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Technical Memorandum

To/Attention	Mr. Reinhard Vogel	**Date**	June 25, 2018
From	Ryan Magladry	**Project No**	116598 - 5.3.1.
cc			
Subject	Turnbull School - Music Room Expansion		

Mr. Vogel,

This technical memorandum is prepared in support of the new music room expansion for the Turnbull Private Elementary School located at 1132 Fisher Avenue. IBI Group has been retained by Hobin Architecture Inc. to review the servicing and grading requirements for the 128m2 expansion. This memorandum presents our findings and recommendations regarding the water supply, wastewater disposal, stormwater management and site grading.

Water Supply

The proposed music room expansion consists of a single wash basin for cleaning music instruments. There are no other proposed facilities with significant water demands (bathrooms, showers, etc). The proposed expansion is not sprinklered, but is located within 90m of an existing fire hydrant. This fixture will likely only be used for the last few minutes of each class session when students may clean their instruments, and is not likely to be a constant demand. The addition of this fixture flow will have neglible impacts on the existing water system.

Waste Water Disposal

Based on correspondence with the school principal, the existing school has a student capacity of 410 students and 40 staffer members. The City of Ottawa Sewer Design Guidelines Daily Sewage Flow For Various Establishments, a school without cafeteria or gymnasium with showers has a daily volume of 30L/person/day. Given a population of 450people, the calculated flowrate of the existing school is 0.16L/s.

The Turnbull school property is approximate 1.79Ha. Using the new City of Ottawa Design Guidelines criteria, the school has an infiltration rate of 0.33L/ha/s. The calculated infiltration rate is 0.59L/s.

As previously noted, the proposed music room expansion consists of a single wash basin for cleaning music instruments. The City of Ottawa Sewer Design Guidelines Daily Sewage Flow For Various Establishments – miscellaneous water use estimates for sewage flow computations for wash basins is 375L/day, or 0.004L/s can be used to demonstrate the impacts of the new expansion.

The sum of the existing flows plus the addition of the wash basin is based on City of Ottawa criteria 0.754 L/s (0.16L/s + 0.59 L/s + 0.004L/s).

The existing sanitary service to the existing school consists of a 200mm diameter sanitary sewer with a designed slope of 1.0%. This pipe has a theoretical full flowing capacity of 34.22 L/s. This is significantly greater than the calculated flows generated by the existing school and the expansion music room.

Stormwater Management

Existing Conditions

The original site grading was designed such that the majority of the existing finished floor is below the finished grade on the north side of the building. As such, the existing foundation was constructed in order to provide adequate exposed concrete (typically referred to as an upstand). In the area of the existing building entrance/exit, there is a small depressed area with a catchbasin. The area captured by Existing CB9 is approximately 214m2 and has a C value of approximately 0.65 (25% grass and 75% asphalt), and was designed to be unrestricted. Refer to the Site Services and Grading drawing prepared by Erion Associates dated December 2002, attached in **Appendix A.**

The pre-expansion unrestricted flow rate to CB9 can be calculated as follows.

Unrestricted Flow to CB9 (Prior to Expansion)

Tc= 10minutes

A= 0.0214ha

C_{avg}=0.65 x 1.25 = 0.81

$I_{100year}$=178.6 mm/hr

Q_{unrest}= 2.78 x C x I x A

=2.78 x 0.81 x 178.6 x 0.0214Ha

=8.60 L/s

The remaining areas adjacent to the existing building sheet drained over the existing asphalt pathway and grassed field, and into existing CB1. CB1 is upstream and in-line with CB2. CB2 was designed to contain an inlet control device which restricts flow to the downstream storm sewer network with a custom sized orifice at 144mm diameter. A 144mm orifice with a head 1.25m results in an existing restricted flow rate of **52 l/s**.

Proposed Stormwater Management Plan

The proposed expansion will consist of a waterproof flat roof with gentle sloping to provide positive drainage to a single scupper location. The scupper will drain onto a 1.8m x 1.8m hard surface pad to diffuse the roof discharge. The stormwater will sheet drain away from the building onto the recreational use field, before ultimately being captured in existing CB1.

The change in AC tributary to existing CB1 can be summarized as follows:

Removal of area from CB1:

Grass Area (occupied by new roof area)	=0.0030Ha @ C=0.25
Paved Area (occupied by new roof area)	=0.0038Ha @ C=0.90
Paved Area (new depressed entrance area)	=0.0039Ha @ C=0.90

Total area removed	=0.0107Ha
Total Average C	=0.72
Total AC removed	=0.0077

Addition of area to CB1:

Roof Area	=0.0128Ha @ C=0.90
Grass Area	=0.0043Ha @ C=0.25
Total area added	=0.0171Ha
Total Average C	=0.74
Total AC added	=0.0126

The AC of the added area to CB1 is greater than the AC of the removed area. Therefore, the flows tributary to CB1 after the expansion will be slightly more than the existing condition. The increase in 100 year flow can be calculated as follows:

100 Year Flow Increase to CB1

Tc= 10minutes

$AC_{increase}$= 0.0126-0.0077=0.0049

Runoff Increase Factor = 1.25

$I_{100year}$ =178.6 mm/hr

Q_{unrest} = 2.78 x AC x 1.25 x I

=2.78 x 0.0049 x 1.25 x 178.6

=3.04 L/s

The existing Inlet Control Device (ICD) in CB2 can remain to ensure no negative impacts on downstream storm sewers. The relatively minor increase in total flow to the overall catchment will be retained upstream of the ICD within underground structures, pipes and on surface ponding. Once all stormwater storage facilities are have reached capacity, the flows will spill into the adjacent drainage ditch which also serves as the outlet for the site.

Unrestricted Flow to Storm Sewer at new depressed entrance CB101

The new depressed entrance should maintain unrestricted flow into the existing storm sewer. The flows for the depressed area can be calculated as follows.

Tc= 10minutes

A= 0.0039ha

C_{avg}=0.90 x 1.25 = 1.0

$I_{100year}$=178.6 mm/hr

Q_{unrest} = 2.78 x C x I x A

=2.78 x 1.0 x 178.6 x 0.0039Ha

=1.93 L/s

The unrestricted flow to the storm sewer is less than the pre-development unrestricted flow to CB9.

New restricted flow to Storm Sewer at new CB100

The area to the east of the proposed expansion, which was previously part of the unrestricted depressed area, is intended to be filled in to closely match the existing surrounding grades. As a result of the updated grading, a low point is required, and thus a new catch basin (CB100). The residual capacity into the storm sewer network is calculated as follows:

Existing Conditions Unrestricted Flow to Storm sewer = 8.60 l/s

Less unrestricted flow to storm sewer (post expansion) = - 1.93 l/s

Residual capacity to meet SWM Targets at new CB100 = 6.67 l/s

Therefore, an ICD will be proposed to restrict flows to the storm sewer. The ICD proposed will consist of an IPEX LMF ICD set to restrict flows to the storm sewer to 6.0 l/s.

The sum of all restricted and unrestricted inlets impacted by the building expansion *(52 l/s @ CB2 + 1.93 l/s @ unrestricted entrance + 6.0 l/s @ new CB100 = 59.93 l/s)* is less than the sum of the restricted and unrestricted inlets prior to the expansion (*52 l/s @ CB2 + 8.60 l/s @ old unrestricted entrance = 60.60 l/s*). The above demonstrates that the total peak flow rate to the sewer network post-expansion is less than pre-expansion. Therefore no net negative impact on the downstream storm sewer system is anticipated.

Site Grading

The grading for the new building expansion will consist of re-shaping the existing grade around the perimeter of the proposed building. As previously noted, the proposed grading will consist of a depressed area serviced by a ramp to the relocated existing building entrance and raising the grade along the eastern façade of the new building to eliminate the previously depressed entrance.

Conclusion

The Turnbull School music room expansion can be serviced by existing infrastructure. Existing water distribution, waste water disposal and stormwater management systems are all adequately sized to accommodate the building expansion.

Ryan Magladry, C.E.T.

Demetrius Yannoulopoulos, P. Eng.

NOTES AND SPECIFICATIONS

GENERAL

1. ALL GENERAL SITE INFORMATION AND CONDITIONS COMPILED FROM EXISTING PLANS AND ENGINEER'S FIELD NOTES. REPORT ALL DISCREPANCIES PRIOR TO ANY WORK. NO RESPONSIBILITY IS ASSUMED OR BORNE BY THE ENGINEER FOR UNDERLYING SUBSURFACE CONDITIONS.

2. NO MODOFICATIONS TO DRAWINGS AND SPECIFICATIONS AND NO MATERIALS SUBSTITUTION IS PERMITTED WITHOUT THE WRITTEN AUTHORIZATION OF THE ENGINEER AND THE OWNER.

3. USE OF DRAWINGS SSG-1 WITHOUT THE ENGINEER'S STAMP AND SIGNATURE IS NOT ALLOWED AND SHOULD ANY SUCH USE OCCUR THE ENGINEER IS RELEASED OF ANY RESPONSIBILITY.

4. SITE BOUNDARIES
FOR SITE BOUNDARY DIMENSIONS REFER TO SURVEY REFERENCE PLAN 4R-11067, PARTS 1, 2, 3, 4 AND 5, DEPOSITED 21/02/95 AS AMENDED BY PLAN 4R-11629, PART 1 DEPOSITED 22/11/95 (FISHER AVENUE ROAD WIDENING)

5. EXISTING CONDITIONS (SURFACE)
REFER TO SITE PLAN BY WEBSTER AND SIMMONDS SURVEYING LTD. (NOW STANTEC) DATED 10/02/95 AND REVISED BASED ON NEW SURVEY 9/12/02. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE SITE CONDITIONS (SURFACE FEATURES)

6. SUBSURFACE CONDITIONS
A GEOTECHNICAL INVESTIGATION REPORT BY JOHN D. PATTERSON AND ASSOC. LTD. DATED 17/05/95 IS AVAILABLE (REPORT No. E1190-2) FOR VIEWING AT THE ARCHITECTS OFFICE. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO SUBSYRFACE CONDITIONS ON THIS SITE. NO RESPONSIBILITY IS ASSUMED BY THE OWNER, THE ARCHITECT, OR THE ENGINEER FOR SUBSURFACE CONDITIONS ACTUALLY ENCOUNTERED DURING CONSTRUCTION.

7. LAYOUT DIMENSIONS
SEWER AND WATER SERVICES LAYOUT IS REFERENCED TO PROPOSED BUILDINGS. FOR ROADWAYS, PARKING AND BUILDING LAYOUT DIMENSIONS REFER TO ARCHITECTURAL SITE PLAN AND FOUNDATION PLANS BY BARRY J. HOBIN AND ASSOC., ARCHITECTS INC.

8. BENCHMARKS
SITE BENCHMARKS SHOWN ON THIS DRAWING ARE REFERENCED TO N.C.C. MONUMENT No. 019680313 HAVING AN ELEVATION OF 81.717 (GEODETIC)

9. SPECIFICATIONS
ALL MATERIALS, CONSTRUCTION, TESTING AND DISINFECTION OF ON-SITE UNDERGROUND SERVICES FOR WATER SUPPLY, SANITARY AND STORM DRAINAGE SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD SPECIFICATIONS CURRENTLY IN EFFECT (DEPT. OF TRANSPORTATION, UTILITIES AND PUBLIC WORKS, INFRASTRUCTURE SERVICES BRANCH) AND BY REFERENCE TO ONTARIO STANDARDS, OPSS AND OPSD.

10. WATERMAINS AND SERVICES
200mmø WATERMAIN SHALL BE PVC-SDR 18
50mmø WATER SERVICE SHALL BE TYPE 'K' SOFT COPPER CONNECTION TO THE EXISTING 200mmø MAIN ON KINGSTON AVENUE SHALL BE BY CITY FORCES WITH EXCAVATION, BACKFILL AND RE-INSTATEMENT BY THE CONTRACTOR. PIPE BEDDING PER CITY STD. W17.

11. SANITARY SEWERS
CONNECT TO EXISTING 225mmø CONC. SEWER ON KINGSTON STREET USING MANUFACTURED TEE COMPLETE WITH ROADWAY REINSTATEMENT.
SANITARY SEWER PIPE SHALL BE PVC-SDR 35.
PIPE BEDDING PER CITY STDS. S6 AND S7.
ALL SANITARY SEWERS SHALL BE TESTED FOR EXFILTRATION USING EITHER HYDROSTATIC OR AIR PRESSURE METHODS IN COMPLIANCE WITH THE REQUIREMENTS OF OPSS 410,07.01.16 AND MUST BE WITNESSED BY THE ENGINEER.

12. STORM SEWERS
STORM SEWER PIPE SIZES 150mmø TO 375mmø SHALL BE PVC-SDR 35.
STORM SEWER PIPE 450mmø SHALL BE HDPE (BOSS POLY-TITE) OR APPROVED EQUAL. PIPE BEDDING PER CITY STDS. S6 AND S7.
200mmø PERFORATED PIPE SUBDRAIN SHALL BE HDPE (BOSS 2000) OR APPROVED EQUAL COMPLETE WITH FILTER SOCK.
PERFORATED PIPE INSTALLED UNDER LANDSCAPED AREAS SHALL BE PER CITY STD L9.
CULVERT PIPE TO BE GALVANIZED STEEL (HEL-COR OR APPROVED EQUIV.) WITH 68mm x 13mm CORRUGATION, 2.8mm THICKNESS.
DITCH CROSSING FILLED COMPLETE WITH GBC 'B' (TYPE II) PLUS 100mm GBC 'A' SURFACE.

13. INSULATION
ALL WATERMAINS INSTALLED TO 2.4m COVER DEPTH: NO INSULATION REQUIRED.
SANITARY AND STORM SEWERS INSTALLED TO LESS THAN 1.5m COVER UNDER PAVEMENT AREAS TO BE INSULATED. INSULATION TO BE INSTALLED ACROSS ENTIRE WIDTH OF TRENCH AT 150mm ABOVE TOP OF PIPE BARREL AND THICKNESS OF INSULATION TO BE 50mm.
INSULATE BETWEEN WATERMAINS AND SEWERS AT LOCATIONS OF PIPE CROSSINGS AND BETWEEN WATERMAINS AND OPEN STRUCTURES AS PER CITY STANDARDS.

14. PAVEMENT STRUCTURES
ACCESS ROADS AND PARKING LOTS SHALL BE CONSTRUCTED TO THE FOLLOWING SPECIFICATIONS:

MATERIAL	CAR PARKING AREAS	FIRE ROUTE/ ACCESS ROADS
HL-3 ASPH CONC.	50mm	40mm
HL-8 ASPH CONC.		50
BASE: OPSS GBC 'A'	150	150
SUB-BASE: OPSS GBC"B" (TYPE II)	200	400
SUBGRADE	EITHER IN SITU SOIL OR SITE SELECTED EXC. SOIL OR GBC 'B' TYPE II	

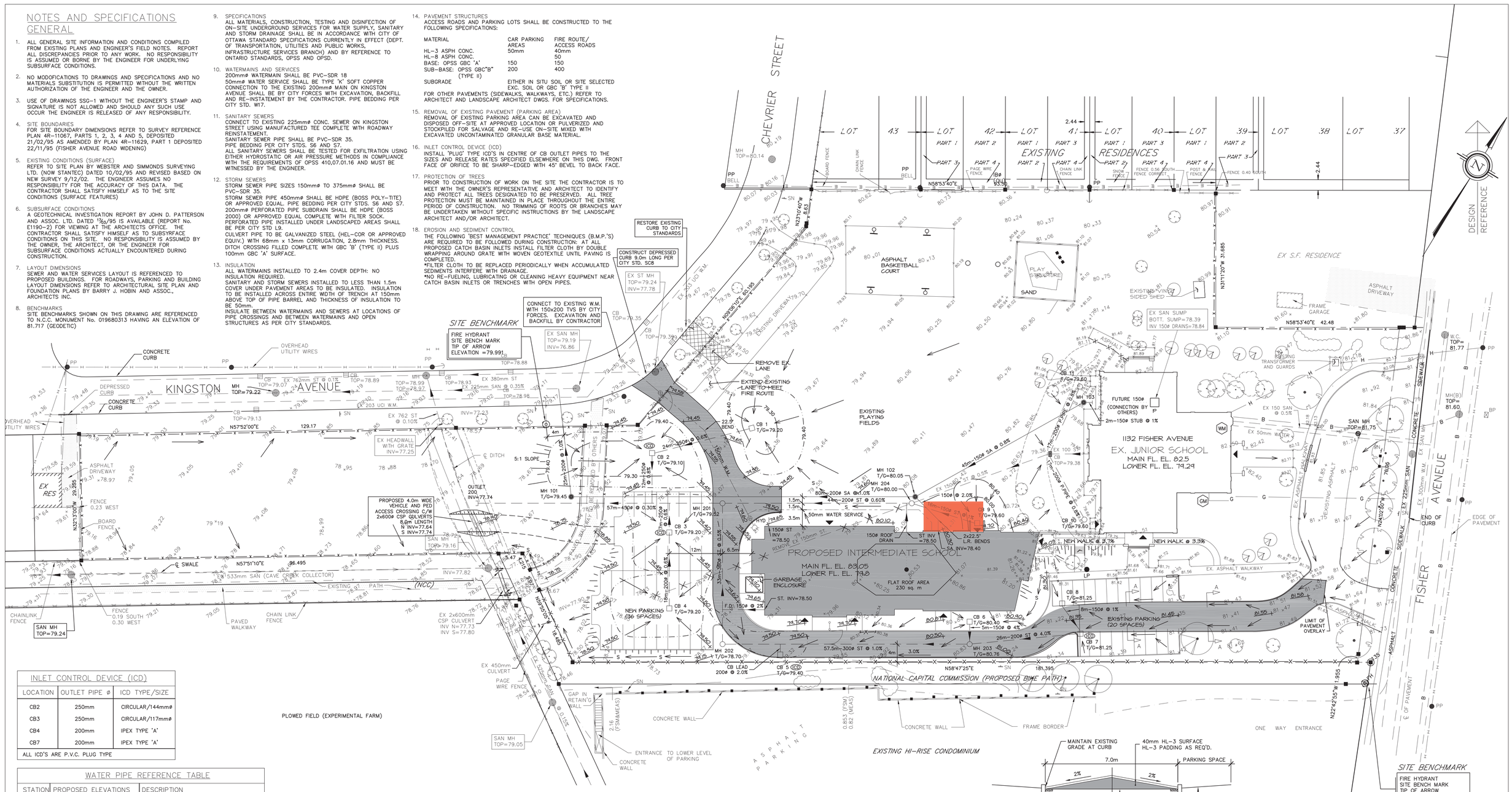
FOR OTHER PAVEMENTS (SIDEWALKS, WALKWAYS, ETC.) REFFER TO ARCHITECT AND LANDSCAPE ARCHITECT DWGS. FOR SPECIFICATIONS.

15. REMOVAL OF EXISTING PAVEMENT (PARKING AREA)
REMOVAL OF EXISTING PARKING AREA CAN BE EXCAVATED AND DISPOSED OFF-SITE AT APPROVED LOCATION OR PULVERIZED AND STOCKPILED FOR SALVAGE AND RE-USE ON-SITE MIXED WITH EXCAVATED UNCONTAMINATED GRANULAR BASE MATERIAL.

16. INLET CONTROL DEVICE (ICD)
INSTALL 'PLUG' TYPE ICD'S IN CENTRE OF CB OUTLET PIPES TO THE SIZES AND RELEASE RATES SPECIFIED ELSEWHERE ON THIS DWG. FRONT FACE OF ORIFICE TO BE SHARP-EDGED WITH 45° BEVEL TO BACK FACE.

17. PROTECTION OF TREES
PRIOR TO CONSTRUCTION OF WORK ON THE SITE THE CONTRACTOR IS TO MEET WITH THE OWNER'S REPRESENTATIVE AND ARCHITECT TO IDENTIFY AND PROTECT ALL TREES DESIGNATED TO BE PRESERVED. ALL TREE PROTECTION MUST BE MAINTAINED IN PLACE THROUGHOUT THE ENTIRE PERIOD OF CONSTRUCTION. NO TRIMMING OF ROOTS OR BRANCHES MAY BE UNDERTAKEN WITHOUT SPECIFIC INSTRUCTIONS BY THE LANDSCAPE ARCHITECT AND/OR ARCHITECT.

18. EROSION AND SEDIMENT CONTROL
THE FOLLOWING 'BEST MANAGEMENT PRACTICE' TECHNIQUES (B.M.P.'S) ARE REQUIRED TO BE FOLLOWED DURING CONSTRUCTION: AT ALL PROPOSED CATCH BASIN INLETS INSTALL FILTER CLOTH BY DOUBLE WRAPPING AROUND GRATE WITH WOVEN GEOTEXTILE UNTIL PAVING IS COMPLETED.
*FILTER CLOTH TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERE WITH DRAINAGE.
*NO RE-FUELING, LUBRICATING OR CLEANING HEAVY EQUIPMENT NEAR CATCH BASIN INLETS OR TRENCHES WITH OPEN PIPES.



INLET CONTROL DEVICE (ICD)

LOCATION	OUTLET PIPE ø	ICD TYPE/SIZE
CB2	250mm	CIRCULAR/144mmø
CB3	250mm	CIRCULAR/117mmø
CB4	200mm	IPEX TYPE 'A'
CB7	200mm	IPEX TYPE 'A'
ALL ICD'S ARE P.V.C. PLUG TYPE		

WATER PIPE REFERENCE TABLE

STATION	PROPOSED ELEVATIONS		DESCRIPTION
	SURFACE	TOP OF PIPE	
0+00	79.32±	–	EX 203ø UCI W.M. (1955) INSTALL 150 x 200 TVS BY CITY FORCES
0+07	79.32	76.92	EAST EDGE OF PAV'T.
0+12.7	79.50	77.10	150 G.V. PER W24 0.3m FROM PROP. LINE
0+13	79.50	77.10	EAST PROPERTY LINE
0+26	79.58	77.18	11.25° BEND (HORIZ.) C/W THRUST BLOCK
0+40	79.48	77.08	
0+48	79.55	77.15	50mm DOMESTIC SERVICE CONNECTION PER W33
0+49	79.55	77.15	150 G.V. PER W24 (HYDRANT S.O.)
0+51.5	79.65	77.25	INSTALL FIRE HYD PER W19 FLANGE EL.=79.75
0+48 =0+00	(150ø) (50ø)		CHAINAGE EQUATION
0+02	79.55	77.15	TYPE 'K' COPPER SERVICE
0+20	79.70	77.30	
0+40	80.00	77.60	45° BEND
0+44	80.25	77.85	45° BEND
0+47	80.30	77.90	BUILDING FOUNDATION WALL

CB STRUCTURE TABLE

I.D. No.	ELEVATIONS		SPECIFICATIONS	FRAME AND COVER
	TOP	INVERT		
CB1	79.20	78.16(250W)	OPSD 705.010	COV: CITY S19 FR: OPSD 400.02*
CB2	79.10	78.02 (250S) 78.02 (250E)	OPSD 705.010 C/W ICD	COV: CITY S19 FR: OPSD 400.02*
CB3	79.20	77.97 (250N) 78.02 (200S)	OPSD 705.010 C/W ICD	COV: CITY S19 FR: OPSD 400.02*
CB4	79.20	78.13 (200N)	OPSD 705.010	COV: CITY S19 FR: OPSD 400.02*
CB5	79.40	78.30 (150N)	OPSD 705.010	COV: CITY S19 FR: OPSD 400.02*
CB6	80.40	79.20 (150S)	OPSD 705.010	COV: CITY S19 FR: OPSD 400.02*
CB7	81.25	79.81 (200W) 79.85 (200N)	OPSD 705.010 C/W ICD	COV: CITY S19 FR: OPSD 400.02*
CB8	81.25	79.93 (150S)	OPSD 705.010 C/W ICD	COV: CITY S19 FR: OPSD 400.02*
CB9	79.60	79.45 (150N/W)	CITY S27 (SUMP 300mm)	COV: CITY S21 FR: CITY S20
CB10	79.60	78.60 (200N)	PVC/ELBOW 300ø PER CITY L11	300ø CI COVER PER CITY L11
CB11	79.60	78.60 (200S)	PVC/ELBOW 300ø PER CITY L11	300ø CI COVER PER CITY L11
EX CB	79.38	78.46 (EX 150 S/W) 78.46 (200S) 78.46 (200N)	CORE DRILL ON SITE CORE DRILL ON SITE	

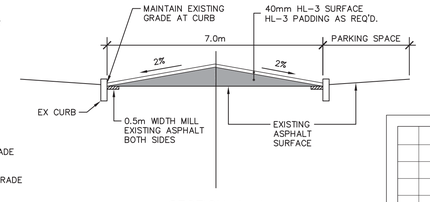
* NOTE: NO HINGE SLOT IN FRAME 400.02

MH STRUCTURE TABLE

I.D. No.	TYPE	ELEVATIONS		SPECIFICATIONS	
		TOP	INVERT	MANHOLE	FRAME AND COVER
101	SAN	79.45	77.09 (200N) 77.14 (200E)	OPSD 701.010 (BENCHING) FLAT CAP	OPSD 401.010 TYPE 'A'
102	SAN	80.05	77.94 (200W) 77.99 (150N/W)	OPSD 701.010 (BENCHING)	OPSD 401.010 TYPE 'A'
103	SAN	79.68	78.04 (150S/W) 78.35 (150S/E) 78.37 (150E)	OPSD 701.010 (BENCHING) FLAT CAP	OPSD 401.010 TYPE 'A'
200	ST	78.30	77.60 (450E)	OUTLET C/W RIP-RAP PER OPSD 810.010(A)	
201	ST	79.45	77.77 (450W) 77.84 (380S) 78.02 (200E)	OPSD 701.010 (150 SUMP) FLAT CAP	OPSD 401.010 TYPE 'A'
202	ST	79.65	78.01 (380N) 78.09 (300E)	OPSD 701.010 (150 SUMP) FLAT CAP	OPSD 401.010 TYPE 'A'
203	ST	80.76	78.67 (300W) 79.00 (150N) 78.77 (200E)	OPSD 701.010 (150 SUMP) FLAT CAP	OPSD 401.010 TYPE 'A'
204	ST	80.00	78.28 (200W) 78.29 (150N/E) 78.30 (150S/E)	OPSD 701.010 (150 SUMP) FLAT CAP INTERCEPT EX 150ø (JR. SCHOOL)	OPSD 401.010 TYPE 'A'

LEGEND

- 79.459 — EXISTING GRADE
- 79.45 — PROPOSED GRADE
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN
- H — HYDRO
- G — GAS
- B — TELEPHONE
- S — PROPOSED SWALE
- DIRECTION OF SURFACE SLOPE
- LIMIT OF PONDING 1:100 YR. STORM
- HEAVY DUTY PAVEMENT STRUCTURE



SECTION A-A
N.T.S.

CAUTION:
THE EXACT LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES IS APPROXIMATE ONLY AND MAY BE INCOMPLETE. THE CONTRACTOR IS RESPONSIBLE TO CONTACT ALL MUNICIPAL AUTHORITIES AND UTILITY COMPANIES TO DETERMINE EXACT LOCATION OF ALL SEWERS, WATERMAINS, GAS, ELECTRICAL AND COMMUNICATIONS, CABLE TV AND OTHER UNDERGROUND INSTALLATIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTION AGAINST DAMAGE OF ALL EXISTING INSTALLATIONS AND IS LIABLE FOR ALL COST SHOULD DAMAGE OCCUR.

no.	date	revision
1.	DEC 23/02	ISSUED FOR SWM REPORT
0.	DEC 20/02	ISSUED FOR SITE PLAN REVIEW

EA
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(613) 267-1693

LICENSED PROFESSIONAL ENGINEER L.M.ERION PROVINCE OF ONTARIO

project
TURNBULL LEARNING CENTRE
PROPOSED INTERMEDIATE SCHOOL
1132 FISHER AVENUE, OTTAWA

drawing title
SITE SERVICES AND GRADING PLAN

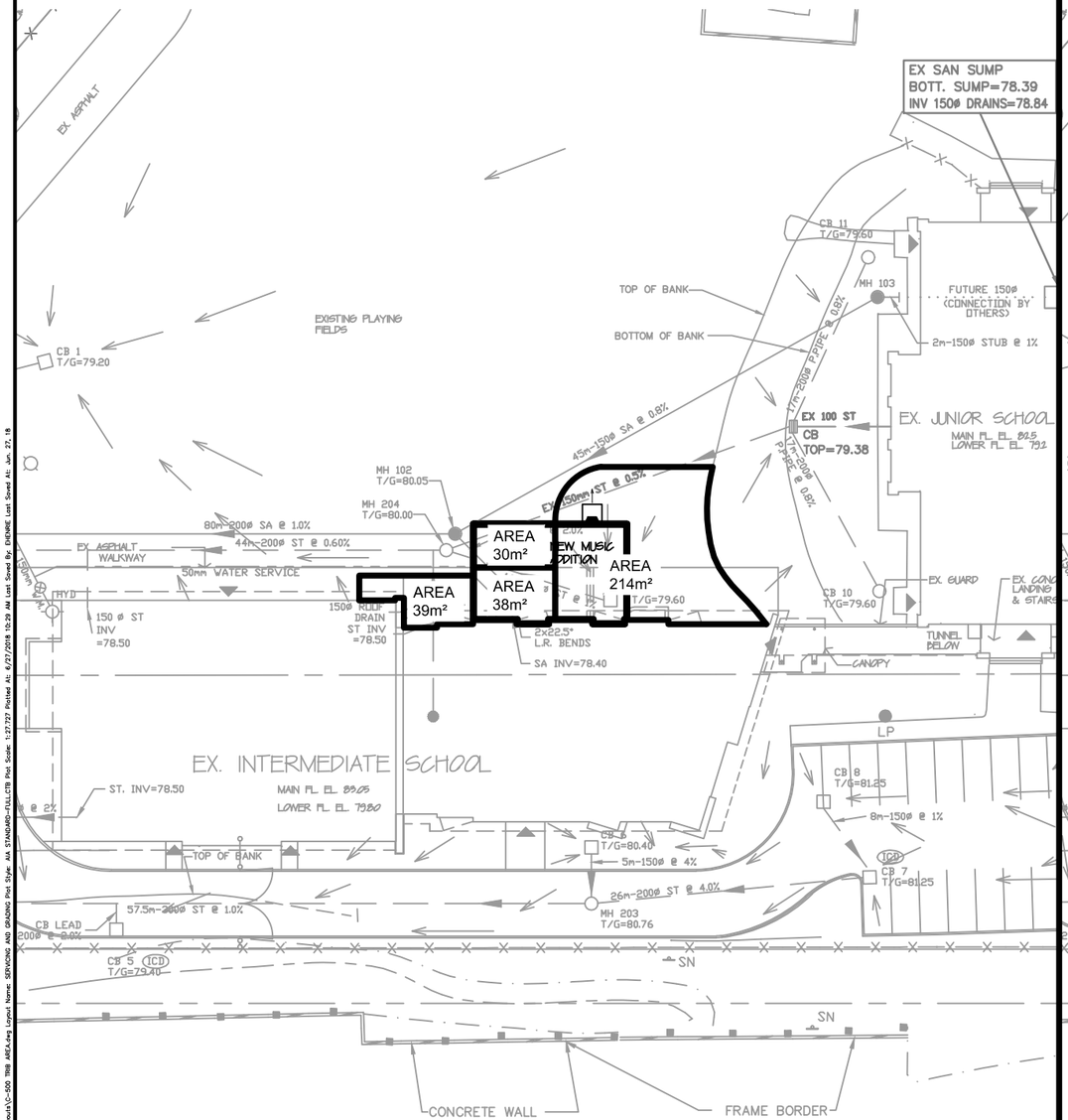
drawn	date	scale
MarCAD	DEC./02	1:400

project 1501

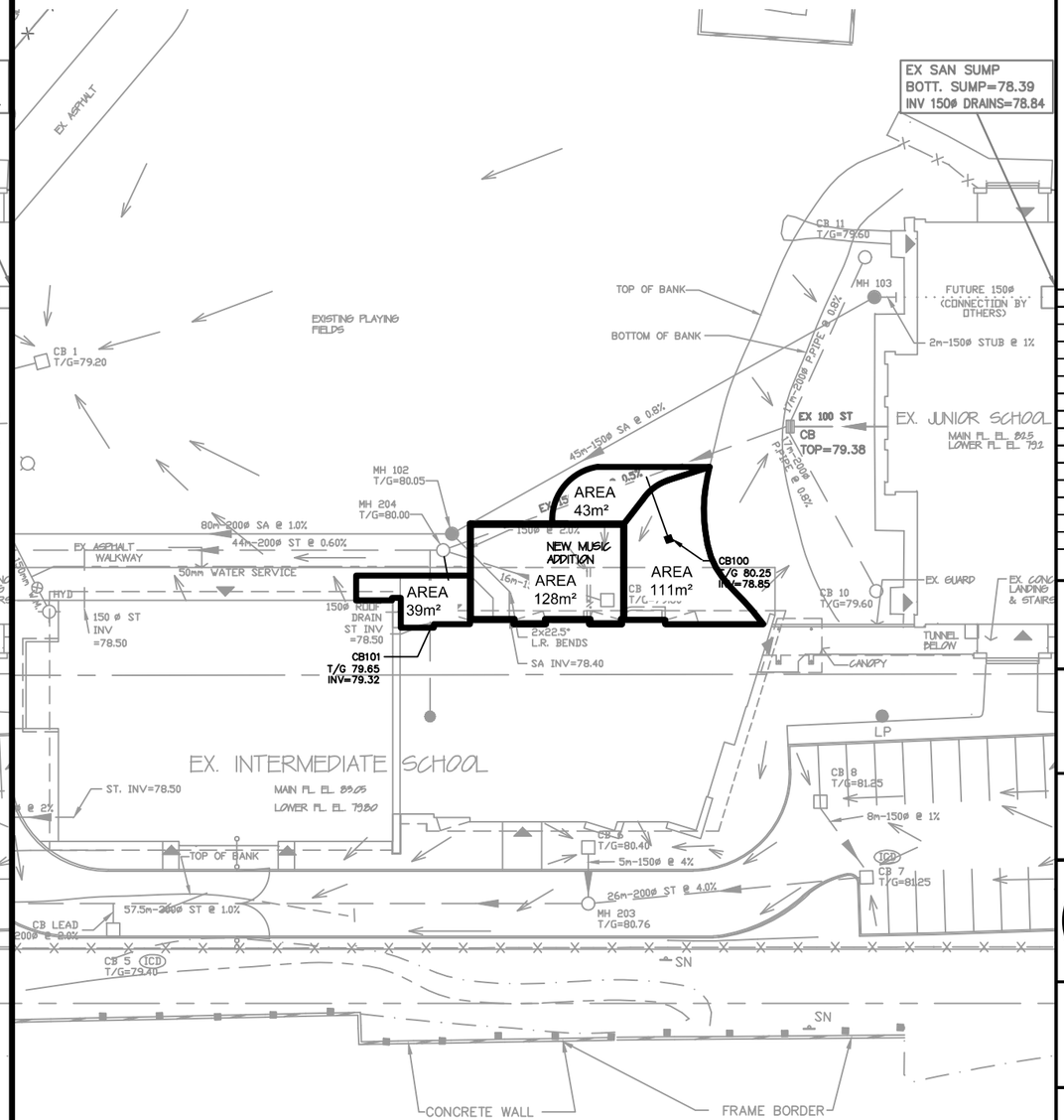
drawing no. SSG-1

revision no. 1

DATE-PLOT
DWGNAME



PRE-EXPANSION



POST EXPANSION

REVIEWED BY
DEVELOPMENT REVIEW SERVICES BRANCH

Signed _____

Date _____ 2018

Plan Number _____

No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2			
1	ISSUED FOR BUILDING PERMIT	DGY	18.06.26

TURNBULL SCHOOL
1132 FISHER AVENUE

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

Project Title

NEW MUSIC ADDITION

LICENSED PROFESSIONAL ENGINEER
D. K. Yannoulopoulos
2018/06/04
PROVINCE OF ONTARIO

Drawing Title

TRIBUTARY AREA PLAN

Scale: NTS

Design	Date
R.M.	JUNE 2018
Drawn: E.H.	Checked: D.G.Y.
Project No.: 116598	Drawing No.: C-500