

PROPOSED ARCHITECTURAL SITE AND SERVICES PLAN R2

1/16" = 1'-0"

REFER TO DETAIL SURVEY FOR ELEVATIONS AND EXISTING CONDITIONS
DATED APRIL 1ST 2021 BY ANNAPOLIS VALLEY SURVEYORS LIMITED



LEGEND

	FIRE HYDRANT
	CATCH BASIN
	UNDER GROUND STORAGE
	6" WATER PVC
	8" SANITARY DR35 PVC
	12" STORM

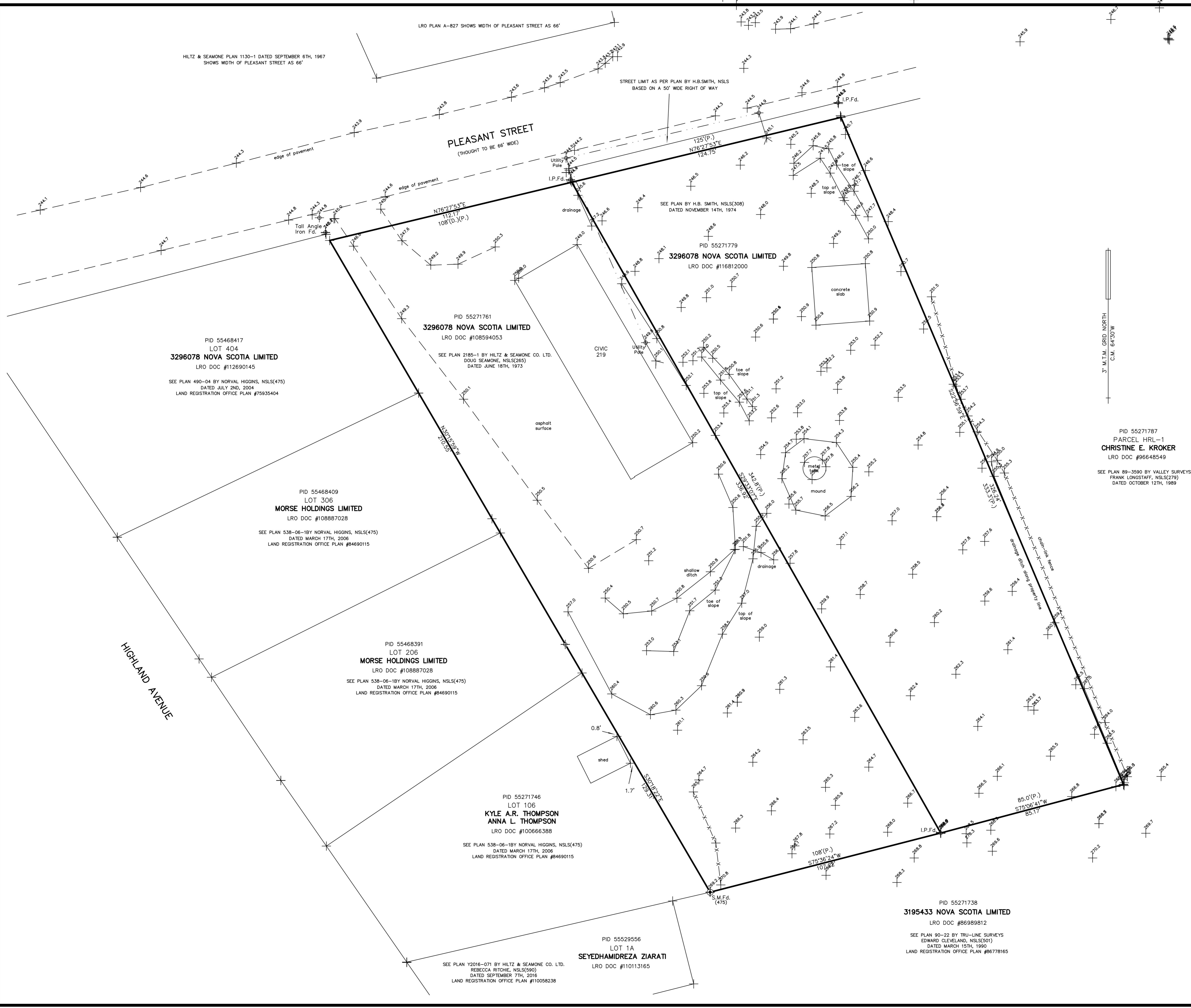
LOT 209

EXISTING LOT	33 955sqft	3 154.5m2
LOT COVERAGE	21.9%	
FOOTPRINT	7468sqft	693.8m2
GREEN SPACE 55.4%	18 771.8sqft	1 744m2
HARD SURFACE 44.7%	15 183.2sqft	1410.5m2
MIN. LOT COVERAGE	394.3m2/ unit (8 UNITS)	
LOT FRONTAGE	124'-9"	38.02m
PARKING	8 UNITS x 1.25 = 10 STALLS	
BUILDING HEIGHT	2 STOREY	

Insight DesignCo

134 Gerrish Street
Windsor, Nova Scotia
p (902) 750 7777
e insightdesigninfo@gmail.com

A100



- LEGEND**
- LANDS DEALT WITH BY THIS SURVEY
 - S.M. SURVEY MARKER
 - △ N.S.C.M. NOVA SCOTIA CO-ORDINATE MONUMENT
 - I.B., R.P. IRON BAR, ROCK POST
 - I.P., DH. IRON PIPE, DRILLHOLE
 - Fd. FOUND
 - ℄ CENTRELINE
 - (T/L) TIE LINE
 - WT. WITNESS
 - Bk., Pg. BOOK, PAGE
 - P.R. PLAN REFERENCE
 - O.H.W.M. ORDINARY HIGH WATER MARK
 - (D),(P),(M),(C) DEED, PLAN, MEASURED, CALCULATED
 - R., A., Ch. RADIUS, ARC, CHORD
 - P.C. POINT OF CURVATURE
 - P.C.C., P.R.C. POINT OF COMPOUND/REVERSE CURVATURE
 - PID PROPERTY IDENTIFICATION NUMBER
 - LRO LAND REGISTRATION OFFICE
 - U.P. UTILITY POLE
 - n.t.s. NOT TO SCALE
 - C.P. CALCULATED POINT
 - NSHPN NOVA SCOTIA HIGH PRECISION NETWORK

NOTES

1) THIS SURVEY WAS EXECUTED DURING THE PERIOD OF MARCH 17TH TO 31ST, 2021

Spatial Reference System Information
 Horizontal Datum: NAD83(CSRS) 2010.0 v.6.0.0
 Projection: 3MTM - Zone 5 - GM 64°30' West Longitude

CO-ORDINATE VALUES (grid)		
CONTROL	NORTHING	EASTING
NSHPN 208017	16,386,974.875	83,697,033.625
NAD83 (CSRS) 2010 (IMPERIAL)		

- BEARINGS ARE GRID AND ARE REFERRED TO THE CENTRAL MERIDIAN OF THE 3MTM GRID, ZONE 5 (64°30' WEST LONGITUDE) - NAD83(CSRS) 2010.0 v.6.0.0
- THIS SURVEY IS TIED TO THE NOVA SCOTIA COORDINATE REFERENCE SYSTEM WITH SMARTNET GPS OBSERVATIONS ON THE FOLLOWING STATIONS:
 - NSACS-CAMBRIDGE (250001 - Federal Number: NS50001)
 - NSHPN 208017 PUBLISHED VALUES JANUARY 6TH, 2017
- DISTANCES ARE HORIZONTAL AT GENERAL GROUND LEVEL AND ARE EXPRESSED IN FEET.
- TO COMPUTE GRID COORDINATES REDUCE THE GROUND DISTANCES TO THE GRID BY MULTIPLYING A COMBINED SCALE FACTOR OF 0.999890.

3' M.T.M. GRID NORTH
C.M. 64°30'W

PID 55271787
 PARCEL HRL-1
CHRISTINE E. KROKER
 LRO DOC #96648549

SEE PLAN 89-3590 BY VALLEY SURVEYS
 FRANK LONGSTAFF, NSLS(279)
 DATED OCTOBER 12TH, 1999

SEE PLAN 77-304-1BY VALLEY SURVEYS
 BRUCE HAVILL, NSLS(214)
 DATED MAY 19TH, 1977

TOPOGRAPHIC SURVEY

LAND OF
3296078 NOVA SCOTIA LIMITED

CIVIC 219 PLEASANT STREET
 WOLFVILLE KINGS COUNTY NOVA SCOTIA

SCALE 1"=20'
 20 10 0 20 40 60

THE SURVEYORS OF NOVA SCOTIA
 FOUNDED 1951

 MICHAEL MCKENNA
 575
 MEMBER

PLAN NO. 21-039

DATE: APRIL 1ST, 2021

SURVEYED BY: MPM

DRAWN BY: MPM

ANNAPOLIS VALLEY SURVEYS LIMITED

54 CORNWALLIS STREET KENTVILLE NOVA SCOTIA
 PHONE 902-698-1225 E-MAIL: mckenna@avsurveys.ca

PLEASANT STREET DEVELOPMENT
209 PLEASANT STREET, WOLFVILLE NOVA SCOTIA



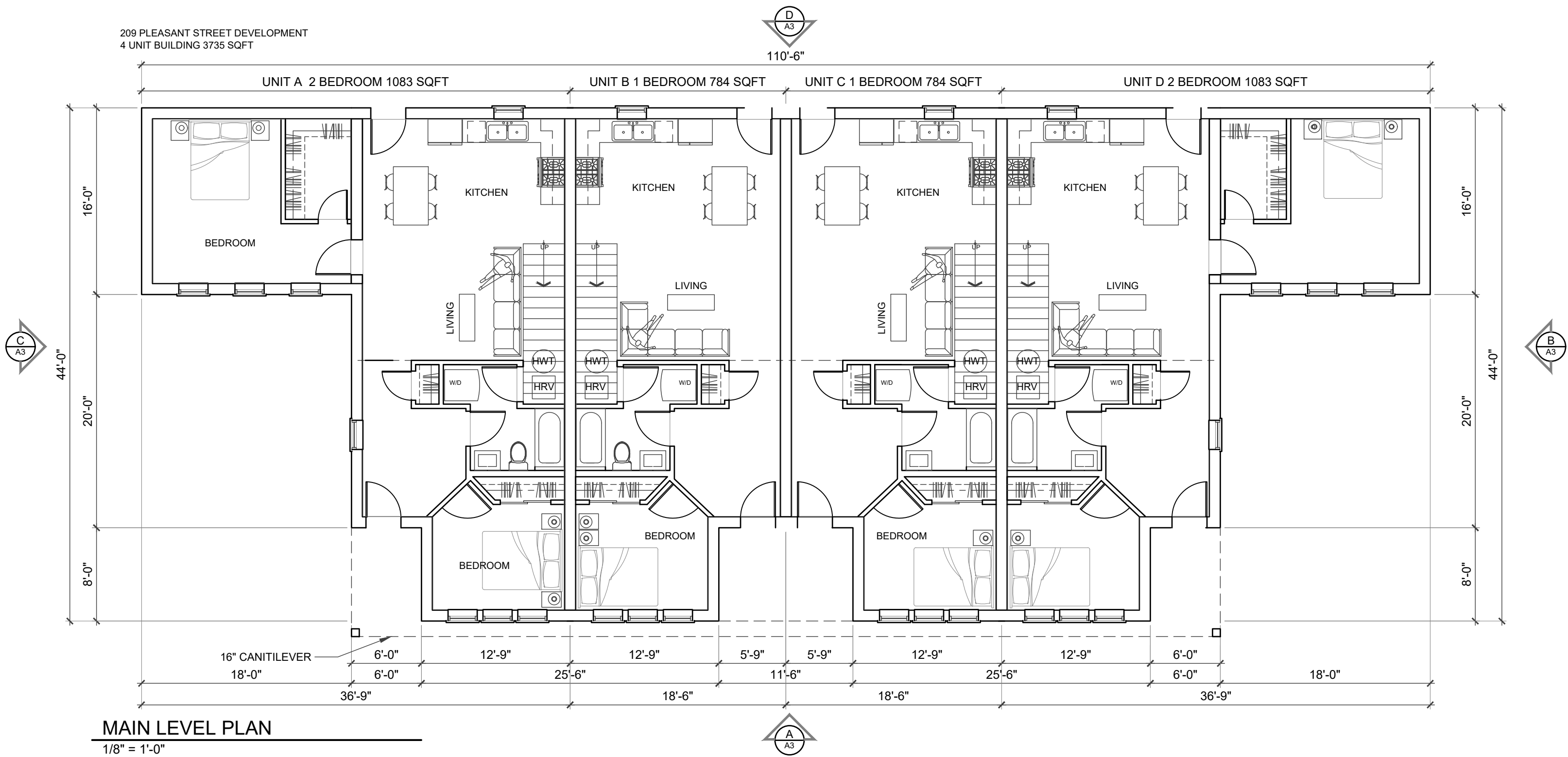
INSIGHT
DESIGN CO.



Insight Design Co
134 Gerrish Street
Windsor, Nova Scotia
p (902) 790 7777
e insightdesigninfo@gmail.com

ARCHITECTURAL DRAWING LIST
A1 ARCHITECTURAL SITE PLAN
A2 PLAN
A3 EXTERIOR ELEVATIONS

209 PLEASANT STREET DEVELOPMENT
4 UNIT BUILDING 3735 SQFT

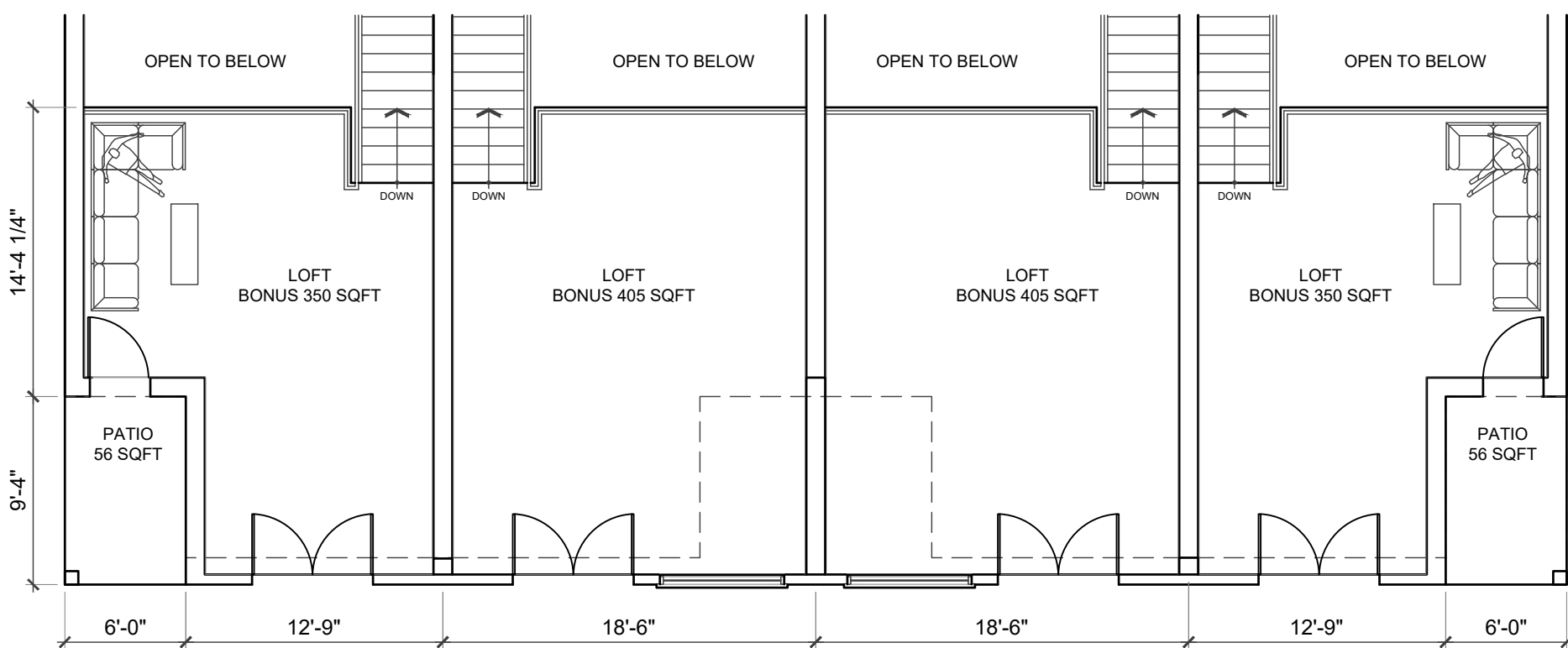


MAIN LEVEL PLAN

1/8" = 1'-0"



CONCEPTUAL RENDERING



LOFT LEVEL PLAN

1/8" = 1'-0"

ISSUE	DATE
-------	------

PHASE: **Site Plan Application**
Application 04292021

NOTES:
COPYRIGHT RELATED TO THE USE OF THIS DRAWING:
The use of this drawing shall be governed by standard copyright law.

DESIGNERS REQUIREMENTS AND APPROVALS:
It is the Builder's responsibility to notify Insight Design Co. and to seek prior written approval for materials and workmanship which deviates from instructions provided by the Designer.

ENGINEERS REQUIREMENTS AND APPROVALS:
It is the Builder's responsibility to notify Insight Design Co. and to seek prior written approval for materials and workmanship which deviates from instructions provided by the Engineer.

AUTHORITIES REQUIREMENTS AND APPROVALS:
All materials and workmanship must comply with the requirements of all authorities having jurisdiction over the work. It is the Builder's responsibility to gain necessary approval from all relevant Authorities.

DIMENSIONS:
All dimensions must be verified on site. Do not scale off drawings. Plans take precedent over elevations in the absence of dimensions or if discrepancies exist. Consult Designer. All minimum dimensions are to comply with the National Building Code of Canada.

SHOP DRAWINGS:
Submit shop drawings to the Designer and Engineer for approval prior to manufacture of prefabricated elements of the building.

SHEET:
PLANS



scale: AS NOTED
date: **02102021**
drawn: **EKM**
chk'd: **CM**

A2

PLEASANT STREET DEVELOPMENT

Lots 209 219 Pleasant Street Wolfville Kings County Nova Scotia

134 Garnish Street Windsor, Nova Scotia
p (902) 790 7777
e insightdesignco@gmail.com

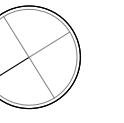
PLEASANT STREET DEVELOPMENT

Lots 209 219 Pleasant Street Wolfville Kings County Nova Scotia

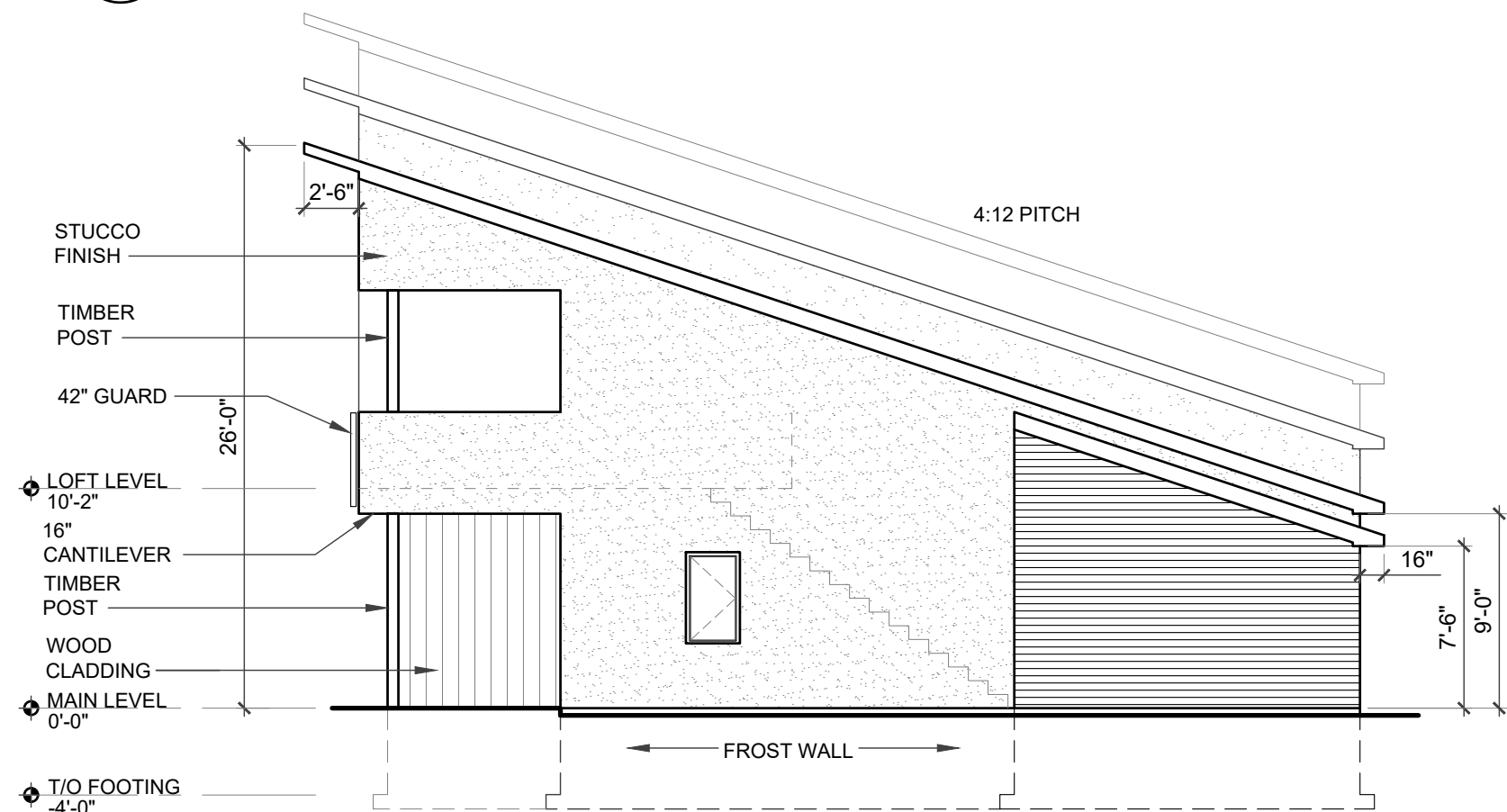
Insight DesignCo



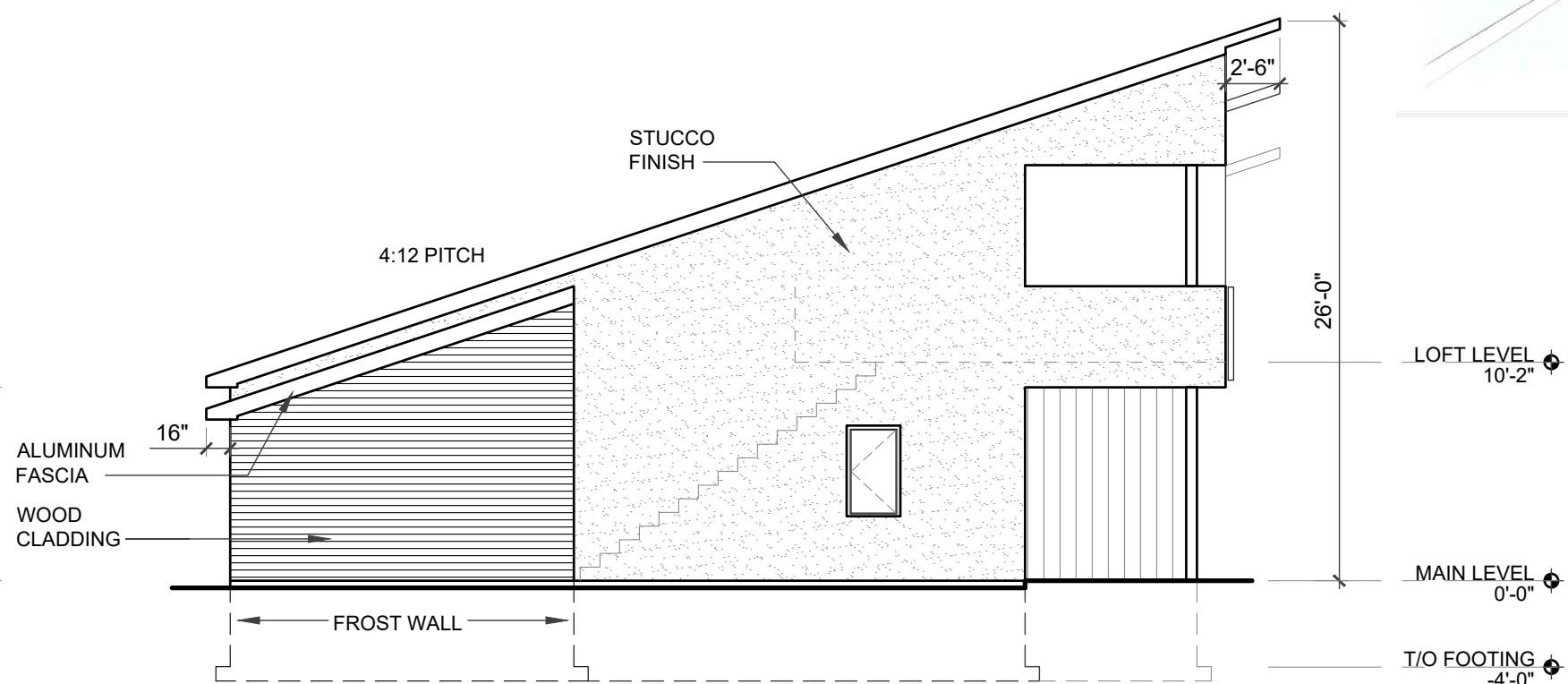
134 Gensh Street
Windsor, Nova Scotia
p (902) 790 7777
e insightdesignco@gmail.com



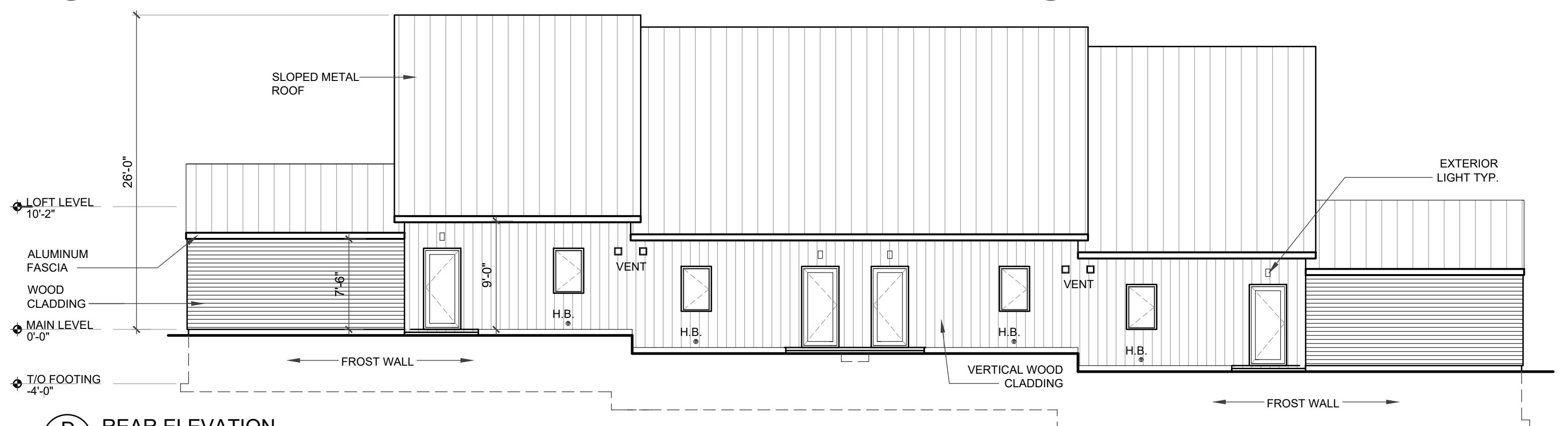
A FRONT ELEVATION
A3 1/8" = 1'-0" REF. A2



B RIGHT ELEVATION
A3 1/8" = 1'-0" REF. A2



C LEFT ELEVATION
A3 1/8" = 1'-0" REF. A2



D REAR ELEVATION
A3 1/8" = 1'-0" REF. A2



INSIGHT
DESIGN CO

CONCEPTUAL RENDERING

ISSUE	DATE

PHASE: **Site Plan Application**
Application **04292021**

NOTES:
COPYRIGHT RELATED TO THE USE OF THIS DRAWING. The use of this drawing shall be governed by standard copyright law.

DESIGNERS REQUIREMENTS AND APPROVALS:
It is the Builder's responsibility to notify Insight Design Co. and to seek prior written approval for materials and workmanship which deviates from instructions provided by the Designer.

ENGINEERS REQUIREMENTS AND APPROVALS:
It is the Builder's responsibility to notify Insight Design Co. and to seek prior written approval for materials and workmanship which deviates from instructions provided by the Engineer.

AUTHORITIES REQUIREMENTS AND APPROVALS:
All materials and workmanship must comply with the requirements of all authorities having jurisdiction over the work. It is the Builder's responsibility to gain necessary approval from all relevant Authorities.

DIMENSIONS:
All dimensions must be verified on site. Do not scale off drawings. Plans take precedent over elevations in the absence of dimensions or if discrepancies exist. Consult Designer. All minimum dimensions are to comply with the National Building Code of Canada.

SHOP DRAWINGS:
Submit shop drawings to the Designer and Engineer for approval prior to manufacture of prefabricated elements of the building.

SHEET:

EXTERIOR ELEVATIONS

scale: AS NOTED
date: **02102021**
drawn: **EKD**
chk'd: **CM**

A3



*Drainage Report
for
209 Pleasant Street
Wolfville, Nova Scotia*



● April 2021

Prepared by:

Prepared for:

3296078 Nova Scotia Limited

3332892 Nova Scotia Limited

28 Finch Drive

Canaan, NS B4N 0C7

902-385-3118 (C)

e-mail: awdewar@hotmail.com

1.0 INTRODUCTION

The property 209 Pleasant Street is located at the south end of Wolfville, NS. It is bound on the south by private lands, east by private lands, west by private lands and north by Pleasant Street. There is a drainage ditch that flows northerly along the property near the east boundary. The total drainage area is approximately 0.77 acres.

Although the development consists of only one catchment area, we need to examine the whole development in order to get a clear picture of how the rainfall runoff flow patterns change from pre-development to post-development. This information is essential for storm water management and mitigation of development challenges. This information will also allow the allocation of drainage to be directed to the most beneficial outlet from the development.

The primary cover of the property is presently treed (10%), and vegetated area (90%). The land slopes (6%) to Pleasant Street, which is the north boundary. The high point is located in the southwest corner.

Presently, most of the storm water runoff flows overland to the Town of Wolfville storm water collection system, which eventually ends up emptying into the Cornwallis River, 3 kilometres to the north. Given these are normal runoff flow conditions, we have concentrated our drainage evaluation to pre and post development flows during 5, 10, 50 and 100 year storms.

2.0 PRESENT CONDITION

The present property drainage area, is labelled Pre A1. (See Photo #1 - Pre-Development).

The drainage catchment area consists of one (1) sub catchment areas, Pre A1 located at the property (0.77 acres).

3.0 FUTURE CONDITIONS

The future drainage patterns will be very similar to the existing, the topography will change slightly due to development of the land. The storm water post-development will drain into a new underground detention storage, and then exit to the existing Town of Wolfville storm water collection system.

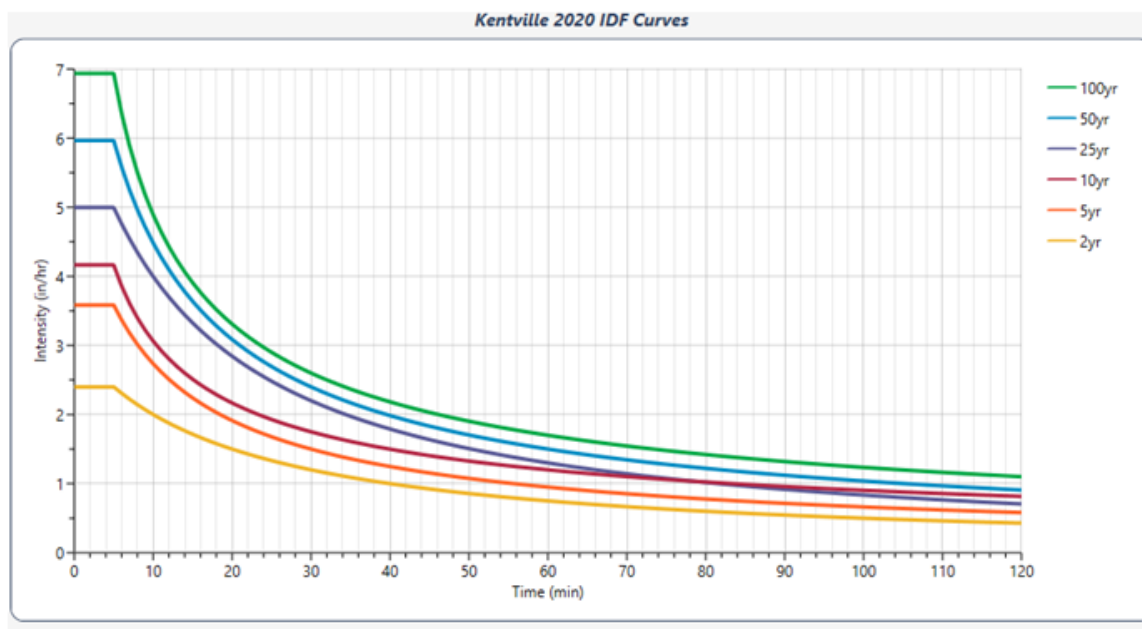
When there is a significant difference between pre and post storm runoff, detention pond storage is usually recommended. They are sized to store storm runoff for such a time as to have a “net zero affect” between pre and post-development storm water runoffs in order to release storm water at a flow rate of not greater than before development. This is achieved by controlling storm water release using small diameter pipes and/or weirs.

4.0 FLOW EVALUATIONS ASSUMPTIONS

Hydrology Studio, a computer modelling program was used to evaluate the Pre and Post development storm water flows and conditions and the development of a storage requirements (Underground and detention pond). The following assumptions were used in our evaluation:

- Method of calculation - SCS
- Units of measure - imperial
- Curve Numbers (CN) vary from 60 to 90 and weighted CNs 65 to 73
- Rainfall intensity based on Kentville Research Station IDF curves derived from Environment Canada Data – Short Duration Rainfall Intensity – Duration – Frequency Data
- Net-zero run off

Kentville IDF Curves



Runoff Coefficients

Runoff curves are based on Table 2 of Section 3.11.3 of the Wolfville Storm Management Design Guidelines

	Area (ac)	CN	Weighted CN		Comments
Pre-A1	0.07	60	4.2	64.55	treed green surface-vegetation D Soil
	0.70	65	45.5		
	0.77		49.7		
Post-B1	0.07	60	4.2	73.31	treed green surface-vegetation hard surface-building D Soil
	0.43	65	27.95		
	0.27	90	24.3		
	0.77		56.45		

Peak Flow Summary

Since the 100 Year storm is the most significant, we have used this storm data to determine the difference between pre and post development storm water runoff.

In area B1 the post development peak flow is 1.691 cfs whereas the pre development peak flow in A-1 is 0.874 cfs, a difference of only 0.817 cfs.

Since this difference is minimal and would not necessitate the construction of a detention pond but rather underground detention storage.

Hydrograph by Return Period

Project Name: Betty Ann Balcom

Hydrology Studio v 3.0.0.18

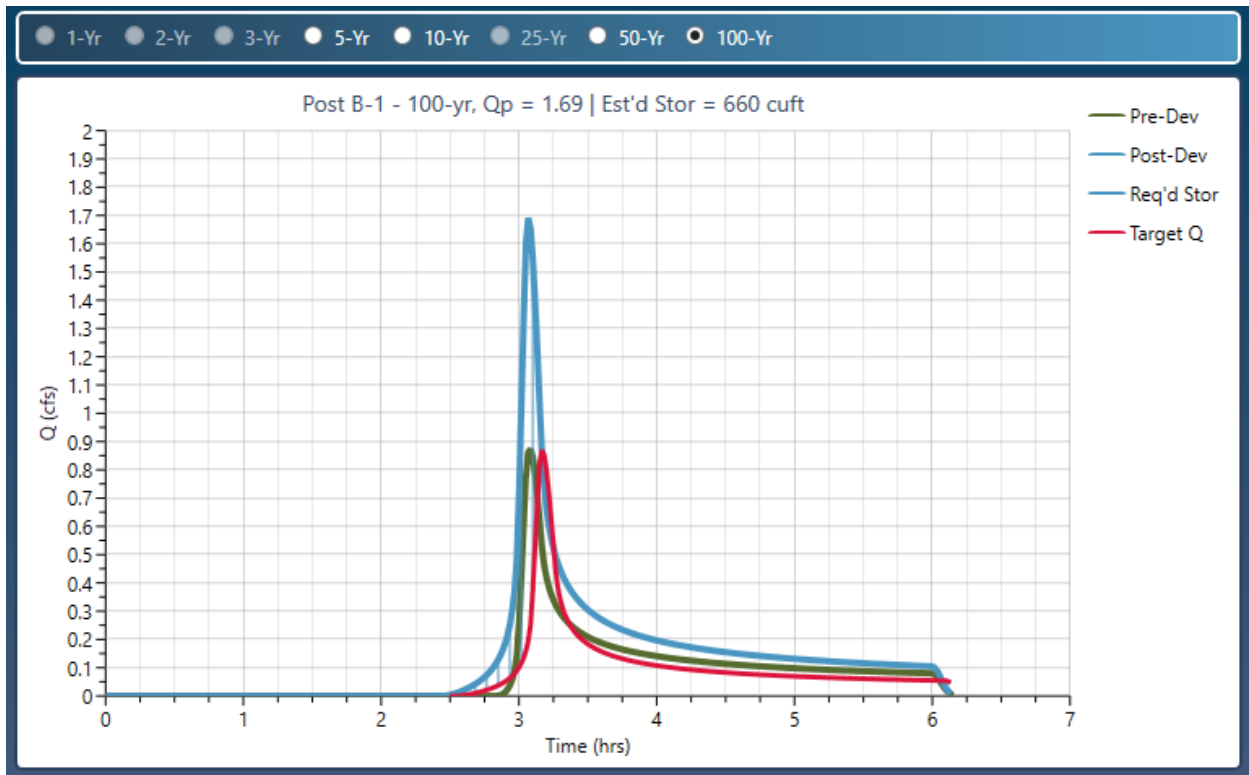
04-11-2021

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	NRCS Runoff	Pre Development				0.289	0.611		0.795	1.178
2	NRCS Runoff	Post Development				0.661	0.959		1.329	1.669

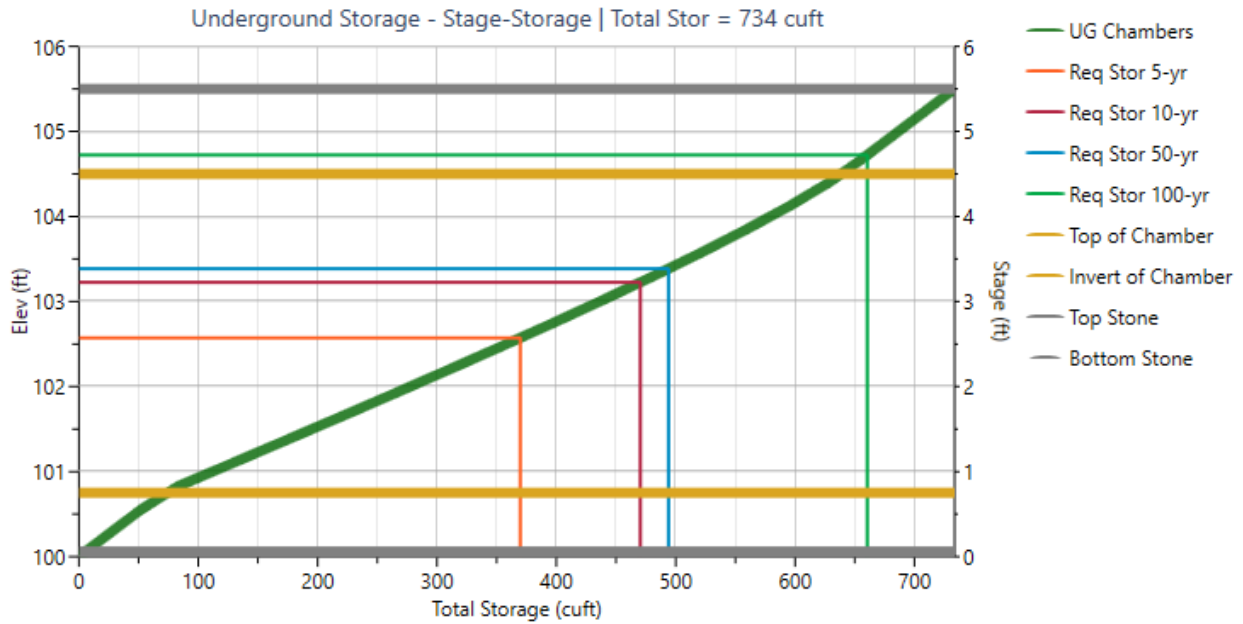
Stormwater Storage

The diagrams below are used to determine the size of storage that is required to provide a truly “net zero” effect.

Storage#1- Storage Estimate



Storage#1- Stage vs Storage

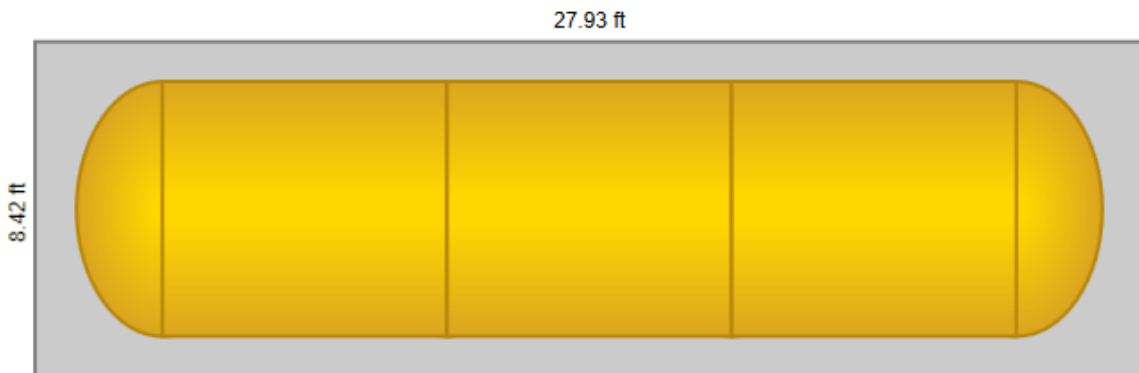


Exceeds estimated required storage of 660 (cuft)

Storage#1- Chamber Layout

Underground Storage - StormTech® MC-3500™ Chamber

3 Chambers, 1 Rows @ 86-in o.c., 2 Endcaps, Total Storage = 734 cuft



Plan Section

Total Storage includes stone encasement, chambers & applicable endcaps. Plan layout for hydraulic design only. Not for construction.

5.0 MITIGATION MEASURES

Given the volume of residual rainfall, the very short time of concentration and the non-linear relationship of rainfall intensity to time, regulating agencies have dictated a "net zero" mitigation response. "Net zero" means the post-development rainfall runoff cannot exceed the pre-development rainfall runoff.

5.1 EROSION AND SEDIMENTATION CONTROLS

Although we feel the proposed development may cause a minor increase in drainage flows, concentration, erosion, and sedimentation, this impact can be eradicated by proper mitigation techniques; therefore, we are recommending that the following course of action be taken:

- 1) Ensure that all construction is in accordance with the terms and procedures in the NSDOE Erosion and Sedimentation Control Handbook. All silt and sedimentation must be contained on-site during development and construction.
- 2) Any new open ditches or channels shall be rock lined, complete with the appropriate number of ditch plugs (control dams).
- 3) Siltation fencing shall be placed at the northern and eastern boundaries of the property, checked regularly; the silt removed and disposed of off-site.
- 4) During Construction, all storm sewer grates on the site shall have filter fabric placed between the frame and grate to stop all siltation from entering the any watercourse.
- 5) All slopes steeper than 2:1 from the construction shall be stabilized with 6 inch minus rock.
- 6) The increased runoff concentration from the proposed development should be collected in a new storm water collection system, detained in underground storage facilities and piped to daylight or connected to a municipal storm water collection system.

- 7) Inform the Town of Wolfville and NSDOE immediately whenever any siltation flows from the project to a watercourse.
- 8) ***All the above measure shall be in place BEFORE construction starts.***

6.0 CONCLUSION

Due to topographical changes on the final development, there will be a minor increase in the storm runoff discharge. However, due to the collection system, which has been designed for the development, the post-development storm runoff is directed towards the existing Town storm water collection system on Pleasant Street.

Given the existing pipe layout, the low increase in storm water runoff and the low estimated storage volume, a detention pond is not necessary, however, underground detention storage is recommended.

Both erosion and sedimentation control measures have been accounted for in the management plan to minimize the impact of this development on the existing and future environmental features, on or near the property.

209 Pleasant Street, Wolfville, NS											
Drainage Report Summary - 100 Year Storm											
30-Apr-21	Area	CN	Flow	Difference	Required	Available	Unit	in-flow	out-flow	Storage	Balance
	Ac		cfs	cfs	cu ft	cu ft		cfs	cfs	pre-flow	cfs
Pre-A1	0.77	65	0.874							0.874	
Post-B5	0.77	73	1.691								
	0.77			0.82	660	734	UG	1.69	0.86	0.87	0.00

7.0 RECOMMENDATIONS

Although the overall storm flows will marginally increase with this development, the impact can be eradicated by proper mitigation and storage techniques. It is our recommendation the following action is taken:

1. The Developer shall ensure that all construction is in accordance with the terms and procedures in the NSDOE Erosion and Sedimentation Control Handbook. Efforts to contain silt and sedimentation on-site during development and construction should be undertaken.
2. Any open ditches or channels shall be rock lined, complete with the appropriate number of ditch plugs (control dams). Detailed construction plans will identify the location and quantity of the ditch plugs.
3. Detention will be accomplished for this development, with an underground storage facility.

Appendix "A"
Basin Model
Hydrograph Summary
Photos

Basin Model

Hydrology Studio v 3.0.0.19

Project Name:

05-01-2021



Hydrograph by Return Period

Hydrology Studio v 3.0.0.19

Project Name:

05-01-2021

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	NRCS Runoff	Pre A-1				0.014	0.264		0.307	0.874
2	NRCS Runoff	Post B-1				0.147	0.731		0.884	1.691

Hydrograph 5-yr Summary

Project Name:

Hydrology Studio v 3.0.0.19

05-01-2021

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre A-1	0.014	3.52	108	----		
2	NRCS Runoff	Post B-1	0.147	3.15	415	----		

Hydrograph 10-yr Summary

Project Name:

Hydrology Studio v 3.0.0.19

05-01-2021

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre A-1	0.264	3.10	1,004	----		
2	NRCS Runoff	Post B-1	0.731	3.07	1,845	----		

Hydrograph 50-yr Summary

Project Name:

Hydrology Studio v 3.0.0.19

05-01-2021

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre A-1	0.307	3.13	723	----		
2	NRCS Runoff	Post B-1	0.884	3.08	1,440	----		

Hydrograph 100-yr Summary

Project Name:

Hydrology Studio v 3.0.0.19

05-01-2021

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre A-1	0.874	3.08	1,857	----		
2	NRCS Runoff	Post B-1	1.691	3.07	2,998	----		



Photo #1 – Looking to the southwest



Photo #2 – Looking to the west



Photo #3 – Looking to the north (Pleasant Street)



Photo #4 – Looking to the southeast



Photo #5 – Looking to the south



Photo #6 – Existing Catchbasins on south side of Pleasant Street



Google Earth Image 5/19/20