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Project No. 2141686A

Site Servicing and Stormwater Management Report

Findlay Creek School Rev 3

820 Miikana Road, Ottawa, Ontario

Prepared for

City of Ottawa
Infrastructure Services and Community Sustainability
110 Laurier Ave. West, 4th floor, Mail Code 01-14
Ottawa, Ontario, K1P 1J1

Rev 3 SUBMISSION February 15, 2023

Table of Contents

1 Introduction

Jp2g Consultants Inc. was retained by N45 Architects Inc. to complete a Site Servicing and Stormwater Management Report suitable for the City of Ottawa Site Plan Control Application, for the Ottawa Carleton District School Board development located at the southeast corner of Miikana road and Kelly Farm Drive intersection Ottawa, ON.

The site is approximately **2.55 ha** in size and is bound by Miikana Road and Kelly Farm Drive on the north and west property limits respectively. The proposed development includes the construction of a new two-storey school with no basement, and associated parking and landscaped areas. All floors area is approximately **7,300.0 m^2**, the roof area is approximately **3,862 m^2**.

A Pre-Consultation meeting was held with City of Ottawa staff on February 14, 2022, to determine the project constraints and requirements. The following report details the site servicing & stormwater management calculations used for capacity, water quantity and quality control in accordance with the City of Ottawa's requirements. Geotechnical requirements can be seen from the Geotechnical Investigation Report*, Proposed New Findlay Creek Public School*, provided by exp.

1.1 Design Drawings

The following reference civil design drawings are included.

- C1 – Site Servicing Plan
- C2 – Site Grading, Erosion and Sedimentation Control
- C3 – Details, Notes, and Schedules
- Figure 1 – Pre-Development Storm Drainage Areas
- Figure 2 – Post-Development Storm Drainage Areas
- Figure 3 – Fire Hydrant Coverage Area

1.2 Environmental Compliance Assessment

Our understanding is an environmental compliance assessment for the subject site is not required. This site is exempt by the following Ontario Regulation 525/98, applicable as follows:

"Subsections 53 (1) and (3) of the Act do not apply to the use, operation, establishment, alteration, extension or replacement of or a change in a storm water management facility that,

(a) is designed to service one lot or parcel of land;
(b) discharges into a storm sewer that is not a combined sewer;
(c) does not service industrial land or a structure located on industrial land; and
(d) is not located on industrial land. O. Reg. 525/98, s. 3; O. Reg. 40/15, s. 4."

2 Objective

This study will outline the servicing requirements for the development and identify the impact of the development on the existing municipal services, including water, storm and sanitary.

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 is in an undeveloped parcel bounded by residential developments on all sides. A **750mm** storm sewer at **0.3%** slope connecting to subdivision storm sewer manhole **MH6104** is constructed by others on Miikana Road at the north side of the site.

3.2 Allowable Release Rate

The stormwater management design criteria for this site are based on the IBI's storm drainage plan for design brief pathways at Findlay creek 4800 bank street (Remer lands) phase 1 Leitrim development area dated August 2017. According to the storm drainage plan (Table 4.5 of the study) a post-development allowable release rate of **$Q_{allowable}$ = 476 l/s** was determined, see attached **Appendix E**.

3.3 Post-Development Conditions

The proposed site development includes a new school building, asphalt parking, hard surface walkways and landscaped areas. Site storm drainage will be conveyed through the existing 750mm dia. storm sewer & manhole MH6104 on Miikana road. The storm water will be managed to limit the 100-year post-development flow rate to the pre-allocated release rate identified in section 3.2.

The site development area is approximately 2.55 ha with a post-development average weighted run-off coefficient of **C = 0.49** and **C = 0.56** for the 5-year and 100-year storm events, respectively. The post development watersheds can be seen in Figure 2 – Post Development Storm Drainage Areas. Runoff coefficients for each storm drainage area were calculated based on the weighted runoff coefficient. A 25% increase for the runoff coefficients were applied for the post development 100-yr storm, with the max c value taken as 1.0. Detailed calculations can be seen 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-allocated allowable release rate of **476 l/s**.

3.4 Storm Sewer Pipe Design

Pipe diameter sizing was based on the **5-year** storm event, in accordance with City requirements. Under 5-year conditions, the storm sewers are not in surcharged conditions (i.e., flow/capacity <100%). In conjunction with the geotechnical investigation provided by exp. the recommended pipe bedding and cover should consist of minimum 300mm of OPSS Granular A compacted to a minimum of 98% SPMDD.

3.5 Stormwater Quality Control

Based on the pre-consultation meeting and communication with the City and South Nation, no additional stormwater quality control is required for this site. It was confirmed that the existing storm sewer system is treated downstream for quality control by the Findlay Creek Village Stormwater Facility to an enhanced level of service (80% TSS removal). Refer to **Appendix I** for confirmation of the TSS removal

3.6 Stormwater Quantity Control

Post-development peak flows will be controlled on the building's roof, in the proposed parking area and in the school yard by installing flow restrictors at the outlet of storm structures CB-1, CBMH-4 and CBMH-5, limiting the outlet discharge for all structures and overland flow to **476 l/s**.

Table 1: Allowable Release Rate Breakdown

ID	Description	Flows	
		5-Year Event	100-Year Event
	Allowable Release Rate (Section 3.2)	**476 L/s**	**476 L/s**
1.2.1	Uncontrolled flow	**104.5 L/s**	**205.1 L/s**
1.2.2	Net-allowable release rate	**371 L/s**	**270.4 L/s***

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

To meet the net-allowable release rate for storm sewers, post-development flows will be controlled on the building's roof, in the proposed parking area and in the school yard. The total resulting peak controlled flow is **270.4 L/s** for both the **5-year and 100-year**. which is equal to the net-allowable release rate.

Table 2: Controlled Flow Breakdown

ID	Description	Controlled Flows	Head (m)	Surface Storage (m^3)		
				5-Year Requirement	100-Year Requirement	Max. Available
	Net-allowable controlled release rate (Table 1)	**270.4 L/s**				
1.3.1	Building Roof	**55.5 L/s**	**-**	**27**	**88**	**193**
1.3.2	School Yard & Soccer Field CB-1	**45 L/s**	**1.75**	**N/A**	**7**	**8**
1.3.3	CBMH-4 East Side Yard *	**39.9 L/s**	**2.33**	**41**	**111**	**143**
1.3.4	Parking Lot	**130 L/s**	**2.62**	**N/A**	**31**	**187**

Refer to **Appendix B** for full calculations.
Flow was restricted at CBMH-4 using an ICD size of 110mm. This ICD was sized to provide the restricted 39.9l/s of flow through the orifice, at the maximum design head for the surface storage for the 100 year + 20% design storm. As underground storage was used, the release rate will fluctuate from the maximum, at the 100 year + 20% design head, to a release rate of zero. Therefore, as seen in section B.1.3.3a of Appendix B, a storage requirement check for 50% of the peak flow through CBMH-4's orifice was performed to ensure that the underground storage had sufficient capacity for the reduced flow rate. With the reduced peak flow, ot was determined that 143m of storage is required for the 100+20% storm. 130m of 900mm underground storage pipes is provided, accounting for 86m of underground storage, and 62m of surface storage. In total, 145m of storage is provided for CBMH-4.

The maximum ponding depth in parking lots will be less than 350mm in accordance with the City of Ottawa requirements. The maximum ponding limits generated from the ICD's are indicated on drawing **C2 – Grading Plan**. In the event the capacity of this system is exceeded, emergency runoff will overflow onto Miikana Road from the northeast parking lot entrance. Flow will also be detained on the school roof by installing parabolic weirs, (Watts Drainage Adjustable Flow Control for Roof Drains, or equivalent approved product), at the 30 proposed locations. Roof drains specified are to be type *RD-100-A1*, to be confirmed by building mechanical design restricting flow from the roof to **55.5 L/s**. To ensure the maximum release rate based on the head provided in the technical roof drain specifications, scuppers are to be provided on the building roof at 150mm above the roof drain elevation, ensuring each flow control roof drain will restrict flow to **1.85 L/s** (30 GPM at 6" head) Refer **to Appendix G product data sheets.**

4 Sanitary Servicing

A new **200mm** sanitary sewer will connect to an existing **200mm** sanitary sewer stub out through SANMH-1 at a **0.38%** slope connecting to the existing sanitary manhole **MH6104A** on Miikana Road and will convey sanitary flows from the new building. Refer to drawing **C1 – Site Servicing Plan**.

Peak sanitary flow for the site is calculated to be **2.07 l/s**. The new **200mm** sanitary sewers at **2%** slope will have a full flow capacity of **46.4 l/s**. The sanitary flows allocated for our subject property is **2.93 l/s** based on IBI's sanitary sewer design sheet in Appendix C of Design Brief, Remer Lands Phase 1 Leitrim South Holdings Inc. (Regional Group). The full flow capacities indicate it is sufficient to handle the new development sanitary flows. The sanitary demand was calculated based on the *City of Ottawa Sewer Design Guidelines 2012* and *Technical Bulletins 2018.* Refer to **Appendix C** for full calculations.

5 Water

A **200mm** watermain stub exists on the north side of the subject property. The existing stub connects to the municipal **200mm** watermain running along Miikana Drive. Additionally, there is a municipal **406mm** watermain running along Kelly Farm Drive. The school facility requires more than 50 m^3 per day therefore dual 150mm dia water service connections are proposed from the existing 406mm watermain on Kelly Farm Dr. to supply the building and the private fire hydrant. The existing stub on Miikana road is proposed to be abandoned in place.

5.1 Domestic Water Demand

The water demand for the new school is calculated based on Table 4.2 of the *City of Ottawa Design Guidelines for Water Distribution*.

Design Criteria:
The pre-consultation meeting noted a population of 674 students, an assumption of extra 325 people is made to account for the staff and portables (55 staff + 15 students x 18 portable = 325).
Total population = 1,000 students and staff.

- Average daily demand for schools = 70 l/student/day
- Maximum school occupancy = 1,000 persons (staff and students)
- Maximum Day Factor (Institutional) = 1.5
- Maximum Hour Factor (Institutional) = 1.8

Average Daily Demand: $\frac{70 \text{ l/student/day} \times 1000 \text{ population}}{24 \text{ hrs/day} \times 3600 \text{ s/hr}} = 0.81 \text{ l/s}$

Maximum Daily Demand: 0.81 l/s x 1.5 = 1.22 l/s
Maximum Hour Demand: 1.22 l/s x 1.8 = 2.20 l/s

The max hour water demand allocated for our subject property is **3.84 l/s** based on IBI's domestic water demand calculations in Appendix B of Design Brief, Leitrim Development Area Phase 1 Leitrim Holdings South Inc. Therefore, the allocated domestic water demand is sufficient for the subject property.

5.2 Fire Flow Demand

There are four (4) fire hydrants along the frontage of the property and a proposed private fire hydrant which will provide fire protection to the site (building and portables). Two (2) along Miikana Road and another two (2) across the road along Kelly Farm Drive. The new building will be equipped with an automatic sprinkler system. Based on the Fire Underwriters Survey Method 2020, the fire flow demand for the new school is calculated to be:

Fire Flow Demand: **117.0 l/s**

FUS method 2020 was used to calculate the fire flow demand considering the portables. Under this condition, the demand was calculated to be **83.3 l/s**, and therefore the more stringent fire flow of **117.0 l/s** shall be considered as the fire flow demand for the new development. (Refer to Appendix B – Fire Flow Calculations).

Based on the aggregate flow between the 3 hydrants on the municipal frontage, and the proposed private fire hydrant, the fire flow demand will be sufficiently met. The 3 fire hydrants within the rights of way on Miikana and Kelly Farm Drive contribute a fire flow of 189 L/s based on a class AA hydrant at a separation distance of between 75m to 150m. In addition, a pressure check for the private fire hydrant was conducted, and determined 54 psi of pressure is available at the private fire hydrant. Based on Appendix I, table 1 of the City of Ottawa design guidelines, the private fire hydrant of class AA will supply an additional 5,700 l/min of fire flow, resulting in an aggregate contribution of 284 l/s exceeding the 117.0 l/s requirements.

The above water demand calculation requirements were provided to the City of Ottawa for the hydraulic analysis of the boundary conditions at the proposed school location. The following boundary conditions included in Appendix H were returned:

SUC Zone Reconfiguration:

Connection 1 - Kelly farm Dr.
Maximum HGL = 148.9 m Head / 77.2 psi Pressure
Peak Hour = 145.3 m Head / 72.1 psi Pressure
Max Day + Fire = 143.7 m Head / 69.8 psi Pressure

Connection 2 - Kelly farm Dr.
Maximum HGL = 148.9 m Head / 77.2 psi Pressure
Peak Hour = 145.3 m Head / 72.1 psi Pressure
Max Day + Fire = 143.7 m Head / 69.8 psi Pressure

Existing Conditions:

Connection 1 - Kelly farm Dr.
Maximum HGL = 154.6 m Head / 85.4 psi Pressure
Peak Hour = 145.2 m Head / 72.0 psi Pressure
Max Day + Fire = 132.0 m Head / 53.2 psi Pressure

Connection 2 - Kelly farm Dr.
Maximum HGL = 154.6 m Head / 85.4 psi Pressure
Peak Hour = 145.2 m Head / 72.0 psi Pressure
Max Day + Fire = 132.0 m Head / 53.2 psi Pressure

Pressure checks within the system were conducted for the max hour demand, and max day + fire demand using the above boundary conditions. For both the existing conditions, and the SUC Zone reconfiguration, operating pressures of the water supply system were between the 345-552 kPa pressure range for the municipal connection at the maximum hourly demand, above the 276 kPa requirement at the building connection for the maximum hour demand, as well as exceeding the minimum 140 kPa requirement for the maximum daily + fire flow demand scenario at the building connection. Detailed calculations can be seen in Appendix H.

As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.). The maximum HGL 77.2 psi is considered relatively close to the 80 psi requirements in a static scenario and therefore it is recommended to install a pressure reducing valve inside the building downstream of the meter.

End of Site Servicing and Stormwater Management Report.

Please contact the undersigned should you require any clarification.

Prepared By:

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Appendix A - Drawings and Figures

LEGEND

- PROPERTY LINE
- EXISTING BUILDING
- DEPRESSED CURB
- BREAK OF SLOPE - NEW
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- NEW SANITARY SEWER
- NEW STORM SEWER
- NEW WATERMAIN
- NEW FENCE
- NEW SILT FENCE
- NEW PERFORATED DRAIN PIPE
- NEW PERIMETER FOUNDATION DRAINAGE TO BE CONNECTED TO THE NEW STORM SEWER
- NEW LIGHT DUTY ASPHALT
- NEW HEAVY DUTY ASPHALT
- NEW CONCRETE SIDEWALK
- NEW GRASS
- NEW REINFORCED GRASS
- NEW INSULATION
- MILLING & OVERLAY 50mm THICK HEAVY DUTY ASPHALT AS PER CITY SPECS
- SEE SHEET NUMBER "C3"
- EXISTING CATCHBASIN
- EXISTING CATCHBASIN MANHOLE
- EXISTING MANHOLES
- NEW CATCHBASIN
- NEW CATCHBASIN MANHOLE
- NEW SANITARY MANHOLE
- NEW STORM MANHOLE
- NEW WATER VALVE
- NEW INLET CONTROL DEVICE
- NEW ROOF DRAIN
- NEW SCUPPER AT 150mm ABOVE ROOF DRAIN LEVEL
- SEWER FLOW DIRECTION
- BUILDING ENTRANCE
- FIRE HYDRANT
- SEWER CAP
- NEW SIAMESE CONNECTION

DRAWING NOTES

01 SUPPLY AND INSTALL NEW 150mm Ø PVC DR18 WATER MAIN SERVICE, MINIMUM 2.4m COVER, OTHERWISE PROVIDE HL40 THERMAL INSULATION IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING W22. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR A WATER PERMIT FROM THE CITY OF OTTAWA FOR INSPECTION, DISINFECTION (CHLORINATION) AND TESTING. COORDINATE NEW WATER SERVICE CONNECTION WITH MECHANICAL PLANS.

02 INSTALLATION OF NEW SERVICE CONNECTION TEE TO EXISTING MUNICIPAL WATERMAIN TO BE COMPLETED BY CITY OF OTTAWA FORCES. EXCAVATION, BACKFILL AND RE-INSTATEMENT BY CONTRACTOR.

03 EXISTING SANITARY STUB APPROXIMATE INVERT: 90.18 INVERTS TO BE CONFIRMED BY CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE UNDERGROUND UTILITY LOCATES BY DAYLIGHTING PRIOR TO CONSTRUCTION.

04 INSTALL FOUR WAY 3.0m LONG 150mm Ø PERFORATED SUBDRAIN WRAPPED IN GEOTEXTILE SOCK EXTENDING FROM CB/CBMH AT PAVEMENT SUBGRADE LEVEL. PROVIDE WATERTIGHT CONNECTION.

05 SUPPLY AND INSTALL NEW 150mm WATER VALVE AT PROPERTY LINE. VALVEBOX ASSEMBLY AS PER CITY OF OTTAWA STANDARD DETAIL DRAWING W24 AND W50.

06 SUPPLY AND INSTALL WATTS ROOF DRAIN CONTROLS TO BE INSTALLED ON ROOF DRAINS. MAXIMUM DISCHARGE 55.5 l/s TOTAL. MAXIMUM ROOF PONDING DEPTH 0.15m. REFER TO MECHANICAL FOR SPECIFIC WEIR SETTINGS. 5-YEAR PONDING VOLUME: 27m³. 100 YEAR PONDING VOLUME: 88m³.

07 EXISTING TRANSFORMER AND BOLLARDS TO REMAIN.

08 SUPPLY AND INSTALL NEW INLET CONTROL DEVICE FLOW REGULATOR AT CATCHBASIN MANHOLE, CBMH-4 OUTLET. MAXIMUM DISCHARGE 39.9 l/s AT 2.33m HEAD AND ORIFICE DIAMETER AT 111mm.

09 SUPPLY AND INSTALL NEW INLET CONTROL DEVICE FLOW REGULATOR AT CATCHBASIN MANHOLE, CBMH-5 OUTLET. MAXIMUM DISCHARGE 130 l/s AT 2.47m HEAD AND ORIFICE DIAMETER AT 197mm.

10 SUPPLY AND INSTALL NEW INLET CONTROL DEVICE FLOW REGULATOR AT CATCHBASIN , CB-1 OUTLET, MAXIMUM DISCHARGE 45 l/s AT 1.56m HEAD AND ORIFICE DIAMETER AT 130mm.

11 INSTALL NEW STORM MANHOLE , STMH-3 AND 250mm Ø STORM SEWER PIPE FROM BUILDING TO CONNECT THE EXISTING 750mm Ø STUB. PROVIDE WATERTIGHT CONNECTION.

12 INSTALL NEW SANITARY MANHOLE SAMH-1 AND 200mm Ø SAINTARY SEWER PIPE FROM BUILDING TO CONNECT THE EXISTING 200mm Ø STUB. PROVIDE WATERTIGHT CONNECTION.

13 PROVIDE 100mm HIGH LOAD RIGID INSULATION PLACED WITHIN SUBGRADE. INSULATION SHALL BE 2.0m WIDE ABOVE PIPE WHERE INDICATED.

14 INSTALL NEW STORM MANHOLE , STMH-1 AND 675mm Ø STORM SEWER PIPE TO CONNECT TO THE EXISTING STORM MANHOLE EX-STMH AT INVERT 91.15. PROVIDE WATERTIGHT CONNECTION.

15 CONNECT SERVICES TO INTERIOR PLUMBING 1.0m FROM BUILDING FOUNDATION. REFER TO MECHANICAL AND ARCHITECTURAL PLANS.

16 NEW PERIMETER FOUNDATION DRAINAGE (REFER TO ARCHITECTURAL) TO BE CONNECTED TO THE NEW STORM SEWER.

17 SUPPLY AND INSTALL NEW 900mmØ HDPE STORMWATER STORAGE PIPE COMPLETE WITH NEW 900mmØ CAP AT APPROXIMATE INVERT: 92.80m FOR STORMWATER MANAGEMENT PURPOSES.

18 SUPPLY AND INSTALL NEW 150MM Ø PERFORATED DRAIN PIPE C/W FILTER SOCK AS PER CITY DETAIL S9. CONNECT SUBDRAIN TO CBMH-4. PROVIDE WATERTIGHT CONNECTION..

19 SUPPLY AND INSTALL NEW 150mm Ø PERFORATED DRAIN PIPE c/w FILTER SOCK. CONNECT SOCCER FIELD SUBDRAIN TO CB-1. PROVIDE WATERTIGHT CONNECTION.

20 SUPPLY AND INSTALL NEW WATERMAIN IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING W50 (TYPICAL PRIVATE SERVICE >100mm CONNECTION PROCEDURE).

21 EXISTING STORM STUB APPROXIMATE INVERT: 90.84. INVERTS TO BE CONFIRMED BY CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE UNDERGROUND UTILITY LOCATES BY DAYLIGHTING PRIOR TO CONSTRUCTION.

22 SUPPLY AND INSTALL BACKFLOW VALVES ON SANITARY AND STORM BUILDING CONNECTION AS PER CITY OF OTTAWA REQUIREMENT. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR PROFLEX PROCO 790 DUCK BILL TYPE AS FOLLOWS:

- SANITARY BACKWATER VALVE, 8" SIZE (200mm).
- STORM BACKWATER VALVE, 10" SIZE (250mm).
- VALVE CLAMP LOCATIONS AT DISCHARGE.

23 ALL WATERMAIN SHALL BE PROVIDED WITH TRACER WIRE AS PER CITY OF OTTAWA STANDARD DETAILS AND SPECIFICATIONS.

24 INSTALL UNDERGROUND CAP WITH METAL BOX FOR CONNECTION TO THE FUTURE FIRE HYDRANT VALVE.

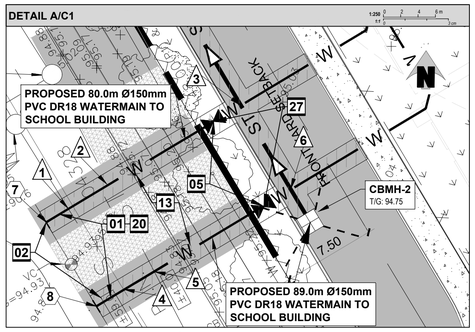
25 SUBDRAINS SHOULD BE INSTALLED ON THE SIDES OF THE ACCESS ROAD AND PARKING AREA. SEE GEOTECHNICAL NOTES AND REFER TO GEOTECHNICAL REPORT.

26 NEW SIAMESE CONNECTION.

27 INSTALL NEW DISTRICT METER AREA (DMA) CHAMBER AND VALVE AS PER CITY OF OTTAWA STANDARD DETAIL DRAWING W3.

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.



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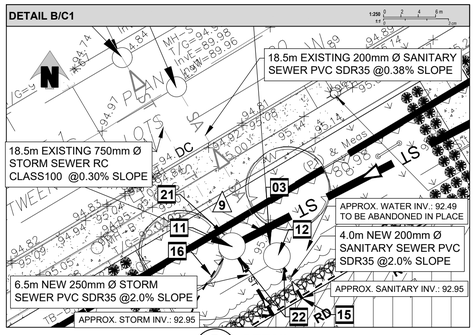

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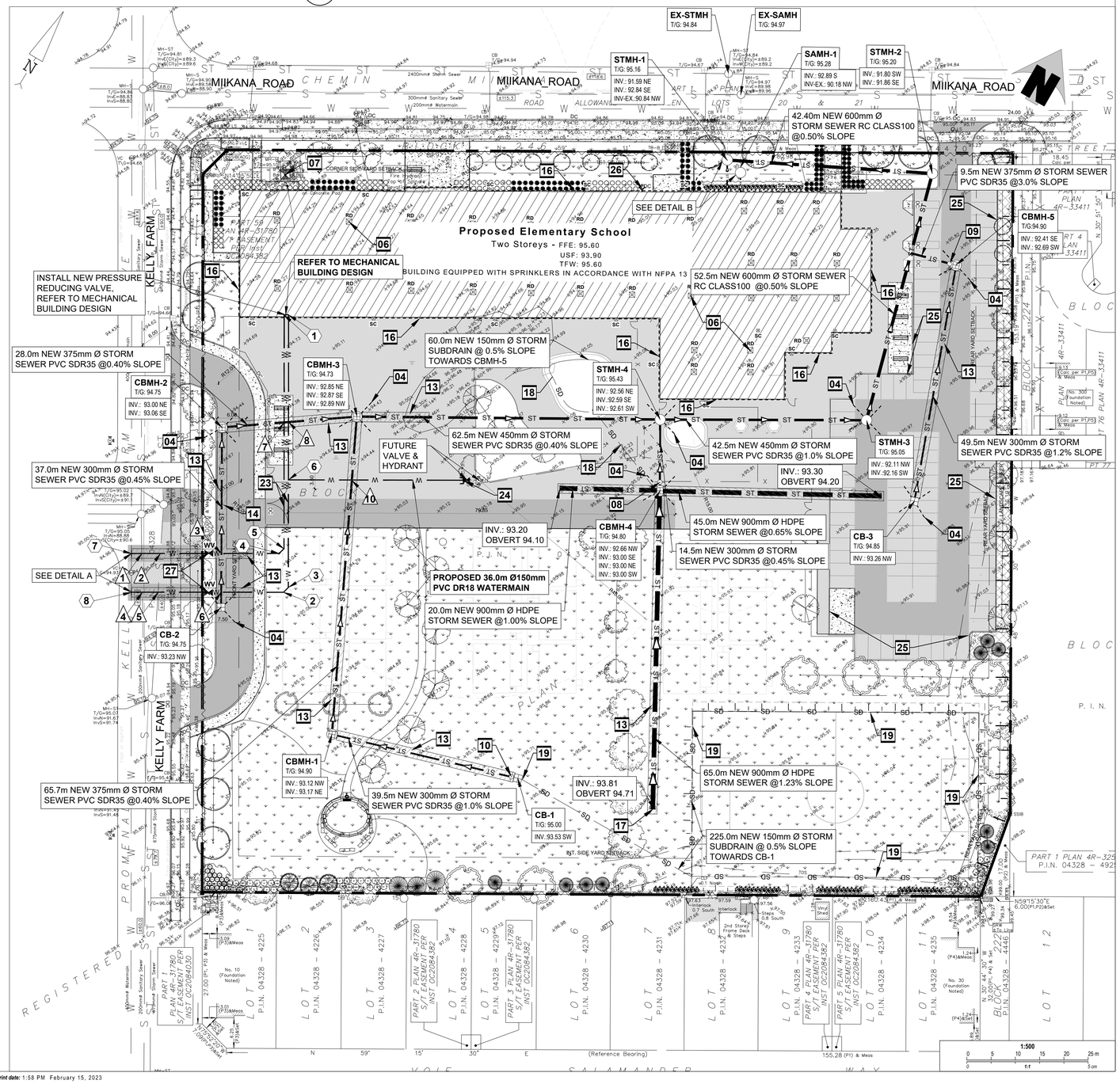

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

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21-5124A

No.	DESCRIPTION	YYYY-MM-DD
5	ISSUED FOR SITE PLAN CONTROL REV-3	2023-02-15
4	ISSUED FOR TENDER REVIEW	2023-01-20
3	ISSUED FOR PERMIT ISSUANCE	2022-11-18
2	ISSUED FOR SITE PLAN CONTROL REV-2	2022-10-27
1	ISSUED FOR SITE PLAN CONTROL REV-1	2022-06-28

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project
Findlay Creek #2 Public School

820 Miikana Road, Ottawa, Ontario
K1X 0G5

seal

PROFESSIONAL ENGINEER SAMMOUR 100227665 February 15, 2023 PROVINCE OF ONTARIO

drawing title
Site Servicing Plan

scale	drawn by
As shown	R.I.
date	checked by
June 2022	A.S.
project number	drawing number
22-719	**C1**

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

revision

D07-12-22-0110

#18804

LEGEND

- PROPERTY LINE
- EXISTING BUILDING
- DEPRESSED CURB
- BREAK OF SLOPE - NEW
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- NEW SANITARY SEWER
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- NEW ROOF DRAIN
- NEW SCUPPER AT 150mm ABOVE ROOF DRAIN LEVEL
- NEW TRANSFORMER PAD
- EXISTING NATURAL GRADE
- PROPOSED FINISHED GRADE
- PROPOSED SLOPE
- OVERLAND FLOW ROUTE
- PROPOSED TOP OF CURB
- PROPOSED BOTTOM OF CURB

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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.

DRAWING NOTES

01 INSTALL SILT FENCE IN ACCORDANCE WITH OPSD 219.130.

02 MATCH EXISTING GRADES AT PROPERTY LINE AND LIMITS OF WORK.

03 INSTALL HEAVY DUTY PAVEMENT IN ACCORDANCE WITH DETAIL 2/C3 ACCORDINGLY. REINSTATE GRADES TO TIE INTO EXISTING AND PROVIDE POSITIVE DRAINAGE TOWARDS STORM STRUCTURES.

04 INSTALL LIGHT DUTY PAVEMENT IN ACCORDANCE WITH DETAIL 1/C3 ACCORDINGLY. REINSTATE GRADES TO TIE INTO EXISTING AND PROVIDE POSITIVE DRAINAGE TOWARDS STORM STRUCTURES.

05 GRADES TO SLOPE AWAY FROM THE BUILDING TO PROVIDE POSITIVE DRAINAGE.

06 ANY DISTURBED AREA WITHIN THE RIGHT-OF-WAY SHALL BE REINSTATED TO EQUAL OR BETTER CONDITION TO THE SATISFACTION OF THE CITY OF OTTAWA.

07 PROTECT EXISTING MANHOLES AND CATCHBASINS USING A FILTER SOCK OR FILTER BASE IN ACCORDANCE WITH DETAIL 4/C3.

08 CONSTRUCT PARKING LOT,LAY BY AND BUS LOOP ENTRANCE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING SC7.1 - CURB RETURN ENTRANCES.

09 PAVEMENT TO BE WITHIN 12mm OF DOOR.

10 PROVIDE MAXIMUM 4:1 SLOPE.

11 COVER OF EXISTING CATCH BASIN TO BE MODIFIED TO TOP ENTRY GATE AS PER CITY STANDARD S19

12 CONTRACTOR TO PROVIDE TRENCH BOX FOR EXCAVATION IN PROXIMITY OF MUNICIPAL RIGHT OF WAY.

13 NOT USED

14 TIE IN NEW CONCRETE TO EXISTING CURB

15 EXISTING LIGHT STANDARD, REFER TO ARCHITECTURAL

16 PROTECT BELL JUNCTION BOX AND MANHOLE. CONTRACTOR TO COORDINATE WITH UTILITIES FOR RELOCATION AND/ OR PROTECTION.

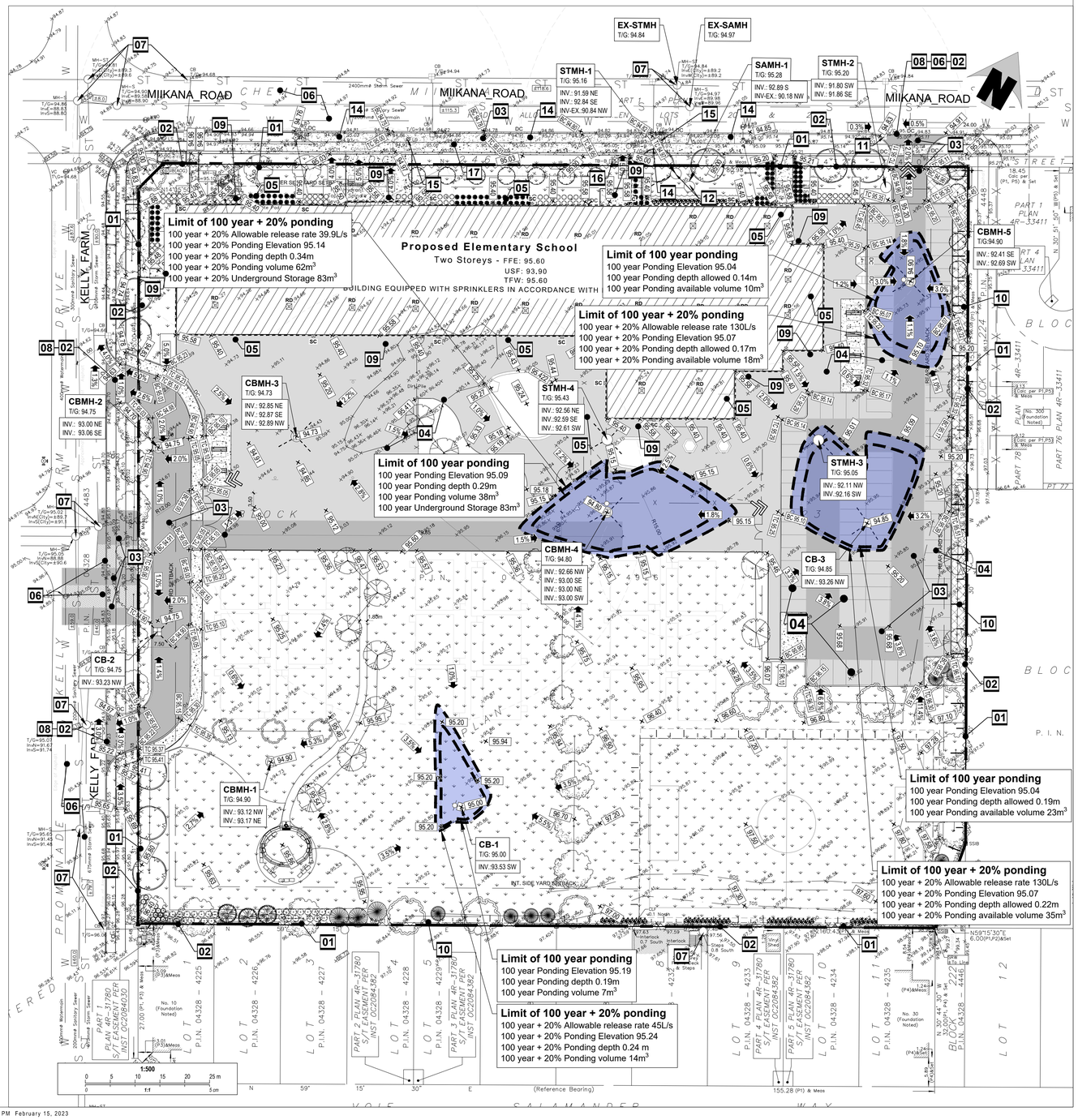
17 NEW EXTENSION OF EXISTING SIDEWALK MAINTAIN EXISTING BARRIER CURB . PROVIDE DOWELS AND JOINTS BETWEEN EXISTING AND NEW SIDEWALK EXTENSION AS APPLICABLE PER CITY OF OTTAWA STANDARD DETAILS R4 , R5 AND R6. CONTRACTOR SHALL ENSURE THE STRUCTURAL INTEGRITY OF EXISTING CONCRETE SIDEWALK AND EXISTING CURB BARRIER THAT WILL REMAIN IN PLACE AND ITS UNDERLYING GRANULAR BASE WHEN COMPACTING THE SUBGRADE AND GRANULAR BASE OF THE NEW SIDEWALK EXTENSION

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.

GEOTECHNICAL NOTES

1. A GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO SHALL INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND TRENCHES, PIPE BEDDING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION.
2. IT IS STRICTLY RECOMMENDED TO REFER GEOTECHNICAL INVESTIGATION REPORT : GEOTECHNICAL INVESTIGATION PROPOSED NEW FINDLAY CREEK PUBLIC SCHOOL 820 MIIKANA ROAD. SOUTHEAST CORNER OF MIIKANA ROAD AND KELLY FARM DRIVE FINDLAY CREEK COMMUNITY BY EXP SERVICES INC.
3. IT IS ANTICIPATED THAT THE MAJORITY OF THE MATERIAL REQUIRED FOR BACKFILLING PURPOSES AND FOR TRENCH BACKFILL WOULD HAVE TO BE IMPORTED AND SHOULD CONFORM TO THE RECOMMENDATION STATED IN THE GEOTECHNICAL REPORT.
4. CONTRACTOR BIDDING ON THIS PROJECT MUST REVIEW AVAILABLE DATA AND DECIDE ON THEIR OWN THE BEST METHOD FOR THE EXCAVATION OF THE BEDROCK IF DEEMED REQUIRED.
5. IT IS RECOMMENDED THAT THE BEDDING FOR THE UNDERGROUND SERVICES INCLUDING MATERIAL SPECIFICATIONS, THICKNESS OF COVER MATERIAL AND COMPACTION REQUIREMENTS CONFORM TO MUNICIPAL REQUIREMENTS AND/OR ONTARIO PROVINCIAL STANDARD SPECIFICATION AND DRAWINGS (OPSS AND OPSD).
6. IT IS RECOMMENDED THAT THE PIPE 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.
7. THE BEDDING THICKNESS MAY BE FURTHER INCREASED IN AREAS WHERE THE SUBGRADE BECOMES DISTURBED.
8. SINCE PAVED SURFACES WILL BE LOCATED OVER SERVICE TRENCHES, IT IS RECOMMENDED THAT THE TRENCH BACKFILL MATERIAL WITHIN THE FROST ZONE (UP TO 1.8 M BELOW FINISHED GRADE), SHOULD MATCH THE EXISTING MATERIAL IN THE ROADWAY TO MINIMIZE DIFFERENTIAL FROST HEAVING OF THE SUBGRADE. THE TRENCH BACKFILL SHOULD BE PLACED IN 300 MM THICK LIFTS AND EACH LIFT SHOULD BE COMPACTED TO 95 PERCENT SPMDD.
9. THE BEDROCK/AUGER REFUSAL DEPTHS ACROSS THE SITE WERE VARIABLE.SHALLOW BEDROCK AND LARGE BOULDERS SHOULD BE EXPECTED DURING THE INSTALLATION OF ANY SERVICES AT THE SITE AND CONTRACTORS BIDDING ON THIS WORK SHOULD ANTICIPATE THESE CONDITIONS.
10. IT IS ANTICIPATED THAT THE MAJORITY OF THE MATERIAL REQUIRED FOR TRENCH BACKFILL AND SUBGRADE FILL IN PARKING AREA AND ACCESS ROADS WOULD HAVE TO BE IMPORTED AND SHOULD CONFORM TO OPSS 1010 SELECT SUBGRADE MATERIAL (SSM) - COMPACTED TO 95 PERCENT OF THE SPMDD AND THE UPPER 300 MM OF THE SUBGRADE FILL MUST BE COMPACTED TO 98% SPMDD.
11. AS PART OF THE SUBGRADE PREPARATION, THE PROPOSED PARKING AREA, PAVED AREA AND ACCESS ROADS SHOULD BE STRIPPED OF TOPSOIL 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 THIS OFFICE. ANY SOFT OR SPONGY SUBGRADE AREAS DETECTED SHOULD BE SUB EXCAVATED AND PROPERLY REPLACED WITH SUITABLE APPROVED BACKFILL COMPACTED TO 95 PERCENT SPMDD (ASTM D698-12E2).
12. THE SUBDRAINS ILLUSTRATED ON PLANS ARE SCHEMATIC. FULL SCHEME OF SUBDRAINS SHOULD BE INSTALLED ON BOTH SIDES OF THE ACCESS ROAD(S).SUBDRAINS SHOULD BE INSTALLED ON BOTH SIDES OF THE ACCESS ROAD(S). SUBDRAINS MUST BE INSTALLED IN THE PROPOSED PARKING AREA AT LOW POINTS AND SHOULD BE CONTINUOUS BETWEEN CATCHBASINS TO INTERCEPT EXCESS SURFACE AND SUBSURFACE MOISTURE AND TO PREVENT SUBGRADE SOFTENING. THIS WILL ENSURE NO WATER COLLECTS IN THE GRANULAR COURSE, WHICH COULD RESULT IN PAVEMENT FAILURE DURING THE SPRING THAW. THE LOCATION AND EXTENT OF SUBDRAINS REQUIRED WITHIN THE PAVED AREAS SHOULD BE REVIEWED BY THE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE PROPOSED SITE GRADING.
13. TO MINIMIZE THE PROBLEMS OF DIFFERENTIAL MOVEMENT BETWEEN THE PAVEMENT AND CATCHBASINS/MANHOLE DUE TO FROST ACTION, THE BACKFILL AROUND THE STRUCTURES SHOULD CONSIST OF FREE-DRAINING GRANULAR PREFERABLY CONFORMING TO OPSS GRANULAR B TYPE II MATERIAL. WEEP HOLES SHOULD BE PROVIDED IN THE CATCHBASINS/MANHOLES TO FACILITATE DRAINAGE OF ANY WATER THAT MAY ACCUMULATE IN THE GRANULAR FILL.
14. THE MOST SEVERE LOADING CONDITIONS ON LIGHT-DUTY PAVEMENT AREAS AND THE SUBGRADE MAY OCCUR DURING CONSTRUCTION. CONSEQUENTLY, SPECIAL PROVISIONS SUCH AS RESTRICTED LANES, HALF-LOADS DURING PAVING, TEMPORARY CONSTRUCTION ROADWAYS, ETC., MAY BE REQUIRED, ESPECIALLY IF CONSTRUCTION IS CARRIED OUT DURING UNFAVORABLE WEATHER.
15. THE FINISHED PAVEMENT SURFACE SHOULD BE FREE OF DEPRESSIONS AND SHOULD BE SLOPED (PREFERABLY AT A MINIMUM CROSS FALL OF 2 PERCENT) TO PROVIDE EFFECTIVE SURFACE DRAINAGE TOWARDS CATCH BASINS. SURFACE WATER SHOULD NOT BE ALLOWED TO POND ADJACENT TO THE OUTSIDE EDGES OF PAVED AREAS.
16. RELATIVELY WEAKER SUBGRADE MAY DEVELOP OVER SERVICE TRENCHES AT SUBGRADE LEVEL. THESE AREAS MAY REQUIRE THE USE OF THICKER/COARSER SUB-BASE MATERIAL AND THE USE OF A GEOTEXTILE AT THE SUBGRADE LEVEL. IF THIS IS THE CASE, IT IS RECOMMENDED THAT ADDITIONAL 150 MM THICK GRANULAR SUB-BASE, OPSS GRANULAR B TYPE II, SHOULD BE PROVIDED IN THESE AREAS, IN ADDITION TO THE USE OF A GEOTEXTILE AT THE SUBGRADE LEVEL.
17. 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.
18. 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.
19. ALL EARTHWORK ACTIVITIES FROM PLACEMENT AND COMPACTION OF FILL IN THE SERVICE TRENCHES TO SUBGRADE PREPARATION, PLACEMENT AND COMPACTION OF GRANULAR MATERIALS AND ASPHALTIC CONCRETE SHOULD BE INSPECTED BY QUALIFIED GEOTECHNICIANS TO ENSURE THAT CONSTRUCTION OF THE SEWERS AND PAVEMENT PROCEEDS ACCORDING TO THE SPECIFICATIONS.
20. STRINGENT CONSTRUCTION CONTROL PROCEDURES SHOULD BE MAINTAINED TO ENSURE THAT UNIFORM SUBGRADE MOISTURE AND DENSITY CONDITIONS ARE ACHIEVED.
21. SHOULD SURFACE AND SUBSURFACE WATER SEEPAGE OCCUR INTO THE EXCAVATIONS COLLECT ANY WATER ENTERING THE EXCAVATIONS AND REMOVE IT BY PUMPING FROM SUMP.
22. IF THE BACKFILL IN THE SERVICE TRENCHES WILL CONSIST OF GRANULAR FILL, CLAY SEALS SHOULD BE INSTALLED IN THE SERVICE TRENCHES AT SELECT INTERVALS (SPACING) AS PER CITY OF OTTAWA DRAWING NO. S8. THE SEALS SHOULD BE 1 M WIDE, EXTEND OVER THE ENTIRE TRENCH WIDTH AND FROM THE BOTTOM OF THE TRENCH TO THE UNDERSIDE OF THE PAVEMENT STRUCTURE. THE CLAY SHOULD BE COMPACTED TO 95 PERCENT SPMDD. THE PURPOSE OF THE CLAY SEALS IS TO PREVENT THE PERMANENT LOWERING OF THE GROUNDWATER LEVEL. CLAY SEAL LOCATIONS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER.
23. 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.
24. THE MUNICIPAL SERVICES SHOULD BE INSTALLED IN SHORT OPEN TRENCH SECTIONS THAT ARE EXCAVATED AND BACKFILLED THE SAME DAY.



No.	DESCRIPTION	YYYY-MM-DD
5	ISSUED FOR SITE PLAN CONTROL REV-3	2023-02-15
4	ISSUED FOR TENDER REVIEW	2023-01-20
3	ISSUED FOR PERMIT ISSUANCE	2022-11-18
2	ISSUED FOR SITE PLAN CONTROL REV-2	2022-10-27
1	ISSUED FOR SITE PLAN CONTROL REV-1	2022-06-28

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

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project
Findlay Creek #2 Public School

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seal

PROFESSIONAL ENGINEER — SAMMOUR — 100227665 — February 15, 2023 — PROVINCE OF ONTARIO

drawing title
Site Grading , Erosion and Sediment Control Plan

scale	drawn by
As shown	R.I.
date	checked by
June 2022	A.S.
project number	drawing number
22-719	**C2**

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

revision

D07–12–22–0110

#18804

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 FARLEY, SMITH AND DENIS SURVEYING LTD., FILE NO.:482-20, DATED OCTOBER 1, 2020. 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. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS. ALL EXCESS SOIL MANAGEMENT, TESTING AND DISPOSAL MUST COMPLY WITH CURRENT O.REG. 406/19. ALL ASSOCIATED COSTS ARE TO BE BORNE BY THE CONTRACTOR.
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. ABIDE BY RECOMMENDATIONS OF GEOTECHNICAL REPORT. REPORT ANY VARIATIONS IN OBSERVED CONATIONS FROM THOSE INCLUDED IN REPORT.
19. REPORT REFERENCES;
    i. GEOTECHNICAL INVESTIGATION PREPARED BY EXP SERVICES INC., PROJECT NO.: OTT-00245378-R0, DATED NOVEMBER 11, 2020.
20. PROVIDE CCTV INSPECTION REPORT FOR ALL SEWERS AND CATCHBASIN LEADS 200mm DIAMETER AND LARGER. REPEAT CCTV INSPECTION FOLLOWING RECTIFICATION OF ANY DEFICIENCIES.

Notes: Sanitary Sewer and Manholes

1. ALL SANITARY SEWER, SANITARY SEWER APPURTENANCES AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW SANITARY PIPING. PROVIDE DYE TESTING FOR NEW SERVICES.
2. SANITARY SEWER PIPE SIZE 150mm DIAMETER AND GREATER TO BE PVC SDR-35 (UNLESS SPECIFIED OTHERWISE) WITH RUBBER GASKET TYPE JOINTS IN CONFORMANCE WITH CSA B-182.2,3,4.
3. SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
4. ALL SANITARY MANHOLES 1200mm IN DIAMETER TO BE AS PER OPSD 701.01. FRAME AND COVER TO BE AS PER CITY OF OTTAWA STANDARD S25 AND S24.
5. MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES AS PER THE OPSD 701.021
6. ANY SANITARY SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER.

Notes: Storm Sewer and Manholes

1. ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW STORM SEWERS, SERVICES AND CB LEADS.
2. STORM SEWERS 450mm DIAMETER AND SMALLER SHALL BE PVC SDR-35, WITH RUBBER GASKET PER CSA A-257.3.
3. STORM SEWER LARGER THAN 450mm SHALL BE REINFORCED CONCRETE CLASS 100.
4. SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
5. ALL STORM MANHOLES TO BE AS PER MANHOLE AND CATCHBASIN SCHEDULE.
6. ANY NEW OR EXISTING STORM SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER.
7. CB IN LANDSCAPE AREAS SHALL BE AS PER CITY OF OTTAWA STANDARD S29, S30 AND S31.
8. ALL CATCHBASIN LEADS TO BE MINIMUM 200mm DIAMETER AT MINIMUM 1.0% SLOPE UNLESS OTHERWISE SPECIFIED.
9. STORM CATCHBASINS AS PER OPSD 705.010 AND FRAME/COVER AS PER CITY STANDARD DRAWINGS S19. STORM CBMH'S AS INDICATED IN TABLE WITH SUMP, ADJUSTMENT SECTIONS SHALL BE AS PER OPSD 704.010.
10. INSTALLATION OF FLOW CONTROL ICD'S TO BE VERIFIED BY QUALITY VERIFICATION ENGINEER RETAINED BY CONTRACTOR.

Parking Lot and Work in Public Rights of Way

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

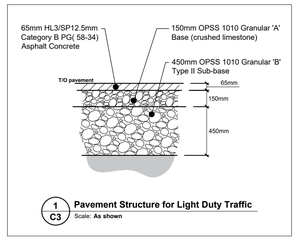
1. PRIOR TO START OF CONSTRUCTION:
   1.1. INSTALL SILT FENCE IN LOCATION SHOWN ON DWG C2.
   1.2. INSTALL FILTER FABRIC OR SILT SACK FILTERS IN ALL THE CATCHBASINS AND MANHOLES TO REMAIN DURING CONSTRUCTION WITHIN THE SITE (SEE TYPICAL DETAIL).
   1.3. INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
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 DRS 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.

Notes: Watermain

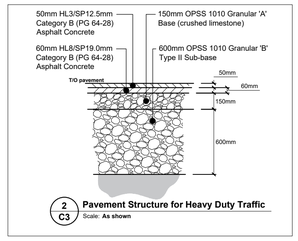
1. ALL WATERMAIN AND WATERMAIN APPURTANANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND MINISTRY OF ENVIRONMENT STANDARDS AND SPECIFICATIONS.
2. ALL WATERMAIN 300mm DIAMETER AND SMALLER TO BE POLY VINYL CHLORIDE (PVC) CLASS 150 DR 18 MEETING AWWA SPECIFICATION C900.
3. ALL WATERMAIN TO BE INSTALLED AT MINIMUM COVER OF 2.4m BELOW FINISHED GRADE. WHERE WATERMAINS CROSS OVER OTHER UTILITIES, A MINIMUM 0.30m CLEARANCE SHALL BE MAINTAINED; WHERE WATERMAINS CROSS UNDER OTHER UTILITIES, A MINIMUM 0.50m CLEARANCE SHALL BE MAINTAINED. WHERE THE MINIMUM SEPARATION CANNOT BE ACHIEVED, THE WATERMAIN SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARDS W25 AND W25.2. WHERE 2.4m MINIMUM DEPTH CANNOT BE ACHIEVED, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W22. WHERE A WATERMAIN IS IN CLOSE PROXIMITY TO AN OPEN STRUCTURE, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W23.
4. CONCRETE THRUST BLOCKS AND MECHANICAL RESTRAINTS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, REDUCERS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER, IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS W25.3 & W25.4.
5. CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS AS PER CITY OF OTTAWA STANDARD W40 & W42.
6. ALL VALVES AND VALVE BOXES AND CHAMBERS, HYDRANTS, AND HYDRANT VALVES AND ASSEMBLES SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARD
7. FIRE HYDRANT LOCATION AND INSTALLATION AS PER CITY OF OTTAWA STANDARD W18 & W19. CONTRACTOR TO PROVIDE FLOW TEST AND PAINTING OF NEW HYDRANT IN ACCORDANCE WITH CITY STANDARDS.
8. IF WATER MAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

Parking Lot and Work in Public Rights of Way

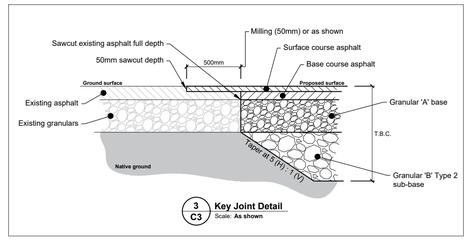
1. CONTRACTOR TO REINSTATE ROAD CUTS AS PER CITY OF OTTAWA DETAIL R10.
2. CONTRACTOR TO PREPARE SUBGRADE, INCLUDING PROOFROLLING, TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT PRIOR TO THE COMMENCEMENT OF PLACEMENT OF GRANULAR B MATERIAL.
3. FILL TO BE PLACED AND COMPACTED PER THE GEOTECHNICAL REPORT REQUIREMENTS.
4. 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.
5. GRANULAR A MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR B PLACEMENT.
6. 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.
7. ASPHALT MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR A PLACEMENT.
8. 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.
9. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING LINE AND GRADE IN ACCORDANCE WITH THE PLANS, AND FOR PROVIDING THE CONSULTANT WITH VERIFICATION PRIOR TO PLACEMENT.
10. 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.
11. PAVEMENT STRUCTURE (MATERIAL TYPES AND THICKNESS) FOR HEAVY DUTY AND LIGHT DUTY AREAS TO BE AS SPECIFIED IN THE GEOTECHNICAL REPORT AND SHOWN ON THE PLANS.



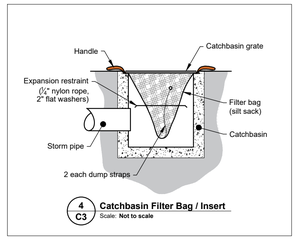
1 C3 **Pavement Structure for Light Duty Traffic**
Scale: **As shown**



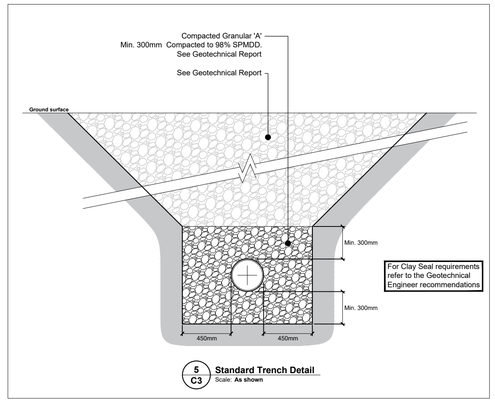
2 C3 **Pavement Structure for Heavy Duty Traffic**
Scale: **As shown**



3 C3 **Key Joint Detail**
Scale: **As shown**



4 C3 **Catchbasin Filter Bag / Insert**
Scale: **Not to scale**



5 C3 **Standard Trench Detail**
Scale: **As shown**

MANHOLE AND CATCHBASIN SCHEDULE

STRUCTURE ID	TOP OF FRAME ELEVATION (m)	PIPE INVERT ELEVATION (m)	STRUCTURE SIZE (mm) / OPSD No.	FRAME (CITY OF OTTAWA)
CB-1	95.000	93.53 SW	600 x 600 / 705.010	S19
CB-2	94.750	93.23 NW	600 x 600 / 705.010	S19
CB-3	94.850	93.26 NW	600 x 600 / 705.010	S19
CBMH-1	94.900	93.12 NW / 93.17 NE	1200 / 701.010	S25 / S28.1
CBMH-2	94.750	93.00 NE / 93.06 SE	1200 / 701.010	S25 / S28.1
CBMH-3	94.730	92.85 NE / 92.87 SE / 92.89 NW	1200 / 701.010	S25 / S28.1
CBMH-4	94.800	92.66 NW / 93.00 SE	1800 / 701.012	S25 / S28.1
CBMH-5	94.900	92.41 SE / 92.69 SW	1200 / 701.010	S25 / S28.1
STMH-1	95.160	91.59 NE / 92.84 SE / EX-90.84 NW	1800 / 701.012 / 1003-010 (DROP PIPE STRUCTURE)	S25 / S24
STMH-2	95.200	91.80 SW / 91.86 SE	1500 / 701.011	S25 / S24
STMH-3	95.050	92.11 NW / 92.16 SW	1500 / 701.011	S25 / S24
STMH-4	95.430	92.56 NE / 92.59 SE / 92.61 SW	1200 / 701.010	S25 / S24
SAMH-1	95.280	92.89 SE / EX-90.18 NW	1200 / 701.010 / 1003-010 (DROP PIPE STRUCTURE)	S25 / S24.1

CROSSING TABLE

LOCATION	OVER / UNDER	T/G	INVERT	OBVERT	CLEARANCE (m)
1	NEW WATERMAIN - EXITING SANITARY	95.05	92.45 (WM)	90.95 (SAN)	1.50
2	NEW WATERMAIN - EXISTING STORM SEWER	96.96	92.45 (WM)	91.95 (STM)	0.50
3	NEW STORM SEWER - NEW WATERMAIN	95.06	93.16 (STM)	92.59 (WM)	0.57
4	NEW WATERMAIN - EXISTING SANITARY SEWER	94.92	92.45 (WM)	91.05 (SAN)	1.40
5	NEW WATERMAIN - EXISTING STORM SEWER	94.91	92.45 (WM)	92.05 (STM)	0.40
6	NEW STORM SEWER - NEW WATERMAIN	94.76	93.20 (STM)	92.60 (WM)	0.60
7	NEW STORM SEWER - NEW WATERMAIN	94.91	92.95 (STM)	92.63 (WM)	0.32
8	NEW STORM SEWER - NEW WATERMAIN	95.06	93.94 (STM)	92.61 (WM)	0.33
9	NEW STORM WATER - EXISTING SANITARY SEWER	95.17	91.61 (STM)	90.38 (SAN)	1.23
10	NEW STORM SEWER - NEW WATERMAIN	95.06	92.92 (STM)	92.60 (WM)	0.32

WATER SERVICE TABLE

ID	DESCRIPTION	FINISHED GRADE (m)	T/O WATERMAIN (m)
1	BUILDING CONNECTION	95.600	93.200
2	45° HORIZONTAL BEND	95.160	92.600
3	45° HORIZONTAL BEND	95.180	92.600
4	45° HORIZONTAL BEND	95.220	92.600
5	45° HORIZONTAL BEND	95.220	92.600
6	TEE 200X150mm	95.000	92.600
7	SERVICE TEE	94.930	92.530
8	SERVICE TEE	94.880	92.480

NOTE: PROVIDE MINIMUM 2.4m COVER OVER T/O WATERMAIN TO FINISHED GRADE, OTHERWISE PROVIDE THERMAL INSULATION HL40 AS PER DETAIL 2/C1.

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

Jp2g Consultants Inc.
ENGINEERS • PLANNERS • PROJECT MANAGERS
1150 Morrison Drive, Suite 410, Ottawa, ONT.
Phone: (613) 828-7800 Fax: (613) 828-2600

21-5124A

No.	DESCRIPTION	YYYY-MM-DD
5	ISSUED FOR SITE PLAN CONTROL REV-3	2023-02-15
4	ISSUED FOR TENDER REVIEW	2023-01-20
3	ISSUED FOR PERMIT ISSUANCE	2022-11-18
2	ISSUED FOR SITE PLAN CONTROL REV-2	2022-10-27
1	ISSUED FOR SITE PLAN CONTROL REV-1	2022-06-28

N45 ARCHITECTURE INC.
71 Bank Street, 7th Floor - Ottawa, Ontario K1P 5N2
tel. 613.224.0095 fax 613.224.9811

project
Findlay Creek #2 Public School

820 Miikana Road, Ottawa, Ontario K1X 0G5

seal

drawing title
Details, Notes and Schedules

scale	drawn by
As shown	R.I.
date	checked by
June 2022	A.S.
project number	drawing number
22-719	C3

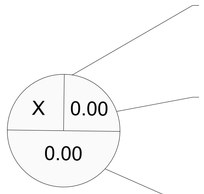
CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES.
DO NOT SCALE DRAWINGS.

revision

D07-12-22-0110

#18804

LEGEND



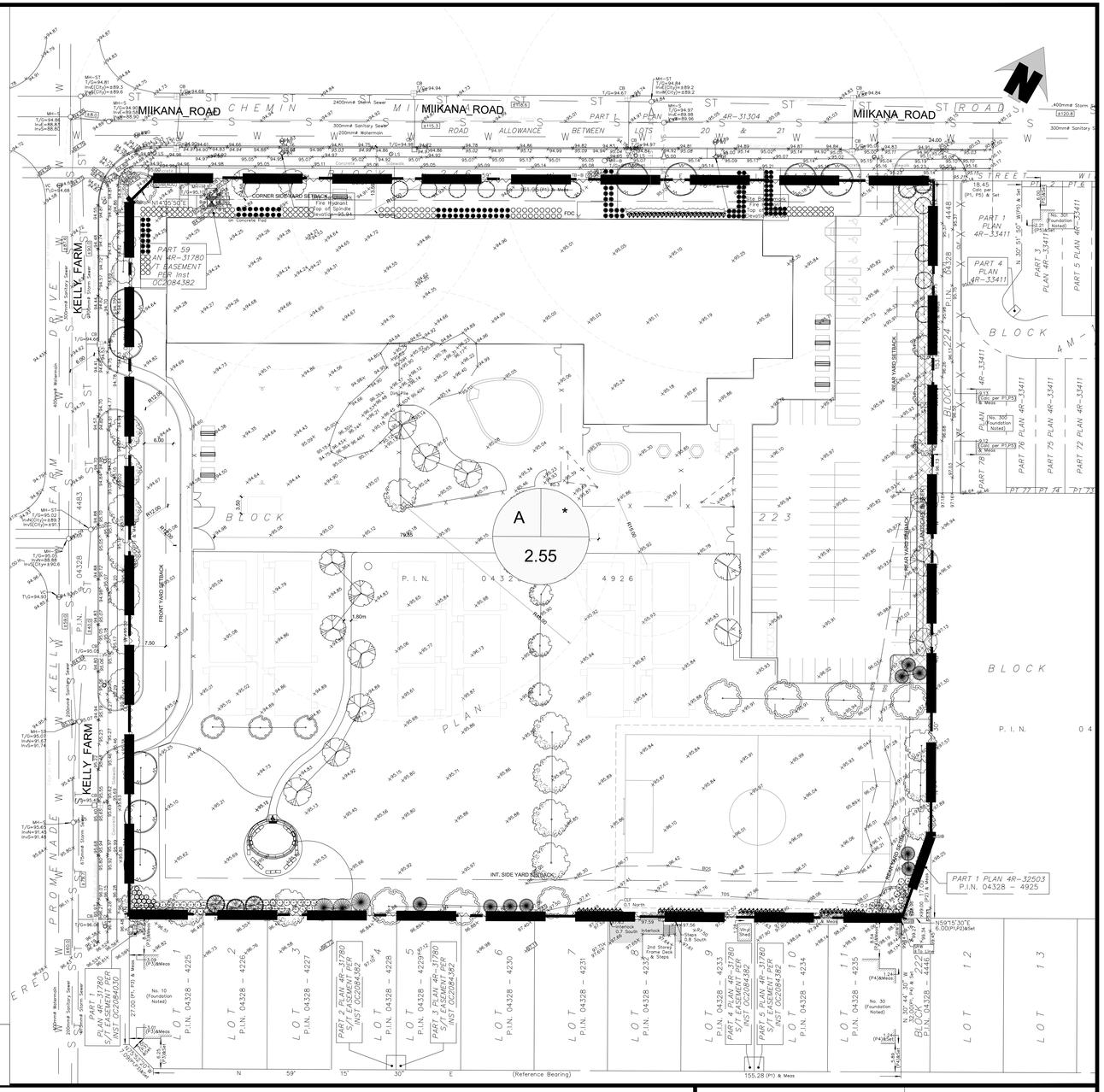
DRAINAGE AREA ID

WEIGHTED RUNOFF COEFFICIENT

DRAINAGE AREA HECTARES

DRAINAGE AREA LIMIT

* ALLOWABLE RELEASE RATE = 476 l/s .
REFER TO PRE-CONSULTING MEETING NOTES : FEBRUARY 14th,2022 .



1:1 000

0 10 20 30 40 50 m

0 1:1 5 cm

Jp2g Consultants Inc.
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12 INTERNATIONAL DRIVE, PEMBROKE, ON
Phone: (613)735-2507, Fax:(613)735-4513

1150 MORRISON DRIVE, SUITE 410, OTTAWA, ON
Phone: (613)828-7800, Fax: (613)828-2600

FINDLAY CREEK #2 PUBLIC SCHOOL

820 MIIKANA ROAD, ONTARIO

~

FIGURE 1 PRE-DEVELOPMENT DRAINAGE AREAS

DESIGNED: AS			PROJECT No.: 21-5124A
DRAFTED: RI			REVISION DATE:
CHECKED: AS	APPROVED: AS		REVISION No.: 1
SCALE: 1:1000			

DWG NAME: J:\5-CIVIL\2021\21-5124A - N45 - NEW SCHOOL FINDLAY CREEK\05 DRAWINGS\1 ONGOING\21_5124A_NSFC_SITE PLAN CONTROL REV 4.DWG LAYOUT: FIG.1_PRE_DEVELOPMENT_AREA SAVED ON Wednesday, February 15, 2023

LEGEND

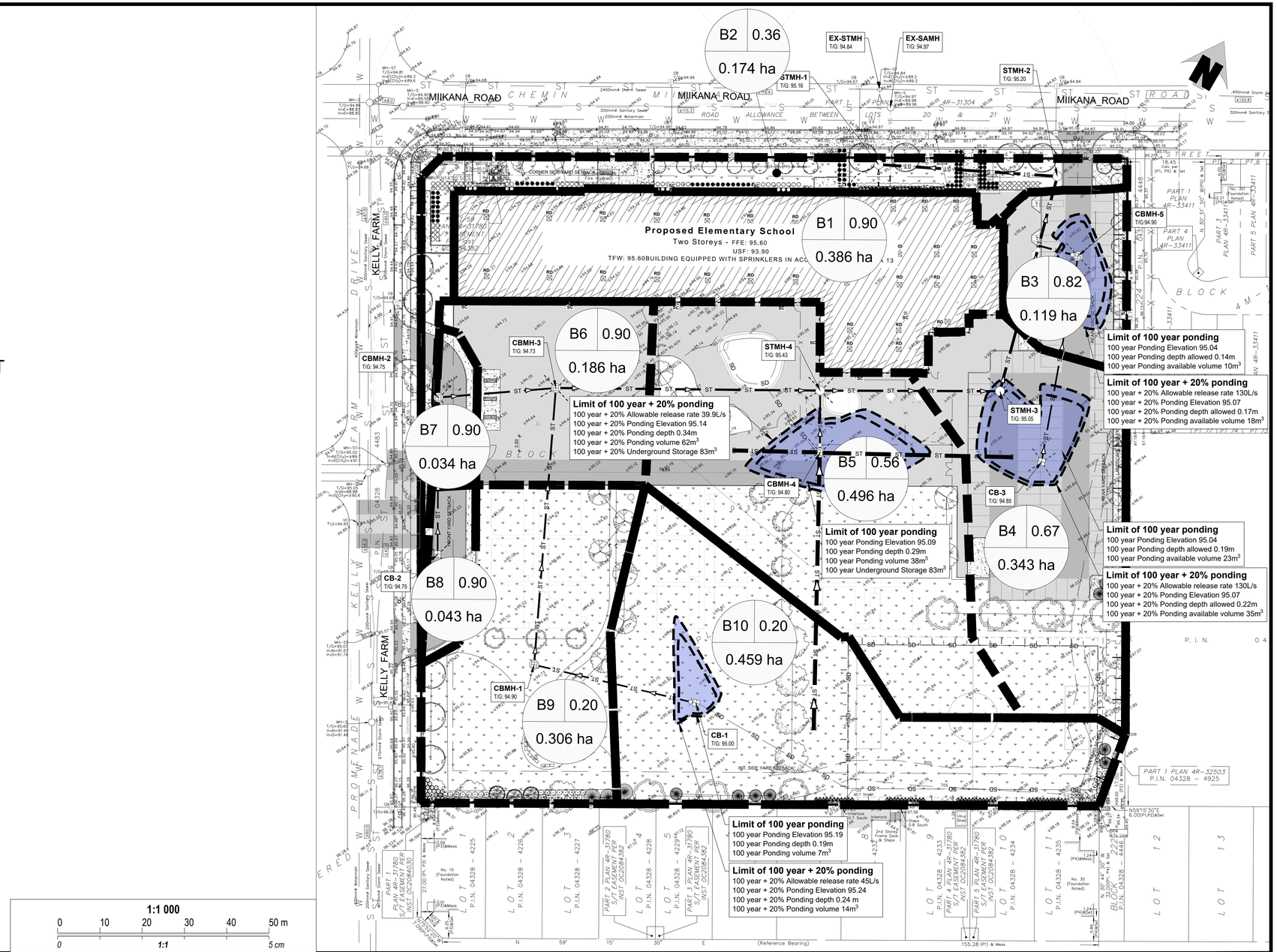
X | 0.00
0.00

DRAINAGE AREA ID

WEIGHTED RUNOFF COEFFICIENT

DRAINAGE AREA HECTARES

DRAINAGE AREA LIMIT



1:1 000

0 10 20 30 40 50 m

0 1:1 5 cm

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FINDLAY CREEK #2 PUBLIC SCHOOL

820 MIIKANA ROAD, ONTARIO

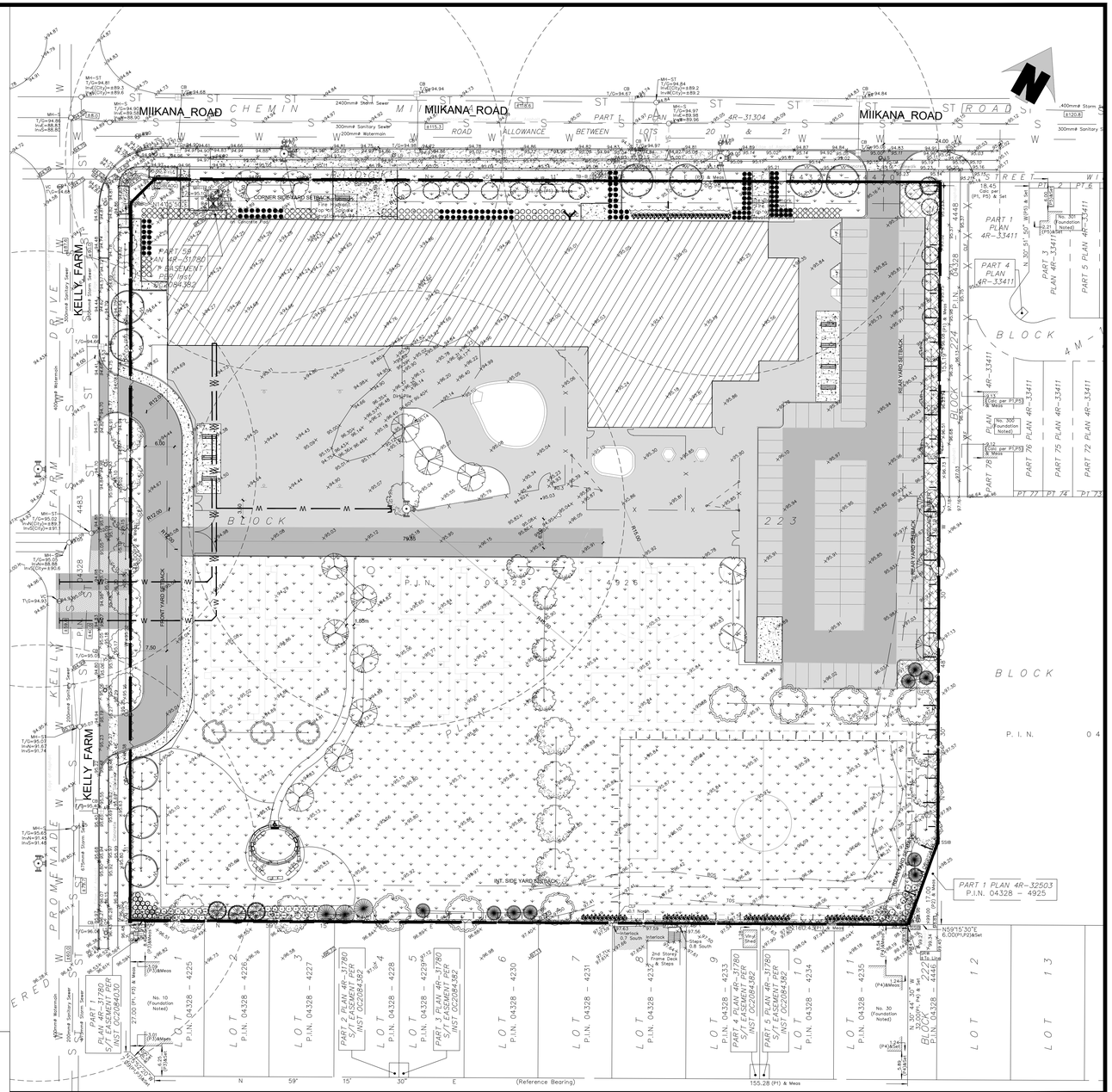
~

FIGURE 2 POST-DEVELOPMENT DRAINAGE AREAS

DESIGNED: AS		PROJECT No.: 21-5124A
DRAFTED: RI		REVISION DATE:
CHECKED: AS	APPROVED: AS	REVISION No.: 1
SCALE: 1:1000		

DWG NAME: J:\5-CIVIL\2021\21-5124A - N45 - NEW SCHOOL FINDLAY CREEK\05 DRAWINGS\1 ONGOING\21_5124A_NSFC_SITE PLAN CONTROL REV 4.DWG LAYOUT: FIG.2_POST_DEVELOPMENT_AREA SAVED ON Wednesday, February 15, 2023

45m RADIUS - FIRE
HYDRANT COVERAGE



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FINDLAY CREEK #2 PUBLIC SCHOOL

820 MIIKANA ROAD, ONTARIO

~

FIGURE 3 FIRE HYDRANT COVERAGE AREA

DESIGNED: AS			PROJECT No.: 21-5124A
DRAFTED: RI			REVISION DATE:
CHECKED: AS	APPROVED: AS		REVISION No.: 1
SCALE: 1:1000			

DWG NAME: J:\5-CIVIL\2021\21-5124A - N45 - NEW SCHOOL FINDLAY CREEK\05 DRAWINGS\1 ONGOING\21_5124A_NSFC_SITE PLAN CONTROL REV 4.DWG LAYOUT: FIG.3_HYDRANT SAVED ON Wednesday, February 15, 2023

Appendix B - Stormwater Management Calculations

Appendix B - Storm Sewer Design Sheet

B.1.1 - Allowable release rate

ID	Description	Type	Areas (m^2) $C_{0.90}$	$C_{0.20}$	Total (m^2)	$C_{pre\text{-}5\text{-}yr}$	$C_{pre\text{-}100\text{-}yr}$*
A	Property Grounds	uncontrolled	0	25453	25453		
			0	**25453**	**25453**		

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

Using the data for the site from the Design Brief Pathways at Findlay Creek 4800 Bank Street (Remer Lands) Phase 1 Leitrim Development Area by IBI Engineering Consultants Ltd. (August 2017), the maximum allowable release rate allocated for this site is:

$Q_{allowable\ (5\text{-}year)}$ = **476** l/s ①

Total Area, A = **2.55** ha

B.1.2 - Post-development release rate

ID	Description	Type	Areas (m^2) $C_{0.90}$	$C_{0.20}$	Total (m^2)	$C_{post\text{-}5\text{-}yr}$	$C_{post\text{-}100\text{-}yr}$*
B1	New School Building Roof	controlled	3862	0	3862	0.90	1.00
B2	Front of School on Miikana Drive & NW frontage	uncontrolled	406	1337	1742	0.36	0.42
B3	CBMH-5 Parking Lot North	controlled	1051	135	1187	0.82	0.91
B4	CB-3 Parking Lot South	controlled	2288	1147	3434	0.67	0.75
B5	CBMH-4 East Side of School Yard	controlled	2562	2404	4966	0.56	0.64
B6	CBMH-3 West Side of School Yard	uncontrolled	1861	0	1861	0.90	1.00
B7	CBMH-2 Bus Lay by north	uncontrolled	338	0	338	0.90	1.00
B8	CB-2 Bus Lay by south	uncontrolled	429	0	429	0.90	1.00
B9	CBMH -1 Landscaping Area South	uncontrolled	0	3060	3060	0.20	0.25
B10	CB- 1 School Yard & Soccer Field	controlled	0	4592	4592	0.20	0.25
			12795	**12676**	**25471**	**0.49**	**0.56**
			(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

Calculations for average weighted runoff coefficient

$C_{post\text{-}5\text{-}yr}$ = 0.49

$C_{post\text{-}100\text{-}yr}$ = 0.56

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.1.2.1a - Uncontrolled overland surface flow

B2 Uncontrolled area, Overland Fronts **0.174** ha

5-year Runoff coefficient, $_{5\text{-}yr\text{-}uncontrolled}$ **0.36**

100-year Runoff coefficient, $_{100\text{-}yr\text{-}uncontrolled}$ **0.42**

Uncontrolled overland surface Release Rate 5-year **18.3** l/s **A**

Uncontrolled overland surface Release Rate 100-year **36.7** l/s **B**

B.1.2.1b - Uncontrolled Network Flow

Total Uncontrolled Network Flow Areas B6, B7, B8, B9 **0.569** ha

5-year Runoff coefficient, $_{5\text{-}yr\text{-}uncontrolled}$ **0.52**

100-year Runoff coefficient, $_{100\text{-}yr\text{-}uncontrolled}$ **0.60**

Uncontrolled overland surface Release Rate 5-year **86.2** l/s **C**

Uncontrolled overland surface Release Rate 100-year **168.4** l/s **D**

Total Uncontrolled Release Rate 5-year **104.5** l/s **E = A+C**

Total Uncontrolled Release Rate 100-year **205.1** l/s **F = B+D**

B.1.2.2 - Net-allowable release rate for controlled storm sewers

$Q_{net\text{-}allowable\ 5\text{-}year}$ = **371.0** l/s **G = 1-E**

*$Q_{net\text{-}allowable\ 100\text{-}year}$ = **270.4** l/s **H = 1-F** * Must be controlled to net-allowable 100-year

B.1.3 Summary of Release Rates

	Surface	Network			Total Release Rate	
	Uncontrolled	Uncontrolled	Cotrolled	Total		
5 Year	18.3	86.2	270.4	356.6	374.9	A Used for Pipe Design
100 Year	36.7	168.4	270.4	438.8	475.5	B Used for surface storage design
	1	2	3	4		

A4 = A2 + A3

B4 = B2 + B3

B.1.3 - Post-development onsite storage

B.1.3.1 - Estimated detention Roof (B1)

Area	**0.386**	ha
5-year Runoff coefficient	**0.90**	
100-year Runoff coefficient	**1.00**	
Roof Drains	**55.5**	l/s

Table 1.3.1a - 5-year estimated detention Building Roof

	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	100.7	55.5	45.2	27.1
	15	83.6	80.7	55.5	25.2	22.7
	20	70.3	67.9	55.5	12.4	14.9
	25	60.9	58.8	55.5	3.3	5.0
	30	53.9	52.1	55.5	-3.4	-6.1
	35	48.5	46.9	55.5	-8.6	-18.1
	40	44.2	42.7	55.5	-12.8	-30.7
	45	40.6	39.3	55.5	-16.2	-43.9
	50	37.7	36.4	55.5	-19.1	-57.4
	55	35.1	33.9	55.5	-21.6	-71.2
	60	32.9	31.8	55.5	-23.7	-85.2
	Therefore	**27**	m^3 estimated roof detention			

Table 1.3.1b - 100-year estimated detention Building Roof

	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	191.7	55.5	136.2	81.7
peak V_{stored} →	15	142.9	153.4	55.5	97.9	88.1
	20	120.0	128.8	55.5	73.3	87.9
	25	103.8	111.5	55.5	56.0	84.0
	30	91.9	98.6	55.5	43.1	77.6
	35	82.6	88.7	55.5	33.2	69.6
	40	75.1	80.7	55.5	25.2	60.4
	45	69.1	74.1	55.5	18.6	50.3
	50	64.0	68.7	55.5	13.2	39.5
	55	59.6	64.0	55.5	8.5	28.1
	60	55.9	60.0	55.5	4.5	16.2
	Therefore	**88**	m^3 estimated yard detention			

B.1.3.2 - Estimated detention School Yard & Soccer Field (B10)

Area	**0.459**	ha
5-year Runoff coefficient	**0.20**	
100-year Runoff coefficient	**0.25**	
Install flow control after CB-1	**45.0**	l/s

Table 1.3.2a - 5-year estimated detention in School Yard

	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	26.6	45.0	-18.4	-11.0
	15	83.6	21.3	45.0	-23.7	-21.3
	20	70.3	17.9	45.0	-27.1	-32.5
	25	60.9	15.5	45.0	-29.5	-44.2
	30	53.9	13.8	45.0	-31.2	-56.2
	35	48.5	12.4	45.0	-32.6	-68.5
	40	44.2	11.3	45.0	-33.7	-80.9
	45	40.6	10.4	45.0	-34.6	-93.5
	50	37.7	9.6	45.0	-35.4	-106.2
	55	35.1	9.0	45.0	-36.0	-118.9
	60	32.9	8.4	45.0	-36.6	-131.7
	Therefore	**-11**	m^3 estimated yard detention			

Table 1.3.2b - 100-year 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	178.6	57.0	45.0	12.0	7.2
	15	142.9	45.6	45.0	0.6	0.5
	20	120.0	38.3	45.0	-6.7	-8.1
	25	103.8	33.1	45.0	-11.9	-17.8
	30	91.9	29.3	45.0	-15.7	-28.2
	35	82.6	26.4	45.0	-18.6	-39.2
	40	75.1	24.0	45.0	-21.0	-50.4
	45	69.1	22.0	45.0	-23.0	-62.0
	50	64.0	20.4	45.0	-24.6	-73.8
	55	59.6	19.0	45.0	-26.0	-85.7
	60	55.9	17.8	45.0	-27.2	-97.8

Therefore **7** 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	68.4	45.0	23.4	14.0
	15	171.5	54.7	45.0	9.7	8.8
	20	143.9	45.9	45.0	0.9	1.1
	25	124.6	39.8	45.0	-5.2	-7.8
	30	110.2	35.2	45.0	-9.8	-17.7
	35	99.1	31.6	45.0	-13.4	-28.1
	40	90.2	28.8	45.0	-16.2	-38.9
	45	82.9	26.4	45.0	-18.6	-50.1
	50	76.7	24.5	45.0	-20.5	-61.5
	55	71.5	22.8	45.0	-22.2	-73.1
	60	67.1	21.4	45.0	-23.6	-84.9

Therefore **14** m^3 estimated yard detention

B.1.3.3 - Estimated detention CBMH -4 (B5) East Side of School Yard (surface + underground)

Area	**0.497**	ha
5-year Runoff coefficient	**0.56**	
100-year Runoff coefficient	**0.64**	
Install flow control in CBMH-4	**39.9**	l/s

Table 1.3.3a - 5-year estimated detention East Side Yard (surface + underground)

	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	80.7	39.9	40.8	24.5
	15	83.6	64.7	39.9	24.8	22.3
	20	70.3	54.4	39.9	14.5	17.4
	25	60.9	47.2	39.9	7.3	10.9
	30	53.9	41.8	39.9	1.9	3.4
	35	48.5	37.6	39.9	-2.3	-4.9
	40	44.2	34.2	39.9	-5.7	-13.6
	45	40.6	31.5	39.9	-8.4	-22.8
	50	37.7	29.2	39.9	-10.7	-32.2
	55	35.1	27.2	39.9	-12.7	-41.9
	60	32.9	25.5	39.9	-14.4	-51.8

Therefore **24** m^3 estimated yard detention **

Table 1.3.3b - 100-year estimated detention East Side of Yard (surface + underground)

	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	157.0	39.9	117.1	70.3
	15	142.9	125.6	39.9	85.7	77.2
peak V_{stored} →	20	120.0	105.5	39.9	65.6	78.7
	25	103.8	91.3	39.9	51.4	77.1
	30	91.9	80.8	39.9	40.9	73.6
	35	82.6	72.6	39.9	32.7	68.7
	40	75.1	66.1	39.9	26.2	62.8

	45	69.1	60.7	39.9	20.8	56.2
	50	64.0	56.2	39.9	16.3	49.0
	55	59.6	52.4	39.9	12.5	41.3
	60	55.9	49.1	39.9	9.2	33.3

Therefore **79** m^3 estimated yard detention **

Table 1.3.3b - 100-year 20% estimated detention East Side of Yard (surface + underground)

	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	214.3	188.4	39.9	148.5	89.1
	15	171.5	150.8	39.9	110.9	99.8
	20	143.9	126.6	39.9	86.7	104.0
peak V_{stored} →	25	124.6	109.6	39.9	69.7	104.5
	30	110.2	96.9	39.9	57.0	102.6
	35	99.1	87.1	39.9	47.2	99.2
	40	90.2	79.3	39.9	39.4	94.5
	45	82.9	72.8	39.9	32.9	89.0
	50	76.7	67.5	39.9	27.6	82.7
	55	71.5	62.9	39.9	23.0	75.9
	60	67.1	59.0	39.9	19.1	68.7

Therefore **104** m^3 estimated yard detention **

B.1.3.3 - Estimated detention CBMH -4 (B5) East Side of School Yard (surface + underground) for 50% peak flow check

50% peak flow control in CBMH-4 **20.0** l/s

Table 1.3.3a - 5-year estimated detention East Side Yard (surface + underground)

	Time (minutes)	$I_{5\text{-years}}$ (mm/hr)	Q_{actual} (l/s)	$Q_{allowable}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m^3)
	10	104.2	80.7	20.0	60.8	36.5
	15	83.6	64.7	20.0	44.8	40.3
peak V_{stored} →	20	70.3	54.4	20.0	34.5	41.4
	25	60.9	47.2	20.0	27.2	40.8
	30	53.9	41.8	20.0	21.8	39.3
	35	48.5	37.6	20.0	17.6	37.0
	40	44.2	34.2	20.0	14.3	34.3
	45	40.6	31.5	20.0	11.5	31.1
	50	37.7	29.2	20.0	9.2	27.6
	55	35.1	27.2	20.0	7.3	23.9
	60	32.9	25.5	20.0	5.6	20.0

Therefore **41** m^3 estimated yard detention **

Table 1.3.3b - 100-year estimated detention East Side of Yard (surface + underground)

	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	157.0	20.0	137.0	82.2
	15	142.9	125.6	20.0	105.7	95.1
peak V_{stored} →	20	120.0	105.5	20.0	85.5	102.6
	25	103.8	91.3	20.0	71.4	107.0
	30	91.9	80.8	20.0	60.8	109.5
	35	82.6	72.6	20.0	52.7	110.6
	40	75.1	66.1	20.0	46.1	110.7
	45	69.1	60.7	20.0	40.8	110.0
	50	64.0	56.2	20.0	36.3	108.8
	55	59.6	52.4	20.0	32.5	107.2
	60	55.9	49.1	20.0	29.2	105.1

Therefore **111** m^3 estimated yard detention **

Table 1.3.3b - 100-year 20% estimated detention East Side of Yard (surface + underground)

	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	214.3	188.4	20.0	168.4	101.1
	15	171.5	150.8	20.0	130.8	117.7
	20	143.9	126.6	20.0	106.6	127.9

peak V_{stored} →	25	124.6	109.6	20.0	89.6	134.4
	30	110.2	96.9	20.0	77.0	138.6
	35	99.1	87.1	20.0	67.2	141.1
	40	90.2	79.3	20.0	59.3	142.4
	45	82.9	72.8	20.0	52.9	142.8
	50	76.7	67.5	20.0	47.5	142.6
	55	71.5	62.9	20.0	43.0	141.8
	60	67.1	59.0	20.0	39.0	140.5

Therefore **143** m^3 estimated yard detention **

B.1.3.4 - Estimated detention Parking Lot B3 & B4

Total controlled Area B3 & B4	**0.462**	ha
5-year Runoff coefficient	**0.71**	
100-year Runoff coefficient	**0.79**	
Install flow control in CBMH-5	**130.0**	l/s

Table 1.3.4a - 5-year estimated detention in parking area

	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	94.5	130.0	-35.5	-21.3
	15	83.6	75.8	130.0	-54.2	-48.8
	20	70.3	63.7	130.0	-66.3	-79.6
	25	60.9	55.2	130.0	-74.8	-112.2
	30	53.9	48.9	130.0	-81.1	-146.0
	35	48.5	44.0	130.0	-86.0	-180.6
	40	44.2	40.1	130.0	-89.9	-215.9
	45	40.6	36.8	130.0	-93.2	-251.5
	50	37.7	34.1	130.0	-95.9	-287.6
	55	35.1	31.8	130.0	-98.2	-323.9
	60	32.9	29.9	130.0	-100.1	-360.5

Therefore **-21** m^3 estimated yard detention

Table 1.3.4b - 100-year estimated detention in parking area

	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	178.6	181.7	130.0	51.7	31.0
	15	142.9	145.4	130.0	15.4	13.8
	20	120.0	122.0	130.0	-8.0	-9.6
	25	103.8	105.6	130.0	-24.4	-36.5
	30	91.9	93.5	130.0	-36.5	-65.8
	35	82.6	84.0	130.0	-46.0	-96.6
	40	75.1	76.4	130.0	-53.6	-128.5
	45	69.1	70.2	130.0	-59.8	-161.3
	50	64.0	65.1	130.0	-64.9	-194.8
	55	59.6	60.7	130.0	-69.3	-228.8
	60	55.9	56.9	130.0	-73.1	-263.3

Therefore **31** m^3 estimated yard detention

Table 1.3.4b - 100-year +20% estimated detention in parking area

	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	218.0	130.0	88.0	52.8
	15	171.5	174.4	130.0	44.4	40.0
	20	143.9	146.4	130.0	16.4	19.7
	25	124.6	126.8	130.0	-3.2	-4.8
	30	110.2	112.2	130.0	-17.8	-32.1
	35	99.1	100.8	130.0	-29.2	-61.3
	40	90.2	91.7	130.0	-38.3	-91.8
	45	82.9	84.3	130.0	-45.7	-123.4
	50	76.7	78.1	130.0	-51.9	-155.8
	55	71.5	72.8	130.0	-57.2	-188.8
	60	67.1	68.2	130.0	-61.8	-222.4

Therefore **53** m^3 estimated yard detention

B.1.4 - Site storage

	5-year required (m3)	100-year required (m3)	100-year +20% required m^3	100 year Ponding depth (m)	Ponding area (m2)	100 Year Available (m3)	100 year Ponding Elev.
Roof Detention	**27**	**88**	**NA**	0.15	3862	**193**	
CB-1 School Yard & Soccer Field Detention	**-11**	**7**	**14**	0.19	107	**7**	95.19
CBMH-4 East Side Yard (surface + underground) **	**41**	**111**	**143**	0.29	397	**121**	95.09
Parking Lot B3 & B4 Detention	**-21**	**31**	**53**	0.19	574	**33**	95.04
CB-3 Storage				0.19	360	**23**	95.04

CBMH-5 Storage			0.14	214	10	95.04

** *100 years available storage surface* ***V1 = 38 cum*** *+ 130 meters of underground 900mm dia pipe* ***V2 = 83 cum*** *, V total availabe storage 100 years required = 121* ***cum***

** *No surface storage requirements for 5 years, all storage in underground 900 dia pipe*

100+20% Ponding Elevations	5-year required (m3)	100-year required (m3)	100-year +20% required m^3	100 year + 20%Ponding depth (m)	Ponding area (m2)	100 Year + 20% Available (m3)	100 year + 20% Ponding Elev.
Roof Detention	27	88	NA	0.15	3862	193	
CB-1 School Yard & Soccer Field Detention	-11	7	14	0.24	169	14	95.24
CBMH-4 East Side Yard (surface + underground) **	41	111	143	0.34	543	145	95.14
Parking Lot B3 & B4 Detention	-21	31	53	0.22	795	53	95.07
CB-3 Storage				0.22	481	35	95.07
CBMH-5 Storage				0.17	314	18	95.07

100 years available storage surface ***V1 = 62cum*** *+ 130 meters of underground 900mm dia pipe* ***V2 = 83 cum*** *, V total availabe storage 100 years + 20% required =* ***145 cum***

No surface storage requirements for 5 years, all storage in underground 900 dia pipe

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B.1.5 - Storm Sewer Pipe Design

Definitions		Rational Method	Notes
Manning's Coefficient =	0.013	Q = 2.78 CIA (l/s), where	1) Used City of Ottawa IDF Curve
Return Frequency (yrs) =	5	C= Runoff Coefficient	2) Min. velocity = 0.8 m/sec
1 acre = 0.4047 hectares		i = Rainfall Intensity (mm/hr)	3) Max. velocity = 6.0 m/sec
		A = Areas in Hectares (ha)	

LOCATION		AREA (ha)		FLOW					SEWER DATA									
		C=	C=	Individual	Cum.	tc	$i_{5\ years}$	$i_{100\ years}$	$Flow_{5\ years}$	$Flow_{100\ years}$	Dia.	Slope	Length	Capacity	Velocity	Sect.Time	Tot. Time	Utilization
From	To	0.90	0.20	2.78CA	2.78CA	(min.)	(mm/hr)	(mm/hr)	(l/s)	(l/s)	(mm)	(%)	(m)	(full) (l/s)	(full) (m/s)	(minutes)	(minutes)	(%)
CB-2	CBMH-2	0.043	0.00	0.11	0.11	10.0	104.2	178.6	11.2	19.2	300	0.45	37.0	64.9	0.9	0.7	10.7	17
CBMH-2	CBMH-3	0.034	0.00	0.08	0.19	10.7	100.8	172.6	19.7	33.8	375	0.40	28.0	110.9	1.0	0.5	11.1	18
CB-1	CBMH-1	0.000	0.459	0.26	0.45	10.0	104.2	178.6	**45**	**45**	300	1.00	65.7	96.7	1.4	0.8	10.8	47
CBMH-1	CBMH-3	0.000	0.306	0.17	0.17	10.0	104.2	178.6	62.7	75.4	375	0.40	39.5	110.9	1.0	0.7	10.7	57
CBMH-3	STMH-4	0.186	0.000	0.47	0.64	10.0	104.2	178.6	130.9	158.5	450	0.40	62.5	180.3	1.1	0.9	10.9	73
CBMH-4	STMH-4	0.256	0.240	0.77	1.41	10.0	104.2	178.6	**39.9**	**39.9**	300	0.45	14.5	64.9	0.9	0.3	10.3	62
STMH-4	STMH-3					10.7	100.9	172.8	170.8	158.5	450	1.00	42.5	285.1	1.8	0.4	11.1	60
STMH-3	NODE					11.1	99.0	169.5	170.8	203.5	600	0.50	35.8	434.1	1.5	0.4	11.4	39
CB-3	CBMH-5	0.229	0.115	0.64	0.64	10.0	104.2	178.6	66.3	113.6	300	1.20	49.5	105.9	1.5	0.6	10.6	63
CBMH-5	NODE	0.105	0.014	0.27	0.27	10.0	104.2	178.6	**130**	**130**	375	3.00	9.5	303.7	2.7	0.1	10.1	43
NODE	STMH-2					11.4	97.2	166.4	300.8	333.5	600	0.50	16.9	434.1	1.5	0.2	11.6	69
STMH-2	STMH-1					11.6	96.3	165.0	300.8	333.5	600	0.50	42.4	434.1	1.5	0.46	12.1	69
BUILDING	STMH-1	ROOF Drains				10.0	104.2	178.6	**55.5**	**55.5**	250	2.00	6.5	84.1	1.7	0.06	10.1	66
STMH-1	EX-STMH					12.1	94.3	161.5	356.3	389.0	*750*	*0.30*	*18.5*	609.7	1.4	0.2	12.3	58
										Existing on Miikana Rd.								

Flow control installed at outlet

Orifice Diameter Calculation

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Design Parameters*

Pipe Area Formula: A = Q/(C(2gh)^0.5))

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)
95.24	93.53	300.0	1.560

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
45.0	0.61	9.8	1.56	0.013	0.130	130

CBMH-5

Elevation at Top of Ponding	Elevation at Pipe Invert	Size of Outlet Pipe	Head from Centroid (h)
(m)	(m)	(mm)	(m)
95.07	92.41	375.0	2.473

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
130.0	0.61	9.8	2.47	0.031	0.197	197

CBMH-4

Elevation at Top of Ponding	Elevation at Pipe Invert	Size of Outlet Pipe	Head from Centroid (h)
(m)	(m)	(mm)	(m)
95.14	92.66	300.0	2.330

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
39.9	0.61	9.8	2.33	0.010	0.111	111

Appendix C - Sanitary Servicing Calculations

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Appendix C - Sanitary Sewer Design Sheet

C.1.1 - Peak Flow Design Based on Site Area

Definitions
Manning's Coefficient (n) = 0.013

Manning's Formula
Q = $A*R^{2/3}*S^{1/2}/n$ (l/s), where
A = Areas in Hectares (ha)
R = Hydraulic Radius (m)
S = Slope

Design Parameters*
1) Average Daily Flow = 280 L/p/day
2) Commercial/Institutional Flow = 28,000 L/ha/day
3) Maximum Residential Peak Factor = 4
4) Commercial/Institutional Peak Factor = 1.50
5) Extraneous Flow = 0.33L/s/ha
6) Minimum Velocity = 0.6 m/s

Designed RI
Checked AS

Location			Residential Flow							Institutional Flow				Infiltration Flow			Total Flow		Sewer Data				
						Cumulative		Average Flow	Peak Flow	Area (ha)		Average Flow	Peak Flow	Area (ha)		Inf. Flow	Average Flow	Peak Flow	Dia.	Slope	Capacity	Velocity	Utilization
Note	From	To	Area (ha)	Units	Population	Area	Population	(l/s)	(l/s)	Individual	Cumulative	(l/s)	(l/s)	Individual	Cumulative	(l/s)	(l/s)	(l/s)	(mm)		(full) (l/s)	(full) (m/s)	(%)
School	School	SAMH-1	0.00	0	0	0.00	0	0.00	0.00	2.5	2.5	0.82	1.23	2.54	2.54	0.84	1.66	2.07	200	2.00%	46.4	1.5	4.5
Municipal Connection	SAMH-1	Ex. MH	0.00	0	0	0.00	0	0.00	0.00	0.00	2.5	0.00	1.23	0.00	2.54	0.84	0.84	2.07	200	0.38%	20.2	0.6	10.3

Appendix D - Fire Flow Demand Calculations

New School Findlay Creek_820 Mikkana Drive_Ottawa

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Appendix D- Fire Flow Demand Requirements

D.1.1 - Fire Flow Demand Requirements (Fire Underwritters Survey (FUS Guidelines))

Fire Flow Formula

Estimated Fire Flow Formula: $F=220*C*A^{1/2}$(L/min)

Designed ZB
Checked AS
Dwg. Reference C1
Jp2g project No 21-5124

F = Required fire flow (L/min)
C = Coefficient related to the type of construction
$C_{1.5}$ = 1.5 for wood frame construction
$C_{1.0}$ = 1.0 for ordinary construction
$C_{0.8}$ = 0.8 for non-combustible construction
$C_{0.6}$ = 0.6 for fire-resistive construction
A = Total floor area in square metres

New School Building

Design Parameters*

Type of Building Construction = Type II (Noncombustible)
Floor Area*** = 7300.0 m^2
Occupancy and Contents Class Limited combustible
Sprinkler System = Automatic sprinkler system conforming to NFPA standards
Sprinkler Building Coverage = Complete building coverage
Factor of Building Coverage X = 1
Number of Storeys = 2

Exposure Parameters*

	West	North	East	South	
Separation Distance =	over 30m	over 30m	over 30m	28.7	m
Length of Exposed Wall =	NA	NA	NA	21.1	m
Length-Height Factor =	NA	NA	NA	21.1	m·storeys (up to a maximum of 5-storeys)

				Adjustments (increases or decreases)											
Building Construction	**Floor Area*** **	**Coefficient**	**A**	**B = A +/- %**		**C = B x %**		**D = B x %**						**Final Adjusted Fire Flow**	**Final Adjusted Fire Flow**
			Fire Flow (F)	**Occupancy**		**Sprinkler**		**Exposure*** **							
	(m^2)		(L/min)	%	Adjusted Fire Flow(s) (L/min)	%	Fire Adjustment Flow(s) (L/min)	West	North	East	South	Total Exposure	Fire Adjustment Flow(s) (L/min)	E = B - C + D (L/min)*	(L/s)
Type II (Noncombustible)	7,300.0	0.8	15,000.0	-0.15	12,750.0	50%	6,375.0	0%	0%	0%	2%	2%	255.0	7,000.0	116.7

*Water Supply for Public Protection (Fire Underwriters Survey, 2020).
***Including all stories

New School Findlay Creek_820 Mikkana Drive_Ottawa Portables Check

Jp2g Consultants Inc.
ENGINEERS · PLANNERS · PROJECT MANAGERS

Appendix D- Fire Flow Demand Requirements

D.1.1 - Fire Flow Demand Requirements (Fire Underwritters Survey (FUS Guidelines))

Fire Flow Formula

Estimated Fire Flow Formula: $F=220*C*A^{1/2}$(L/min)

Designed ZB
Checked AS
Dwg. Reference C1
Jp2g project No 21-5124

F = Required fire flow (L/min)
C = Coefficient related to the type of construction
$C_{1.5}$ = 1.5 for wood frame construction
$C_{1.0}$ = 1.0 for ordinary construction
$C_{0.8}$ = 0.8 for non-combustible construction
$C_{0.6}$ = 0.6 for fire-resistive construction
A = Total floor area in square metres

New School Building

Design Parameters*

Type of Building Construction = Type V (Mass Timber)
Floor Area*** = 244.0 m^2
Occupancy and Contents Class Limited combustible
Sprinkler System =
Sprinkler Building Coverage = Partial building coverage of X%
Factor of Building Coverage X = 0
Number of Storeys = 1

Exposure Parameters*

	West	North	East	South	
Separation Distance =	18.1	28.7	5.9	over 30m	m
Length of Exposed Wall =	32.0	7.514	32	NA	m
Length-Height Factor =	32.0	15.028	32	NA	m-storeys (up to a maximum of 5-storeys)

Building Construction	Floor Area***	Coefficient	A	Adjustments (increases or decreases)										Final Adjusted Fire Flow	Final Adjusted Fire Flow
			Fire Flow (F)	B = A +/- % Occupancy		C = B x % Sprinkler		D = B x % Exposure***							
Type V (Mass Timber)	(m^2)		(L/min)	%	Adjusted Fire Flow(s) (L/min)	%	Fire Adjustment Flow(s) (L/min)	West	North	East	South	Total Exposure	Fire Adjustment Flow(s) (L/min)	E = B - C + D (L/min)*	(L/s)
	244.0	1.5	5,000.0	-0.15	4,250.0	0%	0.0	11%	0%	16%	0%	27%	1,147.5	5,000.0	83.3

*Water Supply for Public Protection (Fire Underwriters Survey, 2020).
***Including all stories

Appendix E - Subdivision Reference Documents and Drawings

REPORT
Project: 33956-5.2.2

DESIGN BRIEF
PATHWAYS AT FINDLAY CREEK
4800 BANK STREET
(REMER LANDS)
PHASE 1
LEITRIM DEVELOPMENT AREA

Prepared for LEITRIM SOUTH HOLDINGS INC.
by IBI GROUP

REVISED: AUGUST, 2017

REVIEWED BY
DEVELOPMENT REVIEW SERVICES BRANCH

Signed _____

Date _____ 2017

Plan Number _____

No.	REVISIONS	By	Date
16	RECORD DRAWING	J.I.M.	2020:10:27
15	ADD 6mX2m CONCRETE TO 2m ASPHALT WALKWAYS BLOCKS	J.I.M.	2019:08:01
14	REVISED BANK ST.- DUN SKIPPER DR. INTERSECTION GEOMETRY	J.I.M.	2018:05:16
13	REVISED SERVICES FOR PARK BLK 231 REVISED SERVICE LOCATION LOT 124 REVISED ECB15 & TCB126 LOCATIONS	J.I.M.	2018:03:09
12	REVISED SERVICE LOCATION BLOCK 225	J.I.M.	2018:02:09
11	REVISED PER HYDRO OTTAWA DESIGN	J.I.M.	2018:02:02
10	REVISED RYCB 105 TO CBMH 105	J.I.M.	2018:01:23
9	REMOVED RYCB 126, ADD PERF PIPE CB126 TO TCB16, FLIPPED UNITS LOTS 9 & 10, REVISE SERVICE LOCATION LOT 16	J.I.M.	2017:12:11
8	REVISED WATERMAIN DUN SKIPPER DR. STA 1+160 TO BANK ST.	J.I.M.	2017:12:06
7	ISSUED FOR MYLARS	J.I.M.	2017:11:02
6	ISSUED FOR CONSTRUCTION	J.I.M.	2017:09:21
5	REVISED BLOCK NUMBERS	J.I.M.	2017:08:11
4	RE-SUBMISSION FOR MOECC APPROVAL & REVISED STREET NAMES	J.I.M.	2017:08:02
3	SUBMISSION FOR MOECC APPROVAL	J.I.M.	2017:07:07
2	SUBMISSION No.2 FOR CITY REVIEW	J.I.M.	2017:05:12
1	SUBMISSION No.1 FOR CITY REVIEW	J.I.M.	2016:11:23

LEITRIM SOUTH HOLDINGS INC.

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

Project Title

pathways at FINDLAY CREEK

LICENSED PROFESSIONAL ENGINEER
J. I. MOFFATT
2020/10/27
PROVINCE OF ONTARIO

Drawing Title

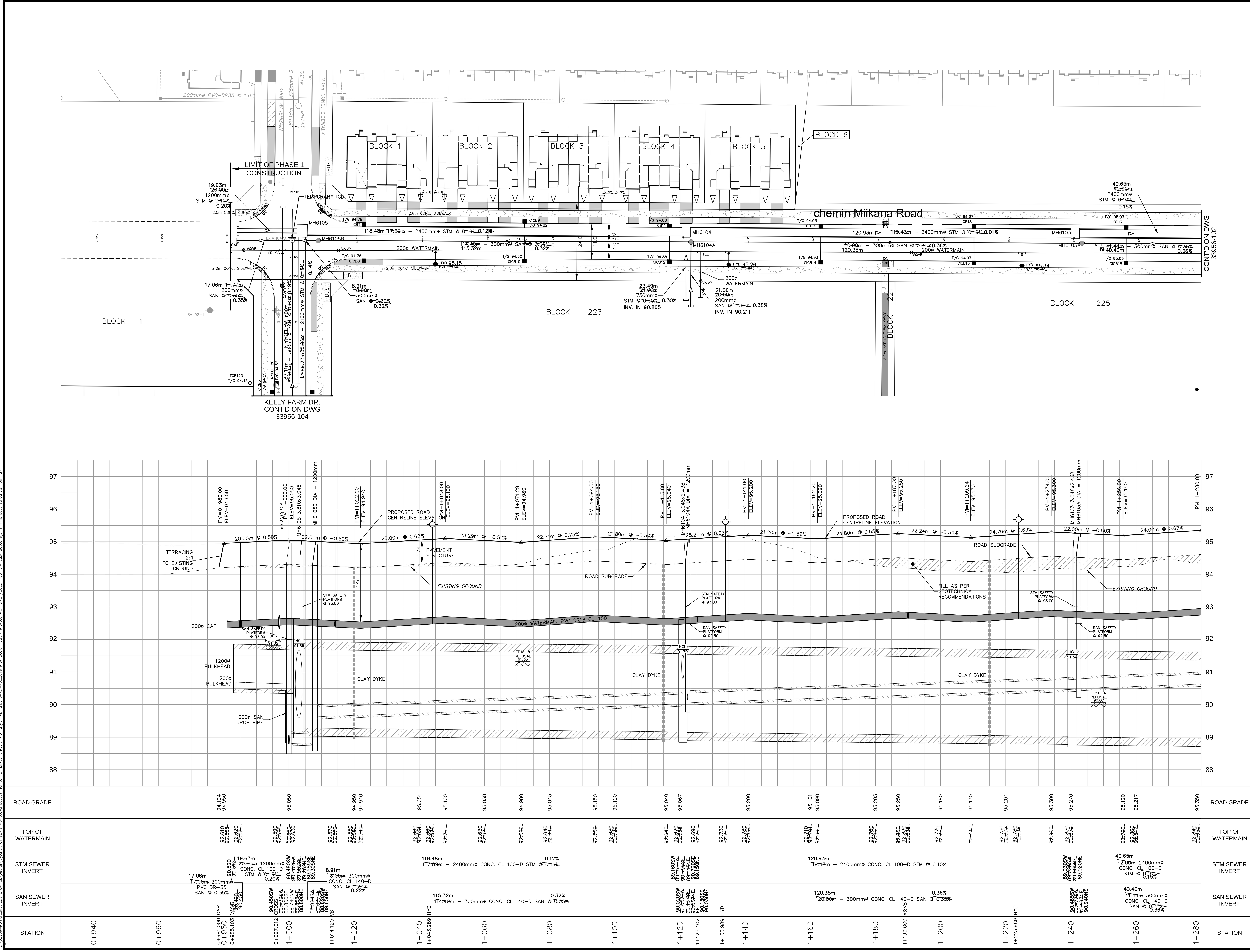
GENERAL PLAN OF SERVICES

Scale 1:1000

Design	Date
J.I.M.	NOV 2016
Drawn	Checked
D.D.	----
Project No.	Drawing No.
33956	100

D07-16-13-0023

#17367



REVIEWED BY
DEVELOPMENT REVIEW SERVICES BRANCH

Signed ____________

Date ____________ 2017

Plan Number ____________

No.	REVISIONS	By	Date
14			
13			
12			
11			
10	RECORD DRAWING	J.I.M.	2020:10:27
9	REVISED SANITARY PIPE MATERIAL TYPE BETWEEN MH6102A AND MH6105B	J.I.M.	2018:02:09
8	REVISED PER HYDRO OTTAWA DESIGN	J.I.M.	2018:02:02
7	ISSUED FOR MYLARS	J.I.M.	2017:11:02
6	ISSUED FOR CONSTRUCTION	J.I.M.	2017:09:21
5	REVISED BLOCK NUMBERS	J.I.M.	2017:08:11
4	RE-SUBMISSION FOR MOECC APPROVAL & REVISED STREET NAMES	J.I.M.	2017:08:02
3	SUBMISSION FOR MOECC APPROVAL	J.I.M.	2017:07:07
2	SUBMISSION No.2 FOR CITY REVIEW	J.I.M.	2017:05:12
1	SUBMISSION No.1 FOR CITY REVIEW	J.I.M.	2016:11:23

LEITRIM SOUTH HOLDINGS INC.

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ibigroup.com

Project Title

pathways at FINDLAY CREEK

LICENSED PROFESSIONAL ENGINEER
J. I. MOFFATT
2018/06/22
PROVINCE OF ONTARIO

N

Drawing Title

MIIKANA ROAD

KELLY FARM DR. TO STA 1+280

Scale
HORIZ. SCALE 1 : 500
VERT. SCALE 1 : 50

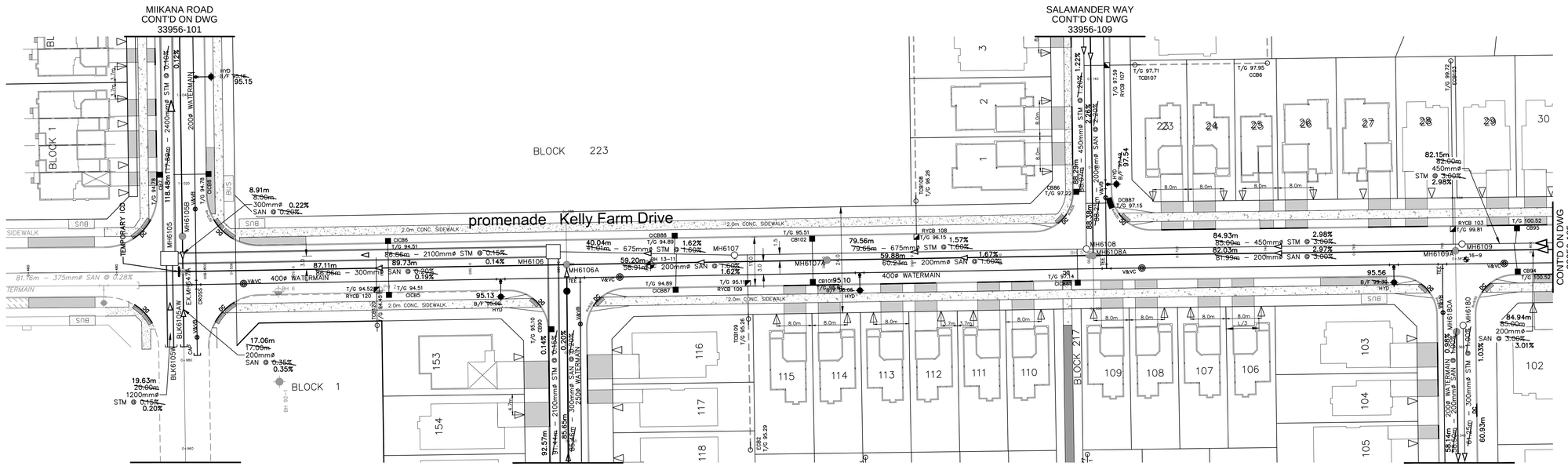
Design	Date
J.I.M.	NOV 2016

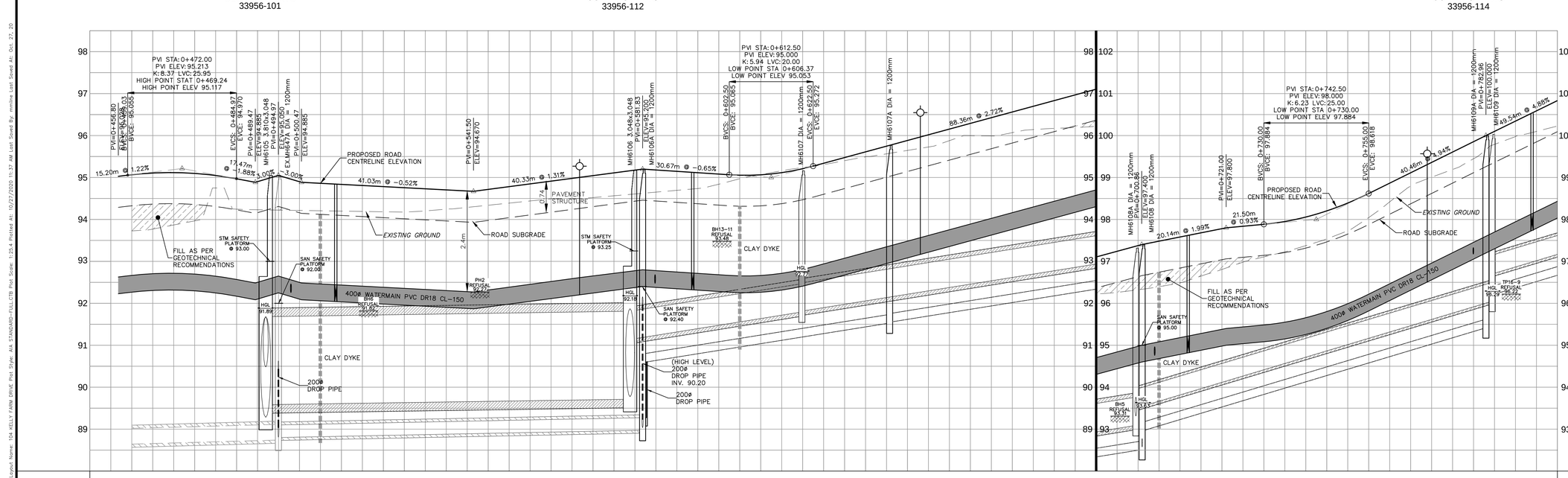
Drawn	Checked
D.D.	----

Project No.	Drawing No.
33956	101

D07-16-13-0023

#17367





ROAD GRADE	95.028 95.055	95.117	95.048	94.970	94.885	95.050	94.885	94.783	94.678 94.670	94.913	95.176 95.200	95.082 95.065	95.053	95.209 95.272	95.747	96.290	96.833	97.400	97.800	97.884	98.057	98.618 98.865	99.854 100.000	100.832	ROAD GRADE
TOP OF WATERMAIN	92.628 92.655	92.717	92.648	92.570	92.485	92.590 92.520	92.520 92.540	92.465	92.460 92.443	92.400 92.564	92.780 92.742	92.280 92.543 92.513	92.520 92.541	92.600 92.543	92.780 92.742	93.330 93.542	93.540 93.566	93.890 93.941	94.420 94.433	95.020 95.042	95.130 95.094	95.180 95.524	95.410 95.542	95.484	95.650 95.562	96.818	95.410 95.465	96.880 96.948	97.510 97.462	97.570 97.550	98.110 98.142	98.440 98.432	TOP OF WATERMAIN
STM SEWER INVERT					89.305NE 89.480SW 89.485NE 89.565SE	89.73m 89.56m – 2100mmø CONC. CL 100–D STM @ 0.14% 89.710NW 89.770SW 89.775NE 91.135SE						40.04m 41.01m 675mmø CONC. CL 100–D STM @ 1.69% 1.62%		91.79NW 91.844SE 91.844SE 91.820SE				79.56m 79.65m – 675mmø CONC. CL 100–D STM @ 1.57% 93.070NW 93.120SE 93.120SE 93.500SE				84.93m 85.00m – 450mmø CONC. CL 65–D STM @ 2.98% 3.06%				82.15m 82.00m 450mmø CONC. CL 65–D STM @ 2.98% 3.06% 96.030NW 96.080SE 96.700SE			STM SEWER INVERT
SAN SEWER INVERT	EX. 375mmø CONC. SAN @ 0.28%				88.740NW 88.820NE 88.820NE 88.900SE	87.11m 86.66m – 300mmø CONC. CL 140–D SAN @ 0.19% 0.26%		V&VC	HYD		88.965NW 89.025SW 89.030NE 91.945SW	59.20m 59.91m – 200mmø PVC DR–35 SAN @ 1.62% 1.60%				91.520NW 91.580SW 91.585NE 91.535SE	59.88m 60.23m – 200mmø PVC DR–35 SAN @ 1.67% 1.66%	HYD		92.540NW 92.600SW 92.605NE 92.960SE	V&VC		82.03m 81.99m – 200mmø PVC DR–35 SAN @ 2.97% 3.06%		HYD		TEE	95.400NW 95.460SW 95.465NE 96.140SE	84.94m 85.00m 200mmø PVC DR–35 SAN @ 3.06% 3.01%		SAN SEWER INVERT
STATION	0+460	0+480	0+497.958 CROSS 0+500	0+508.659	V&VC	0+520	0+540	0+560	0+566.797	HYD	0+580	0+584.806 TEE	0+593.787 V&VC	0+600	0+620	0+640	0+648.066	HYD	0+660	0+680	0+700	0+703.961	V&VC	0+711.960	0+720	0+740	0+760	0+768.957	HYD	0+779.956	TEE	0+780	0+793.956	V&VC	0+800	STATION

No.	REVISIONS	By	Date
14			
13			
12			
11			
10	RECORD DRAWING	J.I.M.	2020:10:27
9	REVISED STORM PIPE CLASS	J.I.M.	2018:02:09
8	REVISED PER HYDRO OTTAWA DESIGN	J.I.M.	2018:02:02
7	ISSUED FOR MYLARS	J.I.M.	2017:11:02
6	ISSUED FOR CONSTRUCTION	J.I.M.	2017:09:21
5	REVISED BLOCK NUMBERS	J.I.M.	2017:08:11
4	RE-SUBMISSION FOR MOECC APPROVAL & REVISED STREET NAMES	J.I.M.	2017:08:02
3	SUBMISSION FOR MOECC APPROVAL	J.I.M.	2017:07:07
2	SUBMISSION No.2 FOR CITY REVIEW	J.I.M.	2017:05:12
1	SUBMISSION No.1 FOR CITY REVIEW	J.I.M.	2016:11:23

REVIEWED BY
DEVELOPMENT REVIEW SERVICES BRANCH

Signed _____

Date _____ 2017

Plan Number _____

LEITRIM SOUTH HOLDINGS INC.

IBI GROUP
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Project Title
pathways at FINDLAY CREEK

PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO
J. I. MOFFATT
2018/06/22

Drawing Title
KELLY FARM DRIVE
MIIKANA RD. TO STA 0+805

Scale
HORIZ. SCALE 1 : 500
VERT. SCALE 1 : 50

Design	Date
J.I.M.	NOV 2016
Drawn	Checked
D.D.	----
Project No.	Drawing No.
33956	104

D07-16-13-0023

#17367

† Pathways at Findlay Creek Phase 1 West modeled flow is from the DDSWMM output file 33956-PH1W-3CHI2.out, 33956-PH1W-3CHI5.out and 33956-PH1W-3CHI100.out which are all presented on the CD in **Appendix E**.

The assigned size of the inlet control devices (ICDs) for the subject site was optimized using DDSWMM. ICDs are incorporated into the stormwater management design to protect the minor system from surcharge during major storm events. The ICDs used for Phase 1 are provided on **Drawing 010**. It should be noted that due to the increased minor system capture at low points flow, there were a few instances where the flow restriction into the minor system was the capacity of the CB inlet. These include one CB on S6115B, one CB on S6183A, one CB on S6107 (indicated in bold in **Table 4.4**). Calculations demonstrating the capacity of the CBs within a road sag is presented in **Appendix E**. In addition, there are two instances where the CB lead is the restriction for the inflow to the minor system. These include S6115B and S6155B. Calculations supporting the lead size for the inflow restriction are provided in **Appendix E**.

For those areas within Phase 1 which will require a separate site stormwater design and analysis, the following table summarizes the assumed inflow rate and minimum on-site storage required for their design.

Table 4.5 Summary of Minimum On-Site Storage and Minor System Inflow Rate for External Development Lands to Phase 1

Drainage Area		Land Use	IMP Ratio (%)	Minimum On-Site Storage Required (m^3)*	Minor System Inflow Rate (l/s)
Segment ID	Area (ha)				
EXT3	2.50	High Density	79	125.00	469
HD1	1.02	High Density	86	100.00	206
PARK1	0.83	Park	14	150.00	38
HD2	0.94	High Density	86	115.00	190
INST	2.55	School	79	290.00	476
EXT4	4.06	Commercial	79	462.00	760
COM	3.01	Commercial	79	345.00	562

** The on-site storage noted was used to evaluate Phase 1. As a minimum this on-site storage should be provided.*

4.9.3 Simulation Results

Minor system hydrographs generated in DDSWMM were downloaded to the XPSWMM model for hydraulic grade line analysis (refer to **Section 4.10**).

The storage available on-site and its maximum depth and the results of the DDSWMM evaluation for the subject site are presented in **Table 4.6**. Also included in **Table 4.6**, is the duration of ponding and depth of ponding for the 2 year, 5 year, 100 year and July 1, 1979 historical storm events. The ponding plan for the subject site is presented on **Drawing 751**. The DDSWMM output files are presented in **Appendix E**.

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LEGEND
Red text High level sanitary sewer

SANITARY SEWER DESIGN SHEET

Remer Lands Phase 1
City of ottawa
Leitrim South Holdings Inc. (Regional Group)

LOCATION				RESIDENTIAL										ICI AREAS							INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA	UNIT TYPES				AREA	POPULATION		PEAK	PEAK	AREA (Ha)						PEAK	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY	AVAILABLE CAPACITY	
STREET	AREA ID	FROM MH	TO MH	w/ Units (Ha)	SF	SD	TH	APT	w/o Units (Ha)	IND	CUM	FACTOR	FLOW (L/s)	INSTITUTIONAL IND	INSTITUTIONAL CUM	COMMERCIAL IND	COMMERCIAL CUM	INDUSTRIAL IND	INDUSTRIAL CUM	FLOW (L/s)	IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(full) (m/s)	L/s	(%)
Dun Skipper Road	6132Aa	MH6132A	MH6133A	0.64	10					32.0	32.0	4.00	0.52		0.00		0.00		0.00	0.00	0.64	0.64	0.18		0.00	0.70	43.28	82.00	200	1.60	1.335	42.58	98.39%
				DRAFT 2016 UPDATED SERVICEABILITY REPORT																													
Street No. 7	EXT2		BLK6133AS						2.88	123.8	123.8	4.00	2.01		0.00		0.00		0.00	0.00	2.88	2.88	0.81										
Street No. 7	6133Ab	BLK6133AS	MH6133A	0.07						0.0	123.8	4.00	2.01		0.00		0.00		0.00	0.00	0.07	2.95	0.83		0.00	2.83	24.19	44.00	200	0.50	0.746	21.36	88.29%
Dun Skipper Road	6133Aa	MH6133A	MH6134A	0.58	10					32.0	187.8	4.00	3.04		0.00		0.00		0.00	0.00	0.58	4.17	1.17		0.00	4.21	37.48	72.14	200	1.20	1.156	33.27	88.76%
Dun Skipper Road	6134A	MH6134A	MH6135A	0.66	12					38.4	226.2	4.00	3.67		0.00		0.00		0.00	0.00	0.66	4.83	1.35		0.00	5.02	28.63	72.09	200	0.70	0.883	23.61	82.47%
Dun Skipper Road	6135A	MH6135A	MH6136A	0.19	3					9.6	235.8	4.00	3.82		0.00		0.00		0.00	0.00	0.19	5.02	1.41		0.00	5.23	28.63	24.81	200	0.70	0.883	23.40	81.74%
				DRAFT 2016 UPDATED SERVICEABILITY REPORT																													
Easement	EXT3	BLK6145A	MH6146A	2.50						250.8	250.8	4.00	4.06		0.00		0.00		0.00	0.00	2.50	2.50	0.70		0.00	4.76	21.64	22.70	200	0.40	0.667	16.88	77.99%
Easement		MH6146A	MH6136A							0.0	250.8	4.00	4.06		0.00		0.00		0.00	0.00	0.00	2.50	0.70		0.00	4.76	21.64	46.46	200	0.40	0.667	16.88	77.99%
				DRAFT 2016 UPDATED SERVICEABILITY REPORT																													
	EXT4	BLK6138A	MH6138A							0.0	0.0	4.00	0.00		0.00	4.07	4.07		0.00	3.53	4.07	4.07	1.14		0.00	4.67	20.24	20.00	200	0.35	0.624	15.57	76.92%
Dun Skipper Road	6138A	MH6138A	MH6137A	0.08						0.0	0.0	4.00	0.00		0.00		4.07		0.00	3.53	0.08	4.15	1.16		0.00	4.69	20.24	32.25	200	0.35	0.624	15.55	76.81%
Dun Skipper Road	6137A	MH6137A	MH6136A	0.10						0.0	0.0	4.00	0.00		0.00		4.07		0.00	3.53	0.10	4.25	1.19		0.00	4.72	20.24	44.44	200	0.35	0.624	15.52	76.67%
Cedar Creek Drive	6136A	MH6136A	MH6121A	0.04						0.0	486.6	3.98	7.85		0.00		4.07		0.00	3.53	0.04	11.81	3.31		0.00	14.69	20.24	28.03	200	0.35	0.624	5.56	27.45%
Cedar Creek Drive	6121A	MH6121A	MH6120A	0.03						0.0	486.6	3.98	7.85		0.00		4.07		0.00	3.53	0.03	11.84	3.32		0.00	14.69	20.24	12.97	200	0.35	0.624	5.55	27.41%
Cedar Creek Drive	6120A	MH6120A	MH6119A	0.10						0.0	486.6	3.98	7.85		0.00		4.07		0.00	3.53	0.10	11.94	3.34		0.00	14.72	20.24	53.29	200	0.35	0.624	5.52	27.27%
Pingwi Place	6132Ab	MH6132A	MH6161A	0.25	3					9.6	9.6	4.00	0.16		0.00		0.00		0.00	0.00	0.25	0.25	0.07		0.00	0.23	56.22	77.03	200	2.70	1.734	56.00	99.60%
Pingwi Place	6161A	MH6161A	MH6162A	0.22	3					9.6	19.2	4.00	0.31		0.00		0.00		0.00	0.00	0.22	0.47	0.13		0.00	0.44	24.19	11.41	200	0.50	0.746	23.75	98.17%
Pingwi Place	6162A	MH6162A	MH6163A	0.62	14					44.8	64.0	4.00	1.04		0.00		0.00		0.00	0.00	0.62	1.09	0.31		0.00	1.34	20.24	74.88	200	0.35	0.624	18.90	93.37%
Pingwi Place	6163A	MH6163A	MH6164A	0.44			12			28.8	92.8	4.00	1.50		0.00		0.00		0.00	0.00	0.44	1.53	0.43		0.00	1.93	20.24	86.35	200	0.35	0.624	18.31	90.46%
Pingwi Place	6164A	MH6164A	MH6119A	0.40			11			26.4	119.2	4.00	1.93		0.00		0.00		0.00	0.00	0.40	1.93	0.54		0.00	2.47	29.63	86.29	200	0.75	0.914	27.16	91.66%
Block 429	COM	BLK6119AE	MH6119A							0.0	0.0	4.00	0.00		0.00	3.01	3.01		0.00	2.61	3.01	3.01	0.84		0.00	3.46	45.12	20.00	300	0.20	0.618	41.66	92.34%
Cedar Creek Drive	6119A	MH6119A	MH6118A	0.05						0.0	605.8	3.93	9.64		0.00		7.08		0.00	6.15	0.05	16.93	4.74		0.00	20.53	45.12	28.01	300	0.20	0.618	24.58	54.49%
Cedar Creek Drive	6118A	MH6118A	MH6117A	0.07						0.0	605.8	3.93	9.64		0.00		7.08		0.00	6.15	0.07	17.00	4.76		0.00	20.55	45.12	33.76	300	0.20	0.618	24.57	54.45%
Block 443	HD1	BLK6117AW	MH6117A	1.03						129.6	129.6	4.00	2.10		0.00		0.00		0.00	0.00	1.03	1.03	0.29		0.00	2.39	20.24	20.00	200	0.35	0.624	17.85	88.20%
Cedar Creek Drive	6117A	MH6117A	MH6116A	0.55			17			40.8	776.2	3.87	12.16		0.00		7.08		0.00	6.15	0.55	18.58	5.20		0.00	23.51	45.12	75.05	300	0.20	0.618	21.60	47.89%
Cedar Creek Drive	6116A	MH6116A	MH6115A	0.52			17			40.8	817.0	3.85	12.76		0.00		7.08		0.00	6.15	0.52	19.10	5.35		0.00	24.25	59.68	67.16	300	0.35	0.818	35.43	59.36%
Salamander Way	6156Aa	MH6156A	MH6157A	0.29	3					9.6	9.6	4.00	0.16		0.00		0.00		0.00	0.00	0.29	0.29	0.08		0.00	0.24	31.55	74.63	200	0.85	0.973	31.31	99.25%
Salamander Way	6157A	MH6157A	MH6158A	0.07			1			2.4	12.0	4.00	0.19		0.00		0.00		0.00	0.00	0.07	0.36	0.10		0.00	0.30	34.22	12.28	200	1.00	1.055	33.92	99.14%
Salamander Way	6158A	MH6158A	MH6153A	0.54			14			33.6	45.6	4.00	0.74		0.00		0.00		0.00	0.00	0.54	0.90	0.25		0.00	0.99	56.22	106.46	200	2.70	1.734	55.23	98.24%
Block 436	PARK	BLK6153C	MH6153A						0.83	0.0	0.0	4.00	0.00		0.00		0.00		0.00	0.00	0.83	0.83	0.23		0.00	0.23	24.19	13.25	200	0.50	0.746	23.96	99.04%
Salamander Way	6153A	MH6153A	MH6154A	0.03						0.0	45.6	4.00	0.74		0.00		0.00		0.00	0.00	0.03	1.76	0.49		0.00	1.23	28.63	10.53	200	0.70	0.883	27.40	95.70%
Salamander Way	6154A	MH6154A	MH6115A	0.13						0.0	45.6	4.00	0.74		0.00		0.00		0.00	0.00	0.13	1.89	0.53		0.00	1.27	24.19	76.18	200	0.50	0.746	22.93	94.76%
Cedar Creek Drive	6115A	MH6115A	MH6101A	0.61			18			43.2	905.8	3.83	14.04		0.00		7.08		0.00	6.15	0.61	21.60	6.05		0.00	26.24	59.68	87.15	300	0.35	0.818	33.44	56.04%
Miikana Road	6101A	MH6101A	MH6102A	0.45			11			26.4	932.2	3.82	14.42		0.00		7.08		0.00	6.15	0.45	22.05	6.17		0.00	26.74	59.68	91.17	300	0.35	0.818	32.94	55.19%
Block 436	HD2	BLK6102AS	MH6102A	0.94						115.2	115.2	4.00	1.87		0.00		0.00		0.00	0.00	0.94	0.94	0.26		0.00	2.13	20.24	20.00	200	0.35	0.624	18.11	89.48%
Miikana Road	6102A	MH6102A	MH6103A	0.23			6			14.4	1061.8	3.78	16.27		0.00		7.08		0.00	6.15	0.23	23.22	6.50		0.00	28.92	59.68	41.44	300	0.35	0.818	30.76	51.54%
Miikana Road	6103A	MH6103A	MH6104A	0.66			18			43.2	1105.0	3.77	16.88		0.00		7.08		0.00	6.15	0.66	23.88	6.69		0.00	29.72	59.68	120.00	300	0.35	0.818	29.97	50.21%
Block 450	INST	BLK6104AS	MH6104A							0.0	0.0	4.00	0.00	2.55	2.55		0.00		0.00	2.21	2.55	2.55	0.71		0.00	2.93	20.24	20.00	200	0.35	0.624	17.32	85.54%
Miikana Road	6104A	MH6104A	MH6105B	0.60			15			36.0	1141.0	3.76	17.39		2.55		7.08		0.00	8.36	0.60	27.03	7.57		0.00	33.32	59.68	114.40	300	0.35	0.818	26.36	44.17%
Miikana Road		MH6105B	*EX. MH647A*							0.0	1141.0	3.76	17.39		2.55		7.08		0.00	8.36	0.00	27.03	7.57		0.00	33.32	45.12	8.00	300	0.20	0.618	11.80	26.15%
Kelly Farm Drive		*EX. MH647A*	*EX. MH742A*	*0.28*			*5*			*12.0*	3538.6	3.38	48.46		2.55		7.08		0.00	8.36	0.28	75.56	21.16		0.00	77.97	101.84	*80.31*	*375*	*0.31*	0.893	23.87	23.43%

Design Parameters:

Residential

SF	3.2	p/p/u
TH/SD	2.4	p/p/u
APT	1.9	p/p/u
Other	43	p/p/Ha

ICI Areas

			Peak Factor
INST	50,000	L/Ha/day	1.5
COM	50,000	L/Ha/day	1.5
IND	35,000	L/Ha/day	MOE Chart
	17000	L/Ha/day	

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 350 L/day 300 L/day
3. Infiltration allowance: 0.28 L/s/Ha
4. Residential Peaking Factor:
Harmon Formula = 1+(14/(4+P^0.5))
where P = population in thousands

Designed: WY
Checked: JM
Dwg. Reference: 501, 501A

No.	Revision	Date
1.	City Submission No. 1	11/23/2016
2.	City Submission No. 2	5/12/2017
3.	City Submission No. 3	7/5/2017
4.	Updated Street Name for MOE Submission	8/3/2017

File Reference: 33956.5.7.1
Date: 5/10/2017
Sheet No: 2 of 2

REVIEWED BY
DEVELOPMENT REVIEW SERVICES BRANCH

Signed _____

Date _____ 2017

Plan Number _____

LEGEND :

6115A
0.81 43.2

- AREA NUMBER
- POPULATION
- AREA IN HECTARES
- FUTURE FLOW DIRECTION

No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9			
8			
7			
6			
5	REVISED BLOCK NUMBERS	J.I.M.	2017:08:11
4	RE-SUBMISSION FOR MOECC APPROVAL & REVISED STREET NAMES	J.I.M.	2017:08:02
3	SUBMISSION FOR MOECC APPROVAL	J.I.M.	2017:07:07
2	SUBMISSION No.2 FOR CITY REVIEW	J.I.M.	2017:05:12
1	SUBMISSION No.1 FOR CITY REVIEW	J.I.M.	2016:11:23

LEITRIM SOUTH
HOLDINGS INC.

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

Project Title

pathways
at FINDLAY CREEK

LICENSED PROFESSIONAL ENGINEER
J. I. MOFFATT
2017/08/02
PROVINCE OF ONTARIO

Drawing Title

SANITARY DRAINAGE
AREA PLAN

Scale
1 : 1000

Design	Date
J.I.M.	NOV 2016
Drawn	Checked
D.D.	----
Project No.	Drawing No.
33956	501

D07-16-13-0023

#17367

IBI GROUP
333 PRESTON STREET
OTTAWA, ONTARIO
K1S 5N4

WATERMAIN DEMAND CALCULATION SHEET

PROJECT : LEITRIM SOUTH HOLDINGS INC. - PHASE 1
LEITRIM DEVELOPMENT AREA
LOCATION : CITY OF OTTAWA

FILE: 33956-5.7
DATE PRINTED: 17-Nov-16
DESIGN: L.E.
PAGE: 1 OF 1

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	SINGLE FAMILY UNITS	TOWN HOUSE UNITS	MEDIUM DENSITY (ha)	POPULATION	INDUST. (ha)	COMM. (ha)	INSTIT. (ha)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
S6A-110	8			27			2.46	0.11	1.42	1.53	0.28	2.14	2.41	0.61	3.84	4.45	15,000
S6A-120	18			61				0.25		0.25	0.62		0.62	1.36		1.36	10,000
S6A-130	24			82				0.33		0.33	0.83		0.83	1.82		1.82	10,000
S6A-140	12			41				0.17		0.17	0.41		0.41	0.91		0.91	10,000
S6A-145	18			61				0.25		0.25	0.62		0.62	1.36		1.36	10,000
S6A-150	18			61				0.25		0.25	0.62		0.62	1.36		1.36	10,000
S6A-160	8	12	24	103				0.42		0.42	1.04		1.04	2.29		2.29	13,500
S6A-170	12			41				0.17		0.17	0.41		0.41	0.91		0.91	13,500
S6A-175		8		22				0.09		0.09	0.22		0.22	0.48		0.48	13,500
S6A-185		8		22				0.09		0.09	0.22		0.22	0.48		0.48	13,500
S6A-230		11	24	73				0.30		0.30	0.74		0.74	1.62		1.62	13,500
S6A-240		52		140				0.57		0.57	1.42		1.42	3.13		3.13	10,000
S6A-260	12			41				0.17		0.17	0.41		0.41	0.91		0.91	10,000
S6B-110	14			48				0.19		0.19	0.48		0.48	1.06		1.06	10,000
S6B-120	15			51				0.21		0.21	0.52		0.52	1.14		1.14	10,000
S6B-140	12			41				0.17		0.17	0.41		0.41	0.91		0.91	10,000
S6B-150	16			54				0.22		0.22	0.55		0.55	1.21		1.21	10,000
S6B-170	16			54				0.22		0.22	0.55		0.55	1.21		1.21	10,000
S6B-180	11			37				0.15		0.15	0.38		0.38	0.83		0.83	10,000
S7-205		52		140				0.57		0.57	1.42		1.42	3.13		3.13	10,000
S7-330		30		81				0.33		0.33	0.82		0.82	1.80		1.80	10,000
S7-332		17	48	132				0.54		0.54	1.34		1.34	2.95		2.95	13,500
B-200						6.89			3.99	3.99		5.98	5.98		10.77	10.77	15,000
TOTALS	**214**	**190**	**96**	**1,413**						**11.14**			**22.43**			**46.10**	

POPULATION DENSITY

Single Family	3.4 persons/unit
Semi Detached & Townhouse	2.7 persons/unit
Medium Density	1.8 persons/unit

WATER DEMAND RATES

Residential	350 l/cap/day
ICI	50,000 l/ha/day

PEAKING FACTORS

Maximum Daily	
Residential	2.5 x avg. day
ICI	1.5 x avg. day
Maximum Hourly	
Residential	2.2 x max. day
ICI	1.8 x max. day

FIRE DEMANDS

Single Family & Townhouses	10,000 l/min (166.7 l/s)
3 Story Bldg	13,500 l/min (225 l/s)
ICI	15,000 l/min (250 l/s)

Appendix F - Pre-Consultation & Development Servicing Study Checklist

APPLICANT'S STUDY AND PLAN IDENTIFICATION LIST

Legend: **S** indicates that the study or plan is required with application submission.
A indicates that the study or plan may be required to satisfy a condition of approval/draft approval.

For information and guidance on preparing required studies and plans refer here:

S/A	Number of copies	ENGINEERING		S/A	Number of copies
S	15	1. Site Servicing Plan	2. Site Servicing Study / Assessment of Adequacy of Public Services	S	3
S	15	3. Grade Control and Drainage Plan	4. Geotechnical Study / Slope Stability Study	S	3
	2	5. Composite Utility Plan	6. Groundwater Impact Study		3
	3	7. Servicing Options Report	8. Wellhead Protection Study		3
S	9	9. Transportation Impact Assessment (TIA)	10. Erosion and Sediment Control Plan / Brief	S	3
S	3	11. Storm Water Management Report / Brief	12. Hydro geological and Terrain Analysis		3
	3	13. Hydraulic Water main Analysis	14. Noise / Vibration Study		3
	PDF only	15. Roadway Modification Functional Design	16. Confederation Line Proximity Study		3

S/A	Number of copies	PLANNING / DESIGN / SURVEY		S/A	Number of copies
	15	17. Draft Plan of Subdivision	18. Plan Showing Layout of Parking Garage		2
	5	19. Draft Plan of Condominium	20. Planning Rationale	S	3
S	15	21. Site Plan	22. Minimum Distance Separation (MDS)		3
	15	23. Concept Plan Showing Proposed Land Uses and Landscaping	24. Agrology and Soil Capability Study		3
	3	25. Concept Plan Showing Ultimate Use of Land	26. Cultural Heritage Impact Statement		3
S	15	27. Landscape Plan	28. Archaeological Resource Assessment Requirements: **S** (site plan) **A** (subdivision, condo)		3
S	2	29. Survey Plan	30. Shadow Analysis		3
S	3	31. Architectural Building Elevation Drawings (dimensioned)	32. Design Brief (includes the Design Review Panel Submission Requirements)	S	Available online
	3	33. Wind Analysis			

S/A	Number of copies	ENVIRONMENTAL		S/A	Number of copies
A	3	34. Phase 1 Environmental Site Assessment	35. Impact Assessment of Adjacent Waste Disposal/Former Landfill Site		3
	3	36. Phase 2 Environmental Site Assessment (depends on the outcome of Phase 1)	37. Assessment of Landform Features		3
	3	38. Record of Site Condition	39. Mineral Resource Impact Assessment		3
	3	40. Tree Conservation Report	41. Environmental Impact Statement / Impact Assessment of Endangered Species		3
	3	42. Mine Hazard Study / Abandoned Pit or Quarry Study	43. Integrated Environmental Review (Draft, as part of Planning Rationale)		3

S/A	Number of copies	ADDITIONAL REQUIREMENTS		S/A	Number of copies
S	1	44. Applicant's Public Consultation Strategy (may be provided as part of the Planning Rationale)	45. Site Lighting Plan		3
A	1	46. Site Lighting Certification Letter	47.		

Meeting Date: 02-14-2022 Application Type: *Site Plan Control*

File Lead (Assigned Planner): Katie O'Callaghan Infrastructure Approvals Project Manager: Tyler Cassidy

Site Address (Municipal Address): 820 Miikana Road *Preliminary Assessment: 1☐ 2☐ 3☐ 4☐ 5

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

It is important to note that the need for additional studies and plans may result during application review. If following the submission of your application, it is determined that material that is not identified in this checklist is required to achieve complete application status, in accordance with the Planning Act and Official Plan requirements, the Planning, Real Estate and Economic Development Department will notify you of outstanding material required within the required 30 day period. Mandatory pre-application consultation will not shorten the City's standard processing timelines, or guarantee that an application will be approved. It is intended to help educate and inform the applicant about submission requirements as well as municipal processes, policies, and key issues in advance of submitting a formal development application. This list is valid for one year following the meeting date. If the application is not submitted within this timeframe the applicant must again pre-consult with the Planning, Real Estate and Economic Development Department.

Description:

A Design Brief is the core submission document that illustrates how the development is designed to work with its existing and planned context, to improve its surroundings and also demonstrate how the proposal supports the overall goals of the Official Plan, relevant secondary plans, Council approved plans and design guidelines. The purpose of the Terms of Reference is to assist the applicant to organize and substantiate the design justification in support of the proposed development and to assist staff and the public in the review of the proposal.

Authority to Request a Design Brief:

The *Planning Act* gives municipalities the authority to require that a Design Brief be prepared. Under Sections 22(4), (5) and Section 41(4) of the *Planning Act*, a Council has the authority to request such other information or material that the authority needs in order to evaluate and make a decision on an application. Section 5.2.6 of the Official Plan sets out the general requirement for a Design Brief.

Preparation:

The Design Brief should be signed by an urban designer, licenced architect, landscape architect, or a full member of the Canadian Institute of Planners.

When Required:

A Design Brief is required for a Site Plan Control planning application.

A Scoped Design Brief* is required when the following planning applications are applied for and not accompanied by a Site Plan Control application:

- Official Plan Amendment
- Zoning By-law Amendment (exception: a change in use which does not result in an increase in height or massing)

The requirement and scope of a Design Brief will be determined at the formal pre-application consultation meeting. Should an application be required to go to the Urban Design Review Panel (UDRP), the Design Brief may be submitted as part of the submission materials to the panel.

Contents for Design Brief Submissions:

A Design Brief will contain and/or address the points identified during the pre-consultation meeting. Failure to address the critical elements identified in the pre-consultation meeting may result in the application being considered incomplete.

** A Scoped Design Brief is composed of:*

- *Section 1 should be combined into the Planning Rationale submission, and*
- *Section 2 items will be confirmed in the pre-application consultation meeting.*

SECTION 1 Note: This section may be combined with the Planning Rationale report

Application Submission:

Not Required	Required	
☐	☒	State the: type of application, legal description, municipal address, purpose of the application and provide an overall vision statement and goals for the proposal.

Response to City Documents:

Not Required	Required	
☐	☒	State the Official Plan land use designation for the subject property and demonstrate how the proposal conforms to the Official Plan as it relates to the design of the subject site. Reference specific policy numbers from the Official Plan to show consistency. Justify areas of non-compliance and explain why there is non-compliance.
☐	☒	State the applicable plans which apply to the subject proposal: community design plan, secondary plan, concept plan and design guideline. Reference the relevant design related polices within the applicable plans/guidelines and provide a comprehensive analysis as to how the proposed development incorporates the objectives or why it does not incorporate the objectives.

Context Plan:

Not Required	Required	
☐	☒	Provide a contextual analysis that discusses/illustrates abutting properties, key destinations and linkages within a 100 meter radius (a larger radius may be requested for larger/more complex projects), such as transit stations, transportation networks for cars, cyclists, and pedestrians, focal points/nodes, gateways; parks/open spaces, topography, views towards the site, the urban pattern (streets, blocks), future and current proposals (if applicable), public art and heritage resources.
☐	☒	Photographs to illustrate existing site conditions and surrounding contexts. Include a map pinpointing (with numbers) where each photo is taken and correspond these numbers with the site photos. Arrows illustrating the direction the photo is taken is also useful.

SECTION 2

Design Proposal:
The purpose of the Design Proposal is to show the building elevations, exterior details, transitions in form, treatment of the public realm and compatibility with adjacent buildings, using 3-D models, illustrations, diagrams, plans, and cross sections. Referencing Official Plan, Section 5.2.1, as determined at time of pre-application consultation meeting, submissions will need to address the following in the form of labelled graphics and written explanation:

Massing and Scale

Not Required	Required	
		Images which show:
		Building massing – from:
☐	☒	• at least two sides set within it current context (showing the entire height and width of the building) **OR**
☐	☐	• all four sides set within it current context (showing the entire height and width of the building).
		Views – of the entire block, from:
☐	☒	• at least two perspectives to show how the proposed building is set within its current context **OR**
☒	☐	• all four perspectives to show how the proposed building is set within its current context.
☒	☐	Building transition – to adjacent uses, with labelled explanation of the transition measures used.
☐	☒	Grading – if grades are an issue.
☐	☒	Alternative building massing – additional imagery and site layouts considered and provide justification for the ultimate proposal sought. *Provide rationale for orientation of school fronting onto Miikana and not Kelly Farm.*

Public Realm

Not Required	Required	
		Labelled graphics and a written explanation which show:
☒	☐	Streetscape – cross sections which illustrate the street design and right of way (referencing the City's design manuals).
☐	☒	Relationship to the public realm – illustrating how the first few storeys of the proposed development responds to and relates to the existing context (e.g. through a podium plan and first floor plan). This is to include detailed explanation on: • Architectural responses • Landscaping details • Public art features (in accordance with Official Plan, Section 4.11) • For developments in Design Priority Areas, detail the building and site features, (in accordance with Official Plan, Section 4.11) which will enhance the public realm. Provide explanation for features which are not provided.

Building Design

Not Required	Required	
☐	☒	Labelled graphics (e.g. building elevations and floor plans) and a written explanation which document the proposed exterior architectural details and design (in accordance with Official Plan, Section 5.2.1).
☒	☐	For high-rise development applications, detail the building design and massing and scale elements and how they relate to the proposed high-rise development (in accordance with Official Plan, Section 5.2.1).

Sustainability

Not Required	Required	
☐	☒	Any sustainable design features to be incorporated, such as green roofs or walls, sun traps, reflective or permeable surfaces.

Heritage

Not Required	Required	
☒	☐	How the building relates to the historic details, materials, site and setting of any existing historic resources on or adjacent to the subject property (if applicable).

Additional Contents:

Some proponents may be requested to provide submission material which complements the Design Brief. These additional requirements could be incorporated into the Design Brief submission for ease of review. These will be identified at the time of application consultation meeting:

- Site Plan x
- Landscape Plan x
- Plan showing existing and proposed servicing
- Shadow Analysis
- Wind Analysis

Submission Requirements

- Digital copies only

Pre-Application Consultation Meeting Notes

Property Address: 4501 Kelly Farm Drive
Pre-Application Consultation File Number: PC2022-0008
2022-02-14, MS TEAMS

Attendees:

Owner: Ottawa-Carleton District School Board

Applicant: Daniel Fournier (Ottawa-Carleton District School Board); Jean Voth (Ottawa-Carleton District School Board); David Lacelle (Ottawa-Carleton District School Board); Vladimir Popovic (n45); Daniela Veisman (n45); Pamela MacCaull (n45); Nathan Farncombe (n45); Patrick Ha (jp2g); Brad Byvelds (Novatech). **Other OCDSB employees who joined may not be captured in this list, as the invite was forwarded.**

City of Ottawa & External Staff: Aamani Sidhu (Dev South), Tyler Cassidy (Infrastructure Approvals PM); Kelsey Charie (Infrastructure Approvals Intern PM), James Holland (South Nation), Burl Walker (Parks); Matthew Ippersiel (Urban Design); Katie O'Callaghan (Dev South)

Regrets: Forestry (Mark Richardson); Mike Giampa (Transportation PM)

Subject: New two-storey elementary school in Findlay Creek with daycare facility.

NOTE: The municipal address for this subject property has changed to 820 Miikana Road

Meeting notes:

Opening & attendee introduction

- Introduction of meeting attendees
- Overview of proposal (application led): 2-storey early-years elementary school and daycare facility approximately 65,000 square feet. The school is projected to serve 674 students -17 classrooms with a library, student comments and the possibility of an outdoor classroom.
- Projected timing including construction:

High-Level Planning Overview:

1. Existing Official Plan – designated "General Urban Area" on Schedule B of the City of Ottawa's Official Plan. The General Urban Area permits the development of a full range and choice of housing types to meet the needs of all ages, incomes, and life circumstances, in combination with conveniently located employment, retail, service, cultural, leisure, entertainment and institutional uses.
2. In the New Official Plan, the subject site is identified as a "Suburban" Transect Policy Area. Under Section 5.4.1. (Policy 2), it states that the Suburban Transect is generally characterized by low-rise to mid-density development. Further, the Suburban (Southeast)Transect identifies the site as an "Neighbourhood". Section 5.4.5 Provides direction to Neighbourhoods located within the Suburban Transect:
    - Generally, provides for up to 3 storeys height permission, and where appropriate 4 storey height permission to allow for higher density low-rise residential development.
    - Provides an emphasis on regulation the maximum built form envelope, based on the context, that frames the public right of way.
3. The New Official Plan also includes City-Wide Policies that relate specifically to School Facilities (Section 4.1) – Policy 4.10.1 includes an emphasis on active travel, low vehicle speeds, covered and shaded bike parking, school lay-byes should be built with visually contrasting materials or colours and Policy 4.10.2 notes the City's preference to locate schools and other neighbourhood uses close together such as daycares to provide convenient access to residents.

4. The subject property is identified in the Leitrim Community Design Plan, which identified the site as “Institutional” in Section 4.2 of the CDP land use designations. The intent of the institutional designation is to identify specific locations for government, service and community facilities and uses throughout the Community. **Permitted uses include** a wide range of institutional uses, places of worship, **schools**, cemeteries, community centres, government and public utility offices, libraries, retirement homes and **care facilities**.

   Community Design Guidelines – Specific to School Site (Section 5.5). The SP maintains that schools are key components in new communities and should be integrated as focal points within the community. The Ottawa area school board has requested a 2.5 ha school site in the south end for the Ottawa Carleton District School Board. The schools have been located along the main north-south spine street as special landmarks in the community. School buildings are envisioned as special buildings that will distinguish the streetscape. Building will be located to form the street edge, with parking located at the side or rear of the building. All the schools have been sited adjacent to neighbourhood parks ranging in size from 0.8 to 1.0ha, which will accommodate facilities such as courts and play structures. The majority of the community’s sports fields will be located in community parks.

   The following guidelines have been created for schools:
   a. School buildings should be located close to the street right-of-way to reinforce the street edge, with frontage on at least two streets, and to create a visually dominant feature in the community
   b. School buildings should be designed as special landmark buildings with high quality design, materials, and finishes. The site should be will landscaped in recognition of their prominent locations and status as landmark buildings.
   c. Parking should be located at the side or rear of the building.
   d. Drop-off should be provided for buses and cars at the side of the building but may be located in the front of the building subject to building design and site plan considerations.
   e. Consideration for a street lay-by should be given for buses and cars.
   f. The front door of the school should be connected with a walkway to the sidewalk on the street.

4. Zoning Information: Split Zone Site - Minor Institutional Zone (I1) and Residential Fourth Density Zone R4Z [Exception 2370].
   - Under the Urban Exception [2370] (which relates only to R4Z), there is no maximum cumulative floor area for accessory buildings

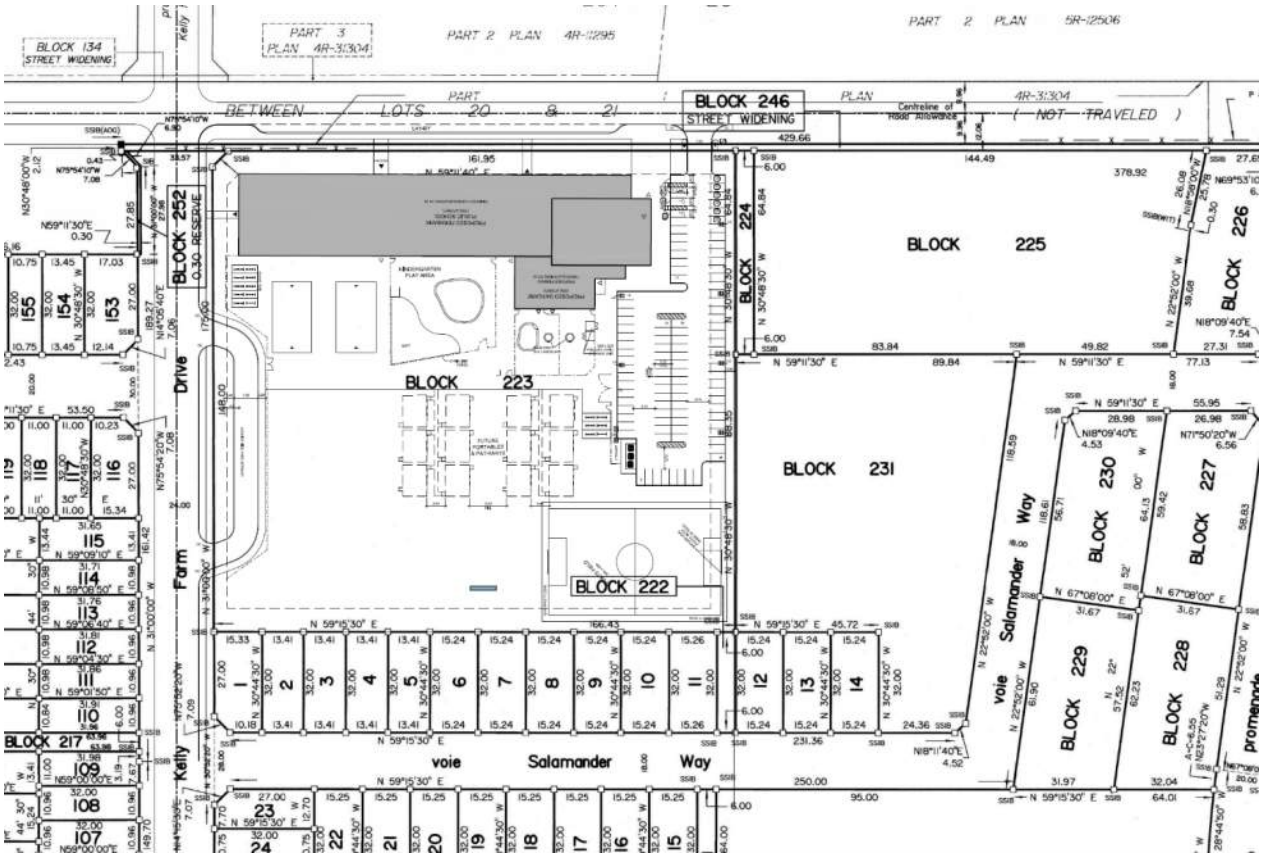


Figure 1: Excerpt of Site Plan for Proposed School Site

Figure 2: Screenshot of Subject Site from GeoOttawa

Preliminary comments and questions from staff and agencies, including follow-up actions:

Infrastructure/Servicing: (Tyler Cassidy /Kelsey Charie):
List of Reports and Plans (Site Plan Control):

1. Site Servicing Plan
2. Grading Plan
3. Erosion and Sediment Control Plan
4. Storm Drainage / Ponding Plan
5. Stormwater Management and Site Servicing Report
6. Geotechnical Investigation Report

Please note the following information regarding the engineering design submissions for the above noted site:

1. The Servicing Study Guidelines for Development Applications are available at the following address: https://ottawa.ca/en/city-hall/planning-and-development/how-develop-property/development-application-review-process-2/guide-preparing-studies-and-plans
2. Servicing and site works shall be in accordance with the following documents:
   - Ottawa Sewer Design Guidelines (October 2012) and all the Technical Bulletins including, Technical Bulletin PIEDTB-2016-01 and ISTB-2018-01
   - Ottawa Design Guidelines – Water Distribution (2010) and Technical Bulletins ISD-2010-2, ISDTB-2014-02 and ISTB-2018-02
   - Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
   - City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
   - City of Ottawa Environmental Noise Control Guidelines (January, 2016)
   - City of Ottawa Park and Pathway Development Manual (2012)
   - City of Ottawa Accessibility Design Standards (2012)
   - Ottawa Standard Tender Documents (latest version)
   - Ontario Provincial Standards for Roads & Public Works (2013)
3. Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-2424 x 44455
4. The Stormwater Management Criteria, for the subject site, is to be as established in the ***Pathways at Findlay Creek Design Brief, prepared by IBI Group, project no. 33956-5.2.2, revised August 2017***:
   - Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.
   - Ensure no overland flow for all storms up to and including the 100-year event. Emergency overflow is to be directed to DDSWM ID S6105A on Miikana Road
   - The 2-yr storm or 5-yr storm event using the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.
   - A calculated time of concentration (Cannot be less than 10 minutes).
   - Allocated stormwater release rate of ~475 L/s.
   - Quality control requirements to be provided by South Nation Conservation Authority (SNCA).
5. Deep Services:

i. *A plan view of the approximate services may be seen above. Services should ideally be grouped in a common trench to minimize the number of road cuts. The sizing of available future services is:*

   a. Connections (Miikana Road):

      i. Existing 750 mm dia. STM (Conc.) stub to MH6104
      ii. Existing 203 mm dia. Watermain (PVC) stub
      iii. Existing 200 mm dia. SAN (PVC) stub to MH6104A

ii. *Provide existing servicing information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.*

iii. *Provide information on the monitoring manhole requirements – should be located in an accessible location on private property near the property line (ie. Not in a parking area).*

iv. *Provide information on the type of connection permitted*

Sewer connections to be made above the springline of the sewermain as per:

a. Std Dwg S11.1 for flexible main sewers – *connections made using approved tee or wye fittings.*

b. Std Dwg S11 (For rigid main sewers) – *lateral must be less that 50% the diameter of the sewermain,*

c. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – *for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain,*

d. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

e. *No submerged outlet connections.*

6. Civil consultant must request boundary conditions from the City's assigned Project Manager prior to first submission. Water Boundary condition requests must include the location of the service and the expected loads required by the proposed development. Please provide the following information:

i. Location of service(s)

ii. Type of development and the amount of fire flow required (as per FUS, 1999).

iii. Average daily demand: ___ l/s.

iv. Maximum daily demand: ___l/s.

v. Maximum hourly daily demand: ___ l/s.

vi. Hydrant location and spacing to meet City's Water Design guidelines.

vii. Water supply redundancy will be required for more than 50 m3/day water demand.

7. Phase 1 ESAs and Phase 2 ESAs must conform to clause 4.8.4 of the Official Plan that requires that development applications conform to Ontario Regulation 153/04.
8. MECP ECA Requirements (Standard) –

All development applications should be considered for an Environmental Compliance Approval (ECA) by the Ministry of the Environment, Conservation, and Parks (MECP);

a. Consultant determines if an approval for sewage works under Section 53 of OWRA is required. Consultant then determines what type of application is required and the City's project manager confirms. (If the consultant is not clear if an ECA is required, they will work with the City to determine what is required. If the consultant it is still unclear or there is a difference of opinion only then will the City PM approach the MECP.

b. The project will be either transfer of review (standard), transfer of review (additional), direct submission, or exempt as per O. Reg. 525/98.

c. Standard Works ToR Draft ECA's are sent to the local MECP office (moeccottawasewage@ontario.ca) for information only

d. Additional ToR draft ECAs require a project summary/design brief and require a response from the local MECP (10 business day window)

e. Site plan Approval, or Draft Approval, is required before an application is sent to the MECP

9. General/ additional comments:

    i. Only one watermain connection per site. However, looping would be required if proposed demand is 50m3/day or greater.

    ii. A pre and post construction CCTV inspection is required for re-using any existing servicing connections.

Environmental (Matthew Hayley)

- **Urban Heat Island Effect**
  Please add features that reduce the urban heat island effect (see New OP 10.3.3) produced by the parking lot, asphalt apron and building footprint. For example, this impact can be reduced by adding large canopy trees, green roofs or vegetation walls, low heat absorbing materials/colours or constructing the parking lot or building differently.

- **Bird-safe Design**
  The applicant team needs to consider the bird-safe design guidelines https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf and incorporate those elements into their design. Items to be include actions to make glass/glazing bird-safe, avoiding design traps (e.g., apparent flythroughs, entrapments, corner glass, etc.), consider structural hazards (e.g., glass railings, antennas, grate size, etc), landscaping that doesn't attract birds to hazards, lighting design needs to considers bird-safe design. Some attributes of the building are a reduced amount of glazing (however there are a large number of windows and there is some corner glass). Please have this addressed either through redesign of the building or the use of bird-safe glazing as per the design guidelines.

South Nation Conservation Authority (James Holland)

- **Environmental**
  - An Environmental Impact Statement was completed for Phases 1-3 of the Pathways Subdivision. The findings and recommendations of the study are to be implemented through the Site Plan Proposal. Please review this study.
  - SNC is not aware of any watercourses on the property. Please note that if a watercourse is identified, interference with the feature may require a permit under O. Reg. 170/06 and restrictions may apply.
- **Stormwater**
  - SNC provides a technical review of the stormwater design when it outlets to a watercourse. In this case, stormwater appear to drain to approved municipal infrastructure, and the CA may not undertake a technical review. This will be confirmed when the documents are circulated.
  - SNC recommends 80% TSS removal for water quality treatment. This should be demonstrated in the stormwater report.

If there are any questions regarding the details provided here, please contact James Holland at jholland@nation.on.ca

Transportation (Mike Giampa)

- Add the Miikana/Kelly Farm unsignalized intersection to your study area and proceed using the CTS analysis.

- Applicant is not required to develop traffic projections and perform analysis at this intersection but will include the intersection within the existing conditions sections of the parent CTS and review pedestrian connectivity etc. following the development.

  [Comments refer to email correspondence between Brad Byvelds and Mike Giampa on Wednesday February 23rd, 2022 – Thursday, February 24th, 2022].

Parks (Burl Walker)

1. Parks and Facilities Planning is currently undertaking a legislated review for the replacement of the City's Parkland Dedication By-law, with the new By-law to be considered by City Council in early July 2022. To ensure the applicant is aware of any potential parkland dedication requirements for the proposed development, we encourage the applicant to familiarize themselves with the existing Parkland Dedication By-law and to sign up for project notifications on the Engage Ottawa project page or by emailing the project lead at Kersten.Nitsche@ottawa.ca.

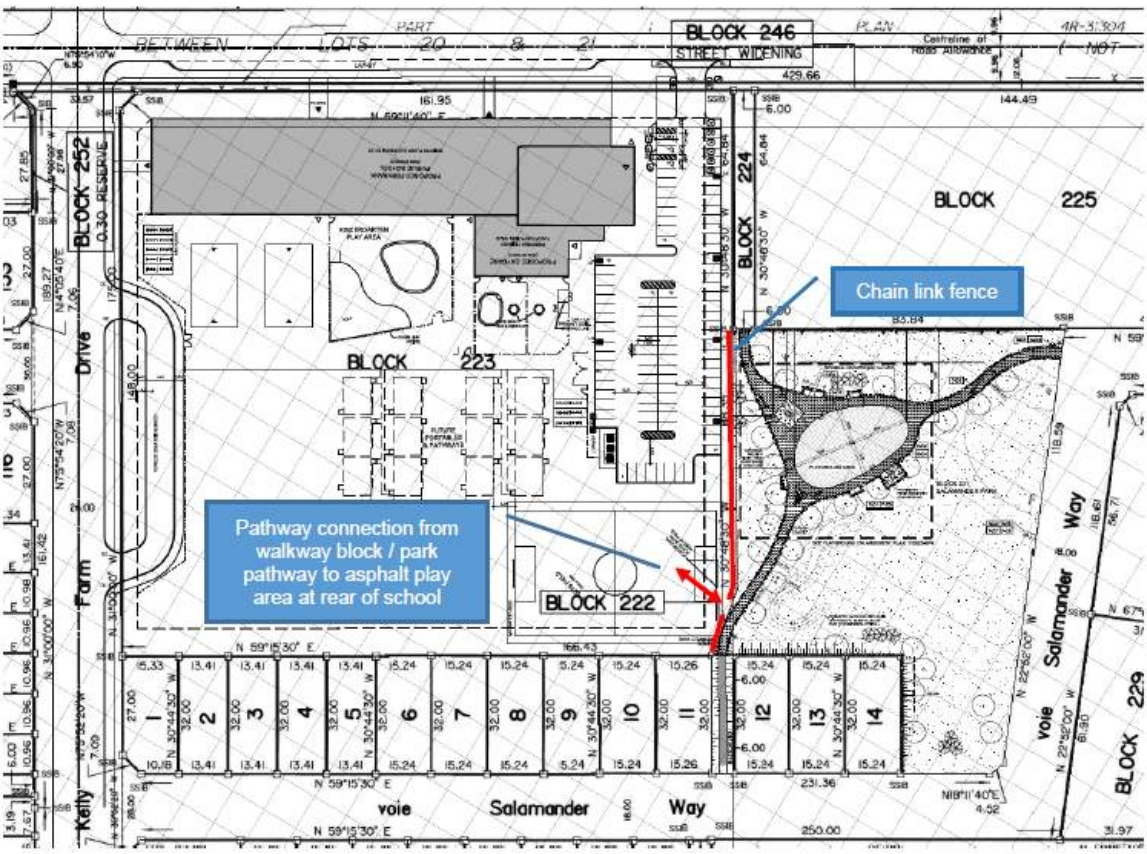
2. Salamander Park is currently under construction on Park Block 231 adjacent to the east side of the school property. Construction is anticipated to be completed this summer. We have provided the issued for construction drawings to the applicant's landscape architect, Marietta Ruhland.

3. A triangular parcel of land at the southeast corner of School Block 223 was transferred from Leitrim South Holdings Inc. to the City on January 23, 2020. The transfer is registered as Instrument Number OC2186294. The parcel is described as Part 1 on Plan 4R-32503. Please note that a fee simple interest was transferred to the City rather than an easement. The school property boundary will need to be adjusted to exclude this triangular parcel on the plans that will be submitted with the site plan control application.

4. The applicant should confirm if they will be providing a playground area for 5- to 12-year-old children with playground equipment such as a play structure and swings. The concept plan only identifies a kindergarten play area and a day care play area. Will there be a need or desire for the daycare or school children to access the Salamander Park playground during school and daycare hours?

5. Deciduous trees should be planted on the east side of the parking lot adjacent to Salamander Park.

6. The Salamander Park project includes an asphalt pathway between Walkway Block 222 and the playground area. Staff recommend that a pathway be constructed from this pathway to the asphalt school playground area at the rear of the school. A conceptual location for the pathway connection is shown in the diagram below. The proposed sports field location will need to be adjusted to accommodate the pathway.



7. We understand that the applicant is proposing to install a chain link fence adjacent to Salamander Park. The fence will be required to meet City standards. The following condition of site plan approval would be proposed:

   The Owner shall install fencing of uniform appearance and quality, with a minimum height of five feet (5') (1.5m) along the common boundary of the School property and the Park Block 231. Fences shall be installed 0.15m on the school property side of the common property line, and the location of the fence shall be verified by an Ontario Land Surveyor. All fences must adhere to the City's fence By-law 2003-462. Fence materials will be of commercial grade and consist of 6-gauge black vinyl coated chain link material and black powder coated schedule 40 pipe rails and posts or an approved alternative.

8. A fence opening will be required where the proposed pathway connects to the walkway block / park pathway. The size of the fence opening and the potential need for a gate should be based on the OCDSB's requirements.

Urban Design (Matthew Ippersiel)

- From an urban design perspective, ensuring porosity between the park and the school is encouraged.
- A connection is planned between Salamander Park and the mid-block walkway on Block 222. It is strongly recommended that a pedestrian pathway be included on-site to link the school to the park and walkway in the south-east corner of the site. This will require shifting the mini soccer field to the west.
- Provide strong connections to planned bus stops. Please be sure to identify nearby bus stop locations on the site plan and/or contextual analysis.
- Ensure that sidewalks are continuous across vehicular apertures.
- Consider that a number of students walking to the school from the neighbourhood from the west may choose to cross where Minikan street terminates. Is a crossing planning in this location? Are there ways in which the design might facilitate pedestrian safety?

- Consider the possibility of sharing the proposed parking facility with the adjacent park.
- Please be sure to reference the Leitrim CDP for any design direction provided.
- Please identify where the outdoor learning area is planned to be located.
- For example, as the design progresses, consider that school buildings are envisioned as “special buildings” that will “distinguish the streetscape”.
- Has an on street lay-by for busses been explored rather than the bus loop? This may free-up additional open space on the site. This would also support the direction of the Leitrim CDP.
- This application is not subject to review by the Urban Design Review Panel.
- An Urban Design Brief is required as a part of your submission. This may be combined with your Planning Rationale report. Please refer to the attached Urban Design Brief Terms of Reference to inform the content of the brief.

Trees (Mark Richardson)

- Our forester has confirmed that all trees should have been removed during the subdivision process and if there are any remaining, they can be removed under that permit.
- If you have any questions, please contact him (I can provide you with his contact info).

Initial Planning Comments (Katie O’Callaghan)

- The City is happy to see the co-location of the daycare facility with the school, this is a positive step as identified in Policy 4.10.2 in the new Official Plan, which encourages co-location of compatible land uses to encourage a walkable 15-minute neighbourhood.

  - Through the Building Better and Smarter Suburbs Initiative (Zoning By-law 2008-250: Omnibus Agreements Q3 2017 – Approved September 27, 2017), the City would like to see land efficiency on school sites. Please consider increasing the building height to three storeys to avoid future minor variance and site plan control applications in the future. The zoning, new OP and the CDP allow heights up to 15m (3-storeys) as of right.

  - The new OP is encouraging school bus lay-byes and PPDOs to be located on separate frontages, with visually contrasting materials or colours. It’s great to see this being done, please consider making the lay-byes visual and stand out for children and families. Consider ways to reduce the width of the island to gain school yard space and maintain width of sidewalk.

  - In the new OP, Policy 4.10.1 includes encouragement of making it safe and easy to walk, bike or take transit to school through supportive site and neighbourhood design. Please consider adding a pedestrian pathway or MUP from the school to the entrance of blocks 11-12 and/or the adjacent park.

  - The parking by-law is tied to the number of classroom and daycare spaces. Please include these details on the site plan. Along with accessible stalls and any EV charging locations of preferred green vehicle stalls.

  - The site is within Area C on Schedule 1A of the Zoning By-law (Areas for Minimum Parking Space Requirements). Please ensure the minimum parking space rates as set out in Section 101 are met for both school sites AND daycare facilities. There may be opportunities to have shared parking provisions between the school and park facilities, provided a shared parking agreement is in place.

  - There is a requirement to provide a minimum amount of bicycle parking spaces on the site, see Section 111 of the Zoning By-law for applicable rates. Please ensure bike parking is covered, shaded and in a safe location and closest to the nearest possible building entrance.

Submission requirements and fees

  - A Site Plan Control (Complex) application is needed. Please see webpage here for more details.

- Plans are to be standard A1 size (594 mm x 841 mm) sheets, utilizing an appropriate Metric scale (1:200, 1:250, 1:300, 1:400 or 1:500).
- All PDF submitted documents are to be unlocked and flattened.
- Ensure that all plans and studies are prepared as per City guidelines – as available online: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans

Next steps

- Planning staff encourage you to discuss the proposal with your Councillor (Carol Anne Meehan) and any impacted community groups and neighbours.

Appendix G Roof Drain and ICD Product Data Sheets

PRODUCT TECHNICAL SPECIFICATION

General

Inlet control devices (ICD's) are designed to provide flow control at a specified rate for a given water head level and also provide odour and floatable control. All ICD's will be IPEX Tempest or approved equal.

All devices shall be removable from a universal mounting plate. An operator from street level using only a T-bar with a hook will be able to retrieve the device while leaving the universal mounting plate secured to the catch basin wall face. The removal of the TEMPEST devices listed above must not require any unbolting or special manipulation or any special tools.

High Flow (HF) Sump devices will consist of a removable threaded cap which can be accessible from street level with out entry into the catchbasin (CB). The removal of the threaded cap shall not require any special tools other than the operator's hand.

ICD's shall have no moving parts.

Materials

ICD's are to be manufactured from Polyvinyl Chloride (PVC) or Polyurethane material, designed to be durable enough to withstand multiple freeze-thaw cycles and exposure to harsh elements.

The inner ring seal will be manufactured using a Buna or Nitrile material with hardness between Duro 50 and Duro 70.

The wall seal is to be comprised of a 3/8" thick Neoprene Closed Cell Sponge gasket which is attached to the back of the wall plate.

All hardware will be made from 304 stainless steel.

Dimensioning

The Low Medium Flow (LMF), High Flow (HF) and the High Flow (HF) Sump shall allow for a minimum outlet pipe diameter of 200mm with a 600mm deep Catch Basin sump.

Installation

Contractor shall be responsible for securing, supporting and connecting the ICD's to the existing influent pipe and catchbasin/manhole structure as specified and designed by the Engineer.

PRODUCT INFORMATION: TEMPEST HF & MHF ICD

Product Description

Our HF, HF Sump and MHF ICD's are designed to accommodate catch basins or manholes with sewer outlet pipes 6" in diameter or larger. Any storm sewer larger than 12" may require custom modification. However, IPEX can custom build a TEMPEST device to accommodate virtually any storm sewer size.

Available in 5 preset flow curves, these ICDs have the ability to provide constant flow rates: 9lps (143 gpm) and greater

Product Function

TEMPEST HF (High Flow): designed to manage moderate to higher flows 15 L/s (240 gpm) or greater and prevent the propagation of odour and floatables. With this device, the cross-sectional area of the device is larger than the orifice diameter and has been designed to limit head losses. The HF ICD can also be ordered without flow control when only odour and floatable control is required.

TEMPEST HF (High Flow) Sump: The height of a sewer outlet pipe in a catch basin is not always conveniently located. At times it may be located very close to the catch basin floor, not providing enough sump for one of the other TEMPEST ICDs with universal back plate to be installed. In these applications, the HF Sump is offered. The HF Sump offers the same features and benefits as the HF ICD; however, is designed to raise the outlet in a square or round catch basin structure. When installed, the HF sump is fixed in place and not easily removed. Any required service to the device is performed through a clean-out located in the top of the device which can be often accessed from ground level.

TEMPEST MHF (Medium to High Flow):
The MHF plate or plug is designed to control flow rates 9 L/s (143 gpm) or greater. It is not designed to prevent the propagation of odour and floatables.

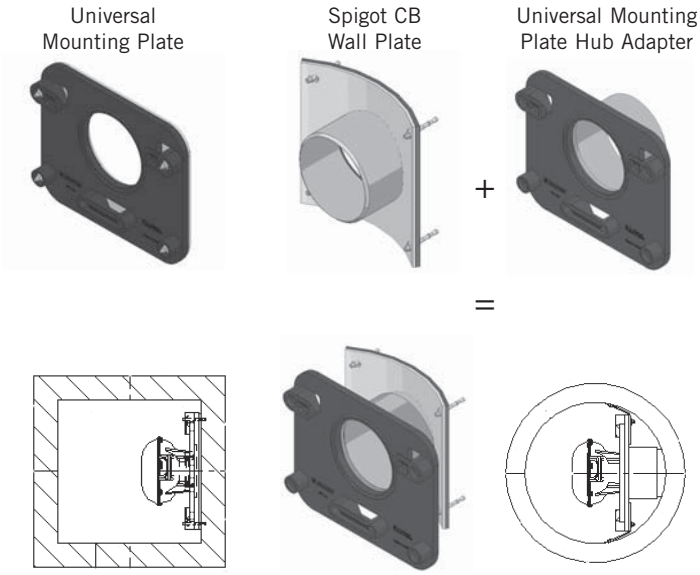
Product Construction

The HF, HF Sump and MHF ICDs are built to be light weight at a maximum weight of 6.8 Kg (14.6 lbs).

Product Applications

The HF and MHF ICD's are available to accommodate both square and round applications:

Square Application **Round Application**



The HF Sump is available to accommodate low to no sump applications in both square and round catch basins:

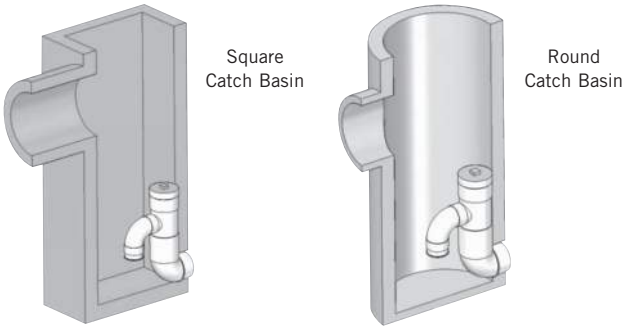
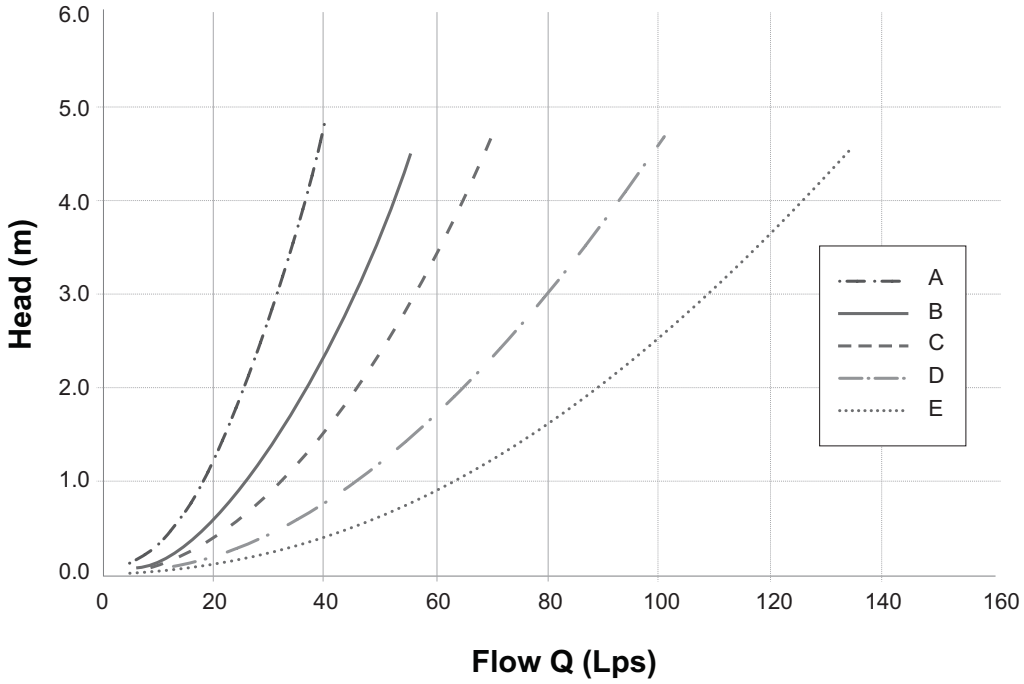


Chart 3: HF & MHF Preset Flow Curves



RD-100

Tag: _____

Large Capacity Roof Drain

Components:

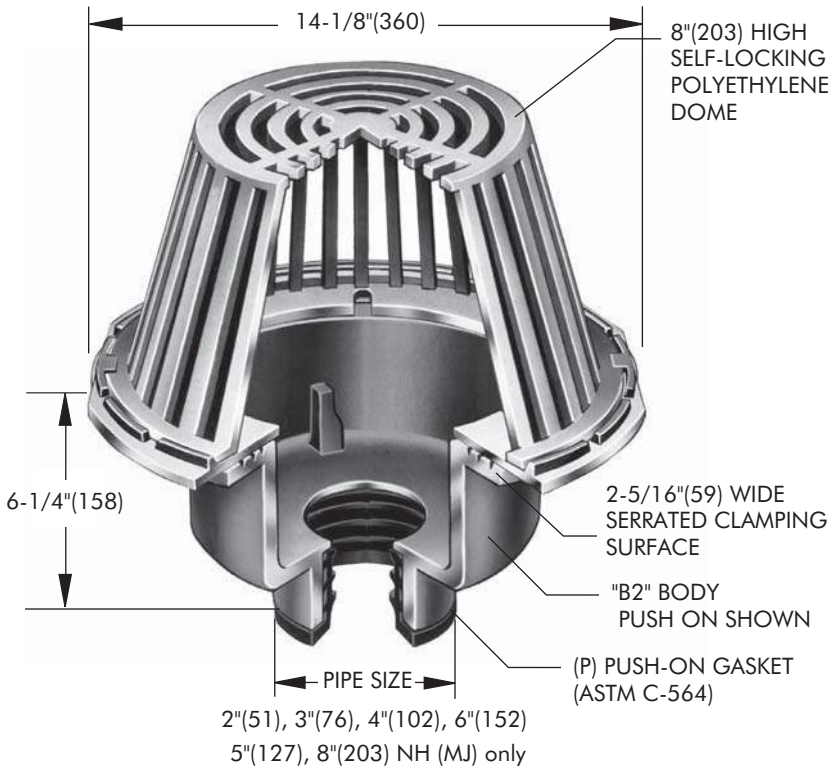

B2


B2-DM


B2-FLG


FC-2

SPECIFICATION: Watts Drainage Products RD-100 epoxy coated cast iron roof drain with deep sump, wide serrated flashing flange, flashing clamp device with integral gravel stop and self-locking polyethylene (standard) dome strainer.



Free Area Sq. In.
137

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

** 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.

Order Code: RD-10☐☐-☐-☐

Ex. RD-102P-K

Pipe Sizing (Select One)

Suffix	Description	
2	2"(51) Pipe Size	☐
3	3"(76) Pipe Size	☐
4	4"(102) Pipe Size	☐
5	5"(127) Pipe Size	☐
6	6"(152) Pipe Size	☐
8	8"(203) Pipe Size	☐

Outlet Type (Select One)

Suffix	Description	
NH	No Hub (MJ)	☐
P	Push On	☐
T	Threaded Outlet	☐
X	Inside Caulk	☐

Options (Select One or More)

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

Optional Body Material (NH Only)

Suffix	Description	
-60	PVC Body w/Socket Outlet	☐
-61	ABS Body w/Socket Outlet	☐

Job Name _____ Contractor _____

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

Engineer _____ Representative _____

CANADA: 5435 North Service Road, Burlington, ON, L7L 5H7 TEL: 905-332-6718 TOLL-FREE: 1-888-208-8927 Website: www.wattsdrainage.ca

Accutrol Weirs

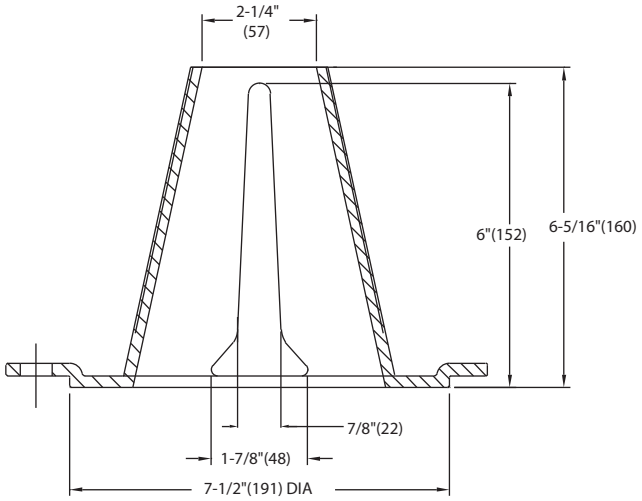
Tag: _____

Flow Control for Roof Drains

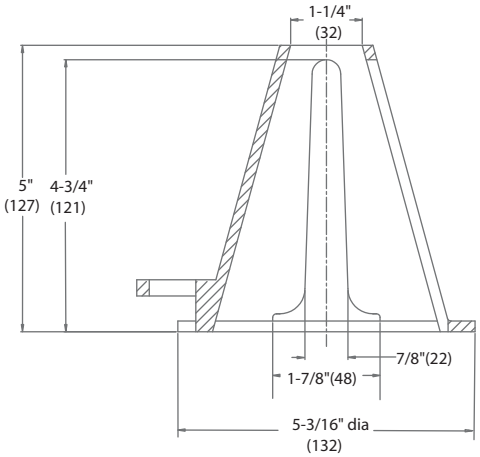
ACCUTROL WEIR FLOW CONTROL

SPECIFICATION: Watts Drainage Products epoxy coated cast iron Accutrol Weir is designed with parabolic openings which limit the flow of rain water off a roof. Each weir slot controls flow to 5 gpm per inch of head to a maximum of 30 gpm at 6" head(for large sump), 25 gpm at 5" head(for small sump) . The Accutrol Weir is secured to the flashing clamp of the roof drain. The Accutrol Weir is available with 1 to 4 slots for the large sump drain and up to 3 slots for the small sump drain.

For Large Sump Roof Drains Specify the "-A" option and number of slots required. (ie. "RD-100-A2" for two slot weir)
For Small Sump Roof Drains Specify the "-A" option and number of slots required. (ie. "RD-200-A1" for one slot weir)



LARGE SUMP ACCUTROL WEIR



SMALL SUMP ACCUTROL WEIR

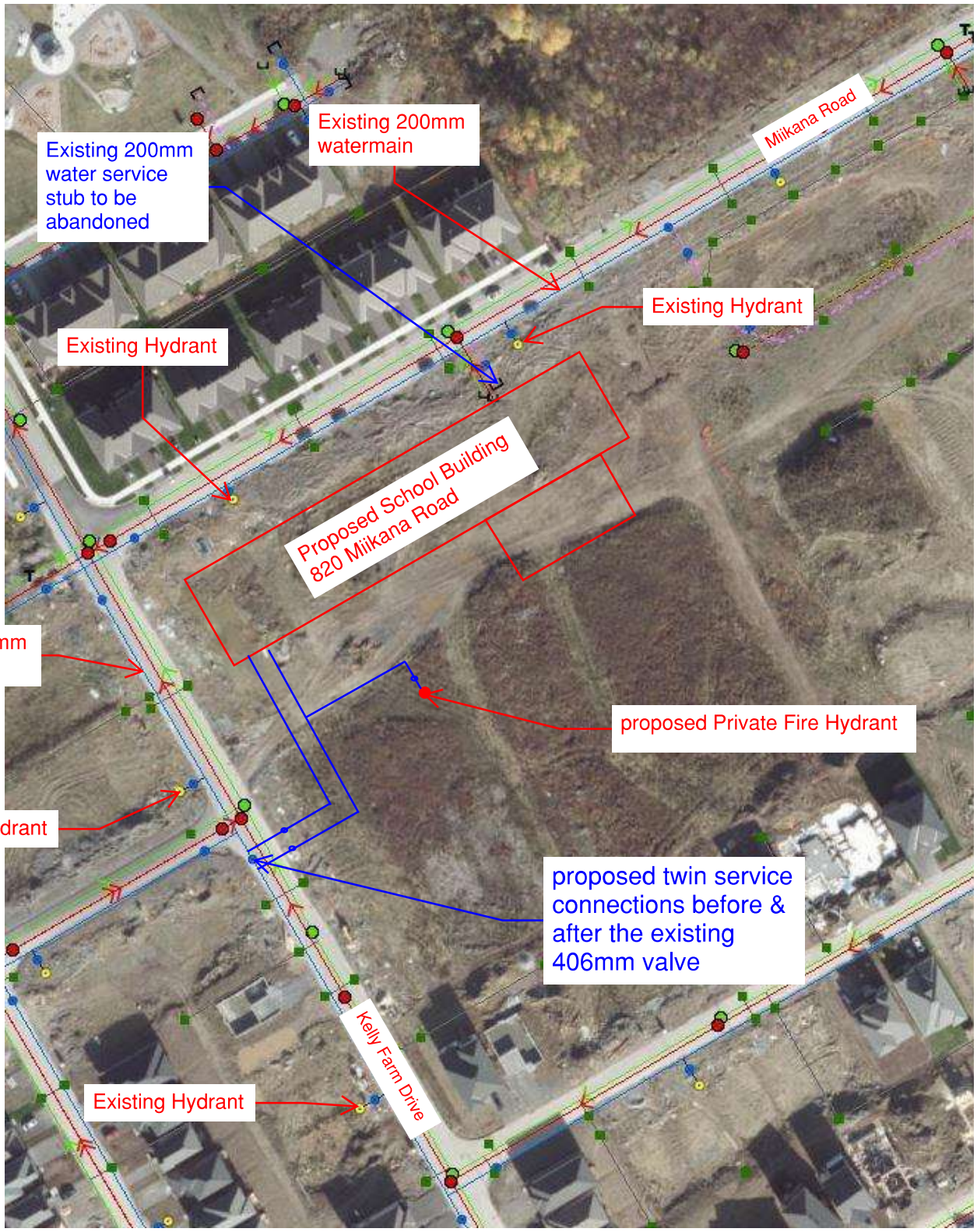
Job Name _____ Contractor _____

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

Engineer _____ Representative _____

CANADA: 5435 North Service Road, Burlington, ON, L7L 5H7 TEL: 905-332-6718 TOLL-FREE: 1-888-208-8927 Website: www.wattsdrainage.ca

Appendix H - Boundary Conditions


Existing 200mm water service stub to be abandoned
Existing 200mm watermain
Miikana Road
Existing Hydrant
Existing Hydrant
Proposed School Building 820 Miikana Road
Existing 400mm watermain
proposed Private Fire Hydrant
Existing Hydrant
proposed twin service connections before & after the existing 406mm valve
Kelly Farm Drive
Existing Hydrant

Boundary Conditions
4501 Kelly Farm Drive

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	49	0.81
Maximum Daily Demand	73	1.22
Peak Hour	132	2.20
Fire Flow Demand #1	7,000	116.67

Location

Results – Existing Conditions

Connection 1 – Kelly Farm Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	154.6	85.4
Peak Hour	145.2	72.0
Max Day plus Fire 1	132.0	53.2

Ground Elevation = 94.6 m

Connection 2 – Kelly Farm Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	154.6	85.3
Peak Hour	145.2	71.9
Max Day plus Fire 1	132.0	53.2

Ground Elevation = 94.6 m

Results – SUC Zone Reconfiguration

Connection 1 – Kelly Farm Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	148.9	77.2
Peak Hour	145.3	72.1
Max Day plus Fire 1	143.7	69.9

Ground Elevation = 94.6 m

Connection 2 – Kelly Farm Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	148.9	77.2
Peak Hour	145.3	72.0
Max Day plus Fire 1	143.7	69.8

Ground Elevation = 94.6 m

Notes

1. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
    a. If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
    b. Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

D.1.2 - SUC Zone Boundary Conditions

Water Demands

Average Daily Demand:	0.83	l/s
Maximum Daily Demand:	1.25	l/s
Maximum Hour Demand:	2.25	l/s
Fire Flow Demand:	116.67	l/s
Maximum Daily + Fire Flow Demand:	117.92	l/s

Design Parameters

Pipe Diameter:	150	mm
Pipe Material:	PVC	
Pipe Length (total network):	85.5	m
Finished Floor Elevation:	95.60	
Pavement (R.O.W.) Elevation:	94.60	

Boundary Conditions SUC Zone Reconfiguration

Max. HGL:	148.9	m
Min HGL:	145.3	m
Max. Day + Fire:	143.7	m

Boundary Condition Check

Check water pressure at municipal connection:

Min. HGL - Pavement elevation =	50.70	m	
=	72.09	psi*	***Normal operating pressure ranges between 345 kPa (50 psi) and 552 kPa (80 psi) under a condition of maximum daily flow as per City of Ottawa Design Guidelines - Water Distribution (Section 4.2.2)**
=	497.07	kPa*	

Pressure at municipal connection OK

Check water pressure at building connection (at max. hour demand):

Min. HGL - Finished floor elevation - Friction Loss** =	49.69	m	****Friction loss calculated using the Hazen-Williams Equation**
=	70.66	psi***	*****Under maximum hourly demand conditions the pressures shall not be less than 276 kPa (40 psi) as per City of Ottawa Design Guidelines - Water Distribution (Section 4.2.2)**
=	487.16	kPa***	

Pressure at building connection (at max. hour demand) OK

Check water pressure at building connection (at max. day + fire demand):

Min. HGL - Finished floor elevation - Friction Loss** =	48.09	m	****Friction loss calculated using the Hazen-Williams Equation**
=	68.38	psi****	******Under maximum day and fire flow demand conditions the residual pressure at any point in the system shall not be less than 140 kPa (20 psi) as per City of Ottawa Design Guidelines - Water Distribution (Section 4.2.2)**
=	471.47	kPa****	

Pressure at municipal connection (at max. day + fire demand) OK

D.1.2 - Existing Water Boundary Conditions

Water Demands		Design Parameters		Boundary Conditions Existing Conditions	
Average Daily Demand:	0.83 l/s	Pipe Diameter:	150 mm	Max. HGL:	154.6 m
Maximum Daily Demand:	1.25 l/s	Pipe Material:	PVC	Min HGL:	145.2 m
Maximum Hour Demand:	2.25 l/s	Pipe Length (total network):	85.5 m	Max. Day + Fire:	132 m
Fire Flow Demand:	116.67 l/s	Finished Floor Elevation:	95.60		
Maximum Daily + Fire Flow Demand:	117.92 l/s	Pavement (R.O.W.) Elevation:	94.60		

Boundary Condition Check

Check water pressure at municipal connection:

Min. HGL - Pavement elevation = 50.60 m
= 71.95 psi*
= 496.09 kPa*

***Normal operating pressure ranges between 345 kPa (50 psi) and 552 kPa (80 psi) under a condition of maximum daily flow as per City of Ottawa Design Guidelines - Water Distribution (Section 4.2.2)**

Pressure at municipal connection OK

Check water pressure at building connection (at max. hour demand):

Min. HGL - Finished floor elevation - Friction Loss** = 49.59 m
= 70.51 psi***
= 486.18 kPa***

****Friction loss calculated using the Hazen-Williams Equation**

*****Under maximum hourly demand conditions the pressures shall not be less than 276 kPa (40 psi) as per City of Ottawa Design Guidelines - Water Distribution (Section 4.2.2)**

Pressure at building connection (at max. hour demand) OK

Check water pressure at building connection (at max. day + fire demand):

Min. HGL - Finished floor elevation - Friction Loss** = 36.39 m
= 51.74 psi****
= 356.77 kPa****

****Friction loss calculated using the Hazen-Williams Equation**

*****Under maximum day and fire flow demand conditions the residual pressure at any point in the system shall not be less than 140 kPa (20 psi) as per City of Ottawa Design Guidelines - Water Distribution (Section 4.2.2)**

Pressure at municipal connection (at max. day + fire demand) OK

D.1.2 - SUC Zone Water Boundary Conditions

Water Demands

Average Daily Demand:	0.81	l/s
Maximum Daily Demand:	1.22	l/s
Maximum Hour Demand:	2.20	l/s
Fire Flow Demand at hydrant	95.00	l/s
Maximum Daily + Fire Flow Demand:	96.22	l/s

Design Parameters

Pipe Diameter:	150	mm
Pipe Material:	PVC	
Pipe Length (total network):	92.0	m
Finished Floor Elevation:	95.60	
Pavement elevation at hydrant:	95.05	

Boundary Conditions SUC Zone Reconfiguration

Max. HGL:	148.9	m
Min HGL:	145.3	m
Max. Day + Fire:	143.7	m

Boundary Condition Check

Check water pressure at fire hydrant

Min. HGL - elevation at hydrant- Friction Loss** =	37.98	m	
=	54.00	psi****	
=	372.32	kPa****	

****Friction loss calculated using the Hazen-Williams Equation**

******Appendix I Ottawa design guidelines table 1 hydrant class AA, 5,700 l/min =95 l/s at a minimum 20 psi**

D.1.2 - Existing Water Boundary Conditions

Water Demands		**Design Parameters**		**Boundary Conditions Existing Conditions**	
Average Daily Demand:	0.81 l/s	Pipe Diameter:	150 mm	Max. HGL:	148.9 m
Maximum Daily Demand:	1.22 l/s	Pipe Material:	PVC	Min HGL:	145.3 m
Maximum Hour Demand:	2.20 l/s	Pipe Length (total network):	92.0 m	Max. Day + Fire:	143.7 m
Fire Flow Demand at hydrant	95.00 l/s	Finished Floor Elevation:	95.60		
Maximum Daily + Fire Flow Demand:	96.22 l/s	Pavement elevation at hydrant:	95.05		

Boundary Condition Check

Check water pressure at fire hydrant

Min. HGL - elevation at hydrant- Friction Loss**	=	37.98 m	****Friction loss calculated using the Hazen-Williams Equation**
	=	54.00 psi****	
	=	372.32 kPa****	******Appendix I Ottawa design guidelines table 1 hydrant class AA, 5,700 l/min =95 l/s at a minimum 20 psi**

Appendix I - TSS and Quality Control

Zachary Bauman

From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Sent: Wednesday, June 15, 2022 9:53 AM
To: James Holland; Ali Sammour
Cc: David Nguyen; Sevigny, John
Subject: RE: PC 2022-0008, New OCDSB Findlay Creek School - 820 Miikana Road, Block 223 (Jp2g # 21-5124A)

****EXTERNAL EMAIL**** Please use caution.

Hi Ali & James,

I can confirm that the site is treated downstream for quality control by the Findlay Creek Village Stormwater Facility to an enhanced level of service (80% TSS removal).

Please let me know if you require any additional information.

Thank you,

Tyler Cassidy, EIT
Infrastructure Project Manager,
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique - South Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

From: James Holland <jholland@nation.on.ca>
Sent: June 15, 2022 9:34 AM
To: Ali Sammour <alis@jp2g.com>
Cc: David Nguyen <davidn@jp2g.com>; Cassidy, Tyler <tyler.cassidy@ottawa.ca>; Sevigny, John <John.Sevigny@ottawa.ca>
Subject: RE: PC 2022-0008, New OCDSB Findlay Creek School - 820 Miikana Road, Block 223 (Jp2g # 21-5124A)

Hi Ali,

I ask that it be confirmed in the report if treatment is already provided downstream of the outlet. The storm pond to the northeast may provide this treatment, but I don't know this for certain. If it doesn't drain to a treatment pond, we ask that it be provided on-site.

Thanks
James

From: Ali Sammour <AliS@jp2g.com>
Sent: Tuesday, June 14, 2022 5:41 PM
To: James Holland <jholland@nation.on.ca>
Cc: David Nguyen <DavidN@jp2g.com>
Subject: PC 2022-0008, New OCDSB Findlay Creek School - 820 Miikana Road, Block 223 (Jp2g # 21-5124A)

External email - if you don't know or can't confirm the identity of the sender, please exercise caution and do not open links or attachments.

Hi James,

This is pertaining to the Pre-Application Consultation File Number: PC2022-0008. New two-storey elementary school in Findlay Creek, 820 Miikana Road. (pre-consultation meeting notes attached for ease of reference).

The pre-consultation notes and a location map are attached for ease of reference (NE corner of Miikana Road and Kelly Farm Dr.).

The Stormwater Management of the site is being developed to drain into the 750mm dia. municipal infrastructure Storm sewer stub as illustrated on the attached location map.

We would like to confirm if a quality control of minimum 80% Total Suspended Solids TSS removal will have to be provided **On Site.**

Regards,

Ali Sammour, M.Eng., P.Eng., PMP
Project Manager | Civil Engineer
Jp2g Consultants Inc.
Email: AliS@jp2g.com | Web: www.jp2g.com
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