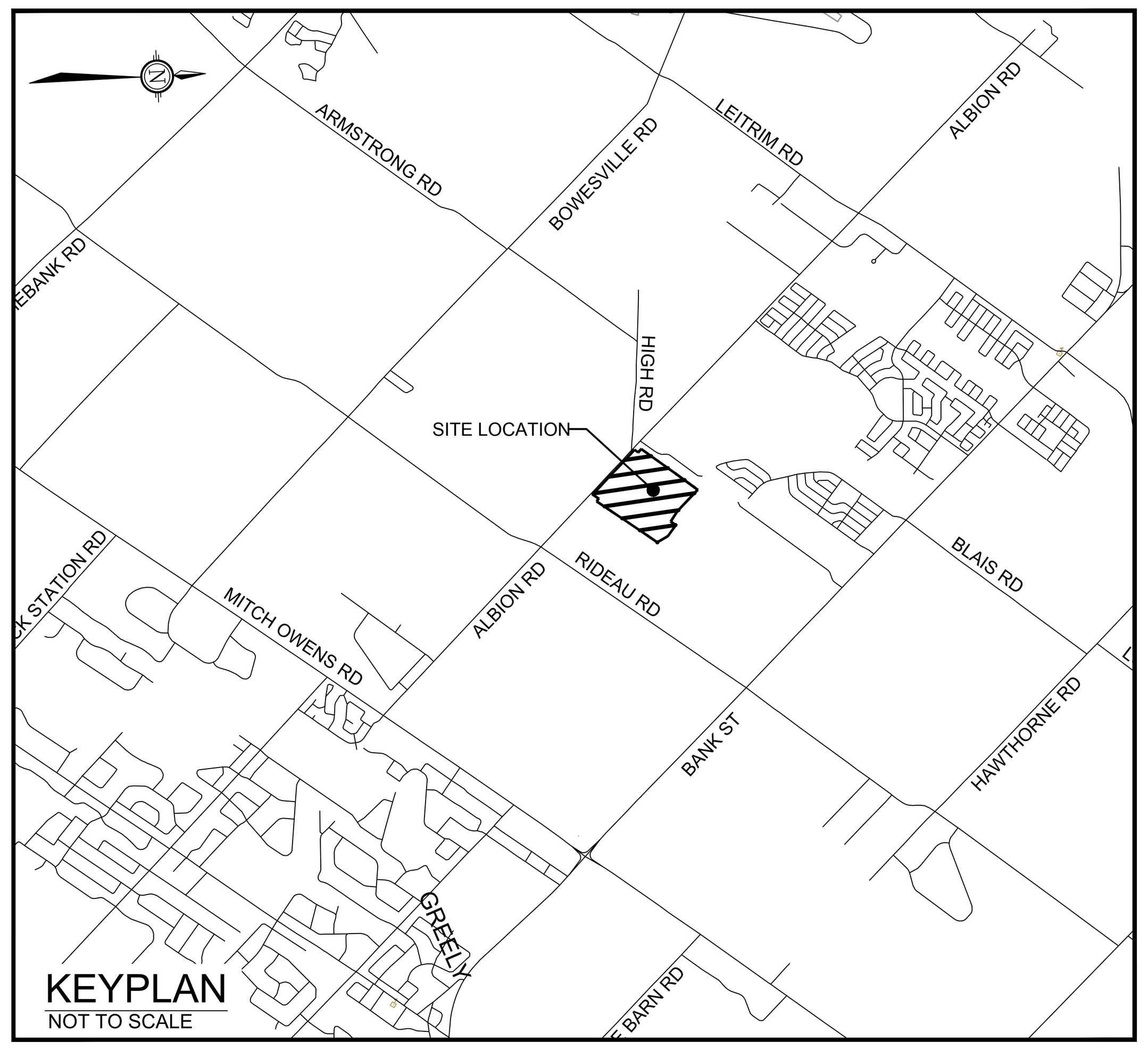
HARD ROCK OTTAWA

4837 ALBION ROAD,
CITY OF OTTAWA

ROADS, SEWERS AND WATERMAINS



KEYPLAN
NOT TO SCALE

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SOSH

YALLOWEGA architecture inc.

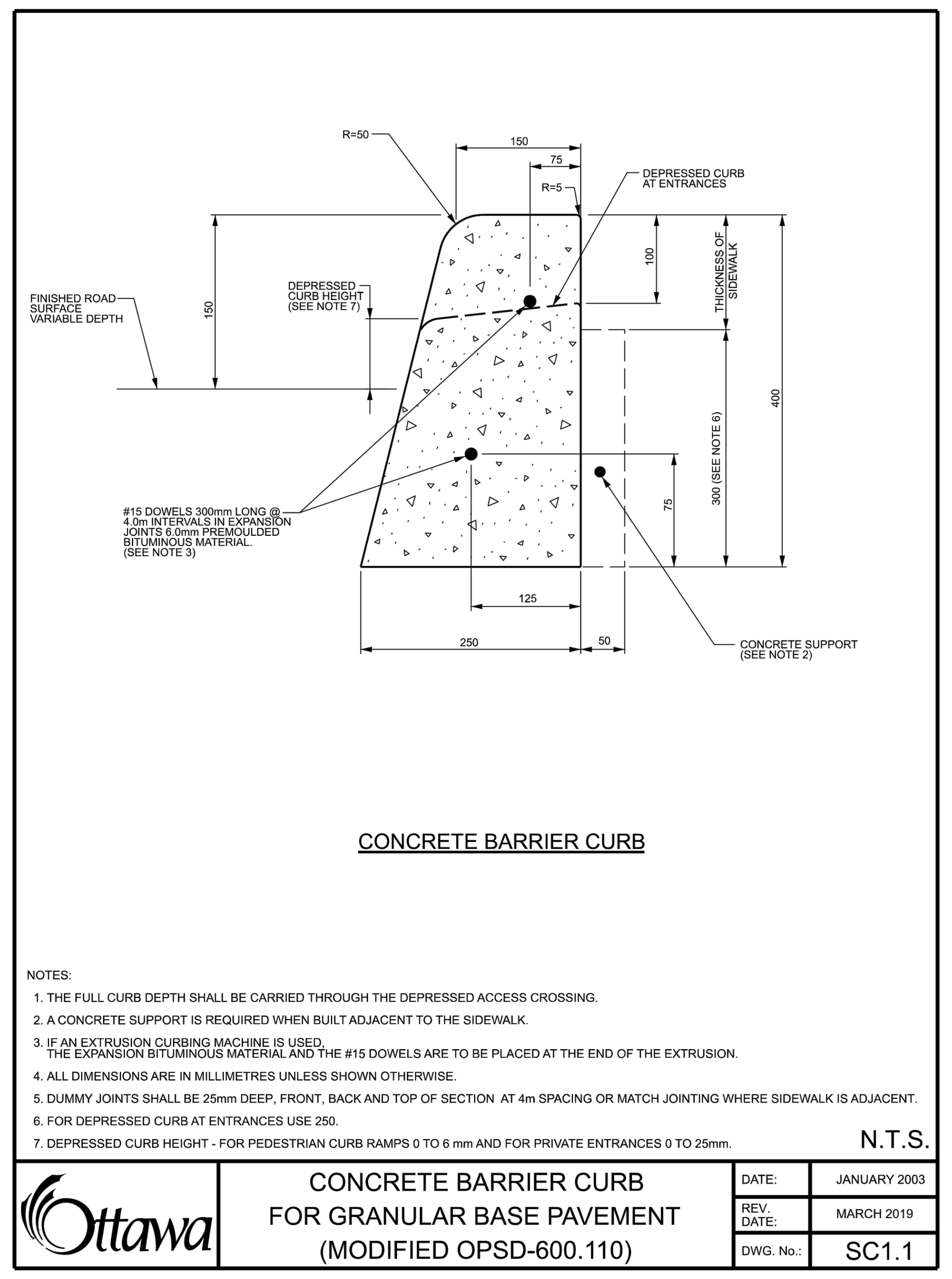
edsa

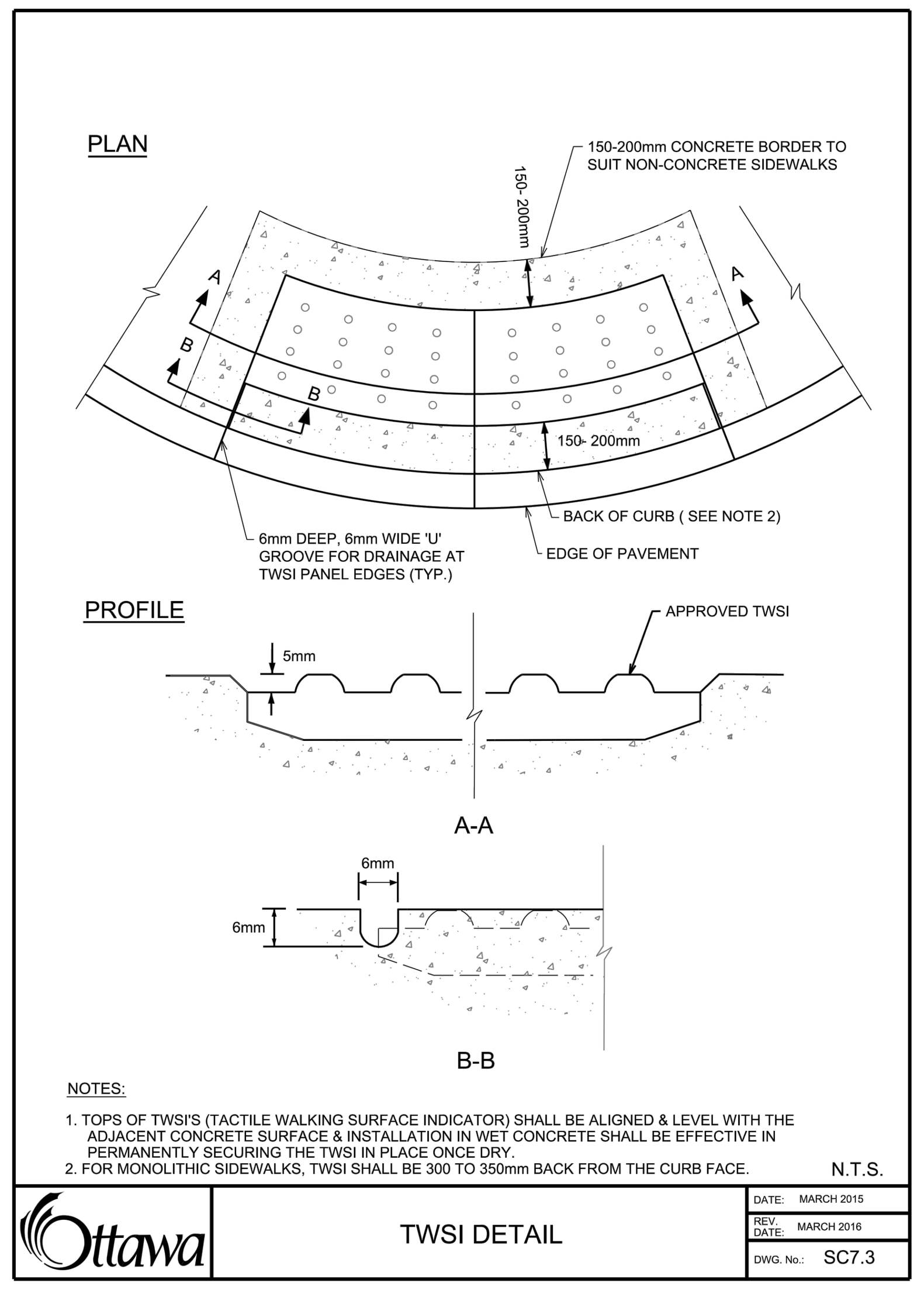
PROJECT No. 116111

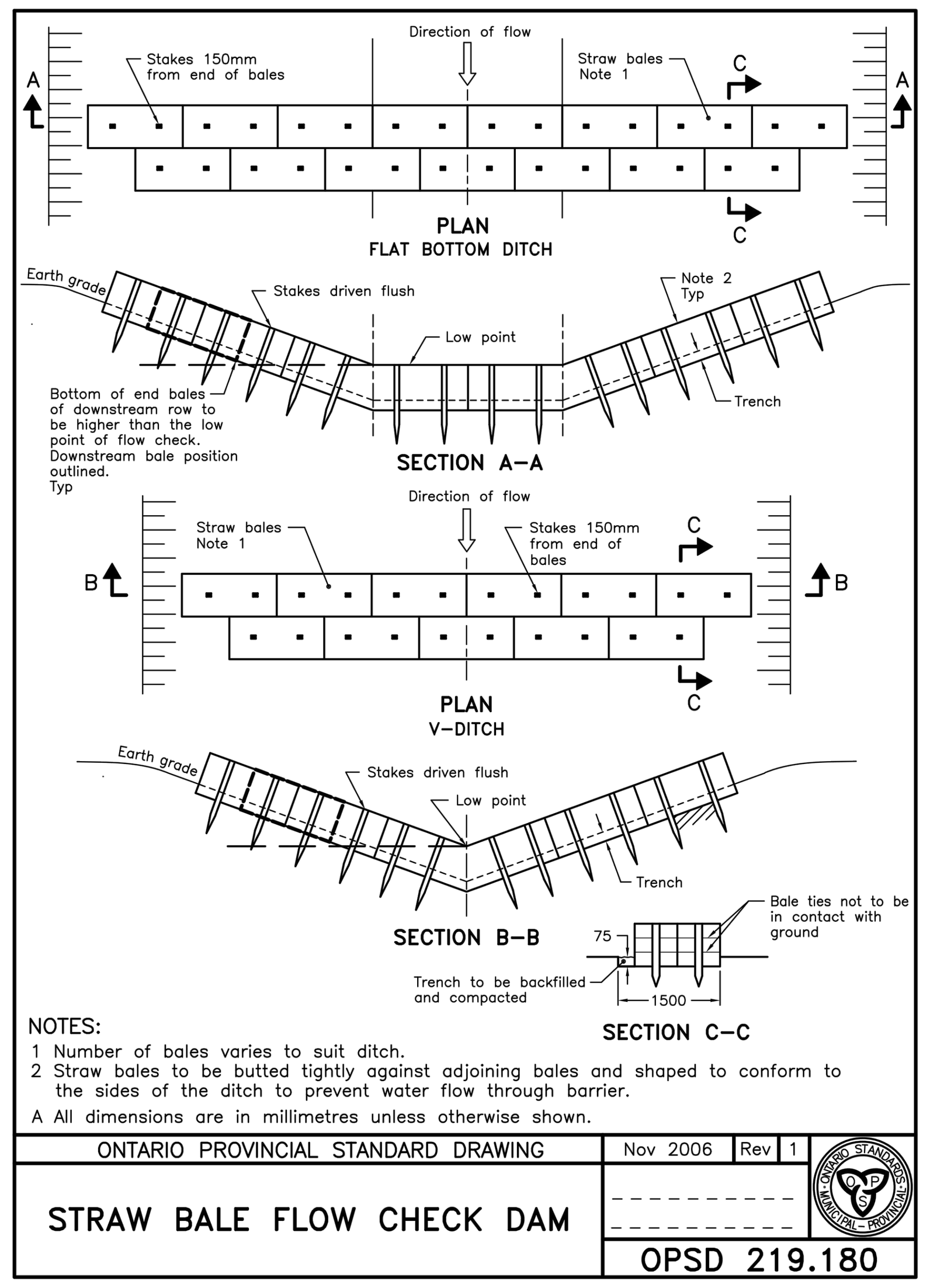
REVISED PER CITY COMMENTS

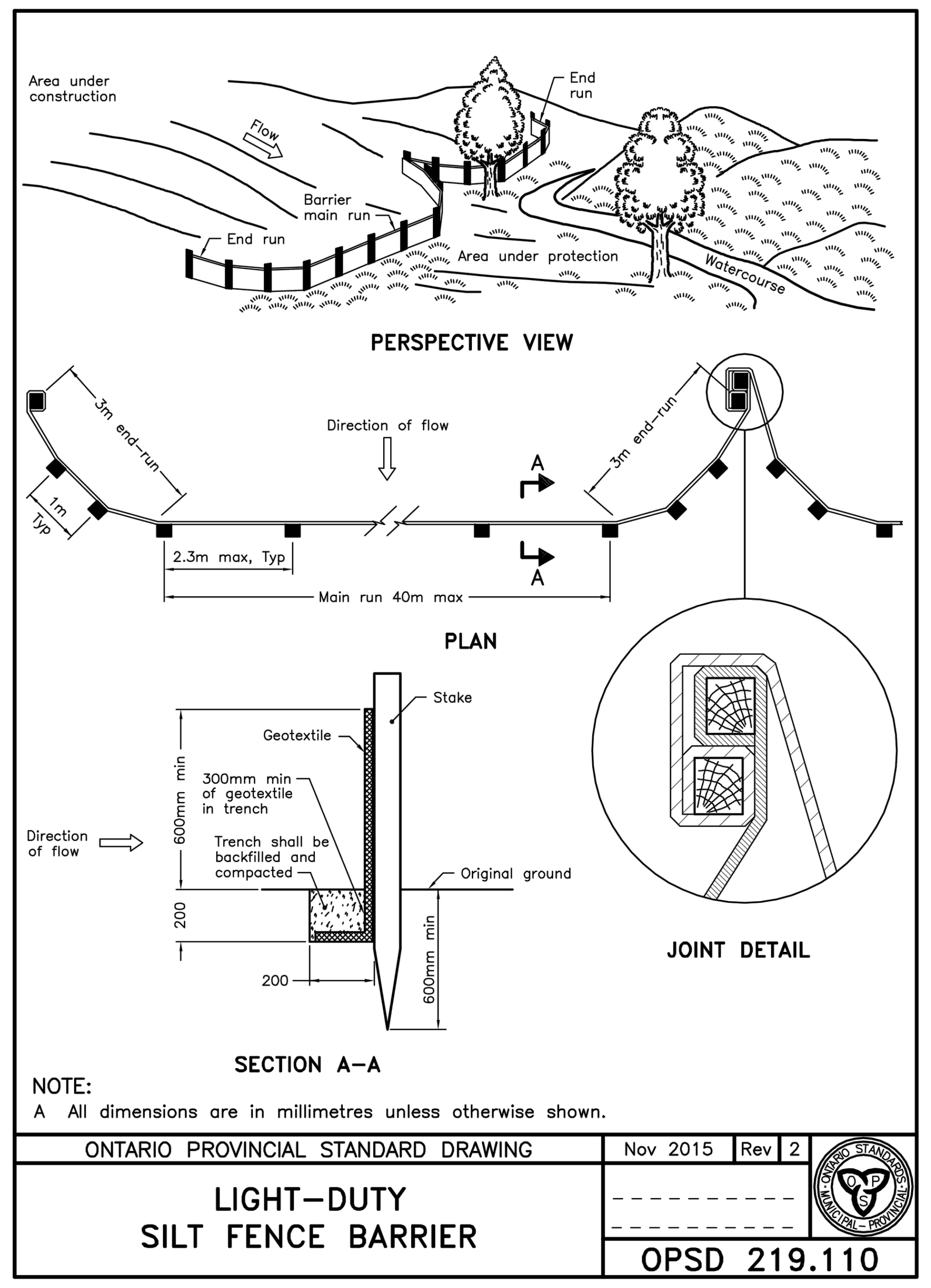
INDEX

116111-REVISED PER CITY COMMENTS - NOV 07/2022









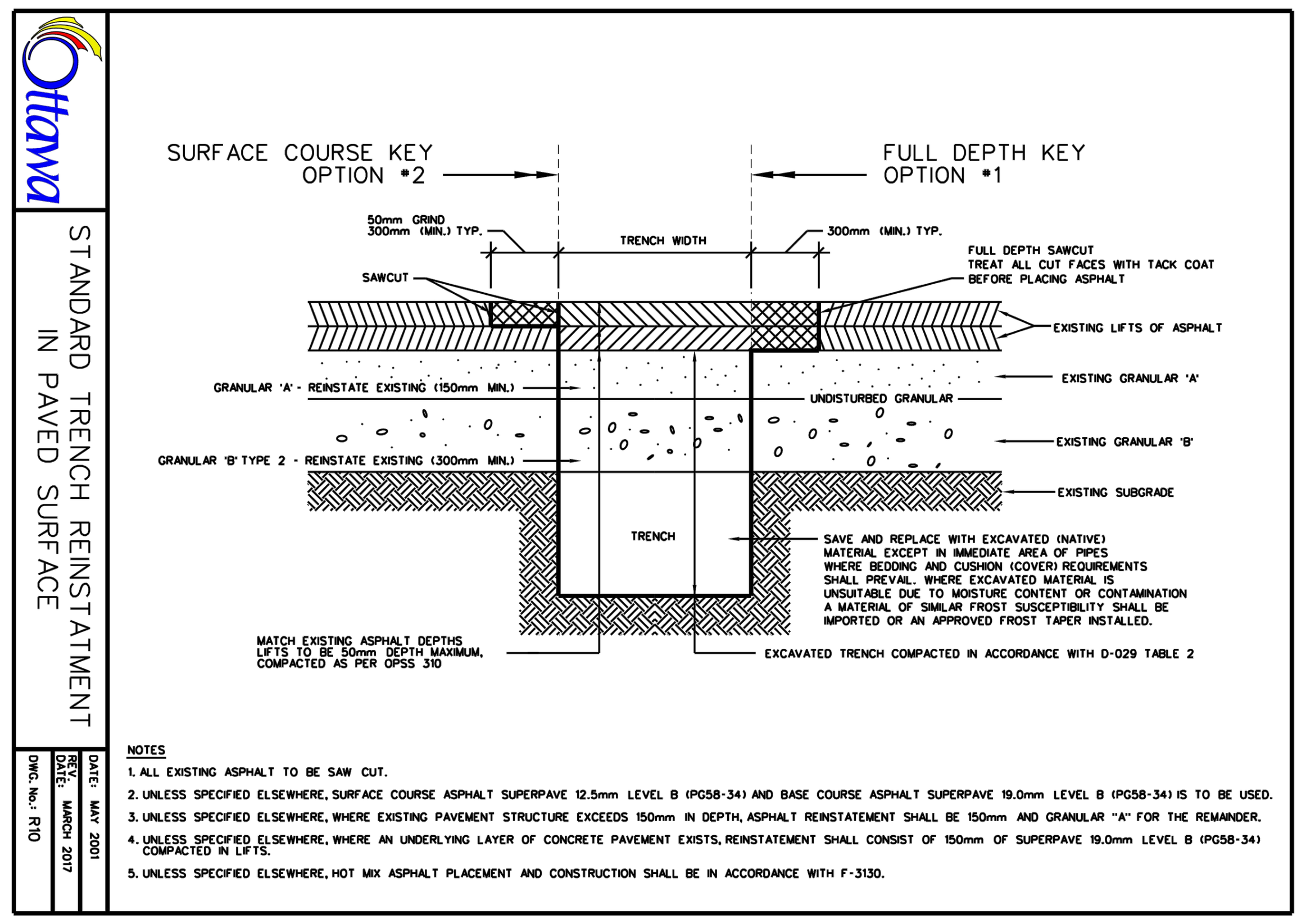
INLET CONTROL DEVICE TABLE:

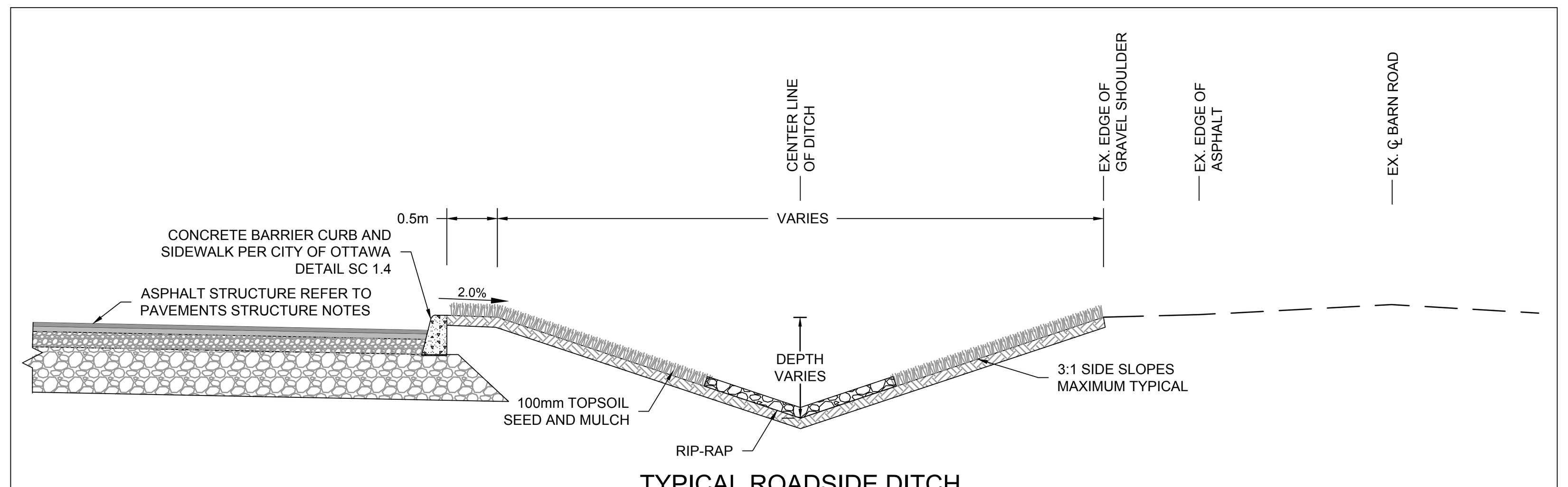
CB / CBMH ID	IPEX ICD Type (model)	Outlet Pipe Dia. (mm)	Structure Dia. (mm)	100-year Model Results	
				Release Rate (L/s)	Head (m)
EX-CB117	HF-77	250	600x600	14.08	1.44
EX-CB134	HF-85	200	600x600	19.43	1.81
EX-CB137	HF-137	200	600x600	47.28	1.58
EX-CB14	HF-130	200	600x600	57.55	2.89
EX-CB60	HF-110	250	600x600	31.55	1.69
EX-CB64	LMF-100	250	600x600	11.04	1.56
EX-CB72	LMF-100	200	600x600	11.58	1.7
EX-CB82	HF-202	200	600x600	96.31	1.39
EX-CB84	HF-118	200	600x600	35.5	1.66
EX-MH105	HF-199	450	1200	122.26	2.39
EX-MH112	HF-218	300	1200	116.78	1.5
PR-CB13	LMF-85	250	600x600	8.01	1.58
PR-CB14	LMF-85	250	600x600	7.88	1.61
PR-CB16/17	HF-202	250	600x600	97	1.41
PR-CB18	LMF-95	250	600x600	9.12	1.45
PR-CB29	LMF-85	250	600x600	4.36	0.49
PR-CB32	LMF-80	300	600x600	8.17	2.06
PR-CB36	LMF-80	250	600x600	6.05	1.34
PR-CB40	LMF-95	250	600x600	9.94	1.73
PR-CB41	LMF-85	250	600x600	7.6	1.47
PR-CBMH104	LMF-85	250	1200	7.3	1.32
PR-CBMH105	LMF-85	250	1200	7.51	1.4
PR-CBMH106	LMF-85	250	1200	7.52	1.4
PR-CBMH107	LMF-85	250	1200	7.88	1.62
PR-CBMH108	LMF-85	250	1200	7.76	1.49
PR-CBMH109	LMF-90	300	1200	9.44	1.6
PR-CBMH110	LMF-85	250	1200	8.47	1.79
PR-CBMH111	LMF-105	300	1200	14.4	1.95
PR-CBMH112	LMF-105	300	1200	14.7	2.03
PR-CBMH114	LMF-95	300	1200	10.77	2.02
PR-CBMH115	LMF-95	300	1200	10.47	1.94
PR-CBMH118	HF-130	300	1200	54.22	1.64
PR-MH100	LMF-95	450	1200	8.74	1.42
PR-TD02	HF-130	200	300x1400	35.43	1.13

*3-hour Chicago Storm.
*IPEX ICD's sized based on 100-year model results.

ROOF DRAIN TABLE:

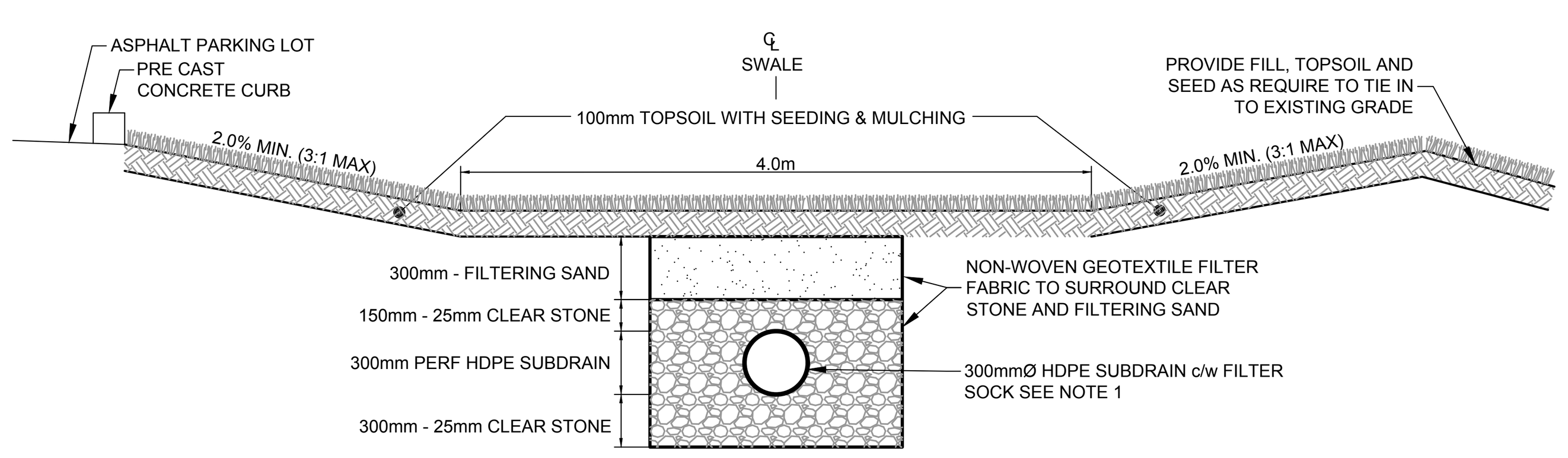
WATTS ACCUTROL RD-100-A-ADJ ROOF DRAIN TABLE		
ROOF AREA	ROOD DRAIN ID	WEIR SETTING
R-1	RD-1 - RD-3	OPEN
R-2	RD-4 - RD-10	OPEN
R-3	RD-11 - RD-14	OPEN
R-4	RD-15 - RD-16	OPEN
R-5	RD-17 - RD-19	OPEN
R-6a	RD-20 - RD-23	OPEN
R-6b	RD-24 - RD-28	OPEN
R-7	RD-29 - RD-31	OPEN
R-8	RD-32	OPEN
R-9	RD-33A/B	OPEN
R-10	RD-34 - RD-37	OPEN
R-11	RD-38 - RD-41	OPEN
R-12a	RD-42 - RD-44	OPEN
R-12b	RD-45 - RD-47	OPEN
R-13	RD-48	OPEN
R-14	RD-49	OPEN





TYPICAL ROADSIDE DITCH

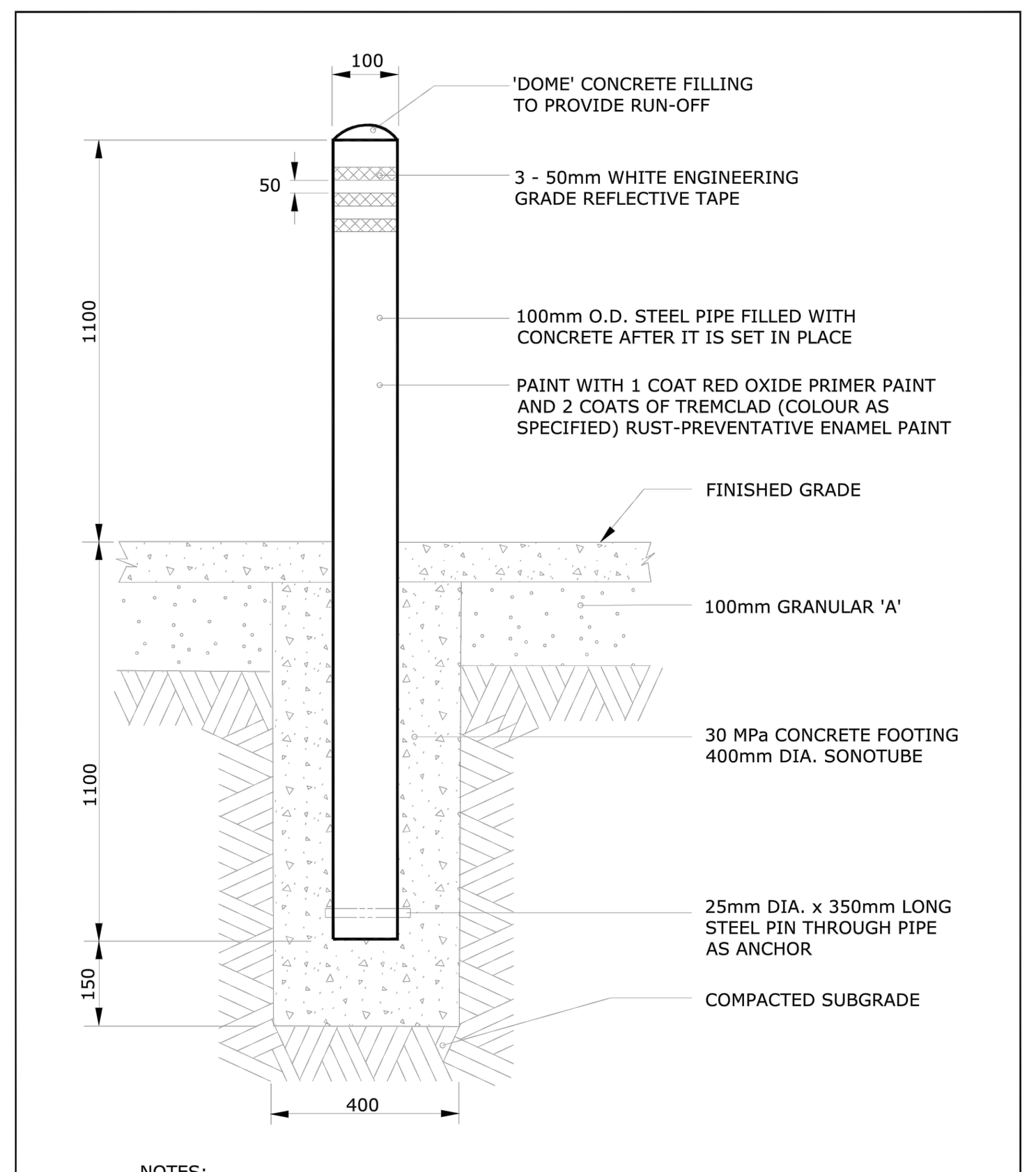
SCALE 1:50



SECTION A-A : TYPICAL INFILTRATION DITCH DETAIL (4.0m BOTTOM)

N.T.S

NOTE:
1. 300mmØ PERFORATED HDPE SUBDRAIN WITH FILTER SOCK TO FOLLOW SLOPE OF SURFACE SWALE. SEE DWG 116111-GR2,



NOTES:
ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

TITLE: 100mm DIAMETER STEEL BOLLARD INSTALLATION FOR PARKING LOTS/PARKS
DATE: MAY 2001
REV: JAN 2015
DWG No: F5

GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $2,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED AND THE CITY OF OTTAWA AS THIRD PARTY.
5. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA.
6. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ALL ORGANIC MATERIAL AND DEBRIS. ALL CONTAMINATED MATERIAL (IF ANY) SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
7. ALL ELEVATIONS ARE GEODETIC. HORIZONTAL (ELLIPSOIDAL) DATUM: NAD-1983 ORIG - LATITUDE: N45° 19' 15.0" LONGITUDE: W75° 37' 25.7" LOCATED 50m NORTH OF THE INTERSECTION OF ALBION ROAD AND LEITRIM ROAD, FIRST ORDER VERTICAL DATUM: CGVD2013 WITH ELEVATION OF 96.552 AND CGVD 28:78 WITH ELEVATION OF 96.853. THE SITE BENCHMARK IS THE TOP OF THE TOP LEFT BOLT ON THE TRAFFIC LIGHT ON THE NORTH SIDE OF THE MAIN ENTRANCE (ELEV. =114.05). REFER TO FARLEY, SMITH & DENIS SURVEYINGLTD. TOPOGRAPHIC PLAN OF PART OF LOTS 23 AND 24 CONCESSION 4 GEOGRAPHICAL TOWNSHIP OF GLOUCESTER, CITY OF OTTAWA).
8. REFER TO GEOTECHNICAL REPORT No. PG4315-2 PREPARED BY PATERSON GROUP, DATED OCTOBER 30, 2019 , FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
9. REFER TO THE DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT No. R2019-196 DATED APRIL 24, 2020, REVISED NOVEMBER 04,2022 PREPARED BY NOVATECH.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
11. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10). ALL ROAD CUTS TO BE REINSTATED WITH FULL MILL OVERLAY AS PER CITY OF OTTAWA STANDARDS (R10).
12. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES AND GRADING PLAN INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THE PLANS. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, T/WM ELEVATIONS, ANY ALIGNMENT CHANGES, AND ALL SURFACE ELEVATION AS BUILT GRADES.
13. THE FIRE SUPPRESSION TANK SHOP DRAWING PROVIDED BY THE CONTRACTOR SHALL INCLUDE STRUCTURAL ENGINEERS SEAL AND PROOF OF COLLAPSE FOR VEHICLES POTENTIALLY PARKED ON TOP OF OF THE TANK.

GRADING NOTES:

1) ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS.
2) EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL CONSULTANT.
3) ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUBEXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS.
4) THE GRANULAR BASE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
5) GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
6) MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
7) ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED AND CONSTRUCTED AS PER CITY OF OTTAWA STANDARDS (SC1.1).
8) AS PER PRIVATE APPROACH BY-LAW NO. 2004-447 SECTION 26 (h) THE GRADE OF ANY PART OF A PRIVATE APPROACH TO A BUILDING MAY BE GREATER THAN 6% BUT SHALL NOT EXCEED 12% PROVIDED THAT A SUBSTANCE MELTING DEVICE SUFFICIENT TO KEEP THE PRIVATE APPROACH FREE OF ICE AT ALL TIMES IS INSTALLED AND PROPERLY MAINTAINED BY THE OWNER.

EROSION AND SEDIMENT CONTROL NOTES:

REFER TO ESC PLAN 116111-ESC FOR FURTHER DETAILS

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.

1) THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
2) THE CONTRACTOR SHALL PLACE FILTER BAGS UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION.
3) SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
4) THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
5) PROVIDE MUD MATS AT ALL CONSTRUCTION ACCESS POINTS TO MINIMIZE SEDIMENT TRANSPORT OFFSITE.
6) EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.

SEWER NOTES:

1. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
STORM / SANITARY MANHOLE (1200Ø)	701.010	OPSD
STORM MANHOLE (1500Ø)	701.011	OPSD
CATCHBASIN (600x600mm)	705.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME	S25	CITY OF OTTAWA
SANITARY COVER	S24	CITY OF OTTAWA
STORM COVER (CLOSED)	S24.1	CITY OF OTTAWA
STORM COVER (OPEN)	S28.1	CITY OF OTTAWA
SEWER TRENCH	S6 & S7	CITY OF OTTAWA
STORMTECH CHAMBERS	SC-740	ADS Inc.
STORM SEWER < 450mmØ	PVC SDR 35 (UNLESS SPECIFIED OTHERWISE)	
STORM SEWER >= 450mmØ	CONC 65D (UNLESS SPECIFIED OTHERWISE)	
STORM INFILTRATION CHAMBERS	SC-740	STORMTECH
SANITARY SEWER	PVC DR 35	CITY OF OTTAWA

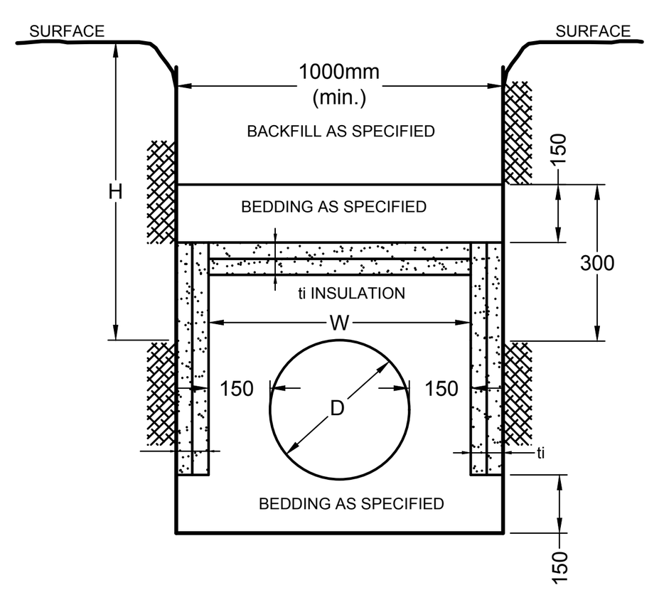
3. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
3. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
4. ALL WEEPING TILE CONNECTIONS TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
5. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 2.0m COVER PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
6. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX: POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
7. STORM MANHOLES AND CBMHS ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
8. ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
9. ALL CATCHBASINS AND CATCHBASIN MANHOLES ARE TO BE PROVIDED WITH MINIMUM 3 METER LONG PERFORATED SUBDRAINS WHICH EXTEND IN TWO DIRECTIONS LONGITUDINALLY AT THE SUBGRADE LEVEL.
10. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES AND RE CCTV PRIOR TO ACCEPTANCE.
11. THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.

SEWER & WATERMAIN INSULATION NOTES:

1. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 2.0m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE)

T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
W = D + 300 (1000 min.)
D = O.D OF PIPE (mm)

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
2000-1700 / 2400-2100	50
1700-1400 / 2100-1800	75
1400 - / 1800-1500	100



INSULATION DETAIL FOR SHALLOW SEWERS & WATERMAIN

N.T.S.

WATERMAIN NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN	PVC DR 18	

2. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OFFICIALS.
3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
4. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

PAVEMENT STRUCTURE:

HEAVY DUTY PAVEMENT
40mm SP 12.5
50mm SP 19.0
150mm OPSS GRANULAR "A"
450mm OPSS GRANULAR "B" TYPE II

LIGHT DUTY PAVEMENT
50mm SP 12.5
150mm OPSS GRANULAR "A"
300mm OPSS GRANULAR "B" TYPE II

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
3	REVISED PER CITY COMMENTS	NOV 07/22	MJH
2	REVISED PER CITY COMMENTS	APRIL 24/20	CJR
1	ISSUED FOR SITE PLAN APPROVAL	NOV 20/19	CJR

SCALE: AS NOTED
DESIGN: MJH
CHECKED: CJR
DRAWN: MJR
CHECKED: CJR
APPROVED: JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M. J. HREHORIAK 100211256 NOV 7/22 PROVINCE OF ONTARIO

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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
NOTES AND DETAILS
GENERAL

PROJECT No. 116111
REV: REV # 3
DRAWING No. 116111-ND1

ADVANCED DRAINAGE SYSTEMS, INC.

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740 OR SC-310.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418-16 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

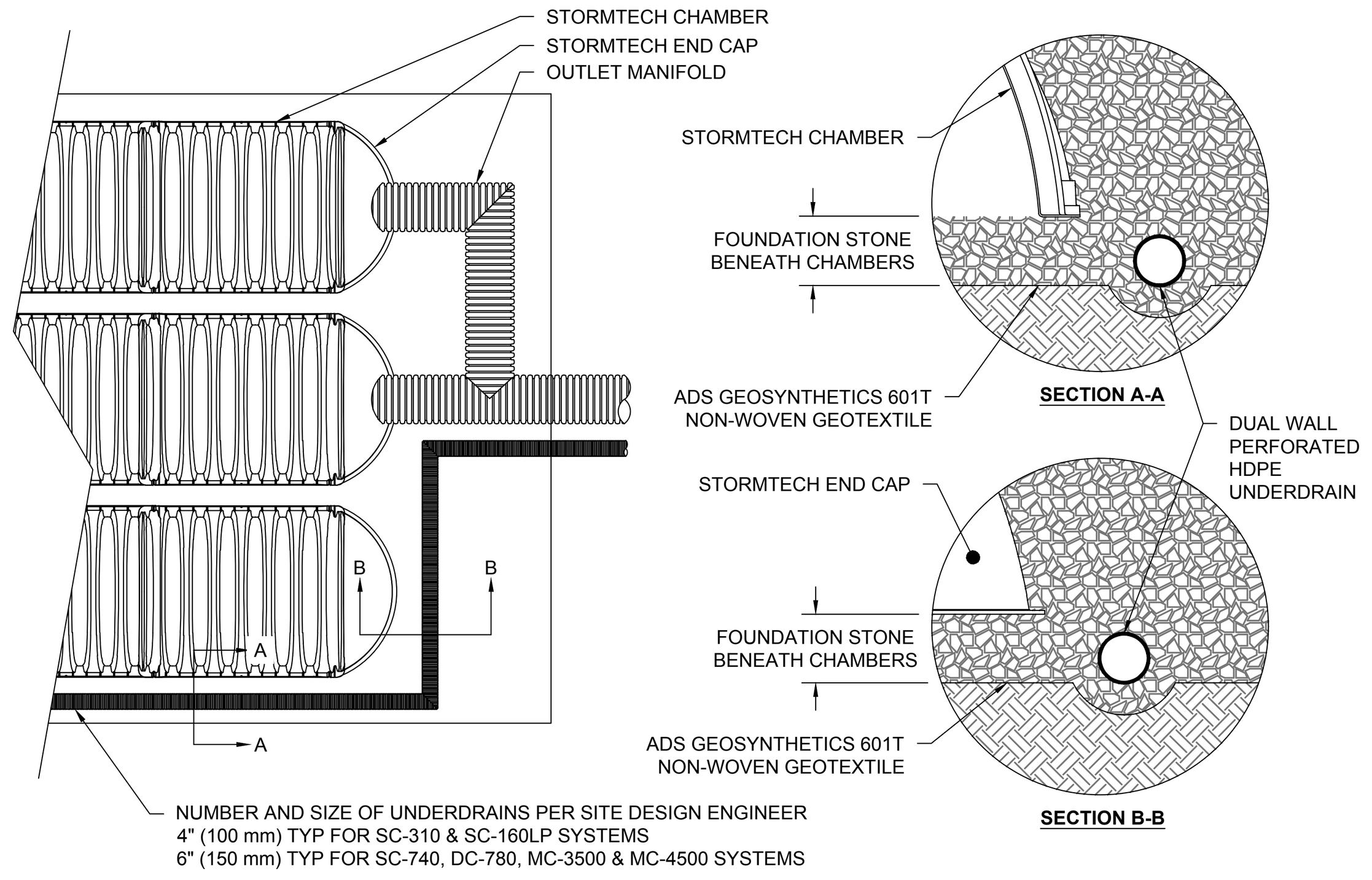
1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

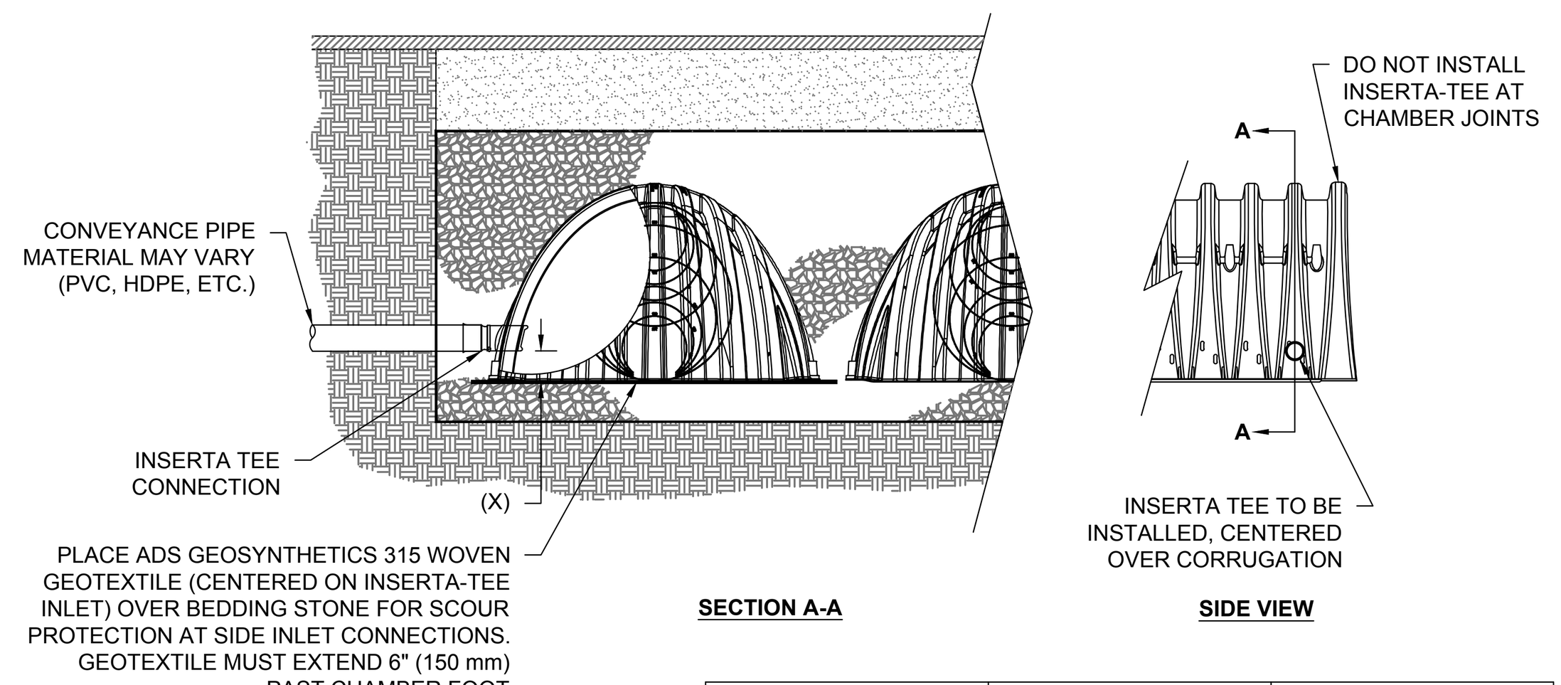
1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



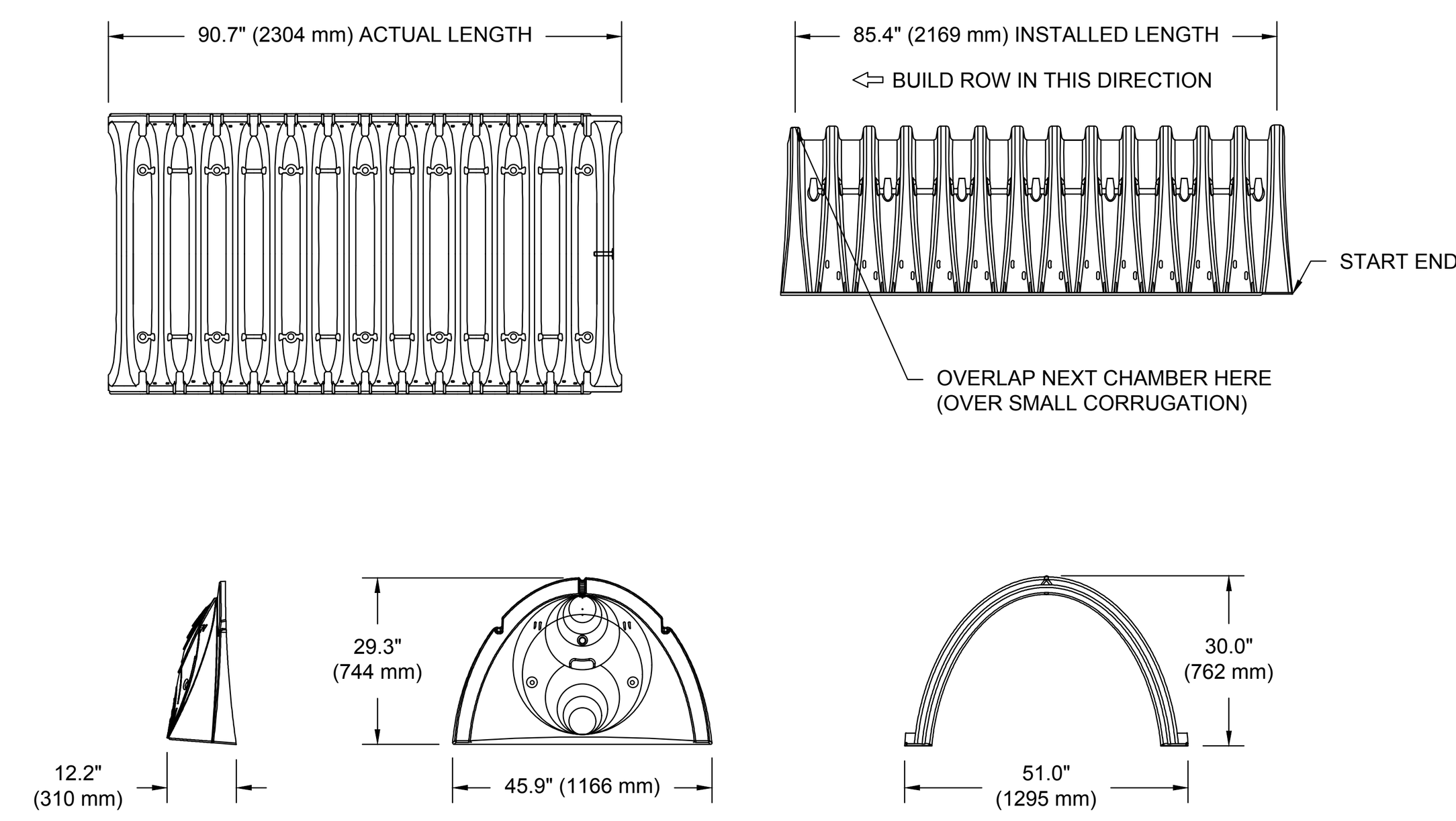
5 UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

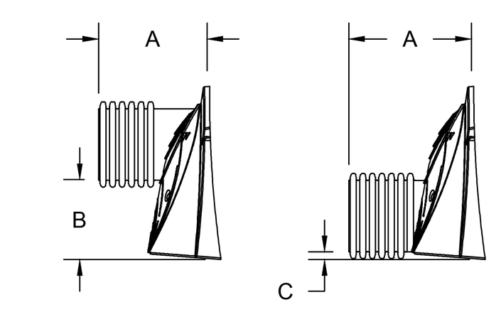
6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

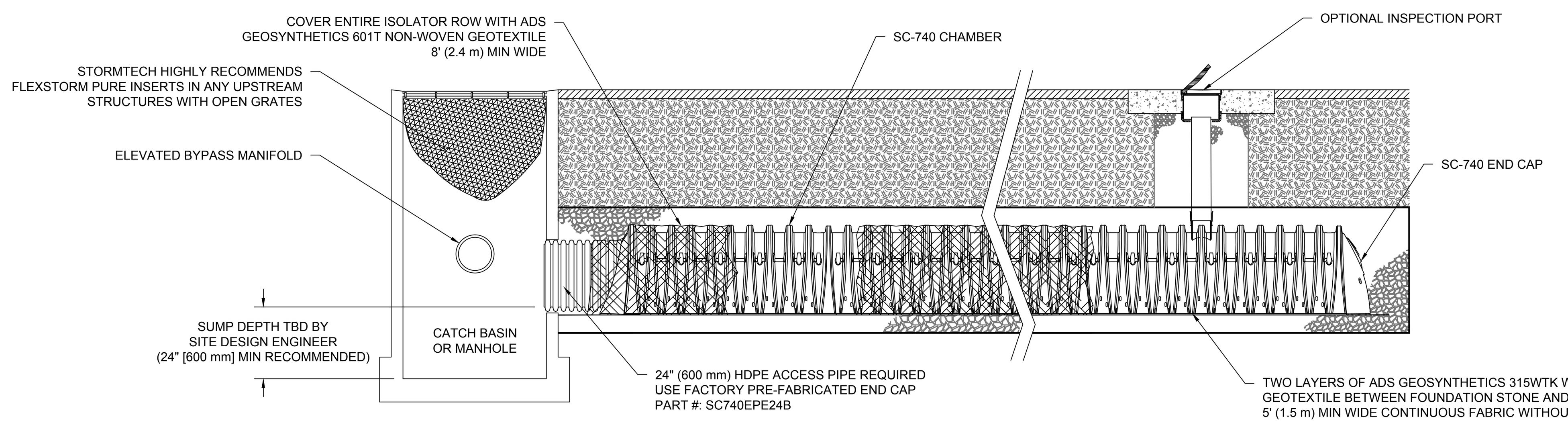
PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

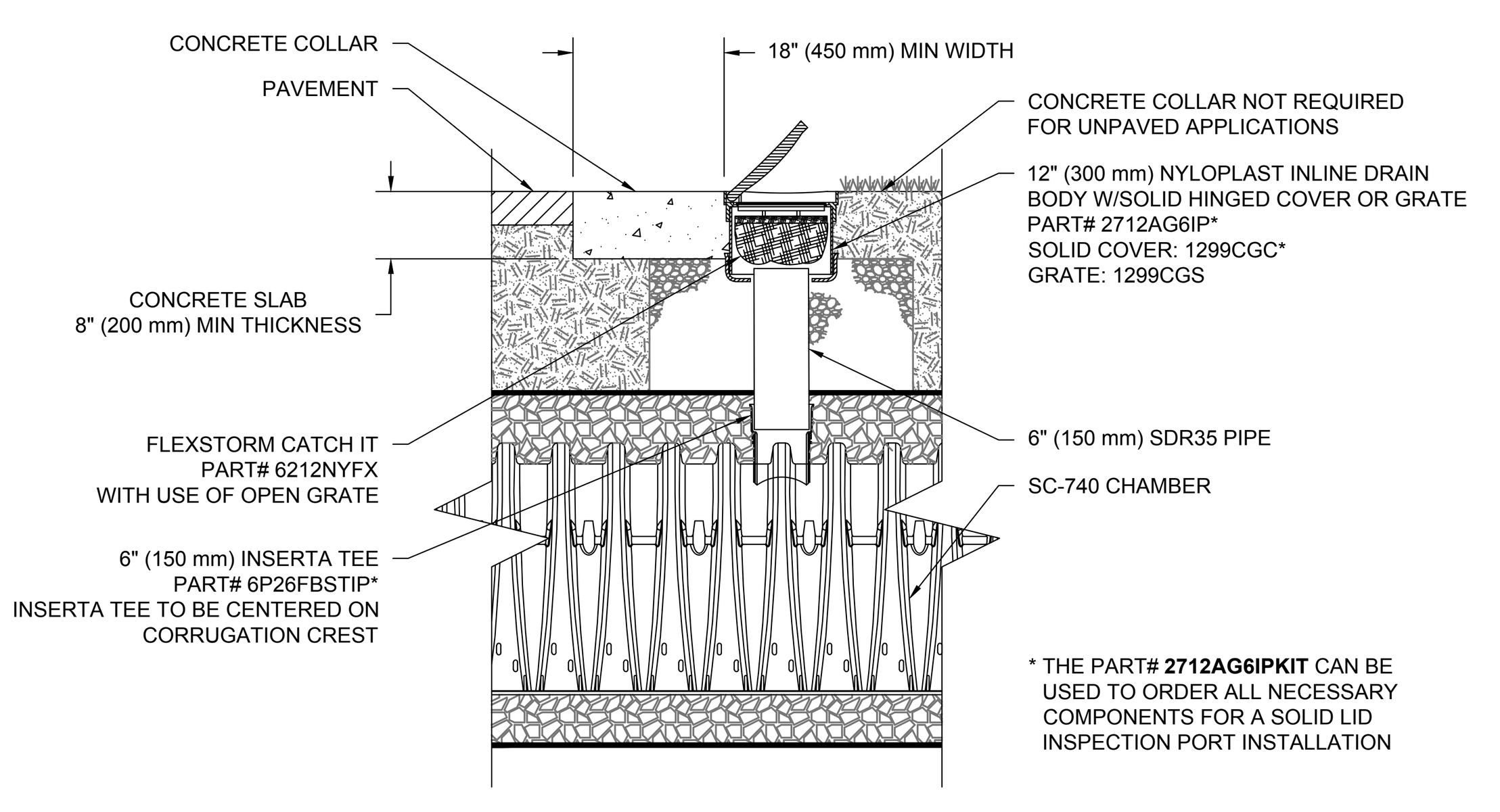
* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-740 TECHNICAL SPECIFICATIONS



3 SC-740 ISOLATOR ROW DETAIL



4 SC-740 6" (150 mm) INSPECTION PORT DETAIL

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

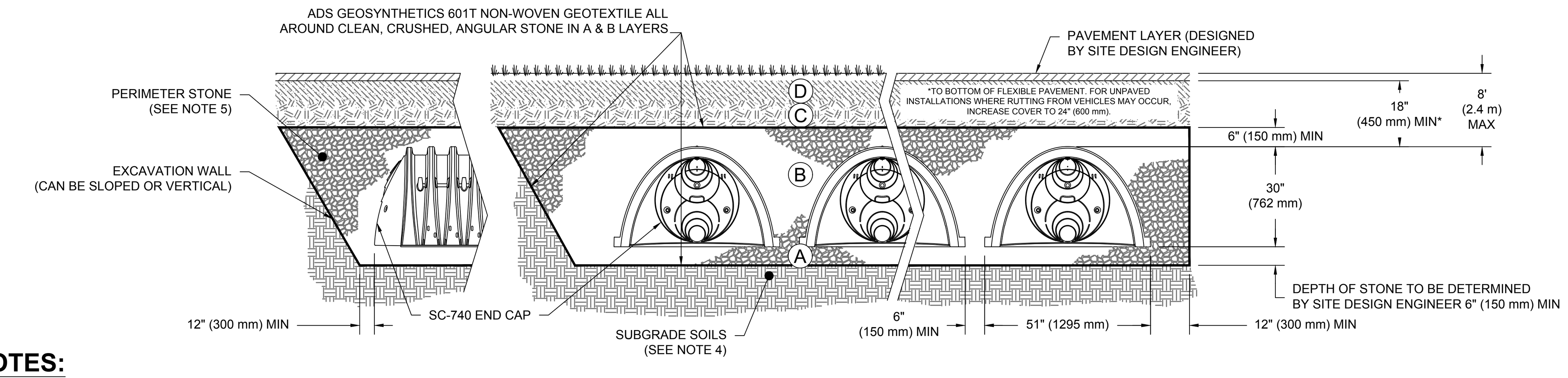
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

1 SC-740 CROSS SECTION DETAIL

DATE: APRIL 24, 2020
PROJECT NO: 116111
NOT TO SCALE
DRAWN:
REVIEWED:
REV:

4640 TRUEMAN BLVD
HILLIARD, OH 43026

SHEET

NOTE:
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No.	REVISION	DATE	BY
2	REVISED PER CITY COMMENTS	APRIL 24/20	CJR
1	ISSUED FOR SITE PLAN APPROVAL	NOV 20/19	CJR

SCALE: AS NOTED

DESIGN: MJH
CHECKED: CJR
DRAWN: MJR
CHECKED: CJR
APPROVED: JLS

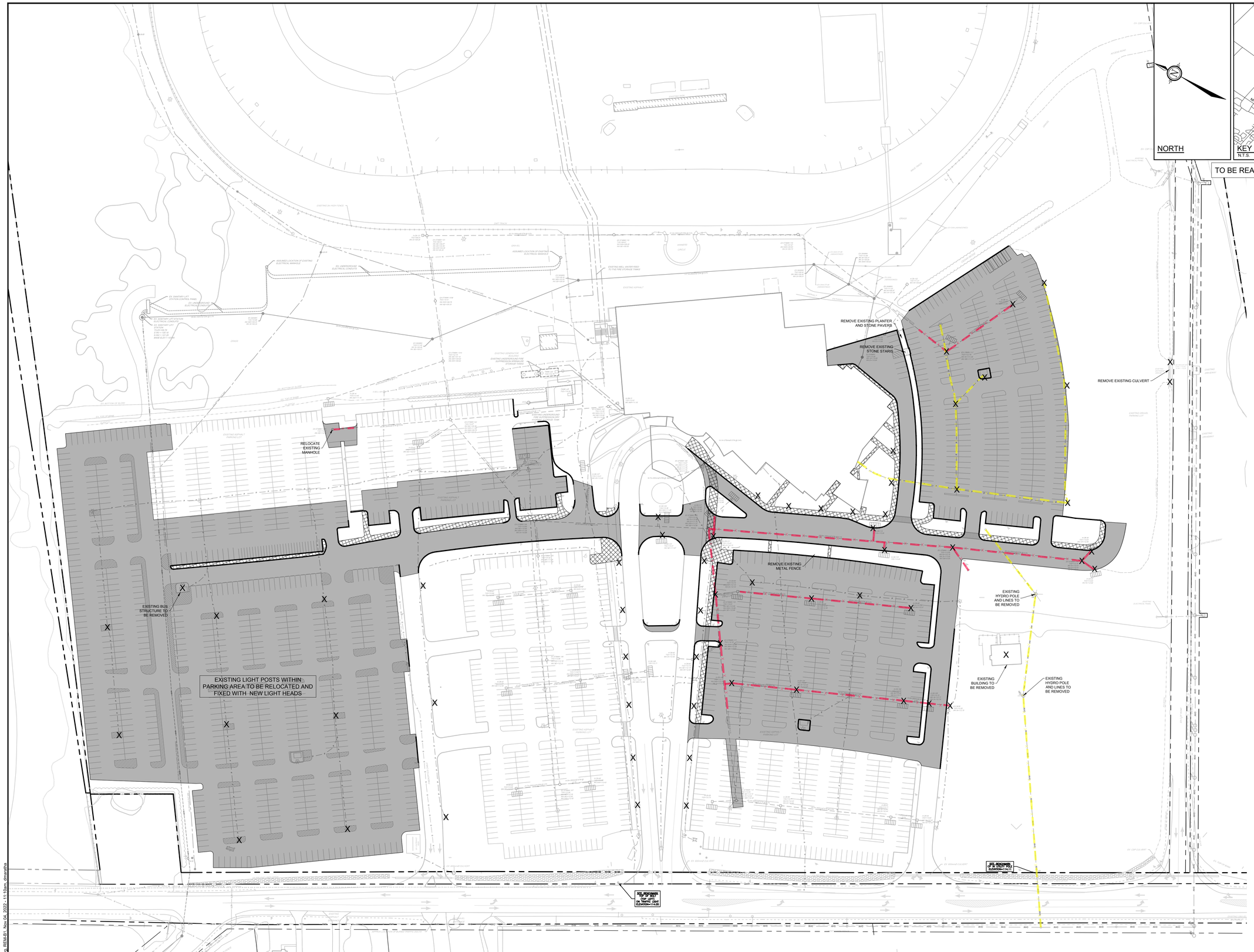
FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
NOTES AND DETAILS
STORMTECH CHAMBERS

PROJECT No. 116111
REV: REV # 3
DRAWING No. 116111-ND2



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3	REVISED AS PER CITY COMMENTS	NOV 07/22	MJH
2	REVISED AS PER CITY COMMENTS	APRIL 24/20	CJR
1	ISSUED FOR SITE PLAN APPROVAL	NOV 20/19	CJR

SCALE 1:750

1:750
0 10 20 30

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

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LICENSED PROFESSIONAL ENGINEER
M.J. HREHORIAK
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NOV 7/22
PROVINCE OF ONTARIO

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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
REMOVALS AND DEMOLITION PLAN

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-REM

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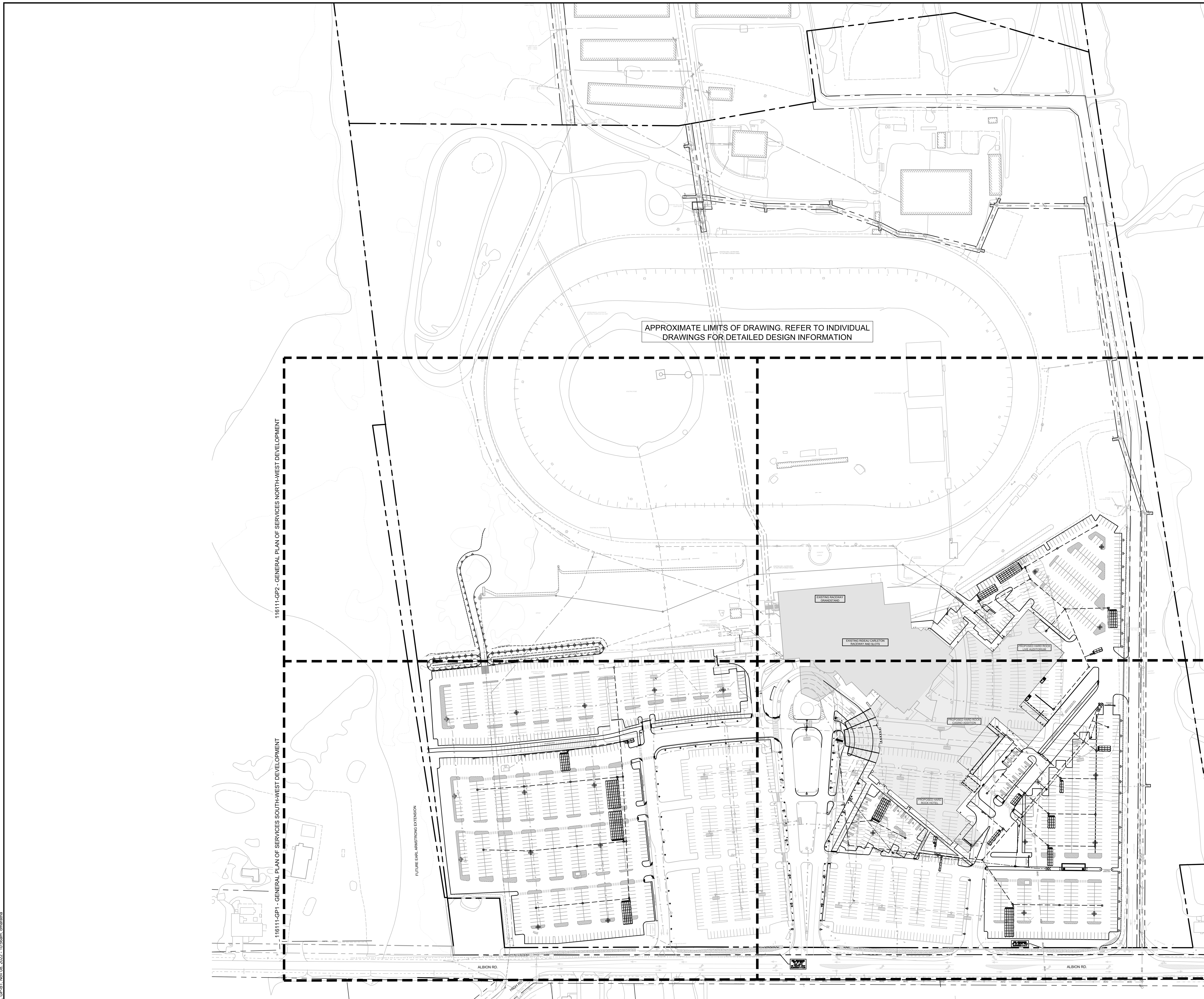

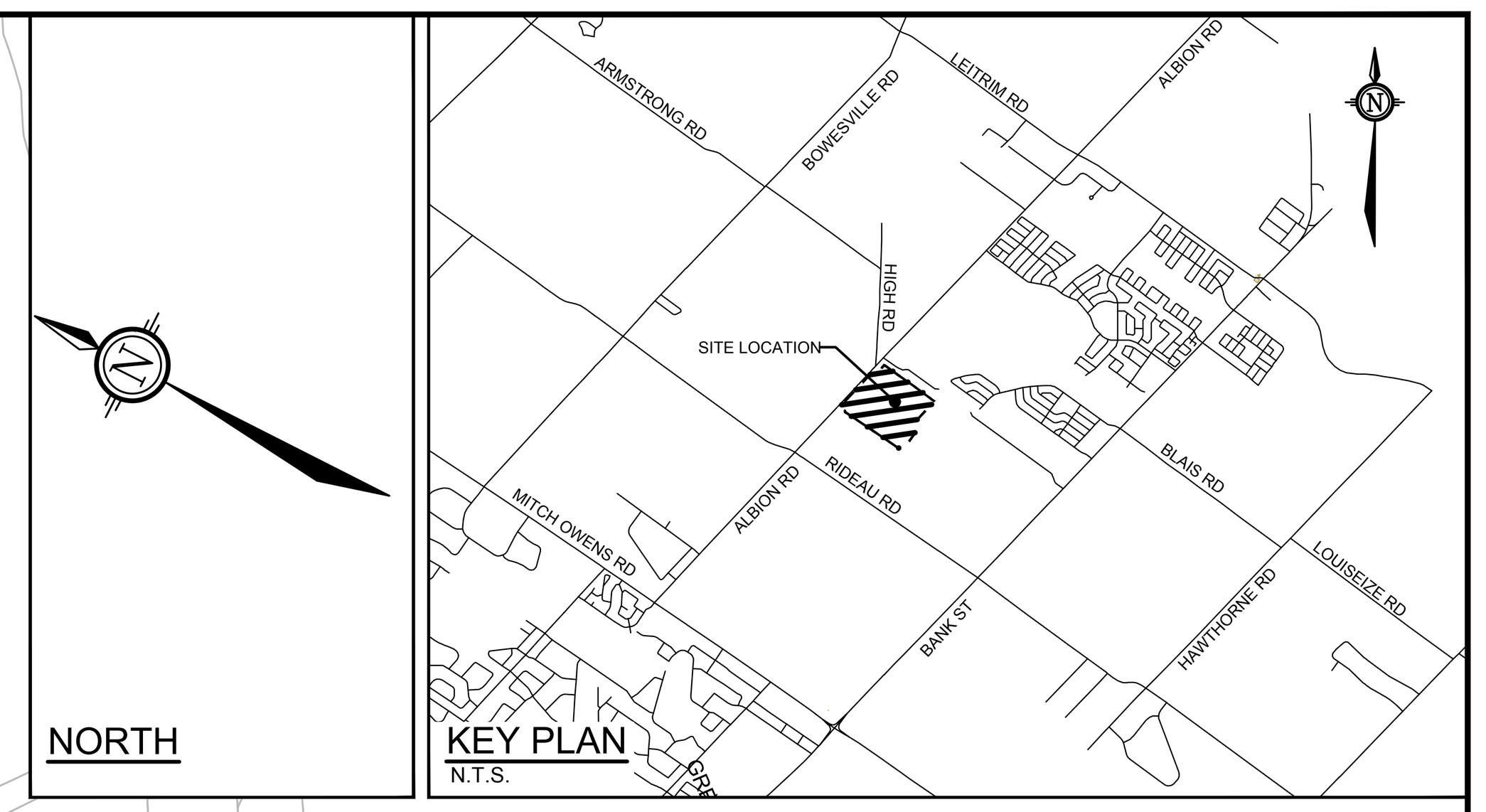

LEGEND

	PROPERTY LINE
	PROPOSED CURB
DC	PROPOSED DEPRESSED CURB
	PROPOSED RETAINING WALL
	PROPOSED PRECAST CONCRETE CURB (O.P.S.D 603.020)
	TACTILE WALKING SURFACE INDICATOR (TWSI) PER CITY DEATIL SC7.3
	PROPOSED CAP
	PROPOSED CROSSWALK PAINTING
	PROPOSED PARKING PAINTING
	PROPOSED SANITARY SERVICE c/w MANHOLE
	PROPOSED STORM SEWER AND MANHOLE
	PROPOSED BUILDING ENTRANCE
	DIRECTION OF FLOW
	PROPOSED CATCHBASIN MANHOLE
ICD	PROPOSED INLET CONTROL DEVICE
	PROPOSED CATCHBASIN
	PROPOSED UNDERGROUND STORAGE WITH GEOTEXTILE (REFER TO 116111-ND FOR DETAILS)
	PROPOSED UNDERGROUND STORAGE WITHOUT GEOTEXTILE (REFER TO 116111-ND FOR DETAILS)
	PROPOSED LIGHT POST/FIXTURE (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
	DECORATIVE LAMP POST (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
	LIGHTING BOLLARD (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
B	CONCRETE BOLLARDS
T	HYDRO TRANSFORMER (REFER TO ELECTRICAL PLAN)
G	GENERATOR (REFER TO ELECTRICAL PLAN)
	ELECTRICAL MANHOLE (REFER TO ELECTRICAL PLAN)
	EXISTING UTILITY POLE C/W GUY WIRES
V&VC	*EXISTING WATERMAIN C/W VALVE & VALVE CHAMBER*
	EXISTING HYDRANT C/W VALVE & LEAD
SAN MH	*EXISTING SANITARY MANHOLE & SEWER*
	EXISTING SANITARY FORCEMAIN
STM MH	*EXISTING STORM MANHOLE & SEWER*
CB 1	*EXISTING CATCHBASIN*
	EXISTING INFILTRATION CHAMBERS
GAS	*EXISTING GAS MAIN*
OHW	*EXISTING OVERHEAD WIRES*
B	*EXISTING BELL LINE*
H	*EXISTING HYDRO*
P	*EXISTING STREETLIGHT POWER SUPPLY*
LS	*EXISTING STREETLIGHT*
	EXISTING PARKING LOT SIGNAGE

TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS

NOTE:
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SCALE
1:1250
1:1250
0 10 20 30 40 50

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GENERAL PLAN OF SERVICES
OVERALL DEVELOPMENT

PROJECT No. 116111
REV: REV # 3
DRAWING No. 116111-GP

PLANB1.DWG - 1000mmx707mm

NOTE:
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SCALE 1:400

1:400 — 0 4 8 12 16

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

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LICENSED PROFESSIONAL ENGINEER
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NOV 7/22
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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GENERAL PLAN OF SERVICES
SOUTH-WEST DEVELOPMENT

PROJECT No. 116111
REV: REV # 3
DRAWING No. 116111-GP1

NOTE:
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SCALE 1:400

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

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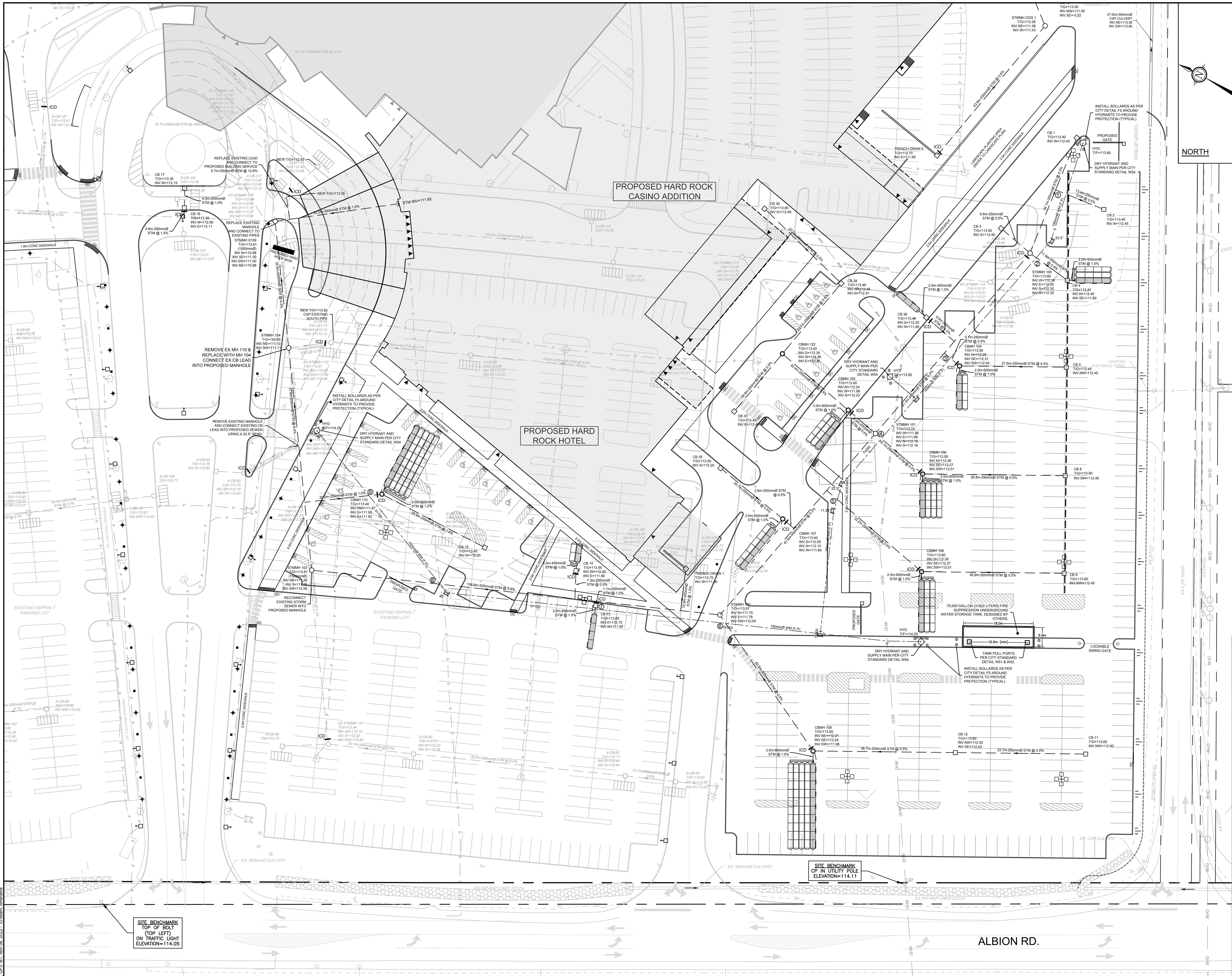
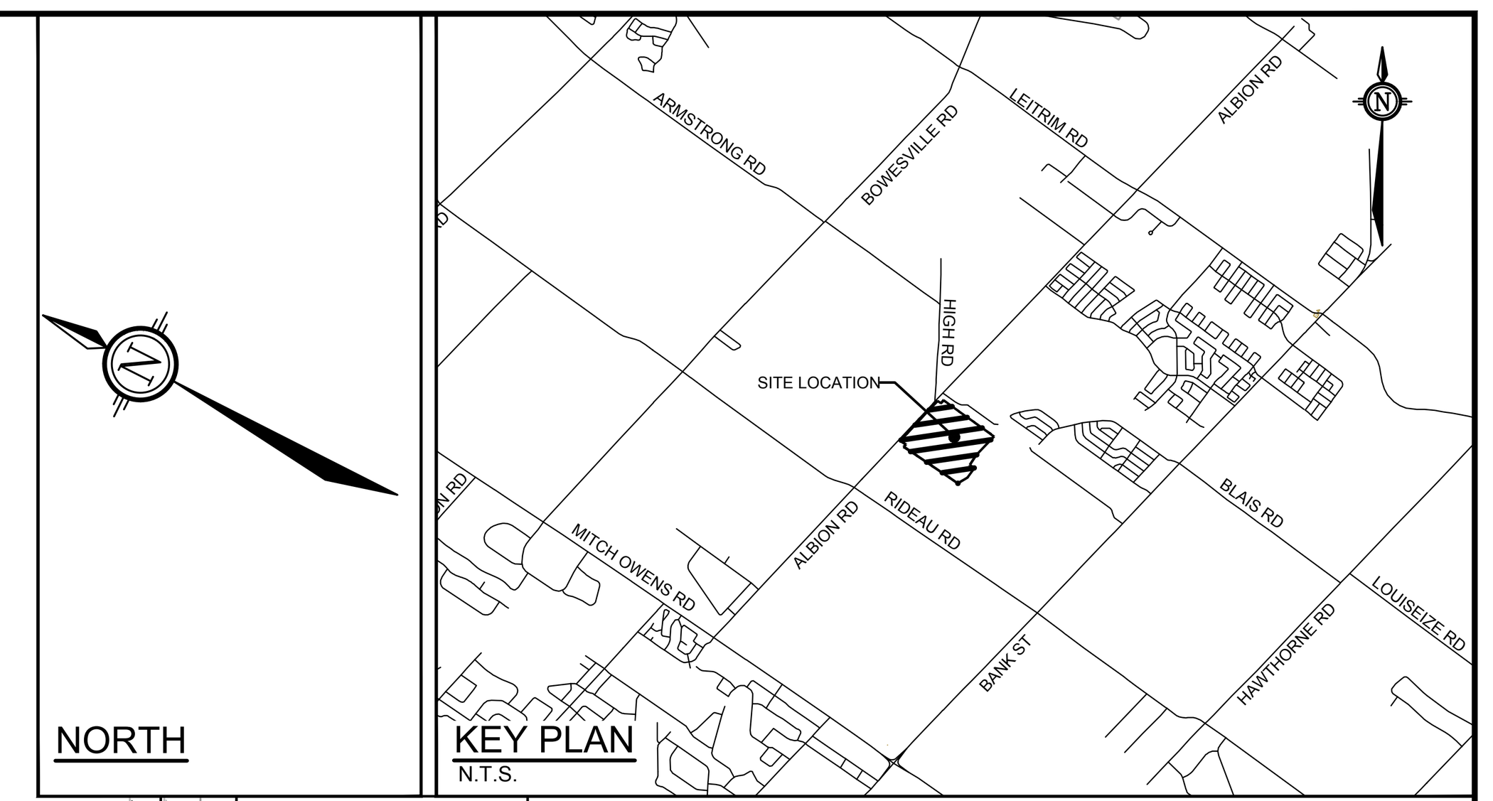
LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GENERAL PLAN OF SERVICES
NORTH-WEST DEVELOPMENT

PROJECT No. 116111
REV # 3
DRAWING No. 116111-GP2





TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS

LEGEND

- PROPERTY LINE
- PROPOSED CURB
- DC — PROPOSED DEPRESSED CURB
- PROPOSED RETAINING WALL
- PROPOSED PRECAST CONCRETE CURB (O.P.S.D 603.020)
- TACTILE WALKING SURFACE INDICATOR (TWSI) PER CITY DEATIL SC7.3
- PROPOSED CAP
- PROPOSED CROSSWALK PAINTING
- PROPOSED PARKING PAINTING
- PROPOSED SANITARY SERVICE c/w MANHOLE
- PROPOSED STORM SEWER AND MANHOLE
- PROPOSED FIRE SUPPRESSION WATERMAIN
- PROPOSED FRY HYDRANT PER CITY DETAIL W54
- PROPOSED BUILDING ENTRANCE
- DIRECTION OF FLOW
- PROPOSED CATCHBASIN MANHOLE
- ICD — PROPOSED INLET CONTROL DEVICE
- PROPOSED CATCHBASIN
- PROPOSED UNDERGROUND STORAGE WITH GEOTEXTILE (REFER TO 116111-ND FOR DETAILS)
- PROPOSED UNDERGROUND STORAGE WITHOUT GEOTEXTILE (REFER TO 116111-ND FOR DETAILS)
- PROPOSED LIGHT POST/FIXTURE (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
- DECORATIVE LAMP POST (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
- LIGHTING BOLLARD (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
- B — CONCRETE BOLLARDS
- T — HYDRO TRANSFORMER (REFER TO ELECTRICAL PLAN)
- G — GENERATOR (REFER TO ELECTRICAL PLAN)
- ELECTRICAL MANHOLE (REFER TO ELECTRICAL PLAN)
- EXISTING UTILITY POLE C/W GUY WIRES
- V&VC — EXISTING WATERMAIN C/W VALVE & VALVE CHAMBER
- EXISTING HYDRANT C/W VALVE & LEAD
- SAN MH — EXISTING SANITARY MANHOLE & SEWER
- EXISTING SANITARY FORCEMAIN
- STM MH — EXISTING STORM MANHOLE & SEWER
- CB 1 — EXISTING CATCHBASIN
- EXISTING INFILTRATION CHAMBERS
- GAS — EXISTING GAS MAIN
- B — EXISTING BELL LINE
- OHW — EXISTING OVERHEAD WIRES
- H — EXISTING HYDRO
- P — EXISTING STREETLIGHT POWER SUPPLY
- LS — EXISTING STREETLIGHT
- EXISTING PARKING LOT SIGNAGE

PIPE CROSSING TABLE

CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE
1	150mmØ WM OBV = 111.40	250mmØ STM INV = 112.40	1.00m
2	150mmØ WM OBV = 111.20	250mmØ STM INV = 112.36	1.16m
3	150mmØ WM OBV = 111.15	250mmØ STM INV = 112.27	1.12m
4	150mmØ WM OBV = 111.30	250mmØ STM INV = 112.19	0.89m
5	150mmØ WM OBV = 111.60	250mmØ STM INV = 112.12	0.52m
6	150mmØ WM OBV = 111.60	300mmØ STM INV = 112.00	0.40m
7	150mmØ WM OBV = 111.30	450mmØ STM INV = 111.90	0.60m
8	150mmØ WM OBV = 111.20	525mmØ STM INV = 111.50	0.30m
9	150mmØ WM OBV = 111.05	250mmØ STM INV = 111.84	0.80m

150mmØ FIRE SUPPRESSION WATERMAIN TABLE

STATION	ELEVATION	TOP OF WATERMAIN	DESCRIPTION
0+000	114.20	111.80	DRY HYDRANT
0+008.7	114.20	111.80	5° HORIZONTAL DEFLECTION
0+026.1	114.20	111.80	TEE CONNECTION WITH 150mm FIRE SUPPRESSIONS WATERMAIN
0+050.7	114.00	111.60	CROSSING STORM SEWER (0.4m CLEARANCE)
0+084.5	113.70	111.30	CROSSING STORM SEWER (0.5m+ CLEARANCE)
0+123.0	113.90	111.25	45° HORIZONTAL BEND
0+125.9	113.85	111.20	CROSSING STORM SEWER (0.3m CLEARANCE)
0+155.3	113.45	111.05	CROSSING STORM SEWER (0.5m+ CLEARANCE)
0+176.7	114.00	111.60	DRY HYDRANT

150mmØ FIRE SUPPRESSION WATERMAIN TABLE

STATION	ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000	114.20	111.80	TEE CONNECTION WITH 150mm FIRE SUPPRESSIONS WATERMAIN
1+031.9	114.00	111.60	11.25° HORIZONTAL BEND
1+034.9	114.00	111.60	CROSSING STORM SEWER (0.5m+ CLEARANCE)
1+039.0	114.00	111.60	22.5° HORIZONTAL BEND
1+054.6	113.70	111.30	CROSSING STORM SEWER (0.5m+ CLEARANCE)
1+068.2	113.95	111.55	DRY HYDRANT TEE CONNECTION
1+082.0	113.55	111.15	CROSSING STORM SEWER (0.5m+ CLEARANCE)
1+116.1	113.60	111.20	CROSSING STORM SEWER (0.5m+ CLEARANCE)
1+121.9	113.85	111.45	22.5° HORIZONTAL BEND
1+134.5	113.80	111.40	CROSSING STORM SEWER (0.5m+ CLEARANCE)
1+148.4	113.60	111.20	DRY HYDRANT

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NOTE:
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SCALE 1:400

1:400 — 0 4 8 12 16

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
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100211256
NOV 7/22
PROVINCE OF ONTARIO

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Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GENERAL PLAN OF SERVICES SOUTH-EAST DEVELOPMENT

PROJECT No. 116111
REV REV #3
DRAWING No. 116111-GP3

PLANB1.DWG - 1000mmx707mm

NORTH
KEY PLAN
N.T.S.
SITE LOCATION
TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS
LEGEND
PROPERTY LINE
PROPOSED CURB
PROPOSED DEPRESSED CURB
PROPOSED RETAINING WALL
PROPOSED PRECAST CONCRETE CURB (O.P.S.D 603.020)
TACTILE WALKING SURFACE INDICATOR (TWSI) PER CITY DEATIL SC7.3
PROPOSED CAP
PROPOSED CROSSWALK PAINTING
PROPOSED PARKING PAINTING
PROPOSED SANITARY SERVICE c/w MANHOLE
PROPOSED STORM SEWER AND MANHOLE
PROPOSED BUILDING ENTRANCE
DIRECTION OF FLOW
PROPOSED CATCHBASIN MANHOLE
PROPOSED INLET CONTROL DEVICE
PROPOSED CATCHBASIN
PROPOSED UNDERGROUND STORAGE WITH GEOTEXTILE (REFER TO 116111-ND FOR DETAILS)
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PROPOSED LIGHT POST/FIXTURE (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
DECORATIVE LAMP POST (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
LIGHTING BOLLARD (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
CONCRETE BOLLARDS
HYDRO TRANSFORMER (REFER TO ELECTRICAL PLAN)
GENERATOR (REFER TO ELECTRICAL PLAN)
ELECTRICAL MANHOLE (REFER TO ELECTRICAL PLAN)
EXISTING UTILITY POLE C/W GUY WIRES
EXISTING WATERMAIN C/W VALVE & VALVE CHAMBER
EXISTING HYDRANT C/W VALVE & LEAD
EXISTING SANITARY MANHOLE & SEWER
EXISTING SANITARY FORCEMAIN
EXISTING STORM MANHOLE & SEWER
EXISTING CATCHBASIN
EXISTING INFILTRATION CHAMBERS
EXISTING GAS MAIN
EXISTING OVERHEAD WIRES
EXISTING BELL LINE
EXISTING HYDRO
EXISTING STREETLIGHT POWER SUPPLY
EXISTING STREETLIGHT
EXISTING PARKING LOT SIGNAGE
EXISTING RACEWAY GRANDSTAND
EXISTING RIDEAU CARLETON RACEWAY AND SLOTS
PROPOSED HARD ROCK LIVE AUDITORIUM
EXISTING SEPTIC SYSTEM (ABANDONED)
ACCESS ROAD
EXISTING GRAVEL PARKING LOT
EXISTING DRIVEWAY
CONNECT TO EXISTING STORM SEWER
RELOCATE EXISTING CB TO PROPOSED CURB LINE AND EXTEND LEAD WITH 22.5° BEND
STMMH OGS 1 T/G=113.28 INV.NE=111.38 INV.W=111.43
CB 40 T/G=113.00 INV.NW=111.50 INV.SE=-0.22
37.00m-600mmØ CSP CULVERT INV.NE=113.36 INV.SW=112.80

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SCALE 1:400

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

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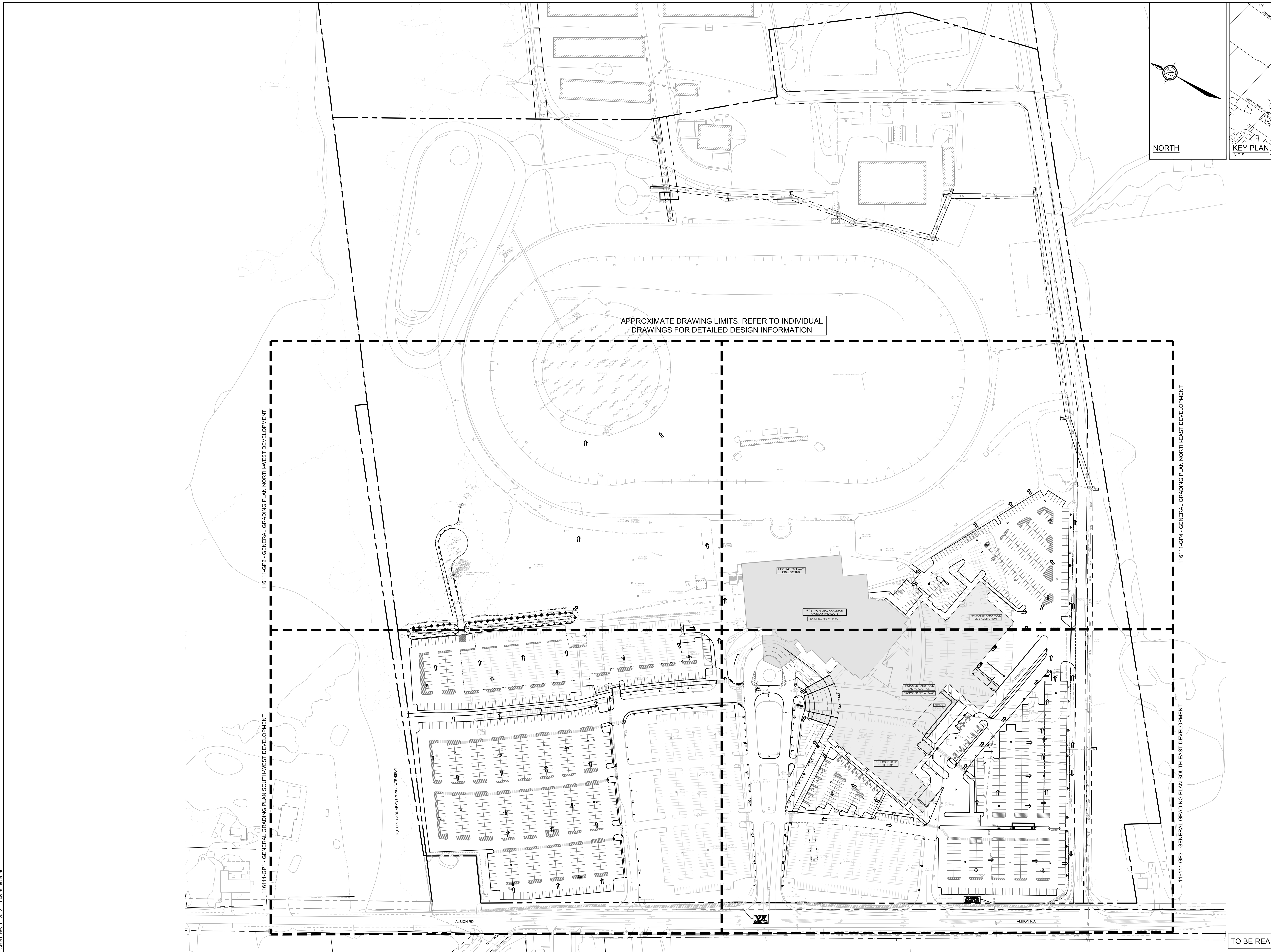
Website www.novatech-eng.com

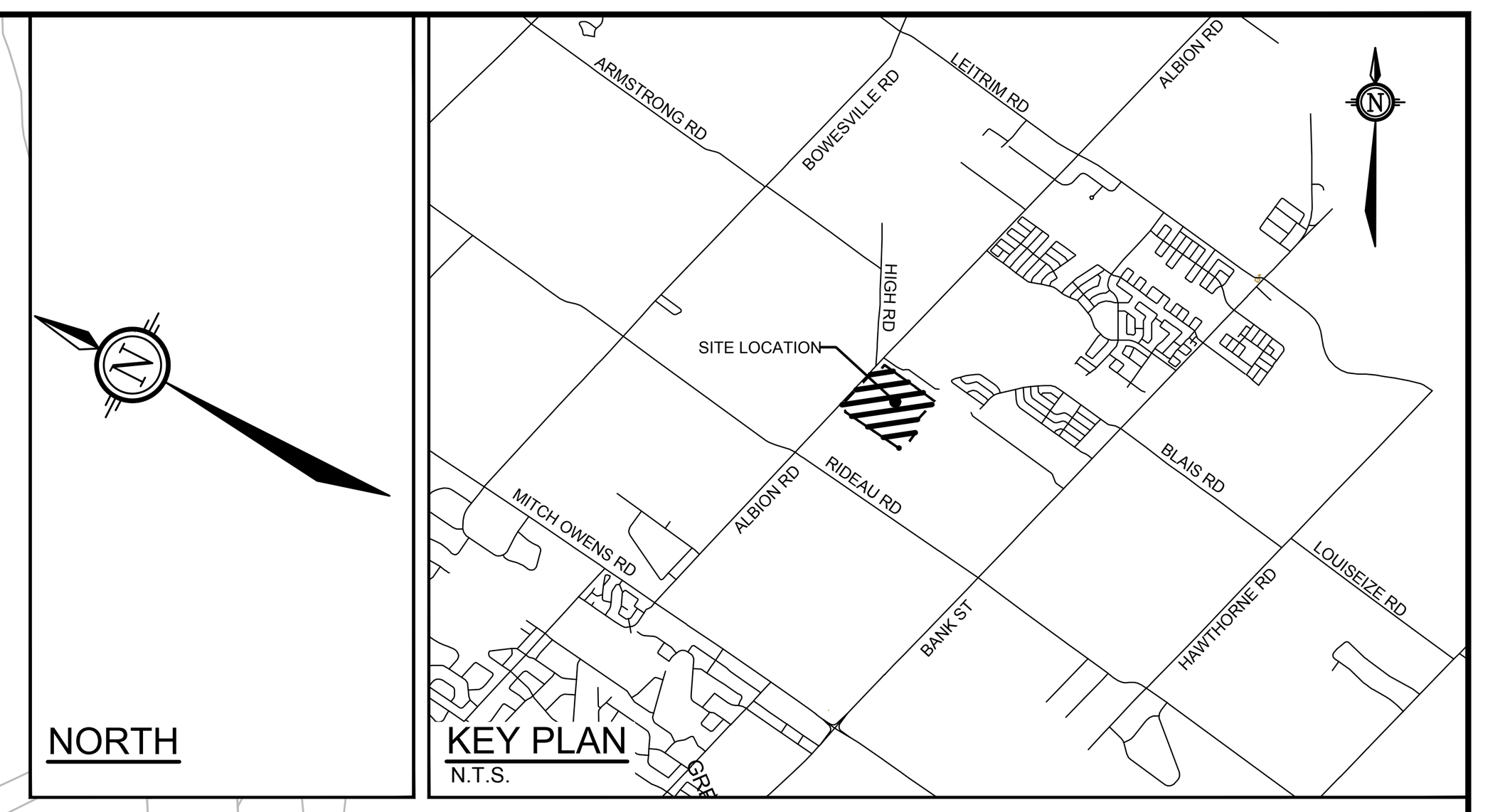
LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GENERAL PLAN OF SERVICES
NORTH-EAST DEVELOPMENT

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-GP4

PLANB1.DWG - 1000mmx707mm





LEGEND

- PROPERTY LINE
- 77.50 — PROPOSED ELEVATION
- 76.45 — EXISTING ELEVATION
- 76.35(S) — PROPOSED SWALE ELEVATION
- PROPOSED BUILDING ENTRANCE
- DIRECTION OF MAJOR OVERLAND FLOW
- PROPOSED SAN MANHOLE
- PROPOSED STORM MANHOLE
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED LIGHT POST/FIXTURE (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
- DECORATIVE LAMP POST (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
- LIGHTING BOLLARD (REFER TO ELECTRICAL/PHOTOMETRIC PLAN)
- CONCRETE BOLLARD
- PROPOSED CROSSWALK PAINTING
- PROPOSED PARKING PAINTING
- H.P. — PROPOSED HIGH POINT
- PROPOSED CURB
- DC — PROPOSED DEPRESSED CURB
- PROPOSED ASPHALT TIE INTO EXISTING ASPHALT
- PROPOSED PRECAST CONCRETE CURB (O.P.S.D 603.020)
- TACTILE WALKING SURFACE INDICATOR (TWSI) PER CITY DEATIL SC7.3
- SWALE c/w SUBDRAIN AND DIRECTION OF FLOW
- TERRACING 3:1 SLOPE MAX (UNLESS OTHERWISE INDICATED)
- PROPOSED RETAINING WALL
- 2.0% — SLOPE AND DIRECTION
- 100YR PONDING LIMITS
- B B — CROSS-SECTION DETAIL (REFER TO NOTES AND DETAILS SHEET)
- EXISTING UTILITY POLE C/W GUY WIRES
- V&VC — EXISTING VALVE & VALVE CHAMBER
- V&VB — EXISTING VALVE & VALVE BOX
- EXISTING HYDRANT
- SAN MH — EXISTING SANITARY MANHOLE
- STM MH — EXISTING STORM MANHOLE
- CB 1 — EXISTING CATCHBASIN
- LS — EXISTING LIGHT STANDARD
- EXISTING FENCE

TO BE READ IN CONJUNCTION WITH ALL OTHER PLANS

NOTE:
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SCALE 1:1250

1:1250 (0 10 20 30 40 50)

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

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NOV 7/22
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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GRADING PLAN
OVERALL DEVELOPMENT

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-GR

LEGEND

- PROPERTY LINE
- 77.50 — PROPOSED ELEVATION
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- PROPOSED BUILDING ENTRANCE
- DIRECTION OF MAJOR OVERLAND FLOW
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- PROPOSED CROSSWALK PAINTING
- PROPOSED PARKING PAINTING
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- DC — PROPOSED DEPRESSED CURB
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- TACTILE WALKING SURFACE INDICATOR (TWSI) PER CITY DEATIL SC7.3
- SWALE c/w SUBDRAIN AND DIRECTION OF FLOW
- TERRACING 3:1 SLOPE MAX (UNLESS OTHERWISE INDICATED)
- PROPOSED RETAINING WALL
- 2.0% — SLOPE AND DIRECTION
- 100YR PONDING LIMITS
- B — B — CROSS-SECTION DETAIL (REFER TO NOTES AND DETAILS SHEET)
- *EXISTING UTILITY POLE C/W GUY WIRES*
- *V&VC — EXISTING VALVE & VALVE CHAMBER*
- *VALVE — EXISTING VALVE & VALVE BOX*
- *EXISTING HYDRANT*
- *SAN MH — EXISTING SANITARY MANHOLE*
- *STM MH — EXISTING STORM MANHOLE*
- *CB 1 — EXISTING CATCHBASIN*
- *LS — EXISTING LIGHT STANDARD*
- *X — EXISTING FENCE*

FUTURE EARL ARMSTRONG EXTENSION

ALBION RD.

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SCALE 1:400

1:400
0 4 8 12 16

DESIGN MJH
CHECKED CJR
DRAWN MJH
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APPROVED JLS

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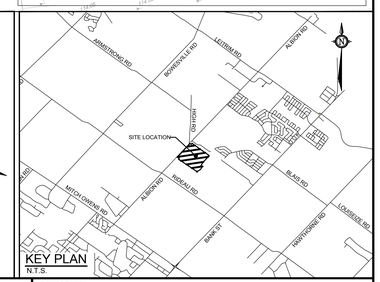
M. J. HARBORIAK
100211256
NOV 7/22
PROVINCE OF ONTARIO

TO BE READ IN CONJUNCTION WITH ALL OTHER PLANS

NORTH

KEY PLAN
N.T.S.



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LOCATION
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HARD ROCK OTTAWA

DRAWING NAME
GRADING PLAN
SOUTH-WEST DEVELOPMENT

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-GR1

LEGEND
PROPERTY LINE
PROPOSED ELEVATION
EXISTING ELEVATION
PROPOSED SWALE ELEVATION
PROPOSED BUILDING ENTRANCE
DIRECTION OF MAJOR OVERLAND FLOW
PROPOSED SAN MANHOLE
PROPOSED STORM MANHOLE
PROPOSED CATCHBASIN MANHOLE
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PROPOSED ASPHALT TIE INTO EXISTING ASPHALT
PROPOSED PRECAST CONCRETE CURB (O.P.S.D 600.020)
TACTILE WALKING SURFACE INDICATOR (TWSI) PER CITY DEATIL SC7.3
SWALE c/w SUBDRAIN AND DIRECTION OF FLOW
TERRACING 3:1 SLOPE MAX (UNLESS OTHERWISE INDICATED)
PROPOSED RETAINING WALL
SLOPE AND DIRECTION
100YR PONDING LIMITS
CROSS-SECTION DETAIL (REFER TO NOTES AND DETAILS SHEET)
EXISTING UTILITY POLE C/W GUY WIRES
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EXISTING HYDRANT
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EXISTING STORM MANHOLE
EXISTING CATCHBASIN
EXISTING LIGHT STANDARD
EXISTING FENCE
NORTH
KEY PLAN
N.T.S.
SITE LOCATION
TO BE READ IN CONJUNCTION WITH ALL OTHER PLANS
EXISTING POND
EXISTING 3m HIGH FENCE
DIRT TRACK
GRAVEL
GRASS
EX SANITARY LIFT STATION
EXISTING GENERATOR BUILDING
EXISTING ANTENNAS
PROPOSED 5.0m ASPHALT ACCESS ROAD
LIMITS OF ASPHALT PAVING
PROPOSED 300mmØ SUBDRAIN CLEAR STONE AND GEOTEXTILE TO CONTINUE UNDER PROPOSED CULVERT
REFER TO DRAWING 116111-ND FOR SECTION DETAILS
BOTTOM OF SLOPE
TOP OF BANK
INFILTRATION DITCH @ 0.3%
PROPOSED 300mmØ SUBDRAIN TO CONNECT TO EXISTING CATCHBASIN
MATCH INTO EXISTING ASPHALT ELEVATION. SAWCUT AND KEYGRIND PROPOSED ASPHALT TIE IN LOCATION AS PER CITY DETAIL R10
STMMH 102A T/G=114.25
EXISTING ASPHALT PARKING LOT TO REMAIN
PRECAST CONCRETE CURB (TYPICAL)
12.00m-400mmØ CSP CULVERT
MATCH INTO EXISTING ELEVATIONS AT PROPERTY LINE

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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GRADING PLAN
NORTH-WEST DEVELOPMENT

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-GR2

TO BE READ IN CONJUNCTION WITH ALL OTHER PLANS

LEGEND

- PROPERTY LINE
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- 2.0% — SLOPE AND DIRECTION
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- B B — CROSS-SECTION DETAIL (REFER TO NOTES AND DETAILS SHEET)
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- SAN MH — *EXISTING SANITARY MANHOLE*
- STM MH — *EXISTING STORM MANHOLE*
- CB 1 — *EXISTING CATCHBASIN*
- LS — *EXISTING LIGHT STANDARD*
- *EXISTING FENCE*

NOTE:
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NOT FOR CONSTRUCTION

No.	REVISION	DATE	BY
3	REVISED PER CITY COMMENTS	NOV 07/22	MJH
2	REVISED PER CITY COMMENTS	APRIL 24/20	CJR
1	ISSUED FOR SITE PLAN APPROVAL	NOV 20/19	CJR

SCALE 1:400

DESIGN	MJH
CHECKED	CJR
DRAWN	MJH
CHECKED	CJR
APPROVED	JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M.J. HREHORIAK 100211256 NOV 7/22 PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GRADING PLAN
SOUTH-EAST DEVELOPMENT

PROJECT No. 116111
REV # 3
DRAWING No. 116111-GR3

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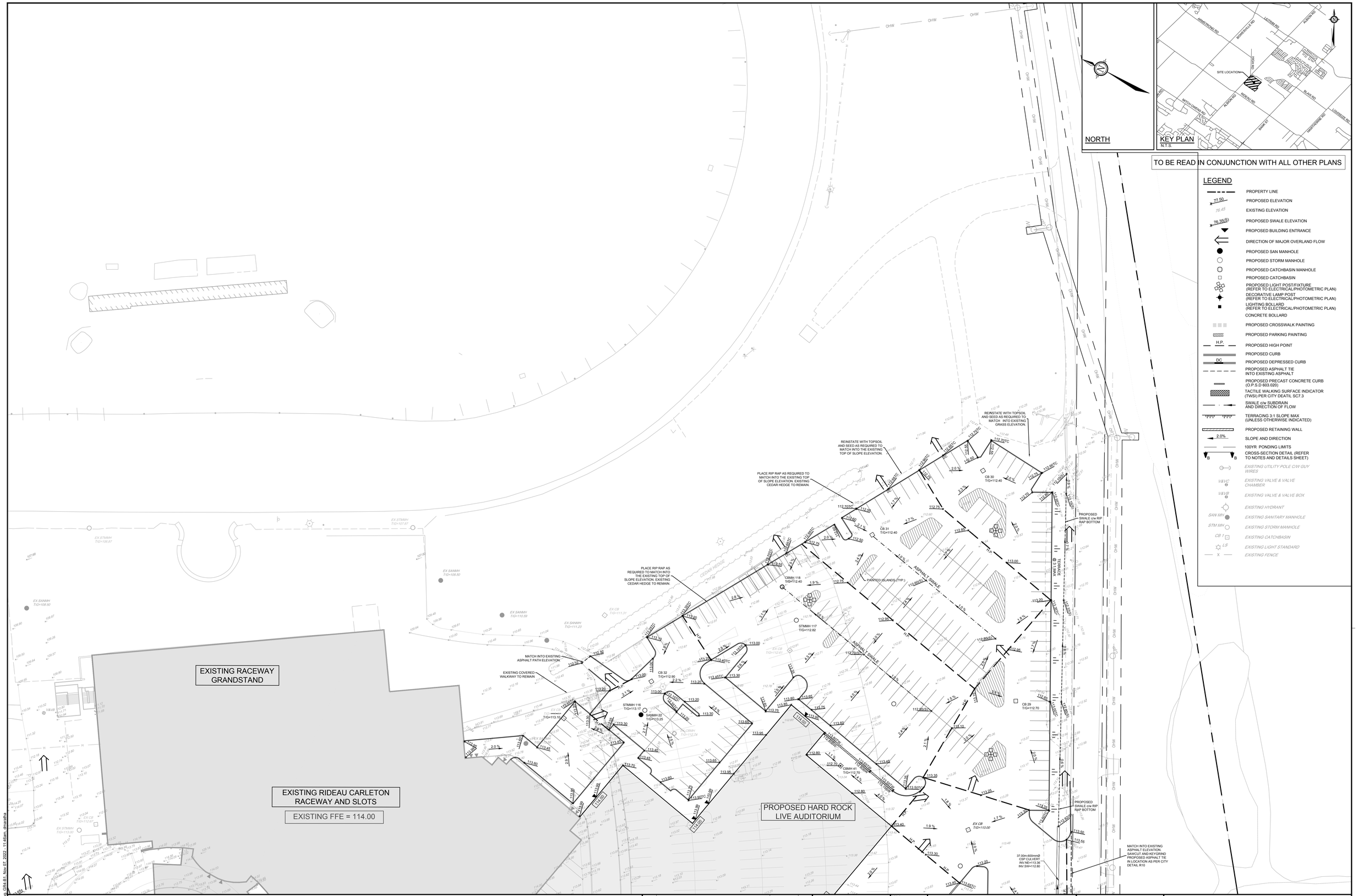

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2	REVISED PER CITY COMMENTS	APRIL 24/20	CJR
1	ISSUED FOR SITE PLAN APPROVAL	NOV 20/19	CJR

SCALE 1:400 (1:400, 0 4 8 12 16)

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
M.J. HREHORIAK
100211256
NOV 7/22
PROVINCE OF ONTARIO

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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
GRADING PLAN
NORTH-EAST DEVELOPMENT

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-GR4

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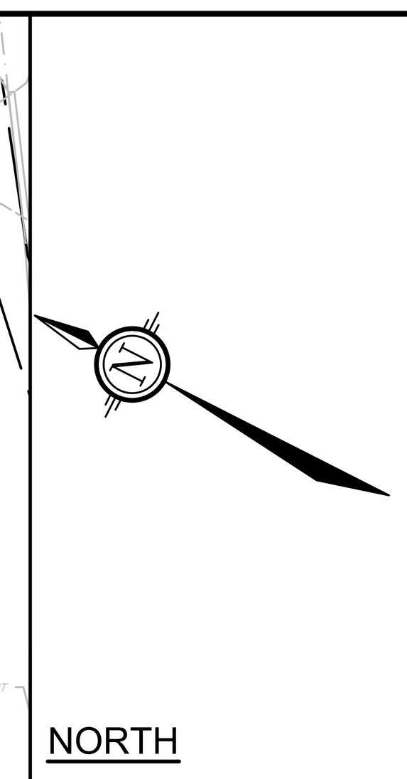

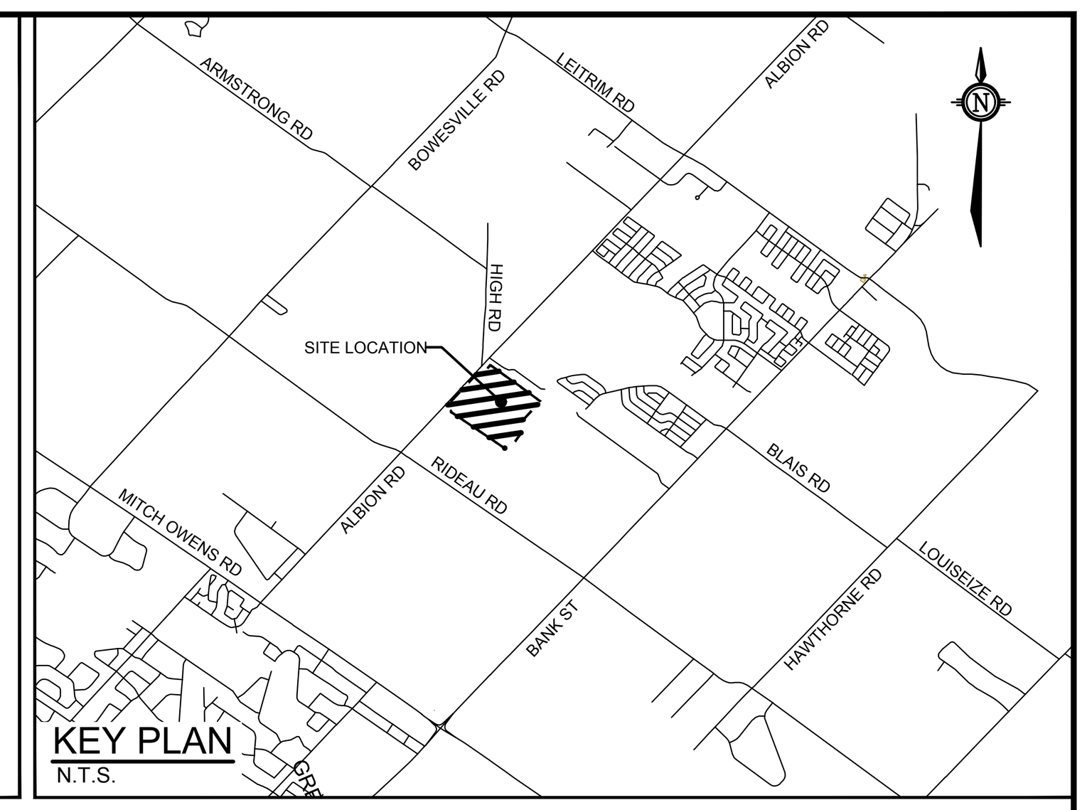

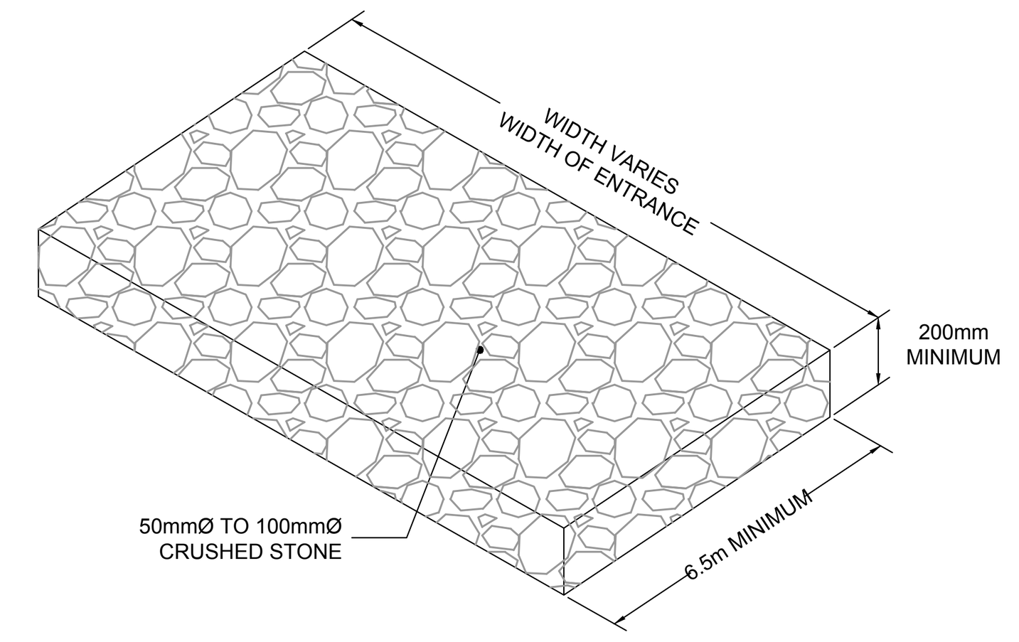

MUD MAT DETAIL

NOT TO SCALE

LEGEND

- PROPERTY LINE
- PROPOSED SWALE
- TERRACING 3:1 SLOPE MAX (UNLESS OTHERWISE INDICATED)
- PROPOSED DITCH CENTERLINE
- PROPOSED FILTER BAGS AT CATCHBASINS, CATCHBASIN MANHOLES AND TRENCHDRAINS
- M M PROPOSED MUD MAT
- PROPOSED FENCE REFER TO LANDSCAPE PLAN
- LIGHT DUTY SILT FENCE (OPSD 219.110)
- PROPOSED STORM MANHOLE
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED BUILDING ENTRANCE
- STRAWBALE CHECK DAM (OPSD 219.180)
- RIP-RAP
- *EXISTING RIP-RAP*
- STM MH *EXISTING STORM MANHOLE*
- CB 1 *EXISTING CATCHBASIN*
- *EXISTING INFILTRATION CHAMBERS*
- LS *EXISTING LIGHT STANDARD*
- *EXISTING FENCE*

REFER TO 116111-ND FOR ADDITIONAL NOTES

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2	REVISED PER CITY COMMENTS	APRIL 24/20	CJR
1	ISSUED FOR SITE PLAN APPROVAL	NOV 20/19	CJR

SCALE 1:750

DESIGN MJH
CHECKED CJR
DRAWN MJH
CHECKED CJR
APPROVED JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M. J. HREHORIAK 100211256 NOV 7/22 PROVINCE OF ONTARIO

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LOCATION
4837 ALBION ROAD, CITY OF OTTAWA
HARD ROCK OTTAWA

DRAWING NAME
EROSION SEDIMENT CONTROL PLAN

PROJECT No. 116111
REV REV # 3
DRAWING No. 116111-ESC