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6659 Franktown Road

Conceptual Stormwater Management Report

Prepared for: Air-Rock Drilling Co. Ltd.

6659 Franktown Road

Ottawa, Ontario

Conceptual
Stormwater Management Report

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

December 2024

Novatech File: 124191
Ref: R-2024-142

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Engineers, Planners & Landscape Architects

December 20, 2024

By Email

City of Ottawa
Planning, Development and Building Services Department
110 Laurier Ave W.
Ottawa, ON K1P 1J1

Attention: **Erica C. Ogden-Fedak RPP, MCIP, Planner II**

Reference: **Conceptual Stormwater Management Report**
6659 Franktown Road
Our File No.: 124191

Please find enclosed the Conceptual Stormwater Management Report (December 2024) issued in support of a minor zoning by-law amendment application for 6659 Franktown Road.

If you have any questions, please contact us.

Yours truly,

NOVATECH

L Bowley.

Lisa Bowley, P. Eng.
Senior Project Manager
Land Development Engineering

cc: Air Rock Drilling Co. Ltd.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

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1.0 INTRODUCTION

Novatech has been retained to prepare a Conceptual Stormwater Management Report for the Air Rock Drilling Co. Ltd property at 6659 Franktown Road. This report outlines the stormwater management strategy for the property in support of a Zoning By-law Amendment application.

It is proposed to bring the existing home-based business on the property into compliance with the requirements of the City of Ottawa's Zoning By-law for home-based businesses. It is understood that should the Zoning By-law be approved for a site-specific home-based business exception a Site Plan Control application would be required.

Details of the required Zoning By-law amendment application were discussed with City staff at a pre-consultation meeting held April 9, 2024. Notes of the meeting are included in **Appendix A**.

1.1 Site Location

The site is legally described as Part of Lot 19, Concession 4, Geographic township of Goulbourn, now City of Ottawa. The site is located at 6659 Franktown Road, approximately 700m west of Joys Road. Refer to **Figure 1 – Key Plan** for the site location.

The total area of the property is approximately 40 hectares in size, however only a small portion of the front of the property, approximately 1.7 hectares, is considered for the Zoning By-law Amendment. The proposed development boundary of the subject property for the purposes of this report is indicated on the **Existing Conditions Plan (124191-EX1)**. This area is used for both the residential use and home-based business. The balance of the property is undeveloped.

1.2 Existing Conditions

Based on discussions with the owner, the development of the home-based businesses began in 2002. Therefore, for the purposes of this report the pre-development conditions are assumed to be the site conditions in 2002. Refer to **Figure 2 – Pre-Development Conditions (2002)**. This plan with aerial imagery shows a house, a pool and an asphalt entrance and gravel parking area.

For the purposes of this report the current site conditions are assumed to be the conditions in 2024, the date of the topographic survey. The survey was completed by Ontario Land Surveyor, J.D. Barnes Limited. The current site features are detailed on the **Existing Conditions Plan (124191-EX1)**.

The site is serviced by a private well and septic system. The adequacy of the private services has been reviewed under separate cover by Paterson Group.

This plan shows the same residential features as in 2002, with an increase in asphalt area and two structures describes as a Quonset Hut (coverall structure) and a garage/office. The owner constructed a berm on their property to obstruct the view of the home- based business from the neighbouring property, 6685 Franktown Road.

1.3 Proposed Development

The owner has been working with their lead consultant, Fotenn, to develop a Concept Plan for the future home-based business that aligns with the Zoning By-law amendment. The Concept Plan is included in **Appendix B**. Novatech has developed a Grading Plan based on this concept which provides proposed grading for the areas that would be reinstated as greenspace, specific parking areas and reduced outdoor storage areas.

Based on discussion the city a 'Risk Management Plan' is in place. This includes the recent installation of an oil and grit separator in the garage.

The site will continue to be serviced by private well and septic.

Refer to the **Grading, Erosion and Sediment Control Plan (124191-GR)** for details.

2.0 CONCEPTUAL STORMWATER MANAGEMENT

For the purposes of this report the pre-development conditions are assumed to be the conditions in 2002, and the post-development conditions are assumed to be site conditions after the implementation of the proposed works shown on the Grading Plan.

Pre-development and post-development drainage areas were developed to assess the stormwater management design criteria for the subject property. The overall drainage patterns are unchanged from the pre-development conditions, including external drainage patterns on to and off the site in the post-development condition. The on-site drainage split changed slightly with the addition of the garage/office.

The total drainage area for the proposed development boundary is approximately 1.7 hectares as depicted on **Pre & Post Development Storm Drainage Area Plan (124191-SDA)**.

2.1 Stormwater Management Criteria

The following stormwater management criteria is proposed:

Stormwater Quantity: Stormwater peak flows are to be controlled to pre-development levels for all storms up to and including the 1:100 year event and would be detained on-site.

Stormwater Quality: Enhanced level of water quality protection with the implementation of lot level and conveyance Best Management Practices.

Erosion & Sediment Control: Provide guidelines for site preparation and construction.

2.2 Stormwater Quantity Control

Pre-Development

Under pre-development conditions (2002), the stormwater runoff for the 1.7-hectare drainage area is split, approximately 1.0 hectares flows south and approximately 0.7 hectares flows north. Both drainage areas outlet to the legal and sufficient outlet, which is the Franktown Road, roadside ditch.

The existing drainage patterns are described as follows:

- Area A: Stormwater runoff from the north sheet drains to a shallow ditch, this ditch goes around 6685 Franktown Road. The ditch is located on the adjacent 6695 Franktown Road property, owned by the applicant.

- Area B: Stormwater runoff from the south portion of the site sheet drains to the roadside ditch at Franktown Road, which flows east towards Richmond.

Peak Flows

Peak flows were estimated using the Modified Rational Method. Supporting calculations are provided in **Appendix C.**

Pre-Development vs. Post-Development Peak Flows

Outlet Location	Drainage Area (ha)		Peak Flow (L/s)					
			2-year		5-year		100-year	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
Area A (north)	0.67	0.71	40.3	72.0	54.7	97.7	118.6	198.1
Area B (south)	1.06	0.97	72.7	75.0	98.6	101.7	203.0	205.0

Storage Requirements

There are minimal changes to the existing drainage patterns (2002) and the post-development conditions. However, runoff has increased due to the expanded hard surface areas (asphalt area and two buildings). Therefore, stormwater detention would be required.

Storage requirements were calculated using the Modified Rational Method, to control 100-year post-development flows to the 100-year pre-development rate. Calculated storage volumes are outlined below.

Outlet Location	Storage Required	Storage Provided
Area A:	48m^3	55m^3
Area B:	24m^3	30m^3

The stormwater management storage for Area A (North) would be provided by a linear dry detention pond located at the rear of the proposed development boundary. The storage for Area B (South) would be provided in a liner ditch on the west of the property.

Refer to the **Grading Plan & Erosion and Sediment Control Plan (121265-GR)** for details.

Detailed stormwater management calculations are provided in **Appendix C.**

Flow Control Structures

Flow control structures would be required at the outlets of the two facilities. The flow control structures would be designed to control the post-development stormwater peak flows to the pre-development condition at the Site Plan stage.

2.3 Stormwater Quality Control

The Rideau Valley Conservation Authority has indicated that an *Enhanced* level water quality control (corresponding to a long-term average TSS removal rate of 80%) is required for this site. This would be archived by designing the swales as water quality swales as described in the criteria outlined in Section 4.5.9 of the *MOE Design Guidelines,* March 2003.

In addition, Best Management Practices would be implemented including:

- Overall site drainage patterns would remain the same.
- Directing surface drainage via grassed swales with flat-bottom.
- Swales at minimal slopes.
- The existing landscape would be maintained where possible to minimize erosion and sediment transport.

2.4 Erosion and Sediment Control

Erosion and sediment control measures would be implemented prior to, during and after construction of the stormwater detention areas in accordance with the “Guidelines on Erosion and Sediment Control for Urban Construction Sites” (Government of Ontario, May 1987).

Temporary Measures

- Confining work within silt fence areas;
- Installing rock flow checks at the outlet(s) from the site;
- Installing straw bales in existing ditches;
- Storing and completing maintenance of all machinery away from the watercourses, swales and diches.

The proposed temporary erosion and sediment control measures would be implemented prior to construction and remain in place throughout each phase of construction and would be inspected regularly. Detailed design drawings would indicate that no control measure shall be permanently removed without prior authorization from the Engineer.

Permanent Measures

- Seeding disturbed areas and establishing grass growth;
- Perimeter ditches acting as water quality swales.

3.0 CONCLUSIONS

It is proposed to bring the existing home-based business on the property into compliance with the requirements of the City of Ottawa's Zoning By-law for home-based businesses. It is understood that should the Zoning By-law be approved for a site-specific home-based business exception; a Site Plan Control application would be required.

The stormwater management design would be further refined at the Site Plan stage and follow these recommendations.

Quantity Control

- Quantity control measures would be implemented to reduce post-development peak flows to pre-development levels for storm events ranging from the 1:5 year to the 1:100 year event.
- Quantity control storage would be provided in the linear storage facility complete with flow control structures.

Quality Control

- Quality control measures would be designed to provide an Enhanced level of water quality protection, corresponding to a long-term average TSS removal rate of 80%.
- Quality control would be provided using flat-bottomed ditches and Infiltration best management practices to further enhance water quality

Erosion and Sediment Control

- Erosion and sediment control would be implemented prior to, during and after construction.

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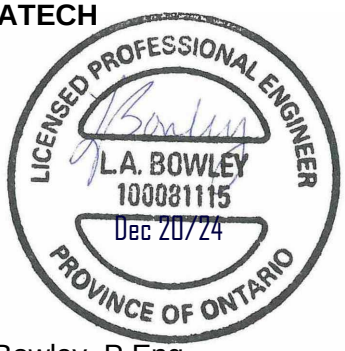


Lisa Bowley, P.Eng
Senior Project Manager
Land Development Engineering

Appendix A

Correspondence

File No.: PC2024-0125

April 12, 2024

Jacob Bolduc
Fotenn Consultants Inc.
Via email: bolduc@fotenn.com

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Zoning By-law Amendment Application – 6659 Franktown Road

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on April 9, 2024.

Pre-Consultation Preliminary Assessment

1 ☐	**2** ☒	**3** ☐	**4** ☐	**5** ☐

One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City's key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 2 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

2. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

Supporting Information and Material Requirements

- The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

- The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

- You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning

Comments:

The applicant is proposing a Zoning By-law Amendment to allow the home-based business (Air Rock Well Drilling) to continue operating on the property. The property and accessory buildings are largely used as a hub and storage site for the businesses drilling vehicles.

It is understood that there are approximately 15 employees. Four of the employees remain on-site throughout the day – three work in the office and one (the resident of the dwelling) works in the garage. It is also understood that there are approximately four drill-rigs, four service trucks, and five trailers. These vehicles are maintained and refuelled on-site; and are also stored there when not in use. The on-site operations typically start around 7:00-7:30 a.m.

Official Plan

1. The portion of the site subject to the proposed application is designated Rural Countryside as per Schedule B9 of the Official Plan. The remainder of the site includes portions that are designated Greenspace.

2. The Rural Countryside Designation permits residential uses.

3. The Official Plan recognizes that home-based businesses shall be permitted wherever the Zoning By-law permits a dwelling, provided the provisions of the Zoning By-law contains regulations to ensure appropriate integration to not adversely impact neighbouring properties by virtue of appearance, function, or attraction of large volume of automobile traffic [S. 4.2.1 5)].

4. Limited small-scale rural industrial and rural commercial uses are also permitted provided the appropriate underlying zoning is in place. These small-scale uses must meet the following criteria:

    i. The uses are necessary to serve the local rural community or the travelling public

v. The development can be supported by services available according to the applicable provincial regulations

vi. The scale of development is suitable for a rural context and where the size of each commercial occupancy will not exceed 300 square metres of gross leasable floor area.

vii. The proposed development is designed to minimize hazards between the road on which it fronts and its vehicular points of access, mitigate incompatibilities with adjacent residential uses and to integrate appropriately with rural character and landscape.

Zoning By-law

5. The portion of the site subject included in the proposed application is zoned Rural Countryside (RU). The property also contains large swathes of Environmental Protection, subzone 3 (EP3) zoning, which will not be affected by this proposal.

6. A dwelling and a home-based business is a permitted use in the Rural Countryside Zone.

7. Section 127 and 128 of the Zoning By-law provide the applicable provisions for home-based businesses in the Rural Countryside Zone. Some of the relevant provisions in each section are provided below.

    Section 127:

    i. Home-based businesses are permitted in any dwelling unit, in any zone that permits residential uses provided:

    ii. They must not become a nuisance because of noise, odour, dust, fumes, vibration, radiation, glare, traffic, or parking generated;

    iii. They must not become a fire or building hazard or health risk;

    iv. The operators of the home-based businesses must reside in the dwelling which the home-based business is conducted, including when the business is in operation

    v. Any number of businesses may exist provided the cumulative maximum total gross floor area outlined in Section 128(3) is not exceeded.

    vi. Home-based businesses must not involve the use of the premises as a dispatching office or supply depot.

    vii. Any number of home-based businesses is permitted on a lot which permits a residential use, either within the dwelling unit, or oversize

dwelling unit, rooming unit or additional dwelling unit, or within an attached garage on the lot provided that:

viii. If within a dwelling unit, oversize unit, or additional dwelling unit, the cumulative size of all home-based businesses per dwelling unit or overside dwelling unit or secondary dwelling unit must not exceed 25% of the unit's gross floor area, or 28m^2 whichever is the greater.

Section 128:

1. The regulations of Sections 127(1), 127(2), Section 127(4) through 127(9), and Sections 127(12) through 127(14) apply.

2. A maximum of three, on-site, non-resident employees are permitted per principal dwelling unit.

3. Home-base businesses are permitted in the dwelling unit, garage, and accessory buildings to a cumulative maximum of 150 sq. m, excluding outdoor storage area associated with the home-based business.

5. For subsection (3), the cumulative total is for all home-based businesses within the principal dwelling unit, garage and accessory buildings combined, with a separate cumulative total applicable to the additional dwelling unit, and not for the principal dwelling unit, garage, accessory buildings and additional dwelling unit combined. If within a dwelling unit or additional dwelling unit, the cumulative size of all home-based businesses per dwelling unit or additional dwelling unit must not exceed 25% of the unit's gross floor area or 28 m^2 whichever is the greater; and if within a rooming unit, no maximum size limit applies, but the home-based business must take place solely within the rooming unit and not within any communal area within the building.

7. In addition to the types of licensed businesses permitted under subsection 127(13), snow plough contractors, drain contractors, antique dealers and any business of storing automobiles, buses, boats, and recreation vehicles are also permitted.

9. No part of any garage or accessory building used for a home-based business may be located closer than 10 metres to any residential use on another lot or to the side lot line of if the neighbouring lot is not developed with a residential use.

10. A maximum cumulative 5% of the lot area or 100 sq.m., whichever is lesser is permitted to be used for outdoor storage associated with all of the home-based businesses combined.

11. The permitted outdoor storage is restricted to the rear yard or to an interior yard adjacent to the rear yard.

12. The outdoor storage is not to be located within 10 metres of any side lot line.

13. Outdoor storage must be screened from view from any abutting public street, or abutting property, with an opaque screen or fence, with a minimum height of 1.4 metres.

14. On-site storage of hazardous chemicals or explosives is prohibited.

8. Provisions for Heavy Vehicles and Recreational Vehicles associated with a Residential Use are included in Section 126 as follows:

(1) No person may park a trailer or heavy vehicle associated with a residential use or with one or more home-based businesses on the same lot as the associated residential use or home-based business unless

i. The lot continues to be used in accordance with Part 4, except as set out in Subsection (2) below and;

ii. The trailer or heavy vehicle is parked within a building; or,

iii. The trailer or heavy vehicle is parked in accordance with Table 126, which sets out the maximum number and permitted location.

(4) For the purposes of this section, the definition of heavy vehicle also includes a recreational vehicle, and the definition of trailer also includes a trailer for a boat, **and a trailer for the transportation of waste or materials**.

Table 126 – Maximum Number of Vehicles Permitted to be Parked

I Type of Vehicle	Provisions IV – AG, EP, ME, MR, and **RU**
i. If greater than 6m in length and is not a school bus: b) a heavy vehicle other than a) above or a trailer other than a trailer for camping or a boat	Two, but no person shall park in a required front or corner side yard and must be a minimum of 3 metres from all lot lines.
v. Cumulative number of heavy vehicles and trailers permitted per lot.	Except where otherwise specified in (i) through (iv), no person shall park a total of more than three trailers and heavy vehicles on the lot, and the required parking for

	the dwelling or farm must continue to be legally provided on the lot.

9. Table 55 in the Zoning By-law provides provisions for accessory structures. In the RU zone, the aggregate of all accessory buildings shall not exceed 5% of the total lot area or 150m^2, whichever is greater.

Discussion

10. It appears that a building permit was never issued for the cover-all structure. Staff cannot approve the use of the structure considering its current status. Please provide evidence that the cover-all structure has been reviewed and approved by Building Code Services. This will be required alongside the Phase 3 submission.

11. The following table is an evaluation of the existing proposal highlighting the home-based provisions that do not appear to be met:

Section	Provision	Comments
128(2)	Despite the unlimited number of businesses permitted, a maximum of three, on-site, non-residential employees are permitted per principal dwelling unit or oversize dwelling unit.	It is understood there are currently 15 employees. 3 employees in addition to the resident stay on-site during the day, whereas the remainder leave to separate job sites. The site-specific exception will need to specify how many non-resident employees remain on-site versus the number who access the site but do not remain during the day. Limits should be proposed in the Zoning By-law Amendment. If employees working off-site park their personal vehicles prior to leaving, please include a location for them to park on the simplified site plan.
128(3)	Home-based businesses are permitted in the dwelling unit, oversized dwelling unit, secondary dwelling unit, rooming unit, garage and accessory buildings to a cumulative maximum of 150 m^2, excluding outdoor	It is understood that the house, garage, and cover-all are all used as a part of the home-based business and far exceed the 150m^2 maximum. Please provide an updated plan confirming the size of the buildings and how much space in each building is used

	storage, associated with the home-based business.	by the home-based business. Floor plans for each structure showing the areas to be used by the home-based business would be helpful. A small increase to this provision could be supported for a site-specific rezoning but may need to be scaled back from existing use.
128(10)	A maximum cumulative 5% of the lot area or 100 sq.m., whichever is lesser is permitted to be used for outdoor storage associated with all of the home-based businesses combined.	Outdoor storage is not identified in the concept plan. Please provide an updated plan showing the location of outdoor storage and the cumulative area it will cover. Storage of heavy equipment and/or materials would be considered outdoor storage.
128(11)	The permitted outdoor storage is restricted to the rear yard or to an interior yard adjacent to the rear yard.	Outdoor storage is not identified in the concept plan. Please show on updated site plan. The location of the proposed storage shall remain consistent with this provision.
128(12)	The outdoor storage is not to be located within 10 metres of any side lot line.	Outdoor storage is not identified in the concept plan. Please show on updated site plan. The location of the proposed storage shall remain consistent with this provision.
128(14)	On-site storage of hazardous chemicals or explosives is prohibited.	The PPS includes a definition for hazardous substances. Fuel is considered to be a hazardous substance. Staff would not support a deviation from this provision.

128(16)	Section 126 sets out the regulations applicable to the parking of heavy vehicles.	It is understood that there are approximately 4 drill-rigs, 4 service trucks, 5 trailers, and 1 boat. Please confirm how many heavy vehicles, trailer, equipment, etc. are used as a part of the home based business, or stored on the property (including those for residential purposes). The length of the trucks and equipment will need to be confirmed. Please show proposed storage locations on updated plan. A maximum of 3 heavy vehicles and trailers as per Section 126 is permitted. A small increase to this provision may be supported. Please consider the proposed storage location for these vehicles when not in use. Indoor storage is preferred.
127(9) a.	If within a dwelling unit, oversize unit, or additional dwelling unit, the cumulative size of all home-based businesses per dwelling unit or overside dwelling unit or secondary dwelling unit must not exceed 25% of the unit's gross floor area, or 28m^2 whichever is the greater.	Please confirm the gross floor area of the dwelling and provide it on an updated site plan. Please confirm the area of the home-based business within the dwelling and provide it on the updated plan. This includes any offices, washrooms, or other areas used by on-site staff.

12. A Zoning By-law Amendment to rezone lands to a Rural Industrial or Rural Commercial use is not appropriate and would not be supported due to the nature of the existing business and the proximity of adjacent residential uses.

13. The current proposal is not consistent with the home-based business provisions and is not aligned with their intent.

    In order to consider a Zoning By-law Amendment, the scale of the operation needs to be reduced with specific consideration for the proposed number of trucks and their storage, the amount of cumulative indoor space used, and the location and amount of outdoor storage.

Storage and use of hazardous substances will not be supported.

14. A Zoning Amendment for a site-specific home-based business exception will only apply to the area delineated by the simplified Site Plan.

15. Should a Zoning By-law Amendment be approved for a site-specific home-based business exception, a Site Plan Control application would also be required, as the building sizes meet the thresholds of the Site Plan Control By-law.

16. If the applicant/owner wishes to continue pursuing a Zoning Amendment for a site-specific home-based business exception, the following will need to be addressed for the Phase 2 Pre-consultation submission:

    a. A new simplified Site Plan showing:

        i. Updated lot lines

        ii. Size of the existing structures

        iii. Location of outdoor storage

        iv. Size of outdoor storage

        v. Amount of each existing structure being used by the home-based business.

        vi. Location for vehicle storage in-season and during the winter.

        vii. Removal of fuel tanks

        viii. If off-site employees park their personal vehicles prior to leaving, please include a proposed location for them to park on the Site Plan.

    b. A draft Planning Rationale which outlines the requested Zoning By-law Amendment with supporting rationale and consistency with the Official Plan policies.

    c. A Zoning Confirmation Report detailing which provisions including home-based business provisions will be met and which cannot be met. Please identify the relief required for the provisions that cannot be met.

Feel free to contact Erica Ogden-Fedak (erica.ogden-fedak@ottawa.ca), Planner, for follow-up questions.

Urban Design

Submission Requirements:

17. Urban Design Brief is required. Please see attached customized Terms of Reference to guide the preparation.

    a. The Urban Design Brief should be structured by generally following the headings highlighted under Section 3 – Contents of these Terms of Reference.

    b. The following elements are particularly important for this development application.

        i. Analysis of existing conditions and operations. Please include photos of interior yard conditions and consideration for how a combination of opaque fencing and coniferous trees can screen lights and noise for adjacent neighbours.

18. Additional drawings and studies are required as shown on the SPIL. Please follow the terms of references (Planning application submission information and materials | City of Ottawa) the prepare these drawings and studies. These include:

    a. Design Brief

    b. Site Plan

    c. Landscape Plan (for spacing/soil volumes and fencing details)

Comments on Preliminary Design

19. Please prepare the Site Plan closer in line with the City's term of reference. Staff understand that this is for a Zoning By-law amendment but much of the requested changes require more accurate dimensions, sizes, and points of reference to evaluate the proposal.

20. Please specify on the Site Plan where employees who do not live on-site park. From the meeting, it seems like there are more employees than parking stalls identified.

21. Due to the nature of the home-based business operations, Staff have concerns regarding noise and light spillover on the adjacent residential properties. Solutions to mitigate this concern could include opaque fencing and coniferous tree planting. Due to the size requirements of coniferous trees and fencing, a conceptual Landscape Plan is being requested to understand how this might impact current operations.

Feel free to contact Molly Smith (molly.smith@ottawa.ca), Urban Design, with any follow-up questions.

Engineering

Zoning By-Law Amendment Comments:

22. A topographic plan of survey needs to identify all representative elevation points, currently existing features, including all property lines, bodies of water, vegetation, easements etc. It needs to provide a note that references the horizontal and vertical datums that were used and tied into to complete the project, including the local benchmarks. The survey should show the municipal road ROW and dimension the distance between the road centre line and the site property line.

23. Servicing Study and Report (water/sanitary)

    a. There are no municipal services near the proposal, therefore, any potential site servicing considerations will only be possible based on private servicing.

    b. Servicing Study and Plans will need to demonstrate that the site can be adequately serviced by private servicing. The report should provide the available water quality and quantity information. It should identify the required projected water demand for the proposal and the expected well capacity (sustainably to be in excess of the demand). The servicing demands will need to be specified in the analysis and include the on-site equipment washing activities. It should also address sanitary servicing needs for the entire site.

    c. The report needs to provide all pertinent calculations and justifications to support any claims made in the report. Any reliance made to other relevant studies should be made and implications clearly stated.

    d. Septic bed sizing considerations pertaining to sanitary demands and the equipment washing operation need to be thoroughly investigated and supported by pertinent calculations. Equipment washing effluent is not allowed to be discharged to any on-site SWM surface runoff control features or the road ROW ditches.

    e. It is not clear, at the moment, if there are existing water wells or septic beds on site. If they are, and are planned to be decommissioned, these intentions need to be included in the report and shown on the site servicing plan. There are several well records identified on the MECP Well Records site.

24. Stormwater (ECA for the site might be required)

    a. A SWM report and a drainage plan will be required, and they need to be submitted for review, to confirm that site can be adequately serviced, with respect to surface run-off control needs.

b. This report should be completed exceeding the requirements laid out in the City's Site Servicing Study Terms of Reference. All stormwater management determinations shall have supporting rationale.

c. The site is adjacent to Environmental Protection Zone, approximately 75 m northwest of the proposal.

   The site is also within Wellhead Protection Area with vulnerability score of 6. Therefore, hydrogeological conditions on site need to be carefully considered, especially if infiltration measures are contemplated, and SWM considerations need to concur with the provincial, RVCA (Rideau Valley Conservation Authority) and the City regulations. It is recommended that the City's Risk Management Official, Tessa Di Iorio is contacted for more details.

d. The ESA (Phase 2) report noted surface soil contamination, as a result of refueling activities, and workshop sump pump discharge near the southwest property limit and northeast property limits, respectively. This may pose potential risk of contamination of the adjacent properties or the downstream SWM systems via surface runoff and needs to be considered in the SWM reporting. Preventive measures need to be recommended.

e. Runoff that crosses or enters the parcel from off-site must be accepted and contemplated in the stormwater management quantity control calculations.

f. The quantity control criteria will be that the 100-year post development peak flow rate from the site must be controlled the 2-year pre-development peak flow rate and stormwater flow rates in excess of the 2-year pre-development storm, up to and including the 100-year post-development storm event, must be detained on site.

g. The quality criteria will be enhanced treatment, 80% TSS removal. Best management SWM practices should be contemplated to address stormwater quality considerations.

h. The proposal will need to show legal and sufficient storm outlet from site for both release rate and volume. If it is proposed to discharge storm water to the existing ditches in the ROW, the ditches will need to be shown to provide continuous flow to an outlet.

i. OGS application should be considered on site to trap potential contaminants (fuels, lubricants, cleaning agents, solvents, etc.) from the workshop sump pump discharge, parking lot, refuelling area and the equipment wash areas - this may require ECA approval.

   Note that oil/grit separators, if used, require Environmental Technology Verification (ETV) protocol for the ECA.

j. The Applicant needs to confirm with the MECP office if the ECA will be required and provide proof of communication to the City.

25. Hydrogeological and terrain analysis requirements (private servicing only)

a. The site is within Wellhead Protection Area with vulnerability score of 6. Therefore, hydrogeological conditions on site need to be carefully considered. Consultation with the City hydrogeologist is strongly recommended prior to undertaking the field study work.

b. The requirements for a Hydrogeological and Terrain Analysis (HGTA) Report are outlined in the City of Ottawa Hydrogeological and Terrain Analysis Guidelines, Section 7.0 for Zoning By-law Amendment. With reference to Section 7.2, the requirements for Zoning By-law Amendment applications are site specific and variable based on local available aquifer information. For the 6659 Franktown Road site, the local supply aquifer is not known for having water quantity or quality concerns; however, given the activities at the site, there may be impacts from site-specific activities. Therefore, a HGTA brief submission is recommended, and should include the following at minimum:

i. It is understood that existing water well/s and septic bed/s are available onsite and are servicing the current activities, thus, the report needs to provide an assessment of the physical state of the existing well/s and the septic bed/s. The consultant should do an inspection of the well/s and confirm that the well/s meet/s current well regulations (at a minimum, the inspection should confirm the well structure, minimum casing stickup, grading around the well, etc. – all to meet O.Reg. 903).

ii. A full pump test for water quantity assessment may not be required. However, for this application to be exempted from conducting a full pump test for water quantity, the HGTA brief must discuss and confirm that the site has an existing well and the well supplies sufficient water quantity and that there is no change in use planned as part of the application under consideration.

iii. A water quality assessment for subdivision suite parameters, trace metals, and VOC is required and should be provided in the HGTA brief, to confirm adequacy of the water supply; given the numerous onsite activities that may potentially contaminate the aquifer, and thus, the water quality test is required to be conducted to assess the magnitude of impacts. Water quality sampling protocols must meet current standard practices.

iv. The local Medical Officer of Health shall be notified if a sodium concentration of 20 mg/l, or greater, is found.

v. If the sum of the septic flows from onsite septic systems is 10,000 L/day or greater, then an ECA will be required from the MECP for the septic system.

vi. If the expected daily design flow is less than 10,000 L/d, a confirmation that the onsite septic system is in good working condition should be provided, and an OSSO inspection may be required.

vii. The HGTA brief should outline and discuss the existing and proposed activities onsite and describe how the aquifer is protected from any potentially contaminating onsite activities and describe how the aquifer is protected in the long-term. This would be supported from the results from the water quality sampling.

c. Contact the hydrogeological reviewer, Obai, at obai.mohammed@ottawa.ca, for any questions as needed.

26. Source Protection comments:

a. The site is located within the Wellhead Protection Area (WHPA) of the Richmond Municipal Well systems, specifically within WHPA-B (vulnerability score 6). There are legally-binding source protection policies that apply to activities on this site, policies are outlined within the Mississippi-Rideau Source Protection Plan.

b. Under Section 59 of the Clean Water Act, policy ADMIN-2-LB of the Mississippi-Rideau Source Protection Plan, and policy 1 under Section 4.9.5 of the new City Official Plan, all new Planning Act applications within designated vulnerable areas must be screened to ensure that new activities do not pose a threat to municipal drinking water sources If there is a significant drinking water threat activity (planned or existing, as defined under the Act), the activity must be managed through a Risk Management Plan prior to the Planning Act approval (note that some new threat activities may be prohibited under certain circumstances).

c. It is understood that there is both fuel storage and chemical storage/handling for vehicle maintenance onsite. Fuel storage is not considered a significant drinking water threat within a WHPA-B(6) thus there are no Source Protection policy requirements, however it is strongly recommended that best management practices be followed related to fuel storage and handling to protect the local water supply aquifer. The storage and handling of vehicle maintenance chemicals onsite meets the circumstances to be considered a significant drinking water threat and requires risk management measures as per applicable Source Protection Plan policies.

d. The applicable policy related to the chemical storage and handling is: **Policy DNAPL-1-LB-S58**. The policy identifies that any existing non-residential storage or use of **Dense Non-Aqueous Phase Liquids (DNAPLs**) onsite will require the negotiation of a Risk Management Plan. DNAPLs are chemicals that a denser than water and do not dissolve in water, and they are very difficult to remediate if spilled in an aquifer. DNAPLs are typically present in some degreasers, cleaning agents and paints (and other related products).

e. A site inspection was conducted in July 2023 by the City's representative Risk Management Inspector and a Risk Management Plan (as per Section 58 of the Clean Water Act) was negotiated with the property owner and signed in August 2023.

f. As such, unless there is a change in activities onsite since July 2023, the source protection requirements have been fulfilled and no further action is required. If there is planned change in activities onsite, then the owner should contact the City's Risk Management Official, Tessa Di Iorio (tessa.diiorio@ottawa.ca).

27. Environmental Site Assessments (Phase 1 and Phase 2) – were submitted to the City - update is required.

a. Phase 1 and Phase 2 ESA's were submitted to the City in support of the Application. The reports noted some Potentially Contaminating Activities causing soil contamination and Areas of Potential Environmental Concern (refueling activities and workshop sump pump discharge near the southwest property limit and northeast property limits, respectively).

It is not clear what the impact of the fuel storage and the sump discharge is on the surface runoff, and consequently the adjacent property and the downstream Storm Water Management system (road ROW ditches and Environmental Protection Zone to the north). Additional analysis needs to be provided.

b. The report states, in Section 5.9.2 that the property is not in a Wellhead protection area, which contradicts the City mapping information.

The site is located in the WHPA-B (vulnerability score 6) for the Richmond Municipal wells and it is shown in the Official Plan Schedule C15: (Schedule C15 - Environmental Constraints | Annexe C15 - Contraintes Écologique (ottawa.ca))

There is also, already signed, Risk Management Plan for the activities onsite.

c. The consultant needs to re-assess the Phase II ESA sampling and assessment requirements under O.Reg. 153 based on this updated information.

d. If the consultant needs assistance interpreting Source Protection Plan policies or requirements, please contact the City's Risk Management Official (Tessa Di Iorio, Tessa.diiorio@ottawa.ca) ```

e. City might provide additional comments at the future reviews.

28. Noise Control Feasibility Study and Report – was submitted to the City - update is required.

a. Report, titled "Environmental Noise Assessment Report, Ottawa, ON, For Air-Rock Drilling, prepared by State of Art Acoustic Inc., dated January 22, 2024", was submitted to the City.

b. It is not clear why the report discounted a possibility of the site operation outside of 7:00 - 23:00 and defined the overall considered acceptable noise level to 50 dB, in the area that can be considered "sleeping quarters".

Section 2.2 (Table 2.2b) of the City "Environmental Noise Control Guidelines, January 2016", states that transportation noise (the proposal can be likely considered as very similar scenario, given the nature of the site peak operation activities, instead of Stationary noise -Class1/ Class 2 considerations), for sleeping quarters should be limited to 40 dB (during 23:00 – 7:00) and 45 dB (7:00 – 23:00). It needs to be noted that the site under consideration is within a residential area therefore it can be considered living space/sleeping quarters for both time limits.

c. The report appears to rationalize the adjacent road noise, as determining factor in defining the acceptable noise level that can be produced on site (resulting mainly from transportation activity, described in the report as truck use), instead of directly referencing the above-mentioned Table 2.2b, with its criteria.

Considering the fact, confirmed in the report, that the main source of the noise generated on site is the transportation related noise (truck operations and truck movement) not stationary noise, the report needs to confirm that the noise generated on site can be controlled to the limits stated in the Table 2.2.b of the City guidelines.

d. It also needs to be noted that it is not clear what the extent of the typical peak activity truck movement noise and the stationary noise related to the truck maintenance was captured during the 48-hour period at the end of November. It was mentioned during the pre-application consultation

meeting (April 09, 2024) that winter months are not the peak site activity time period.

e. City might provide additional comments in the future reviews.

29. Additional observations.

a. The proposed concept plan shows a berm. More details will be required to be shown on the grading plan. The berm might negatively impact drainage on the adjacent property. If berm is being proposed, any drainage crossing from the adjacent property will need to be accommodated as currently existing.

b. There is a landfill (Richmond landfill) approximately 650 m to the SW of the site and approximately 2000 m to the west (Unnamed landfill).

c. Existing water well/s and the septic bed/s need to be shown clearly on the plans.

d. It is not clear if there are any current firefighting provisions on site, such as water tanks, hydrants, etc. If present, they need to be shown on plans.

30. Construction Constraints.

a. Any existing and proposed fuel storage tanks will require protection and mitigation measures as they create a potential hazard on the site. A Spill Response and Contingency Plan, in addition to any provincial or federal requirements, will be required to ensure that risks are determined, and mitigation measures put in place. To aid in the preparation of the Spill Response and Contingency Plan, it is recommended that you use the links below to begin with the determination of provincial and federal regulatory requirements.

i. O. Reg. 224/07: SPILL PREVENTION AND CONTINGENCY PLANS (https://www.ontario.ca/laws/regulation/070224)

ii. Overview of the storage tank regulations (https://www.canada.ca/en/environment-climate-change/services/pollutants/storage-tanks-petroleum-allied-products/regulations.html)

31. Submission requirements for engineering:

a. Site Servicing Plan

32. Report Submission Requirements:

    a. Site Servicing Study and Report (Water & Sanitary)

    b. Storm Water Management Report

    c. Hydrogeological and Terrain Analysis report.

    d. Environmental Site Assessment (Phase 1 ESA; Phase 2 – already submitted to the City – please see the City comments above, for requested updates.

    e. Noise Assessment Report – already submitted to the City - please see the City comments above, for requested updates.

Feel free to contact Derek Kulyk (derek.kulyk@ottawa.ca) Project Manager, for follow-up questions.

Transportation

Comments:

33. A TIA is not required.

34. Right-of-way protection.

    a. See Schedule C16 of the Official Plan.

    b. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.

Feel free to contact Mike Giampa (mike.giampa@ottawa.ca) Transportation Project Manager, for follow-up questions.

Environment

Comments:

35. The subject site is within 120 m of a natural feature and natural systems linkage area. This natural feature has significant woodlands, wildlife and a significant wetland (further back).

36. An Environmental Impact Study (EIS) is required to address the impact of the proposed change of use on the above noted natural features. The EIS will need to focus on the impact of making these proposed use(s) permanent. A site visit is required but only one growing season survey is needed to provide a basic ecological land classification.

37. The wildland fire risk will need to be included in the EIS.

38. The EIS will need to provide an impact assessment on the proposed uses. If a future site plan is required, the EIS should provide recommendations to be implemented at that time otherwise a second EIS may need to be provided.

39. All of the uses proposed to be permitted will need to be assessed for their impact on the natural features.

Feel free to contact Matthew Hayley (matthew.hayley@ottawa.ca), Environmental Planner, for follow-up questions.

Forestry

Comments:

40. A TCR and Landscape Plan are not required for the proposed ZBLA. Please continue to maintain screening between the property and roadway by replacing dead and declining trees at the front of the property.

Feel free to contact Julian Alvarez-Barkham (julian.alvarez-barkham@ottawa.ca), Forester, for follow-up questions.

Conservation Authority

Comments:

41. No comments as the project location is outside of the RVCA's regulated area and there are no identified natural hazards on the site.

Feel free to contact Eric Lalande (eric.lalande@rvca.ca), Rideau Valley Conservation Authority, for follow-up questions.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Regards,

Erica C Ogden-Fedak

Erica C. Ogden-Fedak, MCIP, RPP
Planner II

c.c. Molly Smith – Urban Design
Mike Giampa – Transportation Project Manager
Matthew Haley – Environmental Planner
Derek Kulyk – Infrastructure Project Manager
Obai Mohammed – Hydrogeologist
Tessa Di Iorio – Risk Management Official
Julian Alvarez-Barkham – Forester

Appendix B

Concept Plan (Fotenn)

6659 FRANKTOWN RD
Concept Plan

POTENTIAL LOCATION FOR TANKS

OUTDOOR STORAGE
A: 150m^2

EDGE OF ASPHALT

FENCE / LANDSCAPE ACCORDING TO NOISE STUDY

RELOCATED EMPLOYEE PARKING SPACES

TANKS MOVED TO OUTDOOR STORAGE AREA

EMPLOYEE PARKING TO BE RELOCATED

CONTAINERS REMOVED OFFSITE

VISITOR PARKING SPACES

COVER-ALL
A: 500m^2

GRAVEL / DIRT
(NOT PAVED)

SIDING GARAGE
A: 320m^2

ASPHALT
A:2,556m^2

REINSTATED GREEN SPACE
A:975m^2

PRIVATE LAWN

POOL

DECK

1.5-STOREY BUILDING
A: 320m^2

PORCH

SHED

FENCE

FENCE 1.4m HIGH

BERM

EXISTING DRIVEWAY

FRANKTOWN ROAD

14.7

5.2

16.1

10.0

NOTE 1: The total site area is approximately 40ha.

NOTE 2: The total area of the Cover-All Building is 500m2. Of this area, 70% (350m2) will be allocated for business use, while the remaining 30% (150m2) will be designated for personal use.

NOTE 3: The 1.5-Storey Building has a total area of 320m2 on the ground floor. 100% of this building is allocated for personal use.

NOTE 4: The entire Garage area is allocated for Business use (320m2). Of this 80m2 allocated for office space.

LEGEND

- EXISTING BUILDINGS
- EXISTING LANDSCAPED AREAS
- REINSTATED LANDSCAPED AREAS
- GRAVEL / DIRT AREAS
- 1.5m HIGH BERM
- PROPERTY BOUNDARY

0 5m 10m 15m 30m

No.	REVISION	DATE	BY
5	AFTER SITE VISIT	2024.09.06	RG
4	ADDED MEASURES	2024.08.26	RG
3	ADDED NOTES / AREAS	2024.08.16	RG
2	LOT SIZE	2024.07.08	RP
1	CONCEPT PLAN	2022.07.21	RP
0	BASE PLAN	2022.07.11	RP

CLIENT
AIR ROCK DRILLING

FOTENN
Planning + Design
396 Cooper Street, Suite 300, Ottawa ON K2P 2H7
613.730.5709 www.fotenn.com

DESIGNED	RP
REVIEWED	RP
DATE	2022.07.11

P1

Appendix C

Stormwater Management Calculations

PROJECT #: 124191
PROJECT NAME: Air Rock
LOCATION: 6659 Franktown Road

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

Area A - North

Pre-Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C_{avg}	$*C_{100}$
Total	Hard	0.00	0.90	0.28	0.36
0.67	Gravel	0.11	0.70		
	Soft	0.56	0.20		

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{gravel} \times 0.7 + A_{soft} \times 0.2)/A_T$

*C = (Ahard x 1.0 +Agravel x 0.90+Asoft x
* Runoff Coefficient increases by 25% up to a maximum value of 1.00 for the 100-year event

Pre-Development (uncontrolled)

Outlet Options	Area (ha)	$Q_{2\ Year}$ (L/s)	$Q_{5\ Year}$ (L/s)	$Q_{100\ Year}$ (L/s)
North to Existing Ditch	0.67	**40.3**	**54.7**	**118.6**

Time of Concentration	Tc=	10	min
Rainfall Intensity (2 Year Event)	I_2=	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I_5=	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I_{10}=	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I_{25}=	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I_{50}=	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I_{100}=	178.56	mm/hr

100 year Intensity = 1735.688 / (Time in min + 6.014) $^{0.820}$
10 year Intensity = 1174.184 / (Time in min + 6.014)$^{0.816}$
5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$
2 year Intensity = 732.951 / (Time in min + 6.199)$^{0.810}$

For 25 year storms add 10% to C value
For 50 year storms add 20% to C value
For 100 year storms add 25% to C value

PROJECT #: 124191
PROJECT NAME: Air Rock
LOCATION: 6659 Franktown Road

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

Area B - South

Pre-Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C_{avg}	$*C_{100}$
Total	Hard	0.14	0.90	0.32	0.38
1.06	Gravel	0.06	0.70		
	Soft	0.85	0.20		

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{gravel} \times 0.7 + A_{soft} \times 0.2)/A_{Tc}$

*C = (Ahard x 1.0 +Agravel x 0.90+Asoft x
* Runoff Coefficient increases by 25% up to a maximum value of 1.00 for the 100-year event

Pre-Development (uncontrolled)

Outlet Options	Area (ha)	$Q_{2\ Year}$ (L/s)	$Q_{5\ Year}$ (L/s)	$Q_{100\ Year}$ (L/s)
South to Roadside Ditch	1.06	**72.2**	**97.9**	**201.8**

Time of Concentration	Tc=	10	min
Rainfall Intensity (2 Year Event)	I_2=	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I_5=	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I_{10}=	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I_{25}=	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I_{50}=	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I_{100}=	178.56	mm/hr

100 year Intensity = 1735.688 / (Time in min + 6.014) $^{0.820}$
10 year Intensity = 1174.184 / (Time in min + 6.014)$^{0.816}$
5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$
2 year Intensity = 732.951 / (Time in min + 6.199)$^{0.810}$

For 25 year storms add 10% to C value
For 50 year storms add 20% to C value
For 100 year storms add 25% to C value

PROJECT #: 124191
PROJECT NAME:Air Rock
LOCATION: 6659 Franktown Raod

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

Area A - North

Post-Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C_{avg}	$*C_{100}$
Total	Hard	0.20	0.90	0.48	0.56
0.71	Gravel	0.11	0.70		
	Soft	0.40	0.20		

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{gravel} \times 0.7 + A_{soft} \times 0.2)/A_T$

*C = (Ahard x 1.0 +Agravel x 0.90+Asoft x
* Runoff Coefficient increases by 25% up to a maximum value of 1.00 for the 100-year event

Post-Development (uncontrolled)

Outlet Options	Area (ha)	$Q_{2\ Year}$ (L/s)	$Q_{5\ Year}$ (L/s)	$Q_{100\ Year}$ (L/s)
North to Existing Ditch	0.71	**72.0**	**97.7**	**198.1**

Time of Concentration	Tc=	10	min
Rainfall Intensity (2 Year Event)	I_2=	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I_5=	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I_{10}=	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I_{25}=	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I_{50}=	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I_{100}=	178.56	mm/hr

100 year Intensity = 1735.688 / (Time in min + 6.014) $^{0.820}$
10 year Intensity = 1174.184 / (Time in min + 6.014)$^{0.816}$
5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$
2 year Intensity = 732.951 / (Time in min + 6.199)$^{0.810}$

For 25 year storms add 10% to C value
For 50 year storms add 20% to C value
For 100 year storms add 25% to C value

PROJECT #: 124191
PROJECT NAME:Air Rock
LOCATION: 6659 Franktown Raod

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

Area B - South

Post-Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C_{avg}	*C_{100}
Total	Hard	0.21	0.90	0.36	0.43
0.97	Gravel	0.02	0.70		
	Soft	0.74	0.20		

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{gravel} \times 0.7 + A_{soft} \times 0.2)/A_{Tc}$

*C = (Ahard x 1.0 +Agravel x 0.90+Asoft x
* Runoff Coefficient increases by 25% up to a maximum value of 1.00 for the 100-year event

Post-Development (uncontrolled)

Outlet Options	Area (ha)	$Q_{2\ Year}$ (L/s)	$Q_{5\ Year}$ (L/s)	$Q_{100\ Year}$ (L/s)
South to Roadside Ditch	0.97	**75.0**	**101.7**	**205.0**

Time of Concentration	Tc=	10	min
Rainfall Intensity (2 Year Event)	I_2=	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I_5=	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I_{10}=	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I_{25}=	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I_{50}=	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I_{100}=	178.56	mm/hr

100 year Intensity = 1735.688 / (Time in min + 6.014) $^{0.820}$
10 year Intensity = 1174.184 / (Time in min + 6.014)$^{0.816}$
5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$
2 year Intensity = 732.951 / (Time in min + 6.199)$^{0.810}$

For 25 year storms add 10% to C value
For 50 year storms add 20% to C value
For 100 year storms add 25% to C value

PROJECT #: 124191
PROJECT NAME: Air Rock
LOCATION: 6659 Franktown Road

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

Area A - North

QUANTITY STORAGE REQUIREMENT - 2 YEAR

0.71 =Area (ha)
0.48 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
2 YEAR	0	167.22	158.43	40.3	118.13	0.00
	5	103.57	98.13	40.3	57.83	17.35
	10	**76.81**	**72.77**	**40.3**	**32.47**	**19.48**
	15	61.77	58.52	40.3	18.22	16.40

QUANTITY STORAGE REQUIREMENT - 5 YEAR

0.71 =Area (ha)
0.48 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
5 YEAR	0	230.48	218.36	54.7	163.66	0.00
	5	141.18	133.76	54.7	79.06	23.72
	10	**104.19**	**98.71**	**54.7**	**44.01**	**26.41**
	15	83.56	79.16	54.7	24.46	22.02

QUANTITY STORAGE REQUIREMENT - 100 YEAR

0.71 =Area (ha)
0.56 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
100 YEAR	0	398.62	442.16	118.6	323.56	0.00
	5	242.70	269.21	118.6	150.61	45.18
	10	**178.56**	**198.06**	**118.6**	**79.46**	**47.68**
	15	142.89	158.50	118.6	39.90	35.91

PROJECT #: 124191
PROJECT NAME: Air Rock
LOCATION: 6659 Franktown Road

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

Area B - South

QUANTITY STORAGE REQUIREMENT - 2 YEAR

0.97 =Area (ha)
0.36 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
2 YEAR	0	167.22	162.34	72.2	90.14	0.00
	5	**103.57**	**100.54**	**72.2**	**28.34**	**8.50**
	10	76.81	74.56	72.2	2.36	1.42

QUANTITY STORAGE REQUIREMENT - 5 YEAR

0.97 =Area (ha)
0.36 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
5 YEAR	0	230.48	223.75	97.9	125.85	0.00
	5	**141.18**	**137.05**	**97.9**	**39.15**	**11.75**
	10	104.19	101.15	97.9	3.25	1.95

QUANTITY STORAGE REQUIREMENT - 100 YEAR

0.97 =Area (ha)
0.43 = C

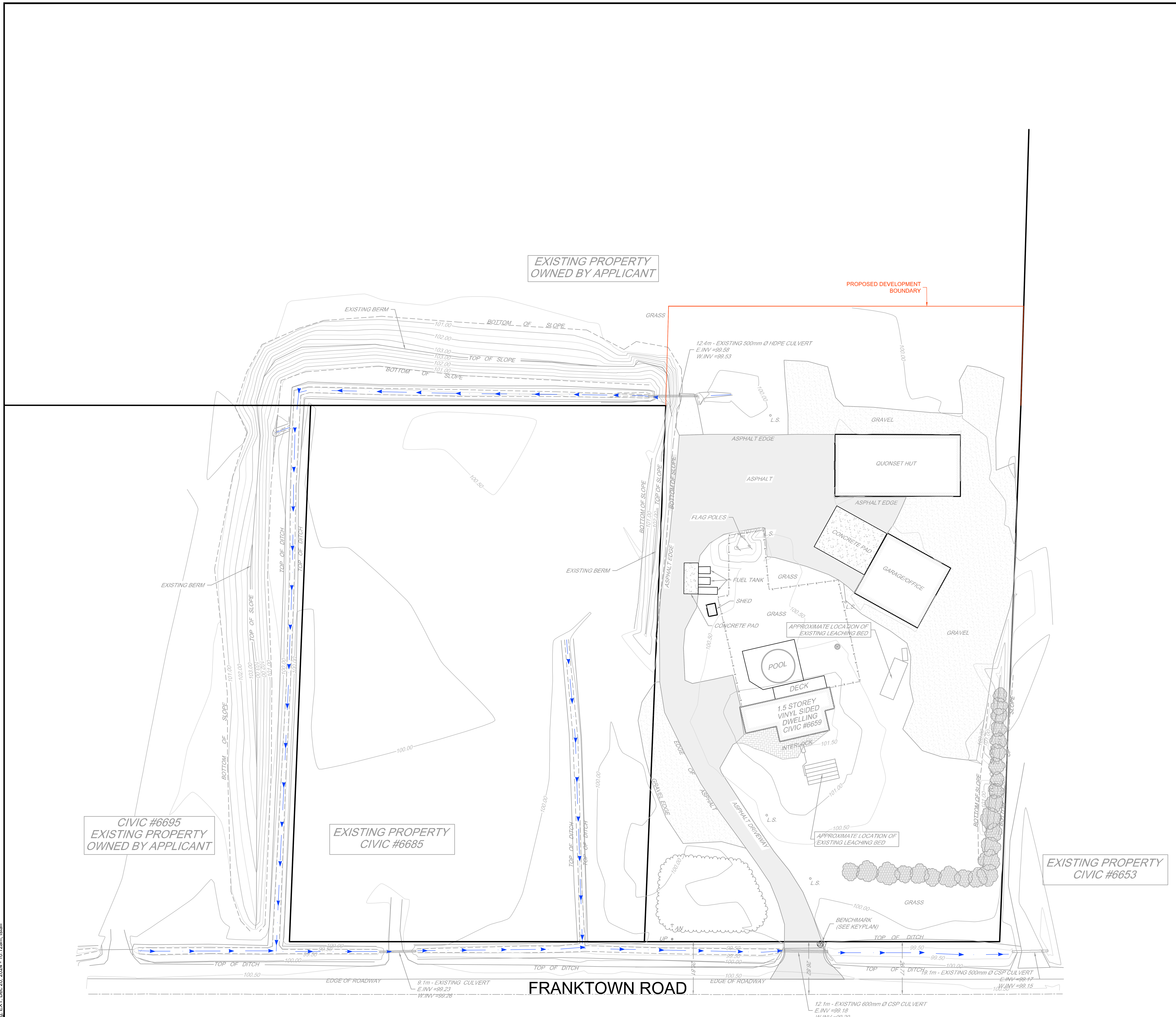
Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
100 YEAR	0	398.62	462.21	201.8	260.41	0.00
	5	**242.70**	**281.42**	**201.8**	**79.62**	**23.89**
	10	178.56	207.05	201.8	5.25	3.15

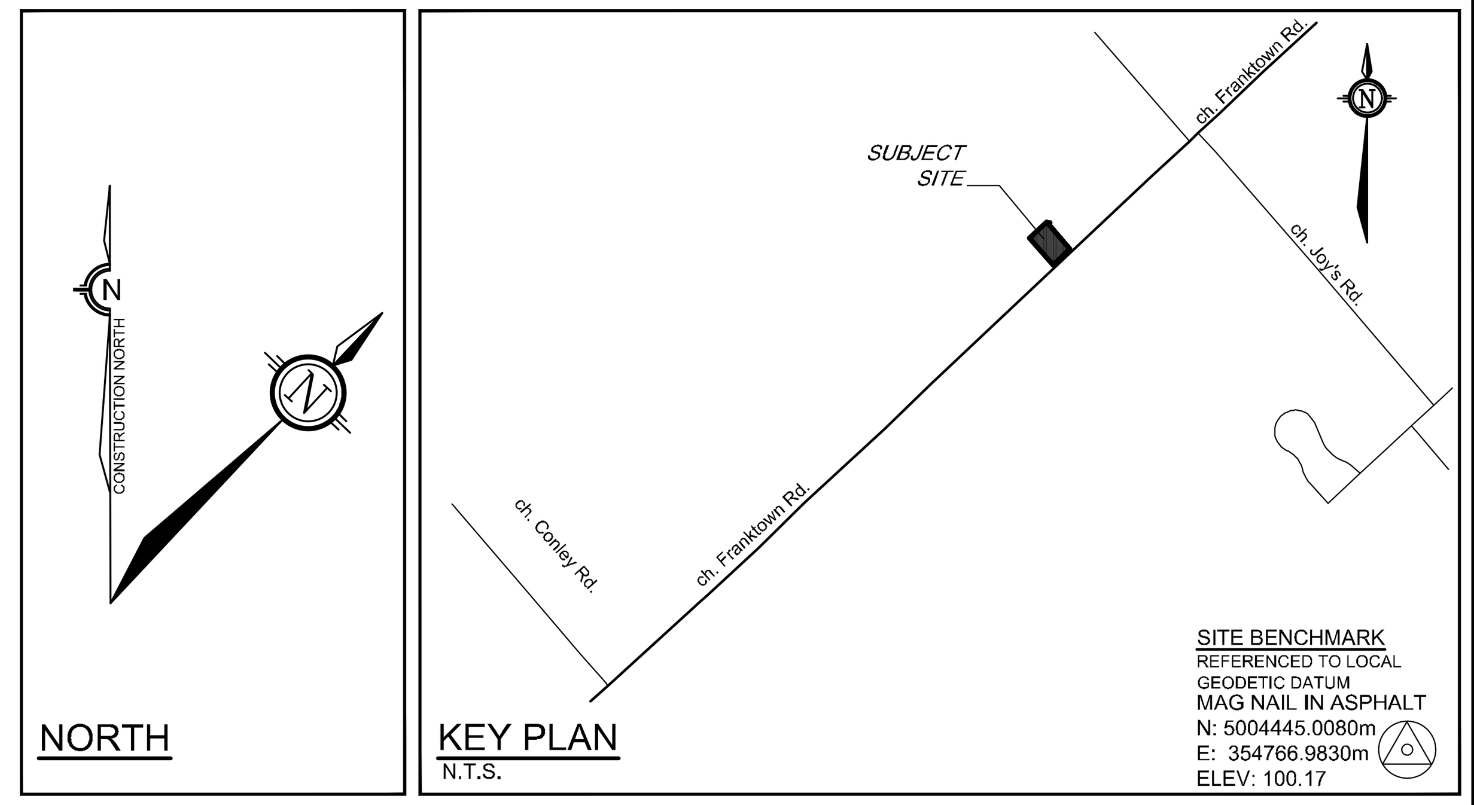
Drawings

Existing Conditions Plan (Survey 2024)

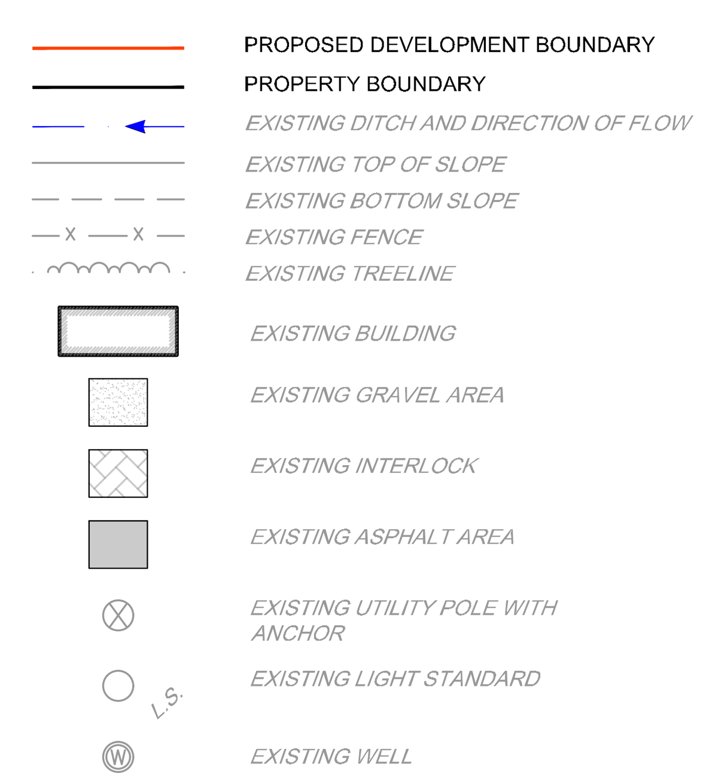
Grading, Erosion and Sediment Control Plan

Pre & Post Development Storm Drainage Area Plan





LEGEND



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NOTE:
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SOURCE REFERENCE:

TOPOGRAPHIC INFORMATION:
PLAN OF SURVEY SHOWING TOPOGRAPHICAL DETAIL OF PART OF LOT 19 CONCESSION 4 - GEOGRAPHIC TOWNSHIP OF GOULBOURN - CITY OF OTTAWA - J.D. BARNES LIMITED / JUNE 25, 2024 / NOVEMBER 12, 2024 / MTM ZONE 9, NAD83(CSRS) ORIGINAL

No.	REVISION	DATE	BY
2.	ISSUED WITH CONCEPTUAL SERVICING AND STORMWATER MANAGEMENT REPORT	DEC 20/24	TGS
1.	ISSUED FOR DISCUSSION	NOV 29/24	TGS

SCALE
1:500

1:500
0 5 10 15 20

DESIGN	TGS
CHECKED	LKC
DRAWN	TGS
CHECKED	LKC
APPROVED	LAB

FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
6659 FRANKTOWN RD.

DRAWING NAME
EXISTING CONDITIONS PLAN (SURVEY 2024)

PROJECT No. 124191
REV REV # 2
DRAWING No. 124191-EX1

PLANA1.DWG - 841mmx594mm

GENERAL NOTES:

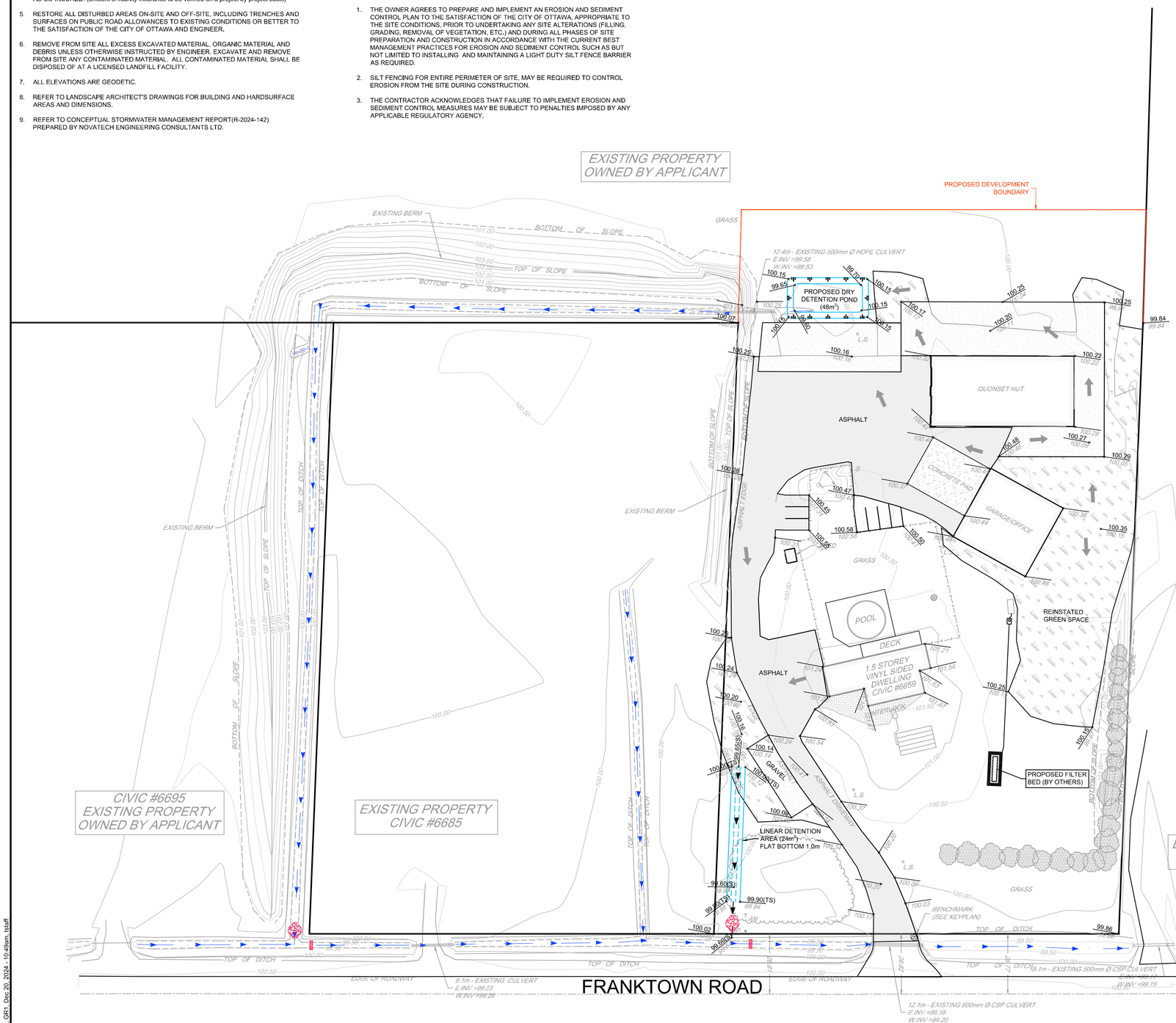
1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00, INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED. (amount of liability insurance to be verified on a project by project basis)
5. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
6. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
7. ALL ELEVATIONS ARE GEODETIC.
8. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.
9. REFER TO CONCEPTUAL STORMWATER MANAGEMENT REPORT(R-2024-142) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.

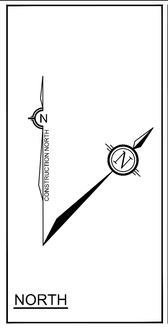
GRADING NOTES:

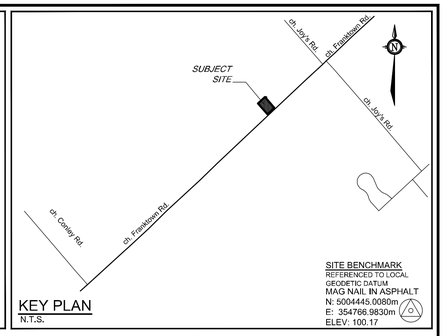
1. MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
2. MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
3. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
4. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.

EROSION AND SEDIMENT CONTROL NOTES:

1. THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL SUCH AS BUT NOT LIMITED TO INSTALLING AND MAINTAINING A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
2. SILT FENCING FOR ENTIRE PERIMETER OF SITE, MAY BE REQUIRED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
3. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

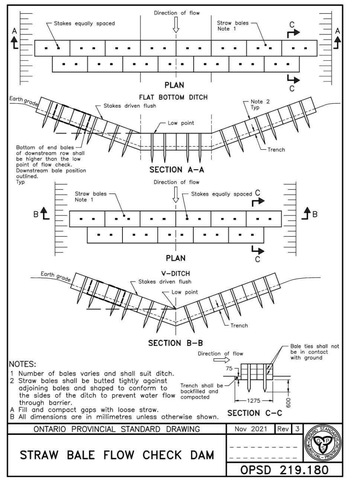






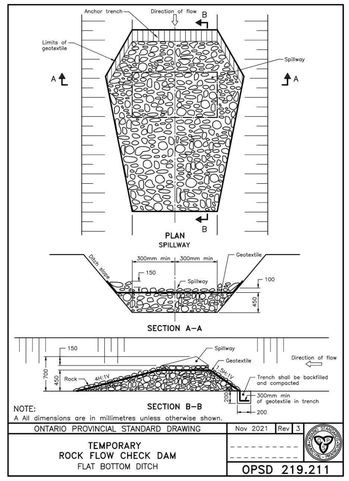
LEGEND

- PROPOSED DEVELOPMENT BOUNDARY
- PROPERTY BOUNDARY
- PROPOSED GRASS SWALE
- PROPOSED GRAVEL AREA
- PROPOSED ASPHALT AREA
- PROPOSED GREEN SPACE
- EXISTING INTERLOCK
- EXISTING DITCH AND DIRECTION OF FLOW
- EXISTING TOP OF SLOPE
- EXISTING BOTTOM OF SLOPE
- EXISTING TREELINE
- EXISTING FENCE
- EXISTING BUILDING
- EXISTING UTILITY POLE WITH ANCHOR
- EXISTING LIGHT STANDARD
- EXISTING WELL
- 92.00 / 92.00 — PROPOSED ELEVATION / EXISTING ELEVATION
- 88.40(S) / 88.05 — PROPOSED SWALE ELEVATION / EXISTING ELEVATION
- 88.40(TS) / 88.69 — PROPOSED TOP OF SLOPE ELEVATION / EXISTING ELEVATION
- PROPOSED DIRECTION OF OVERLAND FLOW
- PROPOSED TEMPORARY ROCK FLOW CHECK DAM (OPSD 219.211)
- PROPOSED STRAW BALE FLOW CHECK DAM (OPSD 219.180)



ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2021 — Rev 3

STRAW BALE FLOW CHECK DAM — OPSD 219.180



ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2021 — Rev 3

TEMPORARY ROCK FLOW CHECK DAM FLAT BOTTOM DITCH — OPSD 219.211

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1.	ISSUED FOR DISCUSSION	NOV 29/24	TGS

SCALE: 1:500 (1:500, 0 5 10 15 20)

DESIGN: TGS
CHECKED: LKC
DRAWN: TGS
CHECKED: LKC
APPROVED: LAB

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER — L.A. BOWLEY — 100081115 — Dec 20/24 — PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
6659 FRANKTOWN RD.

DRAWING NAME
GRADING, EROSION AND SEDIMENT CONTROL PLAN

PROJECT No. 124191
REV REV # 2
DRAWING No. 124191-GR

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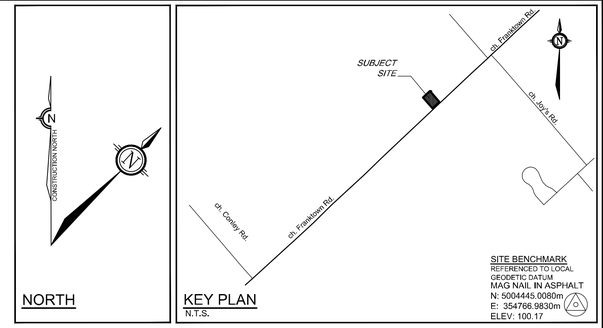
PLAN1.DWG - 241mmx594mm

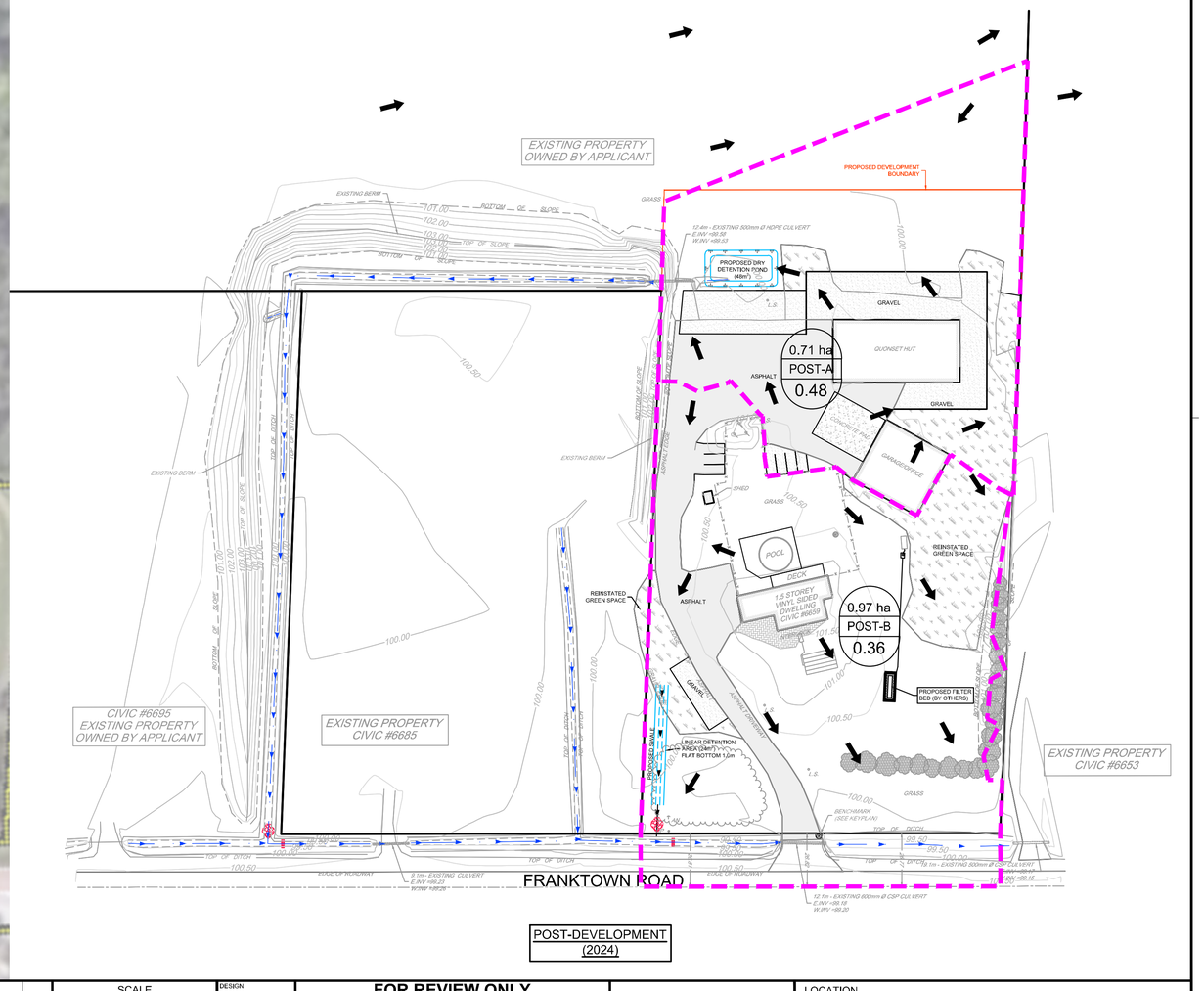
LEGEND

- PROPOSED DEVELOPMENT BOUNDARY
- PROPERTY BOUNDARY
- WATERSHED BOUNDARY
- *EXISTING DITCH AND DIRECTION OF FLOW*
- *EXISTING TOP OF SLOPE*
- *EXISTING BOTTOM SLOPE*
- *EXISTING FENCE*
- *EXISTING TREELINE*
- *EXISTING BUILDING*
- *EXISTING GRAVEL AREA*
- *EXISTING INTERLOCK*
- *EXISTING ASPHALT AREA*
- *EXISTING UTILITY POLE WITH ANCHOR*
- *EXISTING LIGHT STANDARD* (L.S.)
- DIRECTION OVERLAND FLOW

0.67 ha / PRE-A / 0.28 — DRAINAGE AREA (ha); AREA ID; RUNOFF COEFFICIENT



PRE-DEVELOPMENT (2002)



POST-DEVELOPMENT (2024)

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WATERSHED INFORMATION:
REAR WATERSHED LINE INTERPOLATED FROM RVCA GEOPORTAL

AERIAL IMAGE:
GEOOTTAWA 2022

LEGAL BOUNDARY:
GEOOTTAWA 2024

No.	REVISION	DATE	BY
1.	ISSUED WITH CONCEPTUAL SERVICING AND STORMWATER MANAGEMENT REPORT	DEC 20/24	TGS

SCALE: 1:750 (1:750, 0 10 20 30)

DESIGN: TGS
CHECKED: LKC
DRAWN: TGS
CHECKED: LKC
APPROVED: LAB

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LOCATION
CITY OF OTTAWA
6659 FRANKTOWN RD.

DRAWING NAME
PRE & POST DEVELOPMENT STORM DRAINAGE AREA PLAN

PROJECT No. 124191
REV REV # 1
DRAWING No. 124191-SDA

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PLEASE PRINT - DO NOT SCALE