Robinson
Land Development

55 Craig St., Perth ON Site Plan Residential Development Servicing and Stormwater Management Report

Prepared For:

2B Developments

Prepared By:

Robinson Land Development

Project No. 24116
June 2025

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

LEGAL NOTIFICATION

This report was prepared by Robinson Land Development for the account of **2B Developments.**

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. **Robinson Land Development** accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project

1.0 INTRODUCTION

Robinson Land Development has been retained by 2B Developments to prepare a site servicing and stormwater management design for a proposed 3-storey residential apartment building located at 55 Craig St. in the Town of Perth, Ontario.

The client proposes to develop an approximately 1,700 m^2 GFA building consisting of studio, 1-bedroom, and 1-bedroom plus den apartments, along with the associated ground level parking, sidewalks, landscaping and stormwater management on the site. The site is bounded by Craig St. to the south, and single family residential properties to the east, north, and west. Refer to architectural site plan in **Appendix A** for reference.

This report will detail the proposed means of servicing the site with water and sanitary service and provide details on how to meet the Town of Perth stormwater management requirements.

2.0 EXISTING CONDITIONS

The 0.19 ha property is zoned residential (R3) and is currently unoccupied (previous single family home on the site has been demolished).

There is an imminent renewal project along Craig Street by the Town of Perth anticipated for construction Summer 2025. The renewal project is along Craig Street from Gore Street to Cole Road, and includes full replacement of the watermain, sanitary sewer, and storm sewer, as well as roadway, sidewalk, and replaced driveways up to property line. Based on correspondence with the Town, a new driveway and service laterals will be provided to the proposed 55 Craig St. development up to the property line. The following infrastructure will be provided adjacent to the site:

- 200 mm dia. PVC watermain along Craig St.
  - A 50mm water service will be provided up to the property line of the site
- 300 mm dia. PVC sanitary sewer along Craig St.
  - A 150mm sanitary service will be provided up to the property line of the site
- 300 mm dia. PVC storm sewer along Craig St.
  - A 200mm storm service will be provided up to the property line of the site
- A 6m wide driveway will be provided up to the property line of the site for the proposed development.

Refer to excerpts of the Craig St. Reconstruction plans (by Aplin Martin Consultants Inc., Issued for Construction, dated June 11, 2025) provided by the Town in **Appendix A** for more details. Note that the location of the services to 55 Craig St. in the Craig St. Reconstruction plans differ from those identified in the Site Servicing plan, the discrepancy has been identified with the Town and it is understood and expected the services will be installed at the location of the Site Servicing plan.

The existing grading at the north end of the site indicates stormwater runoff enters from properties east of the site and flows to properties west of the site, with a drop in elevation of approximately 1.5 m. This runoff into the property will be managed as part of the grading and on-site stormwater system Refer to the topographic surveys provided by the Owner in **Appendix A** for more details.

We noted that there was a discrepancy between locations of existing driveways of adjacent properties between the owner-provided topographic survey and the base plan of the Craig St. Reconstruction plans which was showed an overlap between the existing driveway of #59 Craig Street and the property line of #55 Craig Street. It is understood that the driveway replacements as part of the Craig St. Reconstruction project will be done at their actual

locations on site and terminate at the property line. The location of the proposed driveway and service laterals to the site shall be validated by as-built information and as part of the proposed site development to ensure integration of the proposed civil design.

3.0 DEVELOPMENT PROPOSAL

The Owner is proposing to develop the subject site into an approximately 1,700 m^2 GFA, 3-storey residential apartment building, consisting of studio, 1-bedroom, and 1-bedroom plus den apartments. The site will be complete with a driveway to Craig St. (tying into the driveway constructed as part of the Craig St. Reconstruction project) and site parking, including parking beneath the overhanging building. Concrete sidewalks will provide access to front and rear building entrance and to first floor apartment terraces. The building mechanical room will be provided within a basement level at the front of the building. Refer to the architectural site plan in **Appendix A** for more details.

The proposed development will be provided with water and sanitary service extensions to the building, and storm infrastructure per Town requirements. The proposed civil design drawings are provided in **Appendix B** including:

- Existing Conditions & Removals Plan
- Servicing Plan
- Grading Plan
- Notes & Details Plan
- Erosion & Sediment Control Plan
- Storm Drainage Area Plan

4.0 WATER SERVICING

4.1 Design Criteria

The subject site will receive water supply from the 200 mm watermain via the 50 mm service installed as part of the Craig St. Reconstruction project, complete with a curb stop valve at the property line. The building will not be sprinklered and therefore the service only needs to supply domestic demand.

The on-site water service has been designed according to the following standards and guidelines:

- Corporation of the Town of Perth Engineering Design Guidelines and Supplemental Specifications
- Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (2020)
- MOECC Design Guidelines for Drinking-Water Systems (2008)

Accordingly, the following watermain design criteria have been utilized for the subject site:

- Average Daily Demand (Residential) 450 L/cap/d
- Residential Density (1-Bedroom Apt.) 2.0 cap/unit
- Peaking Factor (Max Day) 2.0 x Avg Day
- Peaking Factor (Peak Hour) 2.2 x Max Day
- Minimum Pressure During Peak Hour 275 kPa (40 psi)
- Maximum Pressure 550 kPa (80 psi)
- Minimum Pressure During Fire Demand 140 kPa (20 psi)

4.2 Water Demands

The domestic demands were calculated based on the above criteria and summarized below. For the purposes of demand calculations all apartment units are treated as 1-bedroom apartments. Refer to **Appendix C** for proposed domestic demand calculations.

- Average Day Demand: 0.31 L/s
- Peak Hour Demand: 1.38 L/s

Boundary conditions were for the new watermain on Craig St. were unavailable from the Town, so head loss was calculated along the service lateral during peak hour demand scenarios using the Hazen-Williams equation.

$h_f = 10.67 * L * Q^{1.85} / (C^{1.85} * d^{4.87})$
Where L = 14 m
Q = 1.38 L/s (Peak Hour)
C = 100
d = 50 mm (nominal)

The resultant head loss along the service lateral during peak hour demand is only 0.33 m (3 kPa; 0.5 psi); therefore, provided the new watermain on Craig St. can support the minimum 275 kPa (40 psi) pressure during peak hour demands there are no concerns of the system supporting the proposed development. The system pressures on the new 200 mm watermain on Craig St. should be validated by the Town.

4.2 Fire Protection

The required fire flow for the subject site was calculated using the Fire Underwriter's Survey (FUS) long form (refer to **Appendix C**). Based on the building construction, occupancy and ground floor area, the maximum required fire flow is 15,000 L/min (250 L/s). The proposed building will not be sprinkled and fire demand will be covered by local hydrants. The nearest hydrants to the site are located at the southeast corner of Craig St. and Gore St. East and at the southwest corner of Craig St. and Drummond St. East (both within 90 m of the proposed building), which are being replaced as part of the Craig St. Reconstruction project. Refer to the hydrant coverage sketch in **Appendix C**.

Fire flow capacities for the new watermain on Craig St. were unavailable from the Town, but should be validated by the Town to confirm sufficient capacity for the proposed development.

5.0 SANITARY SERVICING

5.1 Design Criteria

Sanitary flows from the site will discharge to the 300 mm sanitary sewer on Craig St. via the 150 mm service installed as part of the Craig St. Reconstruction project.

The on-site sanitary service has been designed according to the following standards and guidelines:

- Corporation of the Town of Perth Engineering Design Guidelines and Supplemental Specifications
- MOECC Design Guidelines for Sewage Works (2008)

Accordingly, the following design parameters have been implemented for the subject site:

- Average Daily Demand (Residential) 350 L/cap/d
- Peaking Factor Harmon Equation
- Infiltration Allowance 0.28 L/s/ha
- Velocity: 0.60-3.0 m/s

5.2 Sanitary Demands

The sanitary demands were calculated based on the above criteria. For the purposes of demand calculations all apartment units are treated as 1-bedroom apartments. The peak sanitary demand was estimated to be 1.02 L/s. The sanitary service lateral has been confirmed to have capacity to convey the peak design flows and meet minimum full flow velocities. Refer to the sanitary sewer design sheet in **Appendix D** for calculation details.

Since the sanitary service provided will be entering the site above the basement elevation, a sanitary sump pump will be required within the basement mechanical room. The sanitary sump pump will be designed by the Building Mechanical Engineer during detailed design.

6.0 STORM SERVICING

6.1 Design Criteria

Stormwater runoff collected on the subject site will discharge to the 300 mm storm sewer on Craig St. via the 200 mm service installed as part of the Craig St. Reconstruction project. Stormwater runoff from properties east of the site that currently flow into the site will also be managed to not cause off-site ponding.

The storm sewer system has been designed according to the following standards and guidelines:

- Corporation of the Town of Perth Engineering Design Guidelines and Supplemental Specifications
- MOECC Stormwater Management Planning and Design Manual (2003)

Accordingly, the following design parameters have been implemented for the subject site:

- Quantity Control post- to pre-development (up to 100-yr)
- Quality Control Enhanced (80% TSS reduction)
- Ponding No ponding during 5-yr, max. 300 mm ponding
- Velocity 0.80-6.0 m/s

The post-development stormwater generated by the site must be controlled to the equivalent pre-development discharge rate up to the 100-yr storm. The off-site flows entering and captured by the site are unchanged and will therefore be considered through-flows. The extents of the off-site flows that enter the site have been assumed based on the grading of Craig St., which peaks just west of Drummond St. East. Uncontrolled flows from the site that continue to drain to the property limits (the west and north perimeter of the site, and the southeast corner of the site) will be accommodated by over-control of the controlled areas. Refer to **Appendix E** for details of the calculations. The summary of the calculations are as follows:

Table 1 – Pre-Development Flows

Design Storm	Pre-Development Site Flows (L/s)	Off-Site Flows (L/s)	Total Pre-Development Flow (L/s)
5-yr	8.9	29.3	38.2
100-yr	19.1	62.6	81.7

6.2 Minor System

Stormwater runoff will be captured on site and connect to the 200 mm storm service at the property line in the centre of the proposed driveway. An oil-grit separator will be installed immediately before discharge to the storm service to provide quality control. Upstream of the oil-grit separator, an inlet control device will be installed within a maintenance hole to control the upstream runoff below maximum allowable. Upstream of the inlet control device, an underground storage system will be installed to provide quantity control up to the 100-yr storm and ensure no ponding during the 5-yr storm. The inlet control device has been sized to ensure the discharge rate is below the allowable pre-development rate, as well as capacity of the 200 mm storm service.

A 250 mm trenched storm sewer system will be installed along the east edge of the site to capture runoff from the apartment terraces and off-site runoff, connecting to a site catch basin which will capture the remainder of the off-site runoff.

The peaked-roof building will be outfitted with downspouts between the apartment units. The downspouts will be connected underground to the storm system directly to minimize runoff on hard surfaces (that create slipping hazards during shoulder seasons with intermittent freezing), along with overflows at the surface in case of backup or blockage.

Since the storm service provided will be entering the site above the basement elevation, a storm sump pump will be required within the basement mechanical room for the foundation drainage. The storm sump pump will be designed by the Building Mechanical Engineer during detailed design.

Refer to the storm sewer design sheets, ICD sizing, storage calculations, and underground storage system cutsheet in **Appendix E** for details and the Storm Drainage Area Plans in **Appendix B** for reference.

A summary of the calculations is presented in the tables below:

Table 2 – 5-Year Post-Development Discharge Rates

Area	Max Discharge Rate (L/s)
Uncontrolled	2.4
Controlled (incl. captured off-site)*	32.3
Total	**34.7**
5-yr Pre-Development Flow	**38.2**

Table 3 – 5-Year Post-Development Storage Volumes

Area	Required Storage (m^3)	Available Storage (m^3)
Underground Storage System	28.3	120.1

*Note: Though the 5-yr controlled flow rate is noted as 32.3 L/s, this is based on the ICD flow rate when the underground storage is full. The actual flow rate during the 5-yr storm will be even less as only ~25% of the underground storage will be utilized (therefore lesser hydraulic head on the ICD)

6.3 Major System

During major storms, the storm system will still capture the storm runoff and direct it towards the underground storage system. Where pipes have insufficient capacity, spillover is expected within the site (CB1 to STMMH204), or backfeeding into the underground storage system (at STMMH203). The underground storage system has been sized to provide storage up to the 100-yr design storm, including at-grade ponding above the underground storage system. All local spillover elevations within the site are below the maximum 300 mm depth and area a minimum of 300 mm below the nearest building doorway. The ultimate site overflow route is directed to Craig St. via the site driveway.

Refer to the storm sewer design sheets, ICD sizing, and storage calculations in **Appendix E** for details and the Storm Drainage Area Plans in **Appendix B** for reference.

A summary of the calculations is presented in the tables below:

Table 3 – 100-Year Post-Development Discharge Rates

Area	Max Discharge Rate (L/s)
Uncontrolled	5.2
Controlled (incl. captured off-site)	32.3
Total	**37.5**
100-yr Pre-Development Flow	**81.7**

Table 5 – 100-Year Post-Development Storage Volumes

Area	Required Storage (m^3)	Available Storage (m^3)
Surface Ponding	-	12.2
Underground Storage System	-	120.1
Total	**126.8**	**132.3**

6.4 Quality Control

Quality control will be provided by an oil-grit separator downstream of the flow-controlled maintenance hole to provide quality control of the storm runoff. The oil-grit separator is sized for 80% TSS reduction based on the controlled flow rates. Refer to OGS sizing cutsheet in **Appendix E** for more details. The underground storage system design includes an "isolator row" as standard design which will also provide additional quality control, though it was not counted in the sizing of the OGS to be conservative.

7.0 EROSION AND SEDIMENT CONTROL

Prior to construction and until vegetation has been re-established in disturbed areas, erosion and sediment control measures must be implemented to mitigate the impact on receiving watercourses and existing infrastructure. Refer to the Erosion and Sediment Control Plan provided in **Appendix B** for details.

8.0 APPROVALS

The proposed development is subject to the Town of Perth Site Plan Approval and Zoning By-Law Amendment process. Further, the stormwater management system may be subject to an Environmental Compliance Approval from the Ontario Ministry of Environment, Conservation and Parks.

9.0 CONCLUSIONS

This servicing and stormwater management report has been prepared to support the Site Plan Approval and Zoning By-Law Amendment application for the development of the property located at 55 Craig Street. The report has detailed the proposed means of servicing the site for potable water and sanitary sewer and provided details on how to meet the stormwater management requirements in accordance with Town of Perth requirements. The proposed servicing and stormwater management designs will be achieved by implementing the following key features:

- Domestic water supply will be provided via the 50 mm diameter service connected to the 200 mm diameter watermain on Craig St., to be constructed as part of the Craig St. Reconstruction project.
- Fire protection will be provided by hydrants at Craig St./Gore St. E and Craig St./Drummond St. E, which are being replaced as part of Craig St. Reconstruction project.
- Sanitary flows will be conveyed to the 150 mm diameter service connected to the 300 mm diameter sanitary sewer on Craig St., to be constructed as part of the Craig St. Reconstruction project.
- Stormwater runoff (minor system) will be conveyed to the 200 mm diameter service connected to the 300 mm diameter storm sewer on Craig St., to be constructed as part of the Craig St. Reconstruction project.
- Stormwater runoff for the post-development 5-yr design storm will be controlled to the pre-development 5-yr design storm with no ponding occurring on site with on site inlet control device and underground storage system.
- Stormwater runoff for the post-development 100-yr design storm will be controlled to the pre-development 100-yr design storm. The underground storage system, as well at-grade ponding, has been designed to provide storage up to the 100-yr design storm.
- Emergency overland flows will be conveyed to Craig St. via the site driveway.
- Quality control will be provided by an oil-grit separator.

- Erosion and sediment control measures will be implemented prior to construction and maintained until vegetation has been re-established in disturbed areas.

Report Prepared By:

Stephen McCaughey, P.Eng.
Project Engineer

Appendix A

Architectural Site Plan

Topographic Surveys

Craig St. Reconstruction plans (by Aplin Martin Consultants, Issued For Construction dated June 11, 2025)

PROPOSED RESIDENTIAL DEVELOPMENT

55 CRAIG ST. PERTH, ON

2B DEVELOPMENTS

Project: 24058
Date: JUNE 2, 2025
Issued for: SPA (DRAFT)

ARCHITECTURAL DRAWING LIST	
SHEET NUMBER	SHEET NAME
A000	COVER / DRAWING LIST
A001	CONTEXT PLAN + PROJECT STATS
A002	BUILDING MASSING
A003	RENDERINGS
A100	SITE PLAN
A200	BASEMENT PLAN
A201	GROUND FLOOR PLAN
A202	2ND FLOOR PLAN
A203	3RD FLOOR PLAN
A204	ROOF PLAN
A401	ELEVATIONS
A402	ELEVATIONS
A501	SECTIONS

PROJECT CONSULTANTS

ARCHITECT
RAW DESIGN INC.
22 GEARY AVE
TORONTO, ON. M6H 2B4
T: 416-599-9729
F: 416-599-7729

LANDSCAPE ARCHITECT
TBD

STRUCTURAL ENGINEER
TBD

PLANNING
WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ON. K2B 8K2
T: 613 829-2800

MECHANICAL & ELECTRICAL ENGINEER
TBD

ENERGY MODEL
TBD

CIVIL ENGINEER
ROBINSON CONSULTANS
350 PALLADIUM DRIVE, SUITE 210
OTTAWA, ON. K2V 1A8
T: 613-592-6060

SURVEY & TOPOGRAPHIC
CALLON DIETZ INC.
19 ROE ST,
CARLETON PLACE, ON. K7C 0N3

TRANSPORTATION
TBD

ENVIRONMENTAL
TBD

NOISE AND VIBRATION
TBD

GEOTECH / HYDRO G
TBD

ISSUE RECORD

2025-06-02	Issued for SPA

REVISION RECORD

NO.	DATE	DESCRIPTION

405-317 ADELAIDE STREET WEST
TORONTO CANADA M5V 1P9
+1 416 599 9729
WWW.RAWDESIGN.CA

24058

55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT

SCALE: NTS

COVER / DRAWING LIST

A000

405-317 ADELAIDE ST. W.
TORONTO CANADA M5V 1P9
+1 416 599 9729
WWW.RAWDESIGN.CA

55 CRAIG ST, PERTH

PRELIMINARY SITE STATISTICS

29 May 2025

Official Plan	SITE AREA	1866.0 sq.m.	20,085	sq.ft.
	NET AREA	1866.0 sq.m.	20,085	sq.ft.
	BUILDING COVERAGE	36%		
	BUILDING HEIGHT	11.5m		
Current Zoning				

AREA CALCULATIONS

FLOOR	UNITS							GROSS FLOOR AREA						OUT. AMENITY		GCA (INCL BALC)	
	STUDIO	1B	1B+D	2B	3B	4B	TOTAL	COMMERCIAL		RESIDENTIAL		TOTAL					
								sq.m.	sq.ft.	sq.m.	sq.ft.	sq.m.	sq.ft.	sq.m.	sq.ft.	sq.m.	sq.ft.
Basement								-	-	-	-	0		-	-	137	1,475
1	0	2	0	4	0		6	-	-	385	4,144	385	4,144	69	738	454	4,882
2	0	8	4	0	0		12	-	-	665	7,158	665	7,158	29	310	694	7,468
3	0	8	4	0	0		12	-	-	665	7,158	665	7,158	29	310	694	7,468
TOTAL	0	18	8	4	0	0	30	0	-	1,715	18,460	1,715	18,460	126	1,357	1,841	19,818
Mix	0%	60%	27%	13%	0%	0%											

FSI

TOTAL	**0.92**
RES	**0.92**

Outdoor Amenity				
Required (9m2/UNIT)	270	sq.m.	2,906	sq.ft.
Provided (patios+balcs+terraces)	126	sq.m.	1,357	sq.ft.
Provided (site landscaping)	324	sq.m.	3,490	sq.ft.
TOTAL PROVIDED	**450**	**sq.m.**	4,847	**sq.ft.**

VEHICLE PARKING

REQUIRED		
RESIDENT (1/UNIT??)		30.0
VISITOR (N/A)		
ACCESSIBLE (4%)		2
TOTAL		**30**

PROVIDED	
RESIDENT	30
VISITOR	
ACCESS.	2
TOTAL	30

BICYCLE PARKING

		REQUIRED	PROVIDED
LONG-TERM (RESIDENTIAL)	5% required vehicular parking, minimum of 2 spaces	2.0	4.0
SHORT-TERM (RESIDENTIAL)	0	0	0.0
COMMERCIAL	0	0	0.0
TOTAL		2.0	4.0

Required Landscaped Open Space

	Percent	sq.m.	sq.ft.
Required	35%	653	7,030
Provided	23%	434	4,672

1 A001 SITE STATISTICS
1 : 1

3 A001 CONTEXT PLAN
1 : 1000

UNIT MATRIX

Number	Name	Area	Area SF
1ST FLOOR			
101	1 BED	48 m²	513 ft²
102	2 BED (BF)	62 m²	669 ft²
103	2 BED	62 m²	669 ft²
104	2 BED	62 m²	669 ft²
105	2 BED	62 m²	669 ft²
106	1 BED	48 m²	514 ft²
2ND FLOOR			
201	1 BED	45 m²	485 ft²
202	1 BED+D	58 m²	620 ft²
203	1 BED+D	58 m²	620 ft²
204	1 BED+D	58 m²	620 ft²
205	1 BED+D	58 m²	620 ft²
206	1 BED	45 m²	485 ft²
207	1 BED	43 m²	466 ft²
208	1 BED	43 m²	458 ft²
209	1 BED	43 m²	458 ft²
210	1 BED (BF)	43 m²	458 ft²
211	1 BED (BF)	43 m²	458 ft²
212	1 BED	38 m²	407 ft²
3RD FLOOR			
301	1 BED	45 m²	485 ft²
302	1 BED+D	58 m²	620 ft²
303	1 BED+D	58 m²	620 ft²
304	1 BED+D	58 m²	620 ft²
305	1 BED+D	58 m²	620 ft²
306	1 BED	45 m²	485 ft²
307	1 BED	43 m²	466 ft²
308	1 BED	43 m²	458 ft²
309	1 BED	43 m²	458 ft²
310	1 BED (BF)	43 m²	458 ft²
311	1 BED (BF)	43 m²	458 ft²
312	1 BED	38 m²	407 ft²

2024 ONTARIO BUILDING CODE DATA MATRIX — Issued: 2024-01-01

PART 3 - FIRE PROTECTION, OCCUPANT SAFETY AND ACCESSIBILITY — OBC REFERENCE[1]

	Name of Practice	RAW DESIGN INC.							
	Address 1	22 GEARY AVE.							
	Address 2	TORONTO, ON							
	Contact								
	Name of Project	24058 - 55 CRAIG ST							
	Location/Address	55 CRAIG ST. PERTH, ON							
	Date	30/05/2025					Seal & Signature		
3.00	BUILDING CODE VERSION	O.Reg. 163/24				LAST CODE AMENDMENT	O.Reg. 447/24		
3.01	PROJECT TYPE	New Construction							[A] 1.3.3.2.
3.02	MAJOR OCCUPANCY CLASSIFICATION	OCCUPANCY					USE		3.1.2.
		C	Residential				APARTMENT		
		-	-						
		-	-						
		-	-						
		-	-						
		-	-						
3.03	SUPERIMPOSED MAJOR OCCUPANCIES	NO	[If Yes, provide explanation below; add lines as necessary]						3.2.2.7.
3.04	BUILDING AREA (m²)	DESCRIPTION					EXISTING	NEW	TOTAL [A] 1.4.1.2.
		NEW RESIDENTIAL APARTMENT						665.00	665.0
									-
									-
		TOTAL					-	665.0	665.0
3.05	GROSS AREA (m²)	DESCRIPTION					EXISTING	NEW	TOTAL [A] 1.4.1.2.
		NEW RESIDENTIAL APARTMENT						1715.00	1,715.0
									-
									-
		TOTAL					-	1,715.0	1,715.0
3.06	MEZZANINE AREA (m²)	DESCRIPTION				MEZZ TYPE	EXISTING	NEW	TOTAL 3.2.1.1.
						Select applicable			-
						Select applicable			-
						Select applicable			-
		TOTAL					-	-	-
3.07	BUILDING HEIGHT	3	STOREYS ABOVE GRADE					12.25 (m)	ABOVE GRADE [A] 1.4.1.2. & 3.2.1.1.
		1	STOREYS BELOW GRADE						
3.08	HIGH BUILDING	No							3.2.6.
3.09	NUMBER OF STREETS/ FIREFIGHTER ACCESS	1	STREET(S)						3.2.2.10. & 3.2.5.
3.10	BUILDING CLASSIFICATION (SIZE AND CONSTRUCTION RELATED TO OCCUPANCY)	3.2.2.53.	Group C, up to 3 Storeys, Increased Area						3.2.2.20-83.
		-	-						
		-	-						
		-	-						
		-	-						
		-	-						
3.11	SPRINKLER SYSTEM	Not Required		PROVIDED:		N/A			3.2.1.5. & 3.2.1.7, 3.2.2.18, 3.2.4.8. to 3.2.4.10. and 3.2.5.12.
		DESCRIBE							
3.12	STANDPIPE SYSTEM	Not Required							3.2.9.
3.13	FIRE ALARM SYSTEM	Required				TYPE PROVIDED: -			3.2.4.
3.14	WATER SERVICE/ SUPPLY IS ADEQUATE	Yes							3.2.5.7.
3.15	CONSTRUCTION TYPE	BASED ON	3.2.2.53.						3.2.2.2.20.-83.
		RESTRICTIONS	Combustible Permitted						
		ACTUAL	Combustible			HEAVY TIMBER CONSTRUCTION		N/A	3.2.1.4.
3.16	IMPORTANCE CATEGORY	Low				-			4.1.2.1.(3), T4.1.2.1.B
3.17	SEISMIC CATEGORY	SEISMIC CATEGORY -							4.1.8.4.(1)
		SITE CLASS	-	-					T4.1.8.5.-B
		SEISMIC DESIGN REQUIRED FOR Table 4.1.8.18. items 6 to 22:				Required			4.1.8.18.(2)
		REASON FOR REQUIREMENT: NEITHER SCI NOR SCD.							
3.18	OCCUPANT LOAD	FLOOR LEVEL/AREA	OCCUPANCY TYPE			OCCUPANT LOAD (PERSONS)	BASED ON	POSTED LIMIT REQUIRED	3.1.17. and 3.1.17.1.(2)
		1ST FLOOR	C			20	No. of sleeping rooms	No	
		2ND FLOOR	C			24	No. of sleeping rooms	No	
		3RD FLOOR	C			24	No. of sleeping rooms	No	
		TOTAL				68			
3.19	BARRIER-FREE DESIGN	Yes							3.8.
	BARRIER-FREE ENTRANCES	1							3.1.8.2.
3.20	HAZARDOUS SUBSTANCES	No							3.3.1.2. & 3.3.1.19.
3.21	REQUIRED FIRE RESISTANCE RATINGS	HORIZONTAL ASSEMBLY				RATING (H)	SUPPORTING ASSEMBLY (H)	NONCOMBUSTIBLE IN LIEU OF RATING?	3.2.2.20-83., 3.2.1.2., 3.2.1.4., 3.2.2.10.
		STOREYS BELOW GRADE				1.00	1.00	NO	
		FLOORS OVER BASEMENT/				1.00	1.00	NO	
		FLOORS				1.00	1.00	NO	
		MEZZANINE						-	
		ROOF				1.00	1.00	N/A	
3.22	SPATIAL SEPARATION	EXPOSING BUILDING FACE	EBF AREA (m²)	L.D. (m)	L/H OR H/L	% UPO PERMITTED/ ACTUAL	REQUIRED FRR (H)	CONSTRUCTION TYPE	CLADDING TYPE	3.2.3.
		NORTH	SEE NOTE			/	-	-		
		SOUTH	SEE NOTE			/	-	-		
		EAST	SEE NOTE			/	-	-		
		WEST	SEE NOTE			/	-	-		
3.23	PLUMBING FIXTURE REQUIREMENTS	RATIO:	MALE:FEMALE = 50:50 EXCEPT AS NOTED OTHERWISE							3.7.4., 3.8.2.3., Tables 3.8.2.3.A. and 3.8.2.3.B
		FLOOR LEVEL OR AREA	OCCUPANT LOAD (PERSONS)	OBC SENTENCE	WATER CLOSETS REQUIRED	WATER CLOSETS PROVIDED	BARRIER-FREE WATER CLOSETS REQUIRED / PROVIDED		UNIVERSAL WASHROOMS REQUIRED / PROVIDED	
							/		/	
							/		/	
							/		/	
3.24	ENERGY EFFICIENCY	COMPLIANCE PATH:	SB-10							12.2.1.2.
		CLIMATE ZONE:			5		DEGREE DAYS BELOW 18 C:			SB-1 Table 2
3.25	SOUND TRANSMISSION DESIGN	IS THERE MORE THAN 1 DWELLING UNIT IN THE BUILDING?:				YES				
		NOTES:								
		OPTION IMPLEMENTED:	Min. STC rating of 50 based on SB-3 and 9.11.1.4							
3.26	ALTERNATIVE SOLUTIONS									[A]1.2.1.1. and [C]2.1.
3.27	NOTES									
1		ALL REFERENCES ARE TO DIVISION B OF THE OBC UNLESS PRECEDED BY [A] FOR DIVISION A AND [C] FOR DIVISION C								

Ontario Building Code Data Matrix, Part 3
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2 A001 OBC MATRIX
1 : 1

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24058

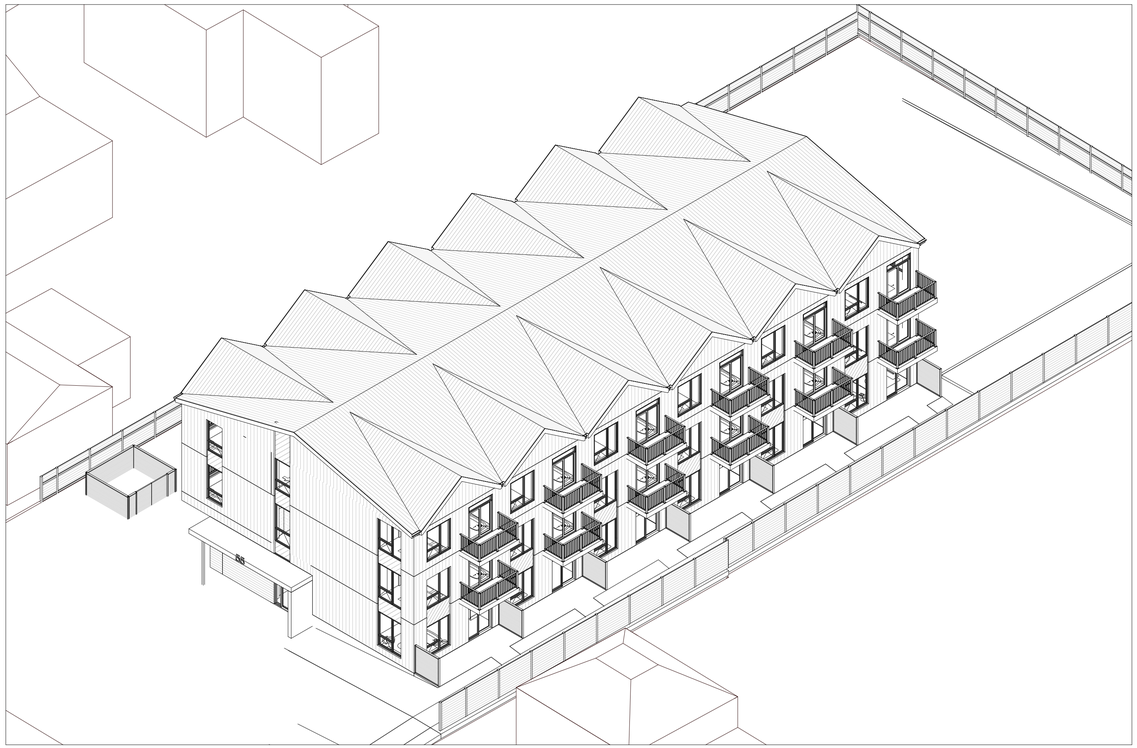
55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT:NTS

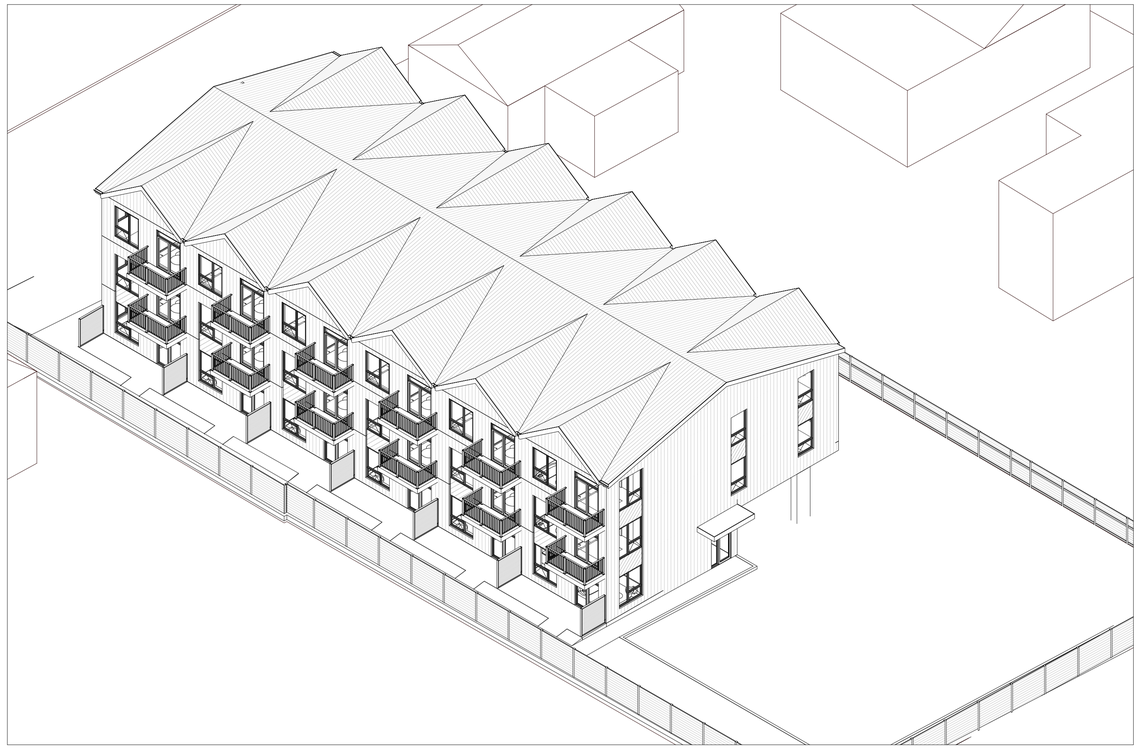
CONTEXT PLAN + PROJECT STATS

SCALE:

A001



1 A002 NE AERIAL



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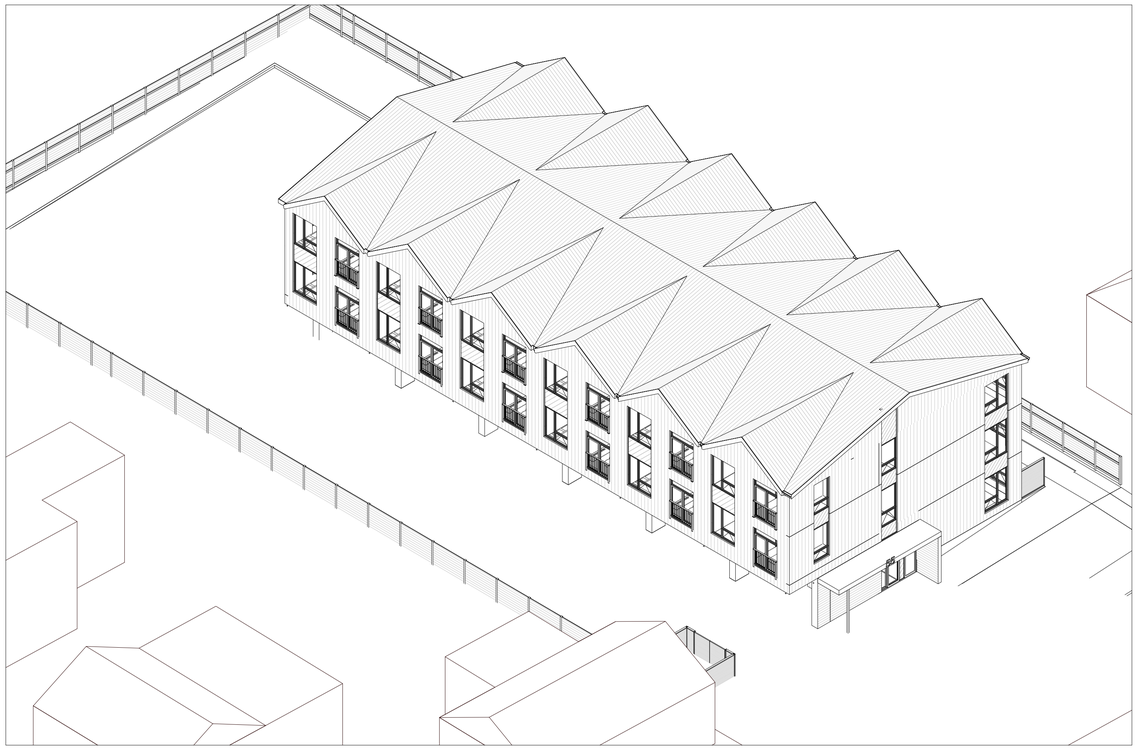
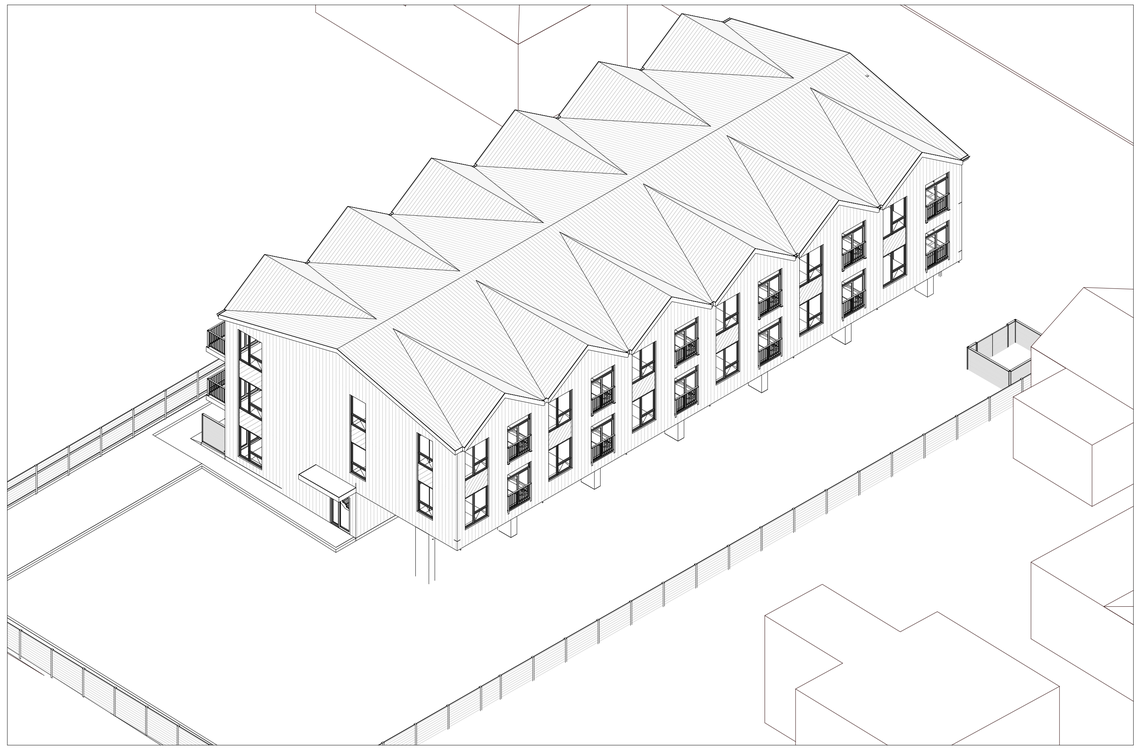


3 A002 SE AERIAL



4 A002 SW AERIAL

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55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT;NTS

BUILDING MASSING

SCALE:

A002

1 A003 1 : 1 NORTH PERSPECTIVE

2 A003 1 : 1 SOUTH PERSPECTIVE

3 A003 1 : 1 EAST ENTRANCE

4 A003 1 : 1 EAST PERSPECTIVE

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55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT

SCALE: NTS

RENDERINGS

A003

SITE PLAN LEGEND

- EXISTING ELEVATION (00.00)
- PROPOSED ELEVATION (+ 00.000)
- TOP OF STRUCTURE (+ 00.000 T.O.S.)
- TOP OF WALL (+ 00.000 T.O.W.)
- TOP OF CURB (+ 00.000 T.O.C.)
- VEHICULAR EXIT/ENTRANCE
- PEDESTRIAN EXIT/ENTRANCE
- PRIMARY RES ENTRANCE
- EXISTING EXTERIOR TO REMAIN
- NEW WALLS
- ITEM ABOVE
- SCREEN REF. # (S)
- WALL TYPE (W)
- DOOR REF # (D)

NOTES:
REFER TO CONSULTANTS DRAWINGS FOR INFORMATION RELATING TO SITE SERVICING, GRADING AND LANDSCAPE. ALL ITEMS NEW CONSTRUCTION UNLESS NOTED OTHERWISE

Abbreviations

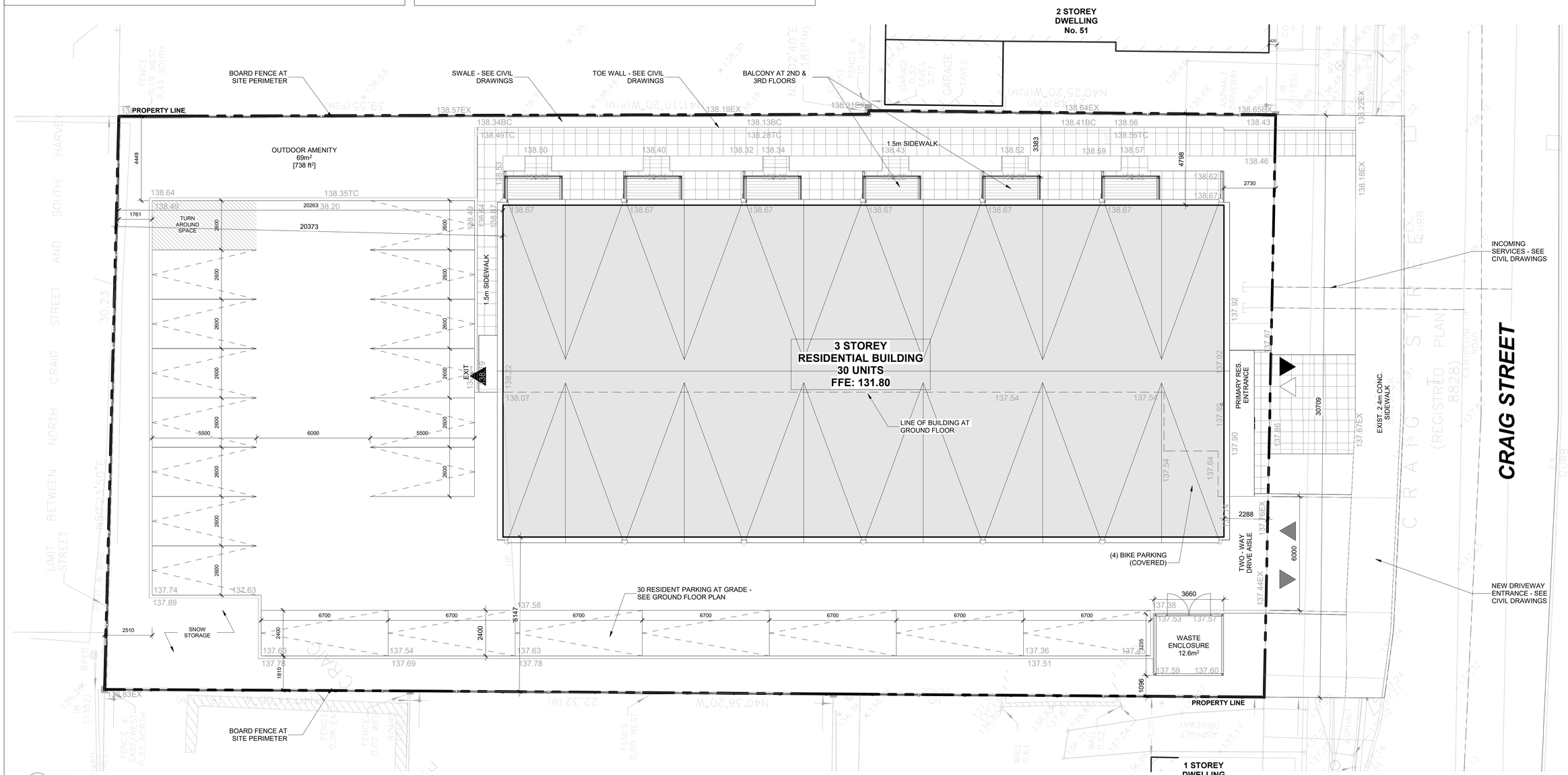
AD	AREA DRAIN
CACF	CENTRAL ALARM CONTROL FACILITY
CB	CATCH BASIN
FH	FIRE HYDRANT
FD	FLOOR DRAIN
HB	HOSE BIB
HLP	HYDRO LIGHT POLE
MH	MAN HOLE
TLS	TRAFFIC LIGHT STANDARD

SITE PLAN INFORMATION TAKEN FROM :

TOPOGRAPHICAL PLAN OF SURVEY OF PART OF LOT 3 (NORTH SIDE OF CRAIG STREET) REGISTERED PLAN 8828 IN THE TOWN OF PERTH COUNTY OF LANARK PREPARED BY CALLON DIETZ INCORPORATED LAND SURVEYORS
(MAY 24, 2022).
246.26m = 000 ESTABLISHED GRADE

SITE PLAN NOTES

1. THE BUILDING IS NOT SPRINKLERED
2. SIDEWALKS AND BOULEVARDS WITHIN THE RIGHT OF WAY TO HAVE A MINIMUM 2% AND MAXIMUM 4% SLOPE TOWARDS THE ROADWAY AND CONSTRUCT TO TOWN OF NEWMARKET'S STANDARD REQUIREMENTS.
3. REFER TO SITE SERVICING PLAN, FOR SEWER AND WATER SERVICE INFORMATION.
4. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGNS, ETC. ALONG THE DEVELOPMENT SITE FRONTAGE THAT ARE NO LONGER REQUIRED ARE TO BE REMOVED. THE BOULEVARD WITHIN THE PUBLIC RIGHT OF WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES ARE TO BE REINSTATED.
5. PROPOSED ACCESS TO THE DRIVEWAY FOR THIS PROJECT TO BE DESIGNED IN ACCORDANCE WITH OPSD 350.010 FOR COMBINED CURB AND SIDEWALK VEHICULAR ENTRANCES.
6. TREE PROTECTION NOTE: THE APPLICANT IS RESPONSIBLE FOR ENSURING THAT TREE PROTECTION HOARDING IS MAINTAINED THROUGHOUT ALL PHASES OF DEMOLITION AND CONSTRUCTION IN THE LOCATION AND CONDITION AS APPROVED BY THE TOWN. NO MATERIALS (BUILDING MATERIALS, SOIL, ETC.) MAY BE STOCKPILED WITHIN THE AREA OF HOARDING. FAILURE TO MAINTAIN THE HOARDING AS ORIGINALLY APPROVED OR THE STORAGE OF MATERIALS WITHIN THE HOARDING WILL BE CAUSE FOR THE LETTER OF CREDIT TO BE HELD FOR THREE YEARS FOLLOWING COMPLETION OF ALL SITE WORKS. HOARDING MUST BE INSPECTED PRIOR TO THE REMOVAL OF ANY TREE HOARDING FROM THE SITE.
7. PARKING SPACES RESERVED FOR PEOPLE WITH DISABILITIES MUST BE IDENTIFIED BY A SIGN, INSTALLED AT THE APPLICANT'S EXPENSE, IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS.
8. THE STRUCTURAL DESIGN OF ANY RETAINING WALL OVER 0.6 M IN HEIGHT OR ANY RETAINING WALL LOCATED ON A PROPERTY LINE IS TO BE SHOWN ON THE SITE GRADING PLAN FOR THIS PROJECT AND IS TO BE APPROVED BY THE CONSULTING ENGINEER FOR THE PROJECT.
9. CONTINUOUS 15 CM HIGH BARRIER TYPE POURED CONCRETE CURBING WILL BE PROVIDED BETWEEN ALL ASPHALT AND LANDSCAPED AREAS THROUGHOUT THE SITE.



1 A100 SITE PLAN
1 : 100

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24058

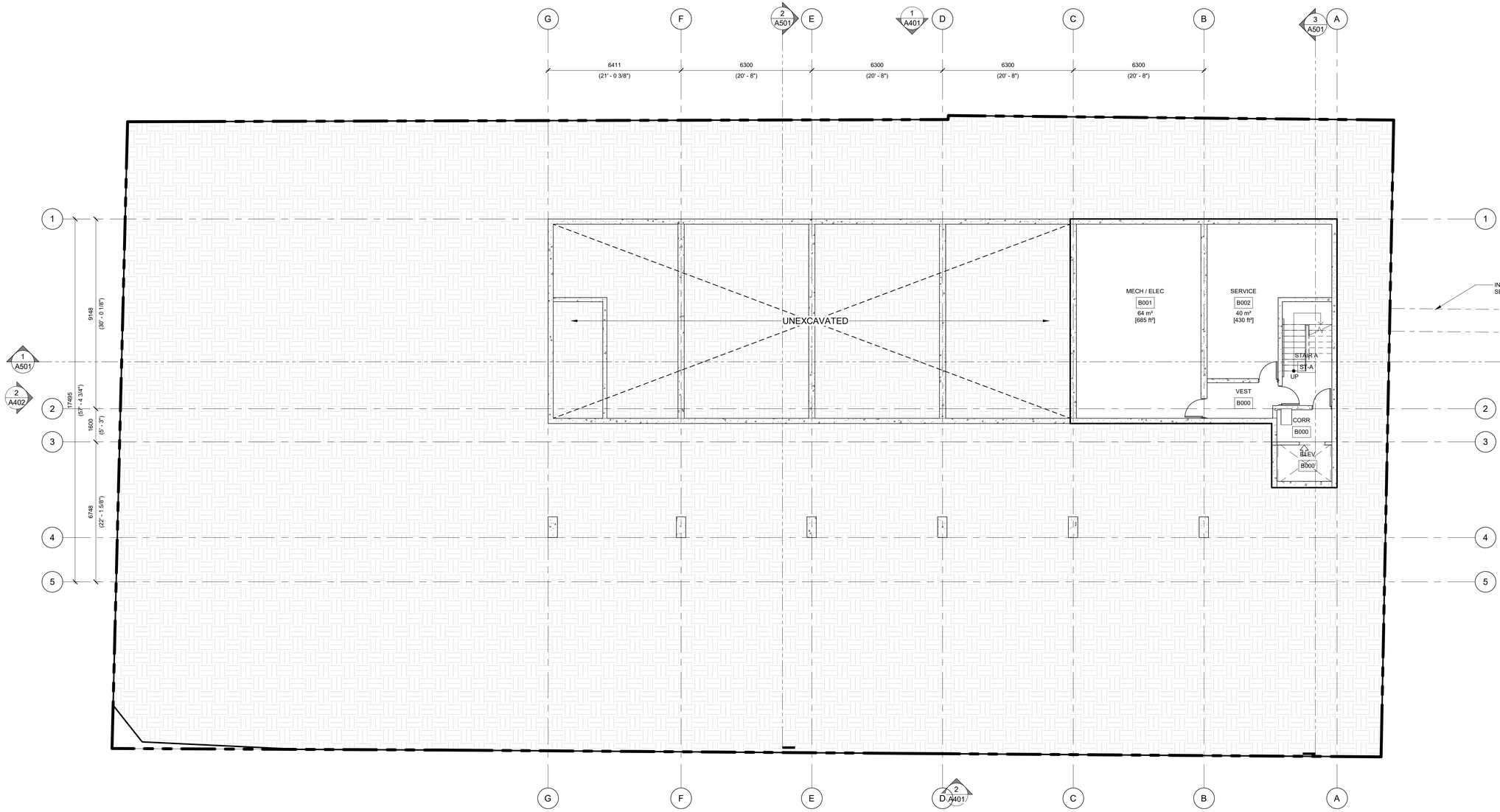
55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT:NTS

SITE PLAN

SCALE: As indicated

A100



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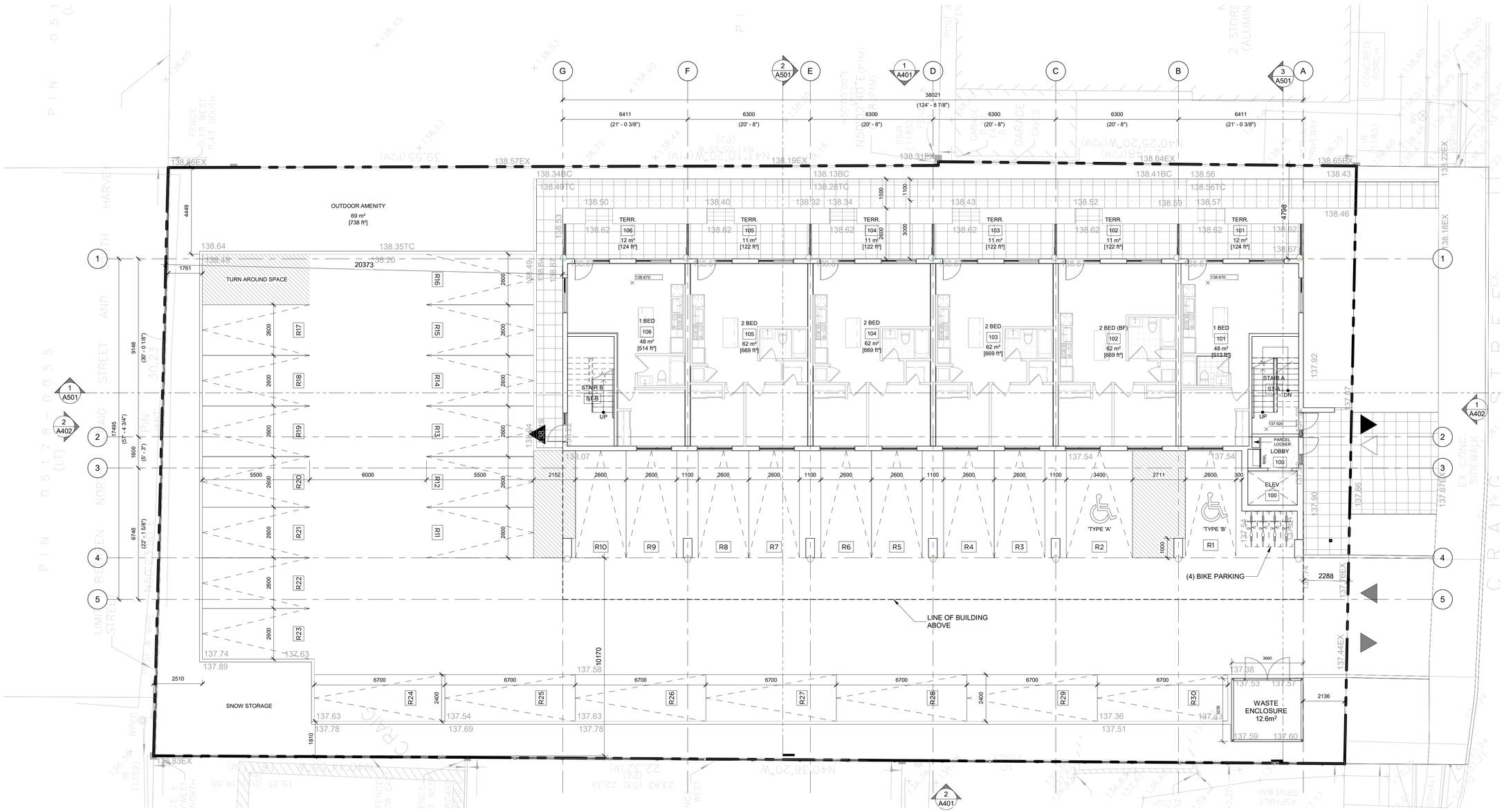
55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT

SCALE: 1 : 100

BASEMENT PLAN

A200



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55 CRAIG ST. PERTH, ON

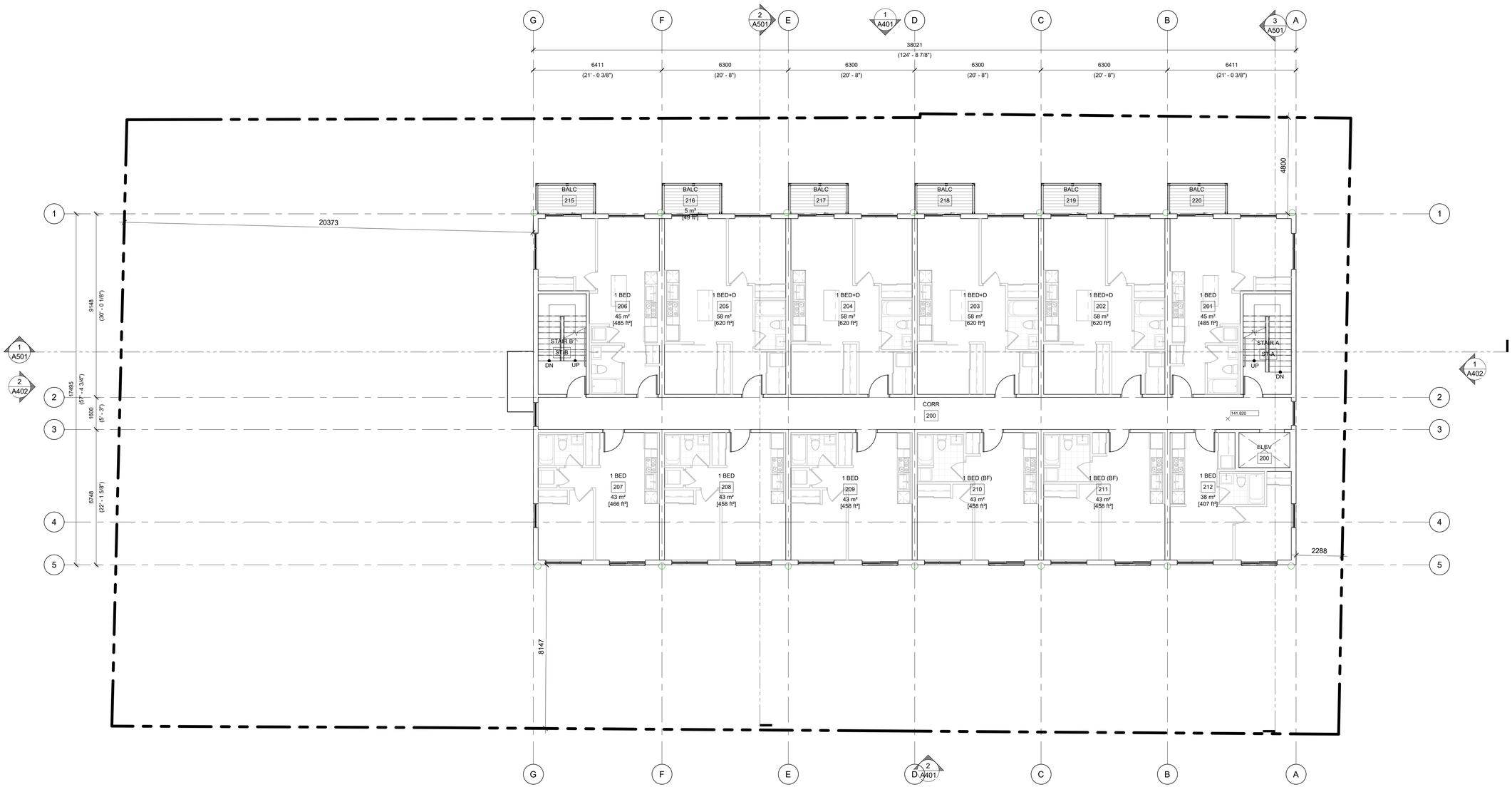
PROPOSED RESIDENTIAL DEVELOPMENT:NTS

GROUND FLOOR PLAN

SCALE: 1 : 100

A201

6/2/2025 4:15:55 PM



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55 CRAIG ST. PERTH, ON

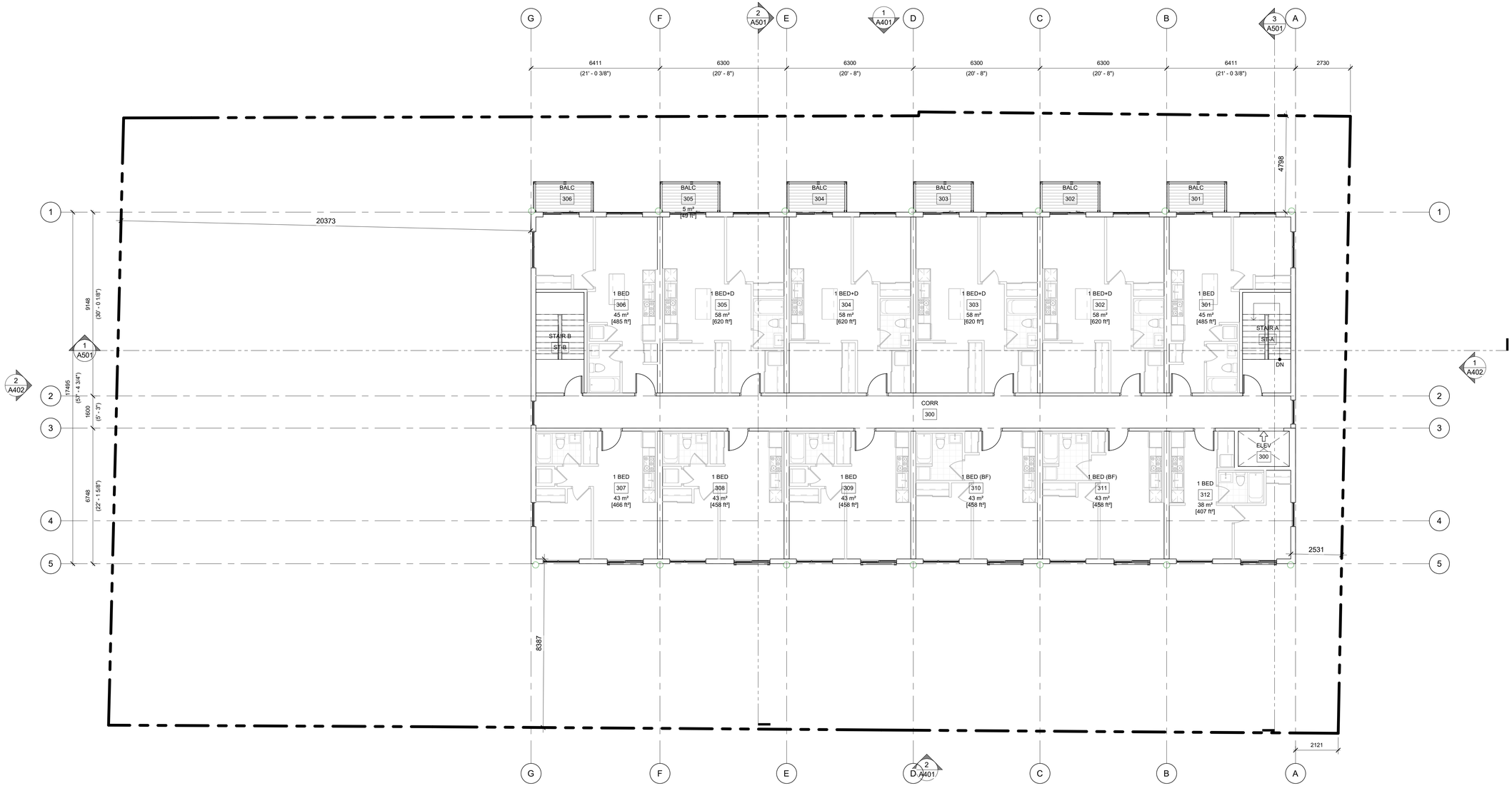
PROPOSED RESIDENTIAL DEVELOPMENT

2ND FLOOR PLAN

SCALE: 1 : 100

NTS

A202



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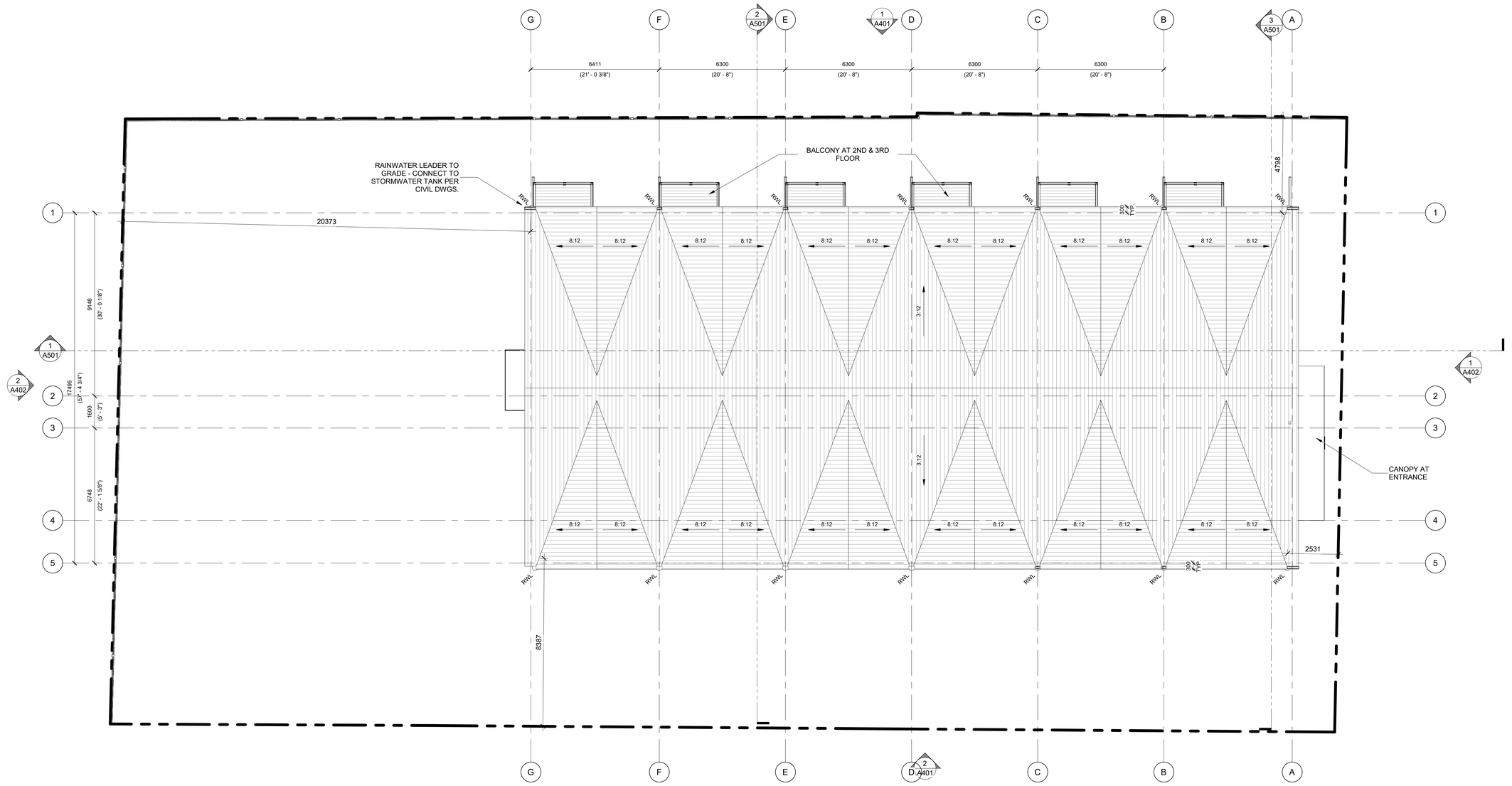
55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT

3RD FLOOR PLAN

SCALE: 1 : 100

A203



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55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT:

ROOF PLAN

SCALE: 1 : 100

A204

MATERIAL LEGEND

1	ARCHITECTURAL SIDING - BOARD AND BATTEN - SAGE GREEN
2	ARCHITECTURAL SIDING - WOOD TONE
3	ARCHITECTURAL SIDING - CHARCOAL
4	STANDING SEAM METAL ROOF - CHARCOAL
5	PREFINISHED METAL FASCIA / FLASHING / WINDOW FRAME - CHARCOAL
6	CLEAR GLAZING
7	METAL RAILING SYSTEM
8	WOOD PRIVACY SCREEN

1 A401 NORTH ELEVATION
1 : 100

2 A401 SOUTH ELEVATION
1 : 100

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55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT

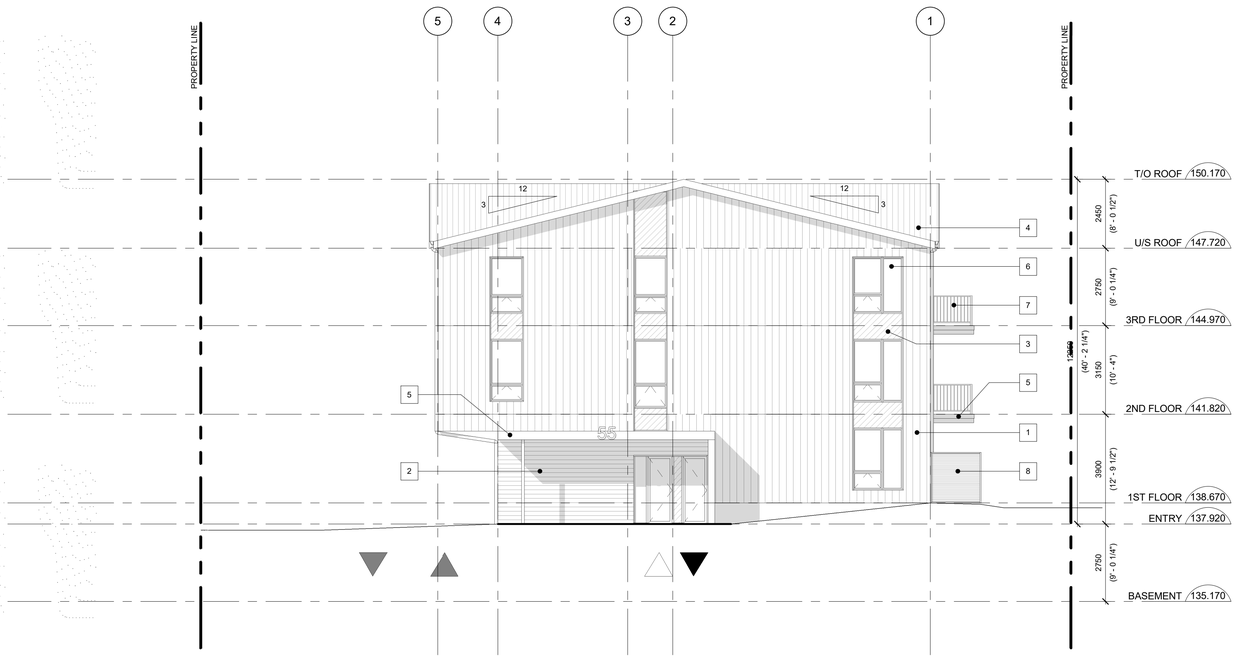
ELEVATIONS

SCALE: 1 : 100

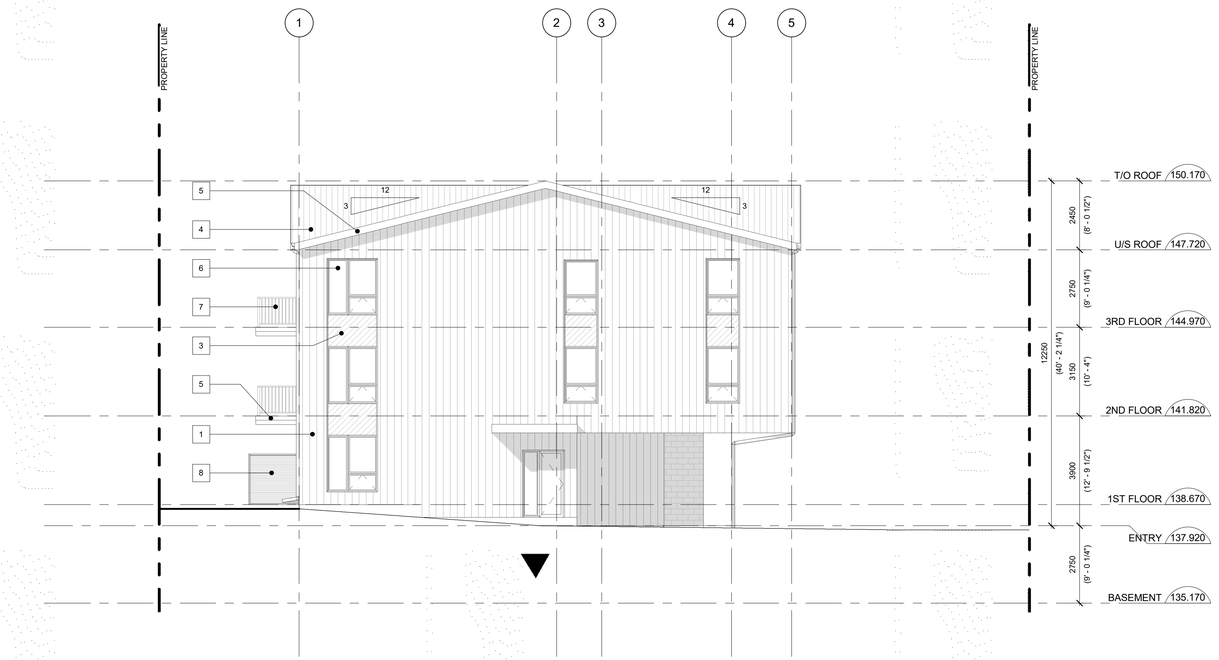
A401

MATERIAL LEGEND

1	ARCHITECTURAL SIDING - BOARD AND BATTEN - SAGE GREEN
2	ARCHITECTURAL SIDING - WOOD TONE
3	ARCHITECTURAL SIDING - CHARCOAL
4	STANDING SEAM METAL ROOF - CHARCOAL
5	PREFINISHED METAL FASCIA / FLASHING / WINDOW FRAME - CHARCOAL
6	CLEAR GLAZING
7	METAL RAILING SYSTEM
8	WOOD PRIVACY SCREEN



1 EAST ELEVATION
A402 1 : 100



2 WEST ELEVATION
A402 1 : 100

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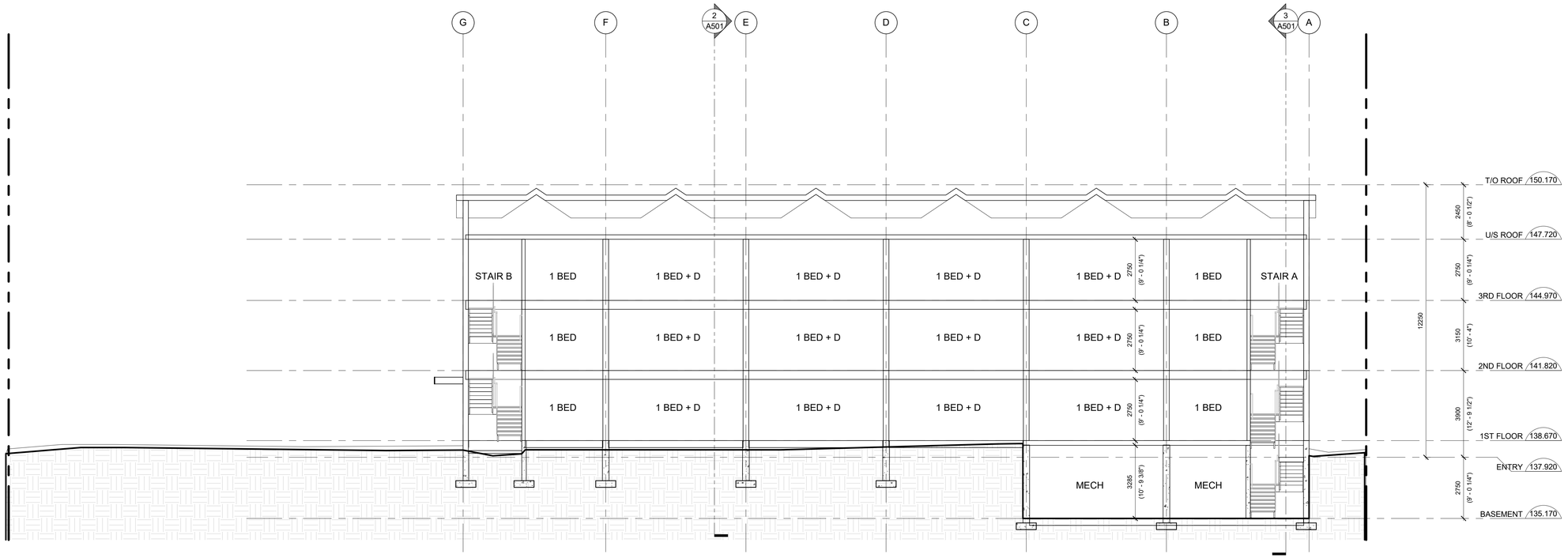
55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT:NTS

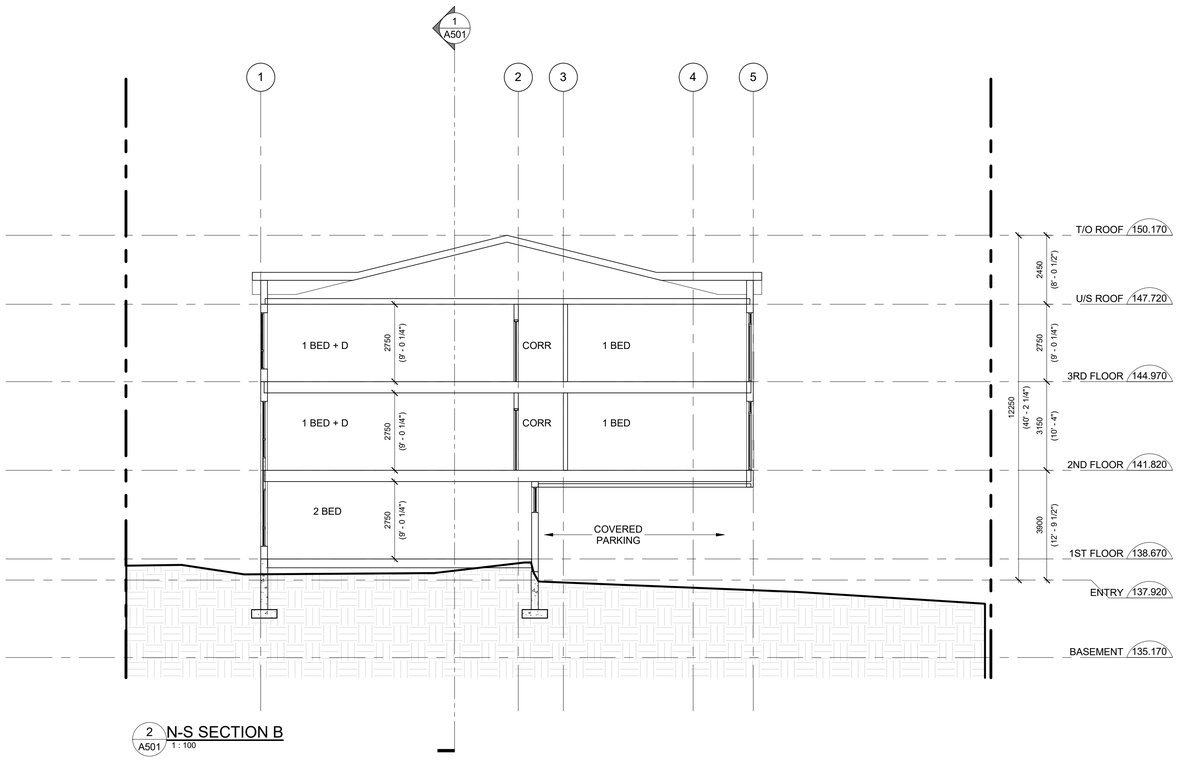
ELEVATIONS

SCALE: 1 : 100

A402



1 A501 E-W SECTION A
1 : 100



2 A501 N-S SECTION B
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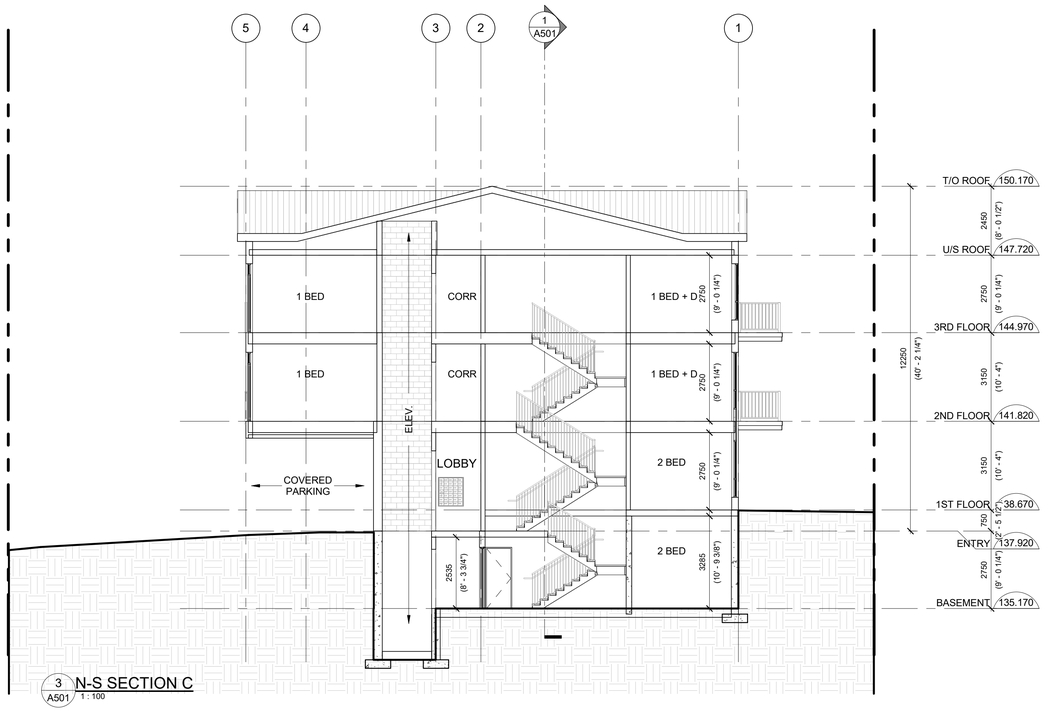

3 A501 N-S SECTION C
1 : 100

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55 CRAIG ST. PERTH, ON

PROPOSED RESIDENTIAL DEVELOPMENT:NTS

SECTIONS

SCALE: 1 : 100

A501

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2191216

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3)

TOPOGRAPHICAL PLAN OF SURVEY

OF PART OF

LOT 3 (NORTH SIDE CRAIG STREET)

REGISTERED PLAN 8828

IN THE

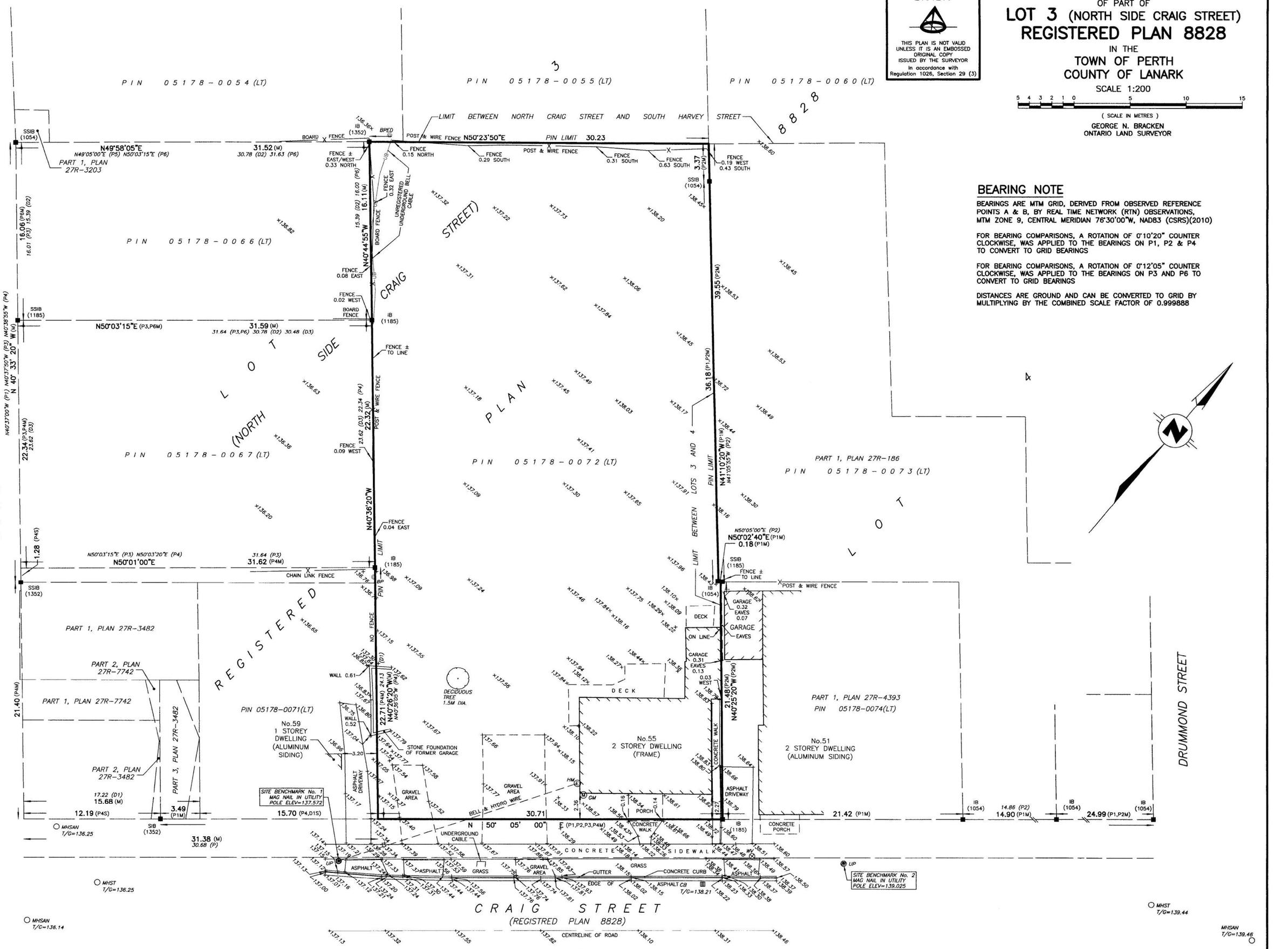
TOWN OF PERTH
COUNTY OF LANARK

SCALE 1:200

5 4 3 2 1 0 5 10 15

(SCALE IN METRES)

GEORGE N. BRACKEN
ONTARIO LAND SURVEYOR



BEARING NOTE

BEARINGS ARE MTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A & B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, MTM ZONE 9, CENTRAL MERIDIAN 76°30'00"W, NAD83 (CSRS)(2010)

FOR BEARING COMPARISONS, A ROTATION OF 0°10'20" COUNTER CLOCKWISE, WAS APPLIED TO THE BEARINGS ON P1, P2 & P4 TO CONVERT TO GRID BEARINGS

FOR BEARING COMPARISONS, A ROTATION OF 0°12'05" COUNTER CLOCKWISE, WAS APPLIED TO THE BEARINGS ON P3 AND P6 TO CONVERT TO GRID BEARINGS

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999888

BENCHMARK:

SITE BENCHMARK No.1 MAG NAIL IN UTILITY POLE AS SHOWN ON PLAN ELEV=137.572

SITE BENCHMARK No.2 MAG NAIL IN UTILITY POLE AS SHOWN ON PLAN ELEV=139.025

ELEVATION NOTE

ELEVATIONS SHOWN HEREON ARE GEODETIC (CGVD-1928:1978) AND ARE DERIVED FROM THE CANNET VRS NETWORK STATION OTTAWA ELEVATION=95.230.

LEGEND:

□	DENOTES	SURVEY MONUMENT SET
■	"	SURVEY MONUMENT FOUND
SIB	"	STANDARD IRON BAR
SSIB	"	SHORT STANDARD IRON BAR
IB	"	IRON BAR
RIB	"	16mm DIAMETER ROUND IRON BAR
CC	"	CUT CROSS
OU	"	ORIGIN UNKNOWN
WIT	"	WITNESS
ORP	"	OBSERVED REFERENCE POINT
M	"	MEASURED
S	"	SET
DIA.	"	DIAMETER
(1054)	"	GEO W BRACKEN LIMITED
(1185)	"	JOHN F. GOLTZ, O.L.S
(1352)	"	BRIAN W. KERR, O.L.S.
P	"	REGISTERED PLAN 8828
P1	"	PLAN 27R-4393
P2	"	PLAN 27R-186
P3	"	BUILDING LOCATION SURVEY BY JOHN F. GOLTZ, O.L.S. DATED MAY 13, 1985
P4	"	PLAN 27R-3482
P5	"	PLAN 27R-3203
P6	"	PLAN OF SURVEY BY BRIAN KERR, O.L.S DATE APRIL, 14 1992
D1	"	INST. No. RS142533
D2	"	INST. No. RS111127
D3	"	INST. No. RS110402
BP	"	BELL POLE
BPED	"	BELL PEDESTAL
CB	"	CATCH BASIN
HM	"	HYDRO METER
GM	"	GAS METER
MHSAN	"	SANITARY MAN HOLE
MHST	"	STORM MAN HOLE
UP	"	UTILITY POLE
UB	"	UNDERGROUND BELL
T/G	"	TOP OF GRATE
WV	"	WATER VALVE

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

(1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND LAND TITLES ACT, AND THE REGULATIONS MADE UNDER THEM.

(2) THE SURVEY WAS COMPLETED ON THE 24th DAY OF MAY, 2022

July 7, 2022
DATE

GEORGE N. BRACKEN
ONTARIO LAND SURVEYOR

METRIC: DISTANCES AND ELEVATIONS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

O:\jobs\1 JOBS CALLON DIETZ\2022\22-1541 K James Construction - Craig Street\Drawing\22-1541.dwg July 8, 2022

Callon Dietz INCORPORATED
ONTARIO LAND SURVEYORS
CARLETON PLACE LONDON NORTH BAY
info@callondietz.com callondietz.com

ISO 9001 REGISTERED

SURVEY BY: RG	DRAWN BY: NJ	FILE No: 22-1541	PLAN No: X-3118

TOPOGRAPHIC SKETCH

53 CRAIG STREET
PERTH
Prepared by Annis, O'Sullivan, Vollebekk Ltd.

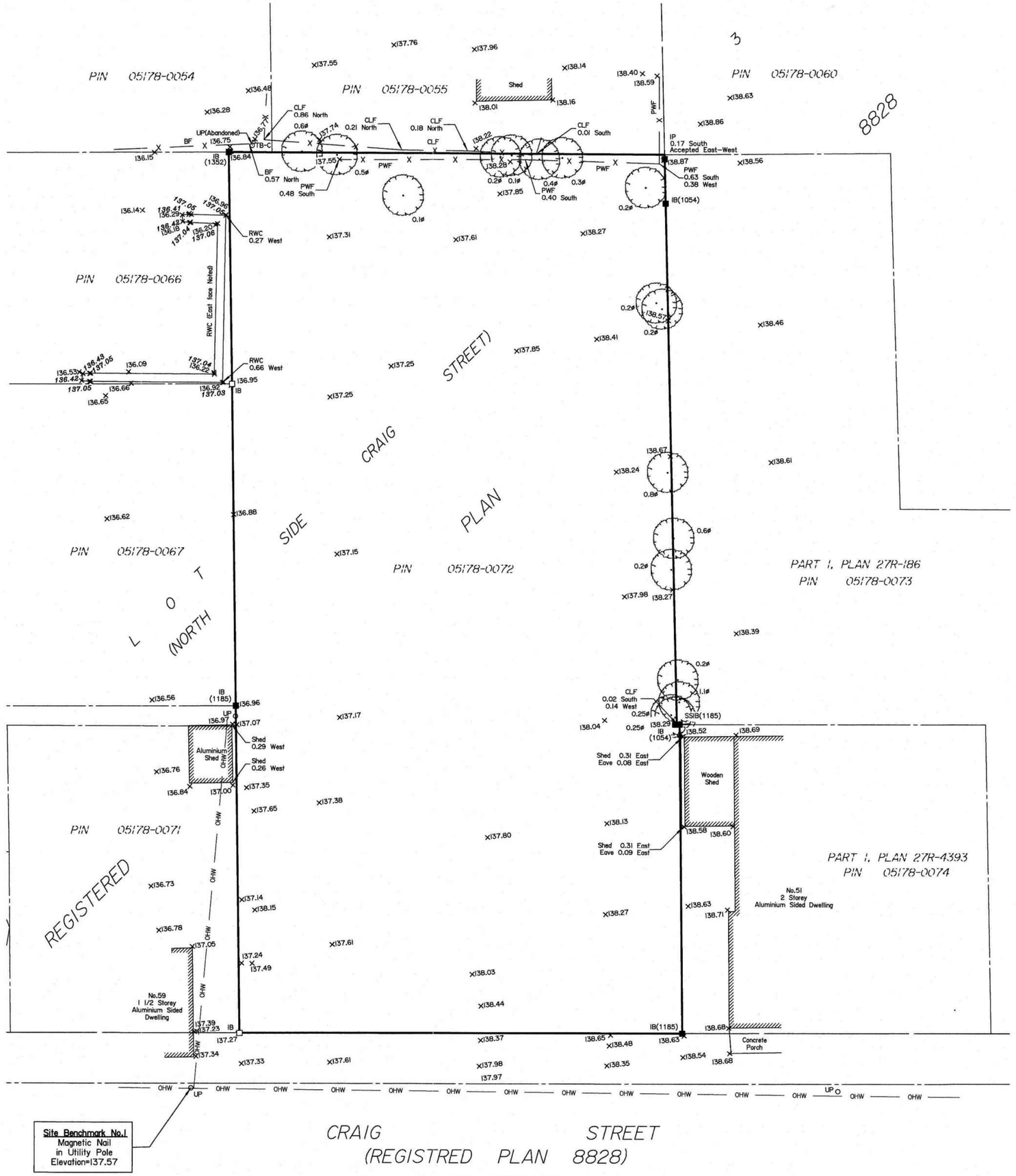
Field Work Completed January 29, 2025

Scale 1 : 200

8.0 6.0 4.0 2.0 0 4 8 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048



Notes & Legend

—□—	Denotes	Survey Monument Planted
—■—	"	Survey Monument Found
SSIB	"	Short Standard Iron Bar
IB	"	Iron Bar
IP	"	Iron Pipe
P&W	"	Post & Wire
BF	"	Board Fence
CLF	"	Chain Link Fence
RWC	"	Concrete Block Retaining Wall
▫ TB-C	"	Cable Terminal Box
O UP	"	Utility Pole
— OHW —	"	Overhead Wires
	"	Deciduous Tree
Ø	"	Diameter
+137.80	"	Location of Elevations
+137.80	"	Location of Retaining Wall Elevations

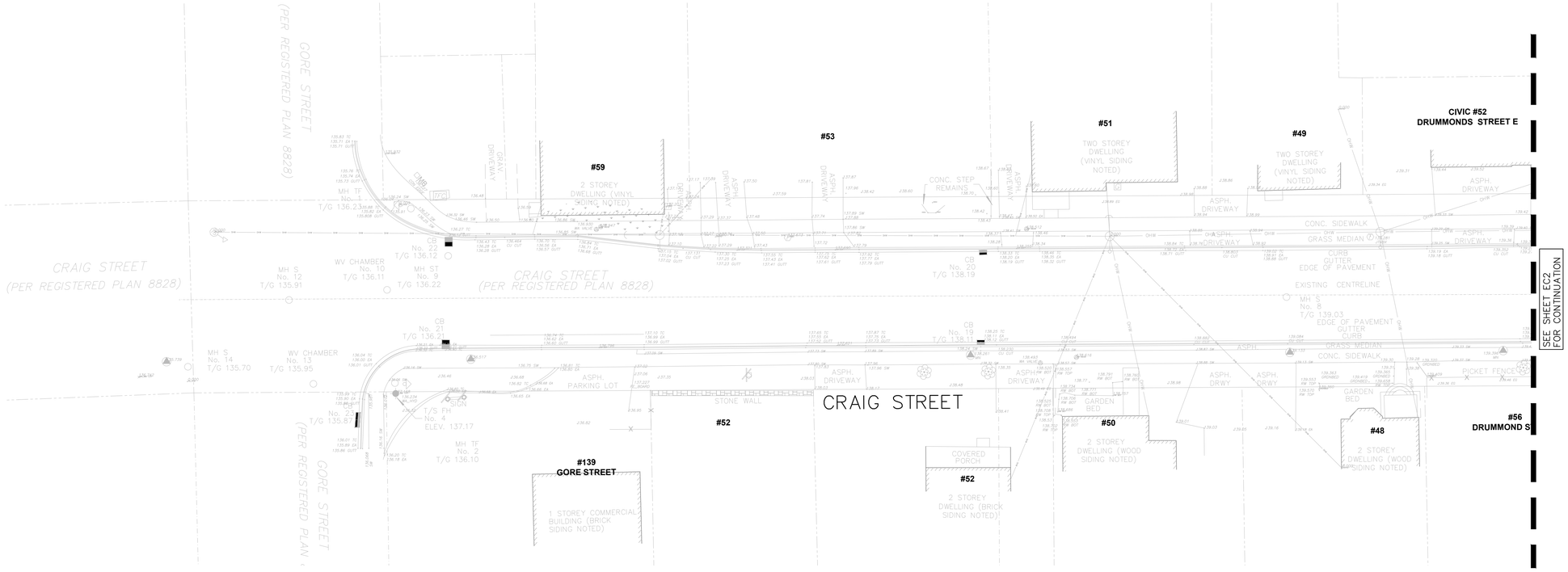
ELEVATION NOTES

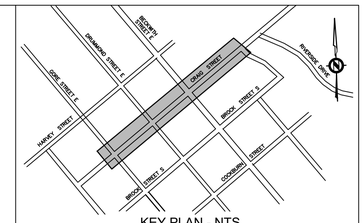
1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Caution

This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors





KEY PLAN - NTS

LEGEND

PROPERTY LINE	
EXISITING EDGE OF ASPHALT	
EXISTING SANITARY	S
EXISTING WATERMAIN	W
EXISTING STORM	D
PROPOSED STORM	D
PROPOSED WATERMAIN	W
PROPOSED SANITARY	S
PROPOSED EDGE OF ASPHALT	
PROPOSED SWALE	
EXISTING GROUND CONTOUR	46.5
EXISTING/PROPOSED ELEVATION	×252.76 / ×252.76
TOP/BOTTOM OF WALL ELEVATION	×274.78TW/BW
GRADE	2.0%
EXISTING/PROPOSED CATCH BASIN	/
EXISTING/PROPOSED CATCH BASIN MANHOLE	/
EXISTING/PROPOSED MANHOLE	/
EXISTING/PROPOSED FIRE HYDRANT	/
PROPOSED ASPHALT	
REGRADED GRASSED EXTENT	
PROPOSED CURB	
PROPOSED DRIVEWAY TO BE REGRADED	
PROPOSED SIDEWALK/ MULTI-USE PATHWAY	

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

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3	03/07/2025	ISSUED FOR TENDER	R.G	J.S
2	02/28/2025	ISSUED FOR 90% DETAILED DESIGN	R.G	J.S
1	02/18/2025	ISSUED FOR 60% DETAILED DESIGN	R.G	J.S

LICENSED PROFESSIONAL ENGINEER
M.A.MELANSON
100569759
2025-06-11
PROVINCE OF ONTARIO

ENGINEER STAMP

LEGAL DESCRIPTION

BENCHMARK

APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING

Aplin & Martin Consultants Ltd.
1000 Innovation Drive Suite 500, Ottawa, O.N. Canada K2K 3E7
Tel: (613) 809-3889, Fax: (416) 644-1889, Email: ottawa@aplinmartin.com

CLIENT

THE TOWN OF PERTH

PROJECT

CRAIG STREET RECONSTRUCTION

DRAWING TITLE

EXISTING CONDITIONS (SHEET 1 OF 4)

DESIGN RG	DATE NOVEMBER, 2024	SCALE 1:250
DRAWN RG	PROJECT NO. 24-7825	
CHECKED MM	DRAWING NO. EC-1	REV. 4
APPROVED JS		

NOTICE TO CONTRACTOR
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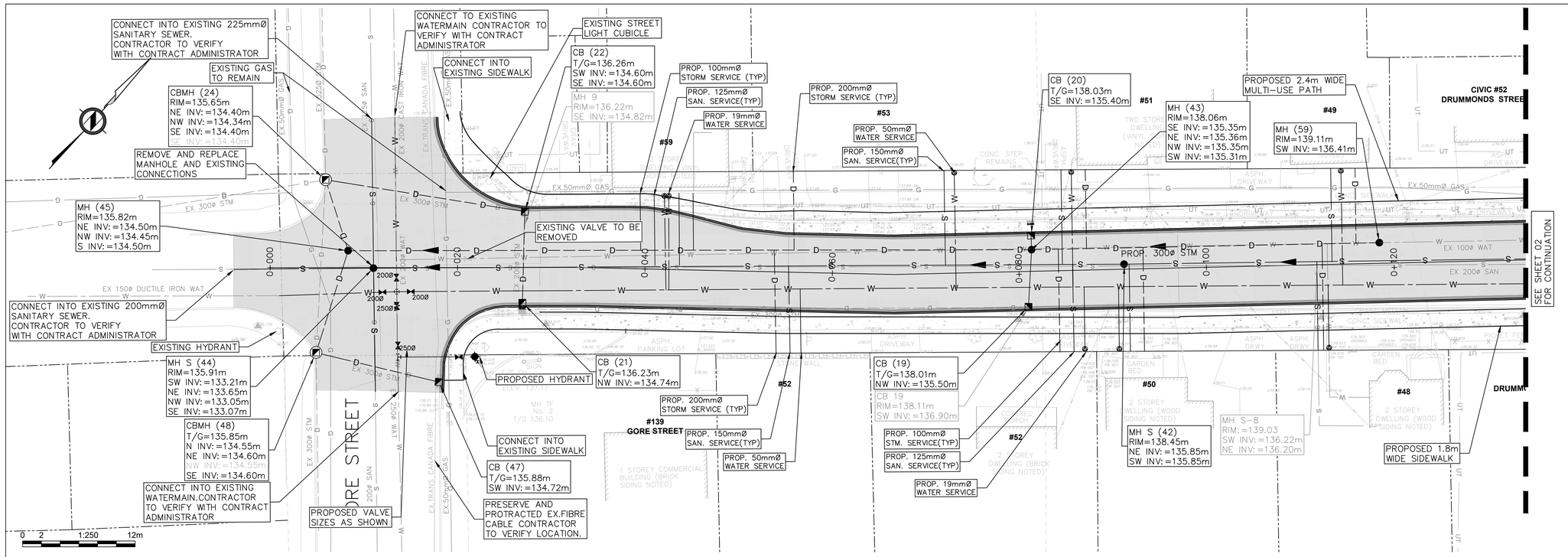
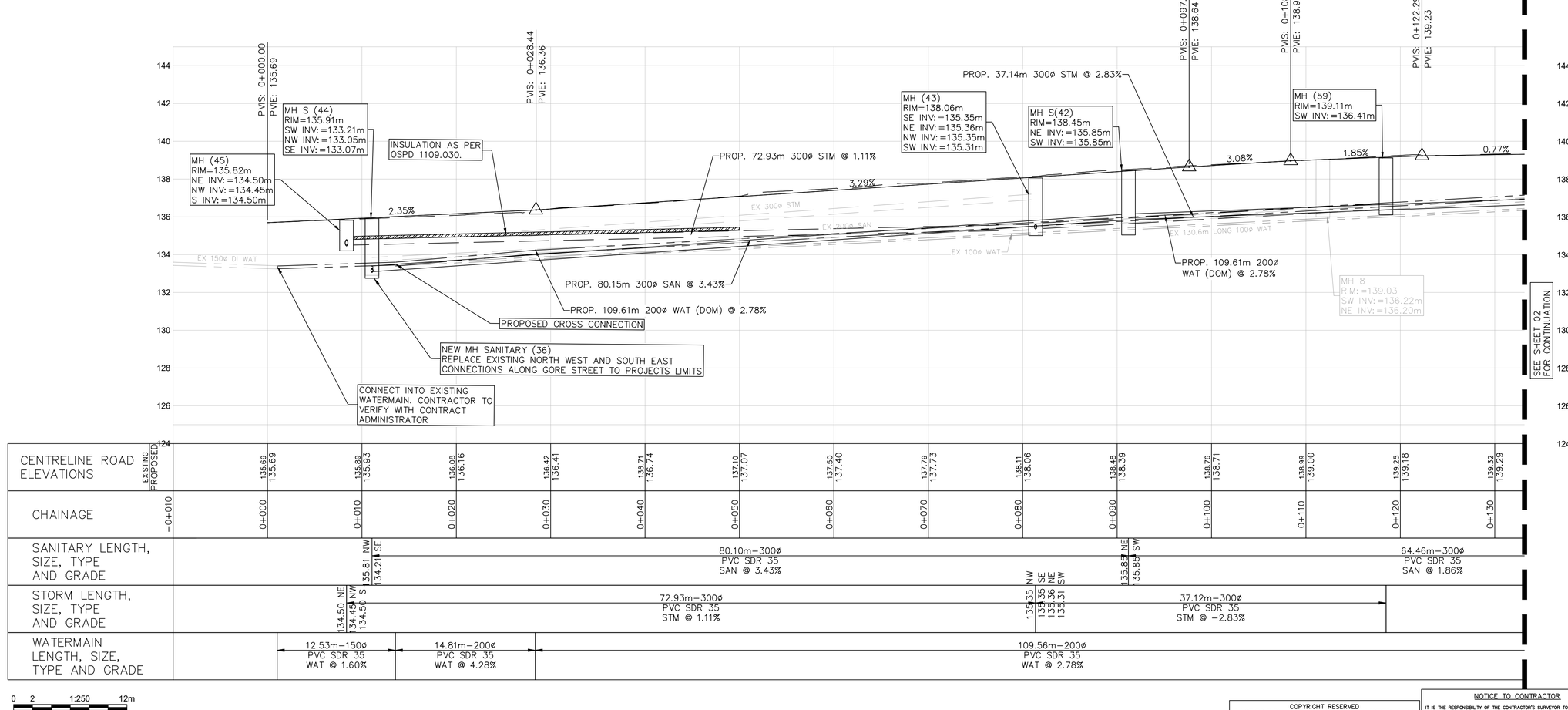
Jun 05 2025 - 5:16pm M:\TOR\2024\24-7825\DWG\ONSITE PRODUCTION\24-7825 EXISTING CONDITIONS.dwg/Layout1 Rdranville





KEY PLAN - NTS

LEGEND

PROPERTY LINE	— - - — - - —
EXISITING EDGE OF ASPHALT	——— /// ———
EXISTING SANITARY	——— S ———
EXISTING WATERMAIN	— W ———
EXISTING STORM	— D — — —
PROPOSED STORM	—— D — — —
PROPOSED WATERMAIN	—— W ———
PROPOSED SANITARY	——— S ———
PROPOSED EDGE OF ASPHALT	——— /// ———
PROPOSED SWALE	— — — — —
EXISTING GROUND CONTOUR	46.5
EXISTING/PROPOSED CATCH BASIN	▨ / ◩
EXISTING/PROPOSED CATCH BASIN MANHOLE	◎ / ◙
EXISTING/PROPOSED MANHOLE	○ / ●
EXISTING/PROPOSED FIRE HYDRANT	⊕ / ●H
EXISTING WATER SERVICE CURB STOP	△
PROPOSED ASPHALT	▒

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M.A.MELANSON
100569759
2025-06-11

ENGINEER STAMP

LEGAL DESCRIPTION

BENCHMARK

APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING

Aplin & Martin Consultants Ltd.
1000 Innovation Drive Suite 500, Ottawa, O.N. Canada K2K 3E7
Tel: (613) 809-3889, Fax: (416) 644-1889, Email: ottawa@aplinmartin.com

CLIENT

THE TOWN OF PERTH

PROJECT

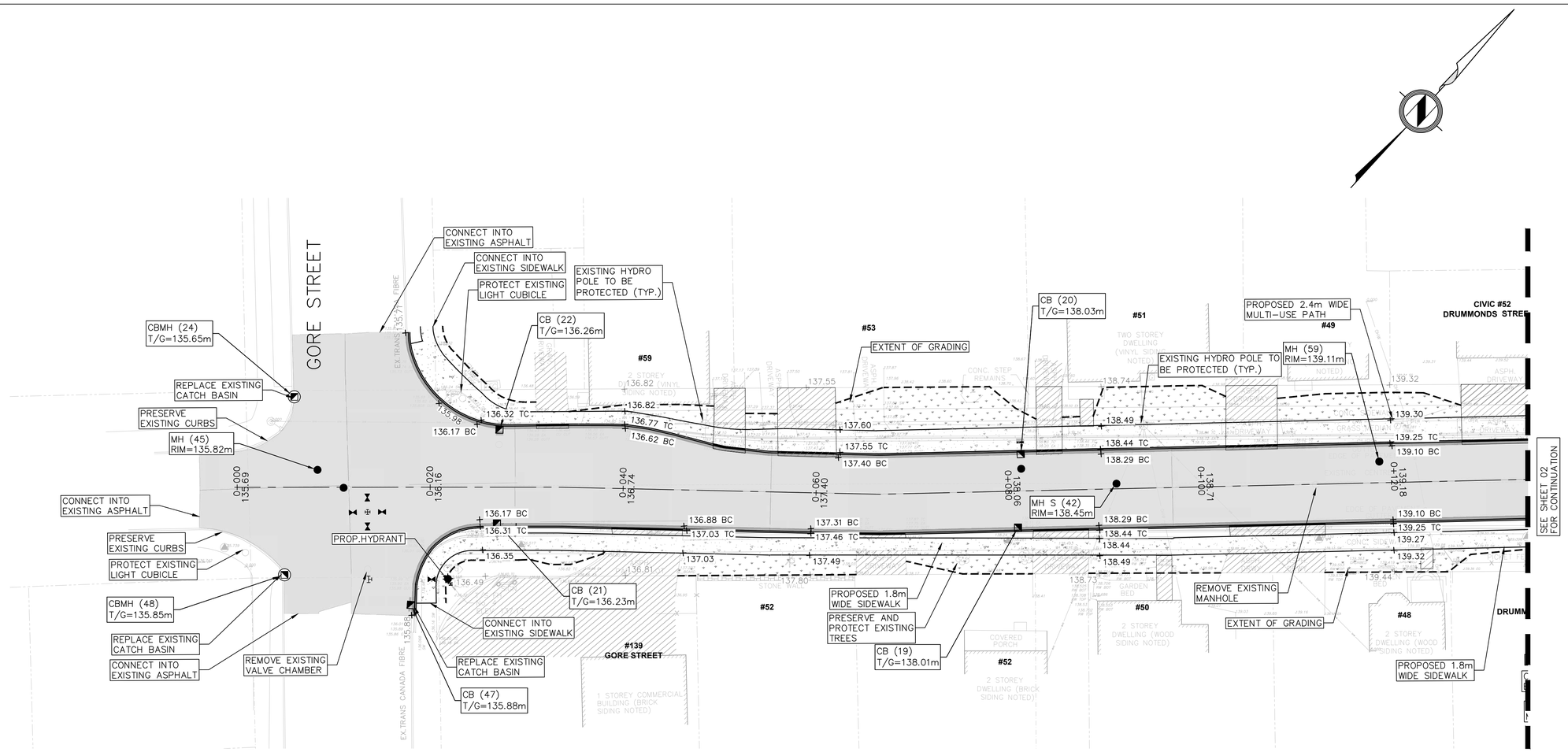
CRAIG STREET RECONSTRUCTION

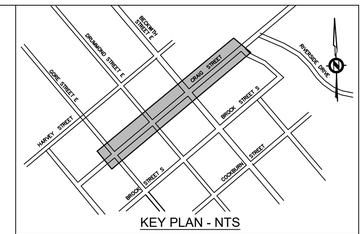
DRAWING TITLE

PLAN AND PROFILE (SHEET 1 OF 4)

DESIGN RG	DATE NOVEMBER, 2024	SCALE 1:250
DRAWN RG	PROJECT NO. 24−7825	
CHECKED MM	DRAWING NO. PP-9	REV. 4
APPROVED JS		

Jun 10 2025 − 12:53pm M:\TOR\2024\24−7825\DWG\ONSITE DESIGN\C3D Corridor Design 2.dwg/SSW1 RGranville





KEY PLAN - NTS

LEGEND

- PROPERTY LINE
- EXISITING EDGE OF ASPHALT
- EXISTING SANITARY
- EXISTING WATERMAIN
- EXISTING STORM
- PROPOSED STORM
- PROPOSED WATERMAIN
- PROPOSED SANITARY
- PROPOSED EDGE OF ASPHALT
- PROPOSED SWALE
- EXISTING GROUND CONTOUR — 46.5
- EXISTING/PROPOSED ELEVATION — ×252.76 / ×252.76
- TOP/BOTTOM OF WALL ELEVATION — ×274.78TW/BW
- GRADE — 2.0%
- EXISTING/PROPOSED CATCH BASIN
- EXISTING/PROPOSED CATCH BASIN MANHOLE
- EXISTING/PROPOSED MANHOLE
- EXISTING/PROPOSED FIRE HYDRANT
- PROPOSED ASPHALT
- REGRADED GRASSED EXTENT
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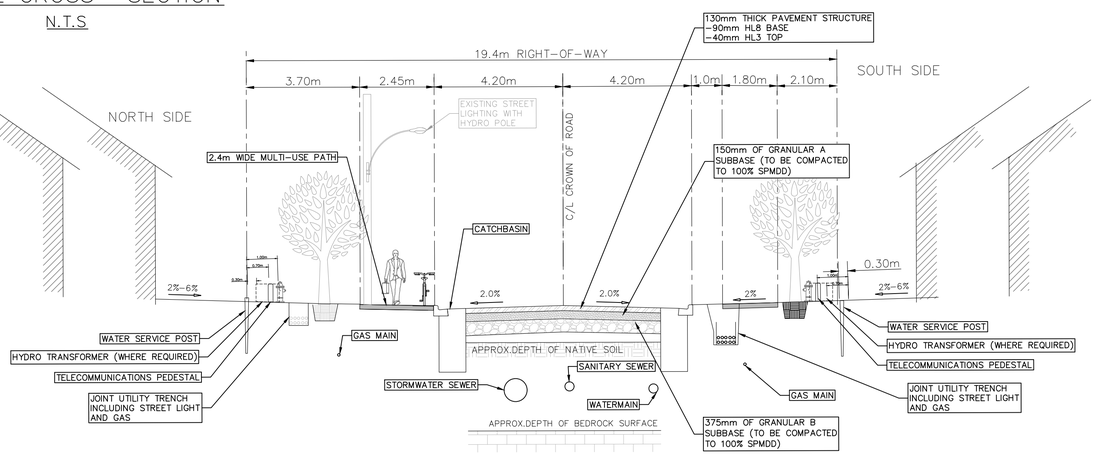
TYPICAL CROSS– SECTION

N.T.S



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LICENSED PROFESSIONAL ENGINEER
M.A.MELANSON
100569759
2025-06-11
PROVINCE OF ONTARIO
ENGINEER STAMP

LEGAL DESCRIPTION

BENCHMARK

APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING
Aplin & Martin Consultants Ltd.
1000 Innovation Drive Suite 500, Ottawa, O.N. Canada K2K 3E7
Tel: (613) 809-3889, Fax: (416) 644-1889, Email: ottawa@aplinmartin.com

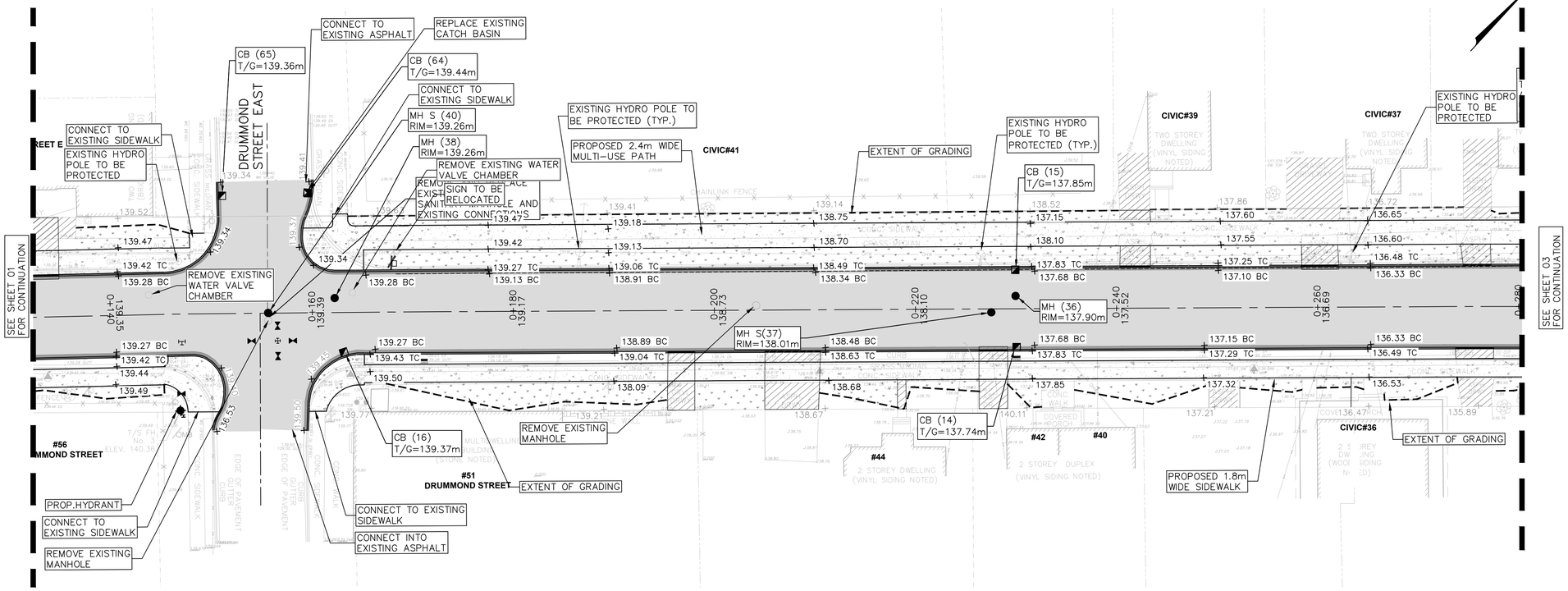
CLIENT
THE TOWN OF PERTH

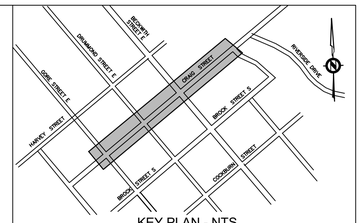
PROJECT
CRAIG STREET RECONSTRUCTION

DRAWING TITLE
GRADING PLAN (SHEET 1 OF 4)

DESIGN RG	DATE NOVEMBER, 2024	SCALE 1:250
DRAWN RG	PROJECT NO. 24–7825	
CHECKED MM	DRAWING NO. GR-1	REV. 4
APPROVED JS		

Jun 10 2025 - 1:05pm M:\YOR\2024\24-7825\DWG\ONSITE PRODUCTION\24-7825 Plan Profile.dwg/Layout1 RGranville

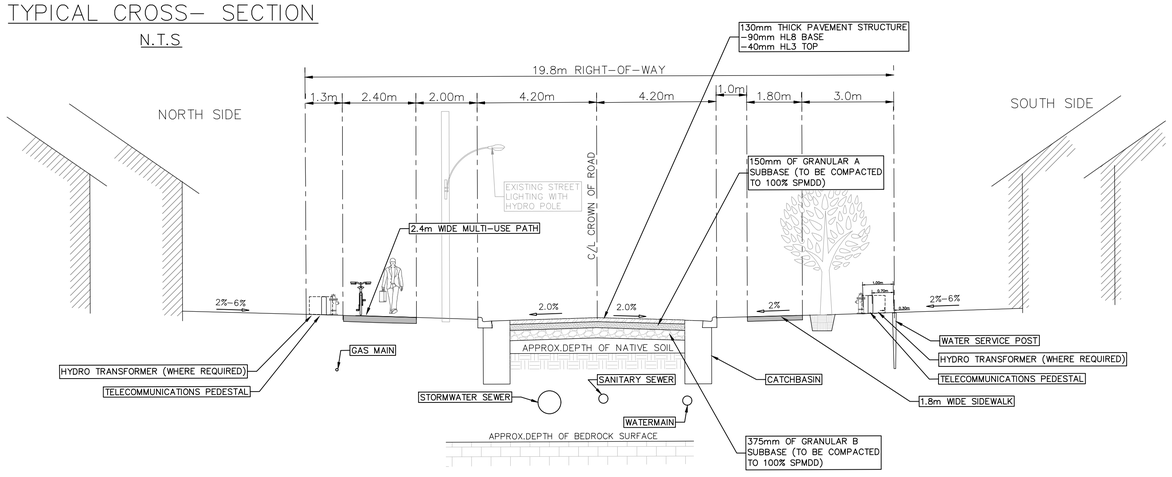




KEY PLAN - NTS

TYPICAL CROSS– SECTION

N.T.S



LEGEND

PROPERTY LINE	
EXISITING EDGE OF ASPHALT	
EXISTING SANITARY	S
EXISTING WATERMAIN	W
EXISTING STORM	D
PROPOSED STORM	D
PROPOSED WATERMAIN	W
PROPOSED SANITARY	S
PROPOSED EDGE OF ASPHALT	
PROPOSED SWALE	
EXISTING GROUND CONTOUR	46.5
EXISTING/PROPOSED ELEVATION	×252.76 / ×252.76
TOP/BOTTOM OF WALL ELEVATION	×274.78TW/BW
GRADE	2.0%
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EXISTING/PROPOSED CATCH BASIN MANHOLE	
EXISTING/PROPOSED MANHOLE	
EXISTING/PROPOSED FIRE HYDRANT	
PROPOSED ASPHALT	
REGRADED GRASSED EXTENT	
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LICENSED PROFESSIONAL ENGINEER M.A.MELANSON 100569759 2025-06-11 PROVINCE OF ONTARIO

ENGINEER STAMP

LEGAL DESCRIPTION

BENCHMARK

APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING

Aplin & Martin Consultants Ltd.
1000 Innovation Drive Suite 500, Ottawa, O.N. Canada K2K 3E7
Tel: (613) 809-3889, Fax: (418) 644-1889, Email: ottawa@aplinmartin.com

CLIENT

THE TOWN OF PERTH

PROJECT

CRAIG STREET RECONSTRUCTION

DRAWING TITLE

GRADING PLAN (SHEET 2 OF 4)

DESIGN RG	DATE NOVEMBER, 2024	SCALE 1:250
DRAWN RG	PROJECT NO. 24–7825	
CHECKED MM	DRAWING NO. **GR-2**	REV. **4**
APPROVED JS		

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Jun 10 2025 – 1:05pm M:\TOR\2024\24-7825\DWG\ONSITE PRODUCTION\24-7825 Plan Profile.dwg/Layout1 (2) RGranville

Appendix B

Existing Conditions and Removals Plan
(DWG. 24116-R1)

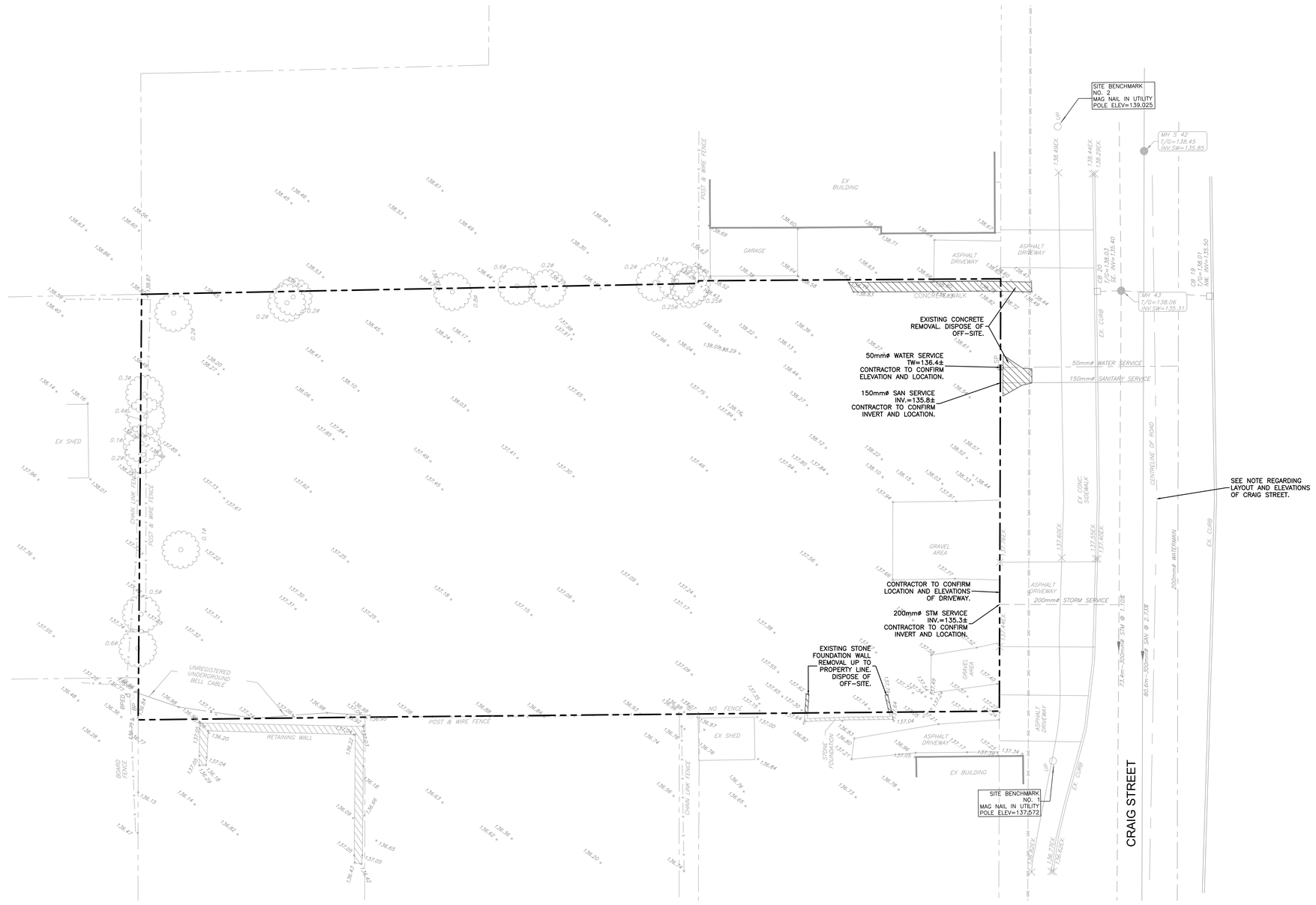
Servicing Plan
(DWG. 24116-S1)

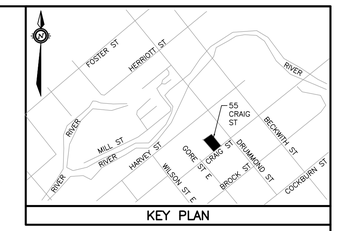
Grading Plan
(DWG. 24116-GR1)

Erosion and Sediment Control Plan
(DWG. 24116-ESC1)

Notes & Details
(DWG. 24116-N1)

Storm Drainage Area Plan
(DWG. 24116-STM1)





LEGEND

- PROPERTY BOUNDARY
- ×104.00 EXISTING ELEVATION
- GAS GAS GAS EXISTING GAS MAIN
- EXISTING CATCH BASIN
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER & MAINTENANCE HOLE
- EXISTING STORM SEWER & MAINTENANCE HOLE
- REMOVALS

NOTE:
1. CRAIG STREET ROW LAYOUT, FINISHED GRADE ELEVATIONS, STORM, SANITARY AND WATERMAIN LOCATIONS AND ELEVATIONS ARE BASED ON RECEIVED INFORMATION OF IMMINENT WORK ALONG CRAIG STREET. REFER TO "CRAIG STREET RECONSTRUCTION – COLE ROAD TO GORE STREET EAST" BY APLIN MARTIN CONSULTANTS, ISSUED FOR CONSTRUCTION DATED 06/11/2025 FOR REFERENCE. LOCATIONS OF SERVICE LATERALS WITHIN ROW COORDINATED THROUGH TOWN OF PERTH. CONTRACTOR SHALL CONFIRM EXISTING LOCATIONS AND ELEVATIONS PRIOR TO COMMENCING AND IDENTIFY DISCREPANCIES TO THE ENGINEER.

NOT FOR CONSTRUCTION

NOTES

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PROPERTY BOUNDARIES ARE DERIVED FROM PLAN OF SURVEY OF PARTH OF LOT 3 (NORTH SIDE CRAIG STREET) REGISTERED PLAN 8828 IN THE TOWN OF PERTH, COUNTY OF LANARK, CALLON DIETZ INC., ONTARIO LAND SURVEYORS. ELEVATIONS SHOWN ARE GEODETIC (CGVD-1928:1978) AND ARE DERIVED FROM THE CAN-NET VRS NETWORK MONUMENT: OTTAWA ELEVATION=95.230. SITE BENCHMARK NO. 1 MAG NAIL IN UTILITY POLE AS SHOWN ON PLAN ELEV= 137.572. SITE BENCHMARK NO. 2 MAG NAIL IN UTILITY POLE AS SHOWN ON PLAN ELEV=139.025.

NO.	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR SPA	30/06/25	SM

SCALE
0 1.5m 3m 6m
HORIZONTAL 1:150

LICENSED PROFESSIONAL ENGINEER
JUL 11/25
S.A.G.MCCAUGHEY
100217133
PROVINCE OF ONTARIO

Robinson Land Development
350 Palladium Drive
Ottawa, ON K2V 1A8
(613) 592-6060 rcii.com

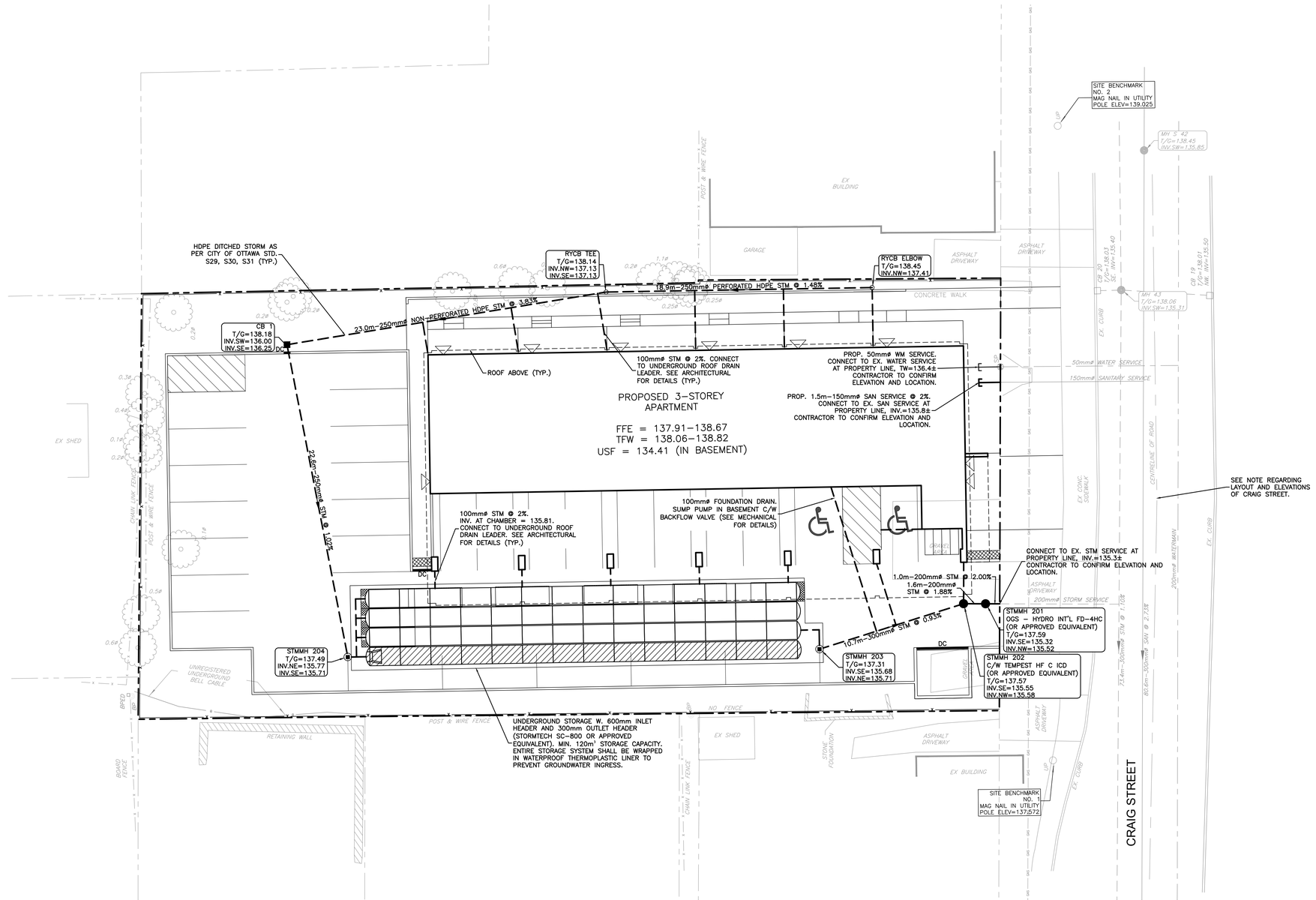
DESIGN	SM
CHECKED	CC
DRAWN	ND
CHECKED	SM
APPROVED	SM

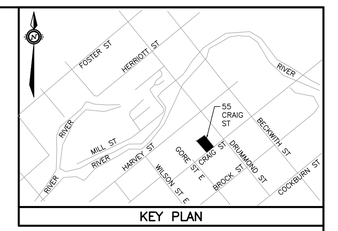
2B DEVELOPMENTS

55 CRAIG STREET,
PERTH, ON

EXISTING CONDITIONS
AND REMOVALS PLAN

PROJECT No.	24116
SURVEY	CD & AOV
DATED	JUNE 2025
DWG. No:	24116-XR1





KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- EXISTING CATCH BASIN
- SP EXISTING CURB STOP & SERVICE POST
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER & MAINTENANCE HOLE
- EXISTING STORM SEWER & MAINTENANCE HOLE
- WATERMAIN
- SANITARY SEWER & MAINTENANCE HOLE
- CATCH BASIN
- REAR YARD CATCH BASIN
- CATCH BASIN MAINTENANCE HOLE
- STORM SEWER & MAINTENANCE HOLE
- ENTRANCE

NOTE:
1. CRAIG STREET ROW LAYOUT, FINISHED GRADE ELEVATIONS, STORM, SANITARY AND WATERMAIN LOCATIONS AND ELEVATIONS ARE BASED ON RECEIVED INFORMATION OF IMMINENT WORK ALONG CRAIG STREET. REFER TO "CRAIG STREET RECONSTRUCTION – COLE ROAD TO GORE STREET EAST" BY APLIN MARTIN CONSULTANTS, ISSUED FOR CONSTRUCTION DATED 06/11/2025 FOR REFERENCE. LOCATIONS OF SERVICE LATERALS WITHIN ROW COORDINATED THROUGH TOWN OF PERTH. CONTRACTOR SHALL CONFIRM EXISTING LOCATIONS AND ELEVATIONS PRIOR TO COMMENCING AND IDENTIFY DISCREPANCIES TO THE ENGINEER.

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NO.	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR SPA	30/06/25	SM

SCALE
0 1.2m 3m 6m
HORIZONTAL 1:150

LICENSED PROFESSIONAL ENGINEER
JUL 11/25
S.A.G.MCCAUGHEY
100217133
PROVINCE OF ONTARIO

Robinson Land Development
350 Palladium Drive
Ottawa, ON K2V 1A8
(613) 592-6060 rcii.com

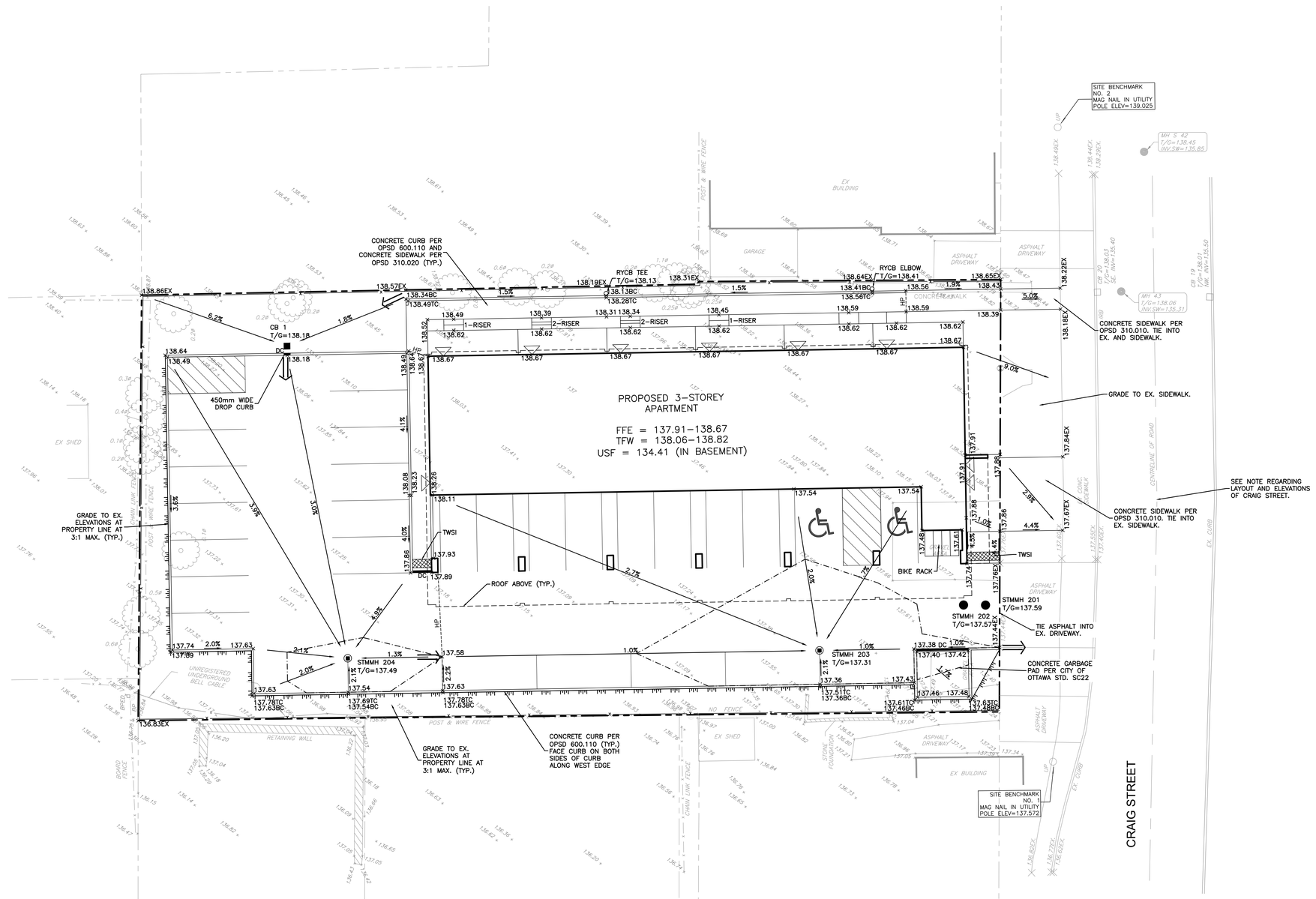
DESIGN	SM
CHECKED	CC
DRAWN	ND
CHECKED	SM
APPROVED	SM

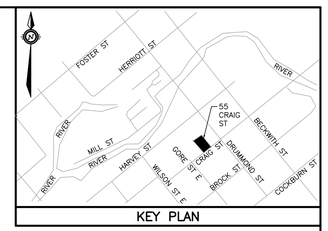
2B DEVELOPMENTS

55 CRAIG STREET, PERTH, ON

SITE SERVICING PLAN

PROJECT No.	24116
SURVEY	CD & AOV
DATED	JUNE 2025
DWG. No:	24116-S1

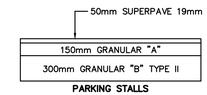




KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- ×104.00 EXISTING ELEVATION
- ×105.00 PROPOSED GRADE
- 2.0% DRAINAGE SLOPE & DIRECTION
- EXISTING CATCH BASIN
- CATCH BASIN
- REAR YARD CATCH BASIN
- CATCH BASIN MAINTENANCE HOLE
- STORM MAINTENANCE HOLE
- ENTRANCE
- 100-YEAR PONDING LIMIT
- MAJOR OVERLAND FLOW ROUTE
- H.P. HIGH POINT
- TERRACING (3H:1V MAX.)



PARKING STALLS

1. REFER TO GEOTECHNICAL INVESTIGATION PREPARED BY KOLLAARD ASSOCIATES DATED JUNE 2, 2025.
2. SUB-EXCAVATE SOFT AREAS AND BACKFILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 150mm LIFTS OR AS OTHERWISE DIRECTED.

PAVEMENT STRUCTURE DETAIL
N.T.S.

NOTE:
1. CRAIG STREET ROW LAYOUT, FINISHED GRADE ELEVATIONS, STORM, SANITARY AND WATERMAIN LOCATIONS AND ELEVATIONS ARE BASED ON RECEIVED INFORMATION OF IMMINENT WORK ALONG CRAIG STREET. REFER TO "CRAIG STREET RECONSTRUCTION – COLE ROAD TO GORE STREET EAST" BY APLIN MARTIN CONSULTANTS, ISSUED FOR CONSTRUCTION DATED 06/11/2025 FOR REFERENCE. LOCATIONS OF SERVICE LATERALS WITHIN ROW COORDINATED THROUGH TOWN OF PERTH. CONTRACTOR SHALL CONFIRM EXISTING LOCATIONS AND ELEVATIONS PRIOR TO COMMENCING AND IDENTIFY DISCREPANCIES TO THE ENGINEER.

NOT FOR CONSTRUCTION

NOTES
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

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NO.	REVISION DESCRIPTION	DATE	BY
1	ISSUED FOR SPA	30/06/25	SM

SCALE
0 1.2m 3m 6m
HORIZONTAL 1:150

LICENSED PROFESSIONAL ENGINEER
JUL 11/25
S.A.G.MCCAUGHEY
100217133
PROVINCE OF ONTARIO

Robinson Land Development
350 Palladium Drive
Ottawa, ON K2V 1A8
(613) 592-6060 rcii.com

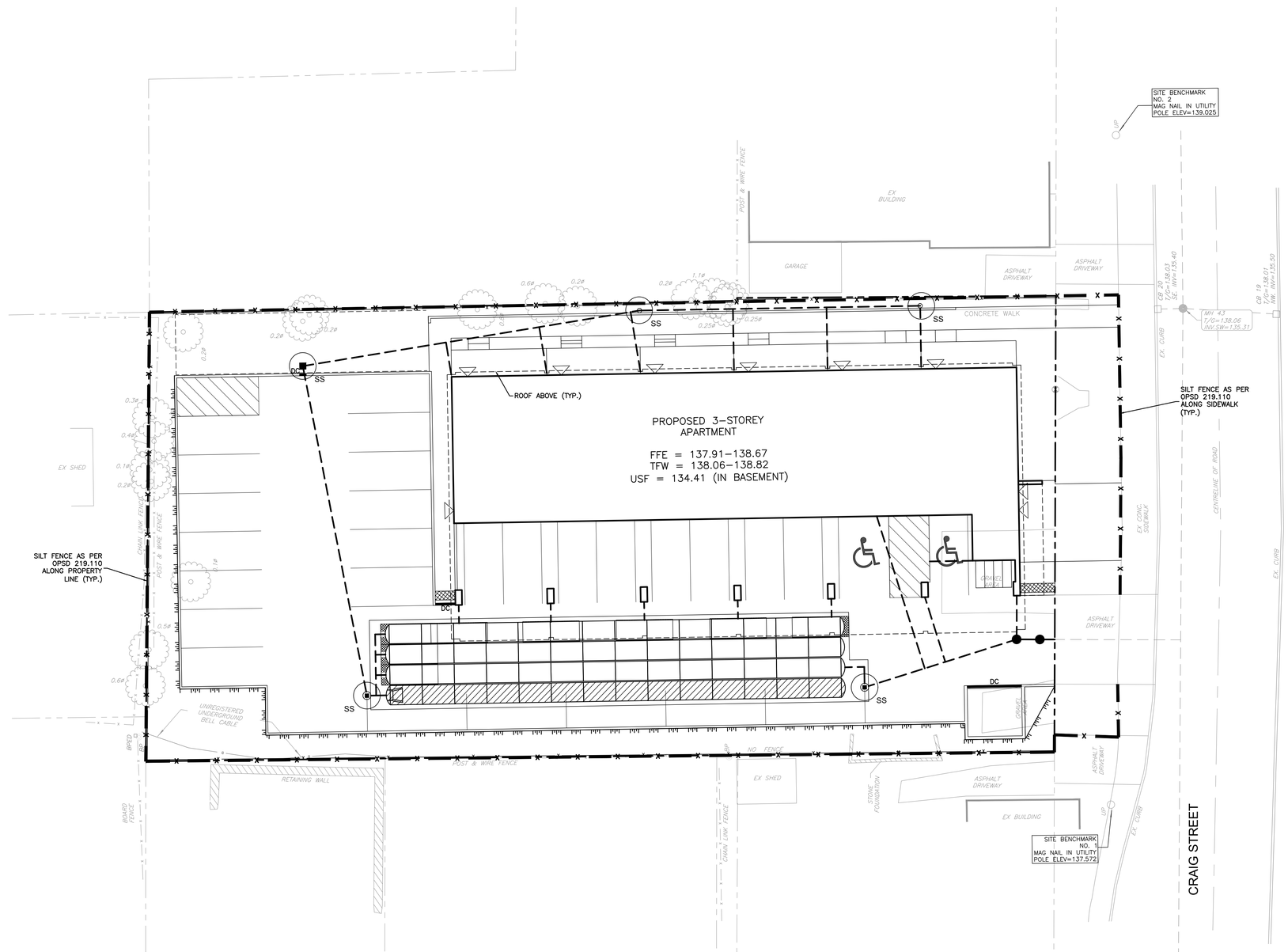
DESIGN	SM
CHECKED	CC
DRAWN	ND
CHECKED	SM
APPROVED	SM

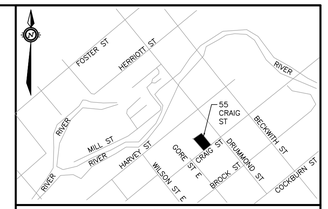
2B DEVELOPMENTS

55 CRAIG STREET,
PERTH, ON

GRADING PLAN

PROJECT No.	24116
SURVEY	CD & AOV
DATED	JUNE 2025
DWG. No:	24116-GR1

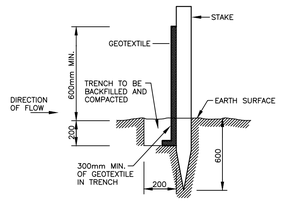




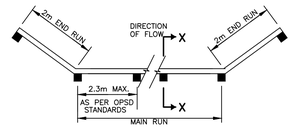
KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- EXISTING CATCH BASIN
- EXISTING STORM SEWER & MAINTENANCE HOLE
- CATCH BASIN
- REAR YARD CATCH BASIN
- CATCH BASIN MAINTENANCE HOLE
- STORM SEWER & MAINTENANCE HOLE
- SILT FENCE
- SILT SACK (OR APPROVED EQUIVALENT)

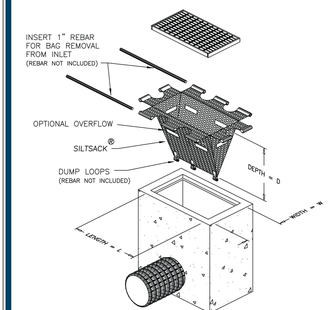


SECTION X-X
N.T.S.



SILT FENCE BARRIER DETAIL
N.T.S.

Typical Siltsack® Construction - Type B



NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE ULTIMATE RECEIVING WATERCOURSE DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
2. LIMIT THE EXTENT OF EXPOSED SOILS AT ANY GIVEN TIME.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATION HAS BEEN RE-ESTABLISHED IN ALL DISTURBED AREAS. RE-VEGETATE DISTURBED AREAS AS SOON AS POSSIBLE.
4. STOCKPILE SOIL AWAY (15 METRES OR GREATER) FROM WATERCOURSES, DRAINAGE FEATURES AND TOP OF STEEP SLOPES.
5. SILT SACKS ARE TO BE PLACED UNDERNEATH THE FRAME AND COVER OF ALL PROPOSED AND EXISTING CATCH BASIN AND OPEN COVER STORM MANHOLES UNTIL CONSTRUCTION IS COMPLETED.
6. A SILT FENCE BARRIER SHALL BE INSTALLED AS PER OPSD 219.110 WHERE INDICATED AND MAINTAINED AS REQUIRED.
7. DURING ACTIVE CONSTRUCTION PERIODS, VISUAL INSPECTIONS SHALL BE UNDERTAKEN ON A WEEKLY BASIS AND AFTER MAJOR STORM EVENTS (>25mm RAIN IN 24 HOUR PERIOD) ON SEDIMENT CONTROL BARRIERS AND ANY DAMAGE REPAIRED IMMEDIATELY.
8. EROSION AND SEDIMENT CONTROL BARRIERS SHALL ALSO BE ASSESSED (AND REPAIRED AS REQUIRED) FOLLOWING SIGNIFICANT SNOWMELT EVENTS.
9. VISUAL INSPECTIONS SHALL ALSO BE UNDERTAKEN IN ANTICIPATION OF LARGE STORM EVENTS (OR A SERIES OF RAINFALL AND/OR SNOWMELT DAYS) THAT COULD POTENTIALLY YIELD SIGNIFICANT RUNOFF VOLUMES.
10. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION OPERATIONS.
11. IN SOME CASES, BARRIERS MAY BE REMOVED TEMPORARILY TO ACCOMMODATE THE CONSTRUCTION OPERATIONS. THE AFFECTED BARRIERS SHALL BE REINSTATED IMMEDIATELY AFTER CONSTRUCTION OPERATIONS ARE COMPLETED.
12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED AS REQUIRED AS THE SITE BECOMES DEVELOPED.
13. SEDIMENT CONTROL DEVICES SHALL BE CLEANED OF ACCUMULATED SEDIMENTATION AS REQUIRED AND REPLACED AS NECESSARY.
14. DURING THE COURSE OF CONSTRUCTION, IF THE ENGINEER BELIEVES THAT ADDITIONAL PREVENTION METHODS ARE REQUIRED TO CONTROL EROSION AND SEDIMENTATION, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES, AS REQUIRED, TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST.
15. CONSTRUCTION AND MAINTENANCE REQUIREMENTS FOR EROSION AND SEDIMENT CONTROLS ARE TO COMPLY WITH OPSS 805.

NOT FOR CONSTRUCTION

NOTES

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NO.	REVISION DESCRIPTION	DATE	BY

SCALE
0 1.5m 3m 6m
HORIZONTAL 1:150

Robinson Land Development
350 Palladium Drive
Ottawa, ON K2V 1A8
(613) 592-6060 rcii.com

DESIGN	SM
CHECKED	CC
DRAWN	ND
CHECKED	SM
APPROVED	SM

2B DEVELOPMENTS

55 CRAIG STREET, PERTH, ON

EROSION AND SEDIMENT CONTROL PLAN

PROJECT No.	24116
SURVEY	CD & AOV
DATED	JUNE 2025
DWG. No:	24116-ESC1

GENERAL NOTES:

1. ALL WORKS AND MATERIALS SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF PERTH AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), AS AMENDED BY THE TOWN OF PERTH.
2. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION, TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
3. ALL DIMENSIONS AND ELEVATIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
4. DESIGN ELEVATIONS GIVEN ARE TO BE ADHERED TO WITH NO CHANGES WITHOUT PRIOR WRITTEN APPROVAL BY ROBINSON LAND DEVELOPMENT.
5. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS TO PROPOSED GRADES WHERE NOTED, AND EXISTING GRADES OTHERWISE.
6. CONTRACTOR SHALL ADJUST FINAL GRADE OF EXISTING MAINTENANCE HOLES, VALVE BOXES, ETC. AS REQUIRED TO MATCH PROPOSED GRADES.
7. ANY AREAS BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE.
8. RELOCATION OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
9. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
10. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE M.T.O. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST AMENDMENT).
11. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
12. THE SUPPORT OF ALL UTILITIES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
13. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH, AS SPECIFIED BY OPSD, IS EXCEEDED.
14. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REFER TO LANDSCAPE PLANS FOR ANY TREE CUTTING.
15. REFER TO GEOTECHNICAL INVESTIGATION PREPARED BY KOLLAARD ASSOCIATES, DATED JUN 2025.
16. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE FOR DEWATERING, SUPPORT AND PROTECTION OF EXCAVATIONS AND TRENCHING AS WELL AS RELEASE OF ANY PUMPED GROUNDWATER IN A CONTROLLED AND APPROVED MANNER.
17. DO NOT CONSTRUCT USING DRAWINGS THAT ARE NOT MARKED "ISSUED FOR CONSTRUCTION".
18. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.
19. THE CONTRACTOR SHALL BE RESPONSIBLE TO MANAGE EXCESS SOIL IN ACCORDANCE WITH ONTARIO REGULATION 406/19.

STORM SEWERS:

1. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2 (LATEST AMENDMENT). ALL NON-REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.1 (LATEST AMENDMENT). PIPE SHALL BE JOINTED WITH STD. RUBBER GASKETS AS PER CSA A257.3 (LATEST AMENDMENT).
2. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
3. ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH TOWN OF PERTH STD. SE-04 UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY GEOTECHNICAL REPORT.
4. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADDITIONAL BEDDING, A DIFFERENT TYPE OF BEDDING OR A HIGHER PIPE STRENGTH AT HIS OWN EXPENSE AND SHALL ALSO BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
5. ALL STORM MANHOLES SHALL BE 1200mm DIAMETER AS PER OPSD 701.010 UNLESS OTHERWISE NOTED.
6. ALL CATCH BASINS SHALL BE 600mm X 600mm AS PER OPSD 705.010 UNLESS OTHERWISE NOTED.
7. STORM MANHOLE FRAME AND COVERS SHALL BE AS PER OPSD 401.010
8. CB FRAME AND COVER PER OPSD 400.020
9. STORM SEWER MANHOLES SERVING SEWERS LESS THAN 900mm SHALL BE CONSTRUCTED WITH A 300mm SUMP. FOR STORM SEWERS 900mm AND OVER USE BENCHING IN ACCORDANCE WITH OPSD 701.021.
10. FOUNDATION DRAIN SUMP PUMP TO BE INSTALLED WITH BACKWATER VALVES (DESIGN BY OTHERS).
11. SEWERS WITH LESS THAN 1.4m COVER SHALL BE INSULATED PER TOWN OF PERTH STD. WA-02.

SANITARY SEWERS:

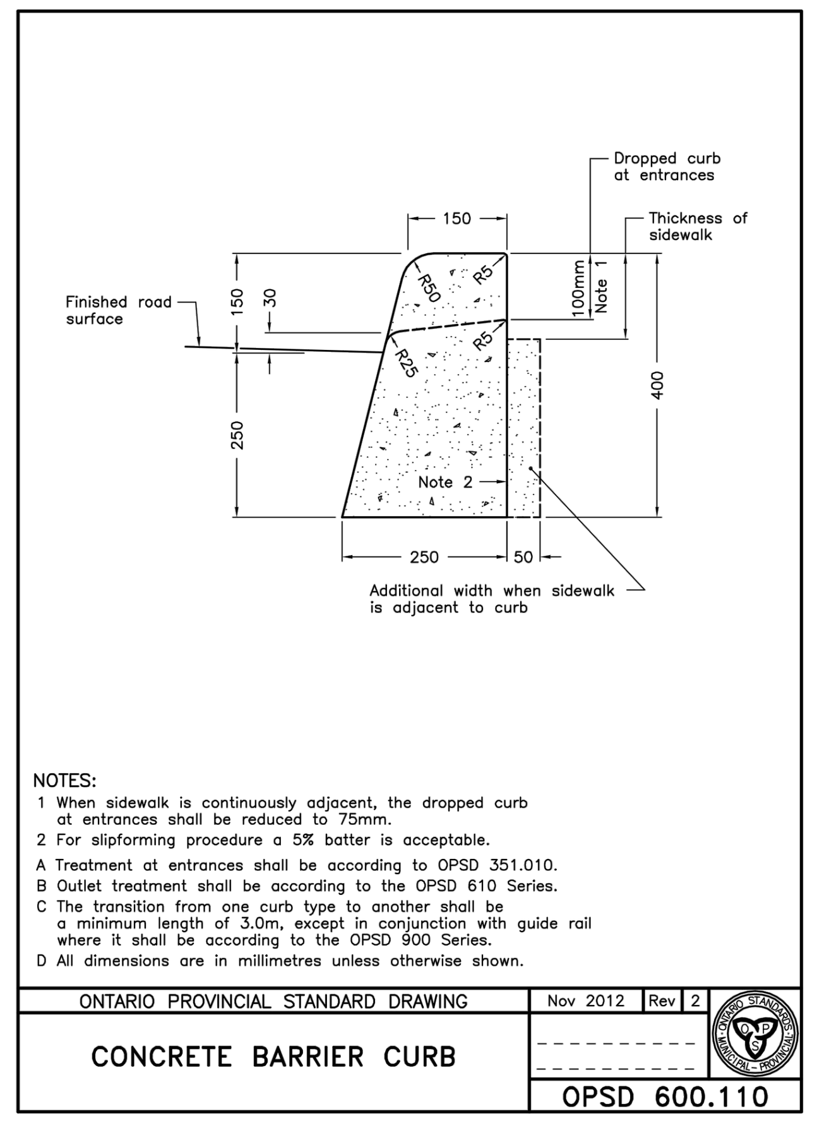
1. ALL SANITARY SEWERS SHALL BE PVC SDR 35 AND SERVICE LATERALS SHALL BE PVC SDR 28, IN ACCORDANCE WITH TOWN OF PERTH STANDARDS.
2. SANITARY SEWER TRENCH AND BEDDING SHALL BE AS PER TOWN OF PERTH STD. SE-04 UNLESS OTHERWISE NOTED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY GEOTECHNICAL REPORT.
3. SUMP PUMP TO BE PROVIDED FOR BASEMENT FLOOR DRAIN (DESIGN BY OTHERS).

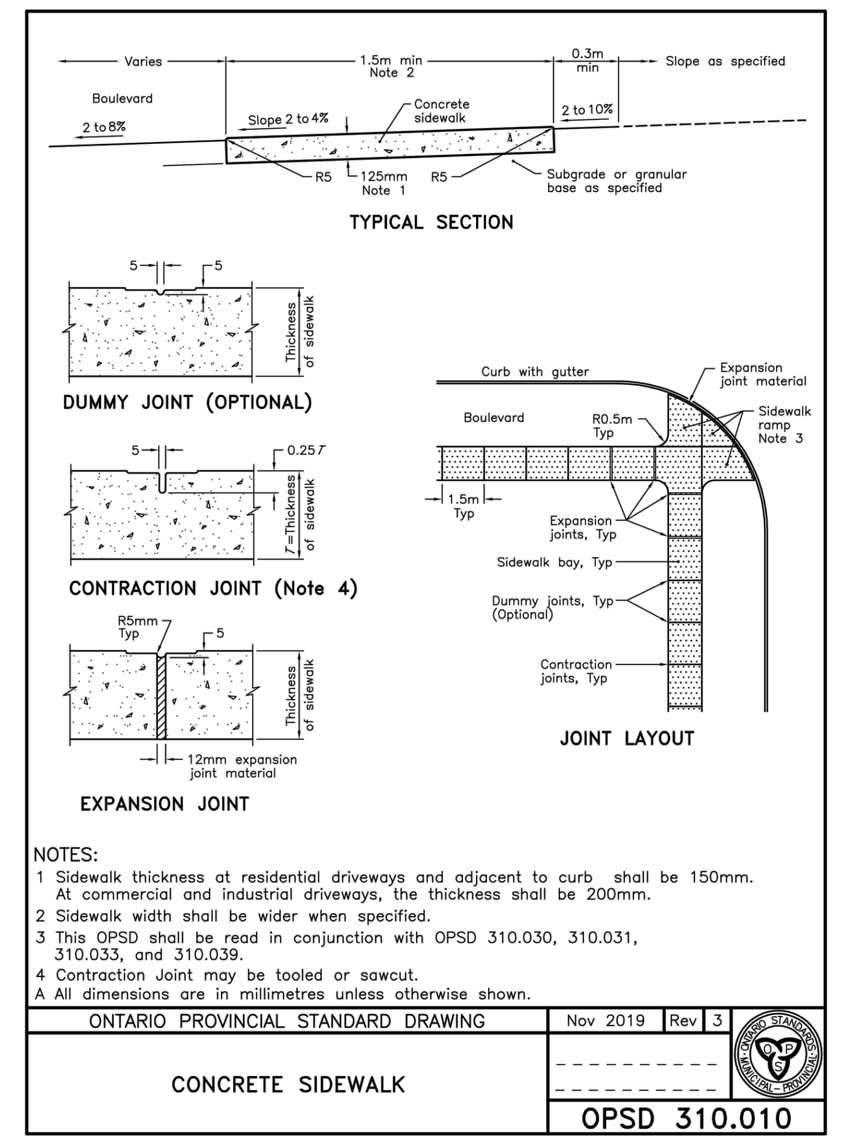
WATER SUPPLY:

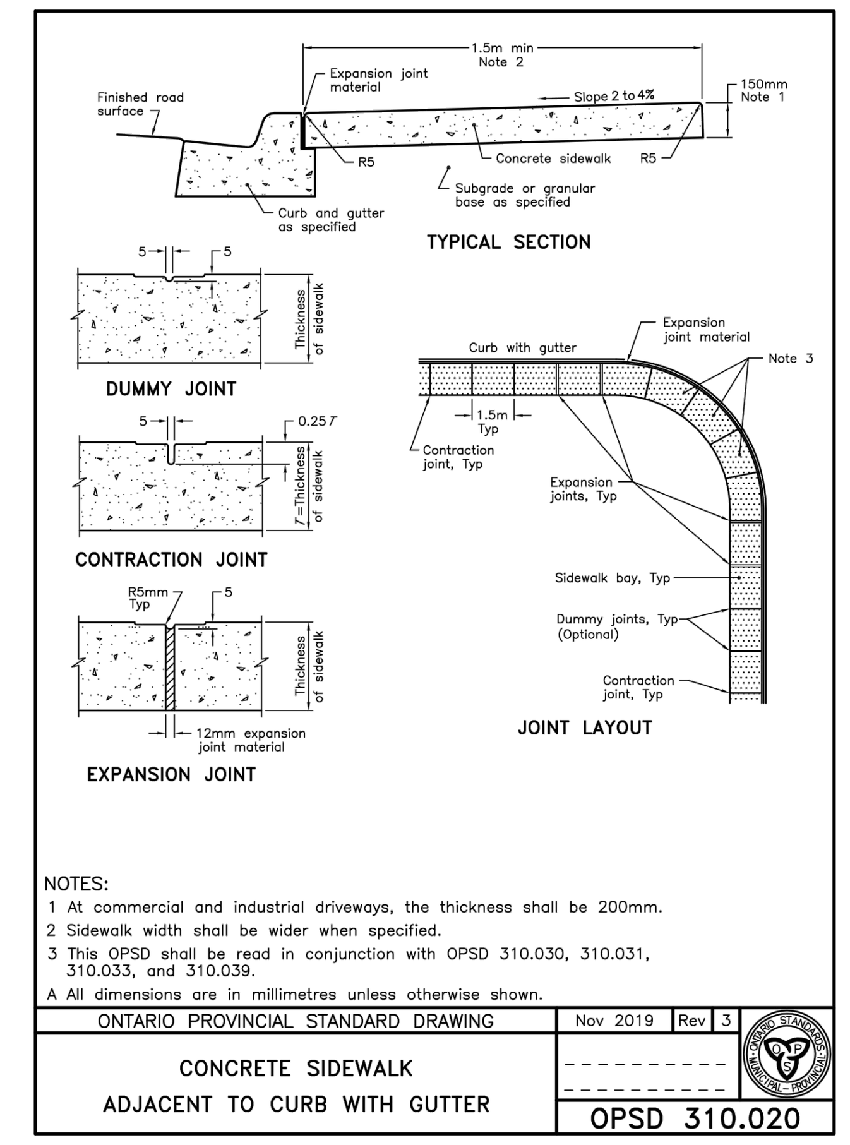
1. ALL WATER SERVICES SHALL BE TYPE K SOFT COPPER CONFORMING TO ASTM B88.
2. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH TOWN OF PERTH STD. SE-04, UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY GEOTECHNICAL REPORT.
3. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS AS PER TOWN OF PERTH REQUIREMENTS.

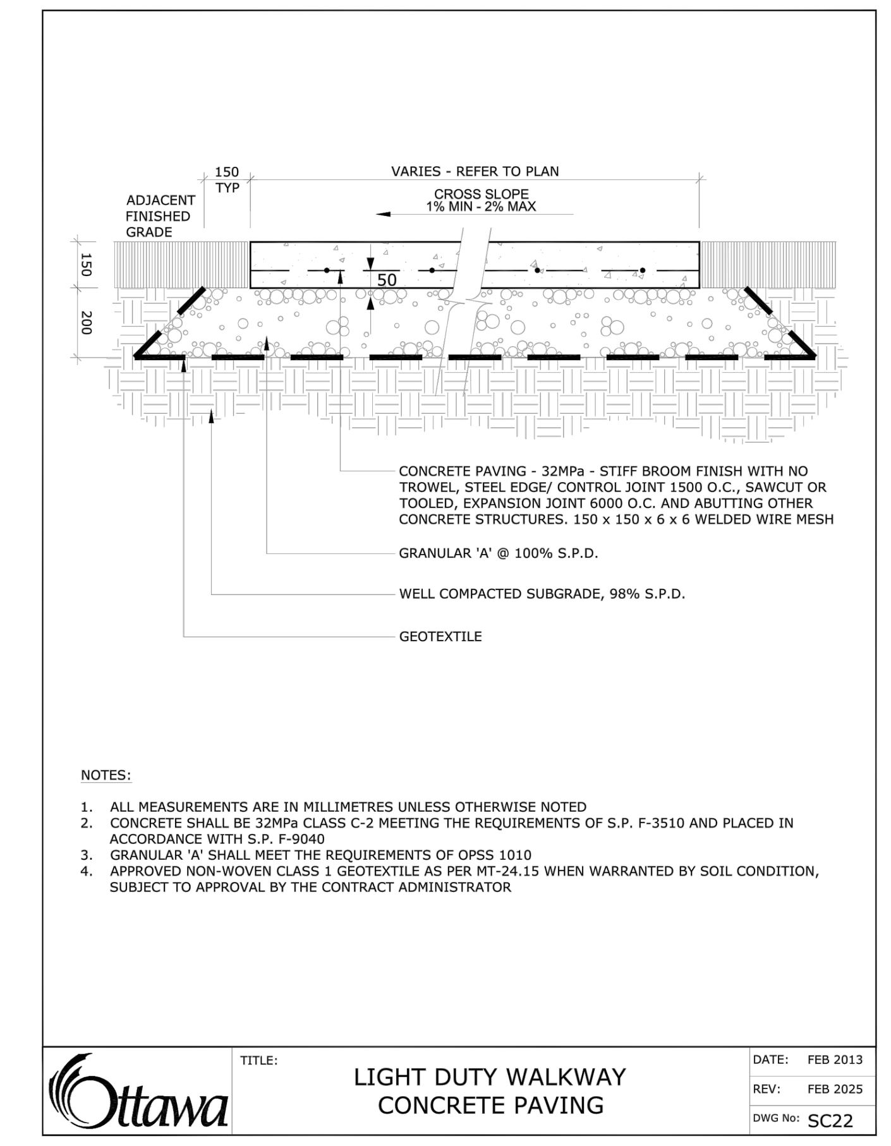
ROADWORK SPECIFICATIONS:

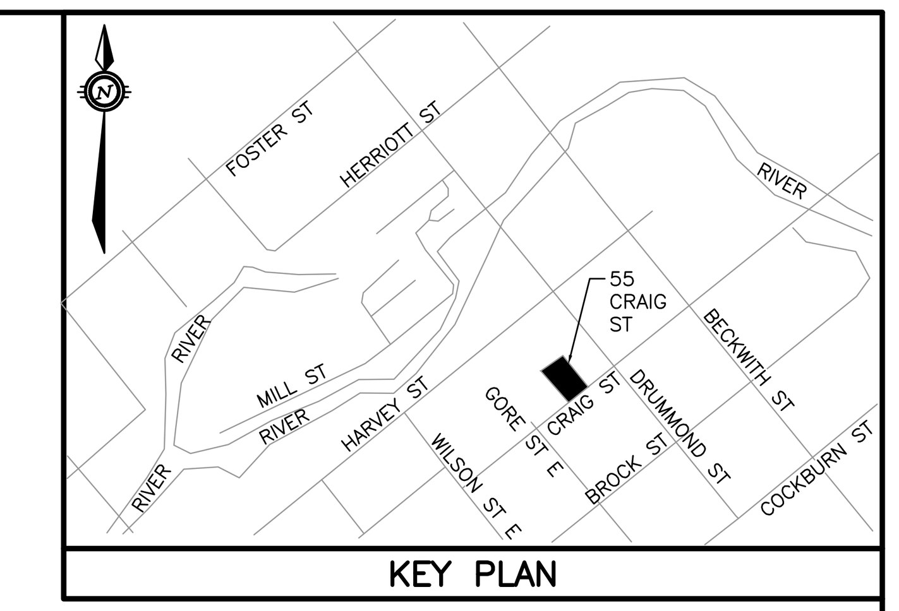
1. CONCRETE CURB SHALL BE IN ACCORDANCE WITH OPSD 600.110. PROVISION SHALL BE MADE FOR CURB DEPRESSIONS AT SIDEWALKS AND DRIVEWAYS.
2. ALL BARRIER CURB TO BE 150mm ABOVE FINISHED ASPHALT GRADE UNLESS OTHERWISE NOTED.
3. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH OPSD 310.010 AND 310.020
4. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA.
5. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE ENGINEER.
6. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 300mm LIFTS.
7. ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW-CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW ASPHALT.
8. PAVEMENT DESIGN AS PER GEOTECHNICAL RECOMMENDATIONS. SEE REPORT BY KOLLAARD ASSOCIATES, DATED JUN 2025.

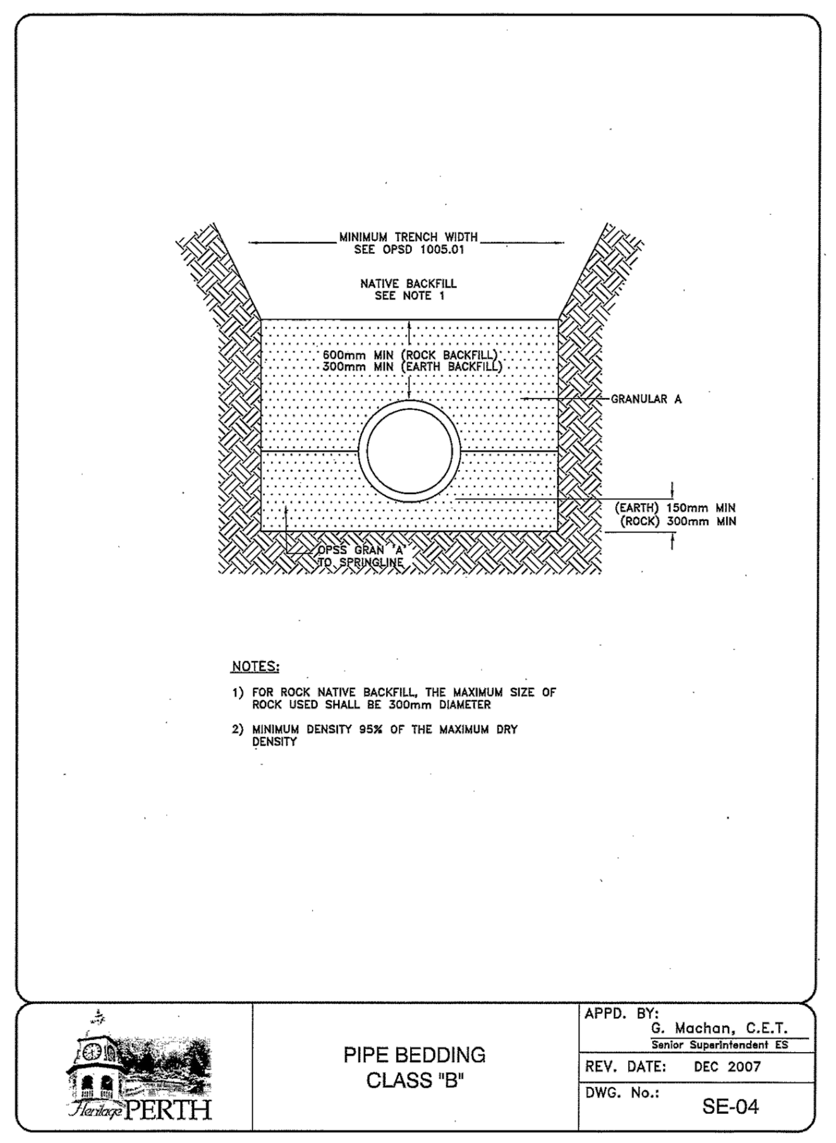


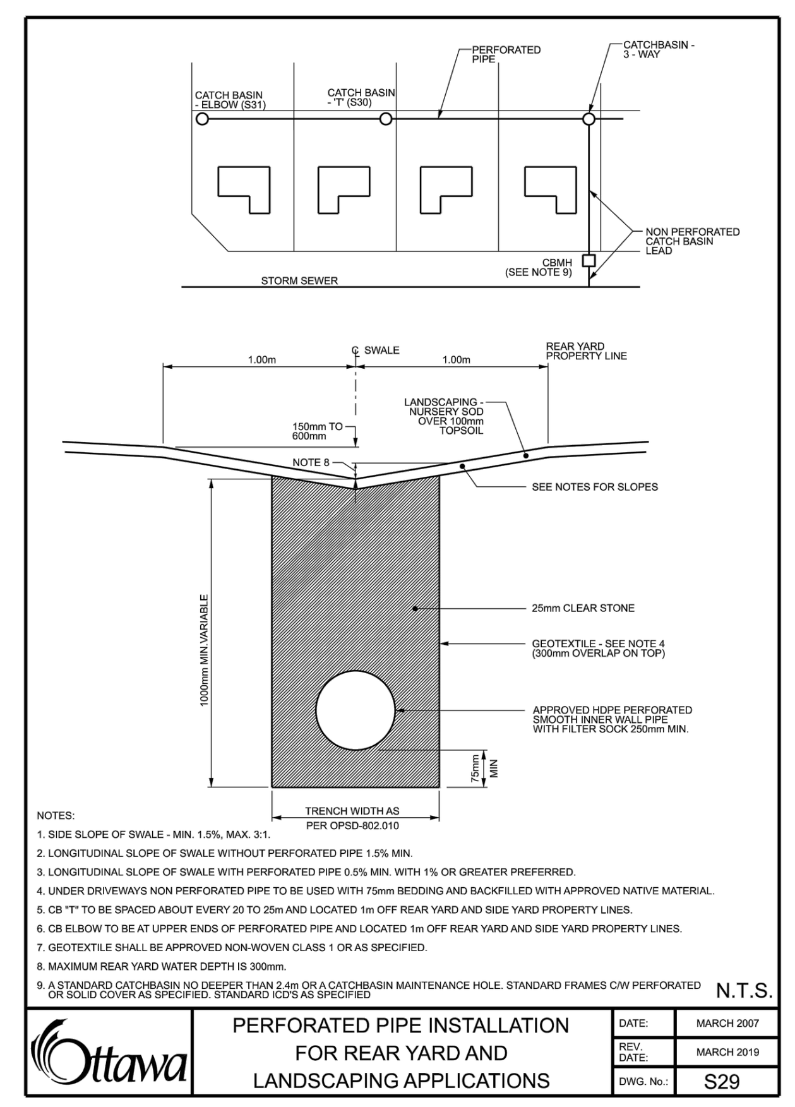


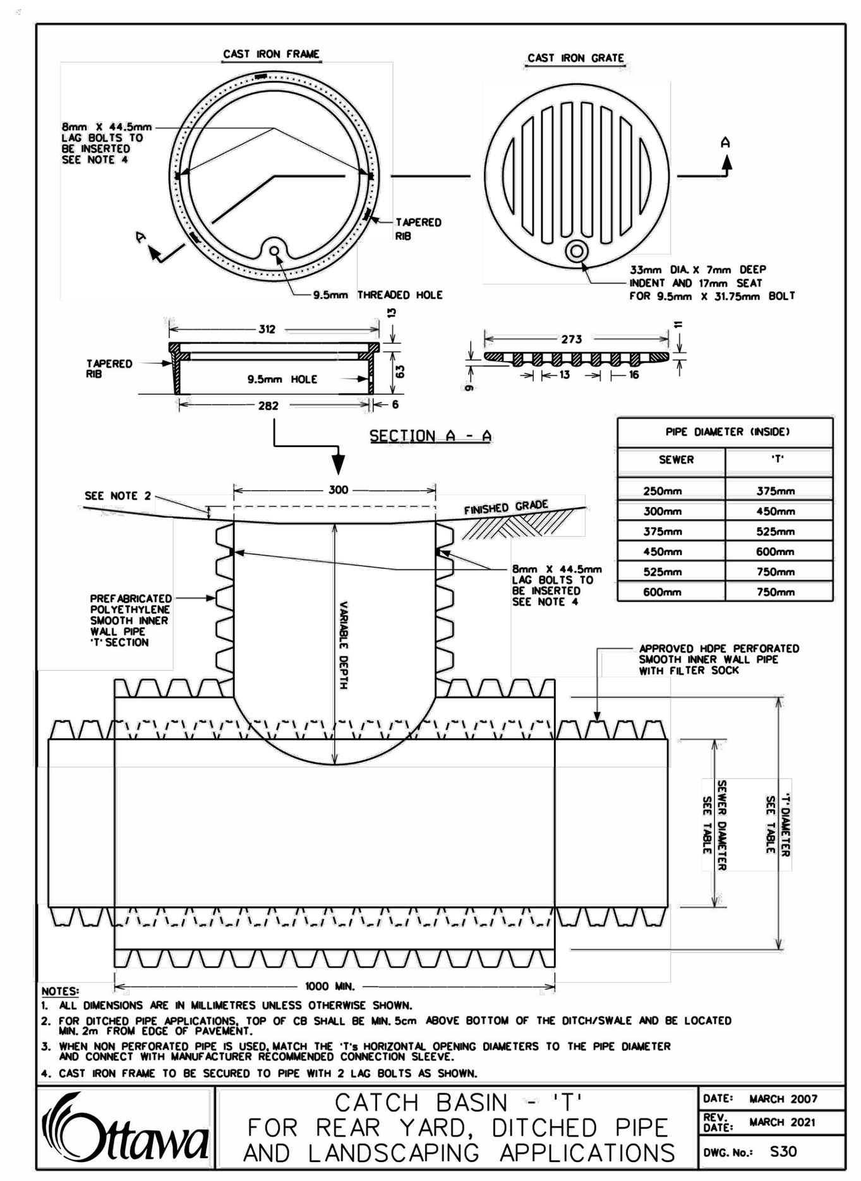


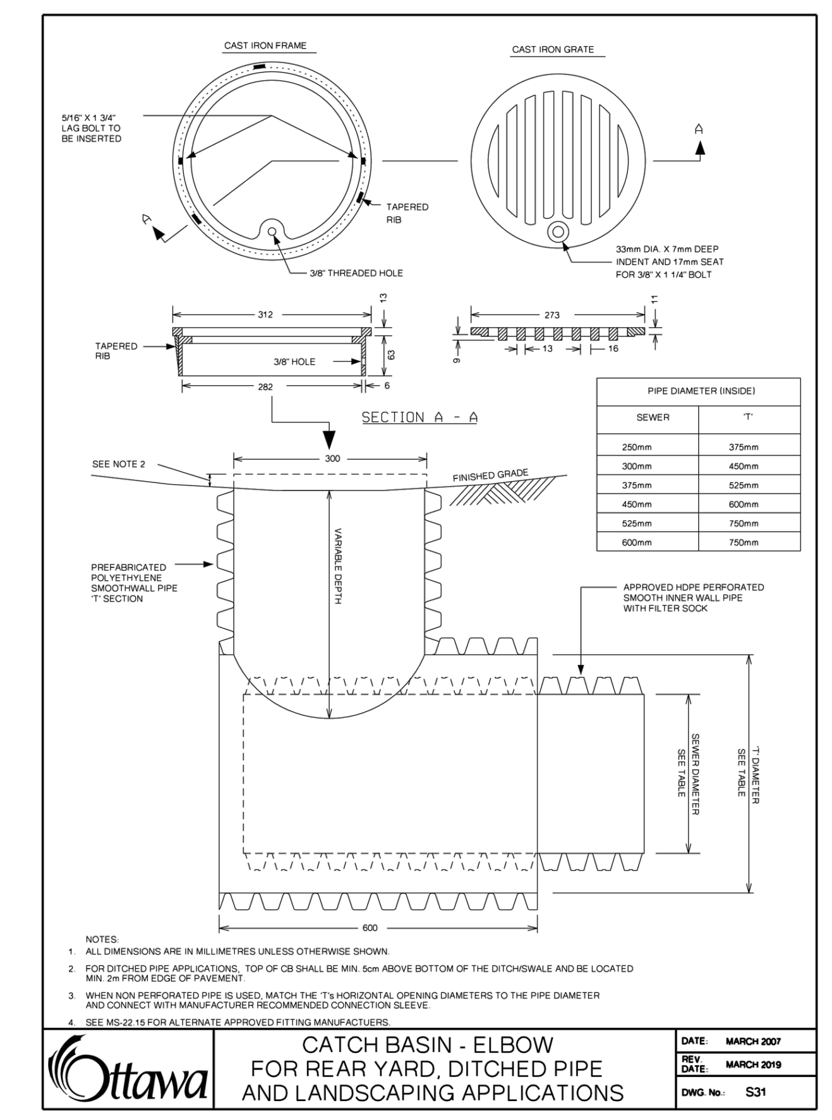












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SCALE

LICENSED PROFESSIONAL ENGINEER
JUL 11/25
S.A.G.MCCAUGHEY
100217133
PROVINCE OF ONTARIO

Robinson Land Development
350 Palladium Drive
Ottawa, ON K2V 1A8
(613) 592-6060 rcii.com

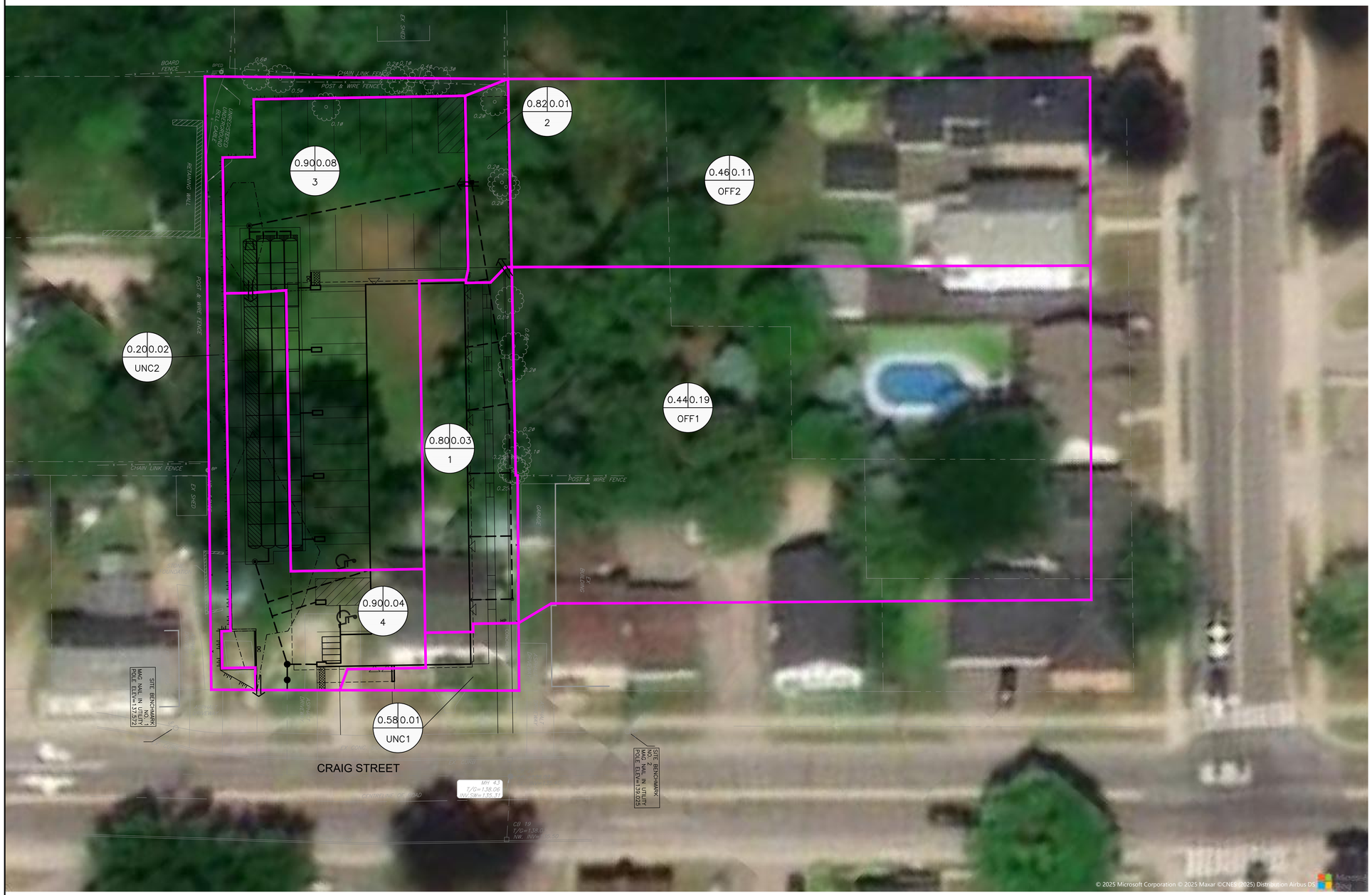
DESIGN	SM
CHECKED	CC
DRAWN	ND
CHECKED	SM
APPROVED	SM

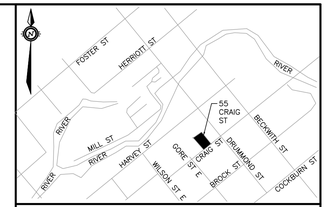
2B DEVELOPMENTS

55 CRAIG STREET,
PERTH, ON

NOTES AND DETAILS PLAN

PROJECT No.	24116
SURVEY	CD & AOV
DATED	JUNE 2025
DWG. No:	24110-N1





KEY PLAN

LEGEND

- PROPERTY BOUNDARY
- EXISTING CATCH BASIN
- EXISTING STORM SEWER & MAINTENANCE HOLE
- CATCH BASIN
- REAR YARD CATCH BASIN
- CATCH BASIN MAINTENANCE HOLE
- STORM SEWER & MAINTENANCE HOLE
- ENTRANCE
- 100-YEAR PONDING LIMIT
- MAJOR OVERLAND FLOW ROUTE
- H.P. HIGH POINT
- TERRACING (3H:1V MAX.)
- STORM DRAINAGE AREA

RUNOFF COEFFICIENT
0.50 0.28 ← AREA (ha)
STM1
DRAINAGE AREA ID

NOT FOR CONSTRUCTION

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LICENSED PROFESSIONAL ENGINEER
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DESIGN	SM
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2B DEVELOPMENTS

55 CRAIG STREET,
PERTH, ON

STORM DRAINAGE PLAN

PROJECT No.	24116
SURVEY	CD & AOV
DATED	JUNE 2025
DWG. No:	24116-STM1

Appendix C

Water Demand Calculations

Fire Demand Calculations

Hydrant Coverage Sketch

WATERMAIN DESIGN SHEET

Robinson Consultants

Junction	RESIDENTIAL POPULATION				NON-RES			AVG. DAILY					MAX. DAILY					PEAK HOURLY				
	ACTUAL COUNT				IND. (ha)	COMM. (ha)	INST. (ha)	DEMAND (L/s)					DEMAND (L/s)					DEMAND (L/s)				
	Studio Apartment	1 Bedroom Apartment	2 Bedroom Apartment	Total Population				RES.	IND.	COMM.	INST.	TOTAL	RES.	IND.	COMM.	INST.	TOTAL	RES.	IND.	COMM.	INST.	TOTAL
BLDG		30		60				0.31				0.31	0.63				0.63	1.38				1.38
Total		**30**		**60**				**0.31**				**0.31**	**0.63**				**0.63**	**1.38**				**1.38**

Residential Densities

Low Density (SFH's) =	3.8	cap/unit
Medium Density (Townhouses) =	3.5	cap/unit

Apartments

1 Bedroom =	**2.0**	**cap/unit**
2 Bedroom =	**3.0**	**cap/unit**
Condo (Seniors) =	1.3	cap/unit

Avg. Daily Demand:			Max. Daily Demand:		Peak Hourly Demand:	
Residential =	**450**	**L/cap/day**	**2.0**	**x Avg. Day**	**2.2**	**x Max. Day**
Industrial (Light) =	35000	L/ha/day	1.5	x Avg. Day	1.8	x Max. Day
Commercial =	28000	L/ha/day	1.5	x Avg. Day	1.8	x Max. Day

Project Name:	53 Craig St.
Project Location:	Perth, ON
Project No:	24116
Date:	12-May-25
Building Type:	Residential
Building Being Considered:	BLDG

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Calculations for Total Required Fire Flow

Step	Parameter				Value	
A	**Type of Construction**	**Options**	**C**			
		Wood Frame (Type V)	1.5	Wood Frame (Type V)	1.5	
		Ordinary Construction (Type III)	1.0			
		Non-Combustible Construction (Type II)	0.8			
		Fire Resistive Construction (Type I)	0.6			
B	Ground Floor Area				1711.0	m^2
	Total Effective Floor Area				**1,711.0**	**m^2**
C	**Fire Flow**				**14,000**	**L/min**
D	**Occupancy Class**	**Options**	**Charge**			
		Non-combustible	-0.25	Limited Combustible	-0.15	
		Limited Combustible	-0.15			
		Combustible	0.00			
		Free burning	0.15			
		Rapid Burning	0.25			
	Occupancy Adjustment				**-2100**	**L/min**
	Fire Flow				**11,900**	**L/min**
E	**Sprinkler Protection**	**Options**	**Charge**			
		Automatic Sprinkler Protection	-0.30	None	0.00	
		None	0.00			
		Water Supply is Standard for System and Hose Lines	-0.10	No	0.00	
		Full Supervision of the Sprinker System	-0.10	No	0.00	
	Sprinkler Reduction				**0**	**L/min**
	Exposures					
	West Side (59 Craig St.)					
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems				No	
	Exposed Building Fully Protected with Automatic Sprinker Systems				No	
	Exposed Wall Length				15	m
	Exposed Wall No. of Storeys				2	
	Length-Height Factor of Exposed Wall				30	m.storeys
	Construction Type of Exposed Wall	**Options**		Wood Frame		
		Wood Frame				
		Ordinary with Unprotected Openings				
		Ordinary without Unprotected Openings				
		Noncombustible or Fire Resistive with Unprotected Openings				
		Noncombustible or Fire Resistive without Unprotected Openings				
	Separation Distance				15	m
	West Side (59 Craig St.) Exposure Charge				**0.11**	
	Exposures					

	West Side (131 & 133 Gore St. E)				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			18	m
	Exposed Wall No. of Storeys			2	
	Length-Height Factor of Exposed Wall			36	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance			24	m
	West Side (131 & 133 Gore St. E) Exposure Charge			**0.02**	
	North Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			8	m
	Exposed Wall No. of Storeys			2	
	Length-Height Factor of Exposed Wall			16	m.storeys
F	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	46	m
	North Side Exposure Charge			**0.00**	
	East Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			20	m
	Exposed Wall No. of Storeys			2	
	Length-Height Factor of Exposed Wall			40	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance			8	m
	East Side Exposure Charge			**0.16**	
	South Side				
	Subject Building and Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Building Fully Protected with Automatic Sprinker Systems			No	
	Exposed Wall Length			9	m
	Exposed Wall No. of Storeys			2	
	Length-Height Factor of Exposed Wall			18	m.storeys
	Construction Type of Exposed Wall	**Options**	Wood Frame		
		Wood Frame			
		Ordinary with Unprotected Openings			
		Ordinary without Unprotected Openings			
		Noncombustible or Fire Resistive with Unprotected Openings			
		Noncombustible or Fire Resistive without Unprotected Openings			
	Separation Distance		**>30m; No Exposure**	37	m
	South Side Exposure Charge			**0.00**	
	Total Exposure Charge			**0.29**	**< 0.75**
	Increase for Exposures			**3451**	**L/min**
G	**Total Required Fire Flow**			**15,000**	**L/min**
Notes:					

1. Fire flow calculations have been prepared in accordance with Fire Underwriters Survey (v. 2020)

2. Floor areas used in Step B based on all above-grade floors

3. Where buildings are at a diagonal to each other, the shortest separtion distance is increased by 3 metres and used as the exposure distance (Ref. FUS v.2020 pg.30).

LEGEND

PROPERTY BOUNDARY

HYDRANT

NOT FOR CONSTRUCTION

Robinson
Land Development

scale 1:1000	CLIENT: 2B Developments	project no. 24116
date 30/05/25	TITLE: Hydrant Coverage Sketch	HYD–1
drawn by SM		

Appendix D

Sanitary Sewer Design Sheet

SANITARY SEWER DESIGN SHEET

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LOCATION				UNIT COUNT			RESIDENTIAL AREA AND POPULATION				RESIDENTIAL FLOW			CUM. PEAK DESIGN FLOW (L/s)	PIPE						
							INDIVIDUAL		CUMULATIVE												
STREET	FROM MH	TO MH	DRAINAGE AREA (ha)	STUDIO	1 BEDROOM	2 BEDROOM	POP.	AREA (ha)	POP.	AREA (ha)	PEAK FACTOR	PEAK POP. FLOW (L/s)	EXTRAN. FLOW (L/s)		LENGTH (m)	DIAMETER (mm)	SLOPE (%)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	EXCESS CAPACITY (L/s)	PERCENT FULL
CRAIG ST.	BLDG	EX.SERVICE	0.19		30		60	0.19	60	0.19	4.00	0.97	0.05	**1.02**	1.5	150	2.0%	21.56	1.22	0.62	20.54	5%
CRAIG ST.	EX.SERVICE	EX.SAN	0.0						60	0.19	4.00	0.97	0.05	**1.02**	10	150	2.0%	21.56	1.22	0.62	20.54	5%

DESIGN PARAMETERS

			Per Unit Populations:		
Average Daily Flow =	**350**	**L/cap/day**	Single Family	3.8	persons/unit
Commercial Flow =	28000	L/ha/day	Semi-detached	3.8	persons/unit
Industrial Flow =	35000	L/ha/day	Townhouse	3.5	persons/unit
Maximum Residential Peak Factor =	**4.0**		Apartments:		
Harmon - Correction Factor (K) =	1.00		**1 Bedroom**	**2.0**	**persons/unit**
Comm/Inst. Peak Factor =	1.5		2 Bedroom	3.0	persons/unit
Extraneous Flow =	**0.28**	**L/s/ha**	Condo (Seniors)	1.3	persons/unit
Minimum Full-Flow Velocity =	0.6	m/s			
Maximum Full-Flow Velocity =	2.4	m/s			

Appendix E

Pre- and Post-Development Flow Rates

Storm Sewer Design Sheets

ICD Calculations

Storage Volume Calculations

Underground Storage System Cutsheet

OGS Cutsheet

	Impervious	Pervious	Gravel
C	0.9	0.2	0.8

Runoff Coefficient Calculations - Pre-Development Runoff

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Gravel Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
PRE	0.001	0.180	0.006	0.186	0.22	0.28	3.5
	0.001	**0.180**	**0.006**	**0.186**	**0.22**	**0.28**	**3.5**

Runoff Coefficient Calculations - Site-Controlled Runoff

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Gravel Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
1	0.027	0.005	0.000	0.032	0.80	1.00	85.6
2	0.007	0.001	0.000	0.008	0.82	1.00	88.0
3	0.082	0.000	0.000	0.082	0.90	1.00	100.0
4	0.038	0.000	0.000	0.038	0.90	1.00	100.0
	0.154	**0.006**	**0.000**	**0.160**	**0.88**	**1.00**	**96.5**

Runoff Coefficient Calculations - Site-Uncontrolled Runoff

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Gravel Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
UNC1	0.004	0.004	0.000	0.008	0.58	0.72	53.8
UNC2	0.000	0.019	0.000	0.019	0.20	0.25	0.0
	0.004	**0.022**	**0.000**	**0.027**	**0.31**	**0.39**	**16.2**

Runoff Coefficient Calculations - Off-Site Runoff Entering Site

Drainage Area ID	Impervious Area (ha)	Pervious Area (ha)	Gravel Area (ha)	Total Area (ha)	C	C (100 YR)	Percent Impervious (%)
OFF1	0.066	0.127	0.000	0.193	0.44	0.55	34.2
OFF2	0.041	0.068	0.000	0.109	0.46	0.58	37.6
	0.107	**0.195**	**0.000**	**0.302**	**0.45**	**0.56**	**35.4**

Note: C_{100} = C * 1.25 (max. 1.0)

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Time of Concentration - Airport Method

Pre-Development Site incl. Off-Site (for Pre-Development Flows)

C =	0.36	
L =	90	m
S =	2.5	%
Tc =	**16.9**	

OFF1 & OFF2 Drainage Area (for Sewer Design Sheets)

C =	0.45	
L =	60	m
S =	2.0	%
Tc =	13.1	

Notes:

1. Tc = 3.26 x (1.1 – C) x L^0.5 / S^0.33
2. Slopes assumed based on "Craig Street Reconstruction" by Aplin Martin Consultants, IFC dated 06/10/2025

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Pre-Development Flow Calculations (incl. Off-Site)

Drainage Area	PRE	Drainage Area	OFF1 & 2
Area (ha) =	0.186	Area (ha) =	0.302
C =	0.22	C =	0.45
C (100 YR) =	0.28	C (100 YR) =	0.56

Design Event	Time (min)	Rainfall Intensity (mm/hr)	On-Site Flow (L/s)	Off-Site Flow (L/s)	Total Flow (L/s)
5 Year	16.9	77.9	8.9	29.3	38.2
100 Year	16.9	133.2	19.1	62.6	81.7

Notes:

1. Rainfall intensity calculated using Town of Perth IDF curve equations.
2. Flow calculated using the Rational Method. Q=2.78CiA
3. C (100 YR) = C + 25% (Max. 1.0)

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Uncontrolled Flow Calculations

Area (ha) =	0.027
C =	0.31
C (100 YR) =	0.39

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)
5 Year	10	104.2	2.4
100 Year	10	178.6	5.2

Notes:

1. Rainfall intensity calculated using Town of Perth IDF curve equations.
2. Flow calculated using the Rational Method. Q=2.78CiA
3. C (100 YR) = C + 25% (Max. 1.0)

STORM SEWER DESIGN SHEET

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LOCATION			AREA (ha)		INDIV. 2.78AR	ACCUM. 2.78AR	TIME OF CONC. (min)	5 YR RAINFALL INTENSITY (mm/hr)	5 YR PEAK FLOW (L/s)	CUMULATIVE CONTROLLED PEAK FLOW (L/s)	PROPOSED SEWER									
DRAINAGE AREA	FROM MH	TO MH	TOTAL AREA	C							PIPE DIA. (mm)	UPSTREAM INV.	DNSTREAM INV.	GRADE (%)	LENGTH (m)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	TIME OF FLOW (min)	PERCENT FULL (PEAK)	PERCENT FULL (CONTROLLED)
OFF1		RYCB	0.193	0.44	0.236	0.236	13.10	90.25	21.3	21.3										
1	RYCB	CB1	0.032	0.80	0.071	0.307	13.10	90.25	27.7	27.7	251	137.13	136.24	3.91	23.0	119.0	2.40	0.16	23%	23%
OFF2		CB1	0.109	0.46	0.140	0.140	13.10	90.25	12.7	12.7										
2	CB1	MH204	0.008	0.82	0.018	0.465	13.26	89.65	41.7	41.7	251	135.99	135.76	1.02	22.6	60.8	1.23	0.31	69%	69%
3	MH204	MH203	0.082	0.90	0.204	0.669	13.56	88.50	59.2	59.2		135.70	135.70	0.00	33.5					
4	MH203	MH202	0.038	0.90	0.095	0.764	13.56	88.50	67.7	67.7	299	135.67	135.57	0.93	10.7	92.5	1.32	0.14	73%	73%
	MH202	MH201	0.000	0.00	0.000	0.764	13.70	88.01	67.3	*32.3*	201	135.55	135.52	1.88	1.6	45.6	1.44	0.02	147%	71%
	MH201	EX. LAT	0.000	0.00	0.000	0.764	13.72	87.94	67.2	*32.3*	201	135.32	135.30	2.00	1.0	47.1	1.48	0.01	143%	69%
			0.462	**0.60**	**0.764**															
									Max	**35.8**										

Design Parameters

Notes:
1. Rainfall intensity calculated using Town of Perth IDF curve equations.
2. Peak flows calculated using the Rational Method.
3. Manning's roughness coefficient = 0.013
4. Full flow velocity: MIN 0.8 m/s; MAX 6.0 m/s
6. MH204-MH203 is underground storage system (Stormtech SC-800 or equivalent). Refer to Servicing & Stormwater Management Report.
7. MH202 is controlled with ICD. Refer to ICD Sizing sheet.
8. Italicized "Cumulative Controlled Peak Flow" indicates the peak flow controlled by ICD.
9. Max permitted flow discharging site = 5yr pre-development flow less uncontrolled flow plus off-site flow

STORM SEWER DESIGN SHEET

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LOCATION			AREA (ha)		INDIV. 2.78AR	ACCUM. 2.78AR	TIME OF CONC. (min)	100 YR RAINFALL INTENSITY (mm/hr)	100 YR PEAK FLOW (L/s)	CUMULATIVE CONTROLLED PEAK FLOW (L/s)	PROPOSED SEWER									
DRAINAGE AREA	FROM MH	TO MH	TOTAL AREA	C							PIPE DIA. (mm)	UPSTREAM INV.	DNSTREAM INV.	GRADE (%)	LENGTH (m)	CAPACITY (L/s)	FULL FLOW VELOCITY (m/s)	TIME OF FLOW (min)	PERCENT FULL (PEAK)	PERCENT FULL (CONTROLLED)
OFF1		RYCB	0.193	0.55	0.295	0.295	13.10	154.46	45.5	45.5										
1	RYCB	CB1	0.032	1.00	0.089	0.384	13.10	154.46	59.2	59.2	251	137.13	136.24	3.91	23.0	119.0	2.40	0.16	50%	50%
OFF2		CB1	0.109	0.58	0.175	0.175	13.10	154.46	27.1	27.1										
2	CB1	MH204	0.008	1.00	0.022	0.581	13.26	153.41	89.2	89.2	251	135.99	135.76	1.02	22.6	60.8	1.23	0.31	147%	147%
3	MH204	MH203	0.082	1.00	0.227	0.808	13.56	151.43	122.3	122.3		135.70	135.70	0.00	33.5					
4	MH203	MH202	0.038	1.00	0.106	0.914	13.56	151.43	138.3	138.3	299	135.67	135.57	0.93	10.7	92.5	1.32	0.14	150%	150%
	MH202	MH201	0.000	0.00	0.000	0.914	13.70	150.58	137.6	*32.3*	201	135.55	135.52	1.88	1.6	45.6	1.44	0.02	302%	71%
	MH201	EX. LAT	0.000	0.00	0.000	0.914	13.72	150.47	137.5	*32.3*	201	135.32	135.30	2.00	1.0	47.1	1.48	0.01	292%	69%
			0.462	**0.71**	**0.914**															
									Max	**76.6**										

Design Parameters

Notes:
1. Rainfall intensity calculated using Town of Perth IDF curve equations.
2. Peak flows calculated using the Rational Method.
3. Manning's roughness coefficient = 0.013
4. Full flow velocity: MIN 0.8 m/s; MAX 6.0 m/s
6. MH202 is controlled with ICD. Refer to ICD Sizing sheet.
7. Italicized "Cumulative Controlled Peak Flow" indicates the peak flow controlled by ICD.
8. Max permitted flow discharging site = 100yr pre-development flow less uncontrolled flow plus off-site flow

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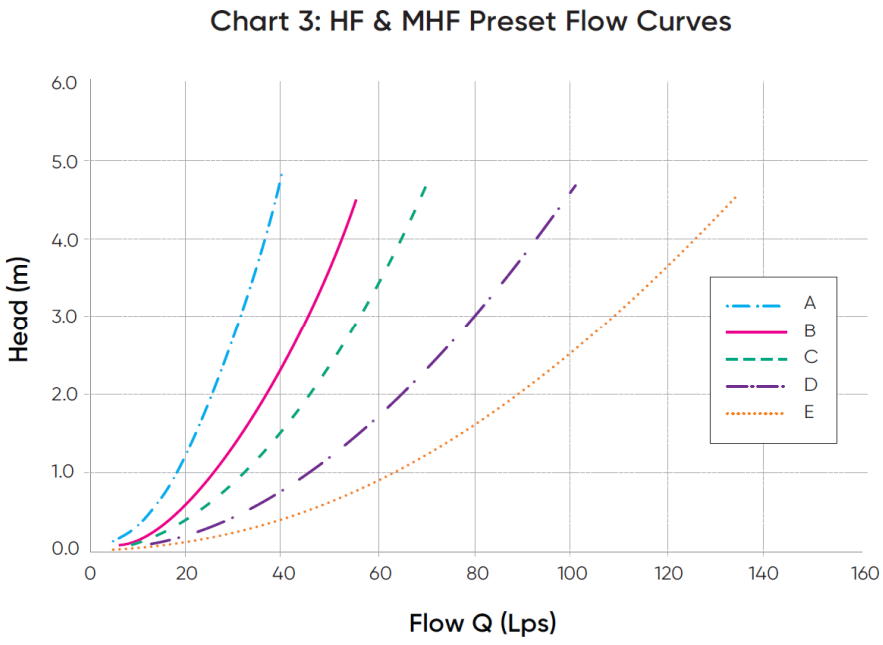
ICD Sizing

STMMH202

CL El.	135.65	m
Top of U/G Storage	136.65	m
Head	1.00	m
Controlled Flow	32.3	L/s

HF C

1. Controlled flow based on head from centre of discharge pipe to top of underground storage (for sewer design sheet & storage)



Source: IPEX Tempest High Flow ICD

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Flow & Storage Volume Calculations - Oversized Pipe

Accum. '2.78AR' - 5yr 0.764 Release Rate (L/s) = **32.3**

Accum. '2.78AR' - 100yr 0.914

Underground Storage System

Available Storage (m3) = **120.1**

STMMH204

Oveflow El. = 137.58

T/G = 137.49

Ponding Area (m2) = 30.8

Available Storage (m3) = **3.7**

STMMH203

Oveflow El. = 137.44

T/G = 137.31

Ponding Area (m2) = 130.0

Available Storage (m3) = **8.5**

Total Available Storage (m3) = 132.3

Design Event	Time (min)	Rainfall Intensity (mm/hr)	Flow (L/s)	Release Rate (L/s)	Net Runoff to be Stored (L/s)	Storage Required (m^3)
5 Year	10	76.8	58.7	16.2	42.5	25.5
	15	61.8	47.2	16.2	31.1	27.9
	20	**52.0**	**39.8**	**16.2**	**23.6**	**28.3**
	25	45.2	34.5	16.2	18.4	27.5
	30	40.0	30.6	16.2	14.4	26.0
	35	36.1	27.6	16.2	11.4	23.9
100 Year	35	82.6	75.4	16.2	59.3	124.5
	40	75.1	68.6	16.2	52.5	126.0
	45	69.1	63.1	16.2	46.9	126.7
	50	**64.0**	**58.4**	**16.2**	**42.3**	**126.8**
	55	59.6	54.5	16.2	38.3	126.4
	60	55.9	51.1	16.2	34.9	125.6

Notes:

1. Rainfall intensity calculated using Town of Perth IDF curve equations.

3. Flow calculated using the Rational Method. Q=2.78CiA

4. C (100 YR) = C + 25% (Max. 1.0)

5. Release Rate for storage calculation at 50% max rate for average flow rate. See ICD Sizing sheet

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

Advanced Drainage Systems, Inc.

SiteAssist™
FOR STORMTECH
INSTALLATION INSTRUCTIONS
VISIT OUR APP

53 CRAIG ST

PERTH, ON, CANADA

SC-800 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-800.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 750 LBS/FT/% . THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-800 SYSTEM

1. STORMTECH SC-800 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 75 mm (3") SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-800 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
3. FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

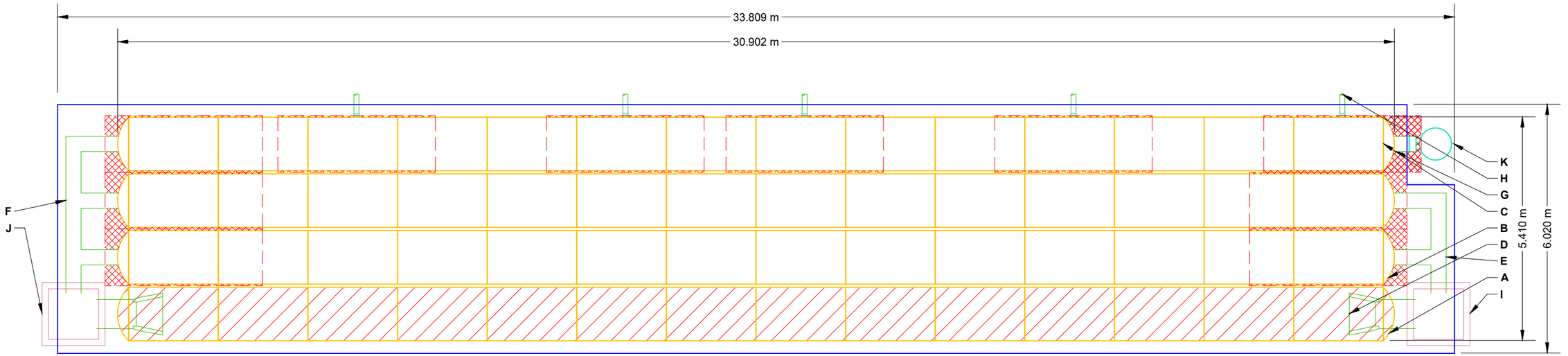
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		PROPOSED ELEVATIONS	
56	STORMTECH SC-800 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	138.840
8	STORMTECH SC-800 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	136.935
152	STONE ABOVE (mm)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	136.783
152	STONE BELOW (mm)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	136.783
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	136.783
120.1	INSTALLED SYSTEM VOLUME (m^3) ABOVE ELEVATION 135.614 (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED)	TOP OF STONE:	136.554
		TOP OF SC-800 CHAMBER:	136.402
		300 mm x 300 mm TOP MANIFOLD INVERT:	135.929
		300 mm x 300 mm TOP MANIFOLD INVERT:	135.929
201.3	SYSTEM AREA (m^2)	100 mm INSERTA TEE INVERT:	135.665
79.7	SYSTEM PERIMETER (m)	600 mm ISOLATOR ROW PLUS INVERT:	135.622
351	THERMOPLASTIC LINER (m^2) (20% OVERAGE)	600 mm ISOLATOR ROW PLUS INVERT:	135.622
		300 mm BOTTOM CONNECTION INVERT:	135.604
		BOTTOM OF SC-800 CHAMBER:	135.563
		BOTTOM OF STONE:	135.411

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED EZ END CAP	A	600 mm BOTTOM PREFABRICATED EZ END CAP, PART#: SC800ECEZ / TYP OF ALL 600 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	58 mm	
PRE-CORED END CAP	B	300 mm TOP PRE-CORED END CAP, PART#: SC800EPE12TPC / TYP OF ALL 300 mm TOP CONNECTIONS	366 mm	
PRE-CORED END CAP	C	300 mm BOTTOM PRE-CORED END CAP, PART#: SC800EPE12BPC / TYP OF ALL 300 mm BOTTOM CONNECTIONS	41 mm	
FLAMP	D	INSTALL FLAMP ON 600 mm ACCESS PIPE / PART#: SC80024RAMP (TYP 2 PLACES)		
MANIFOLD	E	300 mm x 300 mm TOP MANIFOLD, ADS N-12	366 mm	
MANIFOLD	F	300 mm x 300 mm TOP MANIFOLD, ADS N-12	366 mm	
PIPE CONNECTION	G	300 mm BOTTOM CONNECTION	41 mm	
INSERTA TEE	H	100 mm DIAMETER (TYP 5 PLACES)	102 mm	
CONCRETE STRUCTURE	I	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		130 L/s IN
CONCRETE STRUCTURE	J	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		167 L/s IN
NYLOPLAST (OUTLET)	K	750 mm DIAMETER (DESIGN BY ENGINEER)		57 L/s OUT



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 3.810 m OF ADSPLUS625 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

THERMOPLASTIC LINER (SEE TECH NOTE #6.50 PROVIDED BY OTHERS / DESIGN BY OTHERS)

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION**: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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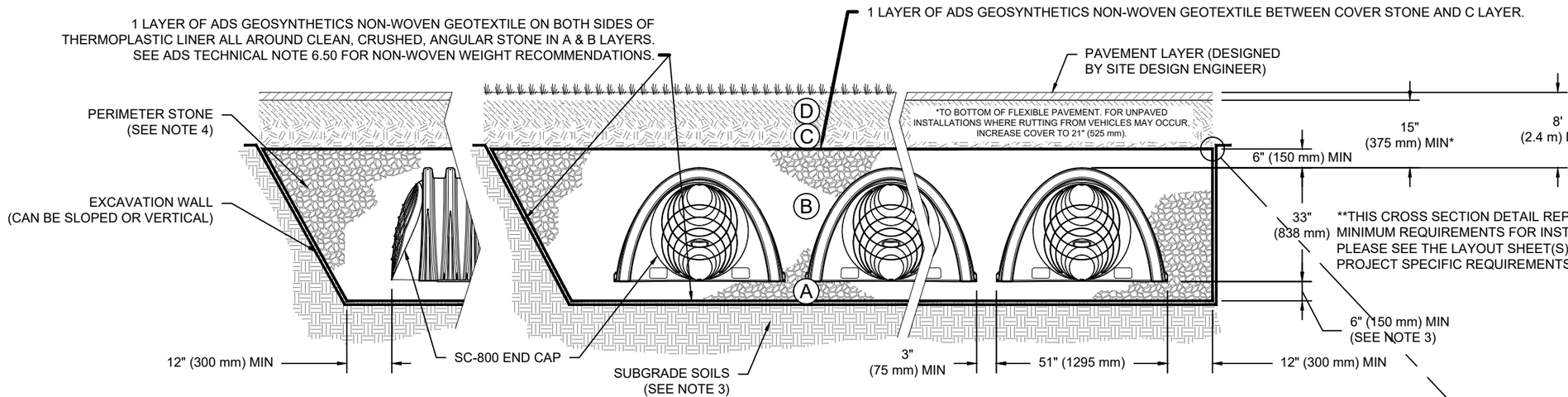
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

SCALE = 1 : 100

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

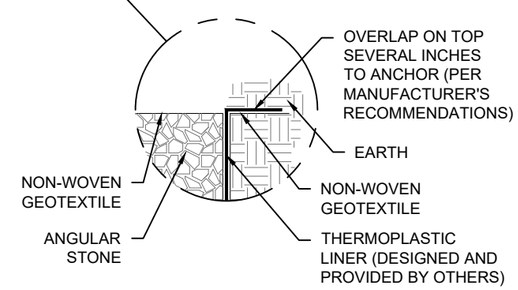
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 750 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



THERMOPLASTIC LINER DETAIL

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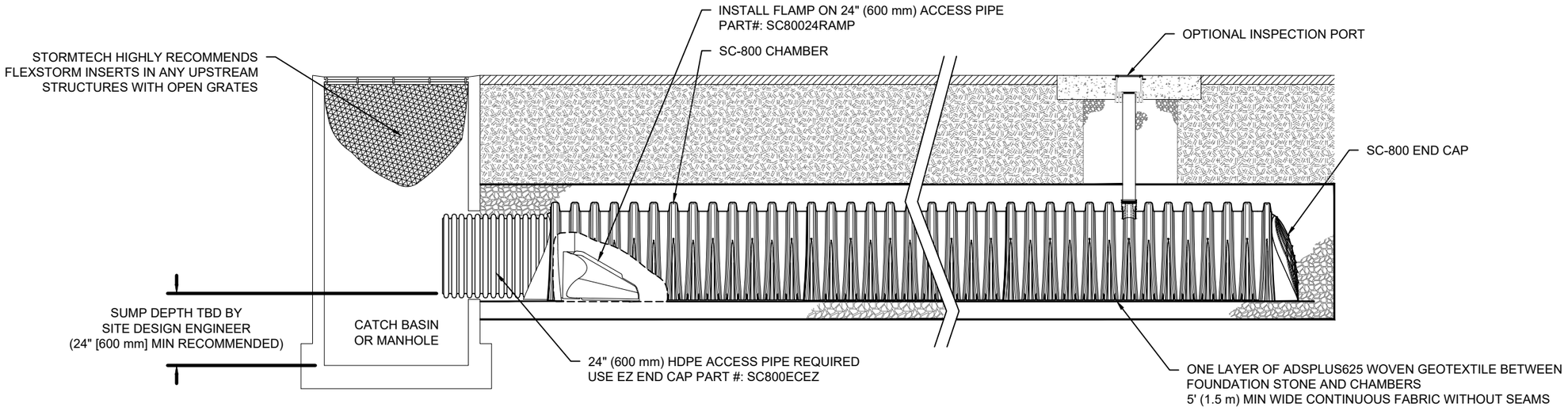

SC-800 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

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

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

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.

2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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SC-800 TECHNICAL SPECIFICATION

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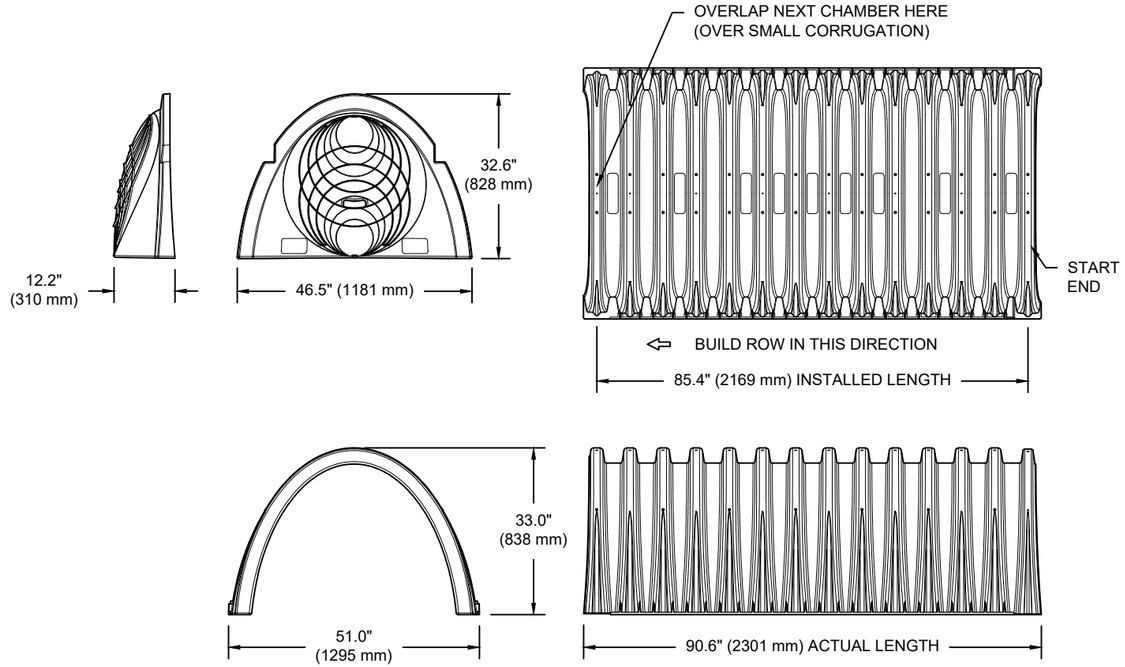


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	78.4 CUBIC FEET	(2.22 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

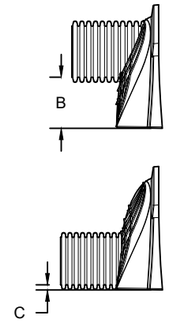
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	46.5" X 32.6" X 10.5"	(1181 mm X 828 mm X 267 mm)
END CAP STORAGE	3.4 CUBIC FEET	(0.09 m³)
MINIMUM INSTALLED STORAGE**	14.7 CUBIC FEET	(0.42 m³)
WEIGHT	15.7 lbs.	(7.1 kg)

* ASSUMES 6" (150 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS, 3" (75 mm) BETWEEN CHAMBERS
**ASSUMES 6" (150 mm) STONE ABOVE AND BELOW END CAPS, 3" (150 mm) BETWEEN ROWS, 12" (300 mm) BEYOND END CAPS

PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"
PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24BPC	24" (600 mm)	---	2.3" (58 mm)
SC800EPE	NONE	SOLID END CAP	



NOTE: ALL DIMENSIONS ARE NOMINAL

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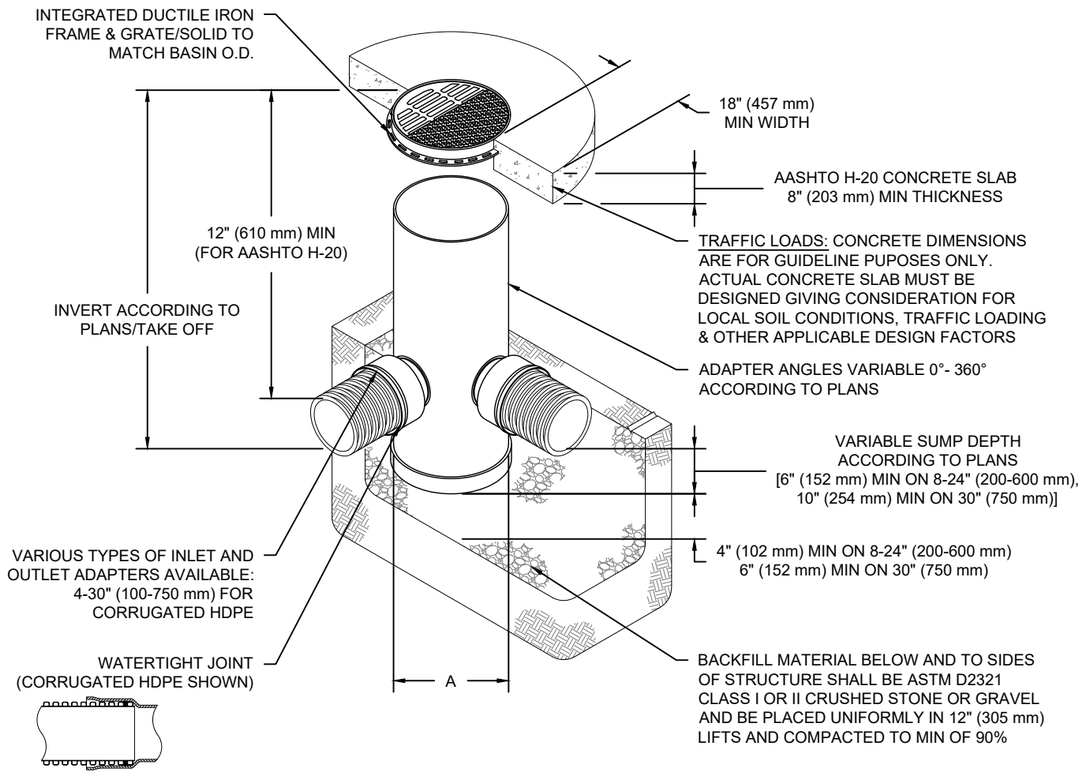
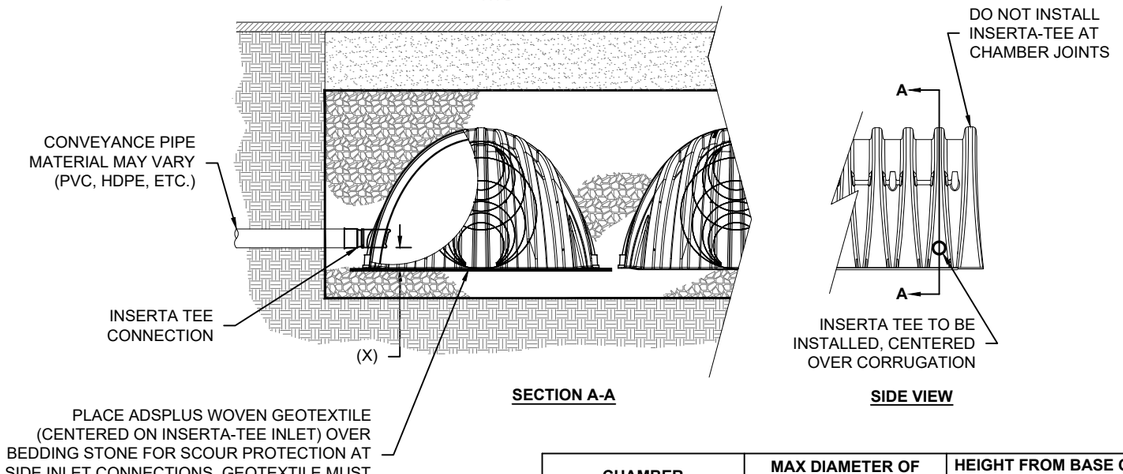
NYLOPLAST DRAIN BASIN

NTS



INSERTA TEE DETAIL

NTS



NOTES:

- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-800	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

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

53 CRAIG ST
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1-800-733-7473

FFE = 137.92–138.67
TFW = 138.07–138.82
USF = 134.42 (IN BASEMENT)

22.6m–250mmø STM @ 1.02%

100mmø STM @ 2%. CONNECT TO UNDERGROUND ROOF DRAIN LEADER. SEE ARCHITECTURAL FOR DETAILS (TYP.)

DC

STMMH 204
T/G=137.49
INV.SE=135.62
INV.NE=135.68

9.7m–300mmø

STMMH 203
T/G=137.31
INV.SE=135.59
INV.NW=135.62

RING WALL

POST & WIRE FENCE

NO FENCE

EX SHED

CHAIN LINK FENCE

STONE FOUNDATION

ADS OGS Sizing Summary

Project Name: 53 Craig St

Consulting Engineer: Robinson Consultants Inc

Location: Perth, Ontario

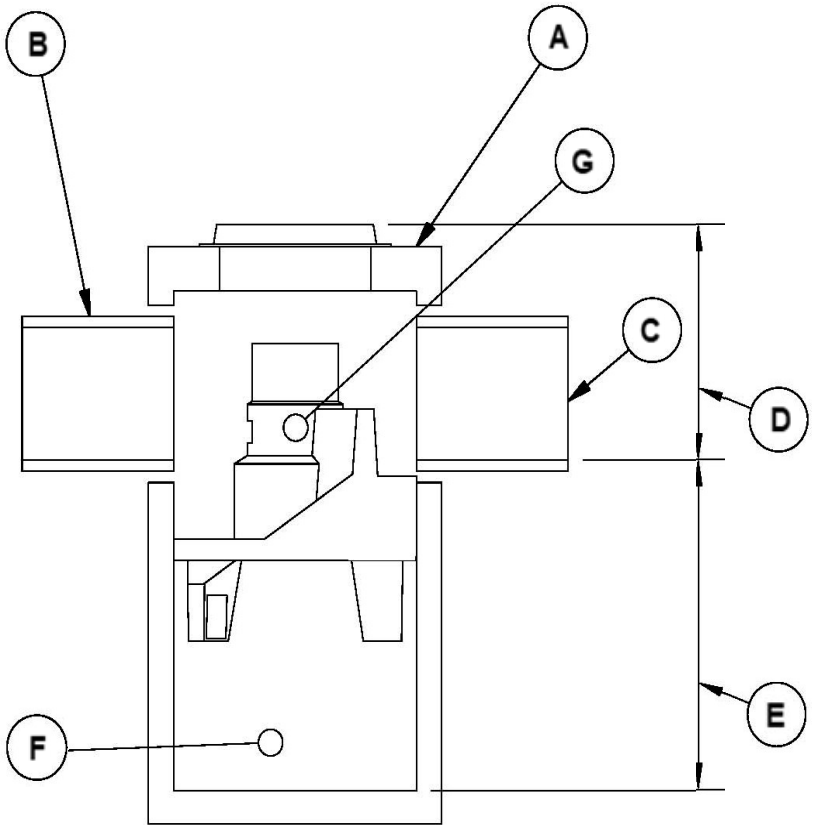
Sizing Completed By: Haider Nasrullah **Email:** haider.nasrullah@adspipe.com

Treatment Requirements		
Treatment Goal:	Enhanced (MOE)	
Selected Parameters:	80% TSS	90% Volume
Selected Unit:	**FD-4HC**	

Site Details	
Site Area:	0.461 ha
% Impervious:	---
Rational C:	0.60
Rainfall Station:	Ottawa, ONT
Particle Size Distribution:	Fine
Peak Flowrate:	---

Summary of Results		
Model	**TSS Removal**	**Volume Treated**
FD-4HC	94.0%	>90%
FD-5HC	96.0%	>90%
FD-6HC	97.0%	>90%
FD-8HC	98.0%	>90%
FD-10HC	99.0%	>90%

FD-4HC Specification	
Unit Diameter (A):	1,200 mm
Inlet Pipe Diameter (B):	200 mm
Outlet Pipe Diameter (C):	200 mm
Height, T/G to Outlet Invert (D):	2470 mm
Height, Outlet Invert to Sump (E):	1515 mm
Sediment Storage Capacity (F):	0.78 m³
Oil Storage Capacity (G):	723 L
Recommended Sediment Depth for Maintenance:	440 mm
Max. Pipe Diameter:	600 mm
Peak Flow Capacity:	510 L/s



Site Elevations:	
Rim Elevation:	137.59
Inlet Pipe Elevation:	135.42,
Outlet Pipe Elevation:	135.12

Notes:

Removal efficiencies are based on NJDEP Test Protocols and independently verified.

All units supplied by ADS have numerous local, provincial, and international certifications (copies of which can be provided upon request). The design engineer is responsible for ensuring compliance with applicable regulations.

Project Name: 53 Craig St

Consulting Engineer: Robinson Consultants Inc

Location: Perth, Ontario

Net Annual Removal Efficiency Summary: FD-4HC

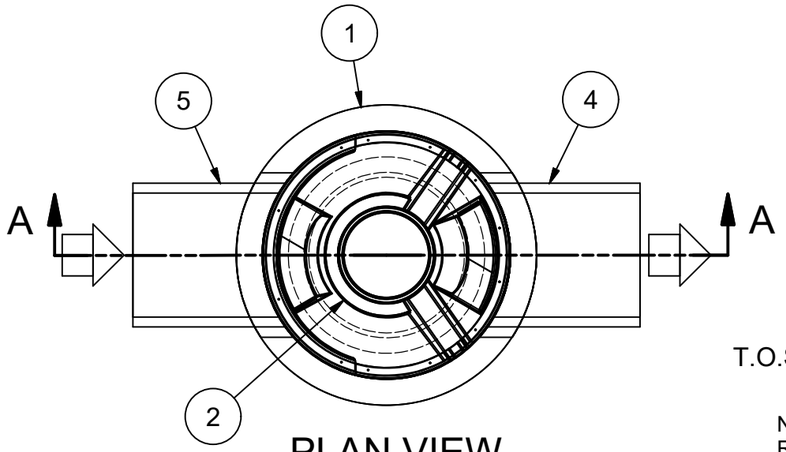
Rainfall Intensity[1]	Fraction of Rainfall[1]	FD-4HC Removal Efficiency[2]	Weighted Net-Annual Removal Efficiency
mm/hr	%	%	%
0.50	0.1%	100.0%	0.1%
1.00	14.1%	100.0%	14.1%
1.50	14.2%	100.0%	14.2%
2.00	14.1%	99.9%	14.1%
2.50	4.2%	97.9%	4.1%
3.00	1.5%	96.2%	1.4%
3.50	8.5%	94.8%	8.1%
4.00	5.4%	93.7%	5.1%
4.50	1.2%	92.7%	1.1%
5.00	5.5%	91.8%	5.1%
6.00	4.3%	90.2%	3.9%
7.00	4.5%	88.9%	4.0%
8.00	3.1%	87.8%	2.7%
9.00	2.3%	86.9%	2.0%
10.00	2.6%	86.0%	2.2%
20.00	9.2%	80.7%	7.5%
30.00	2.6%	77.7%	2.0%
40.00	1.2%	75.6%	0.9%
50.00	0.5%	74.1%	0.4%
100.00	0.7%	69.4%	0.5%
150.00	0.1%	66.9%	0.0%
200.00	0.0%	65.1%	0.0%
		Total Net Annual Removal Efficiency:	93%
		Total Runoff Volume Treated:	>90%

Notes:

(1) Rainfall Data: 1960:2007, HLY03, Ottawa, ONT, 6105976 & 6105978.

(2) Based on third party verified data and appoximating the removal of a PSD similar to the STC Fine distribution

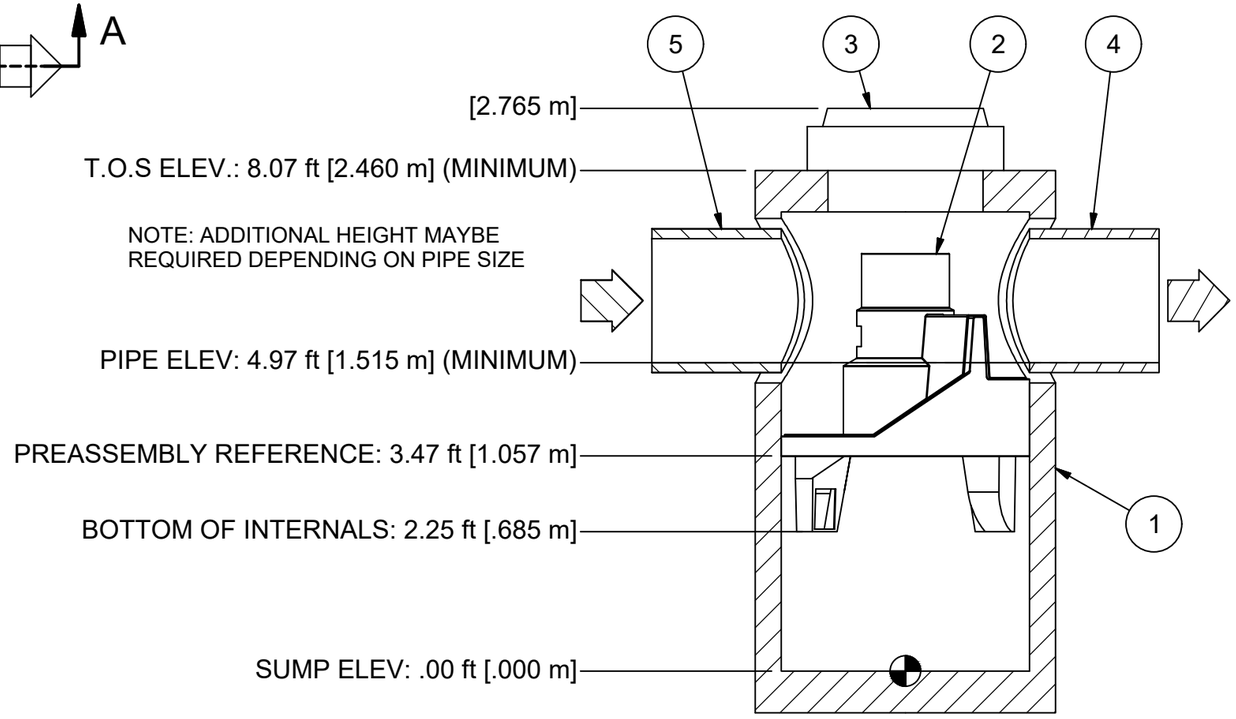
(3) Rainfall adjusted to 5 min peak intensity based on hourly average.



PLAN VIEW

HYDRO FRAME AND COVER (INCLUDED)

GRADE RINGS BY OTHERS
AS REQUIRED



SECTION A-A

PRODUCT SPECIFICATION:

1. PEAK HYDRAULIC FLOW: 18.0 cfs (510 l/s)
2. MIN SEDIMENT STORAGE CAPACITY: 0.7 cu. yd. (0.5 cu. m.)
3. OIL STORAGE CAPACITY: 191 gal. (723 liters)
4. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 24 in. (600 mm)
5. THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
6. FOR MORE PRODUCT INFORMATION INCLUDING REGULATORY ACCEPTANCES, PLEASE VISIT https://hydro-int.com/en/products/first-defense

GENERAL NOTES:

1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 24".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plan.s)
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	48	1200	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	24 (MAX)	600 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	24 (MAX)	600 (MAX)	INLET PIPE (BY OTHERS)

PROJECTION

IF IN DOUBT ASK

COMMENTS:

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.

2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

DATE:	SCALE:
11/8/2019	1:30

DRAWN BY:	CHECKED BY:	APPROVED BY
JLL3	-	

Title
4-ft DIAMETER

FIRST DEFENSE HIGH CAPACITY

GENERAL ARRANGEMENT

Hydro International
hydro-int.com
HYDRO INTERNATIONAL

DO NOT SCALE DRAWING
STEEL FABRICATION TOLERANCES
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.

LINEAR
000 - 012in = ±0.04in
012 - 024in = ±0.06in
024 - 048in = ±0.08in
048 - 120in = ±0.12in
120in >>>> = ±0.20in

ANGULAR
000 - 120in = ±1°
120 - 240in = ±0.5°
240in >>>> = ±0.25°

WEIGHT:	MATERIAL:
N/A	

STOCK NUMBER:

DRAWING NO.:
4FDHC_FDHC GA STD

SHEET SIZE:	SHEET:	Rev:
B	1 OF 1	-