Jp2g Consultants Inc.
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Project No. 20-5060

Design and Stormwater Management Report

Ottawa Carleton Detention Centre Rev 1

2244 Innes Road, Ottawa, Ontario

January 12, 2024

Prepared for

Colliers INTERNATIONAL

Colliers Project Leaders
Domenico Giangregorio

Table of Contents

Contents

1 *Introduction*

Jp2g Consultants Inc. was retained by Colliers International to complete a Stormwater Management Report suitable for the City of Ottawa Site Plan Control Application regarding the Ottawa Carleton Detention Centre Parking Lot at 2244 Innes Road.

The site development's limit of works in the extended parking area is approximately **1.03 ha** in size. The proposed development includes upgrading the existing parking area, and preservation of the existing wetlands.

A Pre-Consultation meeting was held with City of Ottawa staff on August 17, 2021 to determine the project constraints and requirements. The following report details the stormwater management calculations used for capacity, water quantity and quality control in accordance with the City of Ottawa's requirements.

1.1 Design Drawings

The following reference civil design drawings are included.

- C1 – Existing Conditions
- C2 – Site Plan
- C3 – Site Grading Plan
- C4 – Details and Notes

1.2 Parking Lot Requirements

The existing gravel parking lot is not large enough to support the staff at the OCDC. The parking lines are not marked. The proposed parking lot upgrades includes additional parking spaces and paving the parking area with designated parking lines. The proposed site development will include upgrading the existing parking area by adding 6233m^2 of asphalt and including suitable accessibility parking spaces in accordance with the City of Ottawa Accessibility Design Standards.

In accordance with the City of Ottawa Accessibility Design Standards, 4% of the total parking spaces are to be accessible parking spaces. Of the 167 proposed parking spaces, 5 are Type A and 6 are Type B Accessible parking spaces, exceeding the 4% requirement. Type A accessible parking spaces were designed for a width of 3.4m, and Type B parking spaces with a width of 2.4m. Additionally in accordance with the City of Ottawa Parking By Law Section 106, parking spaces are designed for the 5.2m length and 2.6m width requirement.

2 Objective

This study will outline the stormwater management requirements for the development of the parking area and identify the impact of the development on the existing receiving watercourse.

The stormwater management plan is to control post-development peak flows to pre-determined levels, and detain onsite, stormwater up to and including the 100-year storm event with a 20% increase of rainfall intensity without affecting adjacent lands, and to provide clean runoff to minimize pollution of the downstream receiving watercourse.

3 Stormwater Management

3.1 Pre-Development Conditions

The existing site consists of existing parking areas, both paved and gravel/grassed parking. For pre-development drainage considerations, the existing gravel parking areas are considered to have a runoff coefficient of C=0.45, existing paved parking areas of C=0.9, and existing grassed areas of C=0.20. The weighted c-value of the existing parking lot was calculated to be C=0.48, refer to calculations provided in **Appendix B**.

3.2 Allowable Release Rate

The site's allowable release rate was calculated in conjunction with the City of Ottawa requirements. For the existing conditions, the site's release rate was determined using a weighted c-value of 0.48, and the 5-year storm intensity. Therefore, the site will be restricted to an allowable release rate of **$Q_{allowable}$ = 143.0 l/s,** for all storms up to and including the 100-year storm. Detailed calculations can be seen in **Appendix B**.

3.3 Post-Development Conditions

The proposed site development will include upgrading the existing parking areas to a paved parking lot, including new curbs and sidewalk entrances. Flows will be managed to limit the 100-year post-development flow rate to the pre-development 5-year release rate identified in section 3.2.

The site development area is approximately **1.03 ha** with a post-development average weighted run-off coefficient of **C = 0.63** and **C = 0.71** for the 5-year and 100-year* storm events, respectively. Refer to calculations in **Appendix B**. Stormwater management techniques are required to reduce peak flows from the area, given that post-development peak flows will exceed the pre-development allowable release rate of **143.0 l/s**.

3.4 Stormwater Quality Control

An oil grit separator is provided and sized for 80% TSS removal. A 450mm dia RCP inlet pipe will act as the inlet from drainage conveyed overland to the marshed area. Runoff will be conveyed through an OGS separator prior to outlet to discharge into the existing ditch.

3.5 Stormwater Quantity Control

The proposed parking and paved areas will drain into the existing marsh area/stormwater pond. Excess runoff will be detained on site in the existing marshed area. The existing culvert is proposed to be removed and replaced with a new 450mm RCP Pipe and headwall. Based on the orifice flow calculations, a 450mm RCP pipe at an invert of 67.32, and a maximum head of 0.11m will provide an orifice discharge of 143.0 lps. Thus the proposed outlet will restrict all flows up to the 100+20% design storm to less than or equal to the allowable release rate identified in section 3.2. Storage requirements are seen in **Table 1**.

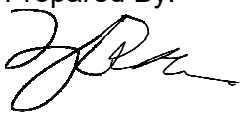
Table 1: Controlled Flow Breakdown

ID	Description	Controlled Flows	100+20% Head (m)	Wetland Storage (m^3)		
				5-Year Requirement	100-Year Requirement	100+20% Requirement
	Net-allowable controlled release rate (Table 1)	**143.0 L/s**				
1.1	Parking Area	**143 L/s**	**0.11**	**27**	**133**	**185**

** Note: Must be controlled to net-allowable 100-year.*

Based on the restricted flow rates, storage will be required to detain the excess runoff on site. On site storage requirements are calculated to be **27m^3** for the 5-year event, **133m^3** for the 100-year, and **185m^3** for the 100+20% stress test event. Based on the existing grading of the wetland ponds, sufficient storage for these events can be provided within the wetland. Maximum storage provided by the existing marshed area is **496m^3**.

Prepared By:



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Reviewed By:

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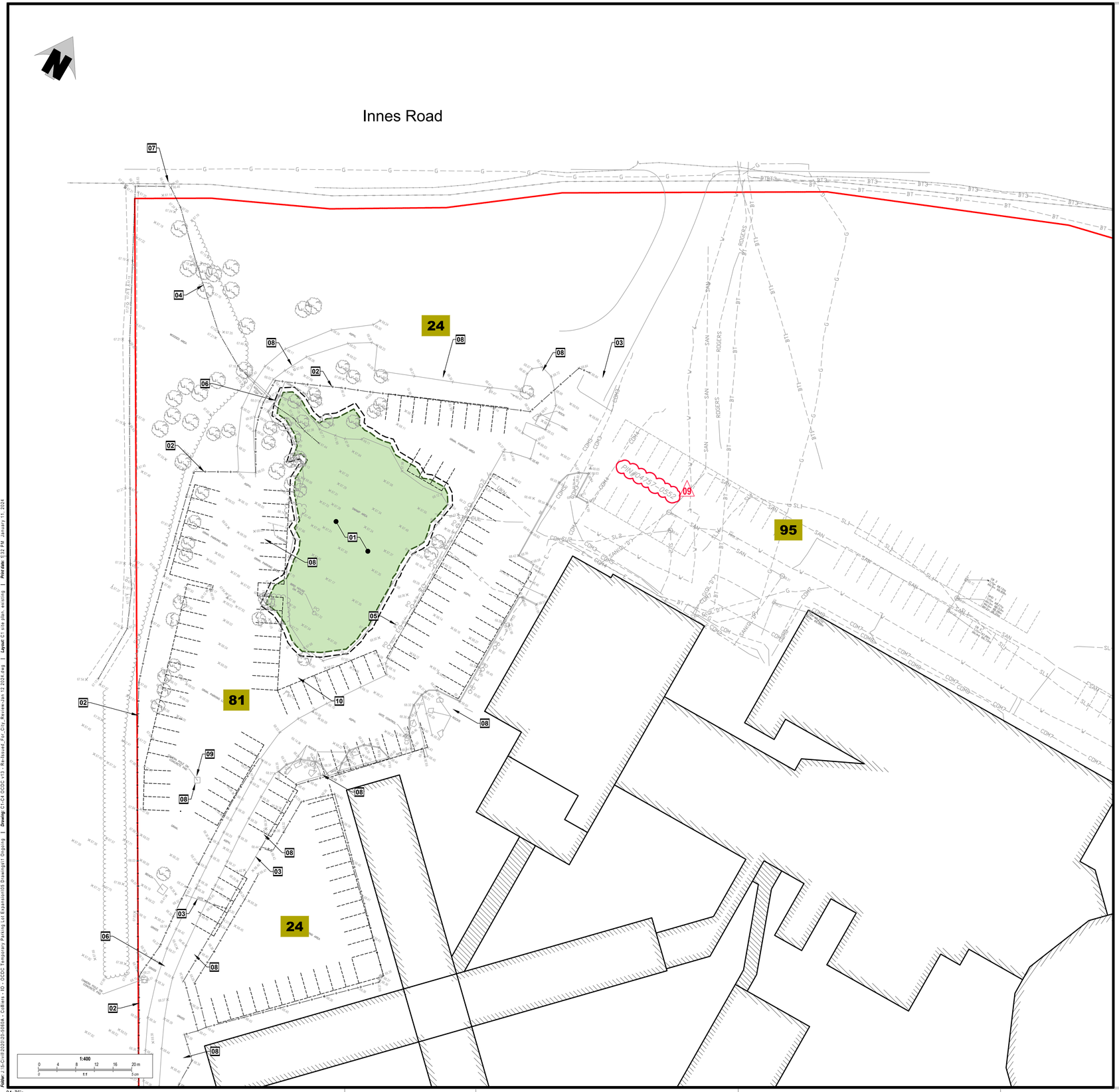
Appendix A - Drawings



LEGEND

- PROPERTY BOUNDARY
- LIMITS OF WORK
- FENCE
- EXISTING BUILDING
- SA — EXISTING SANITARY SEWER
- ST — EXISTING STORM SEWER
- W — EXISTING WATERMAIN
- SA — NEW SANITARY SEWER
- ST — NEW STORM SEWER
- W — NEW WATERMAIN
- LIMIT OF EXISTING WETLAND (09)
- 1m BUFFER FOR WETLAND
- 95 — EXISTING NUMBER OF PARKING STALLS
- EX-CB — EXISTING CATCHBASIN
- EX-CBMH — EXISTING CATCHBASIN MANHOLE
- +54.83 — EXISTING ELEVATION
- EXISTING LIGHT STANDARD TO BE REMOVED REFER TO ELECTRICAL
- WETLAND AREA (09)

DRAWING NOTES

01 EXISTING WETLAND.
02 EXISTING SECURITY FENCE.
03 EXISTING ACCESS GATE.
04 EXISTING DITCH.
05 EXISTING PARKING POSTS.
06 EXISTING CULVERT AND HEADWALL.
07 EXISTING DITCH INLET AT INNES ROAD.
08 EXISTING LIGHT POLE.
09 EXISTING POLE FOR SECURITY CAMERAS.
10 EXISTING LIGHT STANDARD TO BE REMOVED, REFER TO ELECTRICAL

GENERAL NOTES

1. DESIGN AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH MOST RECENT ONTARIO BUILDING CODE.
2. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS WITH RESPECT TO SITE CONDITIONS AND ALL MATERIALS TO THE PROJECT. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
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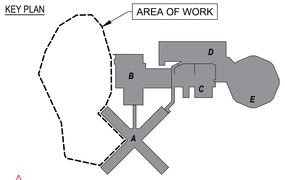
6. CONTRACTOR RESPONSIBLE FOR OBTAINING ALL REQUIRED UTILITY LOCATES, DAYLIGHTING, INSPECTIONS, PERMITS, AND APPROVALS, INCLUDING ALL ASSOCIATED COSTS. LOCATION OF EXISTING UTILITIES ARE APPROXIMATE ONLY AND BASED ON BEST AVAILABLE INFORMATION.
7. PROPERTY BOUNDARY INFORMATION IS DERIVED FROM THE PLAN RECEIVED FROM OCDC PREPARED BY ONTARIO REALTY CORPORATION NOVEMBER 2021 BASED ON INFORMATION OBTAINED FROM PLAN OF PART OF LOT 17 CONCESSION 3 (OTTAWA FRONT) TWP. OF GLOUCESTER, NOW IN THE CITY OF GLOUCETSER REGIONAL MUNICIPALITY OF OTTAWA-CARLETON DATED FEB 22, 1999 PREPARED BY D.A. SIMMONS OLS WEBSTER AND SIMMON'S SURVEYING LTD, OTTAWA.

GEOTECHNICAL NOTES

1. GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO SHALL INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO IMPLEMENT A MONITORING PROGRAM FOR VIBRATIONS TO BE OVERSEEN BY A PROFESSIONAL GEOTECHNICAL ENGINEER. CONTRACTOR TO ALLOW IN HIS BID A UNIT RATE FOR STATIC COMPACTION SHOULD VIBRATION MONITORING REQUIRES THE GEOTECHNICAL ENGINEER TO INSTRUCT THE USAGE OF STATIC COMPACTION METHODS.
3. CONTRACTOR TO AVOID DIRECTING WATER TOWARDS THE TOP OR BOTTOM OF THE RAVINE SLOPE, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. THE EXISTING CREEK CANNOT HANDLE ANY ADDITIONAL FLOW OR VOLUME, AND THE PROPOSED DRAINAGE PLAN SHOULD AIM TO MINIMIZE AND CONTROL ANY IMPACTS IN THIS REGARD.

KEY PLAN



No	Revisions	Date
09	RE-ISSUED FOR CITY REVIEW	2024.01.12
08	RE-ISSUED FOR CITY REVIEW	2023.10.25
07	ISSUED FOR TENDER	2023.08.18
06	99% DESIGN REVIEW	2023.08.15
05	90% DESIGN REVIEW	2022.12.21
04	66% DESIGN REVIEW	2022.02.02
03	33% DESIGN REVIEW R2	2021.11.08
02	33% DESIGN REVIEW R1	2021.10.08
01	33% DESIGN REVIEW	2020.12.07

Orientation

Seal

REGISTERED PROFESSIONAL ENGINEER
D. NGUYEN
100053149
Jan 12, 2024
PROVINCE OF ONTARIO

The Contractor shall check and verify all dimensions and report all errors and omissions to the IO-Owner's/MBS Designee (as applicable) for his/her written direction before proceeding with the Work.

A/B — A Detail No; B Sheet No where detailed

PROJECT ENGINEER: CIVIL, STRUCTURAL, MECHANICAL & ELECTRICAL

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Jp2g Project #: 20-5060A

Ontario
Infrastructure Ontario

AMIS N B

Project
OTTAWA CARLETON DETENTION CENTRE TEMPORARY PARKING LOT EXPANSION

Location
INNES ROAD, GLOUCESTER TOWNSHIP OTTAWA

IO Project No | Site No | Building No

Client
MCSCS

Drawing Title
EXISTING CONDITIONS

Scale: AS NOTED	Date: DECEMBER 2022
Drawn by: R.W.	Substantial Performance Date: —
Designed by: D.N.	Drawing No: C1 of —
Approved by:	CADD File NAME: —

#19042

D07-12-23-0040

24x36in

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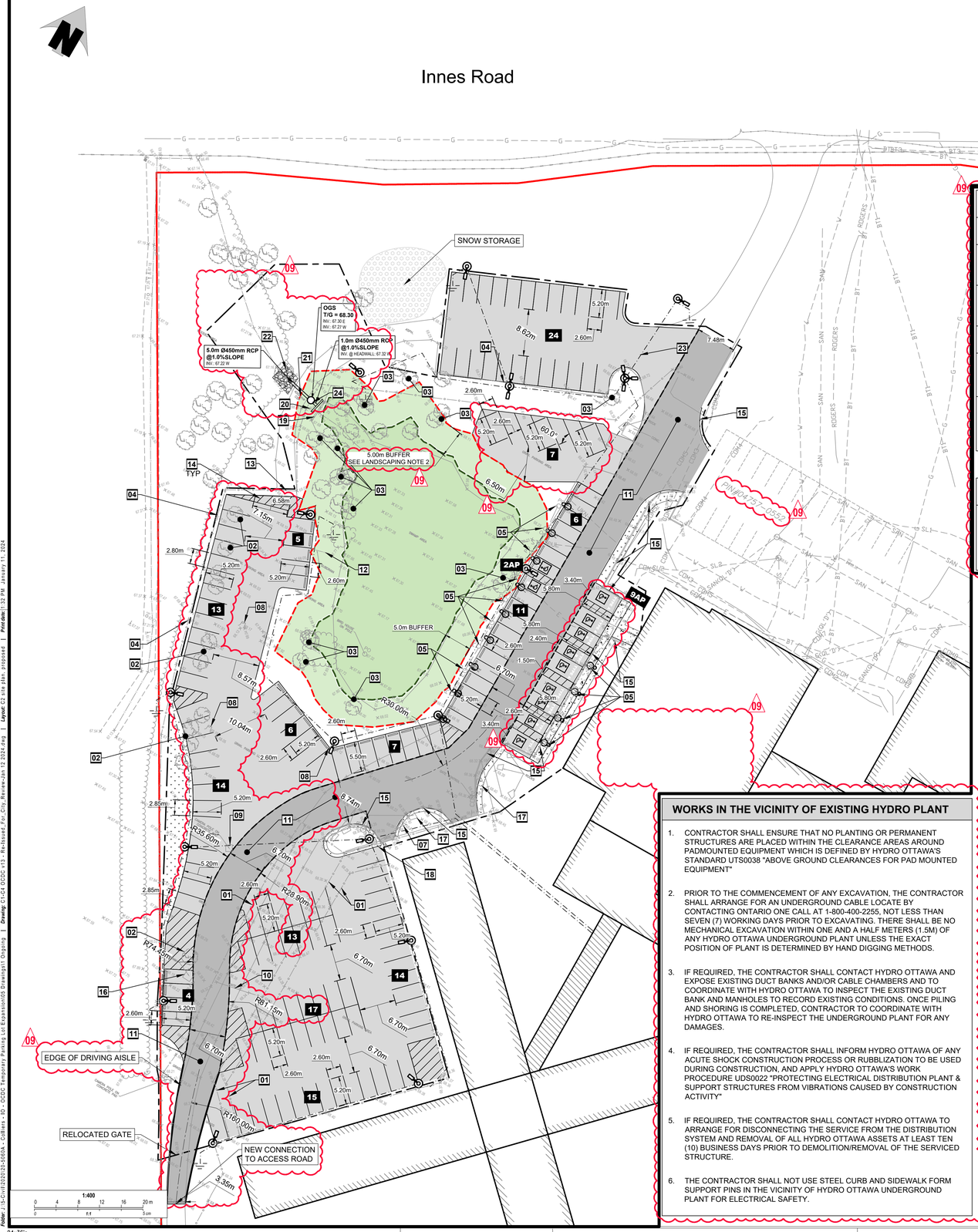

PARKING AND DRIVE AISLE PROVISIONS
UNDER PART4-PARKING,QUEUING AND LOADING PROVISIONS (SECTIONS 100-114)

ZONING BY LAW - SCHEDULE 1A
AREA C : SUBSECTION

ZONING BY LAW - PART 4 (SECTIONS 100-114)
TABLE 101-MINIMUM PARKING SPACE RATES
ROW N28, CORRECTIONAL FACILITY,
COLUMN 4: 1 PARKING PER 100m² OF GROSS FLOOR AREA

GROSS FLOOR AREA = 16,765m² (INCLUDING ALL BLOCKS)
REQUIRED PARKING SPACE = 167 PARKING
PROPOSED PARKING SPACE = 167+95 = 262 PARKING

BICYCLE:
NOT PROVIDED PER EXISTING CONDITIONS

PARKING SPACE DIMENSIONS
MINIMUM = 5.2mx2.6m (90°)
TYPE "A" = 5.8mx3.4m
TYPE "B" = 5.8mX2.4m

AISLE AND DRIVEWAY PROVISIONS (SECTION 107)
REQUIRED 20 OR MORE PARKING SPACES = 6.7m
PROPOSED = 6.7m, 7.15m, 8.57m, 8.74m & 10.04m
TABLE 107-MINIMUM REQUIRED AISLE WIDTH
ROW (c) 56°-70°, COLUMN 2 = 6.5m

AODA PARKING REQUIREMENTS
CITY OF OTTAWA - ACCESSIBILITY DESIGN STANDARDS - SECTION 3.1 PARKING

TOTAL PARKING SPACE = 167 PARKING
ACCESSIBLE PARKING RATIO = 4%
REQUIRED ACCESSIBLE PARKING NUMBER = 7
PROVIDED ACCESSIBLE PARKING NUMBER = 11
5 TYPE "A" ACCESSIBLE PARKING PROPOSED = 5.8mx3.4m
6 TYPE "B" ACCESSIBLE PARKING PROPOSED = 5.8mx2.4m

GEOTECHNICAL NOTES

1. GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO SHALL INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO IMPLEMENT A MONITORING PROGRAM FOR VIBRATIONS TO BE OVERSEEN BY A PROFESSIONAL GEOTECHNICAL ENGINEER. CONTRACTOR TO ALLOW IN HIS BID A UNIT RATE FOR STATIC COMPACTION SHOULD VIBRATION MONITORING REQUIRES THE GEOTECHNICAL ENGINEER TO INSTRUCT THE USAGE OF STATIC COMPACTION METHODS.
3. CONTRACTOR TO AVOID DIRECTING WATER TOWARDS THE TOP OR BOTTOM OF THE RAVINE SLOPE, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. THE EXISTING CREEK CANNOT HANDLE ANY ADDITIONAL FLOW OR VOLUME, AND THE PROPOSED DRAINAGE PLAN SHOULD AIM TO MINIMIZE AND CONTROL ANY IMPACTS IN THIS REGARD.

WORKS IN THE VICINITY OF EXISTING HYDRO PLANT

1. CONTRACTOR SHALL ENSURE THAT NO PLANTING OR PERMANENT STRUCTURES ARE PLACED WITHIN THE CLEARANCE AREAS AROUND PADMOUNTED EQUIPMENT WHICH IS DEFINED BY HYDRO OTTAWA'S STANDARD UTS0038 "ABOVE GROUND CLEARANCES FOR PAD MOUNTED EQUIPMENT"
2. PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL ARRANGE FOR AN UNDERGROUND CABLE LOCATE BY CONTACTING ONTARIO ONE CALL AT 1-800-400-2255, NOT LESS THAN SEVEN (7) WORKING DAYS PRIOR TO EXCAVATING. THERE SHALL BE NO MECHANICAL EXCAVATION WITHIN ONE AND A HALF METERS (1.5M) OF ANY HYDRO OTTAWA UNDERGROUND PLANT UNLESS THE EXACT POSITION OF PLANT IS DETERMINED BY HAND DIGGING METHODS.
3. IF REQUIRED, THE CONTRACTOR SHALL CONTACT HYDRO OTTAWA AND EXPOSE EXISTING DUCT BANKS AND/OR CABLE CHAMBERS AND TO COORDINATE WITH HYDRO OTTAWA TO INSPECT THE EXISTING DUCT BANK AND MANHOLES TO RECORD EXISTING CONDITIONS. ONCE PILING AND SHORING IS COMPLETED, CONTRACTOR TO COORDINATE WITH HYDRO OTTAWA TO RE-INSPECT THE UNDERGROUND PLANT FOR ANY DAMAGES.
4. IF REQUIRED, THE CONTRACTOR SHALL INFORM HYDRO OTTAWA OF ANY ACUTE SHOCK CONSTRUCTION PROCESS OR RUBBLIZATION TO BE USED DURING CONSTRUCTION, AND APPLY HYDRO OTTAWA'S WORK PROCEDURE UDS0022 "PROTECTING ELECTRICAL DISTRIBUTION PLANT & SUPPORT STRUCTURES FROM VIBRATIONS CAUSED BY CONSTRUCTION ACTIVITY"
5. IF REQUIRED, THE CONTRACTOR SHALL CONTACT HYDRO OTTAWA TO ARRANGE FOR DISCONNECTING THE SERVICE FROM THE DISTRIBUTION SYSTEM AND REMOVAL OF ALL HYDRO OTTAWA ASSETS AT LEAST TEN (10) BUSINESS DAYS PRIOR TO DEMOLITION/REMOVAL OF THE SERVICED STRUCTURE.
6. THE CONTRACTOR SHALL NOT USE STEEL CURB AND SIDEWALK FORM SUPPORT PINS IN THE VICINITY OF HYDRO OTTAWA UNDERGROUND PLANT FOR ELECTRICAL SAFETY.

DRAWING NOTES

01 REMOVE AND DISCARD EXISTING DOUBLE SECURITY FENCE.
02 REMOVE EXISTING TREES.
03 EXISTING TREES TO REMAIN.
04 REPAIR OR REPLACE EXISTING FENCE WHERE INDICATED TBC.
05 REMOVE AND REINSTATE ELECTRICAL PLUG IN STATIONS. REFER TO ELECTRICAL DRAWINGS.
06 NOT USED
07 PROTECT EXISTING FIRE HYDRANT DURING CONSTRUCTION.
08 TREE STUMP TO BE REMOVED.
09 RELOCATE EXISTING POLE.
10 RELOCATE EXISTING GATE.
11 PROPOSED REALIGNED FIRE ROUTE.
12 REMOVE AND DISCARD EXISTING SUBDRAIN.
13 EXISTING GATE FOR SNOW REMOVAL OPERATIONS.
14 NO PARKING TO ALLOW ACCESS FOR PARKING EGRESS.
15 EXISTING CURB TO BE REMOVED.
16 EXISTING PICNIC TABLE TO BE RELOCATED.
17 EXISTING LANDSCAPE FEATURES TO BE RELOCATED.
18 PROVIDE CURB TERMINATION
19 REMOVE EXISTING CONCRETE HEADWALL
20 NEW PROPOSED HEADWALL PER OPSD 804.030
21 REMOVE EXISTING 450mm CULVERT. INSTALL RCP 450 DIA PIPES AND OGS SYSTEMAS SHOWN ON PLAN
22 INSTALL RIP RAP AND GEOTEXTILE PER OPSD 810.010
23 FOR ELECTRCAL/SECURITY TRENCHING AND FOUNDATION, REFER TO ELECTRICAL DRAWINGS (TYPICAL)
24 SUPPLY AND INSTALL NEW OIL GRIT SEPARATOR. STRUCTURE TO BE LOCATED OUTSIDE OF ACCESS PATH, PROVIDE TOP SOIL AROUND STRUCTURE FRAME ELEVATION. ENSURE MIN 300mm GRANULAR A ABOVE THE PROPOSED RCP PIPES.

LEGEND

- PROPERTY BOUNDARY
- LIMITS OF WORK
- FENCE
- EXISTING BUILDING
- SA — EXISTING SANITARY SEWER
- ST — EXISTING STORM SEWER
- W — EXISTING WATERMAIN
- ST — NEW STORM SEWER
- NEW BARRIER CURB
- NEW DEPRESSED BARRIER CURB
- NEW EDGE OF PAVEMENT
- NEW REALIGNED FIRE ROUTE
- NEW SILT FENCE
- LIMIT OF EXISTING WETLAND 09
- 5m BUFFER FOR WETLAND
- NEW LIGHT DUTY ASPHALT AS PER DETAIL 1/C4
- NEW HEAVY DUTY ASPHALT AS PER DETAIL 2/C4
- NEW CONCRETE SIDEWALK
- NEW GRASS
- NEW RIP RAP
- LINE PAINTING 09
- WETLAND AREA 09
- EX-CB — EXISTING CATCHBASIN
- EX-CBMH — EXISTING CATCHBASIN MANHOLE
- 54.83 — EXISTING GRADE
- NEW WHEEL STOP 1.83m LENGTH
- NEW LIGHT STANDARD REFER TO ELECTRICAL
- PROPOSED ELECTRICAL / SECURITY TRENCHING

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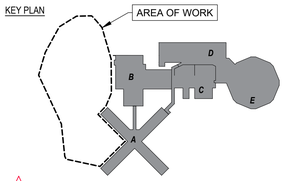
EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE, DURING CONSTRUCTION ACTIVITIES; THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS, AND INSTALLING AND MAINTAINING MUD MATS FOR OUTGOING CONSTRUCTION TRAFFIC DURING CONSTRUCTION ACTIVITIES.
2. PREVENT SOIL LOSS DURING CONSTRUCTION (BY STORM WATER RUNOFF OR WIND EROSION).
3. PROTECT TOPSOIL BY STOCKPILING FOR REUSE.
4. PREVENT SEDIMENTATION OF STORM SEWERS AND RECEIVING STREAMS.
5. PREVENT AIR POLLUTION FROM DUST AND PARTICULATE MATTER.
6. ALL STORM MANHOLES AND CATCHBASIN MANHOLES TO HAVE 300mm SUMPS; ALL CATCHBASINS TO HAVE 600mm SUMPS.
7. INSTALL FILTER BAG INSERT IN ALL STORM MANHOLES AND CATCH BASINS IMPACTED DURING CONSTRUCTION, INCLUDING CATCH BASINS IN THE RIGHT OF WAY.
8. SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA INSPECTOR OR CONSERVATION AUTHORITY.
9. STORM WATER PUMPED INTO CITY SERVICE SHALL FLOW THROUGH A FILTER SOCK.
10. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENTATION CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

LANDSCAPING NOTES

1. CONTRACTOR TO ENSURE THAT THERE IS NO EXCAVATION OVER 20% OF THE CRITICAL ROOT ZONE (CRZ) OF RETAINED TREES DUE TO ASPHALT CONSTRUCTION, REFER TO LANDSCAPING DRAWINGS FOR DELINEATION OF CRITICAL ZONE.
2. ALL LIGHT AND CAMERA POLES AND BASES SHALL BE LOCATED OUTSIDE THE 5 METERS BUFFER OF THE WETLAND.

KEY PLAN



No	Revisions	Date
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02	33% DESIGN REVIEW R1	2021.10.08
01	33% DESIGN REVIEW	2020.12.07

Orientation

Seal

REGISTERED PROFESSIONAL ENGINEER — T. BNGUYEN — 100053149 — Jan 12, 2024 — PROVINCE OF ONTARIO

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PHONE: 613-828-7800 FAX: 613-828-2600
Jp2g Project #: 20-5060A

Ontario Infrastructure Ontario

AMIS N B

Project
OTTAWA CARLETON DETENTION CENTRE TEMPORARY PARKING LOT EXPANSION

Location
INNES ROAD, GLOUCESTER TOWNSHIP OTTAWA
IO Project No — Site No — Building No

Client
MCSCS

Drawing Title
SITE PLAN – NEW PARKING LAYOUT

Scale: AS NOTED	Date: DECEMBER 2022
Drawn by: R.W.	Substantial Performance Date: –
Designed by: D.N.	Drawing No: C2 of –
Approved by:	CADD File NAME: –

#19042

D07-12-23-0040

Folder: J:\5-Civil\2020\20-5060A – Cadieux - IO - OCDC Temporary Parking Lot Expansion\05 Drawings\1 Ongoing\ | Drawing: C1-C4 OCDC v13 - Reissued_For_City_Review-Jan 12 2024.dwg | Layout: C2 site plan_proposed | Print date: January 11, 2024 1:32 PM
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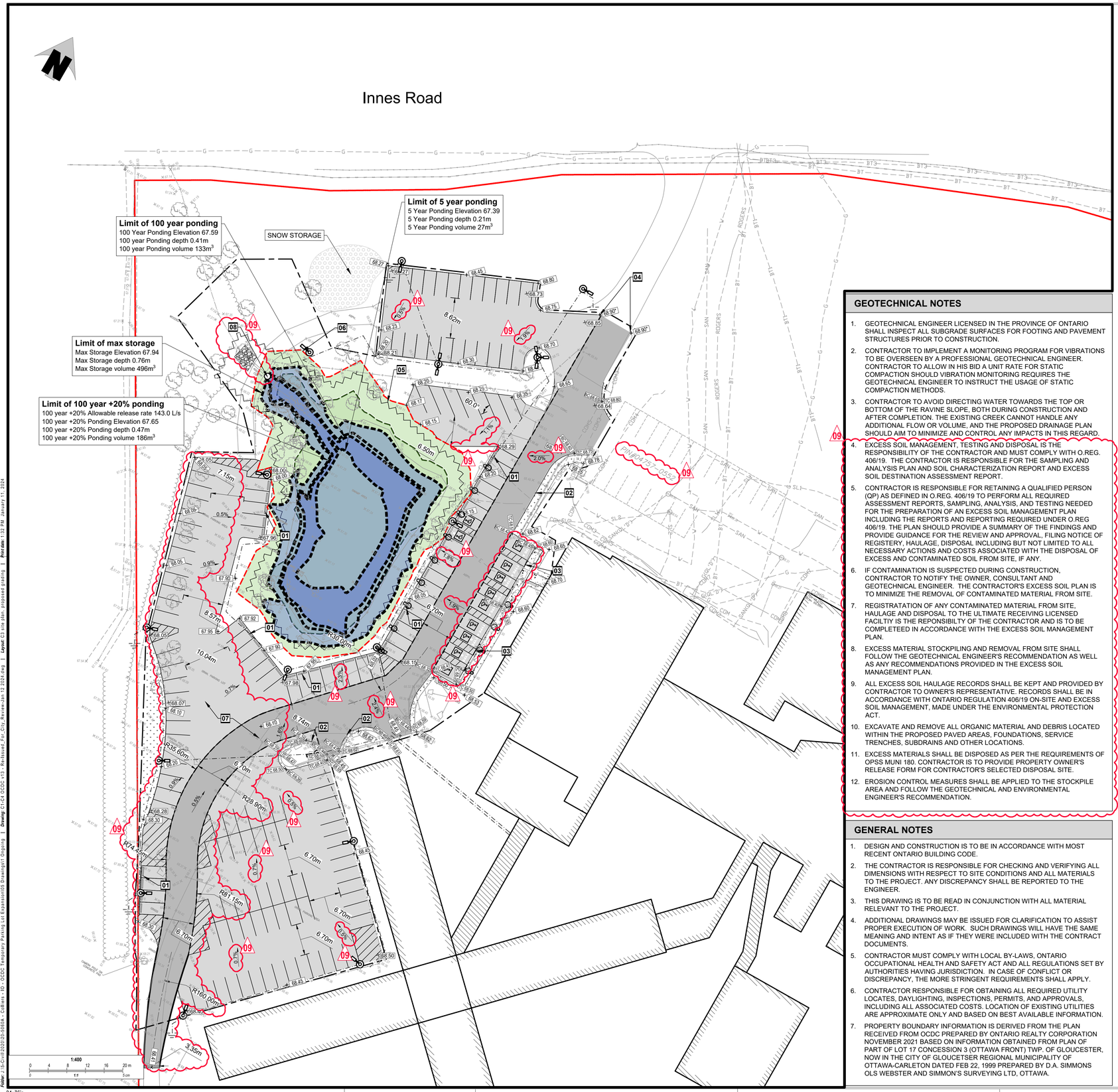


GEOTECHNICAL NOTES

1. GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO SHALL INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO IMPLEMENT A MONITORING PROGRAM FOR VIBRATIONS TO BE OVERSEEN BY A PROFESSIONAL GEOTECHNICAL ENGINEER. CONTRACTOR TO ALLOW IN HIS BID A UNIT RATE FOR STATIC COMPACTION SHOULD VIBRATION MONITORING REQUIRES THE GEOTECHNICAL ENGINEER TO INSTRUCT THE USAGE OF STATIC COMPACTION METHODS.
3. CONTRACTOR TO AVOID DIRECTING WATER TOWARDS THE TOP OR BOTTOM OF THE RAVINE SLOPE, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. THE EXISTING CREEK CANINOT HANDLE ANY ADDITIONAL FLOW OR VOLUME, AND THE PROPOSED DRAINAGE PLAN SHOULD AIM TO MINIMIZE AND CONTROL ANY IMPACTS IN THIS REGARD.
4. EXCESS SOIL MANAGEMENT, TESTING AND DISPOSAL IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST COMPLY WITH O.REG. 406/19. THE CONTRACTOR IS RESPONSIBLE FOR THE SAMPLING AND ANALYSIS PLAN AND SOIL CHARACTERIZATION REPORT AND EXCESS SOIL DESTINATION ASSESSMENT REPORT.
5. CONTRACTOR IS RESPONSIBLE FOR RETAINING A QUALIFIED PERSON (QP) AS DEFINED IN O.REG. 406/19 TO PERFORM ALL REQUIRED ASSESSMENT REPORTS, SAMPLING, ANALYSIS, AND TESTING NEEDED FOR THE PREPARATION OF AN EXCESS SOIL MANAGEMENT PLAN INCLUDING THE REPORTS AND REPORTING REQUIRED UNDER O.REG 406/19. THE PLAN SHOULD PROVIDE A SUMMARY OF THE FINDINGS AND PROVIDE GUIDANCE FOR THE REVIEW AND APPROVAL, FILING NOTICE OF REGISTERY, HAULAGE, DISPOSAL INCLUDING BUT NOT LIMITED TO ALL NECESSARY ACTIONS AND COSTS ASSOCIATED WITH THE DISPOSAL OF EXCESS AND CONTAMINATED SOIL FROM SITE, IF ANY.
6. IF CONTAMINATION IS SUSPECTED DURING CONSTRUCTION, CONTRACTOR TO NOTIFY THE OWNER, CONSULTANT AND GEOTECHNICAL ENGINEER. THE CONTRACTOR'S EXCESS SOIL PLAN IS TO MINIMIZE THE REMOVAL OF CONTAMINATED MATERIAL FROM SITE.
7. REGISTRATATION OF ANY CONTAMINATED MATERIAL FROM SITE, HAULAGE AND DISPOSAL TO THE ULTIMATE RECEIVING LICENSED FACILTIY IS THE REPONSIBILTY OF THE CONTRACTOR AND IS TO BE COMPLETEED IN ACCORDANCE WITH THE EXCESS SOIL MANAGEMENT PLAN.
8. EXCESS MATERIAL STOCKPILING AND REMOVAL FROM SITE SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDATION AS WELL AS ANY RECOMMENDATIONS PROVIDED IN THE EXCESS SOIL MANAGEMENT PLAN.
9. ALL EXCESS SOIL HAULAGE RECORDS SHALL BE KEPT AND PROVIDED BY CONTRACTOR TO OWNER'S REPRESENTATIVE. RECORDS SHALL BE IN ACCORDANCE WITH ONTARIO REGULATION 406/19 ON-SITE AND EXCESS SOIL MANAGEMENT, MADE UNDER THE ENVIRONMENTAL PROTECTION ACT.
10. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED PAVED AREAS, FOUNDATIONS, SERVICE TRENCHES, SUBDRAINS AND OTHER LOCATIONS.
11. EXCESS MATERIALS SHALL BE DISPOSED AS PER THE REQUIREMENTS OF OPSS MUNI 180. CONTRACTOR IS TO PROVIDE PROPERTY OWNER'S RELEASE FORM FOR CONTRACTOR'S SELECTED DISPOSAL SITE.
12. EROSION CONTROL MEASURES SHALL BE APPLIED TO THE STOCKPILE AREA AND FOLLOW THE GEOTECHNICAL AND ENVIRONMENTAL ENGINEER'S RECOMMENDATION.

GENERAL NOTES

1. DESIGN AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH MOST RECENT ONTARIO BUILDING CODE.
2. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS WITH RESPECT TO SITE CONDITIONS AND ALL MATERIALS TO THE PROJECT. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MATERIAL RELEVANT TO THE PROJECT.
4. ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE CONTRACT DOCUMENTS.
5. CONTRACTOR MUST COMPLY WITH LOCAL BY-LAWS, ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND ALL REGULATIONS SET BY AUTHORITIES HAVING JURISDICTION. IN CASE OF CONFLICT OR DISCREPANCY, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
6. CONTRACTOR RESPONSIBLE FOR OBTAINING ALL REQUIRED UTILITY LOCATES, DAYLIGHTING, INSPECTIONS, PERMITS, AND APPROVALS, INCLUDING ALL ASSOCIATED COSTS. LOCATION OF EXISTING UTILITIES ARE APPROXIMATE ONLY AND BASED ON BEST AVAILABLE INFORMATION.
7. PROPERTY BOUNDARY INFORMATION IS DERIVED FROM THE PLAN RECEIVED FROM OGDC PREPARED BY ONTARIO REALTY CORPORATION NOVEMBER 2021 BASED ON INFORMATION OBTAINED FROM PLAN OF PART OF LOT 17 CONCESSION 3 (OTTAWA FRONT) TWP. OF GLOUCESTER, NOW IN THE CITY OF GLOUCETSER REGIONAL MUNICIPALITY OF OTTAWA-CARLETON DATED FEB 22, 1999 PREPARED BY D.A. SIMMONS OLS WEBSTER AND SIMMON'S SURVEYING LTD, OTTAWA.

LEGEND

- PROPERTY BOUNDARY
- LIMITS OF WORK
- FENCE
- EXISTING BUILDING
- SA — EXISTING SANITARY SEWER
- ST — EXISTING STORM SEWER
- W — EXISTING WATERMAIN
- ST — NEW STORM SEWER
- NEW LIGHT DUTY ASPHALT AS PER DETAIL 1/C4
- NEW ASPHALT GRINDING AND PAVING AS PER DETAIL 2/C4
- NEW CONCRETE SIDEWALK
- NEW GRASS
- WETLAND AREA
- NEW SILT FENCE
- LIMIT OF EXISTING WETLAND
- 5m BUFFER FOR WETLAND
- EX-CB — EXISTING CATCHBASIN
- EX-CBMH — EXISTING CATCHBASIN MANHOLE
- +54.83 — EXISTING GRADE
- 68.65+ — NEW GRADE
- -1.4% — NEW SLOPE
- BC 68.65 TC 68.80 — NEW TOP AND BOTTOM OF CURB
- NEW BARRIER CURB
- NEW DEPRESSED BARRIER CURB

DRAWING NOTES

01 INSTALL NEW PRECAST WHEEL STOPPER, TYPICAL

02 CONSTRUCT NEW CONCRETE BARRIER CURB IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL SC1.1

03 CONSTRUCT NEW CONCRETE BARRIER CURB WITH 2.0m WIDE SIDEWALK IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAILS SC1.4. PROVIDE ACCESSIBLE RAMPS, MAX 5%, BESIDE EACH ACCESSIBLE PARKING SPOT AS DENOTED BY THE MARKING LINES.

04 CONTRACTOR TO CONFIRM EXISTING ELEVATION AT LIMIT OF ASPHALT. TIE IN NEW ASPHALT TO EXISTING.

05 INSTALL SILT FENCE IN ACCORDANCE WITH OPSD 219.130 AROUND EXISTING WETLAND DURING CONSTRUCTION.

06 PROTECT EXISTING WETLAND DURING CONSTRUCTION. DO NOT ALTER GRADE OR MATERIAL WITHIN 5M OF EXISTING WETLAND

07 CONTRACTOR TO REMOVE AND DISPOSE OFF SITE ALL EXISTING GRANULAR MATERIAL

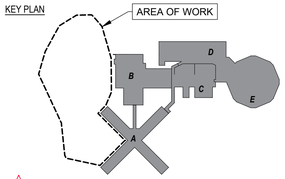
08 SUPPLY AND INSTALL NEW DOWNSTREAM DEFENDER STRUCTURE TO BE SIZED BY MANUFACTURER , MINIMUM 80% TSS REMOVAL. DRAINAGE AREA= 1.035 HA 100 YEARS WEIGHTED RUNOFF COEFFCIENT=0.71. USE 'FINE PARTICLE DISTRIBUTION'. MUST ACCOMODATE 143.0 L/S. PROVIDE WATERTIGHT LID AS PER OPSD 401.030. CONTRACTOR SHALL SUBMIT SHOP-DRAWINGS FOR OGS.

09

EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE, DURING CONSTRUCTION ACTIVITIES; THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS, AND INSTALLING AND MAINTAINING MUD MATS FOR OUTGOING CONSTRUCTION TRAFFIC DURING CONSTRUCTION ACTIVITIES.
2. PREVENT SOIL LOSS DURING CONSTRUCTION (BY STORM WATER RUNOFF OR WIND EROSION).
3. PROTECT TOPSOIL BY STOCKPILING FOR REUSE.
4. PREVENT SEDIMENTATION OF STORM SEWERS AND RECEIVING STREAMS.
5. PREVENT AIR POLLUTION FROM DUST AND PARTICULATE MATTER.
6. ALL STORM MANHOLES AND CATCHBASIN MANHOLES TO HAVE 300mm SUMPS; ALL CATCHBASINS TO HAVE 600mm SUMPS.
7. INSTALL FILTER BAG INSERT IN ALL STORM MANHOLES AND CATCH BASINS IMPACTED DURING CONSTRUCTION, INCLUDING CATCH BASINS IN THE RIGHT OF WAY.
8. SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA INSPECTOR OR CONSERVATION AUTHORITY.
9. STORM WATER PUMPED INTO CITY SERVICE SHALL FLOW THROUGH A FILTER SOCK.
10. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENTATION CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

KEY PLAN



No	Revisions	Date
09	RE-ISSUED FOR CITY REVIEW	2024.01.12
08	RE-ISSUED FOR CITY REVIEW	2023.10.25
07	ISSUED FOR TENDER	2023.08.18
06	99% DESIGN REVIEW	2023.08.15
05	90% DESIGN REVIEW	2022.12.21
04	66% DESIGN REVIEW	2022.02.02
03	33% DESIGN REVIEW R2	2021.11.08
02	33% DESIGN REVIEW R1	2021.10.08
01	33% DESIGN REVIEW	2020.12.07

Orientation

Seal

REGISTERED PROFESSIONAL ENGINEER — D. NGUYEN — 100053149 — Jan 12, 2024 — PROVINCE OF ONTARIO

The Contractor shall check and verify all dimensions and report all errors and omissions to the IO-Owner's/MBS Designee (as applicable) for his/her written direction before proceeding with the Work.

A — Detail No
B — Sheet No where detailed

PROJECT ENGINEER: CIVIL, STRUCTURAL, MECHANICAL & ELECTRICAL

Jp2g Consultants Inc.
ENGINEERS · PLANNERS · PROJECT MANAGERS
1150 MORRISON DRIVE, SUITE 410, OTTAWA, ON K2H 8S9
PHONE: 613-828-7800 FAX: 613-828-2600
Jp2g Project #: 20-5060A

Ontario Infrastructure Ontario

AMIS N B

Project
OTTAWA CARLETON DETENTION CENTRE TEMPORARY PARKING LOT EXPANSION

Location
INNES ROAD, GLOUCESTER TOWNSHIP OTTAWA

IO Project No | Site No | Building No

Client
MCSCS

Drawing Title
SITE GRADING PLAN

Scale: AS NOTED	Date: DECEMBER 2022
Drawn by: R.W.	Substantial Performance Date: –
Designed by: D.N.	Drawing No: C3 of
Approved by:	CADD File NAME: –

#19042

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Folder: J:\5-Civil\2020\20-5060A - Colliers - IO - OCDC Temporary Parking Lot Expansion\05 Drawings\1 Ongoing | Print date: 1:32 PM January 11, 2024 | Layout: C3 site plan, proposed grading | Drawing: C1-C4 OCDC v13 - Re-Issued_For_City_Review-Jan 12 2024.dwg

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General Notes

1. DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND LANDSCAPE DRAWINGS
2. ALL SERVICES, MATERIALS, CONSTRUCTION METHODS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND REGULATIONS OF THE: CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS, ONTARIO PROVINCIAL SPECIFICATION STANDARD SPECIFICATION (OPSS) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), UNLESS OTHERWISE SPECIFIED, TO THE SATISFACTION OF THE CITY AND THE CONSULTANT
3. THE POSITION OF EXISTING POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND ABOVEGROUND UTILITIES, STRUCTURES AND APPURTENANCES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SATISFY HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM DURING THE COURSE OF CONSTRUCTION. ANY RELOCATION OF EXISTING UTILITIES REQUIRED BY THE DEVELOPMENT OF SUBJECT LANDS IS TO BE UNDERTAKEN AT CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR MUST NOTIFY ALL EXISTING UTILITY COMPANY OFFICIALS FIVE (5) BUSINESS DAYS PRIOR TO 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 POWER, COMMUNICATION AND GAS LINES.
5. ALL TRENCHING AND EXCAVATIONS TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS AND AS PER THE RECOMMENDATIONS INCLUDED IN THE GEOTECHNICAL REPORT.
6. REFER TO ARCHITECTS PLANS FOR BUILDING DIMENSIONS, LAYOUT AND REMOVALS. REFER TO LANDSCAPE PLAN FOR LANDSCAPED DETAILS AND OTHER RELEVANT INFORMATION. ALL INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. TOPOGRAPHIC SURVEY COMPLETED AND PROVIDED BY J.D. BARNES LTD., PROJECT NO.: 17-10-013-00, DATED APRIL 24, 2017. CONTRACTOR TO VERIFY IN THE FIELD PRIOR TO CONSTRUCTION OF ANY WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
8. ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS. VERIFY THAT JOB BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED.
9. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE OR CATCH BASIN OUTLETS ARE PROVIDED.
10. ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
11. ALL DISTURBED AREAS OUTSIDE PROPOSED GRADING LIMITS TO BE RESTORED TO ORIGINAL ELEVATIONS AND CONDITIONS UNLESS OTHERWISE SPECIFIED. ALL RESTORATION SHALL BE COMPLETED WITH THE GEOTECHNICAL REQUIREMENTS FOR BACKFILL AND COMPACTION.
12. ABUTTING PROPERTY GRADES TO BE MATCHED UNLESS OTHERWISE SHOWN.
13. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION, INCLUDING WATER PERMIT AND ROAD CUT PERMIT.
14. MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
15. REMOVE FROM 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.
16. AT PROPOSED UTILITY 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.
17. CONTRACTOR TO OBTAIN POST-CONSTRUCTION TOPOGRAPHIC SURVEY, COMPLETED BY OLS OR P.ENG CONFIRMING COMPLIANCE WITH DESIGN GRADING AND SERVICING. SURVEY IS TO INCLUDE LOCATION AND INVERTS FOR BURIED UTILITIES.
18. REPORT REFERENCES;
    i. INSTITUTIONAL PARKING SPACE STUDY, PREPARED BY STEPHENSON ENGINEERING LTD., PROJECT NO.: 20180784, DATED SEPTEMBER 27, 2018.

Parking Lot

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

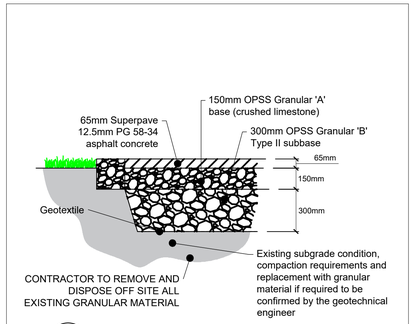
1. PRIOR TO START OF CONSTRUCTION:
   1.1. INSTALL SILT FENCE IN LOCATION SHOWN.
   1.2. INSTALL FILTER FABRIC OR SILT SACK FILTERS IN ALL THE CATCHBASINS AND MANHOLES TO REMAIN DURING CONSTRUCTION WITHIN THE SITE (SEE TYPICAL DETAIL).
   1.3. INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
2. DURING CONSTRUCTION:
   2.1. MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE AND IMPACTS TO EXISTING GRADING.
   2.2. PERIMETER VEGETATION TO REMAIN IN PLACE UNTIL PERMANENT STORM WATER MANAGEMENT IS IN PLACE. OTHERWISE, IMMEDIATELY INSTALL SILT FENCE WHEN THE EXISTING SITE IS DISTURBED AT THE PERIMETER.
   2.3. PROTECT DISTURBED AREAS FROM OVERLAND FLOW BY PROVIDING TEMPORARY SWALES TO THE SATISFACTION OF THE FIELD ENGINEER. TIE-IN TEMPORARY SWALE TO EXISTING CB'S AS REQUIRED.
   2.4. PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
   2.5. INSPECT SILT FENCES, FILTER FABRIC FILTERS AND CATCH BASIN SUMPS WEEKLY AND WITHIN 24 HOURS AFTER A STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
   2.6. DRAWING TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
   2.7. EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
   2.8. DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDED IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
   2.9. CONTROL WIND-BLOWN DUST OFF SITE BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED AND TO THE SATISFACTION OF THE ENGINEER).
   2.10. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE FIELD ENGINEER.
   2.11. CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING AS REQUIRED.
   2.12. DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED.
   2.13. ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
   2.14. TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ABUTTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.
   2.15. ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
   2.16. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

Parking Lot

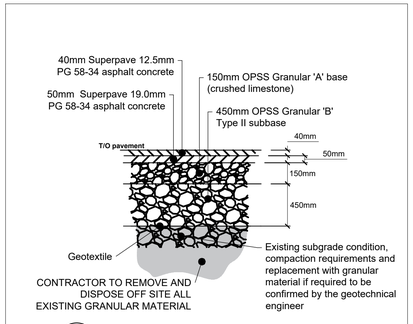
1. CONTRACTOR TO REINSTATE ROAD CUTS AS PER CITY OF OTTAWA DETAIL R10.
2. CONTRACTOR TO PREPARE SUBGRADE, INCLUDING PROOFROLLING, TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT PRIOR TO THE COMMENCEMENT OF PLACEMENT OF GRANULAR B MATERIAL.
3. CONTRACTOR TO SUPPLY, PLACE AND COMPACT GRANULAR B MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF GRANULAR B MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
4. GRANULAR A MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR B PLACEMENT.
5. CONTRACTOR TO SUPPLY, PLACE AND COMPACT GRANULAR A MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF GRANULAR A MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
6. ASPHALT MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR A PLACEMENT.
7. CONTRACTOR TO SUPPLY, PLACE AND COMPACT ASPHALT MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF ASPHALT MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
8. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING LINE AND GRADE IN ACCORDANCE WITH THE PLANS, AND FOR PROVIDING THE CONSULTANT WITH VERIFICATION PRIOR TO PLACEMENT.
9. ALL EXCESS MATERIAL TO BE HAULED OFFSITE AND DISPOSED OF AT AN APPROVED DUMP SITE. SHOULD THE CONTRACTOR DISCOVER ANY HAZARDOUS MATERIAL, CONTRACTOR IS TO NOTIFY CONSULTANT. CONSULTANT TO DETERMINE APPROPRIATE DISPOSAL METHOD/LOCATION.
10. PAVEMENT STRUCTURE (MATERIAL TYPES AND THICKNESS) FOR HEAVY DUTY, AND LIGHT DUTY COURT AREAS TO BE AS SPECIFIED IN THE GEOTECHNICAL REPORT AND SHOWN ON THE PLANS.

Notes: Culvert

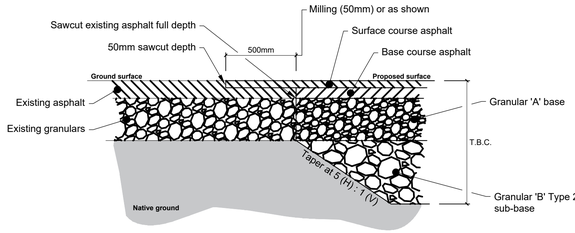
1. CULVERT BEDDING TO BE CONSTRUCTED AS PER OPSD 802.031
2. RIP RAP TO BE INSTALLED AT CULVERT OUTLET AS PER OPSD 810.01
3. CONTRACTOR TO PROVIDE CCTV FOR THE PROPOSED CULVERT. 09



1 C4 **Pavement Structure for Light Duty Pavement (Typ.)**
Scale: **As shown**



2 C4 **Pavement Structure for Heavy Duty Pavement (Typ.)**
Scale: **As shown**

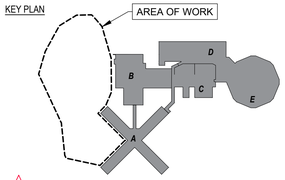


3 C4 **Key Joint Detail**
Scale: **As shown**

GEOTECHNICAL NOTES

1. A GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO SHALL INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND TRENCHES, PIPE BEDDING, CLAY SEALS AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION.
2. IT IS STRICTLY RECOMMENDED TO REFER GEOTECHNICAL INVESTIGATION REPORT: GEOTECHNICAL INVESTIGATION REPORT - BUILDING EXPANSION OTTAWA CARLETON DETENTION CENTRE - 244 INNES ROAD, PREPARED BY DST CONSULTING ENGINEERS AUGUST 11, 207.
3. STRINGENT CONSTRUCTION CONTROL PROCEDURES SHOULD BE MAINTAINED TO ENSURE THAT UNIFORM SUBGRADE MOISTURE AND DENSITY CONDITIONS ARE ACHIEVED.
4. SHOULD SURFACE AND SUBSURFACE WATER SEEPAGE OCCUR INTO THE EXCAVATIONS COLLECT ANY WATER ENTERING THE EXCAVATIONS AND REMOVE IT BY PUMPING FROM SUMP.
5. IT IS RECOMMENDED THAT THE CULVERT BEDDING BE 300 MM THICK AND CONSIST OF OPSS GRANULAR A. THE BEDDING MATERIAL SHOULD BE PLACED ALONG THE SIDES AND ON TOP OF THE PIPE TO PROVIDE A MINIMUM COVER OF 300 MM. THE BEDDING SHOULD BE COMPACTED TO AT LEAST 98 PERCENT OF THE SPMDD. PROVIDE GEOTEXTILE AT SUBGRADE LEVEL.
6. BACKFILL AROUND STRUCTURES SHOULD CONSIST OF FREE-DRAINING GRANULAR MATERIAL CONFORMING TO OPSS GRANULAR B TYPE II
7. SPECIAL PROVISIONS SHOULD BE ALLOWED BY CONTRACTOR FOR LOADING CONDITIONS ON PAVEMENT STRUCTURE DURING CONSTRUCTION SUCH AS RESTRICTED LANES, HALF-LOADS DURING PAVING AND/OR TEMPORARY CONSTRUCTION ROADWAYS ESPECIALLY IF CONSTRUCTION TIME SPANS THROUGH UNFAVORABLE WEATHER PERIOD.
8. IT IS RECOMMENDED THAT A GEOTEXTILE BE PLACED ON THE SURFACE OF THE SUBGRADE PRIOR OF PLACEMENT OF ANY GRANULAR SUB-BASE. THIS MUST BE ALLOWED FOR BY THE CONTRACTOR AND INSTALLED WHEN DIRECTED BY THE GEOTECHNICAL ENGINEER.
9. WEAKER SUBGRADE MAY DEVELOP AT SUBGRADE LEVEL OF SERVICE TRENCHES. IT IS RECOMMENDED TO PROVIDE MIN 500mm THICK GRANULAR SUB-BASE, OPSS GRANULAR B TYPE II, AND GEOTEXTILE AT SUBGRADE LEVEL TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
10. THE PROPOSED PARKING AREA AND ACCESS ROADS SHOULD BE STRIPPED OF ALL EXISTING FILL, SURFACE AND BURIED TOPSOIL (ORGANIC) LAYERS, ORGANIC STAINED SOILS AND OTHER OBVIOUSLY UNSUITABLE MATERIAL. THE SUBGRADE SHOULD BE PROPERLY SHAPED, CROWNED, THEN PROOF ROLLED WITH A HEAVY VIBRATORY ROLLER IN THE FULL-TIME PRESENCE OF A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER'S OFFICE.
11. THE GRANULAR MATERIALS USED FOR PAVEMENT CONSTRUCTION SHOULD CONFORM TO ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS 1010) FOR GRANULAR A AND GRANULAR B TYPE II AND SHOULD BE COMPACTED TO 100 PERCENT OF THE SPMDD.
12. THE ASPHALTIC CONCRETE USED, AND ITS PLACEMENT SHOULD MEET OPSS 1150 OR 1151 REQUIREMENTS. IT SHOULD BE COMPACTED FROM 92 PERCENT TO 97 PERCENT OF THE MRD (ASTM D2041). ASPHALT PLACEMENT SHOULD BE IN ACCORDANCE WITH OPSS 310 AND OPSS 313.
13. TO MINIMIZE SETTLEMENT OF THE PAVEMENT STRUCTURE OVER SERVICES TRENCHES, THE TRENCH BACKFILL MATERIAL WITHIN THE FROST ZONE, TO 1.8 M DEPTH BELOW FINAL GRADE, SHOULD MATCH THE EXISTING MATERIAL ALONG THE TRENCH WALLS TO MINIMIZE DIFFERENTIAL FROST HEAVING OF THE SUBGRADE SOIL, PROVIDED THIS MATERIAL IS COMPACTIBLE. OTHERWISE, FROST TAPERS MAY BE REQUIRED.
14. IT IS RECOMMENDED THAT ALL EXISTING STRUCTURES, VEGETATION, TOPSOIL, BURIED CONCRETE UNITS, AND DEFECTED MATERIALS, BE ENTIRELY REMOVED OF SITE FROM THE BENEATH OF THE PROPOSED PAVED AREAS.
15. EXISTING FILL MATERIALS CAN BE REMAINED IN PLACE IF IT IS FREE OF ORGANIC MATERIALS. THE EXISTING FILL MUST BE COMPACTED AND PROOF-ROLLED.
16. ALL SOFT SPOT AREAS REVEALED DURING PROOF-ROLL, ON EXISTING GRANULAR FILL AND SUBGRADE, MUST BE REPLACED WITH OPSS ACCEPTABLE GRANULAR "B" TYPE II TO A DEPTH OF AT LEAST 500 MM.
17. IT IS RECOMMENDED THAT DURING THE SUBGRADE PREPARATION, AT THE LOCATION OF PARKING LOTS, THE SUBGRADE TO BE SLOPPED FOR POSITIVE DRAINAGE TOWARDS THE POND.
18. GEOTEXTILE MUST BE INSTALLED ON THE SUBGRADE PRIOR TO INSTALLATION OF ANY GRANULAR MATERIALS.

KEY PLAN



No	Revisions	Date
09	RE-ISSUED FOR CITY REVIEW	2024.01.12
08	RE-ISSUED FOR CITY REVIEW	2023.10.25
07	ISSUED FOR TENDER	2023.08.18
06	99% DESIGN REVIEW	2023.08.15
05	90% DESIGN REVIEW	2022.12.21
04	66% DESIGN REVIEW	2022.02.02
03	33% DESIGN REVIEW R2	2021.11.08
02	33% DESIGN REVIEW R1	2021.10.08
01	33% DESIGN REVIEW	2020.12.07

Orientation

Seal

REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO — LENGUYEN 100053149 — Jan 12, 2024

The Contractor shall check and verify all dimensions and report all errors and omissions to the IO–Owner's/MBS Designee (as applicable) for his/her written direction before proceeding with the Work.

A/B A Detail No
B Sheet No where detailed

PROJECT ENGINEER: CIVIL, STRUCTURAL, MECHANICAL & ELECTRICAL

Jp2g Consultants Inc.
ENGINEERS · PLANNERS · PROJECT MANAGERS
1150 MORRISON DRIVE, SUITE 410, OTTAWA, ON K2H 8S9
PHONE: 613-828-7800 FAX: 613-828-2600
Jp2g Project #: 20-5060A

Ontario Infrastructure Ontario

AMIS N B

Project
OTTAWA CARLETON DETENTION CENTRE TEMPORARY PARKING LOT EXPANSION

Location
INNES ROAD, GLOUCESTER TOWNSHIP OTTAWA

IO Project No | Site No | Building No

Client
MCSCS

Drawing Title
DETAILS AND NOTES

Scale: AS NOTED	Date: DECEMBER 2022
Drawn by: R.W.	Substantial Performance Date: –
Designed by: D.N.	Drawing No: C4 of
Approved by:	CADD File NAME: –

#19042

D07-12-23-0040

Folder: J:\5-Civil\2020\20-5060A - Colliers - IO - OCDC Temporary Parking Lot Expansion\05 Drawings\1 Ongoing | Drawing: C1-C4 OCDC v13 - Re-Issued_For_City_Review-Jan 12 2024.dwg | Layout: C4 details and notes | Print date: 12 PM January 11, 2024
24x36in

DRAINAGE AREA LIMIT

ID	5YR
xx ha	

A1	0.48
1.04 ha	

1:1,000

0 m 10 20 30 40 50 m

OTTAWA CARLETON DETENTION CENTRE

2224 Innes Road, Ottawa ON

~

Fig. 1 PREDEVELOPMENT DRAINAGE PLAN

Jp2g Project No.: 20-5060A

Jp2g Consultants Inc.
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Phone: (613)828-7800, Fax: (613)828-2600

DESIGNED: ZB		CLIENT No.: 20-5060A
DRAFTED: ZB		REVISION DATE: 2024-01-05
CHECKED: AS	APPROVED: AS	REVISION No.: 1
SCALE: AS SHOWN		

DRAINAGE AREA LIMIT

ID | 5YR
xx ha

B1 | 0.63
1.04 ha

1:1,000
0 m 10 20 30 40 50 m

OTTAWA CARLETON DETENTION CENTRE

2224 Innes Road, Ottawa ON

~

Fig. 2 POST-DEVELOPMENT DRAINAGE PLAN

Jp2g Project No.: 20-5060A

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DESIGNED: ZB			CLIENT No.: 20-5060A
DRAFTED: ZB			REVISION DATE: 2024-01-05
CHECKED: AS	APPROVED: AS		REVISION No.: 1
SCALE: AS SHOWN			

Appendix B - Stormwater Management Calculations

Appendix B - Storm Sewer Design Sheet

B.1.1 - Allowable release rate

ID	Description	Type	Areas (m2)	Cvalue	Weighted C Value	$C_{pre\text{-}5\text{-}yr}$	$C_{pre\text{-}100\text{-}yr}$*
A1	Gravel Parking	uncontrolled	3332	0.45	1499	0.45	0.56
A1	Asphalt Parking	uncontrolled	2901	0.90	2611	0.90	1.00
A1	Property Grounds	uncontrolled	4118	0.20	824	0.20	0.25
		A1	**10351**		0.48		

**including 25% increase as per City of Ottawa Sewer Design Guidelines*

Estimated time of concentration, t_c = **10.0** minutes ***As per City of Ottawa Sewer Design Guidelines (Section 5.4.5.2)**

Based on Ottawa IDF curve, $i_{5\text{-}years}$ = $998.071/(t_c+6.053)^{0.814}$

104.2 mm/hr

Total Area, A = **1.04** ha

$Q_{allowable\ (5\text{-}year)}$ = **143** l/s ①

B.1.2 - Post-development release rate

ID	Description	Type	Areas (m2)	Cvalue	Weighted C Value	$C_{post\text{-}5\text{-}yr}$	$C_{post\text{-}100\text{-}yr}$*
B1	Paved Parking Area	controlled	6233	0.90	5610	0.90	1.00
B1	Sidewalk	uncontrolled	71	0.90	64	0.90	1.00
B1	Grassed Area	controlled	4047	0.20	809	0.20	0.25
		B1	**10351**		0.63	**0.63**	**0.71**
			(A)	(B)	©	(D)	(E)

**including 25% increase as per City of Ottawa Sewer Design Guidelines*

Calculations for post-development runoff coefficient

$C_{post\text{-}5\text{-}yr\ (col.\ D)}$ = (column A * 0.9 + column B * 0.2) / column C

$C_{post\text{-}100\text{-}yr\ (col.\ E)}$ = (column A * 1.0 + column B * 0.2*1.25) / column C

Note: 0.90 x 1.25 = 1.125, use max. 1.0

Estimated time of concentration, t_c = **10.0** minutes ***As per City of Ottawa Sewer Design Guidelines (Section 5.4.5.2)**

Based on Ottawa IDF curve, $i_{5\text{-}years}$ = $998.071/(t_c+6.053)^{0.814}$

104.2 mm/hr

Based on Ottawa IDF curve, $i_{100\text{-}years}$ = $1735.688/(t_c+6.014)^{0.820}$

178.6 mm/hr

B.1.3 - Post-development marsh storage

B.1.3.1 - Estimated detention Stormwater marsh

Area	1.035	ha
5-year Runoff coefficient	0.63	
100-year Runoff coefficient	0.71	
Controlled Flow	143.0	l/s

Table 1.3.1a - 5-year estimated detention marsh

	Time (minutes)	$i_{5\text{-years}}$ (mm/hr)	Q_{actual} (l/s)	$Q_{allowable}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m^3)
peak V_{stored} →	10	104.2	187.8	143.0	44.8	26.9
	15	83.6	150.6	143.0	7.6	6.8
	20	70.3	126.6	143.0	-16.4	-19.7
	25	60.9	109.7	143.0	-33.3	-49.9
	30	53.9	97.2	143.0	-45.8	-82.5
	35	48.5	87.4	143.0	-55.6	-116.7
	40	44.2	79.6	143.0	-63.4	-152.1
	45	40.6	73.2	143.0	-69.8	-188.4
	50	37.7	67.9	143.0	-75.1	-225.4
	55	35.1	63.3	143.0	-79.7	-263.0
	60	32.9	59.4	143.0	-83.6	-301.1
	Therefore	27	m^3 estimated roof detention			

Table 1.3.1b - 100-year estimated detention marsh

	Time (min)	$i_{100\text{-years}}$ (mm/hr)	Q_{actual} (l/s)	$Q_{allowable}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m^3)
	10	178.6	363.1	143.0	220.1	132.1
peak V_{stored} →	15	142.9	290.6	143.0	147.6	132.8
	20	120.0	243.9	143.0	100.9	121.1
	25	103.8	211.2	143.0	68.2	102.3
	30	91.9	186.8	143.0	43.8	78.9
	35	82.6	167.9	143.0	24.9	52.4
	40	75.1	152.8	143.0	9.8	23.6
	45	69.1	140.4	143.0	-2.6	-6.9
	50	64.0	130.1	143.0	-12.9	-38.8
	55	59.6	121.3	143.0	-21.7	-71.7
	60	55.9	113.7	143.0	-29.3	-105.6
	Therefore	133	m^3 estimated yard detention			

Table 1.3.2b - 100-year +20% estimated detention in School Yard

	Time (min)	$i_{100\text{-years}}$ (mm/hr)	Q_{actual} (l/s)	$Q_{allowable}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m^3)
peak V_{stored} →	10	214.3	435.8	143.0	292.8	175.7
	15	171.5	348.7	143.0	205.7	185.2
	20	143.9	292.7	143.0	149.7	179.7
	25	124.6	253.4	143.0	110.4	165.7
	30	110.2	224.2	143.0	81.2	146.2
	35	99.1	201.5	143.0	58.5	122.9
	40	90.2	183.4	143.0	40.4	96.9
	45	82.9	168.5	143.0	25.5	68.9
	50	76.7	156.1	143.0	13.1	39.2
	55	71.5	145.5	143.0	2.5	8.3
	60	67.1	136.4	143.0	-6.6	-23.7
	Therefore	185	m^3 estimated yard detention			

B.1.4 - Site storage

Storage Elevation	Required Storage (m3)	Ponding depth (m)	100 year Ponding Elev.	Ponding area (m2)	Provided Storage (m3)
5 Year	27	0.21	67.39	352	27
100 Year	133	0.41	67.59	752	138
100 Year + 20%	185	0.47	67.65	853	186
Max Provided Storage	NA	0.76	67.94	1313	496

Orifice Diameter Calculation

Jp2g Consultants Inc.
ENGINEERS · PLANNERS · PROJECT MANAGERS

Design Parameters*

Orifice Flow Formula Q=C*A*SQRT(2*g*h)

Pipe Diameter Formula: A = (pi*d^2)/4
d=sqrt(4*A/pi)

d = Orifice diameter (m)
A = Pipe area (m^2)
C = 0.61
g = 9.81 (m/s^2)
h = head of ponding from the centroid of the pipe invert (m)
Q = Max. flow through pipe (l/s)

CB-1

Elevation at Top of Ponding	Elevation at Pipe Invert	Size of Outlet Pipe	Head from Centroid (h)
(m)	(m)	(mm)	(m)
67.65	67.32	450.0	0.110

Max Flow (Q)	Coeffieicent (C)	g	Head from Centroid (h)	Pipe Area (A)	Orifice Diameter (d)	Orifice Diameter (d)
(l/s)	-	(m/s^2)	(m)	(m^2)	m	mm
142.5	0.61	9.8	0.11	0.159	0.450	450
