



## **Stormwater Management Report and Servicing Brief**

Proposed Warehouse Development  
363 Entrepreneur Crescent  
Ottawa, Ontario

Prepared for:

Dustin Wilson  
310 Sanctuary Private  
Ottawa, ON. K1S 5W1

LRL File No.: 220487-04

April 11th, 2025



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## 1 INTRODUCTION AND SITE DESCRIPTION

LRL Associates Ltd. was retained by Dustin Wilson to complete a Stormwater Management Analysis and Servicing Brief for a proposed warehouse development located at 363 Entrepreneur Crescent in Ottawa, Ontario. The legal description of the property is PIN 14558-0401, Part of Block 3, Registered Plan 50M-136, City of Ottawa. The location of the proposed site can be viewed in Figure 1.



**Figure 1: Aerial View of Proposed Site**

The site has approximately 36.8 metres of frontage along Entrepreneur Cres and an average depth of approximately 81.4 metres. The overall lot area is approximately **0.300 ha**. The property is designated as Rural on Schedule B of the City of Ottawa Official Plan and is zoned RG2 (Rural General Industrial Zone, Subzone 2) In the City of Ottawa Comprehensive Zoning By-law No. 2008-250.

Currently, the site is serving as a parking lot and storage yard, mostly paved in gravel. A gravel driveway provides access to the southwest corner of the lot, off Entrepreneur Crescent. The site is bordered by Entrepreneur Cres and a roadside ditch to the south, commercial / industrial lots to the west and east, and a commercial / industrial lot with surrounding ditch to the north. The balance of the site, small buffers along the property lines and ditches, are grassed area.

The development proposed consists of an industrial warehouse. The warehouse will serve predominantly as storage but will also be used in the construction and maintenance of props & equipment. An entrance branching off Entrepreneur Crescent will provide vehicular access to the



site. A gravel driveway has been proposed along the east face of the building, providing access to the rear paved loading and vehicle maneuverability area. Parking will be provided within the gravel area in front of the south face of the building. The balance of the site will be grassed area and landscaping elements.

This report has been prepared in consideration of the terms and conditions noted above and with the civil drawings prepared for the new development. Should there be any changes in the design features, which may relate to the stormwater considerations, LRL Associates Ltd. Should be advised to review the report recommendations.

## **2 EXISTING SITE AND DRAINAGE DESCRIPTION**

The subject site measures 0.300ha and consists of parking lot and storage yard, mostly paved in gravel. A gravel driveway provides access to the southwest corner of the lot, off Entrepreneur Crescent. The site is currently un-serviced.

As per the topographical survey provided by Annis, O'Sullivan, Vollebakk LTD (dated Dec 14th, 2022), the site is generally flat. Elevations do tend to lower slightly along the property lines, allowing for drainage around the borders of the site to either the rear watercourse or front roadside ditch.

No sewers or watermain are present within Entrepreneur Crescent.

## **3 SCOPE OF WORK**

As per applicable guidelines, the scope of work includes the following:

### **Stormwater management**

- Calculate the allowable stormwater release rate.
- Calculate the anticipated post-development stormwater release rates.
- Demonstrate how the target quantity control objectives will be achieved.
- Demonstrate how the target quality treatment objectives will be achieved.

### **Water services**

- Calculate the expected water supply demand at average and peak conditions.
- Describe the proposed water servicing distribution system

### **Sanitary services**

- Calculate peak flow rates from the proposed development.
- Describe the proposed sanitary sewer system.



## 4 REGULATORY APPROVALS

The South Nation Conservation Authority will need to be consulted in order to obtain municipal approval for site development. Since this is an industrial-use site, an Environmental Compliance Approval (ECA) is required. No other approval requirements from other regulatory agencies beyond the City of Ottawa are anticipated.

## 5 WATER SUPPLY

### 5.1 Water Supply Servicing Design

There is no watermain located within Entrepreneur Cres.

The subject property is proposed to be serviced via 19mm diameter Type K copper service lateral connected to a private drilled well proposed on-site.

Refer to Site Servicing Plan C401 in **Appendix E** for servicing layout.

Table 1 summarizes the City of Ottawa Design Guidelines design parameters utilized in the preparation of the water demand estimate.

**Table 1: City of Ottawa Design Guidelines Design Parameters**

Design Parameter	Value
Industrial – Light Demand	35,000 L/(gross ha)/d
Minimum Depth of Cover	2.4 m from top of watermain to finished grade
<i>*Table updated to reflect technical Bulletin ISDTB-2018-02</i>	

For the purposes of these calculations, the approximate site area of 0.30ha will be used.

The required water supply requirements for the proposed industrial building have been calculated using the following formula:

Where:  $Q = (q \times A \times M)$   
 $q$  = average water consumption (L/grossha/day)  
 $A$  = gross area (ha)  
 $M$  = Peak factor

For industrial water demands, the following factors were used in calculations as per Table 4.2 in the Ottawa Design Guidelines – Water Distribution:

- Maximum Daily Demand Commercial Factor = **1.5**
- Peak Hour Demand Commercial Factor = **1.8**

For a site with an approximate area of **0.300** ha, the industrial anticipated demands were calculated as follows:

- Average daily domestic water demand is **0.122** L/s,
- Maximum daily demand is **0.182** L/s, and



- Maximum hourly is **0.328 L/s**.

The proposed warehouse is proposed to be serviced via 19mm diameter Type K copper service lateral (to be confirmed by the mechanical engineer) connected to a private drilled well proposed on-site.

Refer to **Appendix B** for relevant correspondence, water demand calculations and water service sizing.

## 5.2 Fire Protection Design

The estimated fire flow for the proposed buildings was calculated in accordance with *ISTB-2018-02*. The following parameters were provided by the Architect, see **Appendix A** for collaborating correspondence:

- Type of construction – Non-combustible Construction
- Occupancy type – Non-combustible
- Sprinkler Protection – No sprinkler system

The estimated fire flow demand was estimated to be **3,000 L/min**, see **Appendix B** for details.

Presently, there is no watermain along Entrepreneur Cres.

As per the requirements of the Ontario Building Code 2012, latest edition, all occupancies permitted in Part 9 of the OBC (for building less= than 600sq.m.) do not require to have adequate fire water supply. As such, no on-site fire protection water storage has been proposed for this development.

## 6 SANITARY SERVICE

### 6.1 Sanitary Sewer Servicing Design

The site is currently unserviced, and there is no sanitary sewer located within Entrepreneur Crescent.

The proposed development will be serviced via a septic treatment system and leaching bed, to be installed at the front (south) of the property.

The septic system design had been performed by an accredited septic designer in April 2023 and approved by the Ottawa Septic System Office (OSSO). The system was to be an Eljen type system, equipped with a tank and pump to convey treated flow to a partially raised leaching bed.

The septic designer is currently in coordination with the OSSO to amend the current septic permit, as the footprint and floor plan of the proposed building has changed since the last permit application. Despite the changes, there is only minimal change in the design flows, having only dropped from 1310 L/day to 1273 L/day. Considering this, the septic designer has proposed in the septic permit amendment keep the same septic treatment system as previously proposed.

The septic designer will update the City once a revised permit has been received.



Refer to **Appendix C** for the previous septic design, calculations & permit application.

## 7 STORMWATER MANAGEMENT

### 7.1 Existing Stormwater Infrastructure

Stormwater runoff from the subject property is tributary to the City of Ottawa stormwater management system. As such, approvals for the proposed development within this area are under the approval authority of the City of Ottawa.

In pre-development conditions, stormwater from a south half (approx.) of the property will flow uncontrolled to the nearest property line, and ultimately to the Entrepreneur Crescent roadside ditch.

The Entrepreneur Cres north roadside ditch has been reviewed to ensure it has sufficient capacity for stormwater. Minor sediment accumulation and weed overgrowth can be seen along the length of the roadside ditch. The existing roadside ditch along Entrepreneur varies from 3m to 4m in width, 0.60m to 0.8m in depth, generally steep cross slopes, and averages a mild longitudinal slope of  $\pm 0.21\%$  from east to west. Entrance culverts along Entrepreneur are generally 450mm or 500mm in diameter. The Entrepreneur roadside ditch conveys stormwater through the Tradesman Road and Indcum Road ditches to ultimately outlet to the Boundary Road east roadside ditch.

Design capacity for the ditch is reasonably assumed to be at least 181 L/s. This was calculated using Mannings Equation for Open Channel Flow.

#### Mannings Equation - Open Channel Flow

$$V = \frac{1}{n} \times R^{2/3} \times s^{1/2}$$

V = Water Mass Flow Rate (m/s)

n = Manning's Roughness Coefficient

R = Channel Hydraulic Radius (m)

s = Channel Longitudinal Slope ([height/depth]x100%)

#### Channel Hydraulic Radius

$$R = A/P$$

A = Channel Cross Sectional Area (m<sup>2</sup>)

P = Channel Wetted Perimeter (m)

#### Volumetric Flow Rate

$$Q = VA$$

V = Water Mass Flow Rate (m/s)

A = Channel Cross Sectional Area (m<sup>2</sup>)



Calculations were performed with the following conservative assumptions:

- Mannings runoff coefficient of 0.045 (natural channel, straight w/ overgrowth)
- Channel hydraulic radius of 0.208m<sup>2</sup>
  - Channel cross sectional area of 0.504m<sup>2</sup> (2.24m width x 0.45m depth, considering a 0.15m freeboard)
  - Channel wetted perimeter of 2.42m
- Channel longitudinal slope of 0.21%

The balance of the site's stormwater flows uncontrolled to the nearest property line, and ultimately to the north watercourse.

Refer to **Appendix E** for pre-development watershed information.

## 7.2 Design Criteria

The stormwater management criteria for this development are based on the pre-consultation with City of Ottawa officials, the City of Ottawa Sewer Design Guidelines including City of Ottawa Stormwater Management Design Guidelines, 2012 (City standards), as well as the Ministry of the Environment's Stormwater Planning and Design Manual, 2003 (SWMPD Manual).

### 7.2.1 Water Quality

The proposed development lot is subject to review by the South Nation Conservation Authority (SNCA). It was determined that site stormwater management quality criteria for the site will follow the SNCA's requirements; 80% TSS removal (based on MOE fine PSD).

Stormwater quality requirements have been met by incorporating a treatment unit within the stormwater network, the Stormceptor EFO4 stormwater treatment unit (or approved equivalent).

The Stormceptor EFO4 treatment unit will be treating stormwater from all controlled catchments proposed on-site, with a total approximate catchment area of 0.254 ha and runoff coefficient of 0.75. The unit is expected to provide an estimated net annual sediment (TSS) load reduction of 93%. The EFO4 provides a maximum sediment storage volume of 1190 L and a maximum oil storage volume of 265 L.

The proposed stormwater treatment unit is located at the southeast corner of the site, at the downstream end of the proposed stormwater network. Stormwater will be controlled to a maximum flow of 26.00 L/s upstream of the treatment unit via Hydrovex flow control unit. Treated stormwater will be conveyed to a pump chamber, which will be ultimately discharged to the Entrepreneur roadside ditch.

Correspondence (pre-application consultation meeting minutes) with SNCA input is included in **Appendix A**. Quality treatment unit details have been included within **Appendix D**.



### 7.2.2 Water Quantity

Based on pre-consultation discussions with the City of Ottawa and South Nation Conservation Authority, correspondence included in **Appendix A**, the following stormwater management requirements were identified for the subject site:

- Meet an allowable release rate based on the existing Rational Method Coefficient of no more than 0.50, employing the City of Ottawa IDF parameters for a 2-year storm with a calculated time of concentration equal to or greater than 10 minutes.
- Attenuate all storms up to and including the City of Ottawa 100-year storm event on site.

The 2-year pre-development allowable release rate for the subject site was calculated to be **32.08L/s**.

Refer to **Appendix D** for calculations.

### 7.3 Method of Analysis

The Modified Rational Method has been used to calculate the runoff rate from the site to quantify the detention storage required for quantity control of the development.

Refer to **Appendix D** for storage calculations.

### 7.4 Proposed Stormwater Quantity Controls

The extent of the stormwater management quantity control calculations will focus on the proposed development and the proposed changes to the site. The proposed changes to the site are as follows;

- Industrial warehouse
- Gravel driveway, sidewalk/curbs and parking lot
- Grassed and naturalized areas, and planters

The balance of the site unaffected by these works will remain as they were in existing condition.

The existing site is delineated by catchments EWS-01 (0.214ha draining north) & EWS-02 (0.086ha draining south), both consisting of gravel paving and grassed area (total runoff coefficient of 0.76).

Refer to **Appendix E** Civil Plan C701 for greater detail.

The proposed stormwater management quantity control for this development will be accomplished by restricting flow leaving site via a flow control at the outlet of the stormwater management network; a Hydrovex 125VHV-2 Flow Control Device (or approved equivalent), providing a maximum controlled flow of 26.00 L/s at a design head of 2.20m (100-year HWL elev. = 77.20).

Storage required as a result of quantity control measures will be accomplished via minor surface ponding, but mostly via Stormtech SC-310 underground stormwater storage chambers (equipped with impervious liner to enclose chambers, and concrete anchor slab, due to expected high groundwater levels). The Stormtech SC-310 chambers will be installed below the north driveway, occupying a footprint of approximately 211m<sup>2</sup> (15.2m long by 13.9m wide) and providing up to 81.80m<sup>3</sup> of stormwater storage. The storage chamber will need to be equipped with an impervious liner to isolate collected runoff from groundwater. A reinforced concrete slab will need to be designed and placed below the proposed structures to counteract buoyant forces from the high



groundwater level (design by others). Additionally, due to concerns with soil bearing capacity, it is also proposed to increase the foundation stone depth to 600mm and reinforce the soil with geogrid. Greater detail & requirements for the underground stormwater chambers proposed can be found in **Appendix D**.

Stormwater will be captured by one of the proposed catch basins or manholes within the gravel areas, controlled by the flow control unit within CBMH06, stored on-site via underground chambers and overland ponding, conveyed to the treatment unit and ultimately pumped up to the Entrepreneur Cres roadside ditch. Any stormwater exceeding the proposed allowable high-water level of 77.20 will spillover to the Entrepreneur roadside ditch via the emergency spillover point developed within the south grassed area.

The proposed site storm service and stormwater management system are shown on drawing C401 and detailed calculations, including the design sheet, can be found in **Appendix D**.

The proposed site development has been analyzed and post development watersheds have been allocated.

- Watershed WS-01 (0.080 ha), consisting of the rear (north) gravel loading and vehicle maneuverability area, will be captured by catch basin CB01.
- Watershed WS-02 (0.027 ha), consisting of the north portion of the driveway and small grassed area, will be captured by catch basin CB02.
- Watershed WS-03 (0.078 ha), consisting of the proposed warehouse roof and central portion of the driveway, will be captured by catch basin manhole CBMH04.
- Watershed WS-04 (0.052 ha), consisting of the front (south) yard grassed area and parking lot, will be captured by catch basin CB05.
- Watershed WS-05 (0.017 ha), consisting of the south portion of the driveway, will be captured by catch basin manhole CBMH06.
- Watershed WS-06 (0.046 ha), consisting of the grassed portion of the site along all property lines and naturalized buffer at the north (rear) of the property, will flow overland off site uncontrolled, as it did in pre-development conditions

Table 2 below summarizes post-development drainage areas. Detailed calculations can be seen in **Appendix D**.

**Table 2: Post Development *Drainage Areas***

Drainage Area Name	Area (ha)	Weighted Runoff Coefficient (C)	100 Year Weighted Runoff Coefficient (25% increase)
WS-01 (controlled)	0.080	0.80	1.00
WS-02 (controlled)	0.027	0.73	0.92
WS-03 (controlled)	0.078	0.88	1.00





<b>WS-04 (controlled)</b>	0.052	0.48	0.60
<b>WS-05 (controlled)</b>	0.017	0.76	0.96
<b>WS-06 (uncontrolled)</b>	0.046	0.21	0.27

Table 3 below summarizes the release rates and storage volumes required to meet the allowable release rate of 32.08 L/s for 100-year flow.

**Table 3: Stormwater Release Rate & Storage Volume Summary (100 Year)**

Catchment Area	Drainage Area (ha)	100-year Release Rate (L/s)	100-Year Required Storage* (m³)	Total Available Storage (m³)
<b>WS-01, WS-02, WS-03, WS-04, WS-05 (controlled via ICD)</b>	0.254	26.00	87.94*	101.31
<b>WS-06 (uncontrolled)</b>	0.046	6.08	0.00	0.00
<b>TOTAL</b>	<b>0.300</b>	<b>32.08</b>	<b>87.94</b>	<b>101.31</b>

\*as stormwater storage is occurring underground, the controlled release rate was halved to 13.00 L/s for storage volume calculations

The 100-year maximum ponding depths can be found on drawing “C401 – Servicing & Stormwater Management Plan” of **Appendix E**.

As per previous discussion, the conservative estimate for the ditch design load was calculated to be ±181 L/s. Based on the proposed maximum controlled release rate of 26.00 L/s, we can conclude that the subject site runoff would only occupy roughly 14.4% of the ditch capacity.

## 8 EROSION AND SEDIMENT CONTROL

During construction, erosion and sediment controls will be provided primarily via a sediment control fence to be erected along the perimeter of the site where runoff has the potential of leaving the site. Straw bale check dams are to be installed in the downstream end of the roadside ditch. The rear yard watercourse will be protected as per the EIS recommendations. Construction and maintenance requirements for erosion and sediment controls are to comply with Ontario Provincial Standard Specification OPSS.MUNI.805.

Refer to drawing C101 in **Appendix E** for erosion and sediment control details.





## 9 LOW IMPACT DEVELOPMENT

As per the EIS performed for this site, the proposed development should occur with large focus towards Low Impact Development (LID).

At the rear of the property is located an existing watercourse. A 5m naturalized setback was proposed from the watercourse as a means of protecting the sensitive resource. This setback was respected in the site design, grading & stormwater management design for the site.

All controlled runoff is ultimately being treated by the Stormceptor stormwater treatment unit (or approved equivalent). The uncontrolled runoff, specifically the runoff from the east, south and west buffer zones, will flow over a grassed buffer prior to reaching their intended point of conveyance.

In addition, additional landscaping elements will be incorporated to the site to improve site aesthetic.

## 10 CONCLUSION

This Stormwater Management and Servicing Report for the development proposed at 363 Entrepreneur Crescent presents the rationale and details for the servicing requirements for the subject property.

In accordance with the report objectives, the servicing requirements for the development are summarized below:

### Water Service

- The average daily water demand, maximum daily water demand & maximum hourly water demand for the proposed warehouse was calculated to be **3600 L/day**, **5400 L/day** and **9720 L/day**, respectively.
- The proposed development will be serviced by a new 19 mm diameter water service to be connected to a private drilled well.

### Sanitary Service

- The proposed development will be serviced by a septic treatment train and leaching bed (design by others).

### Stormwater Management

- Stormwater quality controls require a minimum of 80% TSS removal, which will be achieved by the proposed stormwater treatment unit.
- The storm water release rates from the proposed development will meet calculated allowable release rate of **32.08 L/s**.
- Stormwater quantity control objectives will be met through overland ponding and underground storage structures, and control will be provided via the flow control unit proposed.



## 11 REPORT CONDITIONS AND LIMITATIONS

The report conclusions are applicable only to this specific project described in the preceding pages. Any changes, modifications or additions will require a subsequent review by LRL Associates Ltd. to ensure the compatibility with the recommendations contained in this document. If you have any questions or comments, please contact the undersigned.

Prepared by:  
**LRL Associates Ltd.**



Mohan Basnet, P. Eng.  
Civil Engineer

A handwritten signature in black ink, appearing to read "Kyle Herold".

Kyle Herold  
Civil Designer



## **APPENDIX A**

### **Pre-consultation / Correspondance**



# Site Plan Pre-Application Consultation

363 Entrepreneur Crescent

Meeting Date: December 12, 2022

PC2022-0285

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**Applicant:** Kyle Herold – LRL  
Associates.

**Ward** 20 - Osgoode

**Proposal Summary:** Construct a 1393.5 square metre (15,000 square feet) structure for a future production studio with the option to convert the structure to a warehouse.

**Attendees:** *City of Ottawa*

Sean Harrigan, File Lead, City of Ottawa

Travis Smith, Infrastructure Project Manager, City of Ottawa

Sami Rehman, Environmental Planner, City of Ottawa

Ann O'Connor, Urban Design, City of Ottawa

James Holland, South Nation Conservation Authority

*Consultation Team*

Kyle Herold – Consultant – LRL Engineering

Dustin Wilson - Owner

*Regrets*

Mike Giampa, Transportation Project Manager, City of Ottawa

## ***Meeting Minutes***

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### **Proposal Details**

- Construct a 1393.5 square metre (15,000 square feet) structure on private services. During the meeting, the owner mentioned that the proposed structure would first be used as a production studio for their marketing company. If the production studio is no longer need in the future, it is intended to convert the structure into a warehouse.
- A production studio is not a permitted use on the subject and as such, a **Zoning By-law Amendment** is required.
- Please note the comments below pertain to the proposed Site Plan Control application only.

### **Planning Comments**

*Provided by Sean Harrigan*

- A **Planning Justification Report** is required and must clearly demonstrate how the proposed development adheres to the Official Plan.
- The subject site is designated Rural Industrial and Logistics by Schedule B9 of the Official Plan. As per Official Plan section 9.3, lands within this designation are intended to support uses that are not suitable in the Urban area or Rural Countryside due to the requirements for large areas of land or separation from their noxious activity.
- As per Official Plan policy 9.3.1(2), Development on lands designated as Rural Industrial and Logistics shall consider the following:
  - a) Building design, Site layout and landscape in a way that maintains and enhances the rural identity and feel of the area in which such development takes place;
  - b) Appropriate screening from public roads and adjacent properties using natural vegetation, preferably existing vegetation where possible;
  - c) Outdoor amenity areas for employees and landscaping that supports the City's tree canopy targets; and
  - d) Accesses are designed to minimize hazards between the road on which the development fronts and its vehicular points of access.

The **Planning Justification Report** and **Site Plan** should reflect the considerations above, particularly (b) and (c)

- The subject site is zoned RG2 – Rural General Industrial Zone, Subzone 2. A production studio is not a permitted use. However, a warehouse is a permitted use.
- As per Zoning By-law Section 101, the minimum required parking spots are:
  - Production Studio – 1 per 100m<sup>2</sup> of gross floor area.
  - Warehouse – 0.8 per 100m<sup>2</sup> for the first 5000m<sup>2</sup> of gross floor area.

- A **Site Plan** is required and must show the property boundaries, dimensions of existing and proposed structures, zoning table, and other requirements listed in the Site Plan section within the [Guide to preparing studies and plans | City of Ottawa](#).
- Official Plan policy 4.7.2(9) provides guidance that new development that relies upon private sewage system should maintain a minimum area of 800m<sup>2</sup> of undeveloped land for the sewage system. The intent of this policy is to maintain sufficient space for the required septic system as well as a backup location should the proposed system fail anytime in the future. Please ensure the **Site Plan** illustrates the total undeveloped land maintained for the sewage system. The Hydrogeological Report should provide justification if the proposed development does not achieve the 800m<sup>2</sup>.
- A **Landscape Plan** is required and should clearly illustrate the location and details of any existing and proposed vegetation.
  - I strongly recommend planting additional trees adjacent to parking and along the street frontage. Planting along parking spots will help reduce the urban heat island effect and provides a more enjoyable parking experience. Also, there should be some tree planting in any outdoor amenity area as per Official Plan policy 9.3.1(2) described above.
- Given the servicing constraints described in the Engineer's comments and watercourse setback, I anticipate significant challenges with the proposed development at the current scale.

## Engineering Comments

*Provided by Travis Smith*

### *Water supply:*

- A **Hydrogeological and Terrain Analysis** will be required to establish that there is an adequate quantity and quality of groundwater to support the proposed development(s). Data provided by the City indicates that groundwater may have poor yield and poor quality. The requirements for the Hydrogeological and Terrain Analysis Report are outlined in the City of Ottawa Hydrogeological and Terrain Analysis Guidelines, Section 5.0 titled Site Plans. The HGTA report should outline potential onsite activities and risks to existing groundwater users and identify measures that should be implemented to protect the aquifer in the long-term.
- The supply well must be installed and tested to confirm water quantity and quality suitability prior to site plan approval. Support must be provided for the pump test rate; which should be the maximum day rate. The rate should consider the actual use (if known), or potential uses permitted through zoning if unknown.
- The draft site plan dated October 2022 shows a proposed dug well located near the southwestern corner of the building.

- It is noted that local well records show thick marine clay at surface, thus there may NOT be suitable aquifer material for a dug well. Also, note that technical pre-consultation is required for any application where a dug well is proposed. Please refer the City HGTA guidelines section 5.2.3: “Site Plans will normally not be approved based on dug wells, unless it can be demonstrated, to the satisfaction of the City, that a drilled well is likely to produce unacceptable water quantity or quality. Technical pre-consultation is mandatory if dug wells are contemplated. If a Site Plan is being proposed based on dug wells, these must be completed in an aquifer. Wells in aquitard materials, such as clay, silty clay, or low permeability tills, will not be accepted.”
- In addition, the location of the well must be accessible to a drill rig for future repair or maintenance work; the proposed well location between the building and the fence is not appropriate since it may not be accessible. The well must also be located according to the minimum setback requirements of the Ontario Building Code, which at a minimum is 15 metres from the septic distribution piping whereas it is currently shown at approximately 8 metres. (Ontario Building Code, Table 8.2.1.6.B.)
- The site is within the East Ottawa Aquifer Screening Tool and identifies that water quality is variable (poor) with both shallow and deep wells having poor quality. Wells in the area note elevated sodium, chloride, TDS, colour, and DOC. Treatment would be permitted if the well water exceeds MCCRT but would need the approval from the MECP if the water is mineralized (as per the Well Regulation). The consultant should also consider the other issues associated with the mineralized water including corrosivity of the water and shortened lifespan of plumbing fixtures and the septic system. Specialized plumbing and fixtures may be beneficial to reduce the long-term issues.
  - If water quality above the MCCRT is detected in the supply well, then the consultant should contact the reviewer to discuss potential options.
  - If well water is mineralized, then approval from the MECP will be needed to not abandon the well, as required in Ontario Regulation 903 (Section 21).
- The parameters of water quality that will be tested will be the “subdivision suite” known to local well testing companies, as well as trace metals and VOCs. Requirements are outlined in the City of Ottawa Hydrogeological and Terrain Analysis Guidelines. The report should also provide an assessment of adjacent land uses and concerns and determine if any other parameters need to be tested (i.e. petroleum hydrocarbons, etc.).
- Bollards, or other means of preventing vehicle access, will need to be provided between areas with vehicle access and the existing or proposed well(s).
- Technical consultation with the hydrogeological report reviewer is encouraged with the hydrogeological consultant prior to starting field work to help scope onsite assessment and report requirements. Please contact the City hydrogeologist, Tessa

Di Iorio (Tessa.diiorio@ottawa.ca) and copy the assigned project manager to schedule a technical consultation.

- It is the responsibility of the owner to ensure that adequate water supply for fire fighting is provided. The FUS methodology, as opposed to the OBC methodology shall be applied for all rural areas. Enhanced review will be invoked should the construction coefficient chosen be less than 1.
- Preliminary FUS calculations were completed and noted that at a minimum fire reservoir(s) or tank(s) would be required for fire protection which should be incorporated into the site layout. Tanks and reservoirs cannot be placed right next to lot lines or buildings, cannot be driven on in most cases, and will require bollards or other means of preventing vehicle access in most cases.
- All minimum requirements outlined in the subdivision agreement(s) (RLT28910 & RLT28911) must be taken into account. This may include recommendations related to the wells, septic systems, and fire protection which should be considered should they exceed City and MECP requirements.

#### *Sewage Works:*

- A **Servicing Study** will be required, including the septic system design and investigation of the greatest groundwater elevation and percolation test results. It is noted that the surficial geology varies and there is potential for sensitive marine clays which have a low infiltration rate and may impact the septic system design. It appears that there is limited space allotted for the septic system based on the potential required leaching bed area, shown as 40m<sup>2</sup>, which should be addressed in the septic system design.
- Bollards, or other means of preventing vehicle access, will need to be provided between areas with vehicle access and the proposed septic system(s).
- A **Septic System Impact Assessment** must be completed as part of the Hydrogeological and Terrain Analysis Report, as per the City's Hydrogeological and Terrain Analysis Report Guidelines and MECP Guideline D-5-4, please refer to the HGTA for the predictive assessment for commercial/industrial developments (not residential developments).
  - It is noted that there appears to be limited area for infiltration onsite, as well as the low permeability material (clay) – may be difficult to meet nitrate dilution calculation targets
  - Note that compact gravel will be considered impermeable in the septic impact assessment unless accompanied by field testing to confirm infiltration rates
  - If the expected daily design flow is 10,000 L/d or less, the septic permit from the Ottawa Septic System Office must be issued prior to Site Plan Approval being granted.
  - Since this application is a site plan (not lot creation or zoning) septic treatment (i.e. tertiary treatment with nitrate dilution) may be considered as



part of the septic impact assessment calculations. A system certified though NSF or BNQ should be recommended.

- If system isolation is contemplated, the technical pre-consultation with the reviewer is required to ensure the assessment meets the minimum requirements identified in City Guidelines, and to confirm the minimum onsite testing requirements.
- For Information: If the daily design flow is greater than 10,000 L/d, the septic system(s) is regulated by the Ministry of the Environment, Conservation and Parks (MECP) and requires a direct submission Environmental Compliance Approval (ECA) application. It is recommended that that City be present for the applicant's consultations with the MECP. The project would be on hold until the ECA is obtained from the MECP. The turnaround time for an ECA from the MECP can be up to one year. Additionally, a Groundwater Impact Assessment will be required if the site-wide daily design flow is greater than 10,000 L/d.

#### *Geotechnical:*

- A **Geotechnical Investigation** (including extents of potentially sensitive marine clays) will be required. The report should provide sufficient soils and engineering information to confirm that the site(s) are suitable or can be made suitable for development based on the requirements of the Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa.
  - If the presence of clays is confirmed, enhanced investigations must be undertaken with vane shear, Atterberg limits, shrinkage, size, grade raise restriction, consolidation, sensitivity, and liquefaction analysis-amongst others.
  - The Geotechnical Investigation Report will need to include rationalization for the gravel driveway (pavement structure) design, including vehicle numbers and loading specific to the proposed uses.

#### *Storm Water Management:*

- A **Stormwater Management Report** will be required with the Site Plan Control application. There are concerns with the Site Plan provided in that, there are no areas shown for stormwater management. Given the amount of hard surfacing that is proposed, it is anticipated that a large area will be required to meet the stormwater management quantity and quality criteria in addition to LID measures that must be implemented.
  - The quantity criteria will follow either the subdivision agreement (if one exists and can be provided) or will be that the 100-year post development peak flow rate must match the 2-year pre-development peak flow rate.
  - As per Sewer Design Guidelines 8.3.7.3, the pre-development condition is to be determined using the smaller of a runoff coefficient of 0.5 (0.4 in combined

- areas) or the actual existing site runoff coefficient, which is considered to be the grassed site (pre-2014) rather than the current gravel/paved storage area.
- The quality criteria will follow one of the two possibilities depending on the timing of the application;
    - The South Nation Conservation Authorities criteria of 80% total suspended solids (TSS) removal
    - Reporting of TSS removal shall be extensive and if peer reviewed and published papers are relied on for conclusions, the conclusions shall be patently clear and the report shall show overwhelming agreement.
  - Runoff will need to be conveyed to a legal and sufficient outlet. 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.
  - All stormwater management determinations shall have supporting rationale.
  - Low Impact Development (LID) is to be implemented as per the bulletin from the former MOECC (now MECP) titled Expectations RE: Stormwater Management released in February 2015. Note that the City has released a document titled 'Low Impact Development Technical Guidance Report – Implementation in Areas with Potential Hydrogeological Constraints' which aids sites which may have constraints such as low permeability or high groundwater.

#### *Environmental Site Assessment:*

- A **Phase 1 Environmental Site Assessment** (ESA) completed in accordance with Ontario Regulation (O.Reg.) 153.04 will be required. The site is within 500 metres of a historical landfill to the south and asphalt & bitumen manufacturing to the north which are both potentially contaminating activities.
- A **Phase 2 ESA** may be required, depending on the outcome of the Phase 1 ESA.
- A direct submission **ECA application** to the MECP will be required for any proposed stormwater systems since this is an industrial-use site. The turnaround time for an ECA from the MECP can be up to one year. Submitting the ECA application will require preliminary site plan approval.

#### *Snow Storage:*

- Any portion of the subject property which is intended to be used for permanent or temporary snow storage shall be as shown on the approved Site Plan and Grading Plan.
- Snow storage shall not interfere with approved grading and drainage patterns or servicing.

#### *Roads:*

- It appears that vehicle access is provided between 363 Entrepreneur and the adjacent lot at 357 Entrepreneur. If vehicle access between 363 and 357 will continue based on current satellite imagery, an easement will be required to establish the rights over each one of the parcels.

*Site Lighting:*

- Exterior site lighting will require certification by a licensed professional engineer confirming the design complies with the following:
  - The location of the fixtures, fixture type (make, model, part number and the mounting height) must be shown on one of the approved plans.
    - 1. Lighting must be designed only using fixtures that meet the criteria for Full Cut-off classification, as recognized by the Illuminating Engineering Society of North America (IESNA or IES), and
    - 2. It must result in minimal light spillage onto adjacent properties. As a guideline, 0.5 foot-candle is normally the maximum allowable spillage.

*Fire routes:*

- Fire Routes now require designation with By-law through the Site Plan process by contacting [fireroutes@ottawa.ca](mailto:fireroutes@ottawa.ca).

*Plan Submission Requirements for Engineering:*

- Site Servicing Plan
- Grade Control and Drainage Plan
- Erosion and Sediment Control Plan

*Report Submission Requirements for Engineering:*

- Hydrogeological and Terrain Analysis (incl. Septic Impact Assessment)
- Geotechnical Investigation Report
- Stormwater Management Report
- Servicing Study
- Phase 1 Environmental Assessment
- Phase 2 Environmental Assessment (based on findings of Phase 1 ESA)

## **Transportation Comments**

*Provided by Mike Giampa*

- A Traffic Impact Assessment (TIA) is not required.
- A Noise Study is not required.
- The Right-of-Way (ROW) protection requirement is 20 metres. It appears that ROW requirement has been met, but this should be illustrated on the required survey.

## Urban Design Comments

*Provided by Ann O'Connor*

- A **Design Brief** that follows the provided Terms of Reference is required upon submission of a Site Plan Control application.
- Relationship to the public road:
  - When drafting elevations and orientation of windows/doors, consider how best the building can relate to the streetscape / public roads.
  - Consider putting areas internal to the building, where people may congregate, like staff areas or offices to face Entrepreneur Cres.
- Landscaping:
  - Provide tree plantings and soft landscaping along property lines, particularly those that face public roads.
- Pedestrian movement and amenity areas:
  - Consider how people will navigate the site from their vehicles internal to the site as well as from the street. Provide for cross walks / pathways in locations that are most likely to be used by people on the site.
  - Consider areas where people working at these locations may take breaks. Consider amenity areas for people to take lunch breaks.

## Environmental Comments

*Provided by Sami Rehman*

- The City data indicates that a watercourse runs along the rear of subject property. As such, a surface water feature triggers a requirement for an **Environmental Impact Study** (EIS).
- Since staff assume it is an intermittent watercourse, City staff will not be expecting a 30m setback, as outlined in the Official Plan. Staff are willing to accept 15m setback from the channel bank, with the first 5m (adjacent to the watercourse) to be naturally restored. The setback cannot have any infrastructure or site alterations, which includes no parking lots or storage of materials. The only exception would be for ecological restoration activities within the setback. If the applicant is willing to accept this recommendation and incorporate it into their site plan design, then City staff are willing to waive the EIS requirement.
- City staff will require a **Landscape Plan** to demonstrate ecological restoration and the contribution to the City's tree canopy. All planting materials should be locally appropriate native species of trees, shrubs and plants.

- If the applicant does not accept this approach, they will need to conduct an EIS. The EIS will need to address watercourse setback requirements in the Official Plan, potential species at Risk on and nearby the subject property, and recommendations to contribute to the City's canopy and native tree/shrub plantings.

## **South Nation Conservation Authority Comments**

*Provided by James Holland*

### *Environmental:*

- The CA supports waiving the Environmental Impact Statement (EIS) if a 15m setback is provided and a 5m riparian area is planted for the width of the lot. A landscape plan of native species should be provided for the buffer, and the buffer should be a no-touch area. It's recommended that gravel not remain within the 15m setback area to discourage future use for parking, storage, etc.
- A method (eg. physical barrier, etc.) should be provided to restrict use of the riparian area. This area should not be used for snow storage, etc.
- South Nation Conservation (SNC) will provide a technical review if an EIS is required for the development.

### *Stormwater:*

- 80% TSS removal is recommended for quality treatment.
- SNC will provide a technical review if stormwater outlets to the watercourse, or at the request of the City.

### *Conservation Authority Regulations:*

- Please note that any interference with a watercourse may require a permit under O. Reg. 170/06 and restrictions may apply. The requirement will be confirmed at the detailed design stage.

### *Private Septic:*

- It is recommended that Ottawa Septic System Office (OSSO) be contacted to confirm the septic requirements, to ensure that a permit can be obtained under the Ontario Building Code.

To request City of Ottawa plan(s) or report information please contact the City of Ottawa Information Centre:

[informationcentre@ottawa.ca](mailto:informationcentre@ottawa.ca) OR (613) 580-2424 ext. 44455

As per section 53 of the Professional Engineers Act, O.Reg. 941/40, R.S.O. 1990, all documents prepared by engineers must be signed and dated on the seal.

### Application Submission Information

Application Type: **Site Plan Control – Rural Small**

For information on Site Plan Control Applications, including fees, please visit:

<https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/fees-and-funding-programs/development-application-fees>

The application processing timeline generally depends on the quality of the submission.

For more information on standard processing timelines, please visit:

<https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/development-application-forms#site-plan-control>

Prior to submitting a formal application, it is recommended that you pre-consult with the Ward Councillor.

### Application Submission Requirements

For information on the preparation of Studies and Plans and the City's requirements,

please visit: <https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans>

**Please provide electronic copy (PDF) of all plans and studies required.**

**All identified required plans are to be submitted on standards A1 size sheets and use an appropriate metric scale as per [City of Ottawa Servicing and Grading Plan Requirements](#), and shall note the survey monument used to establish datum (beyond the local benchmark) on the plans with sufficient information to enable a layperson to locate the document.**

**Note that many of the plans and studies collected with this application must be signed, sealed and dated by a qualified engineer, architect, surveyor, planner or designated specialist.**

## **APPENDIX B**

### **Water Supply Calculations**





**LRL File No.** 220487-03  
**Project:** Industrial Development  
**Location:** 363 Entrepreneur Cres  
**Date:** December 20, 2024  
**Designed:** K.Herold

**Water Demand**  
 (Based on City of Ottawa Design Guidelines  
 - Water Distribution, 2010)

#### Industrial Demand

Unit Type	Unit Rate	Area (m <sup>2</sup> )	Area (ha)	Demand (L/d)
Industrial - Light	35000 L/(grossha)/d	3000.0	0.30	10500.0
			<b>0.30</b>	<b>10500.0</b>

#### Industrial Consumption Rates

Unit Type	Value	Units	Value	Units
<b>Average Daily Demand</b>	<b>10,500</b>	<b>L/d</b>	<b>0.122</b>	<b>L/s</b>
Maximum Daily Factor	1.5	<i>(Design guidelines - water distribution Table 4.2)</i>		
<b>Maximum Daily Demand</b>	<b>15,750</b>	<b>L/d</b>	<b>0.182</b>	<b>L/s</b>
Peak Hour Factor	1.8	<i>(Design guidelines - water distribution Table 4.2)</i>		
<b>Maximum Hour Demand</b>	<b>28,350</b>	<b>L/d</b>	<b>0.328</b>	<b>L/s</b>

#### Total Demand

Demand	Value	Units	Value	Units
<b>Average Daily Demand</b>	<b>10,500</b>	<b>L/d</b>	<b>0.122</b>	<b>L/s</b>
<b>Maximum Daily Demand</b>	<b>15,750</b>	<b>L/d</b>	<b>0.182</b>	<b>L/s</b>
<b>Maximum Hourly Demand</b>	<b>28,350</b>	<b>L/d</b>	<b>0.328</b>	<b>L/s</b>

#### Water Service Pipe Sizing

Q = VA	Q = Flow Rate	V = Velocity	A = Area of pipe
Assumed maximum velocity =	1.8	m/s	

$$Q = 0.33 \text{ L/s}$$

$$Q = 0.00033 \text{ m}^3/\text{s}$$

$$\text{Minimum pipe diameter (d)} = (4Q/\pi V)^{1/2}$$

$$= 0.015 \text{ m}$$

$$= 15 \text{ mm}$$

$$\text{Proposed pipe diameter (d)} = \begin{matrix} 19 \text{ mm} \\ 3/4 \text{ in} \end{matrix}$$

\*to be verified w/ Mech Eng.





## Fire Flow Calculations

LRL File No. 220487-03  
 Project 363 Entrepreneur Cres  
 Date December 20, 2024  
 Method Fire Underwriters Survey (FUS)  
 Designed by K. Herold

Industrial Warehouse	592	
	<b>592</b>	m <sup>2</sup>

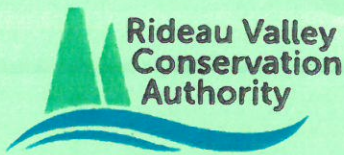
Step	Task	Term	Options	Multiplier	Choose:	Value	unit	Fire Flow
Structural Framing Material								
1	Choose frame used for building	Coefficient C related to the type of construction	Wood Frame	1.5	Fire resistive construction >2 hrs	0.6		
			Ordinary Construction	1.0				
			Non-combustible construction	0.8				
			Fire resistive construction <2 hrs	0.7				
			Fire resistive construction >2 hrs	0.6				
Floor Space Area								
2	Choose type of housing	Type of housing	Single family dwelling	0	Building - no. of units per floor	1	units	
			Townhouse - no. of units	0				
			Building - no. of units per floor	1				
		Enter no. of storeys	Number of floors/storeys for the building (excluding the basement)				1	floors
3	Enter area	Enter floor space area		1	592.0	592	sq.m.	
4	Obtain fire flow before reductions	Required fire flow	Fire Flow = 220 x C x Area <sup>0.5</sup>				L/min	3,212
					(rounded to near. 1000 L/min)		L/min	3,000
							L/s	50.0
Reductions or surcharge due to factors affecting burning								
5	Choose combustibility of contents	Occupancy hazard reduction or surcharge	Non-combustible	-0.25	Non-combustible	-0.25		
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15			L/min	2,250
			Rapid burning	0.25			L/s	37.5
6	Choose reduction for sprinklers	Sprinkler reduction	Sprinklers (NFPA13)	-0.30	False	0		
			Water supply is standard for both the system and fire department hose lines	-0.10	False	0	L/min	2,250
			Fully supervised system	-0.10	False	0	L/s	37.5
7	Choose separation	Exposure distance between units	North side	Over 45m	0			
			East side	10.1 to 20m	0.15			
			South side	Over 45m	0		L/min	2,925
			West side	10.1 to 20m	0.15	0.3	L/s	48.8
Net required fire flow								
8	Obtain fire flow, duration, and volume	Minimum required fire flow rate (rounded to nearest 1000)					L/min	3,000
		Minimum required fire flow rate					L/s	50.0
		Required duration of fire flow					hr	1.25
		Required storage volume for fire flow					L	225,000

## **APPENDIX C**

### **Wastewater Collection Calculations**







SEPTIC FILE #

23 - 098

OTTAWA

Septic Office

3889 Rideau Valley Drive Box 599 Manotick, ON K4M 1A5

Phone: 613-692-3571 PRESS "4" for septic office 1-800-267-3504 Fax: 613-692-1507

SITE ADDRESS: 363 Entrepreneur Cres Township: OSG-HUN-GLO-FI

CONTACT: 1. Absolute Drafting &amp; Design 2. Entrepreneur Holdings 3.

STREET/CIVIC INITIAL ☐

R.V.C.A. RECEIVED \*\*EMAIL ONLY\*\*

APR 25 2023

\*\*NON-RESIDENTIAL\*\*

☒ Commercial☐ Industrial☐ Institutional

## INFORMATION FOR OWNER/APPLICANT

Attached is your Sewage System Permit. A minimum of two inspections are required before your proposed sewage system can be approved for use (additional inspections may be required for clay soils/bedrock and/or re-inspections). Inspections must be requested in writing. Please see attached:

- Inspection fax request form (all inspections MUST be requested in writing)
- As-built components and drawing form
- Copy of the approved application and schedule pages
- Approved Part 8 permit: \*Electronic copy only – Be sure to INCLUDE in Building Application Package for Plans Examiner at CITY of OTTAWA client services, if NEW or RENO construction project.

## Special Note

- A permit is valid for 12 months from the original date of issuance noted in "permit date". If lapsed, it may be renewed only once for a period of 12 months from the date of expiry.

- No person shall make a material change or cause a material change to be made to a plan, specification, document or other information on the basis of which a permit was issued without notifying, filing details with and obtaining the authorization of the Chief Building Official. (Building Code Act 1992, c.23, s.8(12))

Sewage System Permit Construction Requirements**1. Clay Soils/Bedrock only (if required per issued Approval)**

In clay soils/bedrock, a site preparation inspection is required. The total contact area must be properly prepared. Scarification must be done under dry conditions prior to importing leaching bed fill.

**2. Installation Inspection – 2<sup>nd</sup> inspection**

When the sewage system is substantially completed (i.e., before the final fill is placed over the septic tank and leaching bed system) an installation inspection is required. Prior to any inspection request, the following must be submitted:

- a) "as-built components" and "as-built drawings" — see attached form
- b) "engineer letter" — if the system is engineered
- c) grain size analysis and weight bills for all Filter Media types of septic systems
- d) Weigh bills for washed septic stone, where applicable
- e) Maintenance/service contract for treatment unit installed

**3. Final Grading Inspection – 3<sup>rd</sup> inspection**

When construction of the sewage system is complete, a final grading inspection is required. Before a Certificate of Completion can be issued, the following must be complete:

- a) The leaching bed and septic tank must be covered with sand fill and topsoil and graded accordingly
- b) All conditions of the Sewage System Permit & comments on the installation inspection report must be met
- c) The depth of cover & material type must be identified by inspection pipes or holes placed over trenches at 4 corners of bed
- d) The 4 corners of the bed must be staked



# Application for a Permit to Construct or Demolish

This form is authorized under subsection 8(1.1) of the Building Code Act, 1992

## For use by Principal Authority

Application number:	<b>R.V.C.A. RECEIVED</b>	Permit number (if different):	<b>SEPTIC FILE #</b>
Date received:	<b>SEP 29 2023</b>	Roll number:	<b>23-098</b> <b>OTTAWA</b>

Application submitted to: **OTTAWA SEPTIC SYSTEM OFFICE**

(Name of municipality, upper-tier municipality, board of health or conservation authority)

### A. Project Information

Building number, street name		Unit number	Lot/con.
<b>363 ENTREPRENEUR CRESCENT</b>			
Municipality	Postal code	Plan number/other description	
<b>NAHAN (CITY OF OTTAWA)</b>	<b>K4B 1T8</b>		
Project value est. \$		Area of work (m <sup>2</sup> )	
<b>20,000.00</b>		<b>76.32 m<sup>2</sup></b>	

### B. Purpose of application

<input checked="" type="checkbox"/> New construction	<input type="checkbox"/> Addition to an existing building	<input type="checkbox"/> Alteration/repair	<input type="checkbox"/> Demolition	<input type="checkbox"/> Conditional Permit
Proposed use of building		Current use of building		
<b>WAREHOUSE w/ OFFICE SPACE</b>		<b>VACANT LOT</b>		
Description of proposed work				
<b>NEW ELJEN SYSTEM FOR A PRODUCTION FACTORY.</b>				

### C. Applicant

Applicant is: ☐ Owner or ☒ Authorized agent of owner

Last name	First name	Corporation or partnership	
<b>DECOEUR</b>	<b>MARC-ANDRÉ</b>	<b>ABSOLUTE DRAFTING + DESIGN INC.</b>	
Street address		Unit number	Lot/con.
<b>1257 MONTÉE DROUIN</b>			
Municipality	Postal code	Province	E-mail
<b>THE NATION (CASSELMAN)</b>	<b>K0A 1M0</b>	<b>ONTARIO</b>	<b>INFO@ADND.CA</b>
Telephone number	Fax	Cell number	
<b>(613) 434-2844</b>	<b>( )</b>	<b>(613) 229-0869</b>	

### D. Owner (if different from applicant)

Last name	First name	Corporation or partnership	
<b>WILSON</b>	<b>DUSTIN</b>	<b>ENTREPRENEUR HOLDING CORPORATION</b>	
Street address		Unit number	Lot/con.
<b>310 SANCTUARY PVT</b>			
Municipality	Postal code	Province	E-mail
<b>OTTAWA</b>	<b>K1S 5W1</b>	<b>ONTARIO</b>	<b>justdustinwilson@gmail.com</b>
Telephone number	Fax	Cell number	
<b>( )</b>	<b>( )</b>	<b>(613) 700-5262</b>	

Application for a Permit to Construct or Demolish – Effective January 1, 2014



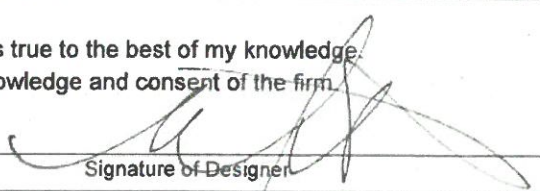
<b>E. Builder (optional)</b>			
Last name <u>UNKNOWN @ TIME OF APPLICATION</u>	First name	Corporation or partnership (if applicable)	
Street address	<b>R.V.C.A. RECEIVED</b> <b>SEP 29 2023</b>		Unit number <u>23-098</u>
Municipality	Postal code	Province	E-mail <u>OTTAWA</u>
Telephone number (     )	Fax (     )	Cell number (     )	
<b>F. Tarion Warranty Corporation (Ontario New Home Warranty Program)</b>			
i. Is proposed construction for a new home as defined in the <i>Ontario New Home Warranties Plan Act</i> ? If no, go to section G.			Yes      No <input checked="" type="checkbox"/>
ii. Is registration required under the <i>Ontario New Home Warranties Plan Act</i> ?			Yes      No <input checked="" type="checkbox"/>
iii. If yes to (ii) provide registration number(s): _____			
<b>G. Required Schedules</b>			
i) Attach Schedule 1 for each individual who reviews and takes responsibility for design activities.			
ii) Attach Schedule 2 where application is to construct on-site, install or repair a sewage system.			
<b>H. Completeness and compliance with applicable law</b>			
i) This application meets all the requirements of clauses 1.3.1.3 (5) (a) to (d) of Division C of the Building Code (the application is made in the correct form and by the owner or authorized agent, all applicable fields have been completed on the application and required schedules, and all required schedules are submitted). Payment has been made of all fees that are required, under the applicable by-law, resolution or regulation made under clause 7(1)(c) of the <i>Building Code Act, 1992</i> , to be paid when the application is made.			Yes <input checked="" type="checkbox"/> No
ii) This application is accompanied by the plans and specifications prescribed by the applicable by-law, resolution or regulation made under clause 7(1)(b) of the <i>Building Code Act, 1992</i> .			Yes <input checked="" type="checkbox"/> No
iii) This application is accompanied by the information and documents prescribed by the applicable by-law, resolution or regulation made under clause 7(1)(b) of the <i>Building Code Act, 1992</i> which enable the chief building official to determine whether the proposed building, construction or demolition will contravene any applicable law.			Yes <input checked="" type="checkbox"/> No
iv) The proposed building, construction or demolition will not contravene any applicable law.			Yes <input checked="" type="checkbox"/> No
<b>I. Declaration of applicant</b>			
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 70%;"> <p style="font-size: 1.2em; margin: 0;"><u>MARC-ANDRÉ DECOEUR [ABSOLUTE DRAFTING + DESIGN Inc.]</u></p> <p style="font-size: 0.8em; margin: 0;">(print name)</p> </div> <div style="width: 25%; text-align: right;"> <p>declare that:</p> </div> </div> <div style="margin-top: 10px;"> <p>1. The information contained in this application, attached schedules, attached plans and specifications, and other attached documentation is true to the best of my knowledge.</p> <p>2. If the owner is a corporation or partnership, I have the authority to bind the corporation or partnership.</p> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 40%;"> <p>Date, <u>Sept. 18, 2023</u></p> </div> <div style="width: 55%; text-align: right;"> <p>Signature of applicant: </p> </div> </div>			

Personal information contained in this form and schedules is collected under the authority of subsection 8(1.1) of the *Building Code Act, 1992*, and will be used in the administration and enforcement of the *Building Code Act, 1992*. Questions about the collection of personal information may be addressed to: a) the Chief Building Official of the municipality or upper-tier municipality to which this application is being made, or, b) the inspector having the powers and duties of a chief building official in relation to sewage systems or plumbing for an upper-tier municipality, board of health or conservation authority to whom this application is made, or, c) Director, Building and Development Branch, Ministry of Municipal Affairs and Housing 777 Bay St., 2nd Floor, Toronto, M5G 2E5 (416) 585-6666.



# Schedule 1: Designer Information


Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>			
Building number, street name <b>363 ENTREPRENEUR (RESCENT)</b>		Unit no.	Lot/con.
Municipality <b>NAVAN [OTTAWA]</b>	Postal code <b>K4B 1T8</b>	Plan number/ other description <b>B.V.C.A. RECEIVED</b>	
<b>B. Individual who reviews and takes responsibility for design activities</b>			
Name <b>MARC-ANDRE DECOEUR</b>		Firm <b>ABSOLUTE DRAFTING + DESIGN INC</b>	
Street address <b>1257 MONTEE DROUIN</b>		Unit no.	Lot/con.
Municipality <b>THE NATION</b>	Postal code <b>K0A 1M0</b>	Province <b>ONTARIO</b>	E-mail <b>INFO@ADND.CA</b>
Telephone number <b>613-434-2844 EXT. 1001</b>	Fax number	Cell number <b>613-229-0869</b>	
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]</b>			
<input checked="" type="checkbox"/> House <input checked="" type="checkbox"/> Small Buildings <input checked="" type="checkbox"/> Large Buildings <input checked="" type="checkbox"/> Complex Buildings		<input checked="" type="checkbox"/> HVAC – House <input checked="" type="checkbox"/> Building Services <input checked="" type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection	
		<input checked="" type="checkbox"/> Building Structural <input checked="" type="checkbox"/> Plumbing – House <input checked="" type="checkbox"/> Plumbing – All Buildings <input checked="" type="checkbox"/> On-site Sewage Systems	
Description of designer's work <b>NEW ELSEN SYSTEM FOR A PRODUCTION FACTORY</b>		<b>SEPTIC FILE # 23-098</b>	
<b>D. Declaration of Designer</b>			
I <u>MARC-ANDRE DECOEUR (ABSOLUTE DRAFTING + DESIGN INC.)</u> declare that (choose one as appropriate): (print name)			
I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.			
Individual BCIN: <u>44555</u>			
Firm BCIN: <u>45254</u>			
I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code.			
Individual BCIN: _____			
Basis for exemption from registration: _____			
The design work is exempt from the registration and qualification requirements of the Building Code.			
Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge.			
2. I have submitted this application with the knowledge and consent of the firm.			
<u>Sept 18, 2023</u> Date		 Signature of Designer	

## NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) (c) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of practice, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

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**Schedule 2: Sewage System Installer Information**  
 SEP 29 2023

<b>A. Project Information</b>				<b>SEPTIC FILE #</b>	
Building number, street name <i>363 ENTREPRENEUR (PRESENT)</i>			Unit number	Lot/con.	
Municipality <i>NAVAN [OTTAWA]</i>	Postal code <i>K4B 1T8</i>	Plan number/ other description		<i>23-098</i>	
<b>B. Sewage system installer</b>				<b>OTTAWA</b>	
Is the installer of the sewage system engaged in the business of constructing on-site, installing, repairing, servicing, cleaning or emptying sewage systems, in accordance with Building Code Article 3.3.1.1, Division C?					
Yes (Continue to Section C)		No (Continue to Section E)		<input checked="" type="checkbox"/> Installer unknown at time of application (Continue to Section E)	
<b>C. Registered installer information (where answer to B is "Yes")</b>					
Name			BCIN		
Street address			Unit number	Lot/con.	
Municipality	Postal code	Province	E-mail		
Telephone number ( )	Fax ( )	Cell number ( )			
<b>D. Qualified supervisor information (where answer to section B is "Yes")</b>					
Name of qualified supervisor(s)			Building Code Identification Number (BCIN)		
<b>E. Declaration of Applicant:</b>					
I <u>MARC-ANDRÉ DÉCOEUR [ABSOLUTE DRAFTING + Design Inc.]</u> declare that: (print name)					
<input checked="" type="checkbox"/> I am the applicant for the permit to construct the sewage system. If the installer is unknown at time of application, I shall submit a new Schedule 2 prior to construction when the installer is known;					
OR I am the holder of the permit to construct the sewage system, and am submitting a new Schedule 2, now that the installer is known.					
I certify that:					
1. The information contained in this schedule is true to the best of my knowledge.					
2. If the owner is a corporation or partnership, I have the authority to bind the corporation or partnership.					
Date <i>Sept. 18, 2023</i>		Signature of applicant 			





# Schedule 4

## Proposed Services

Complete Sections 1 thru 7

SEPTIC FILE #

### 1. Engineered

☐ Yes

☒ No

### 2. Water supply

☒ Proposed

☐ Existing

23-098

OTTAWA

### 3. Type of work proposed

☒ New Installation

☐ Replacement

☐ Alteration

### 4. Type of Well

☐ Dug/bored/Sandpoint well

☒ Drilled well

☐ Municipal

☐ Other

→ Production Factory w/ Showers.

### 5. Residential Sewage Design Flow Info.

Bedrooms \_\_\_\_\_

House (floor area) \_\_\_\_\_ m<sup>2</sup>

People \_\_\_\_\_

Total Fixture Units \_\_\_\_\_ (Schedule 8)

Residential Flow \_\_\_\_\_ L/day

### 6. Sewage Design Flow Other Occupancies

Design Flow 1500 L/day

Detailed sewage flow calculations:

4 employees / 8 hr shift @ 125 L  
 $= 4 \times 125 = 500 \text{ L} \times 3 = 1500 \text{ L/d}$

☒ Class 4 – BMEC Area Bed (Schedule 11)

### 7. Type of System

☐ Treatment Unit \_\_\_\_\_

☐ Class 2 – Leaching Pit

☐ Class 3 – Cesspool

☐ Class 4 – Shallow Buried Trench

☐ Class 4 – Trench (Schedule 9)

☐ Fully raised

☐ Partially raised

☐ In-ground

☐ Class 4 – Filter Media (Schedule 10)

☐ Fully raised

☐ Partially raised

☐ In-ground

\* ELJEN

☐ Fully raised

☒ Partially raised

☐ In-ground

☐ Class 4 – “Type A” Dispersal (Schedule 13)

☐ Fully raised

☐ Partially raised

☐ In-ground

☐ Class 4 – “Type B” Dispersal (Schedule 14)

☐ Fully raised

☐ Partially raised

☐ In-ground

☐ Class 5 – Holding Tank (9000L min)

☐ Tank/Treatment Unit/Pump Chamber ONLY

☐ Effluent Filter/Risers ONLY





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Schedule 5

Sewage System Details

Do Not Complete  
Permit No. **SEPTIC FILE #**  
Revision No.  
Date **23-098**

OTTAWA

Type of System ELJEN SYSTEM (Schedule 4)

Septic/Holding Tank Size: 5509 Litres

Make: LOW-BOY CONCRETE [PROPOSED]

Septic Tank Effluent Filter Make: POLYLOK Model: PL 525 OR EQUIVALENT

Treatment Unit – Make & Model ELJEN GSF 442 MODULES

Number of Units: 20

Other: \_\_\_\_\_

Refer to Typical Drawing # FLOW CALCULATION

Pump(s) required YES

Mantle Information:

Pump Rate \_\_\_\_\_ L/15min

Native or imported =15m in \_\_\_\_\_ direction(s)

Note: Alarm required for all pumping systems

Slope subgrade 2% MIN. % slope

8 DOSING PER DAY  
@ 187.5 LITER PER DOSING

NORTH. direction(s)

\*SEE SEPTIC SECTION ON S102

Site to be Scarified (If clay) YES NO "SILTY SAND"

Clay Seal Required (If bedrock) YES / NO AS PER URL "GEOTECHNICAL REPORT"

☐ Trench

☐ Shallow Buried Trench

Distribution Pipe Length \_\_\_\_\_ m

Pipe Length \_\_\_\_\_ m

Loading Area \_\_\_\_\_ m<sup>2</sup>

Type of Chamber \_\_\_\_\_

☐ Filter Media Bed

Length of Chamber \_\_\_\_\_ m

Stone \_\_\_\_\_ m<sup>2</sup>

☐ Dispersal Bed

Extended Base \_\_\_\_\_ m<sup>2</sup>

☒ BMEC ☐ Type A ☐ Type B  $L = \frac{QT}{400}$

Pipe \_\_\_\_\_ m

Stone \_\_\_\_\_ m<sup>2</sup>

Weight of Filter Media \_\_\_\_\_ Kg

Sand 76.32m<sup>2</sup> [provided] m<sup>2</sup>

Loading Area \_\_\_\_\_ m

Pipe \_\_\_\_\_ m<sup>2</sup>

Linear Loading \_\_\_\_\_ L/m<sup>2</sup>

\*SEE "FLOW CALCULATION SHEET"

☐ Tank/Treatment Unit/Pump Chamber Replacement ONLY

☐ Effluent Filter & Riser ONLY

Construction Notes:



Schedule 6

Soil and Water Table Information  
(Minimum depth of test pit: 2 metres)

Name of Applicant/Agent: MARC-ANDRÉ DÉGÈREUR  
Date: April 19, 2023 Time: \_\_\_\_\_  
Applicant/Agent Signature: \_\_\_\_\_

Inspector: ADD  
Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Inspector Signature: \_\_\_\_\_

EG (.....)	Soil Description	T	EG (.....)	Soil Description	T
<div> <div>EG (76.94)</div> <div> <div>Soil Description</div> <div> <div>SILTY SAND</div> <div>ASSUMED HGWT</div> <div>AS PER LRL GEOTECH. REPORT</div> <div>FILE No: 220407 @ Bit # 3</div> </div> </div> </div>	<div> <div>Soil Description</div> <div> <div>SILTY SAND</div> <div>ASSUMED HGWT</div> <div>AS PER LRL GEOTECH. REPORT</div> <div>FILE No: 220407 @ Bit # 3</div> </div> </div>	<div> <div>T</div> <div> <div>0 @ 20 for SILTY SAND [SB-6]</div> </div> </div>	<div> <div>EG (.....)</div> <div> <div>Soil Description</div> <div> <div>Test pits not available for inspection. Engineer assumes all liability for soil and HGWT info/elev's.</div> </div> </div> </div>	<div> <div>Soil Description</div> <div> <div>Test pits not available for inspection. Engineer assumes all liability for soil and HGWT info/elev's.</div> </div> </div>	<div> <div>T</div> </div>
<div> <div>EG (.....)</div> <div> <div>Soil Description</div> </div> </div>	<div> <div>Soil Description</div> </div>	<div> <div>T</div> </div>	<div> <div>EG (.....)</div> <div> <div>Soil Description</div> </div> </div>	<div> <div>Soil Description</div> </div>	<div> <div>T</div> </div>

LEGEND

BR = Bedrock

GWT = Ground water table

HGWT = High ground water table

M = metres

EG = Existing grade

T = percolation rate





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System Office septiques d'Ottawa

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Schedule 7

Layout Section

Do Not Complete

Permit #

Revision # 3-098

Date

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Scale: 1Block =

N

SEE PROVIDED  
"SEPTIC LAYOUT"

○Dug Well ●Drilled Well ▲Neighbouring Homes ◇Benchmark ---Tile Drainage —Property Line

Elevations (metric only)

B.M. \_\_\_\_\_ m

B.M.Description \_\_\_\_\_

Exact Location \_\_\_\_\_

Min. of 5 elevations in proposed system  
area (in X pattern)

X <sub>1</sub> _____	X <sub>2</sub> _____
X <sub>3</sub> _____	X <sub>4</sub> _____
X <sub>5</sub> _____	X <sub>6</sub> (toe) _____
X <sub>7</sub> _____	X <sub>8</sub> _____



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**Schedule 8**

**Fixture unit count**

Do Not Complete

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Revision #

Date

SEPTIC FILE #

23-098

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Fixtures	# Existing	+ # Proposed	X	unit count	=	Fixture Count
<b>Bathroom</b>						
Bathroom group (toilet, sink and tub or shower) installed in the <u>same</u> room		+	X	6	=	
Bathtub with/without overhead shower		+	X	1.5	=	
Shower stall		+	4	X	1.5	= 6
Wash basin (SINK) (1½inch trap)		+	5	X	1.5	= 7.5
Watercloset (TOILET) tank operated		+	5	X	4	= 20
Bidet / URINAL		+	3	X	1	= 3
<b>Kitchen</b>						
Dishwasher		+	1	X	1	= 1
Sink with/without garbage grinder(s), domestic and other small type single, double or 2 single with a common trap		+	1	X	1.5	= 1.5
<b>Other</b>						
Domestic washing machine		+	1	X	1.5	= 1.5
Combination sink and laundry tray single or double (Installed on 1½ trap)		+	1	X	1.5	= 1.5

\*Total:

42

\*Insert the TOTAL in section 5 of Schedule 4 (0.Reg 151/13 Table 7.4.9.3)

1. Sump pumps and floor drains are not to be connected to the sewage system. Connection of such fixtures to a sewage system may lead to a hydraulic failure of the said system. The above mentioned fixtures should be discharged separately to an approved Class 2 (leaching pit) sewage system.
2. Where laundry waste is not more than 20% of the total daily design sanitary sewage flow, it may discharge to a sewage system (Part 8, OBC, 8.1.3.1(2)).

Agent/Owner signature

Date



# Plan View

Mantle required: Yes ☐ No ☐

Scarification required: Yes ☐ No ☐

Clay seal required: Yes ☐ No ☐

LOADING AREA =  m<sup>2</sup>

DRAWING NOT TO SCALE

FOOTER (Pumped Systems)

TILE RUN

RUNS at \_\_\_\_\_ Meters EACH at \_\_\_\_\_ Meter Centers

HEADER



Ottawa Septic Bureau des systèmes  
System Office septiques d'Ottawa  
TYPICAL DRAWING C  
BURIED OR RAISED BED - BMCC ELJEN System

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SEPTIC FILE #

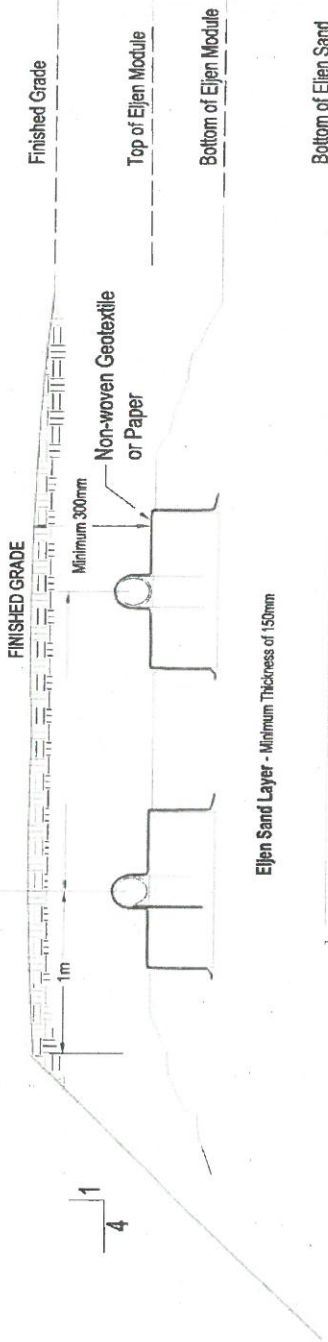
23 - 098

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See provided Section

## Cross-Section Profile

Sand Mantle  
Min. 15m



Eljen Sand Layer - Minimum Thickness of 150mm

Minimum Separation distance of 450mm between HGWT and Sand Layer

Proposed Installation Grades	Approved Installation Grades	Existing Grade

High Ground Water Table/ Unsuitable Soil/ Bedrock

DRAWING NOT TO SCALE

6% - 8% AIR ENTRAINED  
35 MPa (5000 psi) @ 28 DAYS  
AS PER CSA A23.4-09 STANDARD

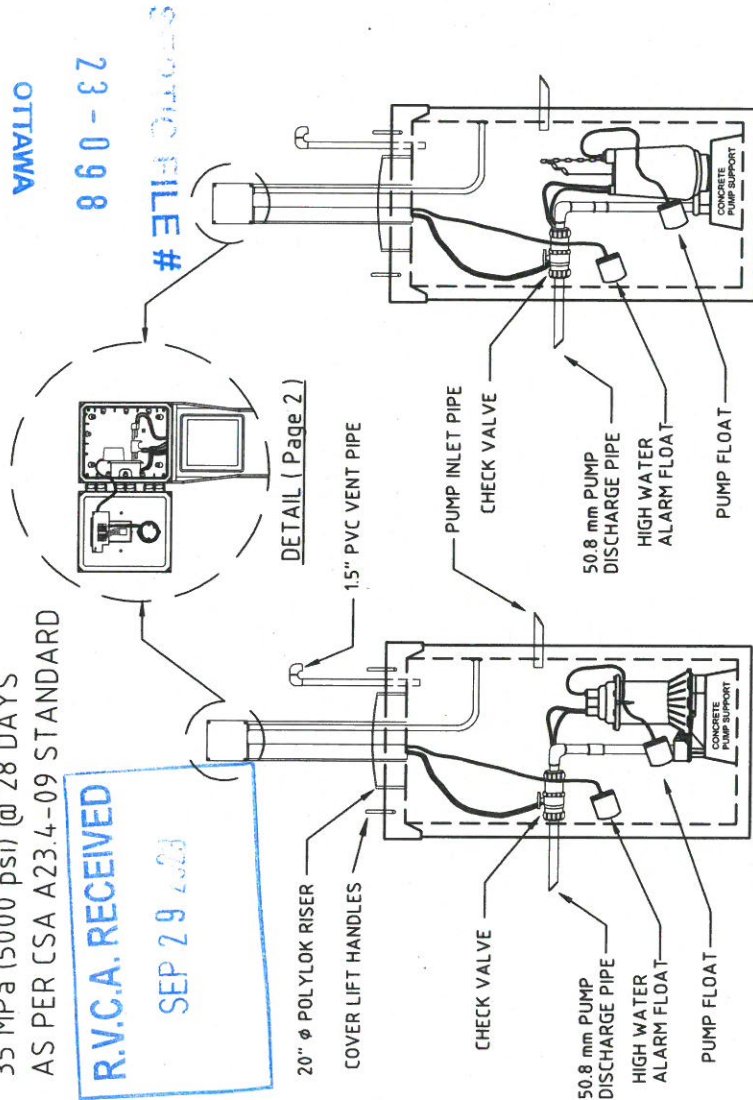
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860-87

# 37180003



DETAIL (Page 2)

SRM 4 0.40 HP PUMP SYSTEM

MGR 20 2.0 HP GRINDER PUMP SYSTEM

BOTH PUMP SHOWN ARE 250 GAL / 1135 L PUMP STATIONS, NOT TO SCALE

SIDE VIEW

## GENERAL NOTES:

A PUMP STATION IS REQUIRED WHEN A SEPTIC SYSTEM IS UNABLE TO FUNCTION BY GRAVITY.

FROM 8.6.1.3. (3) OF THE O.B.C. 2006, WHERE 2 OR MORE PUMPS ARE EMPLOYED WITHIN A DOSING TANK, THE PUMPS SHALL BE DESIGNED SUCH THAT THE PUMPS ALTERNATE DOSING, AND DOSING SHALL CONTINUE IN THE EVENT THAT ONE OF THE PUMP FAILS.

FROM 8.6.1.3. (4) OF THE O.B.C. 2006, WHERE A PUMP OR SIPHON IS REQUIRED, THE PUMP OR SIPHON SHALL BE DESIGNED TO DISCHARGE A DOSE OF AT LEAST 75% OF THE INTERNAL VOLUME OF THE DISTRIBUTION PIPE WITHIN A TIME PERIOD NOT EXCEEDING 15 MINUTES.

A PUMP STATION SHALL HAVE A WORKING VOLUME OF A THIRD OF THE DAILY FLOW OF THE SEPTIC SYSTEM IT IS DESIGNED FOR.

PUMP STATION ARE AVAILABLE IN MULTIPLE SIZES, AND MULTIPLE PUMP SIZES ALSO AVAILABLE.

DUAL PUMP STATION ALSO AVAILABLE, SEE LIST BELOW, VOLUME INDICATED IS MAXIMUM WORKING VOLUME:

175 GAL / 800 LITERS : 3 FEET  $\phi$  - 4 FEET WELL TILE  
250 GAL / 1135 LITERS : 3 FEET  $\phi$  - 6 FEET WELL TILE  
450 GAL / 2045 LITERS : 4 FEET  $\phi$  - 6 FEET WELL TILE  
DUAL - 760 GAL / 3450 LITERS : NORMAL 800 GAL / 3630 L TANK  
DUAL - 1175 GAL / 5340 LITERS : NORMAL 1210 GAL / 5509 L TANK

ALARMS, ELECTRICAL BOXES AND CHECK VALVES MAY DIFFERS FROM ONE PUMP STATION SYSTEMS TO ANOTHER. SIMPLEX AND DUPLEX TIME DOSING CONTROL PANEL AVAILABLE.

16525 SIXTH RD, MOOSE CREEK, ON

KOC 1W0

PHONE : (613)-538-2381

FAX : (613)-538-4870

MOOSE CREEK CEMENT PRODUCTS (2006) LIMITED

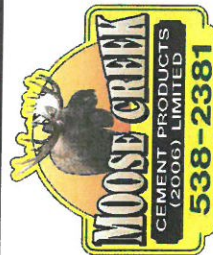
PUMP STATION SIDE VIEW ( Page 1 / 2 )

SCALE

NOT TO SCALE

DATE

JULY 2011





LRJ

ENGINEERING | INGÉNIERIE  
5430 Candelek Road | Ottawa, ON, K1J 9G2  
www.lrl.ca | (613) 842-3434

SEPTIC FILE #

23-098

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Occupancy:

Factory [including Showers]

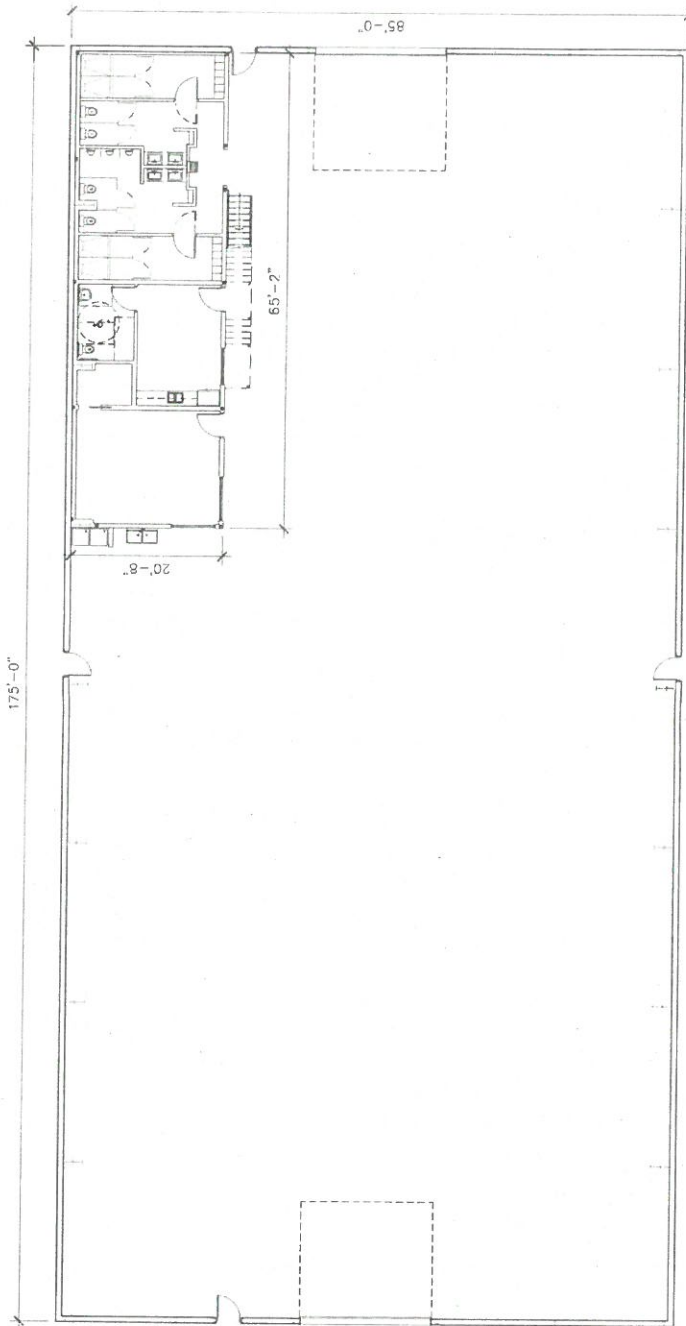
125 L / EMPLOYEE ON 8th Shift.

= 4 EMPLOYEE/SHIFT @ 3 SHIFT

= 12 x 125 L = 1500 L/D

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SEP 19 2023



ADD  
SEP 29 / 23

GROUND FLOOR PLAN

SCALE: 1/16" = 1'-0"

LOADING AREA  
$$\frac{1500 \times 20}{400} = 75 \text{ m}^2 \text{ MIN. REQ'D.}$$
  
\* 10.6 m x 7.2 m  
= 76.32 m<sup>2</sup> PROVIDED.

ELVEN SYSTEM  
$$\frac{1500}{95} = 15.79$$
  
= 16 MODULES  
MIN. REQ'D.  
4 RUNS OF 5 MODULES PROVIDED, = 20 MODULES

SEPTIC TANK  
$$\frac{1500 \times 3}{400} = 11.25$$
  
= 12 MODULES  
MIN. REQ'D.





**LRJ**

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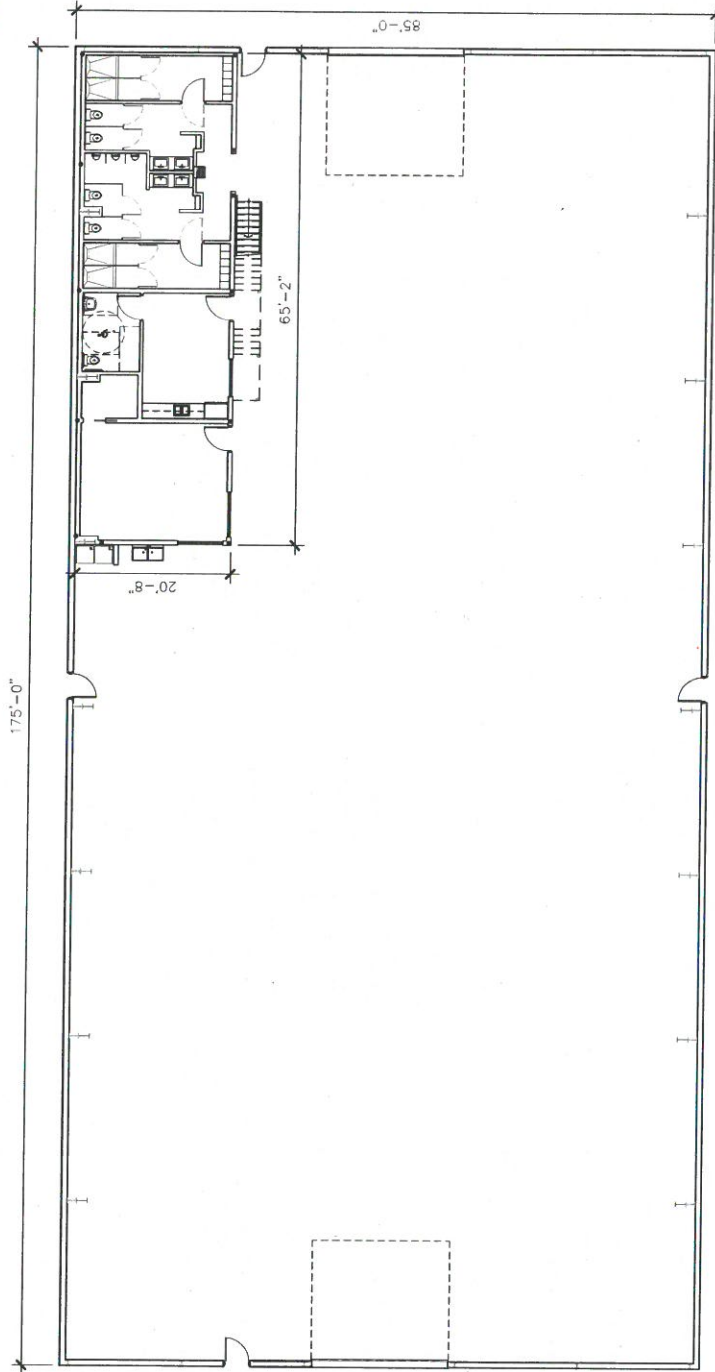
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www.lrl.ca | (613) 842-3434

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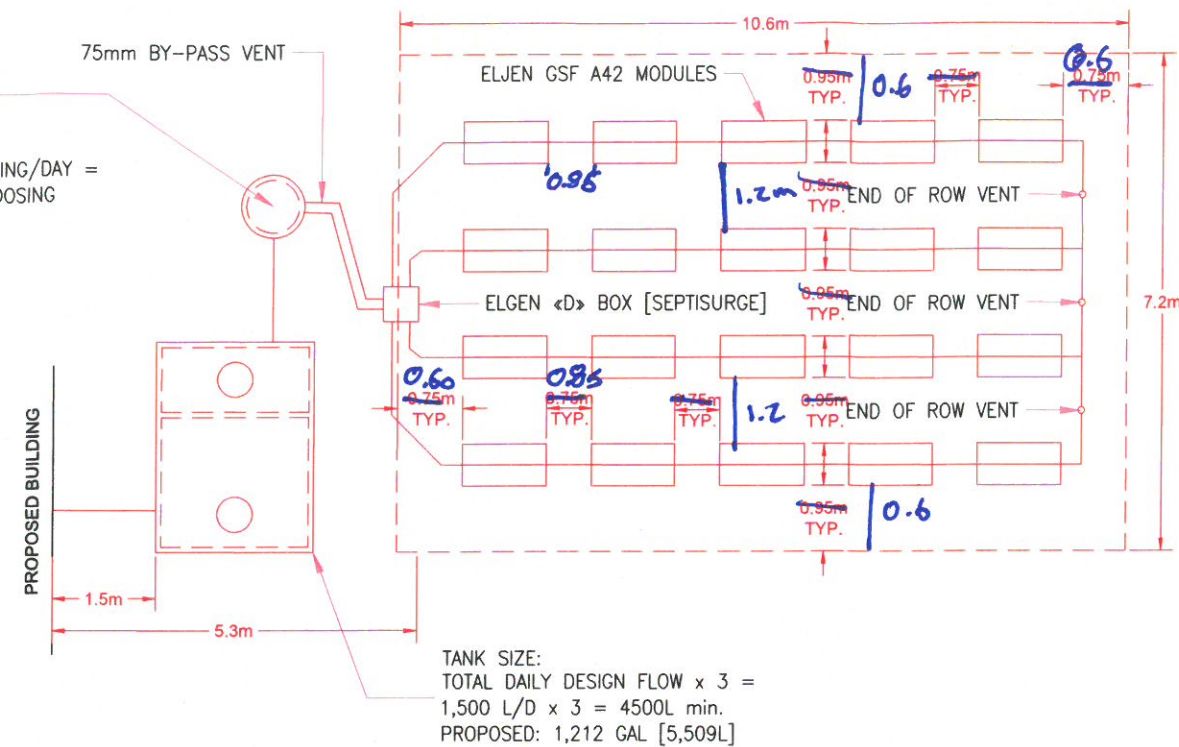


GROUND FLOOR PLAN

SCALE: 1/16" = 1'-0"



DOSING: 8 PER DAY  
ELJEN GSF MODULE: 95 L/D per MODULE  
 $20 \text{ MODULE} / 1,500 \text{ L/D} = 75 \text{ L/D} \div 8 \text{ DOSING/DAY} =$   
 $9.38 \text{ L/MODULE} \times 20 \text{ MODULE} = 187.5 \text{ L/DOSING}$



Add  
Sept 29/23

OTTAWA

SEP 29 2023



**ABSOLUTE**  
DRAFTING + DESIGN INC.

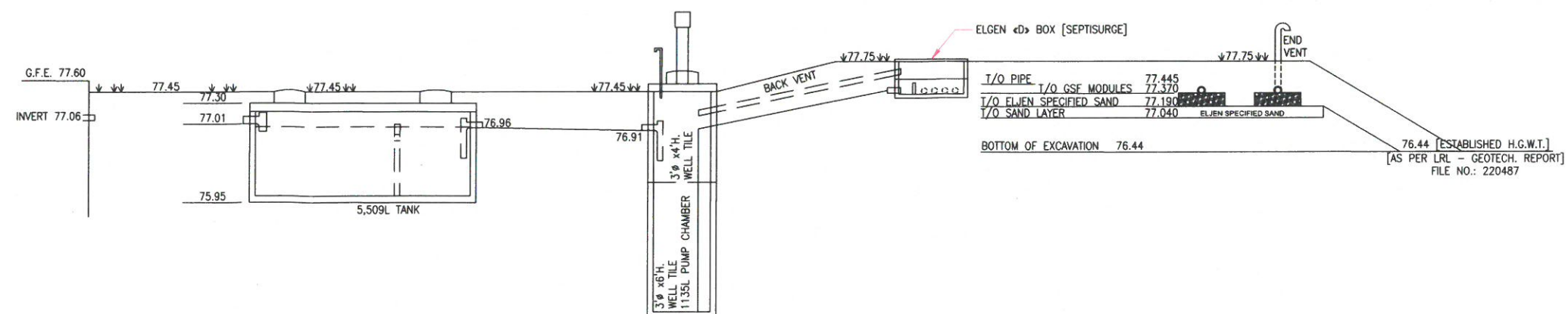
ALL CONTRACTORS SHALL PERFORM THEIR WORK WHETHER DESCRIBED OR NOT, ACCORDING TO THE APPLICABLE BUILDING CODE REQUIREMENTS AND MUNICIPAL REGULATIONS.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ERRORS AND OMISSIONS TO THE DESIGN CONSULTANT.

NO DIMENSION SHOULD BE SCALED ON DRAWINGS.

THE GENERAL CONTRACTOR OR SUB-CONTRACTORS WILL BE HELD RESPONSIBLE FOR ALL WORK DONE ON THE CONSTRUCTION SITE. IN NO EVENT WILL THE DESIGNER BE HELD RESPONSIBLE BEFORE, DURING AND AFTER THE PROJECT.

SCALE: 1:50



SCALE: 1:35

SCALE:

AS INDICATED

DATE: 2023.09.18.

ISSUED FOR  
PERMIT

PROJECT:  
23A011-REV03

DESSIN/DRAWING

## SEPTIC LAYOUT + SPEC'S

PROJET/PROJECT

PRODUCTION FACTORY  
363 ENTREPRENEUR CR., OTTAWA

CLIENT

DUSTIN WILSON

S-102 of S-102



ALL CONTRACTORS SHALL PERFORM THEIR WORK WHETHER DESCRIBED OR NOT, ACCORDING TO THE APPLICABLE BUILDING CODE REQUIREMENTS AND MUNICIPAL REGULATIONS.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ERRORS AND OMISSIONS TO THE DESIGN CONSULTANT.

NO DIMENSION SHOULD BE SCALED ON DRAWINGS.

THE GENERAL CONTRACTOR OR SUB-CONTRACTORS WILL BE HELD RESPONSIBLE FOR ALL WORK DONE ON THE CONSTRUCTION SITE. IN NO EVENT WILL THE DESIGNER BE HELD RESPONSIBLE BEFORE, DURING AND AFTER THE PROJECT.

SCALE:

1:200

DATE:  
2023.09.18.

ISSUED FOR  
PERMIT

PROJECT:  
23A011-REV03

DESSIN/DRAWING

SEPTIC LOCATION

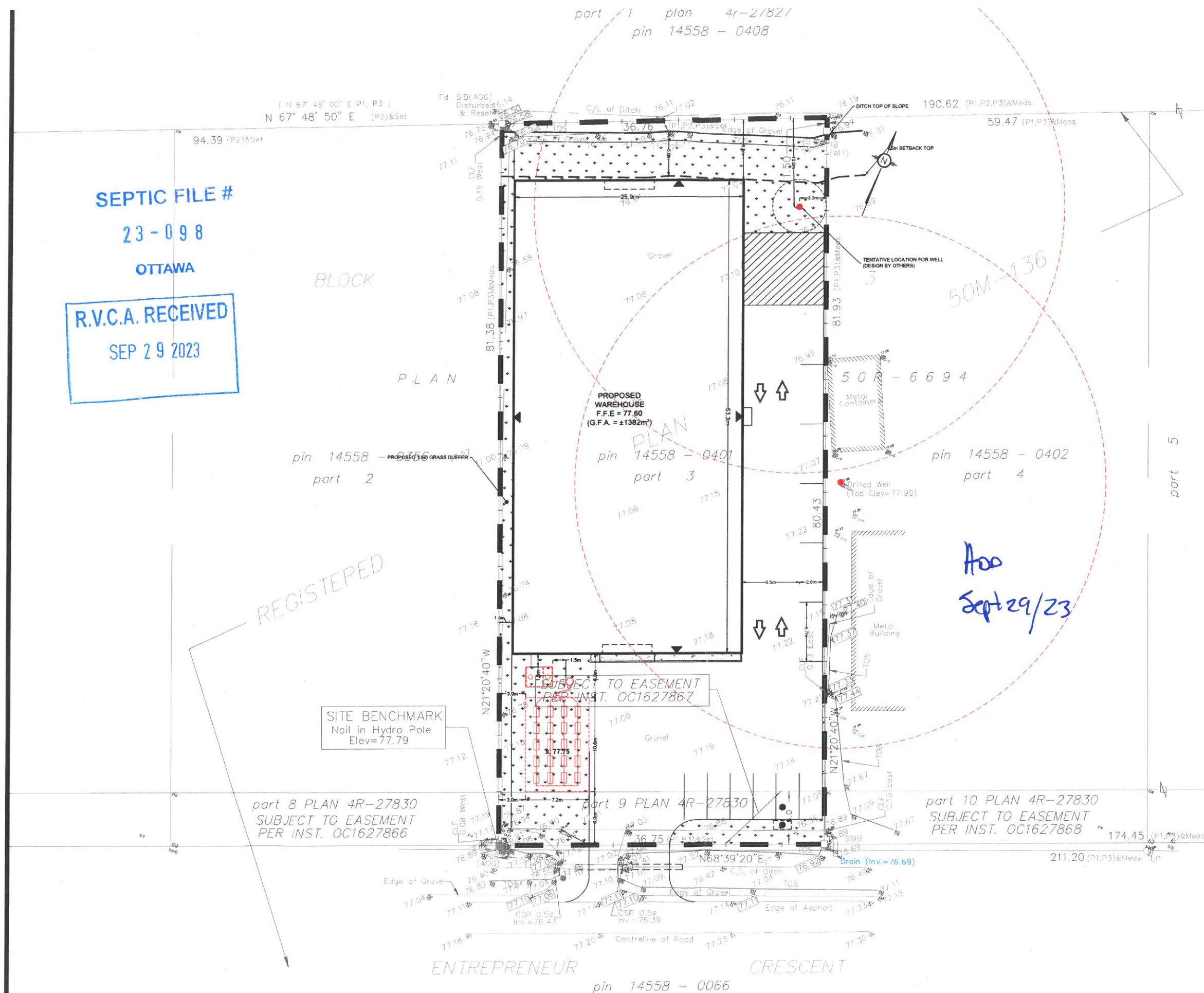
PROJECT/PROJECT

PRODUCTION FACTORY  
363 ENTREPRENEUR CR., OTTAWA

CLIENT

DUSTIN WILSON

S-101 of S-102







**Permit**  
**Part 8 – Sewage System**  
**Ontario Building Code**

Do Not Complete  
Permit No 23-098  
Revision No \_\_\_\_\_  
Date \_\_\_\_\_  
Related Application \_\_\_\_\_

**A copy of this permit must be posted on the property at all time during construction. OBC, Division C — Part 1, Section 1.3.2.1**  
This permit verifies that the on-site sewage system was reviewed and approved for construction under the *Ontario Building Code* and *O.Reg. 323/12* as amended by *O.Reg. 151/13*.

Inspected & Recommended by: ALEX DEKLEINE Owner: ENTREPRENEUR HOLDING COR  
Inspection Date & Time: SEPT 29, 2023 Weather: SUNNY  
Civic Address: 363 ENTREPRENEUR CRES Legal: CON 11 LOT 23  
In the former Township/City of Cumberland

Design Flow for Commercial / Institutional / Industrial (as per Table 8.2.1.3.B)  
Q: PRODUCTION FACTORY 4 EMPLOYEES/ 8 HR = 1500 L/day

septic tank 4500 (MIN) L weigh bills for Eljen Sand ☒ yes ☐ no  
effluent filter REQUIRED grain size analysis required ☒ yes ☐ no  
pump rate TIME DOSED L/15 MIN site to be scarified ☒ yes ☐ no  
treatment unit Eljen GSF A42 clay seal inspection ☐ yes ☒ no  
number of units 20 mantle required ☐ yes ☒ no  
sub-grade inspection ☒ yes ☐ no

ELEVATION ☐ In Ground ☒ Partially Raised ☐ Fully Raised

**TYPE OF SYSTEM**

☐ Trench  
☐ Pipe and Stone or ☐ Chambers  
type of chamber \_\_\_\_\_ pipe length \_\_\_\_\_ m  
loading area \_\_\_\_\_ m<sup>2</sup> orifice spacing \_\_\_\_\_ m  
total trench length \_\_\_\_\_ m ☐ Filter Media Bed  
trench configuration \_\_\_\_\_ stone \_\_\_\_\_ m<sup>2</sup>  
☒ Dispersal Bed extended base \_\_\_\_\_ m<sup>2</sup>  
☒ BMEC ☐ Type A ☐ Type B pipe \_\_\_\_\_  
stone \_\_\_\_\_ m<sup>2</sup> weight of filter media \_\_\_\_\_ kg  
sand 76.32 m<sup>2</sup> loading area \_\_\_\_\_ m<sup>2</sup>  
pipe 4 ROWS OF 5 MODULES ☐ Class 5 Holding Tank  
weight of sand \_\_\_\_\_ kg ☐ Septic Tank Only

Manager, Septic System Approvals: Tony Davidson Permit Date: OCTOBER 2, 2023  
Comments: 1. RVCA TO INSPECT SUBGRADE PRIOR TO SAND PLACEMENT  
☒ maintenance/pumping required ☐ ESA permit # required ☐ engineer to verify  
☐ Class 5 Holding Tank approval only valid for three years from date of issue ☐ subgrade ☐ squirt height  
Manager, Septic System Approvals: \_\_\_\_\_ Revision Date: \_\_\_\_\_  
Comments: \_\_\_\_\_

NOTE: For further details, refer to corresponding application.

## **APPENDIX D**

### **Stormwater Management Calculations**



LRL Associates Ltd.  
Storm Watershed Summary



**LRL File No.** 220487-02

**Project:** Wilson Warehouse Development

**Location:** 363 Entrepreneur Cres, Ottawa

**Date:** April 11, 2025

**Designed:** K. Herold

**Drawing Ref.:** C701, C702

**Pre-Development Catchments**

Watershed	C = 0.20	C = 0.80	C = 0.90	Total Area (ha)	Combined C
EWS-01 (uncontrolled)	0.012	0.202	0.000	0.214	0.77
EWS-02 (uncontrolled)	0.007	0.079	0.000	0.086	0.75
<b>Total</b>	<b>0.019</b>	<b>0.281</b>	<b>0.000</b>	<b>0.300</b>	<b>0.76</b>

**Post-Development Catchments**

Watershed	C = 0.20	C = 0.80	C = 0.90	Total Area (ha)	Combined C
WS-01 (controlled)	0.000	0.080	0.000	0.080	0.80
WS-02 (controlled)	0.003	0.024	0.000	0.027	0.73
WS-03 (controlled)	0.000	0.019	0.059	0.078	0.88
WS-04 (controlled)	0.028	0.022	0.002	0.052	0.48
WS-05 (controlled)	0.001	0.016	0.000	0.017	0.76
WS-05 (uncontrolled)	0.045	0.001	0.000	0.046	0.21
<b>Total</b>	<b>0.077</b>	<b>0.162</b>	<b>0.061</b>	<b>0.300</b>	<b>0.67</b>



LRL File No. 220487-02  
**Project:** Wilson Warehouse Development  
**Location:** 363 Entrepreneur Cres, Ottawa  
**Date:** April 11, 2025  
**Designed:** K. Herold  
**Checked:** M. Basnet  
**Drawing Ref.:** C401

**Stormwater Management  
Design Sheet**

**STORM - 100 YEAR**

**Runoff Equation**

$Q = 2.78CIA \text{ (L/s)}$   
C = Runoff coefficient  
I = Rainfall intensity (mm/hr) =  $A / (Td + C)^B$   
A = Area (ha)  
 $T_c$  = Time of concentration (min)

**Pre-Development Catchments within Development Area**

	<b>Total Area =</b>	<b>0.300</b>	<b>ha</b>	<b><math>\Sigma R =</math></b>	<b>0.76</b>
Uncontrolled	EWS-01 + EWS-02	0.300	ha	R =	0.76
	<b>Total Uncontrolled =</b>	<b>0.300</b>	<b>ha</b>	<b><math>\Sigma R =</math></b>	<b>0.76</b>

**2 Year Pre-development Release Rate**

$I_2 = 732.951 / (Td + 6.199)^{0.81}$       **A = 732.951**      **B = 0.81**      **C = 6.199**  
C = 0.50      \*max 0.50  
I = 76.8 mm/hr  
 $T_c = 10$  min      \*calc'd, min 10mins  
A = 0.300 ha  
**2y Allowable Release Rate = 32.08 L/s**

**Post-development Stormwater Management**

	<b>Total Site Area =</b>	<b>0.300</b>	<b>ha</b>	<b><math>\Sigma R =</math></b>	<b><math>\Sigma R_5</math></b>	<b><math>\Sigma R_{100}</math></b>
Controlled	WS-01	0.080	ha	R =	0.80	1.00
Controlled	WS-02	0.027	ha	R =	0.73	0.92
Controlled	WS-03	0.078	ha	R =	0.88	1.00
Controlled	WS-04	0.052	ha	R =	0.48	0.60
Controlled	WS-05	0.017	ha	R =	0.76	0.96
	<b>Total Controlled =</b>	<b>0.254</b>	<b>ha</b>	<b><math>\Sigma R =</math></b>	<b>0.75</b>	<b>0.94</b>
Uncontrolled	WS-06	0.046	ha	R =	0.21	0.27
	<b>Total Uncontrolled =</b>	<b>0.046</b>	<b>ha</b>	<b><math>\Sigma R =</math></b>	<b>0.21</b>	<b>0.27</b>

**100 Year Post-development Stormwater Management**

$I_{100} = 1735.688 / (Td + 6.014)^{0.820}$       **A = 1735.688**      **B = 0.820**      **C = 6.014**

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m <sup>3</sup> )	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	178.56	117.96	55.17	26.00	6.08	32.08
20	119.95	79.24	63.89	26.00	4.08	30.08
30	91.87	60.69	62.44	26.00	3.13	29.13
40	75.15	49.64	56.74	26.00	2.56	28.56
50	63.95	42.25	48.74	26.00	2.18	28.18
60	55.89	36.92	39.33	26.00	1.90	27.90
70	49.79	32.89	28.94	26.00	1.70	27.70
80	44.99	29.72	17.86	26.00	1.53	27.53
90	41.11	27.16	6.25	26.00	1.40	27.40
100	37.90	25.04	0.00	26.00	1.29	27.29
110	35.20	23.25	0.00	26.00	1.20	27.20
120	32.89	21.73	0.00	26.00	1.12	27.12
130	30.90	20.41	0.00	26.00	1.05	27.05

**100 Year Post-development Stormwater Management - Ponding Calcs (1/2 Release Rate)**



**LRL File No.** 220487-02  
**Project:** Wilson Warehouse Development  
**Location:** 363 Entrepreneur Cres, Ottawa  
**Date:** April 11, 2025  
**Designed:** K. Herold  
**Checked:** M. Basnet  
**Drawing Ref.:** C401

**Stormwater Management  
Design Sheet**

$$I_{100} = 1735.688 / (Td + 6.014)^{0.820}$$

$$A = 1735.688$$

$$B = 0.820$$

$$C = 6.014$$

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m <sup>3</sup> )	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	178.56	117.96	62.97	13.00	6.08	19.08
20	119.95	79.24	79.49	13.00	4.08	17.08
30	91.87	60.69	85.84	13.00	3.13	16.13
40	75.15	49.64	87.94	13.00	2.56	15.56
50	63.95	42.25	87.74	13.00	2.18	15.18
60	55.89	36.92	86.13	13.00	1.90	14.90
70	49.79	32.89	83.54	13.00	1.70	14.70
80	44.99	29.72	80.26	13.00	1.53	14.53
90	41.11	27.16	76.45	13.00	1.40	14.40
100	37.90	25.04	72.23	13.00	1.29	14.29
110	35.20	23.25	67.68	13.00	1.20	14.20
120	32.89	21.73	62.86	13.00	1.12	14.12
130	30.90	20.41	57.81	13.00	1.05	14.05

\*halved the controlled release rate to calculate storage based on variable pressure head

**Onsite Stormwater Retention**

Total Storage Required = **87.94** m<sup>3</sup>  
Overland Ponding Provided = 19.51 m<sup>3</sup>  
Underground Storage Provided = 81.80 m<sup>3</sup>  
Total Storage Provided = **101.31** m<sup>3</sup>

\*provided via u/g stormtech chambers

LRL Associates Ltd.  
Storm Design Sheet

LRL Associates Ltd.  
Storm Design Sheet



**LRL File No.** 220487-02  
**Project:** Wilson Warehouse Development  
**Location:** 363 Entrepreneur Cres, Ottawa  
**Date:** April 9, 2025  
**Designed:** K. Herold  
**Drawing Ref.:** C401

Rational Method     $Q = 2.78CIA$   
 $Q$  = Peak flow in litres per second (L/s)  
 $A$  = Drainage area in hectares (ha)  
 $C$  = Runoff coefficient  
 $I$  = Rainfall intensity (mm/hr)

**Storm Design Parameters**  
Runoff coefficient ( $C$ )  
Grass = 0.2  
Gravel = 0.8  
Asphalt / rooftop = 0.9

IDF curve: Ottawa Macdonald-Cartier Int. Airport  
Storm event: 100 Years  
Intensity equation:  
 $I_{100} = 1735.688 / (T_c + 6.014)0.820$  (mm/hr)

**Pipe Design Parameters**  
Minimum velocity = 0.80 m/s  
Manning's " $n$ " = 0.013

LOCATION			AREA (ha)			FLOW						STORM SEWER								
WATERSHED	From MH	To MH	$C = 0.20$	$C = 0.80$	$C = 0.90$	Indiv. 2.78AC	Accum. 2.78AC	Time of Conc. (min.)	Rainfall Intensity (mm/hr)	Peak Flow $Q$ (L/s)	Controlled Flow $Q_{CONT}$ (L/s)	Req'd Pipe Diameter (mm)	Prop'd Pipe Diameter (mm)	Type	Slope (%)	Length (m)	Capacity Full $Q_{FULL}$ (L/s)	Velocity Full (m/s)	Time of Flow (min)	Ratio $Q/Q_{FULL}$
WS-01	CB01, CB02	MH03	0.000	0.080	0.000	0.178	0.178	10.00	178.56	31.77			300	PVC	0.20%	16.0	43.25	0.61	0.44	0.73
WS-02	MH03	CBMH04	0.003	0.024	0.000	0.055	0.233	11.00	169.91	39.58			300	PVC	0.34%	21.0	56.39	0.80	0.44	0.70
WS-03	CBMH04	CBMH06	0.000	0.019	0.059	0.190	0.423	11.44	166.40	70.36			375	PVC	0.25%	21.4	87.67	0.79	0.45	0.80
WS-04	CB05	CBMH06	0.028	0.022	0.002	0.070	0.070	10.00	178.56	12.41			300	PVC	0.34%	12.0	56.39	0.80	0.25	0.22
WS-05	CBMH06	PUMP	0.001	0.016	0.000	0.036	0.339	11.89	162.96	55.18	26.00		300	PVC	0.34%	5.0	56.39	0.80	0.10	0.46



# LRL Associates Ltd.

## Storm Watershed Summary



**LRL File No.** 220487-02

**Project:** Wilson Warehouse Development

**Location:** 363 Entrepreneur Cres, Ottawa

**Date:** April 11, 2025

**Designed:** K. Herold

**Drawing Ref.:** C701, C702

### Estimated Roadside Ditch Design Load

#### Mannings Equation - Open Channel Flow

$$V = \frac{1}{n} \times R^{2/3} \times s^{1/2}$$

V = Water Mass Flow Rate (m/s)

n = Manning's Roughness Coefficient

R = Channel Hydraulic Radius (m)

s = Channel Longitudinal Slope ([height/length])

#### Channel Hydraulic Radius

$$R = A/P$$

A = Channel Cross Sectional Area (m<sup>2</sup>)

P = Channel Wetted Perimeter (m)

#### Volumetric Flow Rate

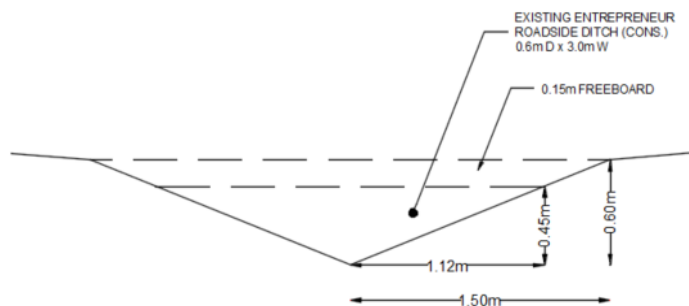
$$Q = VA$$

V = Water Mass Flow Rate (m/s)

A = Channel Cross Sectional Area (m<sup>2</sup>)

#### Design Load

n = 0.045  
A = 0.504 m<sup>2</sup>  
P = 2.42 m  
s = 0.0021  
**R = 0.208 m**  
**V = 0.36 m/s**  
**Q = 181 L/s**



## **APPENDIX E**

### **Civil Engineering Drawings**



PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	HAIDER NASRULLAH 647-850-9417 HAIDER.NASRULLAH@ADSPIPE.COM
ADS SALES REP:	BRAD DUNLOP 613-893-7336 BRAD.DUNLOP@ADSPIPE.COM
PROJECT NO:	S398686
ONTARIO SITE COORDINATOR:	RYAN RUBENSTEIN 519-710-3687 RYAN.RUBENSTEIN@ADSPIPE.COM



# 363 ENTREPRENEUR CRESCENT

## OTTAWA, ON.

### SC-310 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-310.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

### IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

- STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

### NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
- FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

**USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.**

CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT

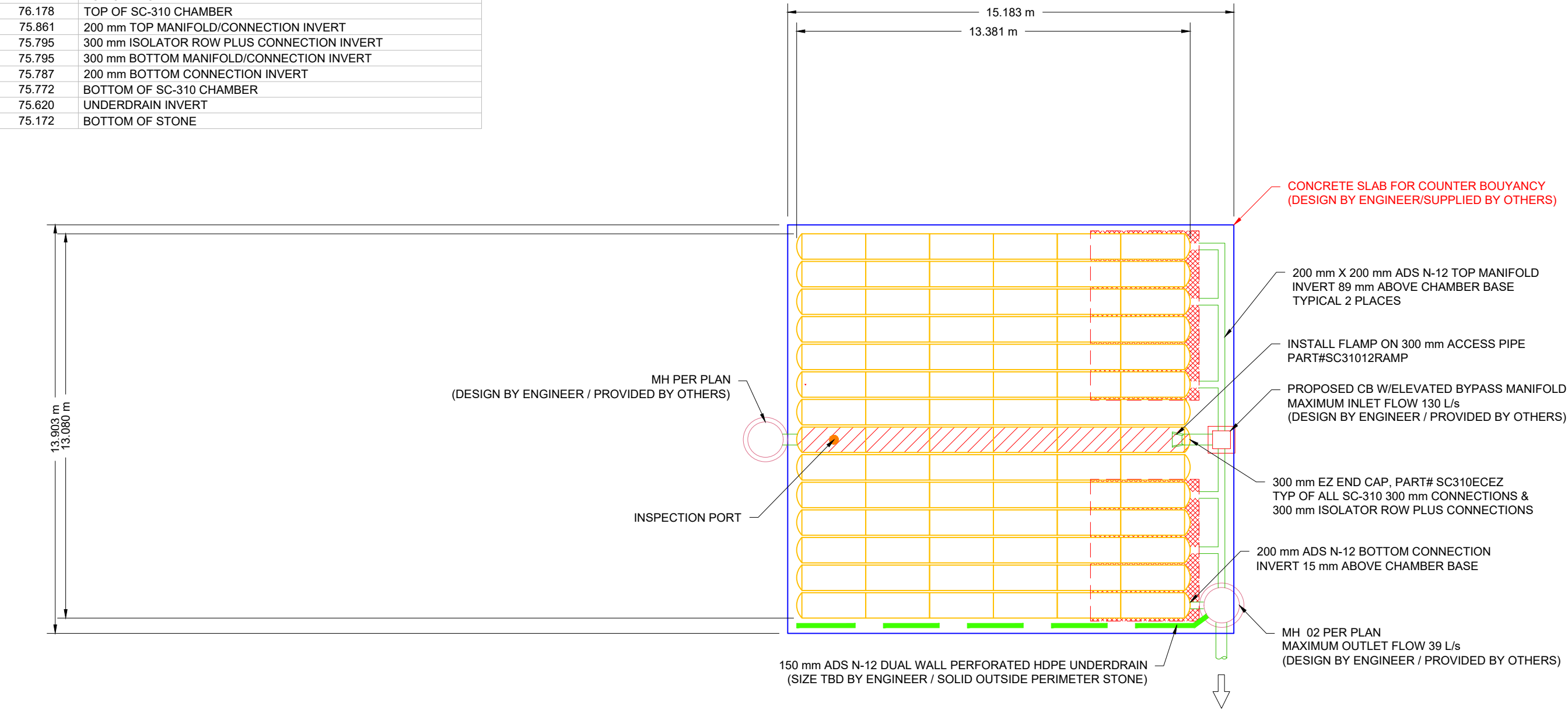
84	STORMTECH SC-310 CHAMBERS
28	STORMTECH SC-310 END CAPS
152	STONE ABOVE (mm)
600	STONE BELOW (mm)
40	% STONE VOID
81.8	INSTALLED SYSTEM VOLUME (m³) ABOVE ELEVATION 75.620 (PERIMETER STONE INCLUDED)
211.0	SYSTEM AREA (m²)
58.1	SYSTEM PERIMETER (m)

PROPOSED ELEVATIONS

78.616	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
76.737	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
76.584	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
76.584	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
76.584	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
76.330	TOP OF STONE
76.178	TOP OF SC-310 CHAMBER
75.861	200 mm TOP MANIFOLD/CONNECTION INVERT
75.795	300 mm ISOLATOR ROW PLUS CONNECTION INVERT
75.795	300 mm BOTTOM MANIFOLD/CONNECTION INVERT
75.787	200 mm BOTTOM CONNECTION INVERT
75.772	BOTTOM OF SC-310 CHAMBER
75.620	UNDERDRAIN INVERT
75.172	BOTTOM OF STONE

NOTES

- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



- ISOLATOR ROW PLUS (SEE DETAIL)
- PLACE MINIMUM 3.81 m OF ADSPLUS625 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
- THERMOPLASTIC LINER (SEE TECHNICAL NOTE 6.50 / PROVIDED BY OTHERS / DESIGN BY OTHERS)

363 ENTREPRENEUR CRESCENT

OTTAWA, ON.

DATE:	02/23/24	DRAWN:	RCT
PROJECT #:	S398686	CHECKED:	RCT

DATE	DRWN	CHKD	DESCRIPTION
4/7/25	RCT	RCT	REVISED PER COMMENTS
3/26/25	RCT	RCT	REVISED PER EPM COMMENTS
3/18/25	RCT	RCT	REVISED PER NEW PLANS

**StormTech®**  
Chamber System  
1-800-821-6710 | WWW.STORMTECH.COM

**ADS** 4640 TRUEMAN BLVD  
HILLIARD, OH 43026

SCALE = 1 : 150

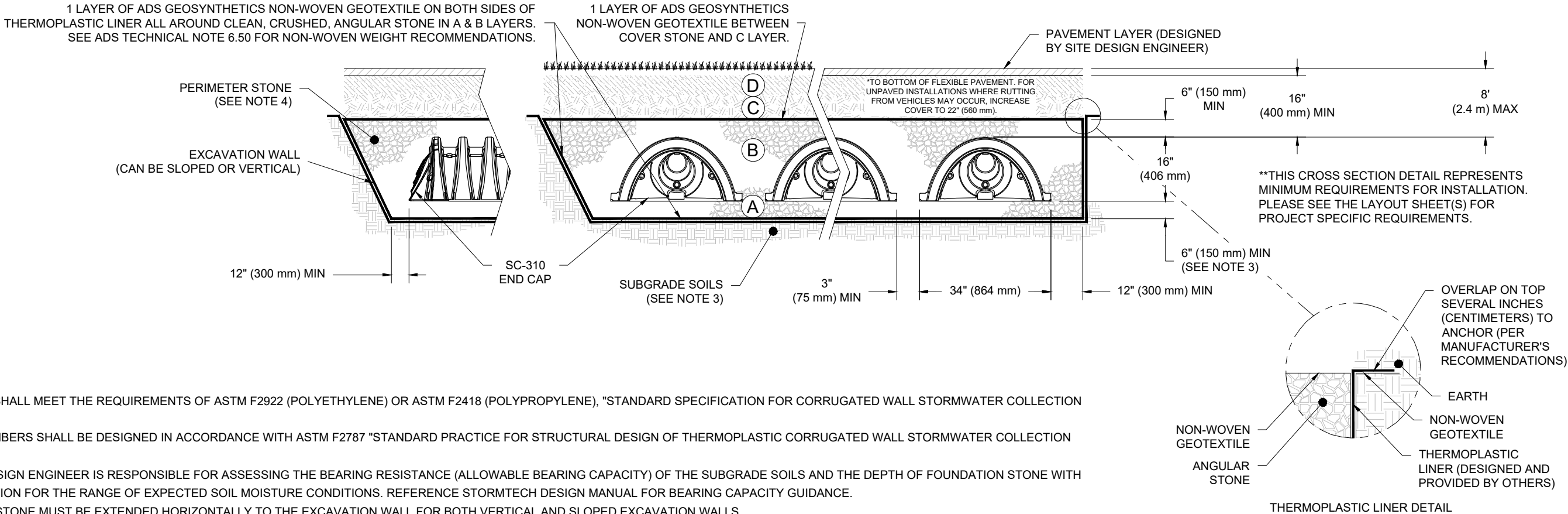
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS/STORMTECH UNDER THE DIRECTION OF THE PROJECT'S ENGINEER OF RECORD (EOR), OR OTHER PROJECT REPRESENTATIVE. THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE EOR'S PRIOR APPROVAL. EOR SHALL REVIEW THIS DRAWING PRIOR TO BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

## ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	3.25	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 16" (400 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>5</sup>	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE <sup>5</sup>	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

PLEASE NOTE:

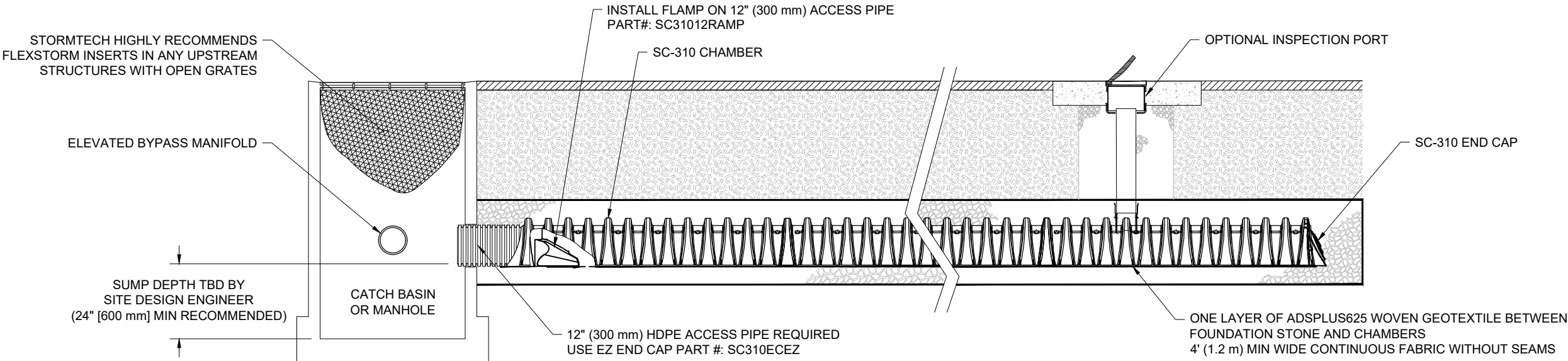
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



## NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.





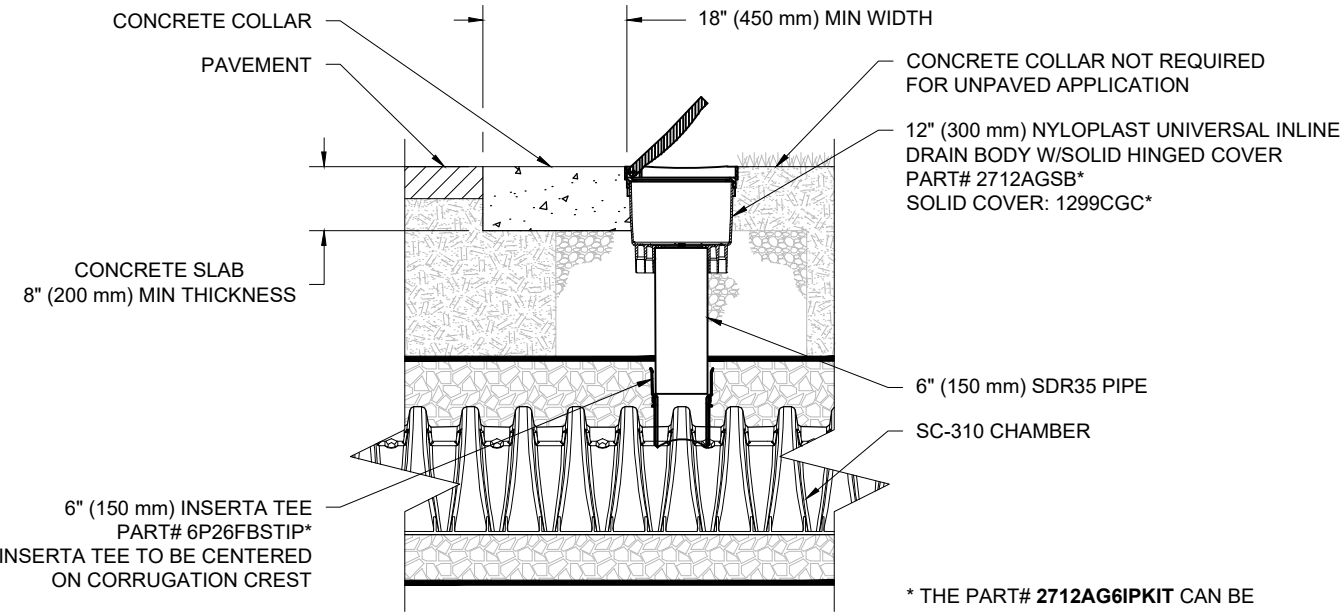
**SC-310 ISOLATOR ROW PLUS DETAIL**  
NTS

**INSPECTION & MAINTENANCE**

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
    - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
    - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
    - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
    - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
    - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
  - B. ALL ISOLATOR PLUS ROWS
    - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
    - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
      - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
      - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
    - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
  - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

**NOTES**

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



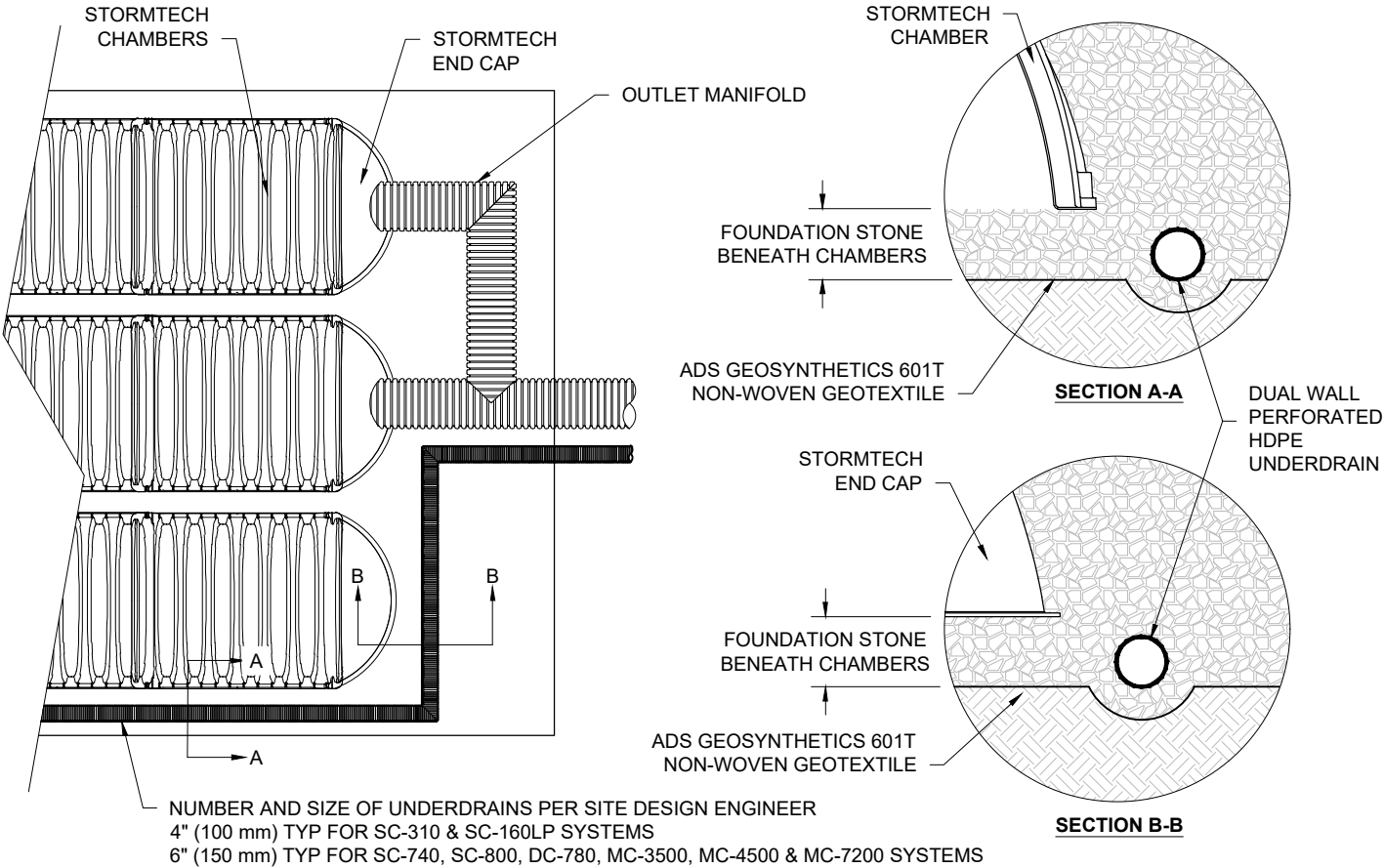
**SC-310 6" (150 mm) INSPECTION PORT DETAIL**  
NTS

363 ENTREPRENEUR CRESCENT		OTTAWA, ON.	
DATE: 02/23/24		DRAWN: RCT	
PROJECT #: S398686		CHECKED: RCT	
4/7/25		REVISD PER COMMENTS	
3/26/25		REVISD PER EPM COMMENTS	
3/18/25		REVISD PER NEW PLANS	
DATE		DESCRIPTION	
DRWN		CHKD	
<b>StormTech®</b> Chamber System 1-800-821-6710   WWW.STORMTECH.COM			
4640 TRUEMAN BLVD HILLIARD, OH 43026			
<b>ADS</b>			
4		SHEET OF 5	

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS/STORMTECH UNDER THE DIRECTION OF THE PROJECT'S ENGINEER OF RECORD (EOR). IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) SPECIFIED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

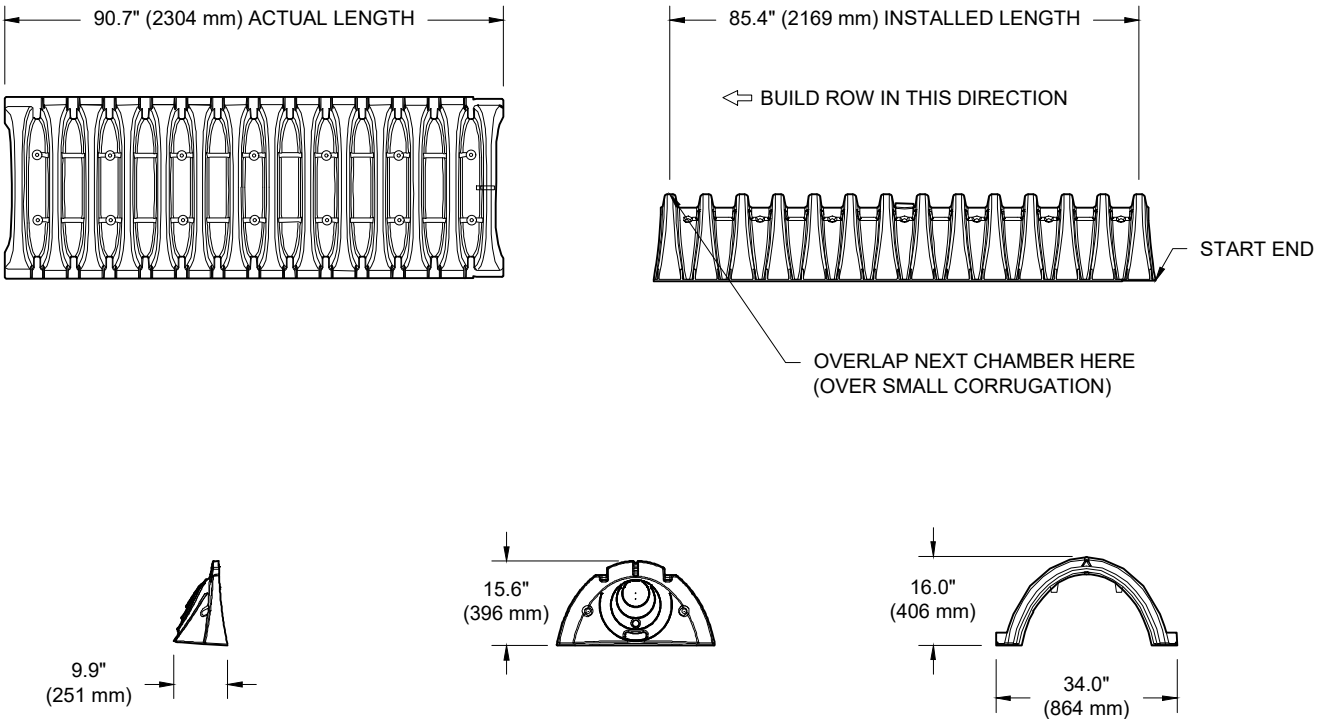
UNDERDRAIN DETAIL

NTS



SC-310 TECHNICAL SPECIFICATION

NTS

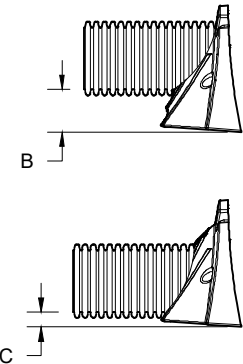


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	29.34 CUBIC FEET	(0.83 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

\*ASSUMES 6" (150 mm) ABOVE AND BELOW CHAMBER; 3" (75 mm) BETWEEN CHAMBERS

PART #	STUB	B	C
SC310EPE06TPC	6" (150 mm)	5.8" (147 mm)	---
SC310EPE06BPC		---	0.5" (13 mm)
SC310EPE08TPC	8" (200 mm)	3.5" (89 mm)	---
SC310EPE08BPC		---	0.6" (15 mm)
SC310EPE10TPC	10" (250 mm)	1.4" (36 mm)	---
SC310EPE10BPC		---	0.7" (18 mm)
SC310ECEZ*	12" (300 mm)	---	0.9" (23 mm)



ALL STUBS, EXCEPT FOR THE SC310ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

\* FOR THE SC310ECEZ THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL; PRE-CORED END CAPS END WITH "PC"

363 ENTREPRENEUR CRESCENT

OTTAWA, ON.

DATE:	02/23/24	DRAWN:	RCT
PROJECT #:	S398686	CHECKED:	RCT

DATE	DRWN	CHKD	DESCRIPTION
4/7/25	RCT	RCT	REVISED PER COMMENTS
3/26/25	RCT	RCT	REVISED PER EPM COMMENTS
3/18/25	RCT	RCT	REVISED PER NEW PLANS

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**ADS**  
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HILLIARD, OH 43026

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ROP. 600mm x 600mm PRECAST  
CONCRETE CATCH BASIN CB01  
C/W FLEXSTORM INLET FILTER  
(OR APPROVED EQUIVALENT)  
T/G = 77.05  
E INV = 75.31

XTENT CB01  
HWL = 77.20)  
GE = 9.98m<sup>3</sup>

PROPOSED DRILLED WELL.  
WELL TO BE PROTECTED W/  
BOLLARDS.

PROPOSED OVERL  
100 YEAR STORMP  
MAX PONDING DEP

PROP. 1200mm DIAMET  
CONCRETE MANHOLE  
C/W FLEXSTORM INLE  
APPROVED EQUIVALE  
T/G = 77.07  
W INV = 75.28  
S INV = 75.22

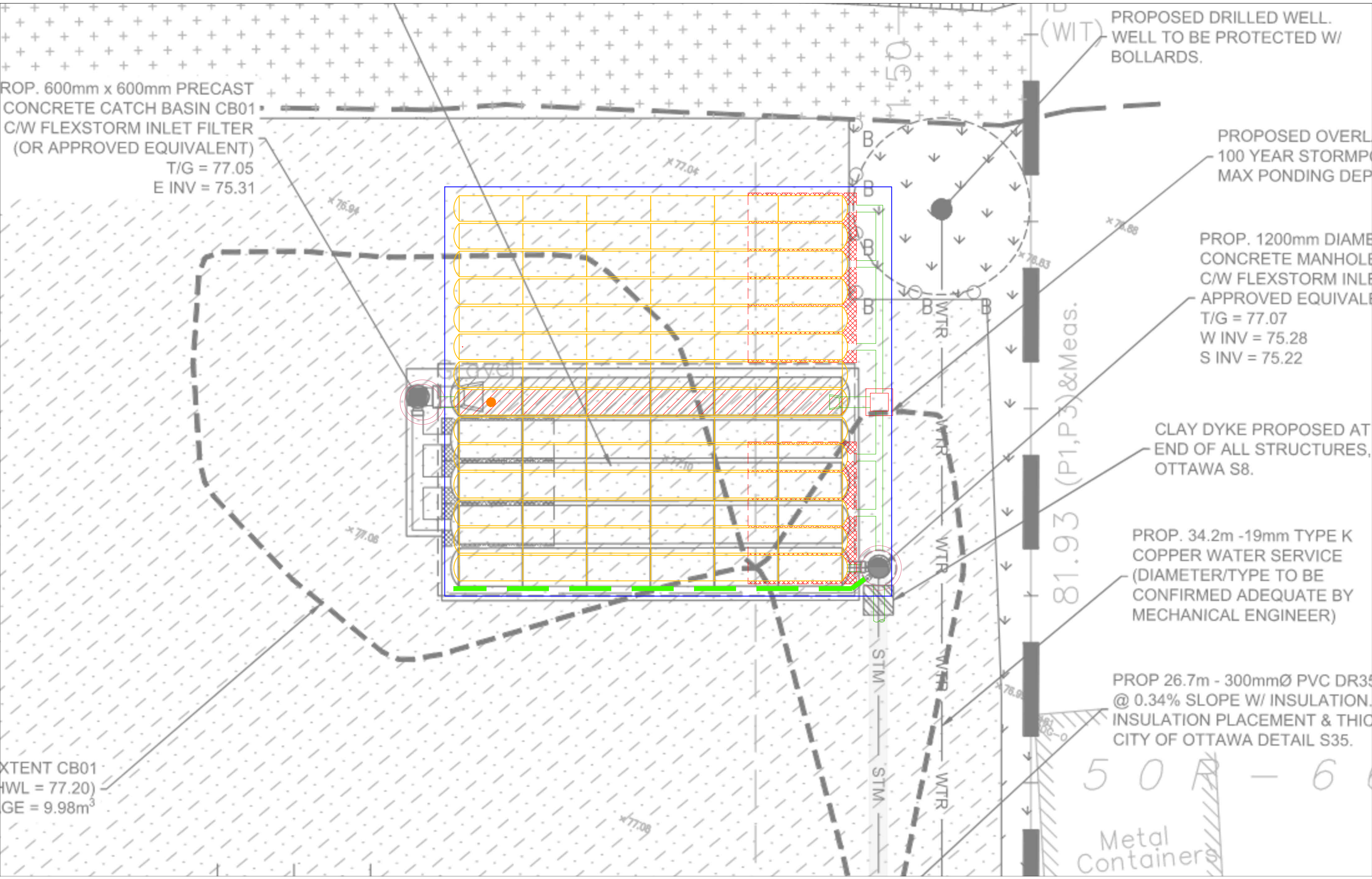
CLAY DYKE PROPOSED AT  
END OF ALL STRUCTURES,  
OTTAWA S8.

PROP. 34.2m -19mm TYPE K  
COPPER WATER SERVICE  
(DIAMETER/TYPE TO BE  
CONFIRMED ADEQUATE BY  
MECHANICAL ENGINEER)

PROP 26.7m - 300mmØ PVC DR35  
@ 0.34% SLOPE W/ INSULATION.  
INSULATION PLACEMENT & THIC  
CITY OF OTTAWA DETAIL S35.

81.93 (P1,P3)&Meas.

50A-60  
Metal Containers





GENERAL NOTES

1. ALL WORKS MATERIALS SHALL CONFIRM TO THE LAST REVISION OF THE STANDARDS AND SPECIFICATIONS FOR THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), WHERE APPLICABLE. LOCAL UTILITY STANDARDS AND MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY WHERE REQUIRED.
2. THE CONTRACTORS SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTORS SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION , TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
3. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION, ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTORS TO CONFIRM UTILITY LOCATIONS AND POSSIBLY ENGINEER OF POSSIBLE CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT CONTRACTORS EXPENSE.
4. ANY AREA BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE. RELOCATING OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR DETECTED BY THE ENGINEER AT THE EXPENSE OF DEVELOPERS.
5. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 'OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS'. THE GENERAL CONTRACTORS SHALL BE DEEMED TO BE THE 'CONTRACTOR' AS DEFINED IN THE ACT.
6. ALL THE CONSTRUCTION SIGNAGE MUST CONFIRM TO THE MINISTRY OF TRANSPORTATION OF ONTARIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PER LATEST AMENDMENT.
7. THE CONTRACTOR IS ADVISED THAT WORKS BY OTHERS MAY BE ONGOING DURING THE PERIOD OF THE CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES TO PREVENT CONFLICTS.
8. ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE.
9. THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS PRIOR WRITTEN APPROVAL IS RECEIVED FROM THE ENGINEER.
10. ALL CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT.
11. FOR DETAILS RELATING TO STORMWATER MANAGEMENT AND ROOF DRAINAGE REFER TO THE SITE SERVICES AND STORMWATER MANAGEMENT REPORT.
12. ALL SEWERS CONSTRUCTED WITH GRADES LESS THAN 1.0% SHALL BE INSTALLED USING LASER ALIGNMENT AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
13. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED AND TO BEAR THE COST OF THE SAME.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL BEDDING, OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH AS SPECIFIED BY OPSD IS EXCEEDED.
15. ALL PIPE/CULVERT SECTION SIZES REFER TO INSIDE DIMENSIONS.
16. SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATELY.
17. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REVIEW WITH CONTRACT ADMINISTRATOR AND THE CITY OF OTTAWA PRIOR TO ANY TREE CUTTING/REMOVAL.
18. DRAWINGS SHALL BE READ ON CONJUNCTION WITH ARCHITECTURAL SITE PLAN.
19. THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER ON SET OF AS CONSTRUCTED SITE SERVICING AND GRADING DRAWINGS.
20. BENCHMARKS: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE SITE BENCHMARK(S) HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION DEPICTED ON THIS PLAN.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY .

THE CONTRACTOR ACKNOWLEDGES THAT SURFACE EROSION AND SEDIMENT RUNOFF RESULTING FROM THEIR CONSTRUCTION OPERATIONS HAS POTENTIAL TO CAUSE A DETRIMENTAL IMPACT TO ANY DOWNSTREAM WATERCOURSE OR SEWER, AND THAT ALL CONSTRUCTION OPERATIONS THAT MAY IMPACT UPON WATER QUALITY SHALL BE CARRIED OUT IN MANNER THAT STRICTLY MEETS THE REQUIREMENT OF ALL APPLICABLE LEGISLATION AND REGULATIONS.

AS SUCH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THEIR OPERATIONS, AND SUPPLYING AND INSTALLING ANY APPROPRIATE CONTROL MEASURES, SO AS TO PREVENT SEDIMENT LADEN RUNOFF ENTERING ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA.

THE CONTRACTOR ACKNOWLEDGES THAT NO ONE MEASURE IS LIKELY TO BE 100% EFFECTIVELY FOR EROSION PROTECTION AND CONTROLLING SEDIMENT RUNOFF AND DISCHARGES FROM THE SITE. THEREFORE, WHERE NECESSARY THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES ARRANGED IN SUCH MANNER AS TO MITIGATE SEDIMENT RELEASE FROM THE CONSTRUCTION OPERATIONS AND ACHIEVE SPECIFIC MAXIMUM PERMITTED CRITERIA WHERE APPLICABLE. SUGGESTED ON-SITE MEASURES MAY INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING METHODS: SEDIMENT PONDS, FILTER BAGS, PUMP FILTERS, SETTLING TANKS, SILT FENCE, STRAW BALES, FILTER CLOTHS, CATCH BASIN FILTERS, CHECK DAMS AND/OR OTHER RECOGNIZED TECHNOLOGIES AND METHOD AVAILABLE AT THE TIME OF CONSTRUCTION. SPECIFIC MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF OPSS 577 WHERE APPROPRIATE, OR IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

WHERE, IN THE OPINION OF THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY, THE INSTALLED CONTROL MEASURES FAIL TO PERFORM ADEQUATELY, THE CONTRACTOR SHALL SUPPLY AND INSTALL ADDITIONAL OR ALTERNATIVE MEASURES AS DIRECTED BY THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY. AS SUCH, THE CONTRACTOR SHALL HAVE ADDITIONAL CONTROL MATERIALS ON SITE AT ALL TIME WHICH ARE EASILY ACCESSIBLE AND MAY BE IMPLEMENTED BY HIM AT THE MOMENTS NOTICE.

PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT TO THE CONTRACT ADMINISTRATOR SIX COPIES OF A DETAILED EROSION AND SEDIMENT CONTROL PLAN (ESCP). THE ESCP WILL CONSIST OF WRITTEN DESCRIPTION AND DETAILED DRAWINGS INDICATING THE ON-SITE ACTIVITIES AND MEASURES TO BE USED TO CONTROL EROSION AND SEDIMENT MOVEMENT FOR EACH STEP OF THE WORK.

CONTRACTOR'S RESPONSIBILITIES

THE CONTRACTOR SHALL ENSURE THAT ALL WORKERS, INCLUDING SUB-CONTRACTOR, IN THE WORKING ARE ARE AWARE OF THE IMPORTANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES AND INFORMED OF THE CONSEQUENCES OF THE FAILURE TO COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AGENCIES.

THE CONTRACTOR SHALL PERIODICALLY, AND WHEN REQUESTED BY THE CONTRACT ADMINISTRATOR, CLEAN OUT ACCUMULATED SEDIMENT DEPOSITS AS REQUIRED AT THE SEDIMENT CONTROL DEVICES, INCLUDING THOSE DEPOSITS THAT MAY ORIGINATE FROM OUTSIDE THE CONSTRUCTION AREA. ACCUMULATED SEDIMENT SHALL BE REMOVED IN SUCH A MANNER THAT PREVENTS THE DEPOSITION OF THIS MATERIAL INTO THE SEWER WATERCOURSE AND AVOIDS DAMAGE TO CONTROL MEASURES. THE SEDIMENT SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH REQUIREMENTS FRO EXCESS EARTH MATERIAL, AS SPECIFIED ELSEWHERE IN THE CONTRACT.

THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE CONTRACT ADMINISTRATOR ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO EITHER THE WATERCOURSE OR THE STORM SEWER SYSTEM. FAILURE TO REPORT WILL BE CONSTITUTE A BRACH OF THIS SPECIFICATION AND THE CONTRACTOR MAY ALSO BE SUBJECT TO THE PENALTIES IMPOSED BY THE APPLICABLE REGULATORY AGENCY. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING CONTROL MEASURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.

THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, THE MEASURE OR MEASURES, IS NO LONGER REQUIRED. NO CONTROL MEASURE MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE CONTRACT ADMINISTRATOR. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED IN A MANNER THAT AVOIDS THE ENTRY OF ANY EQUIPMENT, OTHER THAN HAND-HELD EQUIPMENT, INTO ANY WATERCOURSE, AND PREVENTS THE RELEASE OF ANY SEDIMENT OR DEBRIS INTO ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE WORKING AREA AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH THE REQUIREMENTS FOR EXCESS EARTH MATERIAL.

WHERE, IN THE OPINION OF EITHER THE CONTRACT ADMINISTRATOR OR A REGULATORY AGENCY, ANY OF THE TERMS SPECIFIED HEREIN HAVE NOT BEEN COMPLIED WITH OR PERFORMED IN A SUITABLE MANNER, OR YAT ALL, THE CONTRACTOR ADMINISTRATOR OR A REGULATORY AGENCY HAS THE RIGHT TO IMMEDIATELY WITHDRAW ITS PERMISSION TO CONTINUE THE WORK BUT MAY RENEW ITS PERMISSION UPON BEING SATISFIED THAT THE DEFAULTS OR DEFICIENCIES IN THE PERFORMANCE OF THIS SPECIFICATION BY THE CONTRACTOR HAVE BEEN REMEDIED.

SPILL CONTROL NOTES

1. ALL CONSTRUCTION EQUIPMENT SHALL BE RE-FUELED, MAINTAINED, AND STORED NO LESS THAN 30 METRES FROM WATERCOURSE, STEAMS, CREEKS, WOODLOTS, AND ANY ENVIRONMENTALLY SENSITIVE AREAS, OR AS OTHERWISE SPECIFIED.
2. THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT.
3. IN THE EVENT OF A LEAK, DISCHARGE OR SPILL OF POLLUTANT, DELETERIOUS MATERIAL OR OTHER SUCH MATERIAL OR SUBSTANCE WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT, THE CONTRACTOR SHALL:
  - 3.1. IMMEDIATELY NOTIFY APPROPRIATE FEDERAL, PROVINCIAL, AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS, AGENCIES, AND AUTHORITIES OF THE INCIDENT IN ACCORDANCE WITH ALL CURRENT LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.
  - 3.2. TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE, AND TO TAKE SUCH MEASURES TO MITIGATE AGAINST ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.
  - 3.3. RESTORE THE AFFECTED AREA TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

MUD MAT NOTES

1. THE GRANULAR MATERIAL WILL REQUIRE PERIODIC REPLACEMENT AS IT BECOMES CONTAMINATED BY VEHICLE TRAFFIC.
2. SEDIMENT SHALL BE CLEANED FROM PUBLIC ROADS AT THE END OF EACH DAY.
3. SEDIMENT SHALL BE REMOVED FROM PUBLIC ROADS BY SHOVELING OR SWEEPING AND DISPOSED OR PROPERLY IN A CONTROLLED SEDIMENT DISPOSAL AREA.

SITE GRADING NOTES

1. PRIOR TO THE COMMENCEMENT OF THE SITE GRADING WORKS, ALL SILTATION CONTROL DEVICES SHALL BE INSTALLED AND OPERATIONAL PER EROSION CONTROL PLAN.
2. ALL GRANULAR AND PAVEMENT FOR ROADS/PARKING AREAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
3. ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD AND PARKING AREAS ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. CONCRETE CURB SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. SC1.1 PROVISION SHALL BE MADE OR CURB DEPRESSIONS AS INDICATED ON ARCHITECTURAL SITE PLAN. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD SC1.4. ALL CURBS, CONCRETE ISLANDS, AND SIDEWALKS SHOWN O THIS DRAWING ARE TO BR PRICED IN SITE WORKS PORTION OF THE CONTRACT.
5. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. R10 AND OPSD 509.010 AND OPSS 310.
6. GRANULAR 'A' SHALL BE PLACED TO A MINIMUM THICKNESS OF 30MM AROUND ALL STRUCTURES WITHIN THE PAVEMENT AREA.
7. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 30MM LIFTS.
8. ALL WORK ON THE MUNICIPAL RIGHT OF WAY AND EASEMENTS TO BE INSPECTED BY THE MUNICIPALITY PRIOR BACKFILLING.
9. CONTRACTOR TO OBTAIN A ROAD CUT PERMIT 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL ROAD ALLOWANCE, IF REQUIRED BY THE MUNICIPALITY.
10. ALL PAVEMENT MARKING FEATURES AND SITE SIGNAGE SHALL BE PLACED PER ARCHITECTURAL SITE PLAN. LINE PAINTING AND DIRECTIONAL SYMBOLS SHALL BE APPLIED WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT PAINT.
11. REFER TO ARCHITECTURAL SITE PLAN FOR DIMENSIONS AND SITE DETAILS.
12. STEP JOINTS ARE TO BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT. ALL JOINTS MUST BE SEALED.
13. SIDEWALKS TO BE 13MM & BEVELED AT 2:1 OR 6MM WITH NO BEVEL REQUIRED BELOW THE FINISHED FLOOR SLAB ELEVATION AT ENTRANCES REQUIRED TO BE BARRIER-FREE, UNLESS OTHERWISE NOTED. ALL IN ACCORDANCE WITH OBC 3.8.1.3 & OTTAWA ACCESSIBILITY DESIGN STANDARDS.
14. WHERE APPLICABLE THE CONTRACTOR IS TO SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SHOP DRAWINGS MUST BE SITE SPECIFIC, SIGNED AND SEALED BY A LICENSED STRUCTURAL ENGINEER. THE CONTRACTOR WILL ALSO BE REQUIRED TO SUPPLY AND GEOTECHNICAL CERTIFICATION OF THE AS-CONSTRUCTED RETAINING WALL TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.
15. HYDRO ONE EASEMENT (LOCATED ALONG THE SOUTH PROPERTY LINE) RESTRICTS THE USE OF THIS LAND TO ENSURE NO PERMANENT STRUCTURES, FENCES OR TREES ARE DEVELOPED WITHIN THE STRIP.

ROADWORK SPECIFICATIONS

16. ROADWORK TO BE COMPLETED IN ACCORDANCE WITH GEOTECHNICAL REPORT, PREPARED BY LRL ASSOCIATES. DATED DECEMBER 2024.
17. AL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND STOCK PILED ON SITE AS DIRECTED BY MUNICIPAL AUTHORITY.
18. THE SUBGRADE SHALL BE CROWNED AND SLOPED AT LEAST 2% AND PROOF ROLLED WITH HEAVY ROLLERS.
19. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'A', TYPE II COMPACTED IN MAXIMUM 300MM LIFTS.
20. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO MINIMUM OF 100% STANDARD PROCTOR DENSITY MAXIMUM DRY DENSITY (SPMDD).

SANITARY, FOUNDATION DRAIN, STORM SEWER AND WATERMAIN NOTES

GENERAL

1. LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.
2. CLAY SEALS TO BE INSTALLED AS PER CITY STANDARD DRAWING S6. THE SEALS SHOULD BE AT LEAST 1.5M LONG (IN THE TRENCH DIRECTION) AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. THE SEALS SHOULD EXTEND FROM THE FROST LINE AND FULLY PENETRATE THE BEDDING, SUB-BEDDING, AND COVER MATERIAL. THE BARRIERS SHOULD CONSIST OF RELATIVELY DRY AND COMPATIBLE BROWN SILTY CLAY PLACED IN MAXIMUM 225MM LIFTS AND COMPACTED TO A MINIMUM OF 95% SPMDD. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT 60M INTERVALS IN THE SERVICE TRENCHES.
3. SERVICES TO BUILDING TO BE TERMINATED 1.0M FROM THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
4. ALL MAINTENANCE STRUCTURE AND CATCH BASIN EXCAVATIONS TO BE BACKFILLED WITH GRANULAR MATERIAL COMPACTED TO 98% STANDARD PROCTOR DENSITY, A MINIMUM OF 300MM AROUND STRUCTURES.
5. 'MODULOC' OR APPROVED PRE-CAST MAINTENANCE STRUCTURE AND CATCH BASIN ADJUSTERS TO BE USED IN LIEU OF BRICKING. PARGE ADJUSTING UNITS ON THE OUTSIDE ONLY.
6. SAFETY PLATFORMS SHALL BE PER OPSD 404.02.
7. DROP STRUCTURES SHALL BE IN ACCORDANCE WITH OPSD 1003.01, IF APPLICABLE.
8. THE CONTRACTOR IS TO PROVIDE CCTV CAMERA INSPECTIONS OF ALL SEWERS, INCLUDING PICTORIAL REPORT, ONE (1) CD COPY AND TWO (2) VIDEO RECORDING IN A FORMAT ACCEPTABLE TO ENGINEER. ALL SEWERS ARE TO BE FLUSHED PRIOR TO CAMERA INSPECTION. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS AND NECESSARY REPAIRS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER.
9. CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSS 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF WEAR COURSE ASPHALT.

STORM

10. ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. S6 AND S7 CLASS 'B' UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
11. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
12. CATCH BASIN SHALL BE IN ACCORDANCE WITH OPSD 705.010.
13. CATCH BASIN LEADS SHALL BE IN 200MM DIA. AT 1% SLOPE (MIN) UNLESS SPECIFIED OTHERWISE.
14. ALL CATCH BASINS SHALL HAVE 600MM SUMPS, UNLESS SPECIFIED OTHERWISE.
15. ALL CATCH BASIN LEAD INVERTS TO BE 1.5M BELOW FINISHED GRADE UNLESS SPECIFIED OTHERWISE.
16. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR IS REQUIRED TO PROVIDE AND SHALL BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
17. ALL ROAD AND PARKING LOT CATCH BASINS TO BE INSTALLED WITH ORTHOGONALLY PLACED SUBDRAINS IN ACCORDANCE WITH DETAIL. PERFORATED SUBDRAIN FOR ROAD AND PARKING LOT CATCH BASIN SHALL BE INSTALLED PER CITY STD R1 UNLESS OTHERWISE NOTED.
18. RIP-RAP TREATMENT SEWER AND CULVERT OUTLETS PER OPSD 810.010.
19. ALL STORM SEWER/ CULVERTS TO BE INSTALLED WITH FROST TREATMENT PER OPSD 803.031 WHERE APPLICABLE.
20. ALL STORM MANHOLES WITH PIPE LESS THAN 900MM IN DIAMETER SHALL BE CONSTRUCTED WITH A 300MM SUMP AS PER SDG, CLAUSE 6.2.6.

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS IF REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND INSTALLED UNLESS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CAD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS 'ISSUED FOR CONSTRUCTION', THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS A KNOWLEDGE/ENGAGEMENT OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE, NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTICOMING.

UNAUTHORIZED CHANGES

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY PARTS OF THESE PLANS, SPECIFICATIONS, OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRL'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRL AND THE CLIENT FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES MADE WITHOUT SUCH PROPER AUTHORIZATION.

GENERAL NOTES

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY AND FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT. THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE. THE CLIENT SHALL ASSUME FULLY ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

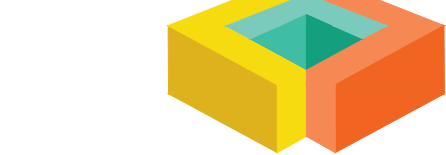
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03	ISSUED FOR SITE PLAN CONTROL	K.H.	20 DEC 2024
02	ISSUED FOR SITE PLAN CONTROL	K.H.	29 AUG 2024
01	ISSUED FOR SITE PLAN CONTROL	K.H.	10 OCT 2023

No.	REVISIONS	BY	DATE
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NOT AUTHENTIC UNLESS SIGNED AND DATED

CIVIL, GEOTECHNICAL, ENVIRONMENTAL ENGINEERS



**LRL**

ENGINEERING | INGÉNIERIE

5430 Canotek Road | Ottawa, ON, K1J 9G2  
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CLIENT	DUSTIN WILSON 310 SANCTUARY PRIV. OTTAWA, ON	
DESIGNED BY:	DRAWN BY:	APPROVED BY:
K.H.	K.H.	M.B.

PROJECT

PROPOSED WAREHOUSE DEVELOPMENT  
363 ENTREPRENEUR CRESCENT, OTTAWA

DRAWING TITLE

GENERAL NOTES

PROJECT NO. 220487	<b>C001</b>
DATE OCT 2022	



#### EROSION AND SEDIMENT CONTROL MEASURES:

"CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES"

#### 1 PRIOR TO START OF CONSTRUCTION:

- PRIOR TO THE REMOVAL OF ANY VEGETATIVE COVER, MOVING OF SOIL, AND CONSTRUCTION:
- INSTALL SILT FENCE IMMEDIATELY DOWNSTREAM FROM AREAS TO BE DISTURBED (SEE PLAN FOR LOCATION).
- INSTALL GEOSOCK INSERTS WITH AN OVERFLOW IN ALL THE DOWNSTREAM CATCHBASINS AND MANHOLES
- INSTALL SILT BACK FILTERS IN ALL CONCRETE CATCH BASIN STRUCTURES
- INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION

#### 2 DURING CONSTRUCTION:

- WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY TO SEPTEMBER ONLY.
- MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE.
- PROTECT DISTURBED AREAS FROM RUNOFF
- PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
- INSPECT SILT FENCES, FILTER CLOTHS AND CATCH BASIN SUMPS WEEKLY AND AFTER EVERY MAJOR STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
- CONSTRUCT SWALES AS PER DETAIL
- PLAN TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION
- EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
- DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDS IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
- CONTROL WIND-BLOWN DUST OFF SITE TO ACCEPTABLE LEVELS BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED)
- ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
- NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THIS CONSULTING ENGINEER AND THE CITY DEPARTMENT OF PUBLIC WORKS.
- CONTRACTOR RESPONSIBLE FOR CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING ETC. AT THE END OF EACH WORK DAY.
- PROVIDE GRAVEL ENTRANCE WHEREVER EQUIPMENT LEAVES THE SITE TO PREVENT MUD TRACKING ONTO PAVED SURFACES. GRAVEL BED SHALL BE A MINIMUM OF 15m LONG, 4m WIDE AND 0.3m DEEP AND SHALL CONSIST OF COARSE (50mm CRUSHED) LIMESTONE MATERIAL. MAINTAIN GRAVEL ENTRANCE IN CLEAN CONDITION.
- DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED
- ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER
- TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.

#### 3 AFTER CONSTRUCTION:

- PROVIDE PERMANENT COVER CONSISTING OF TOPSOIL AND SEED TO DISTURBED AREAS.
- REMOVE STRAW BALE FLOW CHECK DAMS, SILT FENCES AND FILTER CLOTHS ON CATCH BASINS AND MANHOLE COVERS AFTER DISTURBED AREAS HAVE BEEN REHABILITATED AND STABILIZED.
- INSPECT AND CLEAN CATCH BASIN SUMPS AND STORM SEWERS.

#### GENERAL:

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

THE CONTRACTOR ACKNOWLEDGES THAT SURFACE EROSION AND SEDIMENT RUNOFF RESULTING FROM THEIR CONSTRUCTION OPERATIONS HAS POTENTIAL TO CAUSE A DETRIMENTAL IMPACT TO ANY DOWNSTREAM WATERCOURSE OR SEWER, AND THAT ALL CONSTRUCTION OPERATIONS THAT MAY IMPACT UPON WATER QUALITY SHALL BE CARRIED OUT IN MANNER THAT STRICTLY MEETS THE REQUIREMENT OF ALL APPLICABLE LEGISLATION AND REGULATIONS.

AS SUCH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THEIR OPERATIONS, AND SUPPLYING AND INSTALLING ANY APPROPRIATE CONTROL MEASURES, SO AS TO PREVENT SEDIMENT LADEN RUNOFF ENTERING ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA.

THE CONTRACTOR ACKNOWLEDGES THAT NO ONE MEASURE IS LIKELY TO BE 100% EFFECTIVELY FOR EROSION PROTECTION AND CONTROLLING SEDIMENT RUNOFF AND DISCHARGES FROM THE SITE, THEREFORE, WHERE NECESSARY THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES ARRANGED IN SUCH MANNER AS TO MITIGATE SEDIMENT RELEASE FROM THE CONSTRUCTION OPERATIONS AND ACHIEVE SPECIFIC MAXIMUM PERMITTED CRITERIA WHERE APPLICABLE. SUGGESTED ON-SITE MEASURES MAY INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING METHODS: SEDIMENT PONDS, FILTER BAGS, PUMP FILTERS, SETTLING TANKS, SILT FENCE, STRAW BALES, FILTER CLOTHS, CATCH BASIN FILTERS, CHECK DAMS AND/OR OTHER RECOGNIZED TECHNOLOGIES AND METHOD AVAILABLE AT THE TIME OF CONSTRUCTION. SPECIFIC MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF OPS5 577 WHERE APPROPRIATE, OR IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

WHERE, IN THE OPINION OF THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY, THE INSTALLED CONTROL MEASURES FAIL TO PERFORM ADEQUATELY, THE CONTRACTOR SHALL SUPPLY AND INSTALL ADDITIONAL OR ALTERNATIVE MEASURES AS DIRECTED BY THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY. AS SUCH, THE CONTRACTOR SHALL HAVE ADDITIONAL CONTROL MATERIALS ON SITE AT ALL TIME WHICH ARE EASILY ACCESSIBLE AND MAY BE IMPLEMENTED BY HIM AT THE MOMENT'S NOTICE.

PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT TO THE CONTRACT ADMINISTRATOR SIX COPIES OF A DETAILED EROSION AND SEDIMENT CONTROL PLAN (ESCP). THE ESCP WILL CONSIST OF WRITTEN DESCRIPTION AND DETAILED DRAWINGS INDICATING THE ON-SITE ACTIVITIES AND MEASURES TO BE USED TO CONTROL EROSION AND SEDIMENT MOVEMENT FOR EACH STEP OF THE WORK.

#### CONTRACTOR'S RESPONSIBILITIES:

THE CONTRACTOR SHALL ENSURE THAT ALL WORKERS, INCLUDING SUB-CONTRACTOR, IN THE WORKING AREA ARE AWARE OF THE IMPORTANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES AND INFORMED OF THE CONSEQUENCES OF THE FAILURE TO COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AGENCIES.

THE CONTRACTOR SHALL PERIODICALLY, AND WHEN REQUESTED BY THE CONTRACT ADMINISTRATOR, CLEAN OUT ACCUMULATED SEDIMENT DEPOSITS AS REQUIRED AT THE SEDIMENT CONTROL DEVICES, INCLUDING THOSE DEPOSITS THAT MAY ORIGINATE FROM OUTSIDE THE CONSTRUCTION AREA. ACCUMULATED SEDIMENT SHALL BE REMOVED IN SUCH A MANNER THAT PREVENTS THE DEPOSITION OF THIS MATERIAL INTO THE SEWER WATERCOURSE AND AVOIDS DAMAGE TO CONTROL MEASURES. THE SEDIMENT SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH REQUIREMENTS FRO EXCESS EARTH MATERIAL, AS SPECIFIED ELSEWHERE IN THE CONTRACT.

THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE CONTRACT ADMINISTRATOR ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO EITHER THE WATERCOURSE OR THE STORM SEWER SYSTEM. FAILURE TO REPORT WILL BE CONSTITUTE A BREACH OF THIS SPECIFICATION AND THE CONTRACTOR MAY ALSO BE SUBJECT TO THE PENALTIES IMPOSED BY THE APPLICABLE REGULATORY AGENCY. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING CONTROL MEASURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.

THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, THE MEASURE OR MEASURES, IS NO LONGER REQUIRED. NO CONTROL MEASURE MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE CONTRACT ADMINISTRATOR. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED IN A MANNER THAT AVOIDS THE ENTRY OF ANY EQUIPMENT, OTHER THAN HAND-HELD EQUIPMENT, INTO ANY WATERCOURSE, AND PREVENTS THE RELEASE OF ANY SEDIMENT OR DEBRIS INTO ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE WORKING AREA AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH THE REQUIREMENTS FOR EXCESS EARTH MATERIAL.

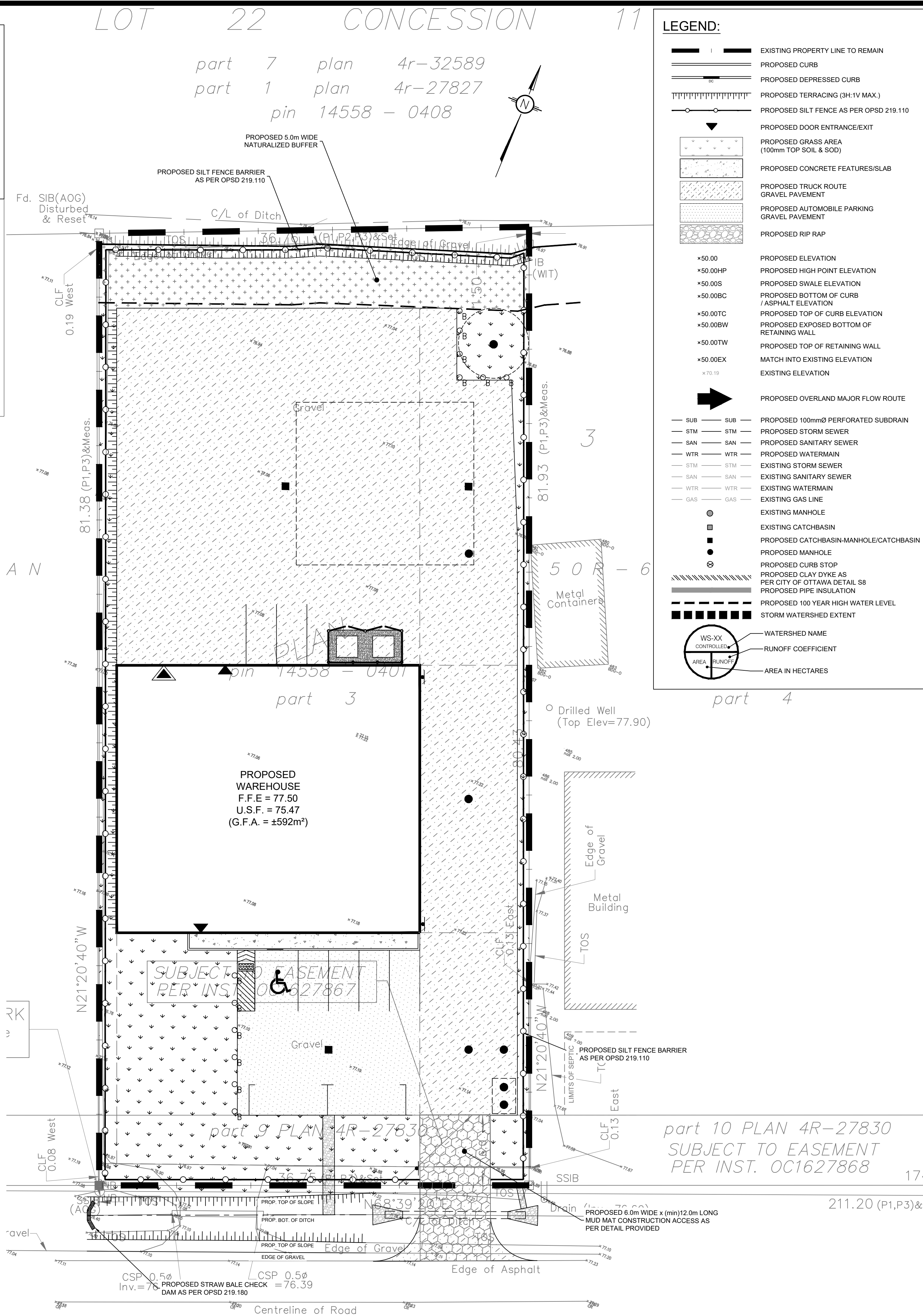
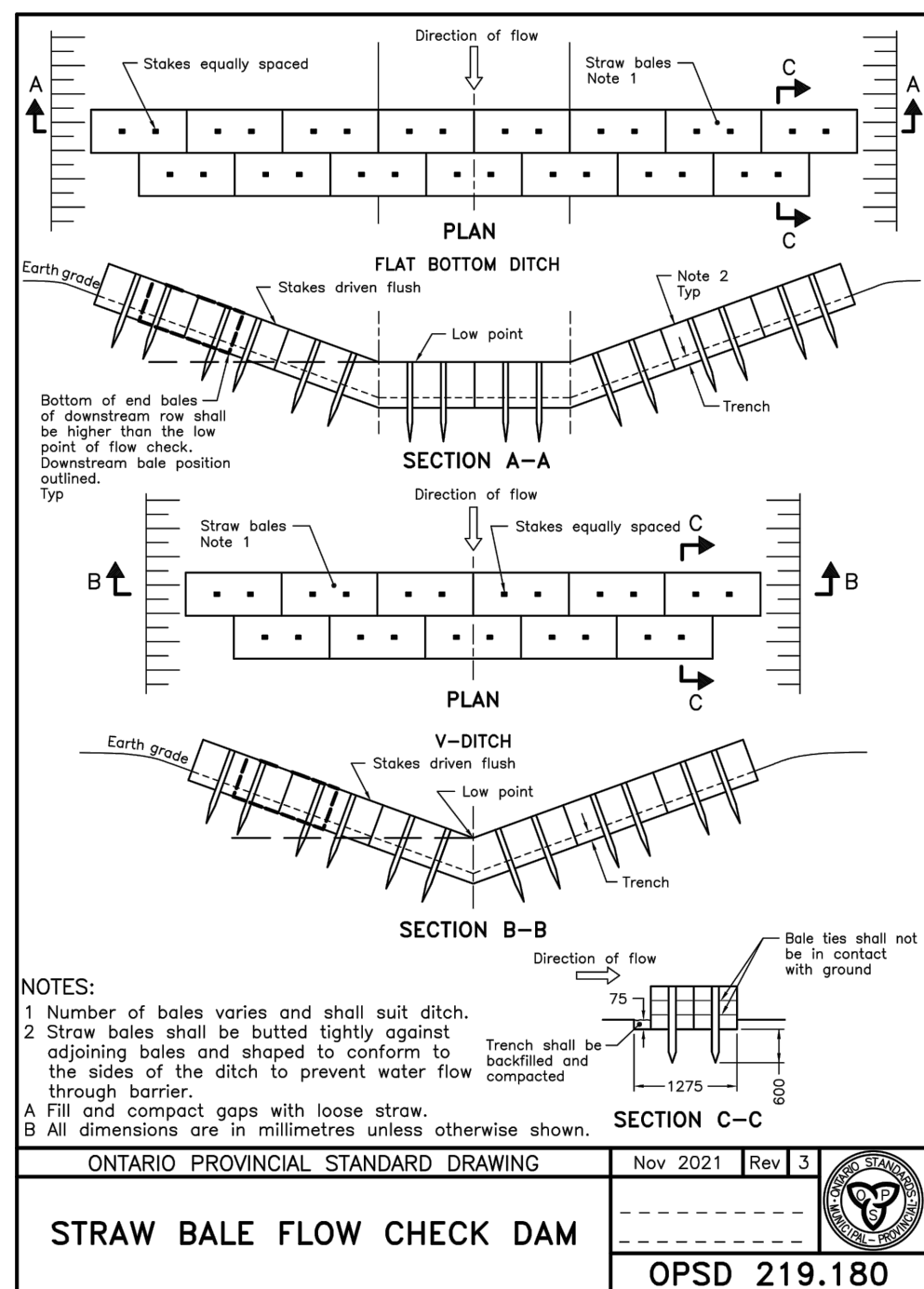
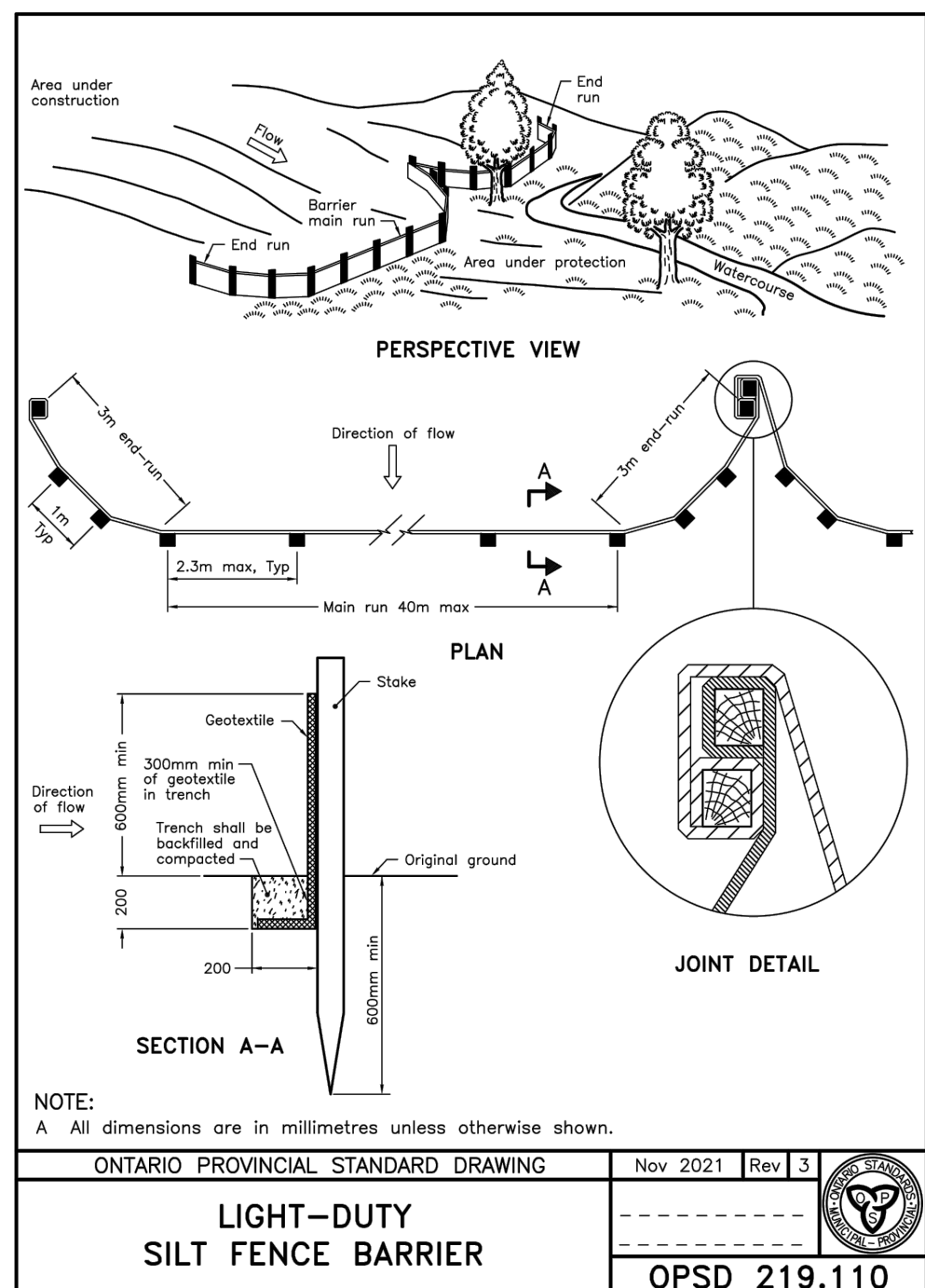
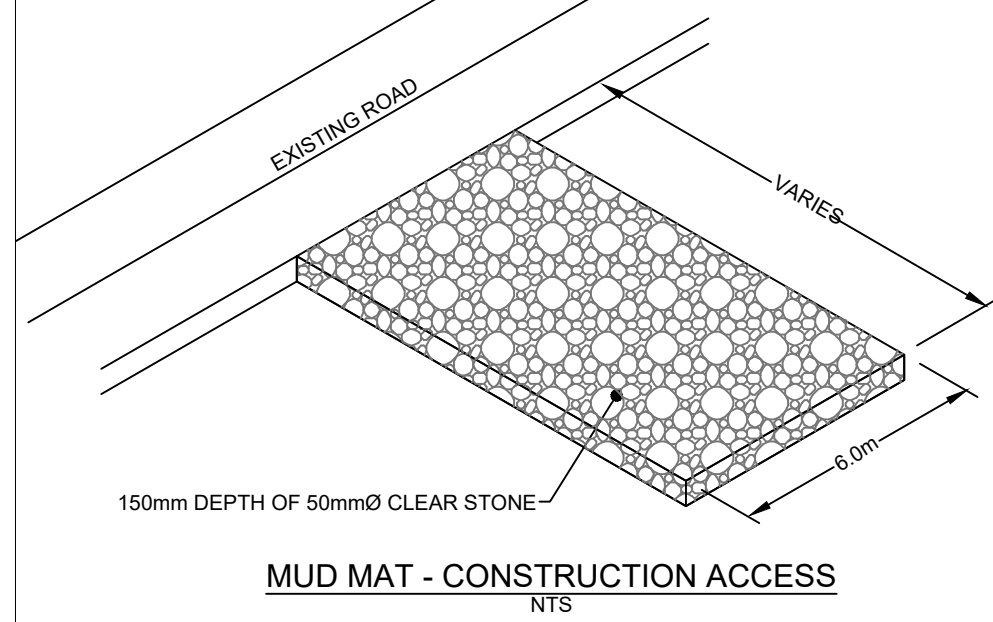
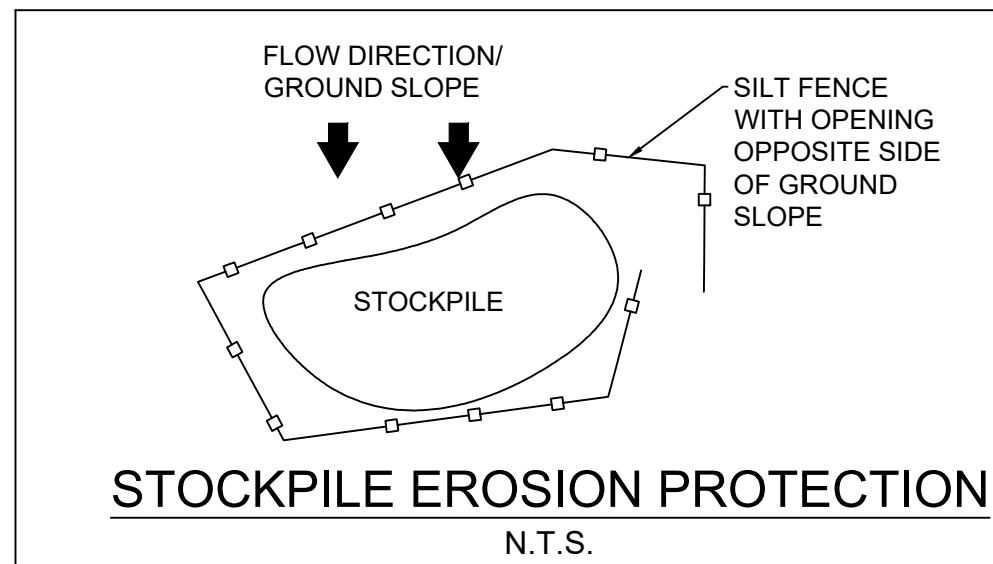
WHERE, IN THE OPINION OF EITHER THE CONTRACT ADMINISTRATOR OR A REGULATORY AGENCY, ANY OF THE TERMS SPECIFIED HEREIN HAVE NOT BEEN COMPLIED WITH OR PERFORMED IN A SUITABLE MANNER, OR TAT ALL, THE CONTRACTOR ADMINISTRATOR OR A REGULATORY AGENCY HAS THE RIGHT TO IMMEDIATELY WITHDRAW ITS PERMISSION TO CONTINUE THE WORK BUT MAY RENEW ITS PERMISSION UPON BEING SATISFIED THAT THE DEFAULTS OR DEFICIENCIES IN THE PERFORMANCE OF THIS SPECIFICATION BY THE CONTRACTOR HAVE BEEN REMEDIED.

#### SPILL CONTROL NOTES:

1. ALL CONSTRUCTION EQUIPMENT SHALL BE RE-FUELED, MAINTAINED, AND STORED NO LESS THAN 30 METRES FROM WATERCOURSE, STEAMS, CREEKS, WOODLOTS, AND ANY ENVIRONMENTALLY SENSITIVE AREAS, OR AS OTHERWISE SPECIFIED.
2. THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT.
3. IN THE EVENT OF A LEAK OR SPILL OF POLLUTANT, DELETERIOUS MATERIAL, OR OTHER SUCH MATERIAL OR SUBSTANCE WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT, THE CONTRACTOR SHALL:
  - 3.1. IMMEDIATELY NOTIFY APPROPRIATE FEDERAL, PROVINCIAL, AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS, AGENCIES, AND AUTHORITIES OF THE INCIDENT IN ACCORDANCE WITH ALL CURRENT LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.
  - 3.2. TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE, AND TO TAKE SUCH MEASURES TO MITIGATE AGAINST ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.
  - 3.3. RESTORE THE AFFECTED AREA TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

#### MUD MAT NOTES:

1. THE GRANULAR MATERIAL WILL REQUIRE PERIODIC REPLACEMENT AS IT BECOMES CONTAMINATED BY VEHICLE TRAFFIC.
2. SEDIMENT SHALL BE CLEANED FROM PUBLIC ROADS AT THE END OF EACH DAY.
3. SEDIMENT SHALL BE REMOVED FROM PUBLIC ROADS BY SHOVELING OR SWEEPING AND DISPOSED OR PROPERLY IN A CONTROLLED SEDIMENT DISPOSAL AREA.



#### USE AND INTERPRETATION OF DRAWINGS:

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THESE DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS A KNOWLEDGE OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK. THE ENGINEER DOES NOT GUARANTEE OR WARRANT DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

#### UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS, OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRI ASSOCIATES LTD. (LRI) WITHOUT OBTAINING LRI'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRI AND TO RELEASE LRI FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRI FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

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#### GENERAL NOTES:

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CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

SCALE: 1:200

No.	REVISIONS	BY	DATE
04	ISSUED FOR SITE PLAN CONTROL AGREEMENT	K.H.	11 APR 2025
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ENGINEERING | INGENIERIE  
5430 Canotek Road | Ottawa, ON, K1J 9G2  
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CLIENT: DUSTIN WILSON  
310 SANCTUARY PRIV.  
OTTAWA, ON

DESIGNED BY: K.H. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED WAREHOUSE DEVELOPMENT  
363 ENTREPRENEUR CRESCENT, OTTAWA

DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN

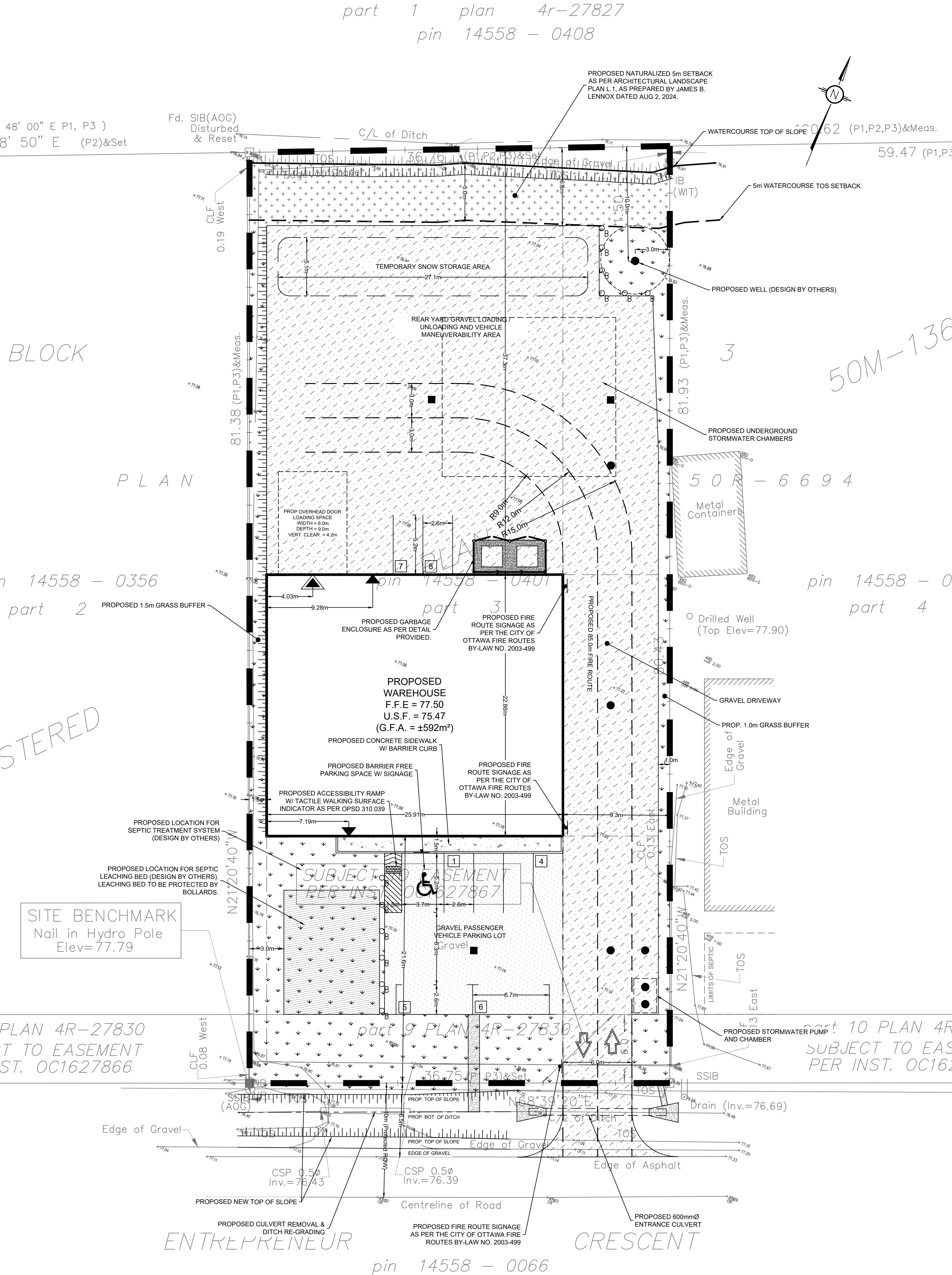
PROJECT NO. 220487  
DATE OCT 2022

C101





KEY PLAN  
N.T.S.



**LEGEND:**

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MIN.)
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED MAN DOOR ENTRANCE/EXIT
- PROPOSED OVERHEAD DOOR
- PROPOSED GRASS AREA (100mm TOP SOIL & SOD)
- PROPOSED NATURALIZED AREA (AS PER LANDSCAPE PLAN L.1)
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED RIP RAP
- PROPOSED ELEVATION
- PROPOSED HIGH POINT ELEVATION
- PROPOSED BOTTOM OF CURB / ASPHALT ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- MATCH INTO EXISTING ELEVATION
- EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED 100mmØ PERFORATED SUBDRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING GAS LINE
- EXISTING MANHOLE
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED MANHOLE
- PROPOSED CURB STOP
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES

DETAILS OF DEVELOPMENT			
DATA		REQUIRED	PROVIDED
ZONING		RG2 (RURAL GENERAL INDUSTRIAL ZONE)	
SETBACKS	FY	15.0m	21.6m
	RY	15.0m	37.3m
	INT.SY	3.0m / 1.5m (MV)	1.5m
	EXT.SY	3.0m	9.3m
NET LOT AREA ( sqm )		3000 sqm	
BUILDING COVERAGE		50 % (MAX)	19.7 %
BUILDING HEIGHT		15.0 m (MAX)	10.8 m
GROSS FLOOR AREA		592 sqm	
No. of UNITS		1	
LOADING SPACES		N/A	N/A
No. OF STOREYS		1	
PARKING:		8*	8
*PARKING SPACE CALCS - AREA D: RURAL (SCHEDULE 1A) WAREHOUSE 0.8 PS / 100m2 @ 549m2 = 4.8 PS (5PS) OFFICE 2.4 P.S. / 100m2 @ 43m2 = 2.4 PS (3PS)			

ARCHITECT  
ABSOLUTE DRAFTING & DESIGN INC.  
1257 DROUIN SIDEROAD, CASSELMAN, ON

LANDSCAPE ARCHITECT  
JAMES B. LENNOX & ASSOCIATES INC.  
3332 CARLING AVE. OTTAWA, ONTARIO K3H 5A8  
Tel: (613) 722-5168 Fax: (866) 343-3942

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ENVIRONMENTAL CONSULTANT  
KILGOUR & ASSOCIATES LTD  
2285 ST. LAURENT BLVD, OTTAWA, ON

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UNLESS THE REVISION TITLE IS ISSUED FOR CONSTRUCTION, THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

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CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

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CIVIL, GEOTECHNICAL, ENVIRONMENTAL ENGINEERS

**LRL**  
ENGINEERING | INGENIERIE  
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CLIENT: DUSTIN WILSON  
310 SANCTUARY PRIV.  
OTTAWA, ON

DESIGNED BY: K.H. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED WAREHOUSE DEVELOPMENT  
363 ENTREPRENEUR CRESCENT, OTTAWA

DRAWING TITLE: SITE PLAN

PROJECT NO: 220487  
DATE: OCT 2022

C201

FILE NUMBER: D07-12-24-0100

PLAN #19238



## PAVEMENT STRUCTURE

COURSE	MATERIAL	THICKNESS (mm)	
		AUTOMOBILE PARKING	TRUCK ROUTE (HEAVY TRAFFIC)
SURFACE	HL 3 A/C (PG 58-28)	--	--
BINDER	HL 8 A/C (PG 58-28)	--	--
BASECOURSE	OPSS GRANULAR "A"	150	150
SUBBASE	OPSS GRANULAR "B" TYPE II	500	600

NOTE:  
IN PREPARATION FOR PAVEMENT CONSTRUCTION AT THIS SITE, ANY SURFICIAL OR NEAR SURFACE/SUBGRADE LEVEL TOPSOIL AND ANY SOFT, WET OR DELETERIOUS MATERIALS SHOULD BE REMOVED FROM THE PROPOSED PAVED AREAS. THE EXPOSED SUBGRADE SHOULD BE INSPECTED AND APPROVED BY GEOTECHNICAL PERSONNEL AND ANY SOFT AREAS EVIDENT SHOULD BE SUBEXCAVATED AND REPLACED WITH SUITABLE EARTH BORROW APPROVED BY THE GEOTECHNICAL ENGINEER. THE SUBGRADE SHOULD BE SHAPED AND CROWNED TO PROMOTE DRAINAGE OF THE SITE DRAINAGE STRUCTURES. FOLLOWING APPROVAL OF THE PREPARATION OF THE SUBGRADE, THE PAVEMENT GRANULARS MAY BE PLACED. REFER TO GEOTECHNICAL INVESTIGATION REPORT PREPARED BY LRL ASSOCIATES DATED FEBRUARY 2023, REV DECEMBER 2024.

### GENERAL NOTES

- ALL WORKS MATERIALS SHALL CONFIRM TO THE LAST REVISION OF THE STANDARDS AND SPECIFICATIONS FOR THE CITY OF OTTAWA.
- ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), WHERE APPLICABLE. LOCAL UTILITY STANDARDS AND MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY WHERE REQUIRED.
- THE CONTRACTORS SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTORS SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTORS TO CONFIRM UTILITY LOCATIONS AND NOTIFY ENGINEER OF POSSIBLE CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT CONTRACTORS EXPENSE.
- ANY AREA BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTORS EXPENSE.
- RELOCATING OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR DETECTED BY THE ENGINEER AT THE EXPENSE OF DEVELOPERS.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 'OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS'. THE GENERAL CONTRACTORS SHALL BE DEEMED TO BE THE CONTRACTOR AS DEFINED IN THE ACT.
- ALL THE CONSTRUCTION SIGNAGE MUST CONFIRM TO THE MINISTRY OF TRANSPORTATION OF ONTARIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PER LATEST AMENDMENT.
- THE CONTRACTOR IS ADVISED THAT WORKS BY OTHERS MAY BE ONGOING DURING THE PERIOD OF THE CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES TO PREVENT CONFLICTS.
- ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE.
- THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS PRIOR WRITTEN APPROVAL IS RECEIVED FROM THE ENGINEER.
- ALL CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT.
- FOR DETAILS RELATING TO STORMWATER MANAGEMENT REFER TO THE SITE SERVING AND STORMWATER MANAGEMENT REPORT.
- ALL SEWERS CONSTRUCTED WITH GRADES LESS THAN 1.0% SHALL BE INSTALLED USING LASER ALIGNMENT AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED AND TO BEAR THE COST OF THE SAME.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL BEDDING, OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH AS SPECIFIED BY OPSD IS EXCEEDED.
- ALL PIPE/CULVERT SECTION SIZES REFER TO INSIDE DIMENSIONS.
- ALL CULVERTS TO CONFORM TO CITY OF OTTAWA STANDARD MATERIAL SPECIFICATION MS-18.3 & OPSS MUNI 1840.
- SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATELY.
- ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REVIEW WITH CONTRACT ADMINISTRATOR AND THE CITY OF OTTAWA PRIOR TO ANY TREE CUTTING/REMOVAL.
- DRAWINGS SHALL BE READ ON CONJUNCTION WITH THE SITE PLAN.
- THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER ON SET OF AS CONSTRUCTED SITE SERVING AND GRADING DRAWINGS.
- BENCHMARKS: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE SITE BENCHMARK(S) HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION DEPICTED ON THIS PLAN.

### SITE GRADING NOTES

- ALL GRANULAR AND PAVEMENT FOR ROADS/PARKING AREAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS (AS APPLICABLE).
- ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD AND PARKING AREAS ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. R10 AND OPSD 509.010 AND OPSS 310.
- GRANULAR 'A' SHALL BE PLACED TO A MINIMUM THICKNESS OF 300MM AROUND ALL STRUCTURES WITHIN THE PAVEMENT AREA.
- SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 300MM LIFTS.
- ALL WORK ON THE MUNICIPAL RIGHT OF WAY AND EASEMENTS TO BE INSPECTED BY THE MUNICIPALITY PRIOR BACKFILLING.
- CONTRACTOR TO OBTAIN A ROAD CUT PERMIT 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL ROAD ALLOWANCE, IF REQUIRED BY THE MUNICIPALITY.
- ALL PAVEMENT MARKING AND SITE SIGNAGE SHALL BE PLACED PER ARCHITECTURAL SITE PLAN. LINE PAINTING AND DIRECTIONAL SYMBOLS SHALL BE APPLIED WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT PAINT.
- REFER TO ARCHITECTURAL SITE PLAN FOR DIMENSIONS AND SITE DETAILS.
- STEP JOINTS ARE TO BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT. ALL JOINTS MUST BE SEALED.
- WHERE APPLICABLE THE CONTRACTOR IS TO SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SHOP DRAWINGS MUST BE SITE SPECIFIC, SIGNED AND SEALED BY A LICENSED ENGINEER.

### ROADWORK SPECIFICATIONS

- ROADWORK TO BE COMPLETED IN ACCORDANCE WITH GEOTECHNICAL REPORT, DATED DECEMBER 2024.
- ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND STOCK PILLED ON SITE AS DIRECTED BY THE MUNICIPAL AUTHORITY.
- THE SUBGRADE SHALL BE CROWNED AND SLOPED AT LEAST 2% AND PROOF ROLLED WITH HEAVY ROLLERS.
- SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'A', TYPE II COMPACTED IN MAXIMUM 300MM LIFTS.
- ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO MINIMUM OF 100% STANDARD PROCTOR DENSITY MAXIMUM DRY DENSITY (SPMDD).

BLOCK

PLAN

pin 14558 - 0356

part 2

REGISTERED

SITE BENCHMARK  
Nail in Hydro Pole  
Elev=77.79

SITE BENCHMARK  
NAIL IN HYDRO POLE  
ELEV = 77.79

part 8 PLAN 4R-27830  
SUBJECT TO EASEMENT  
PER INST. OC1627866

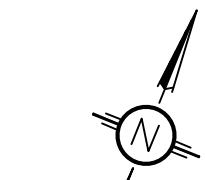
ENTREPRENEUR

pin 14558 - 0066

part 1 plan 4r-27827  
pin 14558 - 0408

PROPOSED NATURALIZED  
5.0m SETBACK

CONTRACTOR TO TERRACE DOWN  
TO TIE TO EXISTING AT A MAXIMUM  
3H:1V SLOPE UNLESS OTHERWISE  
INDICATED



EXISTING TOP OF SLOPE 190.62 (P1,P2,P3)&Meas.

59.47 (P1,P3)

5m TOS SETBACK

PROPOSED DRILLED WELL TO BE  
PROTECTED FROM VEHICULAR TRAFFIC  
BY BOLLARDS

81.3 (P1,P3)&Meas.

CONTRACTOR TO TERRACE  
DOWN TO TIE TO EXISTING AT  
A MAXIMUM 3:1 SLOPE UNLESS  
OTHERWISE INDICATED

PROPOSED TRUCK ROUTE GRAVEL  
PAVEMENT WITHIN DRIVEWAY AS PER  
PAVEMENT STRUCTURE TABLE

Drilled Well  
(Top Elev=77.90)

PROPOSED WAREHOUSE  
F.F.E = 77.50  
U.S.F. = 75.47  
(G.F.A. = ±592m²)

PROPOSED CONCRETE SIDEWALK  
& CONCRETE BARRIER CURB AS  
PER DETAIL SC1.1

PROPOSED AUTOMOBILE PARKING  
GRAVEL PAVEMENT WITHIN PARKING  
SPACES AS PER PAVEMENT  
STRUCTURE TABLE

PROPOSED SEPTIC AREA TO BE  
PROTECTED FROM VEHICULAR  
TRAFFIC BY BOLLARDS

ALL GRASS AREAS TO BE REINSTATED  
WITH 100mm TOPSOIL & SOD

part 10 PLAN 4R-27830

SUBJECT  
PER INS

Bearings are grid, derived and are referred to the Central Meridian of  
MTM Zone 9 ( 76°30' West Longitude ) NAD-83 (original).

## ELEVATION NOTES

- Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
- It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

## UTILITY NOTES

- This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
- Only visible surface utilities were located.
- A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

## LEGEND:

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	PROPOSED DEPRESSED CURB
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	PROPOSED TRUCK ROUTE GRAVEL PAVEMENT
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	PROPOSED RIP RAP
	PROPOSED ELEVATION
	PROPOSED HIGH POINT ELEVATION
	PROPOSED SWALE ELEVATION
	PROPOSED BOTTOM OF CURB / ASPHALT ELEVATION
	PROPOSED TOP OF CURB ELEVATION
	PROPOSED EXPOSED BOTTOM OF RETAINING WALL
	PROPOSED TOP OF RETAINING WALL
	MATCH INTO EXISTING ELEVATION
	EXISTING ELEVATION
	PROPOSED OVERLAND MAJOR FLOW ROUTE
	PROPOSED 100mm PERFORATED SUBDRAIN
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
	PROPOSED WATERMAIN
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN
	EXISTING GAS LINE
	EXISTING MANHOLE
	EXISTING CATCHBASIN
	PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
	PROPOSED MANHOLE
	PROPOSED CURB STOP
	PROPOSED CLAY DYKE AS PER CITY OF OTTAWA DETAIL S8
	PROPOSED PIPE INSULATION
	PROPOSED 100 YEAR HIGH WATER LEVEL
	STORM WATERSHED EXTENT
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	RUNOFF COEFFICIENT
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5m 2 0 5m  
SCALE: 1:200

04 ISSUED FOR SITE PLAN CONTROL AGREEMENT K.H. 11 APR 2025

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01 ISSUED FOR SITE PLAN CONTROL K.H. 10 OCT 2023

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CIVIL, GEOTECHNICAL, ENVIRONMENTAL ENGINEERS



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5430 Canotek Road | Ottawa, ON, K1J 9G2  
www.lrl.ca | (613) 842-3434

CLIENT: DUSTIN WILSON  
310 SANCTUARY PRIV.  
OTTAWA, ON

DESIGNED BY: K.H. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED WAREHOUSE DEVELOPMENT  
363 ENTREPRENEUR CRESCENT, OTTAWA

DRAWING TITLE: GRADING AND DRAINAGE PLAN

PROJECT NO. 220487

DATE: OCT 2022

C301

FILE NUMBER: D07-12-24-0100

PLAN 19238



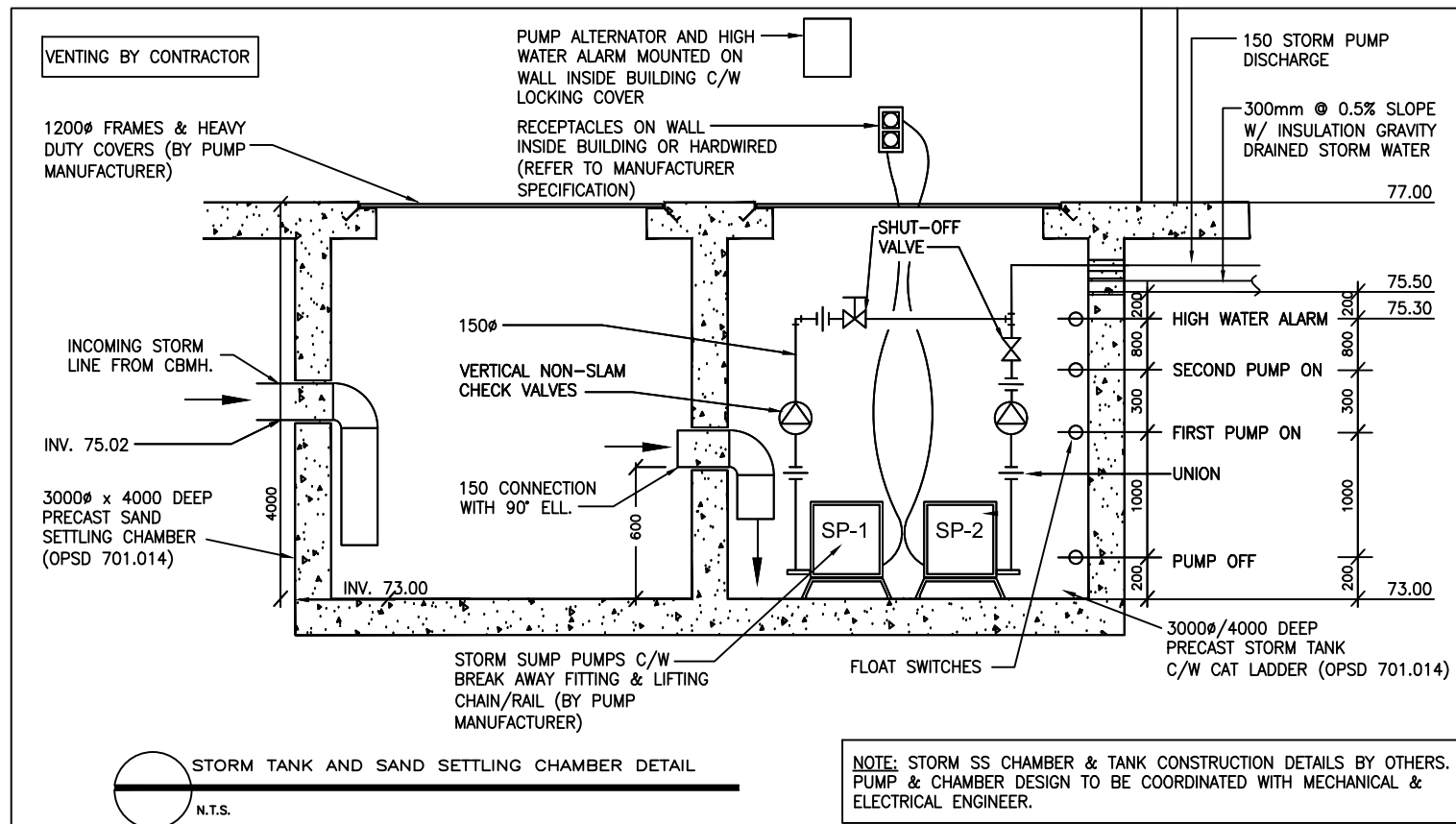
## SANITARY, FOUNDATION DRAIN, STORM SEWER AND WATERMAIN NOTES

## GENERAL

1. LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.
2. ALL MAINTENANCE STRUCTURE AND CATCH BASIN EXCAVATIONS TO BE BACKFILLED WITH GRANULAR MATERIAL COMPACTED TO 98% STANDARD PROCTOR DENSITY. A MINIMUM OF 300MM AROUND STRUCTURES.
3. AS PER THE GEOTECHNICAL INVESTIGATION, CLAY DYKES TO BE INSTALLED WITHIN ALL SERVICES TRENCHES, DOWNSTREAM FROM EACH OF THE MANHOLE AND CATCH BASIN STRUCTURES. THE DYKES SHOULD EXTEND FROM THE BASE OF THE SERVICE TRENCH TO THE SUBGRADE LEVEL, HAVING A MINIMUM WIDTH OF 1.0m.

## STORM

4. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
5. CATCH BASIN SHALL BE IN ACCORDANCE WITH OPSD 705.010.
6. ALL CATCH BASINS SHALL HAVE 600MM SUMPS, UNLESS SPECIFIED OTHERWISE.
7. ALL CATCH BASIN LEAD INVERTS TO BE 1.5M BELOW FINISHED GRADE UNLESS SPECIFIED OTHERWISE.
8. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR IS REQUIRED TO PROVIDE AND SHALL BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
9. ALL STORM MANHOLES WITH PIPE LESS THAN 900MM IN DIAMETER SHALL BE CONSTRUCTED WITH A 300MM SUMP AS PER SDG, CLAUSE 6.2.6.

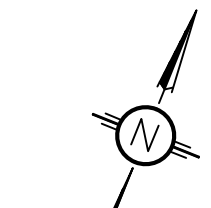


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Fd. SIB  
Dis  
&

PROPOSED SC-310 STORMTECH UNDERGROUND STORMWATER STORAGE CHAMBERS (OR APPROVED EQUIVALENT) w/ IMPERVIOUS LINER AND CONCRETE SLAB (DESIGN BY OTHERS) STORAGE VOLUME PROVIDED = 81.80 m<sup>3</sup> CHAMBER INVERT = 76.78 CHAMBER OVERVERT = 76.77 DEPTH OF FOUNDATION STONE = 0.6m c/w GEOGRID (AS PER GEOTECHNICAL RECOMMENDATION) SYSTEM CONFIGURATION AND MANIFOLD SIZING AS PER ADS STORMTECH CHAMBER SYSTEM SPECS. SEE CIVIL PLAN C801.

part 1 plan 4r-27827  
pin 14558 - 0408



190.62 (P1,P2,P3)&Meas.

59.47 (P1,P3)

-136

3 4

pin 14558 - 0408  
part 3  
rt 4

pin 14558 - 0356  
part 2

REGISTERED

SITE E  
Nail in Hydro Pole  
Elev=77.

part 8 PLAN 4R-27830  
SUBJECT TO EASEMENT  
PER INST. OC1627866

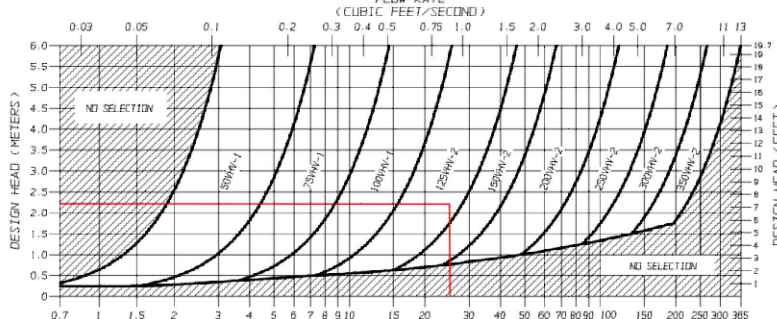
pin 14558 - 0066

## LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3H:1V MAX.)
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- PROPOSED RIP RAP
- PROPOSED ELEVATION
- PROPOSED HIGH POINT ELEVATION
- PROPOSED SWALE ELEVATION
- PROPOSED BOTTOM OF CURB / ASPHALT ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED EXPOSED BOTTOM OF RETAINING WALL
- PROPOSED TOP OF RETAINING WALL
- MATCH INTO EXISTING ELEVATION
- EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED 100mmØ PERFORATED SUBDRAIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING GAS LINE
- EXISTING MANHOLE
- EXISTING CATCHBASIN
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- RUNOFF COEFFICIENT
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HYDROVEK®

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JOHN MEUNIER

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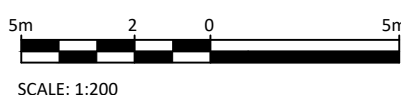
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SCALE: 1:200

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02	CONTROL	K.H.	29 AUG 2024
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No. REVISIONS BY DATE



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www.lri.ca | (613) 842-3434

CLIENT: DUSTIN WILSON  
310 SANCTUARY PRIV.  
OTTAWA, ON

DESIGNED BY: K.H. DRAWN BY: K.H. APPROVED BY: M.B.

PROJECT: PROPOSED WAREHOUSE DEVELOPMENT  
363 ENTREPRENEUR CRESCENT, OTTAWA

## DRAWING TITLE

SERVICING AND STORMWATER  
MANAGEMENT PLAN

PROJECT NO.

220487

DATE

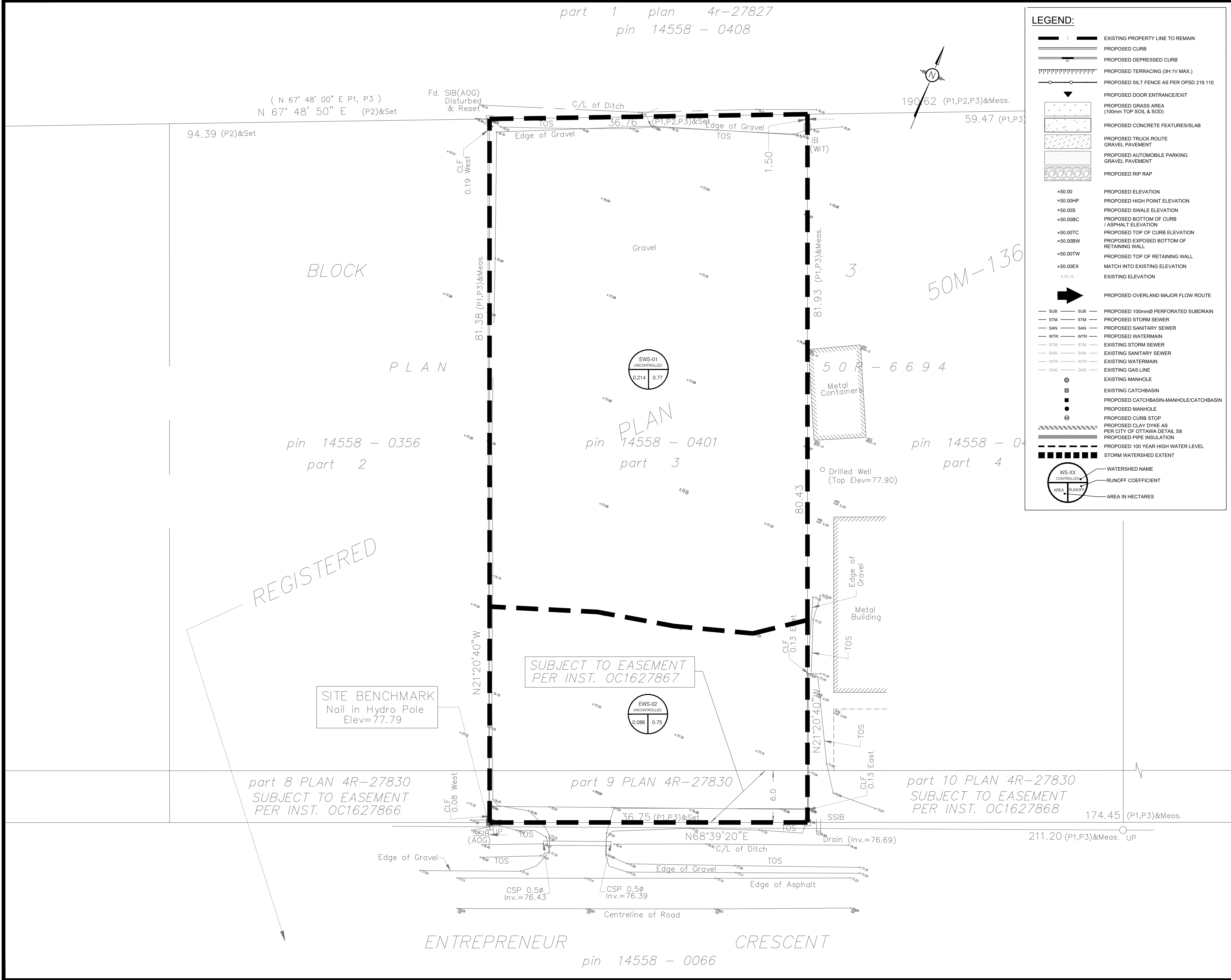
OCT 2022

C401

PLAN #19238

FILE NUMBER: D07-12-24-0100





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PROJECT: PROPOSED WAREHOUSE DEVELOPMENT  
363 ENTREPRENEUR CRESCENT, OTTAWA

DRAWING TITLE: PRE-DEVELOPMENT  
WATERSHED PLAN

PROJECT NO. 220487


DATE: OCT 2022




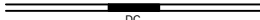

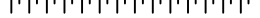
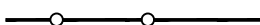



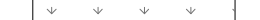
C701

FILE NUMBER: D07-12-24-0100

PLAN #19238





	EXISTING PROPERTY LINE TO REMAIN
	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED TERRACING (3H:1V MAX.)
	PROPOSED SILT FENCE AS PER OPD 219.110
	PROPOSED DOOR ENTRANCE/EXIT
	PROPOSED GRASS AREA (100mm TOP SOIL & SOD)
	PROPOSED CONCRETE FEATURES/SLAB
	PROPOSED TRUCK ROUTE GRAVEL PAVEMENT
	PROPOSED AUTOMOBILE PARKING GRAVEL PAVEMENT
	PROPOSED RIP RAP

**PROPOSED OVERLAND MAJOR FLOW ROUTE**

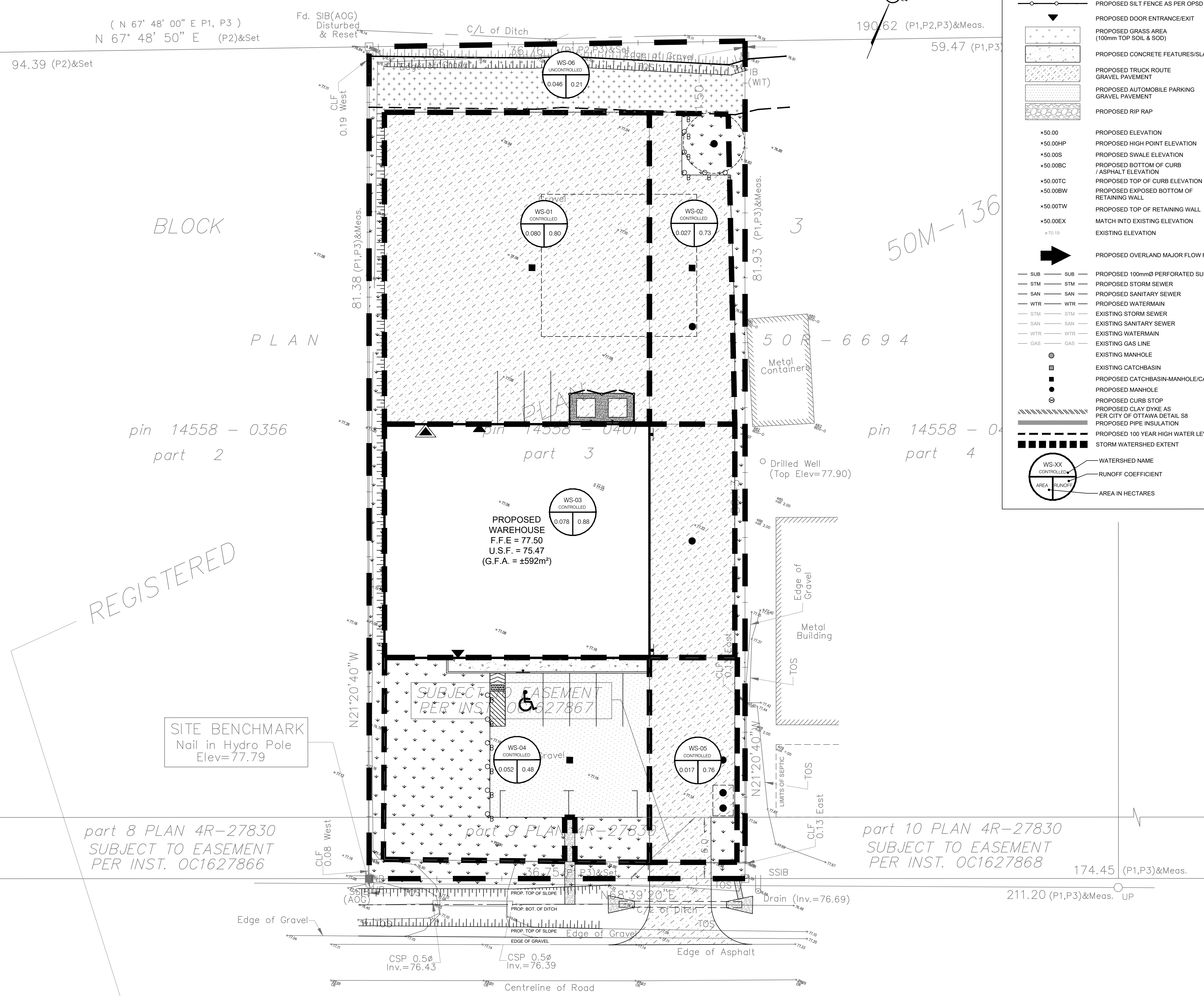
- SUB SUB PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM STM PROPOSED STORM SEWER
- SAN SAN PROPOSED SANITARY SEWER
- WTR WTR PROPOSED WATERMAIN
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- /////// PROPOSED CLAY DRIVE AS PER CITY OF OTTAWA DETAIL S8
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT

**Runoff Calculation Diagram:**

A circle is divided into two sections. The top section is labeled "WS-XX CONTROLLED". The bottom section is labeled "AREA RUNOFF". A line points from the text "WATERSHED NAME" to the top section. Another line points from the text "RUNOFF COEFFICIENT" to the bottom section. A third line points from the text "AREA IN HECTARES" to the bottom section.

C702

LAN #19238



REGISTERED

SITE BENCHMARK  
Nail in Hydro Pole  
Elev=77.79

part 8 PLAN 4R-27830  
SUBJECT TO EASEMENT  
PER INST. OC1627866

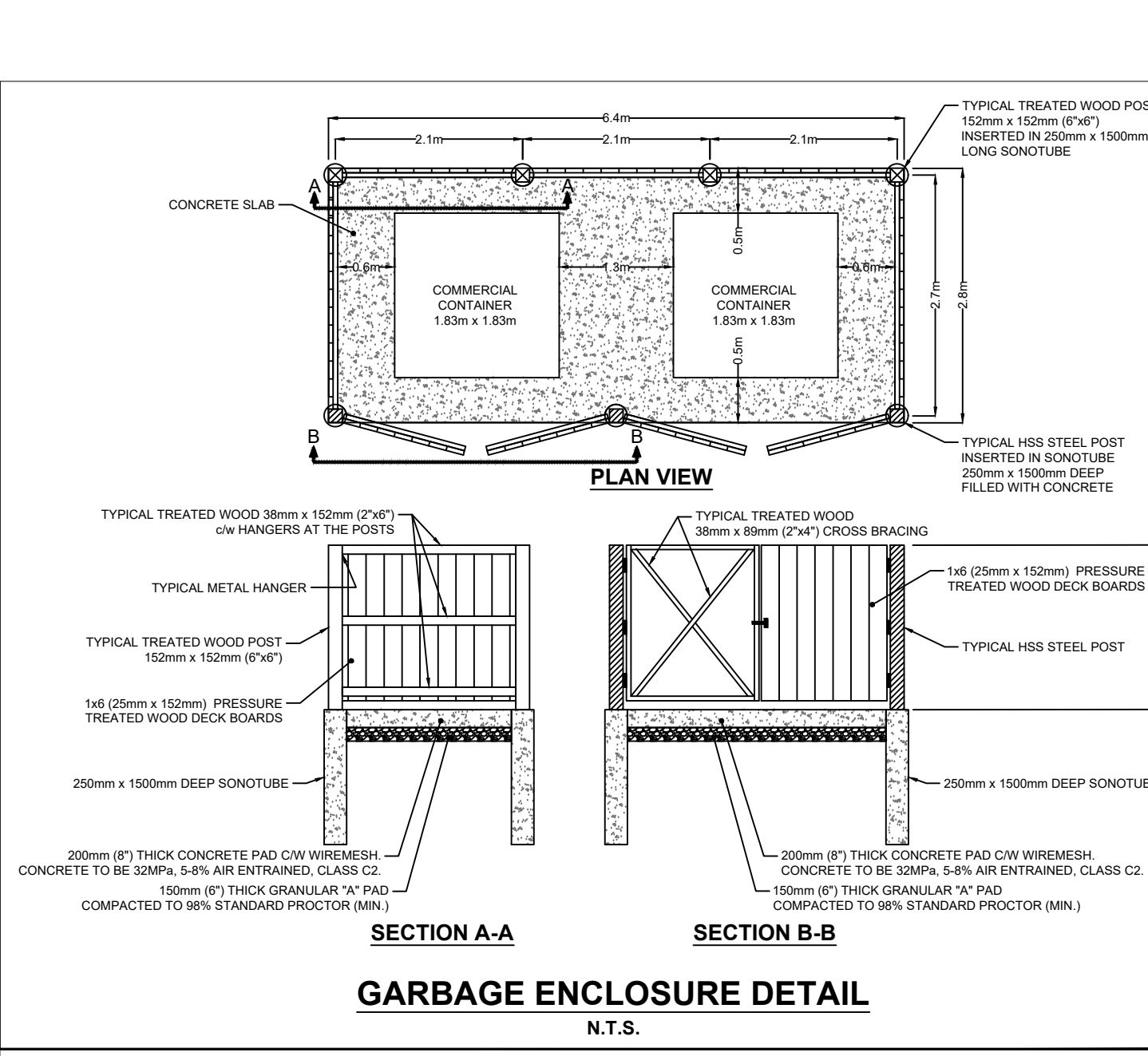
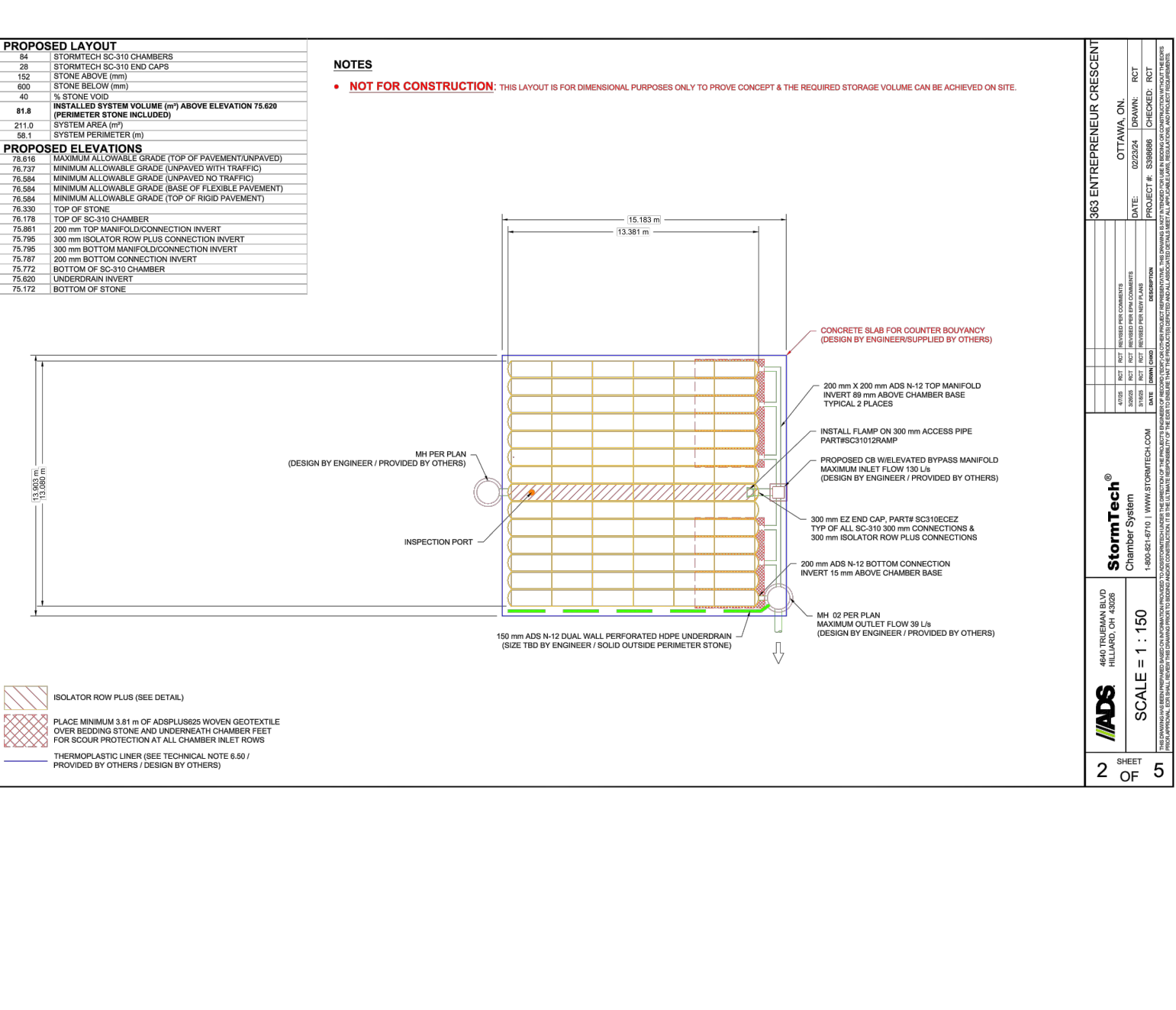
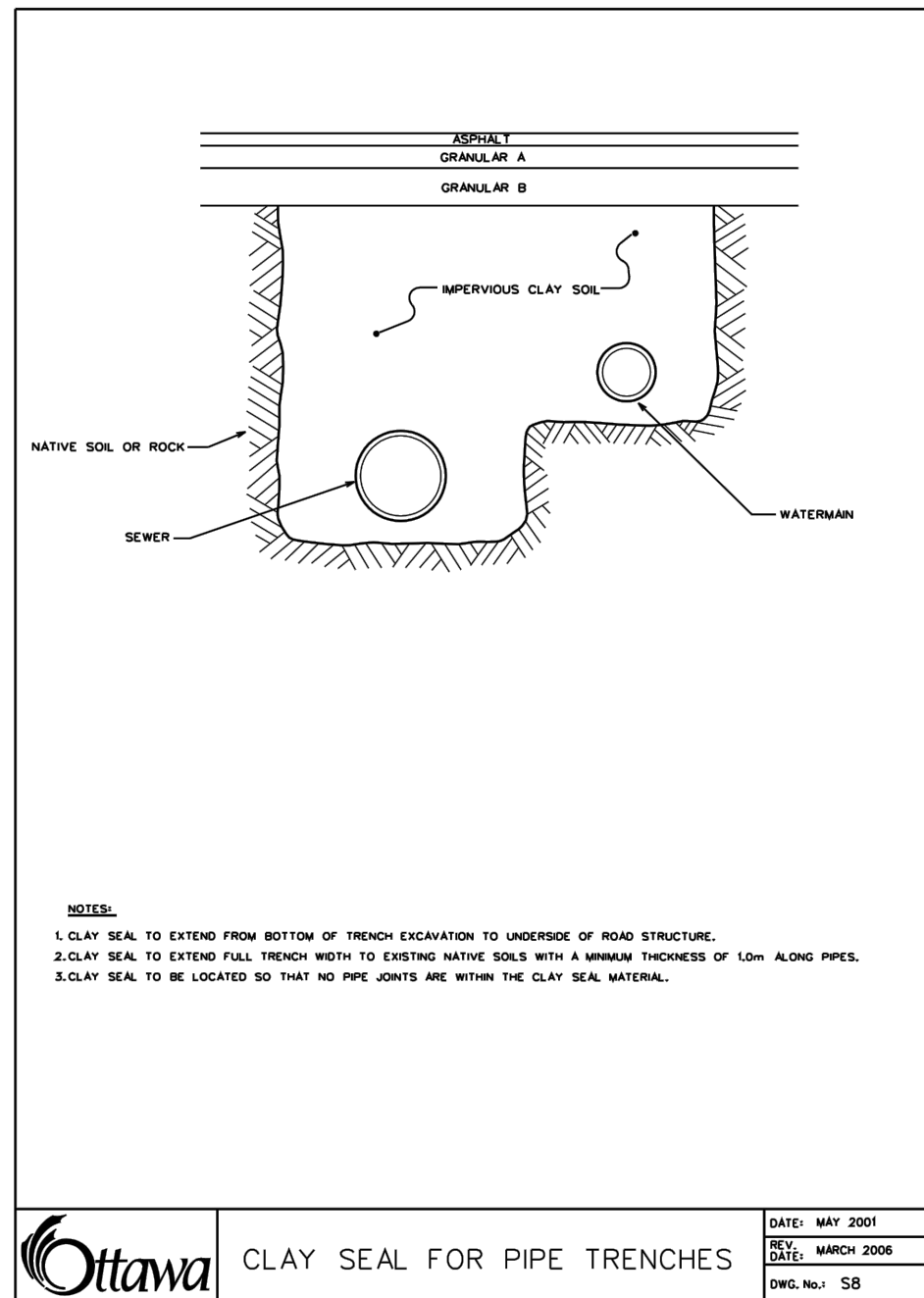
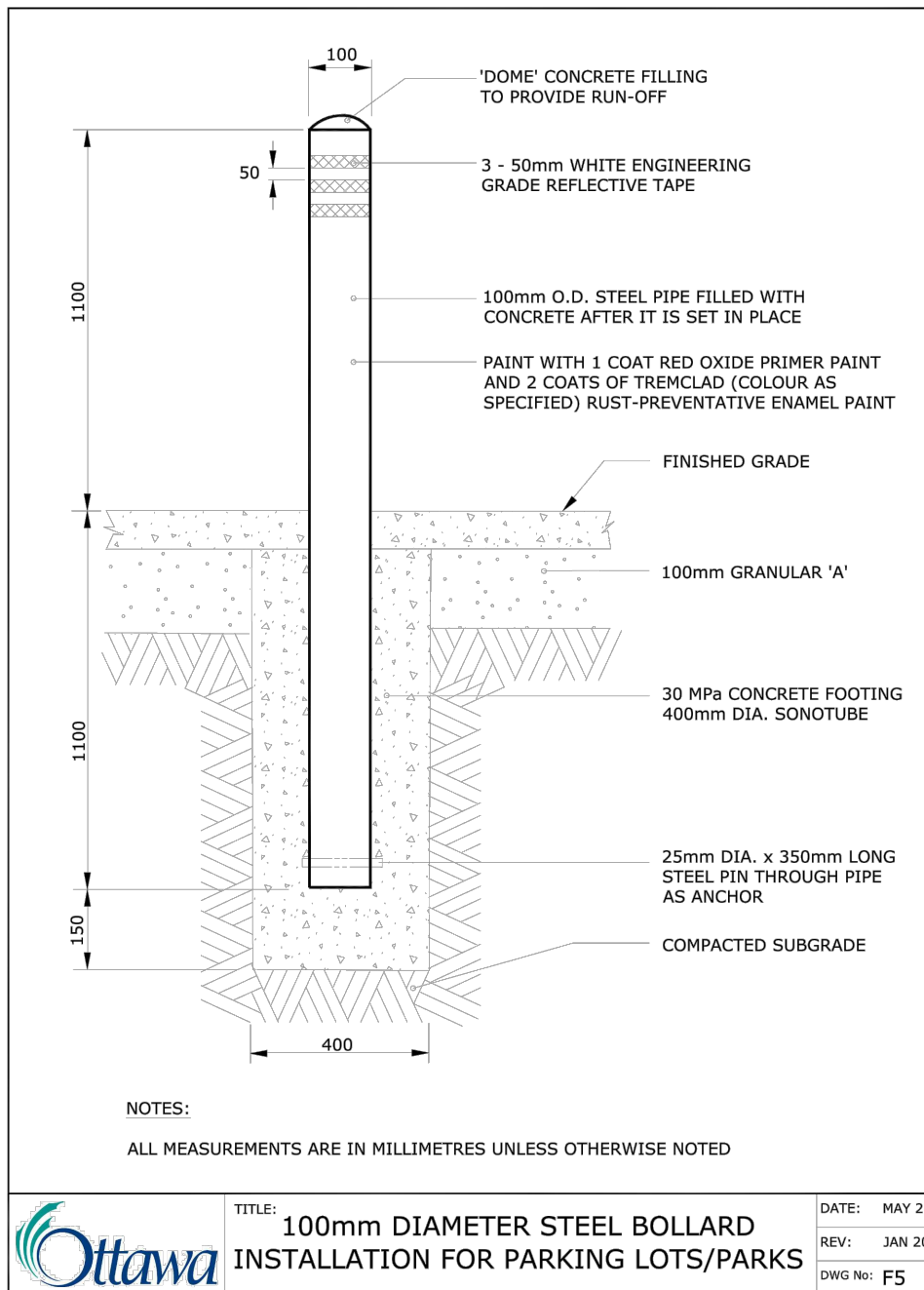
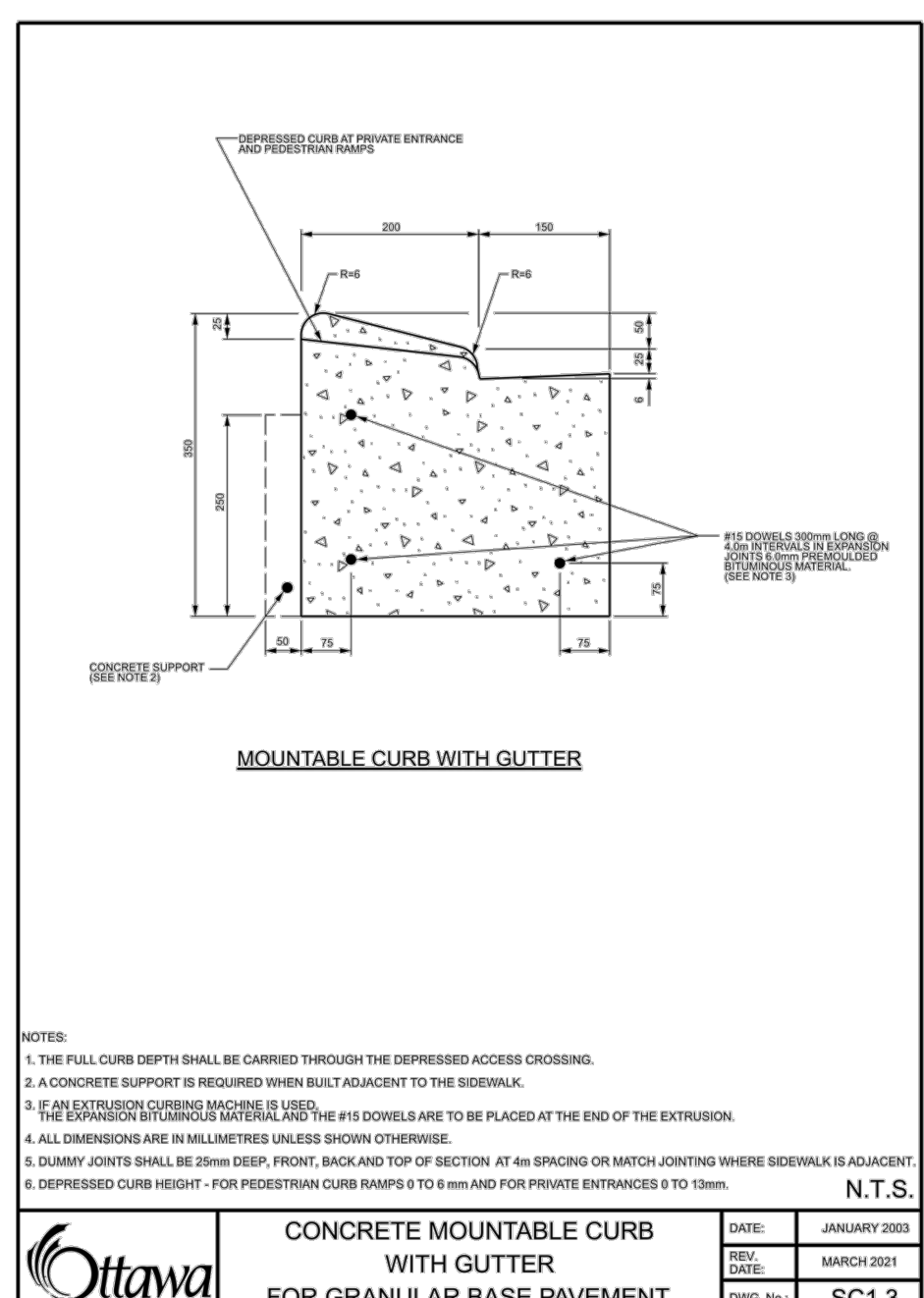
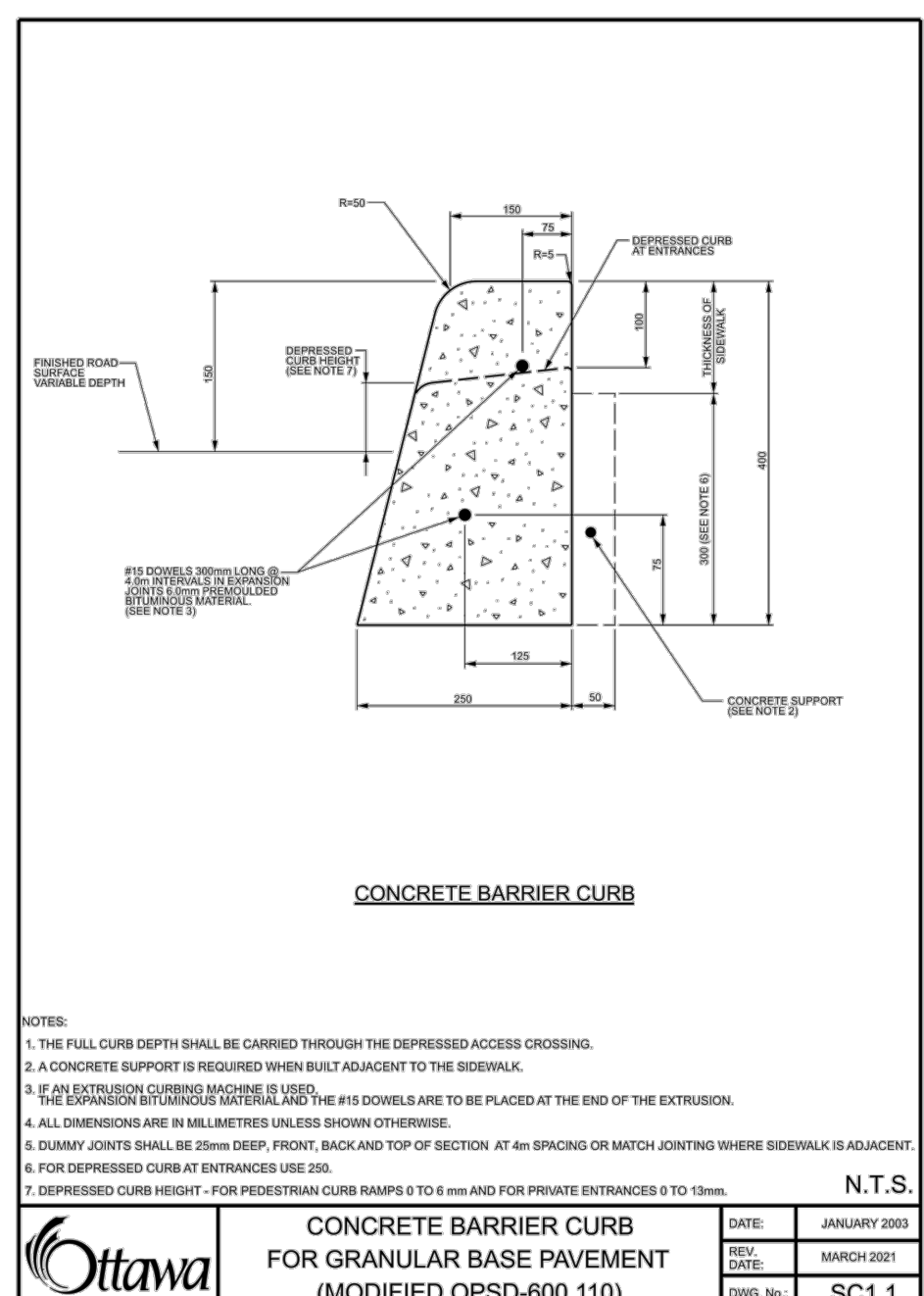
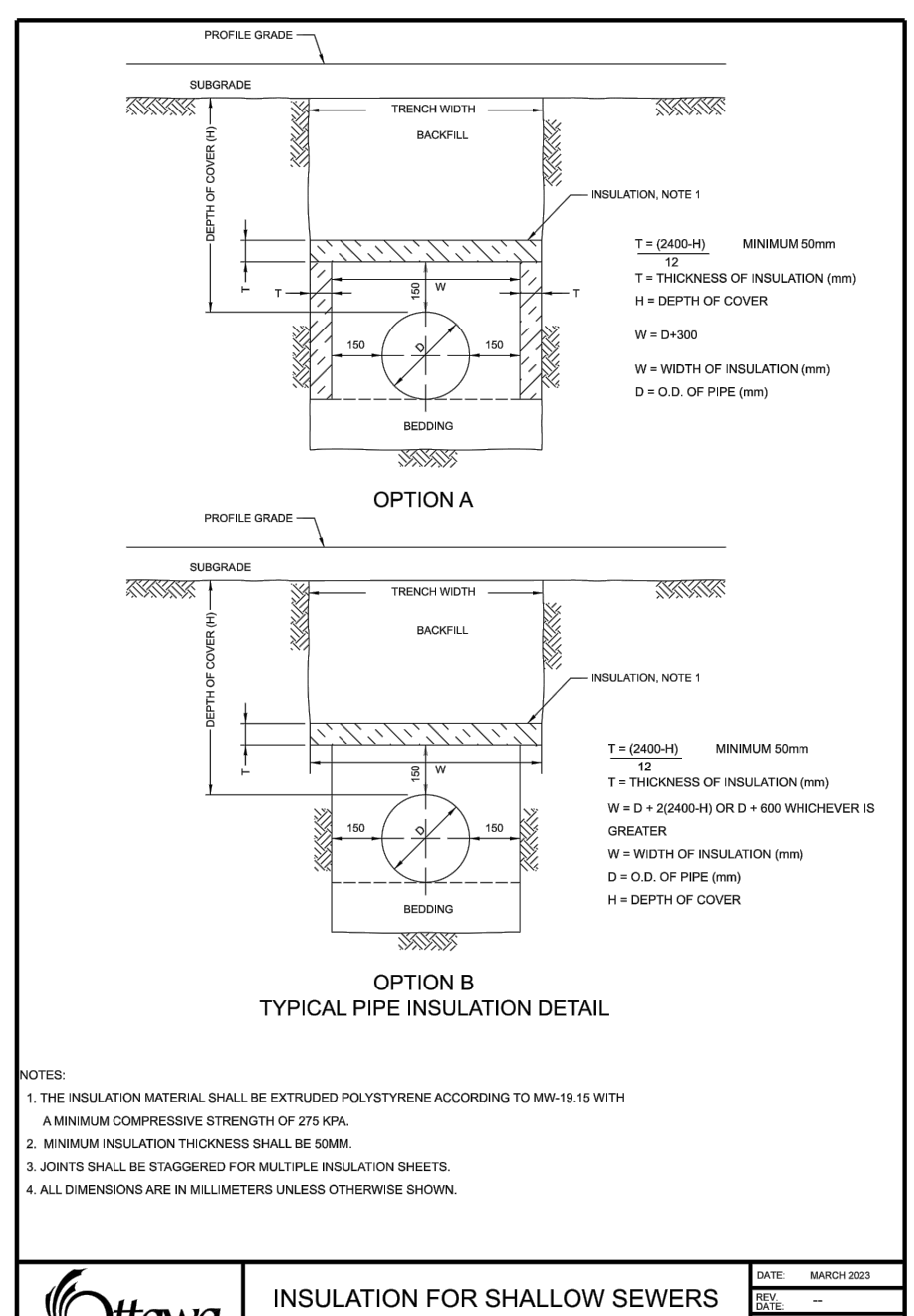
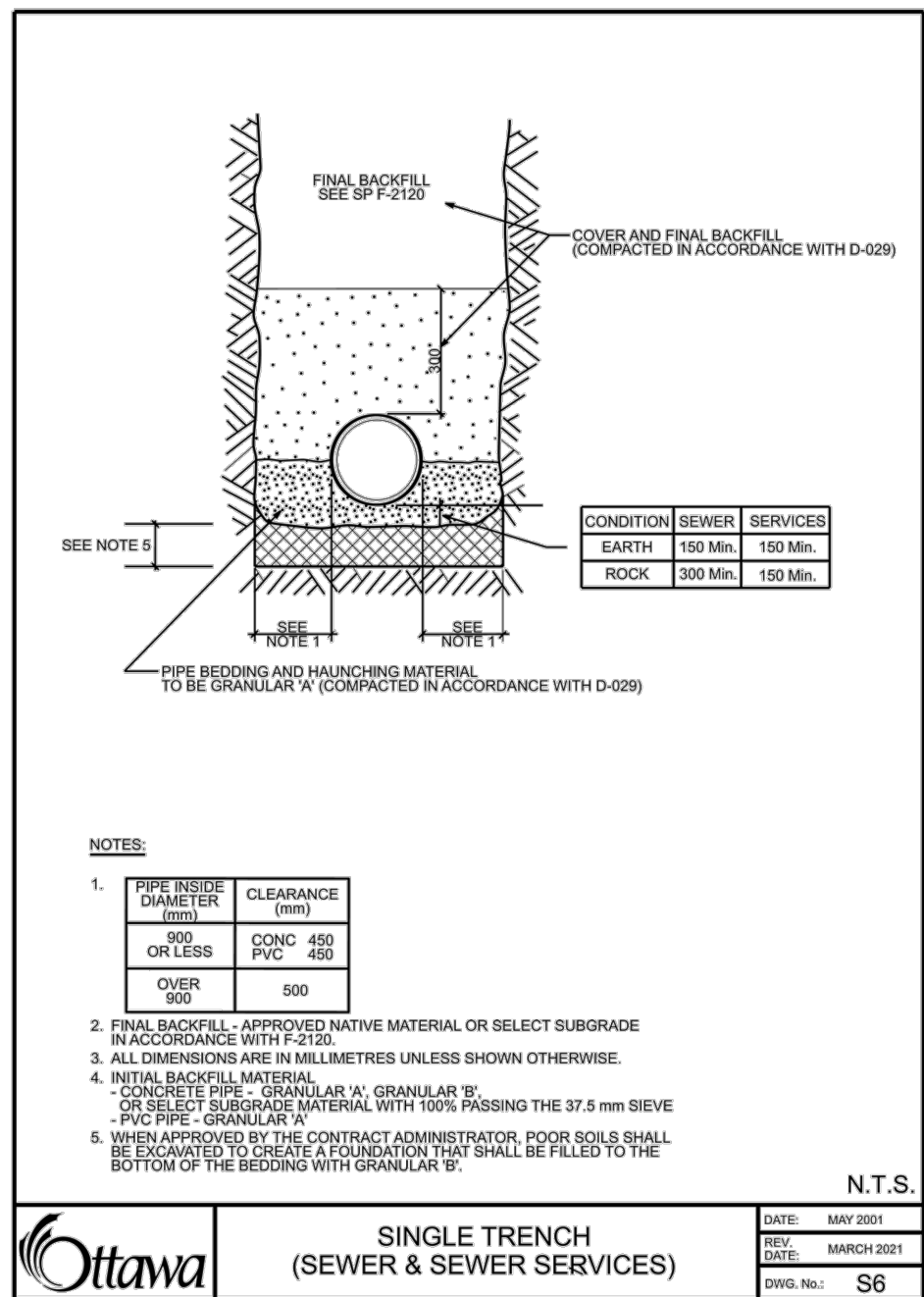
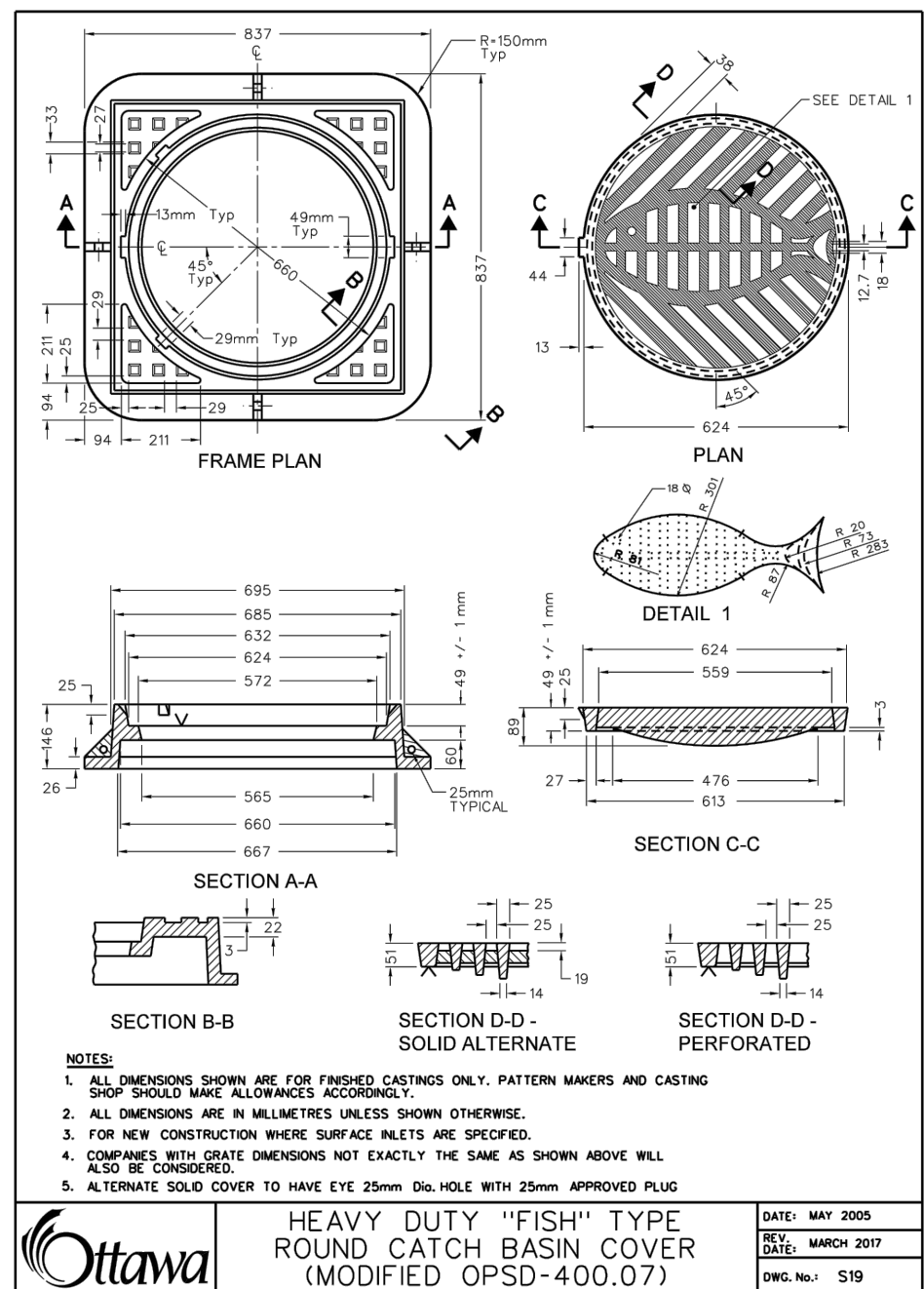
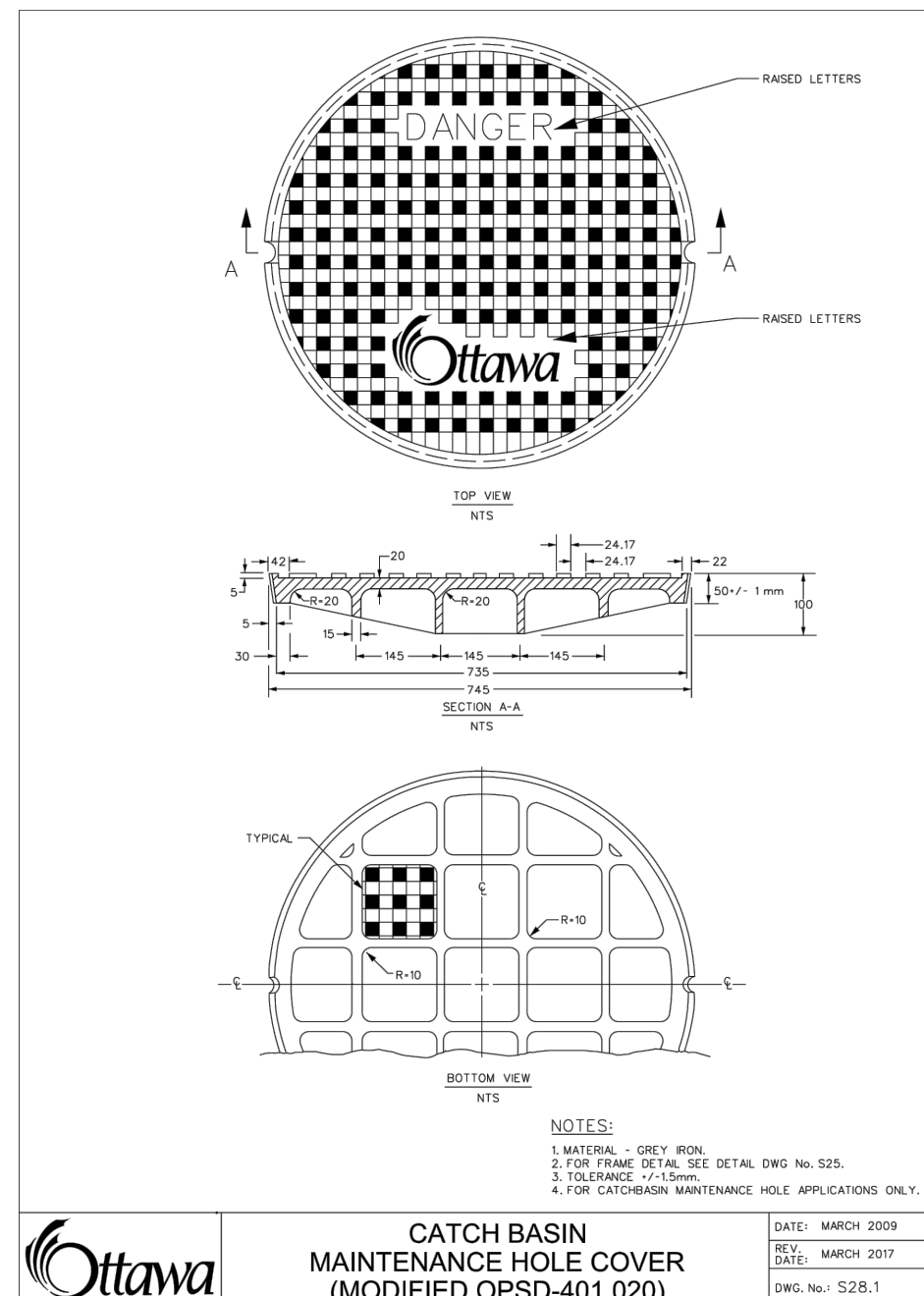
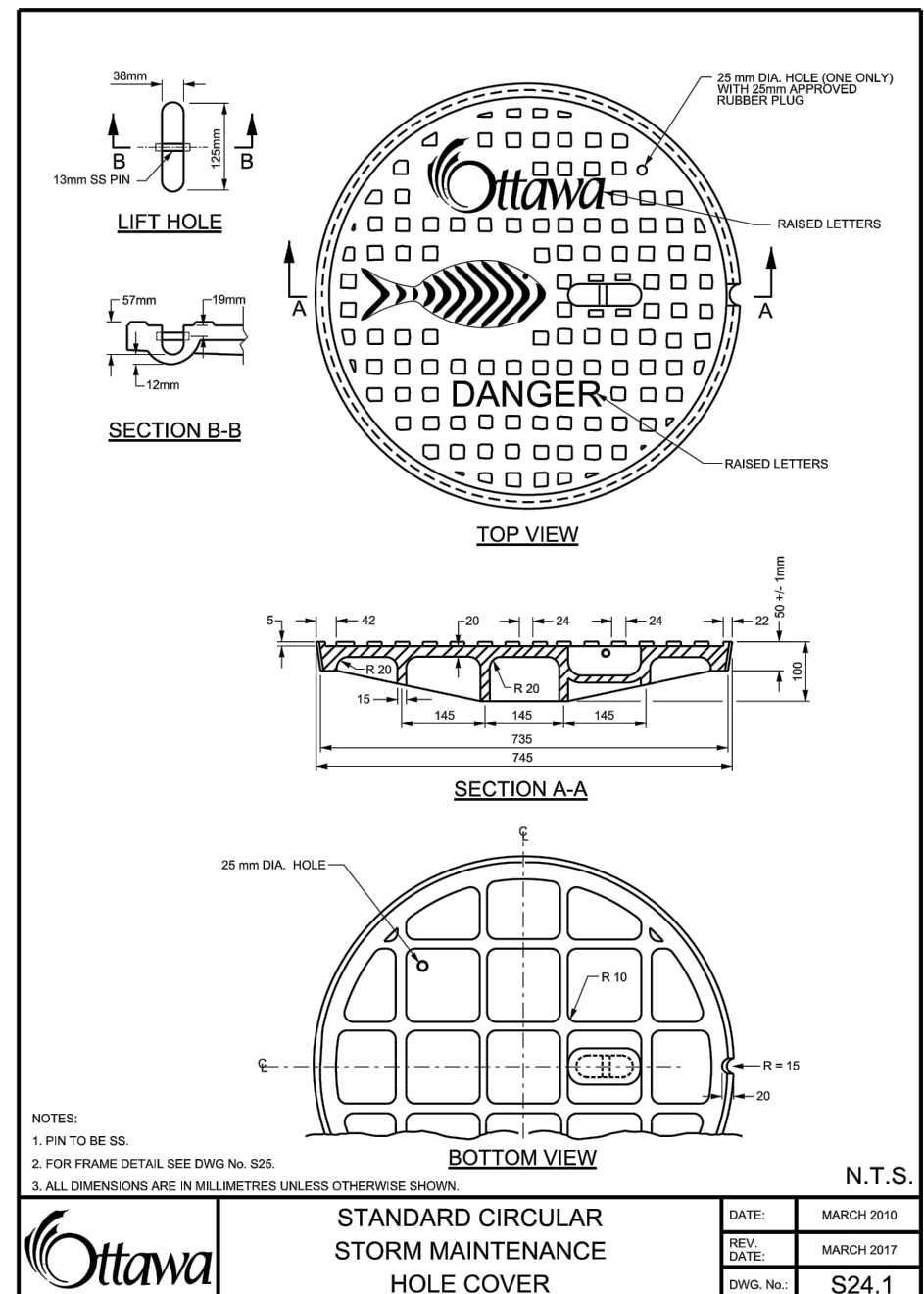
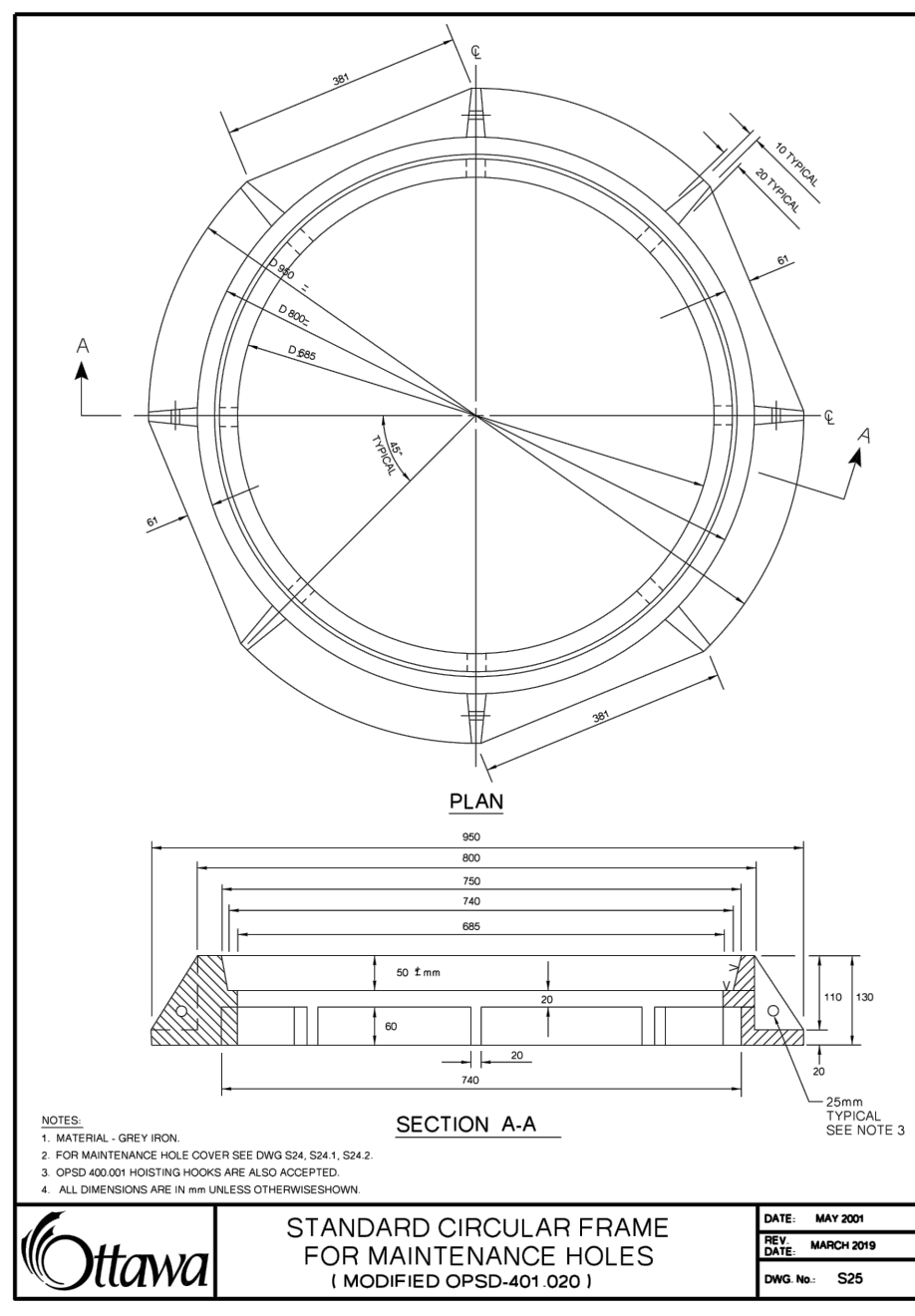
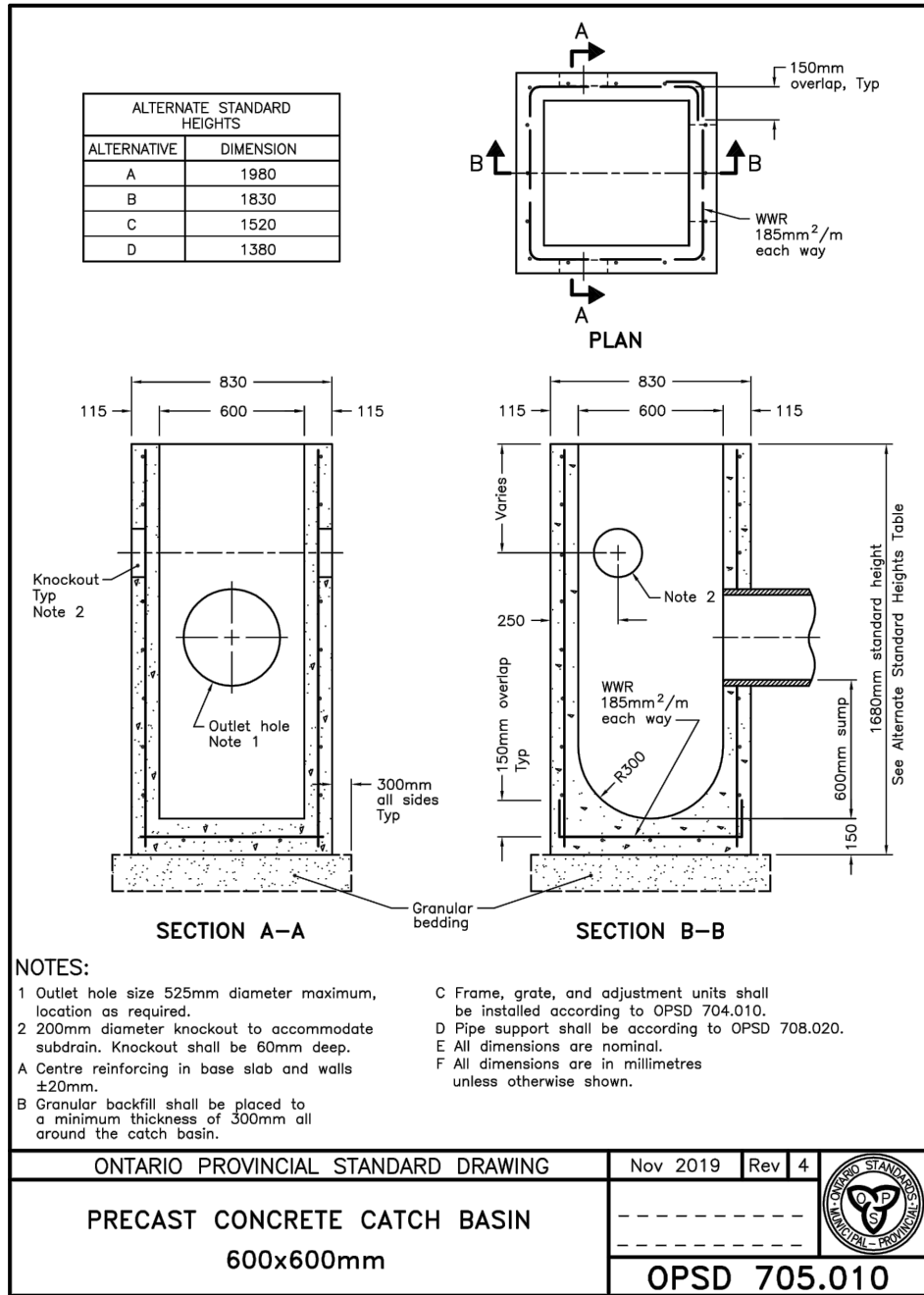
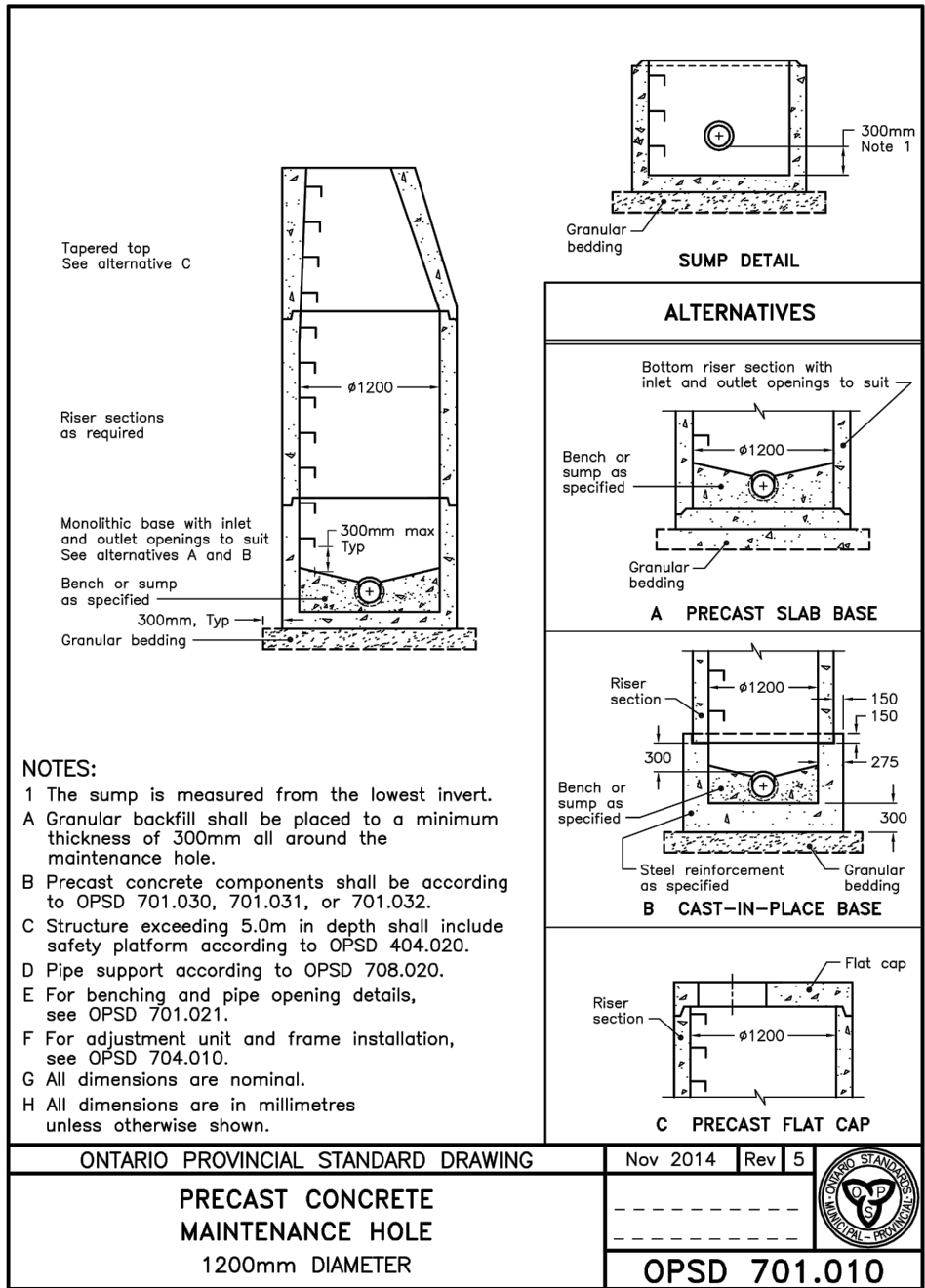
part 10 PLAN 4R-27830  
SUBJECT TO EASEMENT  
PER INST. OC1627868

ENTREPRENEUR

*CRESCENT*

pin 14558 - 0066





# USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DISCRETE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CAD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS ISSUED FOR CONSTRUCTION, THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS A KNOWLEDGE OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRL'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRL AND THE ENGINEER FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES.

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

No.	REVISIONS	BY	DATE
04	ISSUED FOR SITE PLAN CONTROL AGREEMENT	K.H.	11 APR 2025
03	ISSUED FOR SITE PLAN CONTROL	K.H.	20 DEC 2024
02	ISSUED FOR SITE PLAN CONTROL	K.H.	29 AUG 2024
01	ISSUED FOR SITE PLAN CONTROL	K.H.	10 OCT 2023



NOT AUTHENTIC UNLESS SIGNED AND DATED

CIVIL, GEOTECHNICAL, ENVIRONMENTAL ENGINEERS



**ENGINEERING | INGÉNIÉRIE**  
 5430 Canotek Road | Ottawa, ON, K1J 9G2  
 www.lrl.ca | (613) 842-3434

CLIENT: **DUSTIN WILSON**  
**310 SANCTUARY PRIV.**  
**OTTAWA, ON**

DESIGNED BY: **K.H.** DRAWN BY: **K.H.** APPROVED BY: **M.B.**

PROJECT: **PROPOSED WAREHOUSE DEVELOPMENT**  
**363 ENTREPRENEUR CRESCENT, OTTAWA**

DRAWING TITLE: **CONSTRUCTION DETAIL PLAN**

PROJECT NO.: **220487**

DATE: **OCT 2022**

**C901**



## **DRAWINGS/FIGURES**

**Proposed Site Plan  
Legal Survey**





TOPOGRAPHICAL PLAN OF SURVEY OF

PART OF BLOCK 3  
REGISTERED PLAN 50M-136  
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 400

16 12 8 4 0 8 16 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND  
CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Surveyor's Certificate

I CERTIFY THAT:

- This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the regulations made under them.
- The survey was completed on December 8, 2022.

Dec 14/22  
Date

Mer J. Allison  
Ontario Land Surveyor

ASSOCIATION OF ONTARIO  
LAND SURVEYORS  
PLAN SUBMISSION FORM  
V-33900



THIS PLAN IS NOT VALID UNLESS  
IT IS AN EMBOSSED ORIGINAL  
COPY ISSUED BY THE SURVEYOR  
IN ACCORDANCE WITH  
Regulation 1026, Section 29 (3)

Notes & Legend

□	Denotes	Survey Monument Planted
■	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
IB	"	Iron Bar
(WIT)	"	Witness
Meas.	"	Measured
(P1)	"	Plan 4R-27830
(P2)	"	Plan 4R-32589
(P3)	"	Plan 50R-6694
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
—OH—	"	Overhead Wires
UP	"	Utility Pole
CSP	"	Corrugated Steel Pipe
Inv.	"	Invert
CLF	"	Chain Link Fence
TOS	"	Top of Slope
+65.00	"	Location of Elevations
C/L	"	Centreline

Bearings are grid, derived and are referred to the Central Meridian of  
MTM Zone 9 ( 76°30' West Longitude ) NAD-83 (original).

ELEVATION NOTES

- Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
- It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that its relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

- This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
- Only visible surface utilities were located.
- A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.



ANNIS, O'SULLIVAN, VOLLEBEKK LTD.

165 Bay Street  
Embrun, Ont. K0A 1W1  
Phone: (613) 443-3364  
Email: Embrun@aovltd.com

Ontario  
Land Surveyors

Job No. E-2488-22

BIN

LOT 22 CONCESSION 11

PART 7 PLAN 4R-32589  
PART 1 PLAN 4R-27827  
PIN 14558 - 0408

BLOCK 9  
0.5 Reserve

BLOCK

PLAN

PIN 14558 - 0356  
PART 2

PIN 14558 - 0401  
PART 3

PIN 14558 - 0402  
PART 4

REGISTERED

SITE BENCHMARK  
Nail in Hydro Pole  
Elev=77.79

SUBJECT TO EASEMENT  
PER INST. OC:627867

PART 8 PLAN 4R-27830  
SUBJECT TO EASEMENT  
PER INST. OC:627866

PART 9 PLAN 4R-27830

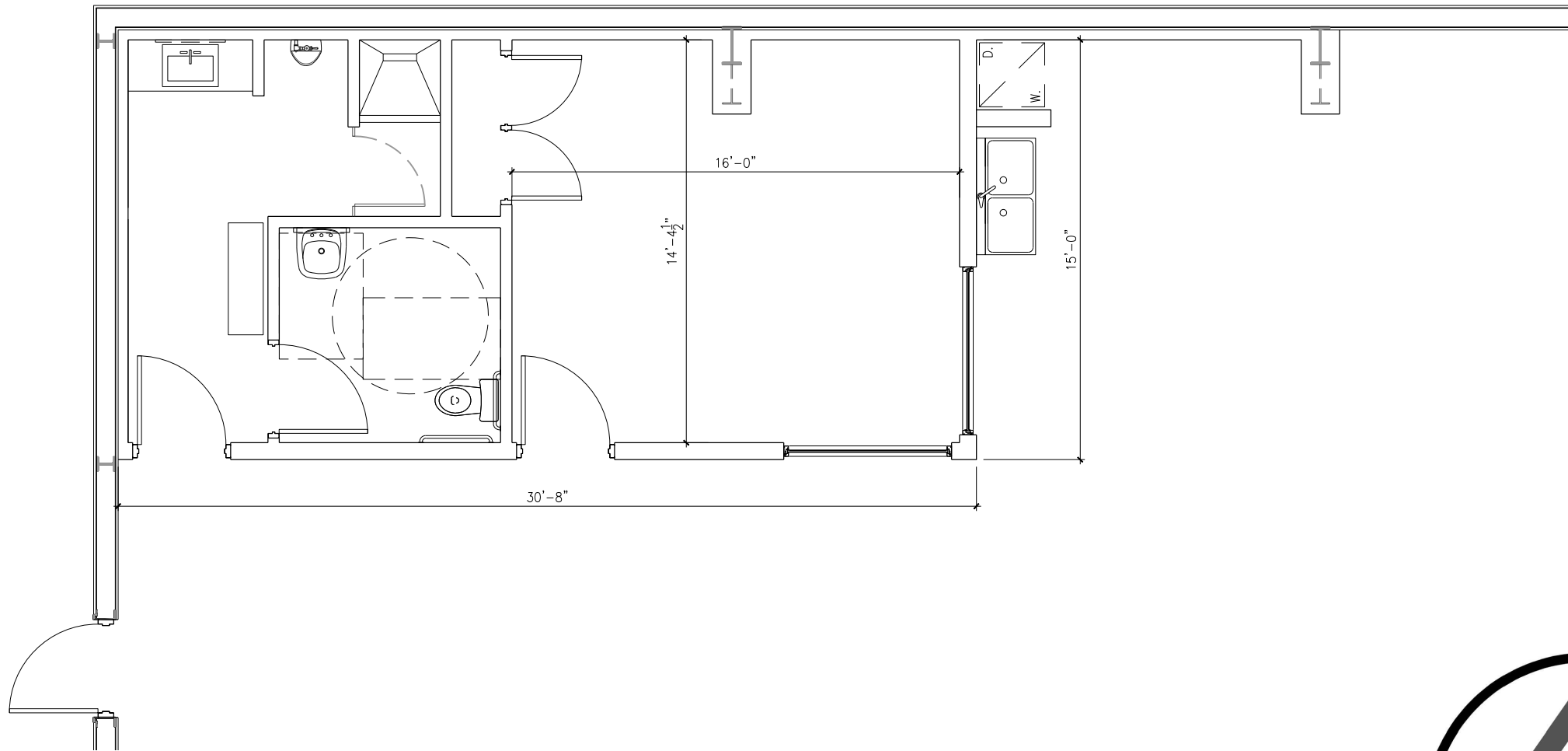
PART 10 PLAN 4R-27830  
SUBJECT TO EASEMENT  
PER INST. OC:627868

PART 15  
PLAN 4R-27830

ENTREPRENEUR

CRESCENT

PIN 14558 - 0066



## PROPOSED | GROUND FLOOR LAYOUT

SCALE: 3/16" = 1'-0"

