6.77
               0.500   10.36 | 1.250   20.79 | 2.000    9.71 |  2.75    6.33
               0.583   14.30 | 1.333   20.79 | 2.083    8.71 |  2.83    6.33
               0.667   14.30 | 1.417   15.73 | 2.167    8.71 |  2.92    5.95
               0.750   27.09 | 1.500   15.73 | 2.250    7.93 |  3.00    5.95

    Unit Hyd Qpeak  (cms)=   0.182

    PEAK FLOW       (cms)=   0.043 (i)
    TIME TO PEAK    (hrs)=   1.083
    RUNOFF VOLUME    (mm)=  15.738
    TOTAL RAINFALL   (mm)=  64.054
    RUNOFF COEFFICIENT   =   0.246

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
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  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\aceb4de6-44

DATE: 02-12-2025                          TIME: 10:26:49

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 5yr 3hr 10min Chicago         **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 632.750
| Ptotal= 40.45 mm |                          B=   0.000
--------------------                          C=   0.741
```

used in: INTENSITY = A / (t + B)^C

Duration of storm = 3.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.11	0.83	114.88	1.67	6.54	2.50	3.95
0.17	4.88	1.00	20.52	1.83	5.73	2.67	3.69
0.33	6.13	1.17	12.57	2.00	5.13	2.83	3.46
0.50	8.55	1.33	9.43	2.17	4.65		
0.67	16.54	1.50	7.68	2.33	4.27		

CALIB			
NASHYD (0101)	Area (ha)=	0.81	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.17	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.11	0.833	16.54	1.583	7.68	2.33	4.65
0.167	4.11	0.917	114.88	1.667	7.68	2.42	4.27
0.250	4.88	1.000	114.88	1.750	6.54	2.50	4.27
0.333	4.88	1.083	20.52	1.833	6.54	2.58	3.95
0.417	6.13	1.167	20.52	1.917	5.73	2.67	3.95
0.500	6.13	1.250	12.57	2.000	5.73	2.75	3.69
0.583	8.55	1.333	12.57	2.083	5.13	2.83	3.69
0.667	8.55	1.417	9.43	2.167	5.13	2.92	3.46
0.750	16.54	1.500	9.43	2.250	4.65	3.00	3.46

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.016 (i)
TIME TO PEAK (hrs)= 1.167
RUNOFF VOLUME (mm)= 5.985
TOTAL RAINFALL (mm)= 40.451
RUNOFF COEFFICIENT = 0.148

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD (0102)	Area (ha)=	0.81	Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.17	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.11	0.833	16.54	1.583	7.68	2.33	4.65
0.167	4.11	0.917	114.88	1.667	7.68	2.42	4.27
0.250	4.88	1.000	114.88	1.750	6.54	2.50	4.27
0.333	4.88	1.083	20.52	1.833	6.54	2.58	3.95
0.417	6.13	1.167	20.52	1.917	5.73	2.67	3.95
0.500	6.13	1.250	12.57	2.000	5.73	2.75	3.69
0.583	8.55	1.333	12.57	2.083	5.13	2.83	3.69
0.667	8.55	1.417	9.43	2.167	5.13	2.92	3.46
0.750	16.54	1.500	9.43	2.250	4.65	3.00	3.46

Unit Hyd Qpeak (cms)= 0.182

PEAK FLOW (cms)= 0.016 (i)
TIME TO PEAK (hrs)= 1.167
RUNOFF VOLUME (mm)= 5.985
TOTAL RAINFALL (mm)= 40.451
RUNOFF COEFFICIENT = 0.148

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\1e74defe-ce
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\1e74defe-ce


DATE: 02-11-2026                          TIME: 11:21:13

USER:


COMMENTS: _____________________________________________________


----------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 100yr 3hr 10min Chicago       **
  ************************************************

--------------------
| CHICAGO STORM    |     IDF curve parameters: A= 953.290
| Ptotal= 71.21 mm |                           B=   0.000
--------------------                           C=   0.711
                        used in:   INTENSITY =  A / (t + B)^C

                        Duration of storm  =  3.00 hrs
                        Storm time step    = 10.00 min
                        Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    8.02 |  0.83  185.45 |  1.67   12.53 |  2.50    7.73
                0.17    9.47 |  1.00   37.49 |  1.83   11.04 |  2.67    7.23
                0.33   11.77 |  1.17   23.45 |  2.00    9.92 |  2.83    6.80
                0.50   16.19 |  1.33   17.80 |  2.17    9.04 |
                0.67   30.45 |  1.50   14.61 |  2.33    8.32 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0201)|   Area     (ha)=   0.23   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.052

     PEAK FLOW       (cms)=   0.017 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=  21.223
     TOTAL RAINFALL   (mm)=  71.214
     RUNOFF COEFFICIENT   =   0.298

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0204)|   Area     (ha)=   0.08
|ID= 1 DT=10.0 min |   Total Imp(%)=  60.22   Dir. Conn.(%)=  60.22
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.05          0.03
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      25.00         45.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     185.45         26.26
               over (min)        10.00         20.00
     Storage Coeff.  (min)=       0.87 (ii)    13.80 (ii)
     Unit Hyd. Tpeak (min)=      10.00         20.00
     Unit Hyd. peak  (cms)=       0.17          0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.02          0.00          0.026 (iii)
     TIME TO PEAK    (hrs)=       1.00          1.17           1.00
     RUNOFF VOLUME    (mm)=      69.21         18.06          48.79
     TOTAL RAINFALL   (mm)=      71.21         71.21          71.21
     RUNOFF COEFFICIENT   =       0.97          0.25           0.69

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0006)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0000     0.0002

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0204)      0.080     0.026      1.00      48.79
   OUTFLOW: ID= 1 (  0006)      0.080     0.000      3.17      20.85

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.60
                  TIME SHIFT OF PEAK FLOW          (min)=130.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0036

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0203)|   Area     (ha)=   0.08   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.018

     PEAK FLOW       (cms)=   0.006 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=  21.218
     TOTAL RAINFALL   (mm)=  71.214
     RUNOFF COEFFICIENT   =   0.298

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0202)|   Area     (ha)=   1.23
|ID= 1 DT=10.0 min |   Total Imp(%)=  92.96   Dir. Conn.(%)=  92.96
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.14          0.09
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=       0.70          9.40
     Length            (m)=     107.00         24.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     185.45         50.12
               over (min)        10.00         10.00
     Storage Coeff.  (min)=       2.31 (ii)     6.62 (ii)
     Unit Hyd. Tpeak (min)=      10.00         10.00
     Unit Hyd. peak  (cms)=       0.17          0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.58          0.01          0.592 (iii)
     TIME TO PEAK    (hrs)=       1.00          1.00           1.00
     RUNOFF VOLUME    (mm)=      69.21         22.25          65.90
     TOTAL RAINFALL   (mm)=      71.21         71.21          71.21
     RUNOFF COEFFICIENT   =       0.97          0.31           0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
```

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  66.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0001)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0132     0.0472
                          0.0050     0.0118   |   0.0149     0.0590
                          0.0086     0.0236   |   0.0165     0.0708
                          0.0111     0.0354   |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0202)     1.230     0.592      1.00      65.90
   OUTFLOW: ID= 1 (  0001)     1.230     0.016      3.08      65.42

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.74
                  TIME SHIFT OF PEAK FLOW         (min)=125.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0688

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     1.23   0.016     3.08    65.42
     + ID2= 2 (  0203):     0.08   0.006     1.00    21.22
       ================================================
       ID = 3 (  0007):     1.31   0.019     1.17    62.72

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\8c133243-de
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\8c133243-de


DATE: 02-11-2026                          TIME: 11:21:14

USER:


COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 10yr 3hr 10min Chicago       **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 721.920
| Ptotal= 47.37 mm |                          B=   0.000
--------------------                          C=   0.736
                         used in:   INTENSITY =  A / (t + B)^C

                         Duration of storm  =  3.00 hrs
                         Storm time step    = 10.00 min
                         Time to peak ratio =  0.33

                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.00    4.90 |  0.83  132.58 |  1.67    7.77 |  2.50    4.72
                  0.17    5.82 |  1.00   24.19 |  1.83    6.82 |  2.67    4.40
                  0.33    7.29 |  1.17   14.88 |  2.00    6.10 |  2.83    4.13
                  0.50   10.14 |  1.33   11.18 |  2.17    5.54 |
                  0.67   19.52 |  1.50    9.12 |  2.33    5.09 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0201)|   Area    (ha)=   0.23   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.052

     PEAK FLOW       (cms)=   0.008 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=   9.882
     TOTAL RAINFALL   (mm)=  47.366
     RUNOFF COEFFICIENT   =   0.209

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0204)|   Area    (ha)=   0.08
|ID= 1 DT=10.0 min |   Total Imp(%)=  60.22   Dir. Conn.(%)=  60.22
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.05          0.03
     Dep. Storage     (mm)=        2.00          5.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       25.00         45.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=      132.58         12.19
               over (min)         10.00         20.00
     Storage Coeff.  (min)=        0.99 (ii)    18.57 (ii)
     Unit Hyd. Tpeak (min)=       10.00         20.00
     Unit Hyd. peak  (cms)=        0.17          0.06
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.02          0.00          0.018 (iii)
     TIME TO PEAK    (hrs)=        1.00          1.17           1.00
     RUNOFF VOLUME    (mm)=       45.37          8.20          30.46
     TOTAL RAINFALL   (mm)=       47.37         47.37          47.37
     RUNOFF COEFFICIENT   =        0.96          0.17           0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0006)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0000     0.0002

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0204)     0.080     0.018      1.00      30.46
   OUTFLOW: ID= 1 (  0006)     0.080     0.000      3.17       2.55

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.42
                  TIME SHIFT OF PEAK FLOW         (min)=130.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0023

--------------------------------------------------------------------------------
--------------------
| CALIB            |
```

```
| NASHYD   (  0203)|   Area    (ha)=   0.08   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.018

     PEAK FLOW       (cms)=   0.003 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=   9.882
     TOTAL RAINFALL   (mm)=  47.366
     RUNOFF COEFFICIENT   =   0.209

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0202)|   Area    (ha)=   1.23
|ID= 1 DT=10.0 min |   Total Imp(%)=  92.96   Dir. Conn.(%)=  92.96
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.14         0.09
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=      0.70         9.40
     Length            (m)=    107.00        24.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=    132.58        23.75
               over (min)      10.00        10.00
     Storage Coeff.  (min)=     2.65 (ii)    8.45 (ii)
     Unit Hyd. Tpeak (min)=     10.00        10.00
     Unit Hyd. peak  (cms)=      0.17         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.41         0.00         0.417 (iii)
     TIME TO PEAK    (hrs)=      1.00         1.00          1.00
     RUNOFF VOLUME    (mm)=     45.37        10.36         42.90
     TOTAL RAINFALL   (mm)=     47.37        47.37         47.37
     RUNOFF COEFFICIENT   =      0.96         0.22          0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  66.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0001)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0132     0.0472
                          0.0050     0.0118   |   0.0149     0.0590
                          0.0086     0.0236   |   0.0165     0.0708
                          0.0111     0.0354   |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0202)     1.230     0.417      1.00      42.90
   OUTFLOW: ID= 1 (  0001)     1.230     0.013      3.00      42.41

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.00
                  TIME SHIFT OF PEAK FLOW         (min)=120.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0434

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     1.23   0.013     3.00     42.41
     + ID2= 2 (  0203):     0.08   0.003     1.00      9.88
       ================================================
       ID = 3 (  0007):     1.31   0.013     1.17     40.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\466ceea3-29
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\466ceea3-29

DATE: 02-11-2026                          TIME: 11:21:14

USER:


COMMENTS: ____________________________________________________________

--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 25yr 3hr 10min Chicago        **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 822.740
| Ptotal= 57.15 mm |                          B=   0.000
--------------------                          C=   0.725
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    6.14 |  0.83  154.98 |  1.67    9.68 |  2.50    5.92
               0.17    7.28 |  1.00   29.61 |  1.83    8.51 |  2.67    5.53
               0.33    9.09 |  1.17   18.34 |  2.00    7.63 |  2.83    5.19
               0.50   12.58 |  1.33   13.85 |  2.17    6.94 |
               0.67   23.97 |  1.50   11.32 |  2.33    6.38 |

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0201)|   Area    (ha)=   0.23   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.052

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=  14.178
     TOTAL RAINFALL   (mm)=  57.153
     RUNOFF COEFFICIENT   =   0.248

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0204)|   Area    (ha)=   0.08
|ID= 1 DT=10.0 min |   Total Imp(%)=  60.22   Dir. Conn.(%)=  60.22
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.05         0.03
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     25.00        45.00
     Mannings n           =     0.013        0.250
```

```
     Max.Eff.Inten.(mm/hr)=     154.98        17.54
               over (min)        10.00        20.00
     Storage Coeff.  (min)=       0.93 (ii)   16.13 (ii)
     Unit Hyd. Tpeak (min)=      10.00        20.00
     Unit Hyd. peak  (cms)=       0.17         0.06
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.00          0.021 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.17           1.00
     RUNOFF VOLUME    (mm)=      55.15        11.90          37.80
     TOTAL RAINFALL   (mm)=      57.15        57.15          57.15
     RUNOFF COEFFICIENT   =       0.97         0.21           0.66

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0006)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0000     0.0002

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0204)      0.080     0.021      1.00      37.80
   OUTFLOW: ID= 1 (  0006)      0.080     0.000      3.17       9.86

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.50
                  TIME SHIFT OF PEAK FLOW         (min)=130.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0028

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0203)|   Area    (ha)=   0.08   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.018

     PEAK FLOW       (cms)=   0.004 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=  14.175
     TOTAL RAINFALL   (mm)=  57.153
     RUNOFF COEFFICIENT   =   0.248

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0202)|   Area    (ha)=   1.23
|ID= 1 DT=10.0 min |   Total Imp(%)=  92.96   Dir. Conn.(%)=  92.96
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.14         0.09
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       0.70         9.40
     Length            (m)=     107.00        24.00
     Mannings n             =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     154.98        33.91
               over (min)        10.00        10.00
     Storage Coeff.  (min)=       2.49 (ii)    7.52 (ii)
     Unit Hyd. Tpeak (min)=      10.00        10.00
     Unit Hyd. peak  (cms)=       0.17         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.48         0.01          0.491 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.00           1.00
     RUNOFF VOLUME    (mm)=      55.15        14.86          52.31
     TOTAL RAINFALL   (mm)=      57.15        57.15          57.15
     RUNOFF COEFFICIENT   =       0.97         0.26           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  66.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0001)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0132     0.0472
                          0.0050     0.0118   |   0.0149     0.0590
                          0.0086     0.0236   |   0.0165     0.0708
                          0.0111     0.0354   |   0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0202)      1.230     0.491      1.00      52.31
   OUTFLOW: ID= 1 (  0001)      1.230     0.014      3.00      51.83

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.88
                  TIME SHIFT OF PEAK FLOW         (min)=120.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0537

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):      1.23   0.014     3.00    51.83
     + ID2= 2 (  0203):      0.08   0.004     1.00    14.17
       ================================================
       ID = 3 (  0007):      1.31   0.016     1.17    49.53

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\2e7c3b1a-16
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\2e7c3b1a-16

DATE: 02-11-2026                          TIME: 11:21:13

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 2yr 3hr 10min Chicago         **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 475.610
| Ptotal= 30.88 mm |                          B=   0.000
--------------------                          C=   0.738
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33
```

```
                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
                0.00     3.17 |  0.83    86.95 |  1.67     5.04 |  2.50     3.05
                0.17     3.77 |  1.00    15.73 |  1.83     4.42 |  2.67     2.85
                0.33     4.72 |  1.17     9.66 |  2.00     3.95 |  2.83     2.67
                0.50     6.58 |  1.33     7.25 |  2.17     3.59 |
                0.67    12.69 |  1.50     5.91 |  2.33     3.30 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0201)|   Area    (ha)=   0.23   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.052

     PEAK FLOW       (cms)=   0.003 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=   4.076
     TOTAL RAINFALL   (mm)=  30.883
     RUNOFF COEFFICIENT   =   0.132

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0204)|   Area    (ha)=   0.08
|ID= 1 DT=10.0 min |   Total Imp(%)=  60.22   Dir. Conn.(%)=  60.22
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.05          0.03
     Dep. Storage     (mm)=        2.00          5.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       25.00         45.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       86.95          3.65
               over (min)         10.00         30.00
     Storage Coeff.  (min)=        1.18 (ii)    29.66 (ii)
     Unit Hyd. Tpeak (min)=       10.00         30.00
     Unit Hyd. peak  (cms)=        0.17          0.04
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.01          0.00          0.012 (iii)
     TIME TO PEAK    (hrs)=        1.00          1.33           1.00
     RUNOFF VOLUME    (mm)=       28.88          3.31          18.52
     TOTAL RAINFALL   (mm)=       30.88         30.88          30.88
     RUNOFF COEFFICIENT   =        0.94          0.11           0.60

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0006)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0000     0.0002

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0204)    0.080     0.012      1.00      18.52
   OUTFLOW: ID= 1 (  0006)    0.080     0.000      3.08       1.38

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.34
                  TIME SHIFT OF PEAK FLOW         (min)=125.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0014

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0203)|   Area    (ha)=   0.08   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.018

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=   4.071
     TOTAL RAINFALL   (mm)=  30.883
     RUNOFF COEFFICIENT   =   0.132

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0202)|   Area    (ha)=   1.23
|ID= 1 DT=10.0 min |   Total Imp(%)=  92.96   Dir. Conn.(%)=  92.96
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        1.14          0.09
     Dep. Storage     (mm)=        2.00          5.00
     Average Slope     (%)=        0.70          9.40
     Length            (m)=      107.00         24.00
     Mannings n           =       0.013         0.250

     Max.Eff.Inten.(mm/hr)=       86.95          8.84
               over (min)         10.00         20.00
     Storage Coeff.  (min)=        3.13 (ii)    11.75 (ii)
     Unit Hyd. Tpeak (min)=       10.00         20.00
     Unit Hyd. peak  (cms)=        0.16          0.08
                                                          *TOTALS*
     PEAK FLOW       (cms)=        0.27          0.00          0.267 (iii)
     TIME TO PEAK    (hrs)=        1.00          1.17           1.00
     RUNOFF VOLUME    (mm)=       28.88          4.27          27.14
     TOTAL RAINFALL   (mm)=       30.88         30.88          30.88
     RUNOFF COEFFICIENT   =        0.94          0.14           0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  66.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0001)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0132     0.0472
                         0.0050     0.0118   |   0.0149     0.0590
                         0.0086     0.0236   |   0.0165     0.0708
                         0.0111     0.0354   |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0202)    1.230     0.267      1.00      27.14
   OUTFLOW: ID= 1 (  0001)    1.230     0.009      2.83      26.65

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.46
                  TIME SHIFT OF PEAK FLOW         (min)=110.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0266

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     1.23    0.009     2.83    26.65
      + ID2= 2 (  0203):     0.08    0.001     1.00     4.07
        ================================================
        ID = 3 (  0007):     1.31    0.009     2.58    25.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
================================================================================================================================


       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL
```

```
       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****

  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\9b627641-ff
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\9b627641-ff

DATE: 02-11-2026                          TIME: 11:21:15

USER:


COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 50yr 3hr 10min Chicago        **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 893.800
| Ptotal= 64.05 mm |                          B=   0.000
--------------------                          C=   0.719
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  3.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.00    7.02 |  0.83  170.70 |  1.67   11.03 |  2.50    6.77
               0.17    8.31 |  1.00   33.42 |  1.83    9.71 |  2.67    6.33
               0.33   10.36 |  1.17   20.79 |  2.00    8.71 |  2.83    5.95
               0.50   14.30 |  1.33   15.73 |  2.17    7.93 |
               0.67   27.09 |  1.50   12.89 |  2.33    7.29 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0201)|   Area    (ha)=   0.23   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.052

     PEAK FLOW       (cms)=   0.014 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=  17.518
     TOTAL RAINFALL   (mm)=  64.054
     RUNOFF COEFFICIENT   =   0.273

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0204)|   Area    (ha)=   0.08
|ID= 1 DT=10.0 min |   Total Imp(%)=  60.22   Dir. Conn.(%)=  60.22
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.05          0.03
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      25.00         45.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     170.70         21.75
               over (min)       10.00         20.00
     Storage Coeff.  (min)=       0.90 (ii)    14.84 (ii)
     Unit Hyd. Tpeak (min)=      10.00         20.00
     Unit Hyd. peak  (cms)=       0.17          0.07
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.02          0.00          0.023 (iii)
     TIME TO PEAK    (hrs)=       1.00          1.17           1.00
     RUNOFF VOLUME    (mm)=      62.05         14.80          43.18
     TOTAL RAINFALL   (mm)=      64.05         64.05          64.05
     RUNOFF COEFFICIENT   =       0.97          0.23           0.67

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  59.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0006)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0000     0.0002

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0204)       0.080     0.023      1.00      43.18
   OUTFLOW: ID= 1 (  0006)       0.080     0.000      3.17      15.23

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.55
                 TIME SHIFT OF PEAK FLOW         (min)=130.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0032

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0203)|   Area    (ha)=   0.08   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.018

     PEAK FLOW       (cms)=   0.005 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=  17.513
     TOTAL RAINFALL   (mm)=  64.054
     RUNOFF COEFFICIENT   =   0.273

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0202)|   Area    (ha)=   1.23
|ID= 1 DT=10.0 min |   Total Imp(%)=  92.96   Dir. Conn.(%)=  92.96
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.14          0.09
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=       0.70          9.40
     Length            (m)=     107.00         24.00
     Mannings n            =      0.013         0.250

     Max.Eff.Inten.(mm/hr)=     170.70         41.81
               over (min)       10.00         10.00
     Storage Coeff.  (min)=       2.39 (ii)     7.02 (ii)
     Unit Hyd. Tpeak (min)=      10.00         10.00
     Unit Hyd. peak  (cms)=       0.17          0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.54          0.01          0.543 (iii)
     TIME TO PEAK    (hrs)=       1.00          1.00           1.00
     RUNOFF VOLUME    (mm)=      62.05         18.36          58.97
     TOTAL RAINFALL   (mm)=      64.05         64.05          64.05
     RUNOFF COEFFICIENT   =       0.97          0.29           0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  66.0     Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
```

```
--------------------
| RESERVOIR(  0001)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |  0.0132      0.0472
                         0.0050     0.0118   |  0.0149      0.0590
                         0.0086     0.0236   |  0.0165      0.0708
                         0.0111     0.0354   |  0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0202)      1.230     0.543      1.00      58.97
   OUTFLOW: ID= 1 (  0001)      1.230     0.015      3.00      58.48

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.80
                  TIME SHIFT OF PEAK FLOW         (min)=120.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0611

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     1.23   0.015     3.00    58.48
     + ID2= 2 (  0203):     0.08   0.005     1.00    17.51
       ================================================
       ID = 3 (  0007):     1.31   0.017     1.17    55.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------

 FINISH
================================================================================================================

================================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2015)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat
  Output  filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\786a5ce5-4f
  Summary filename: C:\Users\cmartin\AppData\Local\Civica\VH5\d2e6ca24-c59f-40b3-9508-3160722ae988\786a5ce5-4f


DATE: 02-11-2026                          TIME: 11:21:14

USER:


COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 5yr 3hr 10min Chicago         **
  ************************************************


--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 632.750
| Ptotal= 40.45 mm |                          B=   0.000
--------------------                          C=   0.741
                        used in:   INTENSITY =  A / (t + B)^C

                        Duration of storm  =  3.00 hrs
                        Storm time step    = 10.00 min
                        Time to peak ratio =  0.33
```

```
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    4.11 |  0.83  114.88 |  1.67    6.54 |  2.50    3.95
                0.17    4.88 |  1.00   20.52 |  1.83    5.73 |  2.67    3.69
                0.33    6.13 |  1.17   12.57 |  2.00    5.13 |  2.83    3.46
                0.50    8.55 |  1.33    9.43 |  2.17    4.65 |
                0.67   16.54 |  1.50    7.68 |  2.33    4.27 |


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0201)|   Area    (ha)=   0.23   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.052

     PEAK FLOW       (cms)=   0.006 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=   7.208
     TOTAL RAINFALL   (mm)=  40.451
     RUNOFF COEFFICIENT   =   0.178

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0204)|   Area    (ha)=   0.08
|ID= 1 DT=10.0 min |   Total Imp(%)=  60.22   Dir. Conn.(%)=  60.22
--------------------

                                    IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=           0.05          0.03
     Dep. Storage     (mm)=           2.00          5.00
     Average Slope     (%)=           1.00          2.00
     Length            (m)=          25.00         45.00
     Mannings n             =         0.013         0.250

     Max.Eff.Inten.(mm/hr)=         114.88          6.82
               over (min)           10.00         30.00
     Storage Coeff.  (min)=           1.05 (ii)   23.23 (ii)
     Unit Hyd. Tpeak (min)=          10.00         30.00
     Unit Hyd. peak  (cms)=           0.17          0.04
                                                              *TOTALS*
     PEAK FLOW       (cms)=           0.02          0.00          0.015 (iii)
     TIME TO PEAK    (hrs)=           1.00          1.33           1.00
     RUNOFF VOLUME    (mm)=          38.45          5.93          25.34
     TOTAL RAINFALL   (mm)=          40.45         40.45          40.45
     RUNOFF COEFFICIENT   =           0.95          0.15           0.63

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  59.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0006)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |  0.0000      0.0002

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0204)      0.080     0.015      1.00      25.34
   OUTFLOW: ID= 1 (  0006)      0.080     0.000      3.17       2.04

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  1.38
                  TIME SHIFT OF PEAK FLOW         (min)=130.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0019

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0203)|   Area    (ha)=   0.08   Curve Number   (CN)= 66.0
|ID= 1 DT=10.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17
```

```
     Unit Hyd Qpeak  (cms)=   0.018

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   1.000
     RUNOFF VOLUME    (mm)=   7.201
     TOTAL RAINFALL   (mm)=  40.451
     RUNOFF COEFFICIENT   =   0.178

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0202)|   Area    (ha)=   1.23
|ID= 1 DT=10.0 min |   Total Imp(%)=  92.96   Dir. Conn.(%)=  92.96
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.14         0.09
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       0.70         9.40
     Length            (m)=     107.00        24.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     114.88        17.06
               over (min)        10.00        10.00
     Storage Coeff.  (min)=       2.80 (ii)    9.43 (ii)
     Unit Hyd. Tpeak (min)=      10.00        10.00
     Unit Hyd. peak  (cms)=       0.17         0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.36         0.00          0.359 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.00           1.00
     RUNOFF VOLUME    (mm)=      38.45         7.56          36.27
     TOTAL RAINFALL   (mm)=      40.45        40.45          40.45
     RUNOFF COEFFICIENT   =       0.95         0.19           0.90

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  66.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0001)|     OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0132     0.0472
                          0.0050     0.0118   |   0.0149     0.0590
                          0.0086     0.0236   |   0.0165     0.0708
                          0.0111     0.0354   |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0202)     1.230     0.359      1.00      36.27
   OUTFLOW: ID= 1 (  0001)     1.230     0.011      3.00      35.79

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.14
                  TIME SHIFT OF PEAK FLOW          (min)=120.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0363

-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0007)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     1.23   0.011     3.00    35.79
     + ID2= 2 (  0203):     0.08   0.002     1.00     7.20
       ================================================
       ID = 3 (  0007):     1.31   0.012     2.58    34.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
```

CROZIER
CONSULTING ENGINEERS

Project: 7456 McLean Road W and 197 Brock Road S
Project No.: 2124-6029
Design by: CM
Reviewed by: JB
Date: 2024-05-28
Updated: 2026-02-13

7456 McLean Road W and 197 Brock Road S, Township of Puslinch
Stage-Storage-Discharge for Catchment 202 Underground Storage Tank

Primary Orifice Diameter:	0.100	
Primary Orifice Invert Elevation:	0.00	
Outlet Orifice Diameter	-	Tank Area (m^2) = 1180
Outlet Orifice Invert Elevation:	-	

Elev.	**Depth**	**Storage Volume**	Orifice Discharge	Total Discharge	Storage
(m)	(m)	(cu.m)	(cu.m/s)	(cu.m/s)	(ha-m)
0.00	0.00	0	0.0000	0.0000	0.0000
0.10	0.10	118	0.0050	0.0050	0.0118
0.20	0.20	236	0.0086	0.0086	0.0236
0.30	0.30	354	0.0111	0.0111	0.0354
0.40	0.40	472	0.0132	0.0132	0.0472
0.50	0.50	590	0.0149	0.0149	0.0590
0.60	0.60	708	0.0165	0.0165	0.0708

NOTE: Rating curve used to model the Underground Storage Tank Outflows in Visual Otthymo.
All elevations and depths are relative to the invert of the Underground Storage Tank.

CROZIER CONSULTING ENGINEERS

Mitigation Analysis

Project: 7456 McLean Road West
Project No: 2792-7289
Date: 13-Feb-26
Created by: CM
Checked by: JB

DESIGN PARAMETERS

LID Identity	Approximate Land Area[1] (m^2)	Annual Percipitation (mm/yr)	Approximate Evapotranspiration[2] (mm/yr)	Design Percipitation (mm/yr)	Runoff (mm/yr)	Total Available Infiltration Volume (m^3/yr)
Infiltration Gallery	757	851	500	351	351	266
TOTAL WITH MITIGATION	**757**					266

REQUIRED STORAGE

Available Infiltration Volume (m^3/yr)	Annual Events Producing Runoff[3]	Capacity	Storage Required (m^3)
266	40	0.4	16.6

UNDERGROUND STORAGE VOLUME OF PROPOSED LIDS

LID Identity	Area (m2)	Depth (m)	Total Underground Volume (m^3)	Void Ratio	Underground Storage Volume (m^3)
Infiltration Gallery	193	0.5	96.5	0.4	38.6
				Storage Required (m^3)	**16.6**
				Underground Storage Provided (m^3)	**38.6**

1. Area contributing to the proposed Infiltration Gallery from the Post-Development Drainage Plan (Figure 2).
2. Evapotranspiration adjusted to reflect the increased imperviousness and increased runoff.
3. LID should be sized to capture 90 % of rainfall events or 20 mm storm event. There are approximately 40 events per year that produce runoff (1994 MOE SWM Manual)

7456 McLean Road W &197 Brock Road S

0912-7186

STORM SEWER DESIGN SHEET

CROZIER CONSULTING ENGINEERS

FREQUENCY - 5 YEAR - City of Guelph IDF			
Coef. A=	632.75	Coef. B=	-0.741
FREQUENCY - 100 YEAR - City of Guelph IDF			
Coef. A=	953.29	Coef. B=	-0.711

MATERIAL	MANNINGS "n"
PVC	0.009
CONC.	0.013
CSP	0.024

DESIGNED BY: CM
CHECKED BY: CM
DATE: 2026-03-13

INITIAL TIME OF CONCENTRATION (minutes) = 10.00

CATCHMENT I.D.	FROM MH	TO MH	AREA (A) (Ha)	5 YEAR RUN-OFF COEFF (C_5)	100 YEAR RUN-OFF COEFF (C_{100})	DESIGN STORM	A x C	5 YEAR CUMUL. A x C_5	100 YEAR CUMUL. A x C_{100}	TIME OF CONC. (min.)	5 YEAR I (mm/hr)	100 YEAR I (mm/hr)	Q (RUNOFF) (L/sec)	5 YR DESIGN FLOW (L/sec)	100 YR DESIGN FLOW (L/sec)	SLOPE (%)	PIPE DIA. (mm)	MANNING'S "n"	VEL. (m/sec)	LENGTH (m)	TIME OF FLOW (min)	PIPE CAPACITY (L/sec)	5 yr CAPACITY (%)	*100 yr CAPACITY (%)
202A	DCB6	CBMH5	0.60	0.81	0.81	5 year	0.48	0.48	0.48	10.00	114.88	185.45	**399.90**	**152.96**	**246.94**	0.50%	375	0.013	1.6	31.9	0.33	**179.08**	**85%**	**138%**
202B	CBMH5	CBMH4	0.10	0.87	0.87	5 year	0.08	0.56	0.56	10.33	112.16	181.24	**457.71**	**174.97**	**282.74**	0.50%	375	0.013	1.6	27.7	0.28	**179.79**	**97%**	**157%**
202C	CBMH4	SWM Tank	0.07	0.90	0.90	5 year	0.06	0.62	0.62	10.61	109.93	177.79	**499.23**	**190.75**	**308.48**	0.60%	375	0.013	1.8	33.0	0.31	**196.17**	**97%**	**157%**
202D	CB3	SWM Tank	0.12	0.89	0.89	5 year	0.11	0.11	0.11	10.00	114.88	185.45	**89.17**	**34.11**	**55.06**				NO PIPE PROPOSED					
202E	DCB1	SWM Tank	0.18	0.90	0.90	5 year	0.16	0.16	0.16	10.00	114.88	185.45	**134.55**	**51.47**	**83.08**				NO PIPE PROPOSED					
202F	CB2	SWM Tank	0.17	0.90	0.90	5 year	0.15	0.15	0.15	10.00	114.88	185.45	**127.74**	**48.86**	**78.88**				NO PIPE PROPOSED					

*Note: Pipes are sized to the 5-year design storm event as per Township of Puslinch standards. Flows exceeding the 5-year storm will be conveyed overland towards the proposed catchbasins located on top of the SWM Tank.

7456 McLean Road W &197 Brock Road S

0912-7186

STORM CATCHBASIN INLET CAPACITY

CROZIER CONSULTING ENGINEERS

Coef. A= 632.75

Coef. A= 953.29

FREQUENCY - 5 YEAR - City of Guelph IDF
Coef. B= -0.741
FREQUENCY - 100 YEAR - City of Guelph IDF
Coef. B= -0.711

MATERIAL	MANNINGS "n"
PVC	0.009
CONC.	0.013
CSP	0.024

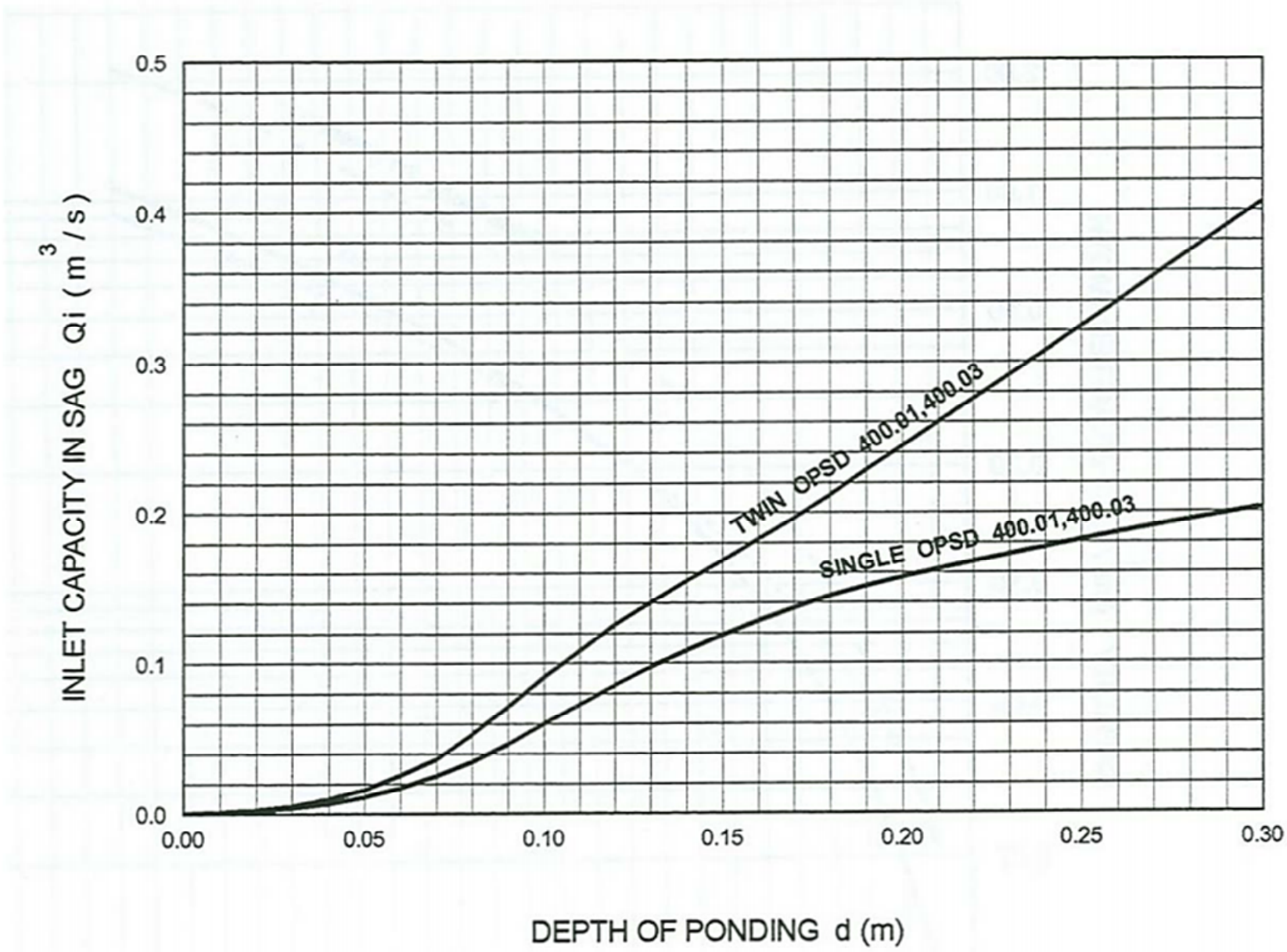
DESIGNED BY: CM
CHECKED BY: CM
DATE: 2026-03-13

INITIAL TIME OF CONCENTRATION (minutes) = 10.00

CATCHMENT I.D.	FROM MH	TO MH	AREA (A) (Ha)	5 YEAR RUN-OFF COEFF (C_5)	100 YEAR RUN-OFF COEFF (C_{100})	DESIGN STORM	A x C	5 YEAR CUMUL. A x C_5	100 YEAR CUMUL. A x C_{100}	TIME OF CONC. (min.)	5 YEAR I (mm/hr)	100 YEAR I (mm/hr)	Q (RUNOFF) (L/sec)	5 YR DESIGN FLOW (L/sec)	100 YR DESIGN FLOW (L/sec)	SLOPE (%)	PIPE DIA. (mm)	*PIPE CAPACITY (L/sec)	100 yr Overland Flow (L/s)	**CB Inlet Capacity (L/s)	Headwater Elevation (m)	*Remaining Overland Flow (L/s)
202A	DCB6	CBMH5	0.60	0.81	0.81	100 year	0.48	0.48	0.48	10.00	114.88	185.45	**399.90**	**152.96**	**246.94**	0.50%	375	179.08	67.86	-	-	**67.86**
202B	CBMH5	CBMH4	0.10	0.87	0.87	100 year	0.08	0.56	0.56	10.33	112.16	181.24	**457.71**	**174.97**	**282.74**	0.50%	375	179.79	102.95	-	-	**102.95**
202C	CBMH4	SWM Tank	0.07	0.90	0.90	100 year	0.06	0.62	0.62	10.61	109.93	177.79	**499.23**	**190.75**	**308.48**	0.60%	375	196.17	112.31	-	-	**112.31**
202D	CB3	SWM Tank	0.12	0.89	0.89	100 year	0.11	0.11	0.11	10.00	114.88	185.45	**89.17**	**34.11**	**55.06**	N/A	N/A	N/A	167.38	75.00	0.11	**92.38**
202E	DCB1	SWM Tank	0.18	0.90	0.90	100 year	0.16	0.16	0.16	10.00	114.88	185.45	**134.55**	**51.47**	**83.08**	N/A	N/A	N/A	175.46	410.00	0.30	**0.00**
202F	CB2	SWM Tank	0.17	0.90	0.90	100 year	0.15	0.15	0.15	10.00	114.88	185.45	**127.74**	**48.86**	**78.88**	N/A	N/A	N/A	78.88	150.00	0.18	**0.00**

*Note: Pipes are sized to the 5-year design storm event as per Township of Puslinch standards. Flows exceeding the 5-year storm will be conveyed overland towards the proposed catchbasins located on top of the SWM Tank.
**Note: CB Inlet capacity are based on MTO Design Chart 4.19 based on the headwater elevation from the lowest spill point of each CB.

Design Chart 4.19: Inlet Capacity at Road Sag

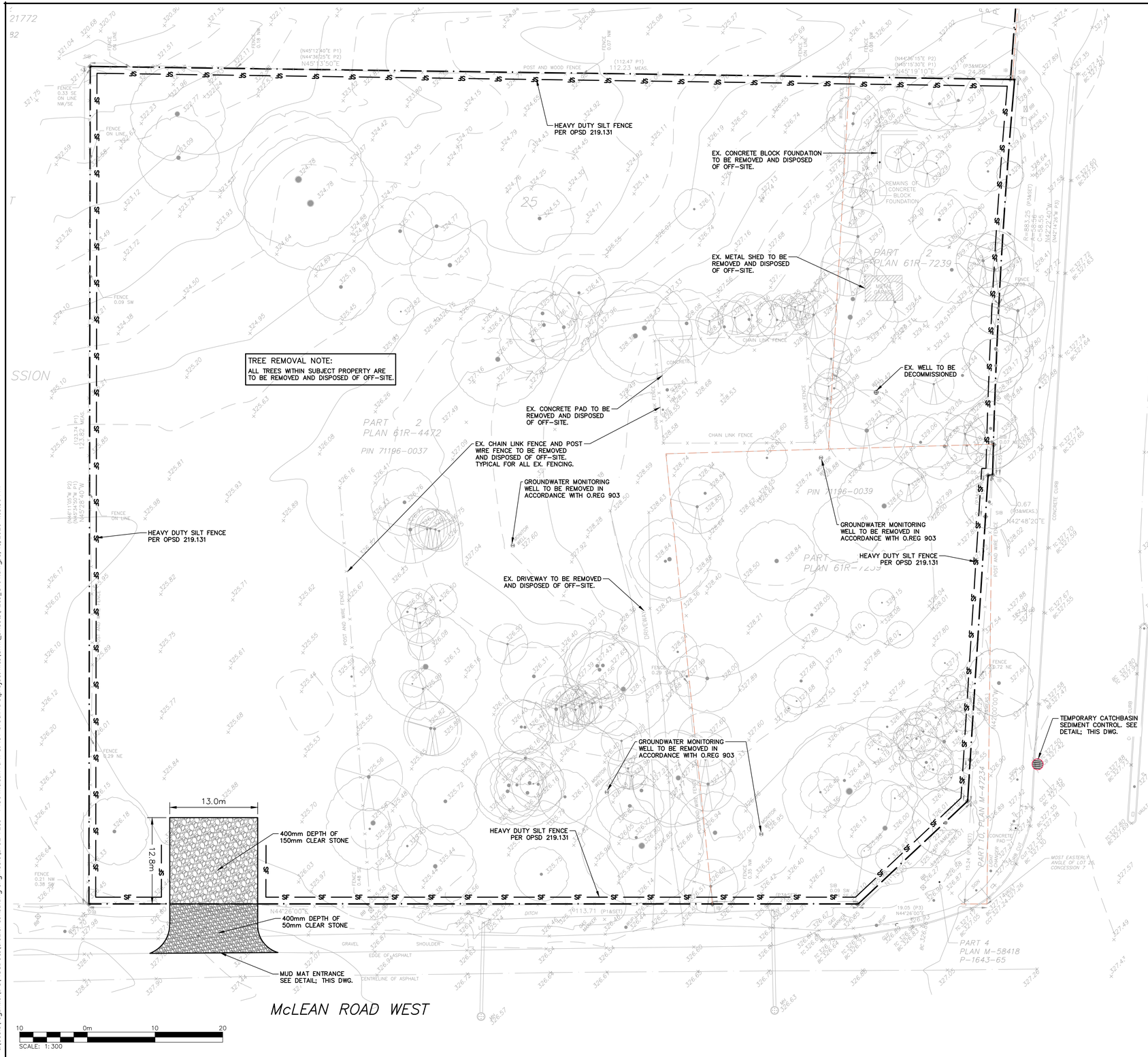


DRAWINGS

Drawing C101: Preliminary Erosion, Sediment Control, and Removals Plan

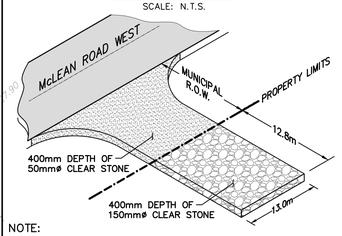
Drawing C102: Preliminary Site Servicing Plan

Drawing C103: Preliminary Site Grading Plan



MUD-MAT DETAIL

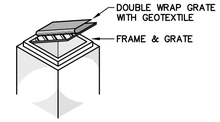
SCALE: N.T.S.



NOTE:
GEOTEXTILE (TERRAFIX 270R OR APPROVED EQUAL) TO BE PLACED AS SEPARATION BARRIER BETWEEN EXISTING GROUND AND CLEAR STONE.

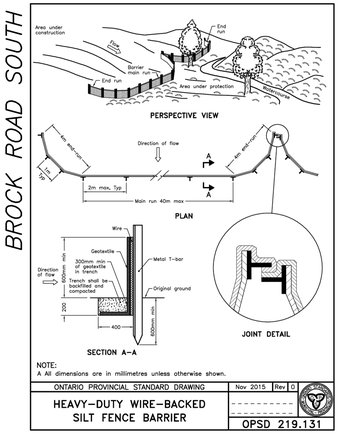
CATCHBASIN SEDIMENT CONTROL DETAIL

SCALE: N.T.S.



NOTES:
1. TO BE INSTALLED IN ALL AFFECTED EXISTING & PROPOSED CATCHBASIN & CATCHBASIN MANHOLES UNDER APPROPRIATE DRAINAGE CIRCUMSTANCES, BETWEEN APRIL AND DECEMBER.
2. WOVEN GEOTEXTILE TO HAVE A MINIMUM EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm OR A NON-WOVEN GEOTEXTILE TO BE CONSIDERED BASED ON SOIL PARAMETERS AND SITE CONDITIONS.
3. GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERE WITH DRAINAGE, OR AS DIRECTED BY THE MUNICIPALITY.

BROCK ROAD SOUTH



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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev	0
HEAVY-DUTY WIRE-BACKED SILT FENCE BARRIER			
	OPSD 219.131		

EROSION & SEDIMENT CONTROL NOTES:

1. EROSION & SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE WORKS.
2. EROSION & SEDIMENT CONTROLS MUST BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY RAIN FALL EVENT, AND MUST BE MAINTAINED AND REPAIRED IN A TIMELY MANNER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
3. EXISTING AND PROPOSED CATCHBASINS ARE TO BE PROTECTED WITH FILTER CLOTH AND 150mm OF 50mm STONE COVER DURING CONSTRUCTION.
4. IT IS REQUIRED TO STABILIZE ALL AREAS THAT WILL REMAIN DISTURBED FOR MORE THAN 30 DAYS.
5. MUD MAT, SILT FENCE, AND CATCHBASIN PROTECTION ARE NOT TO BE REMOVED UNTIL COMPLETION OF CONSTRUCTION.

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- EXISTING FENCE
- EXISTING GRADE
- MUD-MAT; SEE DETAIL
- SF — HEAVY DUTY SILT FENCE; SEE DETAIL
- PROPOSED SEDIMENT CONTROL DEVICE IN EX. CATCHBASIN PER

No.	ISSUE / REVISION	YYYY/MMM/DD
4	ISSUED FOR FOURTH SUBMISSION (ZBA)	2026/MAR/13
3	ISSUED FOR THIRD SUBMISSION (ZBA)	2026/FEB/13
2	ISSUED FOR SECOND SUBMISSION (ZBA)	2025/AUG/01
1	ISSUED FOR COORDINATION	2025/JUL/18
0	ISSUED FOR FIRST SUBMISSION (ZBA)	2023/OCT/20

ELEVATION NOTE:
ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM CGVD28:78, AND WERE DERIVED FROM TOWNSHIP OF PUSLINCH BENCHMARK 0081968105, HAVING A PUBLISHED ELEVATION OF 317.592

BEARING NOTE:
BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHWESTERLY LIMIT OF McLEAN ROAD WEST AS SHOWN ON PLAN 61R-4472, HAVING A BEARING OF N44°26'00"E

SURVEY NOTES:
SURVEY COMPLETED BY TARASICK McMILLAN KUBICKI LIMITED.
PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:
DESIGN ELEMENTS ARE BASED ON SITE PLAN BY RICHARD ZIEGLER ARCHITECT INC.
DATED: MAR. 10, 2026
DRAWING No. A101

DRAWING NOTES:
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THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project
7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing
PRELIMINARY EROSION, SEDIMENT CONTROL AND REMOVALS PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-675-4915 F
WWW.CFCROZIER.CA

Drawn	R.L.	Design	B.W.	Project No.	2792-7289
Check	S.C.	Check	B.W./K.R.	Scale	1: 300
				Dwg.	C 101

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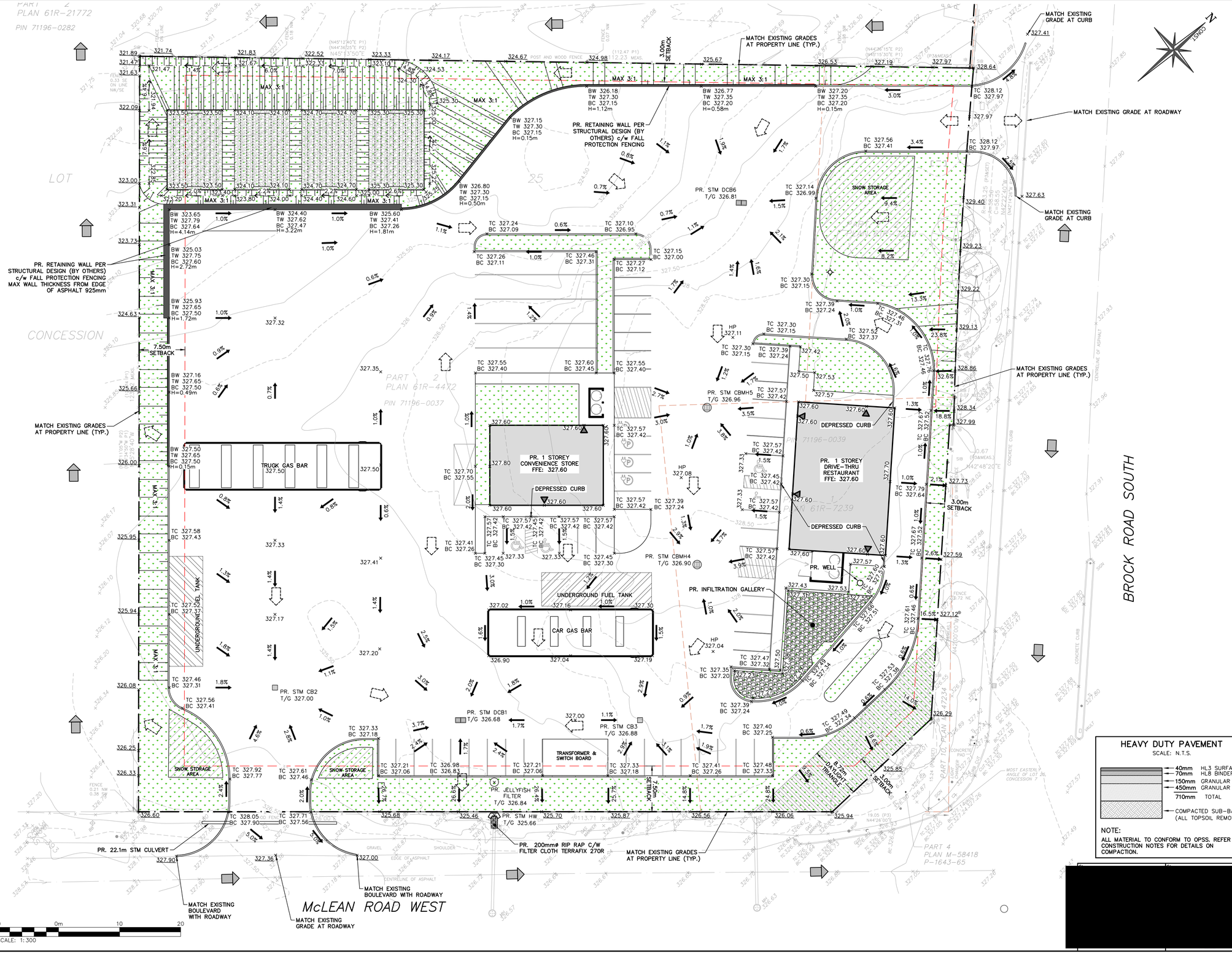

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- EXISTING DITCH
- EXISTING FENCE
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADE (TO MATCH EXISTING)
- PROPOSED MINOR FLOW DIRECTION
- PROPOSED GRASSED SWALE
- PROPOSED RETAINING WALL
- PROPOSED SLOPE (3:1 MAX.)
- PROPOSED MAJOR OVERLAND FLOW DIRECTION
- EXISTING OVERLAND FLOW DIRECTION
- PROPOSED DEPRESSED CURB
- SETBACK LIMIT
- PROPOSED LANDSCAPE AREA

HEAVY DUTY PAVEMENT

SCALE: N.T.S.

40mm	HL3 SURFACE
70mm	HL8 BINDER
150mm	GRANULAR 'A'
450mm	GRANULAR 'B'
710mm	TOTAL
	COMPACTED SUB-BASE (ALL TOPSOIL REMOVED)

NOTE:
ALL MATERIAL TO CONFORM TO OPSS. REFER TO CONSTRUCTION NOTES FOR DETAILS ON COMPACTION.

No.	ISSUE / REVISION	YYYY/MMM/DD
4	ISSUED FOR FOURTH SUBMISSION (ZBA)	2026/MAR/13
3	ISSUED FOR THIRD SUBMISSION (ZBA)	2026/FEB/13
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1	ISSUED FOR COORDINATION	2025/JUL/18
0	ISSUED FOR FIRST SUBMISSION (ZBA)	2023/OCT/20

ELEVATION NOTE:

ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM CGVD28:78, AND WERE DERIVED FROM TOWNSHIP OF PUSLINCH BENCHMARK 00819681O5, HAVING A PUBLISHED ELEVATION OF 317.592

BEARING NOTE:

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHWESTERLY LIMIT OF McLEAN ROAD WEST AS SHOWN ON PLAN 61R-4472, HAVING A BEARING OF N44°26'00"E

SURVEY NOTES:

SURVEY COMPLETED BY TARASICK McMILLAN KUBICKI LIMITED.
PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN BY RICHARD ZIEGLER ARCHITECT INC.
DATED: MAR. 10, 2026
DRAWING No. A101

DRAWING NOTES:

THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART OF IT WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.

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THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project
7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing
PRELIMINARY SITE GRADING PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	R.L.	Design	B.W.	Project No.	2792-7289
Check	S.C.	Check	B.W./K.R.	Scale	1: 300
				Dwg.	C 102

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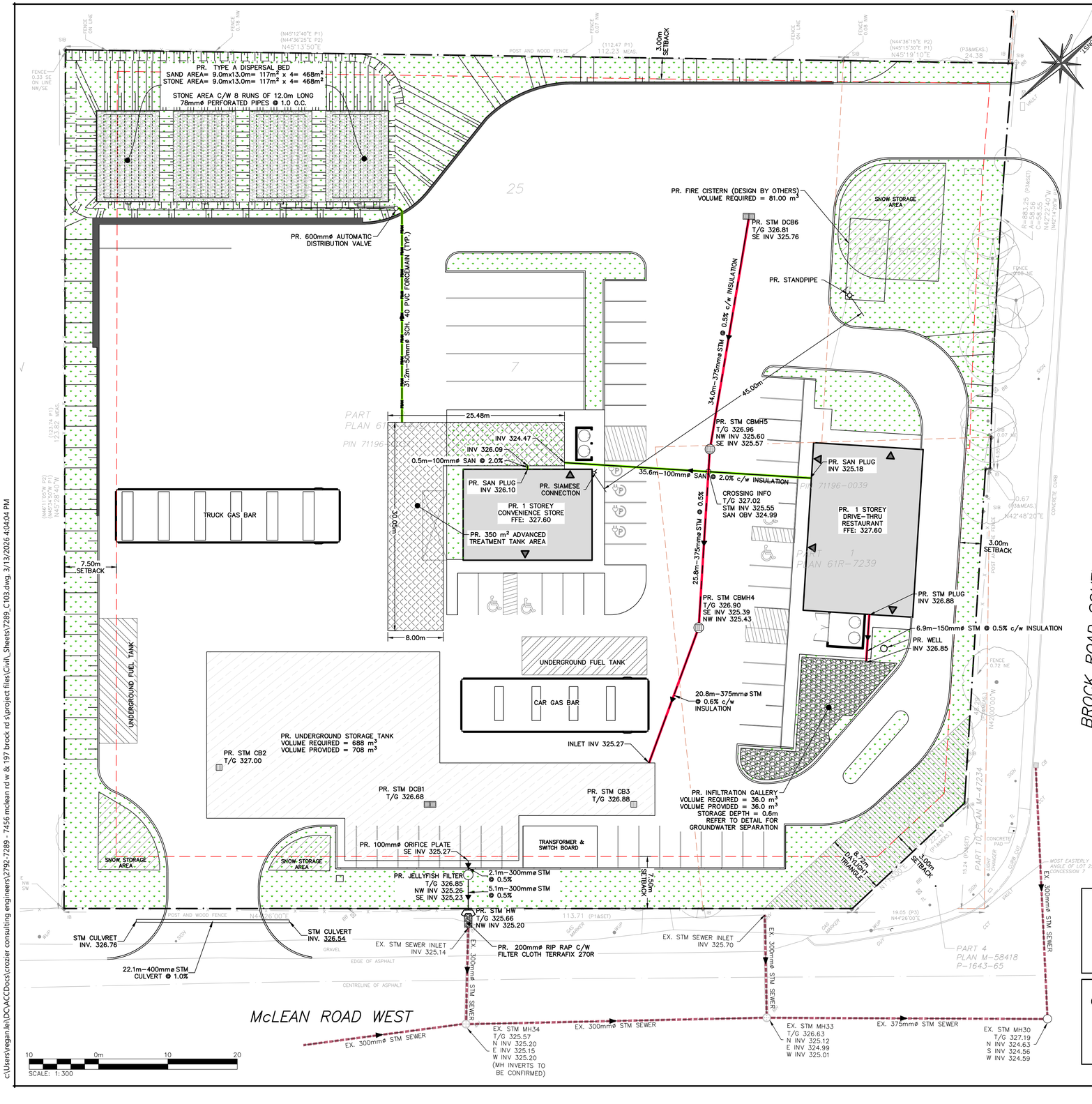


SEWAGE SYSTEM NOTES

1. PROPOSED SEWAGE SYSTEM CONSTRUCTION TO BE UNDERTAKEN IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, ONTARIO MINISTRY OF ENVIRONMENT, AND THE MANUFACTURER'S RECOMMENDATIONS.
2. INSTALLATION OF ALL COMPONENTS OF THE SEWAGE SYSTEM TO BE COMPLETED BY A LICENSED AND REGISTERED ONSITE SEWAGE SYSTEM INSTALLER IN THE PROVINCE OF ONTARIO.
3. THE CONTRACTOR SHALL COORDINATE AND PAY FOR ALL NECESSARY INSPECTIONS WITH THE TOWN AND OTHER AUTHORITIES PERTAINING TO THE INSTALLATION OF THEIR WORK.
4. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES AND EXISTING SEWAGE WORKS PRIOR TO CONSTRUCTION.
5. ALL COMPONENT LOCATIONS SHALL BE FIELD VERIFIED WITH THE ENGINEER PRIOR TO INSTALLATION.
6. ALL EARTHWORKS, INCLUDING PLACEMENT OF FILL ARE TO BE UNDERTAKEN WITH TRACK MOUNTED EQUIPMENT TO KEEP COMPACTION TO A MINIMUM. KEEP ALL TRAFFIC IN THE AREA OF THE PROPOSED LEACHING BED TO A MINIMUM.
7. ALL TOPSOIL AND ORGANICS TO BE REMOVED FROM LEACHING BED AREA.
8. IF HIGH GROUNDWATER CONDITIONS ARE EVIDENT AT THE TIME OF CONSTRUCTION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. ALL VERTICAL CLEARANCE DISTANCES AS REQUIRED BY THE ONTARIO BUILDING CODE MUST BE MAINTAINED.
9. GRAVITY SEWERS TO HAVE MINIMUM 0.6 M COVER AND SHALL BE INSULATED WHERE LESS THAN 1.2M COVER IS PROVIDED. FORCEMAIN SHALL BE INSULATED WHERE LESS THAN 1.5 M COVER IS PROVIDED. BEDDING, COVER AND BACKFILL TO BE IN ACCORDANCE WITH OPSS.
10. UNLESS OTHERWISE NOTED PE FORCEMAIN TO BE HDPE SERIES 100 OR DR 13.5 PE AND PVC FORCEMAIN TO BE SCHEDULE 40. GRAVITY SEWERS TO BE SDR-35. FORCE MAIN TO BE PROVIDED WITH TRACER WIRE, SECURED TO THE TOP OF THE PIPE WITH WATER PROOF TAPE OR ZIP TIES.
11. ALL PIPES SUBJECT TO VEHICULAR TRAFFIC SHALL BE ADEQUATELY PROTECTED.
12. ALL METAL IN TANKS OR PUMP CHAMBERS TO BE GLAVANIZED OR STAINLESS STEEL.
13. ALL JOINTS BELOW THE HIGH WATER LEVEL IN PRECAST TANKS TO BE SEALED WITH MASTIC SEALANT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS FOR WATERTIGHT SEAL. ALL TANK INLETS AND OUTLETS TO BE EQUIPPED WITH CAST IN RUBBER BOOT FOR WATER TIGHT SEAL. UNLESS OTHERWISE NOTED ALL TANK INLETS AND OUTLETS TO BE EQUIPPED WITH TEES.
14. ALL TANKS TO BE PROVIDED WITH PRECAST CONCRETE OR PVC ACCESS RISERS TO GRADE. HATCHES TO BE BOLTED AND GASKETED AND ACCESSIBLE AT GRADE. ALL CIRCULAR HATCHES TO BE 600 MM DIAMETER POLYLOK RISER WITH CAST IN ADAPTOR. ALL SQUARE ACCESS OPENINGS TO BE EQUIPPED WITH CONCRETE RISERS. VENTED HATCHES TO BE PROVIDED ON TANKS CONTAINING PUMPS.
15. A TANK SHALL NOT BE COVERED BY SOIL OR LEACHING BED FILL HAVING A DEPTH GREATER THAN THE MAXIMUM DEPTH OF BURIAL THAT THE TANK IS DESIGNED TO WITHSTAND.
16. EXISTING SOILS SHALL BE SCARIFIED AT A RIGHT ANGLE TO THE DIRECTION OF LATERAL SEWAGE FLOW IN THE LEACHING BED PRIOR TO IMPORTING FILL OR INSTALLING DISTRIBUTION PIPE STONE LAYER.
17. WHEN THE IMPORTATION OF FILL IS REQUIRED, FILL SHOULD BE END-DUMPED AND GRADED PROGRESSIVELY OVER THE PREPARED SITE AREA WITH TRACK MOUNTED EQUIPMENT.
18. ALL ELEVATIONS TO BE VERIFIED PRIOR TO BACKFILL
19. ALL FILL MATERIAL PLACED BENEATH TANKS TO BE COMPACTED TO 95%
20. ALL DISTURBED AREAS TO BE TOPSOILED (100MM MINIMUM) AND SEEDED COMPLETE WITH FERTILIZER AND MULCH IN ACCORDANCE WITH OPSS
21. THE INSTALLING CONTRACTOR SHALL INSTALL THE SEWAGE SYSTEM USING A TRANSIT/LEVEL AND SHALL PROVIDE SAME FOR INSPECTION OF ANY COMPONENT.
22. ALL TREATMENT UNITS THAT CONTAIN MECHANICAL COMPONENTS SHALL BE EQUIPPED WITH AN AUDIBLE AND VISUAL WARNING ALARM, LOCATED TO WARN THE OCCUPANTS OF THE BUILDING SERVED OR THE OPERATOR OF THE TREATMENT UNIT OF A MALFUNCTION IN THE OPERATION OF THE TREATMENT UNIT.
23. THE CONTRACTOR WILL ENSURE THAT EVERY OPERATOR OF A TREATMENT UNIT SHALL OBTAIN, FROM THE MANUFACTURER OR DISTRIBUTOR OF THE TREATMENT UNIT, LITERATURE THAT DESCRIBES THE UNIT IN DETAIL AND PROVIDES COMPLETE INSTRUCTIONS REGARDING THE OPERATION, SERVICING, AND MAINTENANCE REQUIREMENTS OF THE UNIT AND ITS RELATED COMPONENTS NECESSARY TO ENSURE THE CONTINUED PROPER OPERATION IN ACCORDANCE WITH THE ORIGINAL DESIGN AND SPECIFICATIONS.
24. ALL IMPORTED SAND FILL TO HAVE A T-TIME OF 6 TO 10 MIN/CM AND A SILT/CLAY CONTENT OF NO MORE THAN 5% AND SHALL BE VERIFIED IN WRITING BY A SOIL TESTING FIRM AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.
25. SEWAGE SYSTEM HAS BEEN DESIGNED TO RECEIVED DOMESTIC STRENGTH WASTEWATER. ALL SANITARY WASTEWATER FROM THE BUILDINGS MUST MEET THE APPLICABLE SEWER USE BYLAW LIMITS PRIOR TO DISCHARGE TO ADVANCED TREATMENT SYSTEM.

LEGEND

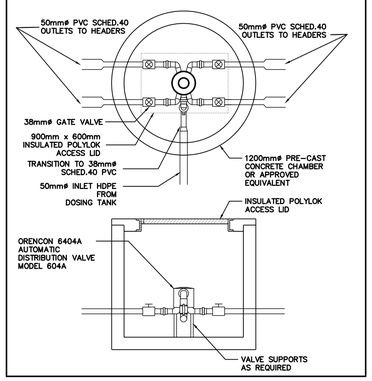
- PROPERTY LINE
- EXISTING STORM SEWER & MANHOLE
- EXISTING SINGLE / DOUBLE CATCHBASIN
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED STANDPIPE
- PROPOSED SIAMESE CONNECTION
- PROPOSED WELL
- PROPOSED STORM SEWER & MANHOLE
- PROPOSED SINGLE / DOUBLE CATCHBASIN
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY FORCEMAIN
- TP# TEST PIT LOCATION
- SETBACK LIMIT
- PROPOSED LANDSCAPE AREA

ON-SITE SEWAGE DESIGN

DAILY DESIGN FLOW REFER TO FSR REPORT FOR DETAILS	TOTAL DESIGN FLOW = 22,000 L/DAY
ADVANCED TREATMENT SYSTEM	TO BE DETERMINED DURING DETAILED DESIGN
SOIL PERCOLATION RATE	T = 15 min/cm (DETERMINED BY C.F. CROZIER)
TYPE A DISPESAL BED STONE AREA	Q/50 =22,000/50 REQUIRED = 440 m² PROVIDED = 468 m²
TYPE A DISPERSAL BED SAND AREA	QT/850= 22,000*15/850 REQUIRED = 389 m² PROVIDED = 468 m²

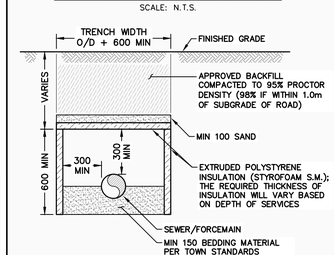
AUTOMATIC DISTRIBUTING VALVE DETAIL

SCALE: N.T.S.



INSULATION FOR SHALLOW SERVICES

SCALE: N.T.S.



NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. 50mm OF INSULATION IS REQUIRED FOR EVERY 600mm OF COVER DEFICIENCY.

SWM TANK SECTION

SCALE: N.T.S.

GROUND SURFACE=326.68
TOP OF TANK=325.87
BOTTOM OF TANK=325.27
GROUNDWATER=324.19

INFILTRATION GALLERY SECTION

SCALE: N.T.S.

GROUND SURFACE=327.30
TOP OF GALLERY=327.15
BOTTOM OF GALLERY=326.55
GROUNDWATER=321.48

No.	ISSUE / REVISION	YYYY/MMM/DD
4	ISSUED FOR FOURTH SUBMISSION (ZBA)	2026/MAR/13
3	ISSUED FOR THIRD SUBMISSION (ZBA)	2026/FEB/13
2	ISSUED FOR SECOND SUBMISSION (ZBA)	2025/AUG/01
1	ISSUED FOR COORDINATION	2025/JUL/18
0	ISSUED FOR FIRST SUBMISSION (ZBA)	2023/OCT/20

ELEVATION NOTE:

ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM CGVD28:78, AND WERE DERIVED FROM TOWNSHIP OF PUSLINCH BENCHMARK 0081968105, HAVING A PUBLISHED ELEVATION OF 317.592

BEARING NOTE:

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE NORTHWESTERLY LIMIT OF McLEAN ROAD WEST AS SHOWN ON PLAN 61R-4472, HAVING A BEARING OF N44°26'00"E

SURVEY NOTES:

SURVEY COMPLETED BY TARASICK McMILLAN KUBICKI LIMITED.
PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN BY RICHARD ZIEGLER ARCHITECT INC.
DATED: MAR. 10, 2026
DRAWING No. A101

DRAWING NOTES:

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ALL EXISTING UNDERORUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project

7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing

PRELIMINARY SITE SERVICING PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	B.W.	2792-7289	
Check	Check	Scale	Dwg.
S.C.	B.W./K.R.	1:300	C 103

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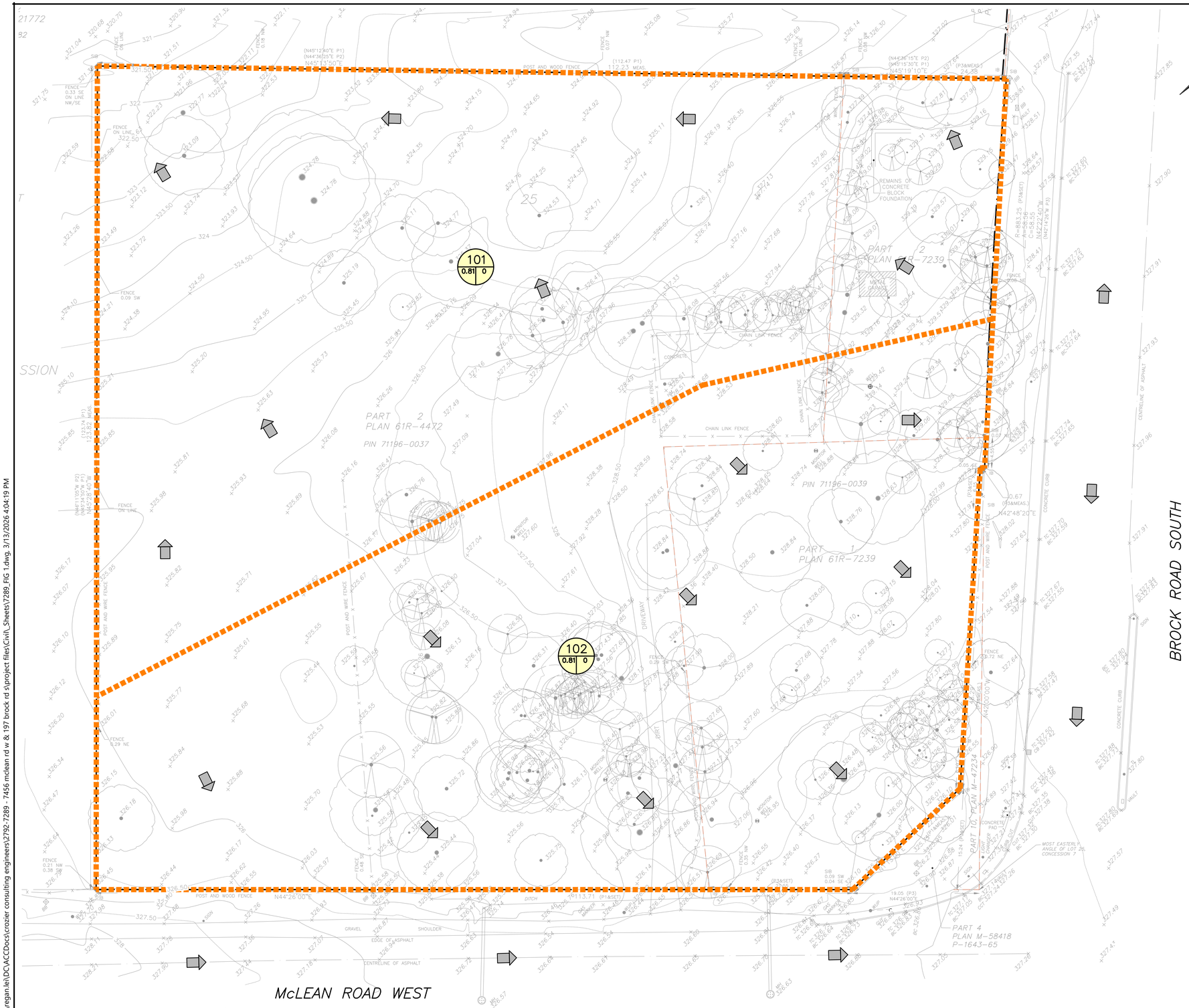
FIGURES

Figure 1: Preliminary Pre-development Drainage Plan

Figure 2: Preliminary Post-development Drainage Plan

Figure 3: Preliminary Storm Sewer Drainage Plan



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- x 215.00 EXISTING GRADE
- EXISTING OVERLAND FLOW DIRECTION
- PRE-DEVELOPMENT STORM DRAINAGE CATCHMENT AREA
- ID — CATCHMENT I.D.
- A (ha) | 70MP (%) — AREA (ha) | % IMPERVIOUSNESS

PRE-DEVELOPMENT CATCHMENT AREAS PER THE STORMWATER MANAGEMENT REPORT - CARROLL POND MUNICIPAL DRAIN (TOWNSHIP OF PUSLINCH, MARCH 2007)

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PROJECT FILE No. 9625-SRPRT
COMPLETED OCTOBER 20, 2022

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Project
7456 McLEAN ROAD WEST AND
197 BROCK ROAD SOUTH
TOWNSHIP OF PUSLINCH

Drawing
PRELIMINARY PRE-DEVELOPMENT DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.	B.W.	2792-7289	
Check	Check	Scale	Dwg.
S.C.	B.W./K.R.	1:300	FIG 1

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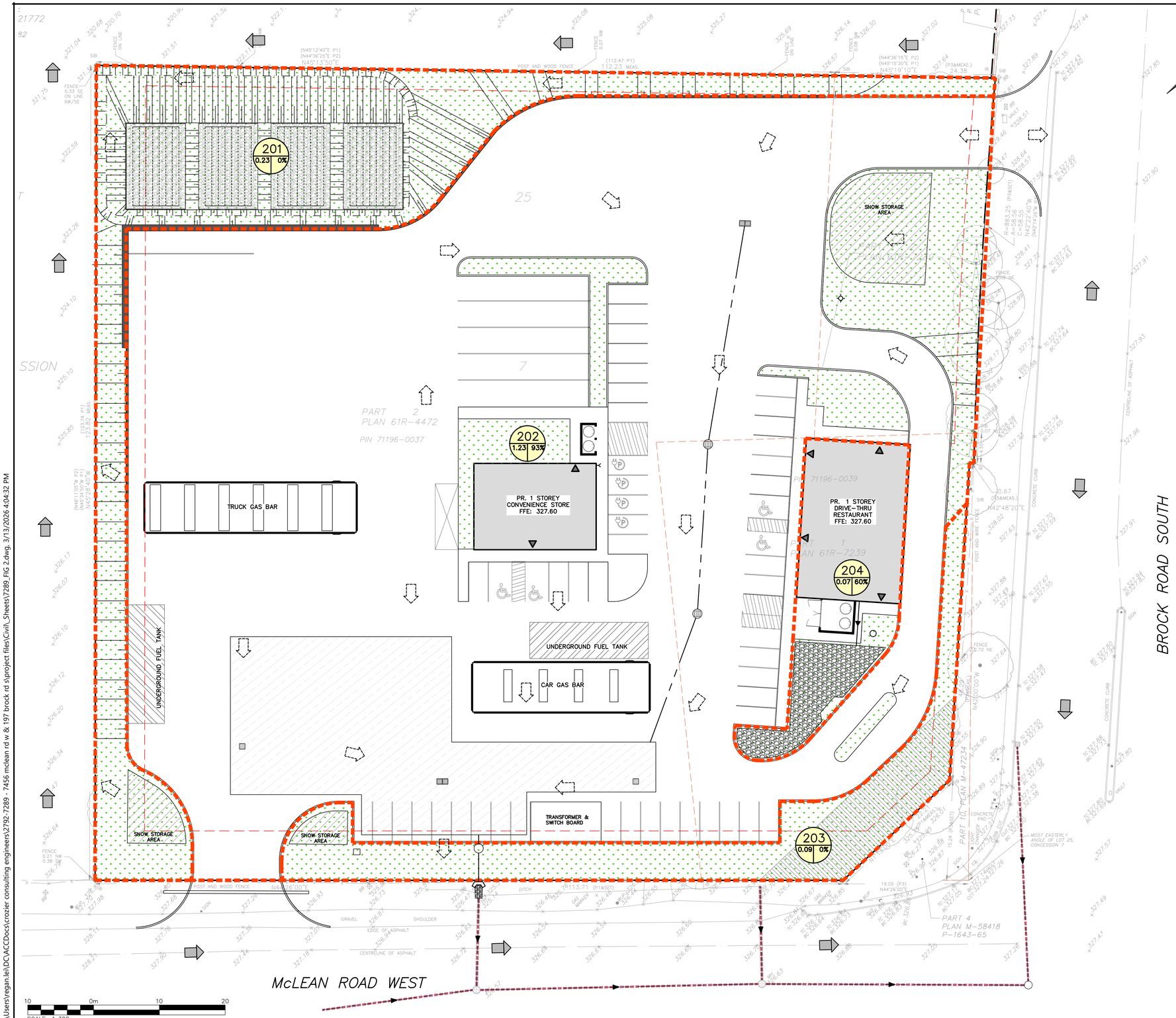
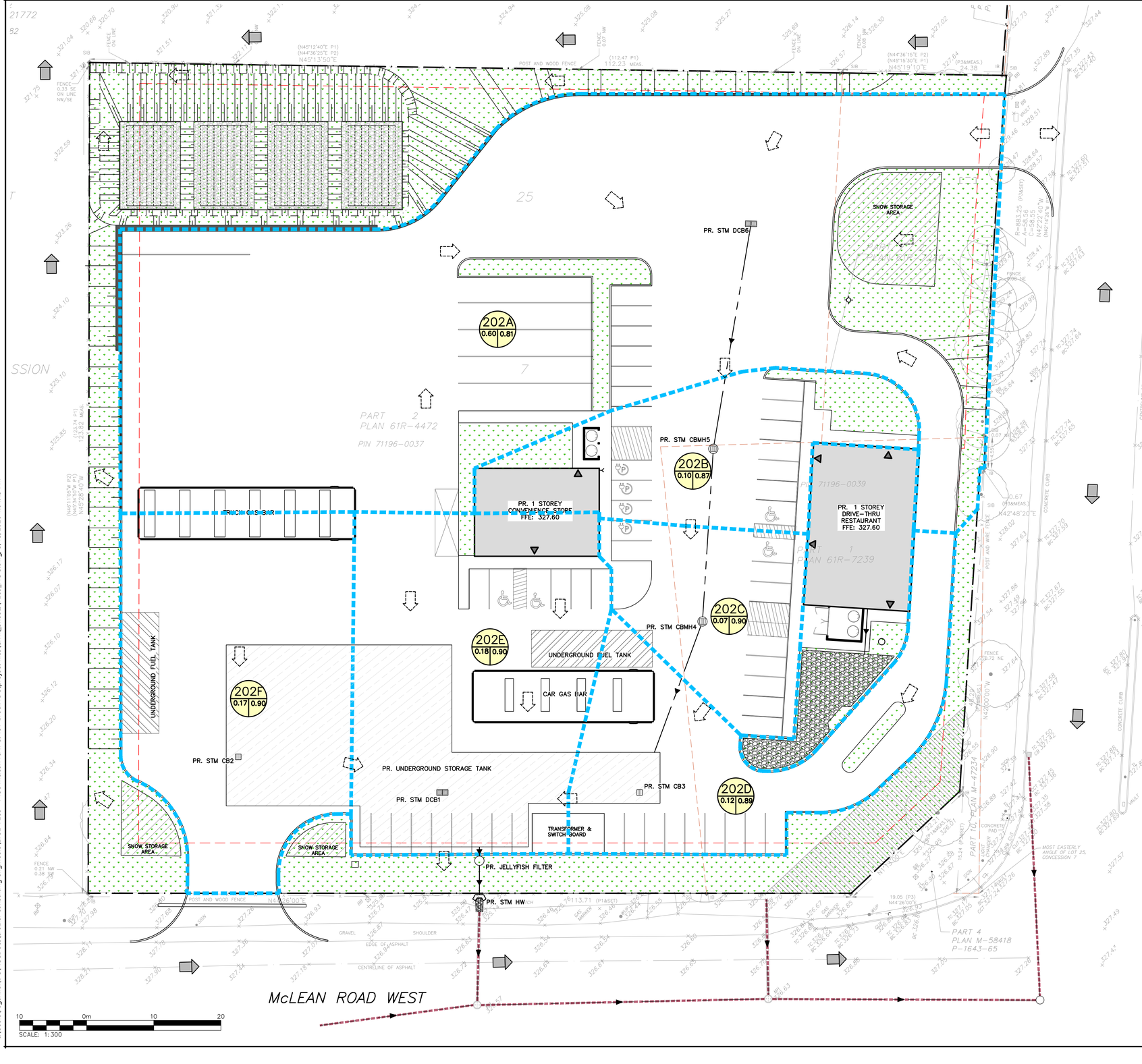

201
0.23 0%
202
1.23 93%
203
0.09 0%
204
0.07 60%
PR. 1 STOREY CONVENIENCE STORE FFE: 327.60
PR. 1 STOREY DRIVE-THRU RESTAURANT FFE: 327.60
TRUCK GAS BAR
CAR GAS BAR
UNDERGROUND FUEL TANK
UNDERGROUND FUEL TANK
SNOW STORAGE AREA
SNOW STORAGE AREA
SNOW STORAGE AREA
TRANSFORMER & SWITCH BOARD
PART 2 PLAN 61R-4472
PIN 71196-0037
PART 1 PLAN 61R-7239
PIN 71196-0039
PART 4 PLAN M-58418 P-1643-65
PART 10, PLAN M-47234
BROCK ROAD SOUTH
McLEAN ROAD WEST
SSION
25
7
T
21772
32
(N45°12'40"E P1)
(N44°36'25"E P2)
N45°13'50"E
(112.47 P1)
(112.23 MEAS)
POST AND WOOD FENCE
(N44°36'15"E P2)
(N45°15'30"E P1)
N45°19'10"E
(P3&MEAS.)
24.38
(N46°11'05"W P2)
(N45°28'40"W P1)
N45°28'40"W
(123.14 P1)
(122.82 MEAS)
(N42°48'20"E P1)
(N43°12'40"E P2)
N42°48'20"E
(113.71 (P1&2))
19.05 (P3)
N44°26'00"E
N44°26'00"W
R=883.26 (P1&SET)
A=58.56
C=58.55
(N42°22'40"W 58.55)
N42°22'40"W
FENCE 0.21 NW 0.38 SE ON LINE NW/SE
FENCE 0.33 SE ON LINE NW/SE
FENCE ON LINE
FENCE 0.07 NW
FENCE 0.08 NW
FENCE 0.72 NE
FENCE 0.08 SE
FENCE 0.06 SE
FENCE 0.06 NW
FENCE 0.08 NW



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PROJECT FILE No. 9625-SPRT
COMPLETED OCTOBER 20, 2022

SITE PLAN NOTES:

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DATED: MAR. 10, 2026
DRAWING No. A101

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Project

7456 McLEAN ROAD WEST AND 197 BROCK ROAD SOUTH TOWNSHIP OF PUSLINCH

Drawing

PRELIMINARY STORM SEWER DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-675-4915 F
WWW.CFCROZIER.CA

Drawn	Design	Project No.
R.L.	B.W.	2792-7289
Check	Check	Scale
S.C.	B.W./K.R.	1:300

Dwg. FIG 3

C:\Users\regan.lei\DCACCDocs\crozier consulting engineers\2792-7289 - 7456 mclean rd w & 197 brock rd s\project files\Civil_Sheets\7289_FIG 3.dwg, 3/13/2026 4:04:45 PM

Marton Smith Landscape Architects (msla)
170 The Donway West, Suite 206
North York, Ontario. M3C 2G3
Tel. 416 492-9966
Fax. 416 492-0426
e-mail: msla@msla.ca

Attn. **W.E. Oughtred and Associates Inc.**
c/o Arlene Beaumont
2140 Winston Park Drive, Suite 26
Oakville, ON L6H 5V5

Date: March 18th, 2026

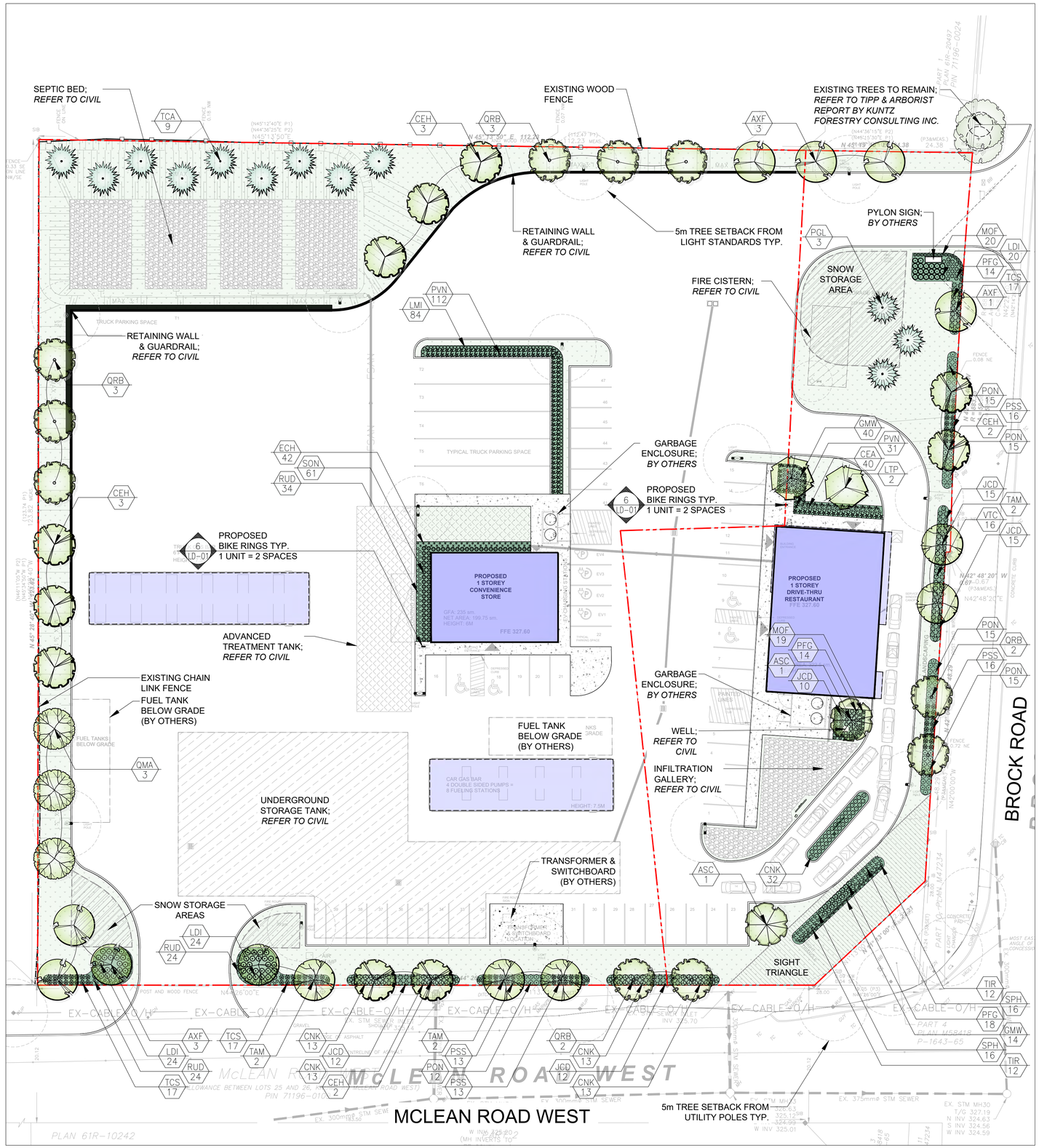
Re.: Landscape Cost Estimate –7456 McLean Rd, Puslinch, ON

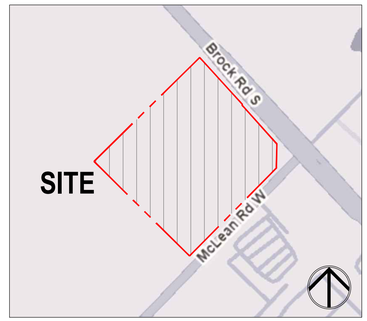
Landscape Cost Estimate

Description	Quantity	Units	Unit Cost	Total
Deciduous Trees	40	ea.	500	20000.00
Coniferous Trees	12	ea.	500	6000.00
Deciduous Shrubs	326	ea.	40	13040.00
Coniferous Shrubs	173	ea.	45	7785.00
Ornamental Grasses	236	ea.	25	5900.00
Perennials	325	ea.	25	8125.00
Planting Soil & Mulch	523	sq. M	12	6276.00
Sodded Area & Topsoil	1	l.s	15,000	15000.00
Bike Rings	2	ea.	900	1800.00
Total				***$ 83,926.00***

This cost estimate has been projected for Landscape letter of credit purposes only, and reflects an approximate installed cost of construction for the Proposed Development at 7456 McLean Rd, Puslinch, ON.

Trinity MacIntyre, B.L.A.
Per. MSLA Landscape Architects





Key Map

Legend

- Existing Deciduous Tree Canopy
- Tree Protection Zone (TPZ)
- Property Line
- Existing Wood Fence
- Existing Chainlink Fence
- Proposed Deciduous Tree
- Proposed Coniferous Tree
- Proposed Shrub/Perennial
- Plant Material Reference Key (AAA 0)
- Proposed Planting Area
- Prop. Sodded Area Typ.
- Prop. Concrete Paving Typ.
- Proposed Bike Ring
- Detail Reference Key (AAA 1-2)

Proposed Plant Material List

KEY	QNTY	BOTANICAL NAME	COMMON NAME	HT/CAL	SPREAD	ROOT	DROUGHT TOLERANT	NATIVE	REMARKS
DECIDUOUS TREES									
ASC	2	Acer saccharum	Sugar Maple	70 mm		B.&B.	Yes	Yes	Full Form
AXF	7	Acer x freemanii 'Jeffersred'	Jeffersred Freeman Maple	70 mm		B.&B.	Yes	Yes	Full Form
CEH	10	Celtis occidentalis	Hackberry	70 mm		B.&B.	Yes	Yes	Full Form
LTP	2	Liriodendron tulipifera	Tulip Tree	70 mm	cream	B.&B.	Yes	Yes	Full Form
QMA	3	Quercus macrocarpa	Bur Oak	70 mm		B.&B.	High	Yes	Full Form
QRB	10	Quercus rubra	Red Oak	70 mm		B.&B.	Yes	Yes	Full Form
TAM	6	Tilia Americana	Basswood Linden	70 mm		B.&B.	High	Yes	Full Form
CONIFEROUS TREES									
PGL	3	Picea glauca	White Spruce	200 cm		B.&B.	Yes	Yes	Full Form
TCA	9	Tsuga canadensis	Canadian Hemlock	200 cm		B.&B.	No	Yes	Full Form
DECIDUOUS SHRUBS									
CEA	40	Ceanothus americanus	New Jersey Tea Shrub	60 cm		C.G.	High	Yes	Full Form
CNK	84	Cornus sericea 'Kelseyi'	Kelsey Red Osier Dogwood	60 cm		C.G.	Yes	Yes	Full Form
LDI	68	Diervilla lonicera	Bush Honysuckle	60 cm		C.G.	High	Yes	Full Form
PFG	46	Potentilla fruticosa 'Goldstar'	Goldstar Potentilla	60 cm		C.G.	High	Yes	Full Form
PON	72	Physocarpus opulifolius 'Nanus'	Dwarf Ninebark	60 cm		C.G.	High	Yes	Dwarf
VTC	16	Viburnum trilobum 'Compactum'	Compact High Bush-Cranberry	70 cm		C.G.	Yes	Yes	Full Form
CONIFEROUS SHRUBS									
JCD	64	Juniperus communis var. 'Depressa'	Depressa Juniper (Canadian Juniper)		70 cm	C.G.	High	Yes	Full Form
PSS	58	Pinus strobus 'Blue Shag'	Dwarf Eastern White Pine		70 cm	C.G.	No	Yes	Full Form
TCS	51	Taxus canadensis	Canada Yew		65 cm	C.G.	High	Yes	Full Form
ORNAMENTAL GRASSES									
PVN	143	Panicum virgatum 'Northwind'	Northwind Switch Grass			2 Gal.	High	Yes	Full Form
SPH	32	Sporobolus heterolepsis	Prairie Dropseed			2 Gal.	High	Yes	Full Form
SON	61	Sorghastrum nutan	Indian Grass			2 Gal.	High	Yes	Full Form – Native
PERENNIALS									
ECH	42	Echinacea purpurea	Purple Cone Flower			2 Gal.	High	Yes	Full Form
GMW	54	Geranium maculatum	Wild Geranium			2 Gal.	High	Yes	Spring Bloom
LMI	84	Lilium michiganense	Michigan Lily			2 Gal.	High	Yes	Full Form
MOF	39	Monarda fistula 'Mohawk'	Mohawk Bee Balm			2 Gal.	High	Yes	Full Form
RUD	82	Rudbeckia fulgida var. sullivantii 'Goldsturm'	Black Eyed Susan			2 Gal.	High	Yes	Full Form
TIR	24	Tiarella cordifolia 'Foam Flower'	Foam Flower (creamy white)			2 Gal.	High	Yes	Full Form

ALL QUANTITIES IN THE LIST OF PLANT MATERIALS ARE TO BE CHECKED BY THE LANDSCAPE CONTRACTOR. ANY DISCREPANCIES ARE TO BE REPORTED TO THE LANDSCAPE ARCHITECT. THE QUANTITIES INDICATED ON THE DRAWINGS SUPERCEDE THE TOTAL QUANTITIES

msla
MARTON SMITH LANDSCAPE ARCHITECTS
170 The Donway W Suite 206.
Toronto, Ontario, Canada. M3C 2G3
tel. 416.492.9966 | email. info@msla.ca

Architect:
RZA
RICHARD ZIEGLER ARCHITECT INC.

Client/Owner:

Municipality:
TOWNSHIP OF PUSLINCH

Notes:

No.	Revision	Date
04	Issued for 3rd Submission	03/18/26
03	Issued for 2nd Submission	02/19/26
02	Issued for Coordination	02/13/26
01	Issued for Submission	08/08/25

North:

Stamp:

Project:

Proposed Landscape and Site Upgrades
7456 McLean Rd
Puslinch, Ontario

Scale: **1:300** Date: **Aug 2025**
Drawn By: **T.M.** Checked By: **L.M.**

Drawing Title:

Landscape Plan

Project No. **25151** Sheet No. **L1-01**

All information contained in these plans shall be checked by the contractor. All discrepancies shall be reported to the Landscape Architect (L.A.) before commencing with construction. All drawings have copyright and shall remain the property of the Landscape Architect. Copying or any reproduction in part or whole shall only be permitted with written consent of L. A. Drawings shall not be used for construction unless sealed & SIGNED. All drainage patterns must drain positively away from buildings or structures at 2% min. The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of utilities or facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume liability for damages. NO CONSTRUCTION SHALL BE UNDERTAKEN UNTIL ALL APPLICABLE PERMITS HAVE BEEN OBTAINED. ALL WORK SHALL CONFORM TO ALL APPLICABLE REGULATIONS. ALL WORK SHALL BE INSPECTED BY STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION
DO NOT SCALE DRAWINGS • PRELIMINARY NOT FOR CONSTRUCTION • THESE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL COUNTERSIGNED BY L. ARCHITECT •

SIGNED

DATE

REFER TO PLAN FOR LOCATION

LANDSCAPE SPECIFICATIONS

CONTRACTOR MUST CONTACT ALL UTILITY COMPANIES FOR STAKE OUTS PRIOR TO ANY EXCAVATION OR PLANTING.

ROUGH GRADING

ROUGH GRADE AND FILL AREAS TO ESTABLISH SUBGRADE AS REQUIRED. PROVIDE DRAINAGE PATTERN AS INDICATED ON DRAWINGS. ROUND SMOOTHLY ALL TOPS AND TOES OF SLOPES. COMPACT ALL AREAS TO 95% STANDARD PROCTOR DENSITY UNLESS SPECIFIED OTHERWISE. EXISTING TREES TO REMAIN ON SITE ARE TO BE PROTECTED AS DETAILED.

FINE GRADING

FINE GRADE ALL AREAS TO FINISHED GRADES AS SHOWN ON LAYOUT OR GRADING PLAN OR ARCHITECT'S SITE PLAN. PROVIDE UNIFORM SLOPES AWAY FROM THE BUILDING, UNLESS SPECIFIED OTHERWISE. SLOPES MAY NOT EXCEED 33 1/3% (3:1).

SPREADING OF TOPSOIL

SCARIFY THE SUBSOIL PRIOR TO THE SPREADING THE TOPSOIL. REMOVE ALL DEBRIS AND LEAVE A FINE-TEXTURED EVEN SURFACE. ALL TOPSOIL TO BE IMPORTED UNLESS PREVIOUSLY APPROVED BY LANDSCAPE ARCHITECT. OBTAIN APPROVAL FOR THE QUALITY OF ANY IMPORTED TOPSOIL BEFORE DELIVERY TO THE SITE. TOPSOIL IS TO BE COMPACTED TO CREATE A FIRM AND EVEN SURFACE.

SOD

USE NO. 1 GRADE TURFGRASS NURSERY SOD WHICH CONFORMS WITH THE SPECIFICATIONS OF THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO. ALL LAWN AREAS SHALL RECEIVE A MINIMUM OF 100MM (4") OF COMPACTED TOPSOIL, AND SHALL BE SODDED WITH #1 KENTUCKY BLUEGRASS - FESCUE. NO SOD SLOPES ARE TO EXCEED 3:1. SLOPE IN EXCESS OF 4:1 TO BE PEGGED.

MINERAL FERTILIZER

APPLY THE FOLLOWING MINERAL FERTILIZER UNLESS SOILS TESTS SHOW OTHER REQUIREMENTS:

1. SODDED AREAS - 11% NITROGEN, 8% PHOSPHORUS AND 4% POTASH (11-8-4) AT THE RATE OF 4.5 KG OVER M2 (10 LBS OVER 1000 SQ. FT.).

2. PLANTING BEDS - 7% NITROGEN, 7% PHOSPHORUS AND 7% POTASH (7-7-7) AT THE RATE OF 40 GRAMS (4 OZ.) FOR EVERY BUSHEL OF TOPSOIL.

PREPARATION OF PLANTING BEDS

ALL PLANT BEDS TO BE CONTINUOUS. EXCAVATE ALL PLANTING BEDS TO THE DEPTH AS INDICATED ON THE DRAWINGS AND DETAILS, MIN 450mm(18"). BACKFILL ALL PLANTING BEDS WITH A SOIL MIXTURE CONSISTING OF SIX (6) PARTS OF SAND LOAM, ONE (1) PART OF FINELY PULVERIZED PEAT MOSS, TWO (2) PARTS OF WELL-ROTTED MANURE AND THE MINERAL FERTILIZER AS SPECIFIED ABOVE. ALSO ADD .58 KILOS BONEMEAL/CUBIC METER OF PLANTING SOIL (1 LB./CUBIC YARD). PREPARE THE PLANTING BEDS FOR PLANTING BEFORE THE DELIVERY OF THE PLANT MATERIAL TO THE JOB SITE.

NOTE: IF THE EXISTING SOIL CONDITIONS ARE CLAY OR WET IN NATURE, CONTACT THE LANDSCAPE ARCHITECT FOR INSTRUCTIONS OF A SUITABLE SOIL MIXTURE. FAILURE TO DO THIS MAY RESULT IN DELAY OF APPROVAL AND ACCEPTANCE.

PLANT MATERIALS

ALL PLANT MATERIAL SHALL CONFORM TO THE STANDARDS OF THE CANADIAN NURSERY TRADES ASSOCIATION FOR SIZE AND SPECIES.

ALL SHRUB AND TREE MATERIAL SHALL BE CONTAINER GROWN, POTTED, S/B OR B/B, UNLESS OTHERWISE NOTED. BARE ROOT PLANTING SHALL BE ACCEPTABLE FOR CERTAIN SPECIES DURING EARLY SPRING OR LATE FALL PLANTING SEASON. CONTRACTOR SHALL MAKE REQUESTS FOR ROOT CONDITION SUBSTITUTION IN WRITING TO THE LANDSCAPE ARCHITECT PRIOR TO COMMENCEMENT OF PLANTING OPERATIONS. ALL PLANT MATERIAL TO BE CLAY GROWN STOCK UNLESS OTHERWISE NOTED.

LANDSCAPE SPECIFICATIONS

1 LD-01

SCALE: N.T.S. DATE:

REFER TO PLAN FOR LOCATION

PLANT MATERIAL INSTALLATION

ALL TREES, SHRUBS AND GROUNDCOVERS SHALL BE PLANTED AS DETAILED & AS SHOWN ON THE PLANTING PLAN. ALL BEDS TO RECEIVE A COVER OF CLEAN MULCH TO A DEPTH OF 100mm(4"). FOR GUYING AND STAKING TREES, REFER TO PLANTING DETAILS. WRAP ALL DECIDUOUS TREES UNDER EXPERIENCED SUPERVISION ONLY TO THE SPECIFICATIONS OF THE ONTARIO LANDSCAPE CONTRACTORS ASSOCIATION.

PLANT MATERIAL SIZES AND CONDITIONS ARE TO BE AS INDICATED ON THE LANDSCAPE DRAWING.

THE INDIVIDUAL PLANT GROUPING TOTAL AS ILLUSTRATED ON THE PLANTING PLAN SUPERSEDES THE ESTIMATED QUANTITY ON THE MASTER PLANT LIST. CONTRACTOR MUST REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT IN WRITING BEFORE COMMENCING ANY WORK. CONTRACTOR WILL ASSUME FULL RESPONSIBILITY IF LANDSCAPE ARCHITECT IS NOT NOTIFIED OF DISCREPANCIES.

* MULCH - SHREDDED PINE MULCH BY "GRO BARK" OR APPROVED EQUAL. LANDSCAPE ARCHITECT TO APPROVE MULCH BEFORE INSTALLATION.

GENERAL MAINTENANCE

PROPER MAINTENANCE PROCEDURES ARE TO BE FULLY ADMINISTERED FOR ALL NEWLY CONSTRUCTED LANDSCAPE WORK, IN ACCORDANCE WITH LANDSCAPE ONTARIO SPECIFICATIONS (SECTION 1E - MAINTENANCE WORK). THIS SHALL APPLY ONLY DURING THE CONSTRUCTION PERIOD, UNLESS OTHERWISE SPECIFIED. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SOD AND PLANTING UNTIL FINAL ACCEPTANCE BY LANDSCAPE ARCHITECT.

RODENT PROTECTION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL TREES AND SHRUBS FOR WINTER PROTECTION AND FROM RODENT INJURY FOR THE DURATION OF GUARANTY PERIOD. PROTECTIVE GUARDS SHALL BE EMPLOYED AROUND ALL DECIDUOUS TREES. GUARDS TO BE 150MM DIA. PVC PIPE OR AS MUNICIPAL GUIDELINES. GUARDS SHALL BE INSTALLED PRIOR TO THE APPLICATION OF THE MULCH AND SHOULD BE PLACED A MINIMUM OF 50MM (2") OUT FROM THE TREE TRUNK ON ALL SIDES.

ALL SHRUBS AND CONIFEROUS TREES SHALL HAVE AN APPLICATION OF "SKOOT" OR APPROVED EQUIVALENT RODENT FORMULA, TO BE APPLIED AT THE END OF OCTOBER. FOLLOW MANUFACTURER'S DIRECTIONS FOR APPLICATION.

GENERAL REQUIREMENTS

USE ABOVE SPECIFICATIONS IN CONJUNCTION WITH THE GENERAL LANDSCAPE SPECIFICATIONS OF THE ONTARIO LANDSCAPE CONTRACTORS ASSOCIATION, THE NURSERY SOD GROWERS ASSOCIATION OF ONTARIO AND WITH THE GUIDE SPECIFICATIONS FOR NURSERY STOCK OF THE CANADIAN NURSERY TRADES ASSOCIATION. USE ONLY PLANT MATERIAL TRUE TO NAME, SIZE AND GRADE AS SPECIFIED ON PLANTING PLAN. PROVIDE SUFFICIENT LABELS OR MARKINGS TO INDICATE CLEARLY THE VARIETY, SIZE AND GRADE OF EACH SPECIMEN OR BUNDLE.

OBTAIN APPROVAL FOR SUBSTITUTIONS AS TO VARIETY, SIZE OR GRADE FROM THE LANDSCAPE ARCHITECT. USE ONLY NURSERY STOCK GROWN UNDER PROPER HORTICULTURAL PRACTICES, VIABLE, FREE FROM PEST AND DISEASE AND UNDAMAGED. CHECK LOCATIONS AND OBTAIN STAKEOUTS OF ALL UTILITY LINES BEFORE EXCAVATION. OBTAIN ALL NECESSARY PERMITS BEFORE COMMENCEMENT OF CONSTRUCTION. REPORT IN WRITING ANY DISCREPANCIES IN THE DRAWINGS, SPECIFICATIONS AND CONTRACT DOCUMENTS TO THE LANDSCAPE ARCHITECT BEFORE THE END OF THE BIDDING PROCESS AND COMMENCEMENT OF CONSTRUCTION. THESE SPECIFICATIONS MAY BE SUPERCEDED BY ADDITIONAL SPECIFICATIONS SET OUT IN THE TENDER DOCUMENTS. CONTRACTOR TO REVIEW ALL DOCUMENTS.

GUARANTEE PERIOD

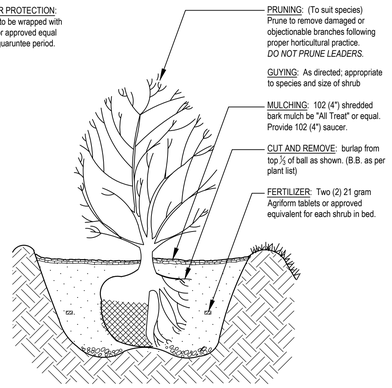
PROVIDE ONE FULL YEAR GUARANTEE ON ALL LANDSCAPE WORK FROM DATE OF FINAL ACCEPTANCE BY LANDSCAPE ARCHITECT. GUARANTEE PERIOD MAY BE EXTENDED TO TWO FULL YEARS DEPENDING ON MUNICIPAL STANDARDS. CONTRACTOR TO VERIFY WITH OWNER AND LANDSCAPE ARCHITECT.

PLANT MATERIAL INSTALLATION

2 LD-01

SCALE: N.T.S. DATE:

REFER TO PLAN FOR LOCATION



WINTER PROTECTION: Shrubs to be wrapped with burlap or approved equal during guarantee period.

PLANTING SOIL MIXTURE: (Mix thoroughly)
A. For ideal situations mix:
- 6 parts good quality topsoil
- 2 parts well rotted cow manure
- 1 part peat moss

B. For clay or wet situations:
- Contact consultants for proper soil mixture, before proceeding with work

C. Add 0.58 kg (1 lb) of bonemeal per cubic yard of soil
D. Soil mixture should be firmly compacted to eliminate air pockets and prevent settlement.

PREPARATION OF BED: Excavate shrub bed to size outlined on drawings, minimum 457 (18") depth. Remove any subsoil or rubbish off site unless otherwise directed.

SPACING: As directed.

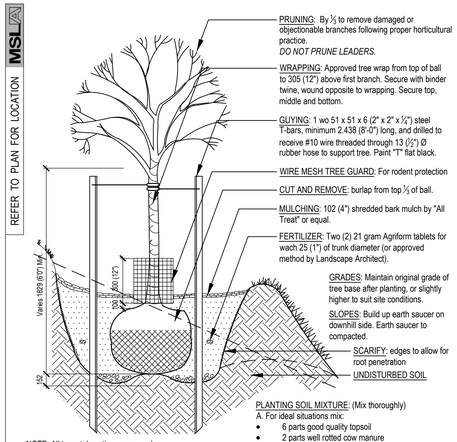
FOR RODENT CONTROL: See landscape specifications or apply "Skoot" at the end of October. Note: All tree stakes, ties and guards are to be removed one year after installation by the landscape contractor.

STANDARD SHRUB PLANTING DETAIL

3 LD-01

SCALE: N.T.S. DATE:

REFER TO PLAN FOR LOCATION



NOTE: All tree stakes, ties, wraps and guards are to be removed one year after installation by the landscape contractor.

ALL GIVEN DIMENSIONS ARE IN METRIC

WIRE BASKETS OR STRING ON ROOT BALL - CUT AND TOP REMOVE ⅓

PLANTING SOIL MIXTURE: (Mix thoroughly)
A. For ideal situations mix:
- 6 parts good quality topsoil
- 2 parts well rotted cow manure
- 1 part peat moss

B. For clay or wet situations:
- Contact consultants for proper soil mixture, before proceeding with work.

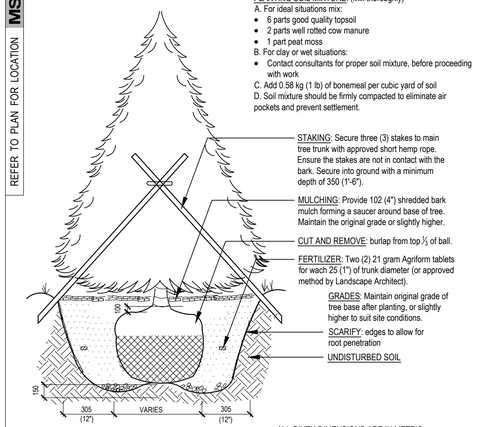
C. Add 0.58 kg (1 lb) of bonemeal per cubic yard of soil
D. Soil mixture should be firmly compacted to eliminate air pockets and prevent settlement.

STANDARD DECIDUOUS TREE DETAIL

4 LD-01

SCALE: N.T.S. DATE:

REFER TO PLAN FOR LOCATION



PLANTING SOIL MIXTURE: (Mix thoroughly)
A. For ideal situations mix:
- 6 parts good quality topsoil
- 2 parts well rotted cow manure
- 1 part peat moss

B. For clay or wet situations:
- Contact consultants for proper soil mixture, before proceeding with work.

C. Add 0.58 kg (1 lb) of bonemeal per cubic yard of soil
D. Soil mixture should be firmly compacted to eliminate air pockets and prevent settlement.

NOTE: All tree stakes, ties, wraps and guards are to be removed one year after installation by the landscape contractor.

ALL GIVEN DIMENSIONS ARE IN METRIC

WIRE BASKETS OR STRING ON ROOT BALL - CUT AND TOP REMOVE ⅓

STANDARD CONIFEROUS TREE DETAIL

5 LD-01

SCALE: N.T.S. DATE:

REFER TO PLAN FOR LOCATION

MAGLIN

MAGLIN SITE FURNITURE INC.
27 BYGRAM PARK DRIVE
WOODSTOCK, ON N4T 1P1
TOLL FREE: 1-800-718-9306
FAX: 1 (877) 260-9393
www.maglin.com

MATERIALS:
The Bike Rack is made from solid cast aluminum

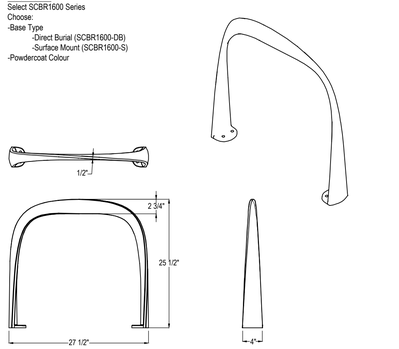
FINISH:
The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION:
The bike rack is delivered pre-assembled. It is available with either a surface mount or direct burial installation option.

TO SPECIFY:
Select SCBR1600 Series
Choose:
-Base Type
-Direct Burial (SCBR1600-DB)
-Surface Mount (SCBR1600-S)
-Powdercoat Colour

☑ SELECT POWDERCOAT COLOR:

FINE TEXTURED COLLECTION	GLOSS COLLECTION
☐ SILVER14 - FINETEX	☐ SILVER14
☐ EVERGREEN - FINETEX	☐ EVERGREEN
☑ BLACK - FINETEX	☐ BLACK
☐ GUNMETAL - FINETEX	☐ GUNMETAL
☐ BRONZE14 - FINETEX	☐ BRONZE14
☐ SLATE - FINETEX	☐ GRAPHITE
☐ TITANIUM - FINETEX	☐ TITANIUM
☐ CORE TEN - FINETEX	☐ PEARL SILVER



BIKE RING BY MAGLIN: MODEL SCBRI 600 SERIES

6 LD-01

SCALE: N.T.S. SURFACE MOUNT MODEL

MARTON SMITH LANDSCAPE ARCHITECTS
170 The Donway W Suite 206.
Toronto, Ontario, Canada. M3C 2G3
tel. 416.492.9966 | email. info@msla.ca

Architect:

RICHARD ZIEGLER ARCHITECT INC.
39 ROLSON STREET TORONTO, ONTARIO, M5V 1A4
T: 416 681 7494 ex. 3 800 413 7992 F: 866 890 1488
www.rzaarchitect.com E: mail@rzaarchitect.com

Client/Owner:

Municipality:

TOWNSHIP OF PUSLINCH

Notes:

No.	Revision	Date
04	Issued for 3rd Submission	03/18/26
03	Issued for 2nd Submission	02/19/26
02	Issued for Coordination	02/13/26
01	Issued for Submission	08/08/25

North:

Stamp:

Project:

Proposed Landscape and Site Upgrades
7456 McLean Rd
Puslinch, Ontario

Scale: **As Shown** Date: **Aug 2025**

Drawn By: **T.M.** Checked By: **L.M.**

Drawing Title:

Landscape Details

Project No. **25151**

Sheet No. **LD-01**

All information contained in these plans shall be checked by the contractor. All discrepancies shall be reported to the Landscape Architect (L.A.) before commencing with construction. All drawings have copyright and shall remain the property of the Landscape Architect. Copying or any reproduction in part or whole shall only be permitted with written consent of L. A. Drawings shall not be used for construction unless sealed & SIGNED. All drainage pattern must drain positively away from buildings or structures at 2% min. The position of existing above ground and underground utilities and facilities are not necessarily shown on the drawings, and where shown, the accuracy of the position of utilities or facilities is not guaranteed. Before starting work, the contractor shall confirm the exact location of all existing utilities and facilities, and shall assume liability for damages. ● ● ●

MINHAS LAWYERS PC

Barristers, Solicitors and Notary Public

Rupinder Preet Minhas
B.Tech, LL.B.(HONS)
145-2960 Drew Rd
Mississauga, ON L4T 0A5
Telephone: (905) 671-9244
Facsimile: (905) 671-9245
Email: rupinder@minhaslawyers.ca

March 11, 2026

To:

Daaz Inc.
7456 McLean Road. W,
Pusclinch, ON,

Re: PINs 71196-0037 (LT) and 71196-0039 (LT) — Limited Legal Opinion Effect of *Planning Act s.50* on Registered Restrictive Covenant

---

Background

I have been asked to provide an opinion regarding the potential effect of the provisions of section 50 of the *Planning Act*, R.S.O. 1990, c. P.13, on a restrictive covenant registered on title to certain lands legally described as PIN 71196-0039 (LT).

Based on the documents and information provided to me, I understand the relevant facts to be as follows:

1. The lands legally described as PIN 71196-0039 (LT) (the "Brock Road Lands").
2. The Brock Road Lands are subject to a restrictive covenant registered on title as Instrument No. RO794471Z (the "Restrictive Covenant").
3. The Restrictive Covenant restricts the storage, distribution, or sale of petroleum products on the lands, subject to certain exceptions.
4. The owner of the Brock Road Lands also owns adjoining lands legally described as PIN 71196-0037 (LT) (the "McLean Road Lands").

5. Based on the parcel registers and legal descriptions reviewed, the Brock Road Lands and the McLean Road Lands appear to be described as Part Lot 25, Concession 7, Township of Puslinch, with reference plans registered thereon, and therefore do not appear to be within a registered plan of subdivision.
6. The Brock Road Lands and the McLean Road Lands are understood to be under common ownership.

Planning Act Considerations

Section 50 of the *Planning Act* restricts the conveyance of part of a parcel of land unless the transaction complies with the provisions of the Act.

Where adjoining lands that are not within a registered plan of subdivision come into common ownership, the lands may be treated as a single parcel of land for the purposes of section 50 of the Planning Act, with the result that the lands may not thereafter be conveyed separately unless the requirements of the Act are satisfied, including the obtaining of a consent where required.

Whether lands are considered a single parcel for the purposes of section 50 ultimately depends on the specific facts, including the title history of the lands and the application of the statutory provisions.

Opinion

In my opinion, if the Brock Road Lands and the McLean Road Lands are treated as a single parcel of land for the purposes of section 50 of the *Planning Act* as a result of common ownership, such treatment would affect only the planning status of the lands and would not alter the scope or application of the Restrictive Covenant registered on title to the Brock Road Lands.

The Restrictive Covenant expressly burdens the lands described in the instrument creating the covenant and runs with those lands. As a result, the covenant continues to apply to the lands described in that instrument.

The fact that adjoining lands may be treated as a single parcel for the purposes of section 50 of the *Planning Act* does not operate to extend the Restrictive Covenant to lands that were not originally

subject to the covenant. Restrictive covenants run with the specific lands described in the instrument creating them and do not automatically expand to adjoining lands solely by reason of common ownership or treatment as a single parcel under the *Planning Act*.

Accordingly, if the Brock Road Lands and the McLean Road Lands are treated as a single parcel for *Planning Act* purposes, the Restrictive Covenant will continue to bind the portion of the lands corresponding to PIN 71196-0039 (LT). The Restrictive Covenant would not apply to the portion corresponding to PIN 71196-0037 (LT) unless the covenant were expressly amended, replaced, or extended to include those lands.

If PIN 0037 and PIN 0039 were to merge into a single PIN, the restrictive covenant would not be extinguished. The covenant runs with the lands described in the instrument creating it, namely the lands formerly described as PIN 71196-0039.

Accordingly, even if the parcels were consolidated into a single PIN, the covenant would continue to burden only the portion of the lands corresponding to the former PIN 71196-0039. The administrative consolidation of parcels into a single PIN does not extend the covenant to lands that were not originally subject to it.

Conclusion

In summary, the application of section 50 of the *Planning Act* to the Brock Road Lands and the McLean Road Lands would not extinguish the Restrictive Covenant nor extend its application to lands that were not originally burdened by it. The Restrictive Covenant would continue to apply only to the lands described in the instrument creating the covenant.

Limitations

This opinion is provided solely for the purpose described above and is based on the documents and information made available to me. I have not undertaken any investigation beyond a review of those materials.

This opinion reflects my professional judgment based on the laws of the Province of Ontario as in force on the date of this letter. It is not a guarantee of the outcome of any particular matter, and the

interpretation or application of the law may differ if considered by a court, tribunal, or other decision-maker.

This opinion is furnished solely for the benefit of the addressee. It may be disclosed to the Township of Puslinch and its planning consultants for informational purposes only; however, no other person or entity may rely upon this opinion without my prior written consent.

I undertake no obligation to update this opinion for changes in law or fact occurring after the date of this letter.

Yours very truly,

Minhas Lawyers PC

[redacted]

Rupinder Preet Minhas
RPM/nk

UNDERTAKING

TO: The Corporation of the Township of Puslinch

RE: Lands municipally known as 7456 Mclean Road West and N/A Brock Road South, being PIN 71196-0037 (LT) and PIN 71196-0039 (LT) (the "Lands")

I, Ishwinderpreet Singh Wadhwa, President of Daaz Inc., hereby undertake and agree as follows:

1. That Daaz Inc. shall not remove, injure, or destroy any trees located on the Lands unless and until site plan approval has been granted by the Township of Puslinch.

2. This Undertaking is provided in connection with the ongoing review of the proposed development of the Lands and is intended to address comments received from the Township's ecologist.

3. This Undertaking shall remain in full force and effect until site plan approval has been granted by the Township of Puslinch, unless otherwise agreed to in writing by the Township.

DATED at MILTON ON, this 17 day of MARCH, 2026.

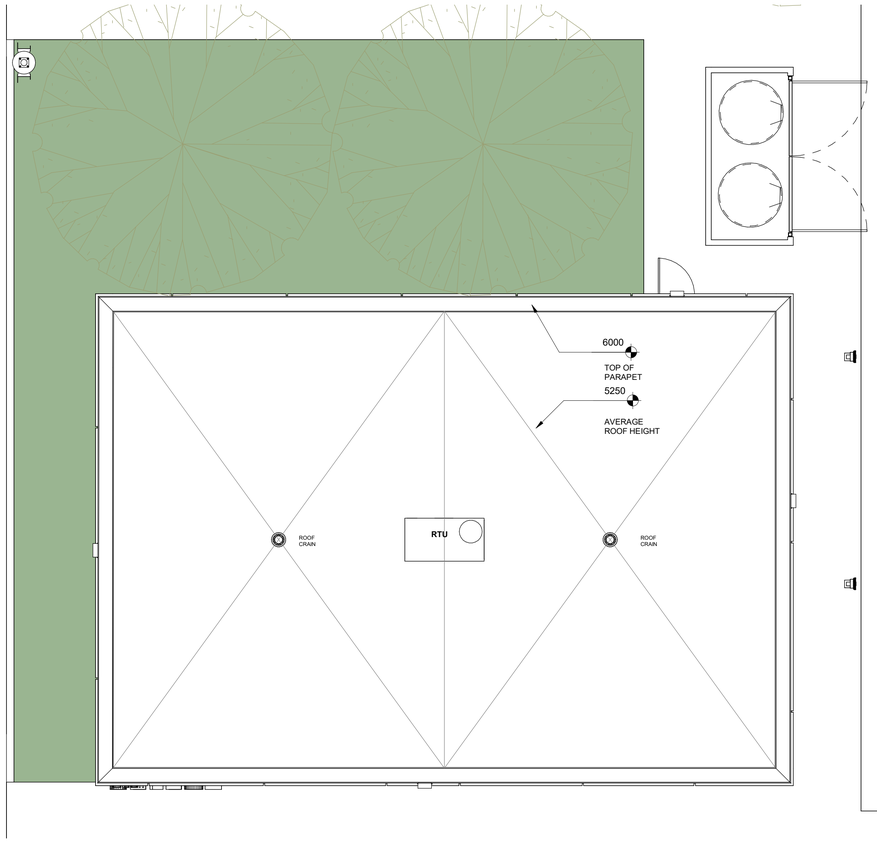
DAAZ INC.

Per: [redacted]

Name: Ishwinderpreet Singh Wadhwa

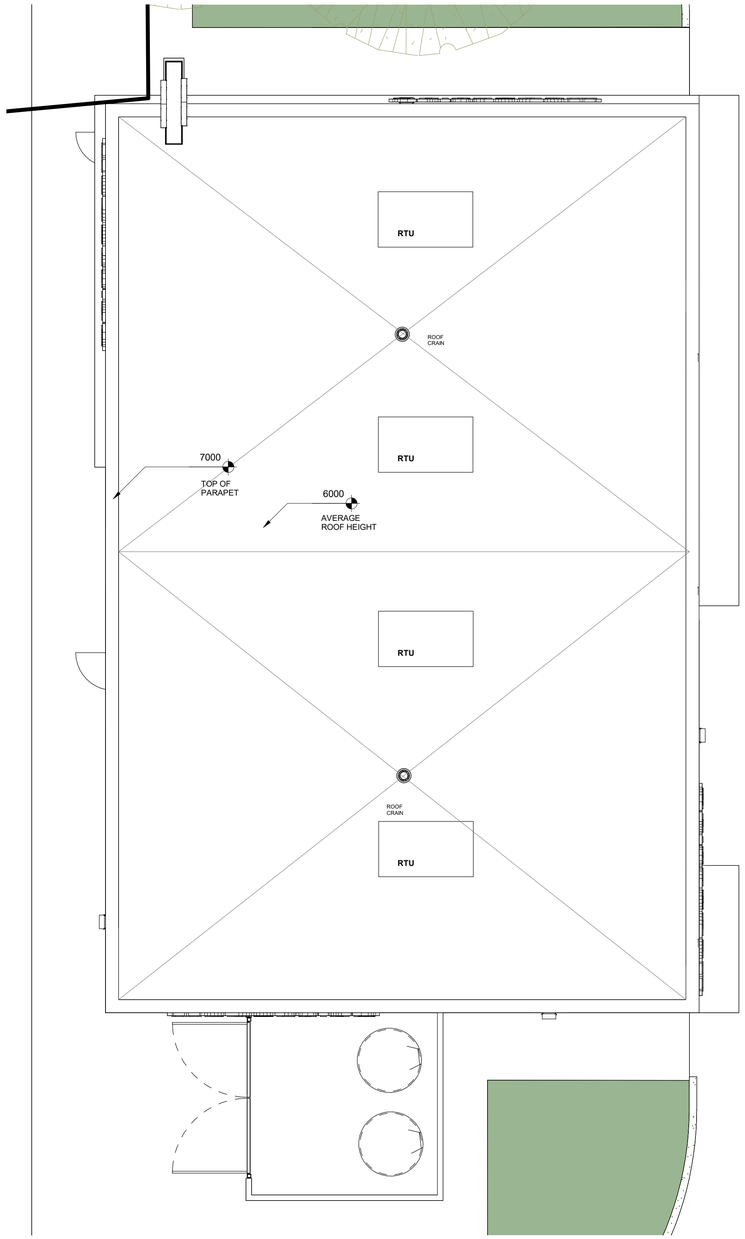
Title: President

I have authority to bind the corporation.



2 A103 **ROOF PLAN CONVENIENCE STORE**

1 : 75



1 A103 **ROOF PLAN RESTAURANT**

1 : 75

RICHARD ZIEGLER ARCHITECT INC.
39 POLSON STREET TORONTO, ONTARIO M5A 1A4
T: 416 461 1494 or 1 800 413 7992 F: 866 895 1488
www.rzarchitect.com E: mail @ rzarchitect.com

NO.	ISSUANCE	DATE
3	REV. & ISSUED FOR PLANNING APPROVALS	2026.03.03
2	REV. & ISSUED FOR PLANNING APPROVALS	2026.02.11
1	ISSUED FOR PLANNING APPROVALS	2025.08.05

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

STAMP

PROPOSED COMMERCIAL DEVELOPMENT

7456 McLEAN ROAD WEST & 197 BROCK ROAD SOUTH
TOWN OF PUSLINCH

ROOF PLANS

SCALE	1 : 75	PROJECT NUMBER
DATE	2026-03-10 2:50:51 PM	202436
DRAWN	SP	
CHECKED	REZ	

SHEET A103 REVISION

FILE NAME: \\ 2024 Projects \ 202436 - 7456 McLean Road, Puslinch \ 2.0 Design and Construction Documents (Permit Revs) \ 7456 McLean Road 2026.03.09.rvt
PLOT DATE: 2026-03-10 2:50:51 PM

N

50 0m 50 100

SCALE: 1:1500

Legend

Passenger car

Minimum Sight Distance

Measured Sight Distance

No.	ISSUE	DATE: MMM/DD/YYYY
0	ISSUED FOR 1ST SUBMISSION	10/20/2023
1	ISSUED FOR 2ND SUBMISSION	07/31/2025
2	ISSUED FOR 3RD SUBMISSION	02/13/2026
3	ISSUED FOR 4TH SUBMISSION	03/17/2026

Engineer

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Project

BLACK–HART CONSTRUCTION INC.
7456 MCLEAN ROAD & 197 BROCK ROAD SOUTH
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

Drawing

PASSENGER VEHICLE
SIGHT DISTANCE ANALYSIS

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 301
TORONTO, ON, M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
B.L.			2377–6556
Check By	Check By	Scale	Drawing
R.K.	I.L.	1:1500	FIG 11a

N

50 0m 50 100
SCALE: 1:1500

Legend

Truck

Passenger car

Minimum Sight Distance

Measured Sight Distance

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR 1ST SUBMISSION	10/20/2023
1	ISSUED FOR 2ND SUBMISSION	07/31/2025
2	ISSUED FOR 3RD SUBMISSION	02/13/2026
3	ISSUED FOR 4TH SUBMISSION	03/17/2026

Engineer

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Project

BLACK–HART CONSTRUCTION INC.
7456 MCLEAN ROAD & 197 BROCK ROAD SOUTH
TOWNSHIP OF PUSLINCH, COUNTY OF WELLINGTON

Drawing

PASSENGER VEHICLE
SIGHT DISTANCE ANALYSIS

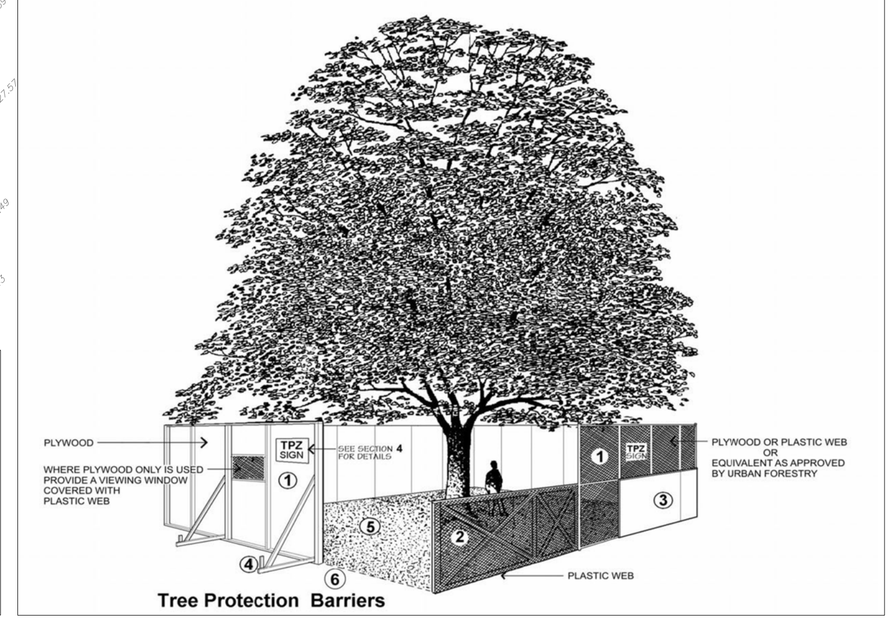
CROZIER CONSULTING ENGINEERS
211 Yonge Street
Suite 301
Toronto, ON, M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
B.L.			2377–6556
Check By	Check By	Scale	Drawing
R.K.	I.L.	1:1500	FIG 11b

TREE PROTECTION PLAN NOTES

- It is the applicants' responsibility to discuss potential impacts to trees located near or wholly on adjacent properties or on shared boundary lines with their neighbours. Should such trees be injured to the point of instability or death the applicant may be held responsible through civil action. The applicant would also be required to replace such trees to the satisfaction of the Township of Puslinch.
- Tree protection barriers shall be installed to standards as detailed in this document and to the satisfaction of the Township of Puslinch.
- Tree protection barriers must be installed using plywood clad hoarding (minimum 19mm or ¾" thick) or an equivalent approved by the Township of Puslinch.
- Where required, Tree Protection Signage must be attached to all sides of the barrier.
- Prior to the commencement of any site activity such as site alteration, demolition or construction, the tree protection measures specified on this plan must be installed to the satisfaction of the Township of Puslinch.
- Once all tree/site protection measures have been installed, the Township of Puslinch must be contacted to arrange for an inspection of the site and approval of the tree/site protection requirements. Photographs that clearly show the installed tree/site protection shall be provided for review.
- Where changes to the location of the approved TPZ or sediment control or where temporary access to the TPZ is proposed, the Township of Puslinch must be contacted to obtain approval prior to alteration.
- Tree protection barriers must remain in place and in good condition during demolition, construction and/or site disturbance, including landscaping, and must not be altered, moved or removed until authorized by the Township of Puslinch.
- No construction activities including grade changes, surface treatments or excavation of any kind are permitted within the area identified on the Tree Protection Plan or Site Plan as a tree protection zone (TPZ). No root cutting is permitted. No storage of materials or fill is permitted within the TPZ. No movement or storage of vehicles or equipment is permitted within the TPZ. The area(s) identified as a TPZ must be protected and remain undisturbed at all times.
- All additional tree protection or preservation requirements, above and beyond the installation of tree protection barriers, must be undertaken or implemented as detailed in the Township-approved arborist report and/or the approved tree protection plan and to the satisfaction of the Township of Puslinch.
- If the minimum tree protection zone (TPZ) must be reduced to facilitate construction access, the tree protection barriers must be maintained at a lesser distance and the exposed portion of TPZ must be protected using a horizontal root protection method approved by the Township of Puslinch.
- Any roots or branches indicated on this plan which require pruning, as approved by the Township of Puslinch, must be pruned by an arborist. All pruning of tree roots and branches must be in accordance with good arboricultural practice. Roots that have received approval from the Township of Puslinch to be pruned must first be exposed using pneumatic (air) excavation, by hand digging or by a using low pressure hydraulic (water) excavation. The water pressure for hydraulic excavation must be low enough that root bark is not damaged or removed. This will allow a proper pruning cut and minimize tearing of the roots. The arborist retained to carry out crown or root pruning must contact the Township of Puslinch no less than three working days prior to conducting any specified work.
- The applicant/owner shall protect all by-law regulated trees in the area of consideration that have not been approved for removal throughout development works to the satisfaction of the Township of Puslinch.
- Convictions of offences respecting the regulations in the Township of Puslinch's Tree By-laws are subject to fines. The landowner may be ordered by the Township to stop the contravening activity or ordered to undertake work to correct the contravention.
- Prior to site disturbance the owner must confirm that no migratory birds are making use of the site for nesting. The owner must ensure that the works are in conformance with the Migratory Bird Convention Act and that no migratory bird nests will be impacted by the proposed work no less than 48 hours prior to conducting any specified work.

Tree resources within the subject property have the potential to be suitable habitat for a variety of wildlife, including potential habitat for species at risk birds and bats. Tree removals should occur outside of the breeding bird window, which occurs from April 1st to August 31st, to avoid impacts to birds in the area and to ensure compliance with the Migratory Birds Convention Act. The bat roosting season in Southern Ontario occurs from April 1st to November 30th. As such, in order to satisfy the tree removal timing restrictions respecting birds and bats, tree removals should occur between December 1st and March 31st.



Tree Protection Barriers

LEGEND

Tree Inventory

Refer to Table 1 and Table 2 of the report dated 25 July 2025 and last revised 18 March 2026 for the complete tree inventory information. Trees measuring 10cm DBH and greater on and within six metres of the subject property and trees of all sizes within the road right-of-way were included in the inventory.

Tree Removals

The removal of 221 trees and five polygons will be required to accommodate the proposed development, as indicated with RED labels.

Tree Preservation

The preservation of the remaining two trees will be possible, as indicated with GREEN labels.

Tree label (GREEN), to be preserved #

Tree label (RED), to be removed #

Dripline of tree identified for preservation (CYAN circle)

Dripline of tree identified for removal (RED circle)

Tree location estimated by KFCI (GREEN circle with solid hatch)

Tree location derived from survey (GREEN circle)

Approximate extent of polygon, to be removed (thick RED line)

No.	Issue / Revision	Date	By
1	Report Submission	25 Jul. '25	KNH
2	Report Resubmission	26 Sept. '25	KNH
3	Report Resubmission	18 Dec. '25	KNH
4	Report Resubmission	11 Feb. '26	KNH
5	Report Resubmission	18 Mar. '26	KNH

Base Data: Tarasick McMillan Kubicki Ltd. (survey), Richard Ziegler Architect Inc. (site)

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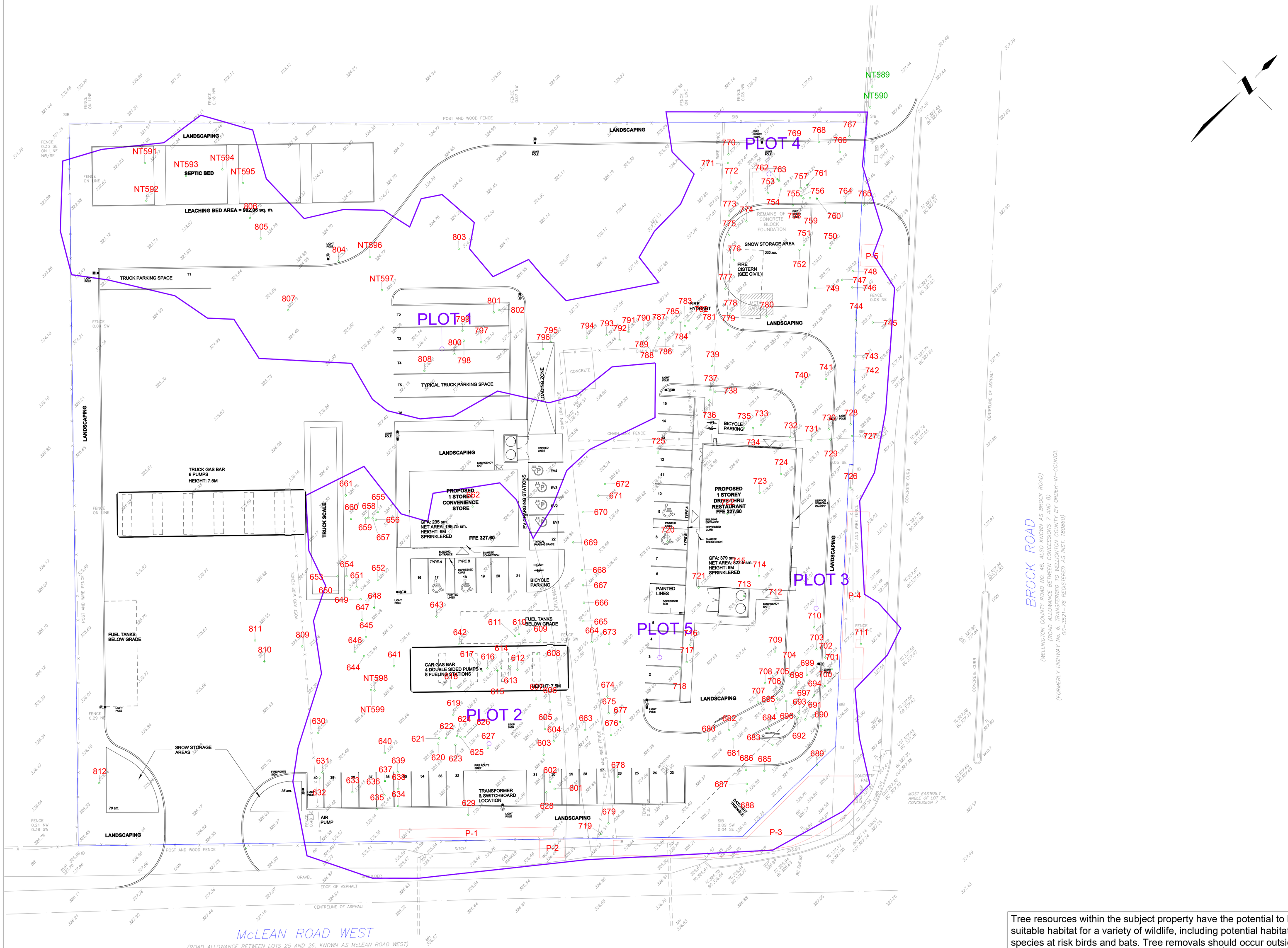
Client
DAAZ Inc.
8290 17th Sideroad East
Acton, Ontario L7J 2M1

Property
7456 McLean Road West
Puslinch, Ontario

Tree Inventory and Preservation Plan

Project	P4711	Figure	1
Date	25 July 2025		
Scale	1:300		



Tree resources within the subject property have the potential to be suitable habitat for a variety of wildlife, including potential habitat for species at risk birds and bats. Tree removals should occur outside of the breeding bird window, which occurs from April 1st to August 31st, to avoid impacts to birds in the area and to ensure compliance with the Migratory Birds Convention Act. The bat roosting season in Southern Ontario occurs from April 1st to November 30th. As such, in order to satisfy the tree removal timing restrictions respecting birds and bats, tree removals should occur between December 1st and March 31st.

LEGEND

Woodland Designation Assessment

Refer to Table 3 of the report dated 25 July 2025 and last revised 18 March 2026 for the 100% plot tally analyses for Unit 1.

Approximate extent of Unit 1 dripline (thick PURPLE line)

Location of 3.99m-radius plot centre (PURPLE circle with PURPLE label) — PLOT #

Tree label (GREEN), to be preserved — #

Tree label (RED), to be removed — #

Tree location estimated by KFCI (GREEN circle with solid hatch)

Tree location derived from survey (GREEN circle)

Approximate extent of polygon, to be removed (thick RED line)

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Woodland Designation Assessment

Project	P4711	Figure	2
Date	25 July 2025		
Scale	1:300		