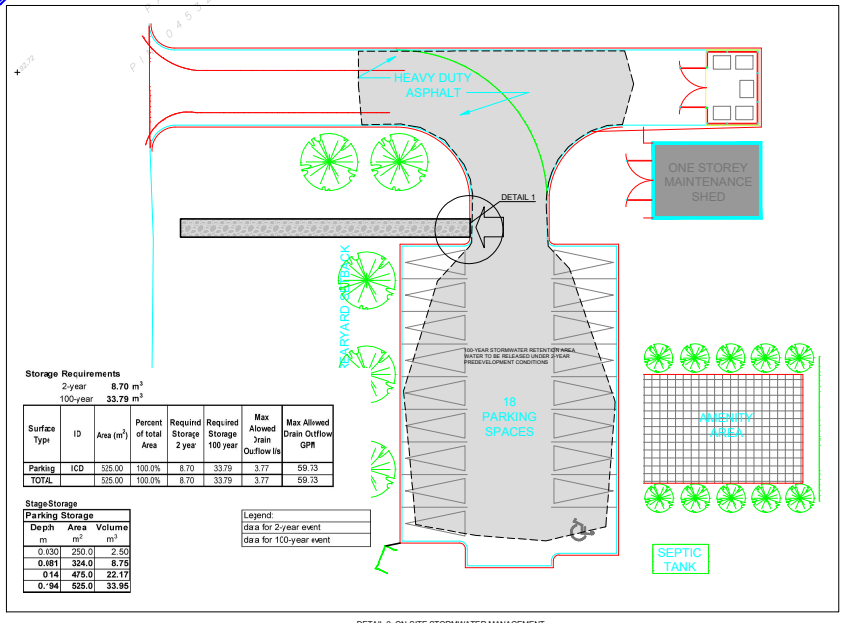
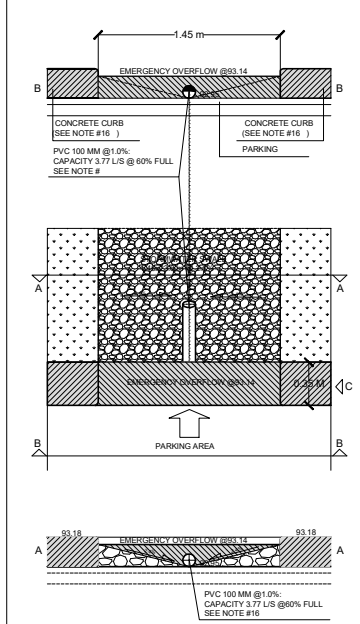
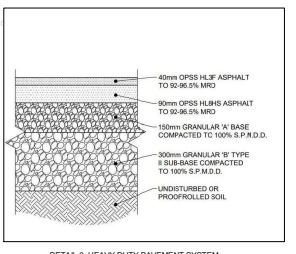


REPLACING OF EXISTING SEPTIC BED (OBC TABLE 8.2.1.3.B) (SEE NOTE #8)
 Veterinary Clinic - Existing residential building
 Total occupancy: 3 persons (Clinic) + 3 bedroom house
 Expected daily design sewage flow (l/day): 1,575 (Clinic) + 2,325 (house)
 Septic tank table calculation: 10,000 liters (Clinic)/house
 Class#4 media filter bed
 Runs: 10.0 m
 Length: 10.0 m
 Bed width: 11.5 m
 Required minimum filter bed area: 76.0 m²
 52.0 m² for antichlor contact area (contingency for T+11.5, percolation rate)



Storage Requirements

Surface	ID	Area (m ²)	Percent of total Area	Required Storage 2-year	Required Storage 100-year	Max Allowed Drain Outflow GPR	Max Allowed Drain Outflow GPR
Parking	ICD	525.00	100.0%	8.70	33.79	3.77	59.13
TOTAL		525.00	100.0%	8.70	33.79	3.77	59.13

Stage Storage

Depth	Area	Volume
0.150	250.0	2.50
0.181	324.0	8.79
0.14	476.0	22.17
0.14	525.0	33.95

Legend
 (a) for 2-year event
 (b) for 100-year event

Manning Formula Uniform Pipe Flow at Given Slope and Depth

Inputs	Value
Pipe Diameter, d _p	100.0000 mm
Minimum Roughness, n	0.0125
Pressure slope (possibly equal to pipe slope), S _p	1.0000 % slope
Percent of (or ratio to) full depth (100% or 1 if flowing full)	60.1500 %

Results:

Flow, Q	3.7798 l/s
Velocity, v	0.2647 m/s
Velocity head, h _v	0.0298 m
Flow Area, A	0.0048 m ²
Wetted Perimeter, P	0.1779 m
Hydraulic Radius, R	0.0278 m
Top Width, T	0.0719 m
Froude Number, F	1.09
Shear stress (inertive force), τ	5.8888 N/m ²

- NOTES:**
- 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.
 - CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY.
 - PROPOSED SITING DETAILS FOR THIS PROPOSED BUILDING WERE TAKEN FROM THE SITE PLAN PREPARED BY "P2 CONCEPTS".
 - 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, McFATT & WOODLAND LIMITED" AND ARCH-NOVA DESIGN INC. IS NOT RESPONSIBLE FOR THE SURVEY PROVIDED.
 - ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA.
 - 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.
 - ALL WORK SHALL BE CONSTRUCTED TO CITY OF OTTAWA'S LATEST REVISED STANDARDS ON APPROVAL BY THE CITY.
 - CONSTRUCT ALL SANITARY PIPES, SEPTIC TANKS, FORCEMAIN AND FILTER BED IN ACCORDANCE WITH CITY OF OTTAWA'S DSSD LATEST REVISED STANDARDS OTHERWISE AS PER OPSS AND OPSD SPECIFICATIONS.
 - ALL WORKS CONSTRUCTED BY THE CONTRACTOR SHALL MEET CITY OF OTTAWA'S CURRENT ENGINEERS' STANDARDS AND PER CITY'S REQUIREMENTS.
 - THE CONTRACTOR SHALL CONSTRUCT AND ENSURE THAT THE 32 mm WATER SERVICES ON THIS LOT SHALL HAVE A MINIMUM OF 24" OF GROUND COVER, OTHERWISE THERMAL INSULATION IS REQUIRED.
 - ALL WATERMAIN SERVICE AND FITTINGS SHALL CONFORM TO APPROVED AWWA AND OR CSA STANDARDS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO COMPLETE THE WORKS.
 - 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 (EXCAVATION, BACKFILLING AND REINSTATEMENTS).
 - THE OWNER AND/OR HIS CONTRACTOR SHALL CONTACT ALL THE UTILITY COMPANIES REGARDING RELOCATION REQUIREMENTS FOR THE EXISTING OVERHEAD UTILITY POLES, IF REQUIRED.
 - STORMWATER MANAGEMENT ON SITE WILL BE FOCUSING 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 PENDING LEVEL.
 - EXISTING CULVERT TO BE ASSESSED AND REPLACED WITH TWIN CORRUGATED STEEL PIPES 375 MM EACH AT 10% SLOPE. FOR THE DRIVEWAY SIDE SLOPE CONSTRUCTION APPLY OPSD 801.010 AND OPSD 801.020.
 - INSTALL BOLLARDS AROUND THE SEPTIC SYSTEM AND NEW WELL FOR PHYSICAL PROTECTION AND PREVENTION OF HEAVY VEHICLES DRIVING OVER TANKS OR HEAD OF THE WELL. BOLLARDS TO BE SECURED TO THE FOUNDATION BLOCK WITH LOCKS. FOR THE ACCESS OF MAINTENANCE VEHICLE BOLLARDS TO BE UNLOCKED AND REMOVED. ONLY AUTHORIZED PERSONNEL TO OPERATE BOLLARDS REMOVAL AND REINSTATEMENT.
- SURVEY NOTES:**
 BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE EASTERLY LIMIT OF DUNROBIN ROAD AS SHOWN IN PLAN SR-13420, HAVING A BEARING OF N04M53°30'.
- SITE BENCHMARK** (E 347 189.56; N 502616354)
VERTICAL CONSTRAINT (GEODETIC BENCHMARK) 001 19680011 ELV. 65.331 M
HORIZONTAL CONSTRAINT (ONC MONUMENT) 0 01919791051
- Horizontal datum: NAD 83 (D-ignis) MTM ZONE 9;
 Vertical datum: Geodetic Datum CGVD88

LEGEND

- PROPOSED ELEVATION
- EXISTING ELEVATION
- PROPOSED FINISH OF CONCRETE FINISH ELEVATION
- UTILITY PIPES
- PROPOSED WATER SERVICES COVER TYPE "X"
- PROPOSED PVC SANITARY LATERAL SERVICES (MIN) SLOPE
- PROPOSED FOUNDATION DRAINAGE
- PROPOSED PVC STORM SEWER
- EXISTING UNDERGROUND POWER LINE/CONDUIT
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING UTILITY POLE
- PROPOSED CURB STOP & SERVICE POST
- PROPOSED WATER & REMOTE METER
- ROOF DRAIN
- PROPERTY LINE
- DRAIN

4 Campbell Reid - KEY MAP

ARCH-NOVA Design Inc. 45 Banner Road NEPEAN ON K2H 8X5
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Servicing & Grading Plan

Project No: C39-05-21
 Date: August 2023
 Drawing No: 19-01
 Scale: 1:200