STORMWATER FACILITY OPERATIONS & MAINTENANCE MANUAL

HUMBER STATION DISTRIBUTION CENTRE

TOWN OF CALEDON
REGION OF PEEL

PREPARED FOR:

PLD HUMBER STATION INVESTMENT LP

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
2800 HIGH POINT DRIVE, SUITE 100
MILTON, ON L9T 6P4

AUGUST 2025

CFCA FILE NO. 0624-6777

CELEBRATING 20 YEARS · SINCE 2004 · CROZIER

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1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by PLD Humber Station Investment LP to undertake the detailed engineering design in support of a proposed industrial development located at 12519-12713 Humber Station Road within the Humber Station Employment Area in the Town of Caledon. For orientation purposes of this report, Humber Station Road is considered to be running north to south, and Street A is east to west. The site is bordered to the east by industrial lands, agricultural lands planned for industrial development to the north and south, and Humber Station Road to the west. Under existing conditions, the property consists primarily of agricultural fields with residential dwellings fronting Humber Station Road.

The property occupies 78.5 hectares and is located east of Humber Station Road approximately 0.70 m south of Healy Road and 1.2 km north of Mayfield Road. The development of the property will be split into phases, with Phase 1A occupying the northeast side of the site, Phase 1B occupying the northwest side of the site, and Phase 2 occupying the south side of the site. Access for vehicles and trucks is proposed via two driveway accesses to a proposed 'Street A' (designed by others) which will run east-west through the property area connecting Phase 1A to Humber Station Road.

The following Operations & Maintenance Manual provides general instructions for the operation and maintenance of the SWM facilities. The maintenance procedures and protocols described herein will assist with the long-term effectiveness of the SWM facilities.

2.0 Description of Stormwater Management System

The infrastructure designed to manage stormwater and site drainage for the subject development complies with the current (as of August 2025) policies and standards of various agencies including:

- Town of Caledon (Town)
- Region of Peel (Region)
- Toronto and Region Conservation Authority (TRCA)
- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Natural Resources and Forestry (MNRF)

The primary stormwater management methods implemented to meet these standards are described below.

The development is required to provide quantity control, infiltration for water balance and onsite retention for erosion per Section 4.1 of the Stormwater Management Implementation Report (Crozier, August 2025). The stormwater management facilities for the site include five (5) underground storage tanks for quantity control and three (3) underground infiltration tanks for water balance and erosion mitigation.

Runoff from the parking areas and drive aisle area to the east of the building is collected and conveyed to underground storage Tank A. Runoff from the parking and drive isle areas to the west of the building is captured and conveyed to underground storage Tank B. Tank C collects stormwater runoff from the south parking area. Tank A and Tank B are hydraulically connected to Tank C, which is located under the parking area at the south of Phase 1A.

The rooftop is controlled by roof drains to the capacity of the roof leaders. The northwest portion of the roof is routed to Tank B directly. The remaining rooftop areas are routed at controlled release rates to infiltration tanks (Tanks 1, 2, and 3). These tanks provide mitigation for the rainwater infiltration deficit and provide the required 5 mm of onsite retention for erosion mitigation. The overflow from Tank 1 and Tank 2 spills into storage Tank A and Tank B and the overflow from Tank 3 spills into Tank C. Scupper's are provided on the roof to allow runoff in excess of 150 mm to spill to the parking lot and drive isles below.

Runoff from the two vehicle entrances is captured and controlled within underground storage Tanks 4 and Tank 5.

Refer to Drawing **C200** for the general servicing layout and **Figure 2** for the LID layout details.

3.0 Operation and Maintenance of Facilities

It is understood that the Owner will be responsible for the operation and maintenance of the stormwater systems post-construction. Maintenance procedures associated with the stormwater management system are detailed below.

3.1 Underground Storage Facilities

The underground concrete storage tanks (Tanks A, B, C, 4 and 5) provide quantity control and are closed-bottom due to high groundwater levels throughout the site. During large storm events, the storage tanks will back up into the parking lots and utilize surface storage. The parking lot is designed to provide up to 0.23 m of ponding before spilling towards Street A. Refer to **Drawings C201** to **C208** for servicing plans showing tank details.

Tanks A, B, and C are designed by others (StormTrap). Details are provided in **Appendix B**.

Infiltration Tanks 1, 2, and 3 provide onsite retention and are open bottom to allow for infiltration. Refer to **Figure 2** for further details.

3.1.1 Access

Access to Tanks A, B, C and Tanks 4 and 5 for inspection and maintenance is provided via access ports located on top of the tanks. Under normal conditions, inspection and maintenance activities can occur from the surface. If a problem occurs which requires a person to enter the tanks, the access ports with ladders may be used by qualified persons to enter the tanks. It should be noted that these tanks are confined spaces and appropriate training, and safety equipment is required to safely access the tanks.

Maintenance access is also provided through the inlet and outlet manholes as shown on the Overall Servicing Plan (**Drawing C200**).

The infiltration chambers are arched plastic chambers with a low profile, so they can only be inspected from the surface. Maintenance access for the infiltration tanks is provided through the inlet and outlet manholes as shown on the Overall Servicing Plan (**Drawing C200**).

Detailed design and shop drawings of the underground storage facilities are also provided in **Appendix B**.

3.1.2 Inspection and Maintenance

The infiltration tanks will only receive rooftop runoff. Since roof runoff is generally considered clean, the accumulation of sediment is expected to be limited. That said, regular inspection and maintenance of all the underground chambers is required to keep them operating to expected design levels, supporting the full function of stormwater management on site. The manufacturer recommends inspection whenever the upstream and downstream catchbasins and stormwater collection system are inspected or maintained for cost saving purposes.

It is recommended that inspection occur after each major storm event. At a minimum, until a cleaning schedule is established, an annual inspection is recommended. If inspected on an annual basis before the stormwater season begins to ensure everything is functioning properly for the upcoming storm season.

Inspections should be completed 2-3 days following the most recent rain event to allow for draining. The system should be visually inspected at all manholes. Utilizing a sediment pole, the amount of silt at each manhole location should be measured and documented. Each pipe opening should also be inspected to ensure that the silt level or any foreign objects are not blocking the pipes. Refer to further inspection and maintenance details provided by StormTrap in **Appendix B** for further details.

Maintenance of the underground chambers is typically performed using a vacuum truck. The floatable trash is removed first by using a bucket strainer to capture and remove any floating debris. The floatable oils are then removed off the top of the water by using the vacuum truck. The vacuum truck is then used to gently remove the clarified water above the sediment layer. Finally, sediment should be flushed towards a vacuum hose for thorough removal. Refer to the StormTrap Maintenance Manual provided in **Appendix B** for details.

Refer to **Table 1** for recommendations for inspection and maintenance of the underground chambers.

Table 1: Inspection and Maintenance Actions of the Underground Tanks

Time Interval	Maintenance Requirement
Post-Construction	Removal of all construction debris and construction related sediment. Repair any damage to the system components.
Annual	At a minimum, annual inspections are required and include the removal of floatables and sediment. The system shall be visually inspected at all manholes. Any blockages shall be removed. Utilizing a sediment pole, the amount of silt at each manhole should be measured and documented.

4.0 Roof Drain Inspection and Maintenance

The release rates from the roof are controlled by the roof drains, per Mechanical Engineer's design and specifications. Refer to **Appendix C** for details.

Please note that per the Ontario Building Code standing water on the rooftop should not exceed 150 mm. When standing water is observed on the roof 48-hours after the storm events, please remove the flow control insert within the roof drain and check for blockage or damage and replace it. If the standing water persists on the roof, there may be a blockage within the roof leader. The

blockage can be identified through closed-circuit television (CCTV) survey, and can be removed through flushing, snakes, or other techniques.

During interim conditions, roof drains are perched to account for 6 cm of standing water on the rooftop for evaporation purposes. After small storm events, it is anticipated that there will be water standing on the roof for up to 48 hours. Once SWM Pond 3 is constructed and brought online, the roof drains should be lowered so there is no longer standing water on top of the roof.

A minimum of two (2) inspections/year are required during the first year of operation to ensure that the system is functioning as intended. Annual inspections are required after the first year to ensure no blockage and standing water within the roof drain system.

5.0 Contact Information

A list of agencies, manufacturers, and maintenance companies involved with this project and contact numbers are provided in **Appendix A**.

6.0 References

This O&M Manual was developed based on recommendations from:

1. *Development Standards Manual,* Town of Caledon (2019)
2. *Public Works Stormwater Design Criteria and Procedural Manual,* Region of Peel (2019)
3. *Stormwater Planning and Design Manual,* Ministry of the Environment (2003)
4. *Low Impact Development Stormwater Management Inspection and Maintenance Guide,* Toronto and Region Conservation Authority (2016)

Should you have any questions regarding the operations and maintenance recommendations discussed within this report, please contact the undersigned.

Yours truly,

C.F. CROZIER & ASSOCIATES INC.

M. Findlay

Maggie Findlay, P.Eng.
Project Engineer

/MF

C.F. CROZIER & ASSOCIATES INC

Rebecca Archer, P.Eng.
Senior Project Engineer

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APPENDIX A

Contact Information for Agencies

CONTACT INFORMATION FOR AGENCIES

Agency	Contact Information
Town of Caledon	6311 Old Church Road Caledon, ON L7C 1J6 Tel: (905) 584-2272 EXT 2233
Region of Peel	7120 Hurontario Street Mississuaga, ON L5W 1N4 Tel: (905) 791-7800
MECP Spill Action Centre	5775 Yonge Street 5th floor North York, Ontario M2M 4J1 Toll Free: 1-800-268-6060 Tel: (416) 325-3000 Fax: (416) 325-3011
C.F. Crozier & Associates Inc.	2800 High Point Drive, Suite 100 Milton, Ontario L9T 6P4 Tel: (905) 875-0026

APPENDIX B

StormTrap

STORMTRAP MAINTENANCE MANUAL

1. Introduction

Regular inspections are recommended to ensure that the system is functioning as designed. Please call your Authorized StormTrap Representative if you have questions in regards to the inspection and maintenance of the StormTrap system. Prior to entry into any underground storm sewer or underground detention systems, appropriate OSHA and local safety regulations and guidelines should be followed.

2. Inspection Schedules for Municipalities

StormTrap Stormwater Management Systems are recommended for inspection whenever the upstream and downstream catch basins and stormwater pipes of the stormwater collection system are inspected or maintained. This will economize the cost of the inspection if it is done at the same time the Municipal crews are visiting the area.

3. Inspection Schedules for Private Development

StormTrap Stormwater Mangement Systems, for a private development, are recommended for inspection after each major storm water event. At a minimum, until a cleaning schedule can be established, an annual inspection is recommended. If inspected on an annual basis, the inspection should be conducted before the stormwater season begins to be sure that everything is functioning properly for the upcoming storm season.

4. Inspection Process

Inspections should be done such that at least 2-3 days has lapsed since the most recent rain event to allow for draining. Visually inspect the system at all manhole locations. Utilizing a sediment pole, measure and document the amount of silt at each manhole location (Figure 1). Inspect each pipe opening to ensure that the silt level or any foreign objects are not blocking the pipes. Be sure to inspect the outlet pipe(s) because this is typically the smallest

pipe in the system. It is common that most of the larger materials will be collected upstream of the system in catch basins, and it is therefore important at time of inspections to check these structures for large trash or blockages.

Remove any blockages if you can during the inspection process only if you can do so safely from the top of the system without entering into the system**. Do not go into the system under any circumstances** without proper ventilation equipment and training. Pass any information requiring action onto the appropriate maintenance personnel if you cannot remove the blockages from above during the inspection process. Be sure to describe the location of each manhole and the type of material that needs to be removed.

The sediment level of the system should also be measured and recorded during the inspection process. Recording the sediment level at each manhole is very important in order get a history of sediment that can be graphed over time (i.e. years) in order to estimate when the system will need to be maintained next. It is also important to keep these records to verify that the inspection process was actually performed if anyone asks for your records in the future.

The sediment level in the underground detention system can be determined from the outside of the system by opening up all the manholes and using a sediment pole to measure the amount of sediment at each location. Force the stick to the bottom of the system and then remove it and measure the amount of sediment at that location. Again, do not go into the system under any circumstances without proper ventilation equipment and training.

5. When to Clean the System

Any blockages should be safely removed as soon as practical so that the Stormwater detention system will fill and drain properly before the next stormwater event.

The Dry Detention System should be completely cleaned whenever the sediment occupies more than 10% to 15% of the originally designed system's volume. The Wet Detention System should be cleaned when the sediment occupies more than 30% or 1/3rd of the originally designed system's volume. NOTE: Check with your municipality in regards to

cleaning criteria, as the allowable sediment before cleaning may be more or less then described above.

6. How to Clean the StormTrap

The system should be completely cleaned back to 100% of the originally designed storage volume whenever the above sediment levels have been reached. Be sure to wait at least 3 days after a stormwater event to be sure that the system is completely drained (if it is a Dry Detention System), and all of the sediments have settled to the bottom of the system (if it is a Wet Detention System).

Do not enter the System unless you are properly trained, equipped, and qualified to enter a confined space as identified by local occupational safety and health regulations.

There are many maintenance companies that are in business to help you clean your underground stormwater detention systems and water quality units. Please call your StormTrap representative for referrals in your area.

A. Dry Detention System Cleaning

Maintenance is typically performed using a vacuum truck. Sediment should be flushed towards a vacuum hose for thorough removal. For a Dry Detention System, remove the manhole cover at the top of the system and lower a vacuum hose into one of the rows of the StormTrap system. Open up the manhole at the opposite end of the StormTrap and use sewer jetting equipment to force water in the same row from one end of the StormTrap row to the opposite side. The rows of the StormTrap are completely open in one contiguous channel from one end to the other for easy cleaning.

Place the vacuum hose and the sewer jetting equipment in the next row and repeat the process until all of the rows have been cleaned.

When finished, replace all covers that were removed and dispose of the collected material properly.

B. Wet Detention System Cleaning

If the system was designed to maintain a permanent pool of water, floatables and any oil should be removed in a separate procedure prior to the removal of all sediment.

The floatable trash is removed first by using a bucket strainer to capture and remove any floating debris.

The floatable oils are then removed off the top of the water by using the vacuum truck to suck off any floatable fluids and liquids.

The next step is to use the vacuum truck to gently remove the clarified water above the sediment layer.

The final step is to clean the sediment for each row as described above in the paragraph "A. Dry Detention System Cleaning". For smaller systems, the vacuum truck can remove all of the sediment in the basin without using the sewer jetting equipment because of the smaller space.

7. Inspection Reports

Proof of these inspections is the responsibility of the property owner. All inspection reports and data should be kept on site or at a location where they will be accessible for years in the future. Some municipalities require these inspection and cleaning reports to be forwarded to the proper governmental permitting agency on an annual basis.

Refer to your local and national regulations for any additional maintenance requirements and schedules not contained herein. Inspections should be a part of your standard operating procedure.

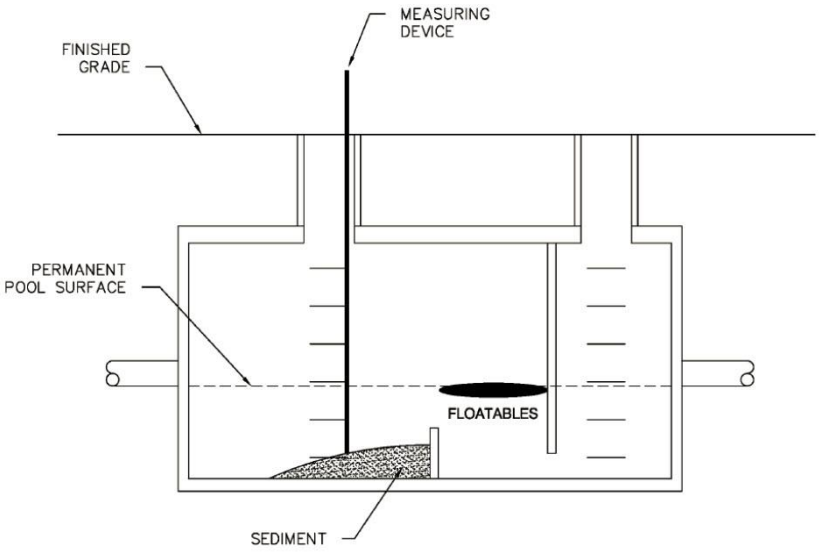

Figure 1. During inspection, measure the distance from finished grade to the top of the sediment inside the system.

Sample inspection and maintenance log

Date	Depth of Sediment	Accumulated Trash	Maintenance Performed	Maintenance Personnel	Comments
2/5/2012	3”	None	Sediment Removal/Vac	B. Johnson	

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Romeoville, Illinois 60446

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT

AND 30m BUFFER

SNOW STORAGE

189 TRAILER STALLS

PROPOSED EMPLOYEE
AMENITY AREA

TEN (10) SHORT TERM
BICYCLE PARKING
SPACES

PROPOSED TRANSFORMER

PROPOSED TRANSFORMER

PHASE 1

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT

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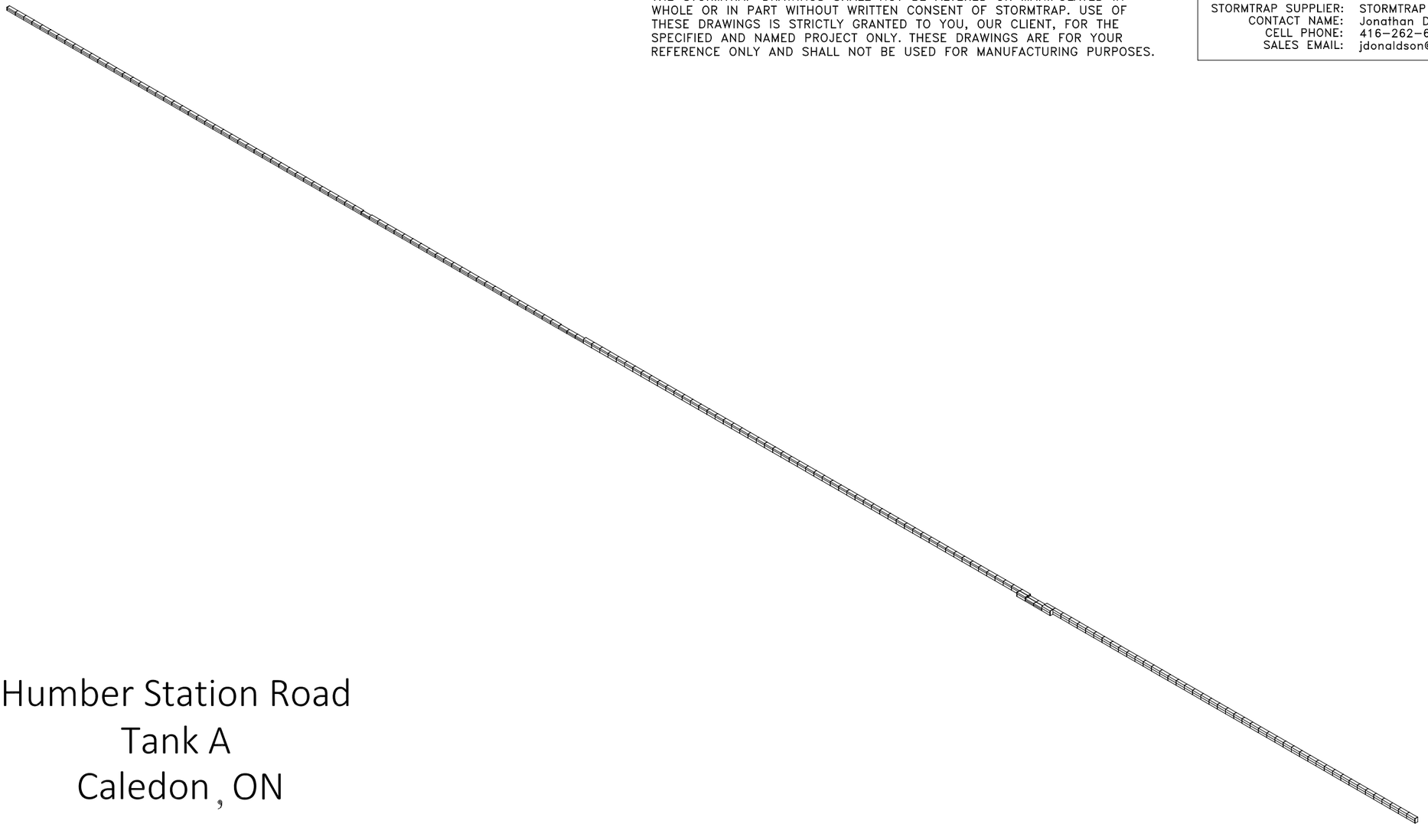
3.0	DOUBLETRAP INSTALLATION SPECIFICATION
3.1	DOUBLETRAP INSTALLATION SPECIFICATION
4.0	DOUBLETRAP BACKFILL SPECIFICATION
5.0	PIPE / ACCESS OPENING SPECIFICATION
6.0–6.1	DOUBLETRAP MODULE TYPES

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
CONTACT NAME: Jonathan Donaldson
CELL PHONE: 416–262–6265
SALES EMAIL: jdonaldson@stormtrap.com



Humber Station Road
Tank A
Caledon , ON

StormTrap®
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]

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COVER SHEET

SHEET NUMBER:

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GENERAL NOTES:

1. STRUCTURE PROXIMITY LOADING DISCLAIMER:

   STORMTRAP MODULES AND FOUNDATION ARE NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADING FROM ANY NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. EXAMPLES OF NEARBY STRUCTURES MAY INCLUDE BUT ARE NOT LIMITED TO BUILDINGS, FOUNDATION ELEMENTS, RETAINING WALLS, LIGHT POLES, BOLLARDS, SIGNPOSTS, FENCES. ADDITIONALLY, STORMTRAP IS NOT RESPONSIBLE FOR INSTALLATION CONFLICTS ARISING FROM ANY OF THESE NEARBY STRUCTURES. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY. FOR LIGHT POLES SHOWN OVER THE TOP OF THE SYSTEM, STORMTRAP WILL PROVIDE A 1.524m LATERAL DISTANCE CAVITY AROUND THE LIGHT POLE TO ACCOMMODATE IT. THE EOR TO TAKE RESPONSIBILITY FOR ENSURING THE LIGHT POLE IS NOT INFLICTING ANY LOADING ON THE STORMTRAP MODULES AND FOUNDATION.

2. TREE LOADING DISCLAIMER:

   THE NUMBER OF TREES OR WEIGHT OF TOTAL PLANT MATERIAL PRESENT ON TOP OF A SINGLE STORMTRAP MODULE SHALL NOT EXCEED 16,000 LBS. THE REQUIREMENTS LISTED HERE APPLY AT BOTH THE TIME OF INSTALLATION AND FOR THE LIFE OF THE TREES AND PLANTS IN QUESTION. THE EOR AND LANDSCAPE ARCHITECT ARE RESPONSIBLE FOR ENSURING THAT TREE AND OTHER PLANT ROOTS DO NOT INTERFERE WITH OR COMPROMISE THE FUNCTIONAL AND STRUCTURAL INTEGRITY OF STORMTRAP'S UNDERGROUND MODULES. APPROPRIATE MEASURES SHOULD BE TAKEN TO PREVENT ROOT GROWTH INTO THE STORMTRAP SYSTEM FROM ADJACENT OR OVERHEAD TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACED AROUND OR ON TOP OF THE SYSTEM.

3. PRE-TREATMENT/SEDIMENT/FILTER CHAMBER DISCLAIMER:

   FOR SYSTEMS CONTAINING PRE-TREATMENT, SEDIMENTATION AND/OR FILTER CHAMBERS; IF REQUIRED TO BE SEALED TO PREVENT SAND AND/OR PRE-TREATED WATER FROM MIGRATING INTO ADJOINING MODULES, IT IS THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THOSE MODULES ARE SEALED.

4. OUTLET CONTROL STRUCTURE DISCLAIMER (IF SHOWN ON THESE PLANS):

   IF A WATERTIGHT SOLUTION IS REQUIRED FOR AN OUTLET CONTROL STRUCTURE, ALL EXTERIOR COLD JOINTS, INCLUDING JOINT BETWEEN TOP AND BASE MODULES, BETWEEN TOP AND BASE OF ADJOINING SYMONS WALLS, AND JOINTS BETWEEN MODULE AND ADJACENT END PANELS WILL BE THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO PROVIDE AND INSTALL THE WATERTIGHT APPLICATION PER THE EOR'S SPECIFICATION.

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1.0

STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING: AASHTO HS-20 HIGHWAY LOADING

ADDITIONAL SURCHARGE LOADING: PER ASTM C857 (3.83kPa)

GROUND WATER TABLE: @ 234.50m

SOIL BEARING PRESSURE: 150 kPa

SOIL DENSITY: 1922 kg/m³

EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE: 5.5 kPa/m

EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE: 12.57 kPa/m

APPLICABLE CODES: ASTM C857, ASTM C858-19, ACI-318, FOR CLEAR COVERS: CSA A23

BACKFILL TYPE: SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	0.864m DOUBLETRAP
STORAGE PROV:	4.84 CUBIC METERS
TOTAL STORAGE PROV:	1,527.05 CUBIC METERS

DESIGN ASSUMPTIONS

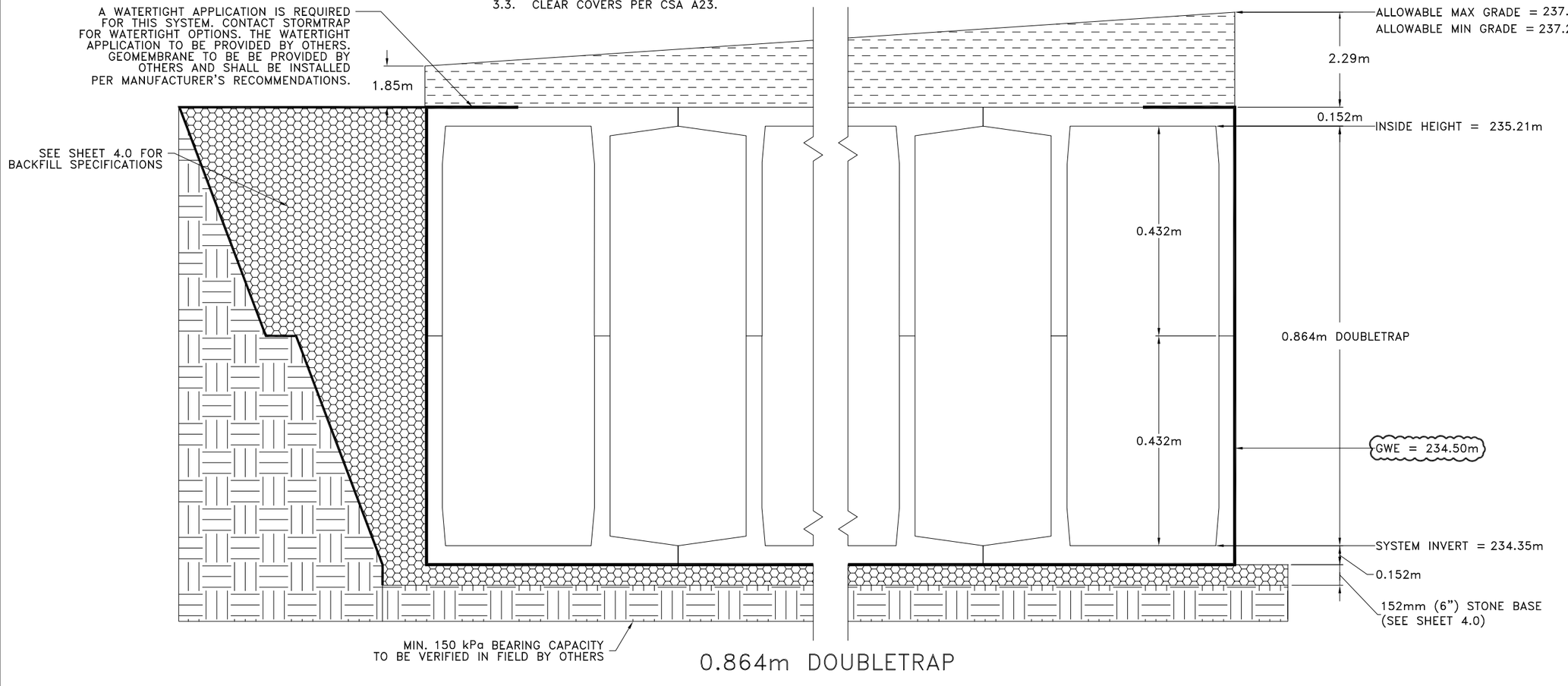
1. ASTM C858-19:
   - 1.1. THE ELASTIC METHOD OF STRUCTURAL DESIGN OR THE STRENGTH DESIGN METHOD FOR REINFORCED CONCRETE OUTLINED IN ACI 318 SHALL BE USED TO DESIGN THE CONCRETE SECTIONS. LOAD COMBINATION FACTORS LISTED BELOW.
     - 1.1.1. DEAD: 1.4
     - 1.1.2. DEAD + LIVE: 1.2 + 1.6
     - 1.1.3. SOIL PRESSURE: 1.6
     - 1.1.4. SOIL SURCHARGE: 1.6

2. ASTM C857:
   - 2.1. LIVE LOAD: PER ASTM C858/C857
     - 2.1.1. AASHTO HS-20 – (71 kN) WHEEL LOAD.
     - 2.1.2. IMPACT LOADING PER ASTM C857 SECTION 4.1.2.2, APPLIED TO ALL LIVE LOAD OPTIONS LISTED ABOVE.
       - 2.1.2.1. 0.152m TO 0.305m COVER RANGE: 30% INCREASE
       - 2.1.2.2. ABOVE 0.306m TO 0.610m COVER RANGE: 20% INCREASE
       - 2.1.2.3. ABOVE 0.611m TO 0.889m COVER RANGE: 10% INCREASE
       - 2.1.2.4. ABOVE 0.890m ONWARDS: NOT APPLIED
   - 2.2. DISTRIBUTION OF WHEEL LOADS THROUGH EARTH FILLS: WHEEL LOADS AT GROUND OR SURFACE SHALL BE DISTRIBUTED USING A WHEEL LOAD AREA REPRESENTED IN FIGURE 2 AND DETAILED IN SECTION 4.1.4 OF ASTM C 857. THE WHEEL LOAD DISTRIBUTION CONSIDERATION IS IRRESPECTIVE OF THE THICKNESS OF SOIL COVER AND IS APPLIED TO ALL SOIL COVER RANGES FROM 0.152m UP TO 3.05m.
   - 2.3. EXTERIOR WALLS SURCHARGE LOADS: EXTERIOR WALLS SURCHARGE LOADS SHALL COMPLY WITH ASTM C 857 SECTION 4.2.1 FOR SURCHARGE PRESSURES, WHICH STATES THAT SURCHARGE PRESSURE SHALL BE NO LESS THAN 0.5% OF THE WHEEL LOAD. IN ADDITION TO THIS THE SURCHARGE PRESSURE CAN BE NEGLECTED WHEN THE DEPTH OF THE SOIL EXCEEDS 2.44m.

3. OTHER STANDARDS:
   - 3.1. FLEXURE DESIGN PER ACI 318.
   - 3.2. SHEAR DESIGN PER ACI 318.
   - 3.3. CLEAR COVERS PER CSA A23.

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 1.85m MAX. 2.29m CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE @ 234.50m. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN INTENT IS TO CONTAIN WATER AND / OR PREVENT GROUNDWATER MIGRATION INTO THE SYSTEM AND WILL NOT BE SUBJECT TO LEAKAGE TESTING. A THIRD PARTY WATER PROOFING SOLUTION IS REQUIRED FOR SEALING OF SYSTEM / MODULE JOINTS AND SEAMS. SOLUTION TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THIRD PARTY WATER-PROOFING SUPPLIER'S PRODUCT SPECIFICATIONS.



0.864m DOUBLETRAP

StormTrap

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0.864m DOUBLETRAP DESIGN CRITERIA

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STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING:	AASHTO HS-20 HIGHWAY LOADING
ADDITIONAL SURCHARGE LOADING:	PER ASTM C857 (3.83kPa)
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	150 kPa
SOIL DENSITY:	1922 kg/m³
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	1.676 kPa
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	3.830 kPa (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857, ASTM C858-19, ACI-318, FOR CLEAR COVERS: CSA A23
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	0.914m DOUBLETRAP
STORAGE PROV:	20.72 CUBIC METERS
TOTAL STORAGE PROV:	1,527.05 CUBIC METERS

DESIGN ASSUMPTIONS

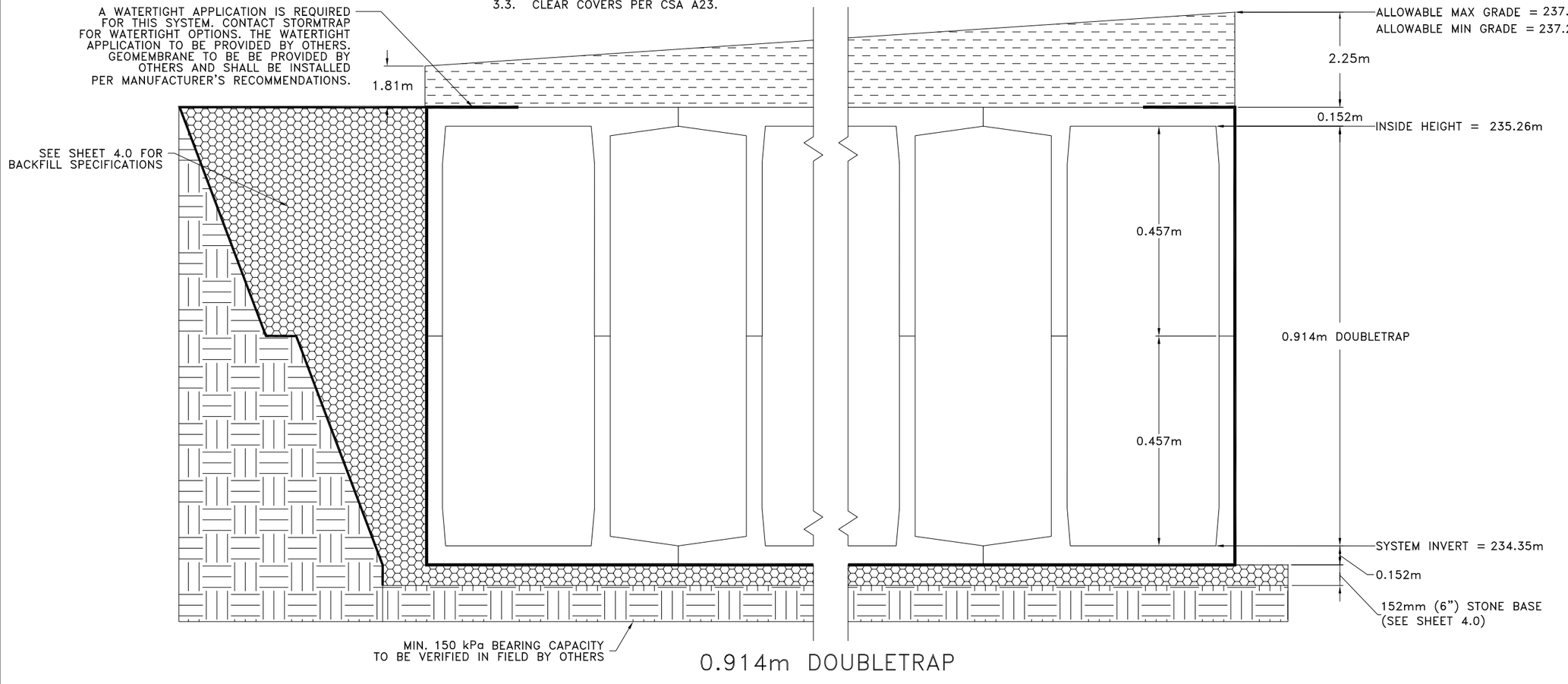
1. ASTM C858-19:
   - 1.1. THE ELASTIC METHOD OF STRUCTURAL DESIGN OR THE STRENGTH DESIGN METHOD FOR REINFORCED CONCRETE OUTLINED IN ACI 318 SHALL BE USED TO DESIGN THE CONCRETE SECTIONS. LOAD COMBINATION FACTORS LISTED BELOW.
     - 1.1.1. DEAD: 1.4
     - 1.1.2. DEAD + LIVE: 1.2 + 1.6
     - 1.1.3. SOIL PRESSURE: 1.6
     - 1.1.4. SOIL SURCHARGE: 1.6

2. ASTM C857:
   - 2.1. LIVE LOAD: PER ASTM C858/C857
     - 2.1.1. AASHTO HS-20 – (71 kN) WHEEL LOAD.
     - 2.1.2. IMPACT LOADING PER ASTM C857 SECTION 4.1.2.2, APPLIED TO ALL LIVE LOAD OPTIONS LISTED ABOVE.
       - 2.1.2.1. 0.152m TO 0.305m COVER RANGE: 30% INCREASE
       - 2.1.2.2. ABOVE 0.306m TO 0.610m COVER RANGE: 20% INCREASE
       - 2.1.2.3. ABOVE 0.611m TO 0.889m COVER RANGE: 10% INCREASE
       - 2.1.2.4. ABOVE 0.890m ONWARDS: NOT APPLIED
   - 2.2. DISTRIBUTION OF WHEEL LOADS THROUGH EARTH FILLS: WHEEL LOADS AT GROUND OR SURFACE SHALL BE DISTRIBUTED USING A WHEEL LOAD AREA REPRESENTED IN FIGURE 2 AND DETAILED IN SECTION 4.1.4 OF ASTM C 857. THE WHEEL LOAD DISTRIBUTION CONSIDERATION IS IRRESPECTIVE OF THE THICKNESS OF SOIL COVER AND IS APPLIED TO ALL SOIL COVER RANGES FROM 0.152m UP TO 3.05m.
   - 2.3. EXTERIOR WALLS SURCHARGE LOADS: EXTERIOR WALLS SURCHARGE LOADS SHALL COMPLY WITH ASTM C 857 SECTION 4.2.1 FOR SURCHARGE PRESSURES, WHICH STATES THAT SURCHARGE PRESSURE SHALL BE NO LESS THAN 0.5% OF THE WHEEL LOAD. IN ADDITION TO THIS THE SURCHARGE PRESSURE CAN BE NEGLECTED WHEN THE DEPTH OF THE SOIL EXCEEDS 2.44m.

3. OTHER STANDARDS:
   - 3.1. FLEXURE DESIGN PER ACI 318.
   - 3.2. SHEAR DESIGN PER ACI 318.
   - 3.3. CLEAR COVERS PER CSA A23.

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 1.81m MAX. 2.25m CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN INTENT IS TO CONTAIN WATER AND / OR PREVENT GROUNDWATER MIGRATION INTO THE SYSTEM AND WILL NOT BE SUBJECT TO LEAKAGE TESTING. A THIRD PARTY WATER PROOFING SOLUTION IS REQUIRED FOR SEALING OF SYSTEM / MODULE JOINTS AND SEAMS. SOLUTION TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THIRD PARTY WATER-PROOFING SUPPLIER'S PRODUCT SPECIFICATIONS.



0.914m DOUBLETRAP

StormTrap

PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]

1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
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PROJECT INFORMATION:

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Tank A

Caledon, ON

CURRENT ISSUE DATE:

01/08/2025

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PRELIMINARY

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SCALE:

NTS

SHEET TITLE:

0.914m DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.2

STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING: AASHTO HS-20 HIGHWAY LOADING

ADDITIONAL SURCHARGE LOADING: PER ASTM C857 (3.83kPa)

GROUND WATER TABLE: @ 234.50m

SOIL BEARING PRESSURE: 150 kPa

SOIL DENSITY: 1922 kg/m³

EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE: 5.5 kPa/m

EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE: 12.57 kPa/m

APPLICABLE CODES: ASTM C857, ASTM C858-19, ACI-318, FOR CLEAR COVERS: CSA A23

BACKFILL TYPE: SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	1.016m DOUBLETRAP
STORAGE PROV:	17.16 CUBIC METERS
TOTAL STORAGE PROV:	1,527.05 CUBIC METERS

DESIGN ASSUMPTIONS

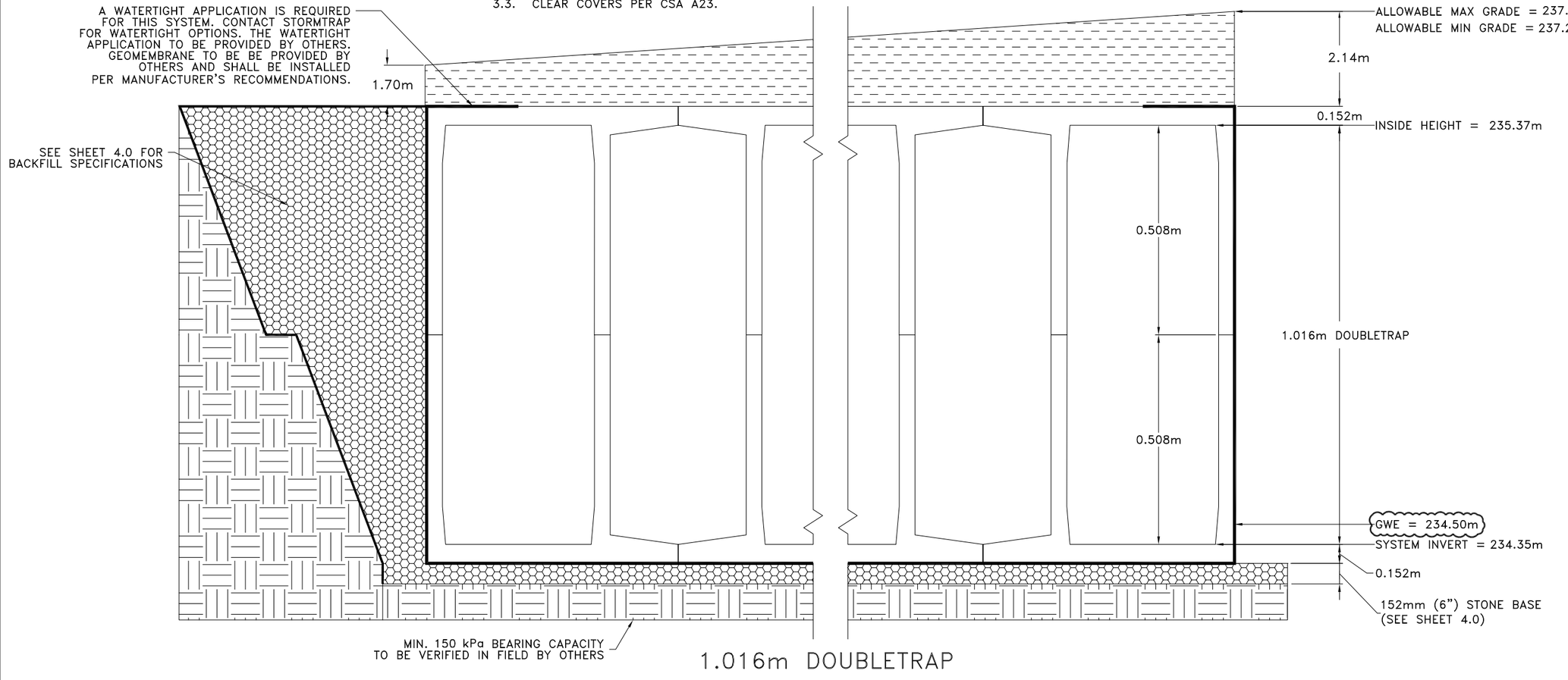
1. ASTM C858-19:
   - 1.1. THE ELASTIC METHOD OF STRUCTURAL DESIGN OR THE STRENGTH DESIGN METHOD FOR REINFORCED CONCRETE OUTLINED IN ACI 318 SHALL BE USED TO DESIGN THE CONCRETE SECTIONS. LOAD COMBINATION FACTORS LISTED BELOW.
     - 1.1.1. DEAD: 1.4
     - 1.1.2. DEAD + LIVE: 1.2 + 1.6
     - 1.1.3. SOIL PRESSURE: 1.6
     - 1.1.4. SOIL SURCHARGE: 1.6

2. ASTM C857:
   - 2.1. LIVE LOAD: PER ASTM C858/C857
     - 2.1.1. AASHTO HS-20 – (71 kN) WHEEL LOAD.
     - 2.1.2. IMPACT LOADING PER ASTM C857 SECTION 4.1.2.2, APPLIED TO ALL LIVE LOAD OPTIONS LISTED ABOVE.
       - 2.1.2.1. 0.152m TO 0.305m COVER RANGE: 30% INCREASE
       - 2.1.2.2. ABOVE 0.306m TO 0.610m COVER RANGE: 20% INCREASE
       - 2.1.2.3. ABOVE 0.611m TO 0.889m COVER RANGE: 10% INCREASE
       - 2.1.2.4. ABOVE 0.890m ONWARDS: NOT APPLIED
   - 2.2. DISTRIBUTION OF WHEEL LOADS THROUGH EARTH FILLS: WHEEL LOADS AT GROUND OR SURFACE SHALL BE DISTRIBUTED USING A WHEEL LOAD AREA REPRESENTED IN FIGURE 2 AND DETAILED IN SECTION 4.1.4 OF ASTM C 857. THE WHEEL LOAD DISTRIBUTION CONSIDERATION IS IRRESPECTIVE OF THE THICKNESS OF SOIL COVER AND IS APPLIED TO ALL SOIL COVER RANGES FROM 0.152m UP TO 3.05m.
   - 2.3. EXTERIOR WALLS SURCHARGE LOADS: EXTERIOR WALLS SURCHARGE LOADS SHALL COMPLY WITH ASTM C 857 SECTION 4.2.1 FOR SURCHARGE PRESSURES, WHICH STATES THAT SURCHARGE PRESSURE SHALL BE NO LESS THAN 0.5% OF THE WHEEL LOAD. IN ADDITION TO THIS THE SURCHARGE PRESSURE CAN BE NEGLECTED WHEN THE DEPTH OF THE SOIL EXCEEDS 2.44m.

3. OTHER STANDARDS:
   - 3.1. FLEXURE DESIGN PER ACI 318.
   - 3.2. SHEAR DESIGN PER ACI 318.
   - 3.3. CLEAR COVERS PER CSA A23.

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 1.70m MAX. 2.14m CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE @ 234.50m. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN INTENT IS TO CONTAIN WATER AND / OR PREVENT GROUNDWATER MIGRATION INTO THE SYSTEM AND WILL NOT BE SUBJECT TO LEAKAGE TESTING. A THIRD PARTY WATER PROOFING SOLUTION IS REQUIRED FOR SEALING OF SYSTEM / MODULE JOINTS AND SEAMS. SOLUTION TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THIRD PARTY WATER-PROOFING SUPPLIER'S PRODUCT SPECIFICATIONS.



1.016m DOUBLETRAP

StormTrap

PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]

1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
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ENGINEER INFORMATION:

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PROJECT INFORMATION:

Humber Station Road

Tank A

Caledon, ON

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SCALE:

NTS

SHEET TITLE:

1.016m DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.3

STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING: AASHTO HS-20 HIGHWAY LOADING

ADDITIONAL SURCHARGE LOADING: PER ASTM C857 (3.83kPa)

GROUND WATER TABLE: @ 237.22m

SOIL BEARING PRESSURE: 150 kPa

SOIL DENSITY: 1922 kg/m³

EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE: 5.5 kPa/m

EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE: 12.57 kPa/m

APPLICABLE CODES: ASTM C857, ASTM C858-19, ACI-318, FOR CLEAR COVERS: CSA A23

BACKFILL TYPE: SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	1.219m DOUBLETRAP
STORAGE PROV:	452.76 CUBIC METERS
TOTAL STORAGE PROV:	1,527.05 CUBIC METERS

DESIGN ASSUMPTIONS

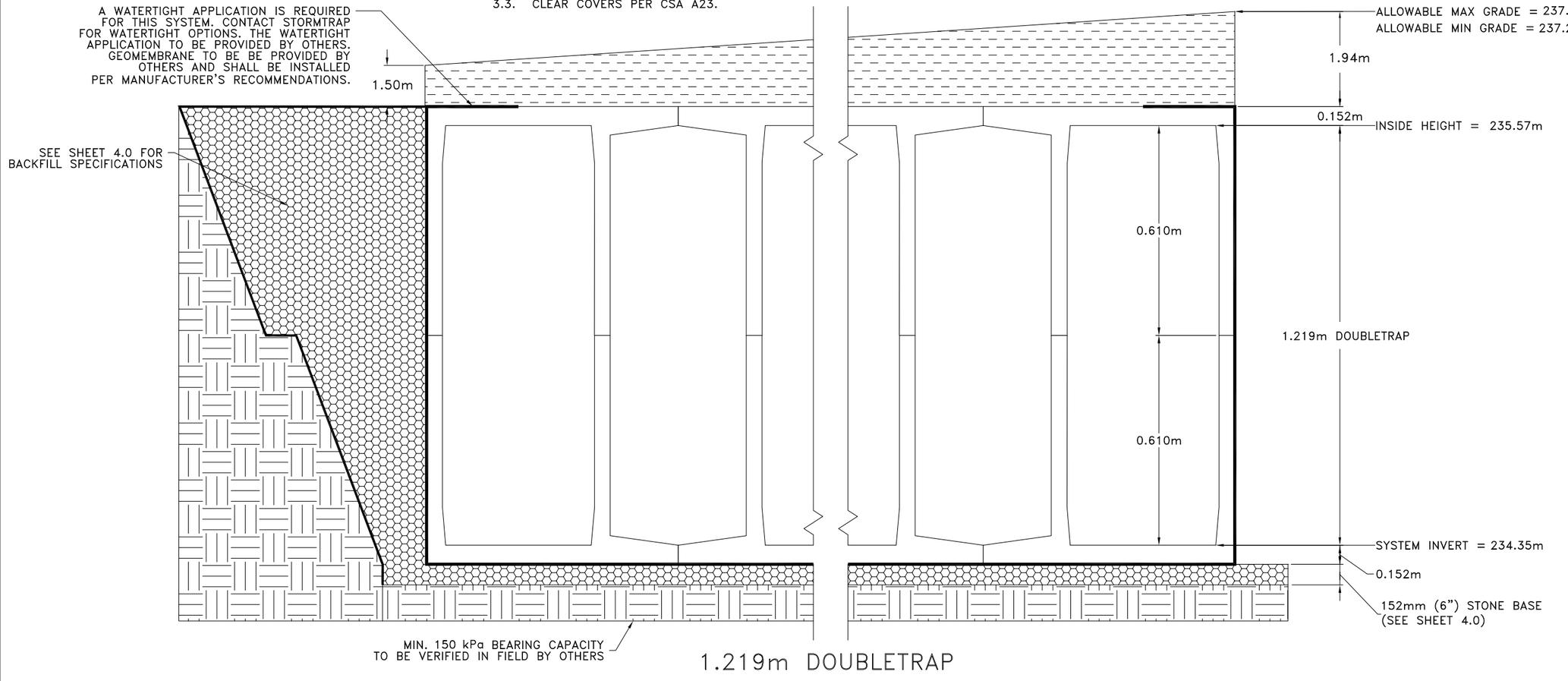
1. ASTM C858-19:
   - 1.1. THE ELASTIC METHOD OF STRUCTURAL DESIGN OR THE STRENGTH DESIGN METHOD FOR REINFORCED CONCRETE OUTLINED IN ACI 318 SHALL BE USED TO DESIGN THE CONCRETE SECTIONS. LOAD COMBINATION FACTORS LISTED BELOW.
     - 1.1.1. DEAD: 1.4
     - 1.1.2. DEAD + LIVE: 1.2 + 1.6
     - 1.1.3. SOIL PRESSURE: 1.6
     - 1.1.4. SOIL SURCHARGE: 1.6

2. ASTM C857:
   - 2.1. LIVE LOAD: PER ASTM C858/C857
     - 2.1.1. AASHTO HS-20 – (71 kN) WHEEL LOAD.
     - 2.1.2. IMPACT LOADING PER ASTM C857 SECTION 4.1.2.2, APPLIED TO ALL LIVE LOAD OPTIONS LISTED ABOVE.
       - 2.1.2.1. 0.152m TO 0.305m COVER RANGE: 30% INCREASE
       - 2.1.2.2. ABOVE 0.306m TO 0.610m COVER RANGE: 20% INCREASE
       - 2.1.2.3. ABOVE 0.611m TO 0.889m COVER RANGE: 10% INCREASE
       - 2.1.2.4. ABOVE 0.890m ONWARDS: NOT APPLIED
   - 2.2. DISTRIBUTION OF WHEEL LOADS THROUGH EARTH FILLS: WHEEL LOADS AT GROUND OR SURFACE SHALL BE DISTRIBUTED USING A WHEEL LOAD AREA REPRESENTED IN FIGURE 2 AND DETAILED IN SECTION 4.1.4 OF ASTM C 857. THE WHEEL LOAD DISTRIBUTION CONSIDERATION IS IRRESPECTIVE OF THE THICKNESS OF SOIL COVER AND IS APPLIED TO ALL SOIL COVER RANGES FROM 0.152m UP TO 3.05m.
   - 2.3. EXTERIOR WALLS SURCHARGE LOADS: EXTERIOR WALLS SURCHARGE LOADS SHALL COMPLY WITH ASTM C 857 SECTION 4.2.1 FOR SURCHARGE PRESSURES, WHICH STATES THAT SURCHARGE PRESSURE SHALL BE NO LESS THAN 0.5% OF THE WHEEL LOAD. IN ADDITION TO THIS THE SURCHARGE PRESSURE CAN BE NEGLECTED WHEN THE DEPTH OF THE SOIL EXCEEDS 2.44m.

3. OTHER STANDARDS:
   - 3.1. FLEXURE DESIGN PER ACI 318.
   - 3.2. SHEAR DESIGN PER ACI 318.
   - 3.3. CLEAR COVERS PER CSA A23.

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 1.50m MAX. 1.94m CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE @ 237.22m. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN INTENT IS TO CONTAIN WATER AND / OR PREVENT GROUNDWATER MIGRATION INTO THE SYSTEM AND WILL NOT BE SUBJECT TO LEAKAGE TESTING. A THIRD PARTY WATER PROOFING SOLUTION IS REQUIRED FOR SEALING OF SYSTEM / MODULE JOINTS AND SEAMS. SOLUTION TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THIRD PARTY WATER-PROOFING SUPPLIER'S PRODUCT SPECIFICATIONS.



1.219m DOUBLETRAP

StormTrap
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4549 / F:331-318-5347

ENGINEER INFORMATION:

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PROJECT INFORMATION:

Humber Station Road

Tank A

Caledon, ON

CURRENT ISSUE DATE:

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PRELIMINARY

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SCALE:

NTS

SHEET TITLE:

1.219m DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.4

STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING: AASHTO HS-20 HIGHWAY LOADING

ADDITIONAL SURCHARGE LOADING: PER ASTM C857 (3.83kPa)

GROUND WATER TABLE: @ 236.26m

SOIL BEARING PRESSURE: 150 kPa

SOIL DENSITY: 1922 kg/m³

EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE: 5.5 kPa/m

EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE: 12.57 kPa/m

APPLICABLE CODES: ASTM C857, ASTM C858-19, ACI-318, FOR CLEAR COVERS: CSA A23

BACKFILL TYPE: SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	1.702m DOUBLETRAP
STORAGE PROV:	528.85 CUBIC METERS
TOTAL STORAGE PROV:	1,527.05 CUBIC METERS

DESIGN ASSUMPTIONS

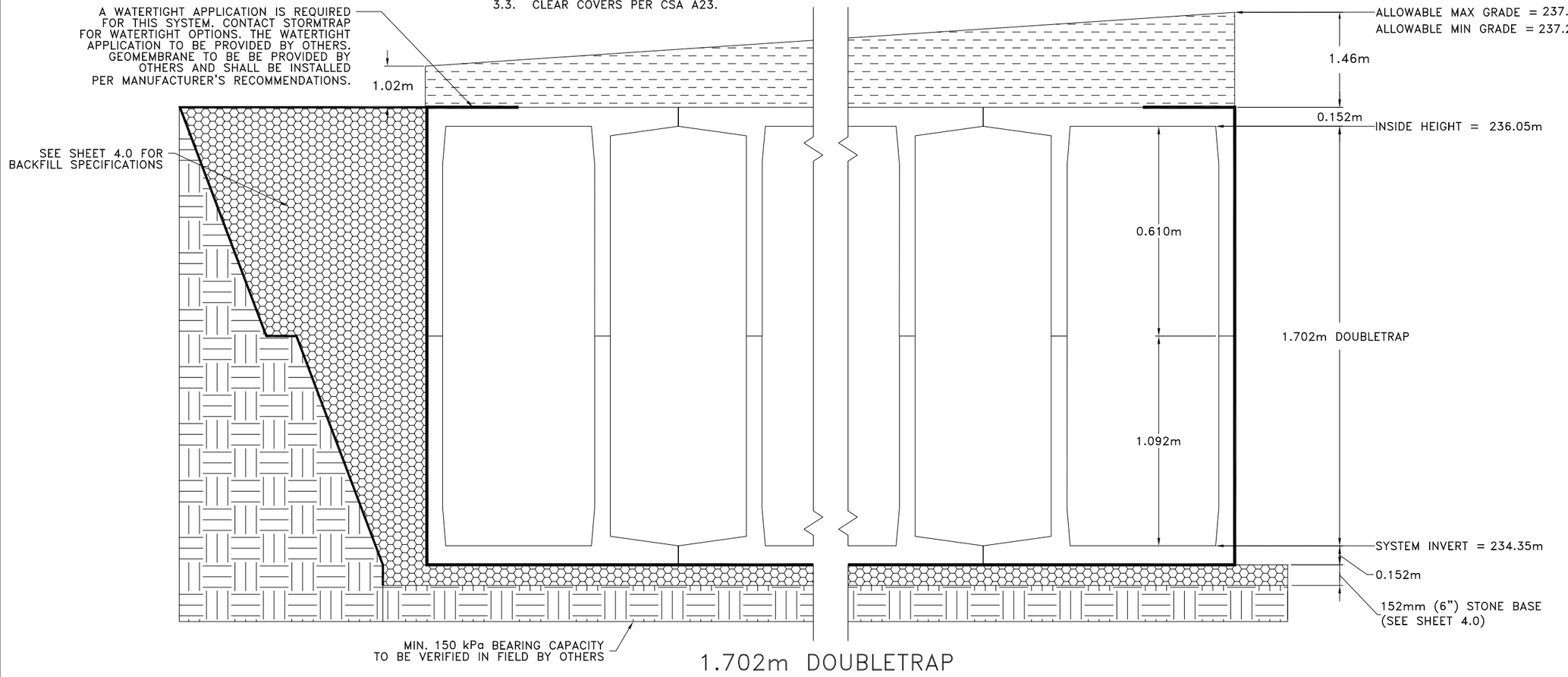
1. ASTM C858-19:
   - 1.1. THE ELASTIC METHOD OF STRUCTURAL DESIGN OR THE STRENGTH DESIGN METHOD FOR REINFORCED CONCRETE OUTLINED IN ACI 318 SHALL BE USED TO DESIGN THE CONCRETE SECTIONS. LOAD COMBINATION FACTORS LISTED BELOW.
     - 1.1.1. DEAD: 1.4
     - 1.1.2. DEAD + LIVE: 1.2 + 1.6
     - 1.1.3. SOIL PRESSURE: 1.6
     - 1.1.4. SOIL SURCHARGE: 1.6

2. ASTM C857:
   - 2.1. LIVE LOAD: PER ASTM C858/C857
     - 2.1.1. AASHTO HS-20 – (71 kN) WHEEL LOAD.
     - 2.1.2. IMPACT LOADING PER ASTM C857 SECTION 4.1.2.2, APPLIED TO ALL LIVE LOAD OPTIONS LISTED ABOVE.
       - 2.1.2.1. 0.152m TO 0.305m COVER RANGE: 30% INCREASE
       - 2.1.2.2. ABOVE 0.306m TO 0.610m COVER RANGE: 20% INCREASE
       - 2.1.2.3. ABOVE 0.611m TO 0.889m COVER RANGE: 10% INCREASE
       - 2.1.2.4. ABOVE 0.890m ONWARDS: NOT APPLIED
   - 2.2. DISTRIBUTION OF WHEEL LOADS THROUGH EARTH FILLS: WHEEL LOADS AT GROUND OR SURFACE SHALL BE DISTRIBUTED USING A WHEEL LOAD AREA REPRESENTED IN FIGURE 2 AND DETAILED IN SECTION 4.1.4 OF ASTM C 857. THE WHEEL LOAD DISTRIBUTION CONSIDERATION IS IRRESPECTIVE OF THE THICKNESS OF SOIL COVER AND IS APPLIED TO ALL SOIL COVER RANGES FROM 0.152m UP TO 3.05m.
   - 2.3. EXTERIOR WALLS SURCHARGE LOADS: EXTERIOR WALLS SURCHARGE LOADS SHALL COMPLY WITH ASTM C 857 SECTION 4.2.1 FOR SURCHARGE PRESSURES, WHICH STATES THAT SURCHARGE PRESSURE SHALL BE NO LESS THAN 0.5% OF THE WHEEL LOAD. IN ADDITION TO THIS THE SURCHARGE PRESSURE CAN BE NEGLECTED WHEN THE DEPTH OF THE SOIL EXCEEDS 2.44m.

3. OTHER STANDARDS:
   - 3.1. FLEXURE DESIGN PER ACI 318.
   - 3.2. SHEAR DESIGN PER ACI 318.
   - 3.3. CLEAR COVERS PER CSA A23.

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 1.02m MAX. 1.46m CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE @ 236.26m. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN INTENT IS TO CONTAIN WATER AND / OR PREVENT GROUNDWATER MIGRATION INTO THE SYSTEM AND WILL NOT BE SUBJECT TO LEAKAGE TESTING. A THIRD PARTY WATER PROOFING SOLUTION IS REQUIRED FOR SEALING OF SYSTEM / MODULE JOINTS AND SEAMS. SOLUTION TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THIRD PARTY WATER-PROOFING SUPPLIER'S PRODUCT SPECIFICATIONS.



1.702m DOUBLETRAP

StormTrap

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Tank A

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SCALE:

NTS

SHEET TITLE:

1.702m DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.5

STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING: AASHTO HS-20 HIGHWAY LOADING

ADDITIONAL SURCHARGE LOADING: PER ASTM C857 (3.83kPa)

GROUND WATER TABLE: @ 235.00m

SOIL BEARING PRESSURE: 150 kPa

SOIL DENSITY: 1922 kg/m³

EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE: 5.5 kPa/m

EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE: 12.57 kPa/m

APPLICABLE CODES: ASTM C857, ASTM C858-19, ACI-318, FOR CLEAR COVERS: CSA A23

BACKFILL TYPE: SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	1.930m DOUBLETRAP
STORAGE PROV:	502.72 CUBIC METERS
TOTAL STORAGE PROV:	1,527.05 CUBIC METERS

DESIGN ASSUMPTIONS

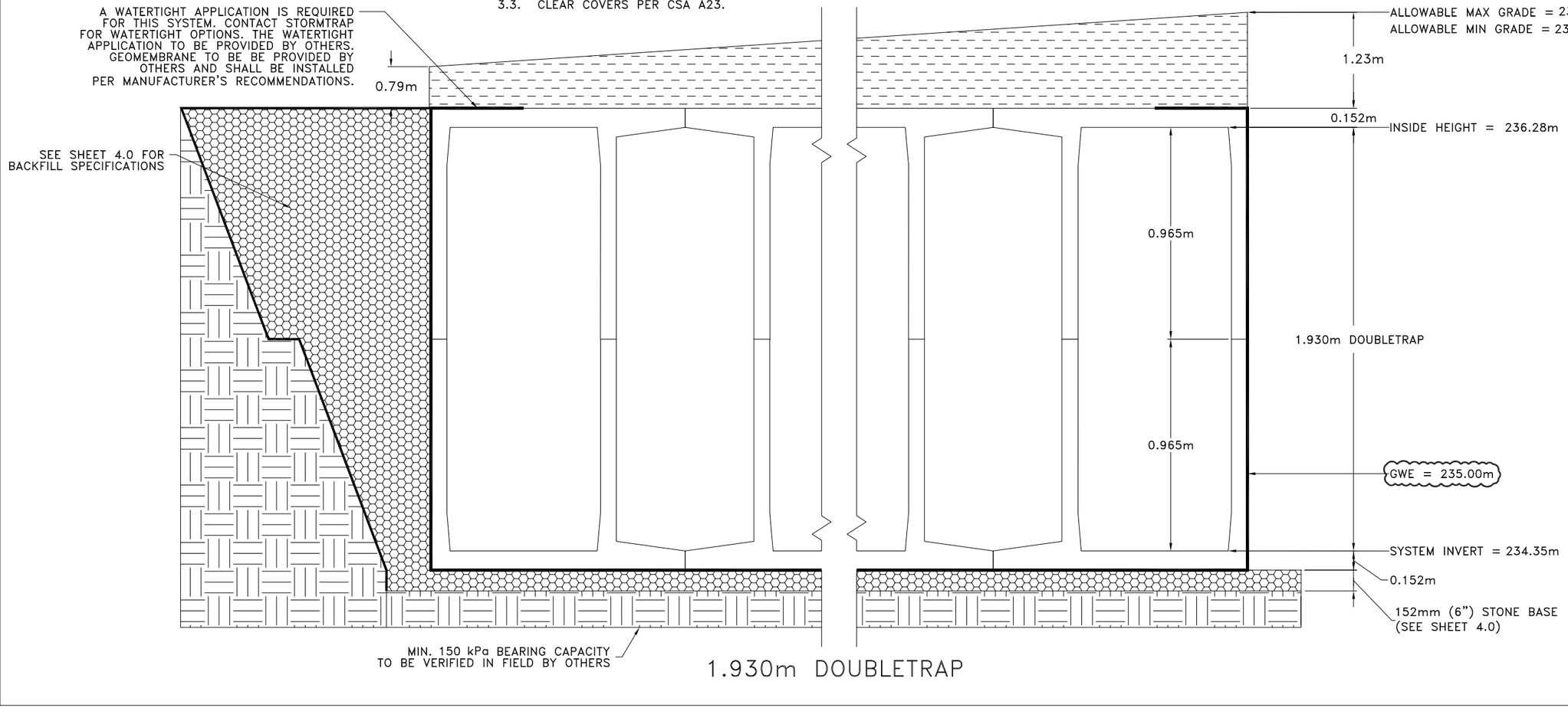
1. ASTM C858-19:
   - 1.1. THE ELASTIC METHOD OF STRUCTURAL DESIGN OR THE STRENGTH DESIGN METHOD FOR REINFORCED CONCRETE OUTLINED IN ACI 318 SHALL BE USED TO DESIGN THE CONCRETE SECTIONS. LOAD COMBINATION FACTORS LISTED BELOW.
     - 1.1.1. DEAD: 1.4
     - 1.1.2. DEAD + LIVE: 1.2 + 1.6
     - 1.1.3. SOIL PRESSURE: 1.6
     - 1.1.4. SOIL SURCHARGE: 1.6

2. ASTM C857:
   - 2.1. LIVE LOAD: PER ASTM C858/C857
     - 2.1.1. AASHTO HS-20 – (71 kN) WHEEL LOAD.
     - 2.1.2. IMPACT LOADING PER ASTM C857 SECTION 4.1.2.2, APPLIED TO ALL LIVE LOAD OPTIONS LISTED ABOVE.
       - 2.1.2.1. 0.152m TO 0.305m COVER RANGE: 30% INCREASE
       - 2.1.2.2. ABOVE 0.306m TO 0.610m COVER RANGE: 20% INCREASE
       - 2.1.2.3. ABOVE 0.611m TO 0.889m COVER RANGE: 10% INCREASE
       - 2.1.2.4. ABOVE 0.890m ONWARDS: NOT APPLIED
   - 2.2. DISTRIBUTION OF WHEEL LOADS THROUGH EARTH FILLS: WHEEL LOADS AT GROUND OR SURFACE SHALL BE DISTRIBUTED USING A WHEEL LOAD AREA REPRESENTED IN FIGURE 2 AND DETAILED IN SECTION 4.1.4 OF ASTM C 857. THE WHEEL LOAD DISTRIBUTION CONSIDERATION IS IRRESPECTIVE OF THE THICKNESS OF SOIL COVER AND IS APPLIED TO ALL SOIL COVER RANGES FROM 0.152m UP TO 3.05m.
   - 2.3. EXTERIOR WALLS SURCHARGE LOADS: EXTERIOR WALLS SURCHARGE LOADS SHALL COMPLY WITH ASTM C 857 SECTION 4.2.1 FOR SURCHARGE PRESSURES, WHICH STATES THAT SURCHARGE PRESSURE SHALL BE NO LESS THAN 0.5% OF THE WHEEL LOAD. IN ADDITION TO THIS THE SURCHARGE PRESSURE CAN BE NEGLECTED WHEN THE DEPTH OF THE SOIL EXCEEDS 2.44m.

3. OTHER STANDARDS:
   - 3.1. FLEXURE DESIGN PER ACI 318.
   - 3.2. SHEAR DESIGN PER ACI 318.
   - 3.3. CLEAR COVERS PER CSA A23.

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.79m MAX. 1.23m CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE @ 235.00m. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN INTENT IS TO CONTAIN WATER AND / OR PREVENT GROUNDWATER MIGRATION INTO THE SYSTEM AND WILL NOT BE SUBJECT TO LEAKAGE TESTING. A THIRD PARTY WATER PROOFING SOLUTION IS REQUIRED FOR SEALING OF SYSTEM / MODULE JOINTS AND SEAMS. SOLUTION TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH THIRD PARTY WATER-PROOFING SUPPLIER'S PRODUCT SPECIFICATIONS.



1.930m DOUBLETRAP

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SCALE:

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SHEET TITLE:

1.930m DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER:

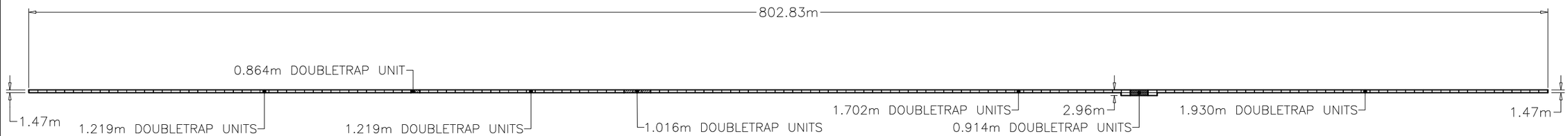
1.6

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 237.66m
ALLOWABLE MIN GRADE = 237.22m
INSIDE HEIGHT ELEVATION = VARIES
SYSTEM INVERT = 234.35m

NOTES:
1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 19mm (3/4") GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.
7. IN ORDER FOR STORMTRAP TO GENERATE APPROVAL DRAWINGS, CIVIL ENGINEERING DRAWINGS MUST BE PROVIDED TO STORMTRAP AND SHALL INCLUDE ALL PIPE SIZES, PIPE MATERIAL, PIPE INVERT ELEVATIONS, ACCESS OPENING SIZE AND SHAPE. IN ADDITION, FINAL GRADING PLANS SHALL ALSO INCLUDE MINIMUM AND MAXIMUM GRADES OVER THE TOP OF THE STORMTRAP SYSTEM.

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
0	I	0.864m DOUBLETRAP	–	–
0	II	0.864m DOUBLETRAP	–	–
0	III	0.864m DOUBLETRAP	–	–
0	IV	0.864m DOUBLETRAP	–	–
2	VII	0.864m DOUBLETRAP	3835	3835
0	VII–1	0.864m DOUBLETRAP	–	–
0	VII–2	0.864m DOUBLETRAP	–	–
0	VII–3	0.864m DOUBLETRAP	–	–
0	VII–4	0.864m DOUBLETRAP	–	–
0	SPIII	0.864m DOUBLETRAP	VARIES	VARIES
0	SPIV	0.864m DOUBLETRAP	VARIES	VARIES
0	T2 PANEL	203mm THICK PANEL	–	
0	T4 PANEL	203mm THICK PANEL	–	
0	T7 PANEL	203mm THICK PANEL	–	
1	JOINT WRAP	18.29m PER ROLL		
8	JOINT TAPE	4.42m PER ROLL		
1	GALLON(S)	PRIMER FOR JOINT WRAP		
TOTAL PIECES = 2				
TOTAL PANELS = 0				
HEAVIEST PICK WEIGHT = 3,835				



BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
0	I	0.914m DOUBLETRAP	–	–
0	II	0.914m DOUBLETRAP	–	–
0	III	0.914m DOUBLETRAP	–	–
0	IV	0.914m DOUBLETRAP	–	–
0	VII	0.914m DOUBLETRAP	–	–
0	VII–1	0.914m DOUBLETRAP	–	–
0	VII–2	0.914m DOUBLETRAP	–	–
8	VII–3	0.914m DOUBLETRAP	3862	3862
0	VII–4	0.914m DOUBLETRAP	–	–
0	SPIII	0.914m DOUBLETRAP	VARIES	VARIES
0	SPIV	0.914m DOUBLETRAP	VARIES	VARIES
0	T2 PANEL	203mm THICK PANEL	–	
0	T4 PANEL	203mm THICK PANEL	–	
0	T7 PANEL	203mm THICK PANEL	–	
2	JOINT WRAP	18.29m PER ROLL		
16	JOINT TAPE	4.42m PER ROLL		
1	GALLON(S)	PRIMER FOR JOINT WRAP		
TOTAL PIECES = 8				
TOTAL PANELS = 0				
HEAVIEST PICK WEIGHT = 3,862				

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
0	I	1.016m DOUBLETRAP	–	–
0	II	1.016m DOUBLETRAP	–	–
0	III	1.016m DOUBLETRAP	–	–
0	IV	1.016m DOUBLETRAP	–	–
6	VII	1.016m DOUBLETRAP	4052	4052
0	VII–1	1.016m DOUBLETRAP	–	–
0	VII–2	1.016m DOUBLETRAP	–	–
0	VII–3	1.016m DOUBLETRAP	–	–
0	VII–4	1.016m DOUBLETRAP	–	–
0	SPIII	1.016m DOUBLETRAP	VARIES	VARIES
0	SPIV	1.016m DOUBLETRAP	VARIES	VARIES
0	T2 PANEL	203mm THICK PANEL	–	
0	T4 PANEL	203mm THICK PANEL	–	
0	T7 PANEL	203mm THICK PANEL	–	
2	JOINT WRAP	18.29m PER ROLL		
8	JOINT TAPE	4.42m PER ROLL		
1	GALLON(S)	PRIMER FOR JOINT WRAP		
TOTAL PIECES = 6				
TOTAL PANELS = 0				
HEAVIEST PICK WEIGHT = 4,052				

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
0	I	1.219m DOUBLETRAP	–	–
0	II	1.219m DOUBLETRAP	–	–
0	III	1.219m DOUBLETRAP	–	–
0	IV	1.219m DOUBLETRAP	–	–
132	VII	1.219m DOUBLETRAP	4342	4342
0	VII–1	1.219m DOUBLETRAP	–	–
0	VII–2	1.219m DOUBLETRAP	–	–
0	VII–3	1.219m DOUBLETRAP	–	–
0	VII–4	1.219m DOUBLETRAP	–	–
0	SPIII	1.219m DOUBLETRAP	VARIES	VARIES
0	SPIV	1.219m DOUBLETRAP	VARIES	VARIES
0	T2 PANEL	203mm THICK PANEL	–	
0	T4 PANEL	203mm THICK PANEL	–	
1	T7 PANEL	203mm THICK PANEL	1096	
31	JOINT WRAP	18.29m PER ROLL		
160	JOINT TAPE	4.42m PER ROLL		
7	GALLON(S)	PRIMER FOR JOINT WRAP		
TOTAL PIECES = 132				
TOTAL PANELS = 1				
HEAVIEST PICK WEIGHT = 4,342				

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
0	I	1.702m DOUBLETRAP	–	–
0	II	1.702m DOUBLETRAP	–	–
0	III	1.702m DOUBLETRAP	–	–
0	IV	1.702m DOUBLETRAP	–	–
106	VII	1.702m DOUBLETRAP	4342	5719
0	VII–1	1.702m DOUBLETRAP	–	–
0	VII–2	1.702m DOUBLETRAP	–	–
0	VII–3	1.702m DOUBLETRAP	–	–
4	VII–4	1.702m DOUBLETRAP	4166	5477
0	SPIII	1.702m DOUBLETRAP	VARIES	VARIES
0	SPIV	1.702m DOUBLETRAP	VARIES	VARIES
0	T2 PANEL	203mm THICK PANEL	–	
0	T4 PANEL	203mm THICK PANEL	–	
1	T7 PANEL	203mm THICK PANEL	1443	
27	JOINT WRAP	18.29m PER ROLL		
128	JOINT TAPE	4.42m PER ROLL		
6	GALLON(S)	PRIMER FOR JOINT WRAP		
TOTAL PIECES = 110				
TOTAL PANELS = 1				
HEAVIEST PICK WEIGHT = 5,719				

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
0	I	1.930m DOUBLETRAP	–	–
0	II	1.930m DOUBLETRAP	–	–
0	III	1.930m DOUBLETRAP	–	–
0	IV	1.930m DOUBLETRAP	–	–
88	VII	1.930m DOUBLETRAP	5356	5356
0	VII–1	1.930m DOUBLETRAP	–	–
0	VII–2	1.930m DOUBLETRAP	–	–
0	VII–3	1.930m DOUBLETRAP	–	–
4	VII–4	1.930m DOUBLETRAP	4872	5114
0	SPIII	1.930m DOUBLETRAP	VARIES	VARIES
0	SPIV	1.930m DOUBLETRAP	VARIES	VARIES
0	T2 PANEL	203mm THICK PANEL	–	
0	T4 PANEL	203mm THICK PANEL	–	
2	T7 PANEL	203mm THICK PANEL	1608	
24	JOINT WRAP	18.29m PER ROLL		
112	JOINT TAPE	4.42m PER ROLL		
5	GALLON(S)	PRIMER FOR JOINT WRAP		
TOTAL PIECES = 92				
TOTAL PANELS = 2				
HEAVIEST PICK WEIGHT = 5,356				

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Tank A
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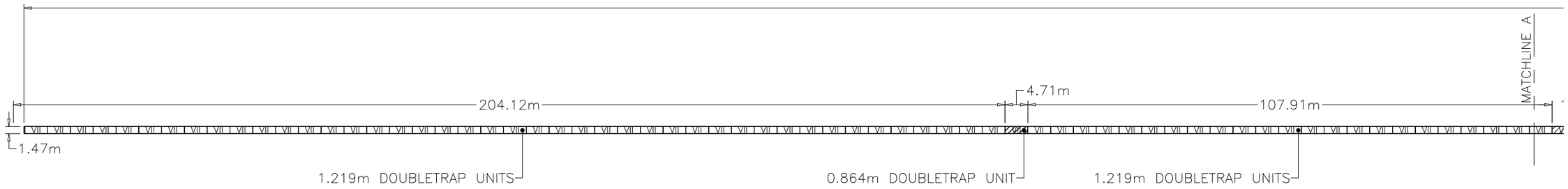
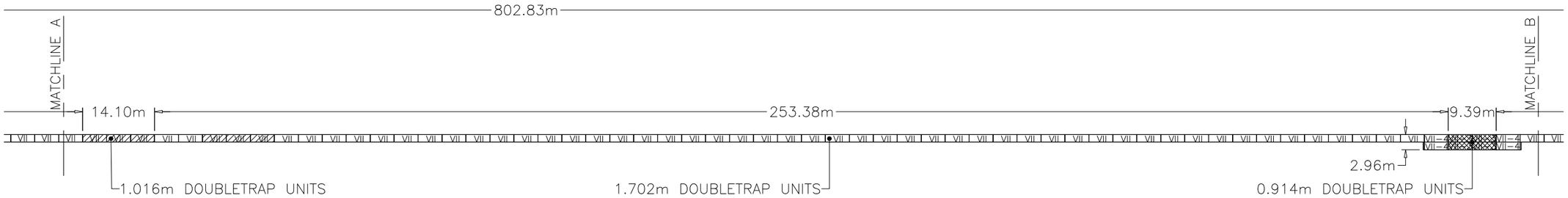
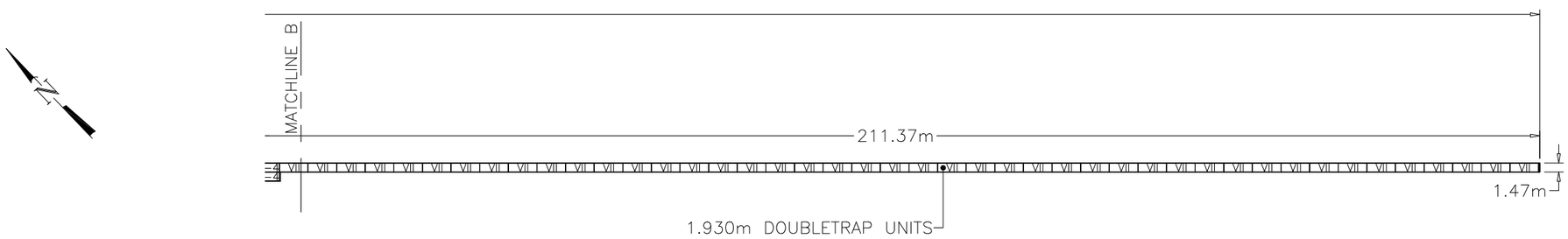
OVERALL DOUBLETRAP SYSTEM LAYOUT

SHEET NUMBER:

2.0







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SHEET TITLE:

DOUBLETRAP SYSTEM LAYOUT

SHEET NUMBER:

2.1

STORMTRAP INSTALLATION SPECIFICATION

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891 (STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES). THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS ARE PROVIDED FOR EMPHASIS. THE MENTION OF THESE ITEMS DOES NOT PRECLUDE THE INSTALLING CONTRACTOR FROM FOLLOWING ASTM C891 IN ITS ENTIRETY AND IMPLEMENTING ALL APPROPRIATE MEASURES. THE INSTALLING CONTRACTOR OWNS AND IS RESPONSIBLE FOR THE STORMTRAP SYSTEM UPON REMOVAL OF THE MODULES FROM THE DELIVERY TRUCK THROUGH 'FINAL CONSTRUCTION'. FINAL CONSTRUCTION IS ACHIEVED WHEN ALL MODULES ARE SET, FULLY BACKFILLED, AND WHEN FINAL FINISHED GRADES ARE REACHED. THE CONTRACTOR IS RESPONSIBLE FOR ANY COUNTERMEASURES NECESSARY TO RESIST UPLIFT/BUOYANCY BEFORE 'FINAL CONSTRUCTION' IS ACHIEVED.

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES CAN BE PLACED ON A LEVEL, 152mm (6") FOUNDATION OF 76mm ($\frac{3}{4}$") AGGREGATE EXTENDING 610mm (2'-0") PAST THE OUTSIDE OF THE SYSTEM (SEE DETAIL 1) AND SHALL BE PLACED ON PROPERLY COMPACTED SOILS (SEE SHEET 1.1 FOR SOIL BEARING CAPACITY REQUIREMENTS), AND IN ACCORDANCE WITH ASTM C891 STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 19mm ($\frac{3}{4}$") (SEE DETAIL 2). IF THE SPACE EXCEEDS 19mm ($\frac{3}{4}$"), THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. STORMTRAP MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT STORMTRAP FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION IS TO BE PROVIDED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.

6. THE HORIZONTAL JOINT BETWEEN THE TOP AND BASE LEG CONNECTIONS OF ALL PERIMETER STORMTRAP MODULES SHALL BE SEALED WITH PREFORMED MASTIC JOINT TAPE ACCORDING TO ASTM C891, 8.8 AND 8.12. (SEE DETAIL 3). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

7. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 203mm (8") WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 4, & 5). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

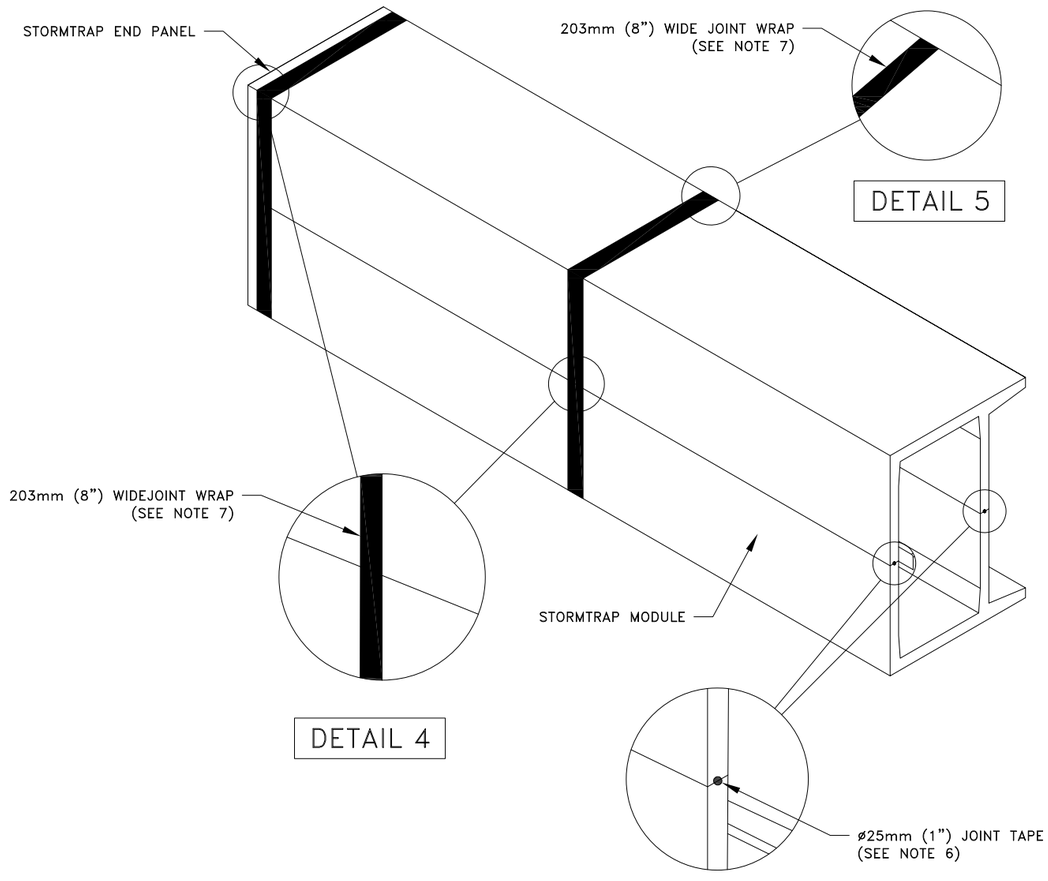
   7.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

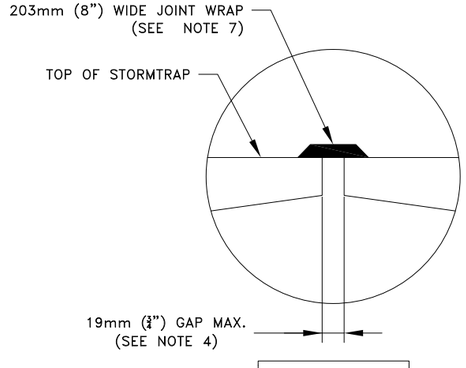
   7.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

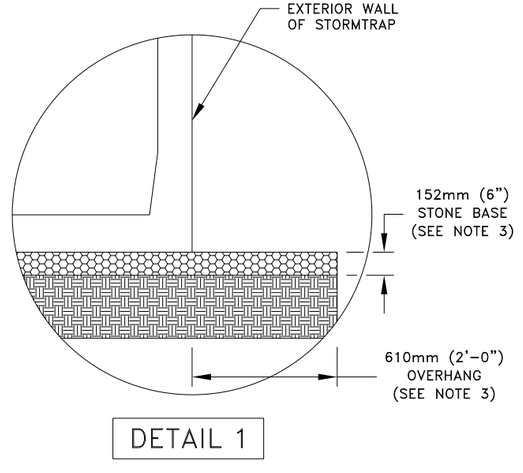
8. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

9. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND TO DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

10. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.







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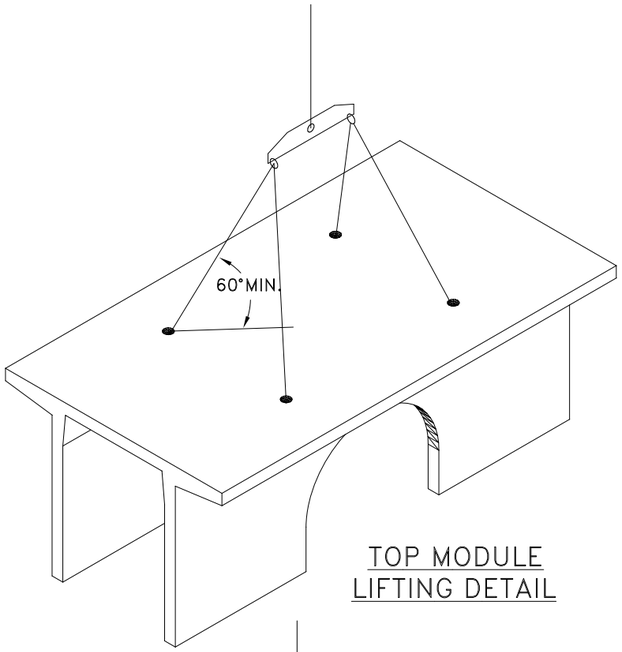
DOUBLETRAP
INSTALLATION
SPECIFICATION

SHEET NUMBER:

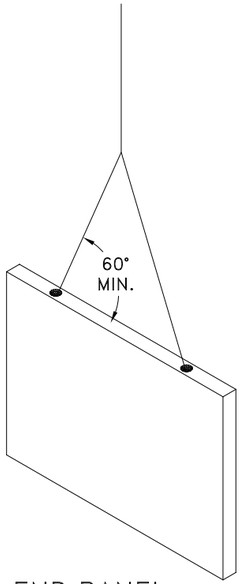
3.0

STORMTRAP MODULE LIFTING SPECIFICATION

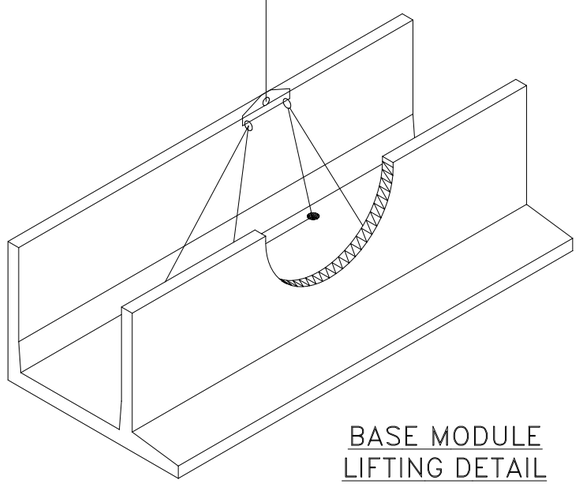
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE.
2. MINIMUM 2134mm (7'FT) CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



TOP MODULE
LIFTING DETAIL



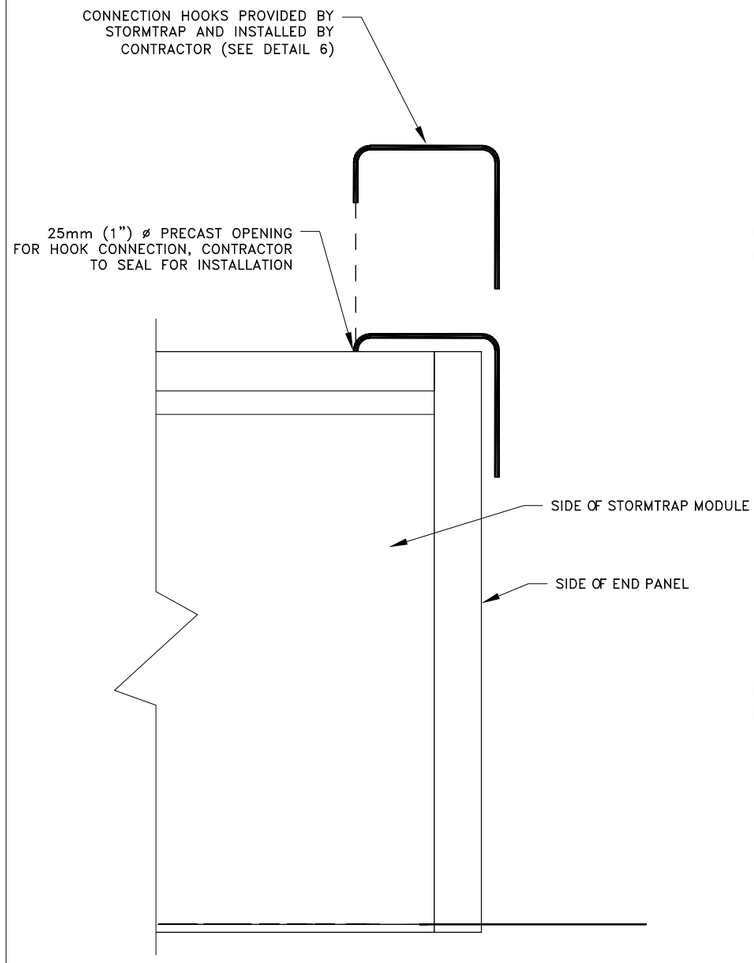
END PANEL
LIFTING DETAIL



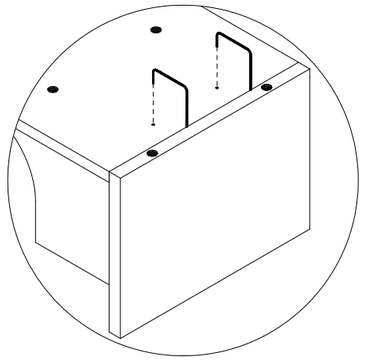
BASE MODULE
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION SPECIFICATION

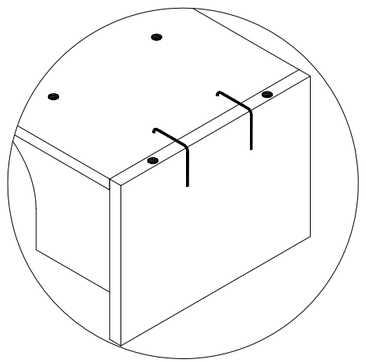
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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DOUBLETRAP
INSTALLATION
SPECIFICATION

SHEET NUMBER:

3.1

ZONE CHART

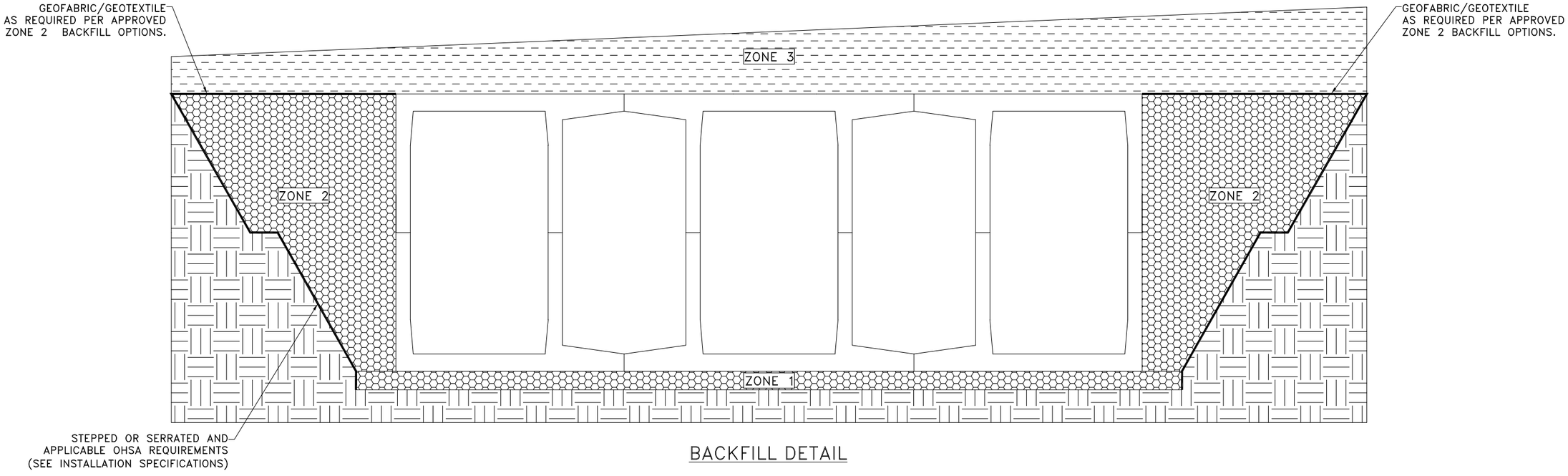
ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	ASTM C33 #5 19mm (¾") STONE ANGULAR AGGREGATE (SEE NOTE 4)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 1922 kg/m³

APPROVED ZONE 2 BACKFILL OPTIONS

OPTION	REMARKS
19mm (¾") STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 25mm SIEVE WITH 0% TO 5% PASSING THE 2.36mm SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING 412µm SIEVE AND LESS THAN 5% PASSING 75µm SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 25mm SIEVE WITH 0% TO 5% PASSING THE 2.36mm SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 38mm SIEVE WITH LESS THAN 12% PASSING THE 75µm SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

STORMTRAP ZONE INSTALLATION SPECIFICATION/PROCEDURE

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 610mm (2'–0") HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE–DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS). ALL MODULES MUST BE SET AND ALL SIDES MUST BE FULLY BACKFILLED BEFORE TRAVEL OVERTOP THE SYSTEM IS PERMITTED. SEE NOTE 2 FOR EXCEPTIONS AND LIMITATIONS.
2. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED IN MINIMUM 152mm (6") LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN LIVE LOAD LISTED ON SHEET 1.0 TRAVEL OVERTOP THE SYSTEM. IF TRAVEL OVER THE SYSTEM OCCURS BEFORE THE MINIMUM DESIGN COVER IS ACHIEVED, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. VEHICLES AND MACHINERY USED TO PLACE FILL MATERIAL ON TOP OF THE SYSTEM SHALL TRAVEL PARALLEL TO THE LONGITUDINAL AXIS OF THE STORMTRAP MODULES WHENEVER POSSIBLE.
3. THE VIBRATORY FUNCTION OF ANY ROLLER, COMPACTOR, VEHICLE, ETC. SHALL NOT BE USED OVERTOP THE SYSTEM WITHOUT PRIOR APPROVAL FROM STORMTRAP. IN SOME CASES, HAND COMPACTION MAY BE NECESSARY TO ENSURE THAT THE ALLOWABLE DESIGN LOADING IS NOT EXCEEDED.
4. STONE AGGREGATE FOUNDATION IN ZONE 1 IS RECOMMENDED FOR LEVELING PURPOSES ONLY (OPTIONAL).



BACKFILL DETAIL

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PROJECT INFORMATION:

Humber Station Road
Tank A
Caledon, ON

CURRENT ISSUE DATE:

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1	11/19/2024	PRELIMINARY	LR

SCALE:

NTS

SHEET TITLE:

DOUBLETRAP BACKFILL SPECIFICATION

SHEET NUMBER:

4.0

ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 610mm (2'–0") IN DIAMETER. ACCESS OPENINGS LARGER THAN 1219mm (4'–0") IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 610mm (2'–0") OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED. SEE SHEET 2.0 FOR SIZES AND LOCATIONS.
2. UNLESS OTHERWISE SPECIFIED, PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 305mm (1'–0") FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 254mm (10") MIN AND 356mm (14") MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 610mm (2'–0") TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

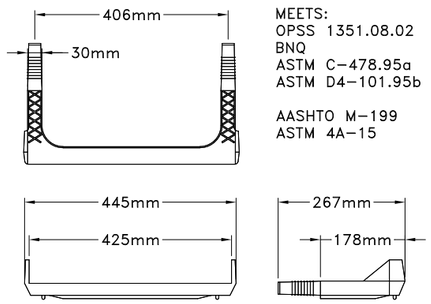
PIPE OPENING SPECIFICATION

1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 305mm (1'–0").
2. CONNECTING PIPES MAY BE INSTALLED WITH A 305mm (1'–0") CONCRETE COLLAR AND AN AGGREGATE CRADLE (AS REQUIRED) FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 35 mPa MAY BE USED.
3. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET INCLUDING BUT NOT LIMITED TO CONCRETE COLLARS, AGGREGATE CRADLES, GRADE RINGS, RISER SECTIONS, ETC., ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.



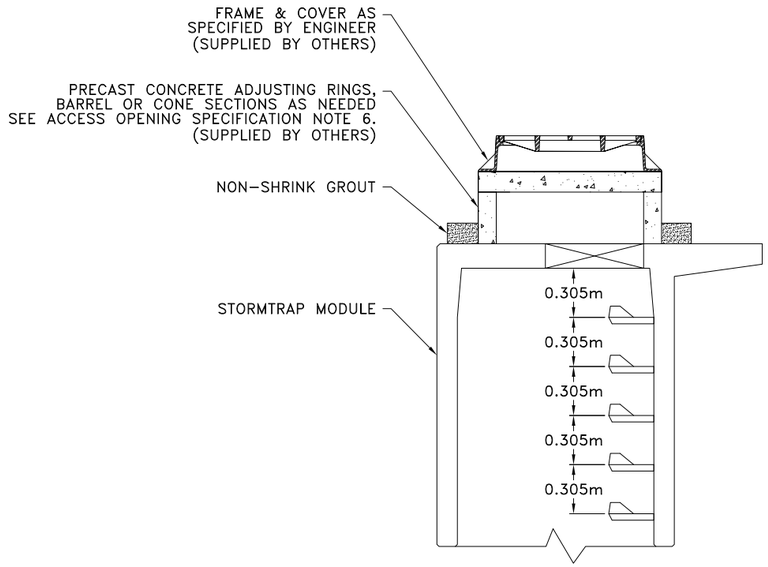
MEETS:
OPSS 1351.08.02
BNQ
ASTM C–478.95a
ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

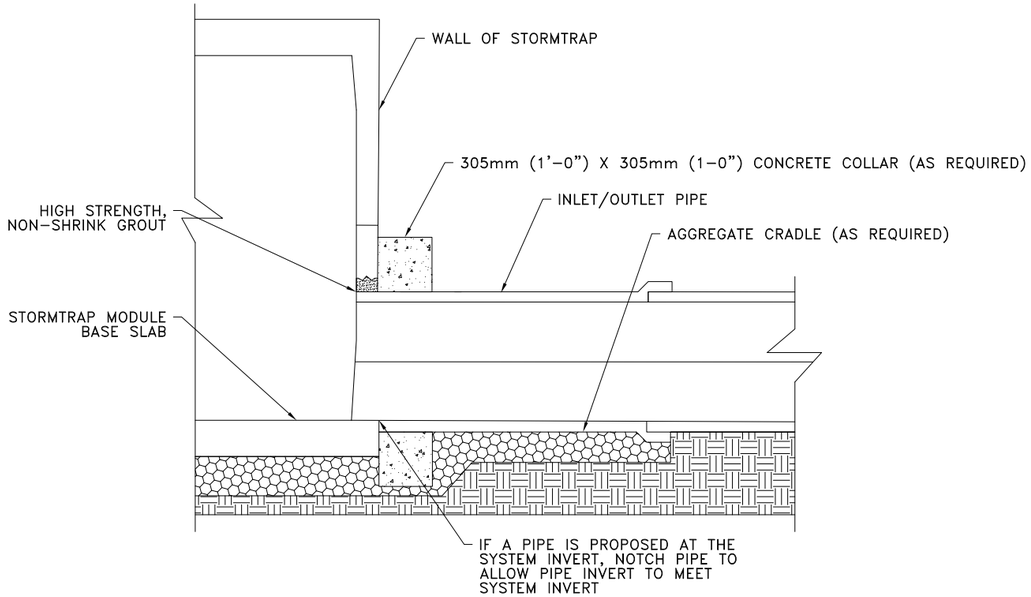
STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 406mm STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 406mm STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.



RISER/STAIR DETAIL



NOTCHED PIPE CONNECTION DETAIL
WHEN PIPE INVERT IS AT
INVERT OF STORMTRAP SYSTEM

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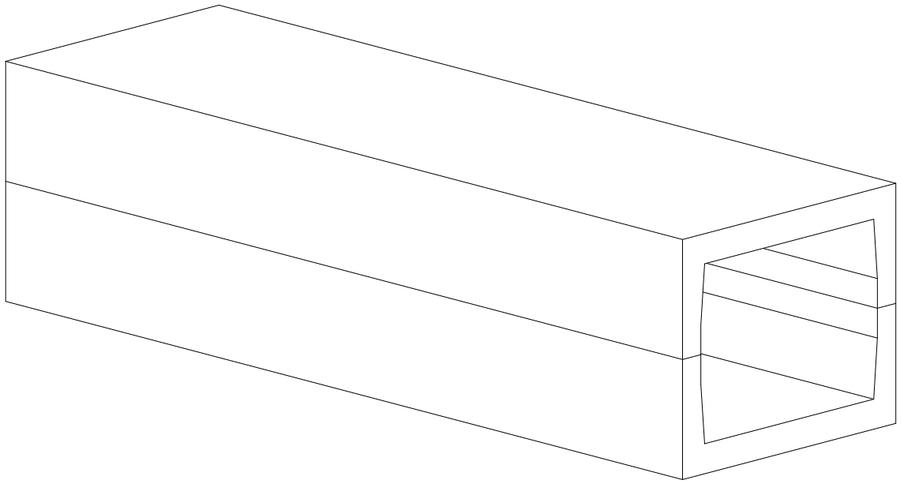
SHEET TITLE:

PIPE / ACCESS OPENING SPECIFICATION

SHEET NUMBER:

5.0



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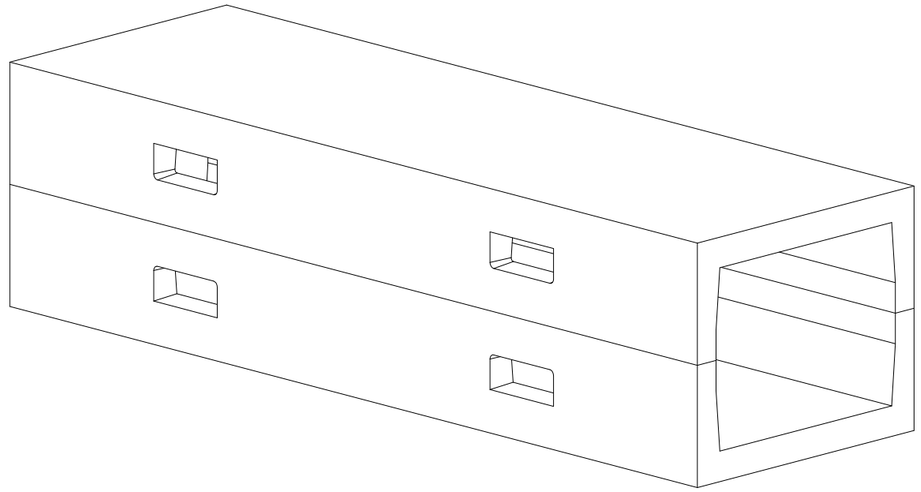
TYPE VII



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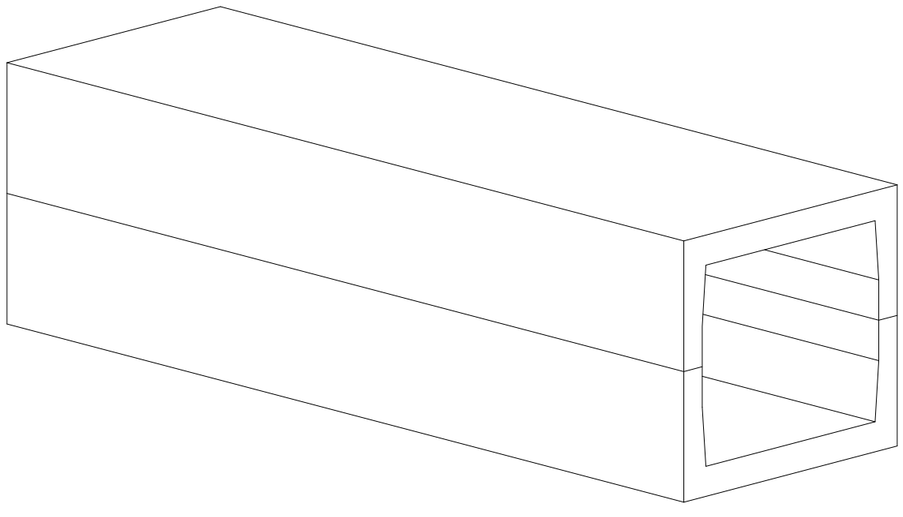
TYPE VII-3



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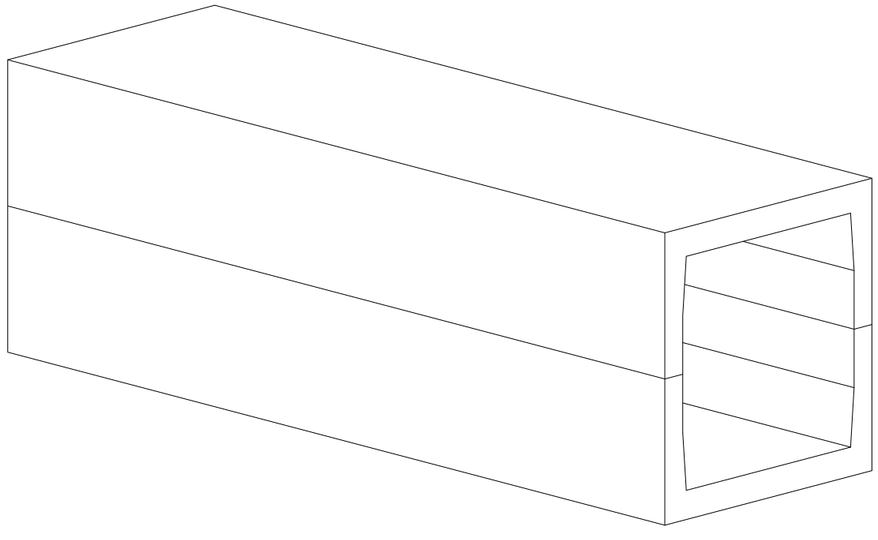

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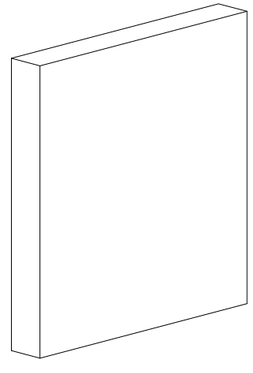
TYPE VII



1.219m DOUBLETRAP
TYPE VII END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

StormTrap
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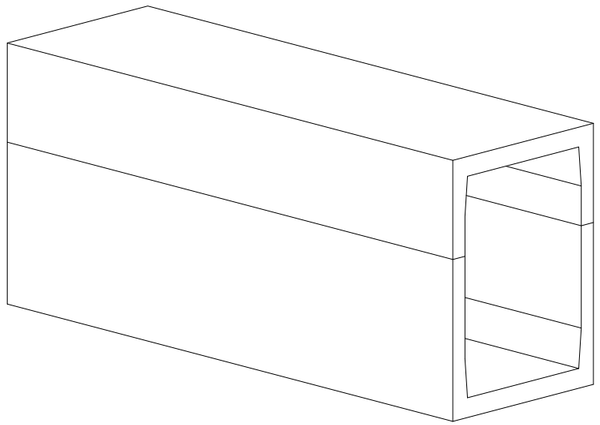
DOUBLETRAP
MODULE TYPES

SHEET NUMBER:

6.0



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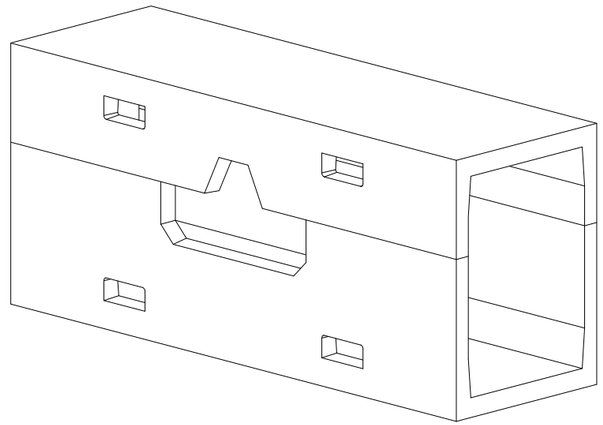

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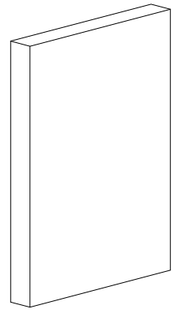

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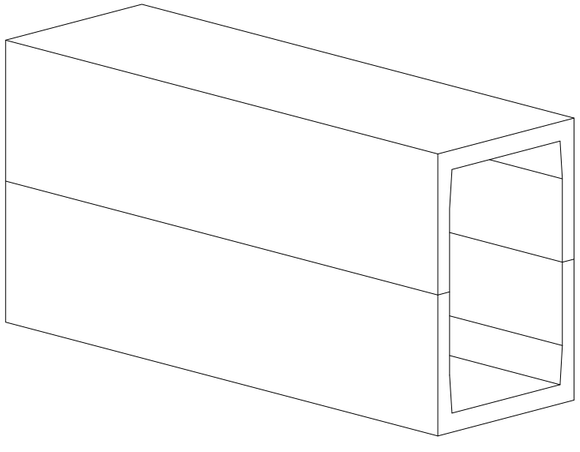

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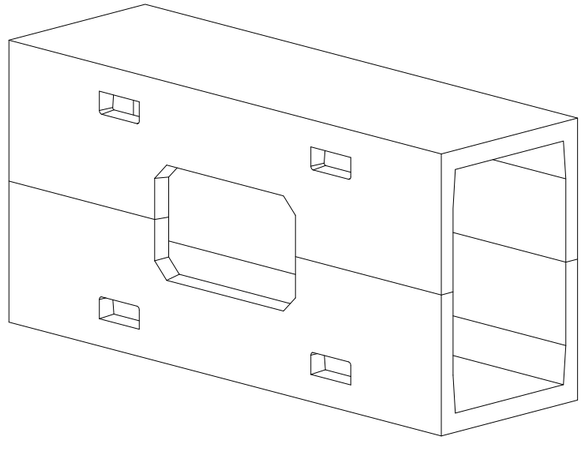
TYPE VII



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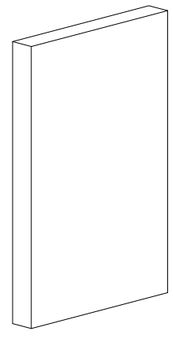

1.930m DOUBLETRAP
TYPE VII END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
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1	11/19/2024	PRELIMINARY	LR

SCALE:

NTS

SHEET TITLE:

DOUBLETRAP
MODULE TYPES

SHEET NUMBER:

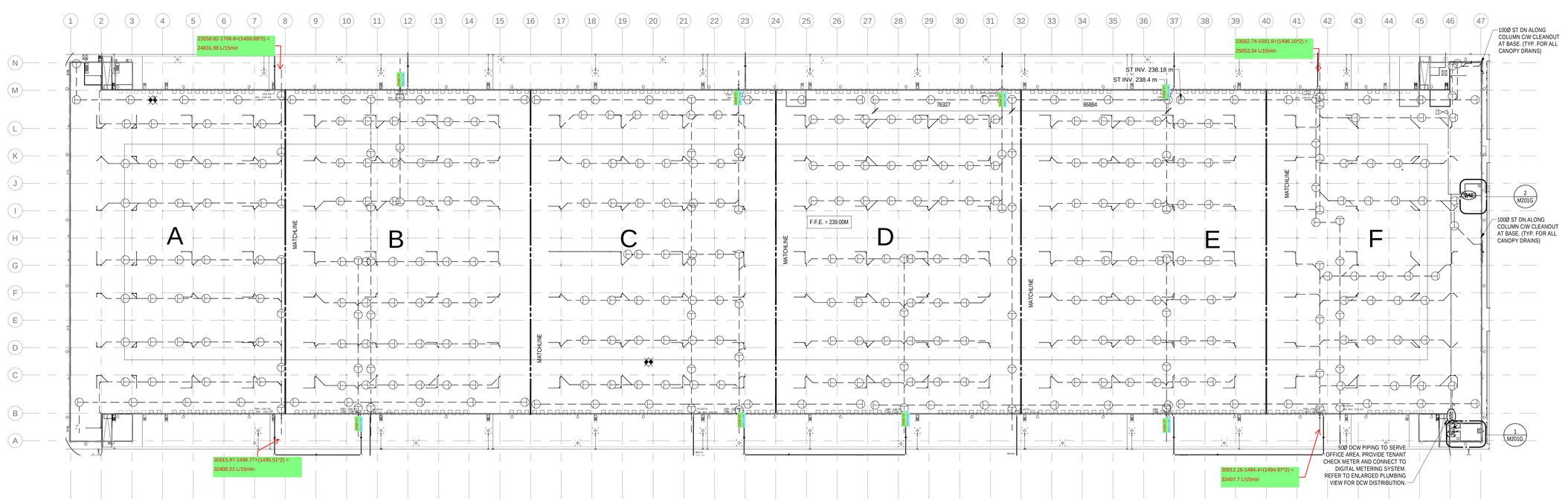
6.1

APPENDIX C

Mechanical

PLUMBING SHEET NOTES

1. PROVIDE ALL VENTING OF SYSTEMS TO MEET OBC PART 7 REQUIREMENTS, WHETHER SHOWN OR NOT.
2. ALL TRAP MUST BE PRIMED IN ACCORDANCE WITH OBC PART 7.
3. INSTALL PLUMBING SYSTEMS AS HIGH AS POSSIBLE. COORDINATE INSTALLATION WITH STRUCTURE, ARCHITECTURE, ELECTRICAL AND OTHER MECHANICAL SERVICES PRIOR TO BEGINNING INSTALLATION. INSTALL ALL PIPING ANIN STRAIGHT RUNS PARALLEL OR PERPENDICULAR TO BUILDING LINES UNLESS NOTED OTHERWISE.
4. PROVIDE ALL REQUIRED CLEANOUTS IN DRAINAGE SYSTEMS IN ACCORDANCE WITH OBC PART 7, INCLUDING EVERY 6M (20') FOR SINK DRAIN LINES, EVERY 15M (50') FOR PIPE 100ø AND SMALLER, AND EVERY 30M (100') FOR LARGER PIPE HORIZONTALLY, AND AT EVERY CHANGE IN DIRECTION OF 135 DEGREES, WHETHER SHOWN OR NOT.
5. CLEANOUTS INSTALLED WITHIN VERTICAL LEADERS SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS TO ENSURE THE CLEANOUT IS ON THE CORRECT SIDE OF ANY ENCLOSURES. PROVIDE ACCESS PANELS TO ACCESS ALL CLEANOUTS BEHIND ARCHITECTURAL ENCLOSURES.
6. REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF ALL PLUMBING FIXTURES. COORDINATE FIXTURE ROUGH-IN DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND PLUMBING FIXTURE SHOP DRAWINGS.
7. PROVIDE AN EXPANSION TANK AT EACH AND EVERY DOMESTIC HOT WATER TANK.
8. UNLESS NOTED OTHERWISE, SLOPE DRAINAGE PIPES 75MM (3") AND SMALLER AT MIN. 2%; HORIZONTAL OFFSETS LESS THAN 6M (20') CONNECTING ROOF DRAINS TO RAIN LEADERS AT MIN. 2%; AND ALL OTHER DRAINAGE PIPES AT MIN. 1%.
9. ALL SANITARY BRANCHES TO BE MINIMUM 100MM (4") UNLESS NOTED OTHERWISE.
10. PROVIDE ISOLATION VALVES WHERE REQUIRED FOR SERVICING, UPSTREAM AND DOWNSTREAM AT ALL EQUIPMENT, AT CONNECTIONS TO RISERS AND WHERE INDICATED ON THE PLANS.
11. MAKE PENETRATIONS THROUGH FLOORS WATERTIGHT IN WASHROOMS, JANITOR'S CLOSETS, MECHANICAL ROOMS, AND THROUGH CEILINGS OF ELECTRICAL ROOMS.
12. INSTALL VALVES AND ACCESSORIES TO BE READILY ACCESSIBLE; PROVIDE ACCESS PANELS TO SUIT FINISH OF WALL OR CEILING WHERE REQUIRED. ACCESS DOORS IN FIRE RATED ASSEMBLIES SHALL BE ULC LISTED TO MATCH ASSEMBLY RATING.
13. ALL PIPING THAT PENETRATES AN ARCHITECTURAL FIRE SEPARATION IS TO BE FULLY FIRE STOPPED WITH UL-LISTED FIRE STOP ASSEMBLIES COMPLYING FULLY WITH SPECIFICATION AND AHJ REQUIREMENTS.
14. COORDINATE WITH THE GENERAL CONTRACTOR TO VERIFY THAT ALL REQUIRED MECHANICAL OPENINGS SHOWN ON THE DRAWINGS AND/OR REQUIRED BY THE SPECIFICATIONS ARE PROVIDED IN PRECAST BUILDING ELEMENTS AT THE SHOP DRAWING STAGE. REVIEW PRECAST SHOP DRAWING TO VERIFY.
15. ALL STORM PIPING TO MAINTAIN 42FT CLEAR HEIGHT AFF. NO EXCEPTIONS.



1 / M200 OVERALL PD FLOOR PLAN
1 : 1000

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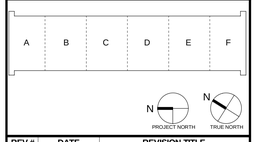
BUILDING KEY PLAN:



REV #	DATE	REVISION TITLE
2	2024-08-29	ISSUED FOR COORDINATION
3	2024-12-06	ISSUED FOR PERMIT

PROJECT NO: 22-000-213
DRAWN BY: SK
CHECKED BY: RR/DJ

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□ RELEASED FOR CONSTRUCTION

PROJECT TITLE:

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CALEDON, ONTARIO

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647-258-2600
https://www.prologis.com

SHEET TITLE:

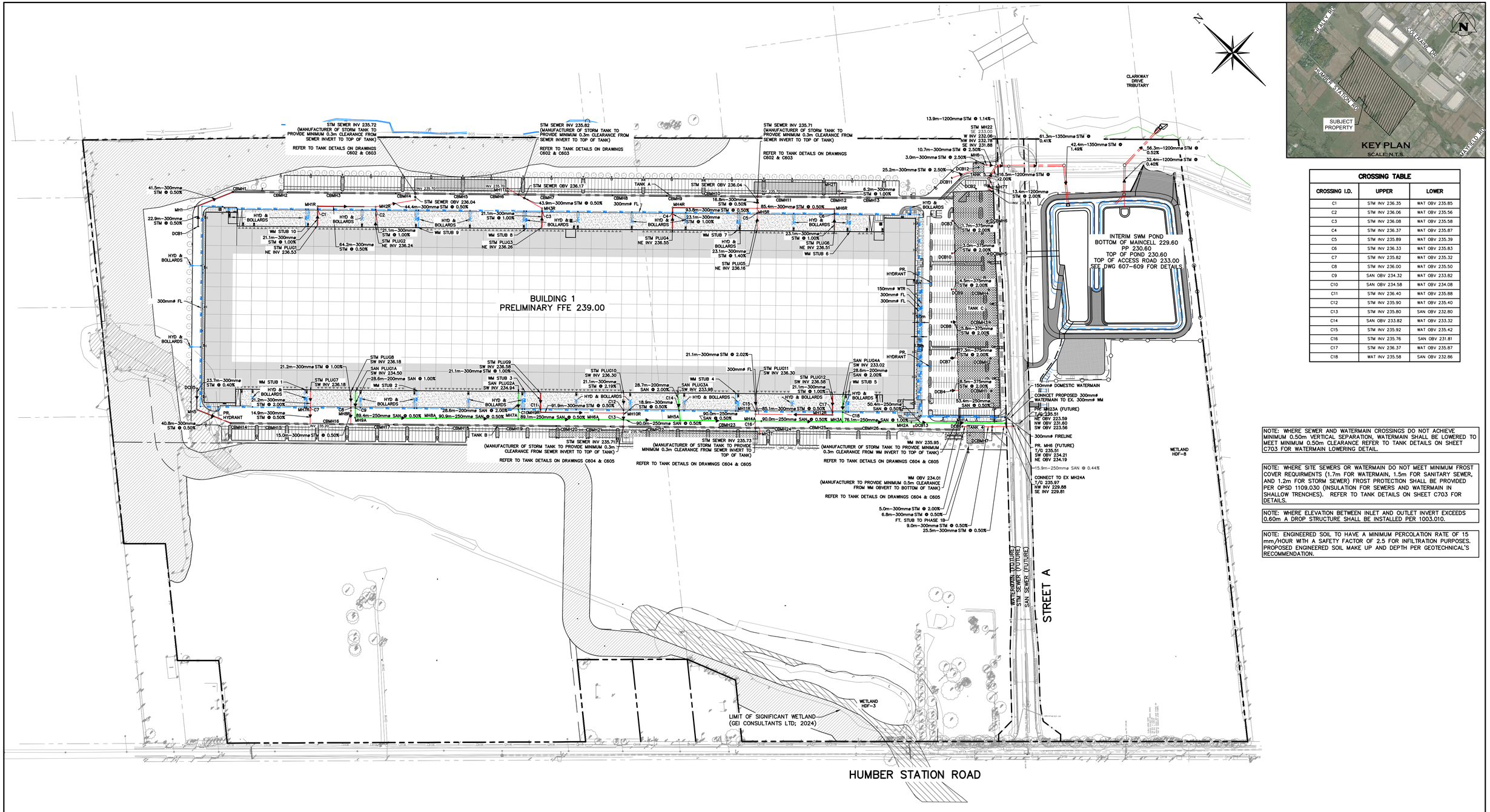
OVERALL PD PLAN

SEAL:

SHEET NO.

M200

DRAWINGS



CROSSING TABLE		
CROSSING I.D.	UPPER	LOWER
C1	STM INV 236.35	WAT OBV 235.85
C2	STM INV 236.06	WAT OBV 235.56
C3	STM INV 236.08	WAT OBV 235.58
C4	STM INV 236.37	WAT OBV 235.87
C5	STM INV 235.89	WAT OBV 235.39
C6	STM INV 236.33	WAT OBV 235.83
C7	STM INV 235.82	WAT OBV 235.32
C8	STM INV 236.00	WAT OBV 235.50
C9	SAN OBV 234.32	WAT OBV 233.82
C10	SAN OBV 234.58	WAT OBV 234.08
C11	STM INV 236.40	WAT OBV 235.88
C12	STM INV 235.90	WAT OBV 235.40
C13	STM INV 235.80	SAN OBV 232.80
C14	SAN OBV 233.82	WAT OBV 233.32
C15	STM INV 235.92	WAT OBV 235.42
C16	STM INV 235.76	SAN OBV 231.81
C17	STM INV 236.37	WAT OBV 235.87
C18	WAT INV 235.58	SAN OBV 232.86

NOTE: WHERE SEWER AND WATERMAIN CROSSINGS DO NOT ACHIEVE MINIMUM 0.50m VERTICAL SEPARATION, WATERMAIN SHALL BE LOWERED TO MEET MINIMUM 0.50m CLEARANCE REFER TO TANK DETAILS ON SHEET C703 FOR WATERMAIN LOWERING DETAIL.

NOTE: WHERE SITE SEWERS OR WATERMAIN DO NOT MEET MINIMUM FROST COVER REQUIRMENTS (1.7m FOR WATERMAIN, 1.5m FOR SANITARY SEWER, AND 1.2m FOR STORM SEWER) FROST PROTECTION SHALL BE PROVIDED PER OPSD 1109.030 (INSULATION FOR SEWERS AND WATERMAIN IN SHALLOW TRENCHES). REFER TO TANK DETAILS ON SHEET C703 FOR DETAILS.

NOTE: WHERE ELEVATION BETWEEN INLET AND OUTLET INVERT EXCEEDS 0.60m A DROP STRUCTURE SHALL BE INSTALLED PER 1003.010.

NOTE: ENGINEERED SOIL TO HAVE A MINIMUM PERCOLATION RATE OF 15 mm/HOUR WITH A SAFETY FACTOR OF 2.5 FOR INFILTRATION PURPOSES. PROPOSED ENGINEERED SOIL MAKE UP AND DEPTH PER GEOTECHNICAL'S RECOMMENDATION.

NOT FOR CONSTRUCTION

TEMPORARY BENCHMARKS:

ELEVATION ARE REFERRED TO THE REGION OF PEEL BENCHMARK No. 40 LOCATED ON THE SOUTH FACE AT THE WEST CORNER OF SOUTH END OF A CONCRETE BOX CULVERT ACROSS MAYFIELD ROAD APPROXIMATELY 0.56 km EAST OF CLARKWAY DRIVE, HAVING AN ELEVATION OF 222.165 m. VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928 (1978 SOUTHERN ONTARIO READJUSTMENT)

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

No.	ISSUE	DATE: MMM/DD/YYYY
1	ISSUED FOR SPA SUBMISSION	NOV/22/2024
2	RE-ISSUED FOR SPA SUBMISSION	AUG/06/2025

Engineer: LICENSED PROFESSIONAL ENGINEER — J. BOILY — 100553247 — Aug-06-2025 — PROVINCE OF ONTARIO

Engineer: LICENSED PROFESSIONAL ENGINEER — M. ISKANDER — 100226629 — Aug-06-2025 — PROVINCE OF ONTARIO

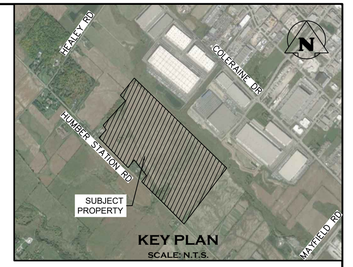
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: OVERALL PHASE 1A SERVICING PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624-6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C200

PART 29, PLAN 4



KEY PLAN
SCALE: N.T.S.

ARCHEOLOGICAL LIMIT INCLUDING PROTECTIVE BUFFER

UNDEVELOPABLE AREA

NATURAL HERITAGE SYSTEM LIMIT

STORMTRAP STORMWATER STORAGE TANK (TANK A)
FOOTPRINT= 1,168m²
PROVIDED VOLUME= 1,524m³
TANK INV ELEV =234.35
TANK OBV VARIES DUE TO CROSSINGS, REFER TO TANK DETAILS ON DRAWINGS C602 & C603

CBMH's TO CONNECT DIRECTLY INTO TOP OF TANK; REFER TO STORMTRAP DESIGN AND DETAILS (TYP.)

41.5m–300mmø STM @ 0.50% INSULATED PER OPSD 1109.03

CBMH1
T/G 237.23
c/w HONEYCOMB GRATE PER OPSD 403.010
NW INV 235.89

CBMH2
T/G 237.22
c/w HONEYCOMB GRATE PER OPSD 403.010

MH1
T/G 237.73
SW INV 236.15
SE INV 236.10

22.9m–300mmø STM @ 0.50% INSULATED PER OPSD 1109.03

DCB1
T/G 237.80
NE INV 236.26

300mmø PVC FIRE LINE

HYDRANT AND BOLLARDS PER REGION OF PEEL STD DWG 1-6-1 AND 1-6-3

300mmø PVC FIRE LINE

300mmø PVC FIRE LINE

HYDRANT AND BOLLARDS PER REGION OF PEEL STD DWG 1-6-1 AND 1-6-3

PROPOSED BUILDING '1'
FFE = 239.00

SEE SHEET C202

SEE SHEET C203

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

REGION OF PEEL NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
2. WATERMAIN AND / OR WATER SERVICE MATERIALS 100 MM (4") AND LARGER MUST BE PVC DR18 CONSTRUCTED AS PER AWWA C900–16. SIZE 50 MM (2") AND SMALLER MUST BE TYPE K SOFT COPPER CONSTRUCTED AS PER ASTM B88–49 OR POLYETHYLENE CONSTRUCTED AS PER AWWA C901 AND CSA B.137.10 (CHOOSE ONLY ONE MATERIAL).
3. WATERMAINS AND / OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 1.7 M (5'6") WITH A MINIMUM HORIZONTAL SPACING OF 1.2 M (4") FROM THEMSELVES AND ALL OTHER UTILITIES.
4. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED WITH AT LEAST A 50 MM (2") OUTLET ON 100 MM (4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. THEY MUST ALSO BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100 MM (4") DIAMETER MINIMUM ON A HYDRANT.
5. ALL CURB STOPS TO BE 3.0 M (10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
6. HYDRANT AND VALVE SET TO REGION STANDARD 1 – 6 – 1 DIMENSION A AND B, 0.7 M (2') AND 0.9 M (3') AND TO HAVE PUMPER NOZZLE.
7. WATERMAINS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SITE PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.
8. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3 M (12") OVER / 0.5 M (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
9. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.
10. ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.
11. LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
12. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF THEIR WORK. WHETHER SHOWN ON THE PLANS OR NOT AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
13. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO THE UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION, WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
14. ALL PROPOSED WATER PIPING MUST BE ISOLATED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE CROSS–CONNECTION CONTROL DEVICE, CONSISTENT WITH THE DEGREE OF HAZARD, FOR BACKFLOW PREVENTION OF THE ACTIVE DISTRIBUTION SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1–7–7 OR 1–7–8.
15. ALL WATER METERS MUST BE INSTALLED IN HEATED AND ACCESSIBLE SPACE.

NOTE: WHERE SEWER AND WATERMAIN CROSSINGS DO NOT ACHIEVE MINIMUM 0.50m VERTICAL SEPARATION, WATERMAIN SHALL BE LOWERED TO MEET MINIMUM 0.50m CLEARANCE REFER TO SHEET C703 FOR WATERMAIN LOWERING DETAIL.

NOTE: WHERE SITE SEWERS OR WATERMAIN DO NOT MEET MINIMUM FROST COVER REQUIRMENTS (1.7m FOR WATERMAIN, 1.5m FOR SANITARY SEWER, AND 1.2m FOR STORM SEWER) FROST PROTECTION SHALL BE PROVIDED PER OPSD 1109.030 (INSULATION FOR SEWERS AND WATERMAIN IN SHALLOW TRENCHES). REFER TO SHEET C703 FOR DETAILS.

NOTE: WHERE ELEVATION BETWEEN INLET AND OUTLET INVERT EXCEEDS 0.60m A DROP STRUCTURE SHALL BE INSTALLED PER 1003.010.

NOTE: ENGINEERED SOIL TO HAVE A MINIMUM PERCOLATION RATE OF 15 mm/HOUR WITH A SAFETY FACTOR OF 2.5 FOR INFILTRATION PURPOSES. PROPOSED ENGINEERED SOIL MAKE UP AND DEPTH PER GEOTECHNICAL'S RECOMMENDATION.

NOT FOR CONSTRUCTION

TEMPORARY BENCHMARKS:

ELEVATION ARE REFERRED TO THE REGION OF PEEL BENCHMARK No. 40 LOCATED ON THE SOUTH FACE AT THE WEST CORNER OF SOUTH END OF A CONCRETE BOX CULVERT ACROSS MAYFIELD ROAD APPROXIMATELY 0.56 km EAST OF CLARKWAY DRIVE, HAVING AN ELEVATION OF 222.165 m. VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928 (1978 SOUTHERN ONTARIO READJUSTMENT)

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

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Engineer: LICENSED PROFESSIONAL ENGINEER — M. ISKANDER — 100226629 — Aug-06-2025 — PROVINCE OF ONTARIO

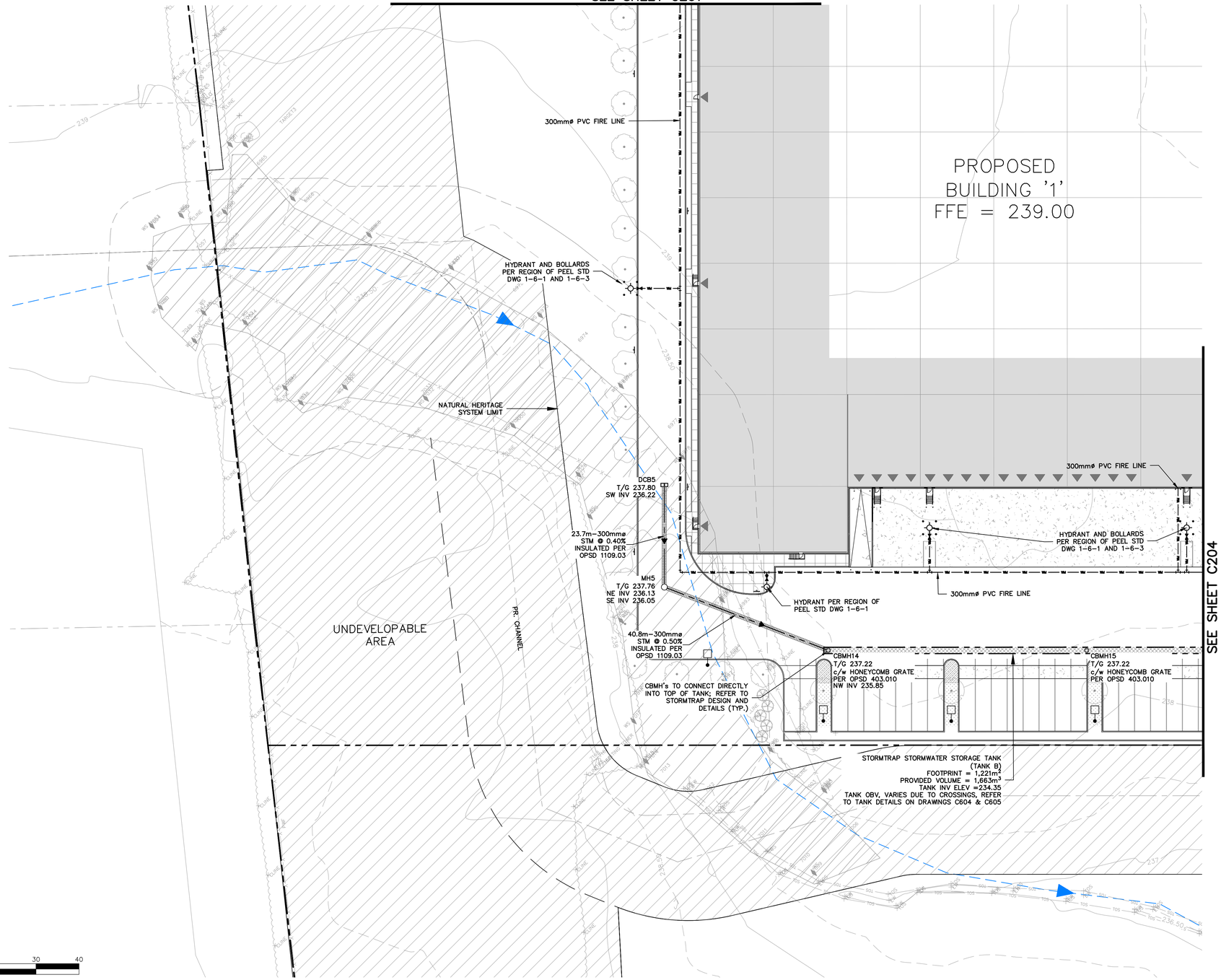
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (1)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624–6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C201

SEE SHEET C201



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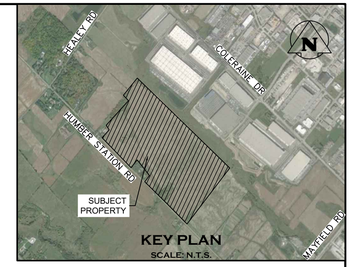
SCALE: 1:500



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NOTE: WHERE SITE SEWERS OR WATERMAIN DO NOT MEET MINIMUM FROST COVER REQUIRMENTS (1.7m FOR WATERMAIN, 1.5m FOR SANITARY SEWER, AND 1.2m FOR STORM SEWER) FROST PROTECTION SHALL BE PROVIDED PER OPSD 1109.030 (INSULATION FOR SEWERS AND WATERMAIN IN SHALLOW TRENCHES). REFER TO SHEET C703 FOR DETAILS.

NOTE: WHERE ELEVATION BETWEEN INLET AND OUTLET INVERT EXCEEDS 0.60m A DROP STRUCTURE SHALL BE INSTALLED PER 1003.010.

NOT FOR CONSTRUCTION

TEMPORARY BENCHMARKS:

ELEVATION ARE REFERRED TO THE REGION OF PEEL BENCHMARK No. 40 LOCATED ON THE SOUTH FACE AT THE WEST CORNER OF SOUTH END OF A CONCRETE BOX CULVERT ACROSS MAYFIELD ROAD APPROXIMATELY 0.56 km EAST OF CLARKWAY DRIVE, HAVING AN ELEVATION OF 222.165 m. VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928 (1978 SOUTHERN ONTARIO READJUSTMENT)

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

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Engineer: LICENSED PROFESSIONAL ENGINEER — M. ISKANDER — 100226629 — Aug-06-2025 — PROVINCE OF ONTARIO

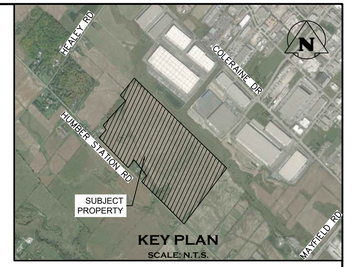
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (2)

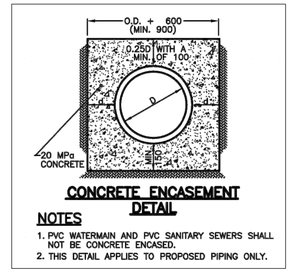
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624-6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C202

PLAN 43R-39298
SUBJECT TO EASEMENT IN GROSS AS IN PR3296292

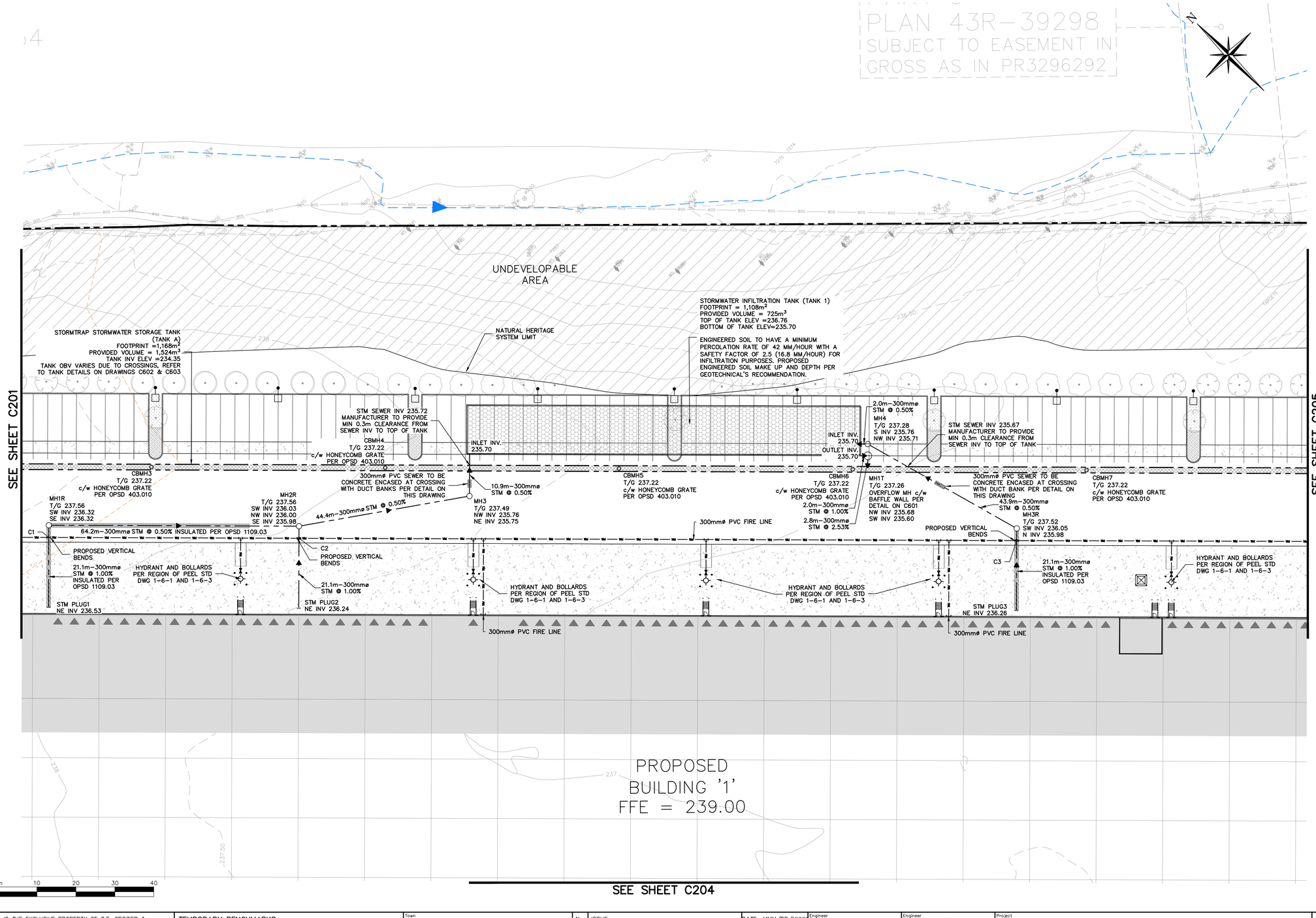


CROSSING TABLE		
CROSSING I.D.	UPPER	LOWER
C1	STM INV 236.35	WAT OBV 235.85
C2	STM INV 236.06	WAT OBV 235.56
C3	STM INV 236.08	WAT OBV 235.58



CONCRETE ENCASEMENT DETAIL

NOTES
1. PVC WATERMAIN AND PVC SANITARY SEWERS SHALL NOT BE CONCRETE ENCASED.
2. THIS DETAIL APPLIES TO PROPOSED PIPING ONLY.



SEE SHEET C204

NOT FOR CONSTRUCTION

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC.
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6. DO NOT SCALE DRAWINGS.

TEMPORARY BENCHMARKS:

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SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
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Engineer: LICENSED PROFESSIONAL ENGINEER — M. ISKANDER — 100226629 — Aug-06-2025 — PROVINCE OF ONTARIO

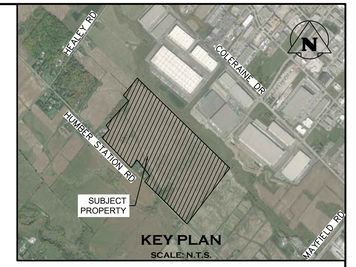
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (3)

CROZIER CONSULTING ENGINEERS

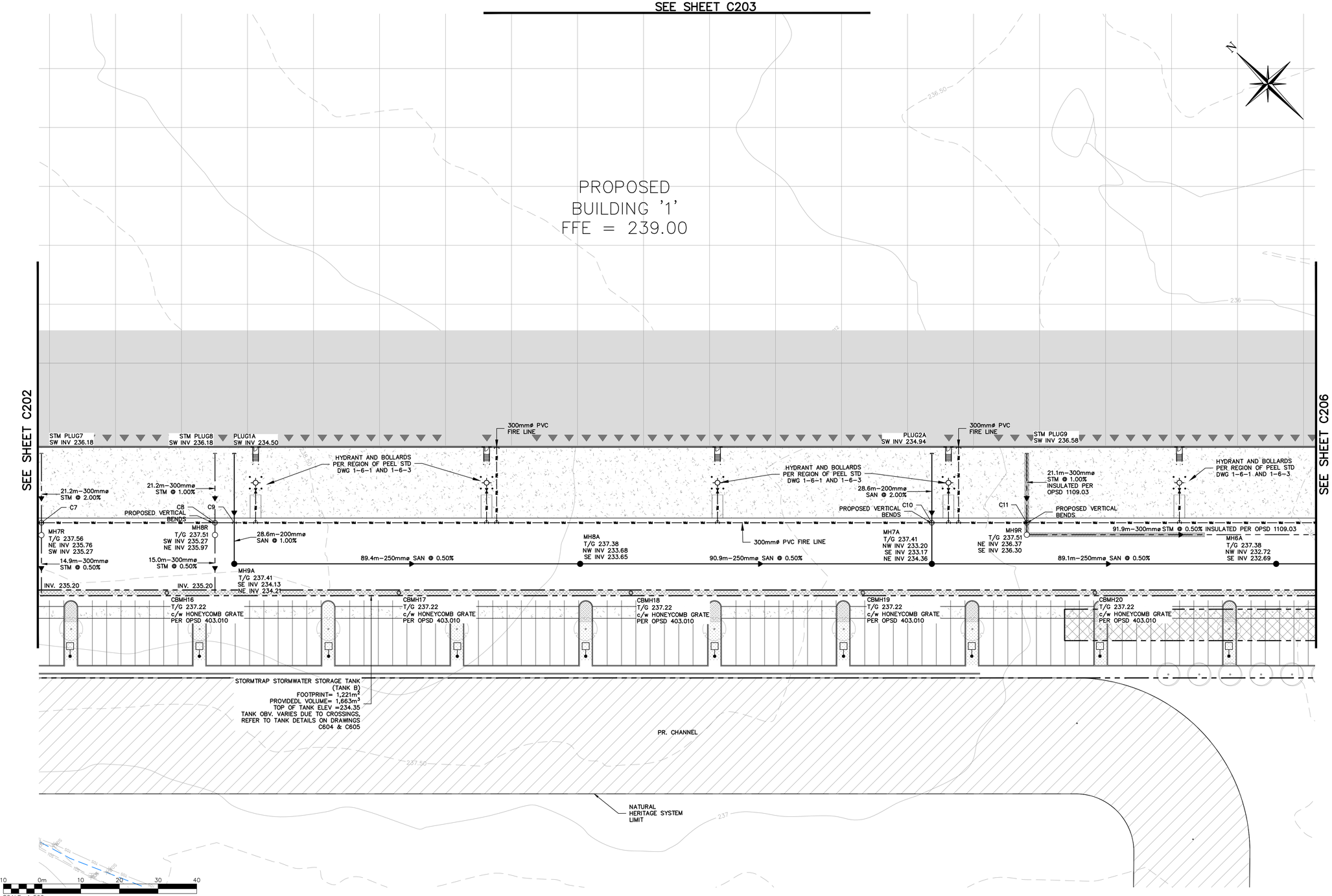
Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624-6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C203

SEE SHEET C203



KEY PLAN
SCALE: N.T.S.

CROSSING TABLE		
CROSSING I.D.	UPPER	LOWER
C7	STM INV 235.82	WAT OBV 235.32
C8	STM INV 236.00	WAT OBV 235.50
C9	SAN OBV 234.32	WAT OBV 233.82
C10	SAN OBV 234.58	WAT OBV 234.08
C11	STM INV 236.40	WAT OBV 235.88



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Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (4)

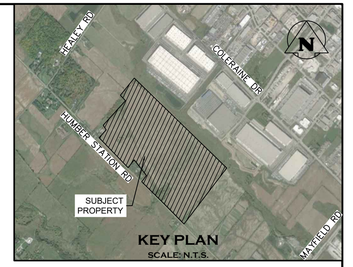
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624-6777
Check By M.I./J.F.	Check By M.I./J.F.	Drawing C204

PART 18
43R-39298

PART 5
PLAN 43R-39773

SUBJECT T



KEY PLAN
SCALE: N.T.S.

CROSSING TABLE		
CROSSING I.D.	UPPER	LOWER
C4	STM INV 236.37	WAT OBV 235.87
C5	STM INV 235.89	WAT OBV 235.39
C6	STM INV 236.33	WAT OBV 235.83

NATURAL HERITAGE SYSTEM LIMIT

STORMTECH STORMWATER STORAGE TANK (TANK A)
FOOTPRINT = 1,168m²
VOLUME = 1,524m³
TANK INV ELEV = 234.35m
TANK OBV. VARIES DUE TO CROSSINGS, REFER TO TANK DETAILS ON DRAWINGS C602 & C603

STORMWATER INFILTRATION TANK (TANK 2)
FOOTPRINT = 1,108m²
PROVIDED VOLUME = 725m³
TOP OF TANK ELEV = 236.76m
BOTTOM OF TANK ELEV = 235.70m

ENGINEERED SOIL TO HAVE A MINIMUM PERCOLATION RATE OF 51 MM/HOUR WITH A SAFETY FACTOR OF 2.5 (20.4 MM/HOUR) FOR INFILTRATION PURPOSES. PROPOSED ENGINEERED SOIL MAKE UP AND DEPTH PER GEOTECHNICAL'S RECOMMENDATION.

MH2T
OVERFLOW MH c/w BAFFLE WALL PER DETAIL ON C601
T/G 237.34
NW INV 235.67
SW INV 235.67

3.0m–300mmø STM @ 1.00%

6.2m–300mmø STM @ 1.00%

OUTLET INV. 235.70

INV. 235.61

STM SEWER INV 235.71
MANUFACTURER TO PROVIDE MIN 0.3m CLEARANCE FROM SEWER INV TO TOP OF TANK

INLET INV. 235.70

300mmø PVC SEWER TO BE CONCRETE ENCASED AT CROSSING WITH DUCT BANK PER DETAIL ON THIS DRAWING

SEE SHEET C203

SEE SHEET C207

CBMH9
T/G 237.22
c/w HONEYCOMB GRATE PER OPSD 403.010

CBMH10
T/G 237.22
c/w HONEYCOMB GRATE PER OPSD 403.010

MH5R
T/G 237.48
SE INV 235.83
NW INV 235.83
SW INV 235.83
NE INV 235.78

CBMH11
T/G 237.22
c/w HONEYCOMB GRATE PER OPSD 403.010

CBMH12
T/G 237.22
c/w HONEYCOMB GRATE PER OPSD 403.010

CBMH13
T/G 237.22
c/w HONEYCOMB GRATE PER OPSD 403.010

MH4R
T/G 237.52
SE INV 236.30
SW INV 236.32

93.8m–300mmø STM @ 0.50% INSULATED PER OPSD 1109.03

16.8m–300mmø STM @ 0.50%

85.4m–300mmø STM @ 0.50% INSULATED PER OPSD 1109.03

PROPOSED VERTICAL BENDS

MH6R
T/G 237.52
SW INV 236.28
NW INV 236.26

C4

PROPOSED VERTICAL BENDS

23.1m–300mmø STM @ 1.00% INSULATED PER OPSD 1109.03

300mmø PVC FIRE LINE

HYDRANT AND BOLLARDS PER REGION OF PEEL STD DWG 1–6–1 AND 1–6–3

C5

PROPOSED VERTICAL BENDS

23.1m–300mmø STM @ 1.40%

STM PLUG5
NE INV 236.16

23.1m–300mmø STM @ 1.00% INSULATED PER OPSD 1109.03

C6

HYDRANT AND BOLLARDS PER REGION OF PEEL STD DWG 1–6–1 AND 1–6–3

STM PLUG6
NE INV 236.51

STM PLUG4
NE INV 236.55

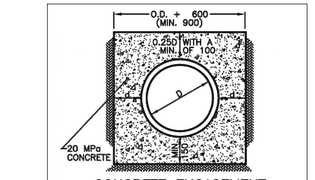
300mmø PVC FIRE LINE

300mmø PVC FIRE LINE

PROPOSED
BUILDING '1'
FFE = 239.00

SCALE: 1:500

SEE SHEET C206



CONCRETE ENCASEMENT DETAIL

NOTES
1. PVC WATERMAIN AND PVC SANITARY SEWERS SHALL NOT BE CONCRETE ENCASED.
2. THIS DETAIL APPLIES TO PROPOSED PIPING ONLY.

NOT FOR CONSTRUCTION

TEMPORARY BENCHMARKS:

ELEVATION ARE REFERRED TO THE REGION OF PEEL BENCHMARK No. 40 LOCATED ON THE SOUTH FACE AT THE WEST CORNER OF SOUTH END OF A CONCRETE BOX CULVERT ACROSS MAYFIELD ROAD APPROXIMATELY 0.56 km EAST OF CLARKWAY DRIVE, HAVING AN ELEVATION OF 222.165 m. VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928 (1978 SOUTHERN ONTARIO READJUSTMENT)

SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

No.	ISSUE	DATE: MMM/DD/YYYY
1	ISSUED FOR SPA SUBMISSION	NOV/22/2024
2	RE-ISSUED FOR SPA SUBMISSION	AUG/06/2025

Engineer: LICENSED PROFESSIONAL ENGINEER — J. BOILY — 100553247 — Aug-06-2025 — PROVINCE OF ONTARIO

Engineer: LICENSED PROFESSIONAL ENGINEER — M. ISKANDER — 100226629 — Aug-06-2025 — PROVINCE OF ONTARIO

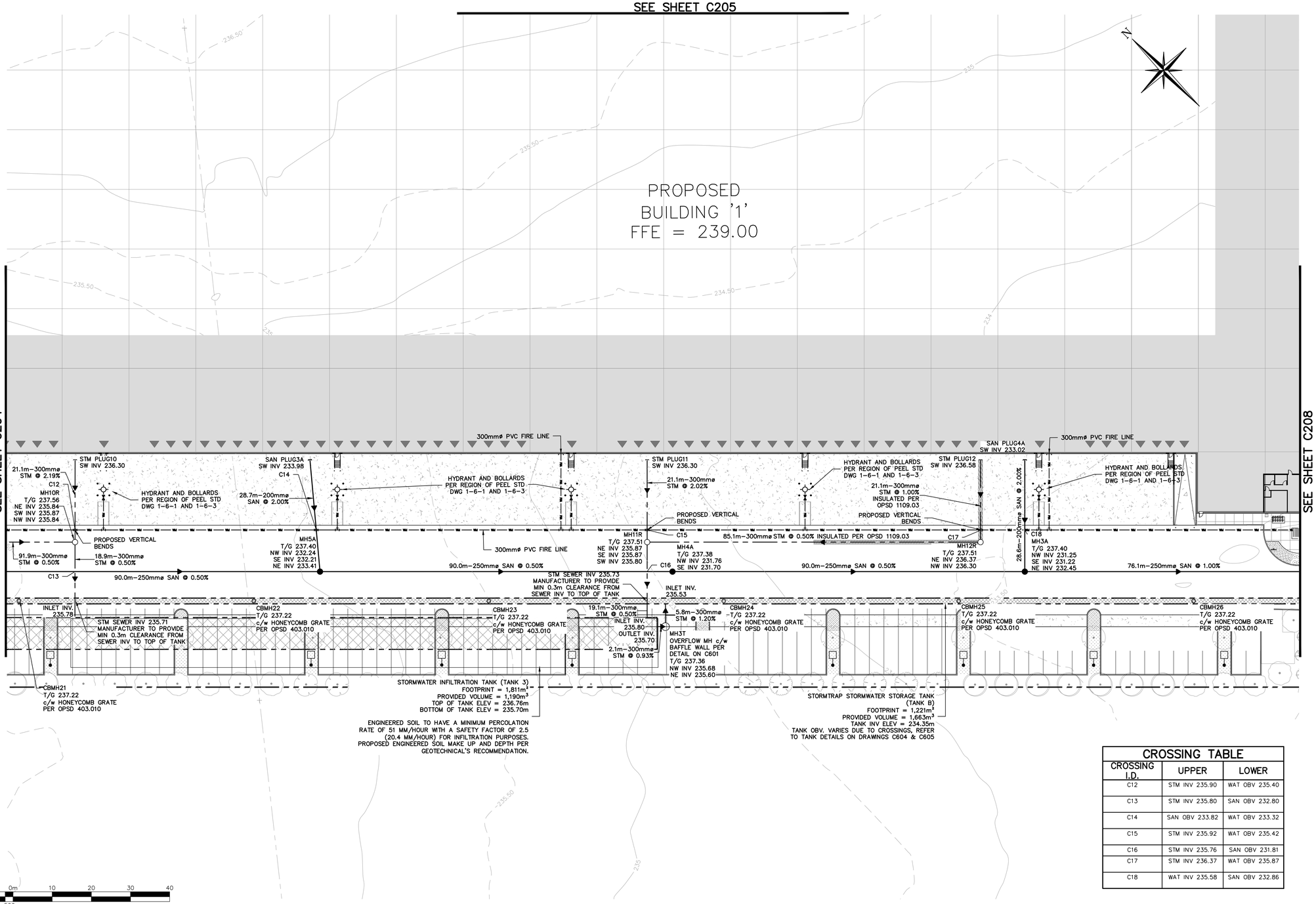
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (5)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624–6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C205

SEE SHEET C205



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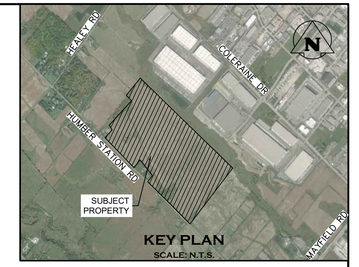

KEY PLAN
SCALE: N.T.S.

REGION OF PEEL NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
2. WATERMAIN AND / OR WATER SERVICE MATERIALS 100 MM (4") AND LARGER MUST BE PVC DR18 CONSTRUCTED AS PER AWWA C900–16. SIZE 50 MM (2") AND SMALLER MUST BE TYPE K SOFT COPPER CONSTRUCTED AS PER ASTM B88–49 OR POLYETHYLENE CONSTRUCTED AS PER AWWA C901 AND CSA B.137.10 (CHOOSE ONLY ONE MATERIAL).
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8. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3 M (12") OVER / 0.5 M (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
9. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.
10. ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.
11. LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
12. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF THEIR WORK. WHETHER SHOWN ON THE PLANS OR NOT AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
13. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO THE UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION, WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
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15. ALL WATER METERS MUST BE INSTALLED IN HEATED AND ACCESSIBLE SPACE.

NOTE: WHERE SEWER AND WATERMAIN CROSSINGS DO NOT ACHIEVE MINIMUM 0.50m VERTICAL SEPARATION, WATERMAIN SHALL BE LOWERED TO MEET MINIMUM 0.50m CLEARANCE REFER TO SHEET C703 FOR WATERMAIN LOWERING DETAIL.

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NOTE: WHERE ELEVATION BETWEEN INLET AND OUTLET INVERT EXCEEDS 0.60m A DROP STRUCTURE SHALL BE INSTALLED PER 1003.010.

CROSSING TABLE

CROSSING I.D.	UPPER	LOWER
C12	STM INV 235.90	WAT OBV 235.40
C13	STM INV 235.80	SAN OBV 232.80
C14	SAN OBV 233.82	WAT OBV 233.32
C15	STM INV 235.92	WAT OBV 235.42
C16	STM INV 235.76	SAN OBV 231.81
C17	STM INV 236.37	WAT OBV 235.87
C18	WAT INV 235.58	SAN OBV 232.86

NOT FOR CONSTRUCTION

TEMPORARY BENCHMARKS:

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SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

No.	ISSUE	DATE: MMM/DD/YYYY
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Engineer: LICENSED PROFESSIONAL ENGINEER J. BOILY 100553247 Aug-06-2025 PROVINCE OF ONTARIO

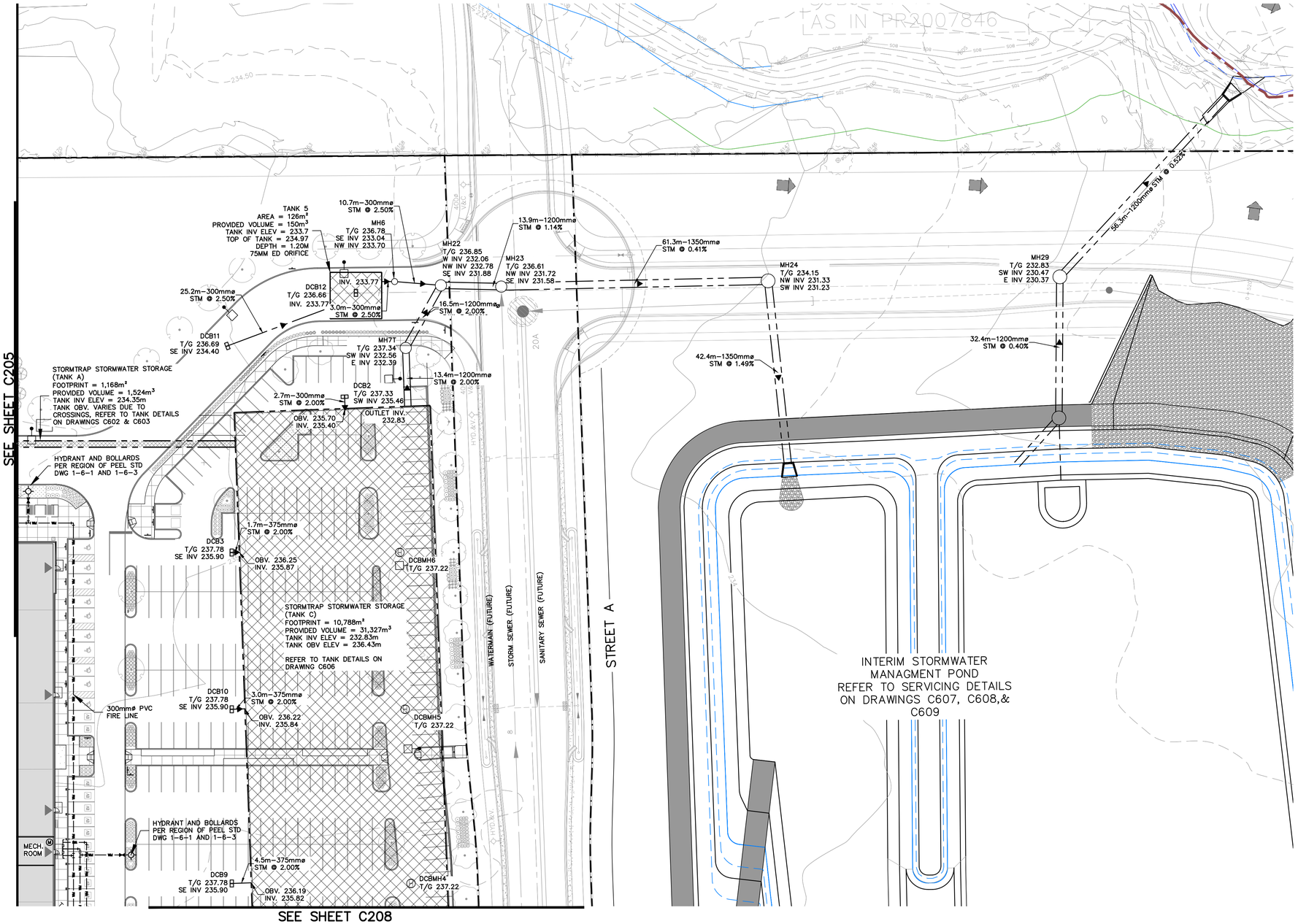
Engineer: LICENSED PROFESSIONAL ENGINEER M. ISKANDER 100226629 Aug-06-2025 PROVINCE OF ONTARIO

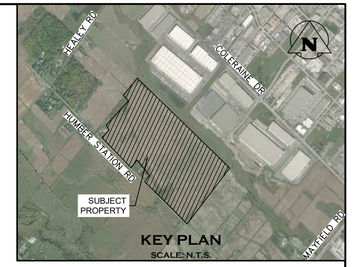
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (6)

C CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624–6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C206





SCALE: 1:500

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NOT FOR CONSTRUCTION

TEMPORARY BENCHMARKS:

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SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

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2	RE–ISSUED FOR SPA SUBMISSION	AUG/06/2025

Engineer: LICENSED PROFESSIONAL ENGINEER — J. BOILY — 100553247 — Aug-06-2025 — PROVINCE OF ONTARIO

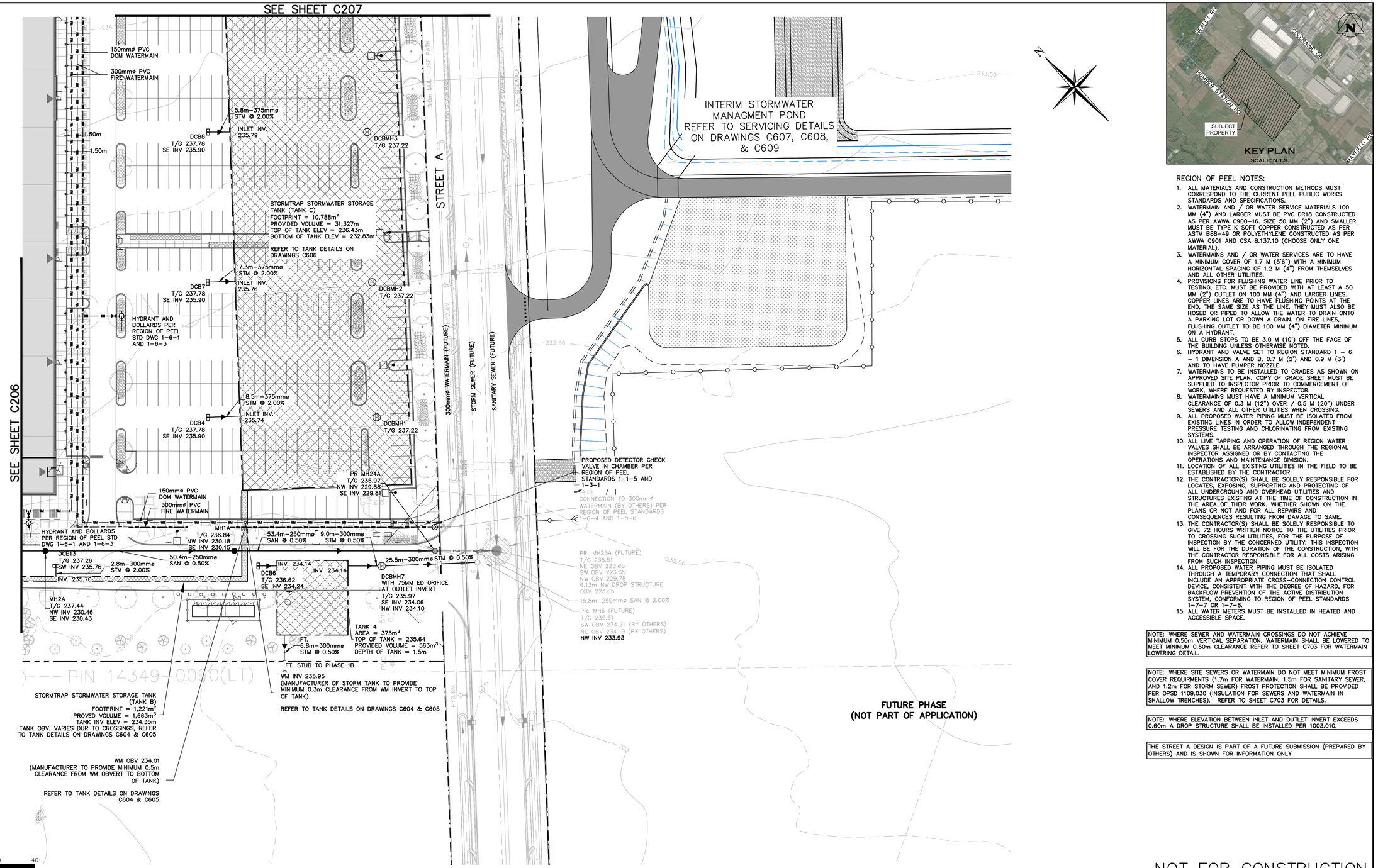
Engineer: LICENSED PROFESSIONAL ENGINEER — M. ISKANDER — 100226629 — Aug-06-2025 — PROVINCE OF ONTARIO

Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (7)

C CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624–6777
Check By	Check By	Drawing
M.I./J.F.	M.I./J.F.	C207



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SITE PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN PETROFF.
DRAWING No.: A100.0, DATED: 25/JUL/2025
PROJECT No.: 22095.00

Town

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Engineer: LICENSED PROFESSIONAL ENGINEER J. BOILY 100553247 Aug-06-2025 PROVINCE OF ONTARIO

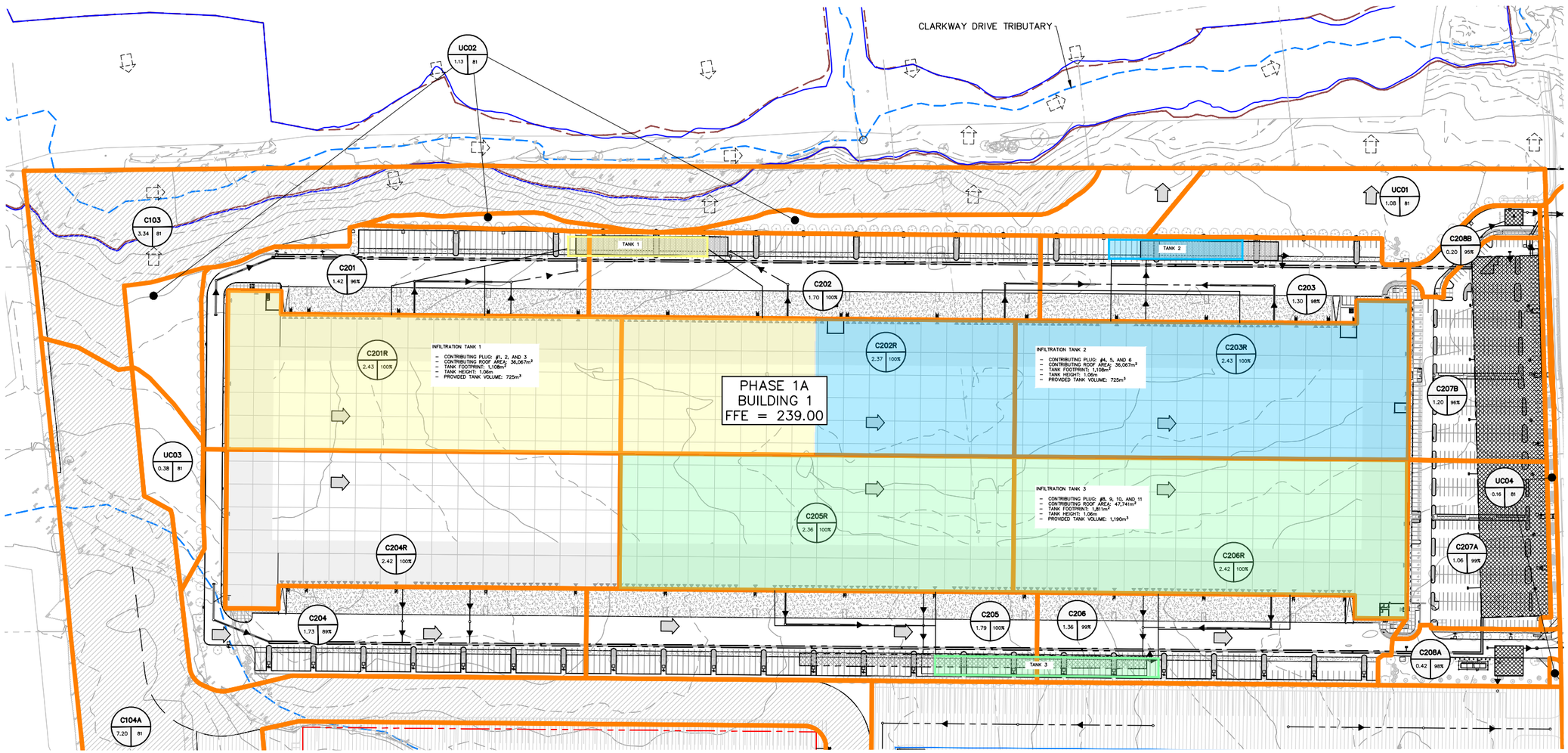
Engineer: LICENSED PROFESSIONAL ENGINEER M. ISKANDER 100226629 Aug-06-2025 PROVINCE OF ONTARIO

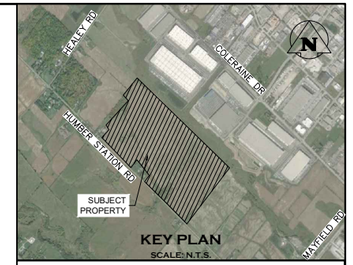
Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: SERVICING PLAN (8)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
S.C./D.G./M.P.H.	J.B./D.G./K.D.	624–6777
Check By M.I./J.F.	Check By M.I./J.F.	Drawing C208





KEY PLAN
SCALE: N.T.S.

LEGEND

- EX. WATERCOURSE
- PR. PROPERTY LIMITS
- PR. STORM CATCHMENT AREA
- C201R / 2.40 / 80 — CATCHMENT AREA ID; CN NUMBER / % IMPERVIOUS; DRAINAGE AREA (ha)
- PR. OVERLAND FLOW DIRECTION
- EX. OVERLAND FLOW DIRECTION
- FUTURE AREAS
- PR. REGIONAL FLOODLINE
- PR. 100-YR FLOODLINE
- TANK 1
- TANK 2
- TANK 3
- PR. STM ROOF LEADER
- PR. STORM SEWER & MANHOLE
- PR. CATCHBASIN
- PR. DOUBLE CATCHBASIN
- PR. CATCHBASIN MANHOLE
- PR. DOUBLE CATCHBASIN MANHOLE
- PIPE INSULATED PER OPSD 1109.03

50 0m 50 100
SCALE: 1:3000

NOT FOR CONSTRUCTION

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Engineer

Engineer

Project: HUMBER STATION DISTRIBUTION CENTRE
TOWN OF CALEDON

Drawing: LID LAYOUT

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
Y.K./M.P.H.	M.F.	624-6777
Check By	Check By	Drawing
R.A.	R.A.	FIG 02