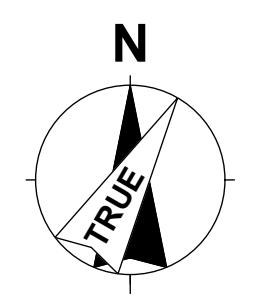
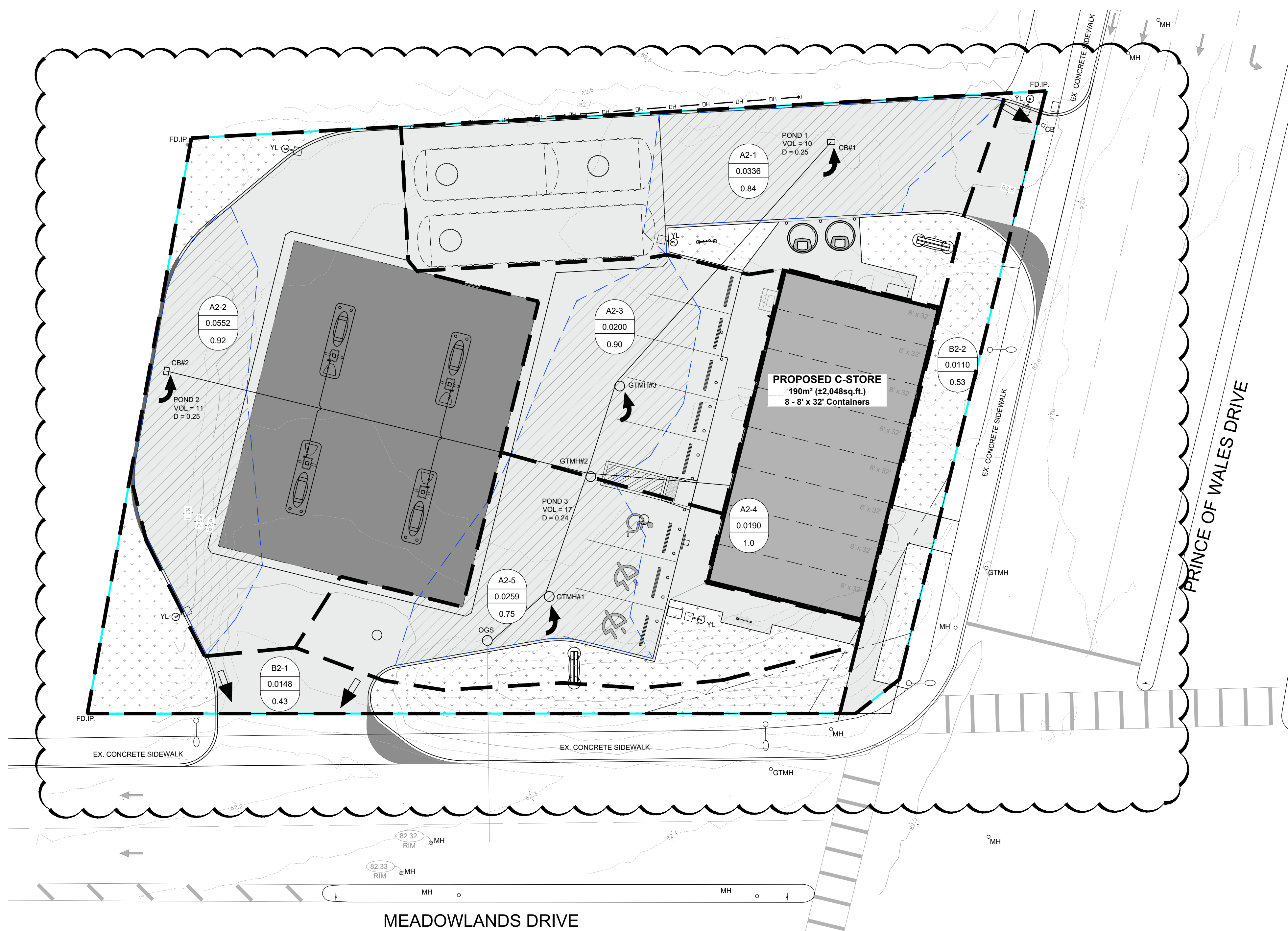


ANS I D 664mm x 559mm
 Approved: YF
 Checked: YF
 Designer: ED
 Project Management Initials: YF
 Last Plotted: 2024-11-27
 Filename: 2024072_C104.0.DWG



LEGEND	
CATCH BASIN	□ CB
GRATED TOP MANHOLE	○ GTMH
STORM MANHOLE	○ STMH
MANHOLE	○ MH
STORM CATCHMENT INLET	➔
OVERLAND ESCAPE ROUTE	➔
ROOF LAND USE	▨
ASPHALT OR CONCRETE PAVEMENT	▨
LANDSCAPED LAND USE	▨
EXTENT OF PONDING	▨
EXTENT OF FULL SUPPLY LEVEL	▨
STORM CATCHMENT BOUNDARY	---
STORM CATCHMENT LABEL	A2
AREA (ha)	0.500
RUNOFF COEFFICIENT	0.65

STORMWATER CALCULATIONS

Rainfall Intensity = 76.4 mm/hr (1:2 Year)
 100.9 mm/hr (1:5 Year)
 161.9 mm/hr (1:100 Year)

POST-DEVELOPMENT SITE CONDITIONS

CATCHMENT B2-1 - UNCONTROLLED TO MEADOWLANDS DRIVE

SURFACE	AREA (m²)	C FACTOR
BUILDING	0	1.00
PAVEMENT	33	0.90
LANDSCAPE	115	0.30
TOTAL	148	0.43

$Q_{B2} = 2.78 C i A$
 1:2 Year 1:100 Year
 $Q_{B2} = 1.4 \quad 2.9 \quad L/s$

CATCHMENT B2-2 - UNCONTROLLED TO PRINCE OF WALES DR

SURFACE	AREA (m²)	C FACTOR
BUILDING	0	1.00
PAVEMENT	43	0.90
LANDSCAPE	67	0.30
TOTAL	110	0.53

$Q_{B2} = 2.78 C i A$
 1:2 Year 1:100 Year
 $Q_{B2} = 1.2 \quad 2.6 \quad L/s$

CATCHMENT A2 - CONTROLLED

SURFACE	AREA (m²)	C FACTOR
BUILDING/ROOF	479	1.00
PAVEMENT	929	0.90
GRAVEL	0	0.65
LANDSCAPE	129	0.30
TOTAL	1537	0.88

$Q_{A2} = 2.78 C i A$
 1:2 Year 1:100 Year
 $Q_{A2} = 29 \quad 61 \quad L/s$

ORIFICE CONTROL IN PR. GTMH#1

$R = 38 \quad 38 \quad mm$
 $A_0 = 0.00454 \quad 0.00454 \quad m^2$
 Head Calculation
 Top of Pond = 81.300 82.380 m
 Pipe Invert = 80.030 80.030 m
 Water depth in outgoing pipe (if orifice submerged) = 0.092 0.110 m
 $H_0 = 1.178 \quad 2.282 \quad m/m$
 $Q_{A2} = 13.1 \quad 18.2 \quad L/s$

STORAGE VOLUME REQUIRED (RATIONAL METHOD MODEL)

1:2 Year 1:100 Year
 $VOLUME_{REQ} = 9.4 \quad 27.0 \quad m^3$
 $ELEVATION_{REACHED} = 81.30 \quad 82.38 \quad m$

STORAGE VOLUME PROVIDED

Storage Volume Available in Surface
 Ponding = 39.1 m³
 SPILL ELEVATION = 82.49 m
 Underground Pipe & Barrel Storage = 14.0 m³
 Total Storage = 53.1 m³

TOTAL FREE FLOW + CONTROLLED FLOW =

1:2 Year 1:100 Year
 $Q_{B2} + Q_{A2} = 15.7 \quad 23.8 \quad L/s$

$Q_{PR} < Q_{ALL}$
 $VOL_{REQ} < VOL_{AVL}$

1 STORMWATER MANAGEMENT PLAN - PROPOSED REDEVELOPMENT

C104-0 SCALE: 1:150

STORMWATER CALCULATIONS																									
STORM SEWER DESIGN - COMPUTATION FORM																									
Project Name: Prince of Wales, Shell		1:5 year intensity (mm/hr)		100.90		Use PVC Pipe for sizes less than: 450		Use Concrete Pipe for sizes greater than: 450		Friction Coefficients: (n)		Computed By: Yvonne													
Job No: 2024072		ST Ci		2018		0.011		0.013		UR		Date: 6/26/2024													
Date Created: 6/26/2024		storm event		constant		tc		constant		intensity		Revised: 11/27/2024													
1:5		2018		10.00		10.00		100.90		PVC		0.90 < n < 3.0													
Catchment Area Design								Pipe Design					Capacity Check												
Drainage Area Label	Manhole	US	DS	Drainage Area (ha)	Sum Area (ha)	Runoff Factor C	Equivalent Area (ha) AxC	Cumulative Area (ha) AxC	US Tc (min)	D/S Tc (min)	Intensity (mm/hr)	Incremental Design Flow (L/s)	Design Flow (L/s)	Restricted Flow (L/s)	Pipe Slope (%)	Nominal Pipe Diameter (mm)	Pipe Material	Friction Coeff. (n)	Pipe Length (m)	Pipe Capacity (L/s)	Velocity (m/s)	Time of Flow (min)	Actual Pipe Diameter (mm)	Design / Cap. Ratio	Pipe OK or SURCHARGED
A2-1	CB#1	GTMH#3		0.0336	0.0336	0.84	0.028	0.028	10.00	10.34	100.90	7.9	7.9	7.9	0.360%	300	PVC	0.011	19.523	68.2	0.97	0.34	299.4	0.12	OK
A2-3	GTMH#3	GTMH#2		0.0200	0.0536	0.90	0.018	0.046	10.34	10.44	99.23	5.0	12.7	12.7	0.350%	300	PVC	0.011	5.739	67.2	0.96	0.10	299.4	0.19	OK
A2-2	CB#2	GTMH#2		0.0552	0.0552	0.92	0.051	0.051	10.00	10.46	100.90	14.3	14.3	14.3	0.340%	300	PVC	0.011	26.133	66.3	0.94	0.46	299.4	0.22	OK
A2-4	GTMH#2	GTMH#1		0.0190	0.1278	1.00	0.019	0.116	10.46	10.57	98.62	5.2	31.8	31.8	0.520%	300	PVC	0.011	7.655	81.9	1.16	0.11	299.4	0.39	OK
A2-5	GTMH#1	OGS		0.0259	0.1537	0.75	0.019	0.135	10.57	10.65	98.09	5.3	36.9	18.0	0.460%	250	PVC	0.011	4.360	48.4	0.97	0.07	251.5	0.37	OK
	OGS	EX MH		0.0000	0.1537	0.88	0.000	0.135	10.65	10.75	97.74	0.0	36.8	18.0	1.920%	250	PVC	0.011	12.474	98.9	1.99	0.10	251.5	0.18	OK



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REGISTRATION

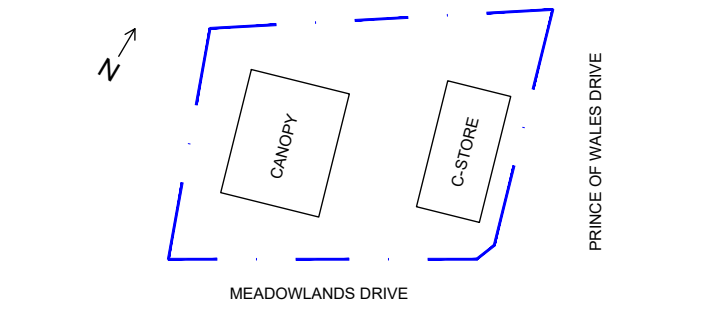


ISSUE/REVISION		
B	2024-12-03	ISSUED FOR SPC-PHASE 3
(SPC COMMENTS)		
B	2024-11-27	ISSUED FOR CLIENT REVIEW
(SPC COMMENTS)		
A	2024-08-01	ISSUED FOR SPC - PHASE 3
IR	DATE	DESCRIPTION

DRAWN BY _____ **SCALE** _____

ED

KEY PLAN



GLOBAL PROJECT ID NUMBER

CAN00650

SHEET TITLE

STORMWATER MANAGEMENT PLAN
 PROPOSED REDEVELOPMENT

CTM DESIGN FILE NAME

2024072_C104.0

SHEET NUMBER

C104.0

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