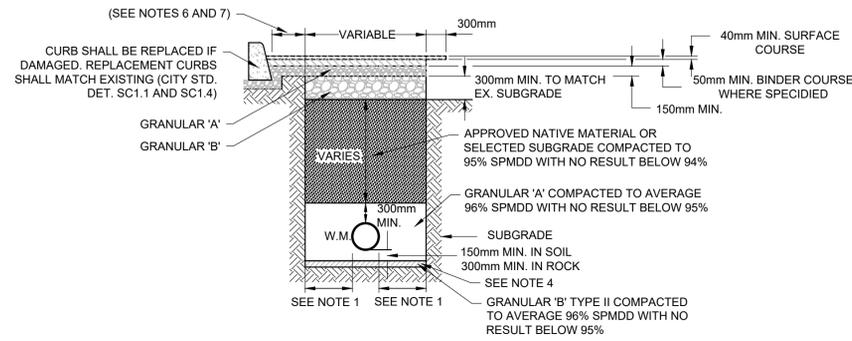


NOTES:

PIPE INSIDE DIAMETER (mm)	CLEARANCE (mm)
900 OR LESS	CONC 450 PVC 450
OVER 900	500

- FINAL BACKFILL - APPROVED NATIVE MATERIAL OR SELECT SUBGRADE
- ALL DIMENSION ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
- WHEN NECESSARY POOR SOILS SHALL BE EXCAVATED TO CREATE A FOUNDATION THAT SHALL BE FILLED TO THE BOTTOM OF THE BEDDING WITH GRANULAR 'B'.
- THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER IS NOT PERMITTED ANYWHERE ON THIS SITE.
- ALL EXISTING ASPHALT AND CONCRETE REMOVAL LIMITS TO BE SAWCUT.
- 300 MM KEY TO BE SAWCUT AND REMOVED OR MILLED.
- ROAD REINSTATEMENT ON THE CURB SIDE OF THE TRENCH EXCAVATION SHALL EXTEND TO THE CURB FACE.
- TACK COAT SHALL BE APPLIED TO ALL MILLED SURFACES

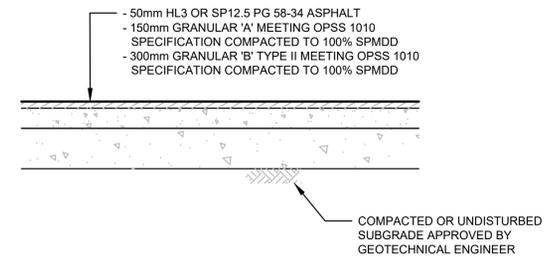


NOTES:

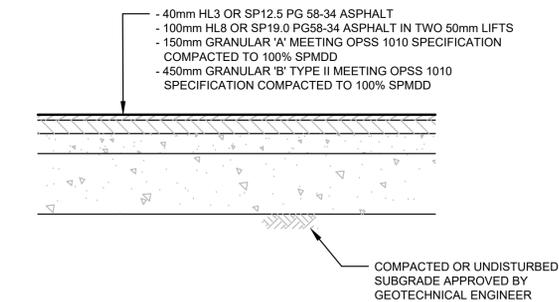
PIPE INSIDE DIAMETER (mm)	CLEARANCE (mm)
900 OR LESS	450
OVER 900	500

- ALL EXISTING ASPHALT REMOVAL AND CONCRETE LIMITS TO BE SAWCUT.
- TRENCH SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL W17.
- WHEN NECESSARY POOR SOILS SHALL BE EXCAVATED TO CREATE A FOUNDATION THAT SHALL BE FILLED TO THE BOTTOM OF THE BEDDING WITH GRANULAR 'B'.
- THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER IS NOT PERMITTED ANYWHERE ON THIS SITE.
- 300mm KEY TO BE SAWCUT AND REMOVED OR MILLED.
- ROAD REINSTATEMENT ON THE CURB SIDE OF THE TRENCH EXCAVATION SHALL EXTEND TO THE CURB FACE.
- TACK COAT SHALL BE APPLIED TO ALL MILLED SURFACES.

1 SEWER AND WATERMAIN INSTALLATION
TYPICAL DETAIL
N.T.S.



LIGHT DUTY PAVEMENT
N.T.S.



HEAVY DUTY PAVEMENT
N.T.S.

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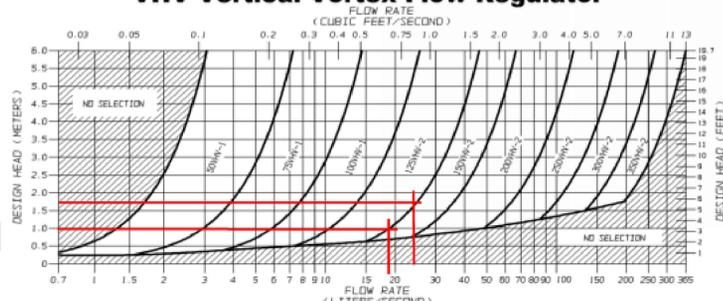
MORRISON HERSHFIELD
200-2932 BASELINE ROAD, OTTAWA, ON K2H 1B1

ISSUED

No.	Date	Description
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2	31/03/2020	ISSUED FOR COORDINATION
3	07/04/2020	ISSUED FOR FOUNDATION PERMIT
4	27/07/2020	ISSUED FOR 80% INTERNAL COORDINATION
5	11/08/2020	REISSUED FOR SITE PLAN APPROVAL
6	31/08/2020	REISSUED FOR SITE PLAN APPROVAL



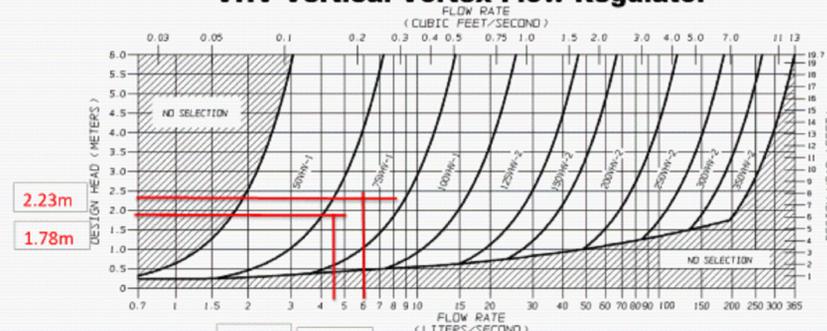
VHV Vertical Vortex Flow Regulator



JOHN MEUNIER



VHV Vertical Vortex Flow Regulator

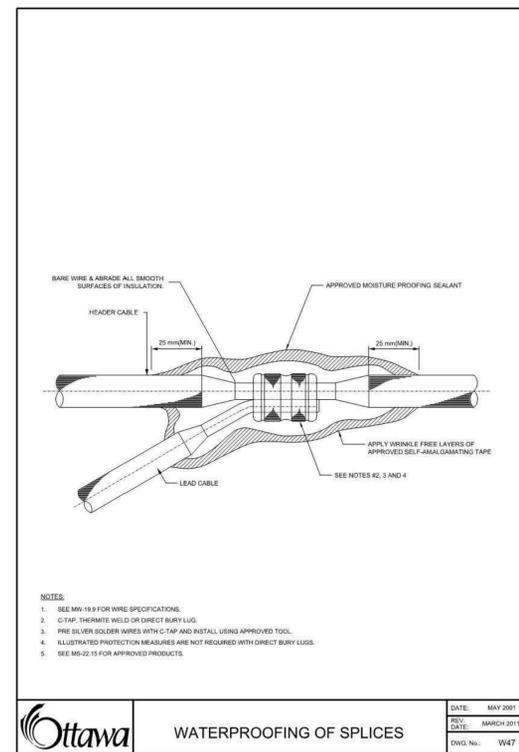


JOHN MEUNIER

Douglas James

DOUGLAS JAMES, MCIP, RPP
MANAGER, DEVELOPMENT REVIEW - CENTRAL
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

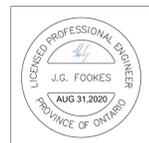
APPROVED
By Douglas James at 3:29 pm, Aug 24, 2021



- NOTES:
- SEE MW-19.8 FOR WIRE SPECIFICATIONS.
 - C-TAP: THERMATE WELD OR DIRECT BURY LUG.
 - PRE-SOLDER SOLDER WIRES WITH C-TAP AND INSTALL USING APPROVED TOOL.
 - ILLUSTRATED PROTECTION MEASURES ARE NOT REQUIRED WITH DIRECT BURY LUGS.
 - SEE MS-22-15 FOR APPROVED PRODUCTS.

Ottawa WATERPROOFING OF SPLICES

DATE: MAY 2001
REV: MARCH 2011
DWG No.: W47



Diamond Schmitt Architects 384 Adelaide Street West, Suite 100, Toronto, Ontario M5V 1R7, Canada. Tel: 416 862 8800, Fax: 416 862 5308, info@dsac.ca, www.dsac.ca

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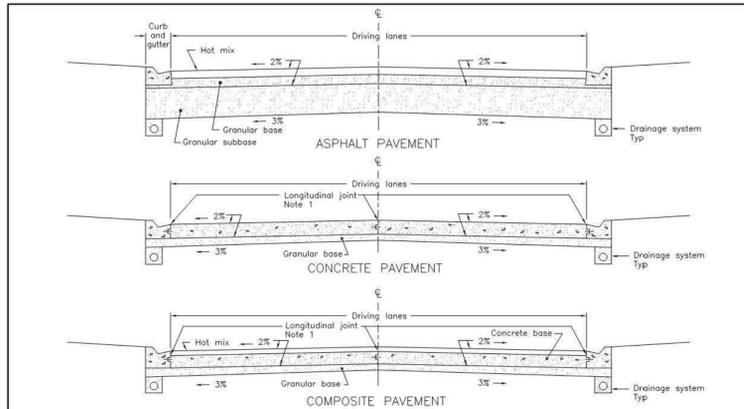
CARLETON UNIVERSITY
STUDENT RESIDENCE

1125 Colonel By Drive,
Ottawa, Ontario
K1S 5B6

DETAILS

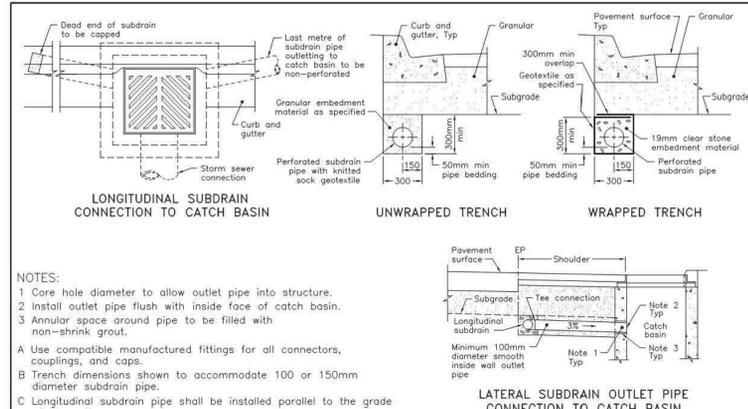
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Project No:
Date:

C005



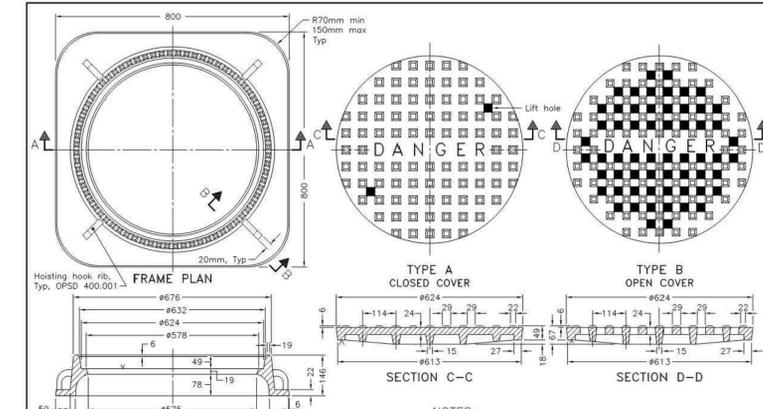
NOTES:
 1 For longitudinal joint details refer to OPSD-552.010 and 552.020.
 A Drainage system connection at every catch basin.
 B Tie bars at all longitudinal joints.

ONTARIO PROVINCIAL STANDARD DRAWING
ASPHALT, CONCRETE AND COMPOSITE PAVEMENT ON GRANULAR BASE URBAN SECTION
 April 1999 Rev 1
 OPSD - 216.020



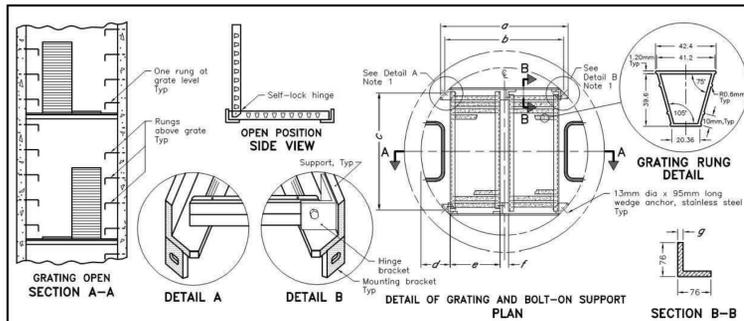
NOTES:
 1 Core hole diameter to allow outlet pipe into structure.
 2 Install outlet pipe flush with inside face of catch basin.
 3 Annular space around pipe to be filled with non-shrink grout.
 A Use compatible manufactured fittings for all connectors, couplings, and caps.
 B Trench dimensions shown to accommodate 100 or 150mm diameter subdrain pipe.
 C Longitudinal subdrain pipe shall be installed parallel to the grade of the gutter.
 D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
SUBDRAIN PIPE CONNECTION AND OUTLET URBAN
 Nov 2008 Rev 2
 OPSD 216.021



NOTES:
 A Covers shall be Type A or Type B as specified.
 B All dimensions are in millimetres unless otherwise shown.

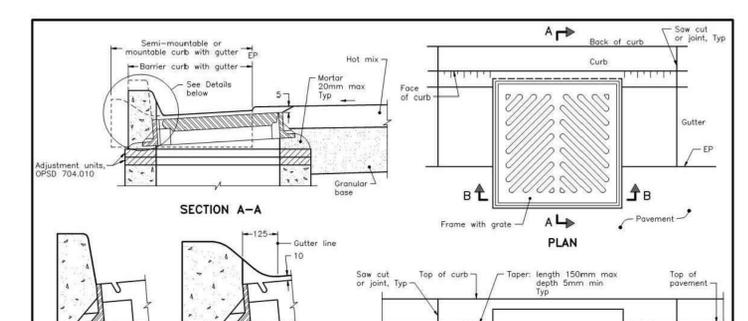
ONTARIO PROVINCIAL STANDARD DRAWING
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES
 Nov 2007 Rev 2
 OPSD 401.010



NOTES:
 1 All hinge brackets and mounting brackets shall be welded all around to support angle.
 A All aluminum in contact with concrete shall be thoroughly coated with asphalt paint.
 B Maintenance hole depth between 5.0m and 10.0m, grate shall be placed at midpoint. Maintenance hole depth between 10.0m and 15.0m, grates shall be placed at third-points.
 C All fasteners shall be 304 stainless steel.
 D All welding shall be according to CSA W47.2 and W59.2.
 E All aluminum components shall be 6000 series structural aluminum.
 F All dimensions are in millimetres unless otherwise shown.

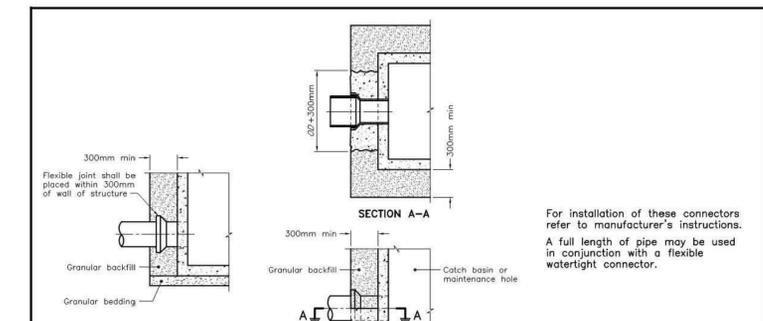
MH Diameter	No of Grates	a	b	c	d	e	f	g
1200	2	900	850	850	225	352	65	10
1500	2	1128	1078	1078	311	419	65	12
1800	3	1344	1293	1293	308	360	65	12
2400	4	1774	1724	1724	401	360	65	12

ONTARIO PROVINCIAL STANDARD DRAWING
ALUMINUM SAFETY PLATFORM FOR CIRCULAR MAINTENANCE HOLES
 Nov 2013 Rev 3
 OPSD 404.020



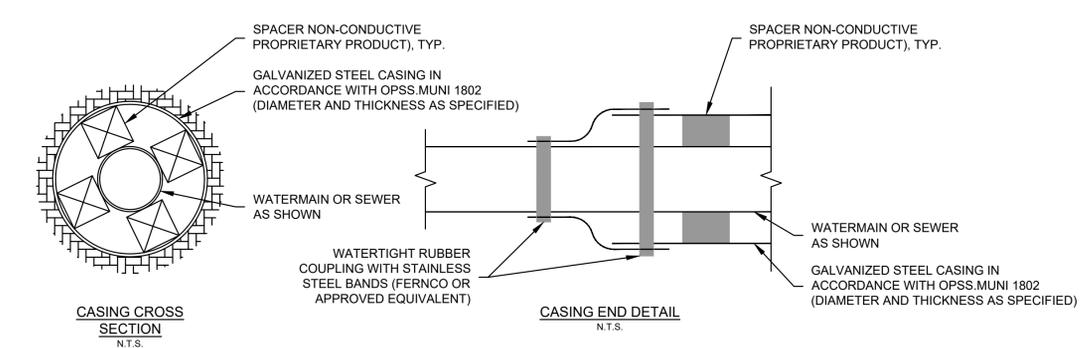
NOTE:
 A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
CATCH BASIN FRAME WITH GRATE INSTALLATION AT CURB WITH GUTTER
 Nov 2018 Rev 2
 OPSD 610.010



NOTE:
 1 Pipe shall be supported with concrete or unshrinkable fill to the first pipe joint.
 A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
SUPPORT FOR PIPE AT CATCH BASIN OR MAINTENANCE HOLE
 Nov 2016 Rev 4
 OPSD 708.020



CASING NOTES:
 1. SUBMIT SHOP DRAWINGS FOR CASING, CATHODIC PROTECTION, COUPLERS, PROPRIETARY SPACERS.
 2. INSTALL CATHODIC PROTECTION ON CASING IN ACCORDANCE WITH REQUIREMENTS FOR WATERMAINS AS SPECIFIED ELSEWHERE.
 3. BEDDING, SURROUND AND BACKFILL TO BE AS SPECIFIED FOR WATERMAINS.
 4. USE SINGLE LENGTH OF CASING PIPE (JOINTS ARE NOT PERMITTED).
 5. FOR WATERMAINS RUN TRACER WIRE OUTSIDE CASING.

PVC DR35 NOMINAL DIA	STEEL CASING OD (mm)
250	355.6
300	406.4
375	508.0

ONTARIO PROVINCIAL STANDARD DRAWING
PIPE CASING DETAIL
 N.T.S.

Douglas James

DOUGLAS JAMES, MCIP, RPP
 MANAGER, DEVELOPMENT REVIEW - CENTRAL PLANNING, INFRASTRUCTURE & ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

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 By Douglas James at 3:29 pm, Aug 24, 2021

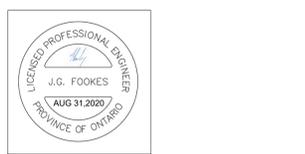
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 200-2932 BASELINE ROAD, OTTAWA, ON K2H 1B1

KEY PLAN

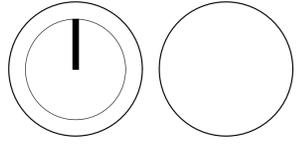
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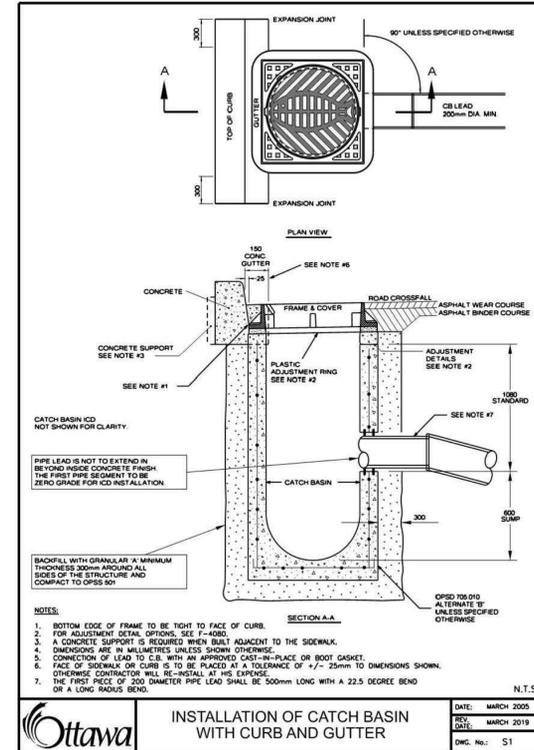
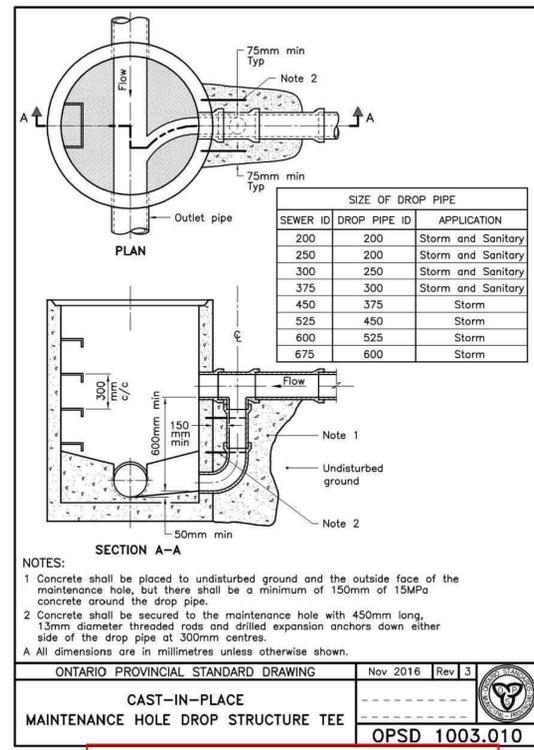
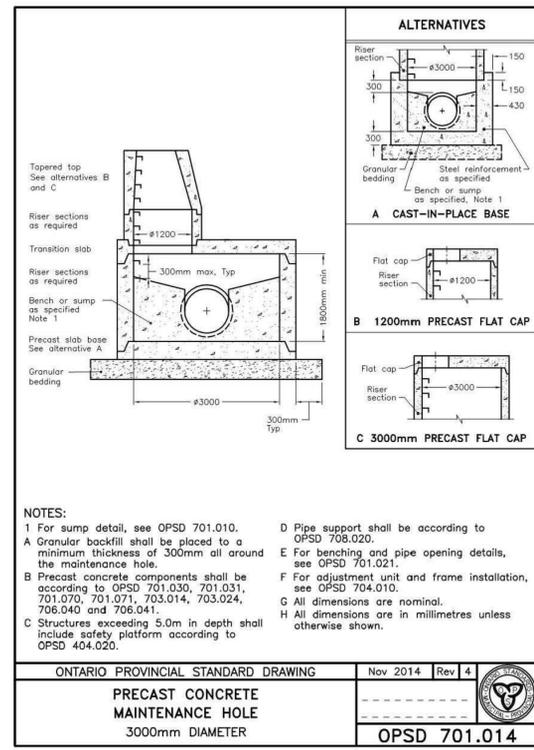
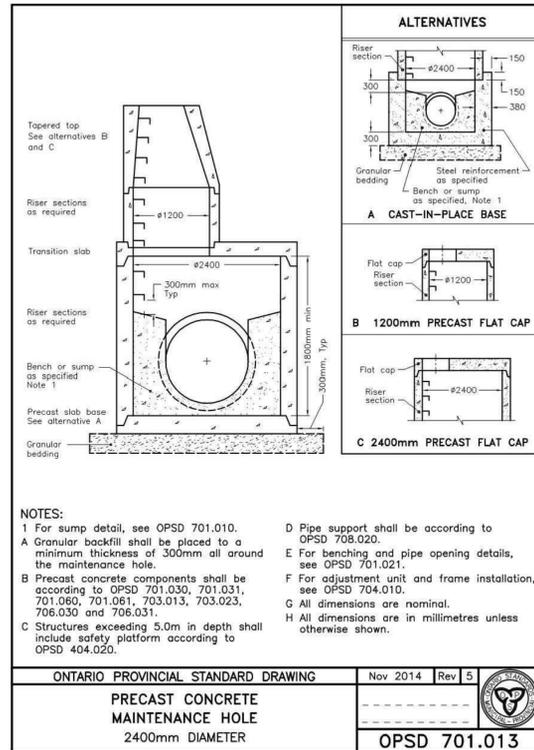
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DETAILS

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 Project No:
 Date:

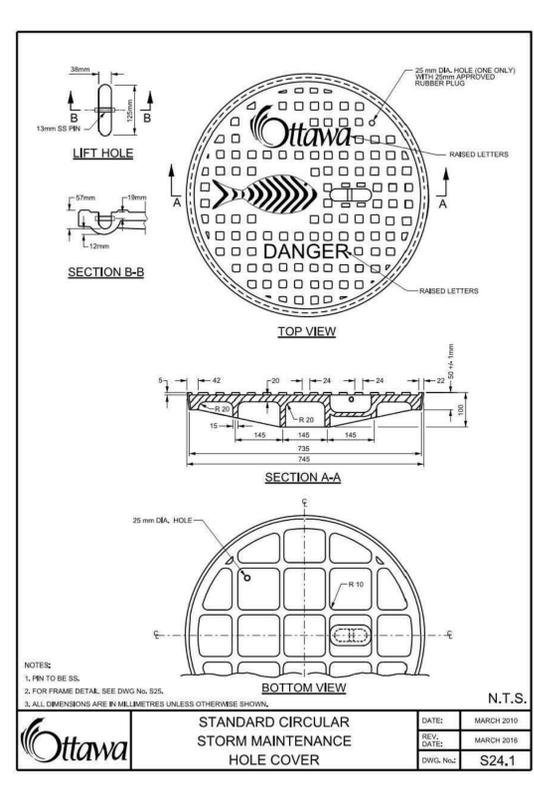
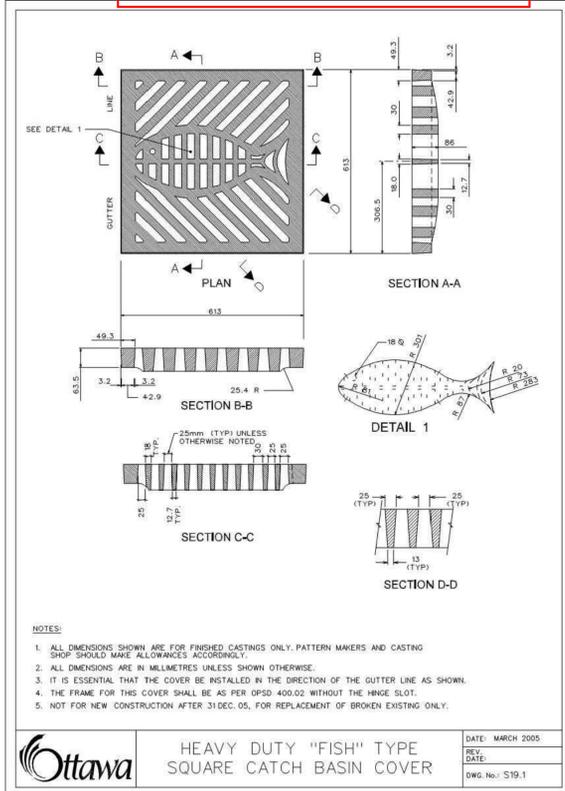
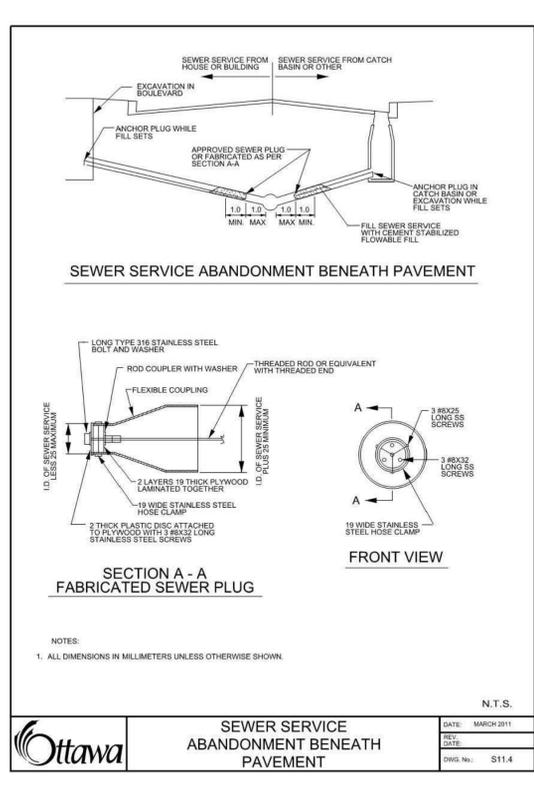
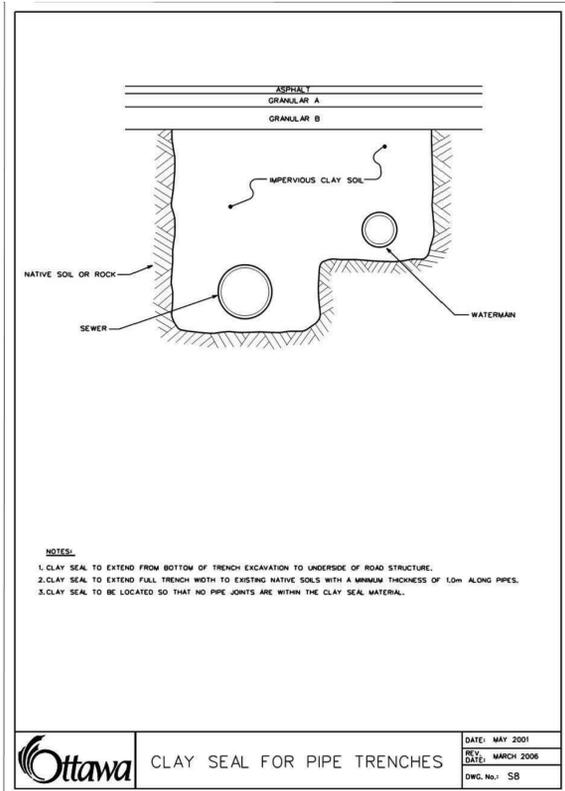
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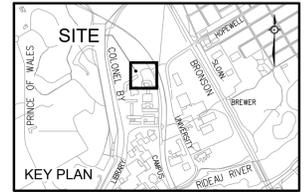
DOUGLAS JAMES, MCIP, RPP
 MANAGER, DEVELOPMENT REVIEW - CENTRAL PLANNING, INFRASTRUCTURE & ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
 By Douglas James at 3:30 pm, Aug 24, 2021



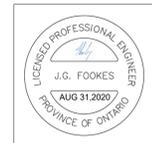
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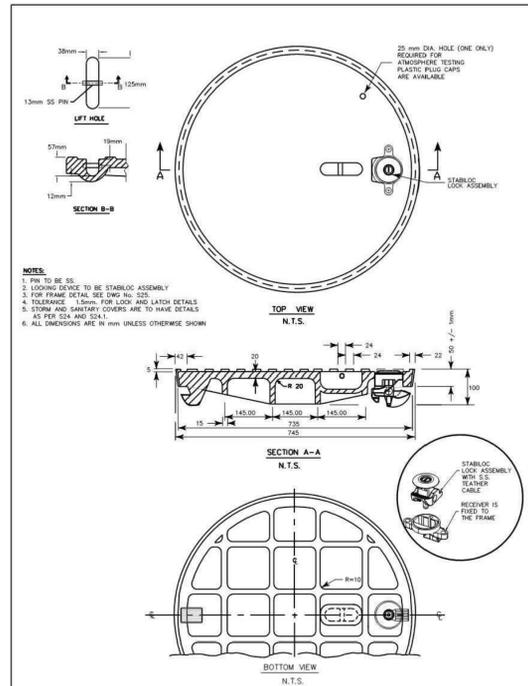
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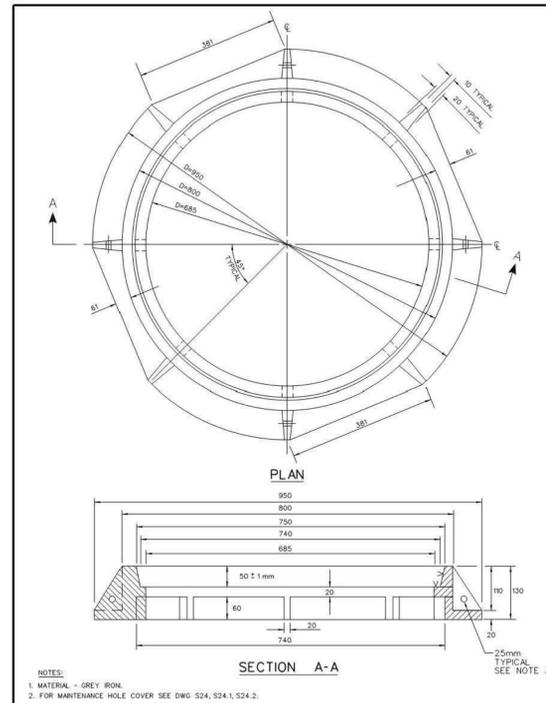
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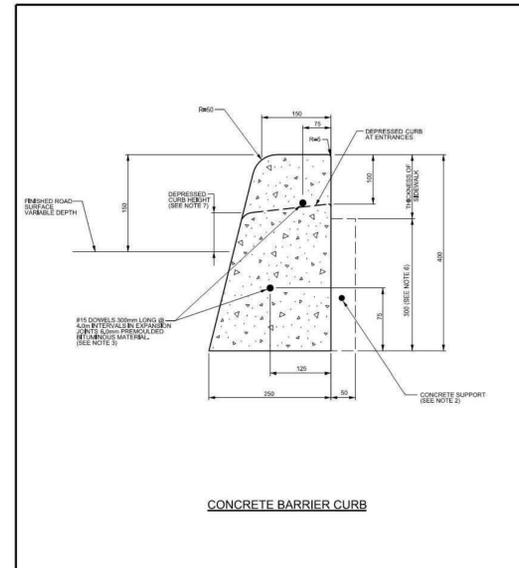
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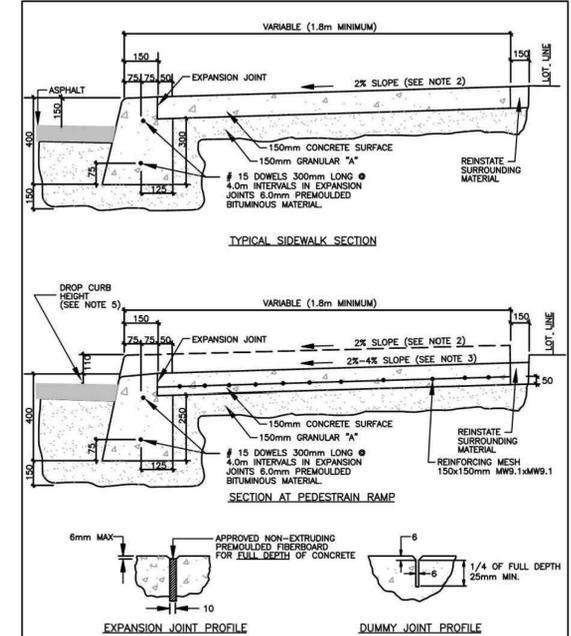
Ottawa STANDARD LOCKABLE MAINTENANCE HOLE COVER
 DATE: MARCH 2008
 REV. DATE: MARCH 2019
 DWG. No.: S24.2



Ottawa STANDARD CIRCULAR FRAME FOR MAINTENANCE HOLES (MODIFIED OPSD-401.020)
 DATE: MAY 2001
 REV. DATE: MARCH 2006
 DWG. No.: S25



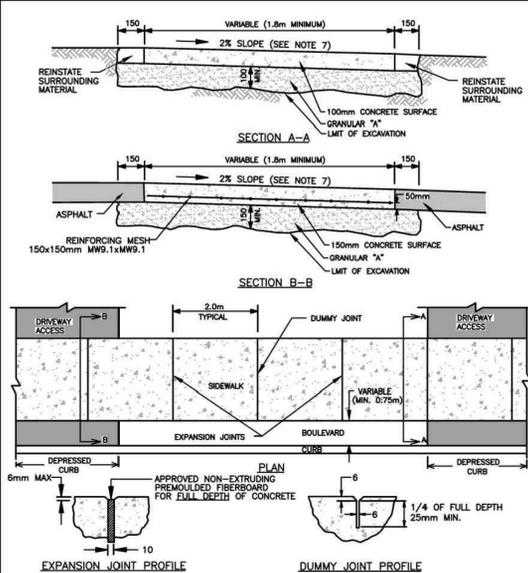
Ottawa CONCRETE BARRIER CURB FOR GRANULAR BASE PAVEMENT (MODIFIED OPSD-600.110)
 DATE: JANUARY 2003
 REV. DATE: MARCH 2014
 DWG. No.: SC1.1



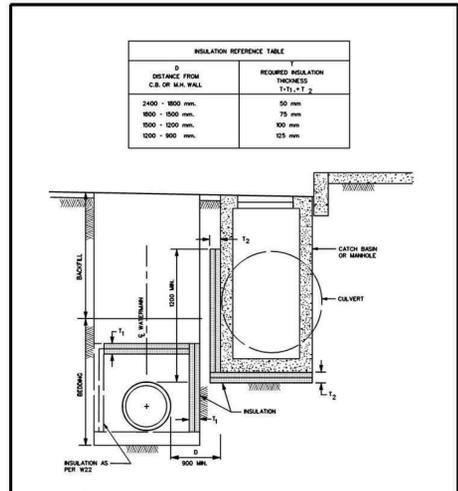
Ottawa CONCRETE BARRIER CURB WITH SIDEWALK
 DATE: JAN. 2003
 REV. DATE: MARCH 2007
 DWG. No.: SC1.4

Douglas James
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 MANAGER, DEVELOPMENT REVIEW - CENTRAL PLANNING, INFRASTRUCTURE & ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

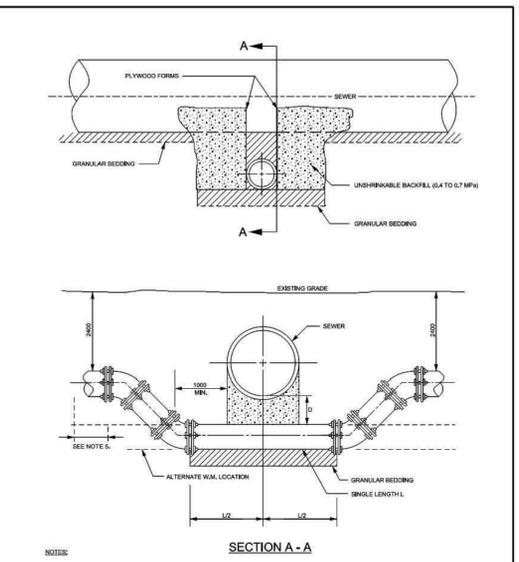
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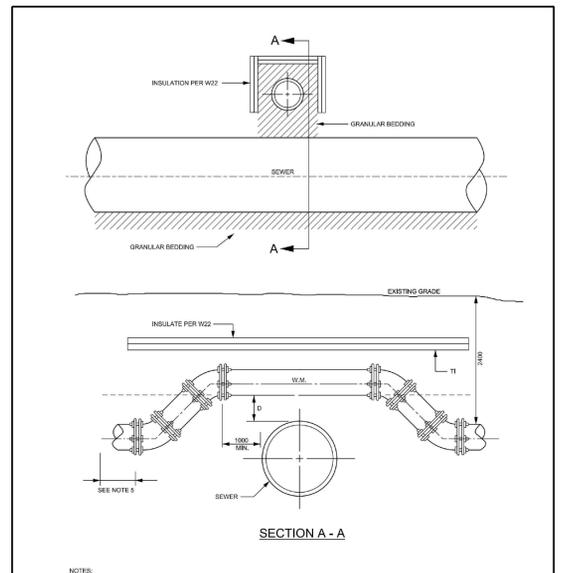
Ottawa TYPICAL CONCRETE SIDEWALK IN BOULEVARD
 DATE: MAY 2001
 REV. DATE: MARCH 2007
 DWG. No.: SC4



Ottawa THERMAL INSULATION OF WATERMAINS AT OPEN STRUCTURES
 DATE: MAY 2001
 REV. DATE: FEB 2004
 DWG. No.: W2.5



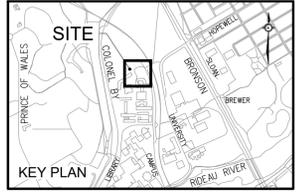
Ottawa WATERMAIN CROSSING BELOW SEWER
 DATE: MAY 2001
 REV. DATE: MARCH 2013
 DWG. No.: W2.5



Ottawa WATERMAIN CROSSING OVER SEWER
 DATE: MAY 2001
 REV. DATE: MARCH 2013
 DWG. No.: W2.5.2

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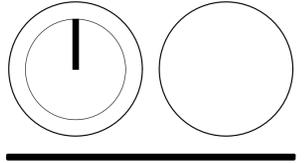
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 Tel: 613 238 2117
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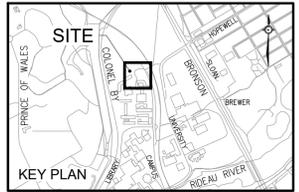
DETAILS

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 Date:

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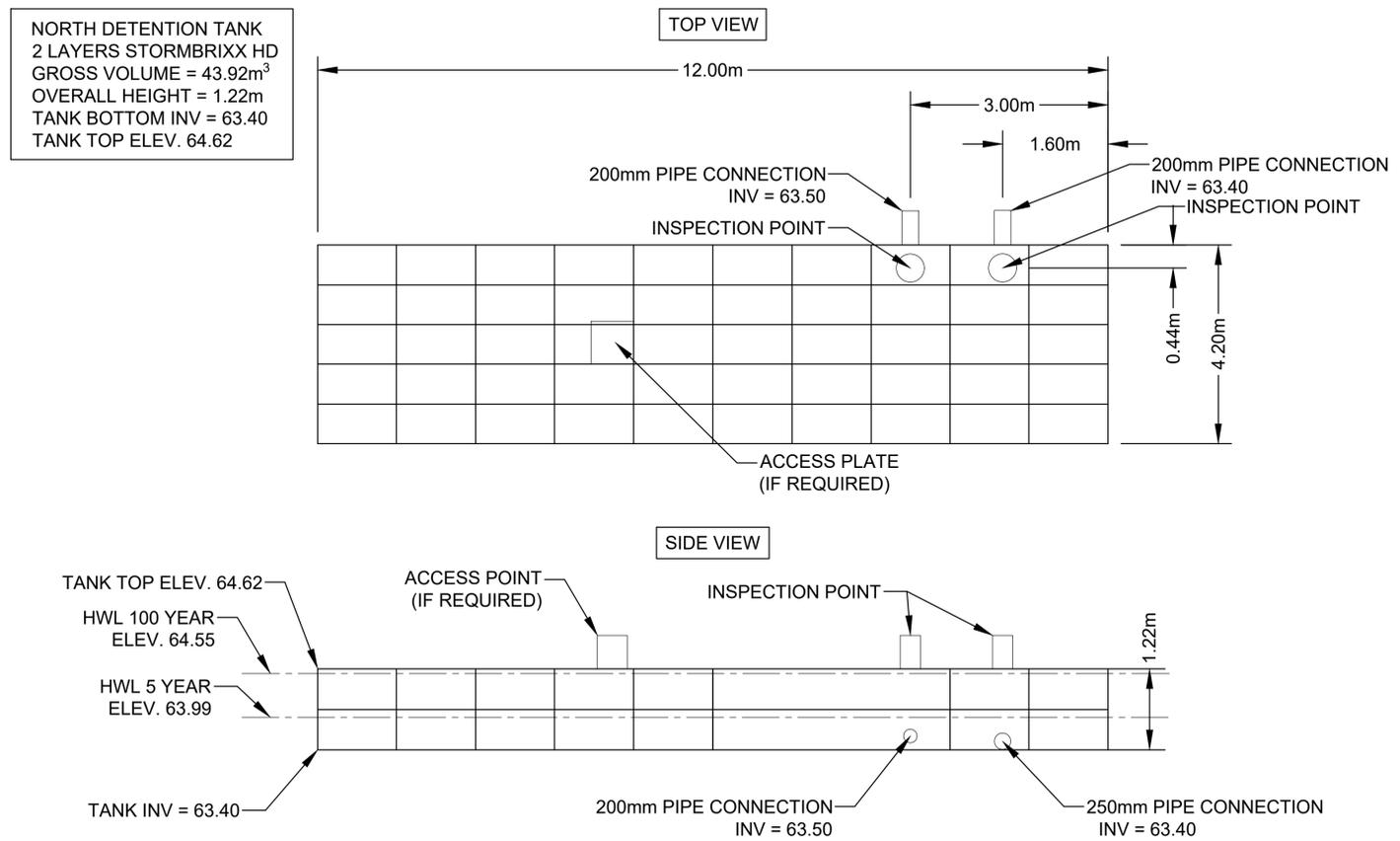
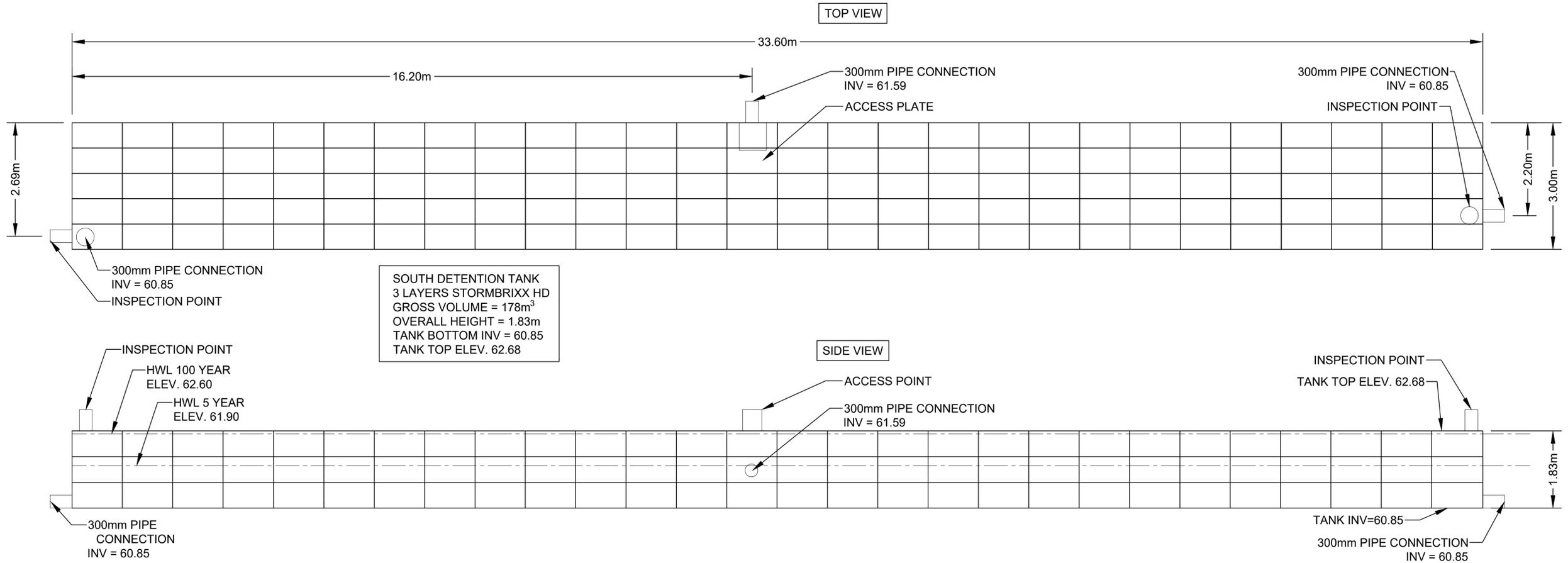
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6	31/08/2020	REISSUED FOR SITE PLAN APPROVAL



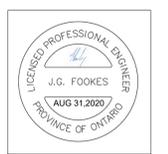
NOTES:

- SUBMIT SHOP DRAWINGS STAMPED BY AND ENGINEER LICENSED TO PRACTICE IN ONTARIO.
- ALL COVERS TO BE OPSD 401.010 TYPE A OR APPROVED EQUIVALENT.
- INSTALLATION (INCLUDING BEDDING, COMPACTION, AND BACKFILL) SHALL BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ON COMPLETION OF INSTALLATION, SUBMIT CCTV VIDEO OF TANK INTERIOR AND LETTER FROM TANK SUPPLIER CONFIRMING THAT INSTALLATION WAS CARRIED OUT IN ACCORDANCE WITH THEIR RECOMMENDATIONS.
- TANK TO BE DESIGNED FOR DEPTH OF FILL AS INDICATED BY GRADING PLAN AND HS20 LOADING.
- TANK TO BE WATERTIGHT. A 40 MIL HEAT-WELDED LLDPE GEOMEMBRANE IS TO BE PROVIDED AND INSTALLED.
- AFTER INSTALLATION PHYSICAL PROTECTION (BARRIERS OR EQUIVALENT) SHALL BE ERECTED TO PROTECT TANK FROM DAMAGE DUE TO CONSTRUCTION EQUIPMENT.
- ALL COVERS FOR ACCESS POINT AND INSPECTIONS POINTS ARE TO BE LOCKABLE, WATERTIGHT PER OPSD 401.030

Douglas James

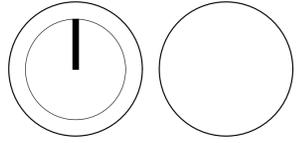
DOUGLAS JAMES, MCIP, RPP
 MANAGER, DEVELOPMENT REVIEW - CENTRAL
 PLANNING, INFRASTRUCTURE & ECONOMIC
 DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
 By Douglas James at 3:30 pm, Aug 24, 2021



Diamond Schmitt Architects 384 Adelaide Street West, Suite 100, Toronto, Ontario M5V 1R7, Canada. Tel: 416 862 8800, Fax: 416 862 5508, info@dsaa.ca, www.dsaa.ca

KWC Architects Inc. 383 Parkdale Avenue, Suite 201, Ottawa, Ontario K1T 0R4, Canada. Tel: 613 238 2117, Fax: 613 238 6395, kwc@kwc-arch.com, www.kwc-arch.com



CARLETON UNIVERSITY
 STUDENT RESIDENCE

1125 Colonel By Drive, Ottawa, Ontario K1S 5B6

DETAILS

Scale: AS SHOWN
 Project No:
 Date:

C009