



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

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Project No: 24-7817

June 03, 2025

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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

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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.

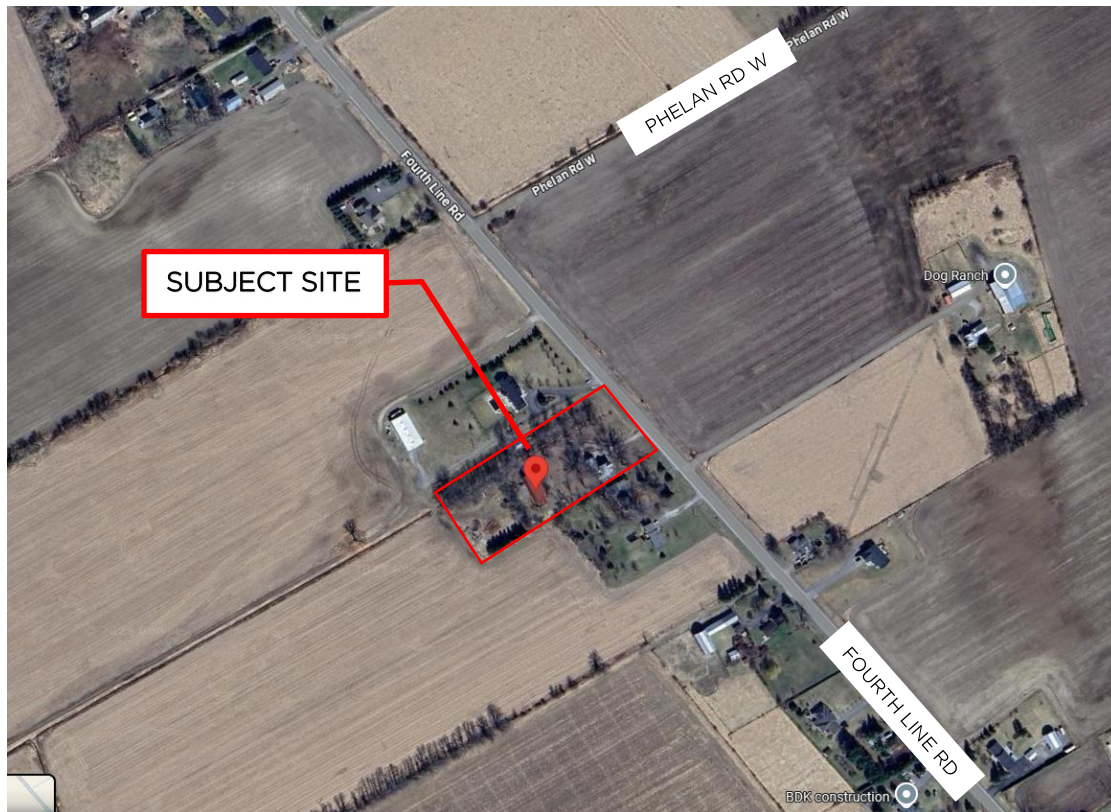


Figure 1: Aerial View (Source: Google Maps Imagery, 2025)

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, Q₂₋₁₀₀ Post-Development are less than Q₂₋₁₀₀ 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

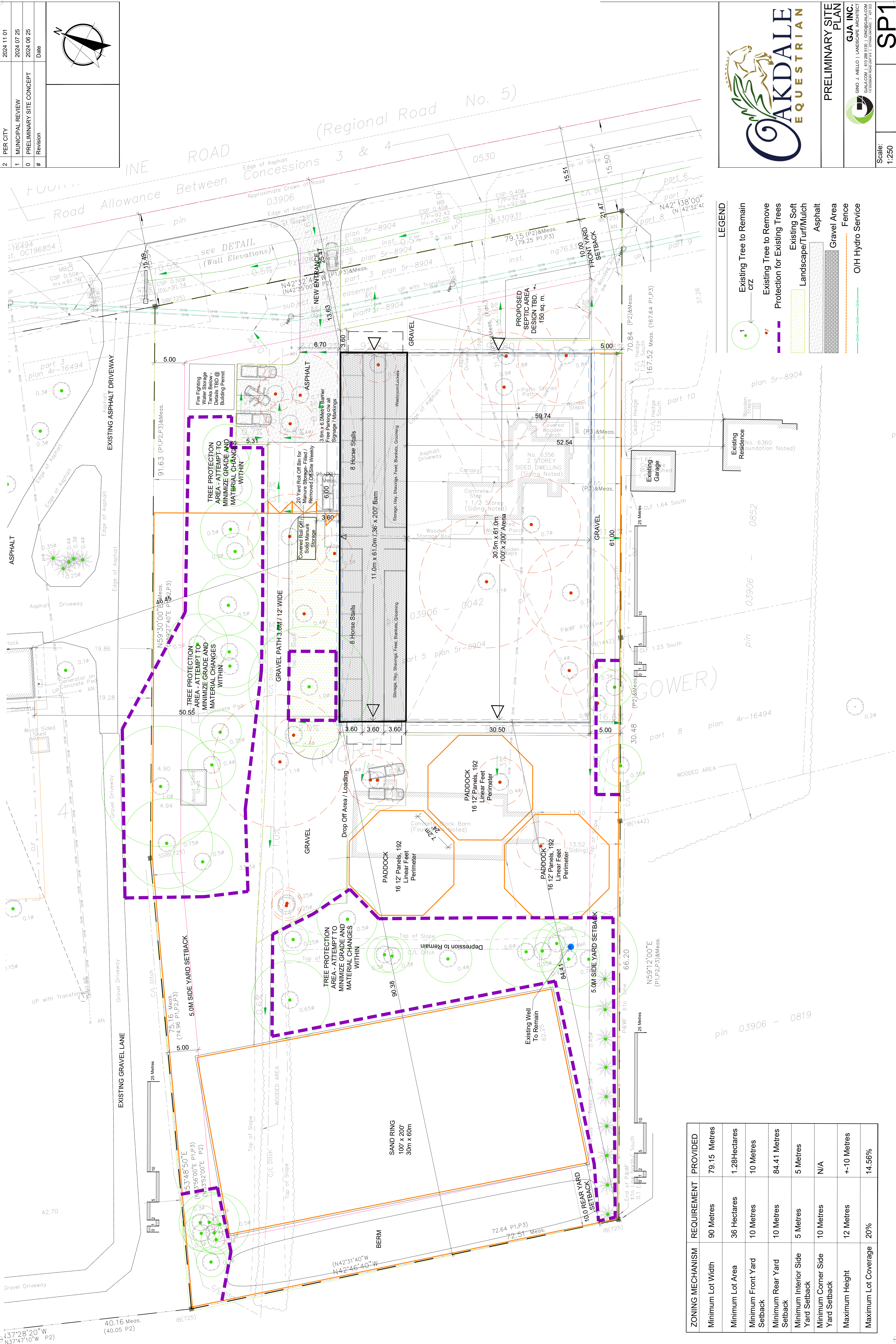
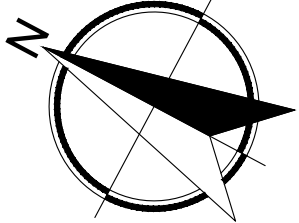
Based on our reflection of the proposed development along with all supporting documentation the following conclusions and recommendations are made:

- 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

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



PRELIMINARY SITE PLAN



Scale: 1:250

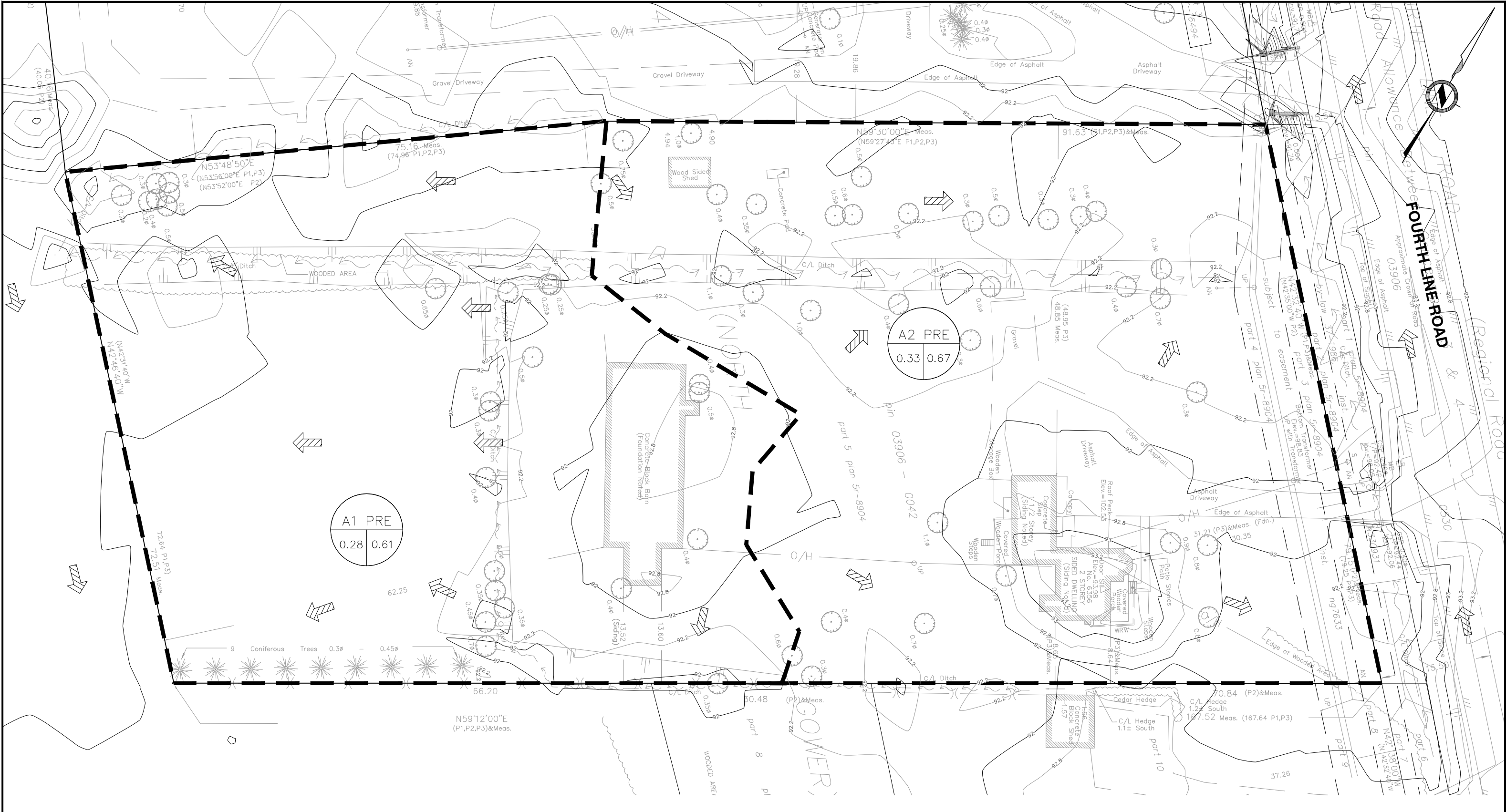
SP1

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%



APPENDIX B

STORMWATER MANAGEMENT DESIGN



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CLIENT: **OAKDALE EQUESTRAIN**

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

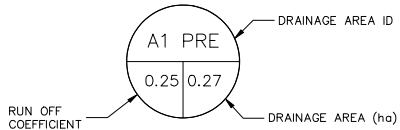
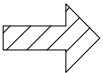
LEGEND:

PRE-DEVELOPMENT DRAINAGE AREA - - - - -

EX. GRADE

×168.25

EX. OVERLAND FLOW DIRECTION



TITLE:

PRE-DEVELOPMENT DRAINAGE AREA PLAN

PROJECT NO.
24-7817

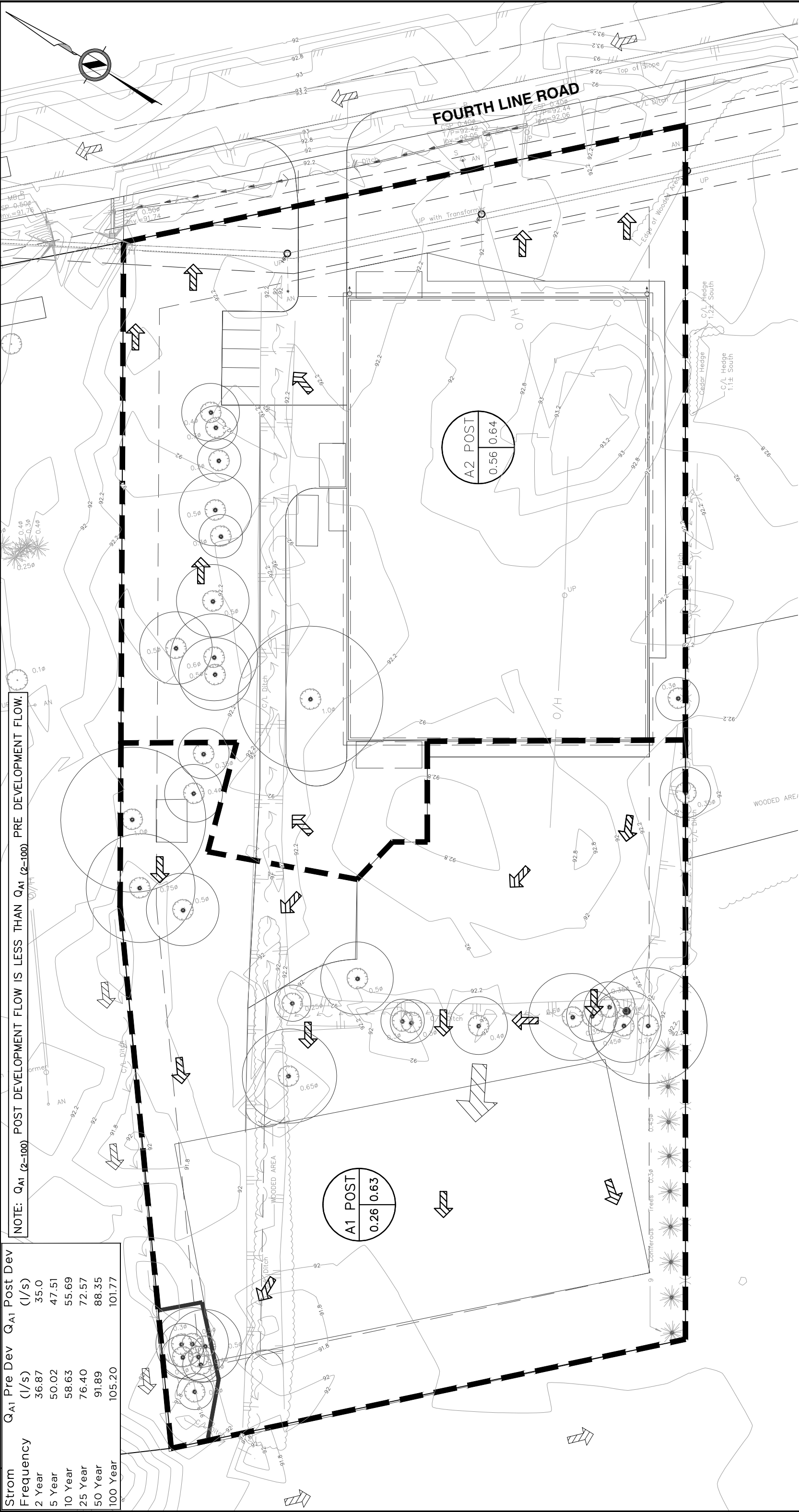
FIGURE NO.
FIG.-01

DRAWING DATE:
MAY, 2025

SCALE :
1:500

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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CLIENT: **OAKDALE EQUESTRIAN**

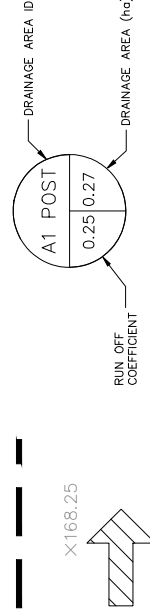
PROJECT: **OAKDALE EQUESTRIAN**
6356 FOURTH LINE ROAD, OTTAWA, ON, K0A 2W0

LEGEND:

POST-DEVELOPMENT DRAINAGE AREA

EX. GRADE

PR. OVERLAND FLOW DIRECTION



TITLE:

POST-DEVELOPMENT DRAINAGE AREA PLAN

PROJECT NO.

24-7817

DRAWING DATE:

MAY, 2025

FIGURE NO.

FIG.-02

RUN OFF COEFFICIENT

DRAINAGE AREA (ha)

SCALE :

1:500



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

City/Town of: Ottawa

Storm Frequency	a	b	c
(Yr)			
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



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

City/Town of: [Ottawa](#)

Storm Frequency	a	b	c
(Yr)			
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
