



Site Servicing and Stormwater Management Report

Findlay Creek School Rev 2

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 2 SUBMISSION July 26, 2022



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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 m²**, the roof area is approximately **3,862 m²**.

A Pre-Consultation meeting was held with City of Ottawa staff on February 02, 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.

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
- Figure 1 – Pre-Development Storm Drainage Areas
- Figure 2 – Post-Development Storm Drainage Areas
- Figure 3 – Fire Hydrant Coverage Area

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, and a new proposed 675 mm dia. to connect to the existing storm sewer manhole MH6106 on Kelly Farm Dr. 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. Refer to calculations in **Appendix B**. Stormwater management techniques are required to reduce peak flows from the area, given that post-development peak flows will exceed the pre-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%).

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. We understand 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).

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-5 and CBMH-6, limiting the outlet discharge for all structures and overland flow to **475.6 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 overland surface 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	2.55	Not required	7	8
1.3.3	CBMH-5 East Side Yard	40 L/s	2.20	24	79	89
1.3.4	Parking Lot	130 L/s	2.52	Not required	31	187

Refer to **Appendix B** for full calculations.



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 roof drains limiting the total flow from the roof to **55.5 L/s**. Each flow control roof drain will restrict flow to **1.85 L/s**. 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 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 m³ per day therefore twining of the water connection is 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: $0.81 \text{ l/s} \times 1.5 = 1.22 \text{ l/s}$

Maximum Hour Demand: $1.22 \text{ l/s} \times 1.8 = 2.20 \text{ l/s}$

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, the fire flow demand for the new school is calculated to be:

Fire Flow Demand: **117.0 l/s** (Refer to Appendix B – Fire Flow Calculations).

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:

Connection 1 - Kelly farm Dr.

Maximum HGL = 148.9 m Head / 77.2 psi Pressure
Peak Hour = 145.3 m Head / 72.0 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 / 72.0 psi Pressure
Max Day + Fire = 143.7 m Head / 69.8 psi Pressure

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



OTTAWA-CARLETON DISTRICT SCHOOL BOARD

Jp2g Consultants Inc. ENGINEERS PLANNERS PROJECT MANAGERS

1150 Morrison Drive, Suite 410, Ottawa, ONT. Phone: (613) 628-7800 Fax: (613) 628-2600

21-5124A



No.	DESCRIPTION	YYYY-MM-DD
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

Professional Engineer Seal for Sammour 100227665, dated June 25, 2022, Province of Ontario.

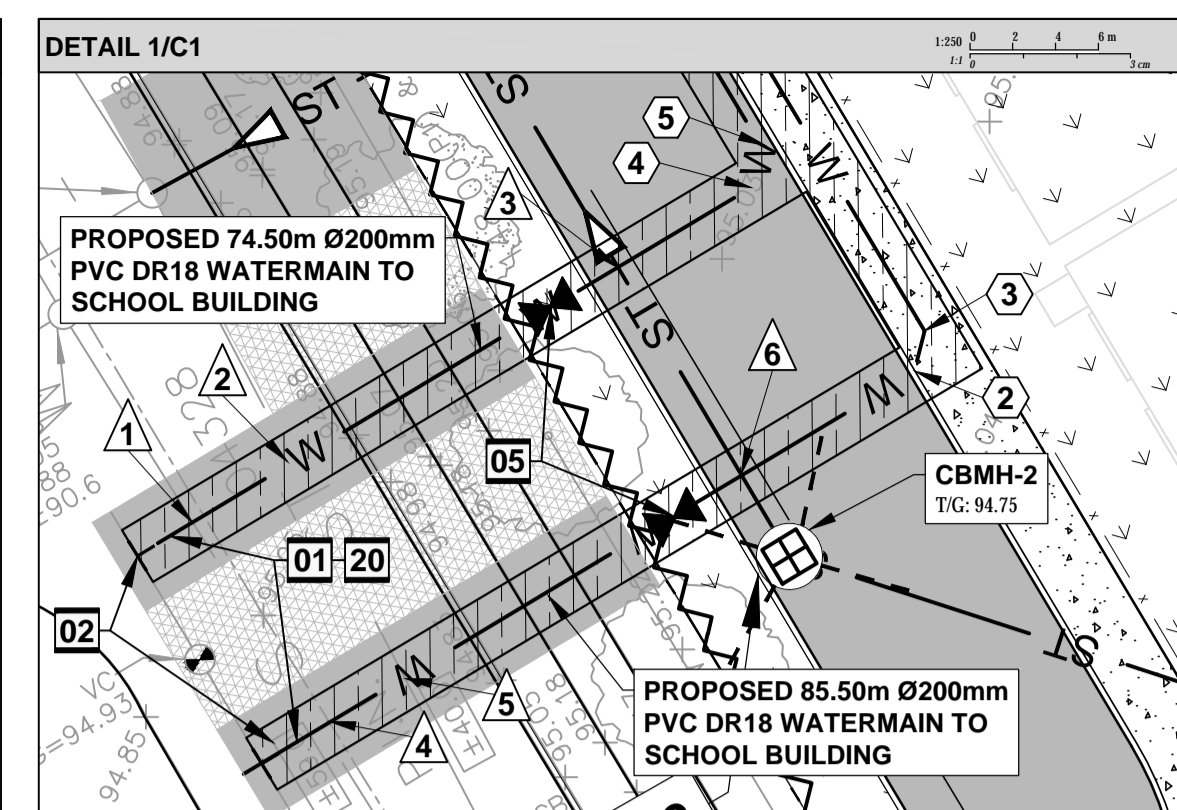
drawing title **Site Servicing Plan**

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

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

LEGEND

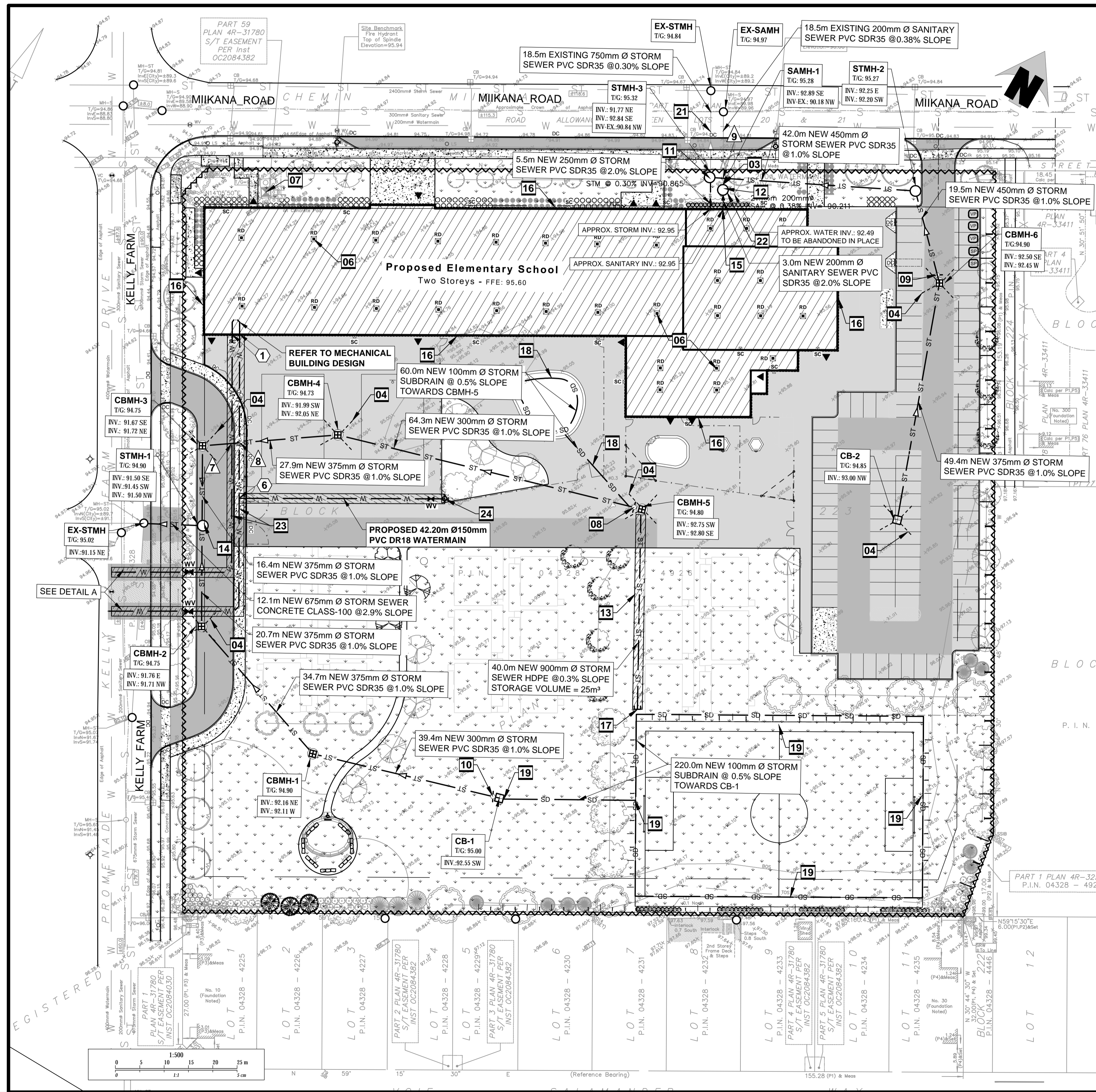
- PROPERTY LINE
- EXISTING BUILDING
- DEPRESSED CURB
- BREAK OF SLOPE - NEW
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- NEW SANITARY SEWER
- NEW STORM SEWER
- NEW WATERMAIN
- NEW LIGHT DUTY ASPHALT
- NEW HEAVY DUTY ASPHALT
- NEW CONCRETE SIDEWALK
- NEW GRASS
- NEW REINFORCED GRASS
- NEW INSULATION
- MILLING & OVERLAY 50mm THICK HEAVY DUTY ASPHALT AS PER CITY SPECS
- EXISTING CATCHBASIN
- EX-CB
- EX-CBMH
- NEW CATCHBASIN
- NEW CATCHBASIN MANHOLE
- NEW SANITARY MANHOLE
- NEW STORM MANHOLE
- NEW WATER VALVE
- NEW INLET CONTROL DEVICE
- NEW ROOF DRAIN
- NEW SCUPPER



DETAIL 1/C1 Scale: 1:250

- DRAWING NOTES**
- SUPPLY AND INSTALL NEW 200mm Ø PVC DR18 WATER MAIN SERVICE. MINIMUM 2.4m COVER. 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.
 - 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.
 - 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.
 - INSTALL FOUR WAY 3.0m LONG 100mm Ø PERFORATED SUBDRAIN WRAPPED IN GEOTEXTILE ROCK EXTENDING FROM CB/CBMH AT PAVEMENT SUBGRADE LEVEL. PROVIDE WATERTIGHT CONNECTION.
 - SUPPLY AND INSTALL NEW 200mm WATER VALVE AT PROPERTY LINE. VALVEBOX ASSEMBLY AS PER CITY OF OTTAWA STANDARD DETAIL DRAWING W24 AND W50.
 - 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.
 - EXISTING TRANSFORMER AND BOLLARDS TO REMAIN.
 - SUPPLY AND INSTALL NEW INLET CONTROL DEVICE FLOW REGULATOR AT CATCHBASIN MANHOLE. CBMH-5 OUTLET. MAXIMUM DISCHARGE 40 l/s AT 2.20m HEAD AND ORIFICE DIAMETER AT 113mm.
 - SUPPLY AND INSTALL NEW INLET CONTROL DEVICE FLOW REGULATOR AT CATCHBASIN MANHOLE. CBMH-5 OUTLET. MAXIMUM DISCHARGE 130 l/s AT 2.53m HEAD AND ORIFICE DIAMETER AT 196mm.
 - SUPPLY AND INSTALL NEW INLET CONTROL DEVICE FLOW REGULATOR AT CATCHBASIN. CB-1 OUTLET. MAXIMUM DISCHARGE 45 l/s AT 2.5m HEAD AND ORIFICE DIAMETER AT 116mm.
 - INSTALL NEW STORM MANHOLE. STMH-3 AND 250mm Ø STORM SEWER PIPE FROM BUILDING TO CONNECT THE EXISTING 750MM Ø STUB. PROVIDE WATERTIGHT CONNECTION.
 - INSTALL NEW SANITARY MANHOLE SAMH-1 AND 200mm Ø SANITARY SEWER PIPE FROM BUILDING TO CONNECT THE EXISTING 200MM Ø STUB. PROVIDE WATERTIGHT CONNECTION.
 - PROVIDE 100mm HIGH LOAD RIGID INSULATION PLACED WITHIN SUBGRADE. INSULATION SHALL BE 2.0m WIDE ABOVE PIPE WHERE INDICATED.
 - 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.
 - CONNECT SERVICES TO INTERIOR PLUMBING 1.0m FROM BUILDING FOUNDATION. REFER TO MECHANICAL AND ARCHITECTURAL PLANS.
 - NEW PERIMETER FOUNDATION DRAINAGE (REFER TO ARCHITECTURAL) TO BE CONNECTED TO THE NEW STORM SEWER.
 - SUPPLY AND INSTALL NEW 90mm Ø HDPE STORMWATER STORAGE PIPE COMPLETE WITH NEW 90mm Ø CAP AT APPROXIMATE INVERT: 92.50m FOR STORMWATER MANAGEMENT PURPOSES.
 - SUPPLY AND INSTALL NEW 100mm Ø PERFORATED DRAIN PIPE c/w FILTER SOCK. CONNECT PLAY AREA SUBDRAIN TO CBMH-5. PROVIDE WATERTIGHT CONNECTION.
 - SUPPLY AND INSTALL NEW 100mm Ø PERFORATED DRAIN PIPE c/w FILTER SOCK. CONNECT SOCCER FIELD SUBDRAIN TO CB-1. PROVIDE WATERTIGHT CONNECTION.
 - SUPPLY AND INSTALL NEW WATERMAIN IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING W50 (TYPICAL PRIVATE SERVICE >100mm CONNECTION PROCEDURE).
 - 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.
 - SUPPLY AND INSTALL NEW SANITARY BACKWATER VALVE INSTALLATION TYPE 1 IN NEW SANITARY MANHOLE SAMH-1 IN ACCORDANCE WITH DETAIL K03.
 - ALL WATERMAIN SHALL BE PROVIDED WITH TRACER WIRE AS PER CITY OF OTTAWA STANDARD DETAILS AND SPECIFICATIONS.
 - INSTALL NEW FIRE HYDRANT WITH 150MM VALVE AS PER CITY DETAIL W19.

- GENERAL NOTES**
- DESIGN AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH MOST RECENT ONTARIO BUILDING CODE.
 - 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.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MATERIAL RELEVANT TO THE PROJECT.
 - ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANINGS AND INTENT AS IF THEY WERE INCLUDED WITH THE CONTRACT DOCUMENTS.
 - 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.
 - 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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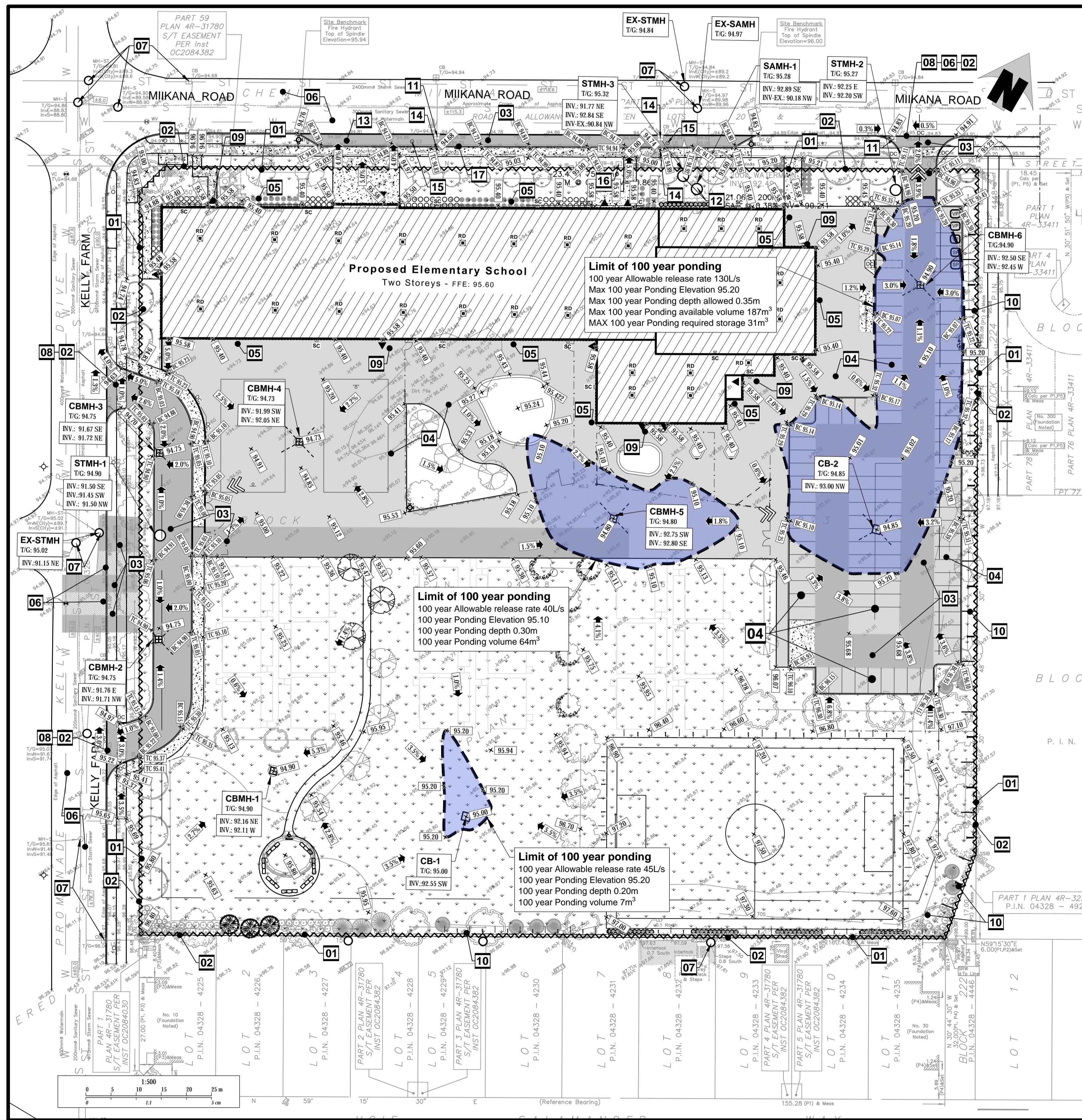
LEGEND	
	PROPERTY LINE
	EXISTING BUILDING
	BREAK OF SLOPE - NEW
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	NEW SANITARY SEWER
	NEW STORM SEWER
	NEW WATERMAIN
	NEW LIGHT DUTY ASPHALT
	NEW HEAVY DUTY ASPHALT
	NEW CONCRETE SIDEWALK
	NEW GRASS
	NEW REINFORCED GRASS
	MILLING & OVERLAY 50mm THICK HEAVY DUTY ASPHALT AS PER CITY SPECS
	NEW SILT FENCE
	DEPRESSED CURB
	EXISTING CATCHBASIN
	EXISTING CATCHBASIN MANHOLE
	NEW CATCHBASIN
	NEW CATCHBASIN MANHOLE
	NEW SANITARY MANHOLE
	NEW STORM MANHOLE
	NEW WATER VALVE
	NEW TRANSFORMER PAD
	EXISTING GRADE
	NEW GRADE
	NEW SLOPE
	OVERLAND FLOW ROUTE
	TOP OF CURB
	BOTTOM OF CURB

- ### EROSION AND SEDIMENT CONTROL NOTES
- 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.
 - PREVENT SOIL LOSS DURING CONSTRUCTION (BY STORM WATER RUNOFF OR WIND EROSION).
 - PROTECT TOPSOIL, BY STOCKPILING FOR REUSE.
 - PREVENT SEDIMENTATION OF STORM SEWERS AND RECEIVING STREAMS.
 - PREVENT AIR POLLUTION FROM DUST AND PARTICULATE MATTER.
 - ALL STORM MANHOLES AND CATCHBASIN MANHOLES TO HAVE 300mm SUMPS; ALL CATCHBASINS TO HAVE 600mm SUMPS.
 - INSTALL FILTER BAG INSERT IN ALL STORM MANHOLES AND CATCH BASINS IMPACTED DURING CONSTRUCTION, INCLUDING CATCH BASINS IN THE RIGHT OF WAY.
 - SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA INSPECTOR OR CONSERVATION AUTHORITY.
 - STORM WATER PUMPED INTO CITY SERVICE SHALL FLOW THROUGH A FILTER SOCK.
 - 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
- GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO SHALL INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION.
 - REFER TO GEOTECHNICAL INVESTIGATION REPORT: GEOTECHNICAL INVESTIGATION PROPOSED NEW FINDLAY CREEK PUBLIC SCHOOL, 820 MIKANA ROAD, SOUTHEAST CORNER OF MIKANA ROAD AND KELLY FARM DRIVE FINDLAY CREEK COMMUNITY BY EXP SERVICES INC. 100-2680 QUEENSWAY DRIVE OTTAWA, ONTARIO K2B 8H6.

- ### GENERAL NOTES
- DESIGN AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH MOST RECENT ONTARIO BUILDING CODE.
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 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MATERIAL RELEVANT TO THE PROJECT.
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 - 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.
 - 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
- INSTALL SILT FENCE IN ACCORDANCE WITH OPS 219.130.
 - MATCH EXISTING GRADES AT PROPERTY LINE AND LIMITS OF WORK.
 - INSTALL HEAVY DUTY PAVEMENT IN ACCORDANCE WITH DETAIL 2C3 ACCORDINGLY. REINSTATE GRADES TO TIE INTO EXISTING AND PROVIDE POSITIVE DRAINAGE TOWARDS STORM STRUCTURES.
 - INSTALL LIGHT DUTY PAVEMENT IN ACCORDANCE WITH DETAIL 1C3 ACCORDINGLY. REINSTATE GRADES TO TIE INTO EXISTING AND PROVIDE POSITIVE DRAINAGE TOWARDS STORM STRUCTURES.
 - GRADES TO SLOPE AWAY FROM THE BUILDING TO PROVIDE POSITIVE DRAINAGE.
 - ANY DISTURBED AREA WITHIN THE RIGHT-OF-WAY SHALL BE REINSTATED TO EQUAL OR BETTER CONDITION TO THE SATISFACTION OF THE CITY OF OTTAWA.
 - PROTECT EXISTING MANHOLES AND CATCHBASINS USING A FILTER SOCK OR FILTER BASE IN ACCORDANCE WITH DETAIL 4/C3.
 - CONSTRUCT PARKING LOT LAY BY AND BUS LOOP ENTRANCE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING SC7.1 - CURB RETURN ENTRANCES.
 - PAVEMENT TO BE WITHIN 12mm OF DOOR.
 - PROVIDE MAXIMUM 4:1 SLOPE.
 - COVER OF EXISTING CATCH BASIN TO BE MODIFIED TO TOP ENTRY GATE AS PER CITY STANDARD S19.
 - CONTRACTOR TO PROVIDE TRENCH BOX FOR EXCAVATION IN PROXIMITY OF MUNICIPAL RIGHT OF WAY.
 - REMOVE EXISTING BARRIER CURB AND EXISTING SIDEWALK.
 - PROVIDE NEW INLET TYPE CATCH BASIN AS PER CITY STANDARD S3 AND EXTEND EXISTING CATCH BASIN LEAD.
 - RELOCATE LIGHT STANDARD TO THE BACK OF NEW SIDEWALK.
 - PROTECT BELL JUNCTION BOX AND MANHOLE. CONTRACTOR TO COORDINATE WITH UTILITIES FOR RELOCATION AND/OR PROTECTION.
 - INSTALL NEW BARRIER CURB AS PER CITY STANDARD SC1.1.



Jp2g Consultants Inc.
ENGINEERS PLANNERS PROJECT MANAGERS
1150 Morrison Drive, Suite 410, Ottawa, ONT.
Phone: (613) 828-7800 Fax: (613) 828-2600
21-6124A



No.	DESCRIPTION	YYYY-MM-DD
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

Professional Engineer Seal:
Sammour 100227665
June 25, 2022
PROVINCE OF ONTARIO

drawing title	
Site Grading, Erosion and Sediment Control Plan	
scale	As shown
drawn by	R.I.
date	June 2022
checked by	A.S.
project number	22-719
drawing number	C2
CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES.	revision
DO NOT SCALE DRAWINGS.	

General Notes

- DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND LANDSCAPE DRAWINGS
- 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 SPECIFICATIONS STANDARD SPECIFICATION (OPSS) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), UNLESS OTHERWISE SPECIFIED, TO THE SATISFACTION OF THE CITY AND THE CONSULTANT
- THE POSITION OF EXISTING POLE LINES, CONDUITS, WATERMANS, 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.
- 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.
- 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.
- 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.
- 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.
- ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS. VERIFY THAT JOB BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED.
- ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE OR CATCH BASIN OUTLETS ARE PROVIDED.
- 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.
- 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.
- ABUTTING PROPERTY GRADES TO BE MATCHED UNLESS OTHERWISE SHOWN.
- 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.
- MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
- 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 OREG. 406/19. ALL ASSOCIATED COSTS ARE TO BE BORNE BY THE CONTRACTOR.
- AT PROPOSED UTILITY CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
- CONTRACTOR TO OBTAIN POST-CONSTRUCTION TOPOGRAPHIC SURVEY, COMPLETED BY OLS OR P.ENG CONFIRMING COMPLIANCE WITH DESIGN GRADING AND SERVICES. SURVEY IS TO INCLUDE LOCATION AND INVERTS FOR BURIED UTILITIES.
- ABIDE BY RECOMMENDATIONS OF GEOTECHNICAL REPORT. REPORT ANY VARIATIONS IN OBSERVED CONDITIONS FROM THOSE INCLUDED IN REPORT.
- REPORT REFERENCES:
 - 1. GEOTECHNICAL INVESTIGATION PREPARED BY EXP SERVICES INC., PROJECT NO.: OTT-00245378-R0, DATED NOVEMBER 11, 2020.
 - 2. 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

- 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.
- 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.
- SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
- 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.
- MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES AS PER THE OPSD 701.021
- 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

- 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.
- STORM SEWERS 450mm DIAMETER AND SMALLER SHALL BE PVC SDR-35, WITH RUBBER GASKET PER CSA A-257.3.
- STORM SEWER LARGER THAN 600mm SHALL BE REINFORCED CONCRETE CLASS 100.
- SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
- ALL STORM MANHOLES TO BE AS PER MANHOLE AND CATCHBASIN SCHEDULE.
- 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.
- CB IN LANDSCAPE AREAS SHALL BE AS PER CITY OF OTTAWA STANDARD S29, S30 AND S21.
- ALL CATCHBASIN LEADS TO BE MINIMUM 200mm DIAMETER AT MINIMUM 1.0% SLOPE UNLESS OTHERWISE SPECIFIED.
- STORM CATCHBASINS AS PER OPSD 705.010 AND FRAME COVER AS PER CITY STANDARD DRAWINGS S19.
- STORM CBMHS AS INDICATED IN TABLE WITH SUMP. ADJUSTMENT SECTIONS SHALL BE AS PER OPSD 704.010.
- INSTALLATION OF FLOW CONTROL ICDS 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.****

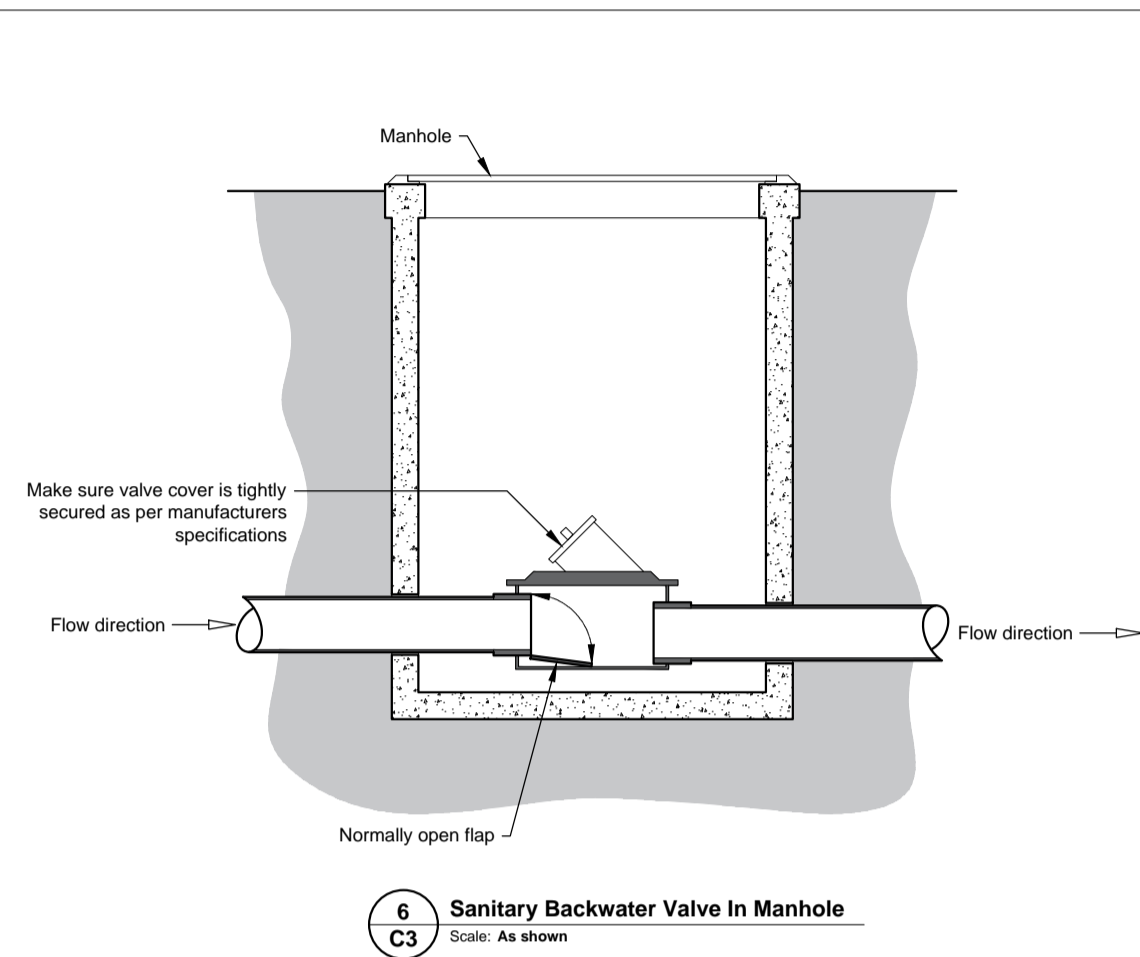
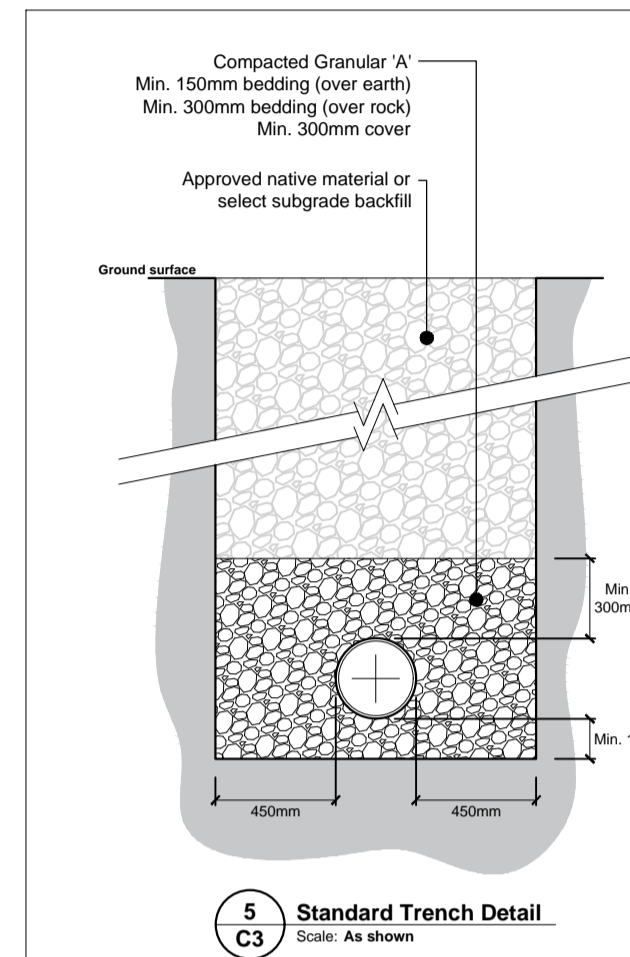
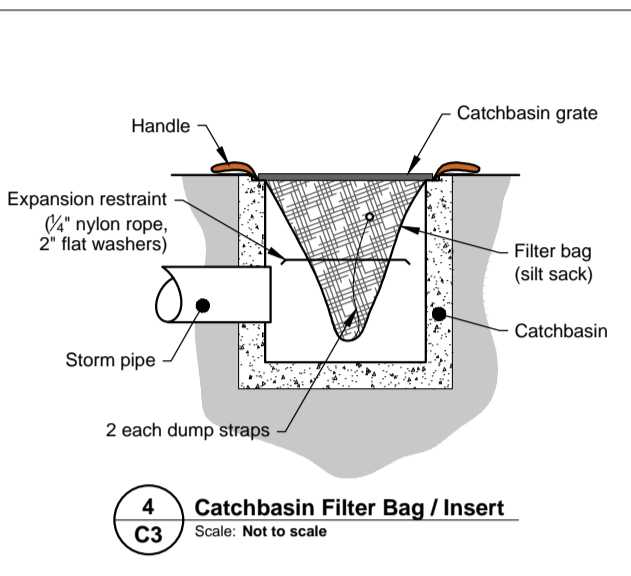
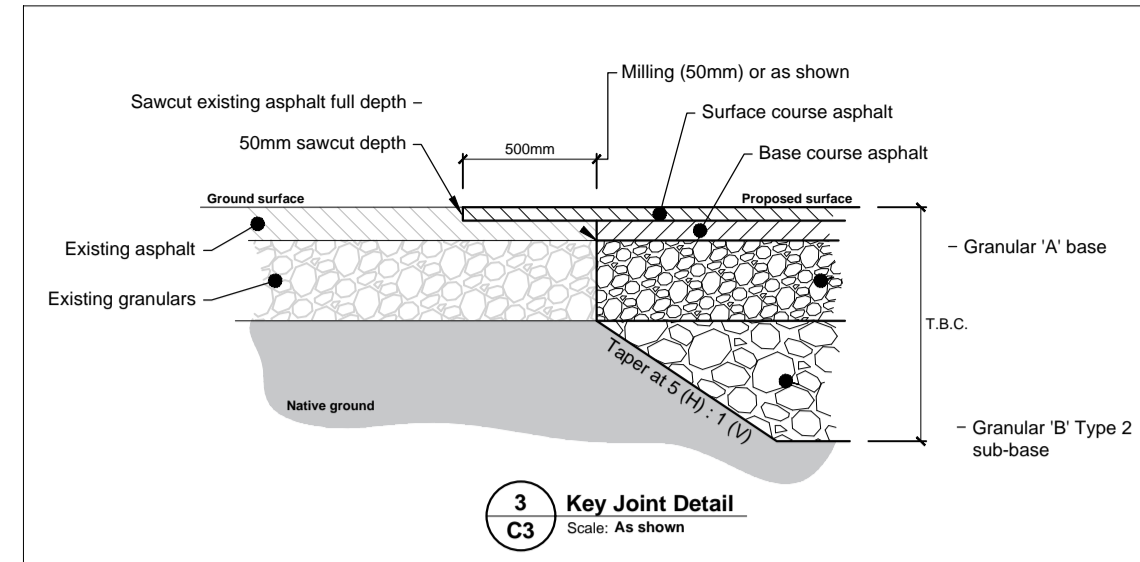
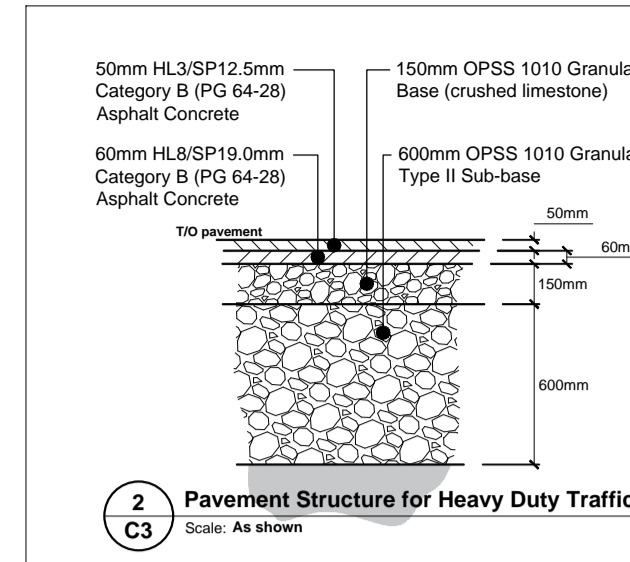
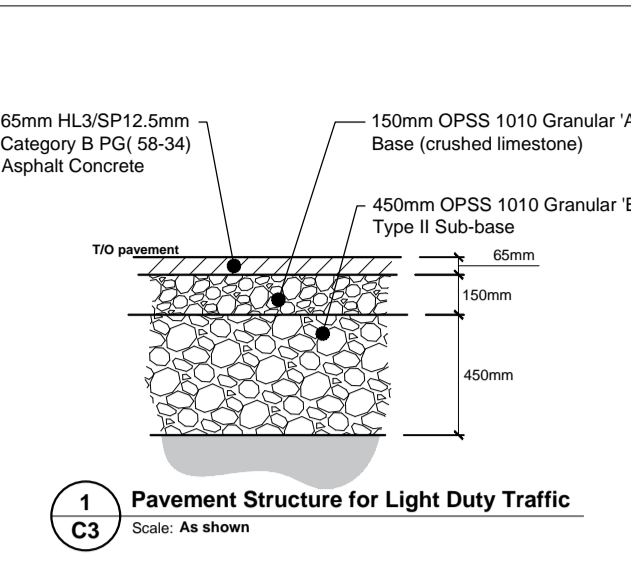
- PRIOR TO START OF CONSTRUCTION:
 - INSTALL SILT FENCE IN LOCATION SHOWN ON DWG C2.
 - INSTALL FILTER FABRIC OR SILT SACK FILTERS ALL THE CATCHBASINS AND MANHOLES TO REMAIN DURING CONSTRUCTION WITHIN THE SITE (SEE TYPICAL DETAIL).
 - INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
- DURING CONSTRUCTION:
 - MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE AND IMPACTS TO EXISTING GRADING.
 - PERMETER 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.
 - PROTECT DISTURBED AREAS FROM OVERLAND FLOW BY PROVIDING TEMPORARY SWALES TO THE SATISFACTION OF THE FIELD ENGINEER. TIE-IN TEMPORARY SWALE TO EXISTING CBS AS REQUIRED.
 - PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
 - INSPECT SILT FENCES, FILTER FABRIC FILTERS AND CATCH BASIN SUMPS WEEKLY AND WITHIN 24 HOURS AFTER A STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
 - DRAWING TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
 - EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
 - DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDED IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
 - 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).
 - NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE FIELD ENGINEER.
 - CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING AS REQUIRED.
 - DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPPED.
 - ANY MULTIMATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
 - TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.
 - 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.
 - 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 SHALL ACKNOWLEDGE THE FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

Notes: Watermain

- ALL WATERMAIN AND WATERMAIN APPURTENANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND MINISTRY OF ENVIRONMENT STANDARDS AND SPECIFICATIONS.
- ALL WATERMAIN 300mm DIAMETER AND SMALLER TO BE POLY VINYL CHLORIDE (PVC) CLASS 150 DR 18 MEETING AWWA SPECIFICATION 900.
- ALL WATERMAIN TO BE INSTALLED AT MINIMUM COVER OF 2.4m BELOW FINISHED GRADE, WHERE WATERMANS CROSS OVER OTHER UTILITIES, A MINIMUM 0.30m CLEARANCE SHALL BE MAINTAINED. WHERE WATERMANS 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.
- 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.
- CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS AS PER CITY OF OTTAWA STANDARD W40 & W42.
- ALL VALVES AND VALVE BOXES AND CHAMBERS, HYDRANTS, AND HYDRANT VALVES AND ASSEMBLES SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARD.
- 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.
- 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

- CONTRACTOR TO REINSTATE ROAD CUTS AS PER CITY OF OTTAWA DETAIL R10.
- CONTRACTOR TO PREPARE SUBGRADE, INCLUDING PROOFROLLING, TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT PRIOR TO THE COMMENCEMENT OF PLACEMENT OF GRANULAR B MATERIAL.
- FILL TO BE PLACED AND COMPACTED PER THE GEOTECHNICAL REPORT REQUIREMENTS.
- 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.
- GRANULAR A MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR B PLACEMENT.
- 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.
- ASPHALT MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR A PLACEMENT.
- 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.
- CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING LINE AND GRADE IN ACCORDANCE WITH THE PLANS, AND FOR PROVIDING THE CONSULTANT WITH VERIFICATION PRIOR TO PLACEMENT.
- 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 METHODOLOGY.



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	92.55 SW	600 x 600 / 705.010	S19	
CB-2	94.850	93.00 NW	600 x 600 / 705.010	S19	
CBMH-1	94.900	92.16 NE / 92.11 W	1200 / 701.010	S25 / S28.1	
CBMH-2	94.750	91.76 E / 91.71 NW	1200 / 701.010	S25 / S28.1	
CBMH-3	94.730	91.67 SE / 91.72 NE	1200 / 701.010	S25 / S28.1	
CBMH-4	94.730	91.99 SW / 92.05 NE	1200 / 701.010	S25 / S28.1	
CBMH-5	94.800	92.75 SW / 92.80 SE	1800 / 701.012	S25 / S28.1	
CBMH-6	94.900	92.50 SE / 92.45 W	1200 / 701.010	S25 / S28.1	
STMH-1	94.900	91.50 SE / 91.45SW / 91.50 NW	1200 / 701.010	S25 / S24	
STMH-2	95.270	92.25 E / 92.20 SW	1200 / 701.010	S25 / S24	
STMH-3	95.320	91.77 NE / 92.84 SE / EX-90.84 NW	1500 / 701.011 / 1003-010 (DOROP PIPE STRUCTURE)	S25 / S24	
SAWH-1	95.280	92.89 SE / EX-90.18 NW	1200 / 701.010 / 1003-010 (DOROP PIPE STRUCTURE)	S25 / S24.1	

CROSSING TABLE					
LOCATION	OVER / UNDER	T/O	INVERT	OBVERT	CLEARANCE (m)
▲	NEW WATERMAIN - EXISTING SANITARY	95.05	92.60 (WM)	90.76 (SAN)	1.84
▲	NEW WATERMAIN - EXISTING STORM SEWER	95.00	92.80 (WM)	92.06 (STORM)	0.74
▲	NEW WATERMAIN - NEW STORM SEWER	94.75	92.80 (WM)	92.05 (STORM)	0.75
▲	NEW WATERMAIN - EXISTING SANITARY SEWER	95.05	92.50(WM)	90.88 (SANITARY)	1.62
▲	NEW WATERMAIN - EXISTING STORM SEWER	95.05	92.80 (WM)	92.20 (STORM)	0.60
▲	NEW WATERMAIN - NEW STORM SEWER	94.82	92.80 (WM)	91.99 (STORM)	0.81
▲	NEW WATERMAIN - NEW STORM SEWER	94.90	92.80 (WM)	92.22 (STORM)	0.58
▲	NEW WATERMAIN - NEW STORM SEWER	94.90	92.80 (WM)	92.22 (STORM)	0.58
▲	NEW STORM WATER - EXISTING SANITARY SEWER	95.30	91.80 (STORM)	90.38 (SAN)	1.42

WATER SERVICE TABLE			
ID	DESCRIPTION	FINISHED GRADE (m)	T/O WATERMAIN (m)
①	BUILDING CONNECTION	95.600	93.000
②	45° HORIZONTAL BEND	94.920	93.000
③	45° HORIZONTAL BEND	94.920	93.000
④	45° HORIZONTAL BEND	95.000	93.000
⑤	45° HORIZONTAL BEND	95.000	93.000
⑥	TEE 200X150mm	95.020	93.000

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



Jp2g Consultants Inc.
 ENGINEERS PLANNERS PROJECT MANAGERS
 1150 Morrison Drive, Suite 410, Ottawa, ONT.
 Phone: (613) 628-7800 Fax: (613) 628-2600
 21-6124A



No.	DESCRIPTION	YYYY-MM-DD
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

Professional Engineer Seal: SAMMOUR 100227665, June 25, 2022, PROVINCE OF ONTARIO

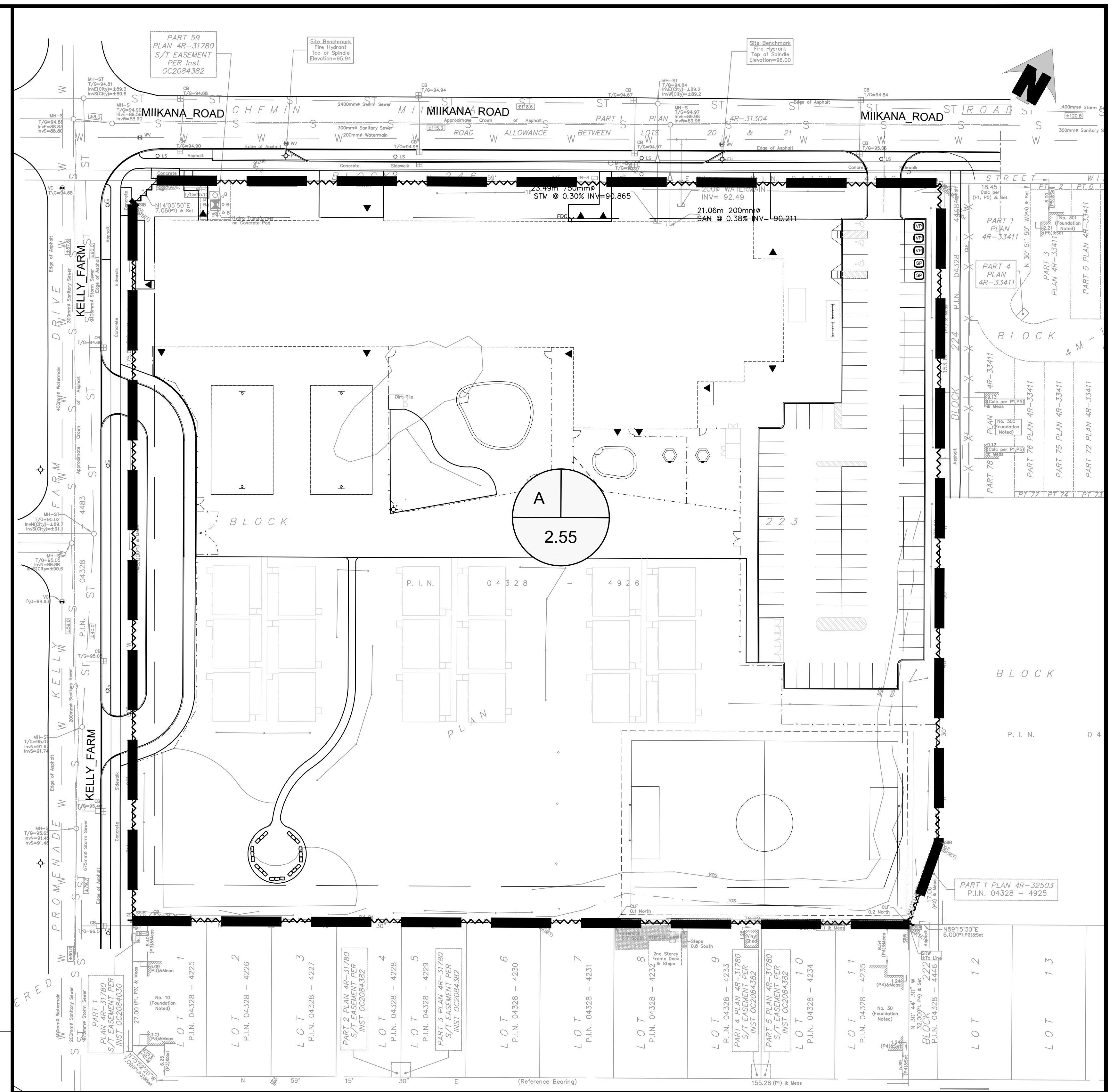
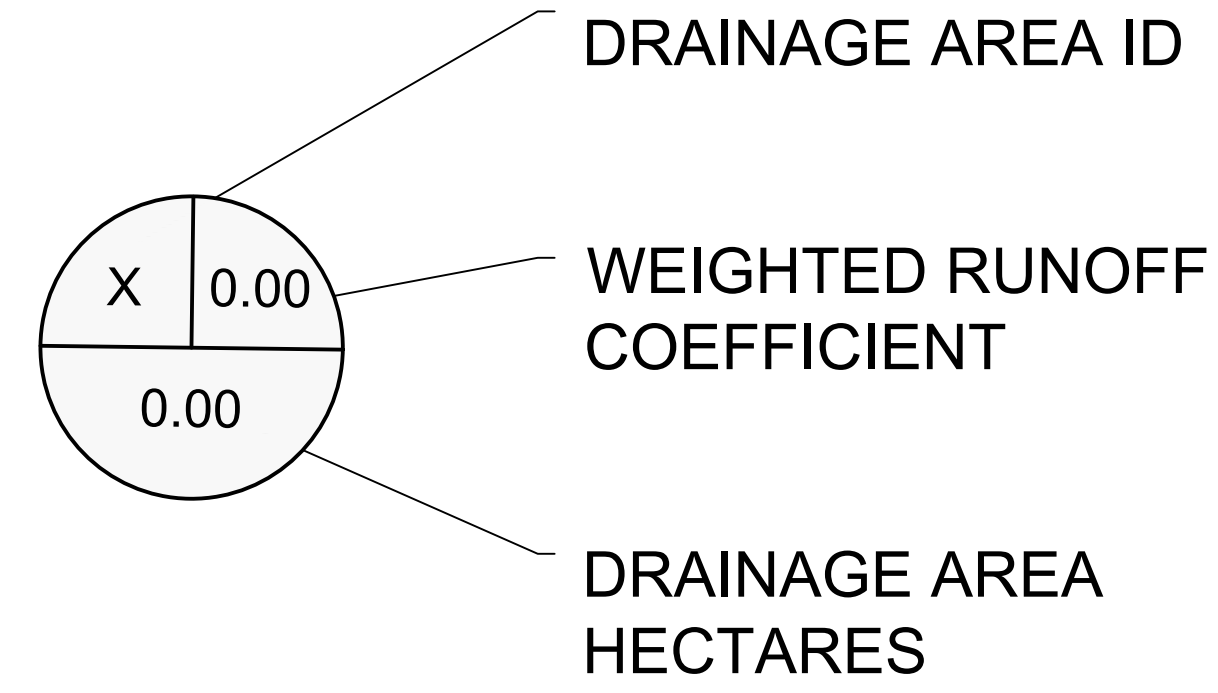
drawing title
Details, Notes and Schedules

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

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

revision

LEGEND



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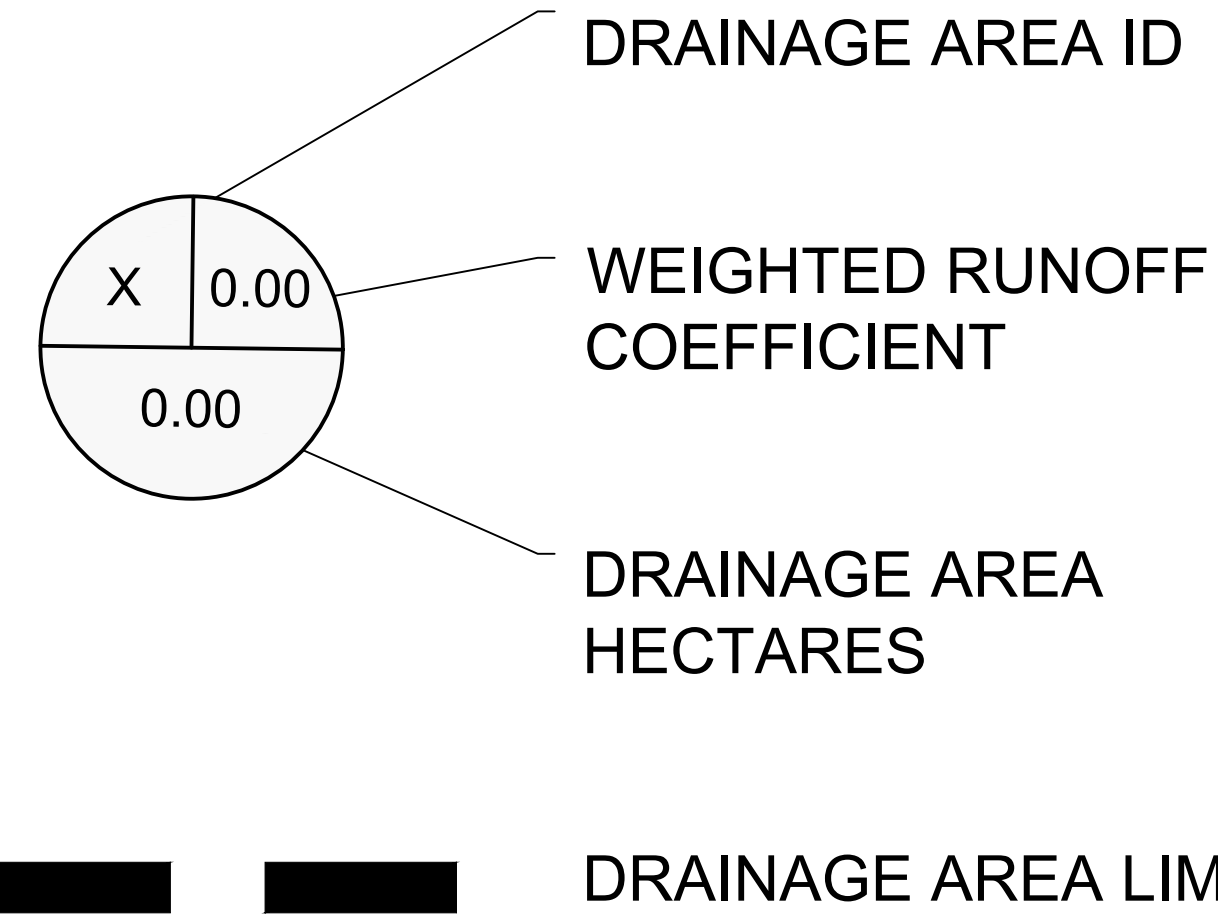
12 INTERNATIONAL DRIVE, PEMBROKE, ON Phone: (613)735-2507, Fax:(613)735-4513
 1150 MORRISON DRIVE, SUITE 410, OTTAWA, ON Phone: (613)828-7800, Fax: (613)828-2600

FINDLAY CREEK #2 PUBLIC SCHOOL
 820 MIKANA ROAD, ONTARIO

FIGURE 1 PRE-DEVELOPMENT DRAINAGE AREAS

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

LEGEND

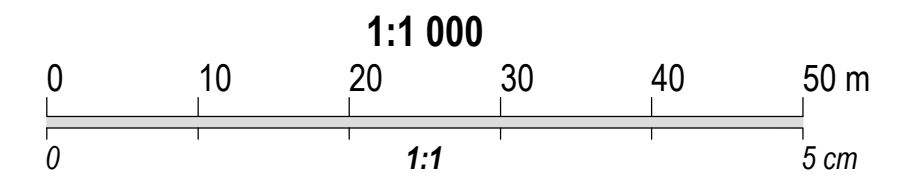
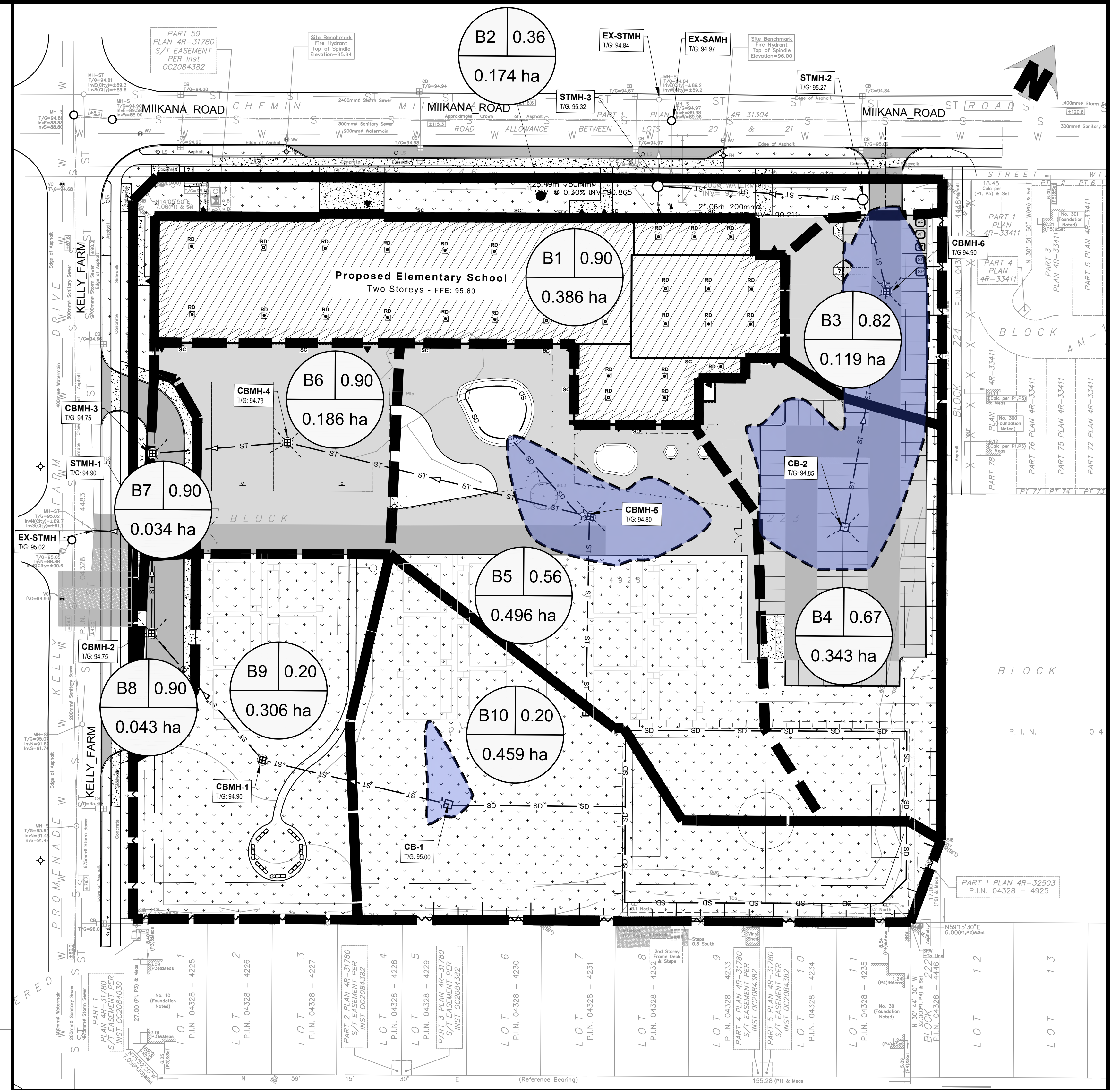


DRAINAGE AREA ID

WEIGHTED RUNOFF COEFFICIENT

DRAINAGE AREA HECTARES

DRAINAGE AREA LIMIT



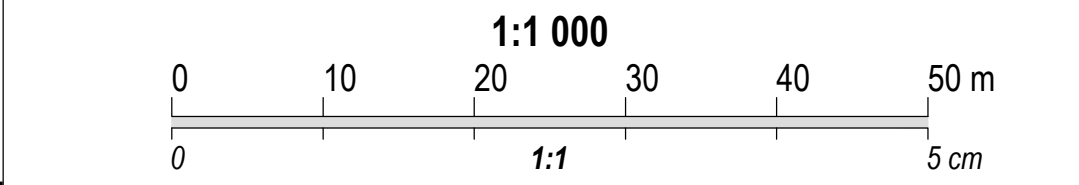
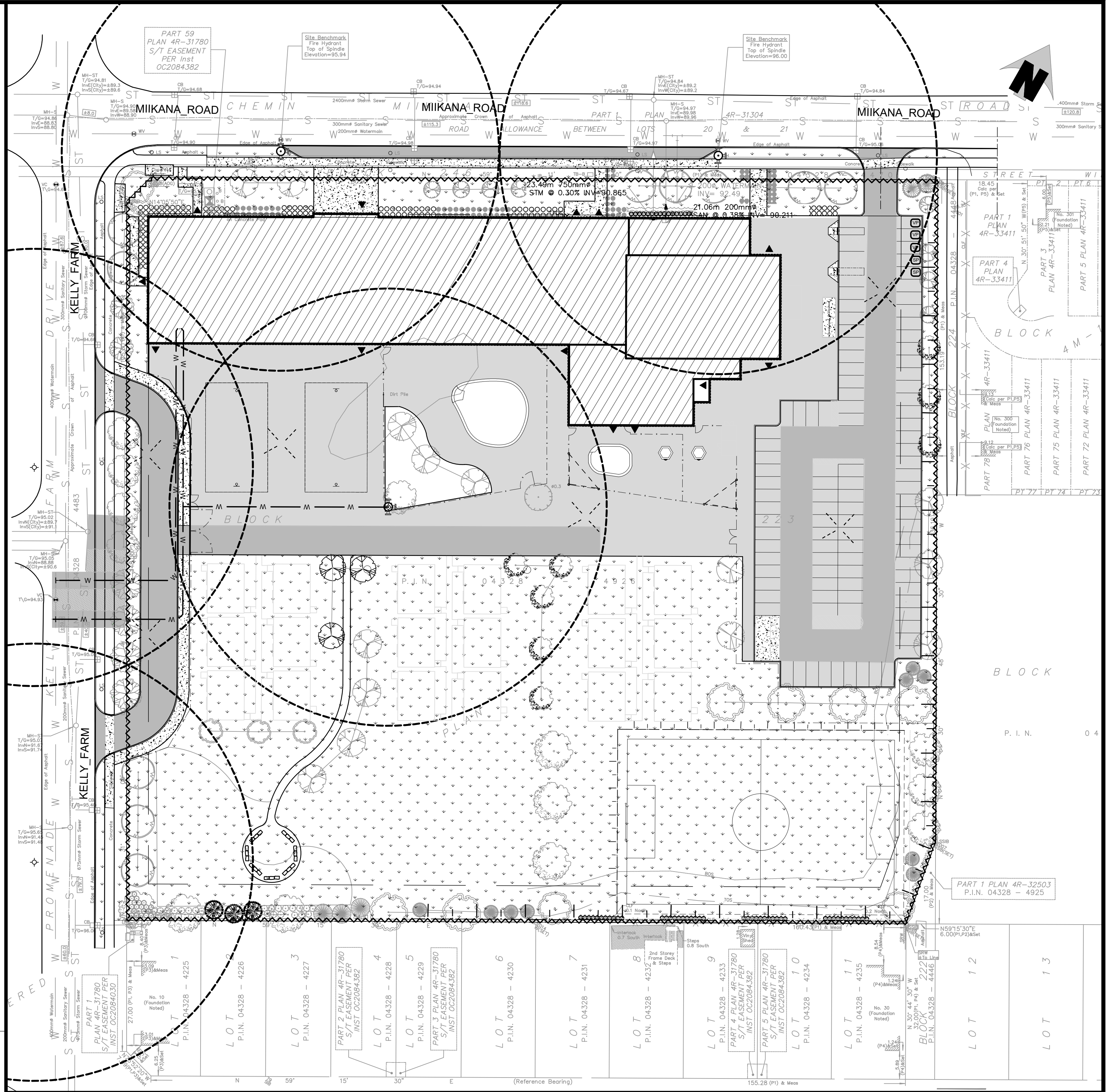
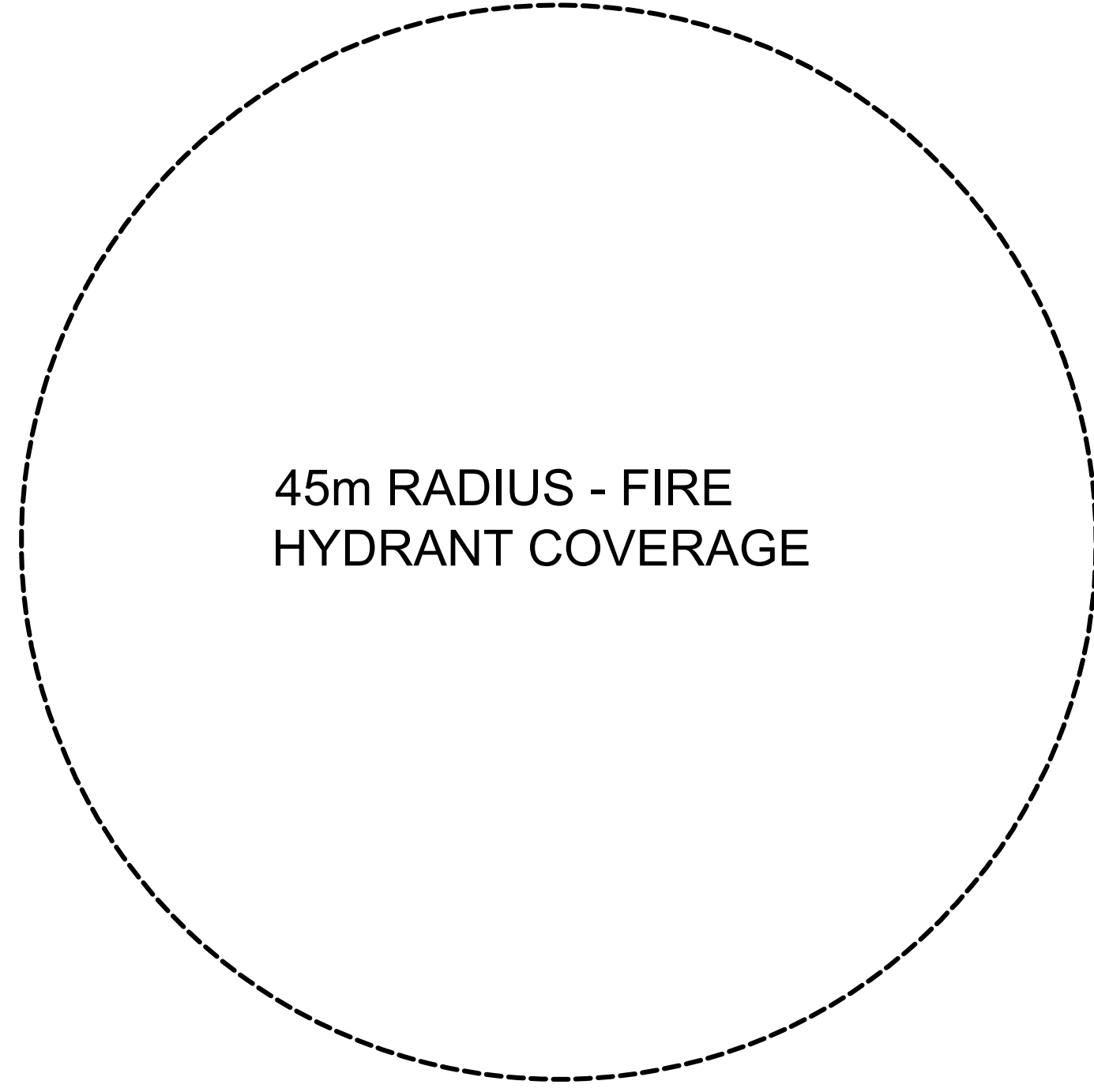
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1150 MORRISON DRIVE, SUITE 410, OTTAWA, ON Phone: (613)828-7800, Fax: (613)828-2600

FINDLAY CREEK #2 PUBLIC SCHOOL
820 MIIKANA ROAD, ONTARIO

FIGURE 2 POST-DEVELOPMENT DRAINAGE AREAS

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



J2 Jp2g Consultants Inc.
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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 3 FIRE HYDRANT COVERAGE AREA

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



Appendix B - Stormwater Management Calculations

Appendix B - Storm Sewer Design Sheet

B.1.1 - Allowable release rate

ID	Description	Type	Areas (m ²)		Total (m ²)	C _{pre-5-yr}	C _{pre-100-yr} *
			C _{0.90}	C _{0.20}			
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 Leirtrim Development Area by IBI Engineering Consultants Ltd. (August 2017), the maximum allowable release rate allocated for this site is:

$Q_{\text{allowable (5-year)}} = 476$ l/s ①
 $\text{Total Area, A} = 2.55$ ha

B.1.2 - Post-development release rate

ID	Description	Type	Areas (m ²)		Total (m ²)	C _{post-5-yr}	C _{post-100-yr} *
			C _{0.90}	C _{0.20}			
B1	New School Building Roof	controlled	3862	0	3862	0.90	1.00
B2	Front of School on Mikkana Drive & NW frontage	uncontrolled	406	1337	1742	0.36	0.42
B3	CBMH -6 Parking Lot North	controlled	1051	135	1187	0.82	0.91
B4	CB -2 Parking Lot South	controlled	2288	1147	3434	0.67	0.75
B5	CBMH -5 East Side of School Yard	controlled	2562	2404	4966	0.56	0.64
B6	CBMH -4 West Side of School Yard	uncontrolled	1861	0	1861	0.90	1.00
B7	CBMH -3 Bus Lay by north	uncontrolled	338	0	338	0.90	1.00
B8	CBMH -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

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

Calculations for post-development runoff coefficient

$C_{\text{post-5-yr (col. D)}} = (\text{column A} * 0.9 + \text{column B} * 0.2) / \text{column C}$
 $C_{\text{post-100-yr (col. E)}} = (\text{column A} * 1.0 + \text{column B} * 0.2 * 1.25) / \text{column C}$
 Note: 0.90 x 1.25 = 1.125, use max. 1.0

Calculations for average weighted runoff coefficient

$C_{\text{post-5-yr}} = 0.49$
 $C_{\text{post-100-yr}} = 0.56$

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.1.2.1 - Uncontrolled overland surface flow

Total uncontrolled area, B2, B6, B7, B8 & B9	0.743	ha
5-year Runoff coefficient, $C_{5\text{-yr-uncontrolled}}$	0.49	
100-year Runoff coefficient, $C_{100\text{-yr-uncontrolled}}$	0.56	

Uncontrolled overland surface Release Rate 5-year	104.5	l/s	②
Uncontrolled overland surface Release Rate 100-year	205.1	l/s	④

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

$Q_{\text{net-allowable 5-year}} = 371.0$ l/s ③ = ① - ②
 $Q_{\text{net-allowable 100-year}} = 270.4$ l/s ⑤ = ① - ④ * Must be controlled to net-allowable 100-year

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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
$peak V_{\text{stored}} \rightarrow$	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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
$peak V_{\text{stored}} \rightarrow$	10	178.6	191.7	55.5	136.2	81.7
	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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
$peak V_{\text{stored}} \rightarrow$	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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
<i>peak V_{stored}</i> →	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** m³ estimated yard detention

B.1.3.3 - Estimated detention CBMH -5 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-5 **40.0** 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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
<i>peak V_{stored}</i> →	10	104.2	80.7	40.0	40.7	24.4
	15	83.6	64.7	40.0	24.7	22.2
	20	70.3	54.4	40.0	14.4	17.3
	25	60.9	47.2	40.0	7.2	10.8
	30	53.9	41.8	40.0	1.8	3.2
	35	48.5	37.6	40.0	-2.4	-5.1
	40	44.2	34.2	40.0	-5.8	-13.9
	45	40.6	31.5	40.0	-8.5	-23.0
	50	37.7	29.2	40.0	-10.8	-32.5
	55	35.1	27.2	40.0	-12.8	-42.2
	60	32.9	25.5	40.0	-14.5	-52.1

Therefore **24** m³ 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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
<i>peak V_{stored}</i> →	10	178.6	157.0	40.0	117.0	70.2
	15	142.9	125.6	40.0	85.6	77.1
	20	120.0	105.5	40.0	65.5	78.6
	25	103.8	91.3	40.0	51.3	77.0
	30	91.9	80.8	40.0	40.8	73.4
	35	82.6	72.6	40.0	32.6	68.5
	40	75.1	66.1	40.0	26.1	62.6
	45	69.1	60.7	40.0	20.7	55.9
	50	64.0	56.2	40.0	16.2	48.7
	55	59.6	52.4	40.0	12.4	41.0
	60	55.9	49.1	40.0	9.1	32.9

Therefore **79** m³ 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-6	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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
$peak V_{\text{stored}} \rightarrow$	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** m³ 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)	$Q_{\text{allowable}}$ (l/s)	Q_{stored} (l/s)	V_{stored} (m ³)
$peak V_{\text{stored}} \rightarrow$	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** m³ estimated yard detention

B.1.4 - Site storage

	5-year required (m3)	100-year required (m3)	Ponding depth (m)	Ponding area (m2)	Max available (m3)
Roof Detention	27	88	0.15	3862	193
CB-1 School Yard & Soccer Field Detention	-11	7	0.20	123	8
CBMH-5 East Side Yard (surface + underground) **	24	79	0.30	637	89
Parking Lot B3 & B4 Detention	-21	31	0.35	1605	187

** 100 years available storage surface $V1 = 64 \text{ cum}$ + 40 meters of underground 900mm dia pipe $V2 = 25 \text{ cum}$, V total available storage 100 years required = **89 cum**

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



B.1.5 - Storm Sewer Pipe Design

Definitions

Manning's Coefficient = 0.013
 Return Frequency (yrs) = 5
 1 acre = 0.4047 hectares

Rational Method

Q = 2.78 CIA (l/s), where
 C= Runoff Coefficient
 i = Rainfall Intensity (mm/hr)
 A = Areas in Hectares (ha)

Notes

1) Used City of Ottawa IDF Curve
 2) Min. velocity = 0.8 m/sec
 3) Max. velocity = 6.0 m/sec

LOCATION		AREA (ha)		FLOW					SEWER DATA									
From	To	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
		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-1	CBMH-1	0.000	0.46	0.26	0.26	10.0	104.2	178.6	45	45	300	1.00	39.4	96.7	1.4	0.5	10.5	47
CBMH-1	CBMH-2	0.000	0.31	0.17	0.43	10.5	101.7	174.3	62.3	74.7	375	1.00	34.7	175.3	1.6	0.4	10.8	36
CBMH-2	STMH-1	0.043	0.000	0.11	0.53	10.8	99.9	171.2	73.0	93.0	375	1.00	20.7	175.3	1.6	0.2	11.1	42
CBMH-5	CBMH-4	0.256	0.240	0.77	0.77	10.0	104.2	178.6	40	40	300	1.00	64.3	96.7	1.4	0.8	10.8	41
CBMH-4	CBMH-3	0.186	0.000	0.47	1.24	10.8	100.2	171.7	86.7	119.9	375	1.00	27.9	175.3	1.6	0.3	11.1	49
CBMH-3	STMH-1	0.034	0.000	0.08	1.32	11.1	98.8	169.3	95.0	134.3	375	1.00	16.4	175.3	1.6	0.2	11.2	54
STMH-1	Ex. STMH Kelly Farm	0.000	0.000	0.00	1.86	11.2	98.0	167.9	168.1	227.3	675	2.89	12.1	1428.9	4.0	0.1	11.3	12
CB-2	CBMH-6	0.229	0.115	0.64	0.64	10.0	104.2	178.6	66.3	113.6	375	1.00	49.4	175.3	1.6	0.5	10.5	38
CBMH-6	STMH-3	0.105	0.014	0.27	0.91	10.5	101.5	174.0	130	130	450	1.00	61.5	285.1	1.8	0.6	11.1	46
Roof	STMH-3	0.386	0.000	0.97	0.97	10.0	104.2	178.6	55.5	55.5	250	2.00	5.5	84.1	1.7	0.05	10.05	66
STMH-3	Ex. STMH Miikana	0.000	0.000	0.00	1.87	11.1	98.8	169.2	185.5	185.5	750	0.30	16.0	609.7	1.4	0.2	11.3	30

Existing on Miikana Rd.

Flow control installed at outlet

Orifice Diameter Calculation

Design Parameters*

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

Pipe Diameter Formula: $A = (\pi \cdot d^2)/4$
 $d = \sqrt{4 \cdot A/\pi}$

d = Orifice diameter (m)

A = Pipe area (m²)

C = 0.61

g = 9.81 (m/s²)

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)
95.20	92.55	300.0	2.500

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	2.50	0.011	0.116	116

CBMH-5

Elevation at Top of Ponding	Elevation at Pipe Invert	Size of Outlet Pipe	Head from Centroid (h)
(m)	(m)	(mm)	(m)
95.10	92.75	300.0	2.200

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
40.0	0.61	9.8	2.20	0.010	0.113	113

CBMH-6

Elevation at Top of Ponding	Elevation at Pipe Invert	Size of Outlet Pipe	Head from Centroid (h)
(m)	(m)	(mm)	(m)
95.20	92.45	450.0	2.525

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	2.53	0.030	0.196	196



Appendix C - Sanitary Servicing Calculations

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

$Q = A \cdot R^{2/3} \cdot S^{1/2} / n$ (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						
Note	From	To	Area (ha)	Units	Population	Cumulative		Average Flow (l/s)	Peak Flow (l/s)	Area (ha)		Average Flow (l/s)	Peak Flow (l/s)	Area (ha)		Inf. Flow (l/s)	Average Flow (l/s)	Peak Flow (l/s)	Dia. (mm)	Slope	Capacity (full) (l/s)	Velocity (full) (m/s)	Utilization (%)
						Area	Population			Individual	Cumulative			Individual	Cumulative								
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

Appendix D- Fire Flow Demand Requirements

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

Fire Flow Formula

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

- 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

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

New School Building

Design Parameters*

- Type of Building Construction = Non-combustible construction
- Floor Area*** = 7300.0 m²
- Occupancy Class = Limited combustible
- Sprinkler System = Automatic sprinkler system conforming to NFPA standards with standard water supply and full supervision
- Sprinkler Building Coverage = Complete building coverage
- Factor of Building Coverage X =
- Number of Storeys = 2

Exposure Parameters*

	North West	-	-	-
Separation Distance =	36.2			m
Length of Exposed Wall =	130.3			m
Length-Height Factor =	260.5	0.0	0.0	0.0 m-storeys (up to a maximum of 5-storeys)

Building Construction	Floor Area*** (m ²)	Coefficient	Adjustments (increases or decreases)										Final Adjusted Fire Flow	Final Adjusted Fire Flow	
			A		B = A +/- %		C = B x %		D = B x %						
			Fire Flow (F) (L/min)	Occupancy	Adjusted Fire Flow(s) (L/min)	Sprinkler	Fire Adjustment Flow(s) (L/min)	Exposure***							
Non-combustible construction	7,300.0	0.8	15,000.0	%	12,750.0	%	6,375.0	North West	-	-	-	Total Exposure	Fire Adjustment Flow(s) (L/min)	E = B - C + D (L/min)*	(L/s)
				-0.15		50%		5%	0%	0%	0%	5%	637.5	7,000.0	116.7

*Water Supply for Public Protection (Fire Underwriters Survey, 1999).

***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

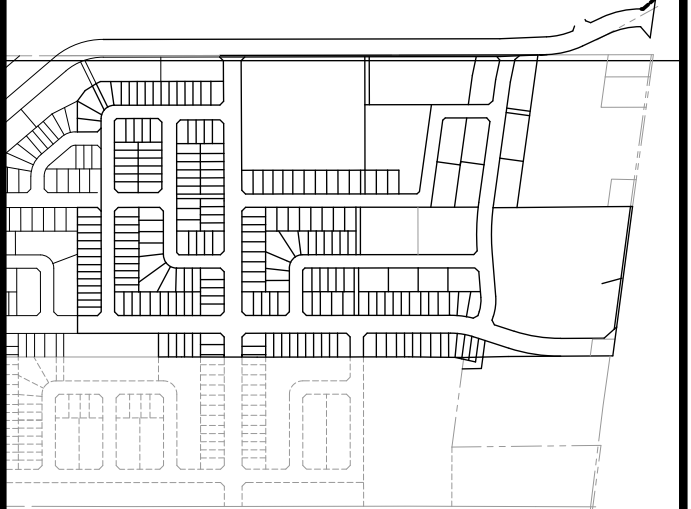
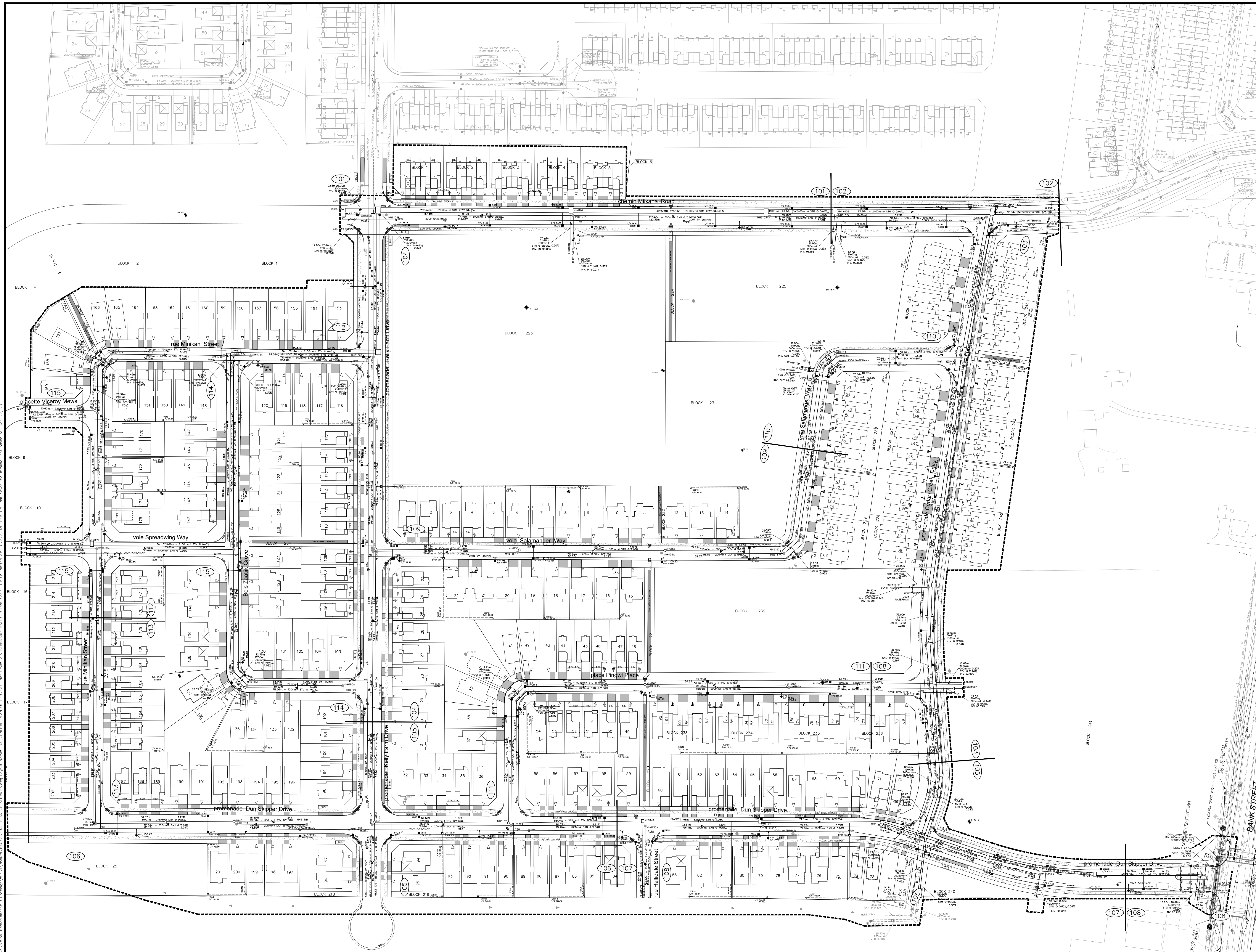


Prepared for LEITRIM SOUTH HOLDINGS INC.
by IBI GROUP

REVISED: AUGUST, 2017

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 184 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.

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Project Title

GENERAL PLAN OF SERVICES

Scale	1:1000
Design	J.I.M.
Date	NOV 2016
Drawing	D.D.
Checked	----
Project No.	33956
Drawing No.	100

J:\33956-Remediation\3.9 Drawings\33956\33956\100 GENERAL PLAN OF SERVICES.dwg Plot Size: A4 STANDARD-HALF/CTB Plot Scale: 1:50.8 Plotted At: 10/27/2020 1:04 PM User: Saved By: rmlina Last Saved At: Oct 27, 20

D07-16-13-0023

† 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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SANITARY SEWER DESIGN SHEET

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

LEGEND

Red text: High level sanitary sewer

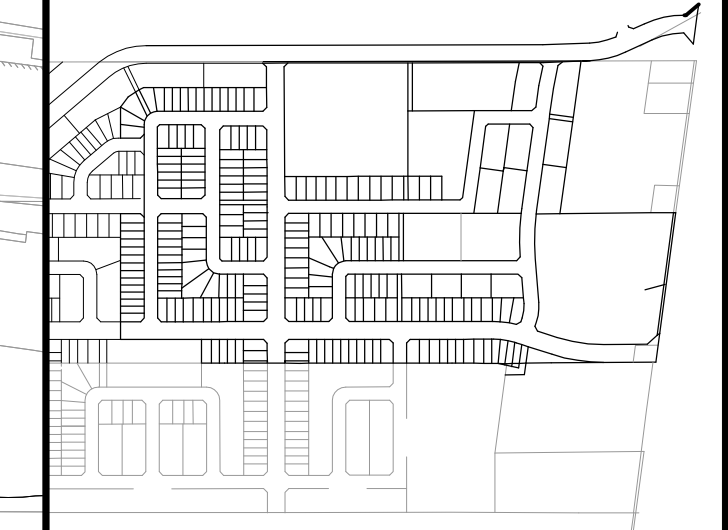
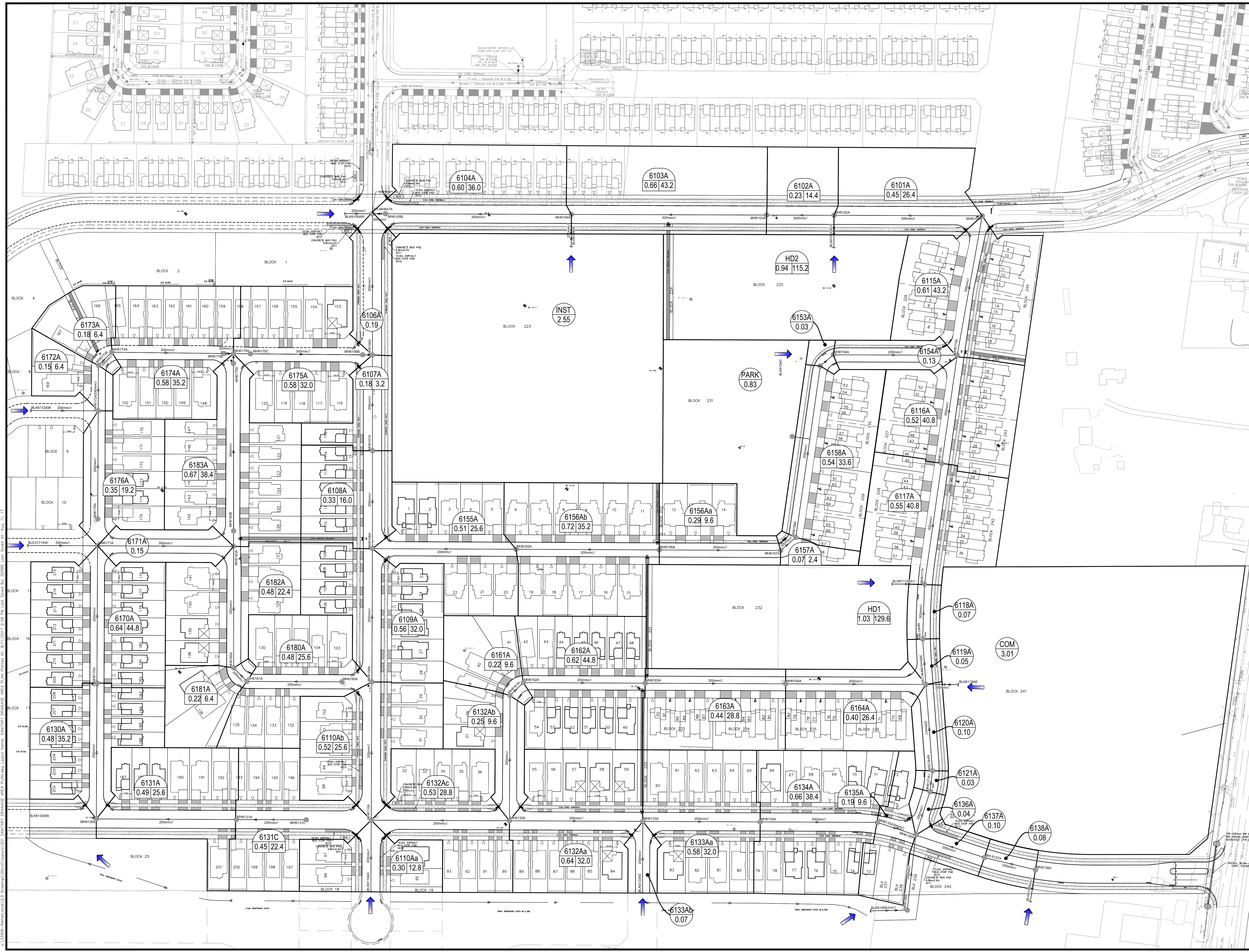
STREET	LOCATION AREA ID	FROM MH	TO MH	AREA w/ Units (Ha)	RESIDENTIAL				AREA w/o Units (Ha)	POPULATION		PEAK FACTOR	PEAK FLOW (L/s)	ICI AREAS				INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PROPOSED SEWER DESIGN			AVAILABLE CAPACITY				
					SF	SD	TH	APT		IND	CUM			INSTITUTIONAL		COMMERCIAL		INDUSTRIAL		IND	CUM	FLOW (L/s)				IND	CUM	DIA (mm)	SLOPE (%)	VELOCITY (full) (m/s)	L/s	%	
														IND	CUM	IND	CUM	IND	CUM														
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	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	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	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	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	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	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	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	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	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	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	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	94.78%	
Cedar Creek Drive	6115A	MH6115A	MH6101A	0.61		18				43.2	905.8	3.83	14.04			0.00	7.08	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%
Mikana Road	6101A	MH6101A	MH6102A	0.45		11				26.4	932.2	3.82	14.42			0.00	7.08	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%	
Mikana Road	6102A	MH6102A	MH6103A	0.23		6				14.4	1061.8	3.78	16.27			0.00	7.08	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%
Mikana Road	6103A	MH6103A	MH6104A	0.66		18				43.2	1105.0	3.77	16.88			0.00	7.08	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	0.71		0.00	2.98	20.24	20.00	200					

LEGEND :

6115A
0.81 | 43.2

AREA NUMBER
POPULATION
AREA IN HECTARES

→ FUTURE FLOW DIRECTION



14		
13		
12		
11		
10		
9		
8		
7		
6		
5	REVISED BLOCK NUMBERS	J.J.M. 2017.08.11
4	RE-SUBMISSION FOR MOECC APPROVAL & REVISED STREET NAMES	J.J.M. 2017.08.02
3	SUBMISSION FOR MOECC APPROVAL	J.J.M. 2017.07.07
2	SUBMISSION No.2 FOR CITY REVIEW	J.J.M. 2017.05.12
1	SUBMISSION No.1 FOR CITY REVIEW	J.J.M. 2016.11.23
No.	REVISIONS	By Date

LEITRIM SOUTH HOLDINGS INC.

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ibigroup.com

Project Title

pathways
at FINDLAY CREEK

LICENSÉ PROFESSIONNEL ENGENIEUR
J. L. MOFFATT
2017/08/02
PROVINCE OF ONTARIO

Drawing Title

**SANITARY DRAINAGE
AREA PLAN**

Scale 1 : 1000

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

J:\33956-Remainder\3.9_Drawing\3.9_Sanitary_Drainage_Area_Plan\3.9_Sanitary_Drainage_Area_Plan_Plot.dwg, Name: SANITARY DRAINAGE AREA PLAN, Plot Date: 8/17/2017 2:09 PM, Last Saved By: DODGE, Last Saved At: Aug. 11, 17

D07-16-13-0023



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)	INST. (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	WATER DEMAND RATES	PEAKING FACTORS	FIRE DEMANDS					
Single Family	3.4 persons/unit	Residential	350 l/cap/day	Maximum Daily	Residential	2.5 x avg. day	Single Family & Townhouses	10,000 l/min (166.7 l/s)
Semi Detached & Townhouse	2.7 persons/unit	ICI	50,000 l/ha/day	Maximum Hourly	ICI	1.5 x avg. day	3 Story Bldg	13,500 l/min (225 l/s)
Medium Density	1.8 persons/unit				ICI	1.8 x max. day	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

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Images which show:</u> <u>Building massing</u> – from: <ul style="list-style-type: none"> at least two sides set within its current context (showing the entire height and width of the building) OR all four sides set within its current context (showing the entire height and width of the building).
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Views</u> – of the entire block, from: <ul style="list-style-type: none"> 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.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Building transition</u> – to adjacent uses, with labelled explanation of the transition measures used.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Grading</u> – if grades are an issue.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Alternative building massing</u> – additional imagery and site layouts considered and provide justification for the ultimate proposal sought. <i>Provide rationale for orientation of school fronting onto Miikana and not Kelly Farm.</i>

Public Realm

Not Required Required

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Labelled graphics and a written explanation which show:</u> <u>Streetscape</u> – cross sections which illustrate the street design and right of way (referencing the City's design manuals).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Relationship to the public realm</u> – 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: <ul style="list-style-type: none"> 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 well 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

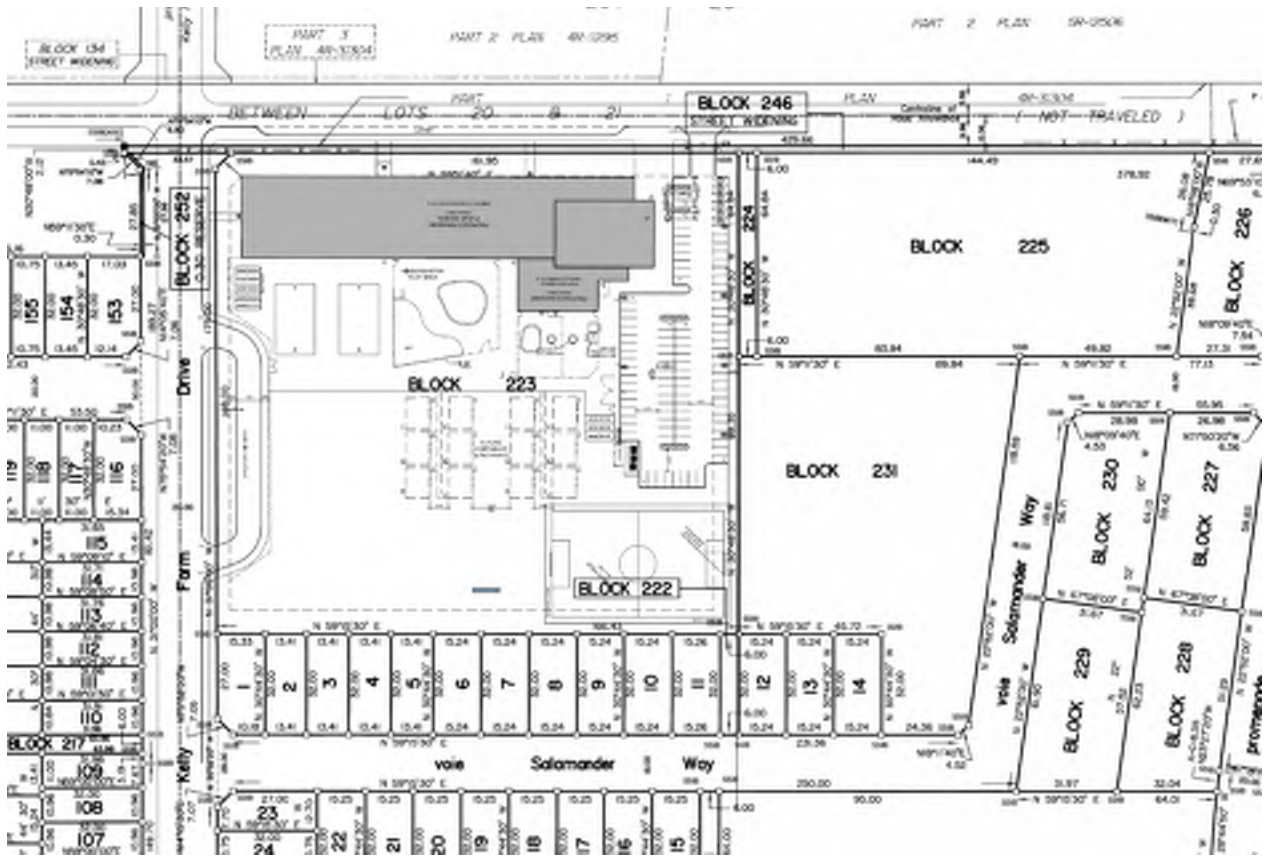


Figure 1: Excerpt of Site Plan for Proposed School Site



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 than 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 than 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

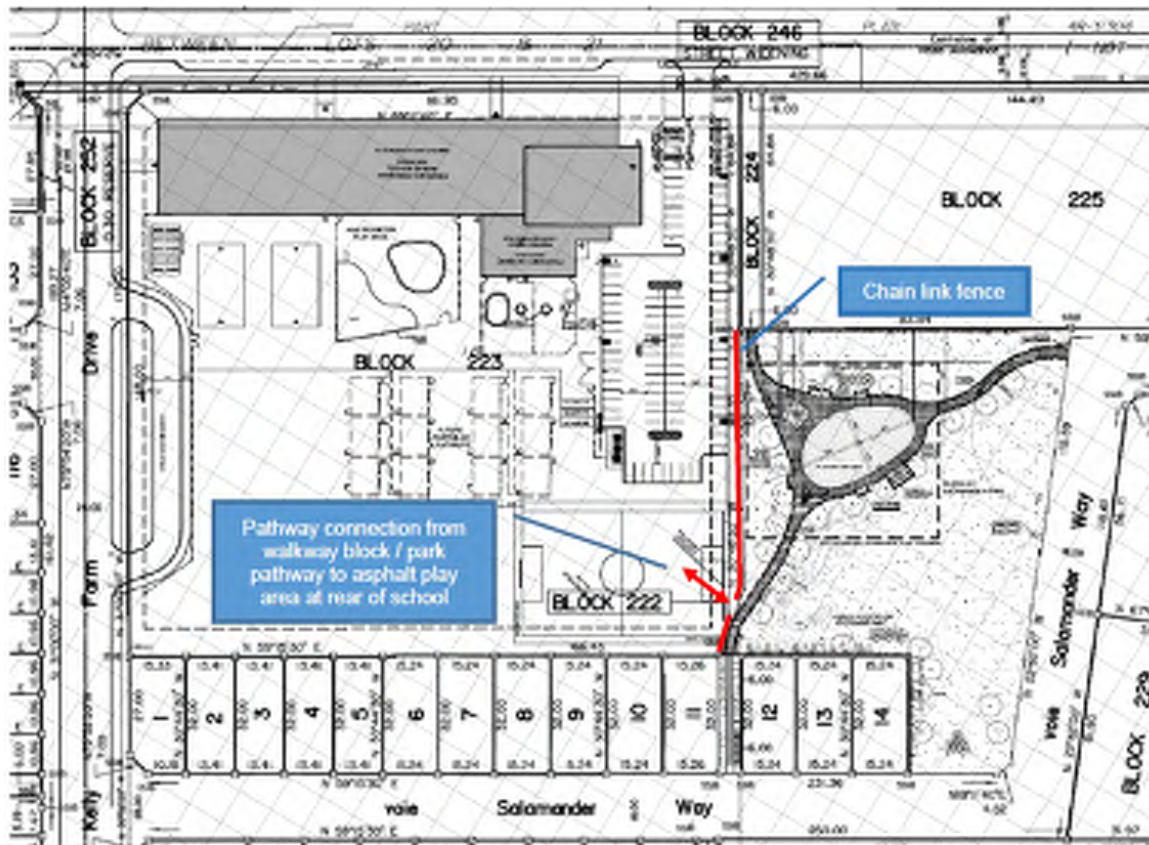
Transportation (Mike Giampa)

- 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.

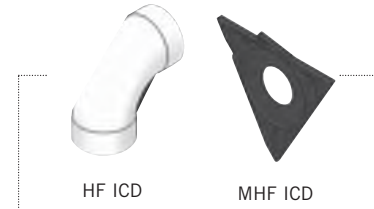


Product Construction

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

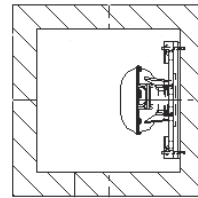
Product Applications

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



Square Application

Universal Mounting Plate



Round Application

Spigot CB Wall Plate

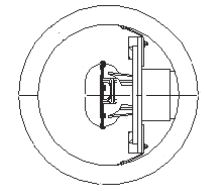


Universal Mounting Plate Hub Adapter

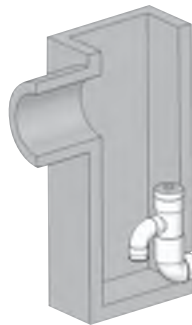


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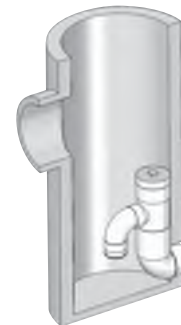
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The HF Sump is available to accommodate low to no sump applications in both square and round catch basins:

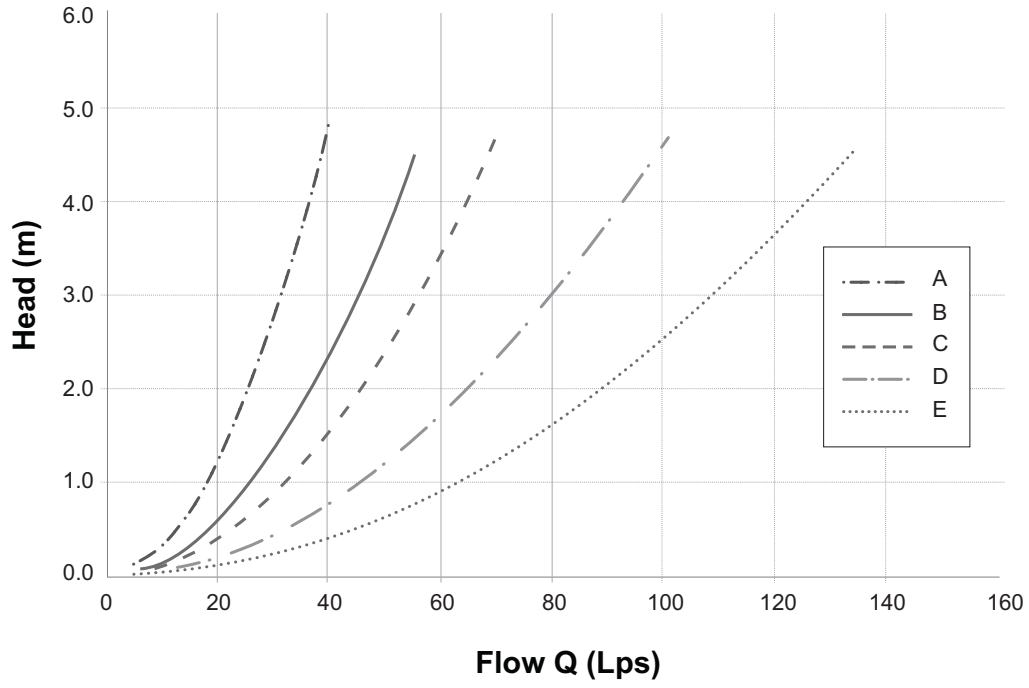


Square Catch Basin



Round Catch Basin

Chart 3: HF & MHF Preset Flow Curves



TEMPEST
 HF & MHF ICD



RD-100

Tag: _____

Large Capacity Roof Drain

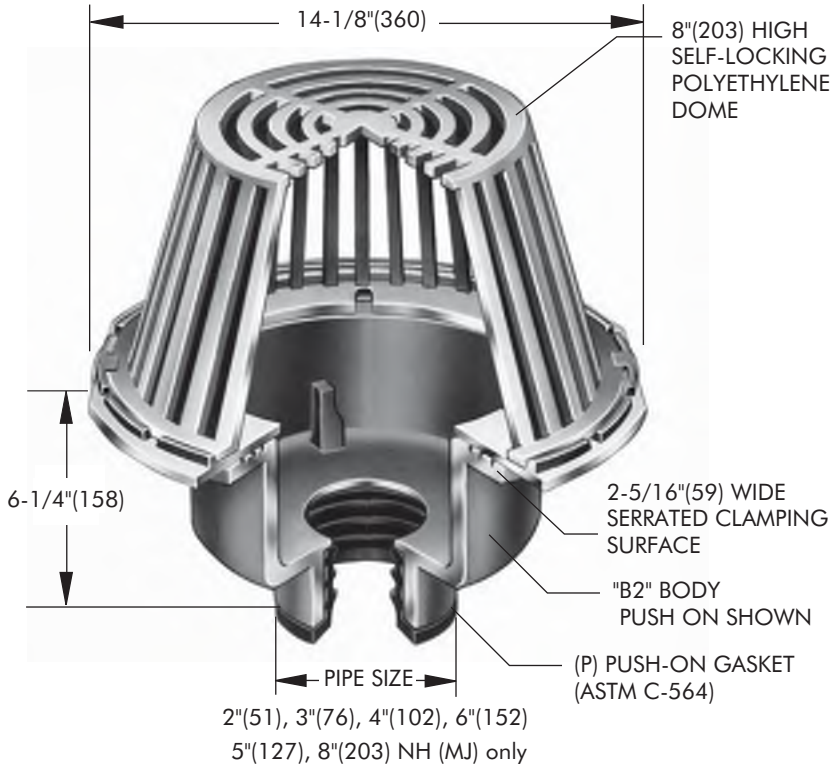
Components:



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.

Order Code: RD-10 - -

Ex. RD-102P-K



Free Area Sq. In.
137

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

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

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

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

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

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

Job Name _____ Contractor _____

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

Engineer _____ Representative _____

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



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

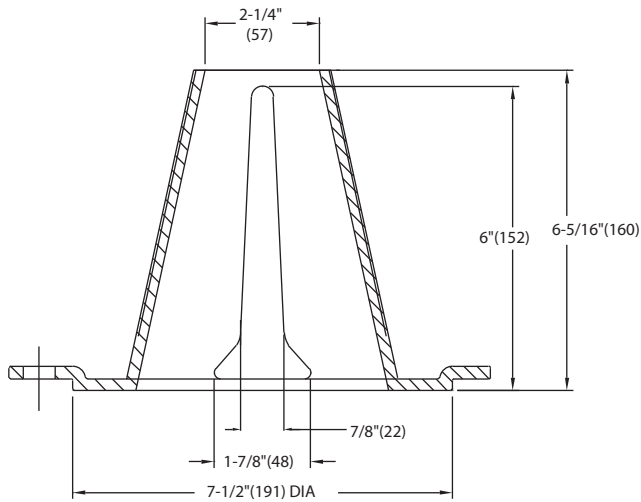


ACCUTROL WEIR FLOW CONTROL

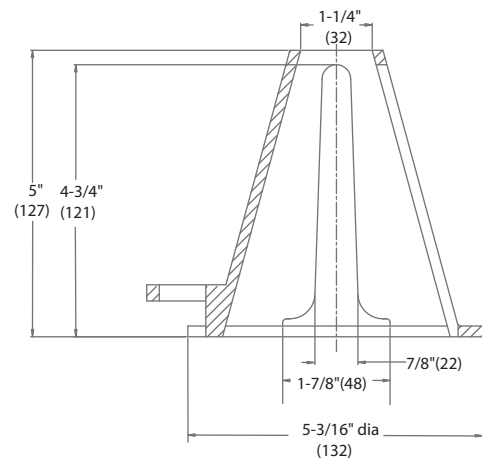
SPECIFICATION: Watts Drainage Products epoxy coated cast iron Accutrol Weir is designed with parabolic openings which limit the flow of rain water off a roof. Each weir slot controls flow to 5 gpm per inch of head to a maximum of 30 gpm at 6" head (for large sump), 25 gpm at 5" head (for small sump). 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 _____

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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

Existing Hydrant

Kelly Farm Drive

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 - Existing 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:	116.67 l/s
Maximum Daily + Fire Flow Demand:	117.89 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

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*
=	497.07 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** =	49.69 m
=	70.66 psi***
=	487.16 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** =	31.09 m
=	44.20 psi****
=	304.77 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