EROSION AND SEDIMENT CONTROL MEASURES:

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

1. PRIOR TO START OF CONSTRUCTION:

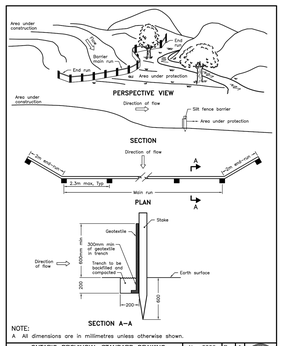
- PRIOR TO THE REMOVAL OF ANY VEGETATIVE COVER, MOVING OF SOIL, AND CONSTRUCTION:
- INSTALL SILT FENCE IMMEDIATELY DOWNSTREAM FROM AREAS TO BE DISTURBED (SEE PLAN FOR LOCATION).
- INSTALL GEODOCK INSERTS WITH AN OVERFLOW IN ALL THE DOWNSTREAM CATCHBASINS AND MANHOLES
- INSTALL SILTSACK FILTERS IN ALL CONCRETE CATCH BASINS STRUCTURES
- INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.

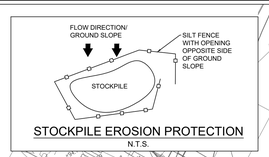
2. DURING CONSTRUCTION:

- WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY TO SEPTEMBER ONLY.
- MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE.
- PROTECT DISTURBED AREAS FROM RUNOFF.
- PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
- INSPECT SILT FENCES, FILTER CLOTHS AND CATCH BASIN SUMPS WEEKLY AND AFTER EVERY MAJOR STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
- CONSTRUCT SWALES AS PER DETAIL.
- PLAN 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 TO ACCEPTABLE LEVELS BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED).
- 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
- NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THIS CONSULTING ENGINEER AND THE CITY DEPARTMENT OF PUBLIC WORKS.
- CONTRACTOR RESPONSIBLE FOR CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING ETC. AT THE END OF EACH WORK DAY.
- PROVIDE GRAVEL ENTRANCE WHEREVER EQUIPMENT LEAVES THE SITE TO PREVENT MUD TRACKING ONTO PAVED SURFACES. GRAVEL BED SHALL BE A MINIMUM OF 15m LONG, 4M WIDE AND 0.3m DEEP AND SHALL CONSIST OF COARSE (50mm CRUSHERT-RUN LIMESTONE) MATERIAL. MAINTAIN GRAVEL ENTRANCE IN CLEAN CONDITION
- DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED.
- ANY MUD/MATERIAL 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 ABUTTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.
- THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE. DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

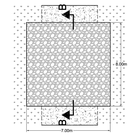
3. AFTER CONSTRUCTION:

- PROVIDE PERMANENT COVER CONSISTING OF TOPSOIL AND SEED TO DISTURBED AREAS.
- REMOVE STRAW BALE FLOW CHECK DAMS, SILT FENCES AND FILTER CLOTHS ON CATCH BASINS AND MANHOLE COVERS AFTER DISTURBED AREAS HAVE BEEN REHABILITATED AND STABILIZED.
- INSPECT AND CLEAN CATCH BASIN SUMPS AND STORM SEWERS.

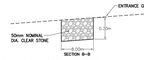




STOCKPILE EROSION PROTECTION
N.T.S.



TYPICAL MUD TRACKING PAD – PLAN VIEW
N.T.S.

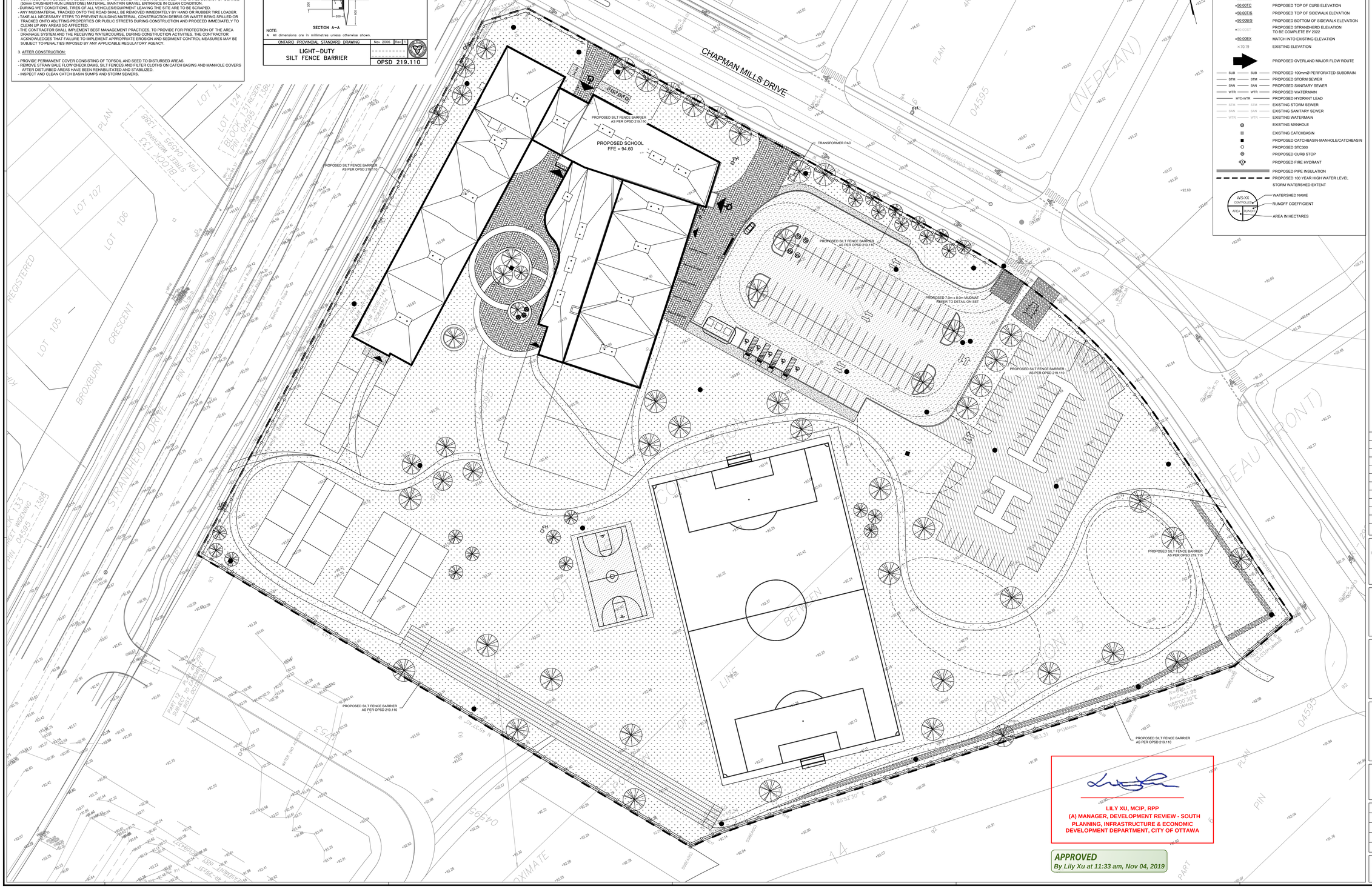


TYPICAL MUD TRACKING PAD – PROFILE VIEW
N.T.S.

NOTES:
THE CONTRACTOR SHALL INSPECT MUD TRACKING PAD WEEKLY AS WELL AS AFTER ANY RAINFALL EVENT GREATER THAN 15mm. THE MUD MAT SHALL BE REPAIRED AS SOON AS PROBLEMS ARE DISCOVERED. THE CONTRACTOR SHALL REPLACE THE CLEAR STONE IMMEDIATELY. LOCATION AND WIDTH OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY CONTRACTOR AND APPROVED BY THE ENGINEER.

LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MIN.)
- PROPOSED DOOR ENTRANCE/EXIT
- PROPOSED GRASS AS PER L-001
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED CHAIN LINK FENCE
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED GRASS AS PER L-001 (FUTURE PARKING LOT AREA)
- PROPOSED INFILTRATION GALLERY
- ×50.00HP — PROPOSED HIGH POINT ELEVATION
- ×50.00 — PROPOSED ELEVATION
- ×50.00BC — PROPOSED BOTTOM OF CURB ELEVATION
- ×50.00TC — PROPOSED TOP OF CURB ELEVATION
- ×50.00T/S — PROPOSED TOP OF SIDEWALK ELEVATION
- ×50.00B/S — PROPOSED BOTTOM OF SIDEWALK ELEVATION
- ×50.00ST — PROPOSED STRANDHERD ELEVATION TO BE COMPLETE BY 2022
- ×50.00EX — MATCH INTO EXISTING ELEVATION
- ×70.19 — EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- SUB — SUB — PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM — STM — PROPOSED STORM SEWER
- SAN — SAN — PROPOSED SANITARY SEWER
- WTR — WTR — PROPOSED WATERMAIN
- HYD-WTR — PROPOSED HYDRANT LEAD
- STM — STM — EXISTING STORM SEWER
- SAN — SAN — EXISTING SANITARY SEWER
- WTR — WTR — EXISTING WATERMAIN
- EXISTING MANHOLE
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED STC300
- PROPOSED CURB STOP
- PROPOSED FIRE HYDRANT
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL STORM WATERSHED EXTENT
- WS-XX — WATERSHED NAME
- CONTROLLED — RUNOFF COEFFICIENT
- AREA — RUNOFF — AREA IN HECTARES



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(A) MANAGER, DEVELOPMENT REVIEW - SOUTH
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
By Lily Xu at 11:33 am, Nov 04, 2019

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11	2019/10/09	RE-ISSUED FOR SPA	M.L.
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north point

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project title
NOUVELLE ÉCOLE SECONDAIRE BARRHAVEN
Barrhaven — Ontario

drawing title
EROSION AND SEDIMENT CONTROL PLAN

date	25/01/2018	job.no.	1817
scales	1:400		
drawn	M.L.	drawing no.	C101
approved	J.C.L.		
plot date	25/01/2018		

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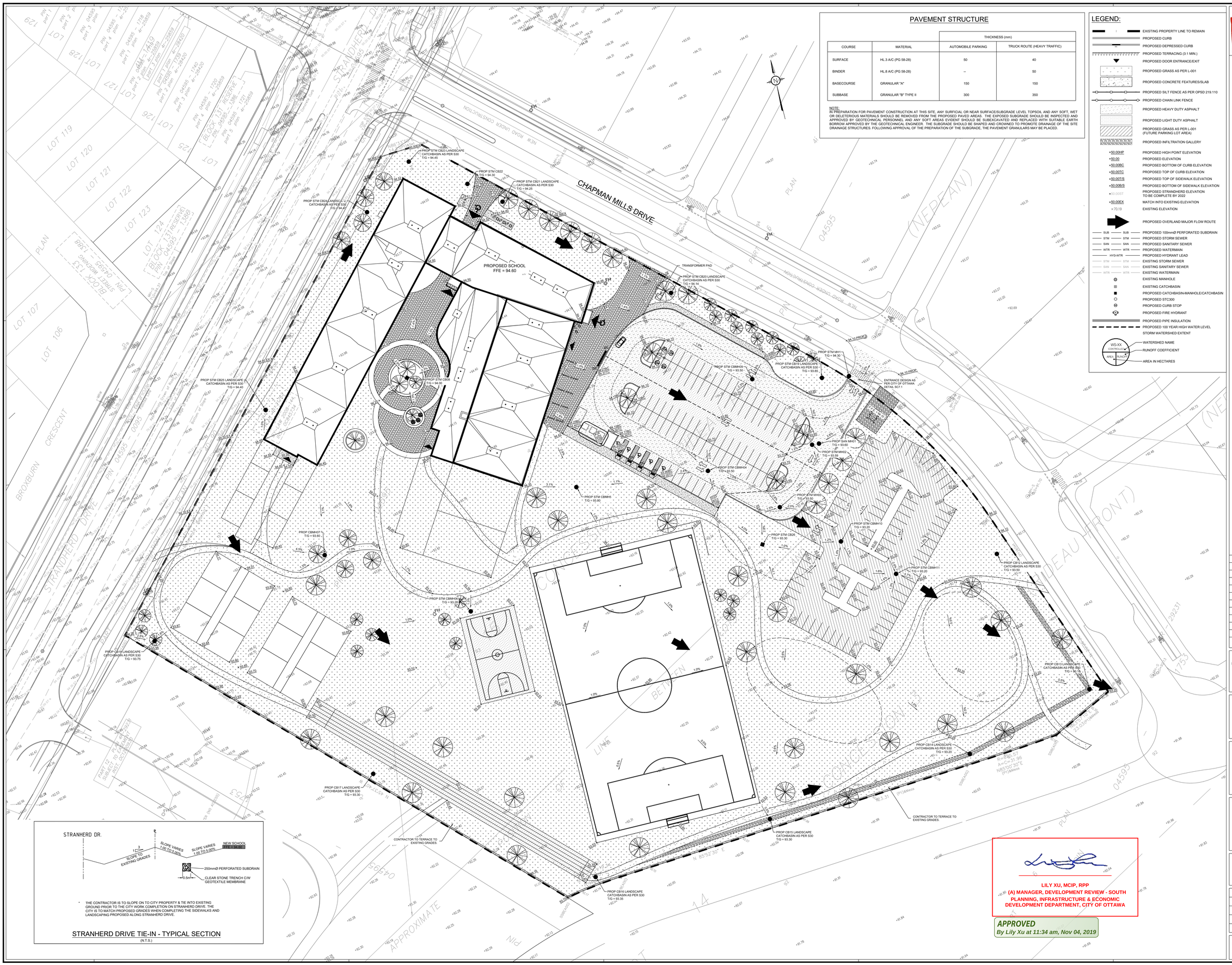

* THE CONTRACTOR IS TO SLOPE ON TO CITY PROPERTY & TIE INTO EXISTING GROUND PRIOR TO THE CITY WORK COMPLETION ON STRANHERD DRIVE. THE CITY IS TO MATCH PROPOSED GRADES WHEN COMPLETING THE SIDEWALKS AND LANDSCAPING PROPOSED ALONG STRANHERD DRIVE.

STRANHERD DRIVE TIE-IN - TYPICAL SECTION

(N.T.S.)

PAVEMENT STRUCTURE

COURSE	MATERIAL	THICKNESS (mm) AUTOMOBILE PARKING	THICKNESS (mm) TRUCK ROUTE (HEAVY TRAFFIC)
SURFACE	HL.3 A/C (PG 58-28)	50	40
BINDER	HL.8 A/C (PG 58-28)	--	50
BASECOURSE	GRANULAR "A"	150	150
SUBBASE	GRANULAR "B" TYPE II	300	350

NOTE:
IN PREPARATION FOR PAVEMENT CONSTRUCTION AT THIS SITE, ANY SURFICIAL OR NEAR SURFACE/SUBGRADE LEVEL TOPSOIL AND ANY SOFT, WET OR DELETERIOUS MATERIALS SHOULD BE REMOVED FROM THE PROPOSED PAVED AREAS. THE EXPOSED SUBGRADE SHOULD BE INSPECTED AND APPROVED BY GEOTECHNICAL PERSONNEL AND ANY SOFT AREAS EVIDENT SHOULD BE SUBEXCAVATED AND REPLACED WITH SUITABLE EARTH BORROW APPROVED BY THE GEOTECHNICAL ENGINEER. THE SUBGRADE SHOULD BE SHAPED AND CROWNED TO PROMOTE DRAINAGE OF THE SITE DRAINAGE STRUCTURES. FOLLOWING APPROVAL OF THE PREPARATION OF THE SUBGRADE, THE PAVEMENT GRANULARS MAY BE PLACED.

LEGEND:

▬ ▬	EXISTING PROPERTY LINE TO REMAIN
═	PROPOSED CURB
DC	PROPOSED DEPRESSED CURB
┬┬┬	PROPOSED TERRACING (3:1 MIN.)
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▨	PROPOSED CONCRETE FEATURES/SLAB
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professional stamp
LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
Oct 9, 2019
PROVINCE OF ONTARIO

project title
NOUVELLE ÉCOLE
SECONDAIRE
BARRHAVEN
Barrhaven Ontario

drawing title
GRADING AND DRAINAGE PLAN

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plot date	25/01/2018		

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LILY XU, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - SOUTH
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

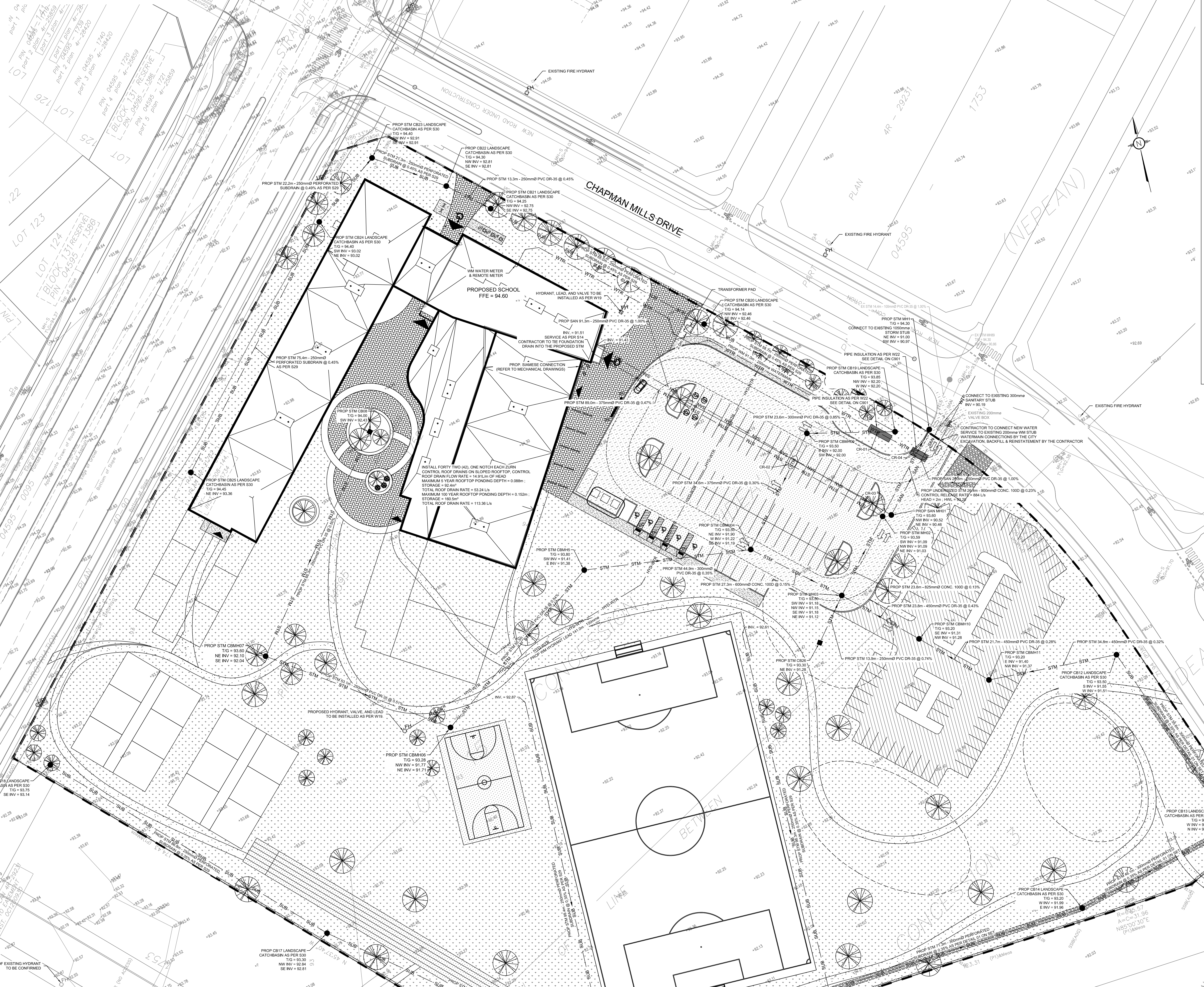
APPROVED
By Lily Xu at 11:34 am, Nov 04, 2019

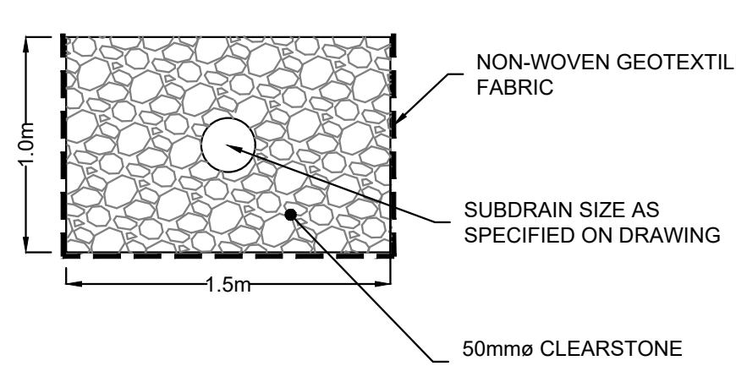
NOTES: GENERAL

1. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.
2. ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS.
3. JOB BENCH MARK - CONFIRM WITH LRL PRIOR TO UTILIZATION.
4. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE, CATCH BASIN OUTLETS AND/OR STORM DETENTION AREAS ARE PROVIDED.
5. STRIP AND REMOVE ALL TOPSOIL FROM IMPROVED AREAS.
6. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
7. ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A CLEAN STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
8. CURBS TO BE BARRIER, CONSTRUCTED AS PER OPSD 600.110.
9. ALL MATERIAL SUPPLIED AND PLACED FOR PARKING LOT AND ACCESS ROAD CONSTRUCTION SHALL BE TO OPSS STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED. CONSTRUCTION TO OPSS 206, 310 & 314. MATERIALS TO OPSS 1001, 1003 & 1010.
10. ABUTTING PROPERTY GRADE TO BE MATCHED.
11. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
12. MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
13. FILTER FABRIC TO BE INSTALLED AND MAINTAINED BETWEEN THE FRAME AND COVER OF ALL CATCHBASINS, CATCHBASIN MANHOLES AND MANHOLES DURING THE CONSTRUCTION PERIOD TO MINIMIZE SEDIMENTS ENTERING THE STORM SEWER SYSTEM. ALL GRASSED AREAS MUST BE COMPLETED PRIOR TO THE REMOVAL OF THE FILTER FABRIC IN THE DRAINAGE STRUCTURES.
14. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS, IF ANY, LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
15. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS BUT NOT LIMITED TO; ROAD CUT PERMITS, SEWER PERMITS, WATER PERMIT, ETC.
16. AT PROPOSED UTILITY CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
17. ALL SIDEWALK CONSTRUCTION TO BE AS PER OPSD 310.010 & OPSD 310.050.

NOTES: SEWERS

1. SEWER BEDDING AS PER TRENCH DETAIL WITH GRANULAR 'A' BEDDING COMPACTED TO 95% OF ITS SPMDD.
2. ALL WORK SHALL BE PERFORMED, AS APPLICABLE IN ACCORDANCE WITH OPSS 407, AND 410.
3. CONTRACTOR TO CONFIRM ELEVATION OF EXISTING SEWERS AT PROPOSED CONNECTION POINTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING ANY WORK.
4. ALL SEWERS WITH LESS THAN 2.0m OF COVER ARE SUBJECT TO INSULATION DETAIL.





DETAIL 01 - INFILTRATION GALLERY DETAIL
(N.T.S.)

LEGEND:

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DC	PROPOSED DEPRESSED CURB
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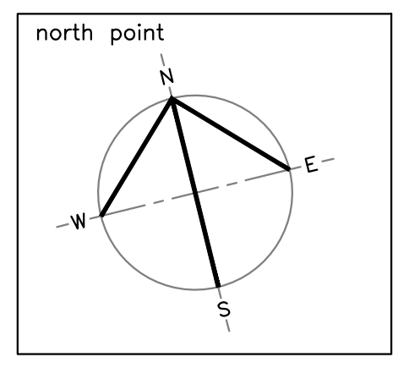

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V. JOHNSON
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Oct 9, 2019

project title

NOUVELLE ÉCOLE SECONDAIRE BARRHAVEN

Barrhaven Ontario

drawing title

SERVICING PLAN

date	25/01/2018	job.no.	1817
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plot date	25/01/2018		

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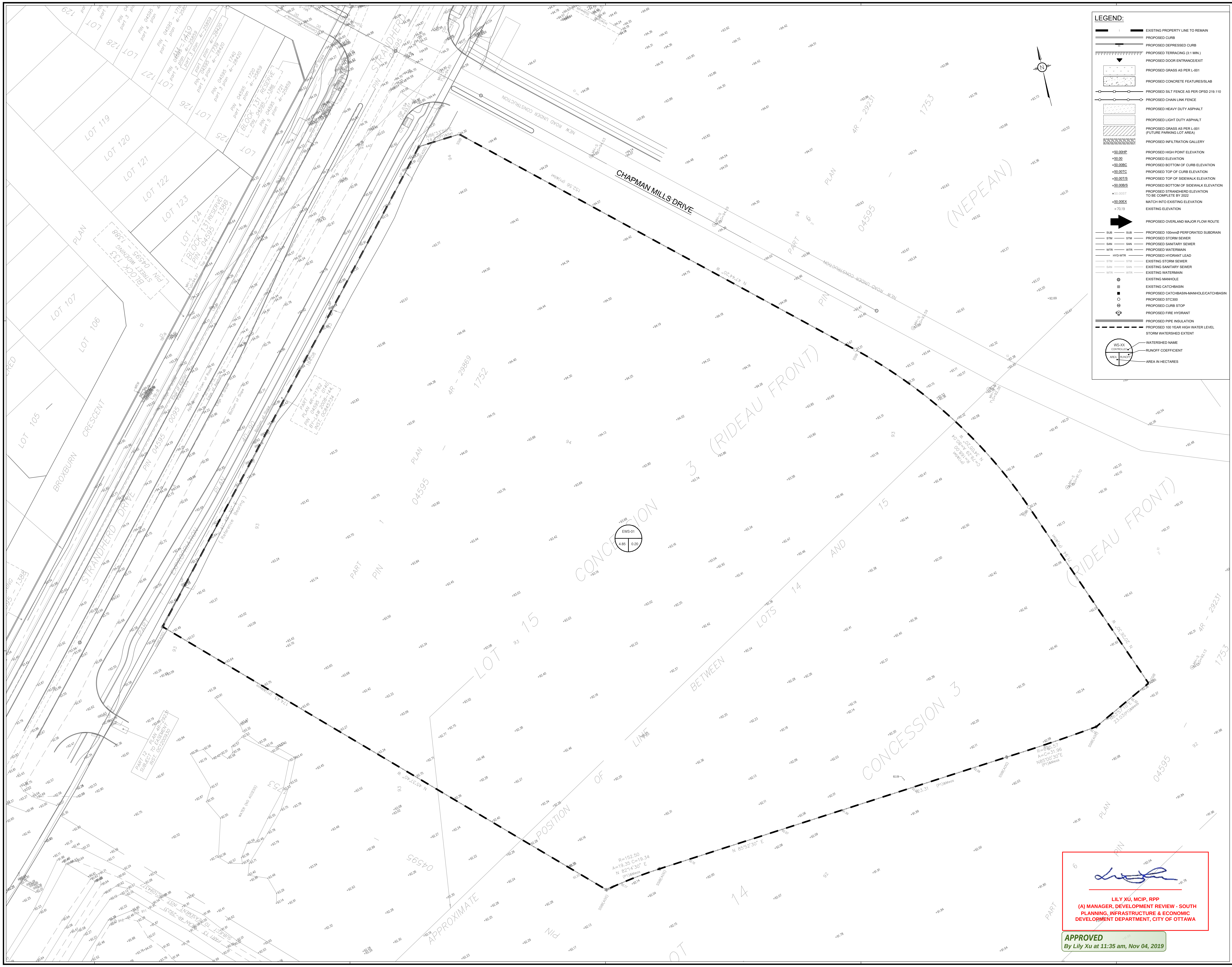
3 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS: STRUCTURAL, MECHANICAL, ELECTRICAL

CROSSING TABLE

Crossing #	WM (obv.)	STM (inv.)	STM (inv.)	SAN (obv.)	Depth Separation (m)
CR-01	91.45	92.10			0.45
CR-02		91.93	91.22	90.80	0.44
CR-03			91.09	90.55	0.54
CR-04	92.20		91.00	90.22	0.53

LILY XU, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - SOUTH
PLANNING, INFRASTRUCTURE & ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
By Lily Xu at 11:34 am, Nov 04, 2019



LEGEND:

▬ ▬	EXISTING PROPERTY LINE TO REMAIN
═	PROPOSED CURB
DC	PROPOSED DEPRESSED CURB
┬┬┬	PROPOSED TERRACING (3:1 MIN.)
▼	PROPOSED DOOR ENTRANCE/EXIT
▨	PROPOSED GRASS AS PER L-001
▨	PROPOSED CONCRETE FEATURES/SLAB
─□─□─	PROPOSED SILT FENCE AS PER OPSD 219.110
─○─○─	PROPOSED CHAIN LINK FENCE
▨	PROPOSED HEAVY DUTY ASPHALT
▨	PROPOSED LIGHT DUTY ASPHALT
▨	PROPOSED GRASS AS PER L-001 (FUTURE PARKING LOT AREA)
▨	PROPOSED INFILTRATION GALLERY
×50.00HP	PROPOSED HIGH POINT ELEVATION
×50.00	PROPOSED ELEVATION
×50.00BC	PROPOSED BOTTOM OF CURB ELEVATION
×50.00TC	PROPOSED TOP OF CURB ELEVATION
×50.00T/S	PROPOSED TOP OF SIDEWALK ELEVATION
×50.00B/S	PROPOSED BOTTOM OF SIDEWALK ELEVATION
×50.00ST	PROPOSED STRANDHERD ELEVATION TO BE COMPLETE BY 2022
×50.00EX	MATCH INTO EXISTING ELEVATION
×70.19	EXISTING ELEVATION
➡	PROPOSED OVERLAND MAJOR FLOW ROUTE
SUB SUB	PROPOSED 100mmØ PERFORATED SUBDRAIN
STM STM	PROPOSED STORM SEWER
SAN SAN	PROPOSED SANITARY SEWER
WTR WTR	PROPOSED WATERMAIN
HYD-WTR	PROPOSED HYDRANT LEAD
STM STM	EXISTING STORM SEWER
SAN SAN	EXISTING SANITARY SEWER
WTR WTR	EXISTING WATERMAIN
●	EXISTING MANHOLE
■	EXISTING CATCHBASIN
■	PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
○	PROPOSED STC300
⊗	PROPOSED CURB STOP
⊙	PROPOSED FIRE HYDRANT
▬	PROPOSED PIPE INSULATION
▬ ▬ ▬	PROPOSED 100 YEAR HIGH WATER LEVEL
	STORM WATERSHED EXTENT

WS-XX CONTROLLED — WATERSHED NAME
RUNOFF — RUNOFF COEFFICIENT
AREA — AREA IN HECTARES

Conseil des écoles publiques de l'Est de l'Ontario

no.	date	revision / issue	by
11	2019/10/09	RE-ISSUED FOR SPA	M.L.
10	2019/09/12	ISSUED AS PER ADDENDUM NO.03	M.L.
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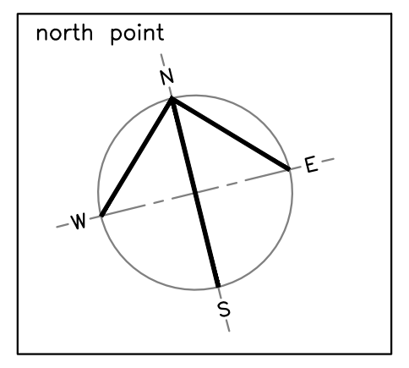

professional stamp

V. JOHNSON
100510576
Oct 9, 2019

project title

NOUVELLE ÉCOLE
SECONDAIRE
BARRHAVEN

Barrhaven Ontario

drawing title

PRE-DEVELOPMENT
WATERSHED PLAN

date	25/01/2018	job.no.	1817
scales	1:400		
drawn	M.L.	drawing no.	C701
approved	J.C.L.		
plot date	25/01/2018		

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LILY XU, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - SOUTH
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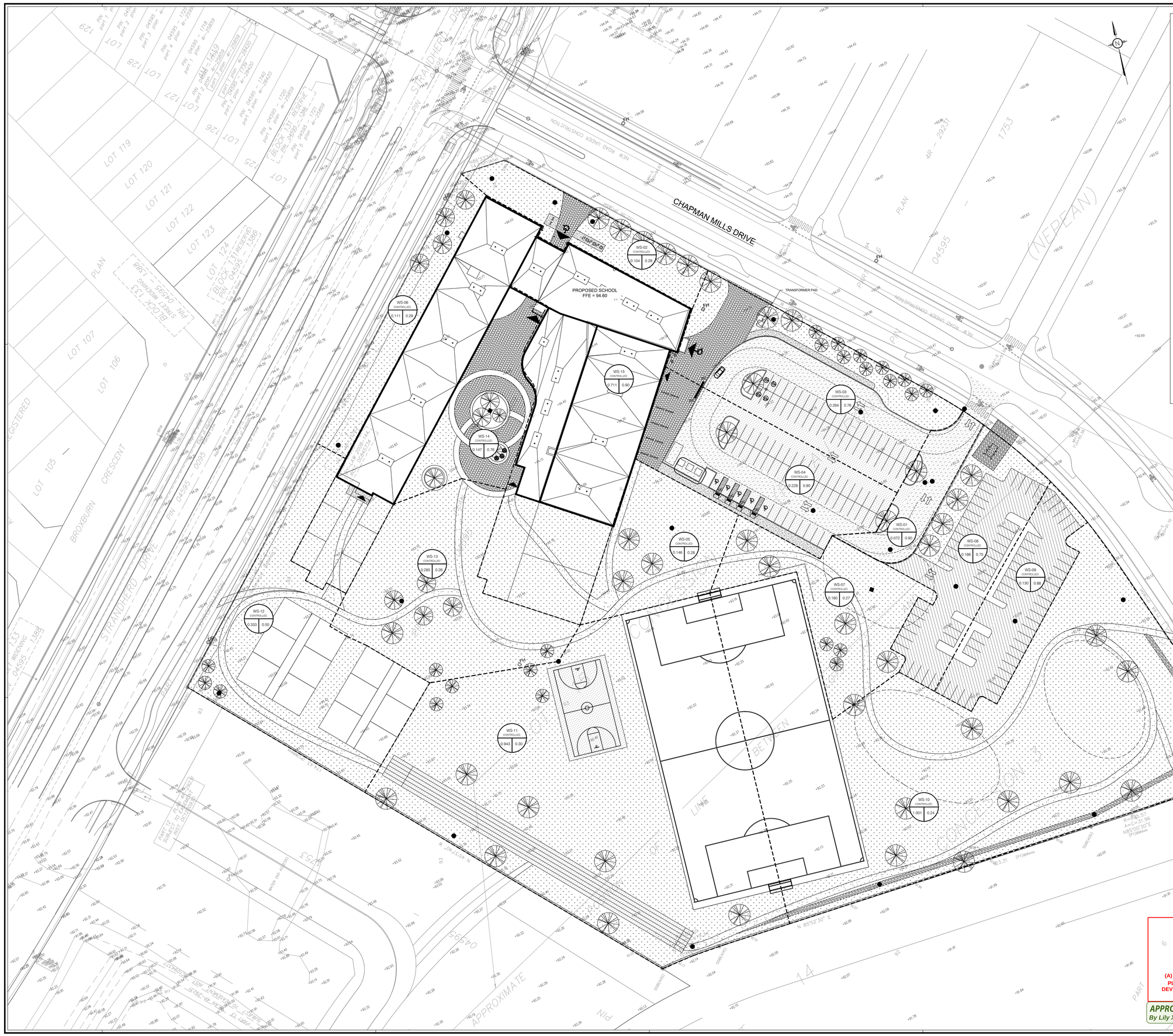
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
By Lily Xu at 11:35 am, Nov 04, 2019



LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
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- PROPOSED TERRACING (3:1 MIN.)
- PROPOSED DOOR ENTRANCE/EXIT
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professional stamp

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V. JOHNSON
100056576
2019.11.01
PROVINCE OF ONTARIO

project title
NOUVELLE ÉCOLE SECONDAIRE BARRHAVEN
Barrhaven Ontario

drawing title
POST-DEVELOPMENT WATERSHED PLAN

date	25/01/2018	job.no.	1817
scales	1:400		
drawn	M.L.	drawing no.	C702
approved	J.C.L.		
plot date	25/01/2018		

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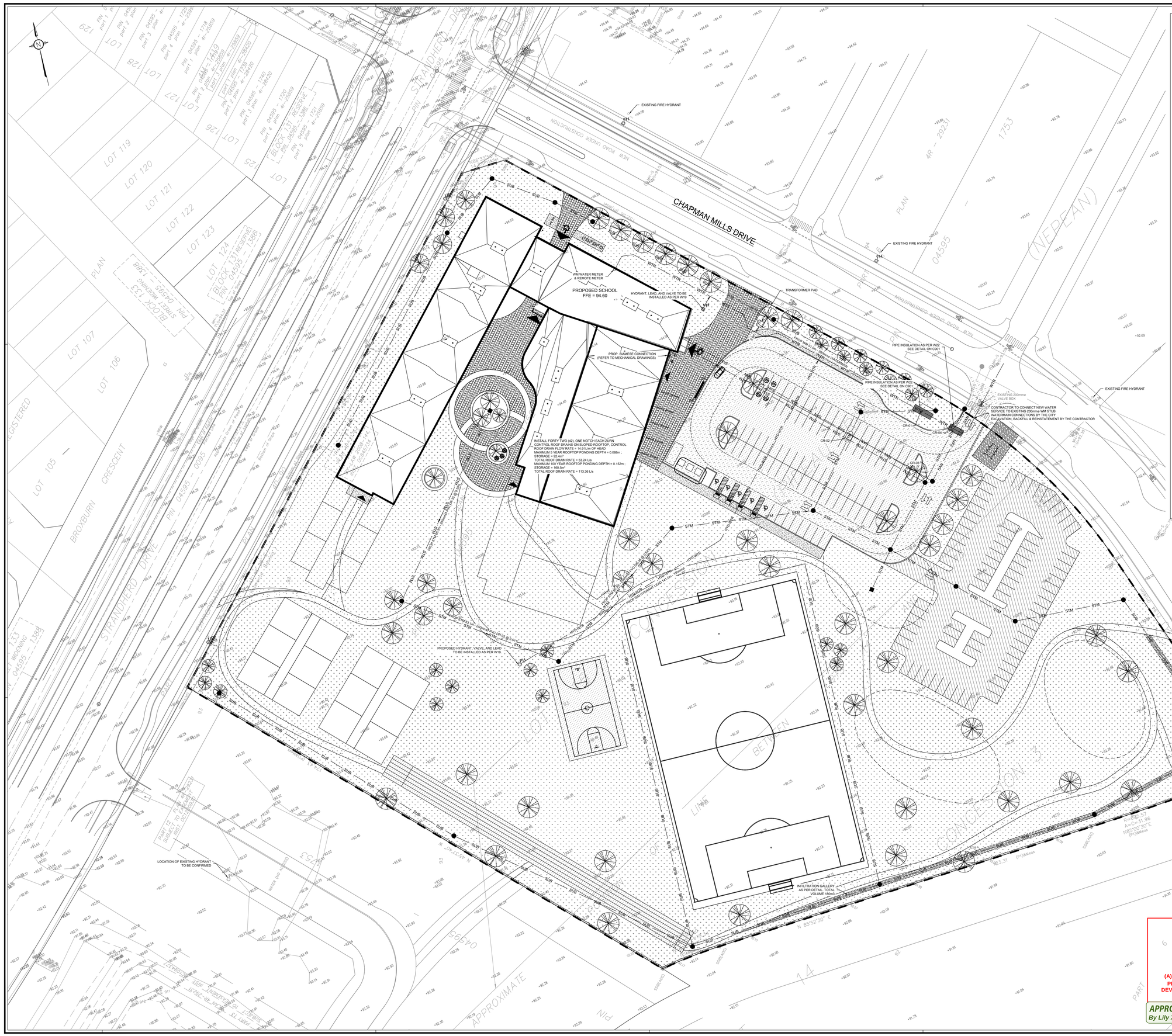
PLANNING, INFRASTRUCTURE & ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
By Lily Xu at 11:35 am, Nov 04, 2019

D07-12-18-0006



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- WS-XX — WATERSHED NAME
- CONTROLLED — RUNOFF COEFFICIENT
- AREA — RUNOFF — AREA IN HECTARES

CUP LEGEND:

- BELL — PROPOSED UNDERGROUND BELL CABLE
- GAS — PROPOSED UNDERGROUND GAS CABLE
- HYDRO — PROPOSED UNDERGROUND HIGH VOLTAGE
- G — PROPOSED GAS METER LOCATION
- PROPOSED BELL PEDESTAL LOCATION

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V. JOHNSON
100030576
PROVINCE OF ONTARIO

project title

NOUVELLE ÉCOLE SECONDAIRE BARRHAVEN

Barrhaven Ontario

drawing title

COMPOSITE UTILITY PLAN

date	25/01/2018	job.no.	1817
scales	1:400		
drawn	M.L.	drawing no.	C801
approved	J.C.L.		
plot date	25/01/2018		

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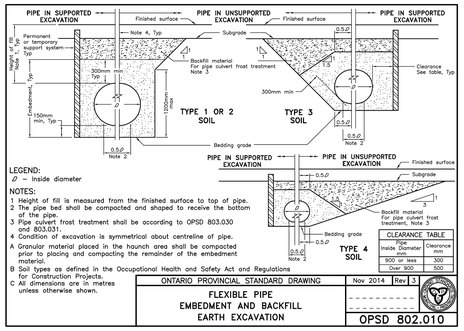
APPROVED
By Lily Xu at 11:35 am, Nov 04, 2019

D07-12-18-0006

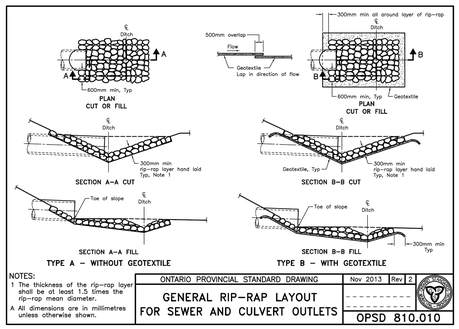


LEGEND:
Ø – Inside diameter

NOTES:
1 Height of fill is measured from the finished surface to top of pipe.
2 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
3 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
4 Condition of excavation is symmetrical about centreline of pipe.
A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
B Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
C All dimensions are in metres unless otherwise shown.

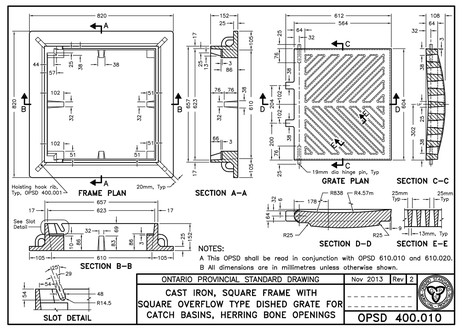
CLEARANCE TABLE	
Pipe Inside Diameter mm	Clearance mm
900 or less	300
Over 900	500

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 3
FLEXIBLE PIPE EMBEDMENT AND BACKFILL EARTH EXCAVATION		OPSD 802.010



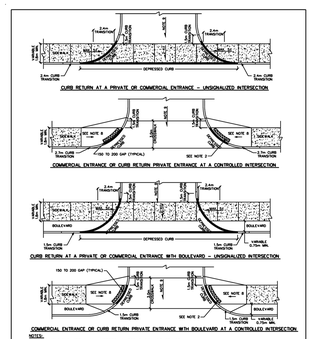
NOTES:
1 The thickness of the rip-rap layer shall be at least 1.5 times the rip-rap mean diameter.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 2
GENERAL RIP–RAP LAYOUT FOR SEWER AND CULVERT OUTLETS		OPSD 810.010



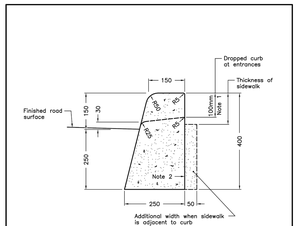
NOTES:
A This OPSD shall be read in conjunction with OPSD 610.010 and 610.020.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 2
CAST IRON, SQUARE FRAME WITH SQUARE OVERFLOW TYPE DISHED GRATE FOR CATCH BASINS, HERRING BONE OPENINGS		OPSD 400.010



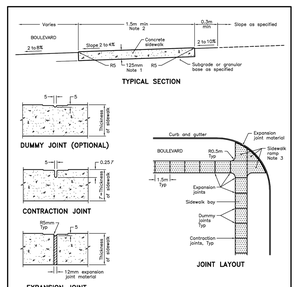
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. APPROVED BUS & WIDTH OF CURB RAMP (1500MM) TACTILE WALKING SURFACE INDICATOR.
3. RADIUS TO MATCH CURB, GRASS GROOVES AS PER OPS
4. SIDEWALK WIDTH AS PER SC1.3.
5. SURFACE TREATMENT AS PER SC1.5 AND SC1.7.
6. CURB RAMPS AS PER SC6 AND SC7.1.
7. CONTROLLED MEANS SIGNALIZED OR A 4-WAY STOP INTERSECTION.
8. SUBJECT TO AVOIDANCE OF MEDIANS, CROSSWALK LINES TO BE CENTRED ON THE CURB RAMP.
9. FOR CURB RAMPS, SLOPE OF 2% TO 5%, MAXIMUM 8%.
10. MAXIMUM SLOPE VARIES, SEE PRIVATE APPROACH STYLES

Ottawa	CURB RETURN ENTRANCES	DATE: MARCH 2007 REV. DATE: MARCH 2017 DWG. No.: SC7.1



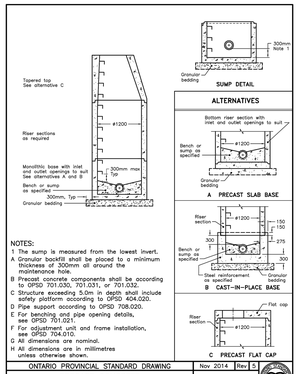
NOTES:
1 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
2 For slipforming procedure a 5% batter is acceptable.
A Treatment at entrances shall be according to OPSD 351.010.
B Outlet treatment shall be according to the OPSD 610 Series.
C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 900 Series.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
CONCRETE BARRIER CURB		OPSD 600.110



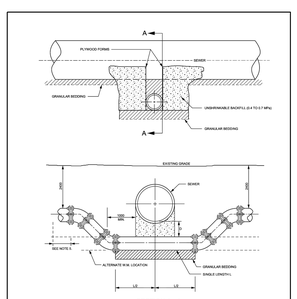
NOTES:
1 Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm. At commercial and industrial driveways, the thickness shall be 200mm.
2 Sidewalk width shall be wider when specified.
3 This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.032, 310.033 and 310.039.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
CONCRETE SIDEWALK		OPSD 310.010



NOTES:
1 The sump is measured from the lowest invert.
A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
C Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.
D Pipe support according to OPSD 708.020.
E For benching and pipe opening details, see OPSD 701.021.
F For adjustment unit and frame installation, see OPSD 704.010.
G All dimensions are nominal.
H All dimensions are in millimetres unless otherwise shown.

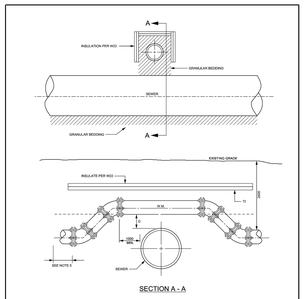
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 5
PRECAST CONCRETE MAINTENANCE HOLE 1200mm DIAMETER		OPSD 701.010



SECTION A - A

NOTES:
FOR WATERMAIN 100mm (NOMINAL) TO 400mm (NOMINAL)
1. BARREL TO BARREL SEPARATION (S) SHALL BE 500mm MINIMUM.
2. THRUST BLOCKS FOR MAIN LARGER THAN 400mm (NOMINAL) SHALL BE PER SPECIAL DESIGN.
3. FOR 100mm (NOMINAL) AND 150mm (NOMINAL) WATER MAINS, BENDS SHALL BE MAX. 22° 30'.
4. CONCRETE FOR THRUST BLOCKS SHALL BE 20 MPa.
5. REFER TO M30.4 FOR RESTRAINED LENGTH REQUIREMENTS.
6. REFER TO M30.3 AND M30.4 FOR THRUST BLOCK REQUIREMENTS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. DESIGNED TO MEET THE INTENT OF THE MOE WATERMAIN DESIGN CRITERIA JUNE 2012.

Ottawa	WATERMAIN CROSSING BELOW SEWER	DATE: MAY 2001 REV. DATE: MARCH 2013 DWG. No.: W25



SECTION A - A

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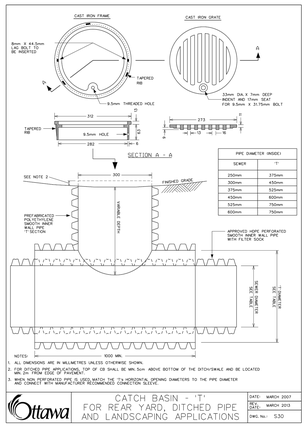
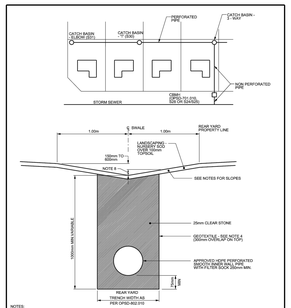
Ottawa	WATERMAIN CROSSING OVER SEWER	DATE: MAY 2001 REV. DATE: MARCH 2013 DWG. No.: W25.2



PIPE DIAMETER (INSIDE)	
SEWER	T
250mm	375mm
300mm	450mm
375mm	525mm
450mm	600mm
525mm	750mm
600mm	750mm

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. MIN. 25 TREE FROM FACE OF CURB. TOP OF CB SHALL BE MIN 5cm ABOVE BOTTOM OF THE DITCH/SWALE AND BE LOCATED AT THE LOWEST POINT OF THE DITCH.
3. WHEN NON PERFORATED PIPE IS USED, MATCH THE 72± HORIZONTAL OPENING DIAMETERS TO THE PIPE DIAMETER AND CONNECT WITH MANUFACTURER RECOMMENDED CONNECTION SLEEVE.

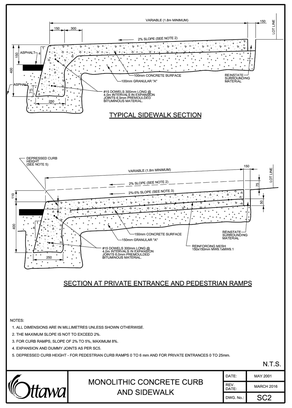
Ottawa	CATCH BASIN - 'T' FOR REAR YARD, DITCHED PIPE AND LANDSCAPING APPLICATIONS	DATE: MARCH 2007 REV. DATE: MARCH 2013 DWG. No.: S30



NOTES:
1. SIDE SLOPE OF SWALE - MIN. 1.25%, MAX. 2:1.
2. LONGITUDINAL SLOPE OF SWALE WITHOUT PERFORATED PIPE 1.5% MIN.
3. LONGITUDINAL SLOPE OF SWALE WITH PERFORATED PIPE 0.5% MIN. WITH 1% OR GREATER PREFERRED.
4. UNDER DRIVEWAYS NON PERFORATED PIPE TO BE USED WITH 75mm BEDDING AND BACKFILLED WITH APPROVED NATIVE MATERIAL.
5. CB "T" TO BE SPACED ABOUT EVERY 20 TO 25m AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
6. CB ELBOW TO BE AT UPPER ENDS OF PERFORATED PIPE AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
7. GEOTEXTILE SHALL BE APPROVED NON-WOVEN CLASS I OR AS SPECIFIED.
8. MAXIMUM REAR YARD WATER DEPTH IS 350mm.

Ottawa	PERFORATED PIPE INSTALLATION FOR REAR YARD AND LANDSCAPING APPLICATIONS	DATE: MARCH 2007 REV. DATE: MARCH 2017 DWG. No.: S29

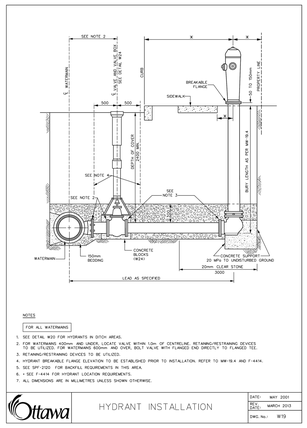
N.T.S.



NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. THE MAXIMUM SLOPE IS NOT TO EXCEED 2%.
3. FOR CURB RAMPS, SLOPE OF 2% TO 5%, MAXIMUM 8%.
4. EXPANSION AND DUMMY JOINTS AS PER SC5.
5. DEPRESSED CURB HEIGHT - FOR PEDESTRIAN CURB RAMPS 0 TO 6 mm AND FOR PRIVATE ENTRANCES 0 TO 25mm.

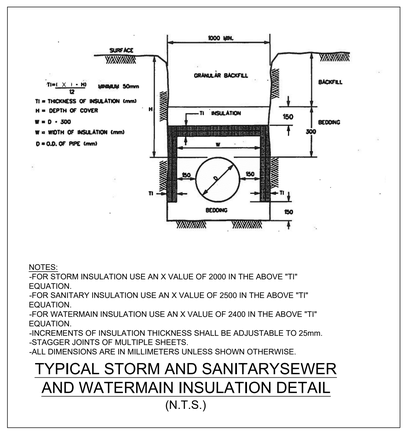
Ottawa	MONOLITHIC CONCRETE CURB AND SIDEWALK	DATE: MAY 2001 REV. DATE: MARCH 2016 DWG. No.: SC2

N.T.S.



NOTES
FOR ALL WATERMAINS
1. SEE DETAIL W30 FOR HYDRANTS IN DITCH AREAS.
2. FOR WATERMAINS 400mm AND UNDER, LOCATE VALVE WITHIN 1.0m OF CENTRELINE. RETAINING/RESTRAINING DEVICES TO BE UTILIZED. FOR WATERMAINS 350mm AND OVER, BOLT VALVE WITH FLANGED END DIRECTLY TO FLANGED TEE.
3. RETAINING/RESTRAINING DEVICES TO BE UTILIZED.
4. HYDRANT BREAKABLE FLANGE ELEVATION TO BE ESTABLISHED PRIOR TO INSTALLATION. REFER TO WM-18.4 AND F-44A.
5. SEE SPF-020 FOR BACKFILL REQUIREMENTS IN THIS AREA.
6. - SEE F-44A FOR HYDRANT LOCATION REQUIREMENTS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

Ottawa	HYDRANT INSTALLATION	DATE: MAY 2001 REV. DATE: MARCH 2013 DWG. No.: W19



NOTES:
-FOR STORM INSULATION USE AN X VALUE OF 2000 IN THE ABOVE "TI" EQUATION.
-FOR SANITARY INSULATION USE AN X VALUE OF 2500 IN THE ABOVE "TI" EQUATION.
-FOR WATERMAIN INSULATION USE AN X VALUE OF 2400 IN THE ABOVE "TI" EQUATION.
-INCREMENTS OF INSULATION THICKNESS SHALL BE ADJUSTABLE TO 25mm.
-STAGGER JOINTS OF MULTIPLE SHEETS.
-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.

TYPICAL STORM AND SANITARYSEWER AND WATERMAIN INSULATION DETAIL
(N.T.S.)

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APPROVED
By Lily Xu at 11:36 am, Nov 04, 2019

Conseil des écoles publiques de l'Est de l'Ontario

no.	date	revision / issue	by
11	2019/10/09	RE-ISSUED FOR SPA	M.L.
10	2019/09/12	ISSUED AS PER ADDENDUM NO.03	M.L.
09	2019/09/05	ISSUED AS PER ADDENDUM NO.02	M.L.
08	2019/08/29	ISSUED AS PER ADDENDUM NO.01	M.L.
07	2019/07/24	ISSUED TENDER	G.B.
06	2019/07/03	ISSUED AS PER CITY COMMENTS	G.B.
05	2019/05/28	ISSUED AS PER COMMENTS	G.B.
04	2019/05/13	ISSUED FOR PERMIT	G.B.
03	2018/12/21	RE-ISSUED FOR SPA	G.B.
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2019-11-01
PROVINCE OF ONTARIO

project title
NOUVELLE ÉCOLE SECONDAIRE BARRHAVEN
Barrhaven Ontario

drawing title
CONSTRUCTION DETAILS PLAN

date	25/01/2018	job.no.	1817
scales	1:400		
drawn	M.L.	drawing no.	C901
approved	J.C.L.		
plot date	25/01/2018		

1 DO NOT SCALE THIS DRAWING.
2 CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES.
3 THIS DRAWING TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS: STRUCTURAL, MECHANICAL, ELECTRICAL

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