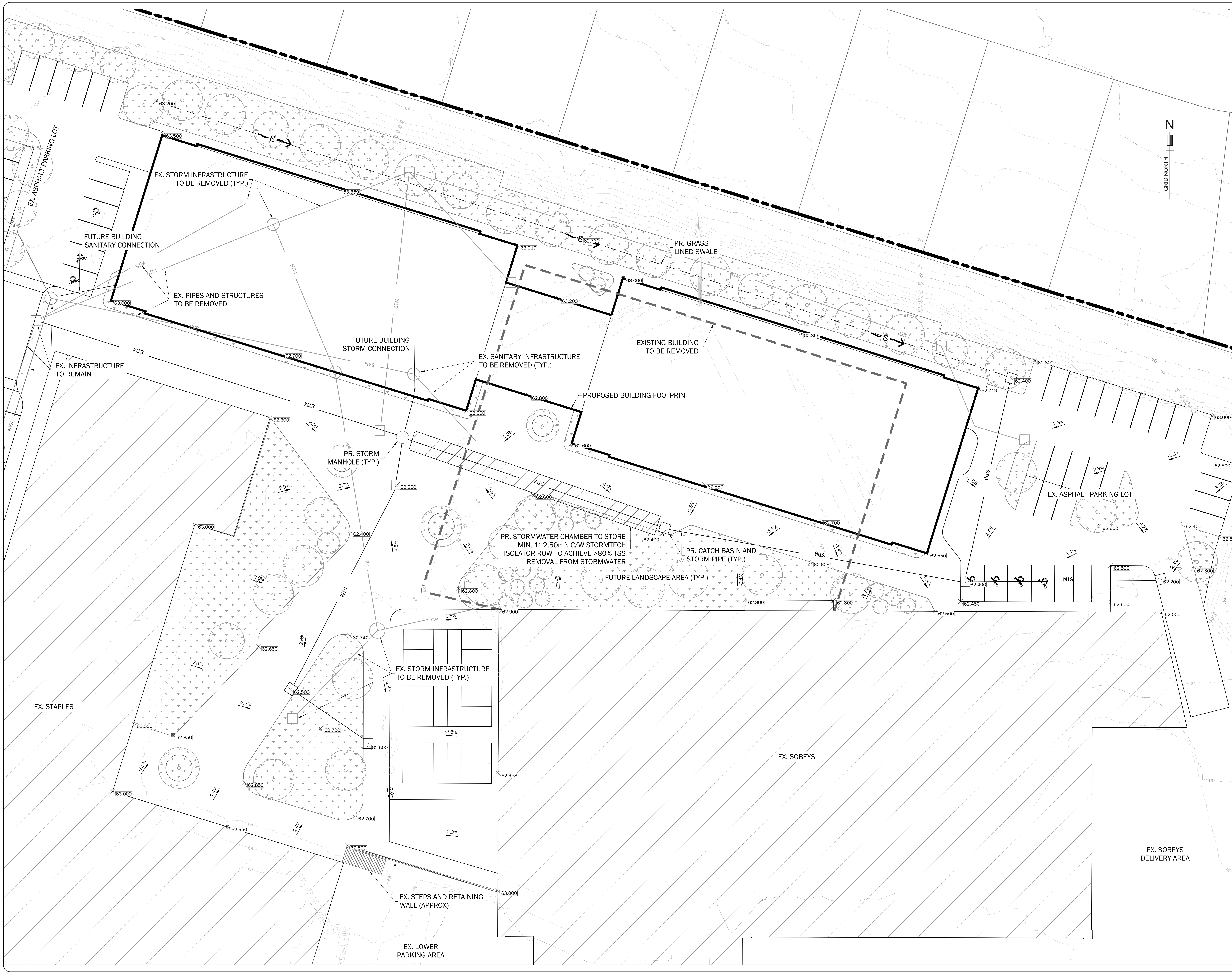
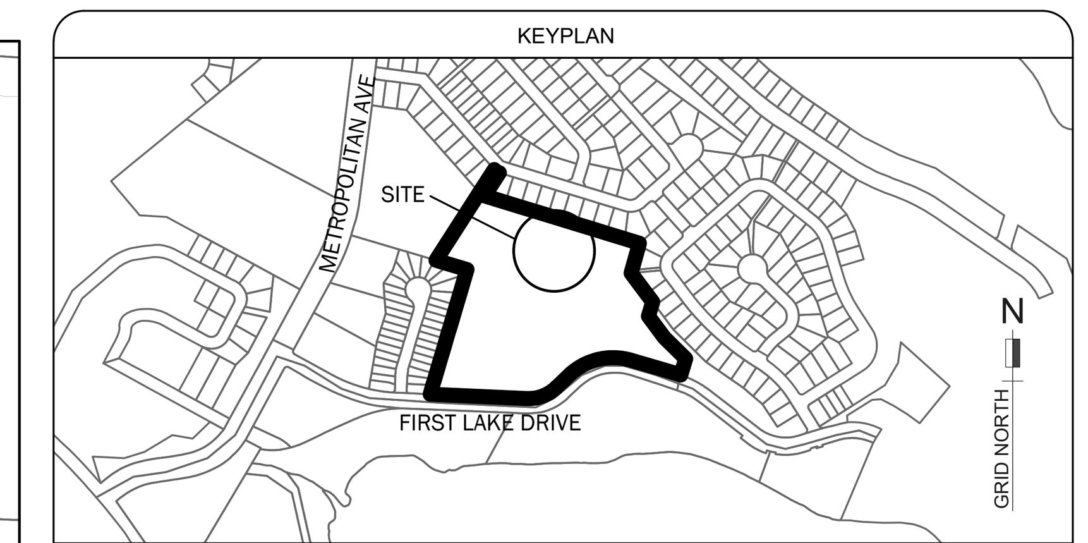


KEYPLAN



NOTES:

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3. ALL WORK MUST CONFORM TO HALIFAX WATER AND HALIFAX REGIONAL MUNICIPALITY STANDARDS AND SPECIFICATIONS (LATEST EDITION).

FIRST 10mm RAINFALL TO BE STORED.

DEVELOPMENT AREA = 11,250²

REQUIRED STORAGE = 112.50m³

NOTE:
ADS (OR EQUIVALENT) STORMWATER CHAMBER C/W STORMTECH ISOLATOR ROW TO PROVIDE >80% TSS REMOVAL FROM STORMWATER. REFER TO SUPPORTING NJCAT DOCUMENT.

NOTE:
ALL EXISTING STRUCTURE AND PIPE LOCATIONS ARE APPROXIMATE, BASED OFF OF HALIFAX WATER GIS INFORMATION.

NOTE:
PROPOSED STRUCTURE LOCATIONS ARE APPROXIMATE AND MAY CHANGE AS DEVELOPMENT OF DETAILED DESIGN PROGRESSES.

No.	MM/DD/YYYY	Revision Description	By
3	06/11/2024	REVISED	EF
2	04/10/2024	ISSUED FOR DEVELOPMENT REVIEW - REVISED SITE	EF
1	03/13/2024	ISSUED FOR DEVELOPMENT REVIEW - REVISED	EF

ABLE
ENGINEERING | LAND SURVEYING

Seal

Original Signed
4599
PROVINCE OF NOVA SCOTIA

SCALE: 1:250
0m 5m 10m 15m 20m 25m

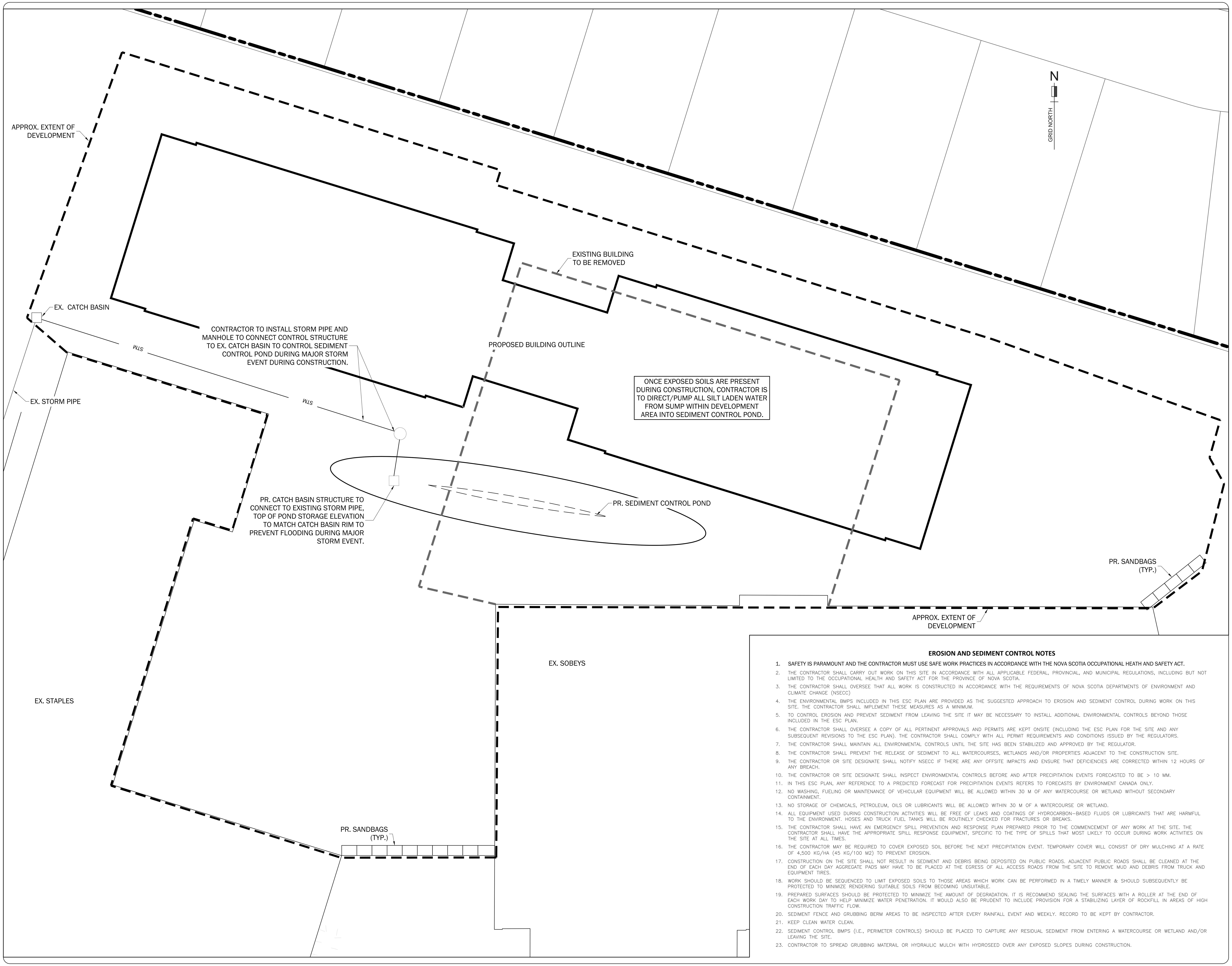
Horizontal	Vertical	Plot
1:250	N/A	ARCH D (24"x36")

Project
70 FIRST LAKE DRIVE
SACKVILLE, NS
PID # 00362442

Title
CONCEPTUAL SITE PLAN

Project No. 240112-96	Drawn E.FRY	Sheet 2 of 2
Ref.	Engineer J.PINHEY	Plan No. C100
Date 2024/01/10	Check	

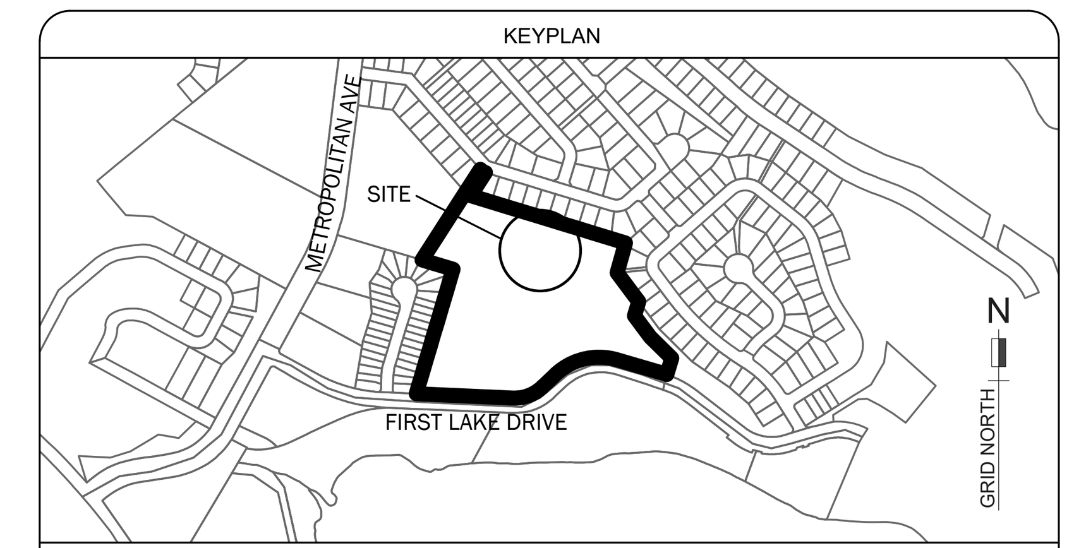
SHEET PRODUCED: 6/11/2024 10:19 AM LAST SAVED BY E.FRY



EROSION AND SEDIMENT CONTROL NOTES

1. SAFETY IS PARAMOUNT AND THE CONTRACTOR MUST USE SAFE WORK PRACTICES IN ACCORDANCE WITH THE NOVA SCOTIA OCCUPATIONAL HEATH AND SAFETY ACT.
2. THE CONTRACTOR SHALL CARRY OUT WORK ON THIS SITE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, PROVINCIAL, AND MUNICIPAL REGULATIONS, INCLUDING BUT NOT LIMITED TO THE OCCUPATIONAL HEALTH AND SAFETY ACT FOR THE PROVINCE OF NOVA SCOTIA.
3. THE CONTRACTOR SHALL OVERSEE THAT ALL WORK IS CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF NOVA SCOTIA DEPARTMENTS OF ENVIRONMENT AND CLIMATE CHANGE (NSECC)
4. THE ENVIRONMENTAL BMPS INCLUDED IN THIS ESC PLAN ARE PROVIDED AS THE SUGGESTED APPROACH TO EROSION AND SEDIMENT CONTROL DURING WORK ON THIS SITE. THE CONTRACTOR SHALL IMPLEMENT THESE MEASURES AS A MINIMUM.
5. TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE IT MAY BE NECESSARY TO INSTALL ADDITIONAL ENVIRONMENTAL CONTROLS BEYOND THOSE INCLUDED IN THE ESC PLAN.
6. THE CONTRACTOR SHALL OVERSEE A COPY OF ALL PERTINENT APPROVALS AND PERMITS ARE KEPT ONSITE (INCLUDING THE ESC PLAN FOR THE SITE AND ANY SUBSEQUENT REVISIONS TO THE ESC PLAN). THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND CONDITIONS ISSUED BY THE REGULATORS.
7. THE CONTRACTOR SHALL MAINTAIN ALL ENVIRONMENTAL CONTROLS UNTIL THE SITE HAS BEEN STABILIZED AND APPROVED BY THE REGULATOR.
8. THE CONTRACTOR SHALL PREVENT THE RELEASE OF SEDIMENT TO ALL WATERCOURSES, WETLANDS AND/OR PROPERTIES ADJACENT TO THE CONSTRUCTION SITE.
9. THE CONTRACTOR OR SITE DESIGNATE SHALL NOTIFY NSECC IF THERE ARE ANY OFFSITE IMPACTS AND ENSURE THAT DEFICIENCIES ARE CORRECTED WITHIN 12 HOURS OF ANY BREACH.
10. THE CONTRACTOR OR SITE DESIGNATE SHALL INSPECT ENVIRONMENTAL CONTROLS BEFORE AND AFTER PRECIPITATION EVENTS FORECASTED TO BE > 10 MM.
11. IN THIS ESC PLAN, ANY REFERENCE TO A PREDICTED FORECAST FOR PRECIPITATION EVENTS REFERS TO FORECASTS BY ENVIRONMENT CANADA ONLY.
12. NO WASHING, FUELING OR MAINTENANCE OF VEHICULAR EQUIPMENT WILL BE ALLOWED WITHIN 30 M OF ANY WATERCOURSE OR WETLAND WITHOUT SECONDARY CONTAINMENT.
13. NO STORAGE OF CHEMICALS, PETROLEUM, OILS OR LUBRICANTS WILL BE ALLOWED WITHIN 30 M OF A WATERCOURSE OR WETLAND.
14. ALL EQUIPMENT USED DURING CONSTRUCTION ACTIVITIES WILL BE FREE OF LEAKS AND COATINGS OF HYDROCARBON–BASED FLUIDS OR LUBRICANTS THAT ARE HARMFUL TO THE ENVIRONMENT. HOSES AND TRUCK FUEL TANKS WILL BE ROUTINELY CHECKED FOR FRACTURES OR BREAKS.
15. THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL PREVENTION AND RESPONSE PLAN PREPARED PRIOR TO THE COMMENCEMENT OF ANY WORK AT THE SITE. THE CONTRACTOR SHALL HAVE THE APPROPRIATE SPILL RESPONSE EQUIPMENT, SPECIFIC TO THE TYPE OF SPILLS THAT MOST LIKELY TO OCCUR DURING WORK ACTIVITIES ON THE SITE AT ALL TIMES.
16. THE CONTRACTOR MAY BE REQUIRED TO COVER EXPOSED SOIL BEFORE THE NEXT PRECIPITATION EVENT. TEMPORARY COVER WILL CONSIST OF DRY MULCHING AT A RATE OF 4,500 KG/HA (45 KG/100 M2) TO PREVENT EROSION.
17. CONSTRUCTION ON THE SITE SHALL NOT RESULT IN SEDIMENT AND DEBRIS BEING DEPOSITED ON PUBLIC ROADS. ADJACENT PUBLIC ROADS SHALL BE CLEANED AT THE END OF EACH DAY AGGREGATE PADS MAY HAVE TO BE PLACED AT THE EGRESS OF ALL ACCESS ROADS FROM THE SITE TO REMOVE MUD AND DEBRIS FROM TRUCK AND EQUIPMENT TIRES.
18. WORK SHOULD BE SEQUENCED TO LIMIT EXPOSED SOILS TO THOSE AREAS WHICH WORK CAN BE PERFORMED IN A TIMELY MANNER & SHOULD SUBSEQUENTLY BE PROTECTED TO MINIMIZE RENDERING SUITABLE SOILS FROM BECOMING UNSUITABLE.
19. PREPARED SURFACES SHOULD BE PROTECTED TO MINIMIZE THE AMOUNT OF DEGRADATION. IT IS RECOMMEND SEALING THE SURFACES WITH A ROLLER AT THE END OF EACH WORK DAY TO HELP MINIMIZE WATER PENETRATION. IT WOULD ALSO BE PRUDENT TO INCLUDE PROVISION FOR A STABILIZING LAYER OF ROCKFILL IN AREAS OF HIGH CONSTRUCTION TRAFFIC FLOW.
20. SEDIMENT FENCE AND GRUBBING BERM AREAS TO BE INSPECTED AFTER EVERY RAINFALL EVENT AND WEEKLY. RECORD TO BE KEPT BY CONTRACTOR.
21. KEEP CLEAN WATER CLEAN.
22. SEDIMENT CONTROL BMPS (I.E., PERIMETER CONTROLS) SHOULD BE PLACED TO CAPTURE ANY RESIDUAL SEDIMENT FROM ENTERING A WATERCOURSE OR WETLAND AND/OR LEAVING THE SITE.
23. CONTRACTOR TO SPREAD GRUBBING MATERAIL OR HYDRAULIC MULCH WITH HYDROSEED OVER ANY EXPOSED SLOPES DURING CONSTRUCTION.

KEYPLAN



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1	01/12/2024	ISSUED FOR DEVELOPMENT REVIEW	EF

ABLE
ENGINEERING | LAND SURVEYING

Seal

Original Signed

PROFESSIONAL EN... PROVINCE OF NOVA SCOTIA 4599

SCALE: 1:250

0m 5m 10m 15m 20m 25m

Horizontal	Vertical	Plot
1:250	N/A	ARCH D (24"x36")

Project

70 FIRST LAKE DRIVE

SACKVILLE, NS

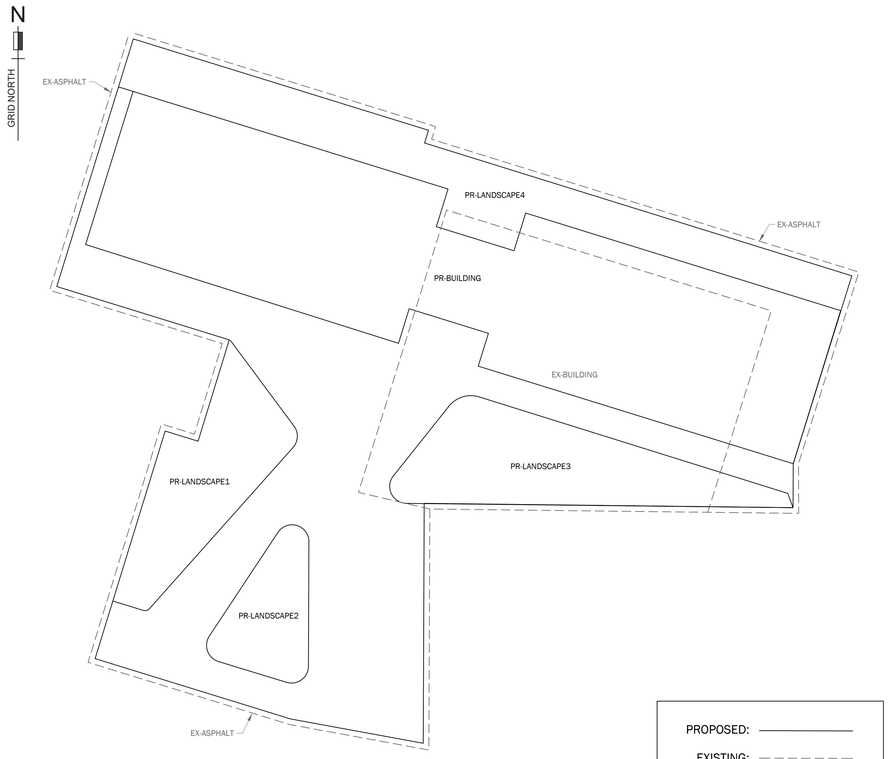
PID # 00362442

Title

EROSION & SEDIMENT CONTROL PLAN

Project No. 240112-96	Drawn E.FRY	Sheet 2 of 3
Ref.	Engineer J.PINHEY	Plan No. C101
Date 2024/01/10	Check	

SHEET PRODUCED: 6/11/2024 10:19 AM LAST SAVED BY E.FRY



PROPOSED:

EXISTING:

EXISTING PEAK FLOWS EXCEED PROPOSED PEAK FLOWS FOR ALL STORM EVENTS. THIS IS DUE TO THE EXISTING AREA OF ANALYSIS FULLY CONSISTING OF ASPHALT OR BUILDING, BEING IMPERMEABLE. THE PROPOSED DESIGN INCLUDES VARIOUS LANDSCAPED AREAS THAT WILL ALLOW SOME STORAGE AND INFILTRATION, CAUSING THE PEAK FLOW TO LOWER. NO DETENTION STORAGE WILL BE REQUIRED FOR THE REQUIRED FOR THE DEVELOPMENT.

PROPOSED 5-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
PR-BUILDING	0.32	OUT-STORM	98.00	111.15	105.16	0.04191	0 00:05:00
PR-IMPERMEABLE	0.34	OUT-STORM	98.00	111.15	105.16	0.04361	0 00:05:00
PR-LANDSCAPE1	0.06	OUT-STORM	74.00	111.15	47.65	0.00368	0 00:05:00
PR-LANDSCAPE2	0.03	OUT-STORM	74.00	111.15	47.57	0.00198	0 00:05:00
PR-LANDSCAPE3	0.08	OUT-STORM	74.00	111.15	47.65	0.00481	0 00:05:00
PR-LANDSCAPE4	0.12	OUT-STORM	74.00	111.15	47.68	0.00765	0 00:05:00

TOTAL PROPOSED PEAK FLOW = 0.10364
TOTAL EXISTING PEAK FLOW = 0.12357

EXISTING 5-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
EX-ASPHALT	0.69	OUT-STORM	98.00	111.15	105.16	0.08977	0 00:05:00
EX-BUILDING	0.26	OUT-STORM	98.00	111.15	105.16	0.03398	0 00:05:00

TOTAL EXISTING PEAK FLOW = 0.12375

PROPOSED 10-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
PR-BUILDING	0.32	OUT-STORM	98.00	140.28	134.24	0.05295	0 00:05:00
PR-IMPERMEABLE	0.34	OUT-STORM	98.00	140.28	134.24	0.05522	0 00:05:00
PR-LANDSCAPE1	0.06	OUT-STORM	74.00	140.28	70.76	0.00566	0 00:05:00
PR-LANDSCAPE2	0.03	OUT-STORM	74.00	140.28	70.69	0.00312	0 00:05:00
PR-LANDSCAPE3	0.08	OUT-STORM	74.00	140.28	70.79	0.00736	0 00:05:00
PR-LANDSCAPE4	0.12	OUT-STORM	74.00	140.28	70.79	0.01161	0 00:05:00

TOTAL PROPOSED PEAK FLOW = 0.13592
TOTAL EXISTING PEAK FLOW = 0.15659

EXISTING 10-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
EX-ASPHALT	0.69	OUT-STORM	98.00	140.28	134.24	0.11383	0 00:05:00
EX-BUILDING	0.26	OUT-STORM	98.00	140.28	134.24	0.04276	0 00:05:00

TOTAL EXISTING PEAK FLOW = 0.15659

PROPOSED 25-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
PR-BUILDING	0.32	OUT-STORM	98.00	177.16	171.09	0.06711	0 00:05:00
PR-IMPERMEABLE	0.34	OUT-STORM	98.00	177.16	171.09	0.06994	0 00:05:00
PR-LANDSCAPE1	0.06	OUT-STORM	74.00	177.16	102.06	0.00821	0 00:05:00
PR-LANDSCAPE2	0.03	OUT-STORM	74.00	177.16	101.98	0.00453	0 00:05:00
PR-LANDSCAPE3	0.08	OUT-STORM	74.00	177.16	102.08	0.01104	0 00:05:00
PR-LANDSCAPE4	0.12	OUT-STORM	74.00	177.16	102.08	0.01699	0 00:05:00

TOTAL PROPOSED PEAK FLOW = 0.17782
TOTAL EXISTING PEAK FLOW = 0.19793

EXISTING 25-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
EX-ASPHALT	0.69	OUT-STORM	98.00	177.16	171.09	0.14413	0 00:05:00
EX-BUILDING	0.26	OUT-STORM	98.00	177.16	171.09	0.05380	0 00:05:00

TOTAL EXISTING PEAK FLOW = 0.19793

PROPOSED 50-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
PR-BUILDING	0.32	OUT-STORM	98.00	204.70	198.60	0.07759	0 00:05:00
PR-IMPERMEABLE	0.34	OUT-STORM	98.00	204.70	198.60	0.08070	0 00:05:00
PR-LANDSCAPE1	0.06	OUT-STORM	74.00	204.70	126.42	0.01019	0 00:05:00
PR-LANDSCAPE2	0.03	OUT-STORM	74.00	204.70	126.31	0.00566	0 00:05:00
PR-LANDSCAPE3	0.08	OUT-STORM	74.00	204.70	126.42	0.01359	0 00:05:00
PR-LANDSCAPE4	0.12	OUT-STORM	74.00	204.70	126.44	0.02096	0 00:05:00

TOTAL PROPOSED PEAK FLOW = 0.20869
TOTAL EXISTING PEAK FLOW = 0.22880

EXISTING 50-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
EX-ASPHALT	0.69	OUT-STORM	98.00	204.70	198.60	0.16650	0 00:05:00
EX-BUILDING	0.26	OUT-STORM	98.00	204.70	198.60	0.06230	0 00:05:00

TOTAL EXISTING PEAK FLOW = 0.22880

PROPOSED 100-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
PR-BUILDING	0.32	OUT-STORM	98.00	231.54	225.43	0.08807	0 00:05:00
PR-IMPERMEABLE	0.34	OUT-STORM	98.00	231.54	225.43	0.09146	0 00:05:00
PR-LANDSCAPE1	0.06	OUT-STORM	74.00	231.54	150.70	0.01218	0 00:05:00
PR-LANDSCAPE2	0.03	OUT-STORM	74.00	231.54	150.62	0.00680	0 00:05:00
PR-LANDSCAPE3	0.08	OUT-STORM	74.00	231.54	150.72	0.01614	0 00:05:00
PR-LANDSCAPE4	0.12	OUT-STORM	74.00	231.54	150.72	0.02520	0 00:05:00

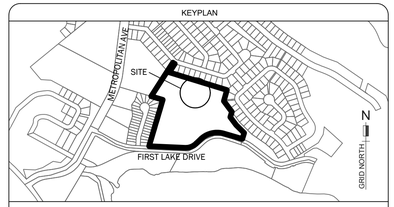
TOTAL PROPOSED PEAK FLOW = 0.23985
TOTAL EXISTING PEAK FLOW = 0.25882

EXISTING 100-YEAR STORM SUBBASINS

Element ID	Area (ha)	Drainage Node ID	Weighted Curve Number	Total Precipitation (mm)	Total Runoff (mm)	Peak Runoff (cms)	Time of Concentration (days hh:mm:ss)
EX-ASPHALT	0.69	OUT-STORM	98.00	231.54	225.43	0.18859	0 00:05:00
EX-BUILDING	0.26	OUT-STORM	98.00	231.54	225.43	0.07023	0 00:05:00

TOTAL EXISTING PEAK FLOW = 0.25882

KEYPLAN



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THE STORM WATER RUNOFF FOR THE 1:5, 1:10, 1:25, 1:50, 1:100 YEAR STORM EVENTS WAS ESTIMATED USING STORM & SANITARY ANALYSIS 2020 (SSA) FROM AUTOCAD CIVIL 3D.

THE STORM WATER CALCULATIONS WERE BASED ON THE SOIL CONSERVATION SERVICE METHOD (SCS TR-55) RUNOFF METHODOLOGY USING THE SYNTHETIC DESIGN STORM EVENT COMMONLY REFERRED TO AS THE CHICAGO STORM. THE RAIN FALL AMOUNTS USED IN THE ANALYSIS & MODELING ARE AS FOLLOWS & WERE OBTAINED FROM ENVIRONMENT CANADA RAIN FALL DATABASE.
1:5 = 111.8mm OF RAIN FALL OVER 24HR PERIOD
1:10 =141.1mm OF RAIN FALL OVER 24HR PERIOD
1:25 = 178.2mm OF RAIN FALL OVER 24HR PERIOD
1:50 = 205.9mm OF RAIN FALL OVER 24HR PERIOD
1:100 = 232.9mm OF RAIN FALL OVER 24HR PERIOD

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ABLE ENGINEERING | LAND SURVEYING

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ISSUED PROFESSIONAL SEAL
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PROVINCE OF NOVA SCOTIA

SCALE: 1:500
0m 10m 20m 30m 40m 50m

Horizontal	Vertical	Plot
1:500	N/A	ARCH D (24"x36")

Project

70 FIRST LAKE DRIVE
SACKVILLE, NS
PID # 00362442

Title

CONCEPTUAL STORMWATER ANALYSIS

Project No.	Drawn	Sheet
240112-96	E.FRY	3 of 3
Ref.	Engineer	Plan No.
	J.PINHEY	C102
Date	Check	
2024/01/10		

SHEET PRODUCED BY ABLE ON 11 MM LAST SAVED BY EF