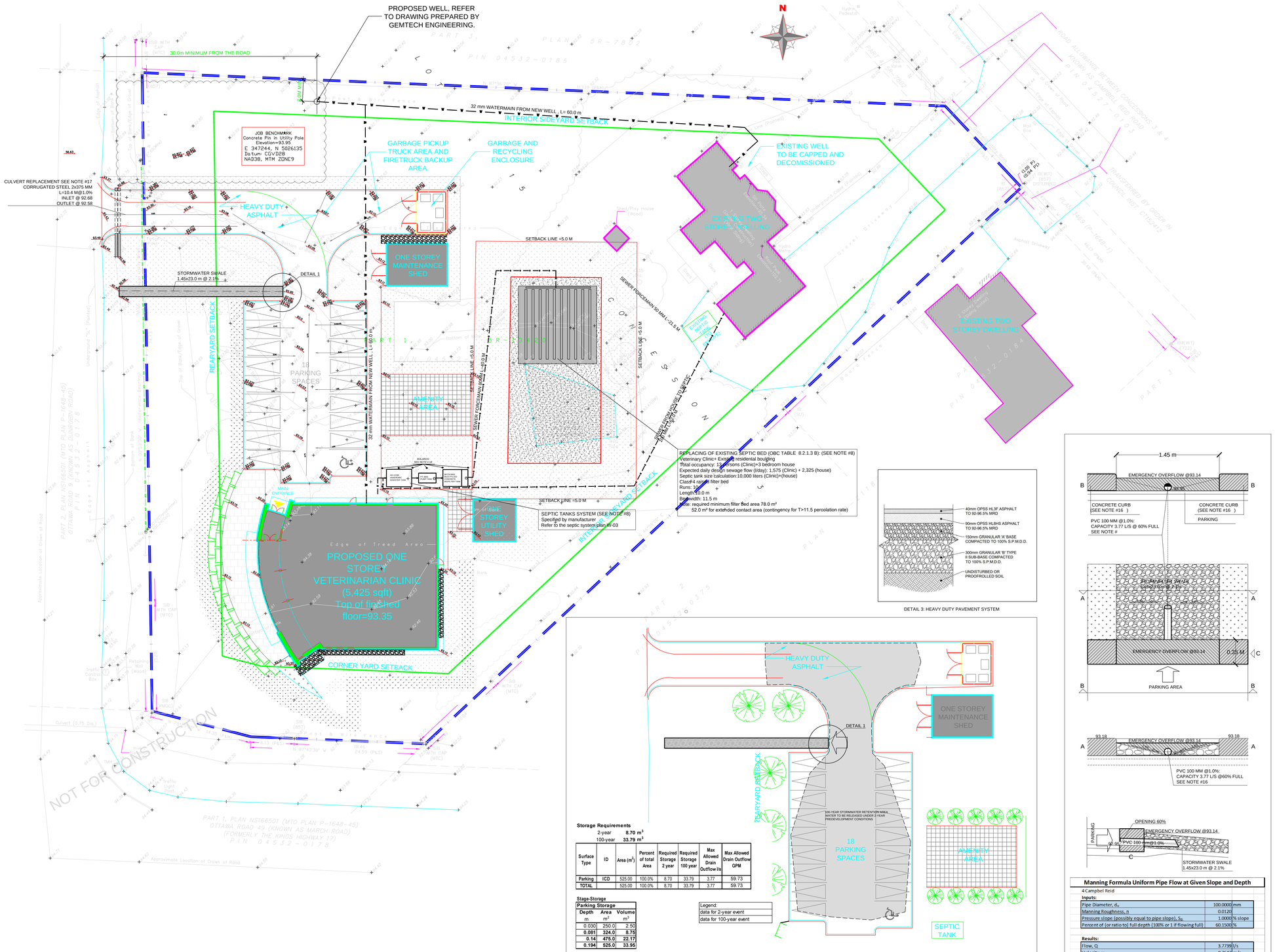


DETAIL 3: HEAVY DUTY PAVEMENT SYSTEM

DETAIL 1: ICD STRUCTURE

DETAIL 2: ON-SITE STORMWATER MANAGEMENT

Storage Requirements

2-year 8.70 m³

100-year 33.79 m³

Surface Type	ID	Area (m²)	Percent of total Area	Required Storage 2 year	Required Storage 100 year	Max Allowed Drain Outflow l/s	Max Allowed Drain Outflow GPM
Parking	ICD	525.00	100.0%	8.70	33.79	3.77	59.73
TOTAL		525.00	100.0%	8.70	33.79	3.77	59.73

Stage-Storage

Parking Storage		
Depth	Area	Volume
m	m²	m³
0.030	250.0	2.50
0.081	324.0	8.75
0.14	475.0	22.17
0.194	525.0	33.95

Legend:
data for 2-year event
data for 100-year event

Manning Formula Uniform Pipe Flow at Given Slope and Depth

4 Campbell Reid

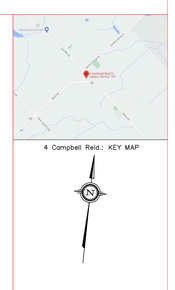
Inputs:	
Pipe Diameter, d_o	100.0000 mm
Manning Roughness, n	0.0120
Pressure slope (possibly equal to pipe slope), S_o	1.0000 % slope
Percent of (or ratio to) full depth (100% or 1 if flowing full)	60.1500 %
Results:	
Flow, Q	3.7739 l/s
Velocity, v	0.7647 m/s
Velocity head, hv	0.0298 m
Flow Area, A	0.0049 m^2
Wetted Perimeter, P	0.1775 m
Hydraulic Radius	0.0278 m
Top Width, T	0.0979 m
Froude Number, F	1.09
Shear Stress (tractive force), τ	5.8983 N/m^2

NOTES:

1. EXISTING SERVICES AND UTILITIES SHOWN ON THIS DRAWING WERE TAKEN FROM THE BEST AVAILABLE RECORDS. CONTRACTOR IS REQUESTED TO CHECK IN THE FIELD FOR LOCATION AND ELEVATION OF PIPES, SEPTIC SYSTEM COMPONENTS (FORCEMAIN, HEADER, FILTER BED PIPES). AND CHECK WITH AUTHORITIES AND UTILITIES TO HIS SATISFACTION BEFORE DIGGING.
2. CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY.
3. PROPOSED SITING DETAILS FOR THIS PROPOSED BUILDING WERE TAKEN FROM THE SITE PLAN PREPARED BY "P2 CONCEPTS"
4. EXISTING HORIZONTAL AND VERTICAL SURVEY DATA SHOWN ON THIS PLAN INCLUDING SITE BENCHMARK, ROAD ELEVATION, SEWER INVERT ELEVATIONS AND THE TOPOGRAPHICAL INFORMATION OF THE LOT SHOWN WERE PROVIDED BY "FAIRHALL, MOFFATT & WOODLAND LIMITED" AND ARCH-NOVA DESIGN INC. IS NOT RESPONSIBLE FOR THE SURVEY PROVIDED.
5. ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA.
6. ALL GRADES SHOWN ARE METRIC. EXISTING AND PROPOSED GRADES SHOWN ON THIS DRAWING ARE BASED ON A GEODETIC BENCHMARK PROVIDED BY "P2 CONCEPTS." AS SHOWN ON THEIR SITE PLAN.
7. ALL WILL BE CONSTRUCTED TO CITY OF OTAWA'S LATTEST REVISED STANDARDS ON APPROVAL BY THE CITY.
8. CONSTRUCT ALL SANITARY PIPES, SEPTIC TANK(S), FORCEMAIN AND FILTER BED IN ACCORDANCE WITH CITY OF OTTAWA'S DSSD LATEST REVISED STANDARDS OTHERWISE AS PER OPSS AND OPSD SPECIFICATIONS.
9. ALL WORKS CONSTRUCTED BY THE CONTRACTOR SHALL MEET CITY OF OTTAWA'S CURRENT ENGINEERS' STANDARDS AND PER CITY'S REQUIREMENTS.
10. THE CONTRACTOR SHALL CONSTRUCT AND ENSURE THAT THE 32 mm WATER SERVICES ON THIS LOT SHALL HAVE A MINIMUM OF 2.4m OF GROUND COVER; OTHERWISE THERMAL INSULATION IS REQUIRED.
11. ALL WATERMAIN SERVICE AND FITTINGS SHALL CONFORM TO APPROVED AWWA AND OR CSA STANDARDS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO COMPLETE THE WORKS.
13. THE SITE WILL BE SERVICED FROM A WELL. CONTRACTOR TO USE "HYDROGEOLOGICAL INVESTIGATION AND TERRAIN ANALYSIS, PROPOSED COMMERCIAL BUILDING, 4 CAMPBELL REID COURT" PREPARED BY "GEMTEC" (JULY 2022) AS A REFERENCE AND GUIDANCE FOR EARTHWORK
14. (EXCAVATION, BACKFILLING AND REINSTATEMENTS).
15. THE OWNER AND/OR HIS CONTRACTOR SHALL CONTACT ALL THE UTILITY COMPANIES REGARDING RELOCATION REQUIREMENTS FOR THE EXISTING OVERHEAD UTILITY POLES, IF REQURED.
16. STORMWATER MANAGEMENT ON SITE WILL BE PONDING ON THE PARKING AREA AND RELEASE OF WATER OVER A CUSTOM DESIGNED SUBMERGED WEIR (PIPE PVC 100 MM) THROUGH THE CURB AND INTO THE DRAINAGE SWALES TO EXISTING STORM DITCH (SEE DETAIL 1). THE WEIR PIPE TO BE MAINTAINED AND CLEANED FROM DEBRIS. AN OVERFLOW AT 0.194 M DEPTH IS DESIGNED TO RUNOFF ANY EXCESS OF WATER OVER 100-YEAR PONDING LEVEL.
17. EXISTING CULVERT TO BE ASSESSED AND REPLACED WITH TWIN CORRUGATED STEEL PIPES 375 MM EACH AT 1.0% SLOPE. FOR THE DRIVEWAY SIDE SLOPE CONSTRUCTION APPLY OPSD 801.010 AND OPSD 801.020
18. INSTALL BOLLARDS AROUND THE SEPTIC SYSTEM FOR PHYSICAL PROTECTION AND PREVENTION OF HEAVY VEHICLES DRIVING OVER TANKS. BOLLARDS TO BE SECURED TO THE FOUNDATION BLOCK WITH LOCKS. FOR THE ACCESS OF MAINTENANCE VEHICLE BOLLARDS TO BE UNLOCKED AND REMOVED. ONLY AUTHORIZED PERSONNELTO OPERATE BOLLARDS REMOVAL AND REINSTATEMENT.

LEGEND

56.63	PROPOSED ELEVATION
57.87	EXISTING ELEVATION
U/S FOOTING	PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION
W	PROPOSED WATER SERVICES COPPER TYPE "K"
S	PROPOSED PVC SANITARY LATERAL SERVICES@1% (MIN.) SLOPE
FD	PROPOSED FOUNDATION DRAINAGE
SD	PROPOSED PVC STORM SEWER
E	EXISTING UNDERGROUND POWER LINE/CONDUIT
	EXISTING CATCH BASIN
	EXISTING STORM MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING UTILITY POLE
	PROPOSED CURB STOP & SERVICE POST
	PROPOSED METER & REMOTE METER
↓DR.	ROOF DRAIN
	PROPERTY LINE
D4	DRAIN



Drawn by:	Z.M.		
Checked by			
Approved by	Z.M.		
Rev 1	Date: Dec. 2022	Description: City comments	
Rev 2	Date: April 2023	Description: City comments	
Rev 3	Date	Description	

ARCH-NOVA Design Inc.
45 Banner Road NEPEAN ON K2H 8X5
613-702-3403 contact@archnova.ca

Servicing & Grading Plan

Location	4 Campbell Reid Crt. , Dunrobin
Owner	Dr. Andrzej Olender 1405 Houston Cres., Ottawa, ON, K2W 1B6
Project No	CW-05-21
Date	June 2023
Drawing No	W-01
Scale	1:200

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
04.06.2023
Z. MIRSA

City of Ottawa File No: D07-12-00-0000
0000