



**Structural
Environmental
Services**

STORMWATER MANAGEMENT REPORT

1620 Laperriere Avenue, Ottawa

Prepared by

E AU Structural & Environmental Services

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Revision 3
November 2024

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1. Project Description

1.1. Introduction

The property at 1620 Laperriere Avenue is located close to the intersection of Laperriere Avenue and Clyde Avenue North. The existing lot is 0.22 hectare, containing a one-story commercial building built in circa 1980. Property at 1620 Laperriere Avenue is currently zoned as IH (Heavy Industrial Zoning) which suits for the purpose of proposed development.

This report will address the servicing requirements associated with the proposed development located at rear of 1620 Laperriere Avenue within the City of Ottawa. This report is prepared in response to the request from City of Ottawa Planning department.

1.2. Existing Conditions:

The property measures a total area of approximately 0.22 hectare. The site is fronting a 203mm diameter UCI water main, 225mm diameter concrete sanitary main and 375mm diameter concrete storm main.



1.3. Guidelines, Previous Studies, And Reports

The following studies were utilized in the preparation of this report:

- Ottawa Sewer Design Guidelines,
City of Ottawa, SDG002, October 2012.
(City Standards)
 - Technical Bulletin ISTB-2018-01
City of Ottawa, March 21, 2018.
(ISTB-2018-01)
 - Technical Bulletin ISTB-2018-04
City of Ottawa, June 27, 2018.
(ISTB-2018-04)

- Ottawa Design Guidelines Water Distribution
City of Ottawa, July 2010.
(Water Supply Guidelines)
 - Technical Bulletin ISD-2010-2
City of Ottawa, December 15, 2010.
(ISD-2010-2)
 - Technical Bulletin ISDTB-2014-02
City of Ottawa, May 27, 2014.
(ISDTB-2014-02)
 - Technical Bulletin ISTB-2018-02
City of Ottawa, March 21, 2018.
(ISTB-2018-02)

- Design Guidelines for Sewage Works,
Ministry of the Environment, 2008.
(MOE Design Guidelines)

- Stormwater Planning and Design Manual,
Ministry of the Environment, March 2003.
(SWMP Design Manual)

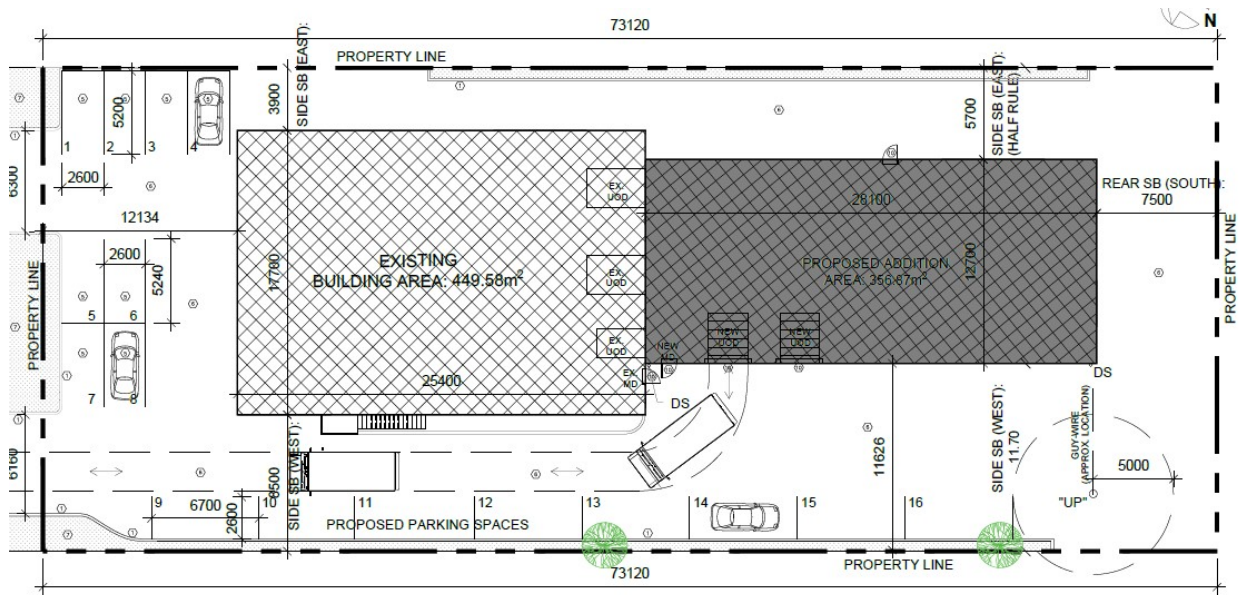
- Ontario Building Code Compendium
Ministry of Municipal Affairs and Housing Building Development Branch,
January 1, 2012 Update. (OBC)

2. Stormwater Design

2.1. Design Criteria

Design of the storm sewer system was completed in conformance with the City of Ottawa Design Guidelines for Sewage Works, Stormwater Management Planning, Design Manual Ontario Ministry of Environment and City of Ottawa Sewer Design Guideline, October 2012.

The site currently contains a two-storey building. The stormwater management will be considered for the addition only. Pre-development conditions will be considered as the lesser of current condition i.e., Asphalt, $C=0.9$ or condition resulting from $C=0.50$. The 5-year storm is calculated for $C=0.5$ as per the direction of the City of Ottawa Planning Department. 100-year storm event is retained to 5-year pre-development.



During all construction activities, erosion and sediment shall be controlled by techniques outlined in Section 6 of this report.

2.2. Minor System Design Criteria

- The storm sewer design is based on the Rational formula and the Manning's Equation under free flow conditions for the 5-year storm using 10 min time of concentration.
- Inflow rates into the minor system are limited to the pre-development rates for up to the 5-year storm, and are based on a time of concentration of 10 min.

2.3. Major System Design Criteria

- The major system has been designed to accommodate runoff of 100 year event. Beyond 100 storm event, shall flow via overland flow route to the City ROW. 100-year flow is restricted to 5year predevelopment.

2.4. Runoff Coefficients

The area for runoff coefficients used, for either pre-development or post-development conditions is based on actual areas measured in CAD. Runoff coefficients for surfaces such as roofs, driveway and parking areas was taken as 0.90 due to the impermeability of these surfaces. For the grassed areas, 0.20 was used. The runoff coefficient for post development is considered as 0.9 since there is no permeable areas on the lot.

2.5. Time of concentration

The time of concentration is taken as 10 minutes, per the City of Ottawa Design Guideline.

2.6. Allowable Release Rate

The allowable release rate from the site was determined using the Modified Rational Method with a 5 years storm, a runoff coefficient $C=0.5$ and a time of concentration of 10 minutes, see below;

- Time of Concentration = 10 minutes,
- Drainage Area = 0.15 ha

$$Q_{\text{allow}} = 2.78 C I A$$

Where:

Q_{allow}	=	Allowable release rate to storm sewer (L/sec)
C	=	Runoff Coefficient (dimensionless) =0.5
I	=	Average Rainfall Intensity for return period (mm/hr)
	=	$998.071/(T_C+6.053)^{0.814} = 104.20$ mm/hr
T_C	=	Time of concentration (minutes)
A	=	Drainage Area (hectares) = 0.035

$$Q_{\text{Allow}} = 5.1 \text{ L/sec}$$

Therefore the allowable release rate from the site is 5.1 L/sec.

3. Stormwater Quantity Control

Post development storm water management design for this site includes 1 area; Roof area.

- Roof: Storm runoff during 5yrs and 100yrs storm event will be stored on the roof.

As ponds generally form in the shape of a cone, the extent and depth of ponding resulting from the 100-year storm event was determined by using the following equation;

$$V=1/3 \times A \times D$$

Where:

V	=	Storage volume (cu. m.)
A	=	surface area of pond (sq.m.)
D	=	pond depth at peak (m)

Detail of calculation can be found in appendixes. Below is the summary of our calculation:

- Stormwater management is calculated for the addition only.
- Post-development flow rate shall be restricted to pre-development flow rate of 5.1 L/sec.
- Based on the calculation, the maximum required storage for 5yr and 100yr storm events are 2.43 m³ and 7.95 m³ respectively.
- 100yr plus 20% due to climate change consideration would bring the required ponding volume to 9.54 m³

Based on calculations, the maximum volume required for the roof at post development stage for 100yrs plus 20% storm event would be 9.54m³. Considering the roof area of 356m², the maximum ponding depth on the roof will be 80mm. The discharge rate from the roof will be controlled via an ICD (whose size will be based on a design head plus available manufacturer database, see Watts RD100) and roof drains with adjustable flow control weirs. Refer to appendix C for ICD data sheet information. Floods beyond the 100yr Storm event will be handled by scupper drains on each side of the building. Please refer to the Grading Plan.

4. Quality Control

Pre-construction, rainwater and snow melt waters flowed somewhat in an uncontrolled manner, from the rear of the lot to the ROW in the north. Post construction, 90% of this precipitation will be captured and stored on the roof. As such, both the quality and quantity of this water will be controlled and improved by virtue of the installed ICD + roof drains. Therefore, there will be no need to provide additional quality control measures, to remove any TSS.

5. Geotechnical Report / Foundation

The Geotechnical Report prepared by Paterson Group is to be referenced. Based on this report, impermeable water proofing shall be applied on foundation walls. No footing drain shall be provided since the foundation structure is “slab on grade”.

All Geotechnical recommendation shall be implemented on its entire context.

6. Erosion and Sediment Control

Following methods will be unutilized to control erosion and sediment:

- Silt fence will be installed around the perimeter of the site and will be cleaned and maintained throughout construction. Silt fence will remain in place until the working areas have been stabilized and re-vegetated.
- Catch basins will have GEO-Fabric or Terafix or an approved equivalent installed under and over the grate during construction to protect from silt entering the storm sewer system.
- A mud mat will be installed at the construction access in order to prevent mud tracking onto adjacent roads.
- Erosion and sediment controls must be in place during construction. The following recommendations to the contractor will be included in contract documents:
 - Limit extent of exposed soils at any given time;
 - Re-vegetate exposed areas as soon as possible;
 - Minimize the area to be cleared and grubbed;
 - Protect exposed slopes with plastic or synthetic mulches;
 - Install silt fence to prevent sediment from entering existing ditches;
 - No refueling or cleaning of equipment near existing watercourses;
 - Provide sediment traps and basins during dewatering;
 - Install filter cloth between catch basins and frames;
 - Plan construction at proper time to avoid flooding;
 - Establish material stockpiles away from watercourses, so that barriers and filters may be installed.
- The contractor will, at every rainfall, complete inspections and guarantee proper performance. The inspection is to include:
 - Verification that water is not flowing under silt barriers;
 - Clean and change filter cloth at catch basins.
- Construction and maintenance requirements for erosion and sediment controls to comply with Ontario Provincial Standard Specification OPSS 577, and City of Ottawa specifications.
- A visual inspection shall be completed daily on sediment control barriers and any damage repaired immediately. Care will be taken to prevent damage during construction operations.
- Proposed CBs are to have erosion protection as identified within the stormwater management report. The maintenance of the CB erosion protection shall be regular inspections and debris removal as required.
- There are existing CB's and CB manholes in ROW in Laperriere Ave. All existing CB or CB manholes shall be protected with GEO-Fabric or Terafix or an approved equivalent and silt sac. Refer to note 3 of drawing C2, Erosion and Sediment Control Plan.
- Refer to Erosion and Sediment control plan in appendix for more detail.

7. Conclusions

This report addresses the storm water management of the proposed site. The following list below itemizes the conclusions of this report.

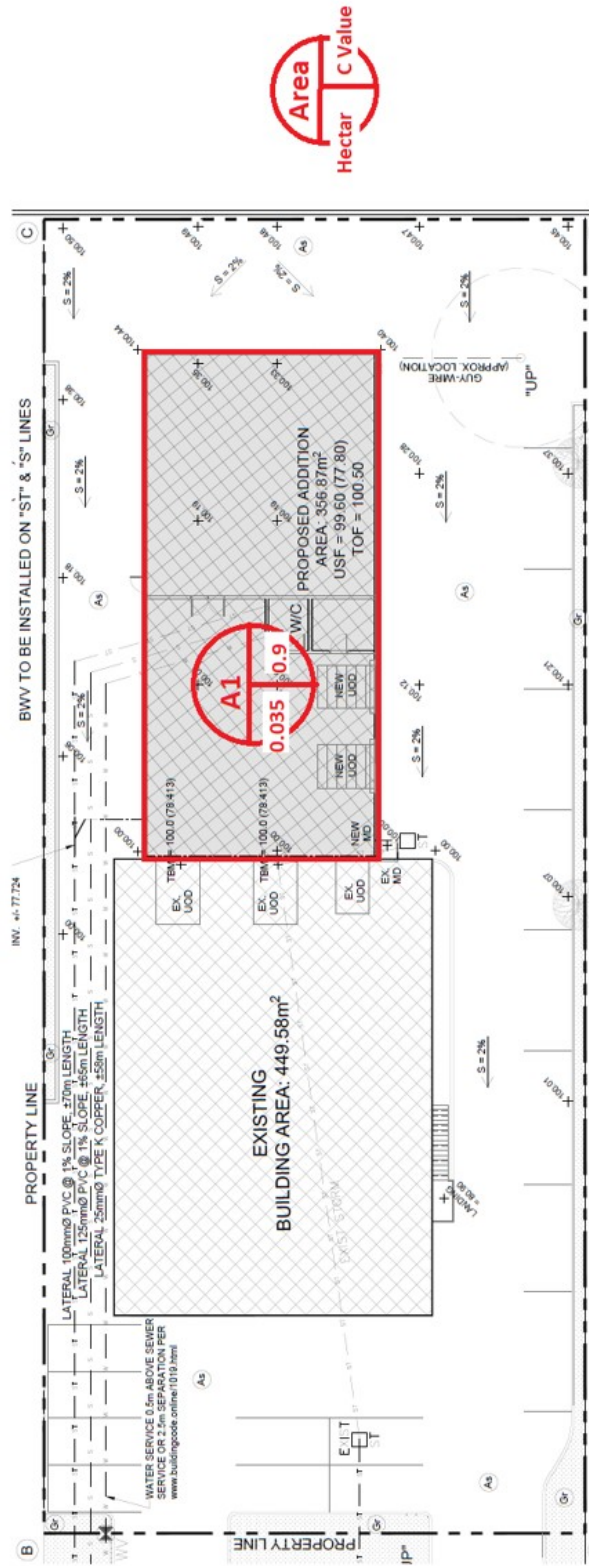
- The allowable release rate and required storage volume for 5year and 100year storm event is calculated for the addition at the rear, only. The rest of the site is existing and considered “grandfathered”.
- Runoff from the roof will be retained on the roof area, then discharged to the City storm system via an ICD + roof drains.
- During all construction activities, erosion and sedimentation shall be controlled by techniques outlined in this report.

Should you have any question, do not hesitate to let us know.



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APPENDIX A:
Storm Drain Area



APPENDIX B:

Stormwater Management Calculation

STORAGE CALCULATIONS

C(5 yr)	C(100 yr)	Area (ha)
0.90	1.00	0.035

Q(restricted) l/s = 5.07

STORAGE TABLE (5 Yr Storm)

t(c)min	I (mm/h)	Q(unrestricted) l/s	Q(restricted) l/s	Q(stored) l/s	V(stored) m ³
5	141.2	12.36	5.07	7.29	2.19
10	104.2	9.12	5.07	4.06	2.43
15	83.6	7.32	5.07	2.25	2.02
20	70.3	6.15	5.07	1.08	1.30
25	60.9	5.33	5.07	0.26	0.40
30	53.9	4.72	5.07	-0.35	-0.62
35	48.5	4.25	5.07	-0.82	-1.72
40	44.2	3.87	5.07	-1.20	-2.88
45	40.6	3.56	5.07	-1.51	-4.08
50	37.7	3.30	5.07	-1.77	-5.32
55	35.1	3.08	5.07	-1.99	-6.58
60	32.9	2.88	5.07	-2.18	-7.86
65	31.0	2.72	5.07	-2.35	-9.17
70	29.4	2.57	5.07	-2.50	-10.49
75	27.9	2.44	5.07	-2.63	-11.82
80	26.6	2.33	5.07	-2.74	-13.17
85	25.4	2.22	5.07	-2.85	-14.52
90	24.3	2.13	5.07	-2.94	-15.89
95	23.3	2.04	5.07	-3.03	-17.26
100	22.4	1.96	5.07	-3.11	-18.64
105	21.6	1.89	5.07	-3.18	-20.03
110	20.8	1.82	5.07	-3.25	-21.42

Max Vol stored 2.43

STORAGE TABLE (100 Yr Storm)

t(c)min	I(100yr) mm/h	Q(actual) l/s	Q(restricted) l/s	Q(stored) l/s	V(stored) m ³
5	242.7	23.6	5.1	18.5	5.56
10	178.6	17.4	5.1	12.3	7.38
15	142.9	13.9	5.1	8.8	7.95
20	120.0	11.7	5.1	6.6	7.92
25	103.8	10.1	5.1	5.0	7.55
30	91.9	8.9	5.1	3.9	6.97
35	82.6	8.0	5.1	3.0	6.23
40	75.1	7.3	5.1	2.2	5.38
45	69.1	6.7	5.1	1.6	4.45
50	64.0	6.2	5.1	1.2	3.46
55	59.6	5.8	5.1	0.7	2.42
60	55.9	5.4	5.1	0.4	1.33
65	52.6	5.1	5.1	0.1	0.21
70	49.8	4.8	5.1	-0.2	-0.94
75	47.3	4.6	5.1	-0.5	-2.12
80	45.0	4.4	5.1	-0.7	-3.32
85	43.0	4.2	5.1	-0.9	-4.54
90	41.1	4.0	5.1	-1.1	-5.77
95	39.4	3.8	5.1	-1.2	-7.02
100	37.9	3.7	5.1	-1.4	-8.29
105	36.5	3.6	5.1	-1.5	-9.56
110	35.2	3.4	5.1	-1.6	-10.85

**Max Vol
stored 7.95**

APPENDIX C:
Specifications and Drawings

SERVICE	Ø(mm)	MATERIAL	INV.	SEPARATION
STORM	100	PVC	77.3	1.7m
WATER	203	DI	75.4	

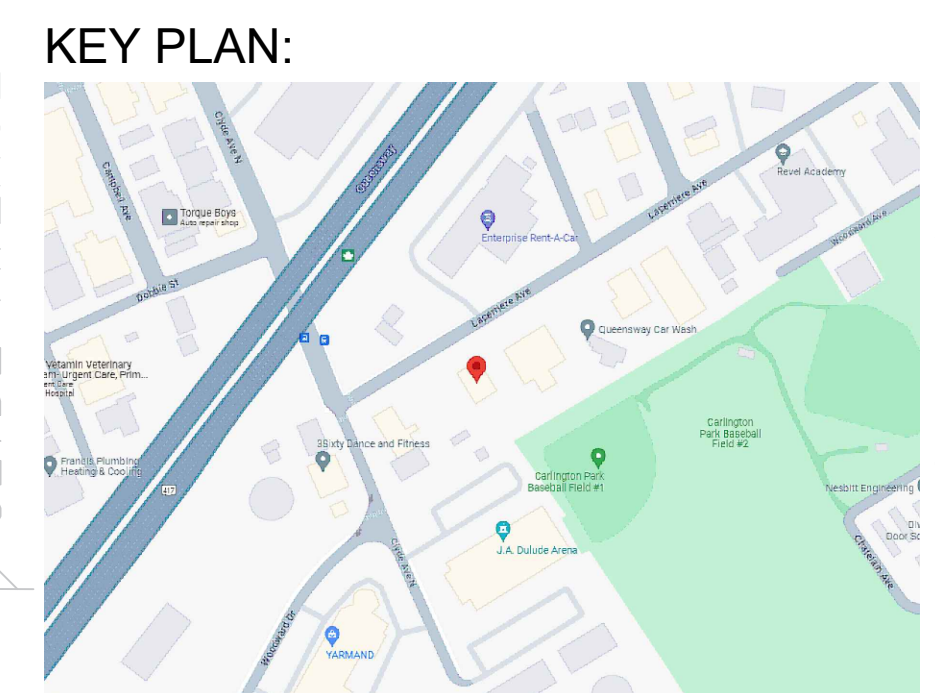
LATERAL 100mØ, L=53m @ 1% MIN.,
INSULATION REQ'D PER CITY STANDARDS

EXISTING BUILDING AREA: 442.88m²
USF = 76.91

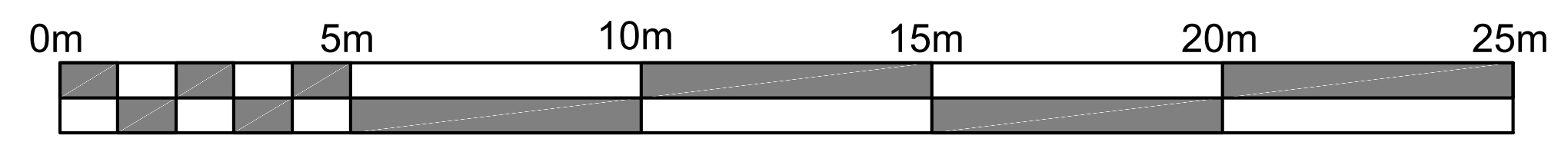
PROPOSED ADDITION AREA: 358.19m²
USS = 78.1
TOF = 79.00

EXISTING STORM TO BE ABANDONED (SEE NOTE 5)

1 GRADING & SITE SERVICING PLAN
C1 SCALE: 1 : 100



- NOTES:**
- "ROW" LEVELS + SEWER MAIN DETAILS TAKEN FROM CITY OF OTTAWA WATER & WASTEWATER NETWORKS -INTERACTIVE MAP.
 - SURVEY INFO WAS TAKEN FROM THE SURVEY DATED 24 SEPT. 2024 BY FAIRHALL, MOFFATT & WOODLAND.
 - INTERNAL - SEE MECHANICAL DWGS FOR DETAILS.
 - EXISTING GRADING & DRAINAGE ON SITE TO REMAIN UNCHANGED.
 - EXISTING STORM UNDER BLDG. WAS CAMERA INSPECTED ON 15/10/2024. THIS LINE IS TO BE ABANDONED PER CITY OF OTTAWA SPECIFICATIONS.



Notes & Legend

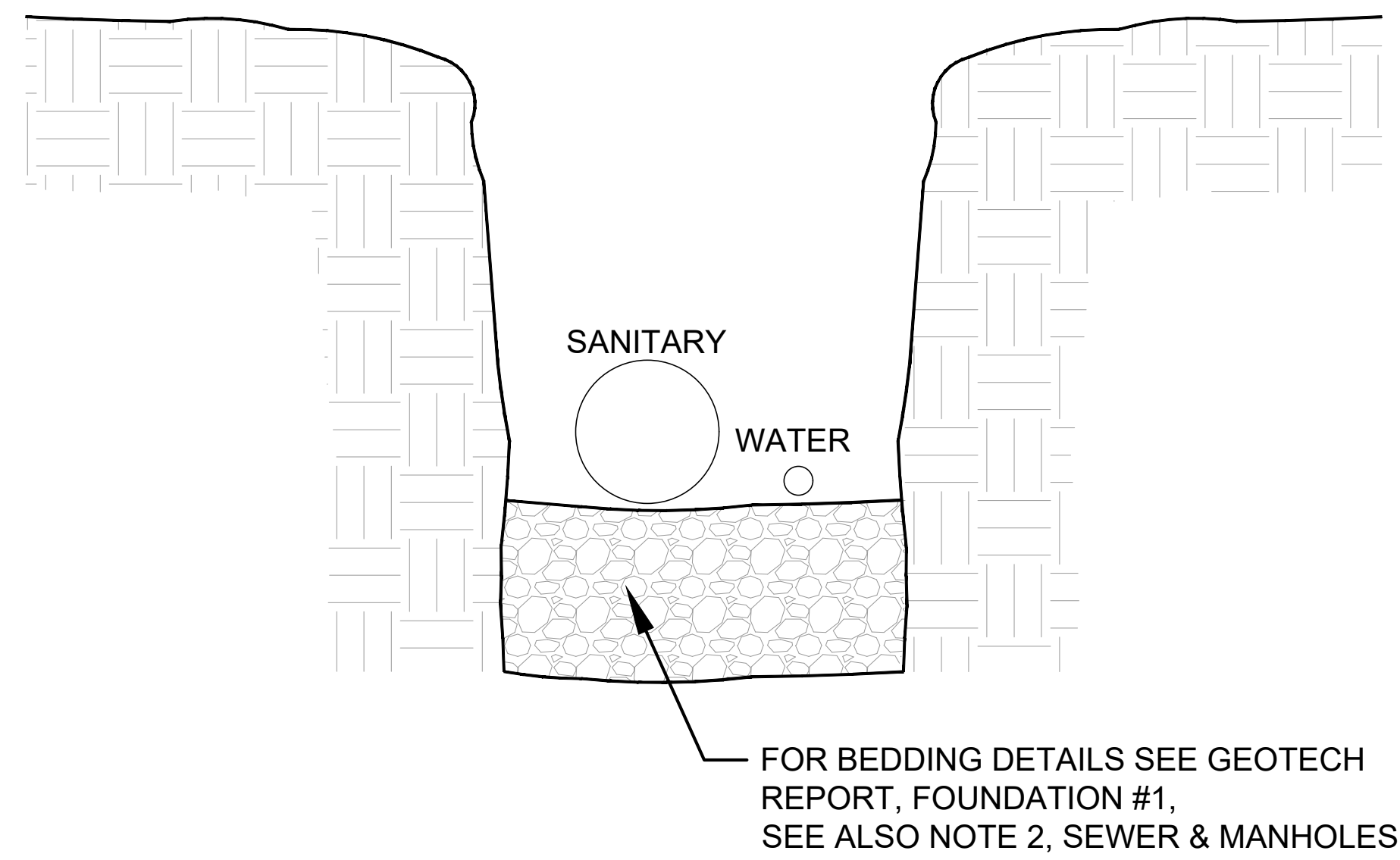
---	Denotes	Property Line
○	MHST	Maintenance Hole (Storm)
○	MHSA	Maintenance Hole (Sanitary)
- s - s -		Underground Sanitary Sewer
- ST - ST -		Underground Storm Sewer
⊗	WV	Water Valve
+65.00		Location of Existing Elevations
T.O.F.		Top of Foundation
UP		Utility Pole
USF		Underside of Footing
USS		Underside of Slab
BWV		Backwater Valve
TBM		Temporary Bench Mark (EL = 100.0)
Gr		Proposed Soft Landscaping (Grass, Top Soil & Sod)
As		Proposed Hard Landscaping (Asphalt)

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Ottawa, ON
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GRADING & SITE SERVICING PLAN
1620 LAPERRIERE AVE.
OTTAWA, ON K1Z 7T2
Drawn by: E.J. Checked By: D.C.
Date: Oct. 24, 2024 Scale: 1:100

Plan number:
C1





1 SERVICES IN TRENCH
C2 SCALE: N.T.S.

GENERAL NOTES:
 1. THE DESIGN AND CONSTRUCTION OF THIS PROJECT IS TO CONFORM TO THE REQUIREMENTS OF THE 2020 ONTARIO BUILDING CODE (O.REO 332/12) & THE CSA STANDARDS INDICATED THEREIN. THE LATEST REVISIONS TO ALL STANDARDS WILL GOVERN.
 2. THE CONTRACTOR SHALL CHECK & VERIFY ALL CONDITIONS & MEASUREMENTS AT THE SITE & REPORT ANY DISCREPANCIES OR UNSATISFACTORY CONDITIONS WHICH MAY ADVERSELY AFFECT THE PROPER COMPLETION OF THE WORK TO THE ENGINEER AND/OR PROJECT COORDINATOR PRIOR TO PROCEEDING WITH THE WORK.

FOUNDATIONS:
 1. PLEASE REF. GEOTECHNICAL INVESTIGATION REPORT - PG7151-1 (27/06/2024).

CONCRETE:
 1. ALL CONCRETE TO BE MINIMUM 25MPa @ 28 DAYS c/w 5-8% AIR ENTRAINMENT.
 2. THE CONCRETE IS TO BE VIBRATED DURING PLACEMENT. THE WIRE MESH IS TO BE SUPPORTED ON CONC. BLOCKS OR PLASTIC CHAIRS SO THAT IT REMAINS IN THE CENTER OF THE SLAB AND THE SLAB IS TO BE FLOAT FINISHED.
 3. FOR DETAILS ON THE FLOOR DRAINS & UNDERGROUND PLUMBING, REFER TO PLUMBING PLANS.

DOORS/HARDWARE:
 1. CONSULT WITH THE CLIENT FOR DETAILS.

ELECTRICAL/LIGHTING/INSTRUMENTATION:
 1. CONSULT WITH THE CLIENT FOR DETAILS.

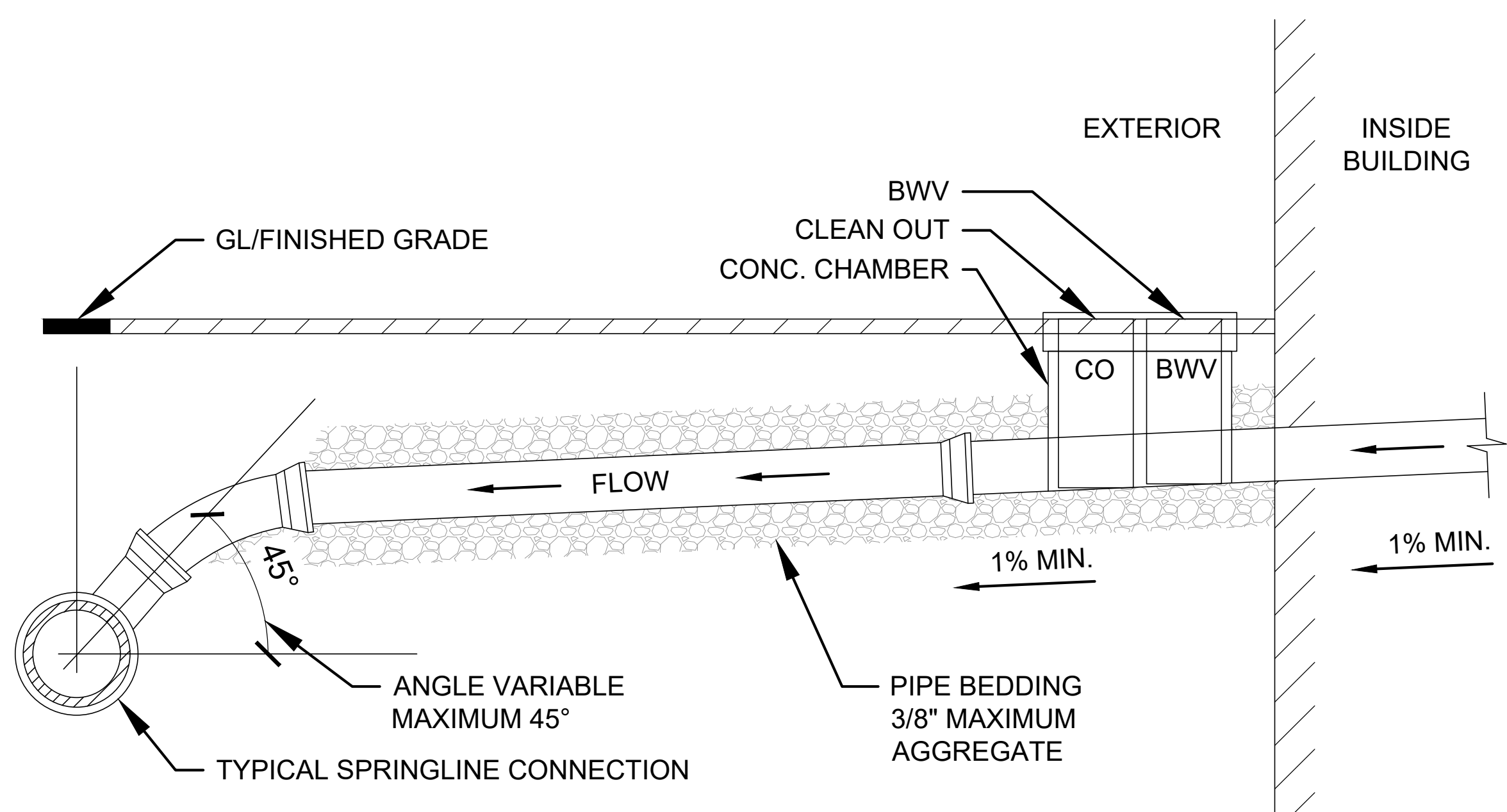
PLUMBING:
 1. CONSULT WITH THE CLIENT FOR DETAILS.

TIMBER:
 1. ALL STRUCTURAL FRAMING LUMBER IS TO BE SPF CONVENTIONAL LUMBER.
 2. ALL LOAD BEARING WALLS TO HAVE CONTINUOUS HORIZONTAL BLOCKING AT MID POINT.
 3. ALL LINTELS TO BE 2- 2x10 c/w 2-2x6 POSTS AT EACH END, UNLESS SHOWN OTHERWISE.

MINIMUM LOADS & DEFLECTION:
 LIVE LOAD = 1.9 KPa
 DEAD LOAD = 1.0 KPa
 SNOW LOAD = 2.5 KPa
 LIVE LOAD DEFLECTION = L/360, MAX.
 TOTAL LOAD DEFLECTION = L/360

NOTES FOR SERVICING:
 1. ALL SERVICES, MATERIALS, CONSTRUCTION METHODS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND REGULATIONS FOR THE CITY OF OTTAWA STANDARD SPECIFICATION AND DRAWINGS, ONTARIO PROVINCIAL SPECIFICATION STANDARD SPECIFICATION (OPPS) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), UNLESS OTHERWISE SPECIFIED, TO THE SATISFACTION OF THE CITY AND THE CONSULTANT.
 2. THE POSITION OF THE EXISTING POLE LINES, CONDUITS, WATER MAINS, SEWERS AND OTHER UNDERGROUND AND ABOVE GROUND UTILITIES, IS NOT GUARANTEED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SATISFY HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME LIABILITY FOR DAMAGE TO THEM DURING THE COURSE OF CONSTRUCTION, ANY RELOCATION OF EXISTING UTILITIES IS TO BE UNDERTAKEN AT THE CONTRACTOR'S EXPENSE.
 3. THE CONTRACTOR MUST NOTIFY ALL EXISTING UTILITY COMPANY OFFICIALS FIVE (5) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION AND HAVE ALL EXISTING UTILITIES AND SERVICES LOCATED IN THE FIELD OR EXPOSED PRIOR TO THE START OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO HYDRO, BELL, CABLE, TV AND CONSUMERS GAS LINES.
 4. ALL TRENCHING AND EXCAVATIONS ARE TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
 5. REFER TO ARCHITECT PLANS FOR BUILDING DIMENSIONS LAYOUT.
 6. THE LOCATION OF UNDERGROUND SERVICES IS BASED ON INFORMATION FROM THE CITY OF OTTAWA, HOWEVER, THE CONTRACTOR MUST ENSURE THAT THIS INFORMATION IS VERIFIED PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
 7. ALL ELEVATIONS ARE FROM ON SITE TBM = 100.00.
 8. JOB BENCHMARK AS INDICATED ON THE DRAWINGS, TOP OF SLAB @ REAR OF EXISTING BUILDING.
 9. ALL EDGES OF THE DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT (THE CONTACTORS RESPONSIBILITY).
 10. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
 11. REMOVE FROM THE SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
 12. ALL PROPOSED UTILIZES CONNECTION POINTS AND CROSSINGS (I.E: STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
 13. SERVICE TRENCHES ON MUNICIPAL RIGHT OF WAY ARE TO BE REINSTATED AS PER CITY OF OTTAWA DETAIL R10.
 14. CONTRACTOR TO REINSTATE PAVER STONES IN CITY "ROW".
 15. PAVEMENT STRUCTURE SHALL CONSIST OF:

TABLE 6 - RECOMMENDED PAVEMENT STRUCTURE - ACCESS LANES AND HEAVY TRUCK PARKING AREAS		
THICKNESS (mm)	MATERIAL DESCRIPTION	
1) 40	WEAR COURSE - HL-3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE	
2) 50	WEAR COURSE - HL-8 OR SUPERPAVE 19 ASPHALTIC CONCRETE	
3) 150	BASE - OPSS GRANULAR A CRUSHED STONE	
4) 450	SUBBASE - OPSS GRANULAR B TYPE II	
SUBGRADE - EITHER FILL, IN-SITU SOIL, OR OPSS GRANULAR B TYPE I OR II MATERIAL PLACED OVER IN-SITU SOIL, BEDROCK OR CONCRETE FILL.		



2 PIPE DETAIL
C2 SCALE: N.T.S.

NOTES FOR SEWER AND MANHOLES:
 1. ALL SANITARY SEWER, SANITARY SEWER APPURTENANCES AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
 2. SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
 3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OPPS 407 AND 410.
 4. SANITARY BACKWATER VALVES ARE TO BE PROVIDED FOR EACH BUILDING CLOSE TO THE FOUNDATION WALL NEAR SERVICES ENTRY AS PER CITY OF OTTAWA STD S14.1 OR S14.2.
 5. STORM BACKWATER VALVES ARE TO BE PROVIDED CLOSE TO THE FOUNDATION WALL NEAR SERVICES ENTRY AS PER THE CITY OF OTTAWA STD S14.
 6. ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
 7. GAS MAIN SHALL BE 1.0m OF SEPARATION FROM WATERMAIN AS PER R20.

NOTES FOR WATER MAIN:
 1. ALL WATER MAIN AND WATER MAIN APPURTENANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND THE MINISTRY OF ENVIRONMENTAL STANDARDS AND SPECIFICATIONS.



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DETAILS & NOTES
 1620 LAPERRIERE AVE.
 OTTAWA, ON K1Z 7T2
 Drawn by: E.J. Checked By: D.C.
 Date: Oct. 24, 2024 Scale: 1:100

Plan number:
C2

EROSION AND SEDIMENTATION

DURING ALL CONSTRUCTION ACTIVITIES EROSION AND SEDIMENTATION SHALL BE CONTROLLED BY THE FOLLOWING TECHNIQUES:

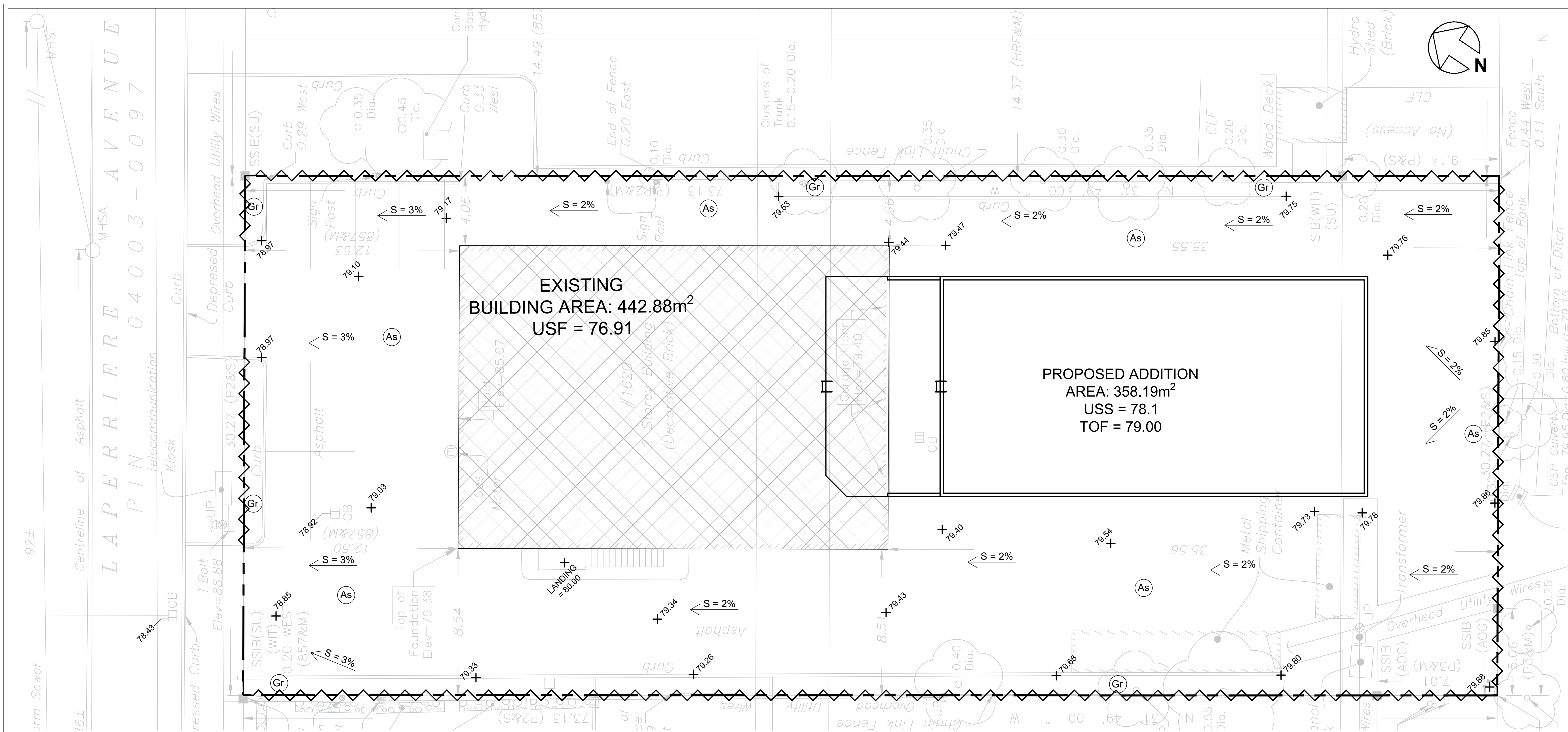
- LIMIT EXTENT OF EXPOSED SOILS AT ANY GIVEN TIME.
- RE-VEGETATE EXPOSED AREAS AS SOON AS POSSIBLE.
- MINIMIZE AREA TO BE CLEARED AND GRUBBED.
- INSTALL SILT FENCE AS PER OPSD 219.110 DRAWING SHOWN ATTACHED.
- TO PREVENT SEDIMENT FROM ENTERING EXISTING CONVEYANCE SYSTEMS.
- MUST BE INSTALLED BEFORE COMMENCEMENT OF CONSTRUCTION AND IN ACCORDANCE WITH THE TOE-IN-DETAIL.
- SILT FENCE CAN BE REMOVED AFTER LANDSCAPING IS COMPLETE.
- NO REFUELING OR CLEANING EQUIPMENT NEAR CATCH BASIN.
- PROVIDE SEDIMENT TRAPS ON APPROPRIATE DAYS TO AVOID FLOODING.
- INSTALL FILTER SOCKS BETWEEN CATCH BASIN COVER AND FRAME.

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

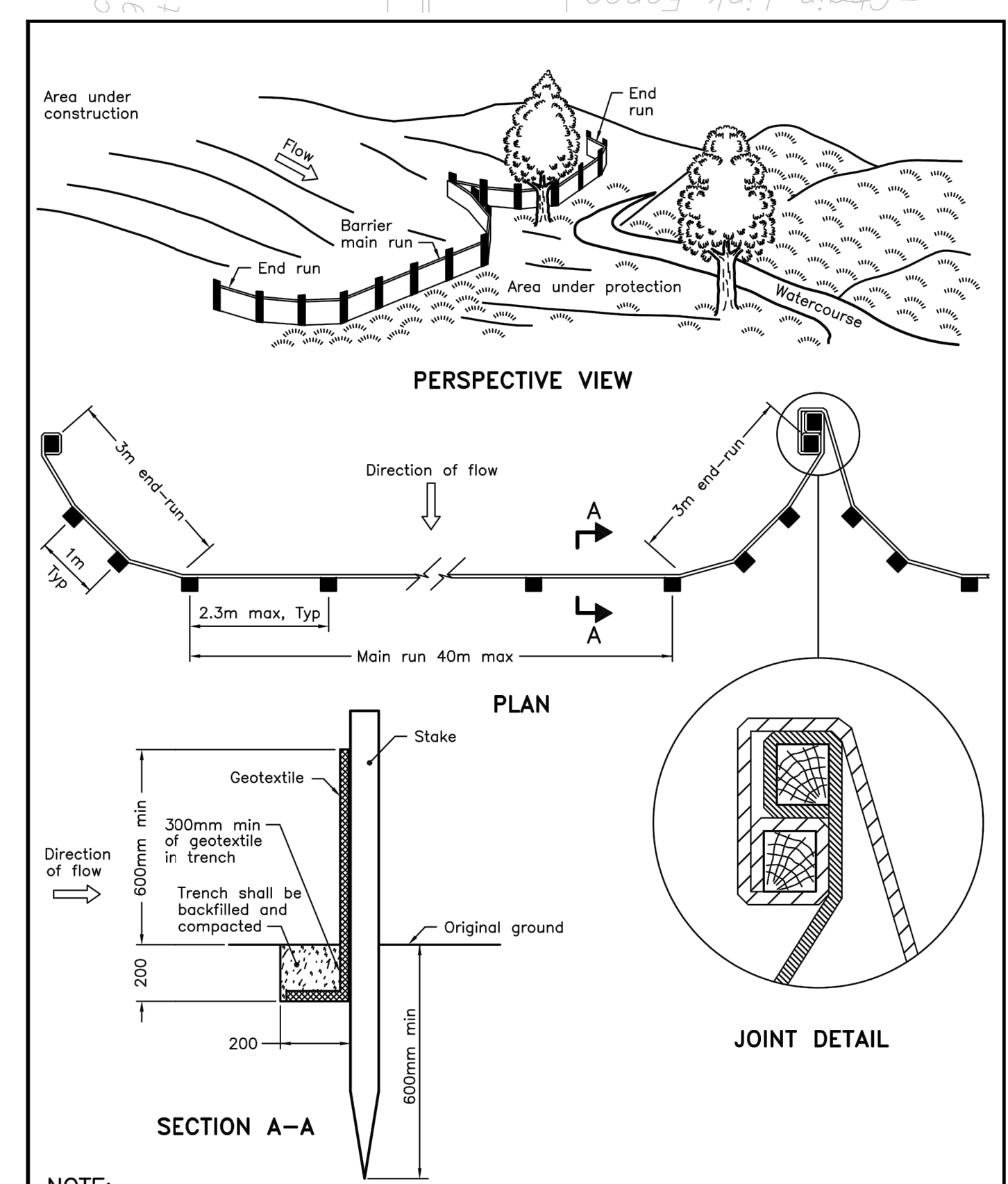
THE FOLLOWING PRACTICES WILL BE FOLLOWED AFTER EVERY RAINFALL TO GUARANTEE THE PROPER PERFORMANCE:

- VERIFY WATER IS NOT FLOWING UNDER SILT FENCES.
- BUILD UP MATERIAL SHOULD BE REMOVED WHEN IT REACHES A DEPTH EQUAL TO HALF THE HEIGHT OF THE FENCE.
- CLEAN OR CHANGE FILTER SOCKS AT CATCH BASINS.
- A VISUAL INSPECTION SHALL BE COMPLETED DAILY ON SEDIMENT CONTROL BARRIERS AND CATCH BASIN AND ANY DAMAGE REPAIRED IMMEDIATELY. THIS PRACTICE WILL ENSURE THAT THE SEDIMENT CONTROL BARRIERS ARE RETAINING ADEQUATELY AND WILL NOT COLLAPSE.
- IN SOME CASES BARRIERS MAY BE REMOVED TEMPORARILY TO ACCOMMODATE THE CONSTRUCTION OPERATIONS; AFFECTED BARRIERS WILL BE REINSTATED AT NIGHT WHEN CONSTRUCTION IS COMPLETED.
- A SILT FENCE BARRIER (OPSD 219.100 TO 219.261) TO BE INSTALLED.
- CONSTRUCTION AND MAINTENANCE REQUIREMENTS FOR EROSION AND SEDIMENT CONTROLS TO COMPLY WITH ONTARIO PROVINCIAL STANDARD SPECIFICATION OPSS 805, AND PROPER MUNICIPALITY SPECIFICATIONS.

NOTE:
THE SEDIMENT & EROSION CONTROL MEASURES MAY BE MODIFIED AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR RIDEAU VALLEY CONSERVATION AUTHORITY. THE SEDIMENT AND EROSION CONTROL SHOULD BE CONSIDERED A "LIVING DOCUMENT" THAT MAY NEED TO BE CHANGED OR ADAPTED DURING THE LIFE OF THE PROJECT TO BE MORE EFFECTIVE.



1 EROSION & SEDIMENT CONTROL PLAN
C3 SCALE: 1 : 125



Notes & Legend

- Property Line
- ~~~~~ Silt Fence Per OPSD 219.110

ONTARIO PROVINCIAL STANDARD DRAWING		Nov 2021	Rev 3
LIGHT-DUTY SILT FENCE BARRIER		OPSD 219.110	

1 STREET CATCHBASIN SEDIMENT TRAP DETAIL

NOTE:

1. FILTER FABRIC TO BE INSPECTED BI-WEEKLY AND REPLACED BY THE OWNER WHEN THE SILT BAG (OR SILT SACK) IS 50% FULL OF SEDIMENT.
2. THIS STANDARD SHOULD BE USED DURING ROAD CONSTRUCTION.
3. THE USE OF TERRAFIX SILT SACK IS REQUIRED. THE USE OF ANY EQUIVALENT PRODUCT IS SUBJECT TO APPROVAL BY THE DIRECTOR OF ENGINEERING.

DRAWING NAME:	SCALE: NTS	APPROVED BY:
ENGINEERING DEPARTMENT	REV: 1	<i>[Signature]</i>
	DATE: AUGUST 2012	DIRECTOR OF ENGINEERING DWC. NO. MP5



EAU STRUCTURAL & ENVIRONMENTAL SERVICES

Ottawa, ON
K1Y 4P9
Tel.: 613-869-0523

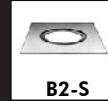
EROSION & SEDIMENT CONTROL PLAN

1620 LAPERRIERE AVE.
OTTAWA, ON K1Z 7T2

Drawn by: E.J. Checked By: D.C.
Date: Oct. 24, 2024 Scale: 1:125

Plan number:
C3

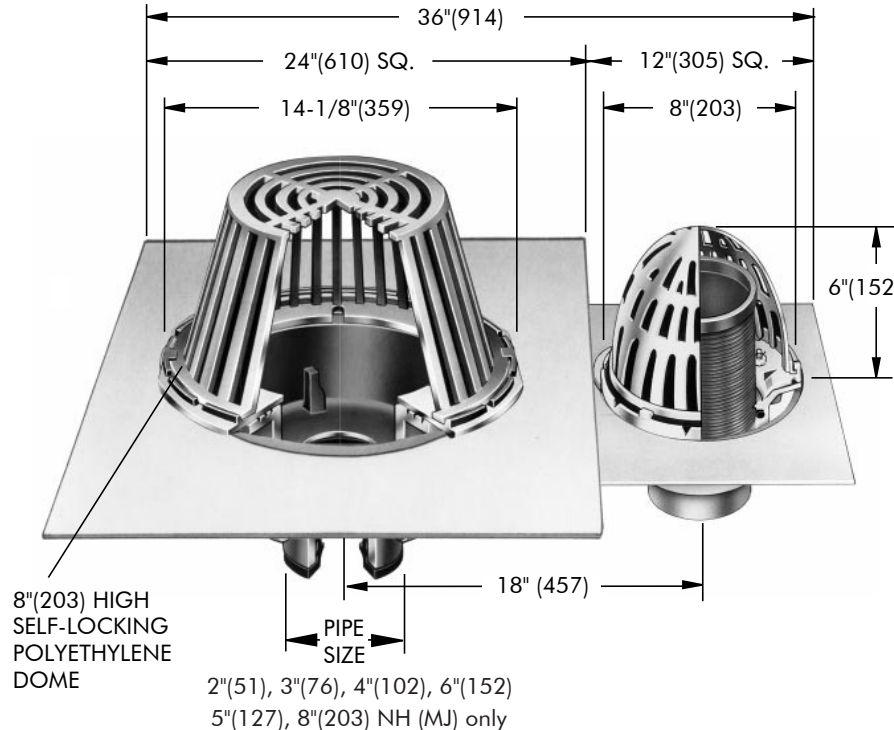
Components:



SPECIFICATION: Watts Drainage Products RD-100-O combined roof drain and secondary overflow system, consisting of galvanized sump receivers; one large sump epoxy coated cast iron body, one small sump epoxy coated cast iron body, combined flashing rings and gravel stop, polyethylene dome strainers and one adjustable 4"(102) diameter ABS overflow standpipe.

Order Code: RD-10 -O-

Ex. RD-102P-O-K



Deck opening 10" (254) with sump receiver 13-1/4" (337)

Deck opening 6-1/2" (165) with sump receiver 8" (203)

Free Area Sq. In.
137

Pipe Sizing (Select One)		
Suffix	Description	
2	2"(51) Pipe Size	<input type="checkbox"/>
3	3"(76) Pipe Size	<input type="checkbox"/>
4	4"(102) Pipe Size	<input type="checkbox"/>
5	5"(127) Pipe Size	<input type="checkbox"/>
6	6"(152) Pipe Size	<input type="checkbox"/>
8	8"(203) Pipe Size	<input type="checkbox"/>

Outlet Type (Select One)		
Suffix	Description	
NH	No Hub (MJ)	<input type="checkbox"/>
P	Push On	<input type="checkbox"/>
T	Threaded Outlet	<input type="checkbox"/>
X	Inside Caulk	<input type="checkbox"/>

Options (Select One or More)		
Suffix	Description	
-A	Accutrol weir (specify # 1-6 slots)	<input type="checkbox"/>
-C	Secondary Membrane Clamp	<input type="checkbox"/>
-D	Underdeck Clamp	<input type="checkbox"/>
-E	Adjustable Extension	<input type="checkbox"/>
-GSS	Stainless Steel Ballast Guard	<input type="checkbox"/>
-H	Adj. to 6" IRMA Ballast Guard	<input type="checkbox"/>
-K	Ductile Iron Dome	<input type="checkbox"/>
-K80	Aluminum Dome	<input type="checkbox"/>
-L	Vandal Proof Dome	<input type="checkbox"/>
-R	2" High External Water Dam	<input type="checkbox"/>
-SO	Side Outlet**	<input type="checkbox"/>
-V	Fixed Extension (1-1/2",2",3",4")	<input type="checkbox"/>
-W-1	Waterproofing Flange	<input type="checkbox"/>
-Z	Extended Integral Wide Flange	<input type="checkbox"/>
-5	Sediment Bucket	<input type="checkbox"/>
-12	Galvanized Dome	<input type="checkbox"/>
-13	All Galvanized	<input type="checkbox"/>
-83	Mesh Covered Dome	<input type="checkbox"/>
-113M	Special Epoxy from 3M Range	<input type="checkbox"/>

Optional Body Material (NH Only)		
Suffix	Description	
-60	PVC Body w/Socket Outlet	<input type="checkbox"/>
-61	ABS Body w/Socket Outlet	<input type="checkbox"/>

** Side Outlet (-SO) option only available in 2"(51), 3"(76), 4"(102) pipe sizes.
Underdeck Clamp (-BED and -D options) are not available when -SO is selected.

Job Name _____ Contractor _____

Job Location _____ Contractor's P.O. No. _____

Engineer _____ Representative _____

WATTS Drainage reserves the right to modify or change product design or construction without prior notice and without incurring any obligation to make similar changes and modifications to products previously or subsequently sold. See your WATTS Drainage representative for any clarification. Dimensions are subject to manufacturing tolerances.



Adjustable Accutrol Weir
 Tag: _____

**Adjustable Flow Control
 for Roof Drains**

ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)

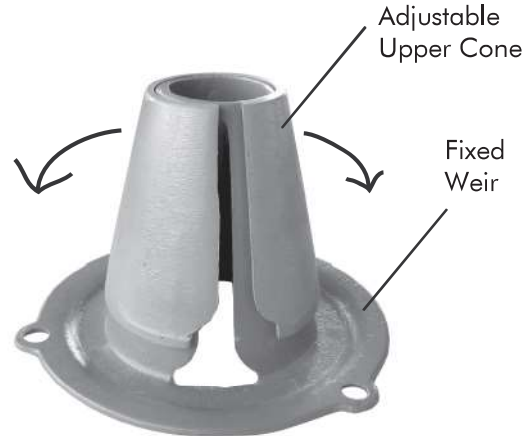
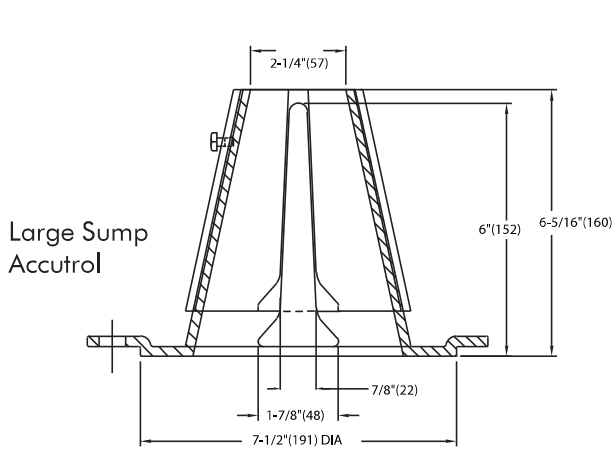
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.

Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

EXAMPLE:

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2" of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3" of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:
 [5 gpm(per inch of head) x 2 inches of head] + 2-1/2 gpm(for the third inch of head) = 12-1/2 gpm.



1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

Weir Opening Exposed	Head of Water					
	1"	2"	3"	4"	5"	6"
	Flow Rate (gallons per minute)					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	10	10	10	10	10

Job Name _____ Contractor _____

Job Location _____ Contractor's P.O. No. _____

Engineer _____ Representative _____

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