



#### EROSION AND SEDIMENT CONTROL MEASURES:

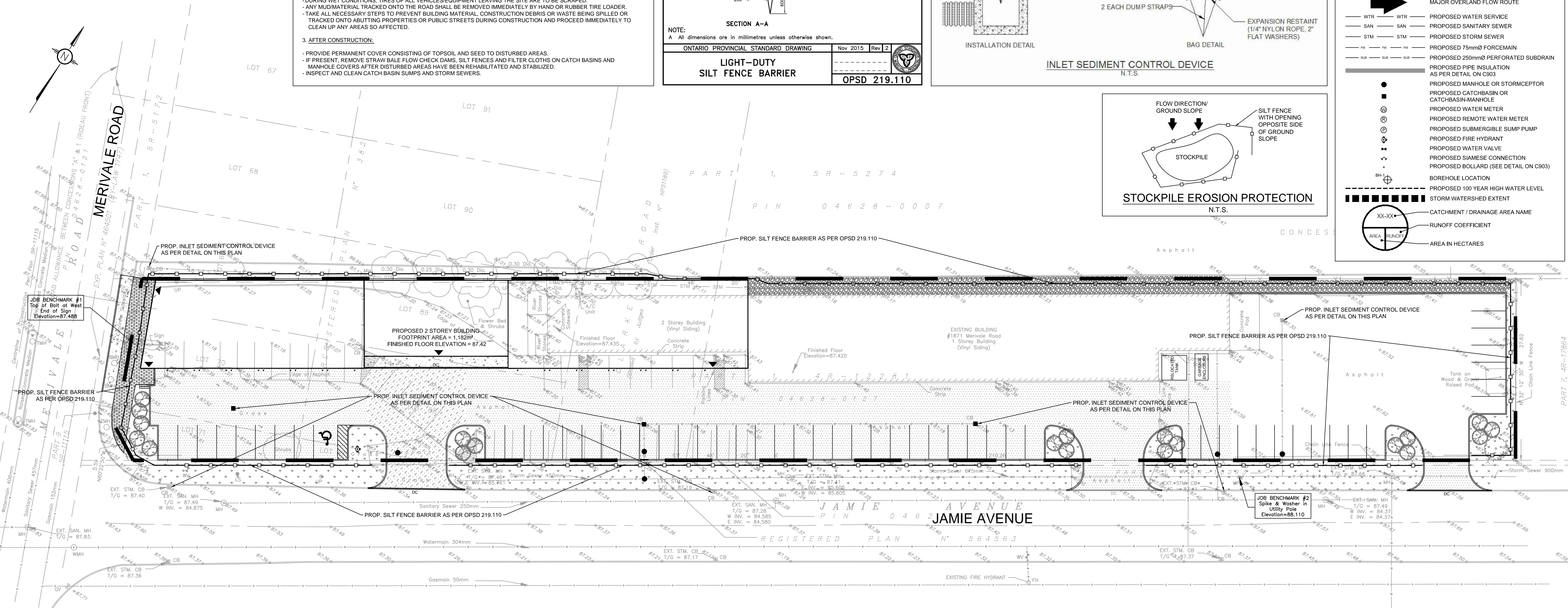
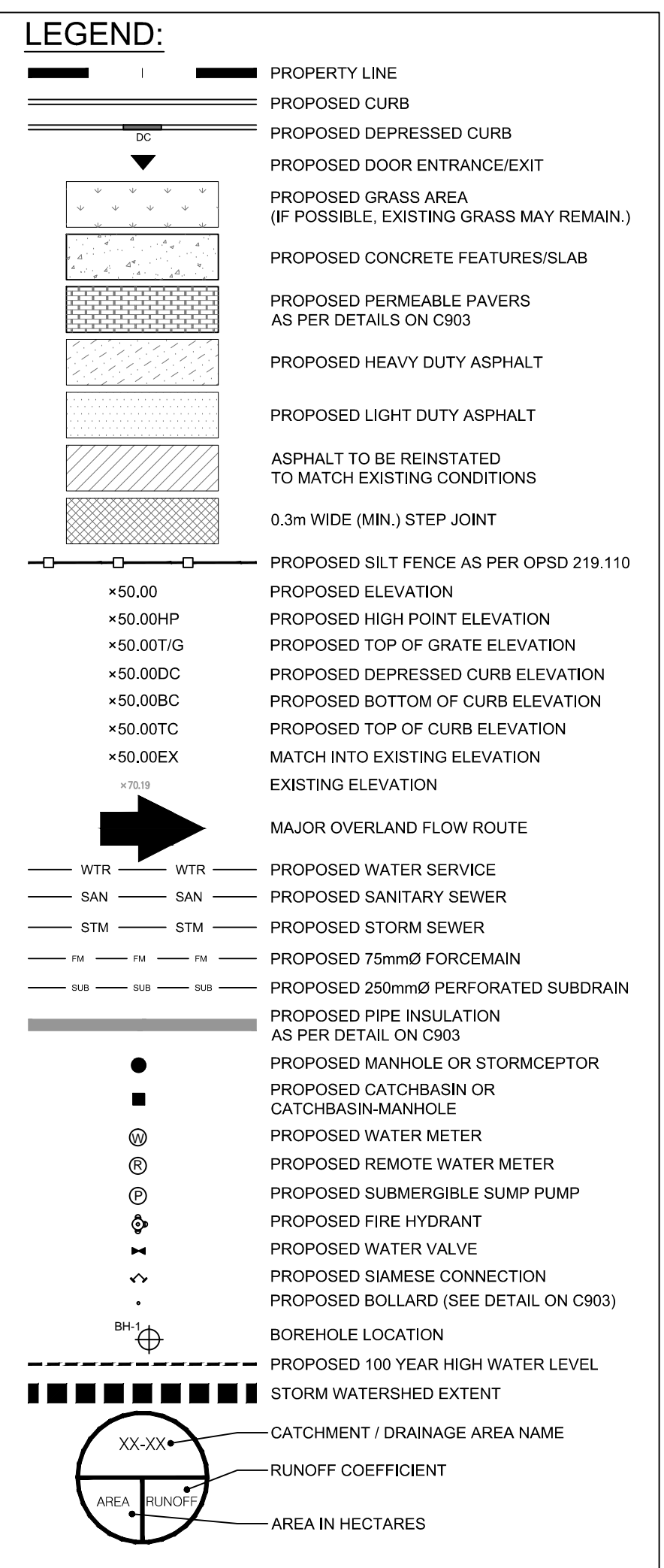
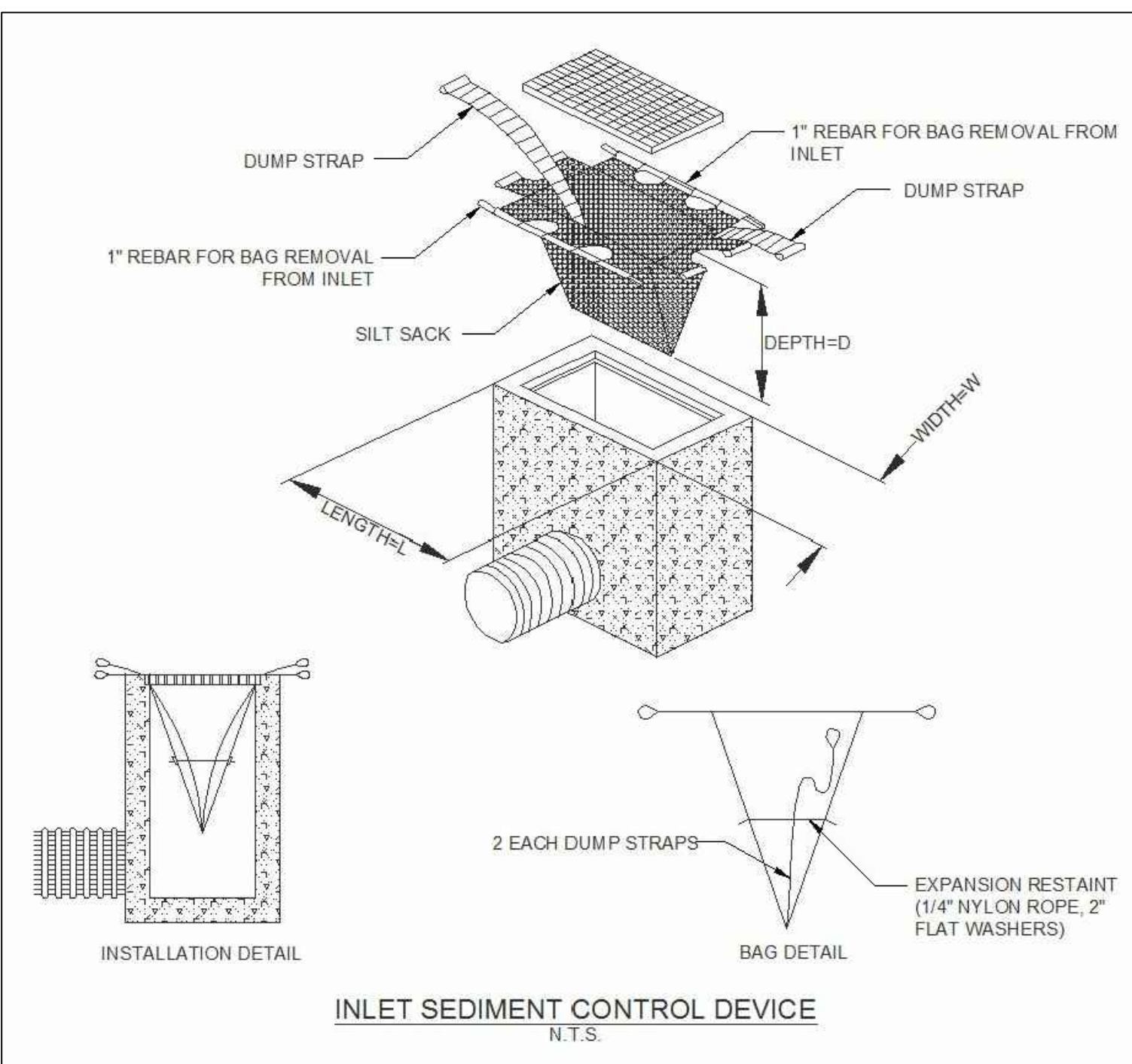
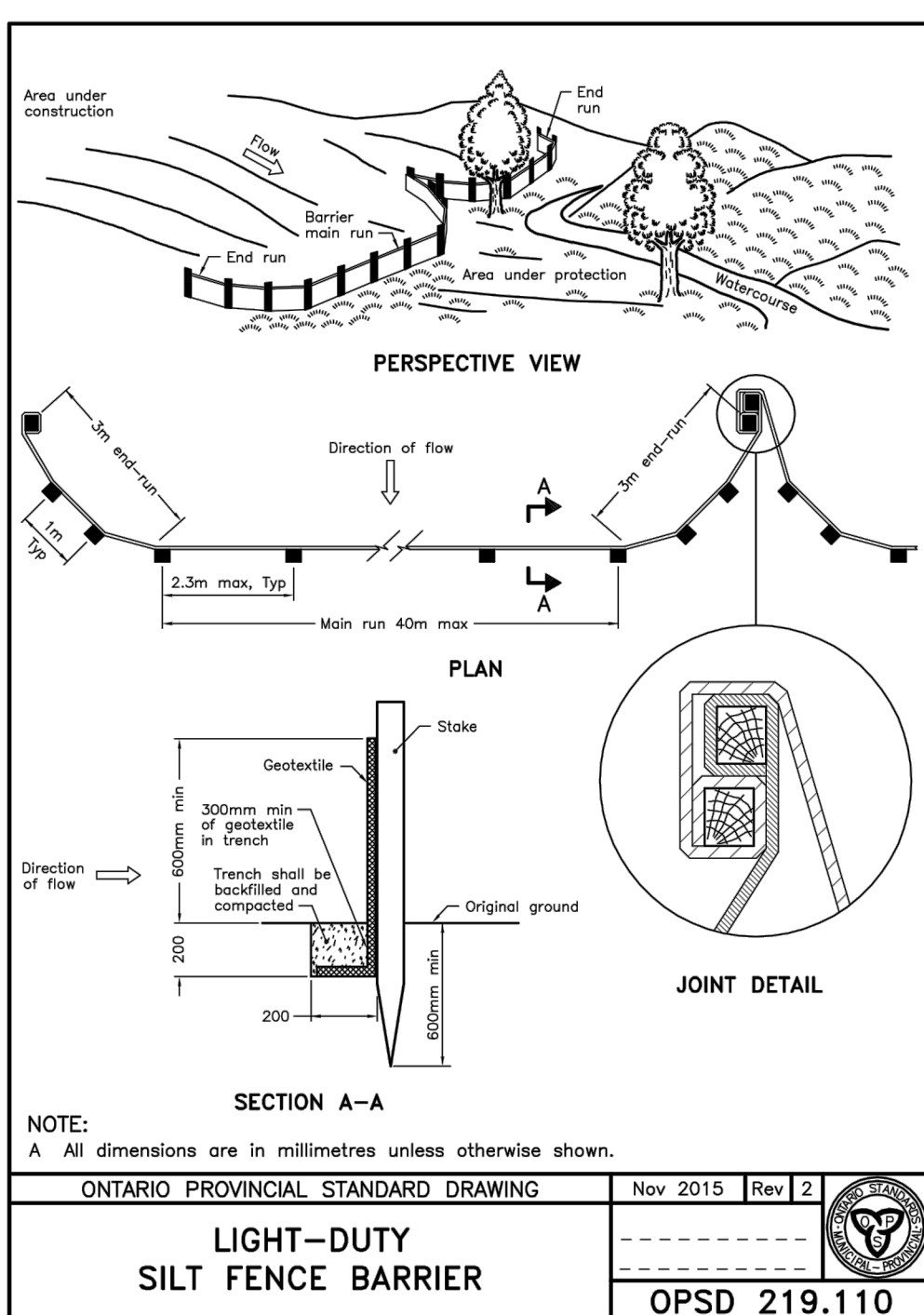
- \*\* CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES
- \*\* SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.

#### 1. PRIOR TO START OF CONSTRUCTION:

- PRIOR TO THE REMOVAL OF ANY VEGETATIVE COVER, MOVING OF SOIL AND CONSTRUCTION:
  - INSTALL SILT FENCE IMMEDIATELY DOWNSTREAM FROM AREAS TO BE DISTURBED (SEE PLAN FOR LOCATION).
  - INSTALL INLET SEDIMENT CONTROL DEVICES
  - INSTALL GEOSOCK INSERTS WITH AN OVERFLOW IN ALL THE DOWNSTREAM CATCHBASINS AND MANHOLES
  - INSTALL SILTSACK FILTERS IN ALL CONCRETE CATCH BASIN STRUCTURES
  - INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
2. DURING CONSTRUCTION:
- WORK TO BE DONE IN THE VICINITY OF MAJOR WATERWAYS TO BE CARRIED OUT FROM JULY 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.
  - 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 SEEDING IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
  - CONTROL WIND-BLOWN DUST OFF SITE TO ACCEPTABLE LEVELS BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED).
  - ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
  - NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS 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 PREVENT MUD TRACKING ONTO PAVED SURFACES. GRAVEL BED SHALL BE A MINIMUM OF 15m LONG, 4M WIDE AND 0.3m DEEP AND SHALL CONSIST OF COARSE (50mm CRUSHER-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 ADJUTING 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.
- IF PRESENT, REMOVE STRAW BALE FLOW CHECK DAMS, SILT FENCES AND FILTER CLOTHS ON CATCH BASINS AND MANHOLE COVERS AFTER DISTURBED AREAS HAVE BEEN REHABILITATED AND STABILIZED.
- INSPECT AND CLEAN CATCH BASIN SUMPS AND STORM SEWERS.



#### USE AND INTERPRETATION OF DRAWINGS:

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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.

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 PROVIDE 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.

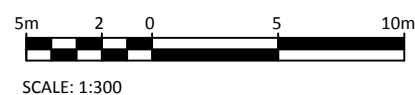
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CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.



APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

DERRICK MOODIE  
MANAGER, DEVELOPMENT REVIEW - WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



NOT AUTHENTIC UNLESS SIGNED AND DATED



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02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

CLIENT BENSON AUTO PARTS  
MR. GERRY BENSON  
700 EDUCATION ROAD, CONRWALL, ONTARIO  
K6H 6B8, TEL. 613-936-7850

DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT  
PROPOSED BENSON AUTO PARTS  
COMMERCIAL DEVELOPMENT  
1871 MERIVALE ROAD, NEPEAN, ON

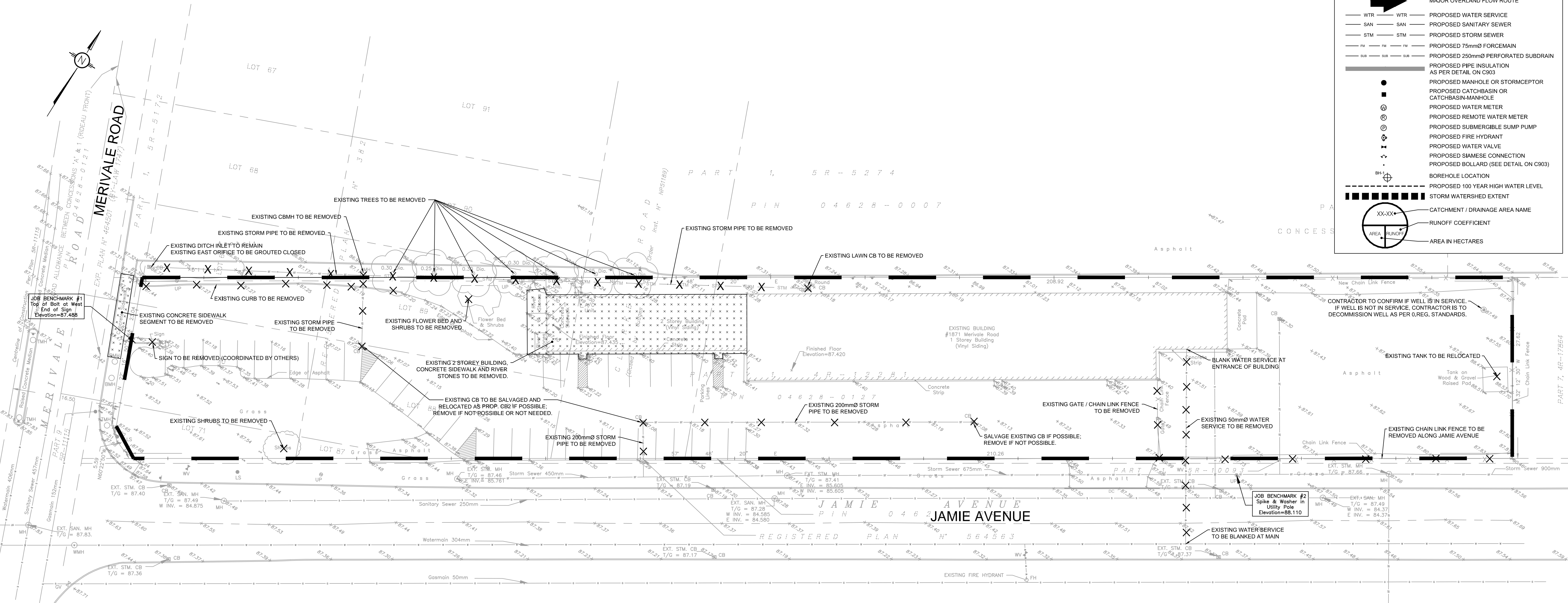
DRAWING TITLE  
EROSION AND SEDIMENT  
CONTROL PLAN

PROJECT NO.  
130828  
DATE  
25 August 2017

C101

D07-12-17-0054





LEGEND:	
	PROPERTY LINE
	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED DOOR ENTRANCE/EXIT
	PROPOSED GRASS AREA (IF POSSIBLE, EXISTING GRASS MAY REMAIN.)
	PROPOSED CONCRETE FEATURES/SLAB
	PROPOSED PERMEABLE PAVERS AS PER DETAILS ON C903
	PROPOSED HEAVY DUTY ASPHALT
	PROPOSED LIGHT DUTY ASPHALT
	ASPHALT TO BE REINSTATED TO MATCH EXISTING CONDITIONS
	0.3m WIDE (MIN.) STEP JOINT
	PROPOSED SILT FENCE AS PER OPSD 219.110
	PROPOSED ELEVATION
	PROPOSED HIGH POINT ELEVATION
	PROPOSED TOP OF GRATE ELEVATION
	PROPOSED DEPRESSED CURB ELEVATION
	PROPOSED BOTTOM OF CURB ELEVATION
	PROPOSED TOP OF CURB ELEVATION
	MATCH INTO EXISTING ELEVATION
	EXISTING ELEVATION
	MAJOR OVERLAND FLOW ROUTE
	PROPOSED WATER SERVICE
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	PROPOSED 75mmØ FORCEMAIN
	PROPOSED 250mmØ PERFORATED SUBDRAIN
	PROPOSED PIPE INSULATION AS PER DETAIL ON C903
	PROPOSED MANHOLE OR STORMCEPTOR
	PROPOSED CATCHBASIN OR CATCHBASIN-MANHOLE
	PROPOSED WATER METER
	PROPOSED REMOTE WATER METER
	PROPOSED SUBMERSIBLE SUMP PUMP
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED SIAMESE CONNECTION
	PROPOSED BOLLARD (SEE DETAIL ON C903)
	BOREHOLE LOCATION
	PROPOSED 100 YEAR HIGH WATER LEVEL
	STORM WATERSHED EXTENT
	CATCHMENT / DRAINAGE AREA NAME
	RUNOFF COEFFICIENT
	AREA IN HECTARES

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APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

DERRICK MOODIE  
MANAGER, DEVELOPMENT REVIEW - WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



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02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
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No.	REVISIONS	BY	DATE

CLIENT  
BENSON AUTO PARTS  
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700 EDUCATION ROAD, CONRWAAL, ONTARIO  
K6H 6B8, TEL. 613-936-7850

DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT  
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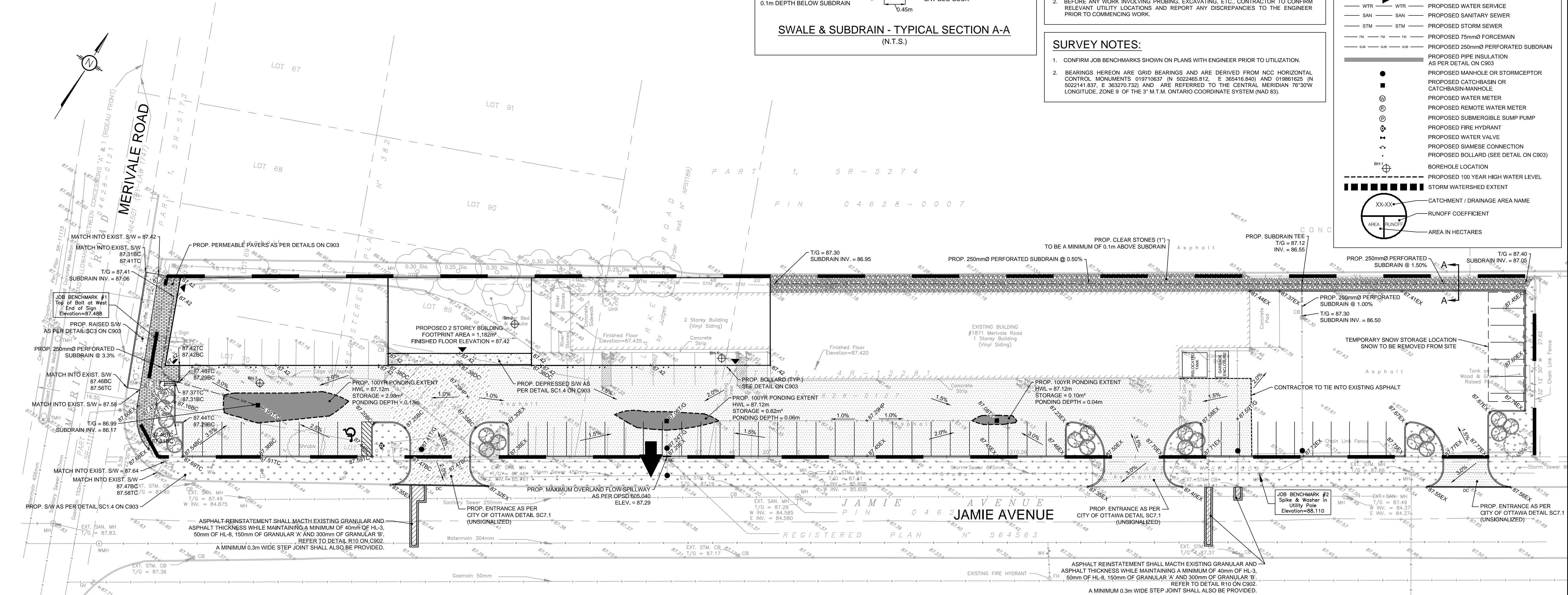
DRAWING TITLE  
DEMOLITION PLAN

PROJECT NO.  
130828  
DATE  
25 August 2017

C102

D07-12-17-0054





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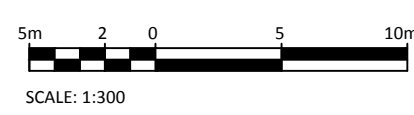
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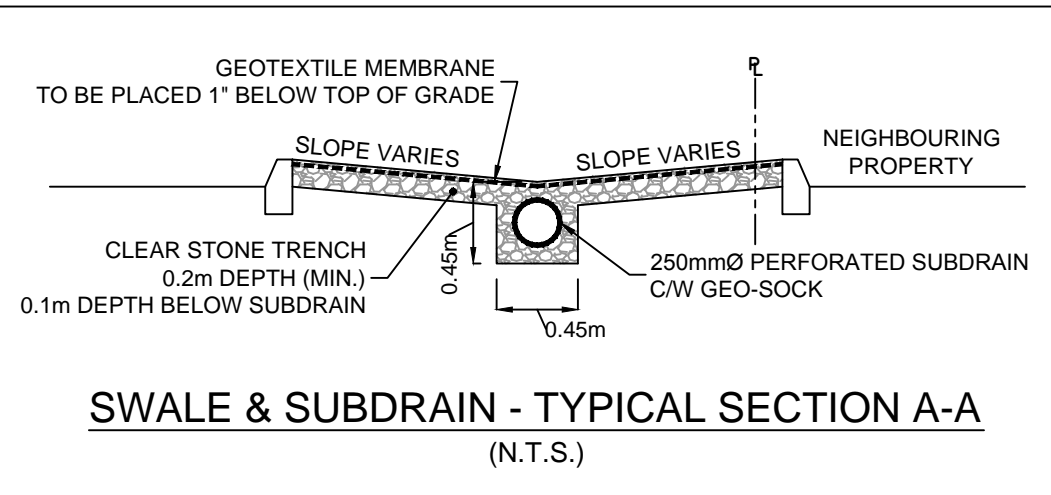
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### PAVEMENT STRUCTURE

COURSE	MATERIAL	THICKNESS (mm)	
		AUTOMOBILE PARKING	TRUCK ROUTE (HEAVY TRAFFIC)
SURFACE	HL-3 A/C (PG 58-28)	50	40
BINDER	HL-8 A/C (PG 58-28)	--	40
BASECOURSE	GRANULAR "A"	150	150
SUBBASE	GRANULAR "B" TYPE II	250	350

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



### GENERAL NOTES:

- ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A CLEAN CUT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
- CURBS TO BE BARRIER, CONSTRUCTED AS PER DETAIL SC1.1 ON C903.
- ALL SIDEWALK CONSTRUCTION TO BE AS PER DETAILS SC1.4 AND SC2 ON C903.
- 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.
- OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION. SUCH AS, BUT NOT LIMITED TO: ROAD CUT PERMITS, SEWER PERMITS, WATER PERMIT, ETC. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS REQUIRED TO COMPLETE THE CONSTRUCTION PROJECT.
- INLET SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED BETWEEN THE FRAME AND COVER OF ALL CATCHBASINS AND CATCHBASIN MANHOLES DURING THE CONSTRUCTION PERIOD TO MINIMIZE SEDIMENTS ENTERING THE STORM SEWER SYSTEM. ALL GRASSED AREAS MUST BE COMPLETED PRIOR TO THE REMOVAL OF THE FILTER FABRIC IN THE CATCH BASINS.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS, IF ANY, LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.

### UTILITY NOTES:

- UNDERGROUND UTILITIES, AS REPORTED ON THIS DRAWING, ARE NOT BASED ON AN ACTUAL FIELD LOCATE BY THE RESPECTIVE UTILITY AGENCIES BUT HAVE BEEN COMPILED FROM DATA OBTAINED FROM THE CITY OF OTTAWA PUBLIC UTILITIES REGISTRY.
- BEFORE ANY WORK INVOLVING PROBING, EXCAVATING, ETC., CONTRACTOR TO CONFIRM RELEVANT UTILITY LOCATIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.

### SURVEY NOTES:

- CONFIRM JOB BENCHMARKS SHOWN ON PLANS WITH ENGINEER PRIOR TO UTILIZATION.
- BEARINGS HEREON ARE GRID BEARINGS AND ARE DERIVED FROM NCC HORIZONTAL CONTROL MONUMENTS: 019710837 (N 5022465.812, E 365418.840) AND 019616225 (N 5022141.837, E 363270.732) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76°30'W LONGITUDE, ZONE 9 OF THE 3° M.T.M. ONTARIO COORDINATE SYSTEM (NAD 83).

### LEGEND:

PROPERTY LINE

PROPOSED CURB

PROPOSED DEPRESSED CURB

PROPOSED DOOR ENTRANCE/EXIT

PROPOSED GRASS AREA (IF POSSIBLE, EXISTING GRASS MAY REMAIN.)

PROPOSED CONCRETE FEATURES/SLAB

PROPOSED PERMEABLE PAVERS AS PER DETAILS ON C903

PROPOSED HEAVY DUTY ASPHALT

PROPOSED LIGHT DUTY ASPHALT

ASPHALT TO BE REINSTATED TO MATCH EXISTING CONDITIONS

0.3m WIDE (MIN.) STEP JOINT

PROPOSED SILT FENCE AS PER OPSS 219.110

PROPOSED ELEVATION

PROPOSED HIGH POINT ELEVATION

PROPOSED TOP OF GRATE ELEVATION

PROPOSED DEPRESSED CURB ELEVATION

PROPOSED BOTTOM OF CURB ELEVATION

PROPOSED TOP OF CURB ELEVATION

MATCH INTO EXISTING ELEVATION

MAJOR OVERLAND FLOW ROUTE

PROPOSED WATER SERVICE

PROPOSED SANITARY SEWER

PROPOSED STORM SEWER

PROPOSED 75mmØ FORCEMAIN

PROPOSED 250mmØ PERFORATED SUBDRAIN

PROPOSED PIPE INSULATION AS PER DETAIL ON C903

PROPOSED MANHOLE OR STORMCEPTOR

PROPOSED CATCHBASIN OR CATCHBASIN/MANHOLE

PROPOSED WATER METER

PROPOSED REMOTE WATER METER

PROPOSED SUBMERGIBLE PUMP PUMP

PROPOSED FIRE HYDRANT

PROPOSED WATER VALVE

PROPOSED SIAMSE CONNECTION

PROPOSED BOLLARD (SEE DETAIL ON C903)

BOREHOLE LOCATION

PROPOSED 100 YEAR HIGH WATER LEVEL

STORM WATERSHED EXTENT

CATCHMENT / DRAINAGE AREA NAME

RUNOFF COEFFICIENT

AREA IN HECTARES

WTR

WTR

SAN

SAN

STM

STM

FM

FM

SUB

SUB

BH

BH

XX-XX

AREA

RUNOFF

APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

DERRICK MOODIE  
MANAGER, DEVELOPMENT REVIEW - WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

LRL

ENGINEERING / INGÉNIERIE

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

02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

CLIENT

BENSON AUTO PARTS  
MR. GERRY BENSON  
700 EDUCATION ROAD, CONNORWALL, ONTARIO  
K6H 6B8, TEL. 613-936-7850

DESIGNED BY:

G.C.

DRAWN BY:

G.C.

APPROVED BY:

M.G.

PROJECT

PROPOSED BENSON AUTO PARTS  
COMMERCIAL DEVELOPMENT  
1871 MERIVALE ROAD, NEPEAN, ON

DRAWING TITLE

GRADING AND DRAINAGE PLAN

PROJECT NO.

130828

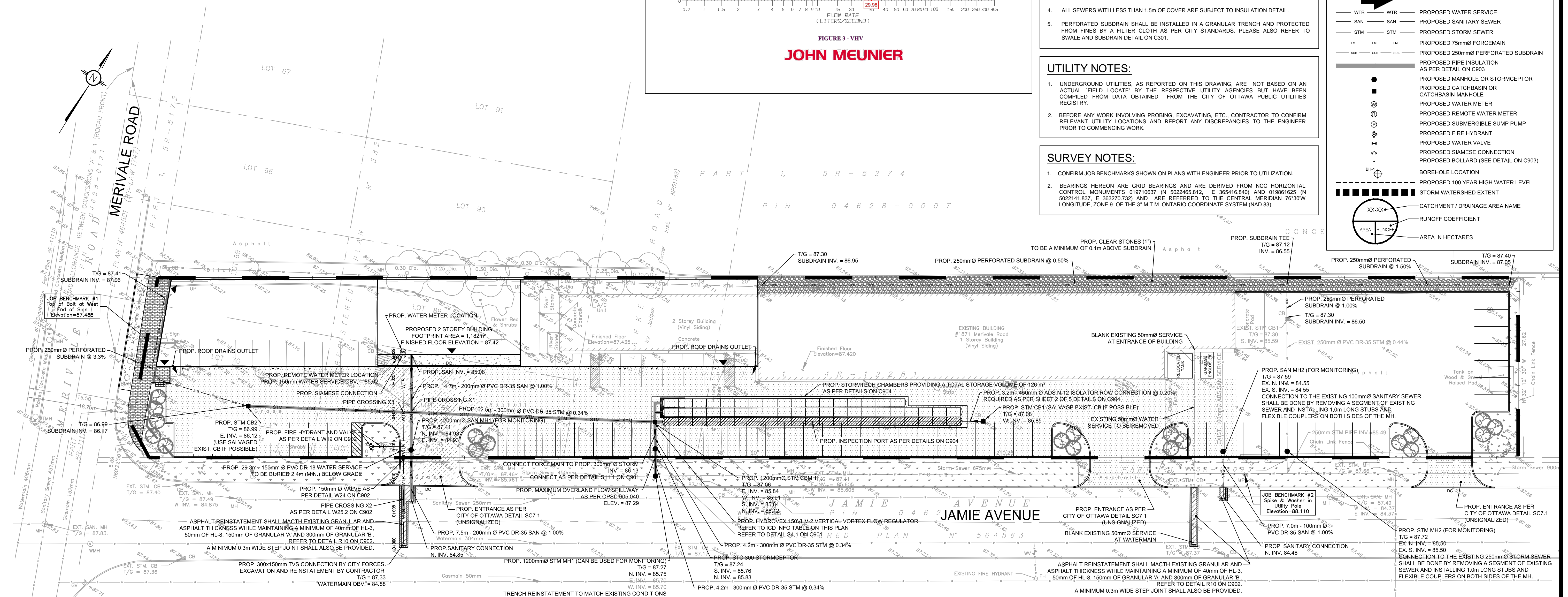
DATE

25 August 2017

C301

D07-12-17-0054





**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'S CONTRACT DOCUMENTS, 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 COPIES 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.

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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.

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 SUBCONTRACTOR 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.

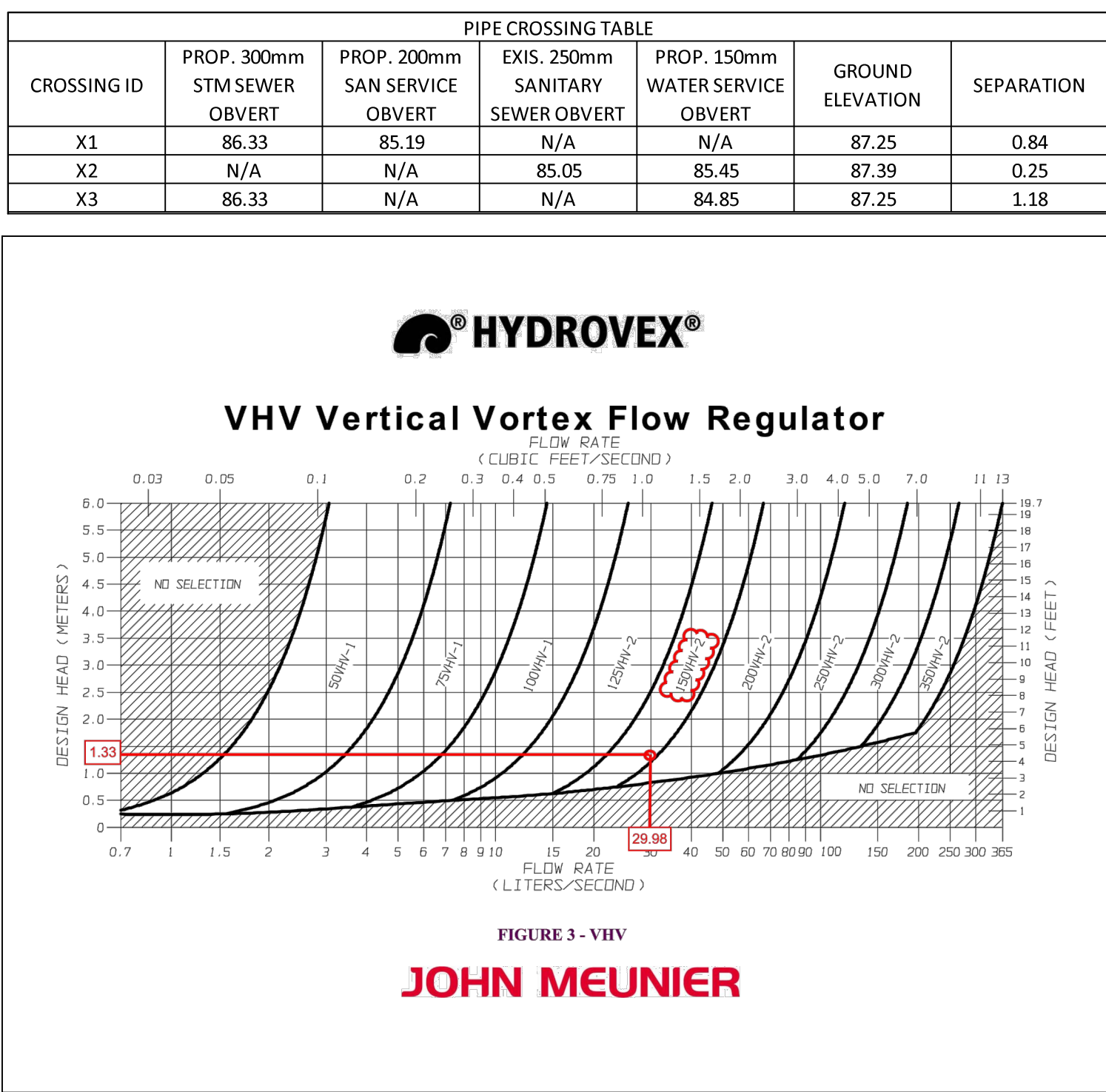
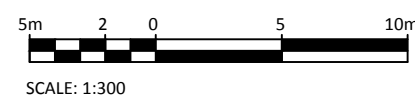
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CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

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.

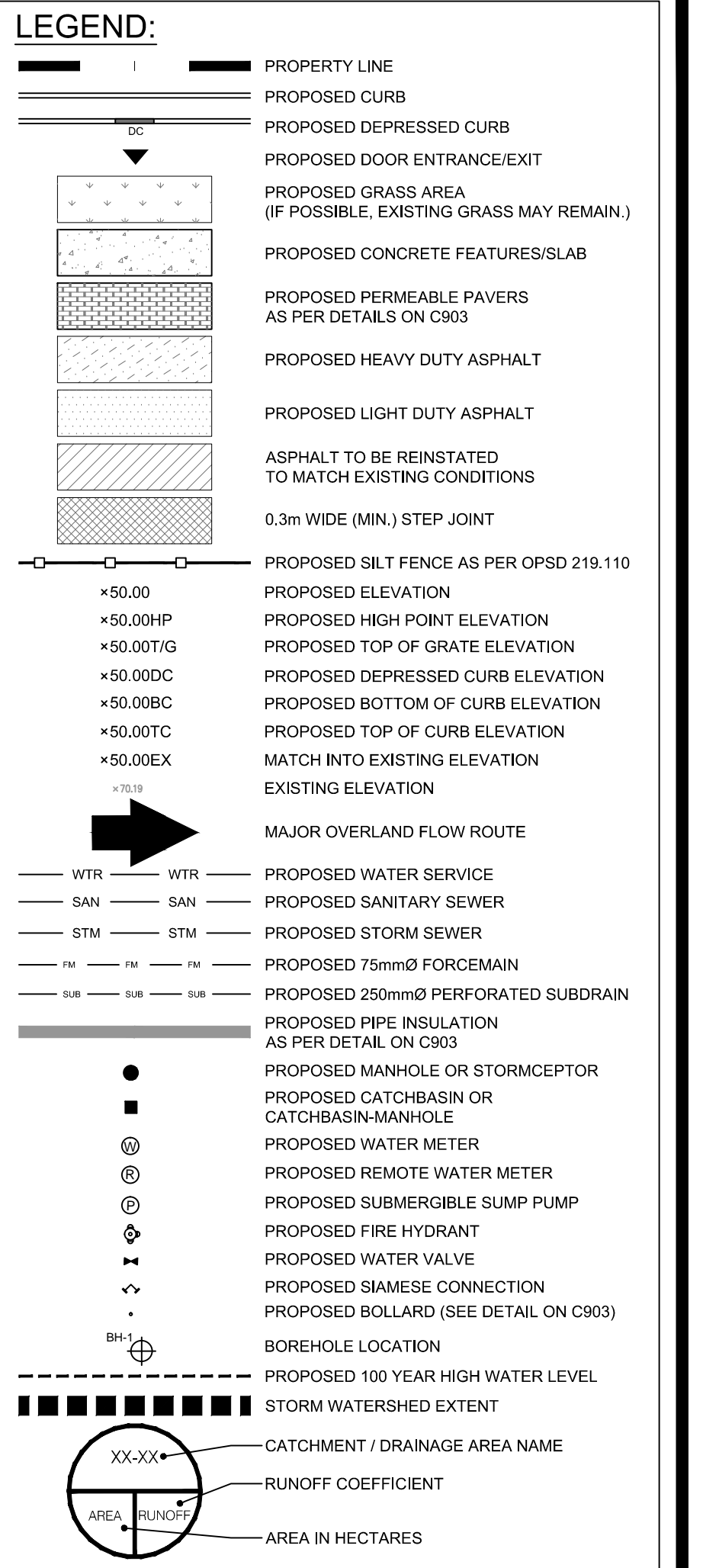
CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.



- NOTES: GENERAL**
- 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 300mm WIDTH MINIMUM.
  - OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, ROAD CUT PERMITS, SEWER PERMITS, WATER PERMIT, ETC. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS REQUIRED TO COMPLETE THE CONSTRUCTION PROJECT.
  - FILTER FABRIC TO BE INSTALLED AND MAINTAINED BETWEEN THE FRAME AND COVER OF ALL CATCHBASINS AND CATCHBASIN MANHOLES DURING THE CONSTRUCTION PERIOD TO MINIMIZE SEDIMENTS ENTERING THE STORM SEWER SYSTEM. ALL GRASSED AREAS MUST BE COMPLETED PRIOR TO THE REMOVAL OF THE FILTER FABRIC IN THE CATCH BASINS.
  - REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS, IF ANY, LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
  - 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.

- NOTES: SEWER**
- SEWER BEDDING AS PER PIPE TRENCH DETAIL WITH GRANULAR 'A' BEDDING COMPACTED TO 95% OF ITS SPMD.
  - ALL WORK SHALL BE PERFORMED, AS APPLICABLE IN ACCORDANCE WITH OPSS 407, AND 410.
  - CONTRACTOR TO CONFIRM ELEVATION OF EXISTING SEWERS AT PROPOSED CONNECTION POINTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING ANY WORK.
  - ALL SEWERS WITH LESS THAN 1.5m OF COVER ARE SUBJECT TO INSULATION DETAIL.
  - PERFORATED SUBDRAIN SHALL BE INSTALLED IN A GRANULAR TRENCH AND PROTECTED FROM FINES BY A FILTER CLOTH AS PER CITY STANDARDS. PLEASE ALSO REFER TO SWALE AND SUBDRAIN DETAIL ON C301.

- UTILITY NOTES:**
- UNDERGROUND UTILITIES, AS REPORTED ON THIS DRAWING, ARE NOT BASED ON AN ACTUAL 'FIELD LOCATE' BY THE RESPECTIVE UTILITY AGENCIES BUT HAVE BEEN COMPILED FROM DATA OBTAINED FROM THE CITY OF OTTAWA PUBLIC UTILITIES REGISTRY.
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APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

**DERRICK MOODIE**  
MANAGER, DEVELOPMENT REVIEW - WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

CLIENT: BENSON AUTO PARTS  
MR. GERRY BENSON  
700 EDUCATION ROAD, CONRWALL, ONTARIO  
K6H 6B8, TEL. 613-936-7850

DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT: PROPOSED BENSON AUTO PARTS  
COMMERCIAL DEVELOPMENT  
1871 MERIVALE ROAD, NEPEAN, ON

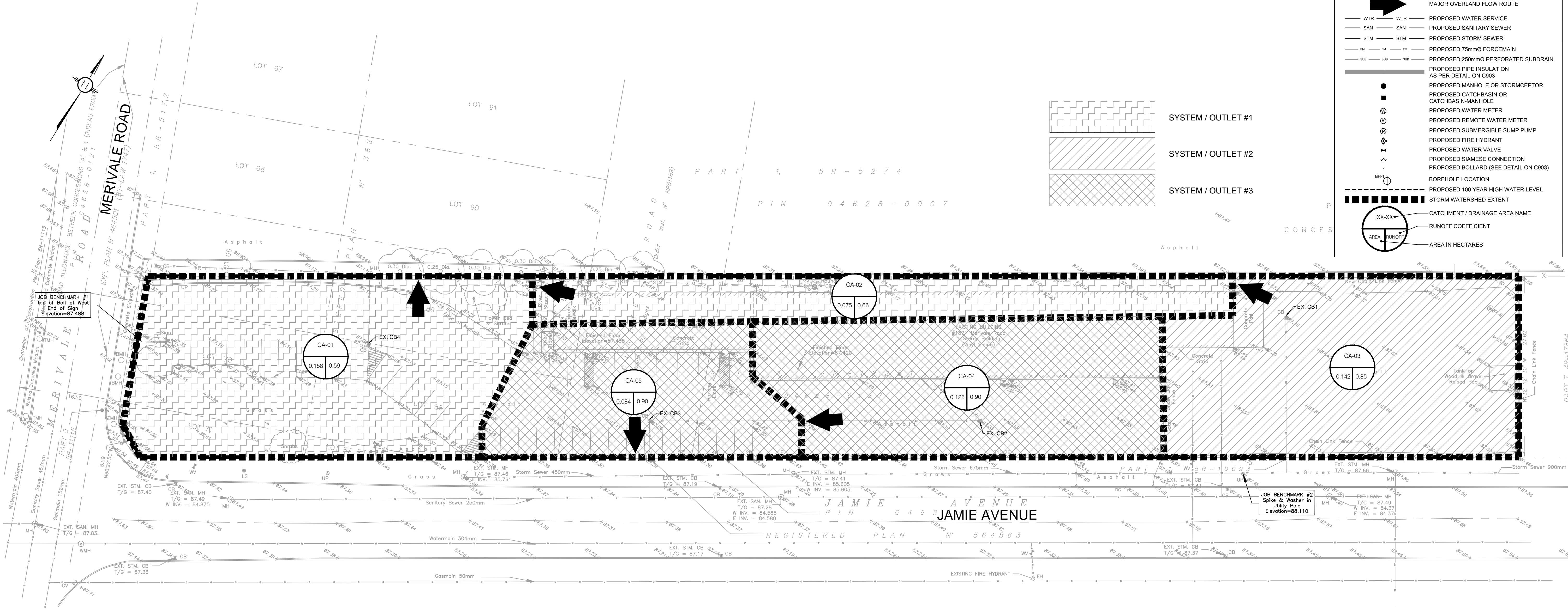
DRAWING TITLE: SITE SERVICING PLAN

PROJECT NO: 130828  
DATE: 25 August 2017

**C401**

D07-12-17-0054





LEGEND:	
	PROPERTY LINE
	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED DOOR ENTRANCE/EXIT
	PROPOSED GRASS AREA (IF POSSIBLE, EXISTING GRASS MAY REMAIN.)
	PROPOSED CONCRETE FEATURES/SLAB
	PROPOSED PERMEABLE PAVERS AS PER DETAILS ON C903
	PROPOSED HEAVY DUTY ASPHALT
	PROPOSED LIGHT DUTY ASPHALT
	ASPHALT TO BE REINSTATED TO MATCH EXISTING CONDITIONS
	0.3m WIDE (MIN.) STEP JOINT
	PROPOSED SILT FENCE AS PER OPSD 219.110
	PROPOSED ELEVATION
	PROPOSED HIGH POINT ELEVATION
	PROPOSED TOP OF GRATE ELEVATION
	PROPOSED DEPRESSED CURB ELEVATION
	PROPOSED BOTTOM OF CURB ELEVATION
	PROPOSED TOP OF CURB ELEVATION
	MATCH INTO EXISTING ELEVATION
	EXISTING ELEVATION
	MAJOR OVERLAND FLOW ROUTE
	PROPOSED WATER SERVICE
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	PROPOSED 75mm Ø FORCE MAIN
	PROPOSED 250mm Ø PERFORATED SUBDRAIN
	PROPOSED PIPE INSULATION AS PER DETAIL ON C903
	PROPOSED MANHOLE OR STORMCEPTOR
	PROPOSED CATCHBASIN OR CATCHBASIN-MANHOLE
	PROPOSED WATER METER
	PROPOSED REMOTE WATER METER
	PROPOSED SUBMERSIBLE SUMP PUMP
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED SIAMESE CONNECTION
	PROPOSED BOLLARD (SEE DETAIL ON C903)
	BOREHOLE LOCATION
	PROPOSED 100 YEAR HIGH WATER LEVEL
	STORM WATERSHED EXTENT
	CATCHMENT / DRAINAGE AREA NAME
	RUNOFF COEFFICIENT
	AREA IN HECTARES

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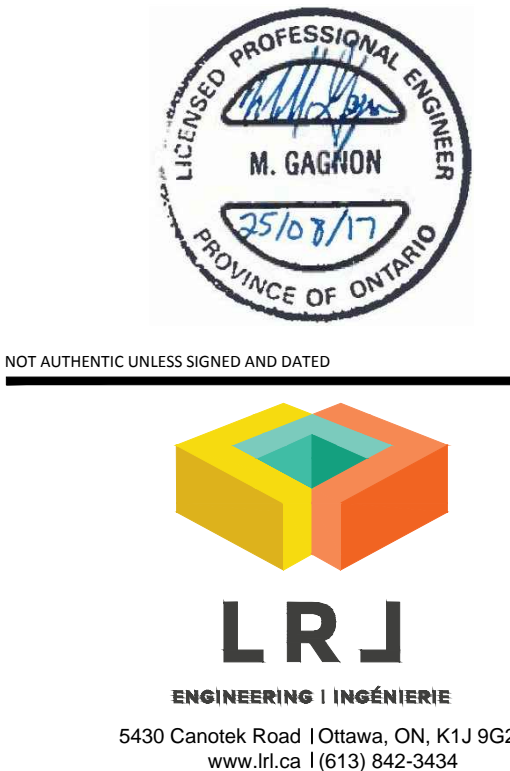
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APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

DERRICK MOODIE  
MANAGER, DEVELOPMENT REVIEW - WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

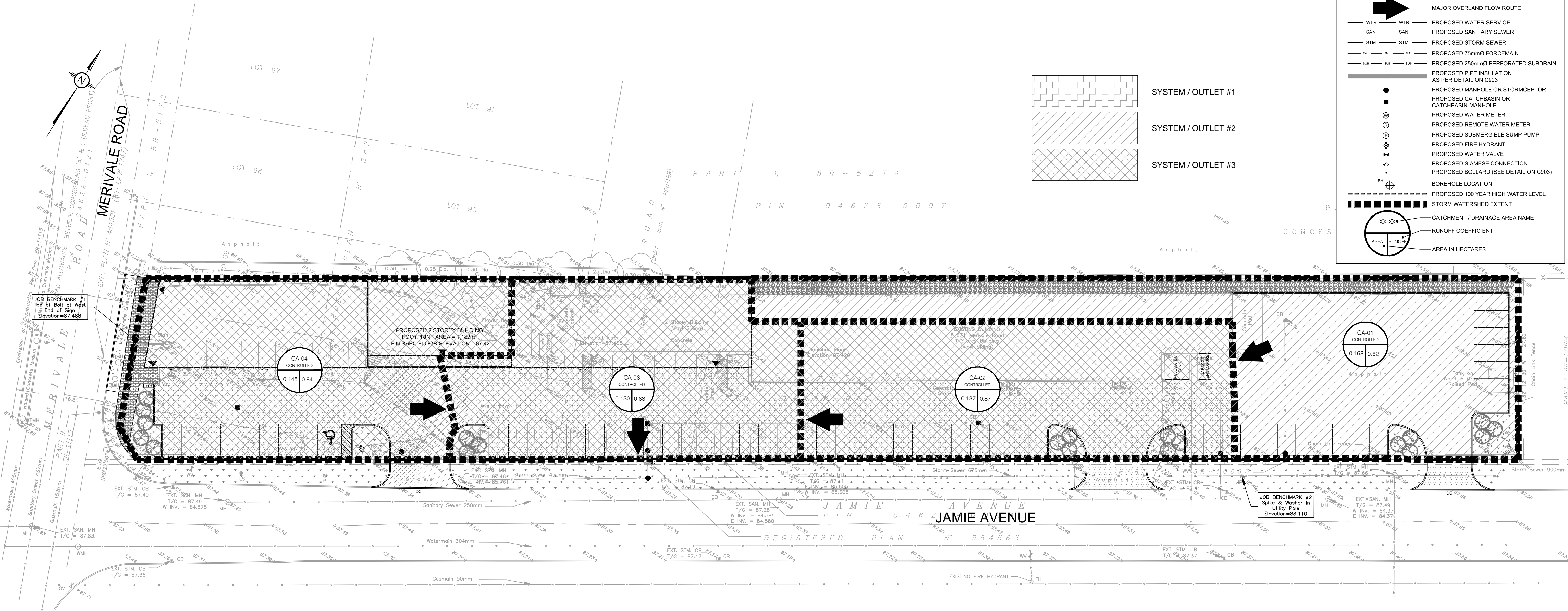


02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

CLIENT	BENSON AUTO PARTS MR. GERRY BENSON 700 EDUCATION ROAD, CONRWAAL, ONTARIO K6H 6B8, TEL. 613-936-7850	
DESIGNED BY:	DRAWN BY:	APPROVED BY:
G.C.	G.C.	M.G.
PROJECT		
PROPOSED BENSON AUTO PARTS COMMERCIAL DEVELOPMENT 1871 MERIVALE ROAD, NEPEAN, ON		
DRAWING TITLE		
PRE-DEVELOPMENT CATCHMENTS PLAN		
PROJECT NO.	130828	C701
DATE	25 August 2017	

D07-12-17-0054





**LEGEND:**

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	PROPOSED DEPRESSED CURB
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	PROPOSED BOTTOM OF CURB ELEVATION
	PROPOSED TOP OF CURB ELEVATION
	MATCH INTO EXISTING ELEVATION
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APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

**DERRICK MOODIE**  
MANAGER, DEVELOPMENT REVIEW – WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



NOT AUTHENTIC UNLESS SIGNED AND DATED



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

02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

CLIENT: BENSON AUTO PARTS  
MR. GERRY BENSON  
700 EDUCATION ROAD, CONRAWALL, ONTARIO  
K6H 6B8, TEL. 613-936-7850

DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT: PROPOSED BENSON AUTO PARTS  
COMMERCIAL DEVELOPMENT  
1871 MERIVALE ROAD, NEPEAN, ON

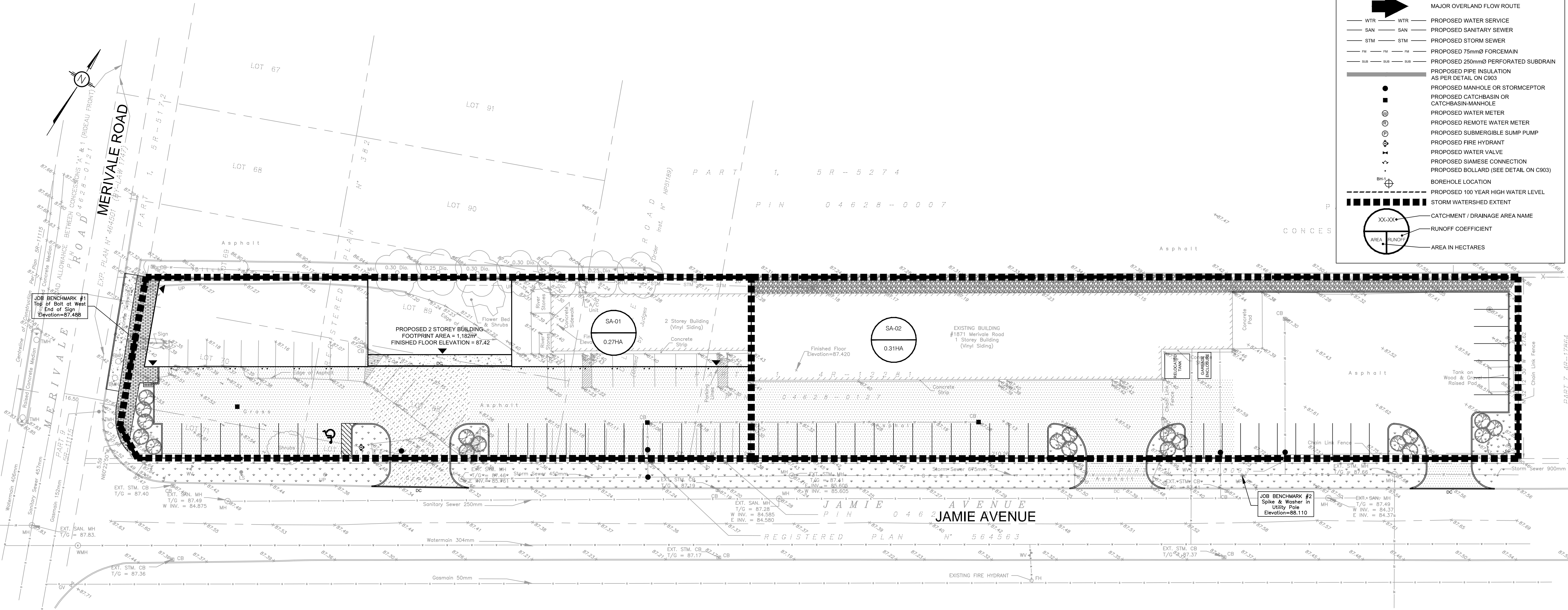
DRAWING TITLE: POST DEVELOPMENT  
CATCHMENTS PLAN

PROJECT NO.: 130828  
DATE: 25 August 2017

**C702**

D07-12-17-0054





**LEGEND:**

- PROPERTY LINE
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED DOOR ENTRANCE/EXIT
- PROPOSED GRASS AREA (IF POSSIBLE, EXISTING GRASS MAY REMAIN.)
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED PERMEABLE PAVERS AS PER DETAILS ON C903
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- ASPHALT TO BE REINSTATED TO MATCH EXISTING CONDITIONS
- 0.3m WIDE (MIN.) STEP JOINT
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED ELEVATION
- PROPOSED HIGH POINT ELEVATION
- PROPOSED TOP OF GRATE ELEVATION
- PROPOSED DEPRESSED CURB ELEVATION
- PROPOSED BOTTOM OF CURB ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- MATCH INTO EXISTING ELEVATION
- EXISTING ELEVATION
- MAJOR OVERLAND FLOW ROUTE
- PROPOSED WATER SERVICE
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED 75mmØ FORCEMAIN
- PROPOSED 250mmØ PERFORATED SUBDRAIN
- PROPOSED PIPE INSULATION AS PER DETAIL ON C903
- PROPOSED MANHOLE OR STORMCEPTOR
- PROPOSED CATCHBASIN OR CATCHBASIN/MANHOLE
- PROPOSED WATER METER
- PROPOSED REMOTE WATER METER
- PROPOSED SUBMERSIBLE SUMP PUMP
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED SIAMESE CONNECTION
- PROPOSED BOLLARD (SEE DETAIL ON C903)
- BOREHOLE LOCATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- CATCHMENT / DRAINAGE AREA NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES

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01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

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MR. GERRY BENSON  
700 EDUCATION ROAD, CONRWALL, ONTARIO  
K9H 6B8, TEL: 613-936-7850

DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT: PROPOSED BENSON AUTO PARTS  
COMMERCIAL DEVELOPMENT  
1871 MERIVALE ROAD, NEPEAN, ON

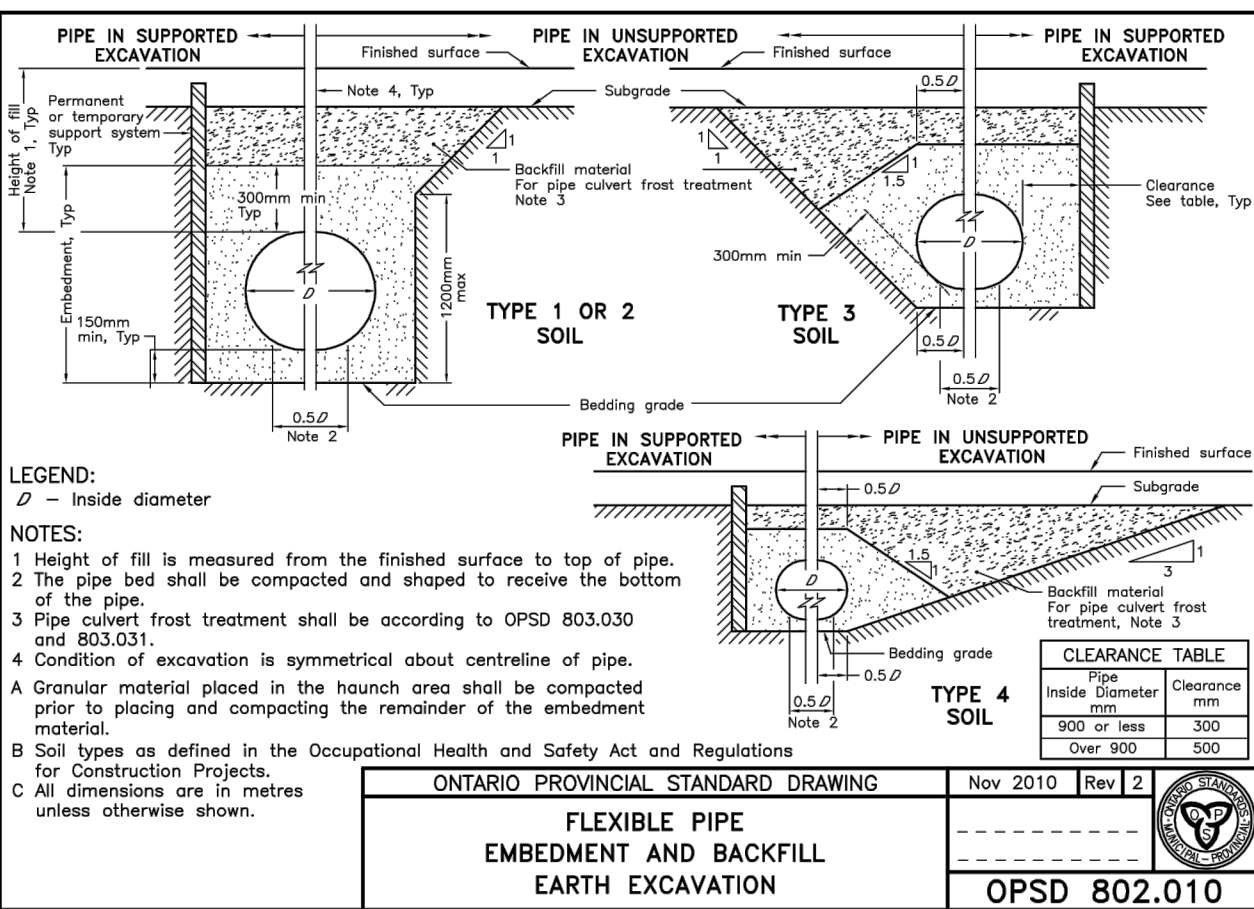
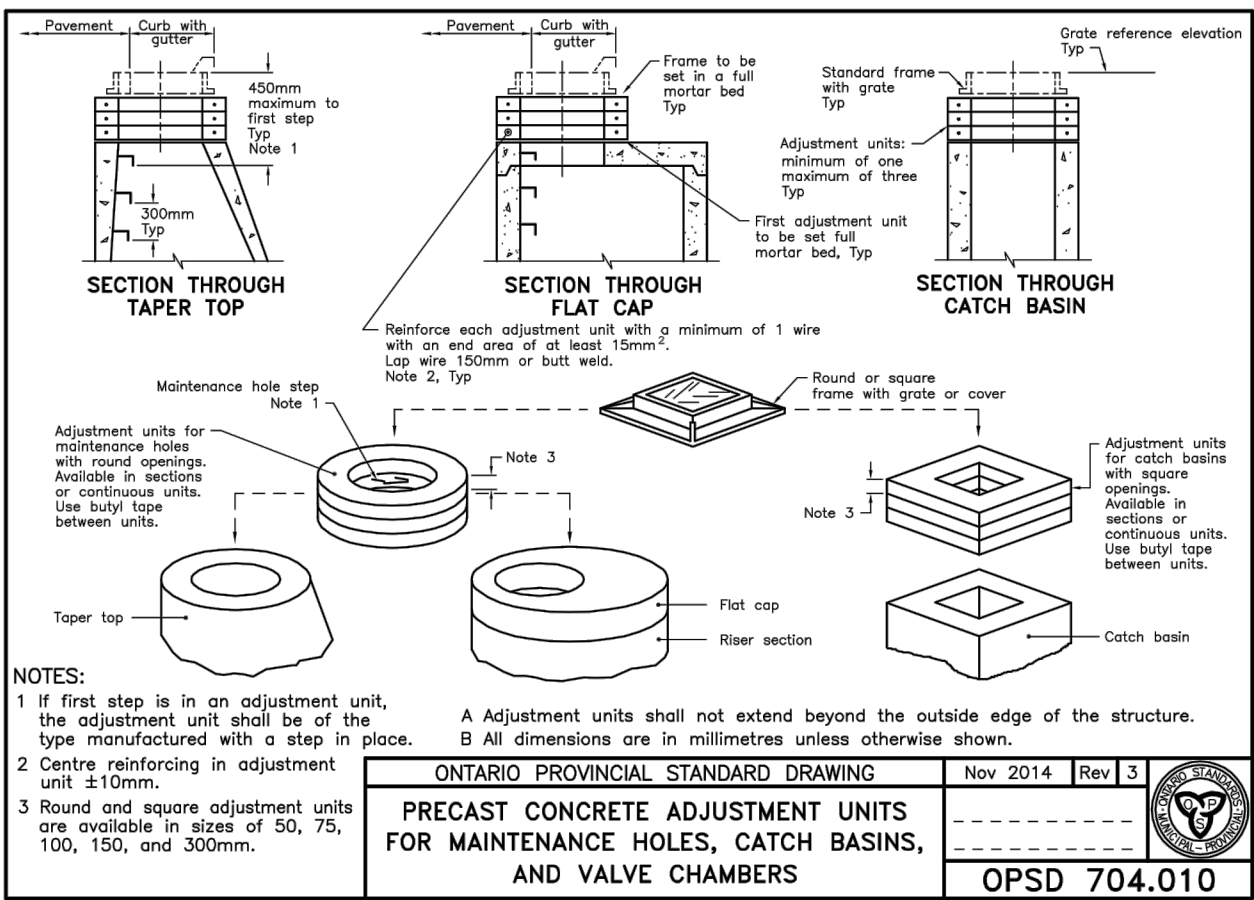
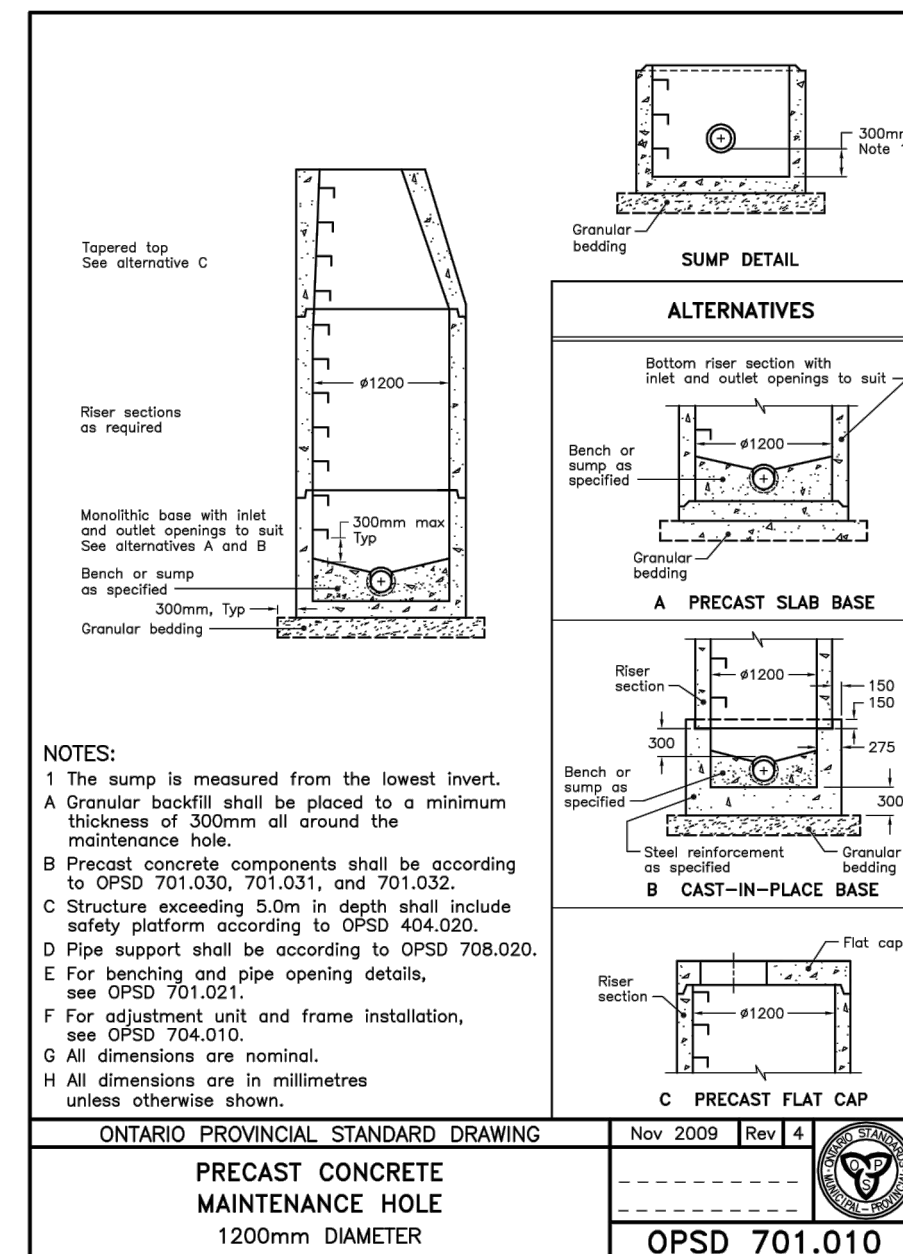
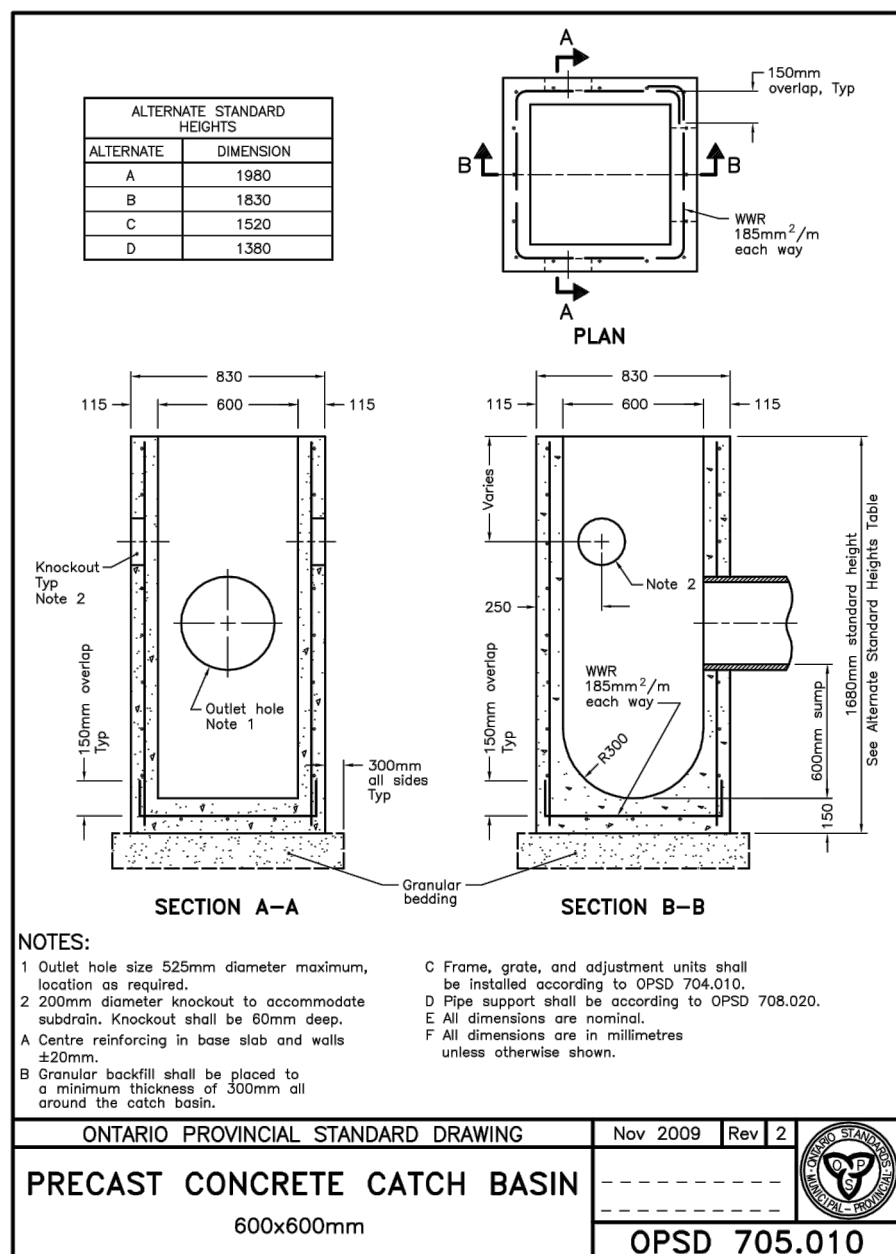
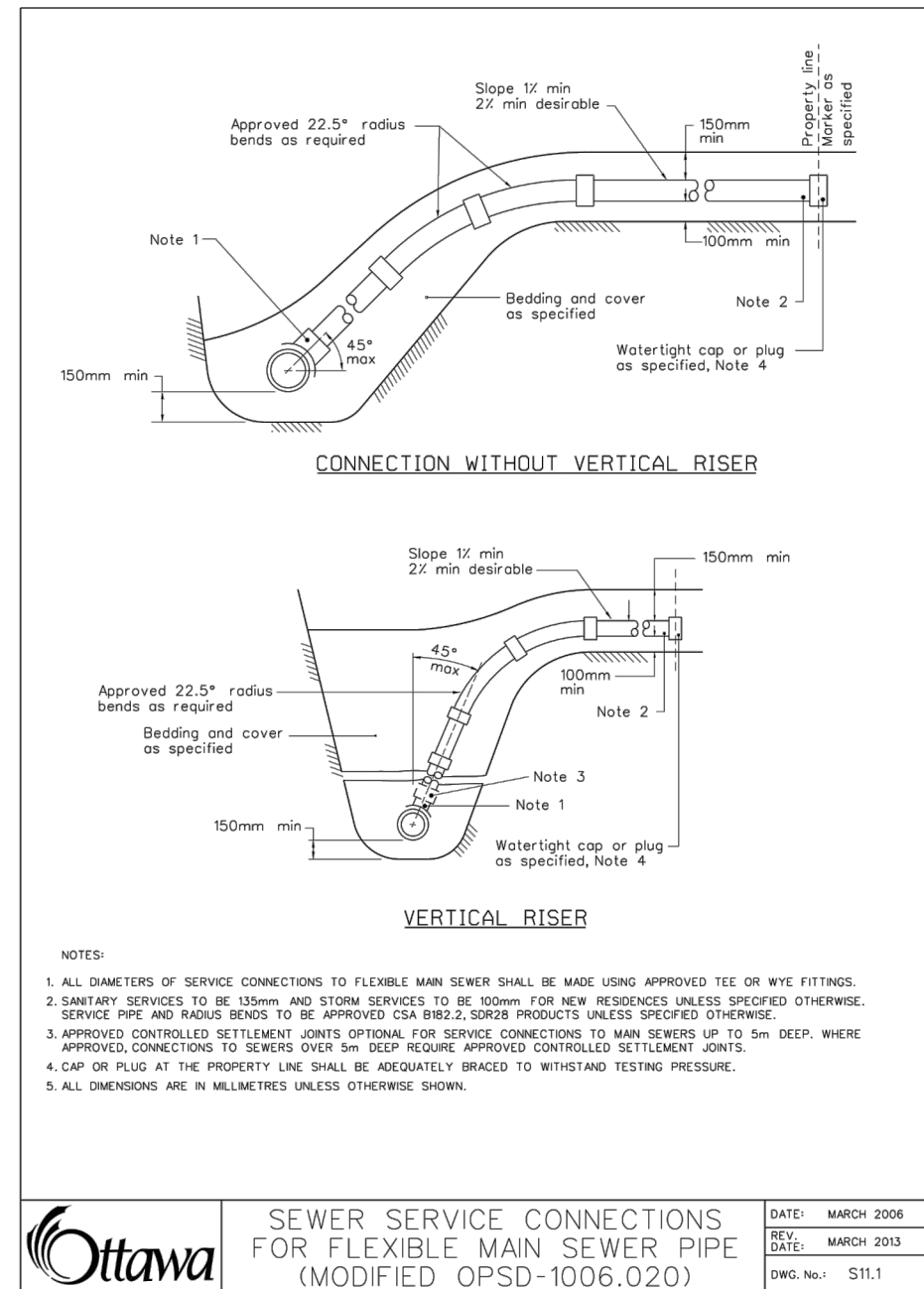
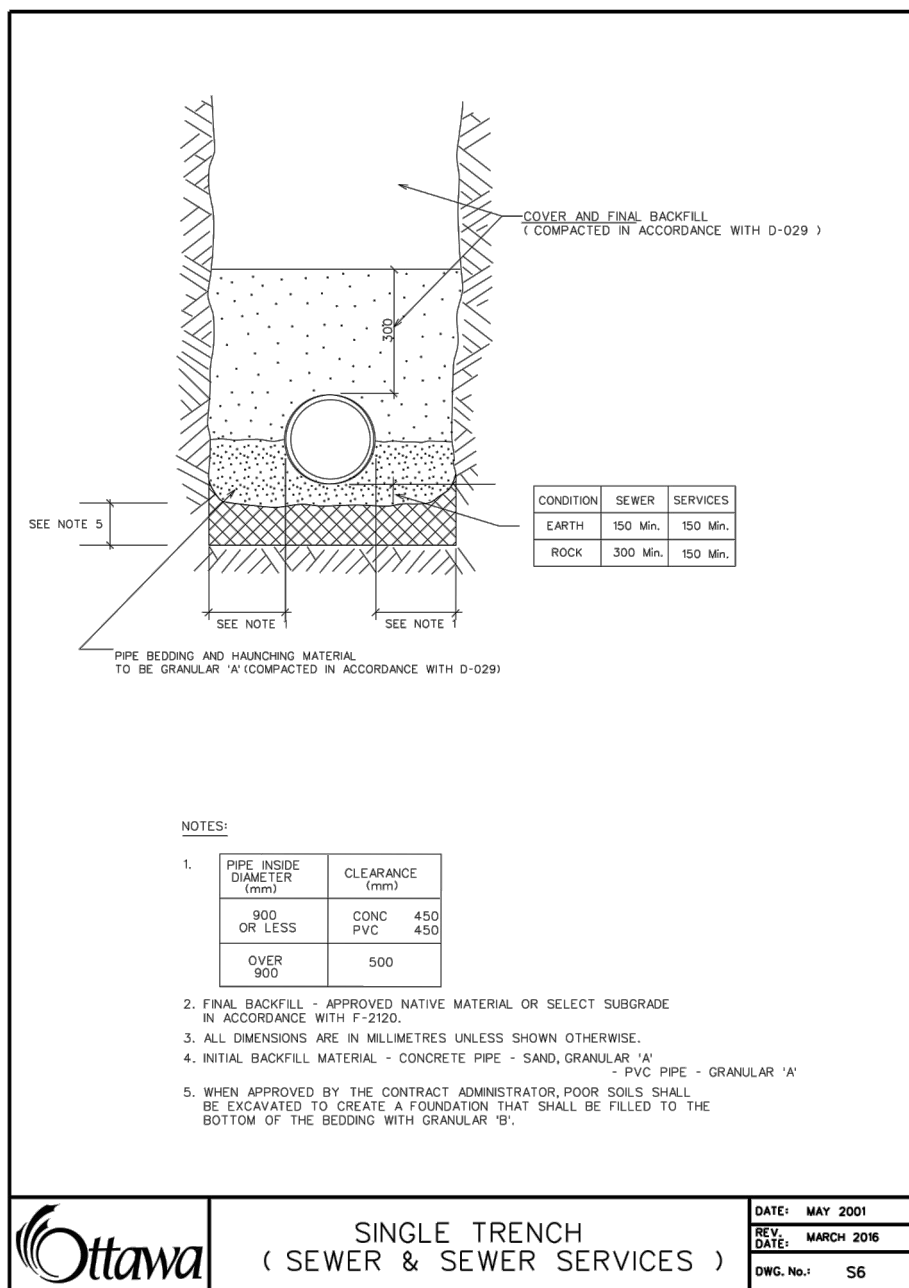
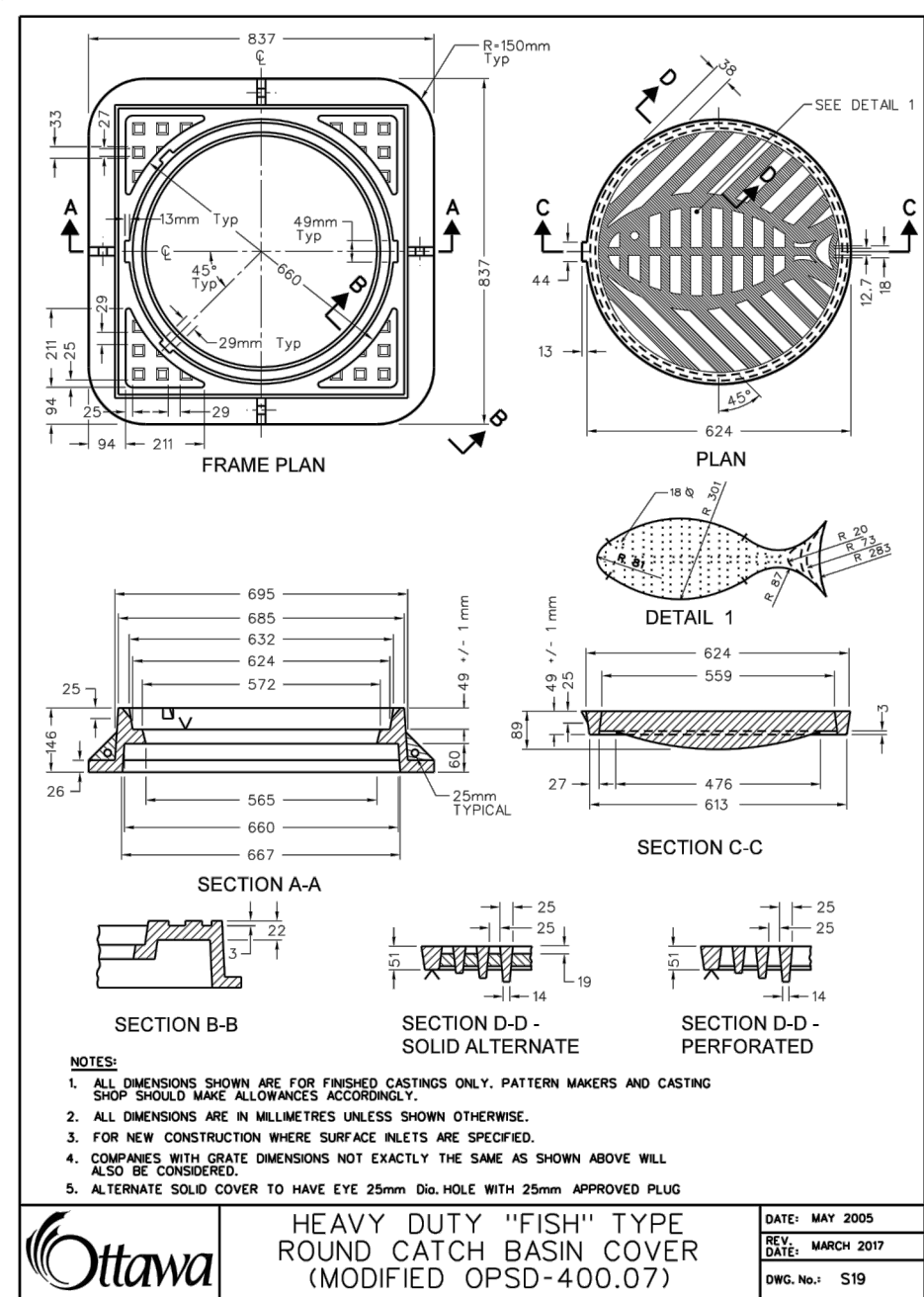
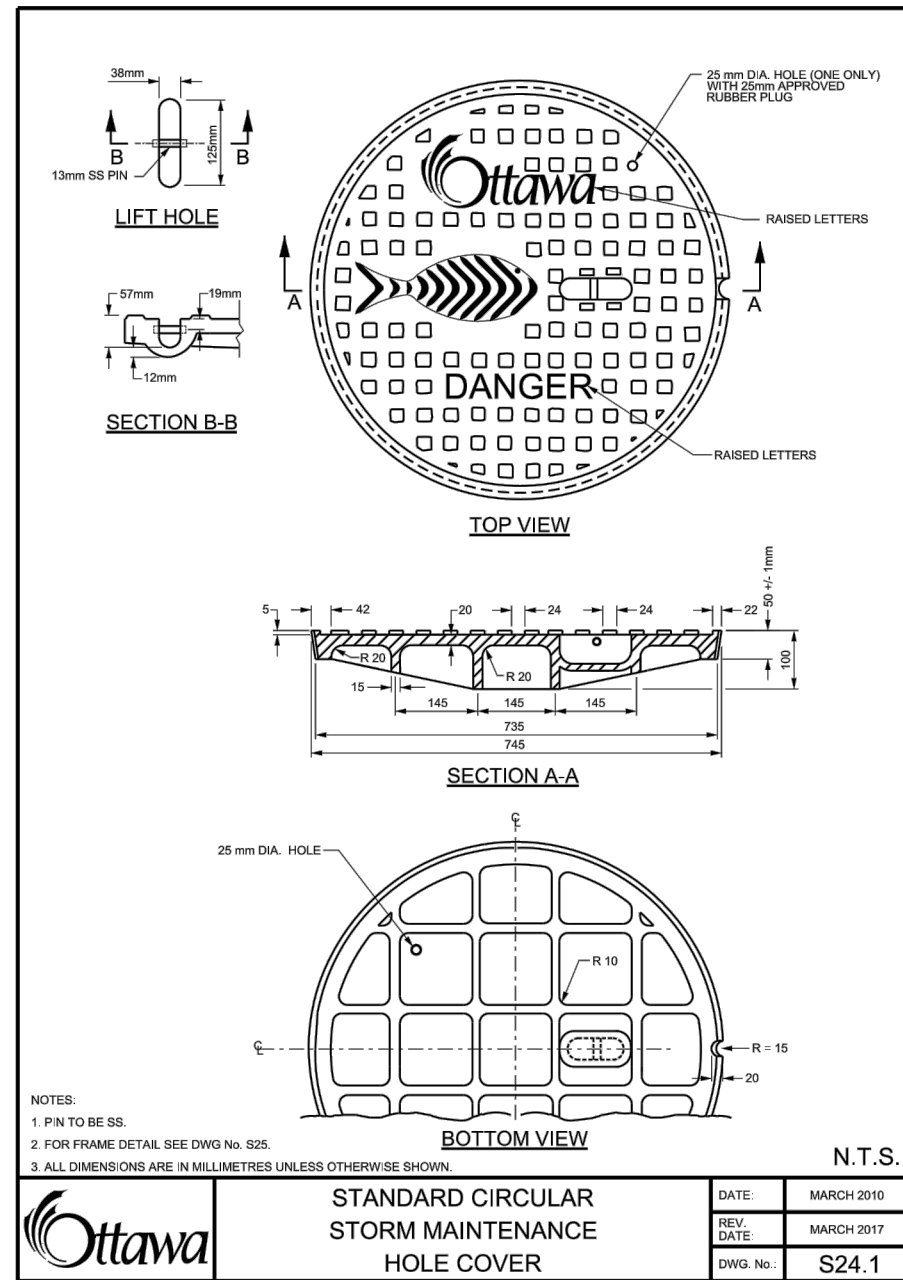
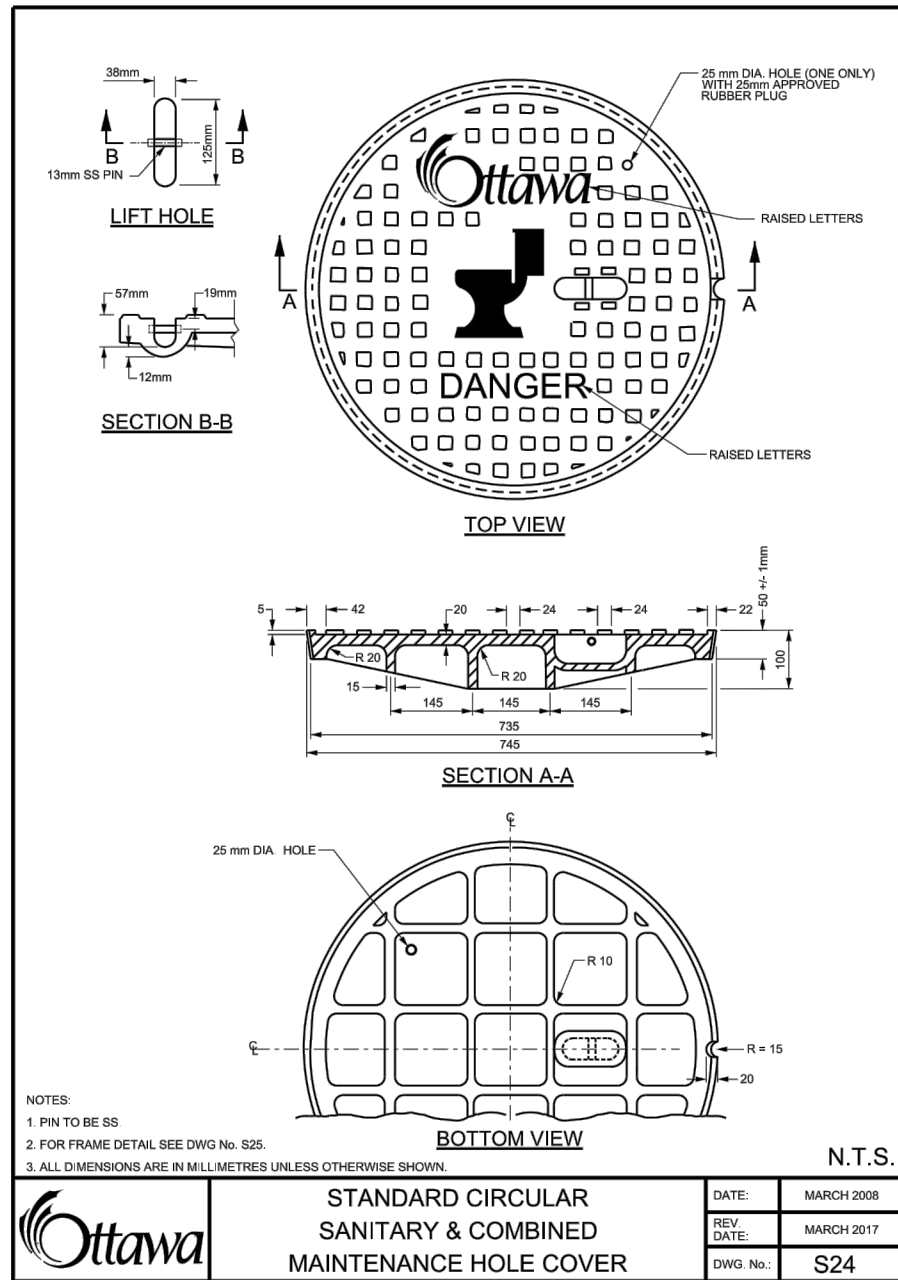
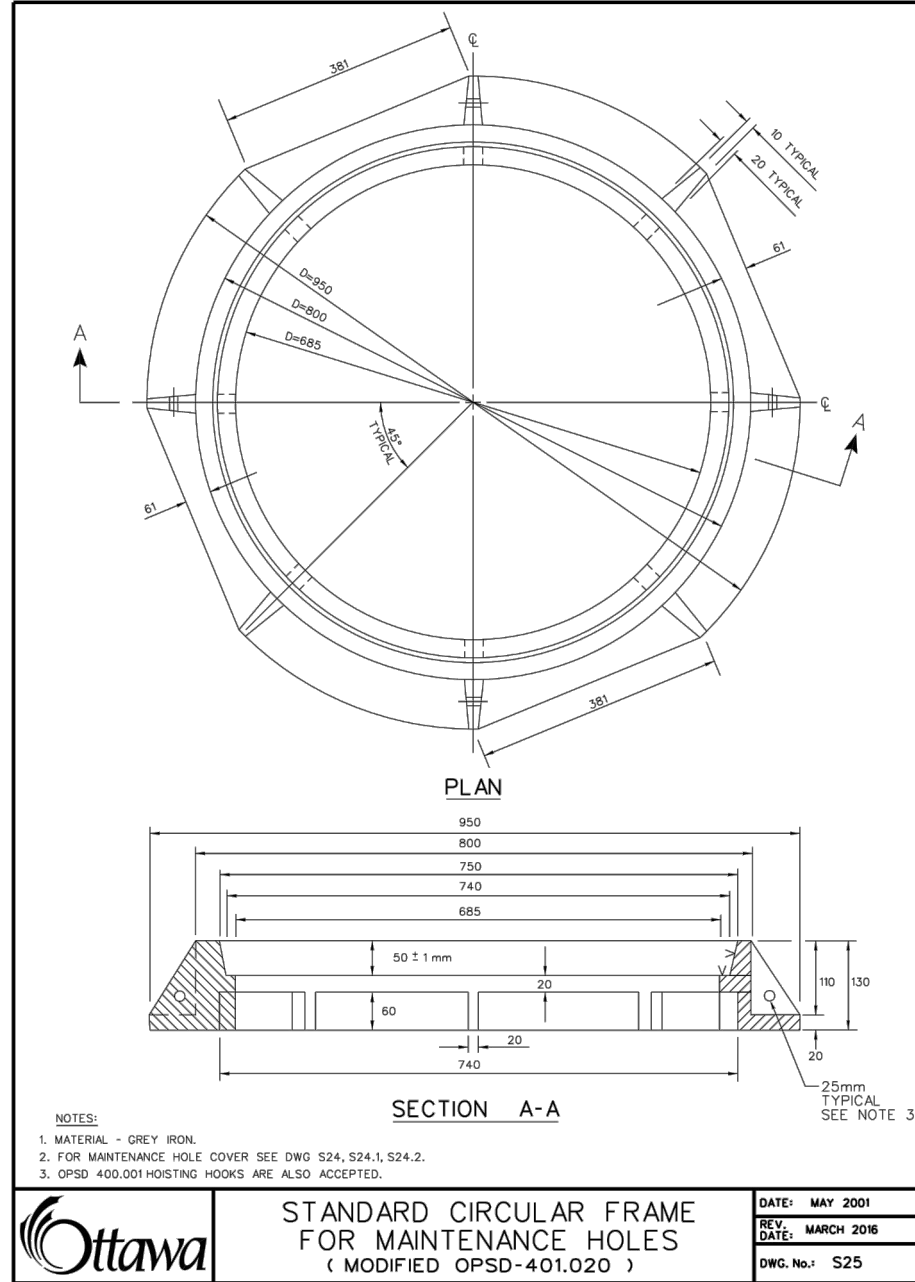
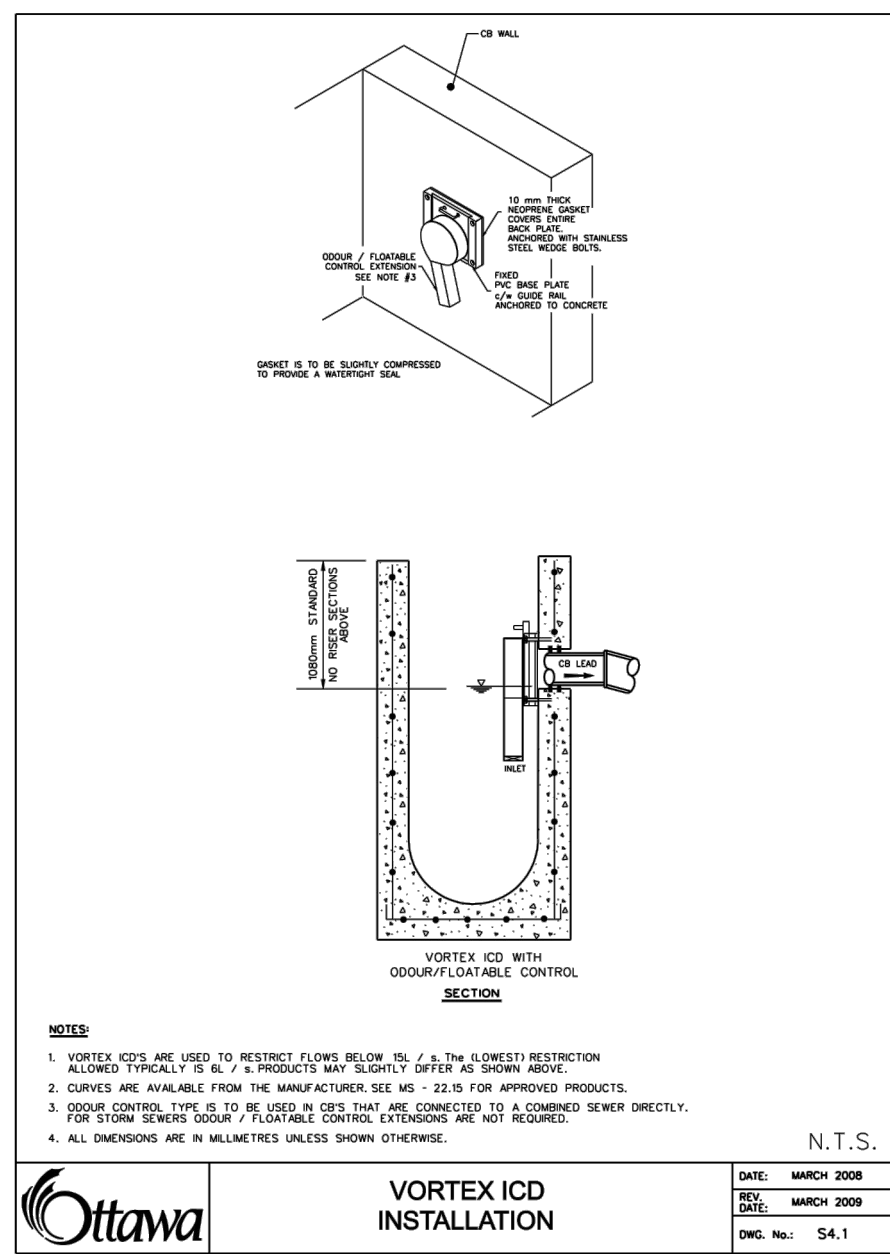
DRAWING TITLE: SANITARY DRAINAGE  
AREA PLAN

PROJECT NO: 130828  
DATE: 25 August 2017

**C703**

D07-12-17-0054





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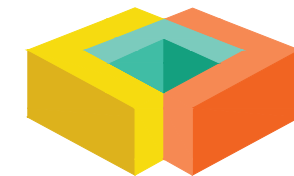
APPROVED ☐ REFUSED ☐

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02 AS PER CITY COMMENTS G.C. 25 AUG 2017  
01 ISSUED FOR SPA G.C. 24 MAR 2017  
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DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT PROPOSED BENSON AUTO PARTS  
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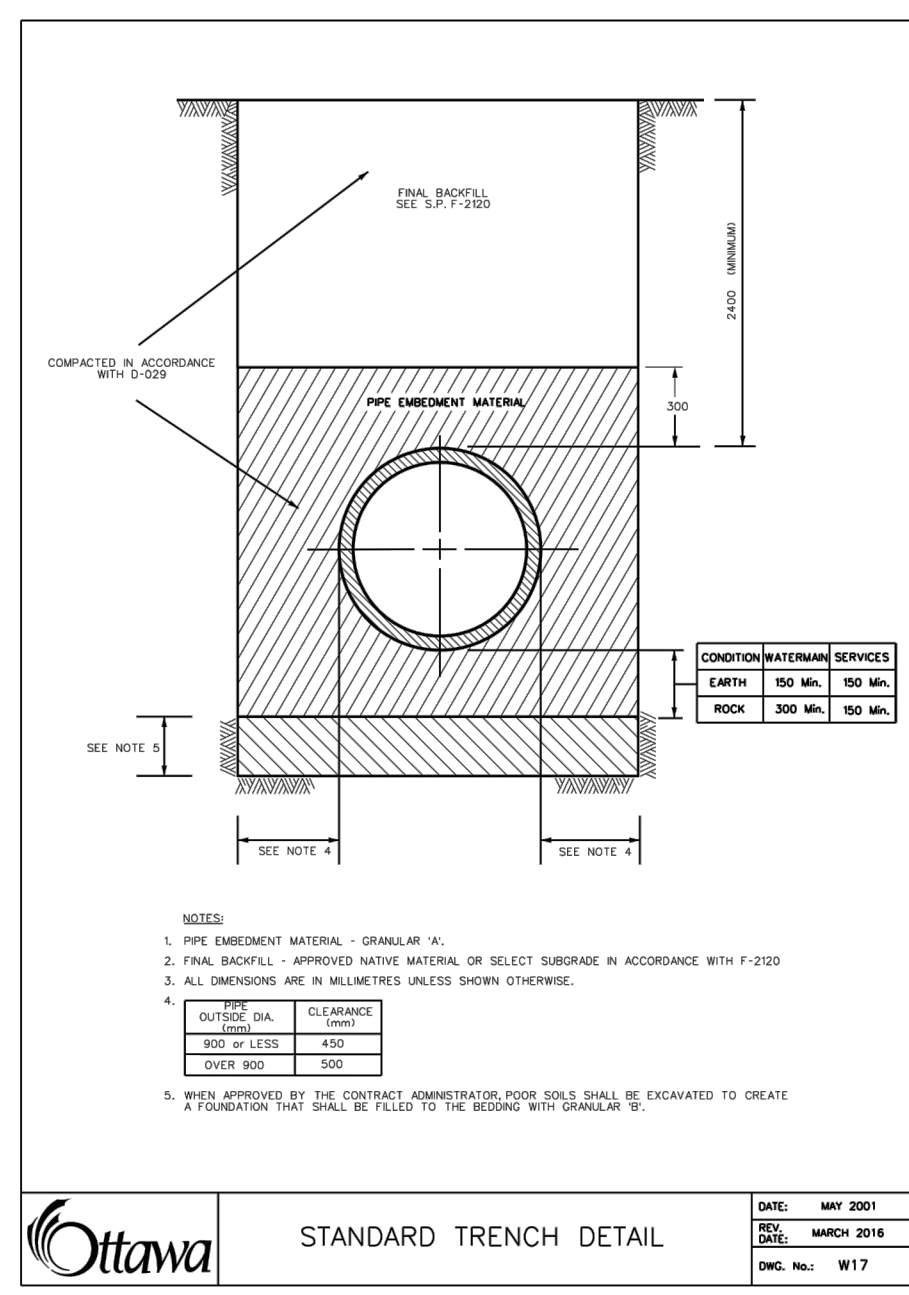
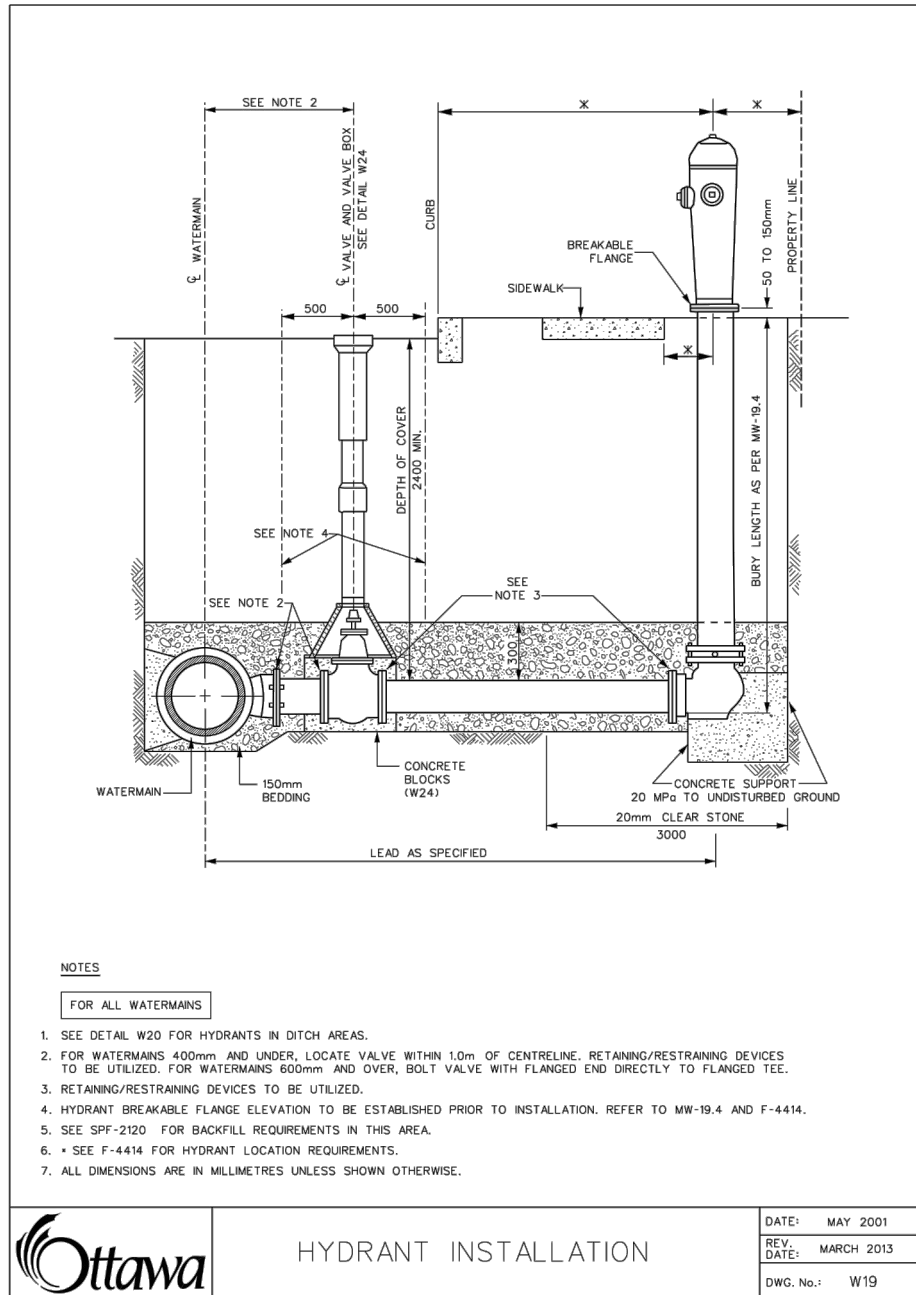
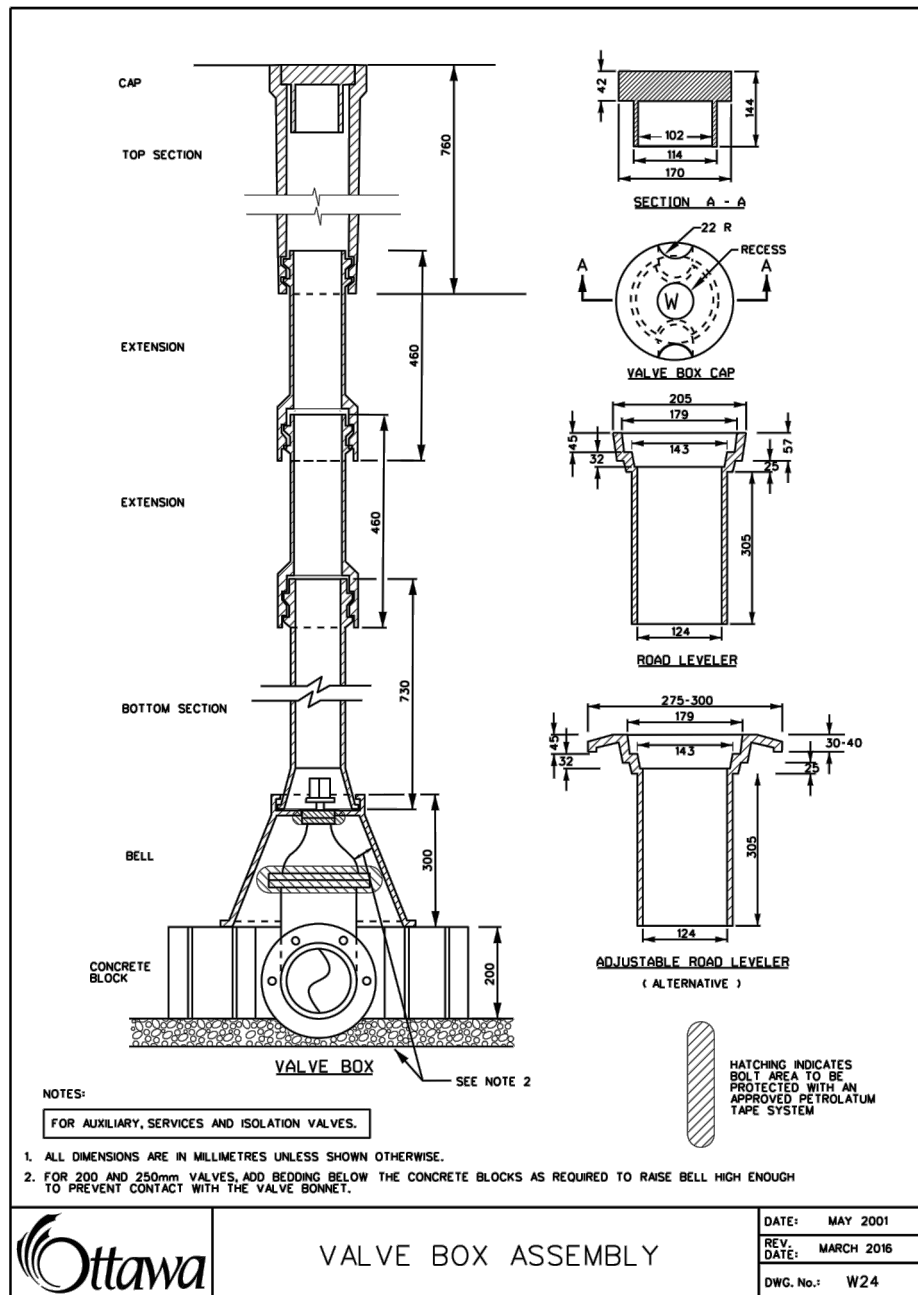
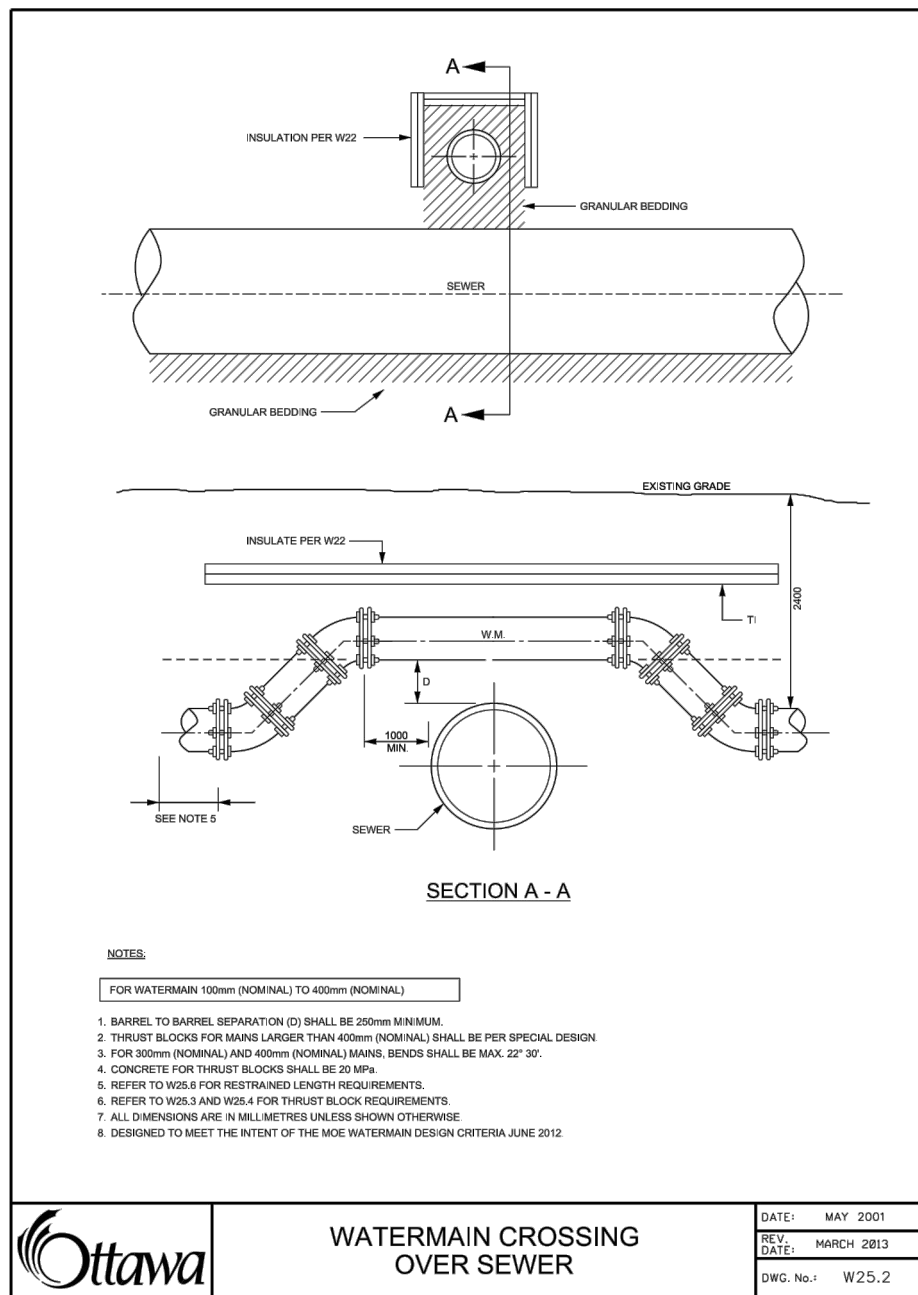
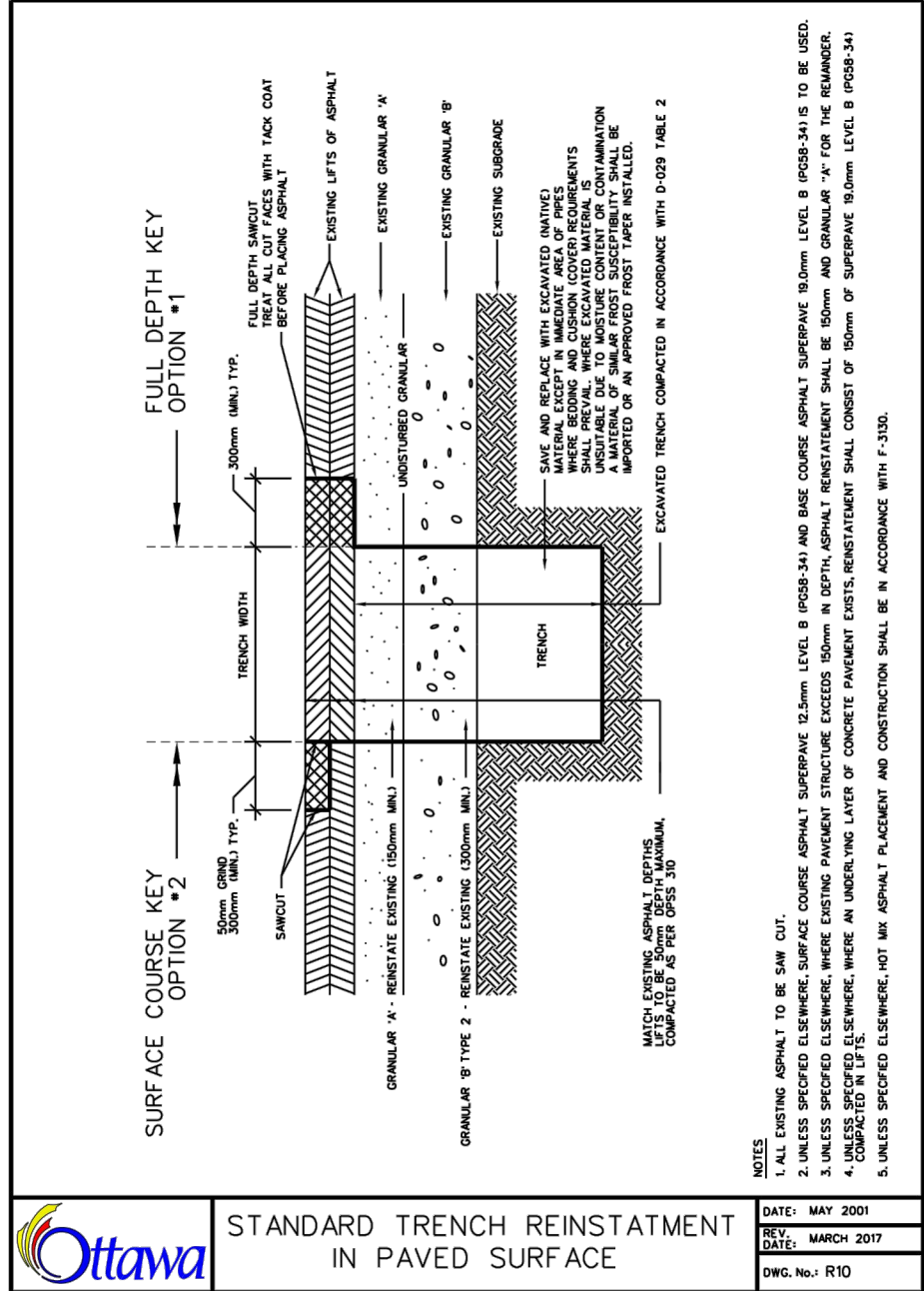
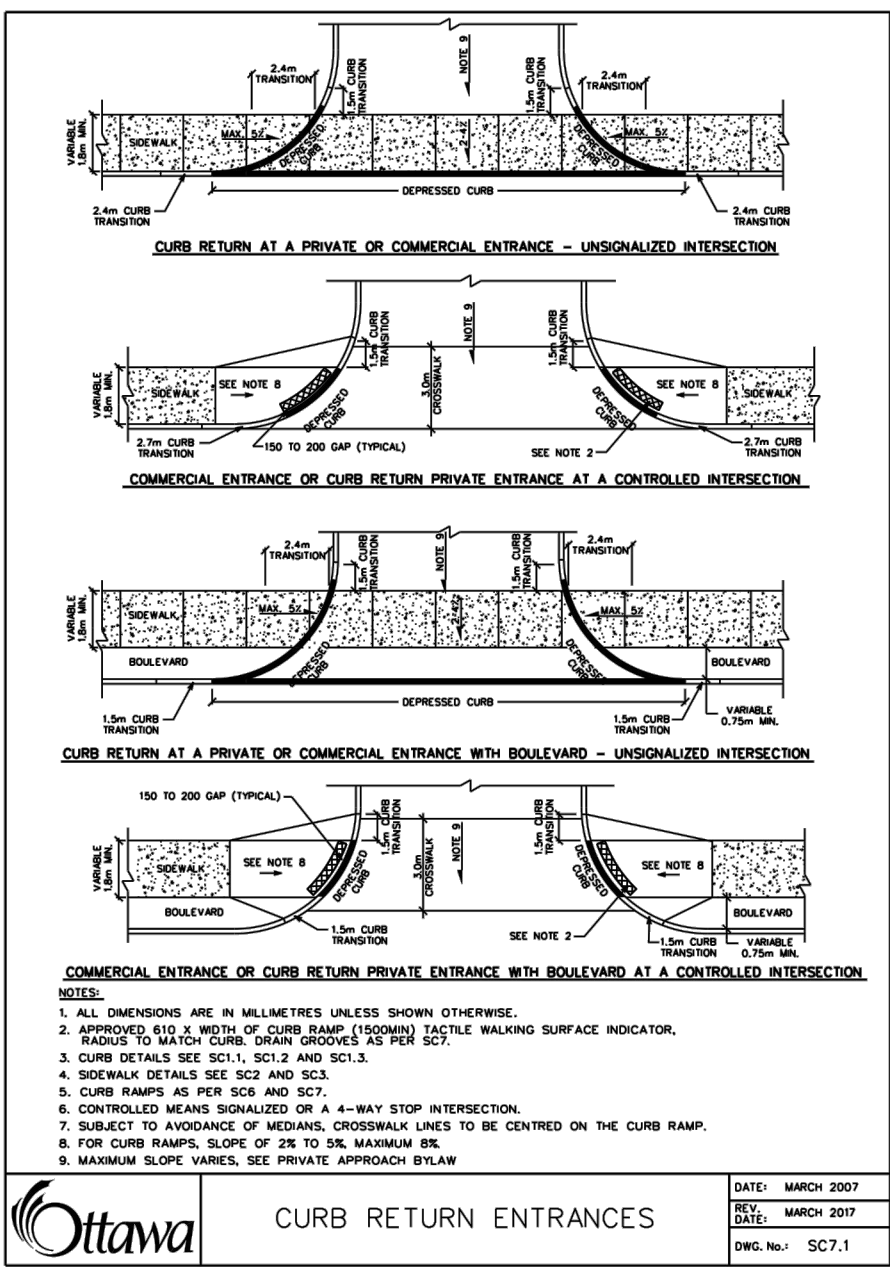
DRAWING TITLE  
CONSTRUCTION DETAILS PLAN

PROJECT NO.  
130828  
DATE  
25 August 2017

**C901**

D07-12-17-0054





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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.

APPROVED ☐ REFUSED ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

**DERRICK MOODIE**  
MANAGER, DEVELOPMENT REVIEW - WEST  
PLANNING, INFRASTRUCTURE & ECONOMIC  
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



NOT AUTHENTIC UNLESS SIGNED AND DATED



**LRL**  
ENGINEERING / INGÉNIERIE

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

02	AS PER CITY COMMENTS	G.C.	25 AUG 2017
01	ISSUED FOR SPA	G.C.	24 MAR 2017
No.	REVISIONS	BY	DATE

CLIENT: BENSON AUTO PARTS  
MR. GERRY BENSON  
700 EDUCATION ROAD, CONRWALL, ONTARIO  
K6H 6B8, TEL. 613-936-7850

DESIGNED BY: G.C. DRAWN BY: G.C. APPROVED BY: M.G.

PROJECT: PROPOSED BENSON AUTO PARTS  
COMMERCIAL DEVELOPMENT  
1871 MERIVALE ROAD, NEPEAN, ON

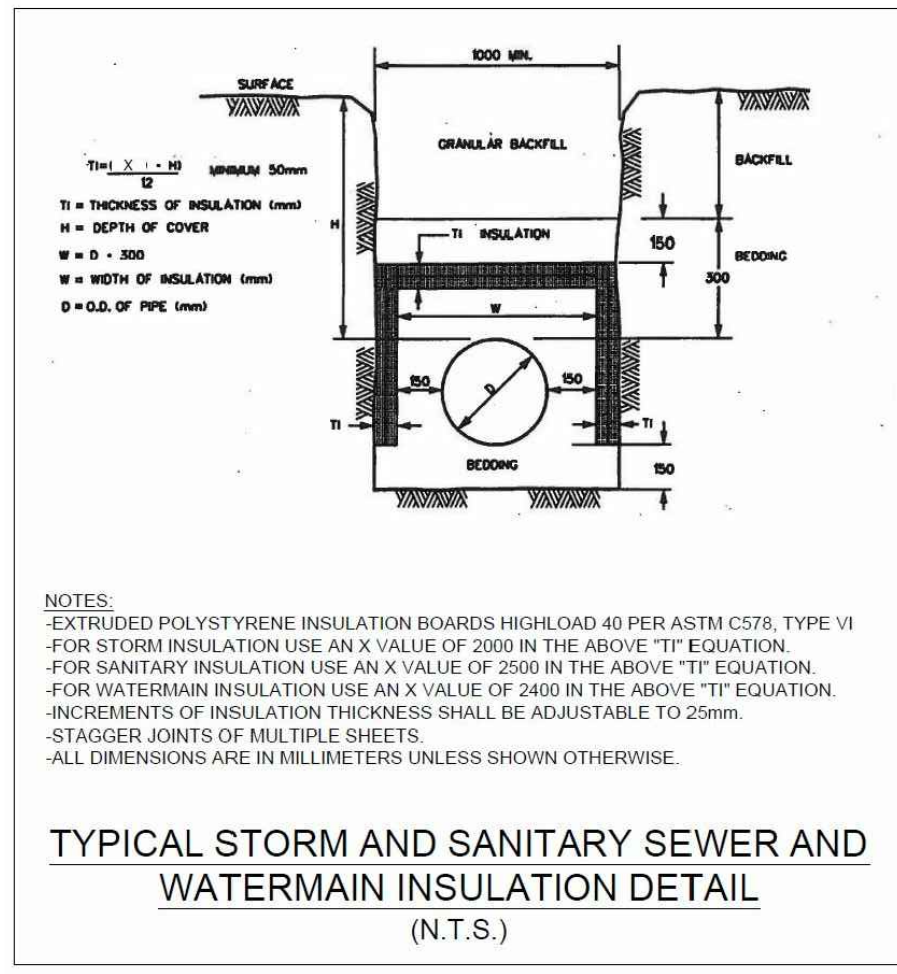
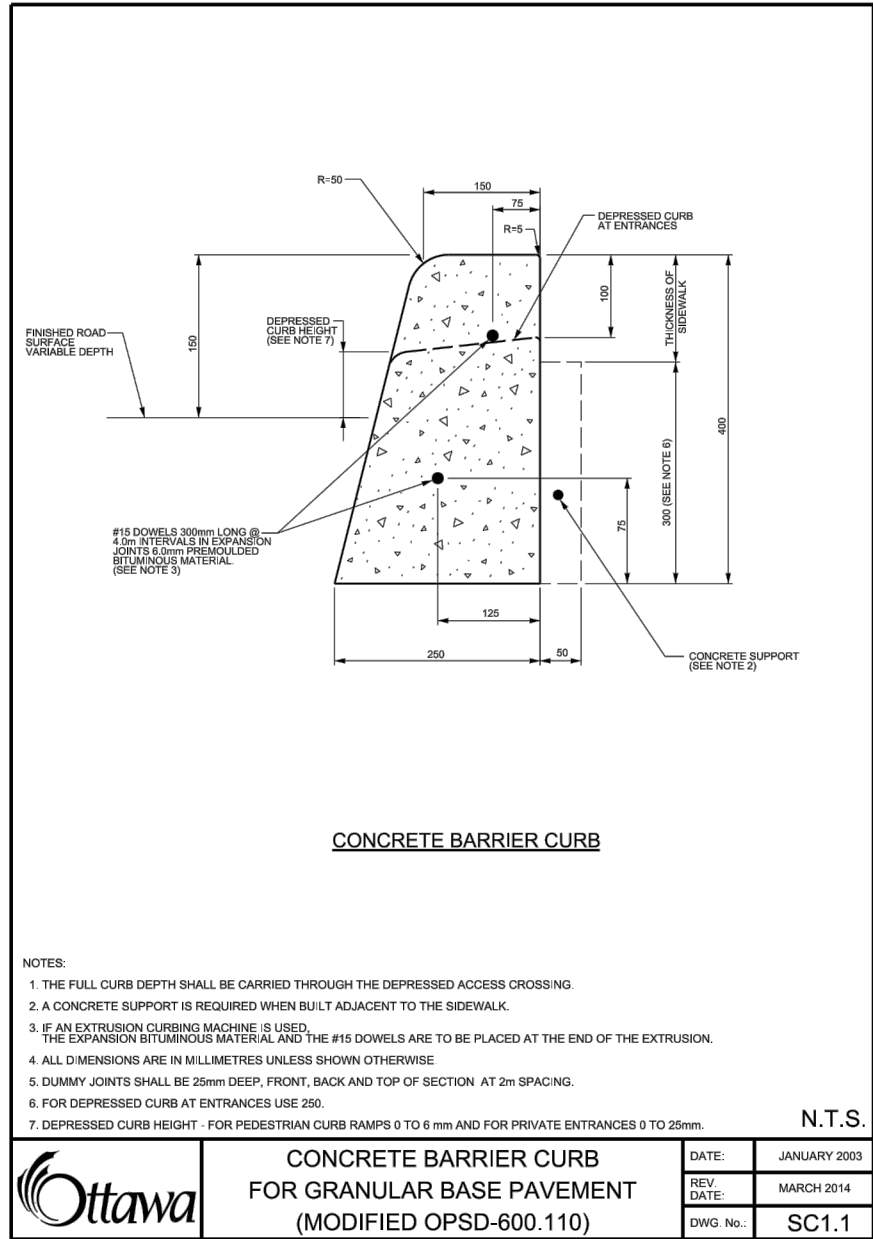
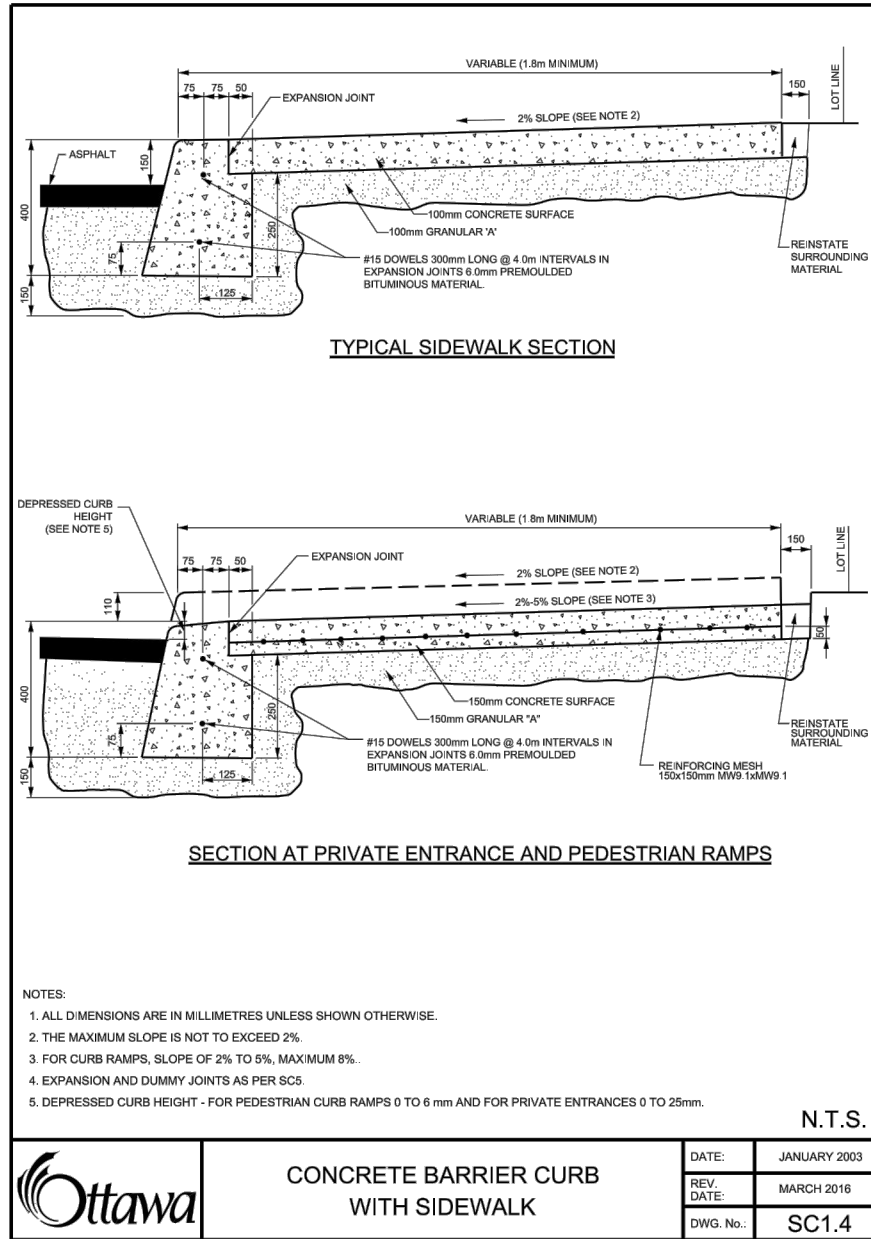
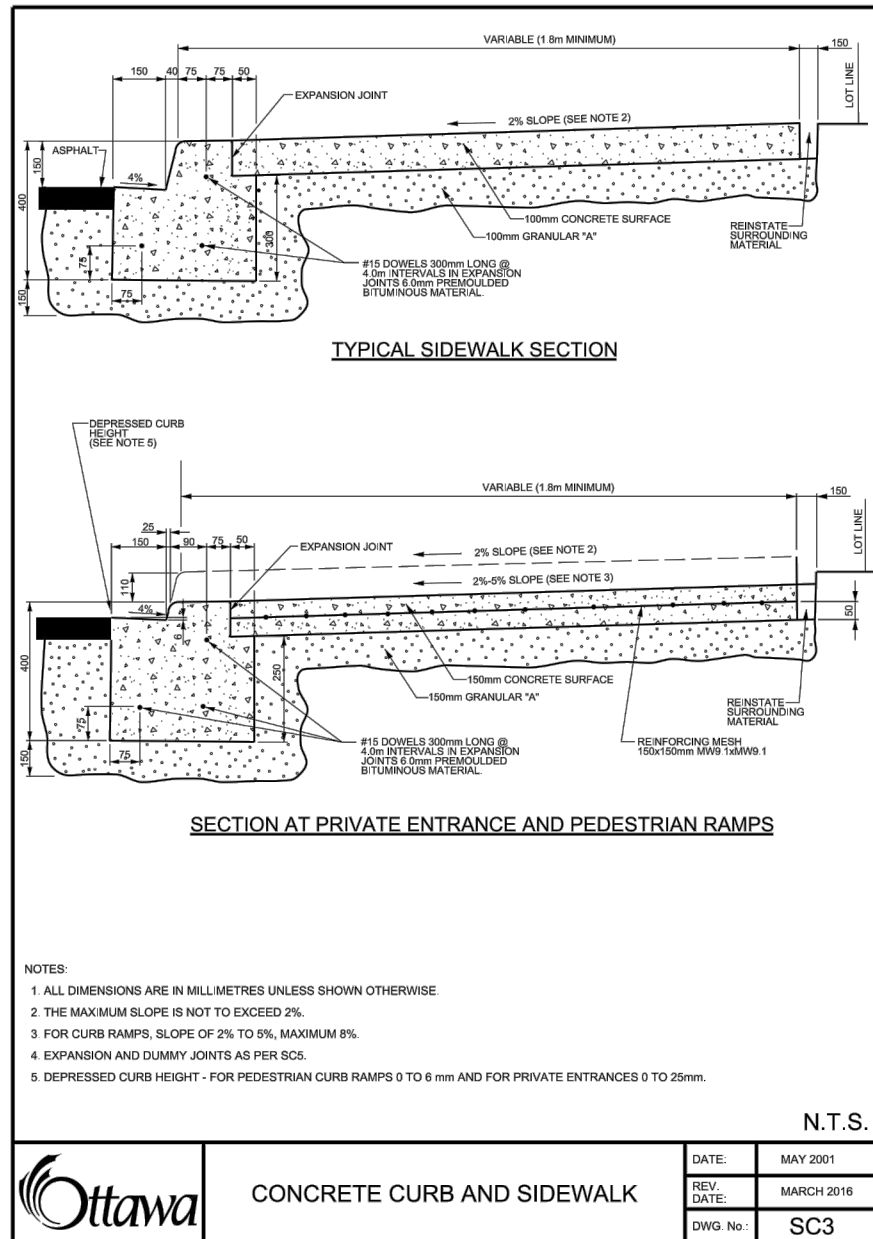
DRAWING TITLE: CONSTRUCTION DETAILS PLAN

PROJECT NO. 130828  
DATE: 25 August 2017

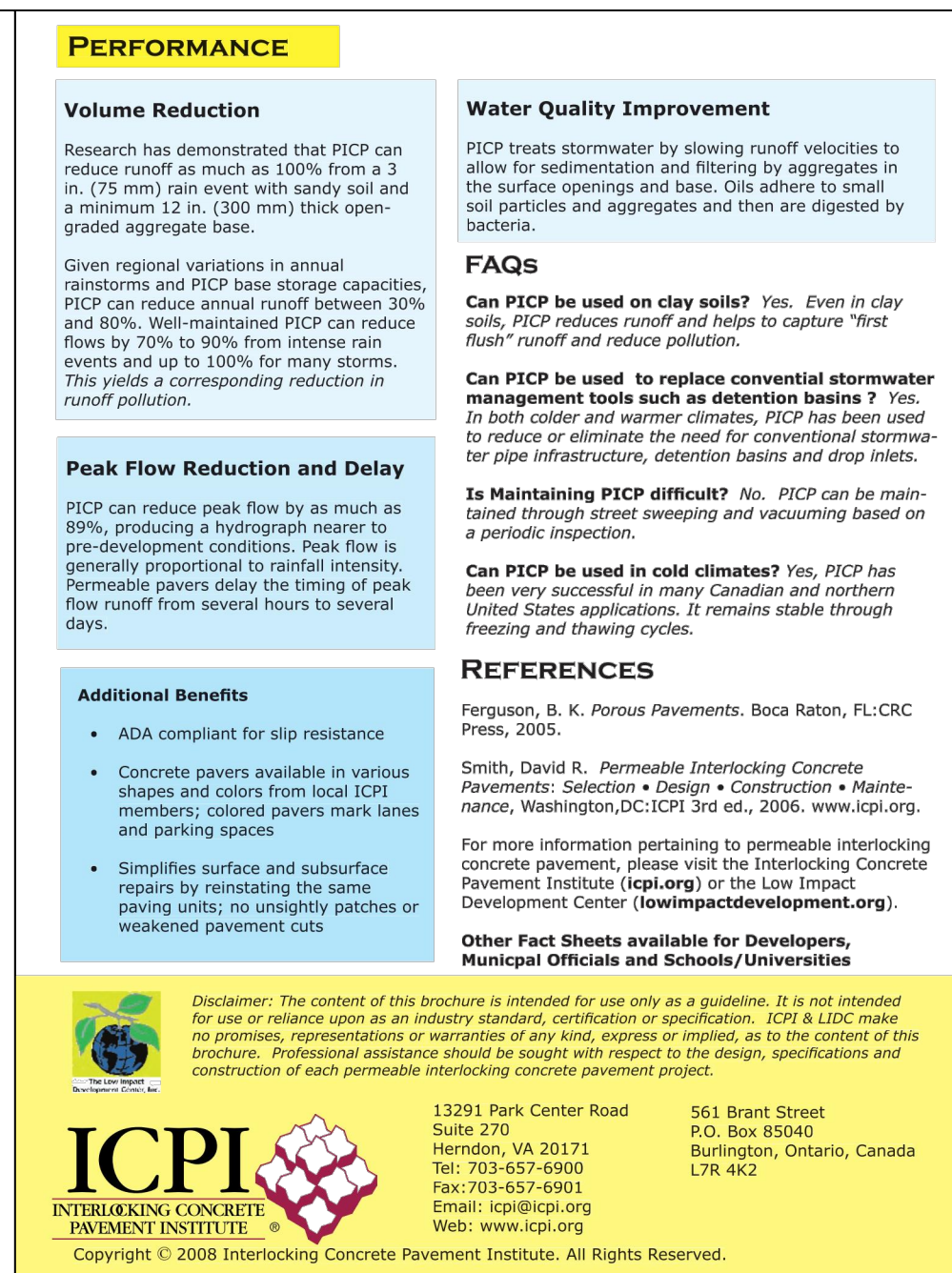
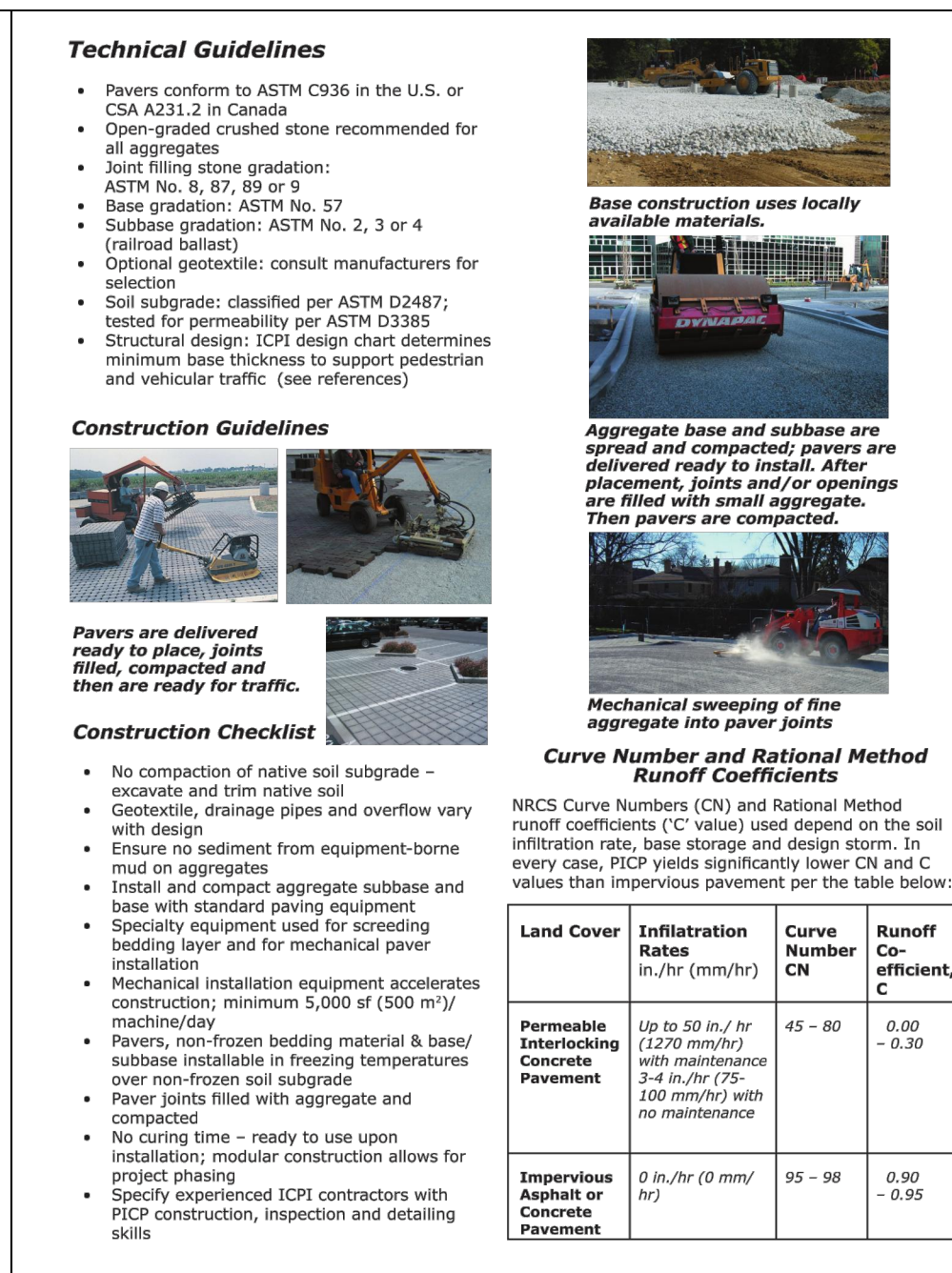
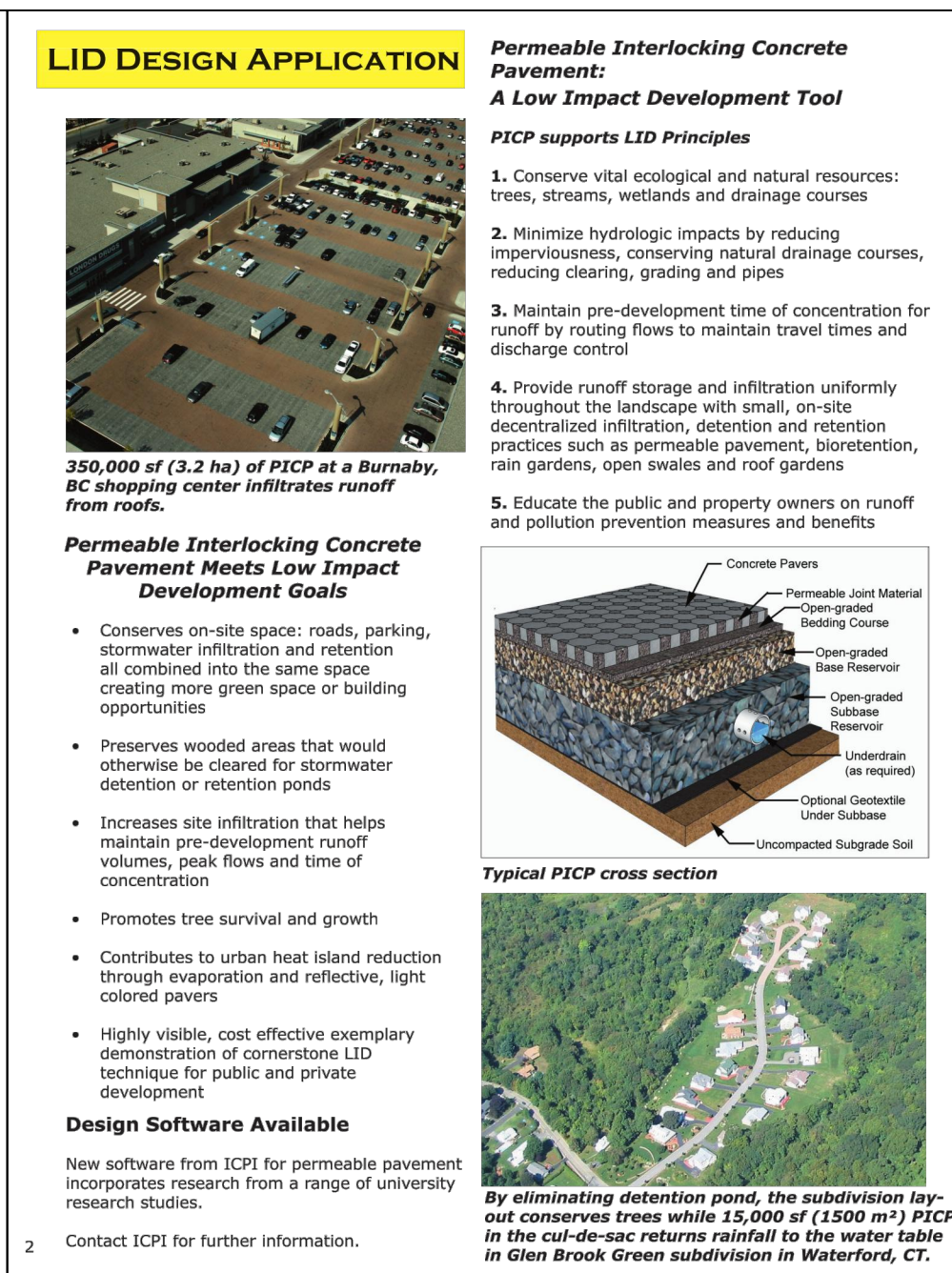
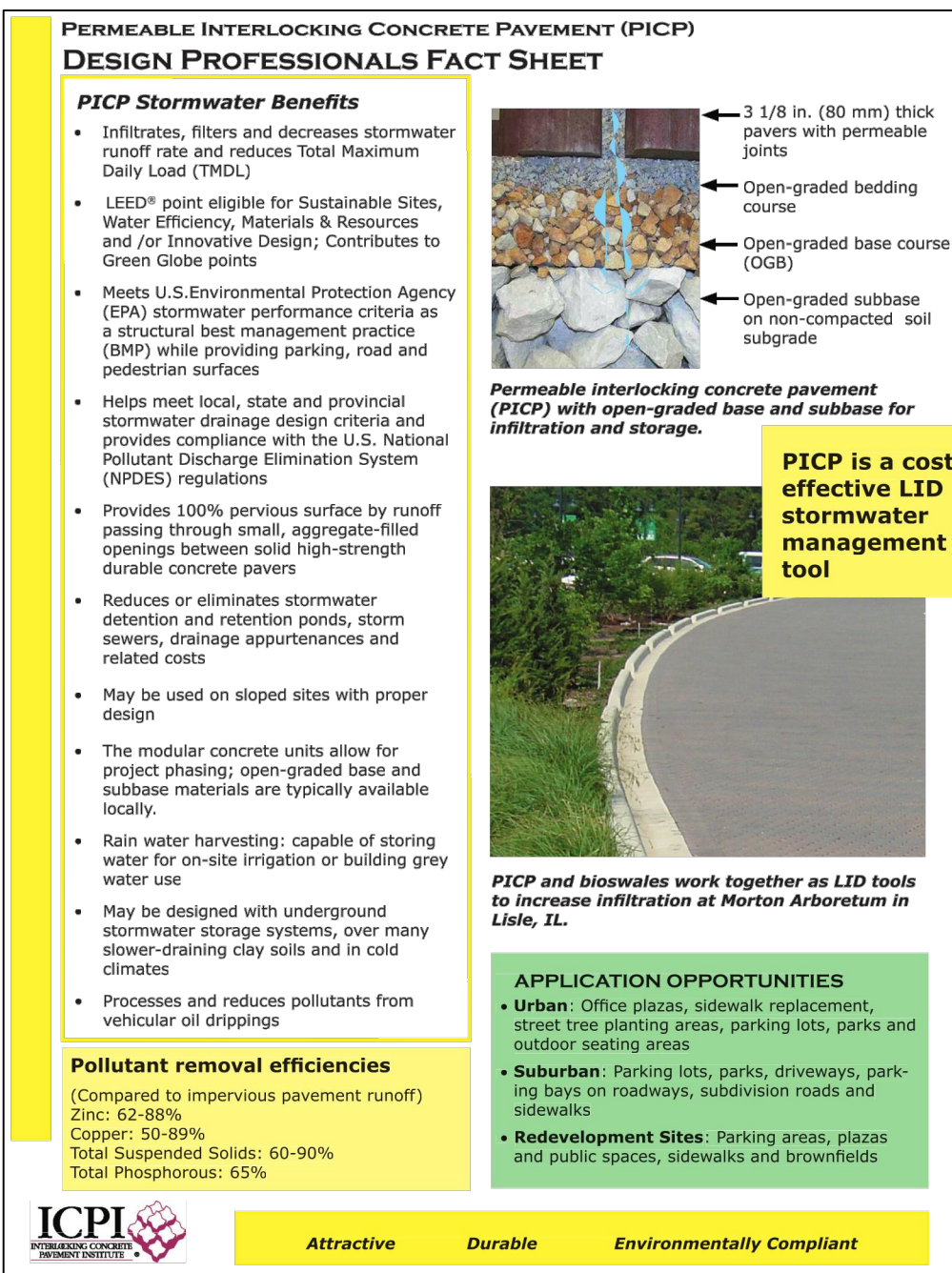
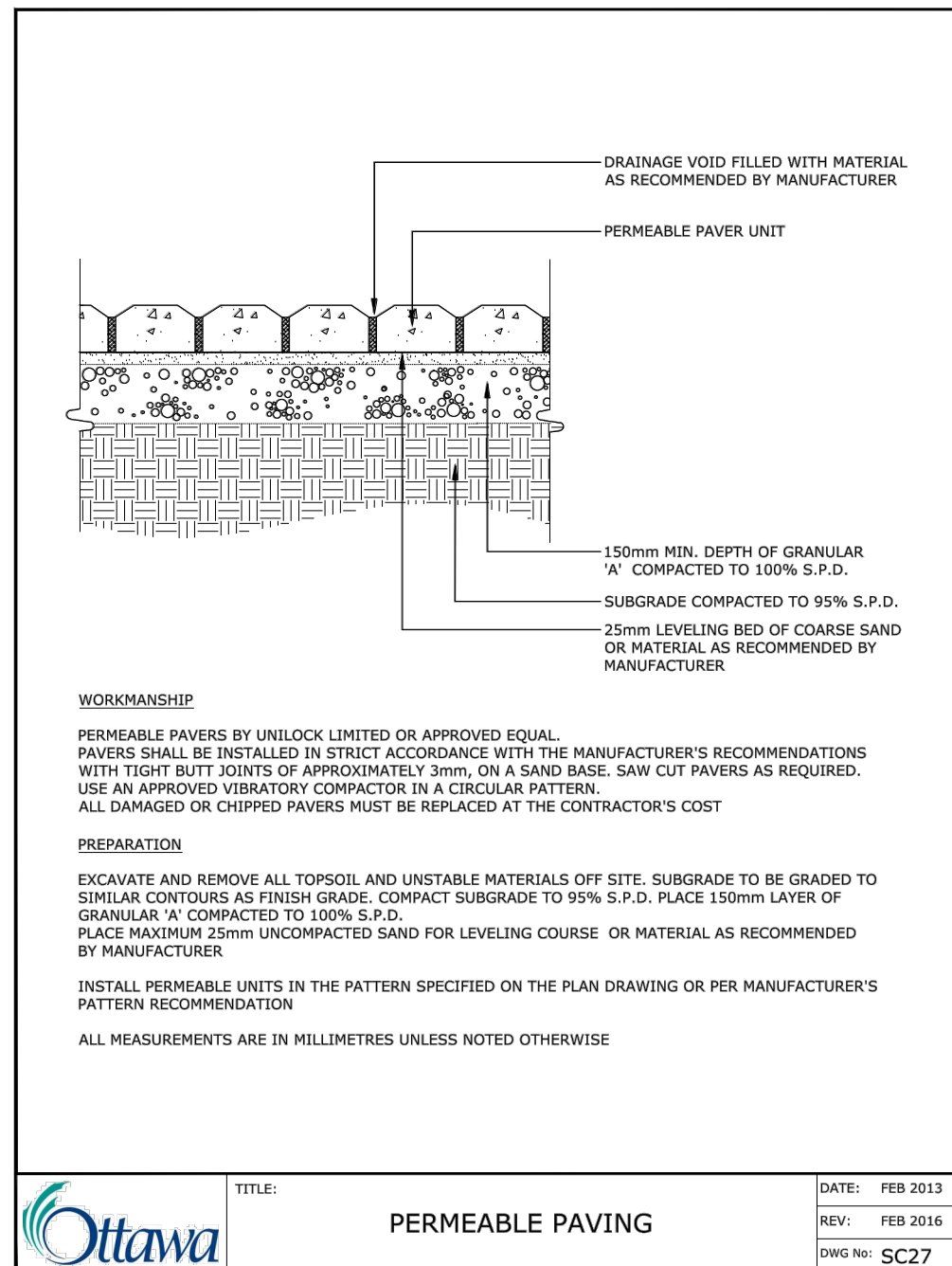
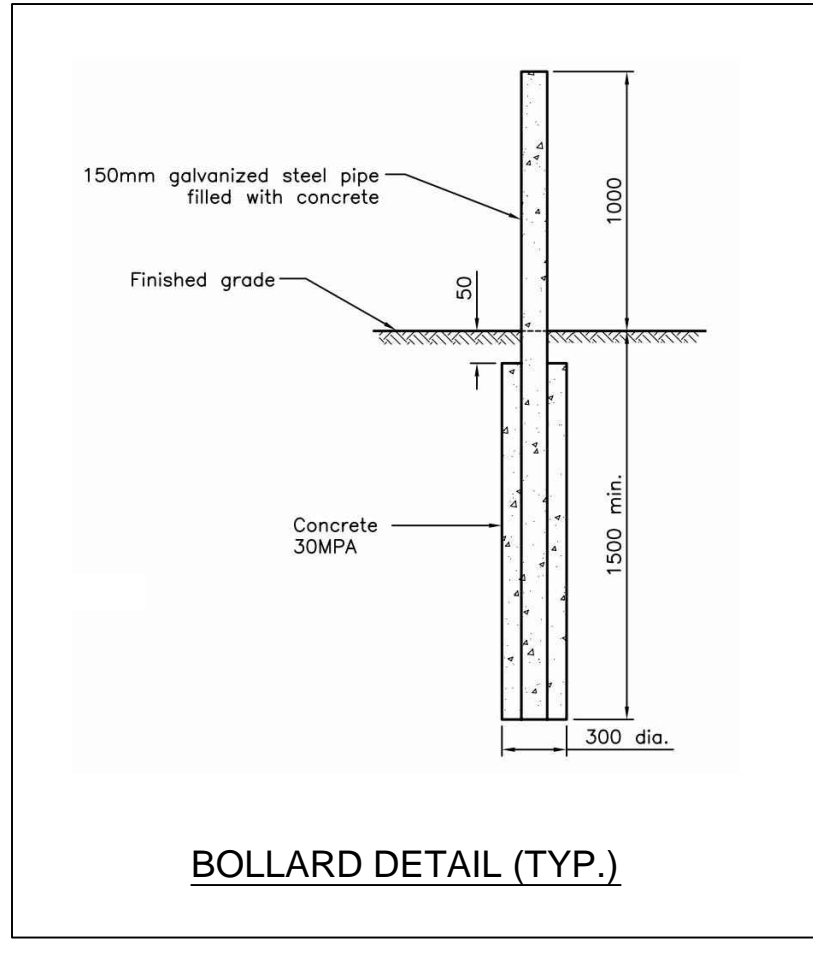
**C902**

D07-12-17-0054





Property and Test Method	HIGHLOAD 40
Thermal Resistance, per inch (25 mm), ASTM C518, C177, @ 75°F (24°C) mean temp., ft <sup>2</sup> ·in <sup>2</sup> ·F/Btu (m <sup>2</sup> ·°C/W), R-value (RSI), min.	5.0 (88)
Compressive Strength <sup>(1)</sup> , ASTM D1621, psi (kPa), min.	40 (275)
Water Absorption, ASTM D2842, % by volume, max. (96 hr water immersion)	0.8
Water Vapour Permeance <sup>(2)</sup> , ASTM E96, perms (ng/Pa·s·m <sup>2</sup> )	1.0 (57.2)
Maximum Use Temperature, °F (°C)	165 (74)
Coefficient of Linear Thermal Expansion, ASTM D696, in/in·°F (mm/mm·°C)	3.5 x 10 <sup>-4</sup> (6.3 x 10 <sup>-5</sup> )
Flexural Strength, ASTM C203, psi (kPa), min.	70 (480)
Compressive Modulus (typical), ASTM D1621, psi (kPa)	1,400 (9,650)
Complies with CAN/ULC S701, Type	4



**USE AND INTERPRETATION OF DRAWINGS.**

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE ADDENDUMS TO THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDUMS 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 DETAILING 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 COPIES 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 ILLUSTRATE 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 CLAIM 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 WITHOUT SUCH PROPER AUTHORIZATION.

**GENERAL NOTES:**

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**APPROVED** ☐ **REFUSED** ☐

THIS \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

**DERRICK MOODIE**  
MANAGER, DEVELOPMENT REVIEW - WEST  
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**PROPOSED BENSON AUTO PARTS COMMERCIAL DEVELOPMENT 1871 MERIVALE ROAD, NEPEAN, ON**

**DRAWING TITLE**

**CONSTRUCTION DETAILS PLAN**

**PROJECT NO.** 130828  
**DATE** 25 August 2017

**C903**

D07-12-17-0054



PROJECT INFORMATION	
ENGINEERED BY	IVAN SHARMA
PRODUCT	SC-740
MANAGER	IVAN SHARMA
SALES REP	IVAN SHARMA
PROJECT NO.	17033



1871 MERIVALE  
OTTAWA, ON

#### STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740 OR SC-310.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE REBARS.
- CHAMBERS SHALL PROVIDE CONTINUOUS UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE ASHTO LPSI BRIDGE DESIGN SPECIFICATIONS, SECTION 13.13, ARE MET FOR:
  - 1) LIVE LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S4-08 TRUCK AND THE ASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2779 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE CERTIFIED TO CSA S14 "POLYMER SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES" AND MEET ASTM D222 POLYETHYLENE OR ASTM F4416 POLYPROPYLENE "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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 STRUCTURAL EVALUATION REPORT BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.45 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY ASTM F2779 AND ASTM F4416 FOR THERMOPLASTIC.
  - A STRUCTURAL EVALUATION REPORT BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE ASHTO LPSI BRIDGE DESIGN SPECIFICATIONS, SECTION 13.13, ARE MET FOR:
    - 1) LIVE LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S4-08 TRUCK AND THE ASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
  - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- 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

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DODGER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 METHODS:
  - STORMTECH COATED LOCATED OFF THE CHAMBER BED.
  - BACKFILL 48 ROWS ARE BEST USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.
- THE CONTRACTOR MUST REPORT ANY KNOWN DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- 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

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BASE CHAMBERS.
  - NO RUBBER TIED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE STORMTECH SC-310/SC-740 CONSTRUCTION GUIDE.
  - STORMTECH RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.
- FILL 900 mm (30") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DODGER TO PUSH EMBEDED 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.

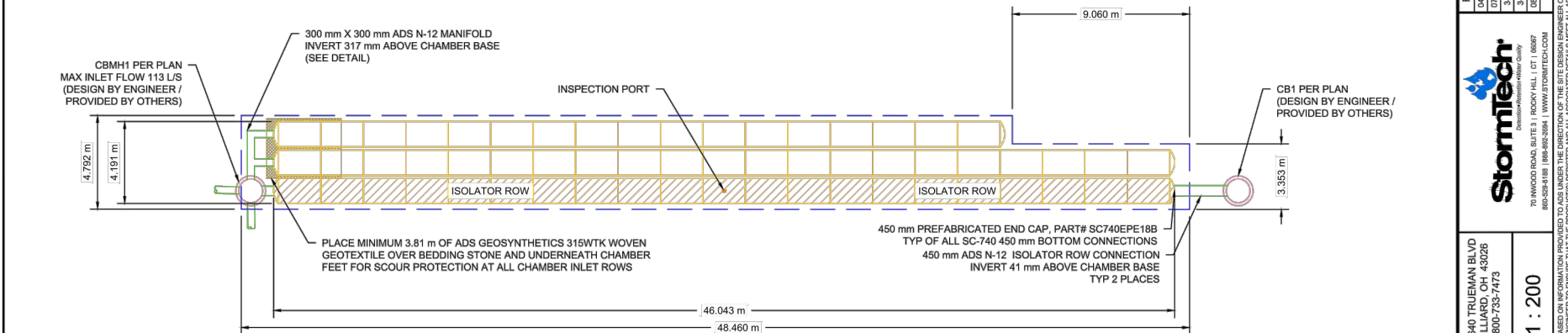
CONTACT STORMTECH AT 1-888-862-2994 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

#### PROPOSED LAYOUT

98	STORMTECH SC-740 CHAMBERS
9	STORMTECH SC-740 END CAPS
132	STONE ABOVE (mm)
132	STONE BELOW (mm)
40	% STONE VOID
128.1	INSTALLED SYSTEM VOLUME (cu ft)
239	SYSTEM AREA (sq ft)
107	SYSTEM PERIMETER (m)

#### PROPOSED ELEVATIONS

MINIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/PAVED)	88.020
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)	87.190
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	87.020
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)	87.020
TOP OF STONE	88.740
TOP OF SC-740 CHAMBER	88.840
300 mm TOP MANHOLE INVERT	88.190
480 mm ISOLATOR ROW INVERT	88.840
BOTTOM OF SC-740 CHAMBER	88.800
BOTTOM OF STONE	88.600



1871 MERIVALE OTTAWA, ON	DATE: 04-22-13 PROJECT: 17033
DESIGNED BY: IVAN SHARMA CHECKED BY: IVAN SHARMA	SCALE: 1" = 2' 0"
STORMTECH	SHEET 2 OF 5

#### ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	ASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED SUBGRADE REQUIREMENTS. MAY BE PART OF THE 'E' LAYER.	ANY SOLID ROCK MATERIALS, NATIVE SOLS, OR PER ENGINEER'S PLAN, CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS AND INSPECTIONS. ANY FILL MATERIALS MUST BE COMPACTED TO THE REQUIRED DENSITY.
C	INITIAL FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDED STONE OR LAYER TO 1' (300 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THIS PRELIMINARY SUBGRADE MAY BE PART OF THE 'D' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, OR FINES OR PROCESSING AGGREGATE.	ASHTO M-87 A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-12, A-13, A-14, A-15, A-16, A-17, A-18, A-19, A-20, A-21, A-22, A-23, A-24, A-25, A-26, A-27, A-28, A-29, A-30, A-31, A-32, A-33, A-34, A-35, A-36, A-37, A-38, A-39, A-40, A-41, A-42, A-43, A-44, A-45, A-46, A-47, A-48, A-49, A-50, A-51, A-52, A-53, A-54, A-55, A-56, A-57, A-58, A-59, A-60, A-61, A-62, A-63, A-64, A-65, A-66, A-67, A-68, A-69, A-70, A-71, A-72, A-73, A-74, A-75, A-76, A-77, A-78, A-79, A-80, A-81, A-82, A-83, A-84, A-85, A-86, A-87, A-88, A-89, A-90, A-91, A-92, A-93, A-94, A-95, A-96, A-97, A-98, A-99, A-100, A-101, A-102, A-103, A-104, A-105, A-106, A-107, A-108, A-109, A-110, A-111, A-112, A-113, A-114, A-115, A-116, A-117, A-118, A-119, A-120, A-121, A-122, A-123, A-124, A-125, A-126, A-127, A-128, A-129, A-130, A-131, A-132, A-133, A-134, A-135, A-136, A-137, A-138, A-139, A-140, A-141, A-142, A-143, A-144, A-145, A-146, A-147, A-148, A-149, A-150, A-151, A-152, A-153, A-154, A-155, A-156, 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