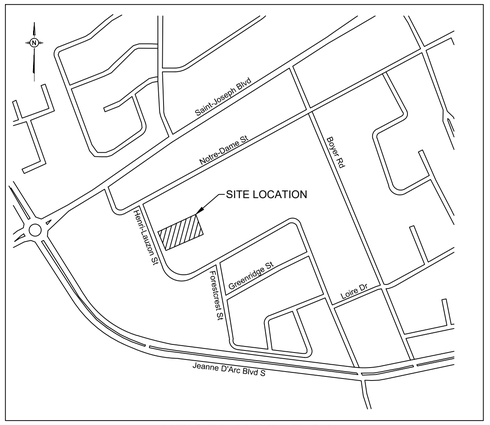
PROPOSED RESIDENTIAL DEVELOPMENT

1401-1411 HENRI LAUZON STREET
ORLEANS, ONTARIO
REVISION NO. 02



KEY PLAN (N.T.S.)

LRL

ENGINEERING | INGÉNIERIE

5430 Canotek Road | Ottawa, ON, K1J 9G2
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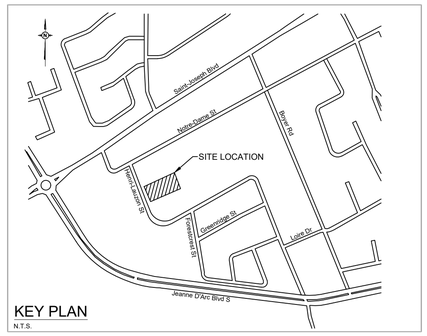
DRAWING LIST

	TITLE PAGE	
1	EROSION AND SEDIMENT CONTROL PLAN	C101
2	GRADING PLAN	C301
3	SERVICING PLAN	C401
4	HALO STREET (0+000 TO 0+122) P1 STREET (0+000 TO 0+031) P2 STREET (0+000 TO 0+032) PLAN AND PROFILES	C501
5	UNDERGROUND STORAGE AND STORMWATER SEPARATOR DETAILS	C601
6	UNDERGROUND STORAGE AND STORMWATER SEPARATOR DETAILS	C602
7	UNDERGROUND STORAGE AND STORMWATER SEPARATOR DETAILS	C602
8	POST DEVELOPMENT WATERSHED PLAN	C701
9	POST DEVELOPMENT SEWERSHED PLAN	C801

PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS, ONTARIO
REVISION NO. 03
LRL PROJECT NO. 08181

D07-12-15-0004

16540



KEY PLAN
N.T.S.

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 ALONG DITCHES IMMEDIATELY DOWNSTREAM FROM AREAS TO BE DISTURBED (SEE PLAN FOR LOCATION).
- INSTALL SILTSACK FILTERS IN ALL CONCRETE CATCH BASINS STRUCTURES IN THE VICINITY AND DOWNSTREAM
- INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.

2. DURING CONSTRUCTION:

- WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY AND 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 DESTABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
- NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVES 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 PROVIDE 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.

3. AFTER CONSTRUCTION:

- PROVIDE PERMANENT COVER CONSISTING OF TOPSOIL AND SEED TO DISTURBED AREAS.
- REMOVE 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.

LEGEND

- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED TERRACING
- PROPOSED BOTTOM OF GRASS SWALE
- PROPOSED ASPHALT ROAD
- EXISTING BUILDING ENVELOPE
- EXISTING ROAD CENTRELINE
- EXISTING ROAD

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS IF REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

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UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

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SCALE: 1:250

No.	REVISIONS	BY	DATE
03	ISSUED AS PER CITY COMMENTS	D.M.	DEC. 10, 2018
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00	ISSUED FOR SPC	A.E.	FEB. 29, 2016

LICENSED PROFESSIONAL ENGINEER
G. L. BRUNET
100191036
10/12/2018
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

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CLIENT
BILBERRY GROUP

DESIGNED BY:	DRAWN BY:	APPROVED BY:
A.E.	D.S.	G.B.

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE
EROSION AND SEDIMENT CONTROL PLAN

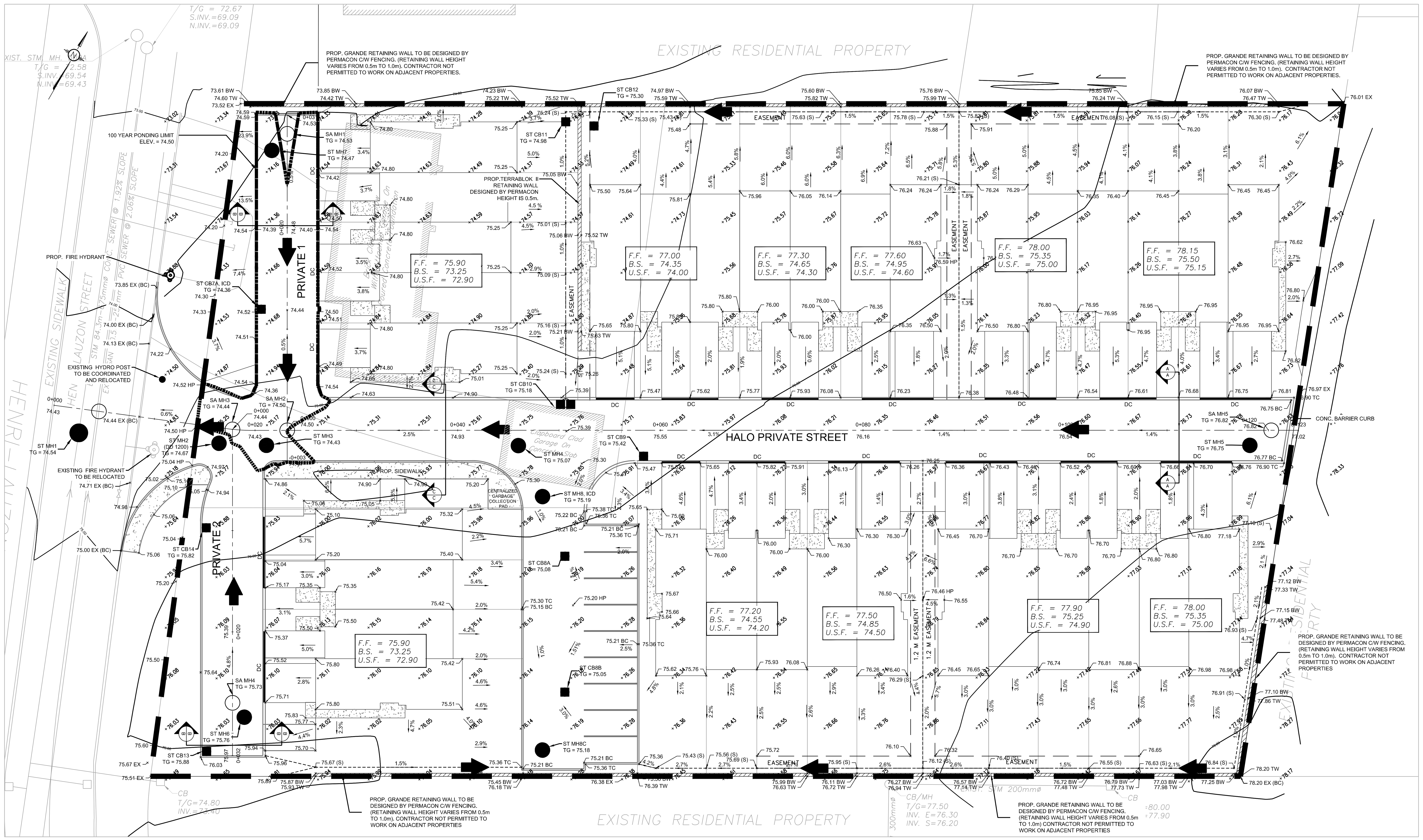
PROJECT NO.
08181

DATE
DEC. 10, 2018

C101

D07-12-15-0004

16540

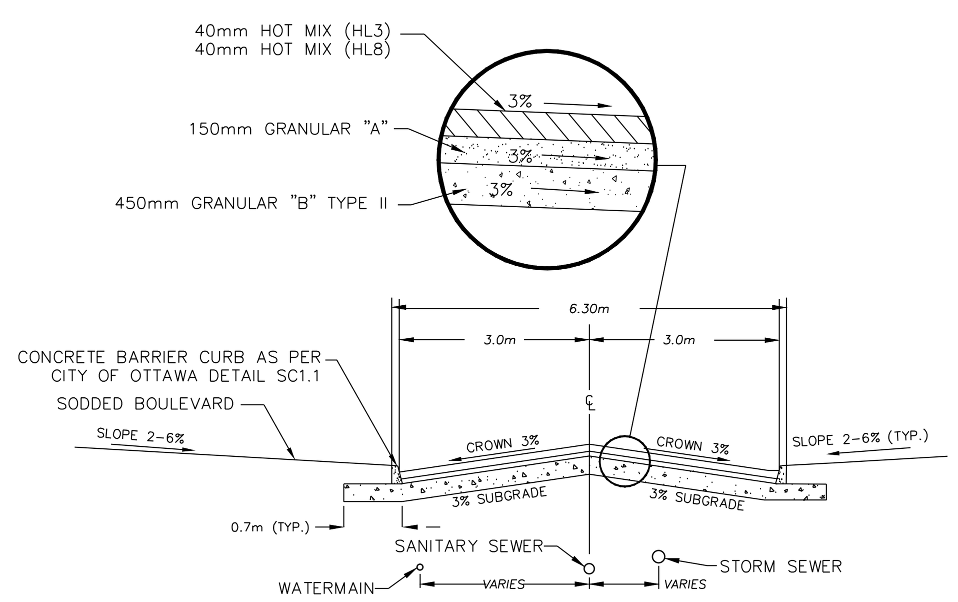


KEY PLAN

N.T.S.

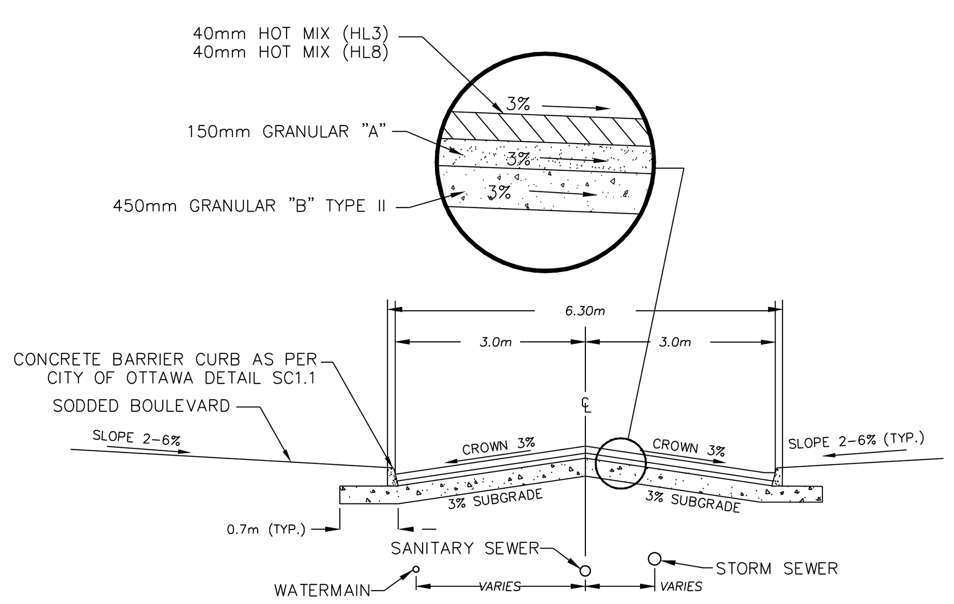
LEGEND

- PROPOSED MAJOR OVERLAND ROUTE
- SITE DEVELOPMENT AREA BOUNDARY
- PROPOSED BUILDING ENVELOPE
- SERVICES LOCATION
- FIRE HYDRANT
- VALVE
- PROPOSED WATERMAIN
- PROPOSED TERRACING
- PROPOSED CURB
- DC — PROPOSED DEPRESSED CURB
- PROPOSED ROAD CENTRELINE
- PROPOSED BOTTOM OF GRASS SWALE
- EXISTING HYDRO POLE
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM MANHOLE
- F.F. — FINISH FLOOR
- B.S. — BOTTOM OF SLAB
- USF — UNDERSIDE OF FOOTING
- 99.99 — PROPOSED ELEVATION
- 99.99 (S) — PROPOSED SWALE ELEVATION
- 99.99 TW — PROPOSED TOP OF WALL ELEVATION
- 99.99 BW — PROPOSED BOTTOM OF WALL ELEVATION
- 99.99 TC — PROPOSED TOP OF CURB ELEVATION
- 99.99 BC — PROPOSED BOTTOM OF CURB ELEVATION
- ×99.99 — EXISTING ELEVATION
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING CATCH BASIN
- EXISTING PROPERTY BOUNDARY
- EXISTING BUILDING ENVELOPE
- EXISTING ROAD CENTRELINE
- EXISTING ROAD
- PROPOSED 100 YEAR WATER LEVEL



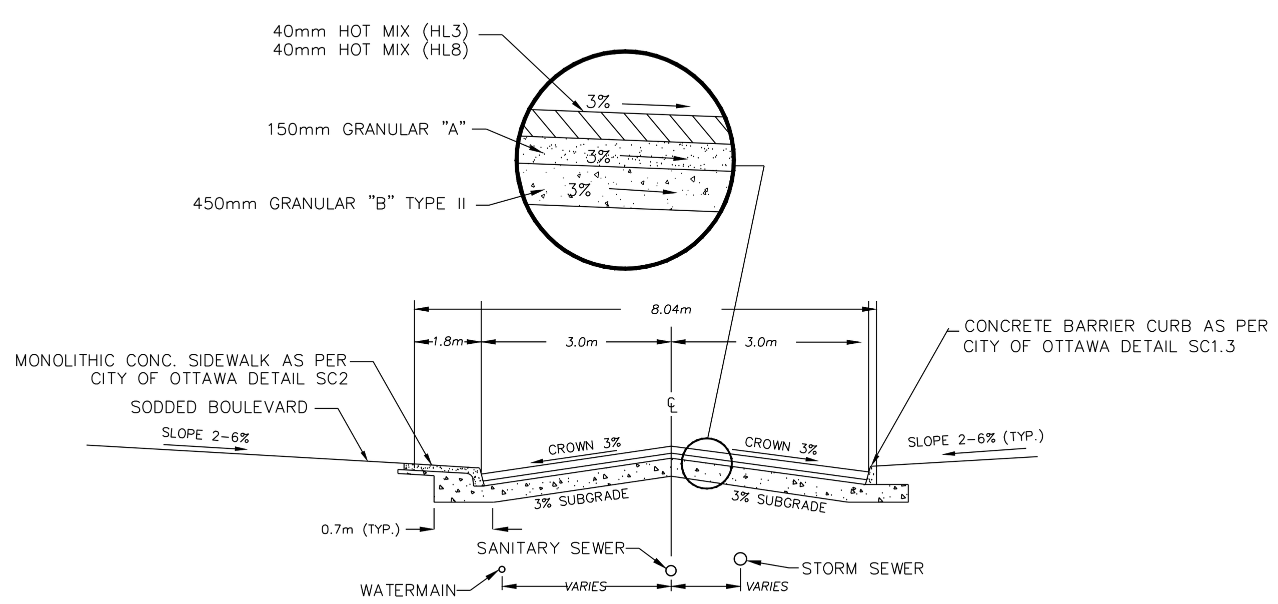
TYPICAL ROAD SECTION

HALO PRIVATE A-A (N.T.S.)



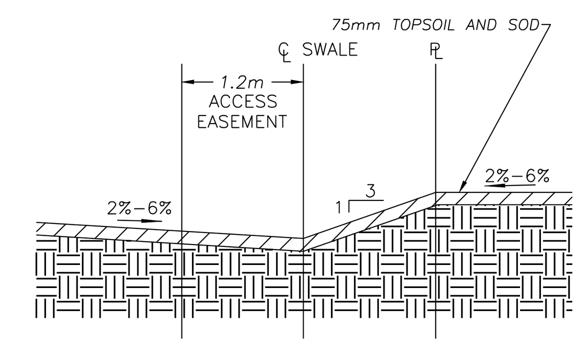
TYPICAL ROAD SECTION

PRIVATE 1 & 2 B-B (N.T.S.)

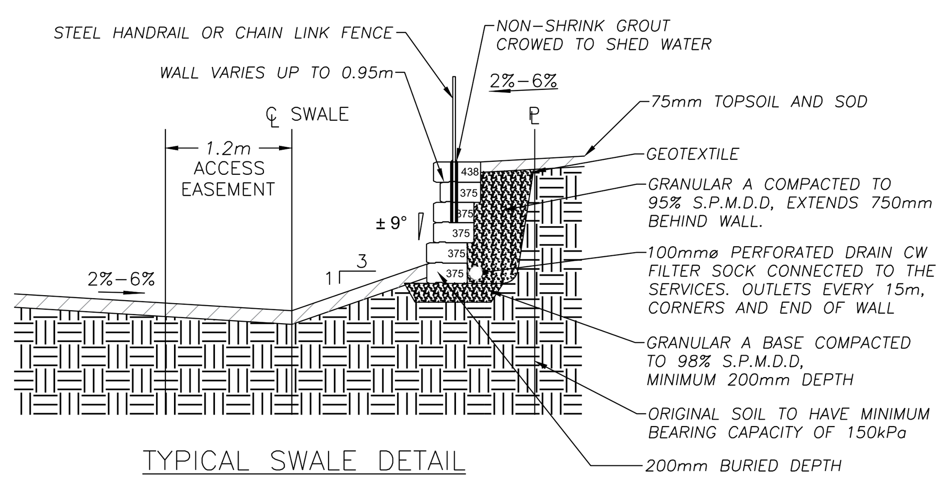


TYPICAL ROAD SECTION

HALO PRIVATE C-C (N.T.S.)



TYPICAL SWALE DETAIL (N.T.S.)



TYPICAL SWALE DETAIL WITH RETAINING WALL (N.T.S.)

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LICENSED PROFESSIONAL ENGINEER G. L. BRUNET 100191036 10/12/2018 PROVINCE OF ONTARIO

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CLIENT

BILBERRY GROUP

DESIGNED BY:	DRAWN BY:	APPROVED BY:
A.E.	M.B.	G.B.

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE

GRADING PLAN

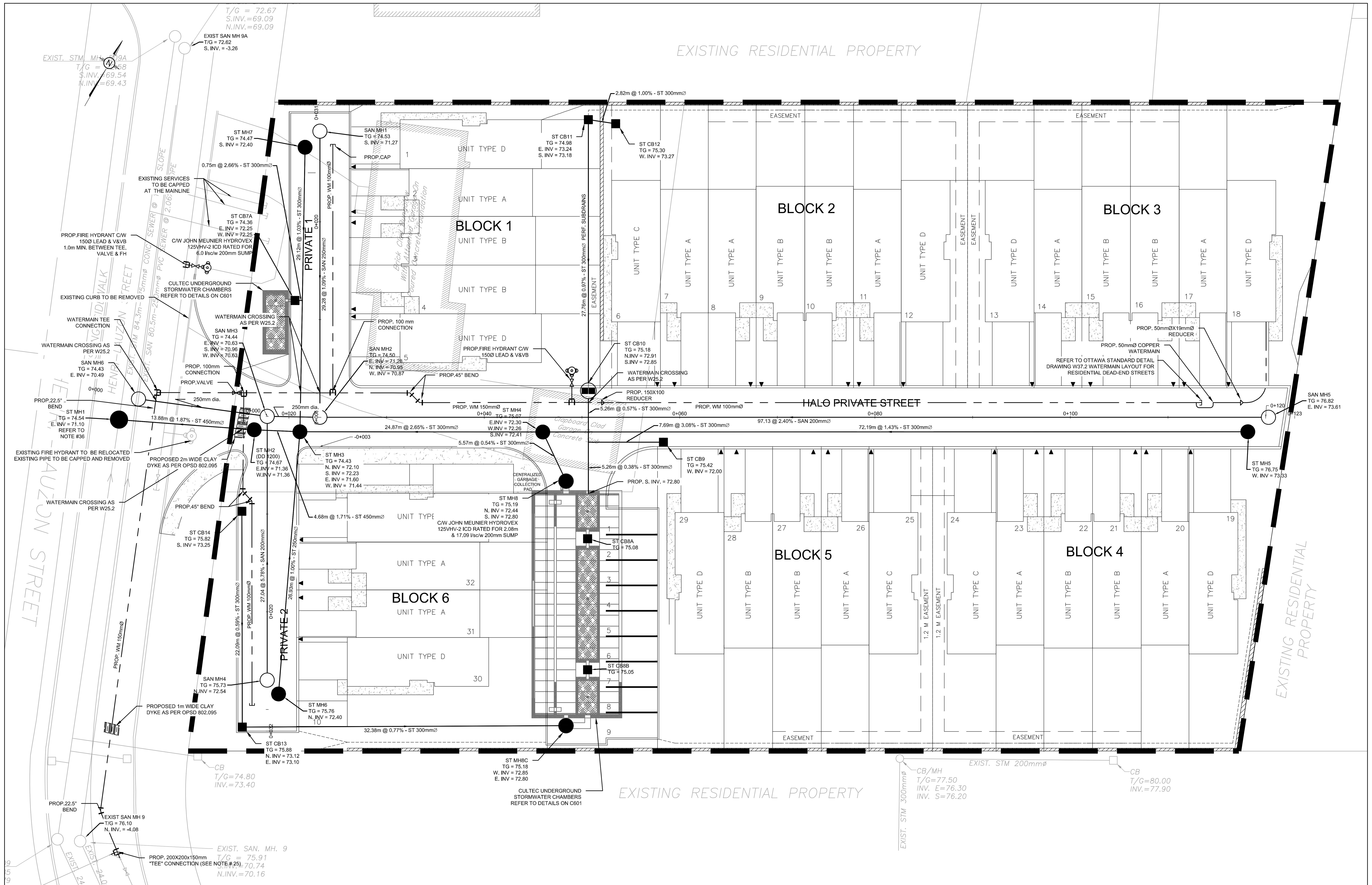
PROJECT NO.
08181

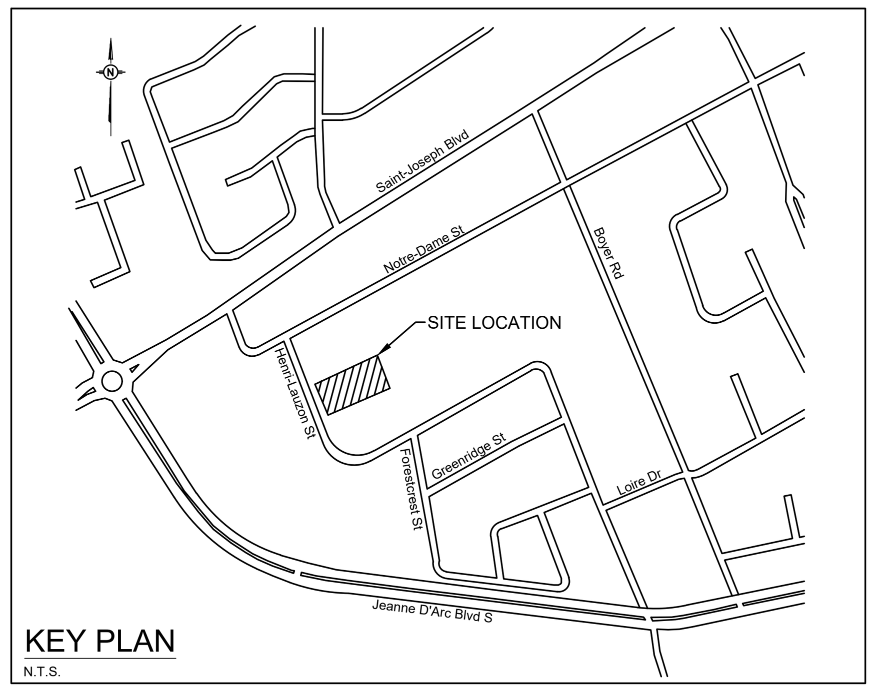
DATE
JAN. 20, 2016

C301

D07-12-15-0004

16540





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- EXISTING SANITARY SEWER
- EXISTING BUILDING ENVELOPE
- EXISTING ROAD CENTRELINE
- EXISTING ROAD

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 TO BE OBTAINED FROM DUTRISAC SURVEYING LTD REFERENCE PLAN 4R-19358.
4. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE OR CATCH BASIN OUTLETS 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 NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
8. CURBS TO BE MOUNTABLE, CONSTRUCTED AS PER CITY OF OTTAWA DETAIL SC1.3 UNLESS OTHERWISE.
9. RESTORE PAVEMENT STRUCTURE AND SURFACES ON EXISTING ROADS TO A CONDITION AT LEAST EQUAL TO ORIGINAL AND TO THE SATISFACTION OF THE MUNICIPAL AUTHORITIES.
10. 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.
11. ABUTTING PROPERTY GRADE TO BE MATCHED.
12. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
13. MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
14. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
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. THE LATEST GEOTECHNICAL REPORT FOR THIS SITE SHALL BE ADHERED TO AND FORMS PART OF THE REQUIREMENTS OF THIS CONSTRUCTION SITE.
18. PRIOR TO CONSTRUCTION, A GEOTECHNICAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO IS TO INSPECT ALL SUB SURFACES FOR FOOTINGS, SERVICES, RETAINING WALLS AND PAVEMENT STRUCTURES.

NOTES: WATERMAIN

19. ALL WATER MAIN TO BE INSTALLED AT MINIMUM COVER OF 2.4m BELOW FINISHED GRADE OR THERMAL INSULATION SHALL BE PROVIDED AS PER W22. PROVIDE THERMAL INSULATION FOR WATERMAIN AT OPEN STRUCTURES AS PER W23, AND WATERMAIN OVER SEWER AS PER W25.2.
20. WATER MAIN BEDDING TO BE AS PER CITY OF OTTAWA DETAIL W17.
21. CONCRETE THRUST BLOCKS AND RESTRAINING AS PER CITY OF OTTAWA DETAIL W25.3.
22. CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS AS PER CITY OF OTTAWA DETAIL W40.
23. 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.
24. ALL WATERMAIN PIPES TO BE PVC DR-18 OR EQUIVALENT.
25. ALL CONNECTIONS OF NEW WATERMAIN TO EXISTING WATERMAIN & ALL BLANKINGS OF EXISTING MAINS AND SERVICES SHALL BE PERFORMED BY CITY OF OTTAWA FORCES. THE CONTRACTOR SHALL PROVIDE EXCAVATION, BACKFILL AND REINSTATEMENT.
26. WATER METER & RADIO ENDPOINT TO BE INSTALLED AS PER CITY OF OTTAWA STANDARD W30.

NOTES: SEWER

27. ALL WORK SHALL BE PERFORMED, AS APPLICABLE IN ACCORDANCE WITH OPSS 407, AND 410.
28. ALL SEWERS WITH LESS THAN 1.5m SHALL BE INSULATED WITH MINIMUM 50mm STYROFOAM THICK INSULATION.
29. ALL SEWER PIPES (SAN & STORM) AS PER DRAWING, UNLESS APPROVED OR SPECIFIED OTHERWISE.
30. REAR YARD SWALES TO BE INSTALLED WITH 250mm DIAMETER PERFORATED DRAIN AS PER CITY OF OTTAWA STANDARD S.29.
31. CATCH BASINS TO BE AS PER OPSD 705.010 WITH FRAME AND COVERS TO CITY OF OTTAWA STANDARD S19. ALL CATCH BASIN MANHOLES TO BE OPSD 701.010 WITH FRAME TO CITY OF OTTAWA STANDARD S25 AND COVER TO CITY OF OTTAWA STANDARDS S28.1.
32. STORM AND SANITARY MANHOLES TO BE TO OPSD 701.010 WITH FRAME TO CITY OF OTTAWA STANDARD S25 AND COVER TO CITY OF OTTAWA STANDARDS S24.1 FOR STORM AND S24 FOR SANITARY.
33. CB ELBOW IN THE REAR YARDS SHALL BE AS PER CITY OF OTTAWA STANDARD S31 AND CB 'T' SHALL BE AS PER CITY OF OTTAWA STANDARD S30.
34. CATCHBASINS AND MANHOLES SHALL BE BACKFILLED USING GRANULAR B-TYPE I.
35. THE JOINTS BETWEEN CATCHBASIN AND MANHOLE SECTIONS ARE TO BE WRAPPED WITH NON-WOVEN GEOTEXTILE AS PER OPSS 1860 - TYPE 1 IN ORDER TO PREVENT FINE SOIL INFILTRATION.
36. CONNECTING TO THE EXISTING 675mm STORM SEWER ALONG HENRI-LAUZON STREET SHALL BE BY REMOVING A PIECE OF EXISTING SEWER AND INSTALLING 1.0m LONG STUBS AND FLEXIBLE COUPLERS ON EITHER SIDE OF THE MAINTENANCE HOLE.

08181-STM

Structure Name	Structure Details	Description
MH1	T/G = 74.54 E INV IN = 71.10	1500mm dia AS PER OPSD 701.011 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
MH2	T/G = 74.67 E INV IN = 71.36 W INV OUT = 71.36	1200mm DIAMETER DOWNSTREAM DEFENDER BY HYDRO INTERNATIONAL. REFER TO DETAIL DWG C.601
MH3	T/G = 74.43 N INV IN = 72.10 S INV IN = 72.23 E INV IN = 71.60 W INV OUT = 71.44	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
MH4	T/G = 75.07 S INV IN = 72.41 E INV IN = 72.30 W INV OUT = 72.26	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
MH5	T/G = 76.75 E INV OUT = 73.33	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
MH6	T/G = 75.76 N INV OUT = 72.40	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
MH7	T/G = 74.47 S INV OUT = 72.40	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
CB7A	T/G = 74.36 E INV IN = 72.25 W INV OUT = 72.25	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19 ICD – JOHN MEUNIER HYDROVEX 125VHV-2 ICD RATED FOR 6.00 l/sc/w
MH8	T/G = 75.19 S INV IN = 72.80 N INV OUT = 72.44	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID – ICD – JOHN MEUNIER HYDROVEX 125VHV-2 ICD RATED FOR 19.09 l/sc/wD
CB8A	T/G = 75.08	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19 SUMP DEPTH 1.0m
CB8B	T/G = 75.05	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19 SUMP DEPTH 1.0m
MH8C	T/G = 75.18 W INV IN = 72.85 E INV OUT = 72.80 N INV OUT = 72.80	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S28.1. PERFORATED LID
CB9	T/G = 75.42 W INV OUT = 72.00	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19
CB10	T/G = 75.18 N INV IN = 72.91 S INV OUT = 72.85	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19
CB11	T/G = 75.89 E INV IN = 73.24 S INV OUT = 73.18	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19
CB12	T/G = 75.44 W INV OUT = 73.27	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19
CB13	T/G = 75.88 N INV IN = 73.12 E INV OUT = 73.10	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19
CB14	T/G = 75.82 S INV OUT = 73.25	600mm AS PER OPSD 705.010 FRAME & COVER AS PER CITY OF OTTAWA S19

08181-SAN

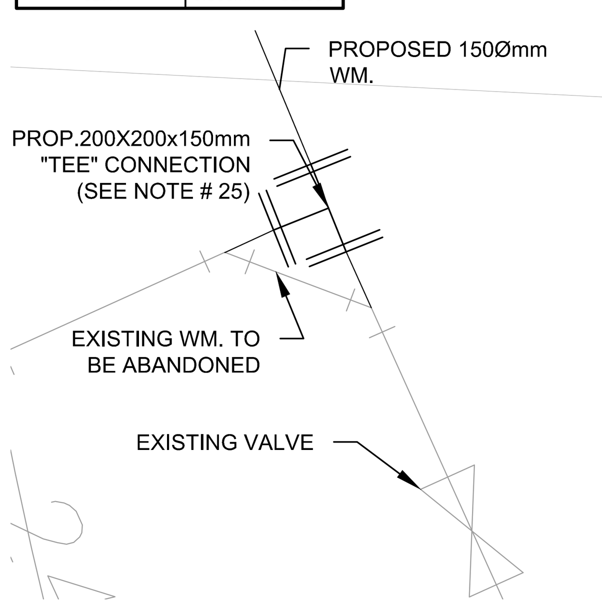
Structure Name	Structure Details	Description
MH1	T/G = 74.53 S INV OUT = 71.27	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S24.1
MH2	T/G = 74.50 E INV IN = 71.28 N INV IN = 70.95 W INV OUT = 70.87	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S24.1
MH3	T/G = 74.44 E INV IN = 70.63 S INV IN = 70.96 W INV OUT = 70.63	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S24.1
MH4	T/G = 75.73 N INV OUT = 72.52	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S24.1
MH5	T/G = 76.82 W INV OUT = 73.61	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S24.1
MH6	T/G = 74.43 E INV IN = 70.49	1200mm dia AS PER OPSD 701.010 FRAME AS PER CITY OF OTTAWA STD. S25 & COVER AS PER CITY OF OTTAWA STD. S24.1

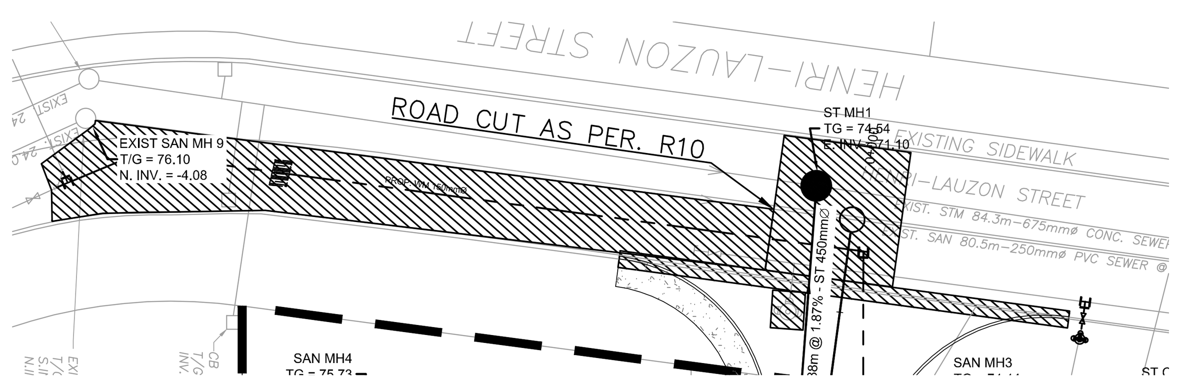
WATERMAIN SERVICE SCHEDULE
HALO PRIVATE STREET

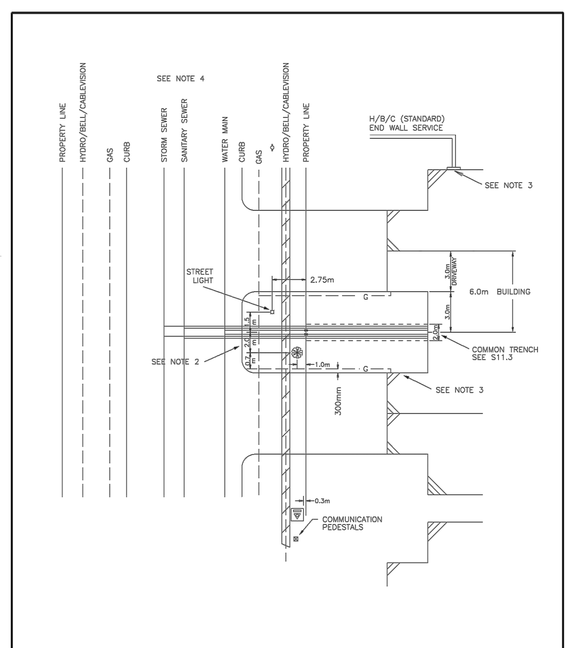
CHAINAGES	DESCRIPTION	TOP OF GROUND	TOP OF WATERMAIN	TOP OF SEWER
HENRI LAUZON STREET				
	200x200x150mm Tee	75.93	73.53	-
	150x150x150mm Tee	74.45	72.05	-
	150mm 45° BEND	74.29	71.99	-
PRIVATE 2				
0-002	150x150x150mm Tee	74.49	72.09	-
0-001	SAN SEWER CROSSING	74.43	72.09	70.60
0+001	STORM SEWER CROSSING	74.74	71.34	72.36
0+008	50mm 45° BEND	75.35	72.95	-
0+009	50mm 45° BEND	75.35	72.95	-
0+030	CAP	75.80	73.40	-
PRIVATE 1				
0+002	150x150x150mm Tee	74.47	72.07	-
0+028	CAP	74.48	72.07	-
HALO PRIVATE STREET				
0+015	150mm VALVE	74.50	72.10	-
0+016	SAN. SEWER CROSSING	74.47	73.30	71.50
0+019	STORM SEWER CROSSING	74.47	73.30	72.35
0+042	50mm 45° BEND	74.60	72.24	-
0+043	50mm 45° BEND	74.70	72.30	-
0+049	FIRE HYDRANT	75.16	72.74	-
0+051	STORM SEWER CROSSING	75.20	73.80	72.85
0+053	150x75 REDUCER	75.30	72.90	-
0+100	50mm REDUCER AND CAP	76.39	74.29	-

08181-STM

Structure Name	CB LEADS
CB7A	0.300mmø @2.66%

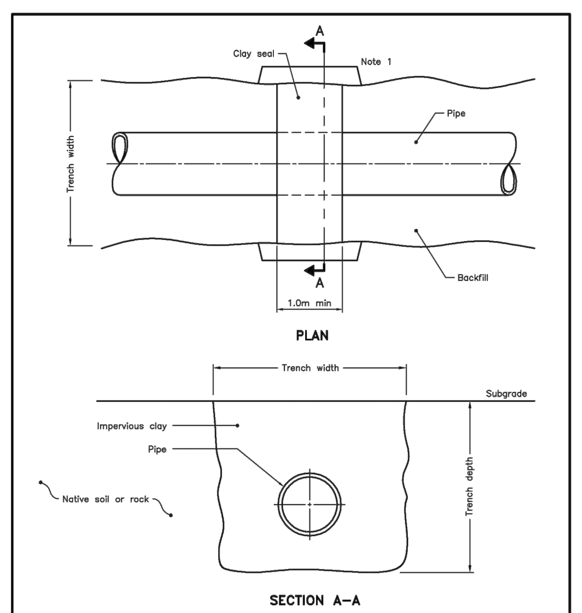






NOTES:
1. TRANSFORMER PEDESTALS AND FIRE HYDRANTS (WHERE APPLICABLE) TO BE INSTALLED AT END OF TOWNHOUSE BLOCKS.
2. INCREASE THIS DIMENSION IF SPACE IS AVAILABLE. THIS DIMENSION WILL INCREASE WITH LARGER LOT FRONTAGES.
3. SERVICE ENTREES TO UTILITY SPECIFICATIONS.
4. REFER TO R.O.W. CROSS SECTIONS FOR UTILITY LOCATIONS.
5. SEE W27 FOR ADDITIONAL WATER SERVICING SCENARIOS.

Ottawa | TOWNHOUSE SERVICING | DATE: MARCH 2009 | REV. DATE: MARCH 2013 | DWG. No.: R21



NOTES:
1. Key into undisturbed trench soil.
A Clay seal shall extend from bottom of trench excavation to the subgrade.
B Clay seal shall be located so that no pipe joints are within the clay seal material.
C All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2011 | Rev 1
CLAY SEAL FOR PIPE TRENCHES | OPSD 802.095

USE AND INTERPRETATION OF DRAWINGS

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5m 0 5 10m
SCALE: 1:250

No.	REVISIONS	BY	DATE
03	ISSUED AS PER CITY COMMENTS	D.M.	DEC. 10, 2018
02	ISSUED AS PER CITY COMMENTS	D.M.	OCT. 16, 2018
01	ISSUED AS PER CITY COMMENTS	D.M.	AUG. 23, 2018
00	ISSUED FOR SPC	A.E.	FEB. 29, 2016

NOT AUTHENTIC UNLESS SIGNED AND DATED

LRL
ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT
BILBERRY GROUP

DESIGNED BY:	DRAWN BY:	APPROVED BY:
A.E.	M.B.	G.B.

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE
SERVICING PLAN

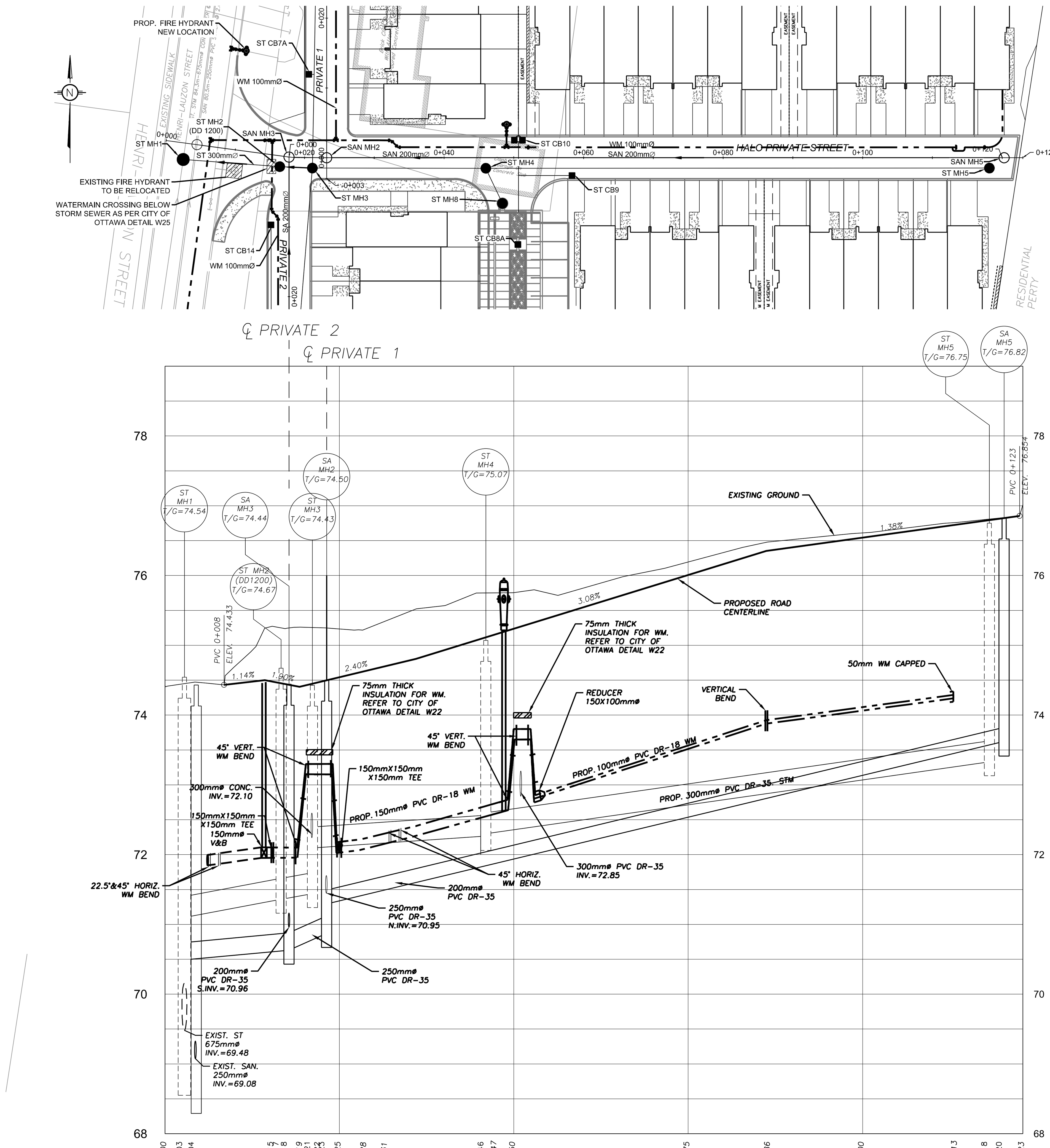
PROJECT NO.
08181

DATE
JAN. 20, 2016

C401

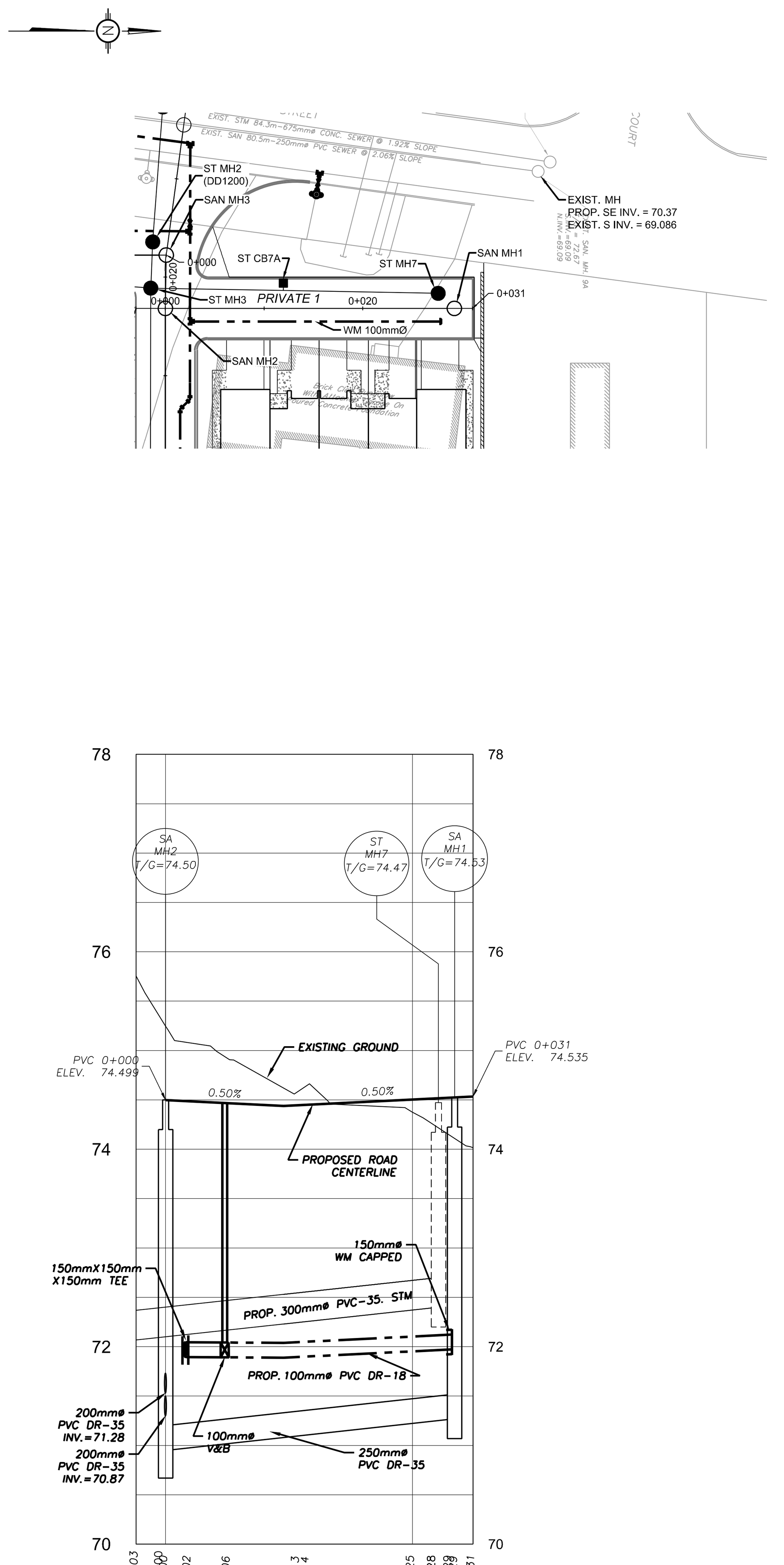
D07-12-15-0004

16540



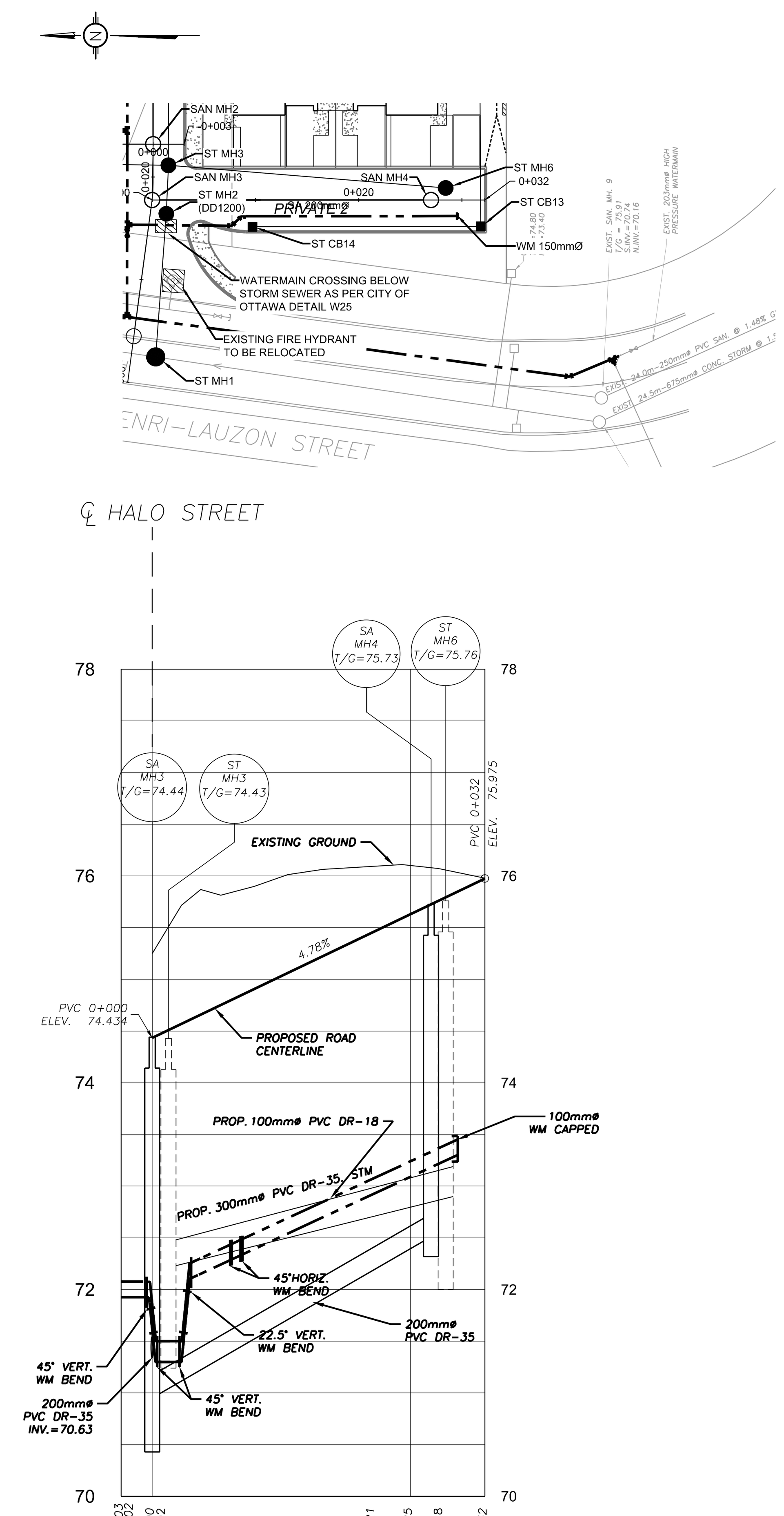
Row	Values
EXSITING GROUND ELEVATION	74.43, 75.23, 75.76, 76.19, 76.61, 77.02
PROPOSED CENTERLINE ELEVATION	74.54, 75.24, 76.01, 76.54
TOP OF WATERMAIN	72.07, 72.07, 72.07, 72.18, 72.24, 72.29, 72.72, 73.80, 73.56, 73.93, 74.11, 74.29
PROPOSED SANITARY SEWER INVERTS	
PROPOSED STORM SEWER INVERTS	

HALO STREET PROFILE



Row	Values
EXSITING GROUND ELEVATION	75.75, 75.25, 74.38, 74.01
PROPOSED CENTERLINE ELEVATION	74.50, 74.53
TOP OF WATERMAIN	72.07, 72.04, 72.04, 72.05, 72.10, 72.12
PROPOSED SANITARY SEWER INVERTS	
PROPOSED STORM SEWER INVERTS	

P1 STREET PROFILE



Row	Values
EXSITING GROUND ELEVATION	75.25, 76.10, 75.98
PROPOSED CENTERLINE ELEVATION	74.43, 75.63, 75.97
TOP OF WATERMAIN	74.43, 73.06, 75.63, 75.97
PROPOSED SANITARY SEWER INVERTS	70.96, 72.52
PROPOSED STORM SEWER INVERTS	

P2 STREET PROFILE

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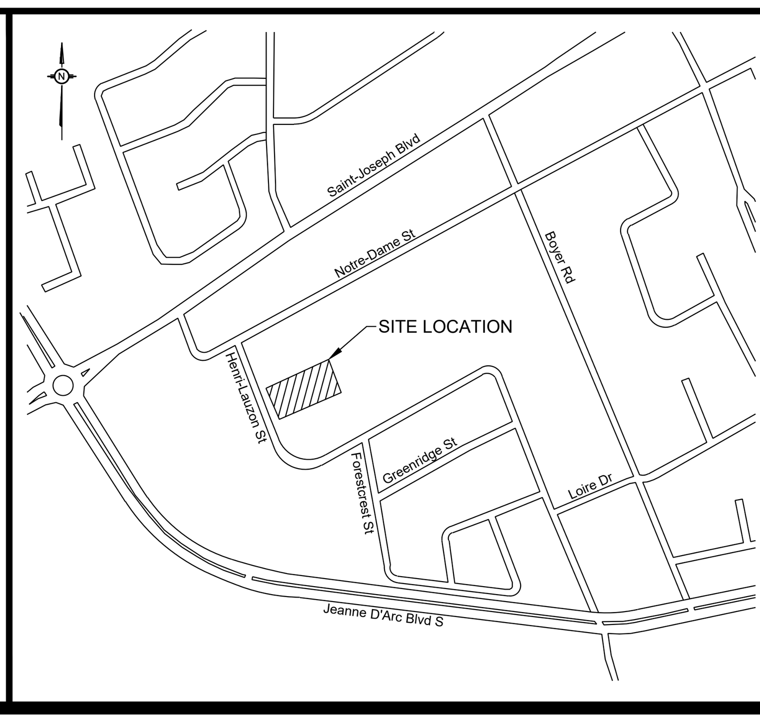

10m 5 0 10 20m
SCALE: 1:500

LICENSED PROFESSIONAL ENGINEER G. L. BRUNET 100191036 10/12/2018 PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

LRL ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
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CLIENT
BILBERRY GROUP

DESIGNED BY:	DRAWN BY:	APPROVED BY:
A.E.	M.B.	G.B.

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE
HALO STREET (0+000 TO 0+122)
P1 STREET (0+000 TO 0+031)
P2 STREET (0+000 TO 0+032)
PLAN AND PROFILE

PROJECT NO.
08181

DATE
DEC. 10, 2018

C501

D07-12-15-0004

16540

1401 HENRI LAUZON STREET
OTTAWA, ON

DRAWING INDEX

TITLE	SHEET NO.
SOUTH SYSTEM LAYOUT SHEET	1 OF 7
SOUTH SYSTEM CALCULATION SHEET	2 OF 7
NORTH SYSTEM LAYOUT SHEET	3 OF 7
NORTH SYSTEM CALCULATION SHEET	4 OF 7
SYSTEM OVERLAY SHEET	5 OF 7
DETAIL SHEET	6 OF 7
SEPARATOR ROW DETAIL SHEET	7 OF 7

PROJECT INFORMATION	
PROJECT NO:	18-1222.02
CULTEC SALES REP:	KENT FRAME (GEOSTORM) 416-570-4676 KENT@GEOSTORM.CA
CULTEC TECHNICAL MANAGER:	DAN GERA 475-289-7064 DGERA@CULTEC.COM
CULTEC CAD TECH:	YESIKA PEÑA 475-289-7103 YPENA@CULTEC.COM
COMMENTS:	

CULTEC, Inc.
Subsurface Stormwater Management Systems
P.O. Box 280
878 Federal Road
Brookfield, CT 06804
www.cultec.com
PH: (203) 775-4416
PH: (800) 4-CULTEC
FX: (203) 775-1462
tech@cultec.com

NOTE: THESE SHOP DRAWINGS MAY CONTAIN COMPONENTS INCLUDING BUT NOT LIMITED TO MANHOLES, CATCH BASINS, STORM PIPES AND FITTINGS, MANIFOLDS, CASTINGS AND OTHER NECESSARY APPURTENANCES THAT MAY NOT BE SUPPLIED BY CULTEC, INC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR SUPPLIER TO CONFIRM WITH CULTEC THE MATERIALS PROVIDED.

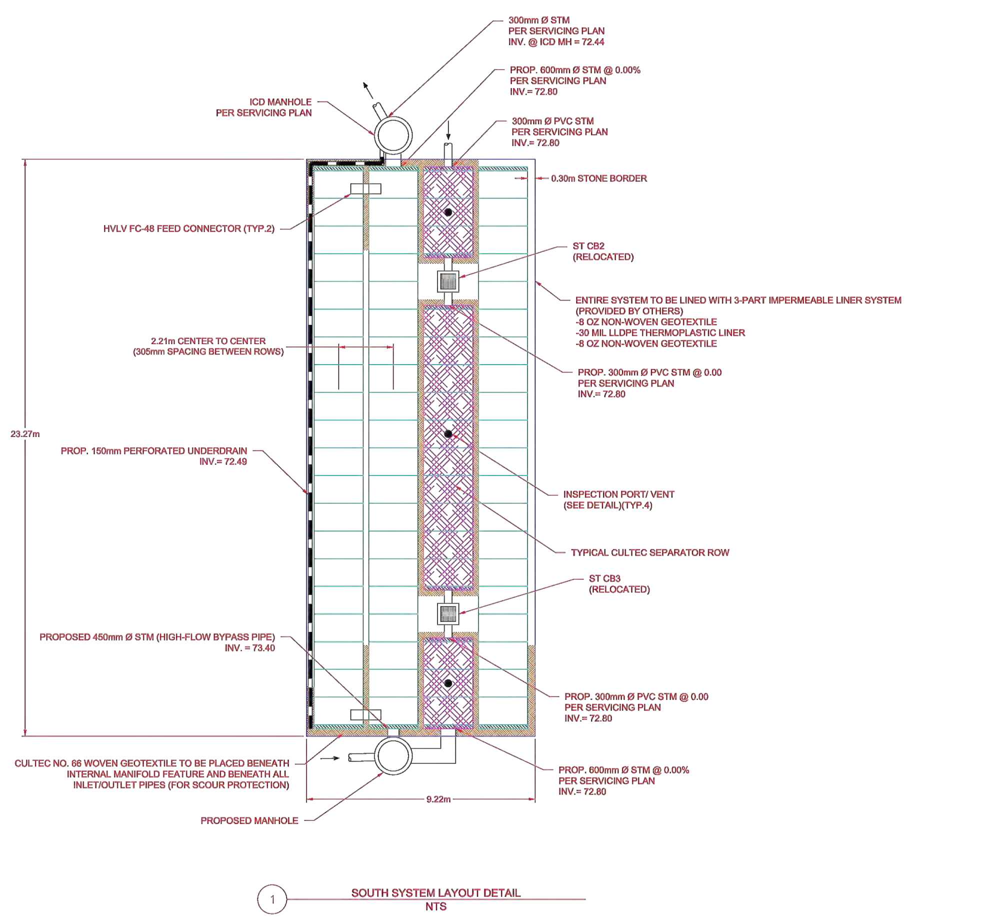
BEFORE YOU BEGIN - REQUIRED MATERIALS AND EQUIPMENT

1. PROPER GEOTECHNICAL SOIL EVALUATION BY A QUALIFIED ENGINEER OR SOIL SCIENTIST TO DETERMINE SUITABILITY OF STRUCTURAL INSTALLATION
2. OSHA COMPLIANCE
3. CULTEC WARNING TAPE, OR EQUIVALENT
4. ASSURANCES FROM LOCAL UTILITIES THAT NO UNDERGROUND GAS, ELECTRICAL OR OTHER POTENTIALLY DANGEROUS PIPELINES OR CONDUITS ARE ALREADY BURIED AT THE SITE
5. ACCEPTABLE 25 - 50mm) WASHED, CRUSHED, CLEAR STONE AS DETAILED IN CULTEC'S INSTALLATION INSTRUCTIONS. CLEANLINESS OF STONE TO BE VERIFIED BY ENGINEER.
6. ACCEPTABLE FILL MATERIAL AS SHOWN IN CULTEC'S INSTALLATION INSTRUCTIONS.
7. ALL CULTEC CHAMBERS AND ACCESSORIES AS SPECIFIED IN THE ENGINEER'S PLANS INCLUDING CULTEC NO. 410 NON-WOVEN GEOTEXTILE, CULTEC STORMFILTER AND CULTEC NO. 66 WOVEN GEOTEXTILE, WHERE APPLICABLE.
8. RECIPROCATING SAW OR ROUTER
9. STONE BUCKET
10. STONE CONVEYOR AND/OR TRACKED EXCAVATOR
11. TRANSIT OR LASER LEVEL MEASURING DEVICE
12. COMPACTION EQUIPMENT WITH MAXIMUM GROSS VEHICLE WEIGHT OF 12,000 LBS (5,440 KGS). VIBRATORY ROLLERS MAY ONLY BE USED ON THE STONE BASE PRIOR TO THE INSTALLATION OF CHAMBERS.
13. CHECK CULTEC CHAMBERS FOR DAMAGE PRIOR TO INSTALLATION. DO NOT USE DAMAGED CULTEC CHAMBERS, CONTACT YOUR SUPPLIER IMMEDIATELY TO REPORT DAMAGE OR PACKING-LIST DISCREPANCIES.

REQUIREMENTS FOR CULTEC CHAMBER SYSTEM INSTALLATIONS

1. INSTALLING CONTRACTORS ARE EXPECTED TO COMPREHEND AND USE THE MOST CURRENT INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING A SYSTEM INSTALLATION. IF THERE IS ANY QUESTION AS TO WHETHER YOU POSSESS THE MOST CURRENT INSTRUCTIONS, CONTACT CULTEC AT (203) 775-4416 OR VISIT WWW.CULTEC.COM.
2. CONTACT CULTEC AT LEAST THIRTY DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE FOR A PRE-CONSTRUCTION MEETING.
3. ALL CULTEC SYSTEM DESIGNS MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.
4. USE CULTEC INSTALLATION INSTRUCTIONS AS A GUIDELINE ONLY FOR MINIMUM/MAXIMUM REQUIREMENTS. ACTUAL DESIGN MAY VARY. REFER TO APPROVED CONSTRUCTION DRAWINGS FOR JOB-SPECIFIC DETAILS. BE SURE TO FOLLOW THE ENGINEER'S DRAWINGS AS YOUR PRIMARY GUIDE.
5. THE FOUNDATION STONE SHALL BE LEVEL AND COMPACTED PRIOR TO CHAMBER INSTALLATION.
6. OVERLAPPING RIB CONNECTIONS OF CHAMBERS SHALL BE FULLY SHOULDERED PRIOR TO STONE PLACEMENT.
7. CENTER-TO-CENTER SPACING SHALL BE CHECKED AND MAINTAINED THROUGHOUT INSTALLATION PROCESS.
8. ANY DISCREPANCIES WITH THE SYSTEM SUB-GRADE SOIL'S BEARING CAPACITY MUST BE REPORTED TO THE DESIGN ENGINEER.
9. NON-WOVEN GEOTEXTILE MUST BE USED AS SPECIFIED IN THE ENGINEER'S DRAWINGS.
10. CULTEC REQUIRES THE CONTRACTOR TO REFER TO CULTEC'S INSTALLATION INSTRUCTIONS CONCERNING VEHICULAR TRAFFIC. RESPONSIBILITY FOR PREVENTING VEHICLES THAT EXCEED CULTEC'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE CHAMBER SYSTEM LIES SOLELY WITH THE CONTRACTOR THROUGHOUT THE ENTIRE SITE CONSTRUCTION PROCESS. THE PLACEMENT OF WARNING TAPE, TEMPORARY FENCING, AND/OR APPROPRIATELY LOCATED SIGNS IS HIGHLY RECOMMENDED. IMPRINTED WARNING TAPE IS AVAILABLE FROM CULTEC. FOR ACCEPTABLE VEHICLE LOAD INFORMATION, REFER TO CULTEC INSTALLATION INSTRUCTIONS.
11. TRAFFIC OF INSTALLATION EQUIPMENT OR OTHER VEHICULAR TRAFFIC OVER TOP OF THE CULTEC STORMWATER SYSTEM IS STRICTLY RESTRICTED AND PROHIBITED UNTIL SATISFACTORY COVER AND COMPACTION IS ACHIEVED ACCORDING TO CULTEC'S MANUFACTURER INSTALLATION INSTRUCTIONS.
12. EROSION AND SEDIMENT-CONTROL MEASURES MUST MEET LOCAL CODES AND THE DESIGN ENGINEER'S SPECIFICATIONS THROUGHOUT THE ENTIRE SITE CONSTRUCTION PROCESS.
13. CULTEC SYSTEMS MUST BE DESIGNED AND INSTALLED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. FAILURE TO DO SO WILL VOID THE LIMITED WARRANTY.
14. CONTACT CULTEC, INC. AT 203-775-4416 WITH ANY QUESTIONS OR FURTHER CLARIFICATION OF REQUIREMENTS.
15. PLACEMENT OF EMBEDMENT STONE MUST BE IN ACCORDANCE WITH CULTEC'S INSTALLATION INSTRUCTIONS. STONE COLUMN HEIGHT DEFERENTIAL MUST NEVER EXCEED 12" (305 mm) BETWEEN CHAMBER ROWS, ADJACENT CHAMBERS OR STONE PERIMETER. STONE MUST BE PLACED OVER THE CROWN OF THE CHAMBERS TO ANCHOR THE CHAMBERS IN PLACE AND MAINTAIN ROW SPACING.
16. EMBEDMENT STONE MUST ONLY BE PLACED BY EXCAVATOR OR TELESCOPING CONVEYOR BOOM. PLACEMENT OF EMBEDMENT STONE WITH BULLDOZER IS NOT AN ACCEPTABLE METHOD OF INSTALLATION AND MAY CAUSE DAMAGE TO THE CHAMBERS. ANY CHAMBERS DAMAGED USING AN UNACCEPTABLE METHOD OF BACKFILL ARE NOT COVERED UNDER THE CULTEC LIMITED WARRANTY.

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE PROJECT ENGINEER OF RECORD TO ENSURE THAT THE CULTEC SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE PROJECT ENGINEER OF RECORD'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS.



1 SOUTH SYSTEM LAYOUT DETAIL
NTS

CULTEC STORMWATER MANAGEMENT SYSTEM
TOTAL STORAGE REQUIRED: 235.70 m³
TOTAL STORAGE PROVIDED: 241.17 m³
(SYSTEM AREA: 214.52 m²)
*SYSTEM INSTALLED REQUIRING STONE AMOUNTS OF 305mm BELOW CHAMBERS, 305mm ABOVE CHAMBERS AND A 305mm BORDER SURROUNDING

*NOTE: ALL EXTERNAL SYSTEM STRUCTURES, INLET/OUTLET PIPES, AND PROPOSED ELEVATIONS MUST BE DESIGNED AND APPROVED BY ENGINEER. ALL SYSTEM ELEVATIONS PROVIDED MUST BE VERIFIED BY THE DESIGN ENGINEER AND THE DESIGN ENGINEER MUST ENSURE CHAMBER BURIAL REQUIREMENTS ARE MET.

MATERIALS LIST (SOUTH SYSTEM MATERIALS LIST - SEE COVER SHEET FOR COMBINED PROJECT MATERIALS LIST)		
RECHARGER 902HD CHAMBER	76	PIECES
RECHARGER 902HD END CAP	12	PIECES
HVLV FC-48 FEED CONNECTORS	2	PIECES
CULTEC NO. 410 NON- WOVEN GEOTEXTILE	13	SQ. METERS
CULTEC NO. 66 WOVEN GEOTEXTILE 1.83m x 30.48m	50	METERS
CULTEC INSPECTION PORT KIT	3	PIECES
25-50mm WASHED, CRUSHED, CLEAR STONE	252	CU. METERS
30 MIL LLDPE GEOMEMBRANE LINER	603	SQ. METERS
8 OZ. NON-WOVEN GEOTEXTILE	1,205	SQ. METERS

CULTEC RECHARGER® 902HD LEGEND
- RECHARGER 902HD CHAMBER
- RECHARGER 902HD END CAP
- HVLV FC-48 FEED CONNECTORS
- CULTEC SEPARATOR ROW
- CULTEC NO. 66 WOVEN GEOTEXTILE
- STONE BORDER

CULTEC, Inc. *Subsurface Stormwater Management Systems* P.O. Box 280, 878 Federal Road, Brookfield, CT 06804, www.cultec.com, PH: (203) 775-4416, PH: (800) 4-CULTEC, FX: (203) 775-1462, tech@cultec.com

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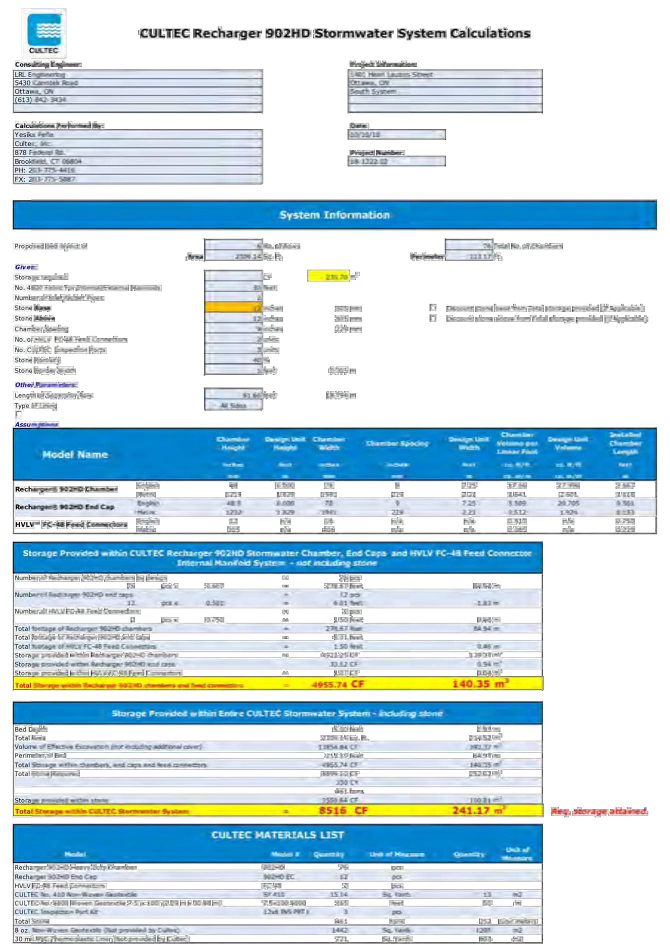
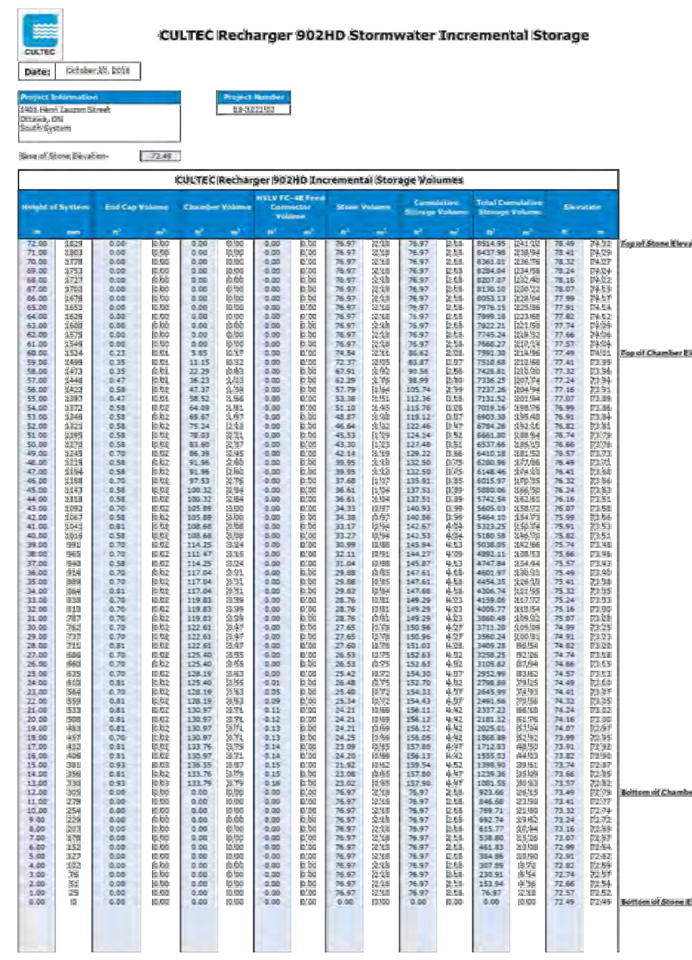
1401 HENRI LAUZON STREET
OTTAWA, ON
SOUTH SYSTEM LAYOUT SHEET

CULTEC STORMWATER CHAMBER			
PROJECT NO:	18-1222.02	DATE:	10/10/18
DESIGNED BY:	YP	CHECKED BY:	DG
SCALE:	N.T.S.	SHEET NO:	1 OF 7



SOUTH SYSTEM STORAGE CALCULATION



SOUTH SYSTEM STAGE-STORAGE TABLE

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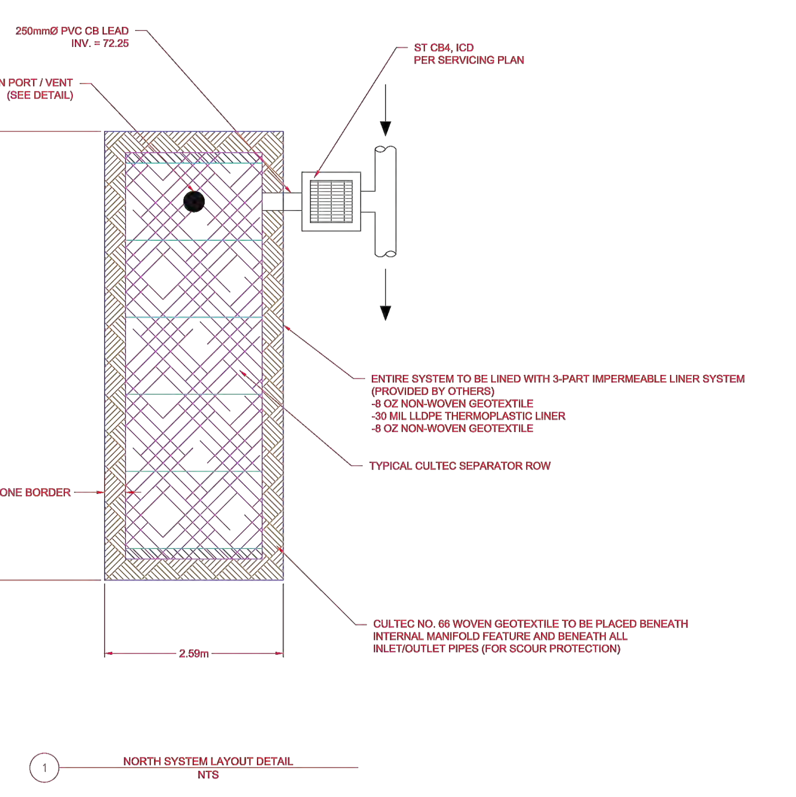
1401 HENRI LAUZON STREET
OTTAWA, ON
SOUTH SYSTEM CALCULATION SHEET

CULTEC STORMWATER CHAMBER			
PROJECT NO:	18-1222.02	DATE:	10/10/18
DESIGNED BY:	YP	CHECKED BY:	DG
SCALE:	N.T.S.	SHEET NO:	2 OF 7



1 NORTH SYSTEM LAYOUT DETAIL
NTS

CULTEC STORMWATER MANAGEMENT SYSTEM
TOTAL STORAGE REQUIRED: 15.00 m³
TOTAL STORAGE PROVIDED: 15.89 m³
(SYSTEM AREA: 16.85 m²)
*SYSTEM INSTALLED REQUIRING STONE AMOUNTS OF 229mm BELOW CHAMBERS, 305mm ABOVE CHAMBERS AND A 305mm BORDER SURROUNDING

*NOTE: BEDDING STONE DISCOUNTED FROM TOTAL STORAGE PROVIDED

*NOTE: ALL EXTERNAL SYSTEM STRUCTURES, INLET/OUTLET PIPES, AND PROPOSED ELEVATIONS MUST BE DESIGNED AND APPROVED BY ENGINEER. ALL SYSTEM ELEVATIONS PROVIDED MUST BE VERIFIED BY THE DESIGN ENGINEER AND THE DESIGN ENGINEER MUST ENSURE CHAMBER BURIAL REQUIREMENTS ARE MET.

MATERIALS LIST (NORTH SYSTEM MATERIALS LIST - SEE COVER SHEET FOR COMBINED PROJECT MATERIALS LIST)		
RECHARGER 902HD CHAMBER	5	PIECES
RECHARGER 902HD END CAP	2	PIECES
HVLV FC-48 FEED CONNECTORS	0	PIECES
CULTEC NO. 410 NON- WOVEN GEOTEXTILE	4	SQ. METERS
CULTEC NO. 66 WOVEN GEOTEXTILE 1.83m x 30.48m	8	METERS
CULTEC INSPECTION PORT KIT	1	PIECES
25-50mm WASHED, CRUSHED, CLEAR STONE	20	CU. METERS
30 MIL LLDPE GEOMEMBRANE LINER	144	SQ. METERS
8 OZ. NON-WOVEN GEOTEXTILE	72	SQ. METERS

CULTEC RECHARGER® 902HD LEGEND
- RECHARGER 902HD CHAMBER
- RECHARGER 902HD END CAP
- HVLV FC-48 FEED CONNECTORS
- CULTEC SEPARATOR ROW
- CULTEC NO. 66 WOVEN GEOTEXTILE
- STONE BORDER

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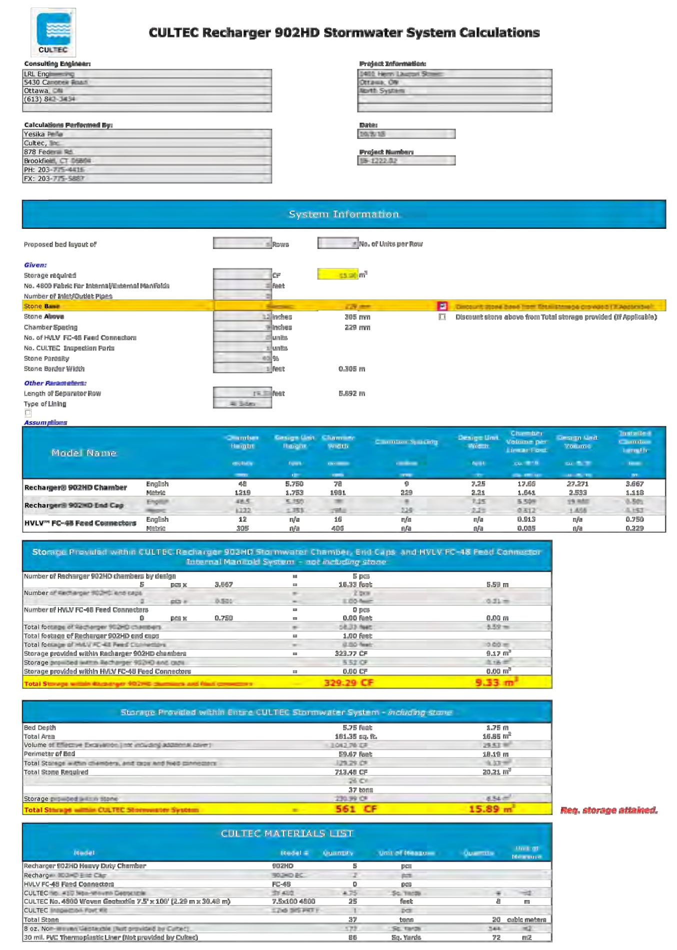
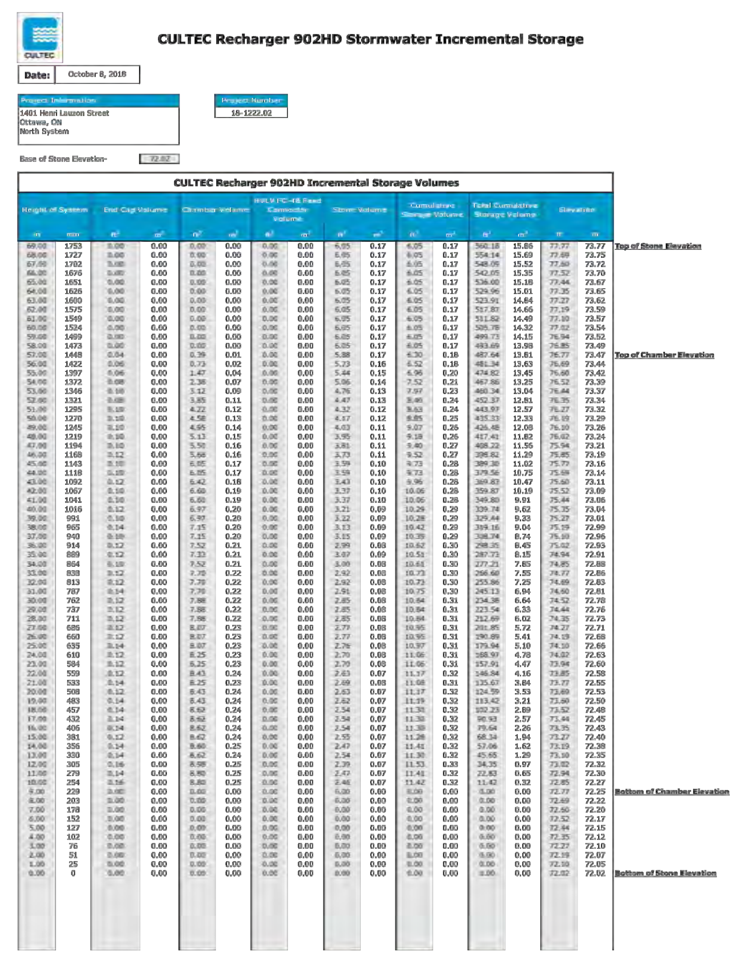
1401 HENRI LAUZON STREET
OTTAWA, ON
SOUTH SYSTEM LAYOUT SHEET

CULTEC STORMWATER CHAMBER			
PROJECT NO:	18-1222.02	DATE:	10/10/18
DESIGNED BY:	YP	CHECKED BY:	DG
SCALE:	N.T.S.	SHEET NO:	3 OF 7



NORTH SYSTEM STORAGE CALCULATION



NORTH SYSTEM STAGE-STORAGE TABLE

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1401 HENRI LAUZON STREET
OTTAWA, ON
NORTH SYSTEM CALCULATION SHEET

CULTEC STORMWATER CHAMBER			
PROJECT NO:	18-1222.02	DATE:	10/10/18
DESIGNED BY:	YP	CHECKED BY:	DG
SCALE:	N.T.S.	SHEET NO:	4 OF 7

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS IF REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CADD FILES OR OTHER ELECTRONIC MEDIA AND COPIED THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS "ISSUED FOR CONSTRUCTION", THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS ACKNOWLEDGEMENT OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRL'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRL AND THE CLIENT FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES MADE WITHOUT SUCH PROPER AUTHORIZATION.

GENERAL NOTES:

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

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

No.	REVISIONS	BY	DATE
03	ISSUED AS PER CITY COMMENTS	D.M.	DEC. 10, 2018
02	ISSUED AS PER CITY COMMENTS	D.M.	OCT. 16, 2018
01	ISSUED AS PER CITY COMMENTS	D.M.	AUG. 23, 2018
00	ISSUED FOR SPC	A.E.	FEB. 29, 2016

LICENSED PROFESSIONAL ENGINEER
G. L. BRUNET
100191036
10/12/2018
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

LRL
ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT
BILBERRY GROUP

DESIGNED BY:	DRAWN BY:	APPROVED BY:
A.E.	D.S.	G.B.

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE
UNDERGROUND STORAGE AND STORMWATER SEPARATOR DETAILS

PROJECT NO.
08181

DATE
DEC. 10, 2018

C601

D07-12-15-0004

16540

CULTEC RECHARGER 902HD® PRODUCT SPECIFICATIONS

GENERAL

CULTEC RECHARGER 902HD CHAMBER (NO. 902HD) STYLE ARCHITECTURE OF STADIUM OR ARCH DESIGN. THE CHAMBER SHALL BE MANUFACTURED BY INJECTION MOLDING. NO SCRAP OR RECYCLED MATERIAL SHALL BE USED IN THE MANUFACTURE OF THE CHAMBER.

CHAMBER PARAMETERS

1. THE CHAMBER SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. (P. BROOKFIELD, CT) AND IN CHINA BY CULTEC (HEBEI).
2. THE CHAMBER SHALL BE PROVEN AND TESTED IN ACCORDANCE WITH ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE CHAMBER SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE COPOLYMER RESINS AND CONTAIN NO REPROCESSED OR RECYCLED MATERIAL OTHER THAN CLEAN, VIRGIN MANUFACTURING SCRAP OR REGRIND MATERIAL GENERATED FROM AND REUSED WITHIN THE CONTROLLED MANUFACTURING PLANT OF THE CHAMBER MANUFACTURER.
4. THE CHAMBER SHALL BE STRUCTURALLY CONFIGURED TO ALLOW CONNECTION TO ADJACENT CHAMBERS AT ANY POINT ALONG THE CHAMBER BODY FOR ANY CHAMBER ROW.
5. THE CHAMBER SHALL BE ARCHED IN SHAPE.
6. THE CHAMBER SHALL BE OPEN-BOTTOMED.
7. THE CHAMBER SHALL BE JOINED USING AN INTEGRATED JOINER WITHIN END PANELS, WHICH SHALL INCORPORATE A GASKET TO PREVENT INFILTRATION OF BACKFILL MATERIALS.
8. THE CHAMBER'S STRUCTURAL DIMENSIONS OF THE CULTEC RECHARGER 902HD SHALL BE AS INDICATED ON THE "CULTEC RECHARGER 902HD HEAVY DUTY PLAN VIEW" DRAWING. THE NOMINAL CHAMBER DIMENSIONS SHALL BE 51.0" (1295 mm) WIDE, 19.5" (495 mm) HIGH AND 90.0" (2286 mm) LONG.
9. WHEN ASSEMBLED IN A ROW, THE CHAMBER SHALL PROVIDE A MINIMUM OF 6.0 SQ. IN. (38.7 SQ. CM.) OF OPEN AREA FOR FLOW INTO AND OUT OF THE CHAMBER PER LINEAR FOOT OF CHAMBER.
10. THE CHAMBER'S STRUCTURAL DIMENSIONS OF THE CULTEC RECHARGER 902HD SHALL BE AS INDICATED ON THE "CULTEC RECHARGER 902HD HEAVY DUTY CROSS SECTION - NORTH SYSTEM" AND "CULTEC RECHARGER 902HD HEAVY DUTY CROSS SECTION - SOUTH SYSTEM" DRAWINGS. THE CHAMBER SHALL BE CONFIGURED TO PROVIDE A MINIMUM INSTALLED HEIGHT OF 19.5" (495 mm).
11. THE CHAMBER SHALL HAVE A MINIMUM INSTALLED WIDTH OF 51.0" (1295 mm).
12. THE CHAMBER SHALL HAVE A MINIMUM INSTALLED LENGTH OF 90.0" (2286 mm).
13. THE CHAMBER SHALL HAVE A MINIMUM STORAGE VOLUME OF 79.4 CU. FT. (2.25 CU. M.).
14. THE CHAMBER SHALL HAVE A MINIMUM WEIGHT OF 75 LBS. (34 KG).
15. THE CHAMBER SHALL BE MANUFACTURED WITH A CORRUGATION PROFILE INTERLOCK THAT ENSURES POSITIVE ENGAGEMENT BETWEEN ADJACENT CHAMBERS.
16. THE CHAMBER SHALL BE MANUFACTURED WITH INTEGRAL, INTERLOCKING STIFFENING RIBS OVER THE CORRUGATIONS.
17. THE CHAMBER SHALL BE MANUFACTURED WITH A MINIMUM OF TWO (2) INTEGRAL LIFTING LUGS LOCATED NEAR THE TOP OF THE CHAMBER END WALL.
18. THE CHAMBER SHALL BE MANUFACTURED WITH A MINIMUM OF TWO (2) INTEGRAL ANCHORING TABS LOCATED NEAR THE BOTTOM OF THE CHAMBER END WALL.
19. THE CHAMBER SHALL BE MANUFACTURED WITH A MINIMUM OF TWO (2) INTEGRAL STACKING LUGS LOCATED NEAR THE TOP OF THE CHAMBER END WALL.
20. THE CHAMBER SHALL BE MANUFACTURED WITH A MINIMUM OF TWO (2) INTEGRAL STACKING SUPPORTS LOCATED NEAR THE BOTTOM OF THE CHAMBER END WALL.
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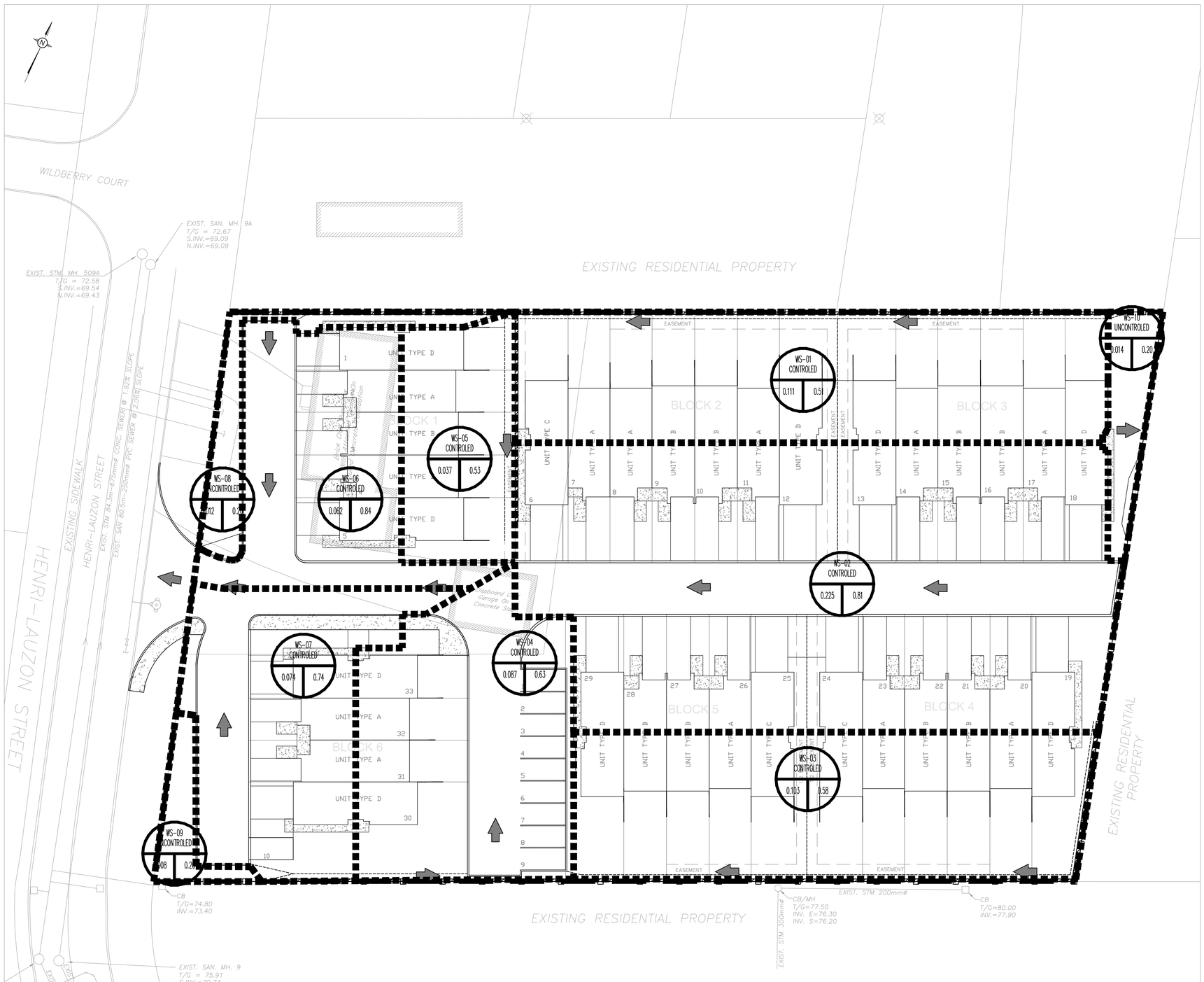
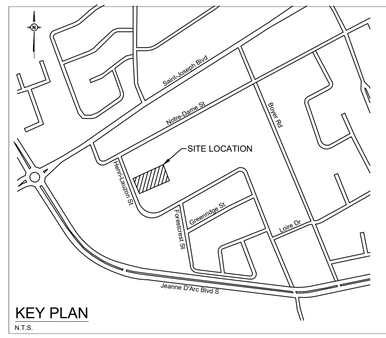
169. THE CHAMBER SHALL BE MANUFACTURED WITH A MINIMUM OF TWO (2) INTEGRAL STACKING SUPPORTS LOCATED NEAR THE BOTTOM OF THE CHAMBER END WALL.
170. THE CHAMBER SHALL BE MANUFACTURED WITH A MINIMUM O





KEY PLAN
N.T.S.

LEGEND

- PROPOSED OVERLAND MAJOR FLOW ROUTE
- PROPOSED STORM WATERSHED
- PROPOSED WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES
- ABANDONED SANITARY SEWER & MANHOLE
- EXISTING COMBINED SEWER & MANHOLE
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING PROPERTY BOUNDARY
- EXISTING BUILDING ENVELOPE
- EXISTING WOOD FENCE
- EXISTING CHAINLINK FENCE
- EXISTING RETAINING WALL
- EXISTING ROAD CENTRELINE
- EXISTING ROAD

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS IF REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

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UNAUTHORIZED CHANGES:

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SCALE: 1:250

No.	REVISIONS	BY	DATE
03	ISSUED AS PER CITY COMMENTS	D.M.	DEC. 10, 2018
02	ISSUED AS PER CITY COMMENTS	D.M.	OCT. 16, 2018
01	ISSUED AS PER CITY COMMENTS	D.M.	AUG. 23, 2018
00	ISSUED FOR SPC	A.E.	FEB. 29, 2016

LICENSED PROFESSIONAL ENGINEER G. L. BRUNET 100191036 10/12/2018 PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

LRL
ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT

BILBERRY GROUP

DESIGNED BY:	DRAWN BY:	APPROVED BY:
A.E.	D.S.	G.B.

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT
1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE

POST-DEVELOPMENT STORM WATERSHED PLAN

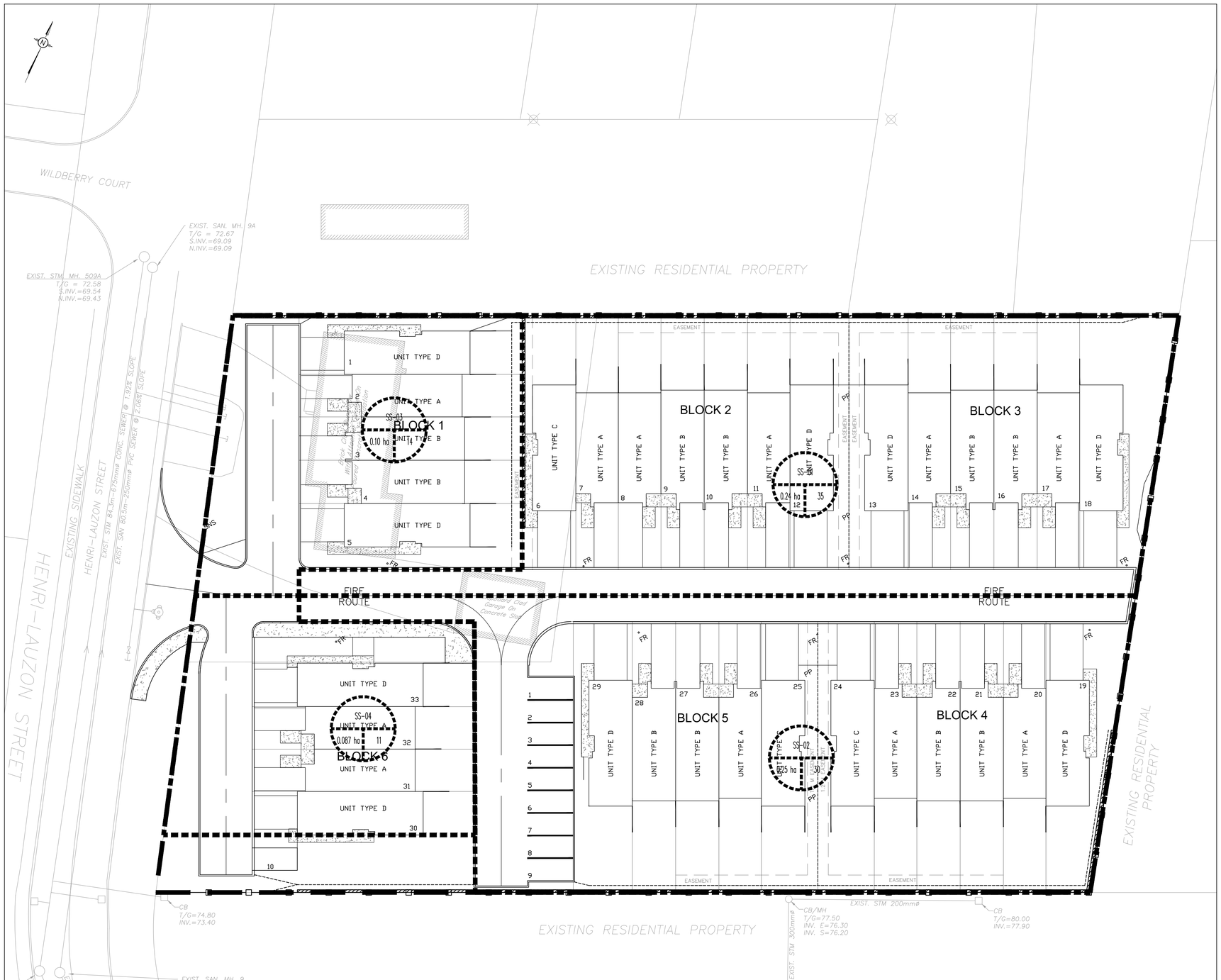
PROJECT NO. 08181

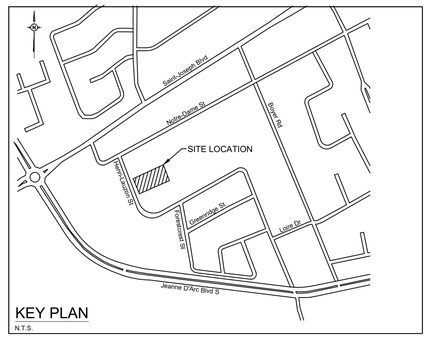
DATE DEC. 10, 2018

C701

D07-12-15-0004

16540





KEY PLAN
N.T.S.

LEGEND

- PROPOSED STORM WATERSHED
- PROPOSED SEWERSHED NAME
- POPULATION
- AREA IN HECTARES
- ABANDONED SANITARY SEWER & MANHOLE
- EXISTING COMBINED SEWER & MANHOLE
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
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1401-1411 HENRI LAUZON STREET
ORLEANS (OTTAWA), ONTARIO

DRAWING TITLE
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PROJECT NO.
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