



PO Box 1749
Halifax, Nova Scotia
B3J 3A5

MEMORANDUM

To: Chair and Members of North West Planning Advisory Committee (NWPAC)

From: Tyson Simms, Planner

Date: February 24, 2014

Subject: Case 18897: Application by Brian Hatfield to amend the existing Hatfield Farm development agreement (1840 Hammonds Plains Road, Hammonds Plains) to enable an expansion of commercial recreation activities on the property.

Background:

The applicant (Brian Hatfield) has proposed to expand commercial recreation activities on the subject property (1840 Hammonds Plains Road, Hammonds Plains). The property is zoned MU-1 (Mixed Use 1), and also subject to a Development Agreement, which allows the property to operate as a commercial recreation use. Consideration of this expansion requires substantial amendments to the existing Development Agreement.

Policy P-27 of the Beaver Bank, Hammonds Plains and Upper Sackville Municipal Planning Strategy (MPS) allows Community Council to consider proposed expansions to existing commercial recreation uses. A copy of the policy is attached for the Committee's reference as Attachment A.

The attached maps (Maps 1 and 2) show the land use designation and zoning for the subject property. Materials provided by the applicant (Attachment B) include: a site plan; landscaping plan; traffic impact statement; preliminary stormwater management plan; and a preliminary sedimentation and erosion and control plan. The site plan denotes the location of existing and proposed buildings/uses.

This application has been on file with HRM since 2009. An initial public information meeting (PIM) was held on Monday, March 30, 2009 under Case 01238. Due to unforeseen circumstances, the application was paused until such time that the applicant was able to provide additional information. The file has resumed under the new case number 18897, and a second public information meeting was held on February 6, 2014. A copy of the meeting minutes and an oral summary will be provided at the Committee's meeting on March 5, 2014.

Input Sought from the Committee:

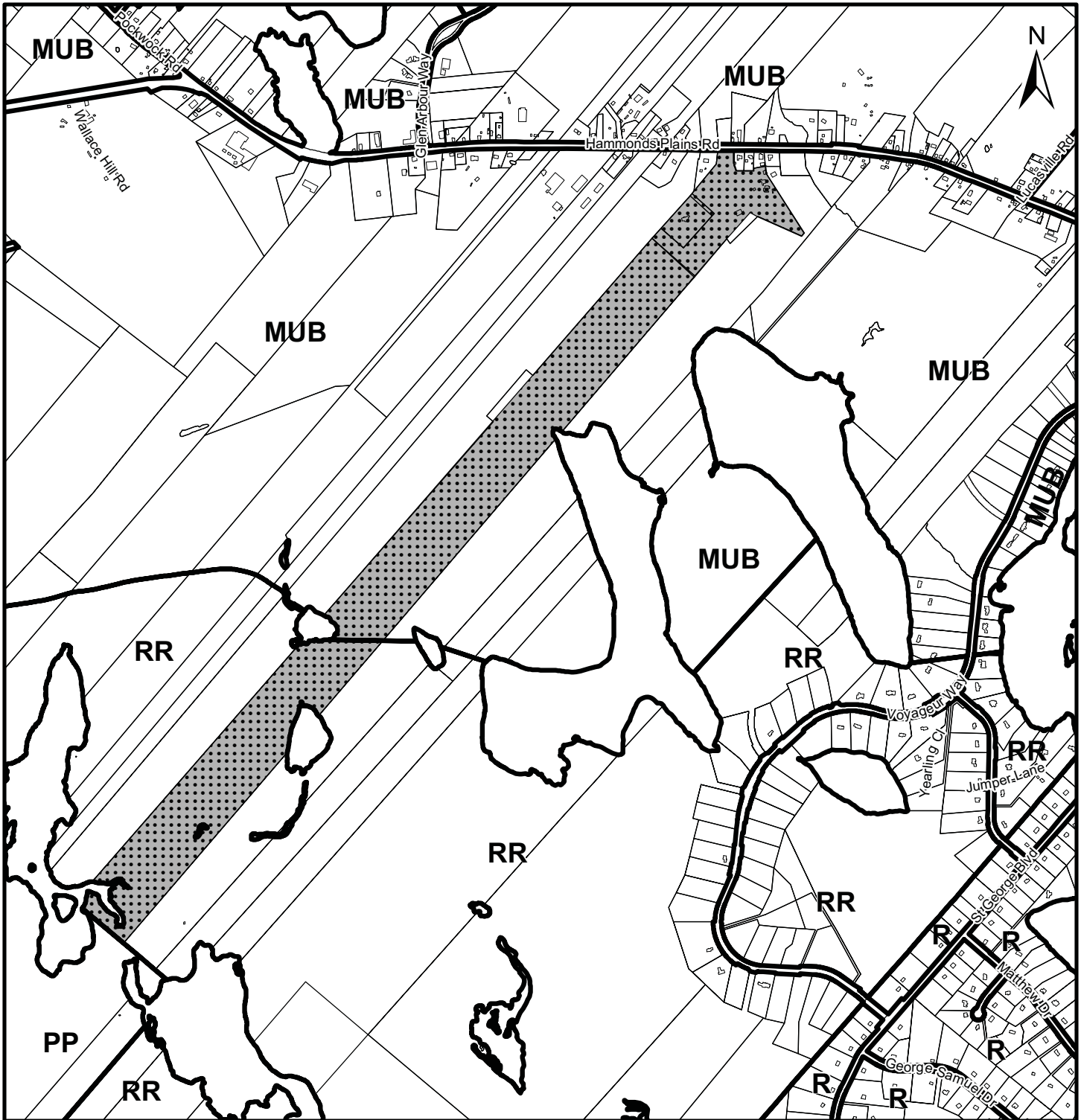
Feedback is sought from NWPAC relative to this proposed expansion and its ability to satisfy the enabling plan policy (P-27) of the Beaver Bank, Hammonds Plains and Upper Sackville MPS. NWPAC's recommendation will be included in the staff report to Community Council.

HRM Community and Recreation Services – Planning Applications

Eastern Region Office PO Box 1749, Halifax, NS B3J 3A5 Website: www.halifax.ca
Phone: (902) 490-4843 Fax: (902) 490-4346 Email: simmst@halifax.ca


Attachments:

- Map 1 – Generalized Future Land Use
- Map 2 – Zoning and Notification
- Attachment A – Policy P-27 of the Beaver Bank, Hammonds Plains and Upper Sackville MPS
- Attachment B - Materials Provided by Applicant for Review



Map 1 - Generalized Future Land Use

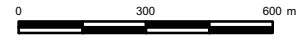
1840 Hammonds Plains Road
Hammonds Plains

 Area of proposed development agreement

Beaver Bank, Hammonds Plains and Upper Sackville Plsn Area

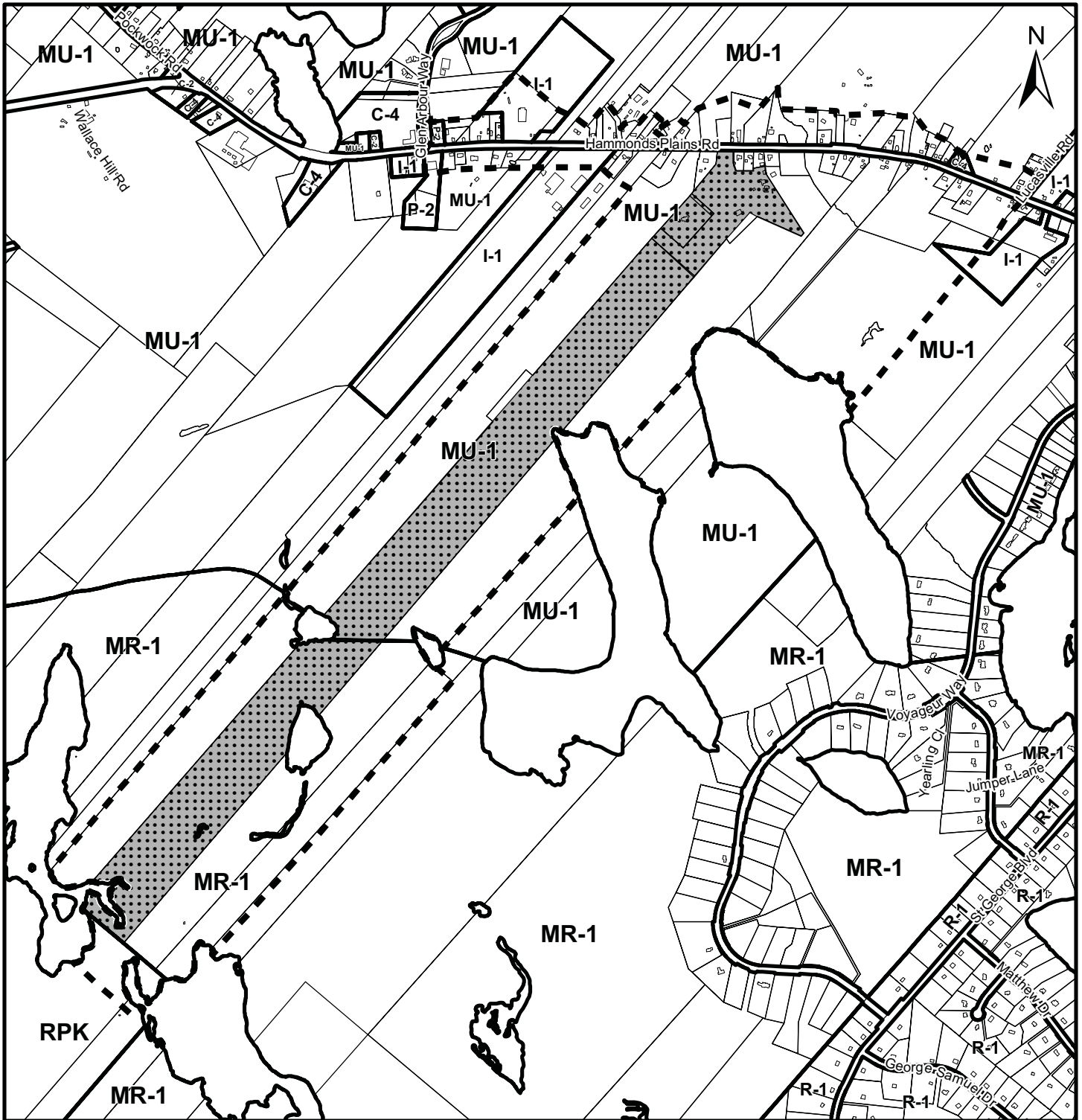
Designation

- R Residential
- RR Rural Resource
- MUB Mixed Use B
- PP Provincial Park




This map is an unofficial reproduction of a portion of the Generalized Future Land Use Map for the plan area indicated.


HRM does not guarantee the accuracy of any representation on this plan.



Map 2 - Zoning and Notification

1840 Hammonds Plains Road
Hammonds Plains

 Area of proposed development agreement

 Area of notification

Beaver Bank, Hammonds Plains
and Upper Sackville Land Use By-Law Area

Zone

R-1	Single Unit Dwelling
MU-1	Mixed Use 1
MR-1	Mixed Resource
RPK	Regional Park
P-2	Community Facility
C-2	General Business
C-4	Highway Commercial
I-1	Mixed Industrial

HALIFAX
REGIONAL MUNICIPALITY
DEVELOPMENT APPROVALS

0 300 600 m



This map is an unofficial reproduction of a portion of the Zoning Map for the plan area indicated.

HRM does not guarantee the accuracy of any representation on this plan.

Attachment A

Policy P-27 of the Beaver Bank, Hammonds Plains and Upper Sackville MPS

Policy P-27

Within the Mixed Use A, B and C Designations, it shall be the intention of Council through the land use by-law to provide for the continued use of commercial recreation uses to the extent they presently exist (Policy P-9 and P-12). Further, Council may consider any proposed expansion of existing commercial recreation uses as well as the development of new commercial recreation uses by development agreement and according to the provisions of the Municipal Government Act. In considering any new or expanded commercial recreation use, Council shall have regard to the following:

- (a) that the site exhibits characteristics which make the location particularly suitable for the proposed use;
- (b) the potential for adversely affecting adjacent residential and community facility development by virtue of noise, visual intrusion, traffic generation and littering;
- (c) the provision of landscaping or buffering from adjacent development and the public road to which it has access in order to reduce the impact of the proposed development;
- (d) the availability of a site and site design which will entirely contain all aspects of the operation within the boundary of the proposed site;
- (e) the impact on traffic circulation and in particular sighting distances and entrances and exits to the site.
- (f) the layout and design of the facility;
- (g) general maintenance of the facility;
- (h) where any sewage treatment plant is proposed, the location and level of treatment of the sewage treatment plant;
- (i) that the appearance of all buildings and structures related to the use shall be compatible with the surrounding area in terms of scale, exterior finish and signage;
- (j) an assessment of environmental concerns related to the proposed development and in particular, potential effects on watercourses;
- (k) the requirement for any applicable provincial approvals; and
- (l) hours of operation; and
- (m) the provisions of Policy P-137.

Policy Preamble – Direct Excerpt from Beaver Bank, Hammonds Plains and Upper Sackville MPS

Commercial Recreation Uses - Mixed Use A, B and C Designations

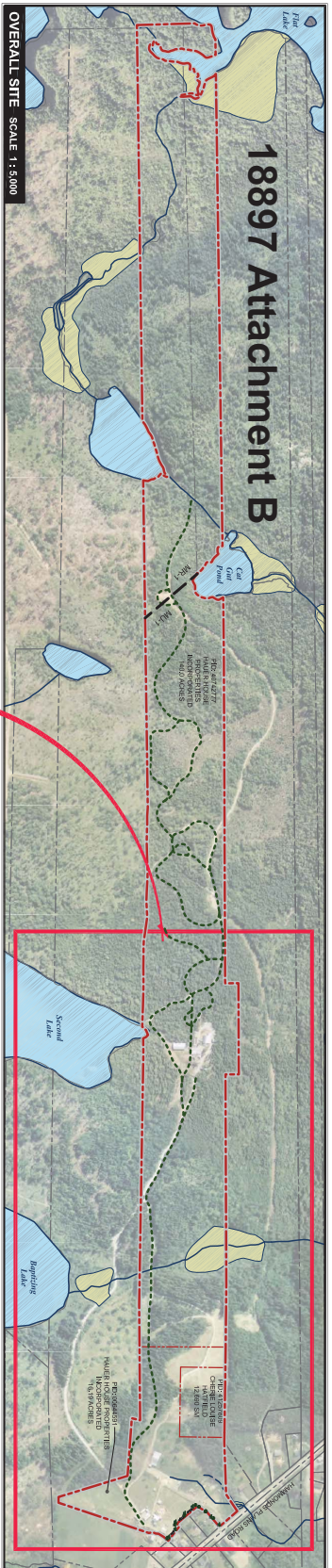
As previously indicated, there are a number of existing commercial recreation activities within the mixed use designations. The potential exists for more of these due to the scenic and natural amenities of the Plan Area and its easy accessibility to the metropolitan area. Such activities include campgrounds, amusement parks, golf courses, race tracks, drive-in theatres and associated food outlets.

The Strategy seeks to ensure that all commercial recreation uses make a positive contribution not only to the regional markets which they serve but also to the local community itself. While there is support for this type of commercial development, there is concern with the potential for greatly increased amounts of traffic, as well as the noise and garbage often associated with the wide range of commercial recreation activities. Residents seek assurance that such activities will not detract from the existing character of the communities and the enjoyment of property. It is not the intention of the designations

to permit any such use where it can be demonstrated that the proposed use will cause a significant reduction in the enjoyment of properties in the immediate area. It is the intention that such uses will be considered where it can be shown that a site has high commercial recreation potential which can be exploited without creating negative external impacts.

An additional concern with commercial recreation operations such as campgrounds is often the requirement for installation of a sewage treatment plant. While the Province has jurisdiction over the design and construction of such facilities, there are serious problems with ongoing maintenance which can effect adjacent properties and the quality of nearby watercourses.

Golf courses also raise environmental questions, related to the extensive use of fertilizer and its effect on watercourses. This impact can be assessed through site evaluation. The layout of club houses and greens can be designed in such a way that the impact on watercourses and adjacent development is minimized, including hazards resulting from stray golf balls.



LEGEND

- Site Boundary
- Existing Internal Property Line
- Adjacent Property Line
- Gravel Road / Trails
- Gravel Road / Trails
- Appropriate Future Driveway
- Water Features
- Wetland
- Existing Buildings
- Proposed Buildings, Expansions
- Riding Trail

FUTURE DEVELOPMENT

- 1 - BARN EXPANSION
- 2 - INDOOR RIDING RING / BARN
- 3 - BLACKSMITH SHOP / WORKSHOP
- 4 - HORSE SHELTER
- 5 - HAY STORAGE
- 6 - PARKING LOT EXPANSION
- 7 - HORSE PARKING / WAGON AND SLEIGH PARKING
- 8 - STORE / RECEPTION / WASHROOMS / RESTAURANT
- 9 - P-FLAGSTONE
- 10 - FRUIT AND VEGETABLE STAND (NO CONC. PAD)
- 11 - TACK SHOP
- 12 - WAGON HOUSE EXPANSION
- 13 - ADDITIONAL PARKING
- 14 - ADDITIONAL SEPTIC FIELD
- 15 - GETTING PEN
- 16 - MINI GOLF
- 17 - EXPANSION TO RUBBER RODEO BUILDING
- 18 - SLIDE AND POOL
- 19 - EXPANSION TO MANI-LOGE
- 20 - HORSE AND WAGON PARKING AREA
- 21 - CHURCH GROUPS AND CORPORATE MEETING ROOMS
- 22 - COTTAGES / CABINS
- 23 - SPLAT SHOT AREA WITH ORIENTATION BUILDING
- 24 - CANOE STORAGE
- 25 - RECREATIONAL OBSTACLE COURSE WITH ORIENTATION BUILDING
- 26 - RESTAURANT EXPANSION
- 27 - WORKERS HOUSING

**CONCEPT PLAN
FUTURE DEVELOPMENT
HAMMONDS PLAINS, NOVA SCOTIA**

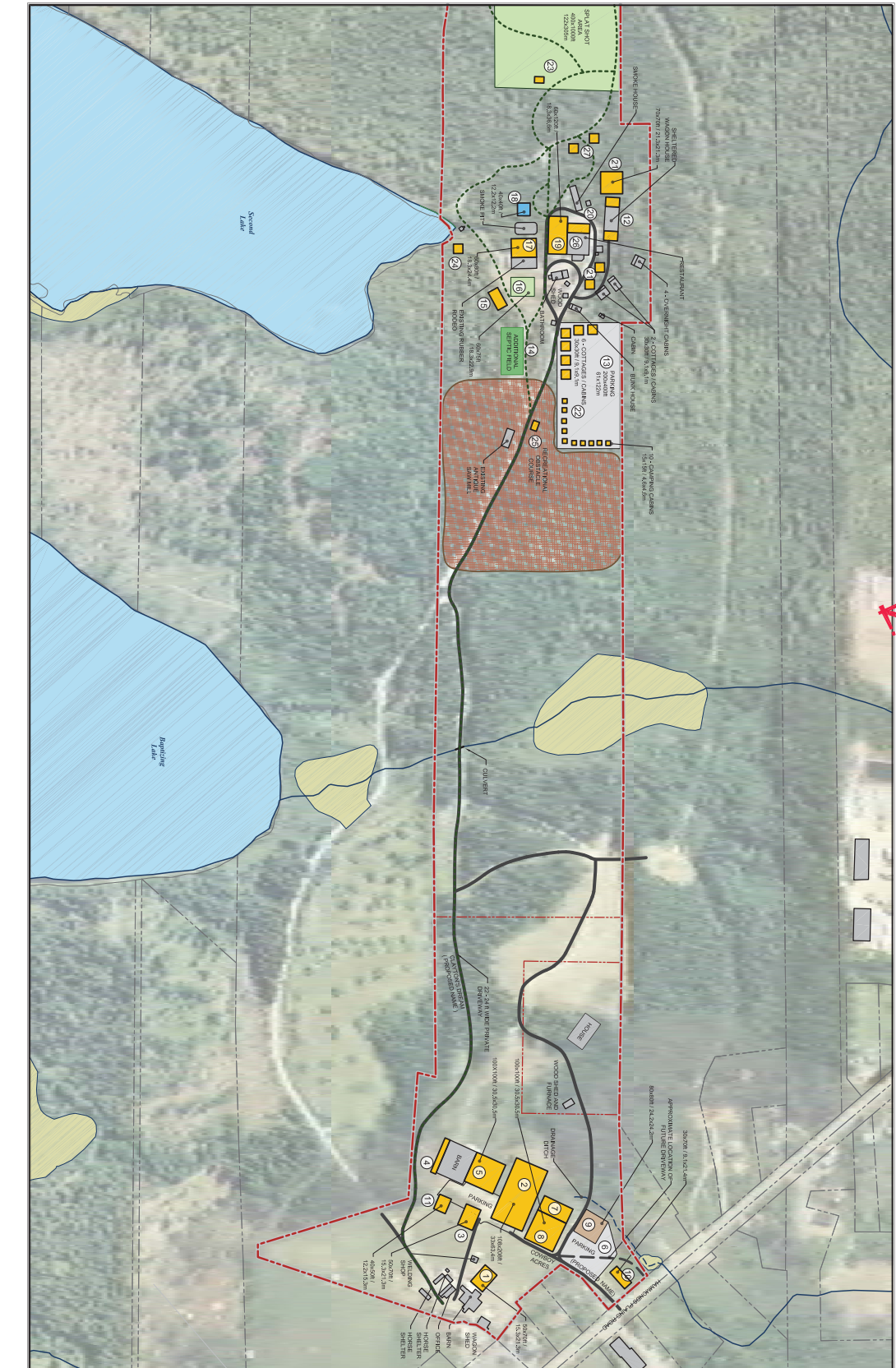
HATFIELD FARM
B05032108_V19
AUGUST 14, 2013

1 SPECTACLE LAKE DRIVE
DARTMOUTH, NS B3A 2X4
CANADA, B3B 1X7
PHONE: 902.635-6955 • FAX: 902.635-1846
WWW.GENTIVAR.COM

SCALE

60 40 20 0 100 m
1:12,000

NORTH





Ref. No. B05032

September 11, 2013

Tyson Simms, MPlan
Planner – Eastern Region
Development Approvals - Planning Applications
Halifax Regional Municipality
40 Alderney Drive, Dartmouth, NS B2Y 2N5

**RE: Addendum, Traffic Impact Statement
Expansion of Activities at Hatfield Farms
Hammonds Plains Road, Hammonds Plains, NS**

Dear Mr. Simms:

Hatfield Farms has modified their 2010 concept plan for future development of their operations. Figure 1 illustrates the current concept for expansion, which will occur over a number of years. This is the Addendum Letter to supplement the October 2010 Traffic Impact Statement and to consider traffic impacts of the proposed changes. The 2010 Traffic Impact Statement is attached as an Appendix to this letter.

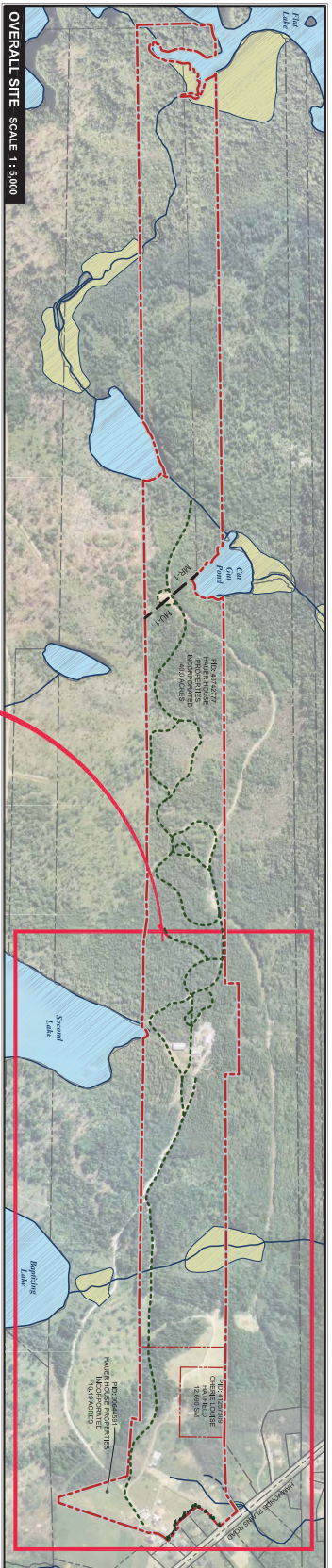
Description of Study Area Streets

Hammonds Plains Road is a two-lane collector street with one lane for each direction of travel. There is a 70km/h speed limit on Hammonds Plains Road in the vicinity of Hatfield Farms. Volumes on Hammonds Plains Road past the site driveway have been estimated to be 800 vehicles per hour (vph) eastbound and 310 vph westbound during the AM peak hour, and 570 vehicles per hour (vph) eastbound and 920 vph westbound during the PM peak hour. These volume estimates are based on an HRM traffic count completed during August 2012 between Lucasville Road and Glen Arbour Way.

Hammonds Plains Road has well managed access and dedicated left turn lanes at major intersections from Highway 103, Exit 5, to just before Pockwock Road. Between Pockwock Road and Lucasville Road, the character of Hammonds Plains Road changes and there are numerous commercial and residential driveways. There are left turn lanes provided on Hammonds Plains Road at the intersections of Pockwock Road, Glenn Arbour Way, and Lucasville Road. None of the commercial or residential driveways on this section of street has a dedicated left turn lane provided on Hammonds Plains Road.

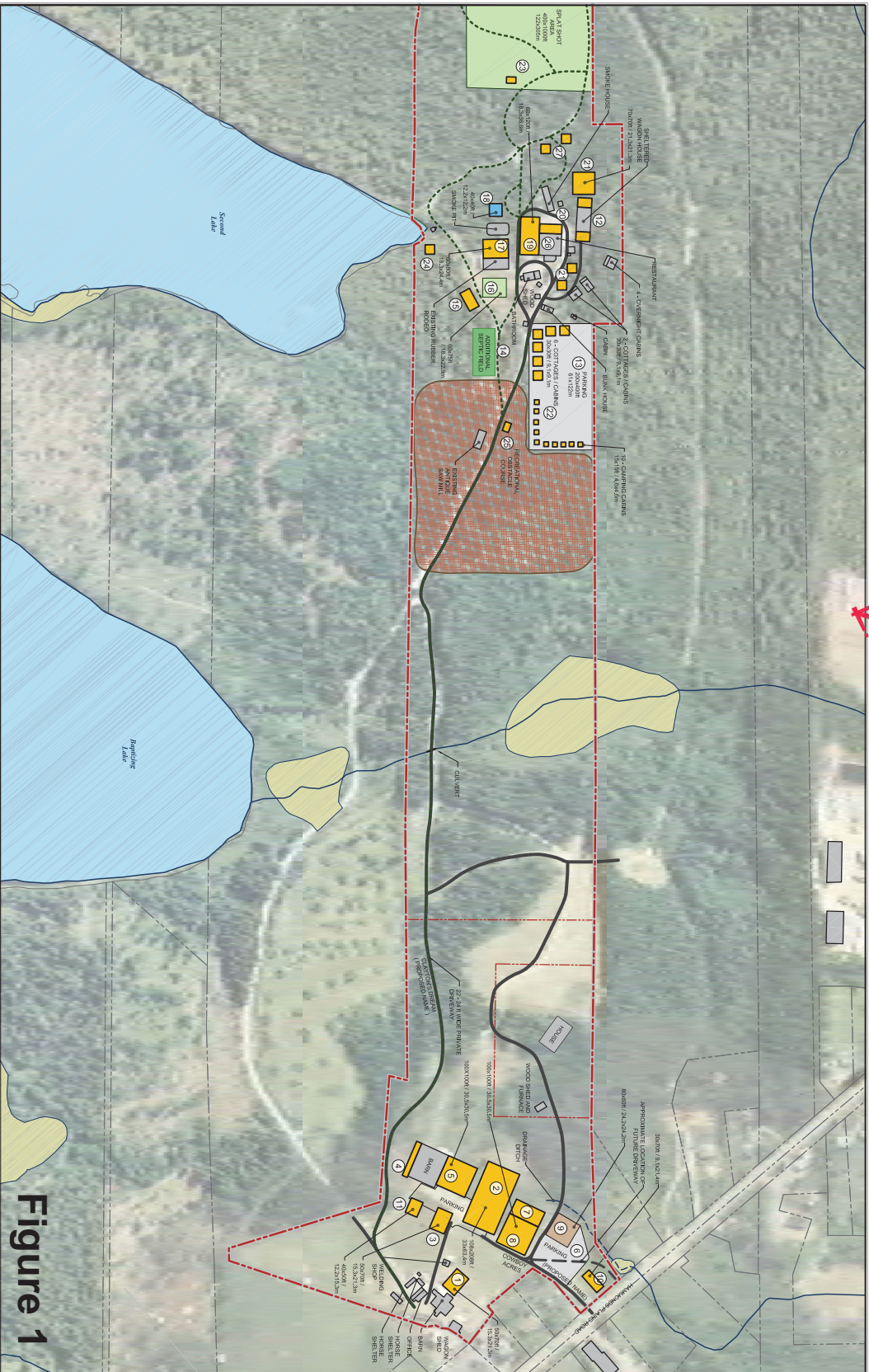
Description of Driveway to Hatfield Farms

The driveway to Hatfield Farms is located on the south side of Hammonds Plains Road. Traffic from the east must make a left turn across opposing traffic to enter the site. There is a "Hidden Intersection" sign on the westbound approach to the driveway, as it is understood that the Stopping Sight Distance (SSD) on the westbound approach to the driveway is marginal.



LEGEND

- Site Boundary
- - - Existing Internal Property Line
- - - Adjacent Property Line
- Gravel Road / Trails
- Appropriate Future Driveway
- Water Features
- Wetland
- Existing Buildings
- Proposed Buildings, Expansions
- Riding Trail



FUTURE DEVELOPMENT

- 1 - BARN EXPANSION
- 2 - INDOOR RIDING RING / BARN
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- 24 - CANOE STORAGE
- 25 - RECREATIONAL OBSTACLE COURSE WITH ORIENTATION BUILDING
- 26 - RESTAURANT EXPANSION
- 27 - WORKERS HOUSING

Sources:
 • 2000 Provincial Mapping, Provincial Property Mapping.
 • Google Maps, Satellite, 2000
 • GENIVAR survey plan B050326224wg dated September 17, 2012.

Designer: K.Winters
 Planner: B.Morison
 VERSION **1.9**

HATFIELD FARM
 AUGUST 14, 2013 B05032108_V19

SCALE
 60 40 20 0 100 m
 1:2,000

NORTH

GENIVAR
 1 SPECTACLE LAKE DRIVE
 10000 CANADA, B3B 3X7
 PHONE: 502-635-9855 • FAX: 502-635-1846
 WWW.GENIVAR.COM

Trip Generation and Description of Activities

Hatfield Farms currently provides a venue for a number of activities ranging from riding lessons, corporate retreats, to weddings. When there are no bookings in the evenings there is little to no activity on the site. Since there are many days without bookings, the volume at the site driveway is quite low during most days. Previous studies for the property have examined existing activities on the site and estimates that on a typical weekday with bookings, there would be an average of 72 two-way person trips to Hatfield Farms between 5 PM and 6 PM. From discussions with the operators of Hatfield Farms, many customers arrive to the site in carpools or together on busses. For this access review, the conservative estimate of two persons per vehicle is being assumed which estimates the current operation of Hatfield Farms to include 36 vph (vehicles per hour) with 18 vehicles entering and 18 vehicles exiting.

Initial expansion is planned to include upgrades to existing buildings in the portion of the property near Hammonds Plains Road as well as some enhancements to facilities further into the site. This includes development as shown on Figure 1, numbers 1 to 7, 9, 11 to 18, 20, 24, 27 and number 8 without the restaurant portion. Through discussions with the operators, these upgrades are to provide better accommodation of activities that currently occur on the site. Initial expansion is not expected to increase traffic volumes at the Site driveway beyond the existing estimated 36 vph using the driveway in the PM peak.

When considering addition of amenities including numbers 19, 21, 22, 23, 25, and 26 an increase in the number of trips attracted to the site is expected and estimated to be about 20% more than using the existing site.

Trips estimated to be generated by the site expansion were estimated in the 2010 Traffic Impact Statement using *Trip Generation, 7th Edition* (Institute of Transportation Engineers (ITE), Washington, 2003). Since there has been no major change in the proposed development, the estimates trips that will be generated by the site at build-out of land uses identified on Figure 1 remain consistent with the 92 trips (46 in and 46 out) estimated to be generated in the 2010 Traffic Impact Statement during the PM Peak period. These trip estimates include pass-by trips.

The addition of a Restaurant expansion upgrade for a portion of #8 and expansion #10, Fruit and Vegetable stand, are expected to account for a large portion of the projected increase in trips attracted to the site.

Summary

1. Hatfield Farms have modified their 2010 Site Concept for future development on their property.
2. The site is expected to be built out with additional amenities added over the next number of years.
3. At buildout, the site is expected to generate at total of 92 vph passby and primary trips (46 in and 46 out) during the PM peak.
4. Westbound Stopping Sight Distance (SSD) at the existing driveway is marginal.

5. None of the driveways on the study section of Hammonds Plains Road have left turn lanes. The driveway to Hatfield Farms is not untypical of any of the driveways along the study section of Hammonds Plains Road.

Recommendations

Since none of the driveways along the study section of Hammonds Plains Road have dedicated left turn lanes, the Hatfield Farms driveway is not out of character of drivers' expectations when driving on this section of street.

Additional of initial enhanced amenities are not expected to generate additional trips to the site. Before additional traffic is generated development of numbers 19, 21, 22, 23, 25, and 26, consideration should be given to relocation of the driveway to improve sight distance.

Before proceeding with the final development of the Restaurant and Fruit and Vegetable Stand, traffic volumes at the site driveway should be reviewed and analysis for a left turn lane be conducted.

Sincerely,

GENIVAR Inc.

Original signed

Greg O'Brien, P.Eng.
Manager, Traffic & Transportation - Dartmouth





Ref. No. B05032

October 26, 2010

Mr. Miles Agar
Halifax Regional Municipality – Central Region
636 Sackville Drive
P.O. Box 1749
Halifax, NS, B3J 3A5

**RE: Traffic Impact Statement – Expansion of Activities at Hatfield Farms
Hammonds Plains Road, Hammonds Plains, NS**

Dear Mr. Agar:

Hatfield Farms has developed a concept plan for future development of their operations on their property in Hammonds Plains fronting onto Hammonds Plains Road. Figure 1 shows the concept for expansion, which will occur over a number of phases. During the AM peak there is little activity at Hatfield Farms. This letter will concentrate on traffic using the site driveway during the weekday PM Peak period on Hammonds Plains Road and determine level of expansion that may necessitate access improvements at the Site driveway.

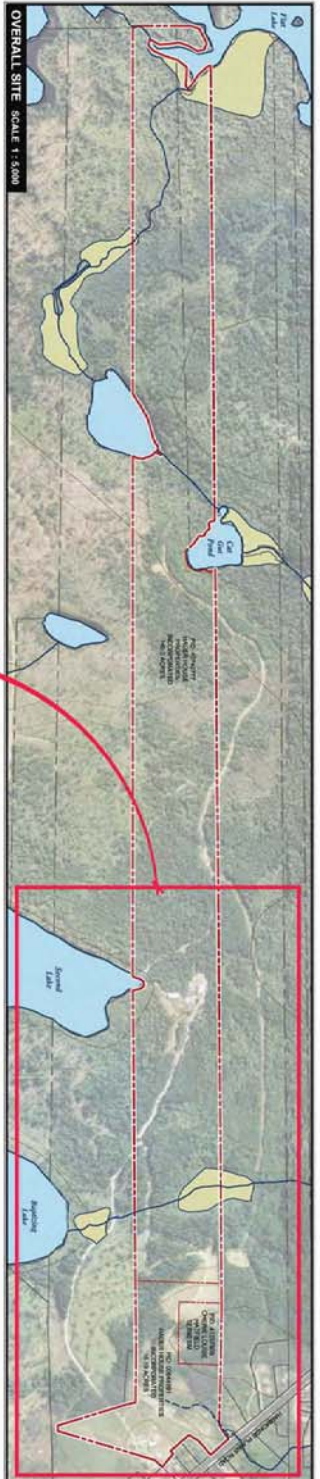
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Hammonds Plains Road has well managed access and dedicated left turn lanes at major intersections from Highway 103, Exit 5, to just before Pockwock Road. Between Pockwock Road and Lucasville Road, the character of Hammonds Plains Road changes and there are numerous commercial and residential driveways. There are left turn lanes provided on Hammonds Plains Road at the intersections of Pockwock Road, Glenn Arbour Way, and Lucasville Road. None of the commercial or residential driveways on this section of street has a dedicated left turn lane provided on Hammonds Plains Road.

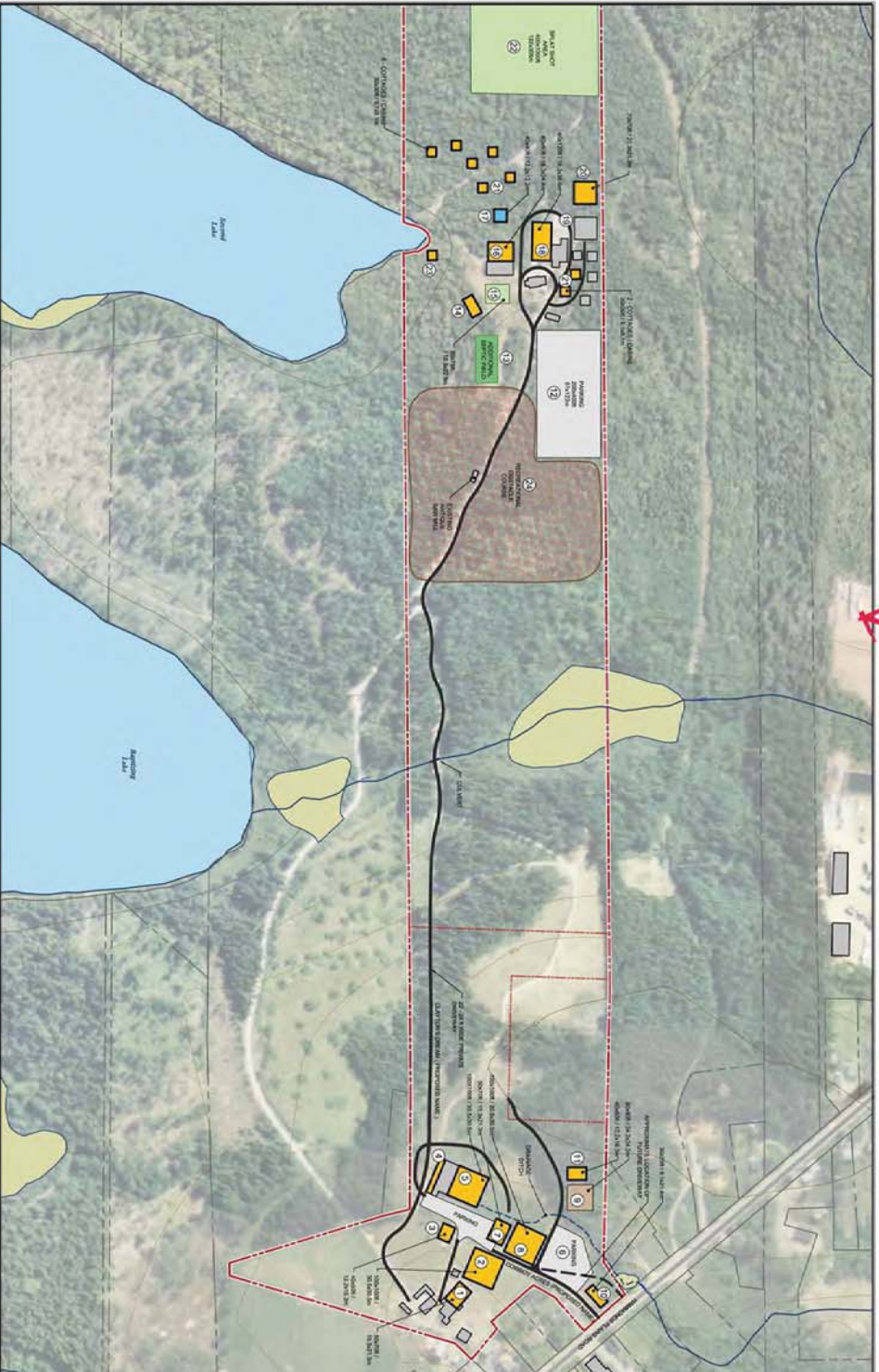
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LEGEND

- Site Boundary
- Existing Internal Property Line
- Adjacent Property Line
- Gravel Road / Trail
- Approximate Future Driveway
- Water Features
- Wetland
- Existing Buildings
- Proposed Buildings / Expansion



FUTURE DEVELOPMENT

PHASE 1

- 1 - BARN EXPANSION
- 2 - MOON RISING BANG / BARN
- 3 - HORSE SHELTER
- 4 - HORSE SHELTER
- 5 - HAY STORAGE EXPANSION
- 6 - HORSE PARKING / WAGON AND SLEDGE PARKING
- 7 - HORSE PARKING / WAGON AND SLEDGE PARKING
- 8 - STORE / RECEPTION / WASHROOMS
- 9 - WASHROOMS
- 10 - WASHROOMS

PHASE 2

- 11 - ADDITIONAL PARKING
- 12 - ADDITIONAL PARKING
- 13 - PUTTING PEN
- 14 - PUTTING PEN
- 15 - MAN GUT
- 16 - MAN GUT TO RUBBER ROEGD BUILDING
- 17 - SLED AND POOL
- 18 - EXPANSION TO MAIN LOBBE
- 19 - HORSE AND WAGON PARKING AREA
- 20 - HORSE AND WAGON PARKING AREA
- 21 - COTTAGES / CABINS
- 22 - SHAY SHOT AREA
- 23 - RECREATIONAL OBSTACLE COURSE

PHASE 3

- 24 - WITH RESTAURANT PORTION
- 25 - FRUIT AND VEGETABLE STAND (NO CONC. PAD)

NOTE: SITE SUBJECT TO SURVEY.

**CONCEPT PLAN
FUTURE DEVELOPMENT
HAMMONDS PLAINS, NOVA SCOTIA
HATFIELD FARMS**

OCTOBER 7, 2010 860203108_V14

SCALE

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GENIVAR

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Phone: 902.426.6337
www.genivar.com

FIGURE 1

Description of Activities

Hatfield Farms currently provides a venue for a number of activities ranging from riding lessons, corporate retreats, to weddings. When there are no bookings in the evenings there is little to no activity on the site. Since there are many days without bookings, the volume at the site driveway is quite low during most days. Previous studies for the property have examined existing activities on the site and estimates that on a typical weekday with bookings, there would be an average of 72 two-way person trips to Hatfield Farms between 5 PM and 6 PM. From discussions with the operators of Hatfield Farms, many customers arrive to the site in carpools or together on busses. For this access review, the conservative estimate of two persons per vehicle is being assumed which estimates the current operation of Hatfield Farms to include 36 vph (vehicles per hour) with 18 vehicles entering and 18 vehicles exiting.

Phase 1 of the expansion is planned to include upgrades to existing buildings in the portion of the property near Hammonds Plains Road. This includes development as shown on Figure numbers 1 to 7, 11, and number 8 without the restaurant portion. Through discussions with the operators, these upgrades are to provide better accommodation of activities that currently occur on the site. Phase 1 expansion is not expected to increase traffic volumes at the Site driveway beyond the existing estimated 36 vph using the driveway in the PM peak.

Phase 2 of the expansion is estimated to include upgrade and addition of amenities to the portion of the property further into the site. Including numbers 12 through 24 on Figure 1, and build-out of the future development plan would include addition of a restaurant and fruit and vegetable stand shown as a portion of number 8 and number 10 in Figure 1.

Trip Generation - *Trip Generation, 7th Edition* (Institute of Transportation Engineers (ITE), Washington, 2003) provides trip generation rate estimates for AM and PM Peak hours for various land uses. Trips estimated to be generated by the site expansion are summarized in Table 1.

Traffic attracted to the site has been separated as pass-by trips and primary trips. Pass-by trips are considered as traffic that is already using the adjacent street and is expected to make intervening trips into the development to make use of services and then continue on to their original destination. Pass-by trips have been considered to be 50% of the traffic attracted to the Phase 3 development of the Restaurant and Fruit and Vegetable Stand (7 in and 7 out) during the PM peak hour.

The development is expected to accommodate land uses as shown in Table 1 and is estimated to generate 92 trips (46 in and 46 out) including the pass-by trips during the PM peak hour at Site Build-out.

Table 1 - Trip Generation Estimates					
Land Use ¹	Number Units ²	Trip Generation Rates		Trips Generated ³	
		PM Peak		PM Peak	
		IN	OUT	IN	OUT
Existing Development					
Existing		-	-	18	18
Total Trips estimated for Existing Development				18	18
Phase 1 Development					
Numbers ^{4,5} 1-7, 11 and 8 without Restaurant		-	-	0	0
Total Trips estimated with Completion of Phase 1				18	18
Phase 2 Development					
Numbers ^{4,6} 12-21, 23, 24		-	-	4	4
Splatshot Area ⁷ Number 22 ⁴	20 person	-	-	10	10
Total Trips for Phase 2 Development				14	14
Total Trips estimated with Completion of Phases 1 and 2				32	32
Phase 3 Development					
Restaurant (ITE 932)	50 seats	0.24	0.18	12	9
Fruit and Vegetable Stand (ITE 814) ⁹	2.7 KGLA	2.27	2.89	6	8
Total Trips for Phase 3 Development				18	17
On Site Synergies with existing Land Uses ⁸				-4	-3
Total Trips for Phase 3 Development				14	14
Total Trips estimated with Site Buildout¹⁰				46	46
Notes:					
1. Trip generation rates are 'vehicles per hour per unit.' Rates are for indicated Land Uses and Land Use Codes, <i>Trip Generation, 7th Edition</i> , Institute of Transportation Engineers, 2003.					
2. KGLA is '1000 square feet of leasable floor area'					
3. Vehicles per hour for peak hours.					
4. Numbers are expansions as shown in Figure 1					
5. Upgrades for Phase 1 are not expected to attract additional trips to the site as described above					
6. Expansion of these facilities is expected to better accommodate existing functions and slightly larger groups. It is estimated that the Phase 2 expansions would increase traffic attracted to the site by 20%.					
7. Splatshot area is expected to attract additional customers. Area is being designed for about 20 players. Assuming 2 people per vehicle would generate up to 10 trips entering and 10 exiting per hour					
8. It is estimated that 20% of the customers to the vegetable stand and restaurant are already on site					
9. Since the average size of buildings included in <i>Trip Generation</i> publish data is much larger, rates for the high range are used.					
10. Included in the total trips are passby trips already travelling on Hammonds Plains Road that will be attracted to the Restaurant and the Fruit and Vegetable Stand					

Distribution of Site Traffic

The turning movement count acquired in September 2009 (Table A-1) has been grown by 1% per year to provide estimates of 2010, 2012 and 2016 peak hour volumes without site generated trips which are shown in Figure A-1 (Boxes A,C,and E).

Pass-by traffic is attracted to the site driveway from traffic on Hammonds Plains Road based on magnitude of each travel direction. Primary trips have been distributed to the street network as follows:

- to / from West – 40%
- to / from East – 60%

Traffic generated by the Site has been assigned to the site driveway for each phase of development and added to projected background volumes without additional site traffic to estimate the PM peak hour volumes with additional site development as shown in Figure A-1 (Boxes B, D, and F).

Left Turn Lane Warrant

Left turn movements on a two-lane street may cause both operational and safety problems. Operational problems result as a vehicle stopped waiting for an opportunity to turn across 'heavy' opposing traffic causes a queue of stopped vehicles to form. Safety problems result from rear end collisions when a stopped left turning vehicle is struck by an advancing vehicle, or from head-on or right angle collisions when a left turning vehicle is struck by an opposing vehicle.

The *Geometric Design Standards for Ontario Highways Manual* contains nomographs for left turn lane analysis for two lane streets. The analysis method, which is normally used by traffic engineers in Nova Scotia to evaluate need for left turn lanes, uses a series of nomographs that consider speed, advancing volumes, left turns as a percentage of advancing volumes, and opposing volumes. A point, based on 'opposing' and 'advancing' volumes, plotted to the right of the 'warrant line' of the appropriate '% left turns' and 'approach speed' nomograph, indicates that a left turn lane is warranted for the conditions used in the analysis. Similarly, a point that is plotted to the left of the warrant line indicates that a left turn lane is not warranted.

During the analysis period, left turns as a percentage of advancing volume are projected to be about 1.0% for Phase 1 development, 1.7% for Phase 2 development, and 2.5% for Buildout of development as shown in Figure 1.

The left turn analysis nomographs begin with 5% left turning traffic up to 40% left turning traffic. Normally when left turning traffic is in the 1% to 2% range of advancing volume, a left turn analysis is not considered. At site buildout, left turning traffic is expected to be approaching the percentage of left turning traffic where the 5% left turn nomograph becomes reasonable to apply. Figure A-2 shows the estimated 2016 PM Peak hour volumes on the 5% left turning nomograph. A left turn lane is warranted on Hammonds Plains Road at Site Buildout.

Summary

1. Hatfield Farms have developed a concept for future development on their property.
2. The site is expected to be built out in phases over the next number of years.
3. At buildout, the site is expected to generate a total of 92 vph passby and primary trips (46 in and 46 out) during the PM peak.
4. Westbound Stopping Sight Distance (SSD) at the existing driveway is marginal.
5. None of the driveways on the study section of Hammonds Plains Road have left turn lanes. The driveway to Hatfield Farms is not untypical of any of the driveways along the study section of Hammonds Plains Road.

Recommendations

Since none of the driveways along the study section of Hammonds Plains Road have dedicated left turn lanes, the Hatfield Farms driveway is not out of character of drivers expectations when driving on this section of street.

Phase 1 expansion is not expected to generate additional trips to the site. Before additional traffic is generated by Phase 2 development, consideration should be given to relocation of the driveway to improve sight distance.

After completion of Phase 2 Development, traffic volumes at the site driveway should be reviewed and analysis for a left turn lane be conducted before proceeding with the final phase of expansion of the Restaurant and Fruit and Vegetable Stand.

Sincerely,

GENIVAR Consultants Limited Partnership

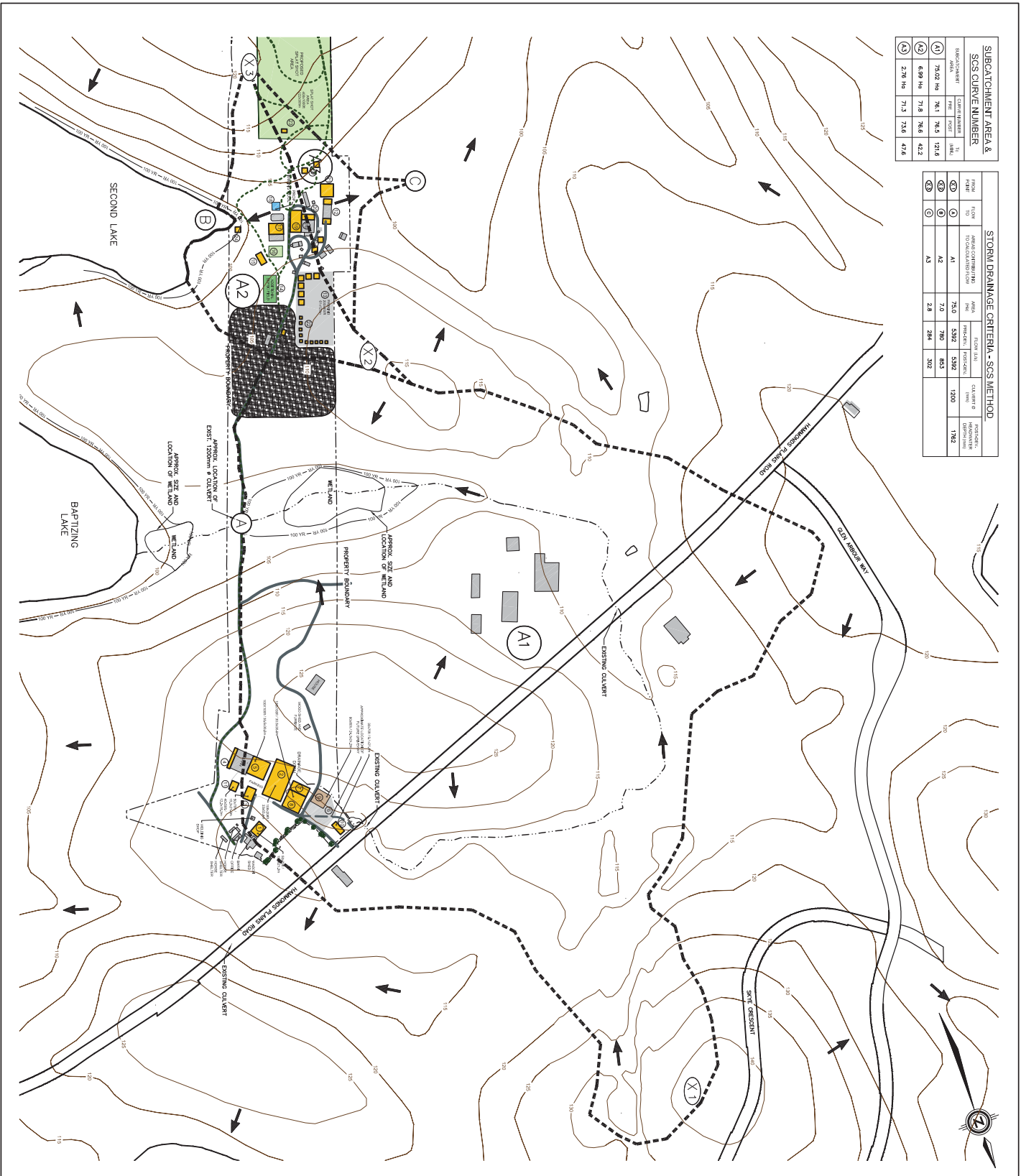
Original Signed

Greg O'Brien, P.Eng.
Manager, Traffic & Transportation - Dartmouth



SUBCATCHMENT AREA & SCS CURVE NUMBER			
Subcatchment Area	Area (ha)	Curve Number	Weighted Curve Number
(A1)	74.02	76.1	76.5
(A2)	6.89	71.8	76.6
(A3)	2.78	71.3	73.6
			47.6

STORM DRAINAGE CRITERIA - SCS METHOD					
Flow From	Area Contributing To	Area (ha)	Peak Flow (mm)	Time Lag (min)	Retention Detention Time (min)
(A1)	(A1)	74.0	5392	5392	1200
(A2)	(A1)	7.0	780	863	1782
(A3)	(A1)	2.8	284	302	



Legend	Description
	EXISTING WETLAND / SWAMP
	CONTOUR
	PROPERTY BOUNDARY
	100 YEAR FLOOD LIMITS
	DRAINAGE AREA LABEL
	OVERLAND FLOW DIRECTION
	PROPOSED GRAVELLED ROAD
	EXISTING BUILDING
	PROPOSED BUILDING

- NOTES**
1. ORIGINAL DIMENSIONS BASED ON WATER METEOROLOGICAL DATA, 100
 2. CULVERT CAPACITY BASED ON INLET CONTROL, AND HEADWATER DEPTH
 3. FLOWS FROM CULVERTS USING THE SCS METHOD
 4. CULVERT DATA WAS OBTAINED FROM NEW SCOTIA DRAINAGE CENTRE.

NO.	DESCRIPTION	CHK'D	DATE
1	RE-DESIGNED FOR APPROVAL		19-AUG-2013
2	RE-DESIGNED FOR APPROVAL		14-DEC-2009
0	ISSUED FOR APPROVAL		1-SEP-2009



1 SPECTACLE LAKE DRIVE
DARTMOUTH, NOVA SCOTIA
CANADA B5B 1X9
PHONE: 902 202 855-1466
WWW.GENIVAR.COM



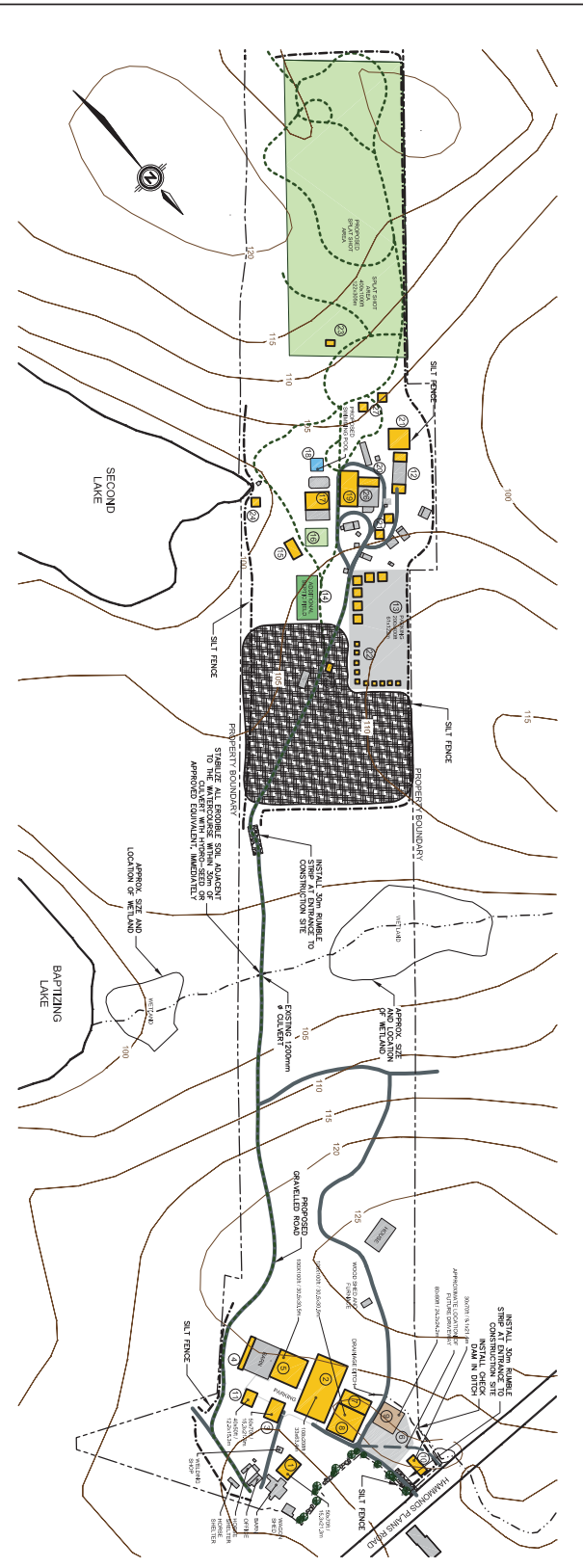
HALIFAX
REGIONAL MUNICIPALITY

CLIENT
BRIAN HATFIELD
HAMMONDS PLAINS, NOVA SCOTIA

PROJECT
HATFIELD FARM
HAMMONDS PLAINS, NOVA SCOTIA

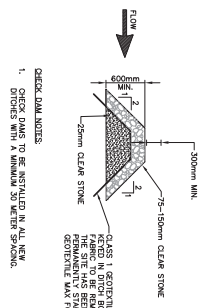
SHEET DESCRIPTION
**PRELIMINARY STORM WATER
MANAGEMENT PLAN**

DATE	BY	SCALE	SHEET
19-AUG-2013		1:3000	1
14-DEC-2009		1:3000	2
1-SEP-2009		1:3000	

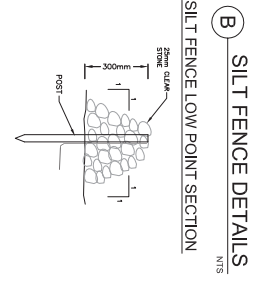


A FILTER FABRIC BERM AND CHECK DAM DETAILS
NTS

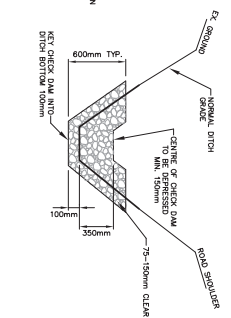
CHECK DAM PROFILE



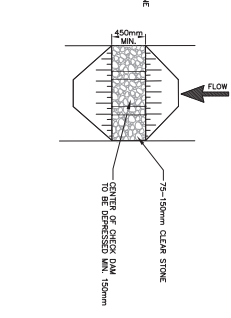
B SILT FENCE LOW POINT SECTION
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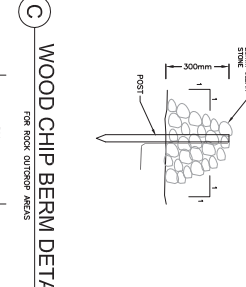
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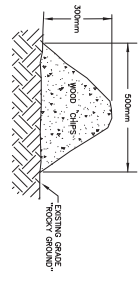
CHECK DAM PLAN



SILT FENCE LOW POINT SECTION
NTS



C WOOD CHIP BERM DETAIL
FOR ROCK OUTCROP AREAS
NTS



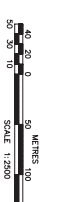
EROSION AND SEDIMENT CONTROL GENERAL NOTES

- CONSTRUCTION ACTIVITY TO BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION PERIOD FOR THE ENTIRE DURATION OF THE PROJECT. THE DESIGNER HAS CONDUCTED A VISUAL INSPECTION OF THE SITE AND HAS IDENTIFIED AREAS OF EROSION AND SEDIMENTATION. THE WORK IS TO BE COMPLETED IN THAT AREA, INCLUDING FINAL GRADING.
- ALL WORKS TO BE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NOVA SCOTIA DEPARTMENT OF ENVIRONMENT.
- CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF NATURAL WATERBODIES FROM DAMAGE DUE TO SILTATION RUN-OFF FROM THE CONSTRUCTION SITE. ACCEPTABLE CONSTRUCTION PROCEDURES MAY BE OBTAINED FROM THE DESIGNER AND ENVIRONMENT.
- TRIBUTARY STORM WATER FROM SITE TO BE DIRECTED TO SEDIMENTATION CONTROL DEVICES AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR TO MONITOR ENVIRONMENT DURING A DAY BEFORE ON A DAILY BASIS WHEN WORK IS PROGRESS. CONTRACTOR TO REPORT TO THE DESIGNER ANY EROSION OR SEDIMENTATION THAT OCCURS DURING THE CONSTRUCTION PERIOD.
- CONTRACTOR TO INSPECT SEDIMENT CONTROL STRUCTURES AND MAKE NECESSARY REPAIRS ON A WEEKLY BASIS AND BEFORE THE END OF EACH WORKING DAY. CONTRACTOR TO SUBMIT A WEEKLY REPORT OF EXPOSED AREAS.
- CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS TO PERFORM WORKS, AND COMPLY WITH ALL PERMIT REQUIREMENTS AND REGULATIONS.
- CONTRACTOR TO MAINTAIN ACCESS TO ALL EXISTING AND ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES.
- COVER EXPOSED SURFACES WITH HAY, MULCH OR WOOD CHIPS AS REQUIRED TO PREVENT SEDIMENT RUN-OFF. MAINTAIN COVER THROUGHOUT CONSTRUCTION PERIOD.
- WHERE SOIL FENCE IS SHOWN AND GROUND IS TOO ROCKY TO INSTALL REGULAR SILT FENCE, CONTRACTOR MAY SUBSTITUTE WITH AN ALTERNATIVE METHOD SUCH AS A CHECK DAM.
- MAINTAIN CLEAR GRAVEL ACCESS ROAD TO SITE PERMANENTLY OPENING ADDITIONAL GRAVEL TO COVER AND SURFACES. CONTRACTOR RESPONSIBLE TO CLEAR MAINTAIN STRIPS THAT MAY ACCUMULATE DEBRIS AS A RESULT OF THIS WORK. TRACKED VEHICLES TO BE WASHED AT THE END OF EACH DAY.
- CONTRACTOR TO MAINTAIN ACCESS TO ALL EXISTING AND ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES.
- KEEPING TRUCKS ACCESS TO SITE AT CONSTRUCTION ENTRANCE.
- SEE ACTIVITY SUBJECT TO RECOMMENDATIONS OF MUNICIPALITY, MUNICIPALITY TRUCK-BLANK.
- ALL SEDIMENT CONTROL MEASURES TO BE FUNCTIONAL. AT ALL TIMES SEDIMENT CONTROL MEASURES TO BE MAINTAINED AND REPAIRED AS NECESSARY.
- THE SEDIMENTATION AND EROSION CONTROL MEASURES OBTAINED ON THIS PLAN ARE RECOMMENDATIONS ONLY. DEPENDING ON SITE CONDITIONS DURING CONSTRUCTION, ADDITIONAL MEASURES MAY BE REQUIRED.

EROSION AND SEDIMENT CONTROL CONSTRUCTION SCHEDULE

- CLEAR ROWWAYS WHERE REQUIRED, DO NOT DRUB.
- INSTALL RUBBER STRIPS, SILT FENCE, CHECK DAMS & CUT OFF DRITCHES AS SHOWN ON THE PLAN.
- CONTRACTOR TO MAINTAIN ACCESS TO ALL EXISTING AND ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES.
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1	RE-DESIGNED FOR APPROVAL		19-AUG-2013
2	RE-DESIGNED FOR APPROVAL		16-DEC-2009
0	ISSUED FOR APPROVAL		1-SEP-2009



BRIAN HATFIELD
HAMMONDS PLAINS, NOVA SCOTIA
PROJECT: **HATFIELD FARM**
HAMMONDS PLAINS, NOVA SCOTIA

PRELIMINARY SEDIMENTATION & EROSION CONTROL PLAN

DATE: 19-AUG-2013	SHEET: 2
REVISION: 16-DEC-2009	SHEET: 2
ISSUED: 1-SEP-2009	SHEET: 2
NO.:	SHEET: 2