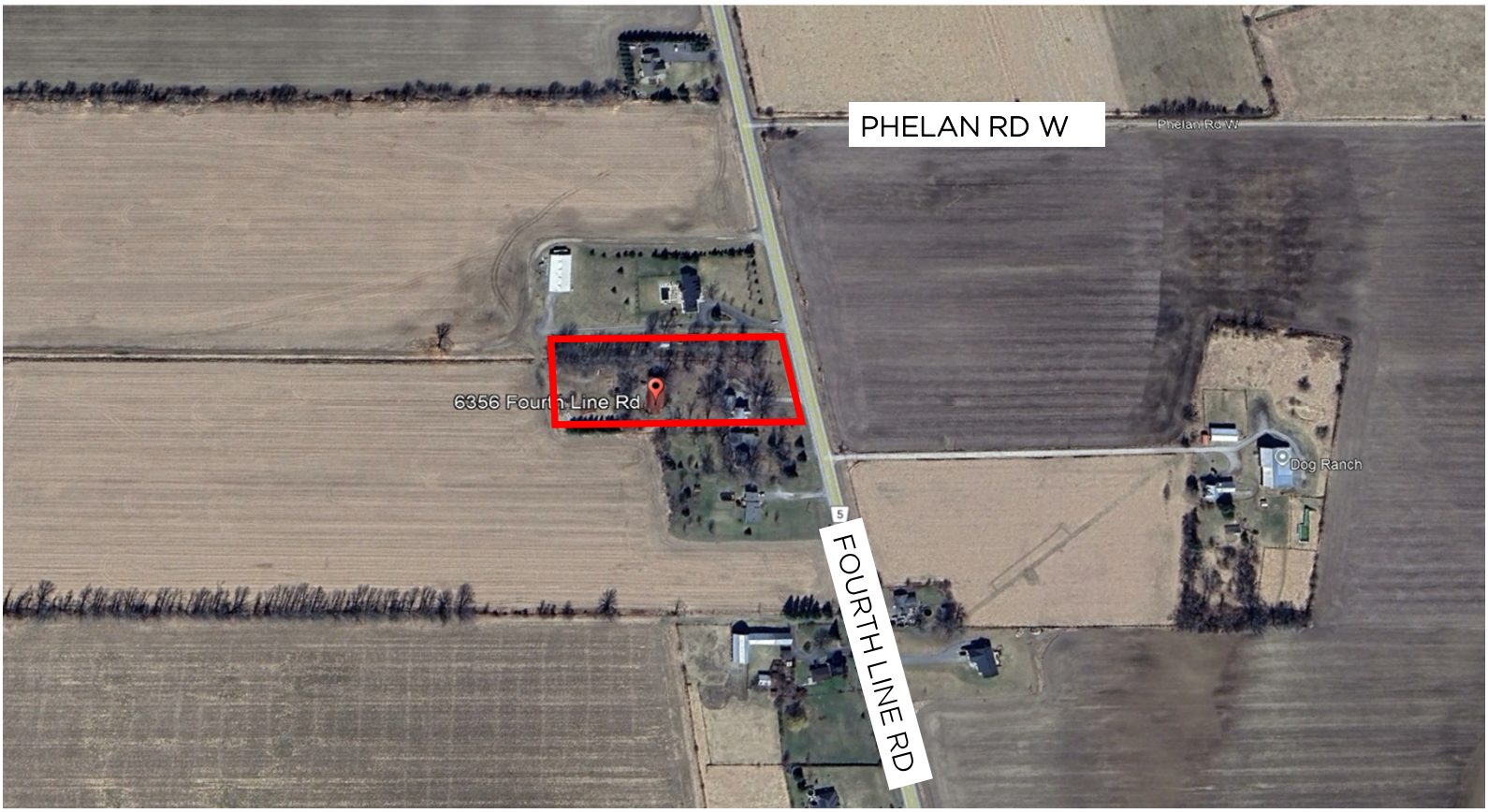


APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING

PLANT ARCHITECT INC.

New Equestrian Facility in City of Ottawa, 6356 Fourth Line Rd, Ottawa, ON
Stormwater Management Brief

354 Davis Road. Suite 403, OAKVILLE, ON L6J 2X2
| WWW.APLINMARTIN.COM | (416) 644-1900

Project No: 24-7817

June 03, 2025

Aplin & Martin Consultants Ltd.

Prepared by:
Deep Patel, EIT
Title: Engineering Designer

Prepared by:
Julian Cesario, P.Eng
Title: Project Engineer

Revision History

Revision	Date	Details	Name	Title
1	June 3, 2025	First Submission	Julian Cesario	Project Engineer

Distribution List

# Hard Copies	PDF Submission	Company/Association
-	1	Oakdale Equestrian

Statement of Limitations

Aplin & Martin Consultants Ltd. prepared this report for the City of Ottawa and the RVCA. The material in this report reflects the best judgment of Aplin & Martin Consultants Ltd. in the light of the information available at the time of preparation. Any use of, or reliance placed upon, the material contained in this report by third parties, or decisions based upon this report are the sole responsibility of those third parties. Aplin & Martin Consultants Ltd. accepts no responsibility for damages suffered by any third parties as a result of decisions made, or actions taken, based upon information contained within this report.

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

Aplin Martin has been retained by Oakdale Equestrian Inc. to prepare a Stormwater Management Brief in support of the proposed development located at 6356 Fourth Line Road, within the City of Ottawa. This report has been prepared to demonstrate that post-development drainage patterns and runoff volumes for the site maintain or improve upon the existing (pre-development) conditions, consistent with direction provided by City staff.

Figure 1: Aerial View (Source: Google Maps Imagery, 2025)

2.0 SITE CONDITIONS

2.1. Existing Site Conditions

The subject property is approximately 1.28 ha in area, located on the west side of Fourth Line Road, in a semi-rural setting. Under existing conditions, the site is generally open with minor topographic variations. As shown in the Pre-Development Drainage Area Plan (DAP), the site drains in two directions:

- A1 (northwest catchment): Flows toward the northwest corner of the site into existing shallow ditches.
- A2 (southeast catchment): Sheet flows toward Fourth Line Road, ultimately draining into the roadside ditch running parallel to the road.

2.2. Proposed Site Conditions

The proposed development consists of an equestrian facility including barns, paddocks, a sand riding ring, parking area, septic zone, and minor accessory structures. The post-development drainage condition slightly alters the drainage boundary between A1 and A2; however, overall runoff discharge patterns remain the same.

- A1 (northwest catchment): Flows toward the northwest corner of the site into existing shallow ditches.
- A2 (southeast catchment): Sheet flows toward Fourth Line Road, ultimately draining into the roadside ditch running parallel to the road.

3.0 STORMWATER MANAGEMENT

3.1. Design Criteria

The City of Ottawa has reviewed the proposed drainage strategy and confirmed that stormwater management for the site must demonstrate that the post-development runoff flows (or runoff coefficient "C") does not exceed pre-development values to the rear yard swale, exhibited by A1 PRE & A1 POST. No additional quantitative or qualitative stormwater controls (such as TSS removal or water balance targets) are required for this application.

PRE-DEVELOPMENT PEAK FLOWS					
Catchment	Area (ha)	Runoff Coefficient (C)	Q (2-Yr)	Q (5-Yr)	Q (100-Yr)
A1 Pre	0.61	0.28	36.9	50.0	105.2
A2 Pre	0.67	0.33	46.4	63.0	130.0

Table 1: Pre-Development Peak Flow Summary

POST-DEVELOPMENT PEAK FLOWS					
Catchment	Area (ha)	Runoff Coefficient (C)	Q (2-Yr)	Q (5-Yr)	Q (100-Yr)
A1 Post	0.63	0.26	35.0	47.5	101.8
A2 Post	0.64	0.56	77.5	105.2	209.7

Table 2: Post-Development Peak Flow Summary

Hence, as summarized in the above tables, $Q_{2\text{-}100}$ Post-Development are less than $Q_{2\text{-}100}$ Pre-Development for catchment A1 which satisfies the stormwater control requirement as discussed in meetings conducted with the City of Ottawa. As well, although the flows increase from the Pre-development to Post-development condition for catchment A2, the drainage ultimately outlets to a ditch system within the municipal right-of-way adjacent to Fourth Line Road, which is deemed a legal outlet.

3.2. Construction Erosion and Sediment Control

An Erosion and Sediment Control (ESC) Plan has been developed in accordance with standard City of Ottawa and MECP practices. Refer to the Erosion and Sediment Control Plan (sheet C-02) in Appendix C1 for the plan details.

Installation and maintenance of the following ESC measures shall be implemented during construction:

- Silt fence around the perimeter of the construction zone

- Gravel mud mat at the site entrance to minimize off-site sediment tracking
- Maintenance and inspection of ESC measures throughout construction
- Sediment traps at drainage discharge points if needed

4.0 CONCLUSIONS AND RECOMMENDATIONS

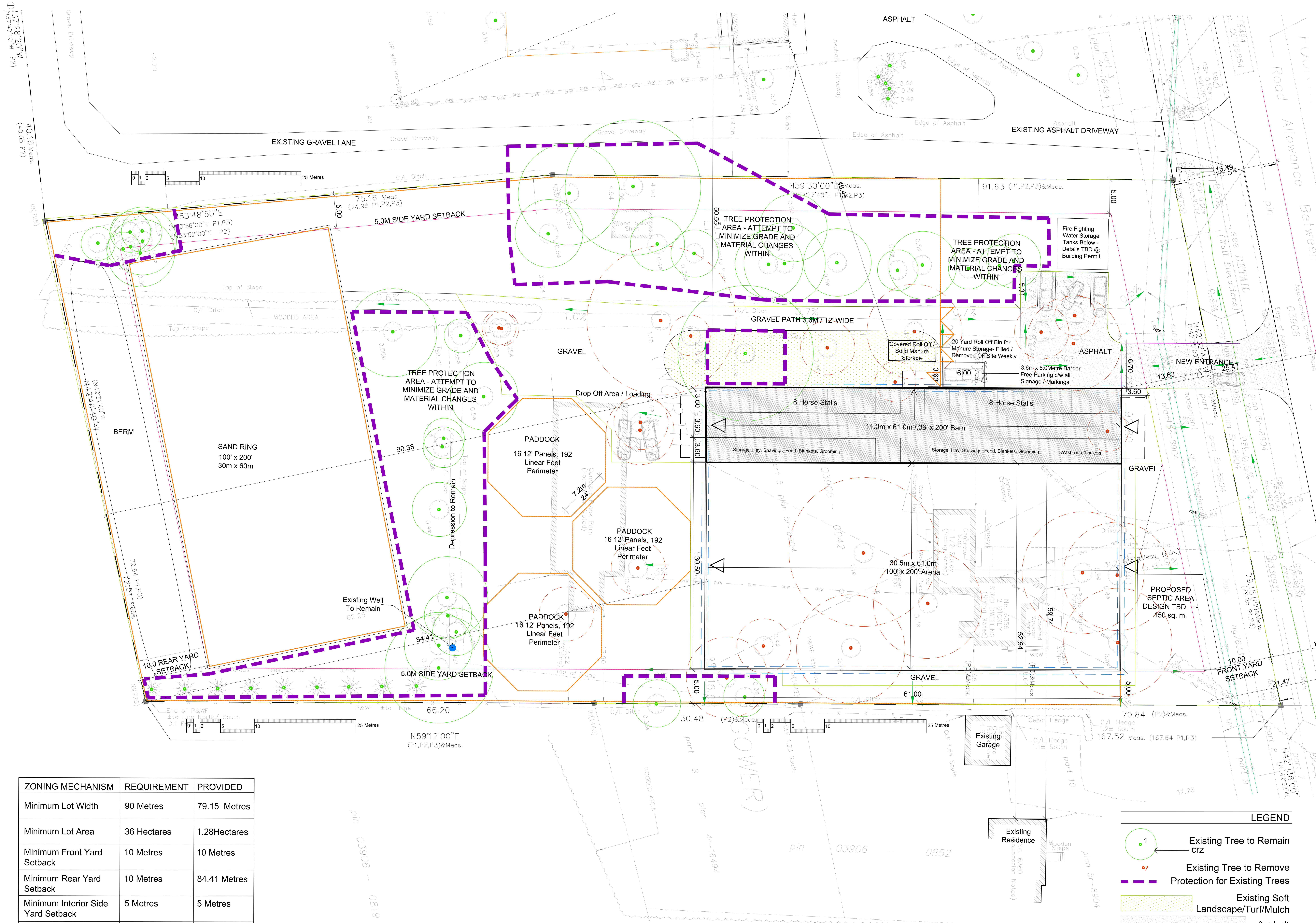
Based on our reflection of the proposed development along with all supporting documentation the following conclusions and recommendations are made:

- The proposed site maintains existing drainage discharge points and divides the site into two sub catchments, A1 and A2, consistent with pre-development conditions.
- The post-development runoff within A1 does not exceed pre-development runoff, in accordance with City requirements.
- Erosion and sediment control measures shall be in place prior to construction and are to be maintained through the full project construction phase. ESC measures are to be removed at the end of the construction.

APPENDIX A

SUPPORTING DOCUMENTS

#	Revision	Date
2	PER CITY	2024 11 01
1	MUNICIPAL REVIEW	2024 07 25
0	PRELIMINARY SITE CONCEPT	2024 06 25



EXISTING GRAVEL LANE
ASPHALT
EXISTING ASPHALT DRIVEWAY
5.0M SIDE YARD SETBACK
TREE PROTECTION AREA - ATTEMPT TO MINIMIZE GRADE AND MATERIAL CHANGES WITHIN
TREE PROTECTION AREA - ATTEMPT TO MINIMIZE GRADE AND MATERIAL CHANGES WITHIN
Fire Fighting Water Storage Tanks Below - Details TBD @ Building Permit
GRAVEL PATH 3.6M / 12' WIDE
GRAVEL
Covered Roll Off / Solid Manure Storage
20 Yard Roll Off Bin for Manure Storage- Filled / Removed Off Site Weekly
ASPHALT
3.6m x 6.0Metre Barrier Free Parking c/w all Signage / Markings
NEW ENTRANCE
TREE PROTECTION AREA - ATTEMPT TO MINIMIZE GRADE AND MATERIAL CHANGES WITHIN
Drop Off Area / Loading
8 Horse Stalls
8 Horse Stalls
11.0m x 61.0m /,36' x 200' Barn
Storage, Hay, Shavings, Feed, Blankets, Grooming
Storage, Hay, Shavings, Feed, Blankets, Grooming
Washroom/Lockers
BERM
SAND RING
100' x 200'
30m x 60m
PADDOCK
16 12' Panels, 192 Linear Feet Perimeter
PADDOCK
16 12' Panels, 192 Linear Feet Perimeter
PADDOCK
16 12' Panels, 192 Linear Feet Perimeter
Depression to Remain
Existing Well To Remain
30.5m x 61.0m
100' x 200' Arena
GRAVEL
PROPOSED SEPTIC AREA DESIGN TBD. +- 150 sq. m.
10.0 REAR YARD SETBACK
5.0M SIDE YARD SETBACK
GRAVEL
FRONT YARD SETBACK
Existing Garage
Existing Residence
N59°12'00"E
N59°30'00"E
75.16
91.63
90.38
84.41
66.20
70.84
167.52
61.00
30.50
25 Metres

ZONING MECHANISM	REQUIREMENT	PROVIDED
Minimum Lot Width	90 Metres	79.15 Metres
Minimum Lot Area	36 Hectares	1.28Hectares
Minimum Front Yard Setback	10 Metres	10 Metres
Minimum Rear Yard Setback	10 Metres	84.41 Metres
Minimum Interior Side Yard Setback	5 Metres	5 Metres
Minimum Corner Side Yard Setback	10 Metres	N/A
Maximum Height	12 Metres	+-10 Metres
Maximum Lot Coverage	20%	14.56%

LEGEND

- Existing Tree to Remain crz
- Existing Tree to Remove
- Protection for Existing Trees
- Existing Soft Landscape/Turf/Mulch
- Asphalt
- Gravel Area
- Fence
- O/H Hydro Service

OAKDALE EQUESTRIAN

PRELIMINARY SITE PLAN

GJA INC.

GINO J. AIELLO | LANDSCAPE ARCHITECT

GJALA.COM | 613 286 5130 | GINO@GJALA.COM

Scale: 1:250

SP1

SURVEYOR'S REAL PROPERTY REPORT

PART 1 Plan of
PART OF LOT 16
CONCESSION 4
Geographic Township of North Gower
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 400

16 12 8 4 0 8 16 Metres

Metric

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

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 2nd day of February, 2024.

Feb 26, 2024
Date

Jamie Leslie
Ontario Land Surveyor

PART 2
THIS PLAN MUST BE READ IN CONJUNCTION WITH SURVEY REPORT DATED: FEBRUARY 26, 2024

ANNIS, O'SULLIVAN, VOLLEBEKK LTD. grants to E. Aiello ("The Client"), their solicitors, mortgagees, and other related parties, permission to use original, signed, sealed copies of the Surveyor's Real Property Report in transactions involving The Client.

Notes & Legend

Denotes		
—○—	=	Survey Monument Planted
—■—	=	Survey Monument Found
SIB	=	Standard Iron Bar
SSIB	=	Short Standard Iron Bar
IB	=	Iron Bar
(WIT)	=	Witness
Meas.	=	Measured
(AOG)	=	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	=	Plan 5R-8904
(P2)	=	Plan 4R-16494
(P3)	=	(725) Plan June 24, 1988
OHW	=	Overhead Wires
UP	=	Utility Pole
AN	=	Anchor
LP	=	Light Post
PG-W	=	Wood Pole
AC	=	Air Conditioner
CSP	=	Corrugated Steel Pipe
T/P	=	Top of Pipe
Inv.	=	Invert
	=	Sign
MB	=	Mail Box
CLF	=	Chain Link Fence
SRW	=	Stone Retaining Wall
WRW	=	Wood Retaining Wall
P&WF	=	Post and Wire Fence
	=	Deciduous Tree
	=	Coniferous Tree
Ø	=	Diameter
+ 65.00	=	Location of Elevations
+ 65.00T	=	Top of Wall Elevation
C/L	=	Centreline
	=	Property Line
Fdn.	=	Foundation
Elev.	=	Elevation

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations and are referenced to MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

ELEVATION NOTES

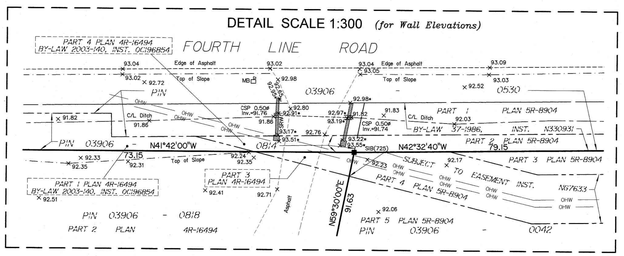
1. Elevations shown are geodetic, derived from Monument No. 0011986U014 having an elevation of 90.221 metres and are referred to the CGVD28 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Topographic data was collected under Winter Conditions. Snow cover and ice preclude determining location and elevation of some topographical data that is otherwise visible.

DETAIL SCALE 1:300 *(for Wall Elevations)*



ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
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Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com

Ontario Land Surveyors

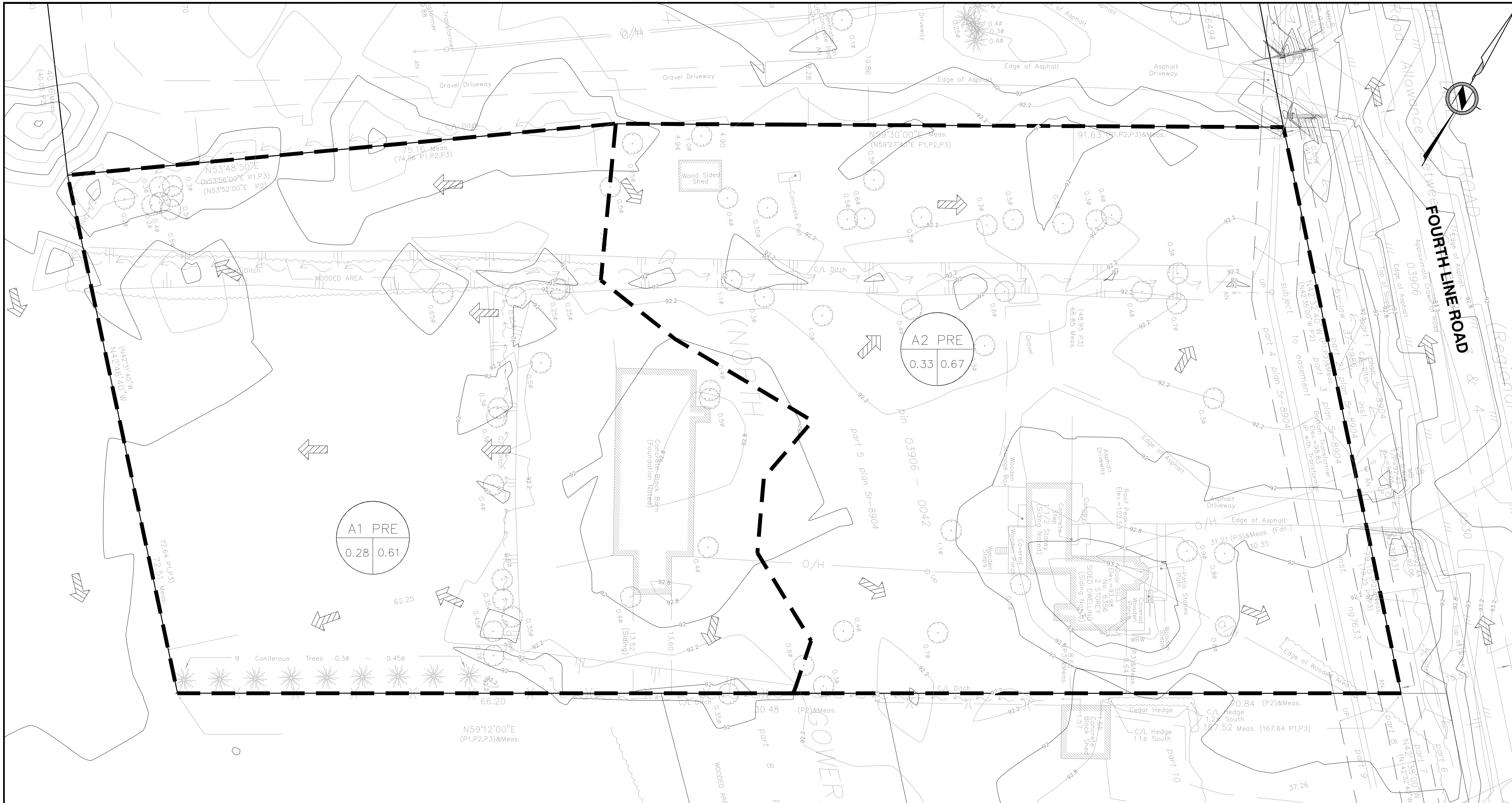
Job No. 24186-24 Ontario Inc PLI 16 C 4 NG T F

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-69249

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

APPENDIX B

STORMWATER MANAGEMENT DESIGN



CLIENT:	OAKDALE EQUESTRAIN
PROJECT:	OAKDALE EQUESTRIAN 6356 FOURTH LINE ROAD, OTTAWA, ON, K0A 2W0

APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING

Aplin & Martin Consultants Ltd.
#403 - 354 Davis Road, Oakville, O.N. Canada L6J 2X2
Tel: (905) 582-0630, Fax: (604) 597-9061, Email: general@aplinmartin.com

LEGEND:

PRE–DEVELOPMENT DRAINAGE AREA

EX. GRADE ×168.25

EX. OVERLAND FLOW DIRECTION

A1 PRE — DRAINAGE AREA ID
0.25 — RUN OFF COEFFICIENT
0.27 — DRAINAGE AREA (ha)

TITLE:

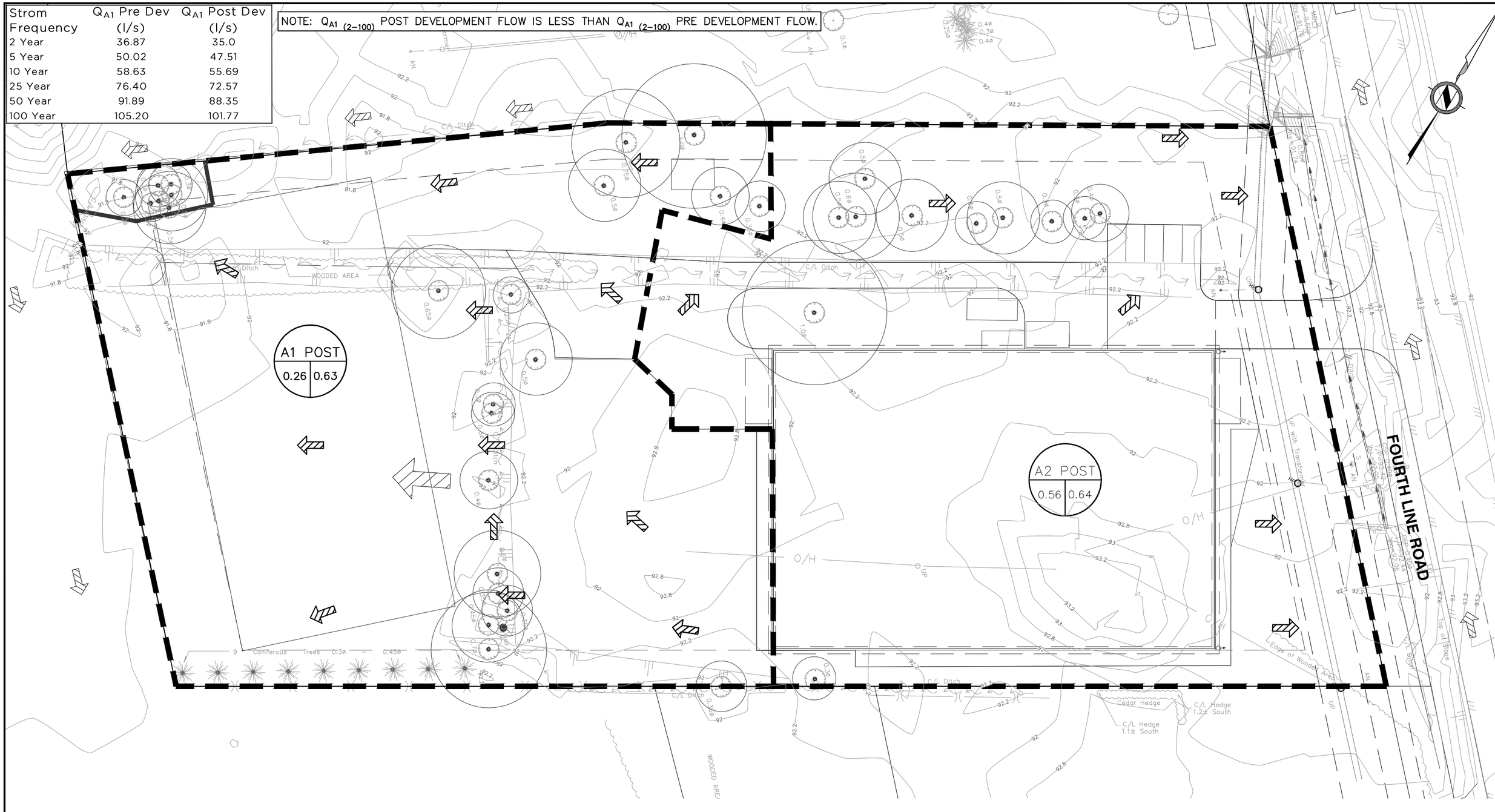
PRE-DEVELOPMENT DRAINAGE AREA PLAN

PROJECT NO. 24-7817	DRAWING DATE: MAY, 2025
FIGURE NO. FIG.-01	SCALE : 1:500

May 22 2025 – 11:15am M:\TOR\2024\24-7817\DWG\ONSITE PRODUCTION\Figures\24-7817 – FIG 01 PRE DEV DAP.dwg/STM PRE DAP DPatel

Strom Frequency	Q_{A1} Pre Dev (l/s)	Q_{A1} Post Dev (l/s)
2 Year	36.87	35.0
5 Year	50.02	47.51
10 Year	58.63	55.69
25 Year	76.40	72.57
50 Year	91.89	88.35
100 Year	105.20	101.77

NOTE: $Q_{A1\ (2-100)}$ POST DEVELOPMENT FLOW IS LESS THAN $Q_{A1\ (2-100)}$ PRE DEVELOPMENT FLOW.



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Tel: (905) 582-0630, Fax: (604) 597-9061, Email: general@aplinmartin.com

CLIENT: **OAKDALE EQUESTRAIN**

PROJECT: **OAKDALE EQUESTRIAN**
6356 FOURTH LINE ROAD, OTTAWA, ON, K0A 2W0

LEGEND:
POST-DEVELOPMENT DRAINAGE AREA
EX. GRADE
PR. OVERLAND FLOW DIRECTION ×168.25

A1 POST (0.25 | 0.27) — DRAINAGE AREA ID; RUN OFF COEFFICIENT; DRAINAGE AREA (ha)

TITLE: **POST-DEVELOPMENT DRAINAGE AREA PLAN**

PROJECT NO. **24-7817**	DRAWING DATE: **MAY, 2025**
FIGURE NO. **FIG.-02**	SCALE : **1:500**

May 22, 2025 - 11:14am M:\TOR\2024\24-7817\DWG\ONSITE PRODUCTION\Figures\24-7817 - FIG 02 POST DEV DAP.dwg\STM POST DAP DPatel

APLIN MARTIN

Project:	Oakdale Equestrian	**Date:**	22May/25
A&M File:	24-7817	**By:**	DP

Pre-Development Runoff Coefficient

A1 Pre	Total Area	0.61	C (2-10 YR)	C (25 YR)	C (50 YR)	C (100 YR)
	Pervious	0.58	0.25	0.28	0.30	0.31
	Impervious	0.03	0.90	0.99	1.00	1.00
	Composite 'C'		0.28	0.31	0.34	0.35
A2 Pre	Total Area	0.67	C (2-10 YR)	C (25 YR)	C (50 YR)	C (100 YR)
	Pervious	0.59	0.25	0.28	0.30	0.31
	Impervious	0.08	0.90	0.99	1.00	1.00
	Composite 'C'		0.33	0.36	0.38	0.39

Pre-Development Peak Flows

Area ID	A (ha)	C	Tc (min)
A1 Pre	0.61	0.28	10.00
A2 Pre	0.67	0.33	10.00

City/Town of: Ottawa

Storm Frequency (Yr)	a	b	c
2	733	6.20	0.81
5	998	6.05	0.81
10	1174	6.01	0.82
25	1403	6.02	0.82
50	1570	6.01	0.82
100	1736	6.01	0.82

Storm Frequency: 2 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 Pre	0.17	76.81	0.04	36.9
A2 Pre	0.22	76.81	0.05	46.4

Storm Frequency: 5 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 Pre	0.17	104.19	0.05	50.0
A2 Pre	0.22	104.19	0.06	63.0

Storm Frequency: 10 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 Pre	0.17	122.14	0.06	58.6
A2 Pre	0.22	122.14	0.07	73.8

Storm Frequency: 25 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 Pre	0.19	144.69	0.08	76.4
A2 Pre	0.24	144.69	0.10	96.2

Storm Frequency: 50 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 Pre	0.20	161.47	0.09	91.9
A2 Pre	0.25	161.47	0.11	114.3

Storm Frequency: 100 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 Pre	0.21	178.56	0.11	105.2
A2 Pre	0.26	178.56	0.13	130.0

APLIN MARTIN

Project:	Oakdale Equestrian	**Date:**	22May/25
A&M File:	24-7817	**By:**	TBD

Post-Development Runoff Coefficient

A1 POST	Total Area	0.63	C (2-10 YR)	C (25 YR)	C (50 YR)	C (100 YR)
	Pervious	0.61	0.25	0.28	0.30	0.31
	Gravel	0.03	0.45	0.50	0.54	0.56
	Composite 'C'		0.26	0.28	0.31	0.32
A2 POST	Total Area	0.64	C (2-10 YR)	C (25 YR)	C (50 YR)	C (100 YR)
	Landscaped	0.27	0.25	0.28	0.30	0.31
	Gravel	0.09	0.45	0.50	0.54	0.56
	Asphalt	0.03	0.90	0.99	1.08	1.13
	Impervious	0.25	0.90	0.99	1.00	1.00
	Composite 'C'		0.56	0.62	0.65	0.66

Post-Development Peak Flows

Area ID	A (ha)	C	Tc (min)
A1 POST	0.63	0.26	10.00
A2 POST	0.64	0.56	10.00

City/Town of: Ottawa

Storm Frequency (Yr)	a	b	c
2	733	6.20	0.81
5	998	6.05	0.81
10	1174	6.01	0.82
25	1403	6.02	0.82
50	1570	6.01	0.82
100	1736	6.01	0.82

Storm Frequency: 2 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 POST	0.16	76.81	0.04	35.0
A2 POST	0.36	76.81	0.08	77.5

Storm Frequency: 5 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 POST	0.16	104.19	0.05	47.5
A2 POST	0.36	104.19	0.11	105.2

Storm Frequency: 10 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 POST	0.16	122.14	0.06	55.7
A2 POST	0.36	122.14	0.12	123.3

Storm Frequency: 25 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 POST	0.18	144.69	0.07	72.6
A2 POST	0.40	144.69	0.16	160.7

Storm Frequency: 50 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 POST	0.20	161.47	0.09	88.3
A2 POST	0.42	161.47	0.19	186.6

Storm Frequency: 100 Year

Area ID	AC	I (mm/hr)	Q (m^3/s)	Q (L/s)
A1 POST	0.21	178.56	0.10	101.8
A2 POST	0.42	178.56	0.21	209.7

APPENDIX C

ENGINEERING PLANS