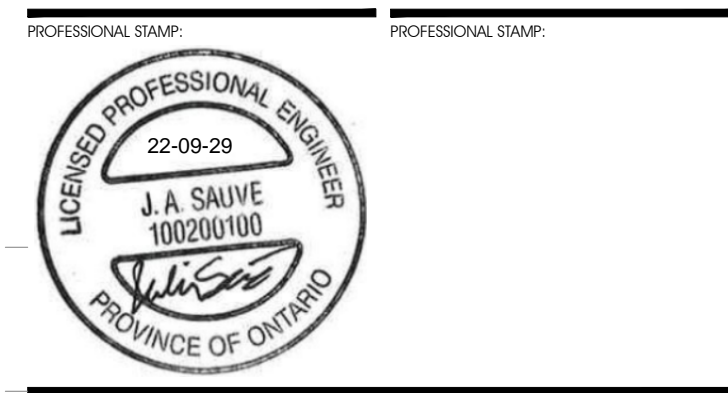


RECORD OF REVISIONS

1	ISSUED FOR SITE PLAN CONTROL REV. 3	SEPTEMBER 29, 2022
2	ISSUED FOR 66% REVIEW	JULY 15, 2022
3	ISSUED FOR SITE PLAN CONTROL REV. 2	JUNE 7, 2022
4	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021

NUMBER: REVISION: DATE: (MM/DD/YYYY)



**CIVITAS GROUP**  
ARCHITECTURE & LANDSCAPE ARCHITECTURE

CIVITAS ARCHITECTURE INC. OTTAWA, ON T 613.742.7492  
14 CHAMBERLAIN AVENUE, SUITE 101, CANADA K1S 1V9 WWW.CIVITAS-INC.CA

CONSULTANT LOGO:



PROJECT TITLE:  
**FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY**

SCALE: NONE

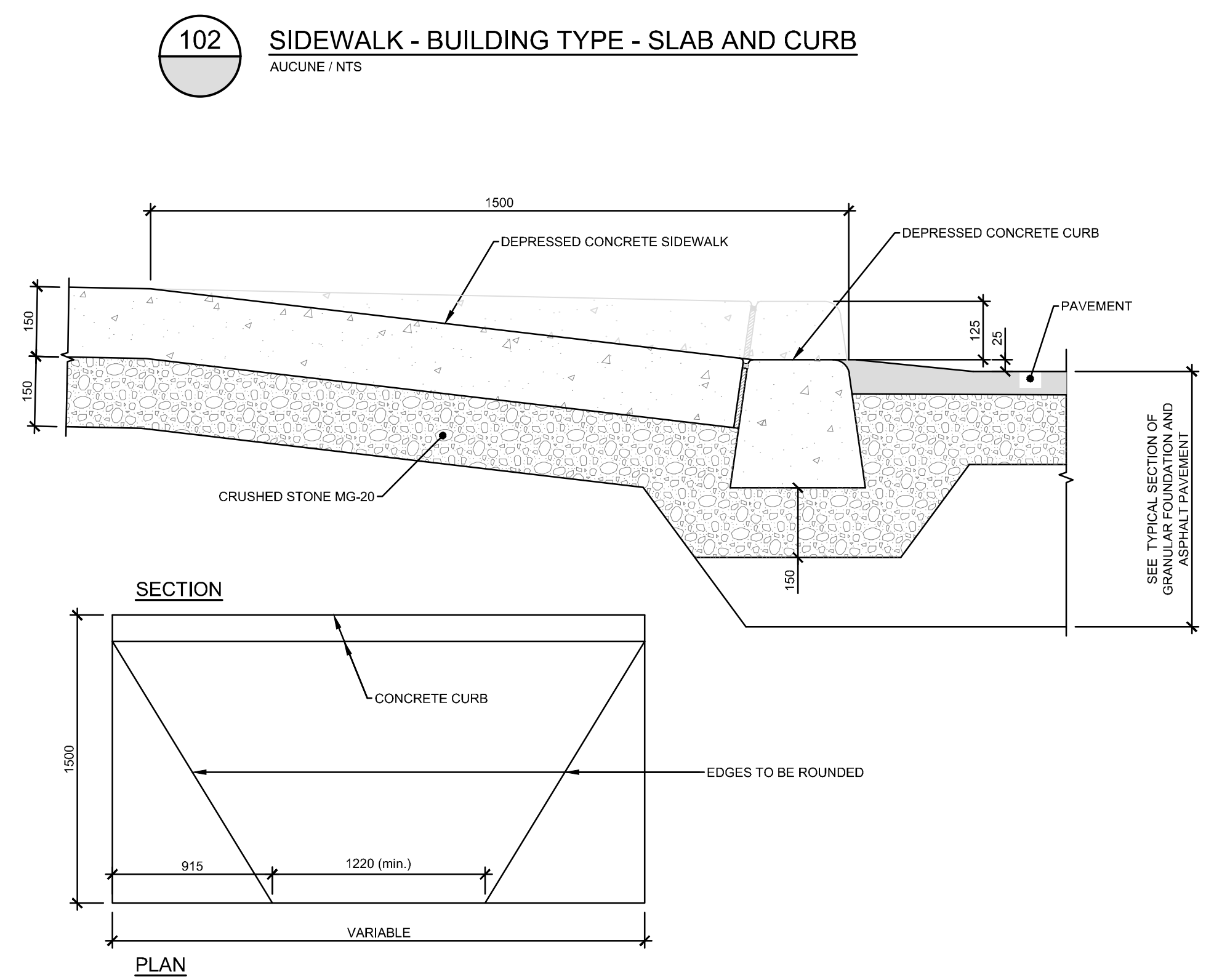
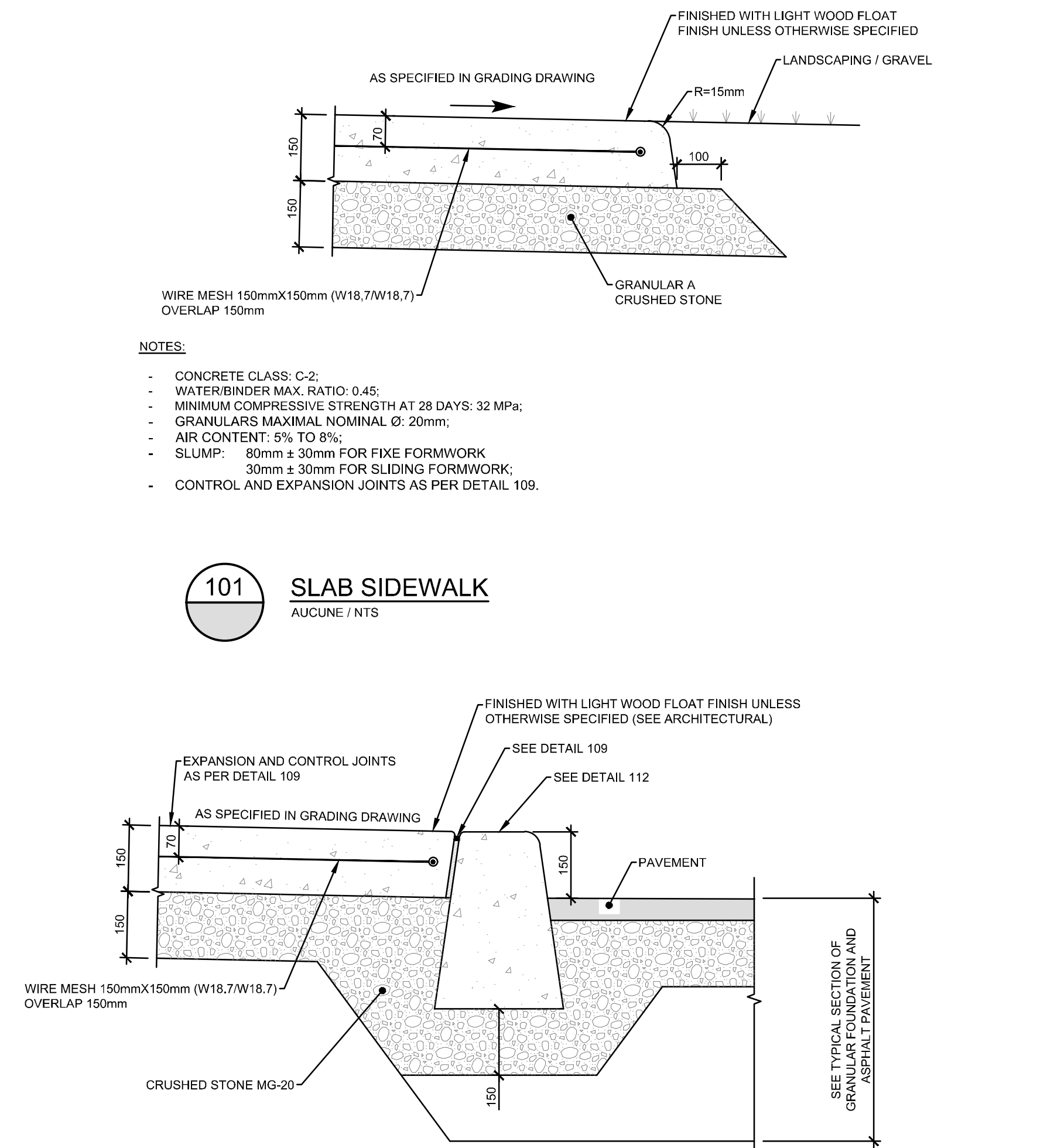
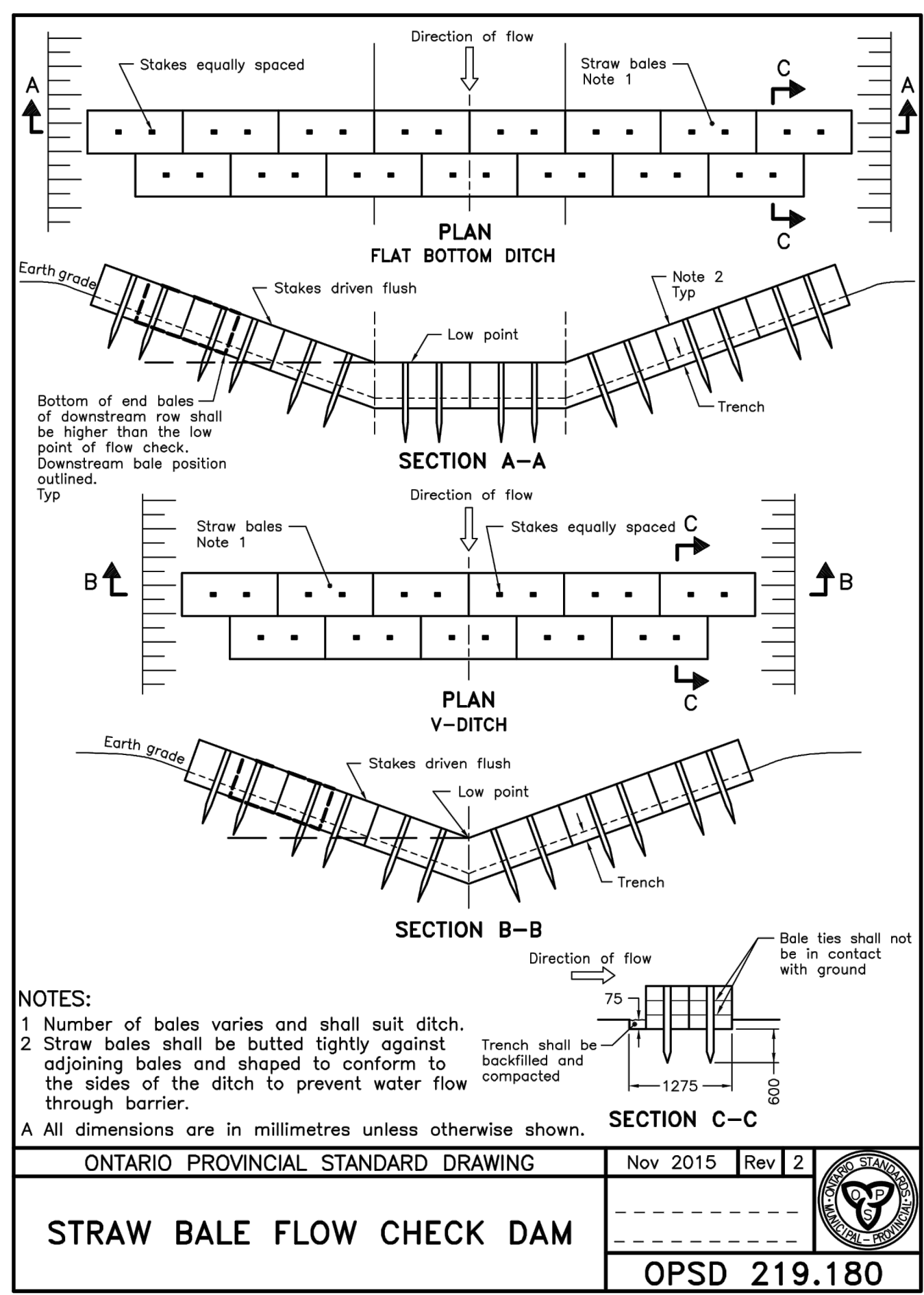
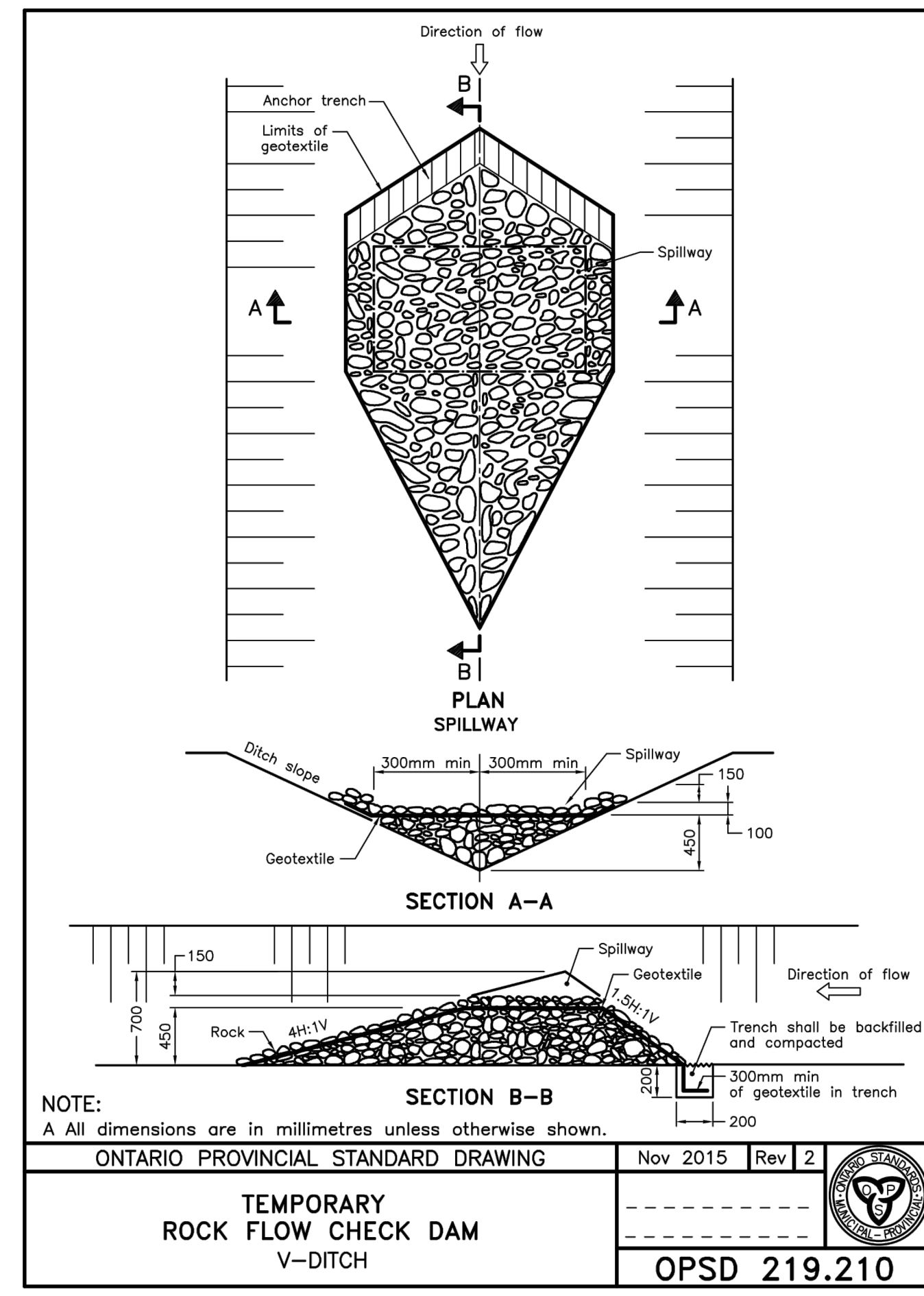
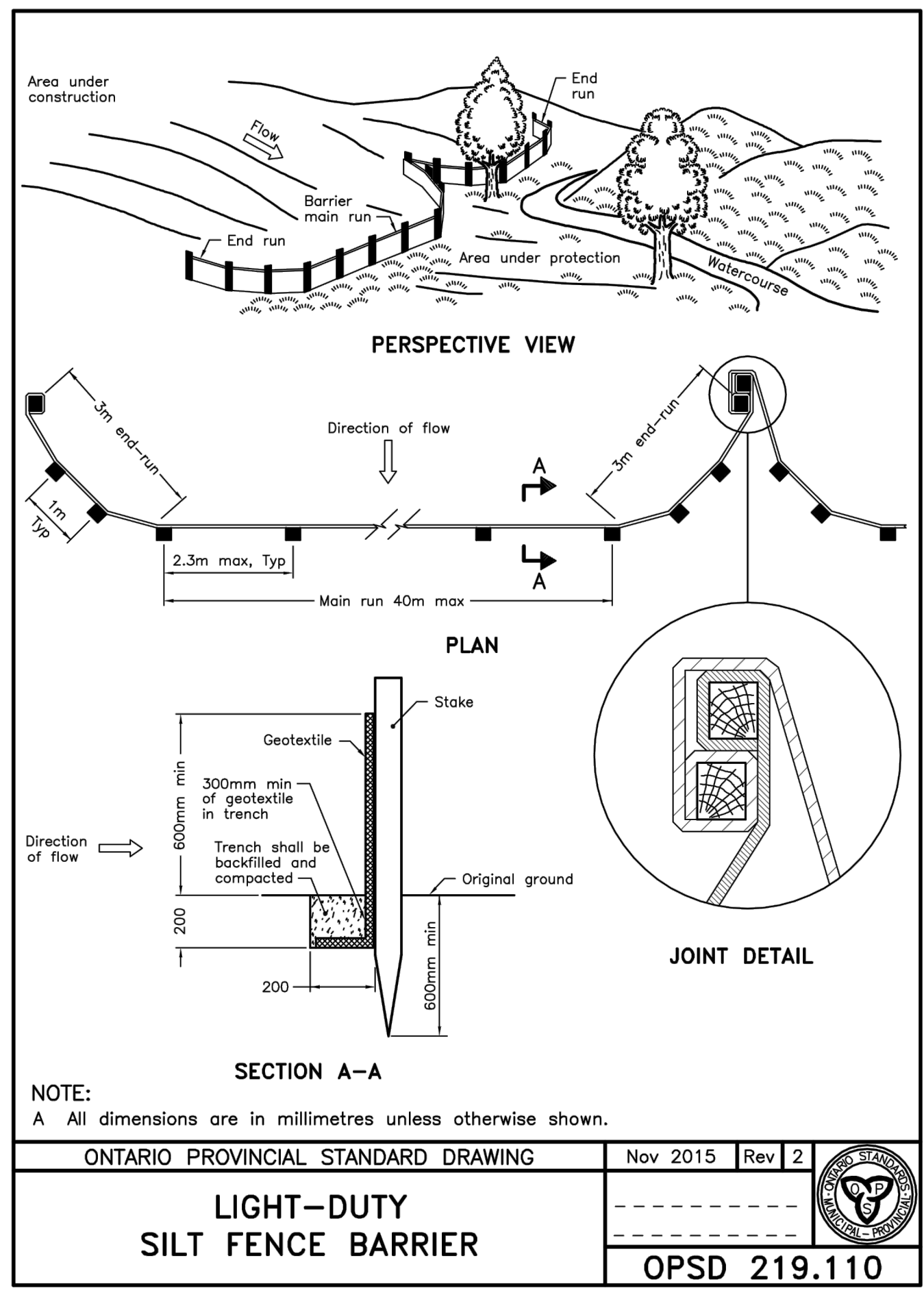
SOMME ST. OTTAWA, ON

DRAWING TITLE:

**DETAILS**

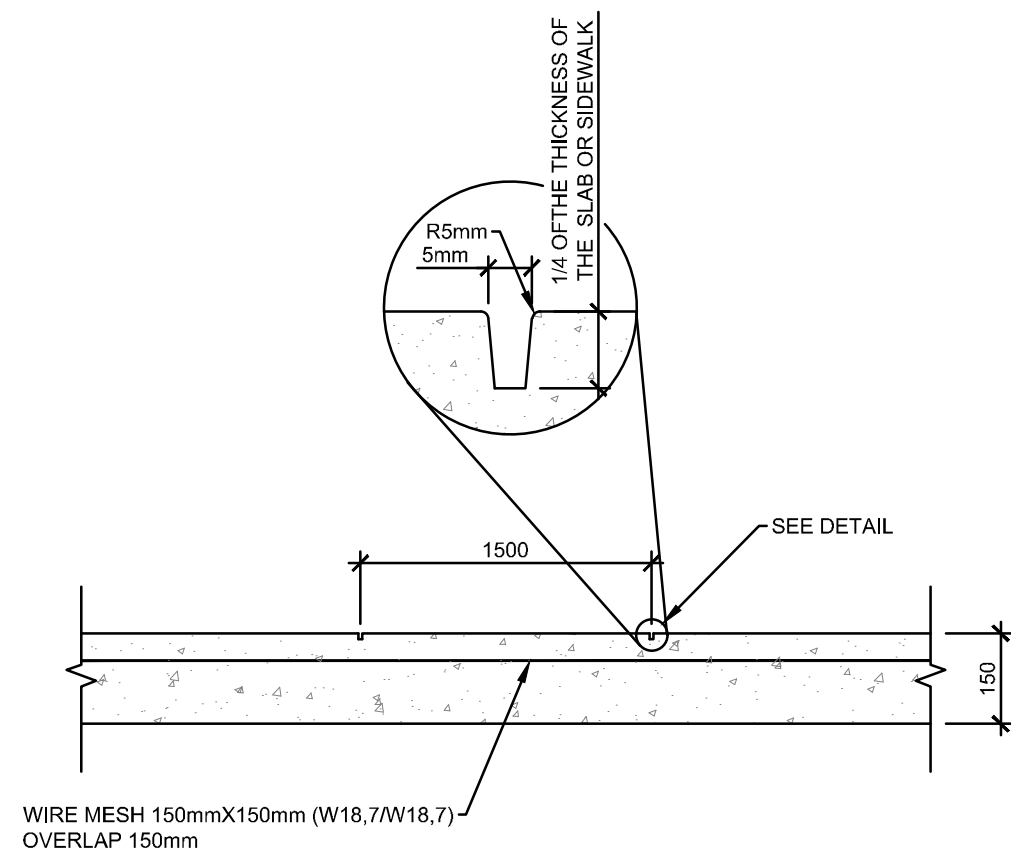
DRAWN BY:	D.CANN	DRAWING NUMBER:	<b>C009</b>
DATE:		REVIEWED BY:	J.SAUVÉ
APPROVED BY:		PRINT DATE:	
ISSUED DATE:	NOVEMBER 26, 2021	REVISION NUMBER:	
CLIENT PROJECT #:		PROJECT #:	<b>A001083</b>

DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ADJUSTING THE ARCHITECT OF ANY DISCREPANCIES BEFORE CONSTRUCTION COMMENCES. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SOLELY BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.

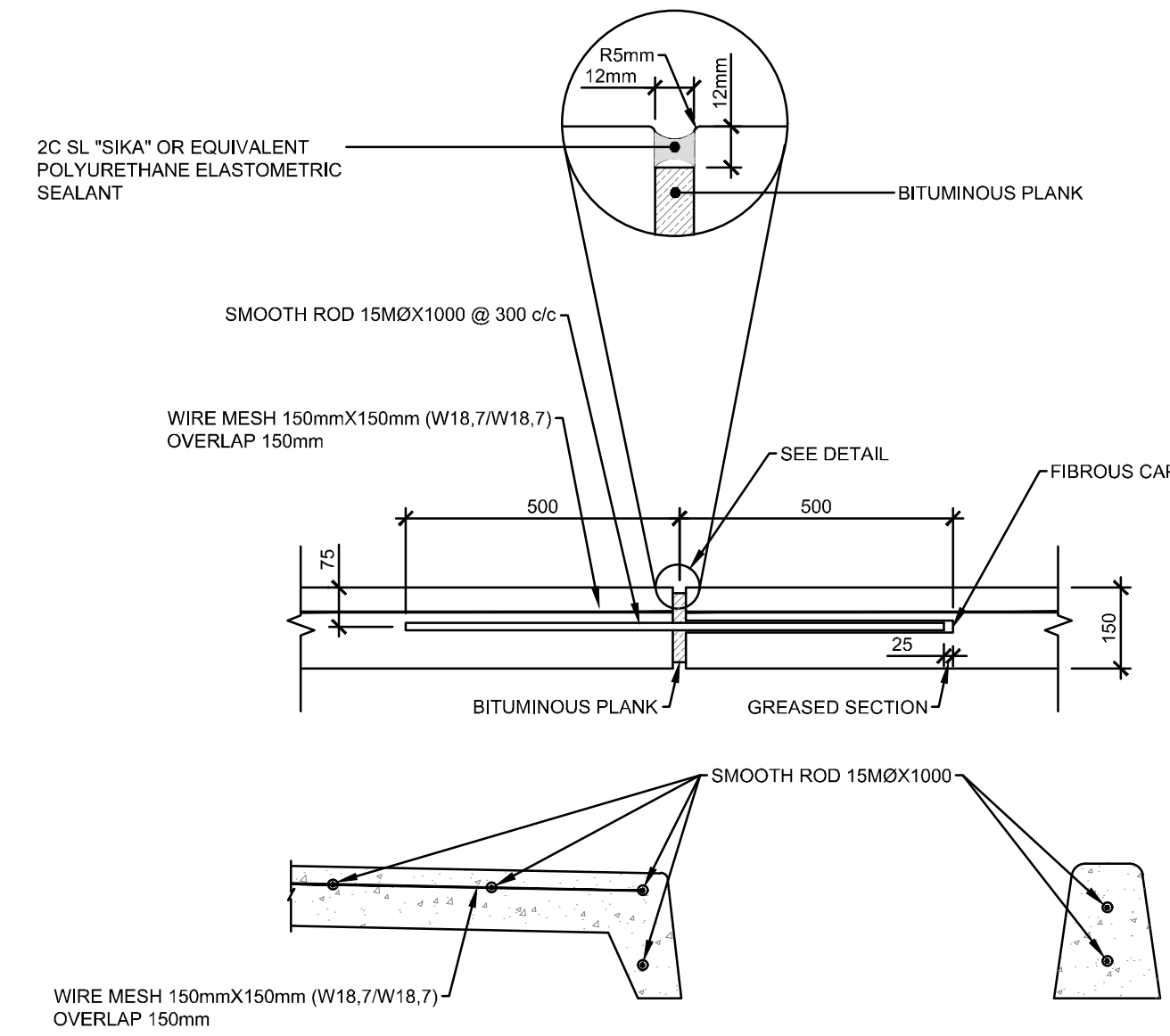


C:\MIA-PLUS\CIVITAS\CIVITAS-10\DOT\_PROJECTS\A001000-A001499\A001083\_FASTFRATE\_WAREHOUSE\_DEVELOPMENT\A001460\_CIVIL





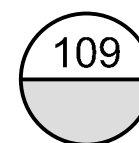
**CONTROL JOINT**



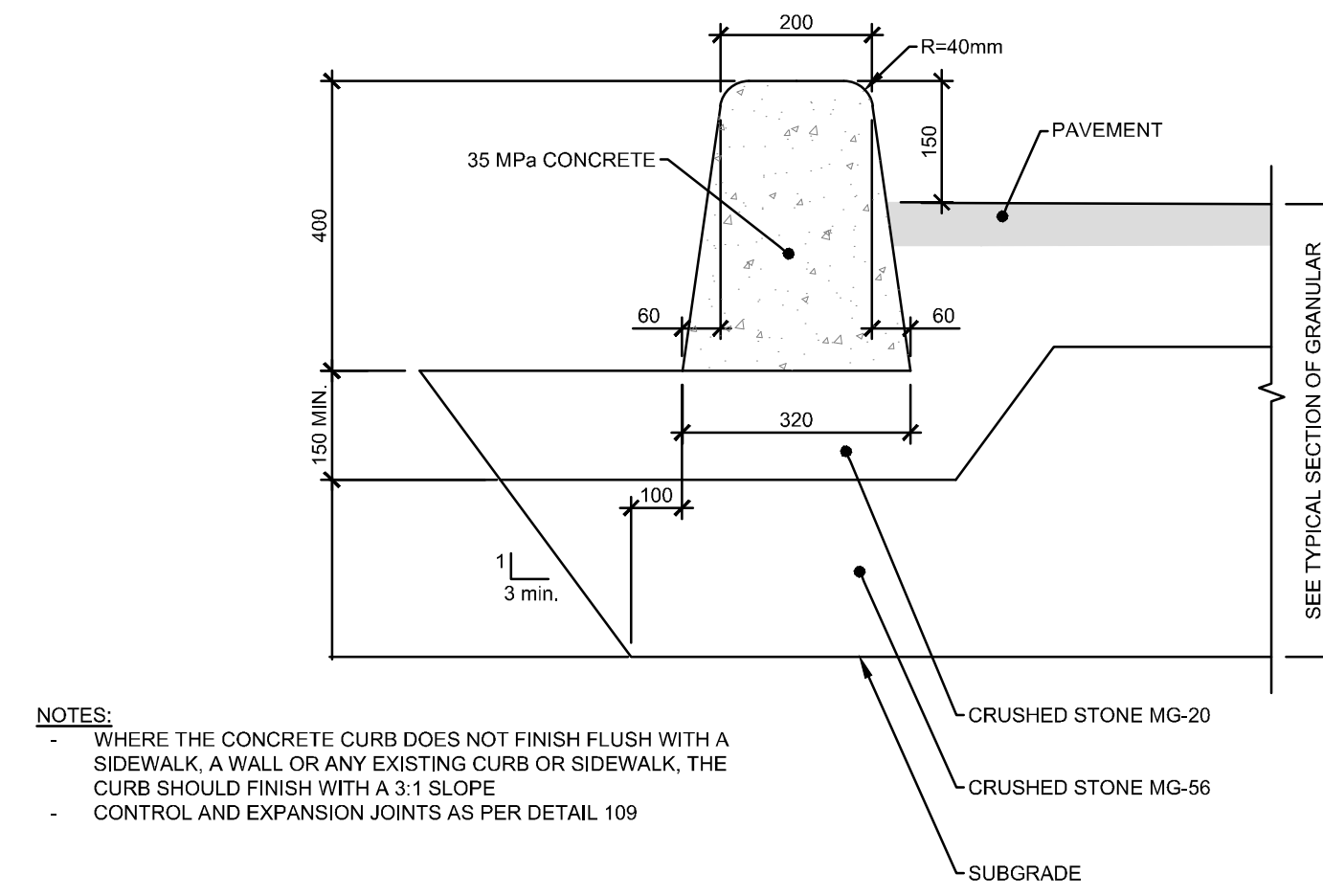
**CONSTRUCTION AND EXPANSION JOINT**

**NOTES:**

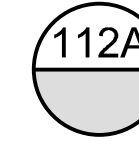
- EXPANSION JOINTS OF CONCRETE WORK AT 6.0m C/C MAX. DIRECTION CHANGE AND AT CONTACT WITH CONCRETE STRUCTURES
- EDGES AND CONTROL JOINTS SHALL BE GROOVED, TOOLED AND BURNISHED WITH BRONZE EDGERS AND GROOVERS.



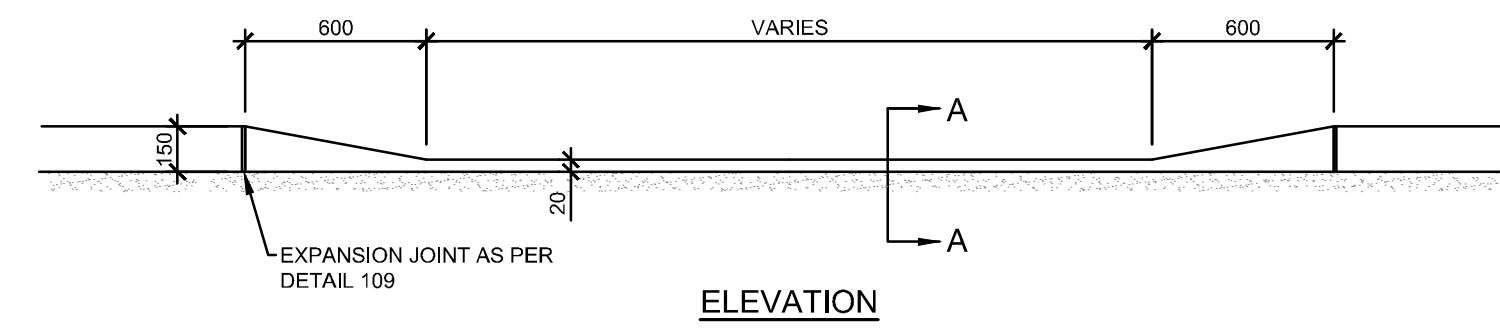
**109 EXPANSION, CONTROL AND CONSTRUCTION JOINTS FOR CONCRETE WORK**  
AUCUNE / NTS



- NOTES:**
- WHERE THE CONCRETE CURB DOES NOT FINISH FLUSH WITH A SIDEWALK, A WALL OR ANY EXISTING CURB OR SIDEWALK, THE CURB SHOULD FINISH WITH A 3:1 SLOPE
  - CONTROL AND EXPANSION JOINTS AS PER DETAIL 109



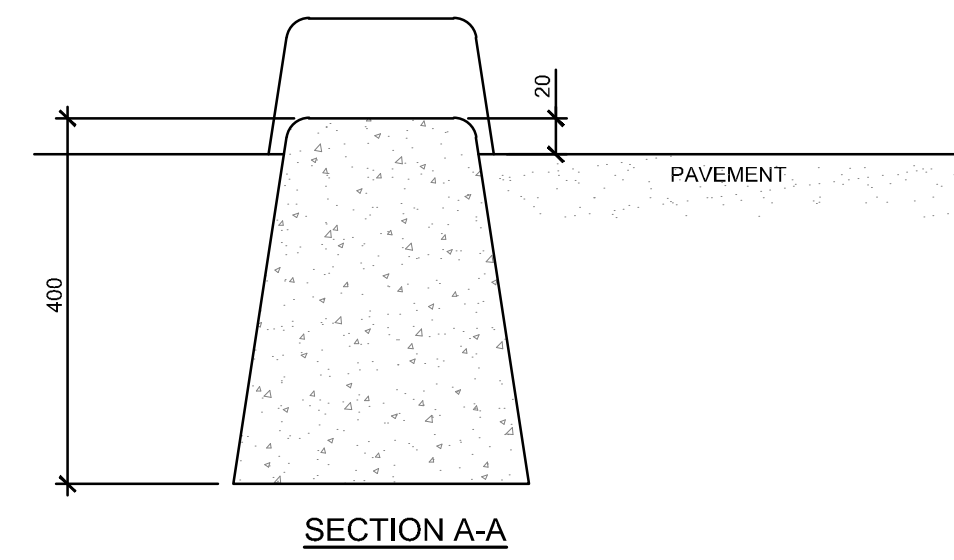
**112A CONCRETE CURB DETAIL (TYPICAL)**  
AUCUNE / NTS



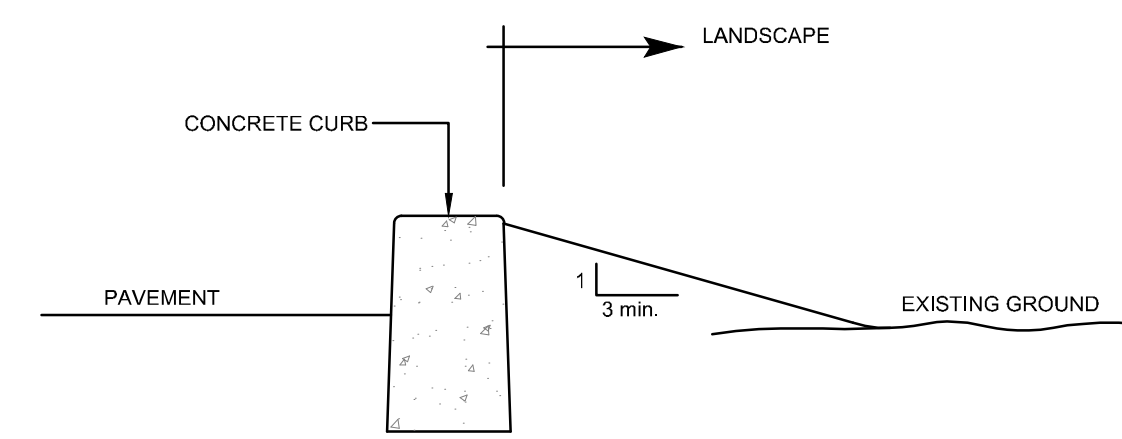
**ELEVATION**



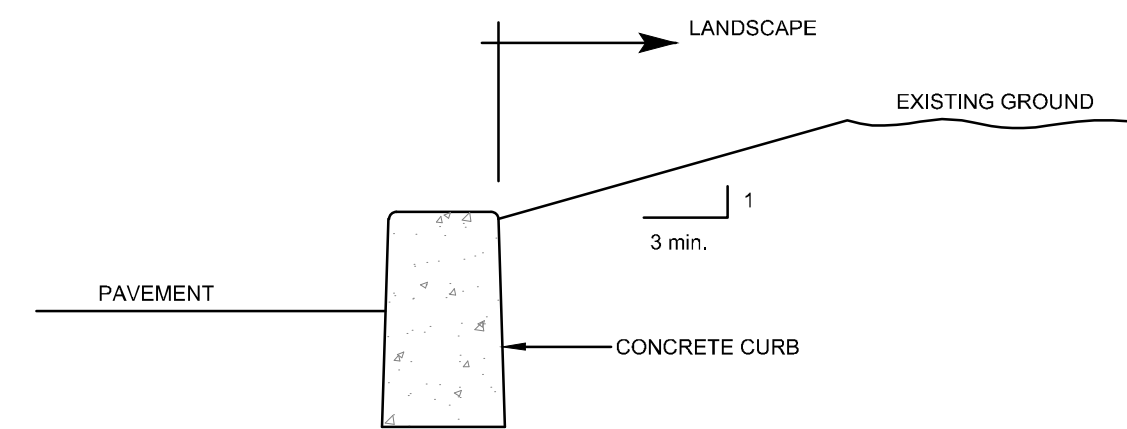
**113 DEPRESSED CONCRETE CURB**  
AUCUNE / NTS



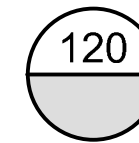
**SECTION A-A**



**SIDE VIEW - LOWER EXISTING GROUND**

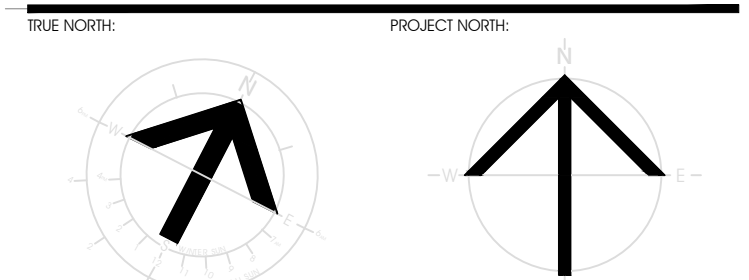
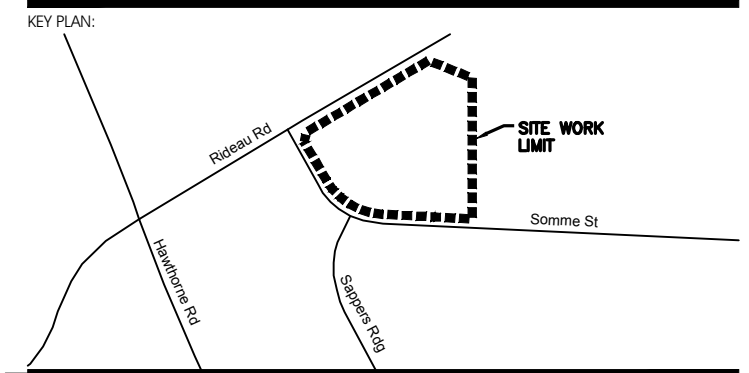


**SIDE VIEW - UPPER EXISTING GROUND**

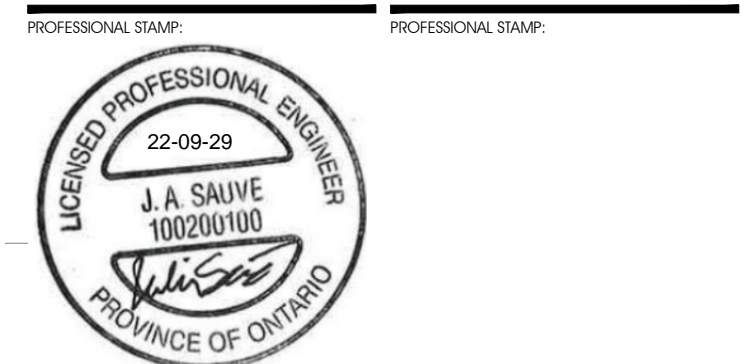


**120 TYPICAL SECTION - LANDSCAPE CONCRETE CURB**  
AUCUNE / NTS

CLIENT LOGO:



NUMBER	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR 66% REVIEW	JULY 15, 2022
2	ISSUED FOR 66% REVIEW	JUNE 7, 2022
3	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021



CIVITAS ARCHITECTURE INC. OTTAWA, ON T 613.742.7492  
14 CHAMBERLAIN AVENUE, SUITE 101 CANADA K1S 1V9 WWW.CIVITAS-INC.CA



**FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY**  
SCALE: NONE  
SOMME ST, OTTAWA, ON

**DETAILS**

DRAWN BY: D.CANN DRAWING NUMBER: **C010**  
DATE: J.SAUVÉ  
REVIEWED BY: J.SAUVÉ  
APPROVED BY:  
PRINT DATE: NOVEMBER 26, 2021 REVISION NUMBER:  
ISSUED DATE: NOVEMBER 26, 2021  
CLIENT PROJECT #: PROJECT #

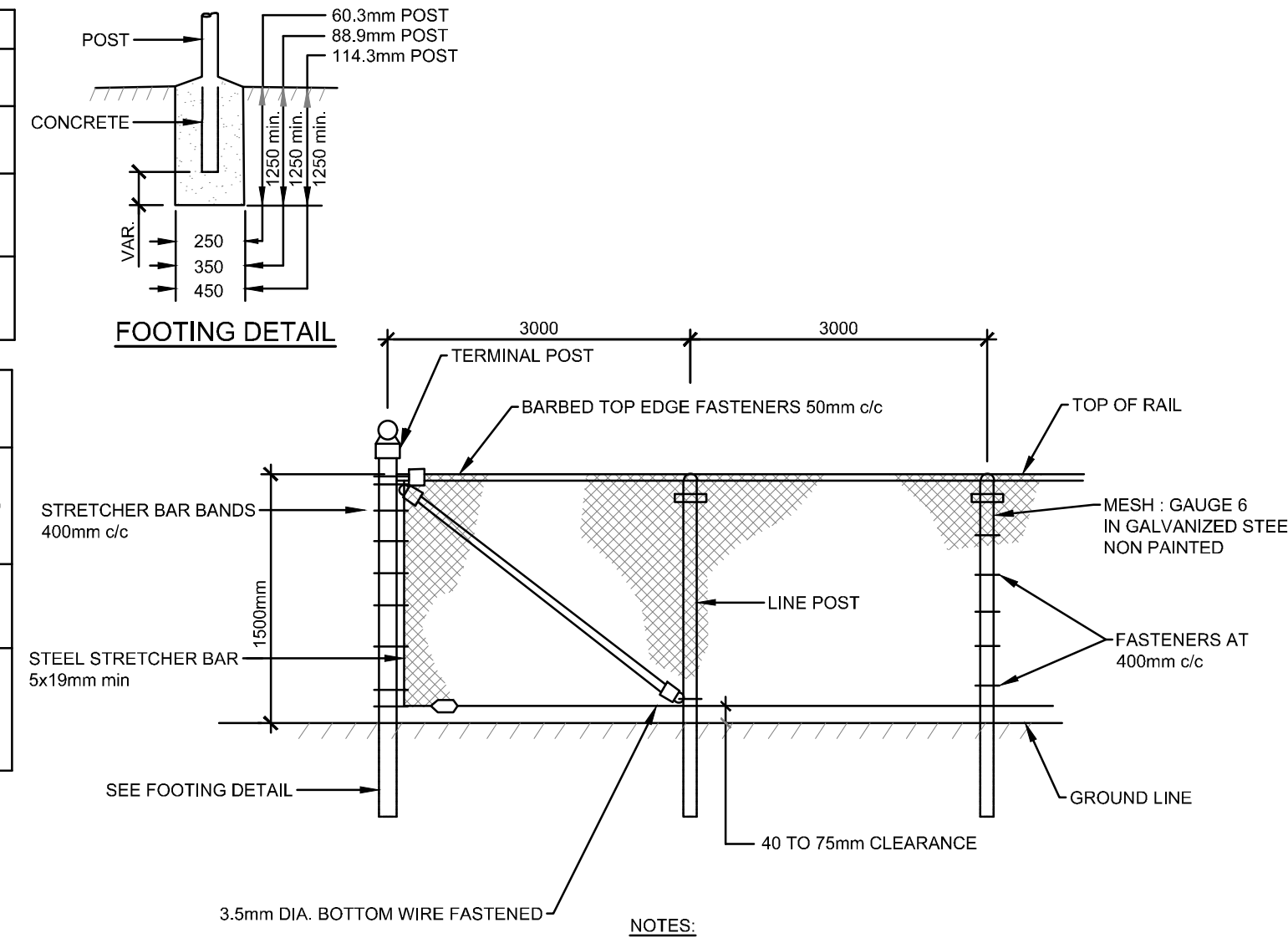
**A001083**

DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND TYPING. THE ARCHITECT IS NOT RESPONSIBLE FOR ANY CONSTRUCTION BEFORE CONSTRUCTION COMMENCES. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL AND OTHER CONSULTATIVE DRAWINGS. THIS DRAWING SHALL BE USED FOR CONSTRUCTION PURPOSES ONLY AS ISSUED BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.

POST DETAILS				
POST TYPE	OUTSIDE DIA. (mm)	POST LENGTH		SLEEVES
		STANDARD (m)	RETAINING WALLS (m)	
LINE POST	60.3	2.6	2.0	88.9
END, CORNER, OR STRAINING POST	88.9	2.9	2.3	114.3

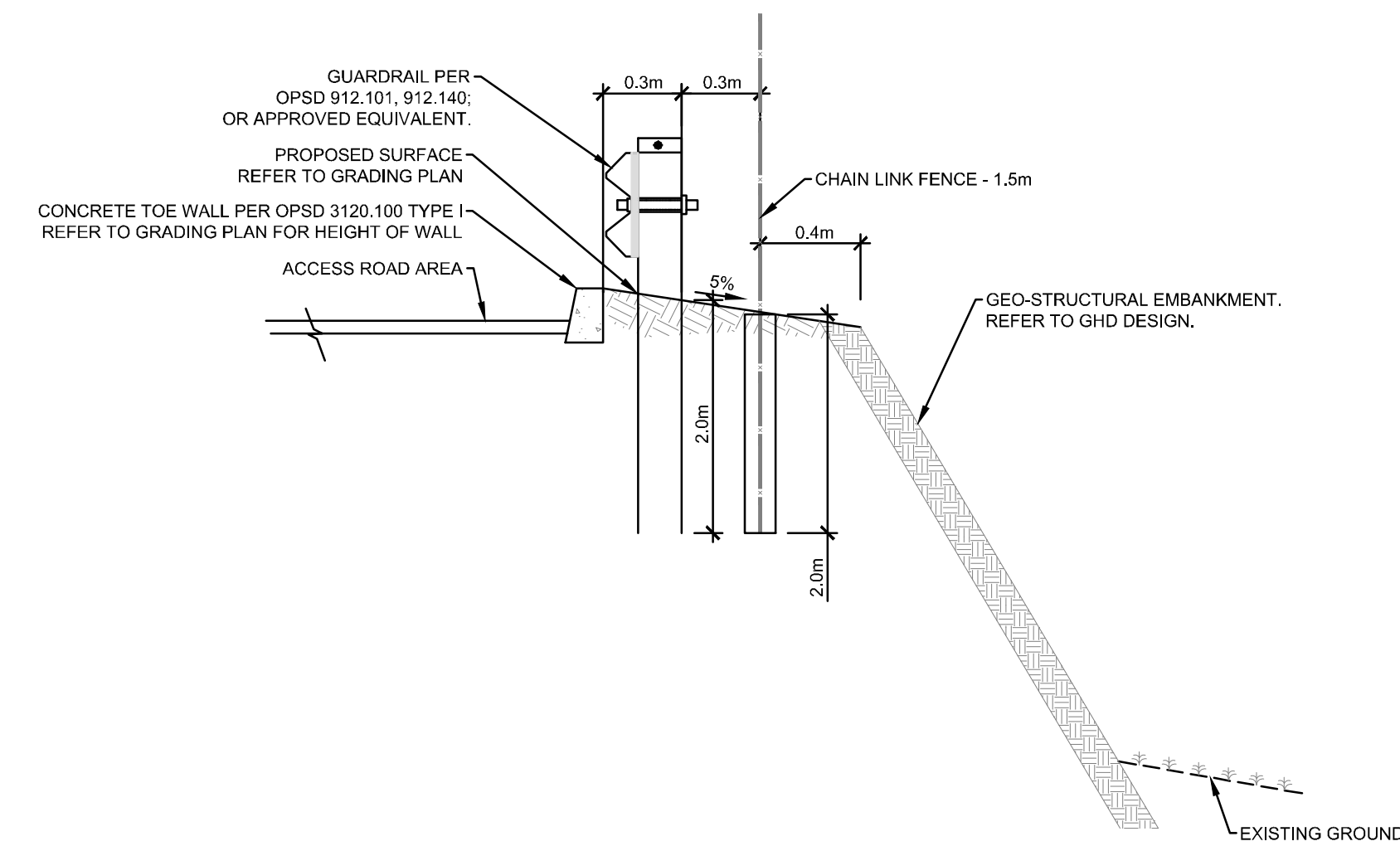
GATE AND GATE POST DETAILS			
GATE TYPE AND MAX. OPENING (m)	FRAME MEMBER REINFORC. MIN. OUT. DIA. (mm)	POST DIA. MIN. OD (mm)	LENGTH STANDART (m)
SINGLE SWING 4.5 SINGLE SWING 6.0 DOUBLE SWING 9.0	48.3	114.3	2.9

NOTE:  
GATE LEAVES GREATER THAN 3.6m IN WIDTH ARE SUPPLIED WITH DIAGONAL BRACES.



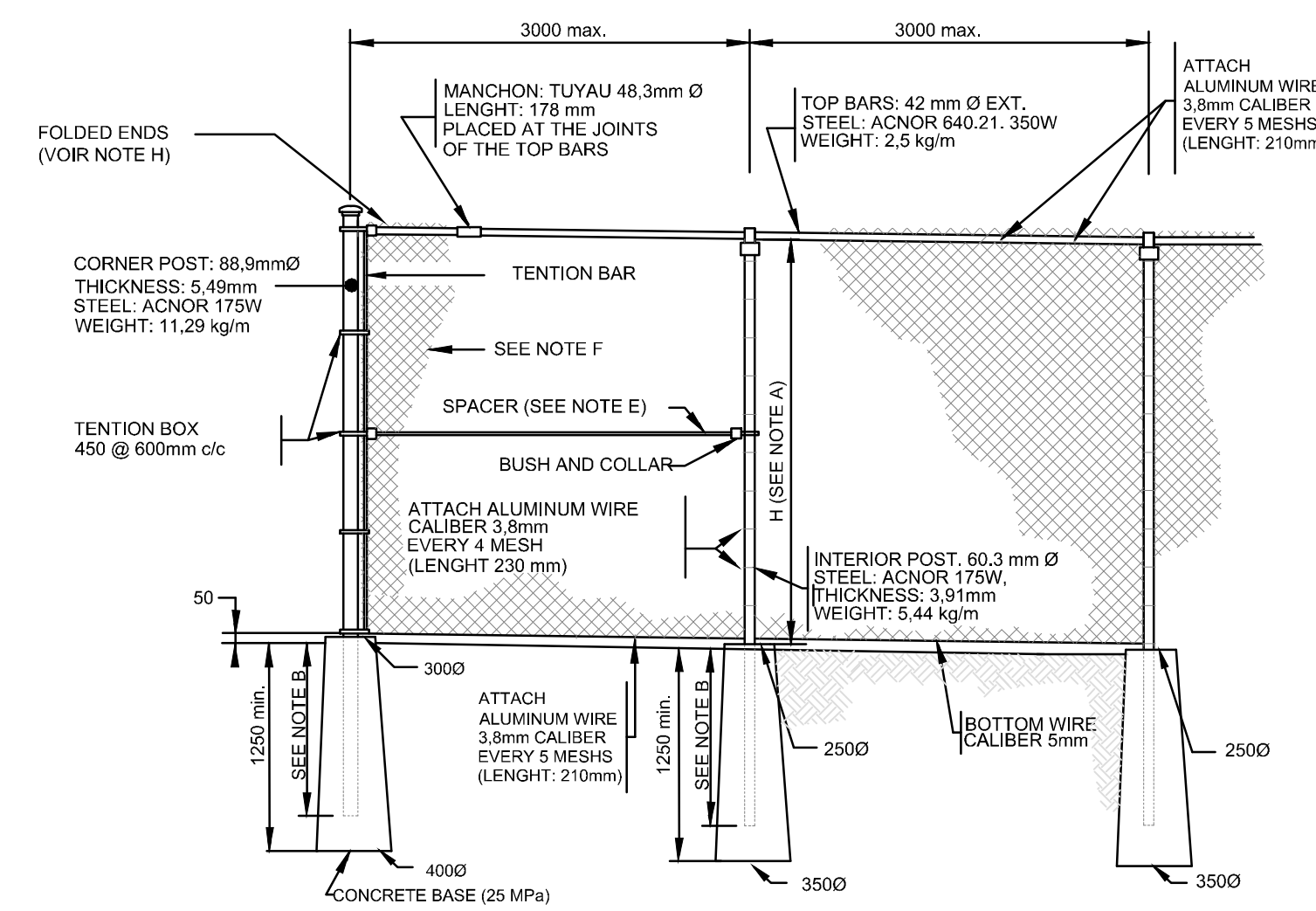
- NOTES:
1. ALL FASTENERS MADE OF GALVANIZED STEEL (NO ALUMINUM)
  2. TOP OF RAIL TYPE "KNUCKLE/KNUCKLE" (NO POINTY EDGE)

126 CHAIN LINK FENCE  
AUCUNE / NTS



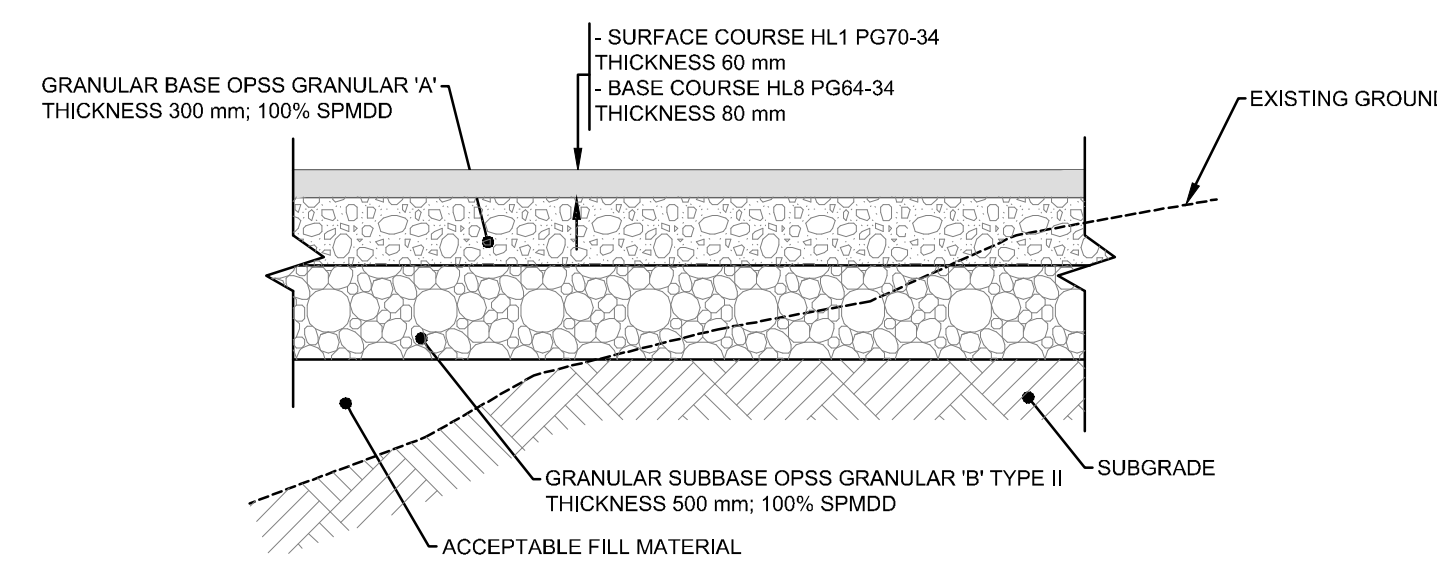
NOTES:  
- INSTALLATION OF GUARDRAIL AND FENCE POSTS BY AUGERING STRICTLY PROHIBITED.

138 TYPICAL SECTION - EMBANKMENT, GUARDRAIL AND FENCE  
AUCUNE / NTS

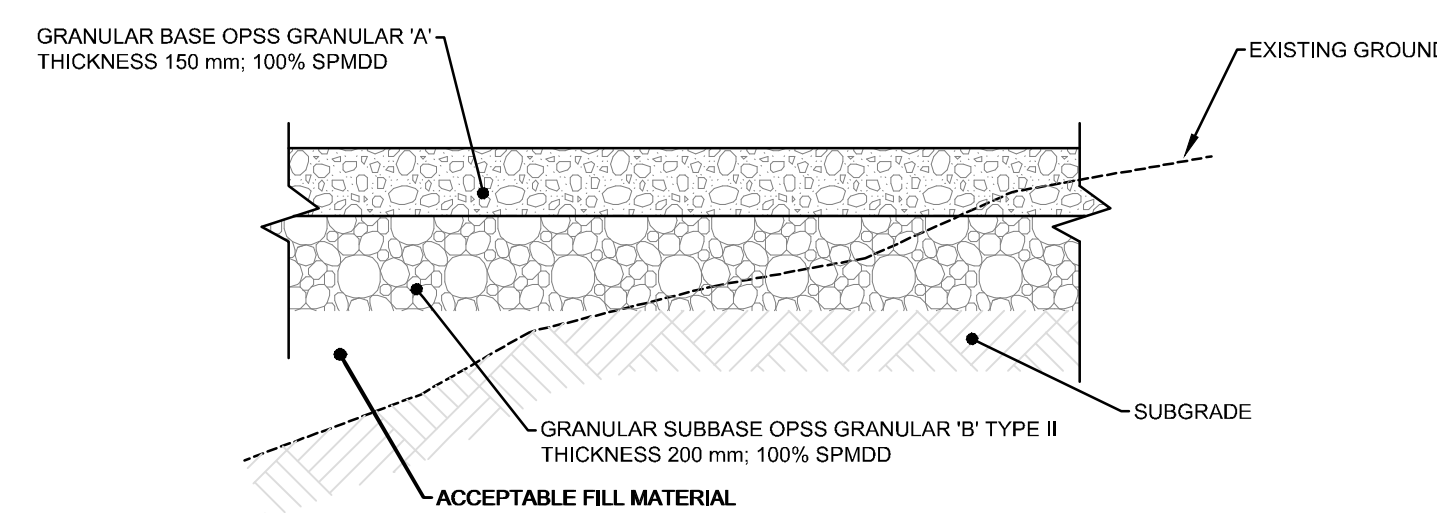


- NOTES:
- A. FENCE HEIGHT: 1.5 m.
  - B. LENGTH OF UNDERGROUND POLES: 1.1 m
  - C. CORNER POST: 88.9 mm Ø WITH TWO SPACERS.
  - D. REINFORCING POST: 88.9 mm Ø EVERY 60 m WITH TWO SPACERS.
  - E. SPACERS: 42.2 mm Ø, 350W ACNOR STEEL.
  - F. GALVANIZED GRILLING-008, COVERED WITH VINYL (BLACK) FOR A TOTAL GAUGE #8E-008, CONFORMS TO CANOGSS-138.1 (TYPE 1, CATEGORY A, MEDIUM STYLE) SPACING OF 50mm X 50mm.
  - G. ALL METAL PARTS ARE GALVANIZED.
  - H. THE ENDS OF THE MESHES AT THE TOP AND BOTTOM MUST BE FOLDED INWARDS SO AS NOT TO HAVE PRICKLY TIPS.
  - I. THE WIRE MESH AND METAL PARTS MUST BE BLACK WITH PVC STRAP "SUPER PRIVACY" (BLACK) IN THE PLACES INDICATED ON THE OVERALL PLAN
  - J. MEASUREMENTS ARE IN MILLIMETRES

141A GALVANIZED METAL MESH FENCE 1.8m HIGH  
AUCUNE / NTS

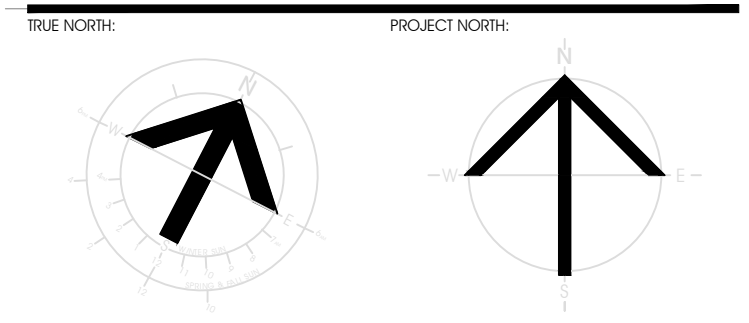
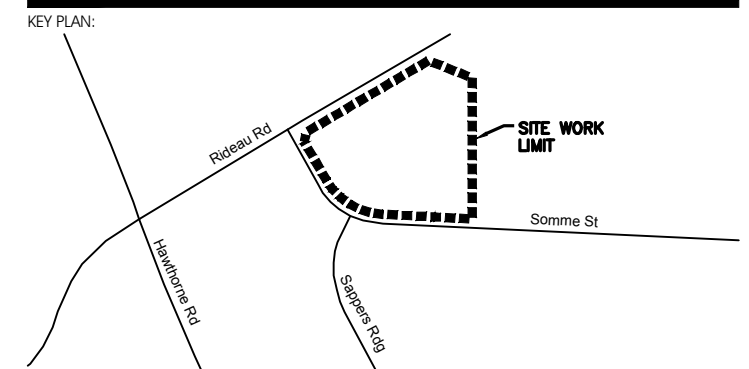


202 TYPICAL SECTION - GRANULAR FOUNDATION AND ASPHALT PAVEMENT (HEAVY DUTY)  
AUCUNE / NTS



202A TYPICAL SECTION - GRANULAR PAD  
AUCUNE / NTS

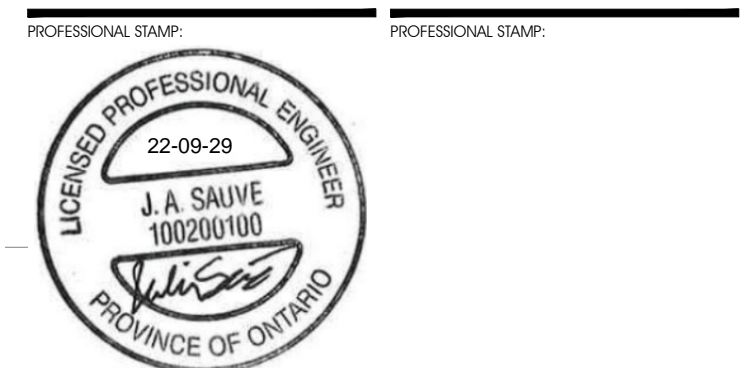
CLIENT LOGO:



RECORD OF REVISIONS

NO.	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR SITE PLAN CONTROL - REV. 3	SEPTEMBER 29, 2022
2	ISSUED FOR 60% REVIEW	JULY 15, 2022
3	ISSUED FOR SITE PLAN CONTROL - REV. 2	JUNE 7, 2022
4	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021

NUMBER: REVISION: DATE (MM/DD/YYYY)  
SITE:



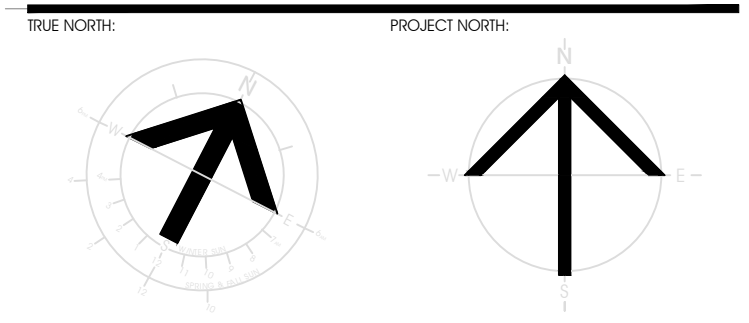
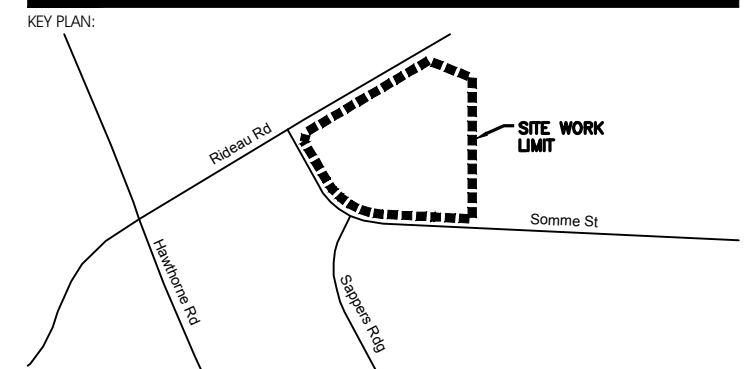
PROJECT TITLE:  
FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY  
SCALE: NONE  
SOMME ST, OTTAWA, ON

DETAILS

DRAWN BY: D.CANN DRAWING NUMBER:  
DATE: J.SAUVÉ  
REVIEWED BY: J.SAUVÉ C011  
APPROVED BY:  
PRINT DATE: NOVEMBER 26, 2021 REVISION NUMBER:  
ISSUED DATE: PROJECT #:  
CLIENT PROJECT #: A001083

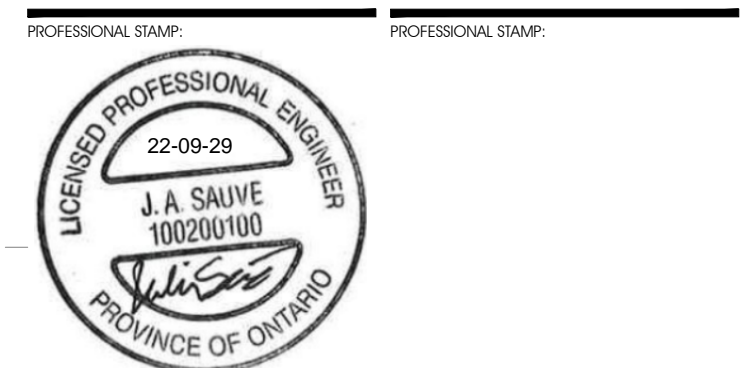
DO NOT SCALE THE DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND TYPING. THE ARCHITECT IS NOT RESPONSIBLE FOR ANY CONSTRUCTION ERRORS. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL, AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SOBBED BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.





RECORD OF REVISIONS

NO.	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR 66% REVIEW	JULY 15, 2022
2	ISSUED FOR 66% REVIEW	JUNE 7, 2022
3	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021



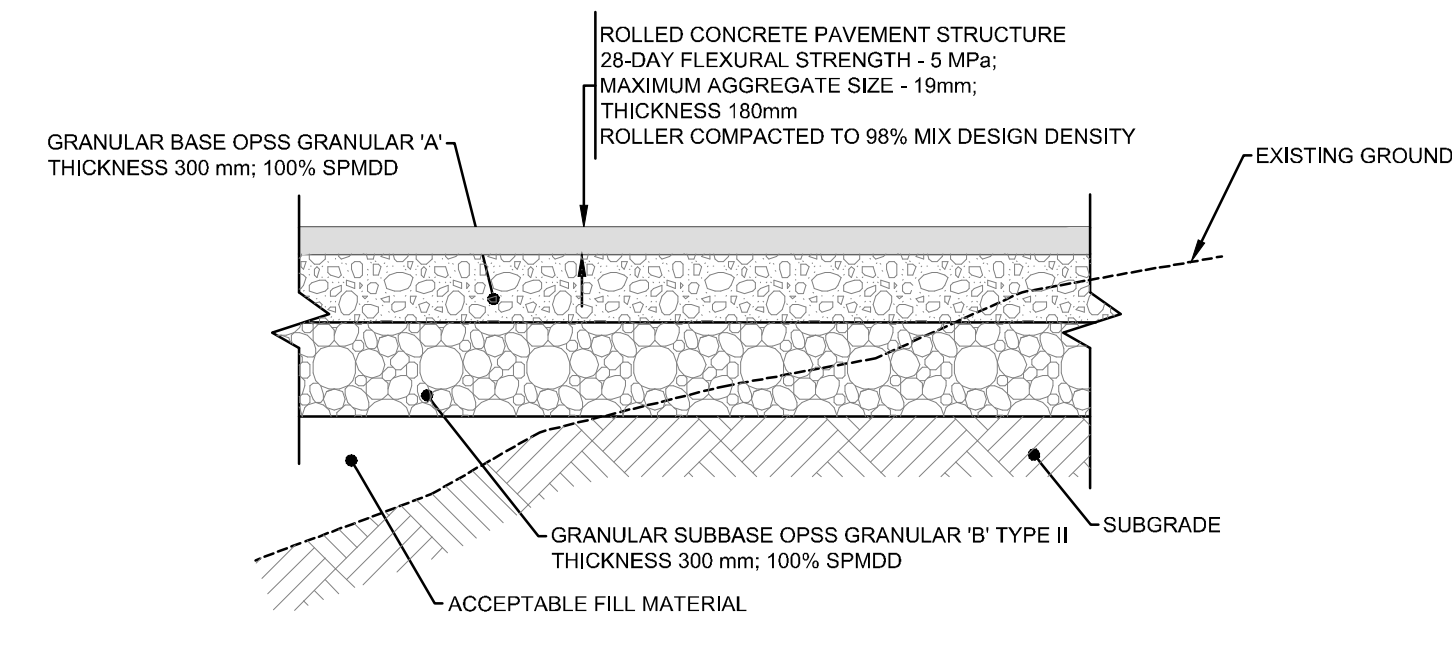
PROJECT TITLE:  
**FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY**  
 SCALE: NONE  
 SOMME ST, OTTAWA, ON

## DETAILS

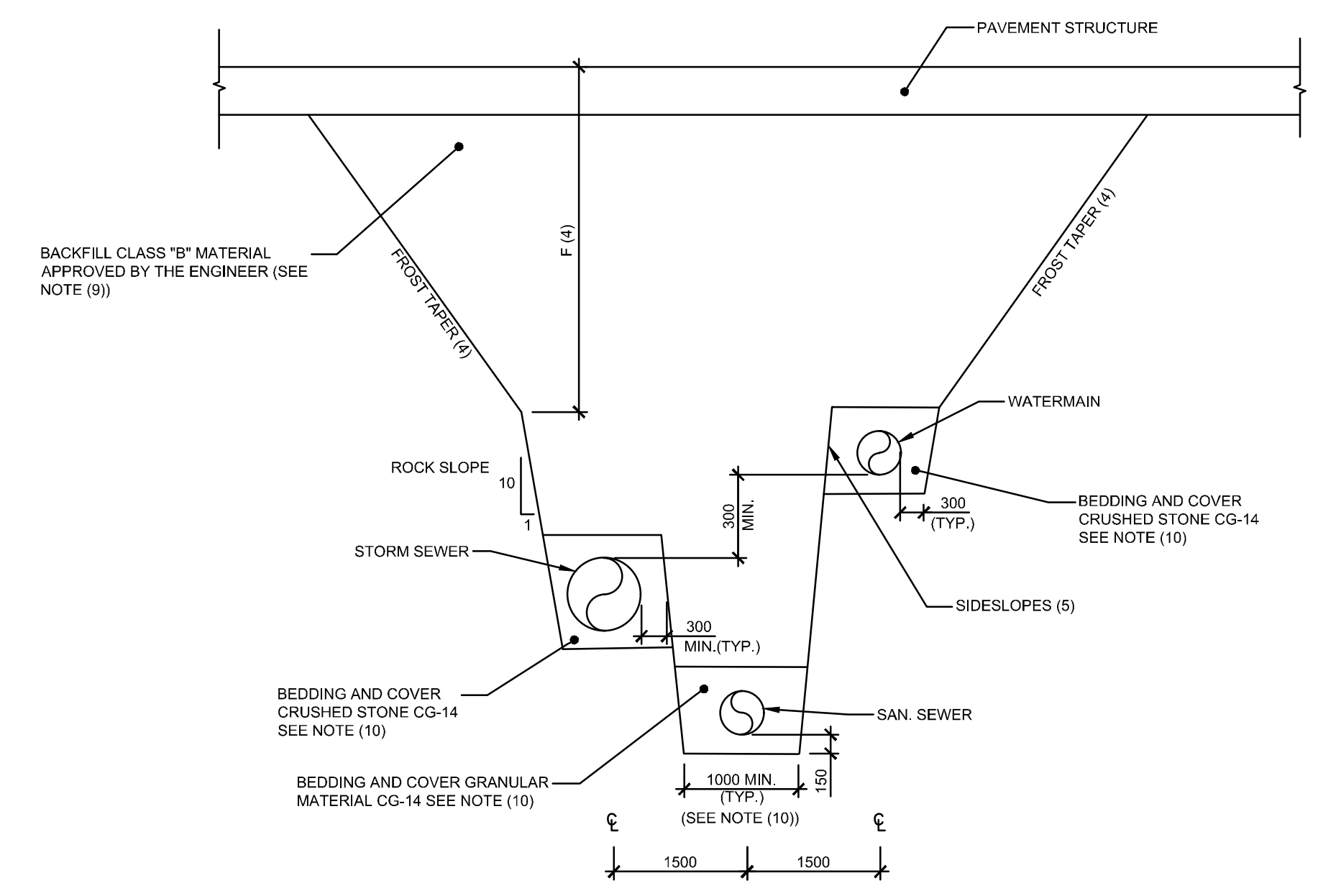
DRAWN BY: D.CANN DRAWING NUMBER:  
 DATE: DATE: **C012**  
 REVIEWED BY: J.SAUVE  
 APPROVED BY: APPROVED BY:  
 PRINT DATE: PRINT DATE:  
 ISSUED DATE: NOVEMBER 26, 2021 REVISION NUMBER:  
 CLIENT PROJECT #: PROJECT #:

**A001083**

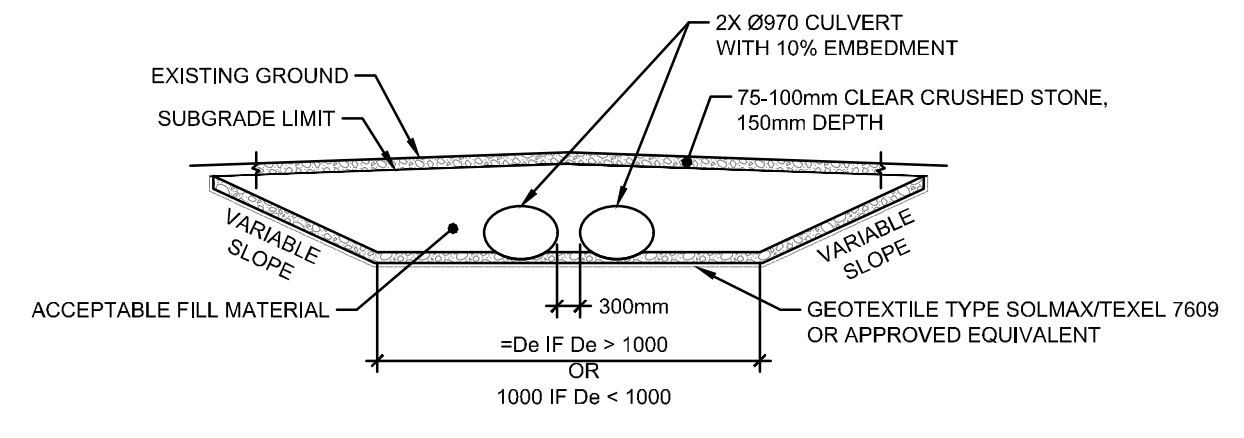
DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CHECKING THE ARCHITECT OF ANY DISCREPANCIES BEFORE CONSTRUCTION COMMENCES. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SOLELY BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.



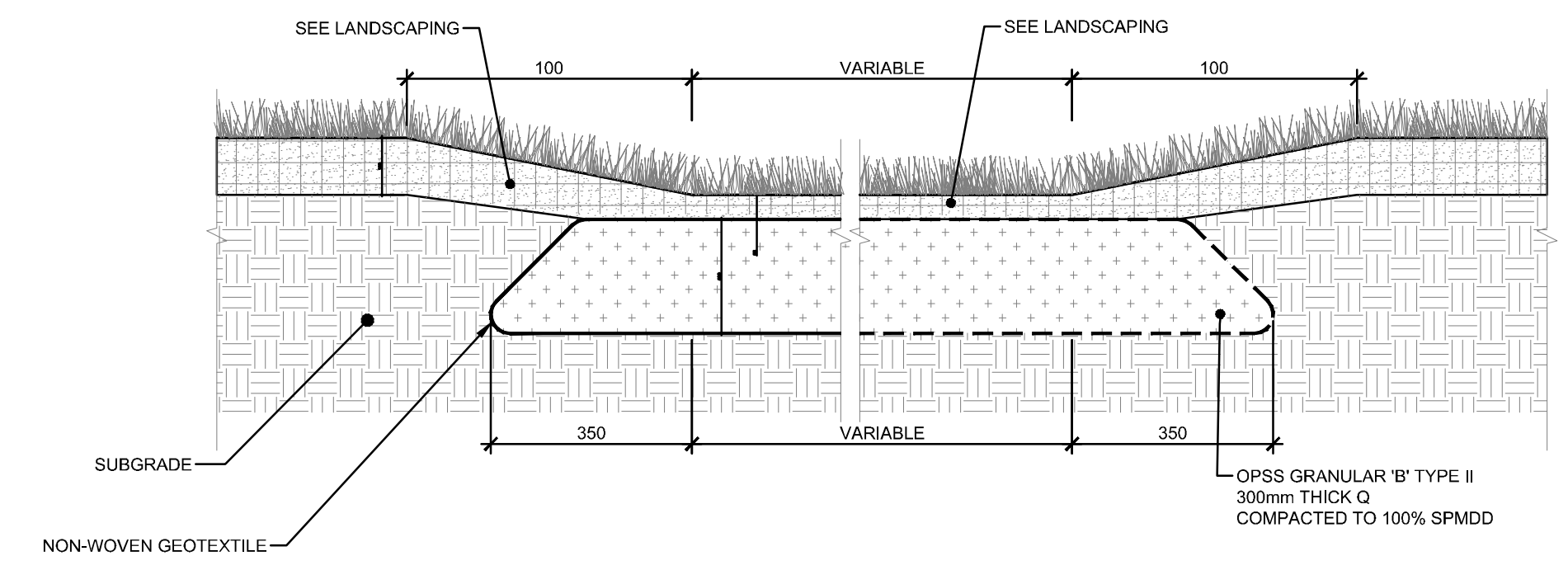
**203** TYPICAL SECTION - GRANULAR FOUNDATION AND CONCRETE PAVEMENT (HEAVY DUTY)  
 AUCUNE / NTS



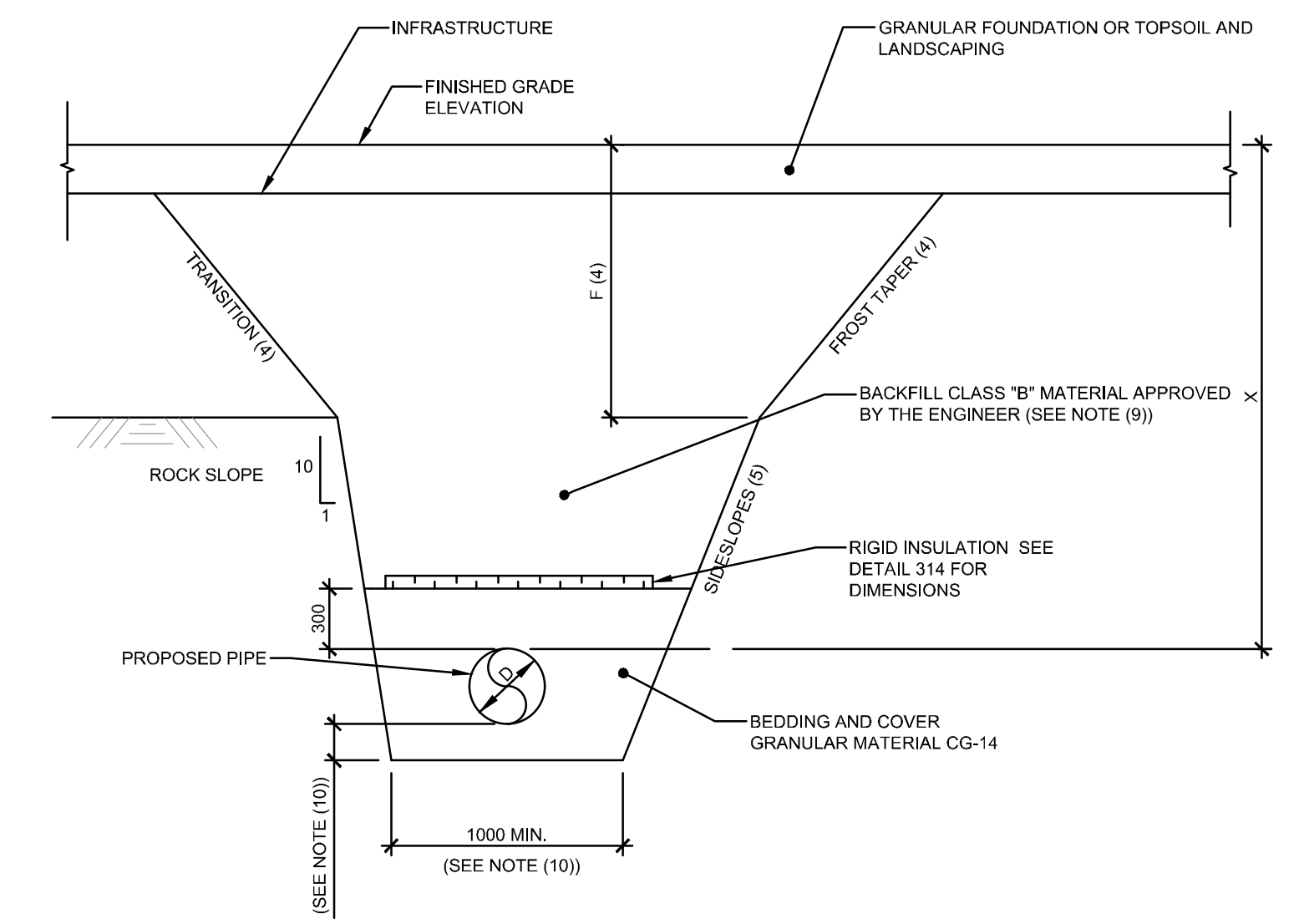
**308** TYPICAL SECTION SINGLE TRENCH - MULTIPLE PIPES  
 AUCUNE / NTS



**212** MUD MAT - TEMPORARY CONSTRUCTION ENTRANCE  
 ECHELLE/SCALE: 1:100



**215** SEPTIC SYSTEM MAINTENANCE TRUCK ACCESS AREA  
 AUCUNE / NTS

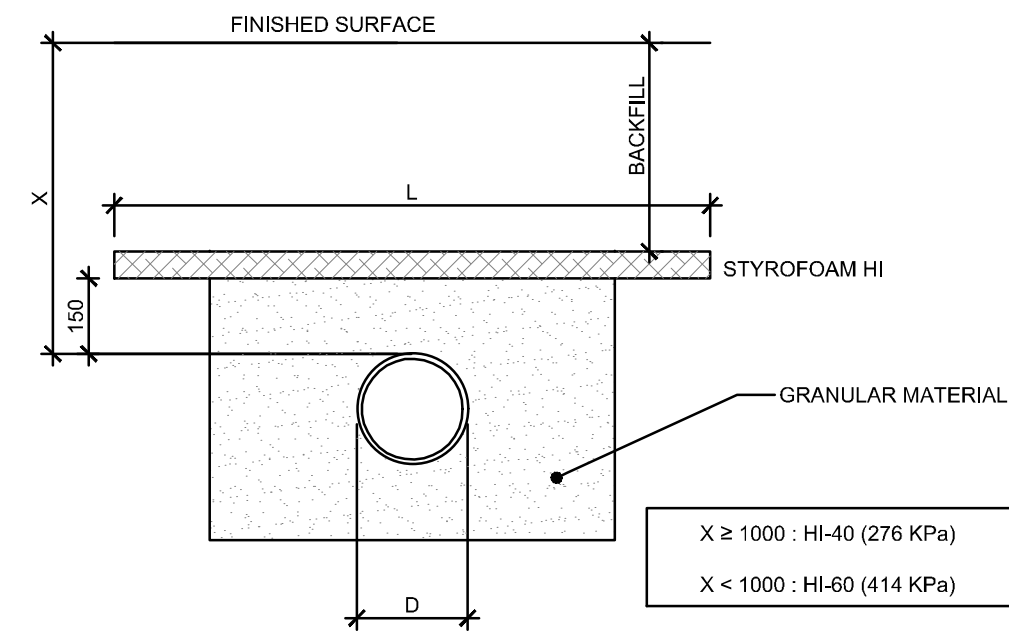


- NOTES:
- A - WHEN X < 1.8m, INSULATION IS REQUIRED FOR WATERMAIN
  - B - WHEN X < 1.5m, INSULATION IS REQUIRED FOR SEWER

**309** TYPICAL SECTION FROST PROTECTION FOR SEWERS, CATCHBASIN LEAD AND WATERMAIN  
 AUCUNE / NTS

C:\CIMA-PLUS\CIMA\CIMA-C\10\DOT\_PROJECTS\AA001000-AA01499\AA01083\_FASTFRATE\_WAREHOUSE\_DEVELOPMENT\A00460\_CIVIL

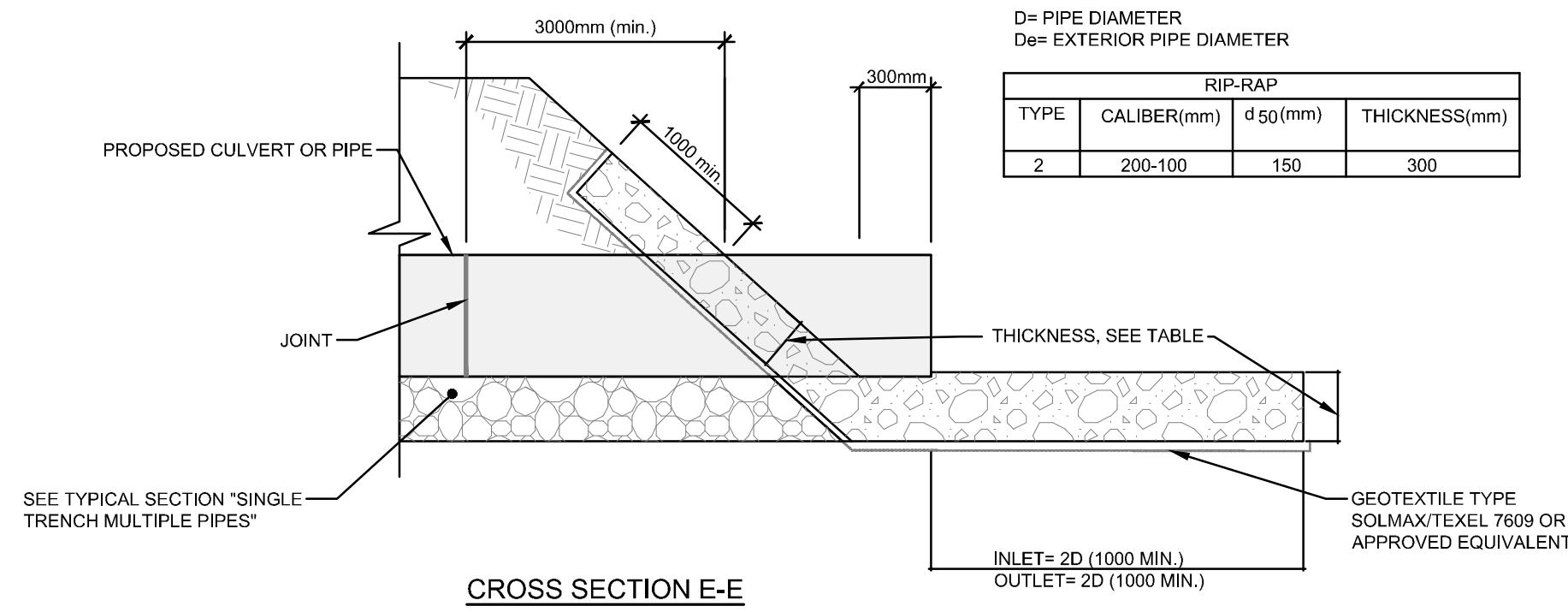




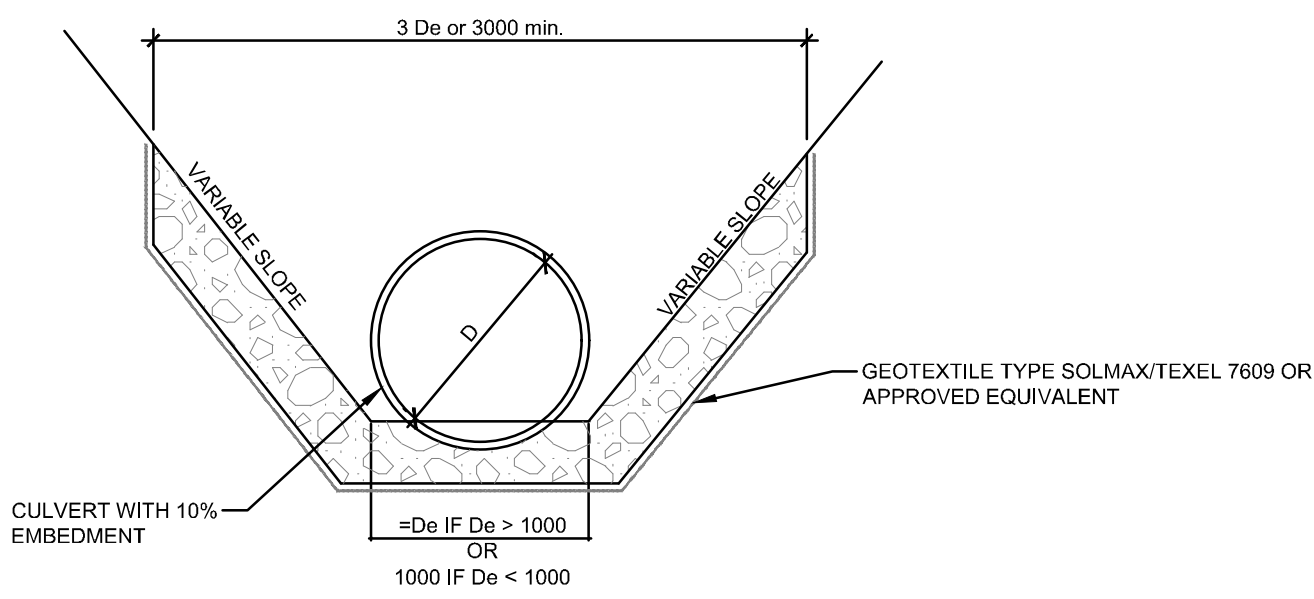
MINIMUM WIDTH OF INSULATION TABLE (L)									INSULATION THICKNESS
X	Q	150	200	250	300	375	450	525	
750	1650	1700	1750	1800	1875	1950	2025	2100	100
1000	1150	1200	1250	1300	1375	1450	1525	1600	100
1250	650	700	750	800	875	950	1025	1100	75
1500	600	600	600	600	600	600	600	600	75
1750	600	600	600	600	600	600	600	600	50

L= INSULATION WIDTH (mm)  
D= PIPE DIAMETER (mm)

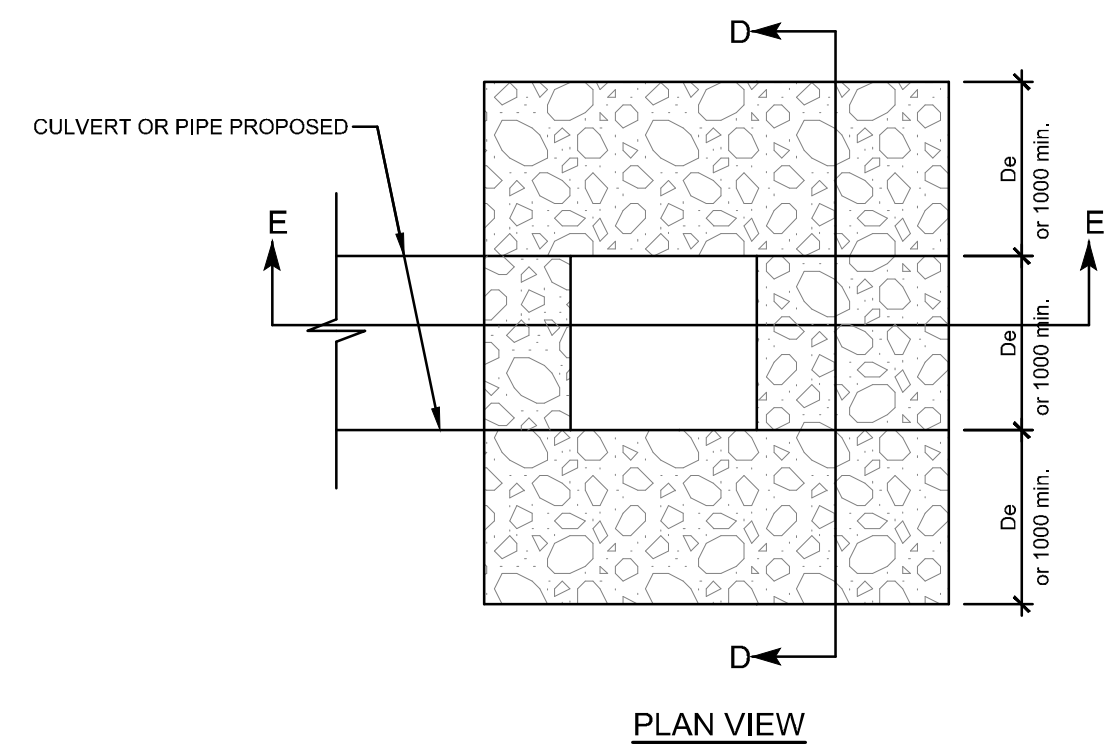
**314A** PIPE INSULATION (1.8m COVER)  
AUCUNE / NTS



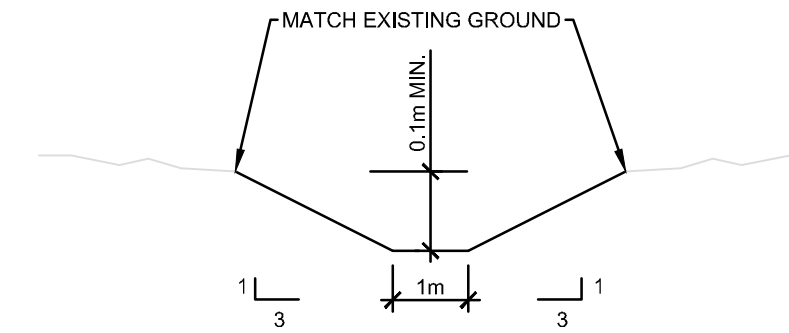
CROSS SECTION E-E



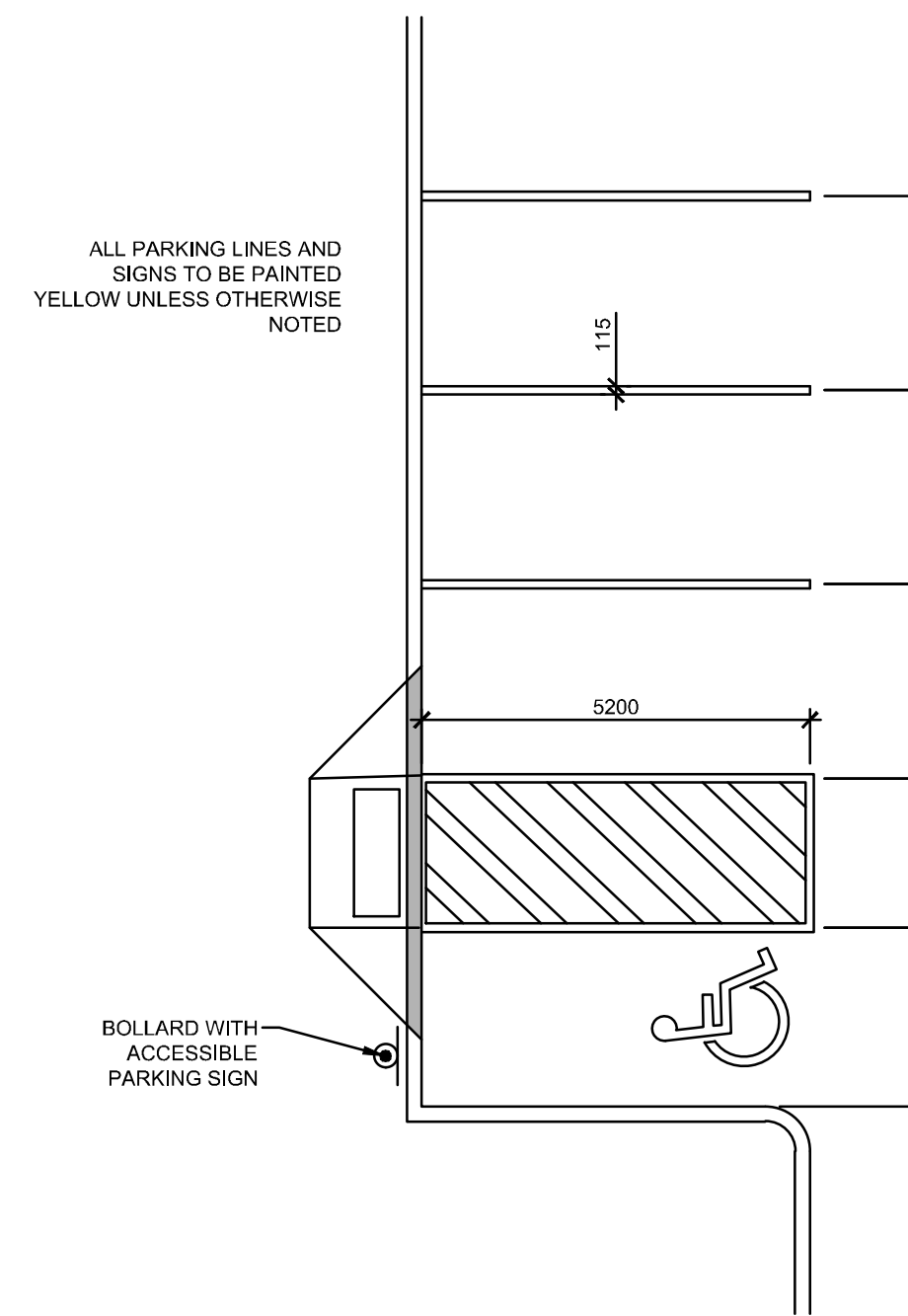
CROSS SECTION D-D



**319** INLET/OUTLET FOR CULVERT OR PIPE DETAIL (TYPICAL)  
AUCUNE / NTS



**333** SWALE (TYPICAL)  
AUCUNE / NTS

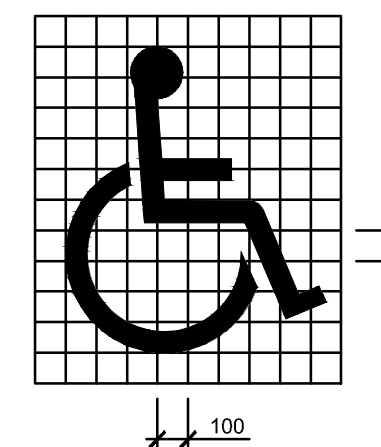


**408** TYPICAL PARKING STALLS  
AUCUNE / NTS

ACCESSIBLE PARKING SIGN



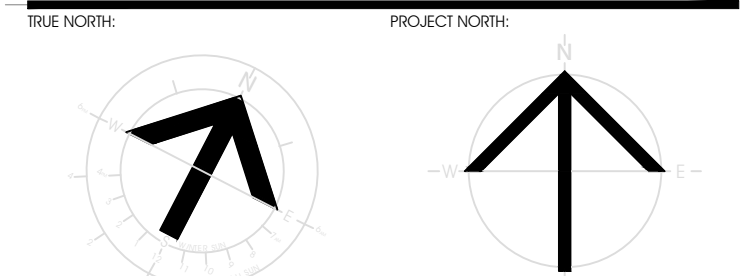
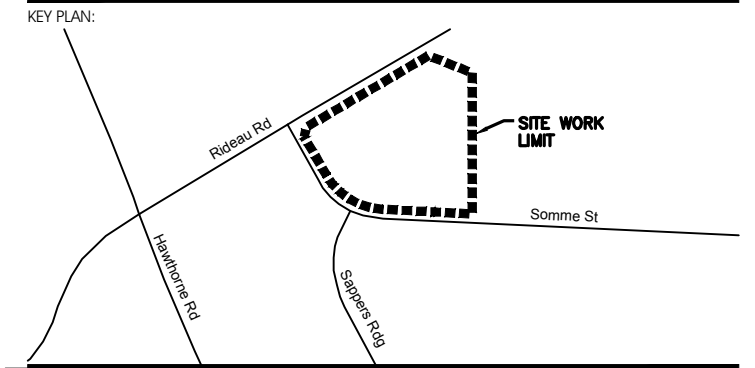
P-150-S



**409B** ACCESSIBLE PARKING SIGN AND MARKING

CLIENT LOGO:

**FASTFRATE**  
**CBRE**



RECORD OF REVISIONS:

NO.	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR SITE PLAN CONTROL REV. 3	SEPTEMBER 29, 2022
2	ISSUED FOR 66% REVIEW	JULY 15, 2022
3	ISSUED FOR SITE PLAN CONTROL REV. 2	JUNE 7, 2022
4	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021

NUMBER: REVISION: DATE (MM/DD/YYYY)  
SITE:



CIVITAS ARCHITECTURE INC. OTTAWA, ON T 613.742.7492  
14 CHAMBERLAIN AVENUE, SUITE 101, CANADA K1S 1V9 WWW.CIVITAS-INC.CA



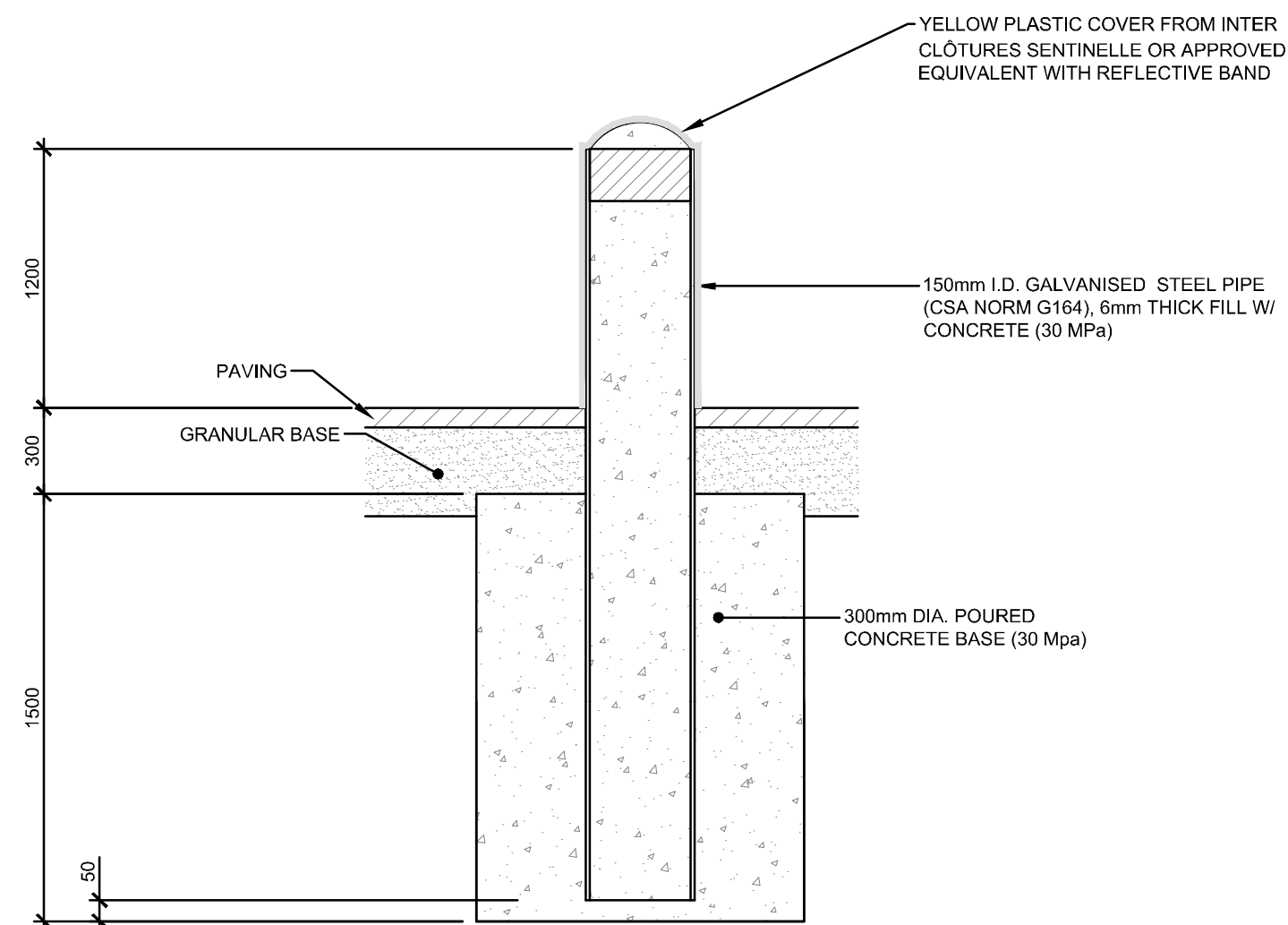
PROJECT TITLE:  
FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY  
SCALE: NONE  
SOMME ST, OTTAWA, ON

**DETAILS**

DRAWN BY: D.CANN	DRAWING NUMBER: <b>C013</b>
DATE:	
REVIEWED BY: J.SAUVÉ	
APPROVED BY:	
PRINT DATE:	
ISSUED DATE: NOVEMBER 26, 2021	REVISION NUMBER:
CLIENT PROJECT #:	PROJECT #:

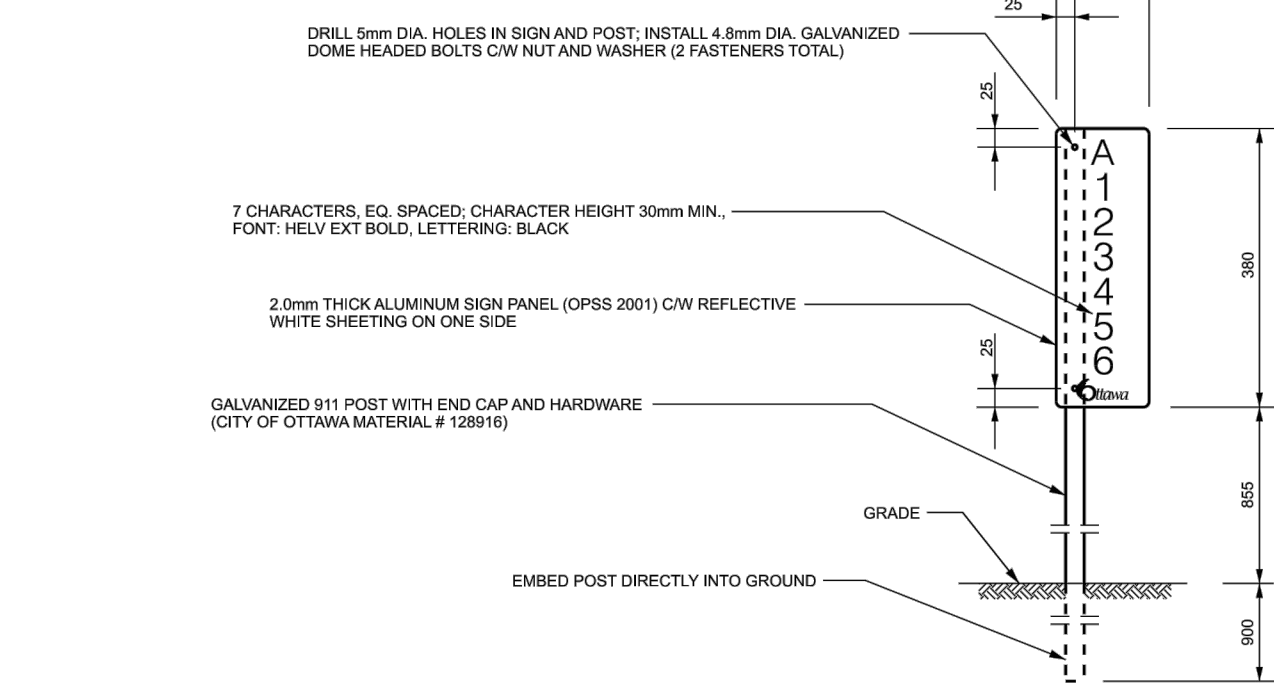
**A001083**  
DO NOT SCALE THE DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND TYPING. THE ARCHITECT IS NOT RESPONSIBLE FOR ANY CONSTRUCTION ERRORS. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL, AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.



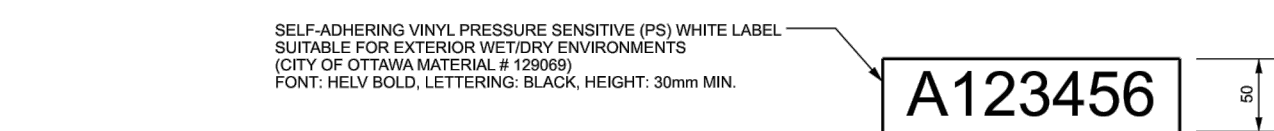


**STANDARD BOLLARD**  
AUCUNE / NTS

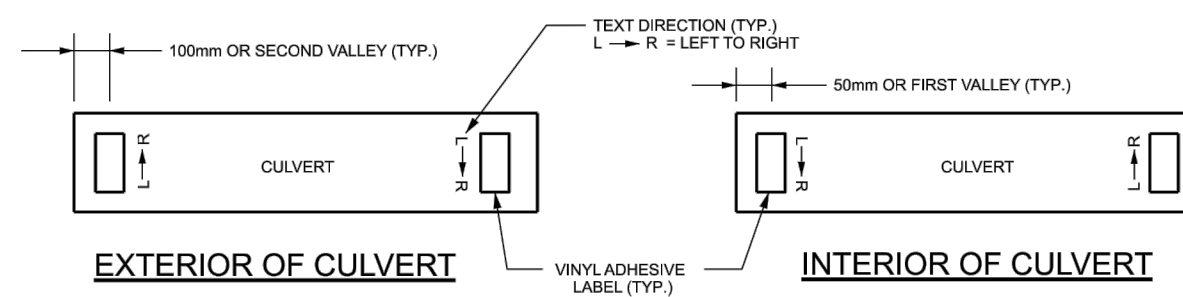
**CULVERT NUMBER IDENTIFICATION SIGN**



**VINYL ADHESIVE LABELS**



**ADHESIVE LABEL LOCATIONS**

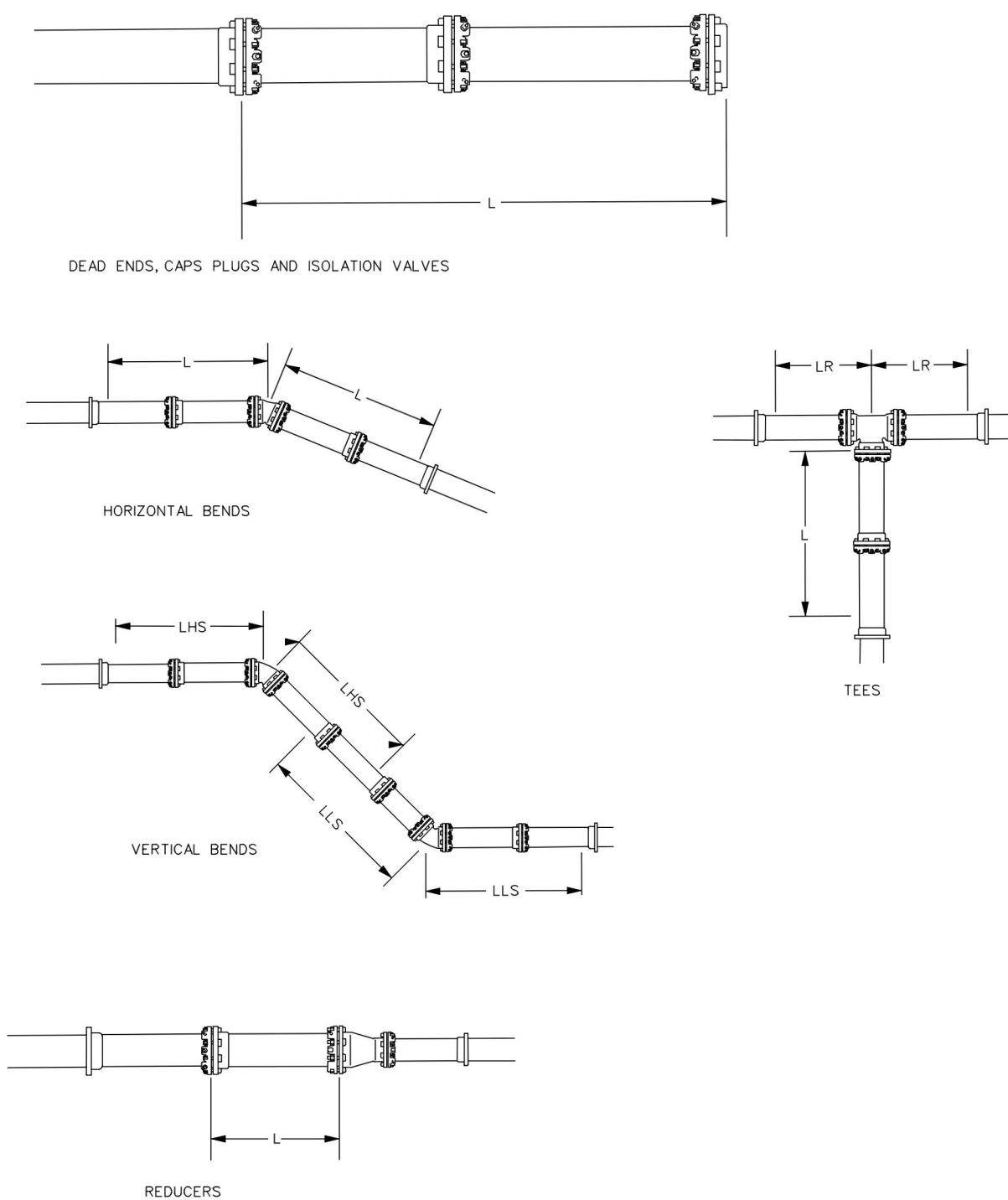


- NOTES:**
- REFLECTIVE WHITE SHEETING SHALL BE 3M ENGINEERED PRESSURE SENSITIVE (PS) OR EQUIVALENT.
  - TOTAL OF 2 CULVERT NUMBER IDENTIFICATION SIGNS AND 4 VINYL ADHESIVE LABELS REQUIRED FOR EACH CULVERT.
  - PREPARE SURFACE OF GALVANIZED STEEL AS PER LABEL MANUFACTURER'S RECOMMENDATION TO ACHIEVE PROPER BOND.
  - CITY OF OTTAWA LOGO STAMP SHALL BE AFFIXED TO THE FRONT OF EACH CULVERT NUMBER IDENTIFICATION SIGN.
  - TO BE PLACED NEXT TO CEDAR POST WITH REFLECTIVE STRIP.

N.T.S.

**Ottawa** CULVERT IDENTIFICATION SIGN FOR CULVERTS OWNED BY CITY OF OTTAWA

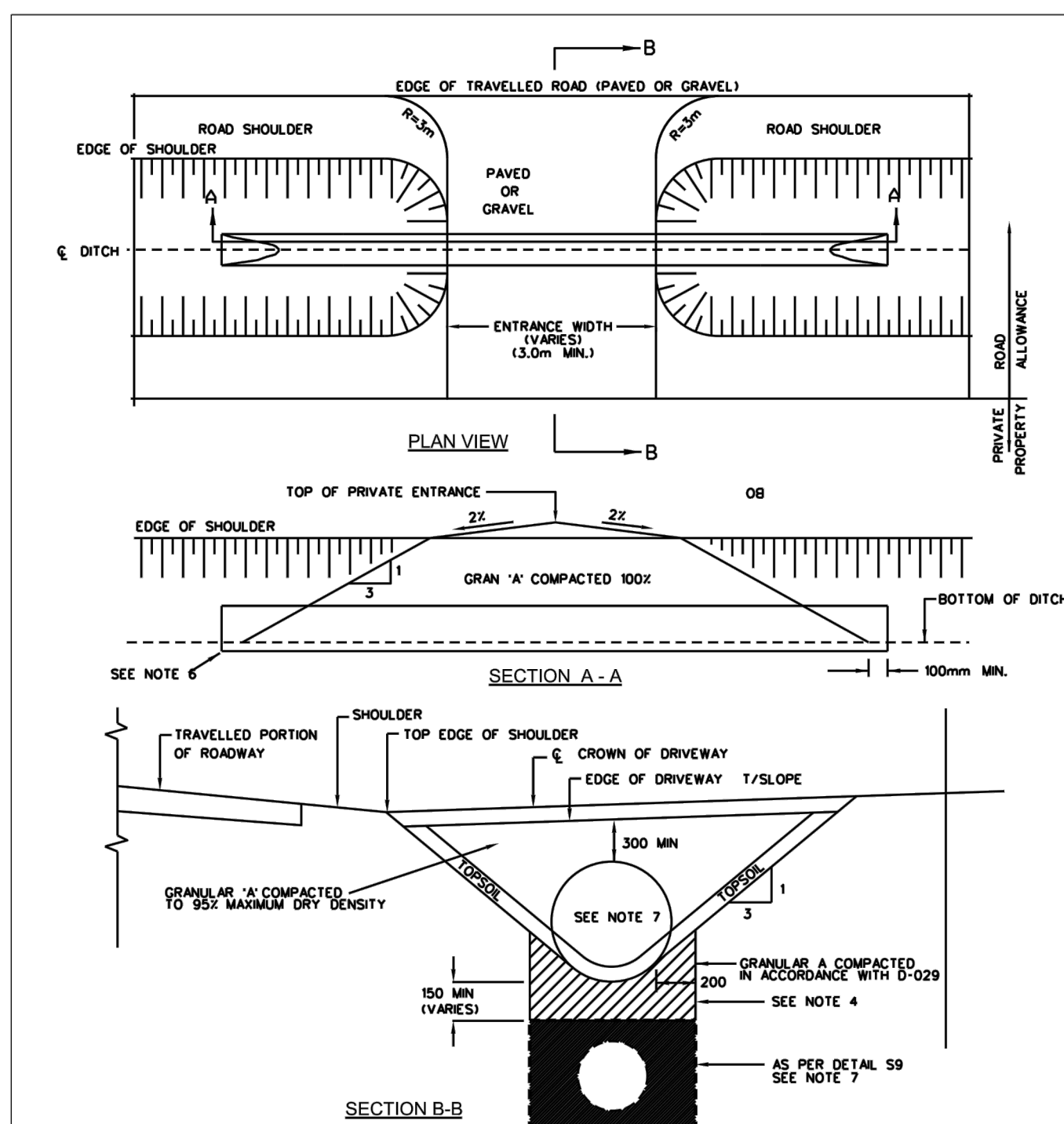
DATE: SEPTEMBER 2006  
REV. DATE: MARCH 2021  
DWG. No.: S34



- NOTES:**
- ANY JOINT THAT FALLS WITHIN THE RECOMMENDED LENGTH (L) SHALL BE RESTRAINED. SEE DRAWING W25.6
  - TO REDUCE THE NUMBER OF RESTRAINERS REQUIRED THE USE OF FULL PIPE LENGTHS IS RECOMMENDED IN THESE AREAS.

**Ottawa** RESTRAINING AND RETAINING RINGS FOR PVC AND DI PIPE 400mm AND UNDER

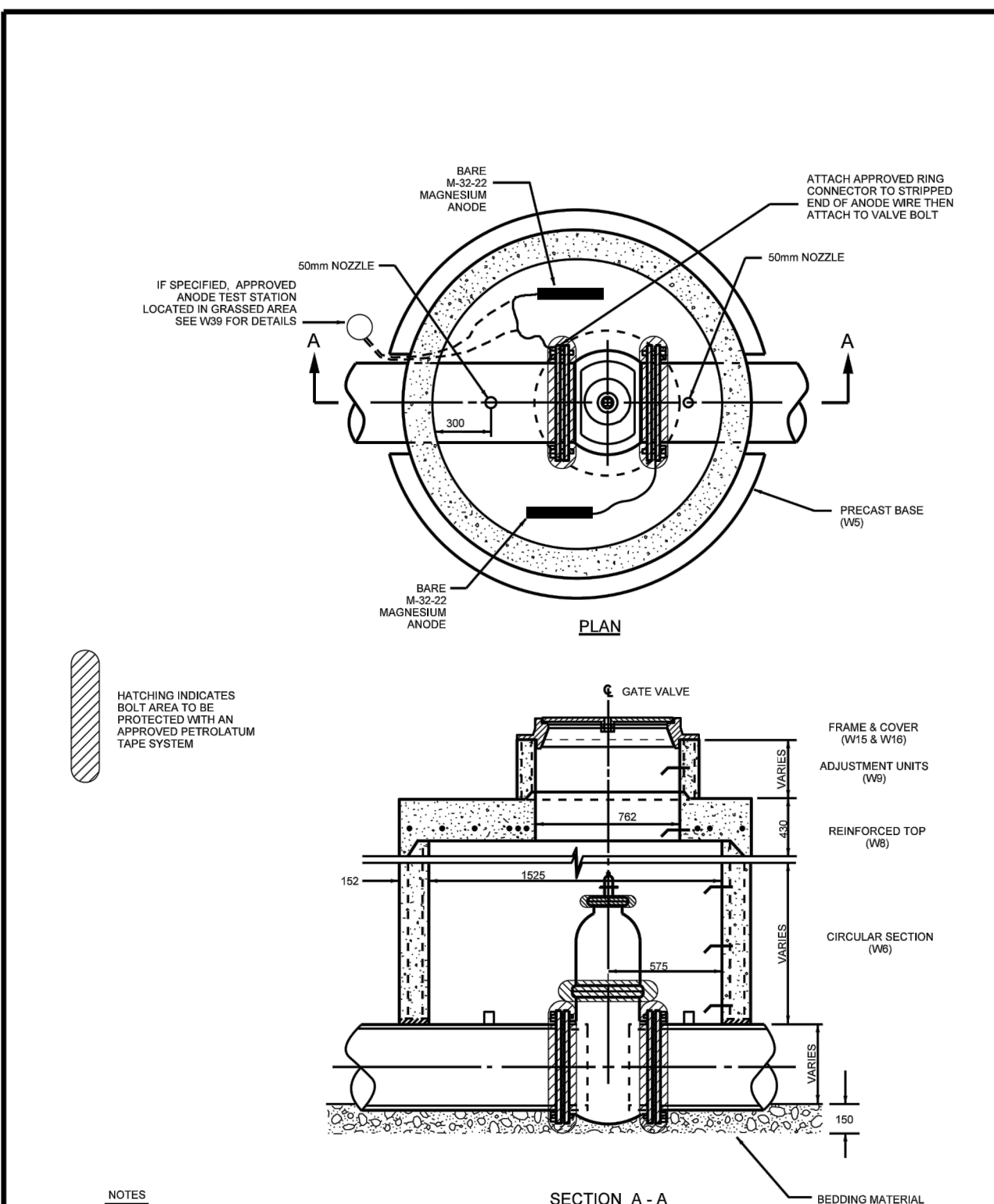
DATE: MAY 2001  
REV. DATE: NONE  
DWG. No.: W25.5



- NOTES:**
- APPROVED NEW CULVERT MATERIAL ONLY, MIN. 500mm UNLESS SPECIFIED OTHERWISE, DITCH AND CULVERT TO BE SIZED ACCORDING TO SEWER DESIGN CURVE MANUAL.
  - LENGTH OF CULVERTS IS DEPENDENT UPON THE DEPTH OF DITCH AND WIDTH OF ENTRANCE.
  - ENTRANCE CULVERTS GREATER THAN 300mm DIA. OR MULTIPLE CULVERTS MUST BE APPROVED PRIOR TO INSTALLATION. CULVERTS OVER 5m LONG AND HEADWALLS REQUIRE APPROVAL AND PERMIT BY THE CITY.
  - IN FROST SUSCEPTIBLE SOILS SPECIAL BEDDING CONDITIONS WILL BE REQUIRED.
  - REMOVE ALL ORGANICS FROM SIDE SLOPES AND DITCH BOTTOM PRIOR TO PLACING CULVERT AND GRANULARS.
  - CULVERT TO BE COUNTERSUNK 10% OF ITS DIAMETER BELOW FINISHED DITCH INVERT.
  - WHERE SPECIFIED, APPROVED DITCHED PIPE TO BE AT A MINIMUM GRADE OF 0.5% AND BE NON-PERFORATED TYPE UNDER CULVERTS.
  - SEE MS 22.15 FOR APPROVED PRODUCTS, UNLESS OTHERWISE STATED IN THE CONTRACT, CONSTRUCTION AS PER OPSS 421.
  - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

**Ottawa** PRIVATE ENTRANCE DETAIL - RURAL

DATE: MAY 2001  
REV. DATE: MARCH 2016  
DWG. No.: S26



- NOTES:**
- CLEARANCE AROUND PIPE AT CHAMBER WALL TO BE 50mm MINIMUM.
  - VALVE CHAMBERS IN LIEU OF BOXES ON WATERMANS SMALLER THAN 300mm ONLY TO BE USED, IF APPROVED BY THE CONTRACT ADMINISTRATOR.
  - REFER TO MAN-11 FOR ADDITIONAL REQUIREMENTS.
  - REFER TO MAN-19 IS FOR APPROVED MANUFACTURERS.
  - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
  - CATHODIC PROTECTION MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH W39, V40 AND V42.
  - TRACER WIRE REQUIRED FOR PVC, PE-X AND HDPE WATERMAIN PIPE ONLY AS PER W39, TRACER WIRE TO BE CONNECTED TO VALVE BOLT AS PER W36 AND SECURED TO TOP OF CHAMBER.

**Ottawa** CIRCULAR CHAMBER GATE VALVES

DATE: MAY 2001  
REV. DATE: MARCH 2021  
DWG. No.: V3

**TABLE OF RESTRAINED LENGTHS FOR DI AND PVC WATERMAIN PIPE IN STANDARD GRANULAR 'A' EMBEDMENT IN SOILS OF BEARING CAPACITY OF 100 KPa AND OVER**

REDUCERS	LARGER DIAMETER SIDE (TO BE RESTRAINED)					
	100mm	150mm	200mm	250mm	300mm	400mm
100mm	N/A	3	6	8	10	14
150mm	N/A	N/A	4	6	9	13
200mm	N/A	N/A	N/A	3	6	11
250mm	N/A	N/A	N/A	N/A	4	9
300mm	N/A	N/A	N/A	N/A	N/A	7
400mm	N/A	N/A	N/A	N/A	N/A	N/A

**DEAD ENDS, CAPS, PLUGS, VALVES**

BEFORE CAPS AND EITHER SIDE OF VALVES - L	5	6	9	10	12	16
---	---	---	---	----	----	----

**VERTICAL BENDS**

LENGTH HIGH SIDE - LHS	3	4	5	6	7	9
LENGTH LOW SIDE - LLS	1.5	2	2.5	3	3.5	4.5

**TEES**

LENGTH ALONG THE BRANCH - L	1	1	1	1	1	1
LENGTH ALONG THE RUN - LR	3	3	3	3	3	3

**HORIZONTAL BENDS**

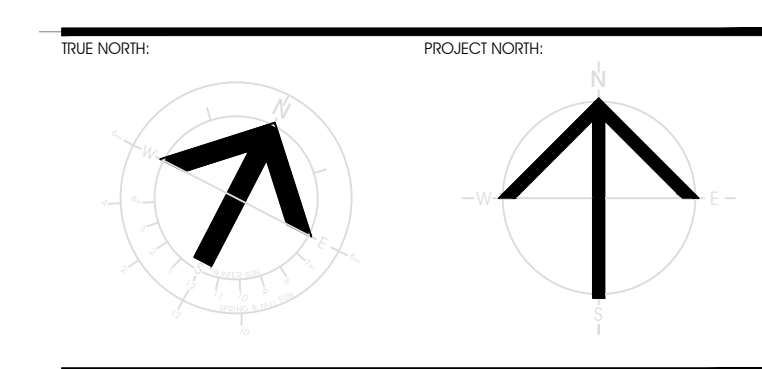
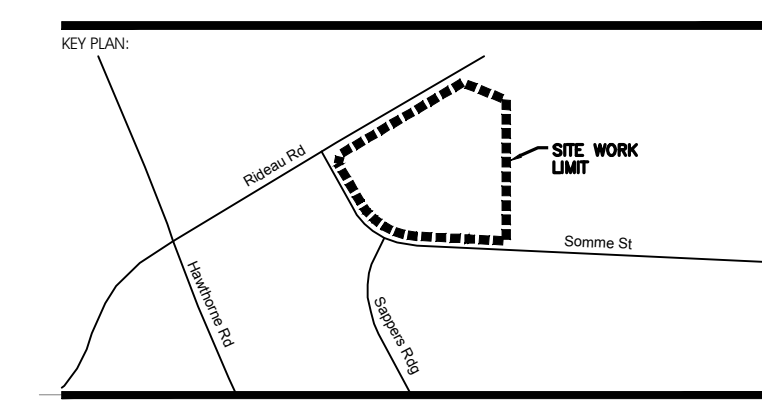
11.25, 22.5, AND 45 DEGREE BENDS	1	1.5	1.5	2	2	2.5
----------------------------------	---	-----	-----	---	---	-----

- NOTES:**
- THE ABOVE RESTRAINED LENGTHS MEET OR EXCEED THE WATERMAIN DESIGN CRITERIA FOR FUTURE ALTERATIONS AUTHORIZED UNDER A DRINKING WATER WORKS PERMIT.
  - THE ASSUMPTIONS MADE FOR THE ABOVE CALCULATIONS ARE AS FOLLOWS:
    - MAXIMUM OPERATING PRESSURE OF 100 psi
    - MAXIMUM SURGE PRESSURE WITH A FLOW VELOCITY CHANGE OF 0.6 m/s OF 115 psi (115 psi FOR CLASS 52 DI AND FOR PVC MAX. SURGE IS 35 psi)
    - FOR SOFTWARE CALCULATIONS A TEST PRESSURE OF 150 psi AND A SAFETY FACTOR OF 1.5 WAS USED WHICH RESULTS IN 225 psi MAXIMUM PRESSURE.
    - TYPE 5 TRENCH BEDDING.
    - DEPTH TO BURY 24 METRES EXCEPT FOR VERTICAL BENDS, WHERE THE HIGH SIDE IS AT 1.8 METRES.
    - EMBEDMENT MATERIAL GRANULAR 'A' WITH CHARACTERISTICS OF ASTM D2487 GP.
    - GP SOILS ARE DESCRIBED AS POORLY GRADED GRAVEL AND SAND-GRAVEL MIXES WITH LITTLE OR NO FINES.
    - (G) MUST BE OF SOLID PIPE WITHOUT JOINTS, FITTINGS, ETC.
    - THE TABLES APPLY TO BOTH DUCTILE IRON AND PVC, WHERE ONE LENGTH EXCEEDED THE OTHER THE LONGER LENGTH WAS USED.
    - RESTRAINED LENGTHS ARE IN METRES.

**Ottawa** TABLES OF RESTRAINED LENGTHS FOR PVC AND DI PIPE 400mm AND UNDER

DATE: MAY 2001  
REV. DATE: MARCH 2011  
DWG. No.: W25.6

CLIENT LOGO:



**RECORD OF REVISIONS**

NO.	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR SITE PLAN CONTROL REV. 3	SEPTEMBER 29, 2022
2	ISSUED FOR 66% REVIEW	JULY 15, 2022
3	ISSUED FOR SITE PLAN CONTROL REV. 2	JUNE 7, 2022
4	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021



**CIVITAS GROUP**  
ARCHITECTS & LANDSCAPE ARCHITECTS

CIVITAS ARCHITECTURE INC. OTTAWA, ON T 613.742.7492  
14 CHAMBERLAIN AVENUE, SUITE 101 CANADA K1S 1Y9 WWW.CIVITAS-INC.CA



PROJECT FILE:  
**FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY**

SCALE: NONE

SOMMIE ST.  
OTTAWA, ON

**DETAILS**

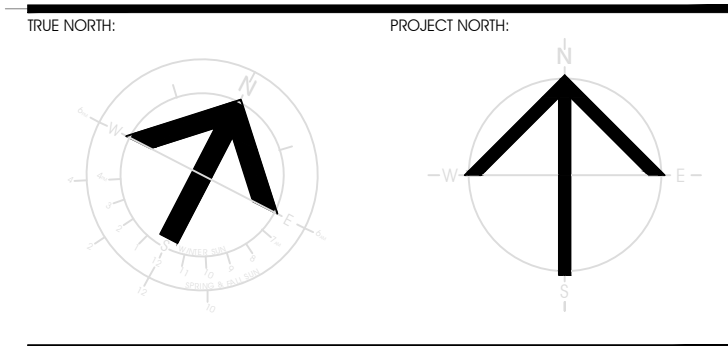
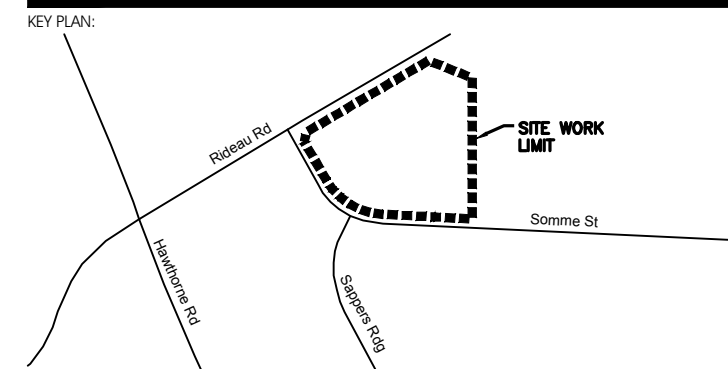
DRAWN BY: D.CANN DRAWING NUMBER:  
DATE: J.SAUVÉ  
REVIEWED BY: J.SAUVÉ **C014**  
APPROVED BY:  
FIRST DATE: NOVEMBER 26, 2021 REVISION NUMBER:  
ISSUED PROJECT #: PROJECT #:  
**A001083**

DO NOT SCALE THE DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND DEPTHS. BE AWARE OF ANY DISCREPANCIES BEFORE COMMENCING CONSTRUCTION. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL, AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.









RECORD OF REVISIONS

NO.	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR SITE PLAN CONTROL REV. 3	SEPTEMBER 29, 2022
2	ISSUED FOR 66% REVIEW	JULY 15, 2022
3	ISSUED FOR SITE PLAN CONTROL REV. 2	JUNE 7, 2022
4	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021

PROFESSIONAL STAMP

**CIVITAS GROUP**  
ARCHITECTURE & LANDSCAPE ARCHITECTURE

CIVITAS ARCHITECTURE INC. OTTAWA, ON T 613.742.7492  
14 CHAMBERLAIN AVENUE, SUITE 101, CANADA K1S 1Y9 WWW.CIVITAS-INC.CA

**CIMA+**

PROJECT TITLE:  
**FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY**

SCALE: NONE

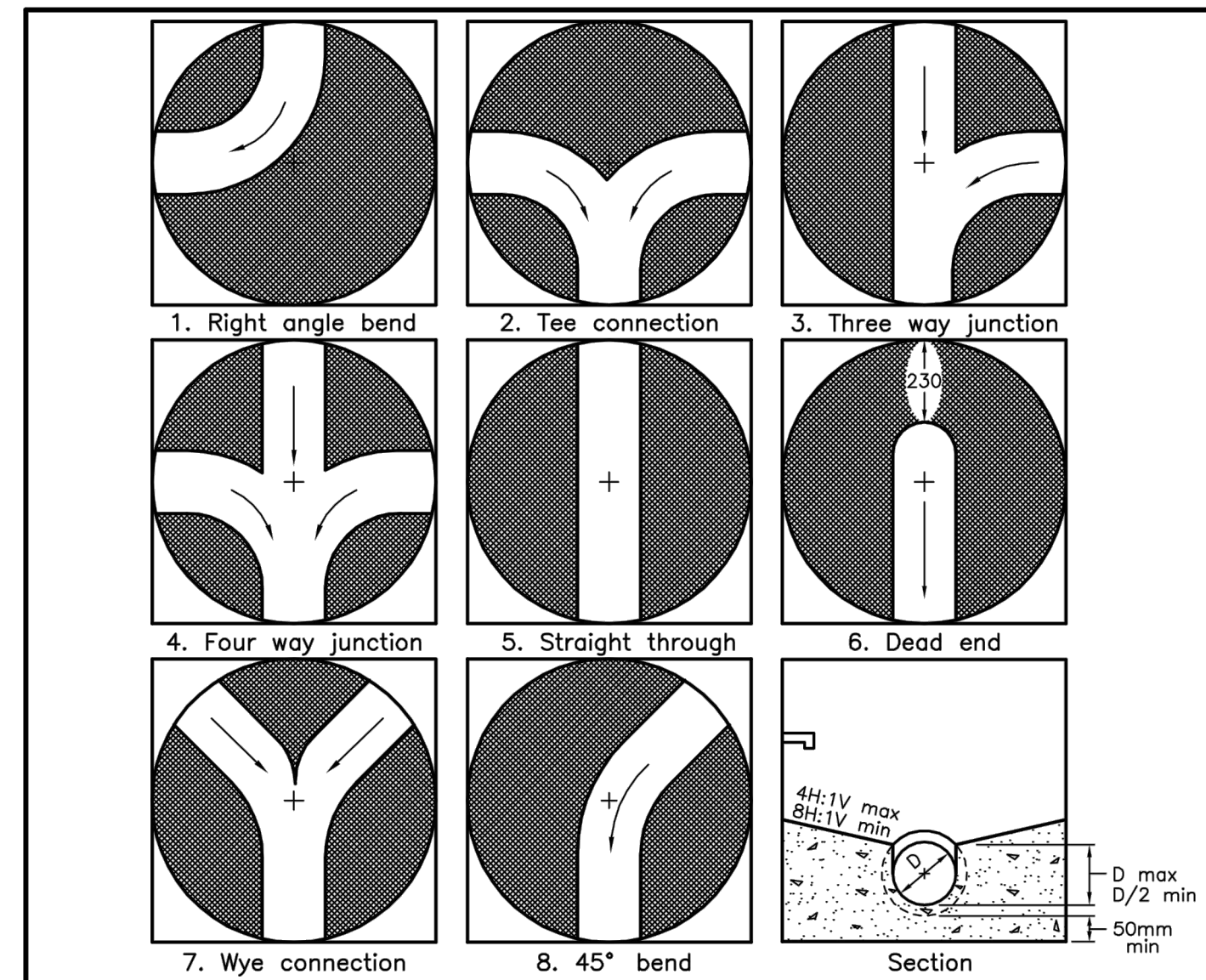
SOMMIE ST. OTTAWA, ON

**DETAILS**

DRAWN BY: D.CANN DRAWING NUMBER:  
DATE: J.SAUVÉ PROJECT #:  
REVIEWED BY: J.SAUVÉ **C016**  
APPROVED BY: DATE: NOVEMBER 26, 2021 REVISION NUMBER:  
ISSUED DATE: NOVEMBER 26, 2021  
CLIENT PROJECT #: PROJECT #:

**A001083**

DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND SPECIFICATIONS. THE ARCHITECT OF ANY DISCREPANCIES BEFORE COMMENCING WORK. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL, AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL BE USED FOR CONSTRUCTION PURPOSES UNLESS SO ORDERED BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.



MAXIMUM SIZE HOLE IN THE WALL IN PRECAST RISER SECTIONS

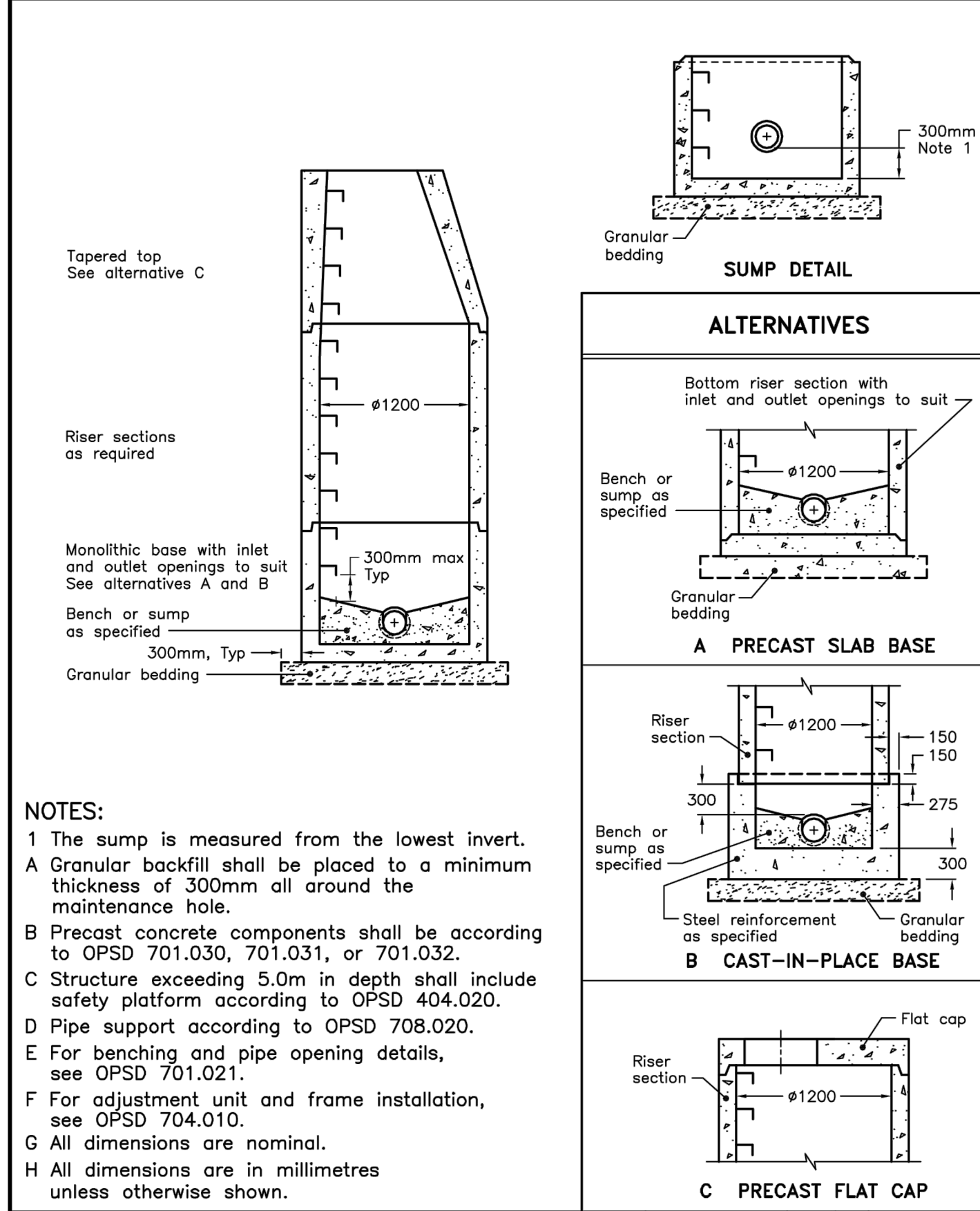
Maintenance Hole Diameter	No. 1-4	No. 5 and 6	No. 8	No. 7	
				Inlet Hole	Outlet Hole
1200	700	860	780	700	860
1500	860	1220	960	860	1170
1800	1220	1485	1220	1220	1485
2400	1485	2020	1760	1485	2020
3000	1930	2450	2300	1930	2450
3600	2470	3085	2730	2470	3085

NOTES:  
1 Slopes shall be maintained from the outlet hole opening for top of benching.  
A Concrete for benching shall be 30MPa.  
B When benching is hand-finished, it shall be given wood float finish, channel shall be given steel trowel finish.  
C Benchings slope and height shall be as specified.  
D When specified, maintenance holes that are 1200mm in diameter with a uniform channel for 200 or 250mm pipe may be prebenched at the manufacturer with standardized benching slope and channel orientation.  
E All dimensions are nominal.  
F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 4

**MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES**

OPSD 701.021

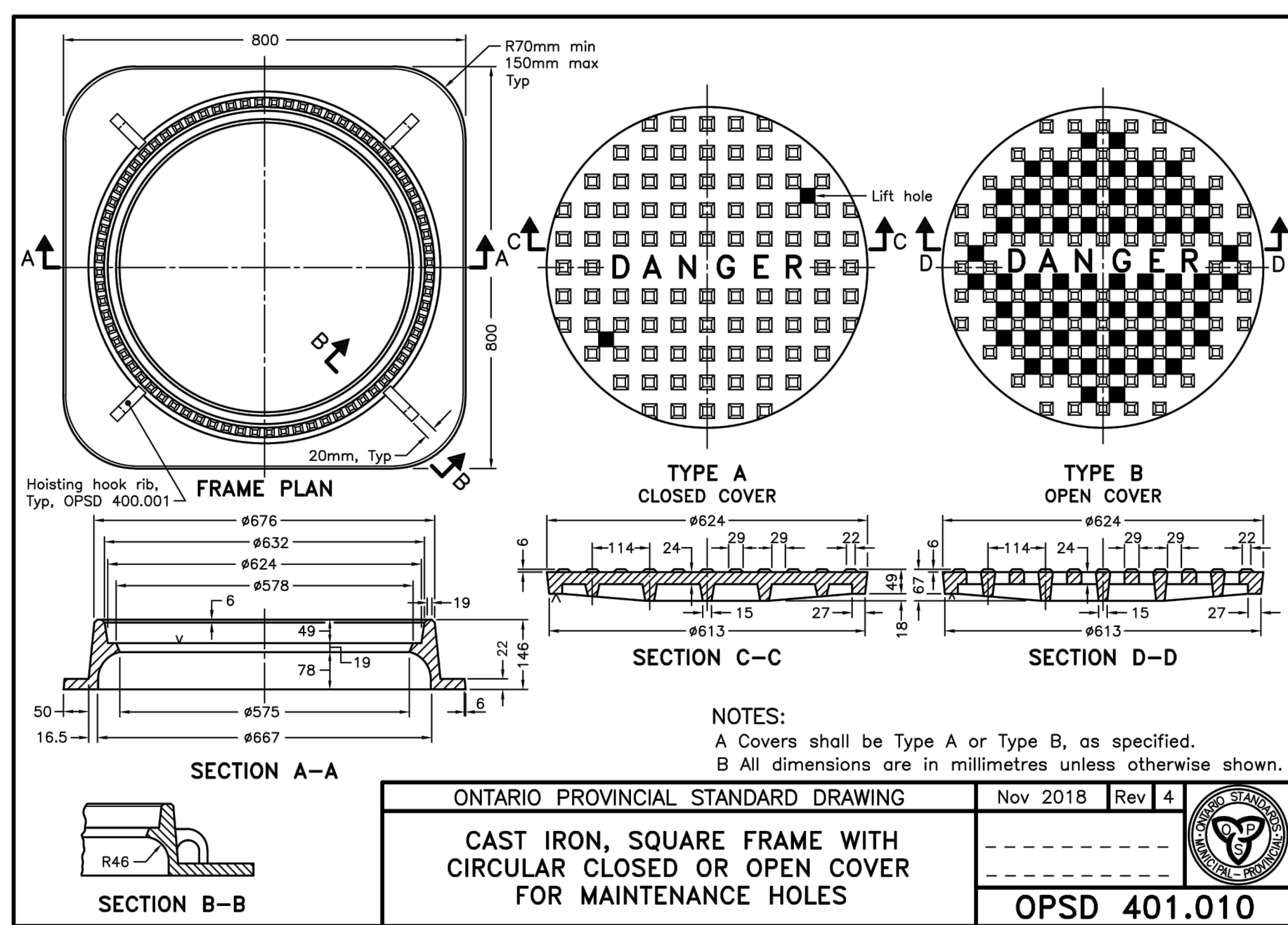


NOTES:  
1 The sump is measured from the lowest invert.  
A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.  
B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.  
C Structure exceeding 5.0m in depth shall include safety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

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 5

**PRECAST CONCRETE MAINTENANCE HOLE 1200mm DIAMETER**

OPSD 701.010

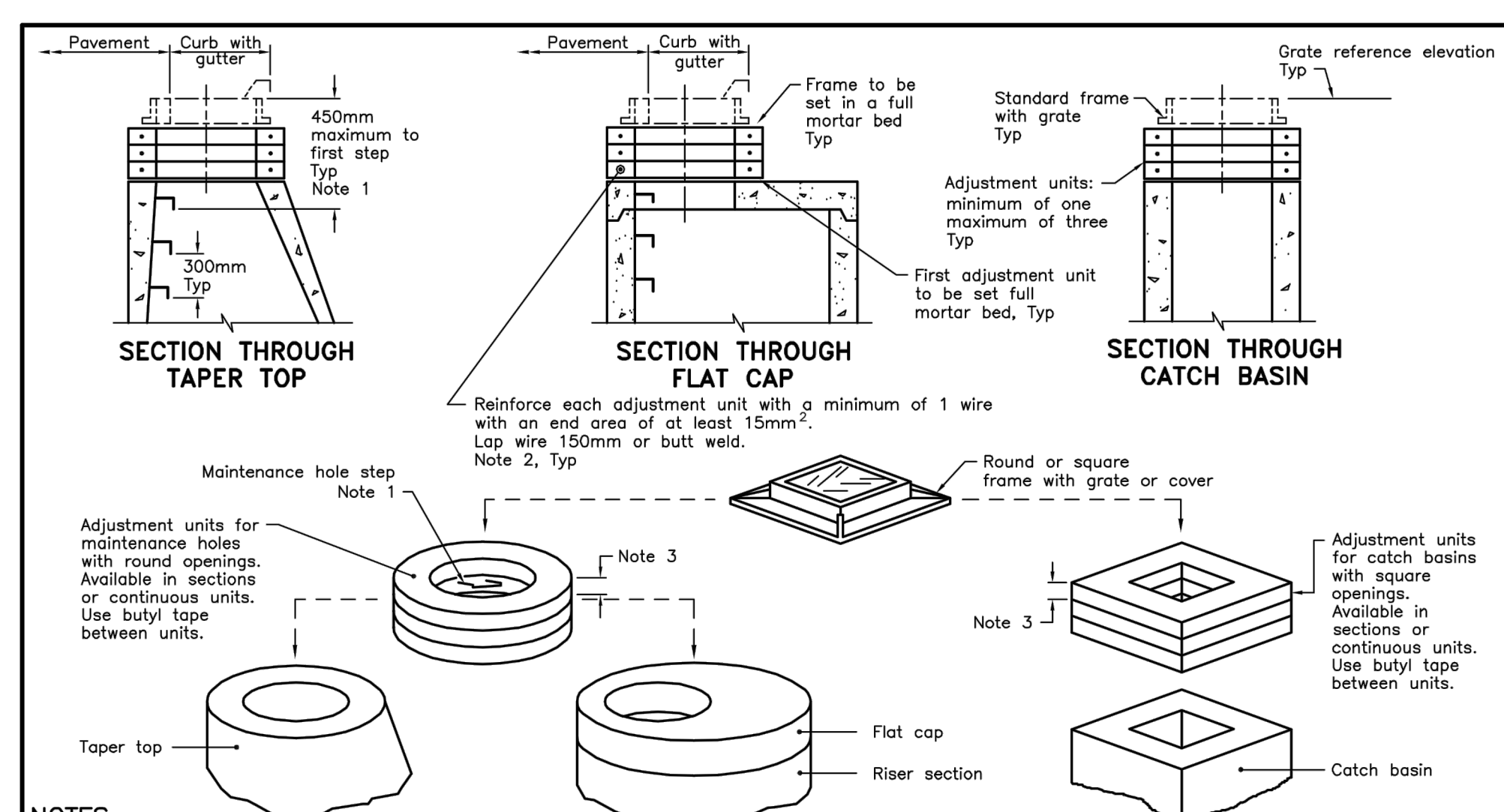


NOTES:  
A Covers shall be Type A or Type B, as specified.  
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2018 Rev 4

**CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES**

OPSD 401.010



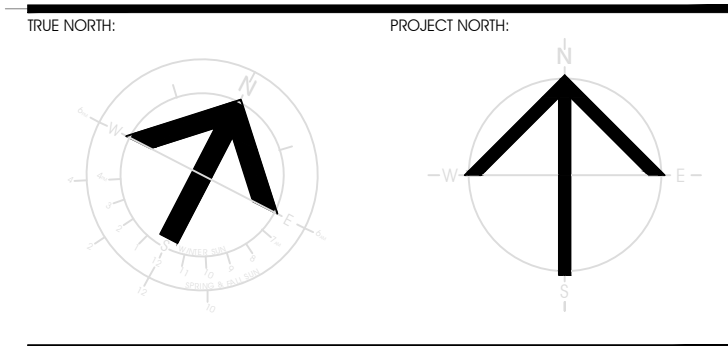
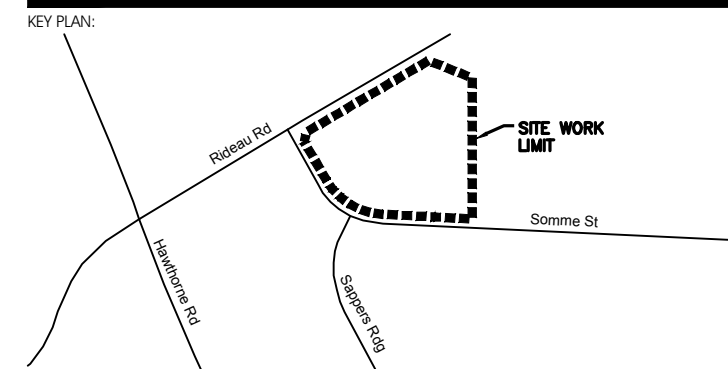
NOTES:  
1 If first step is in an adjustment unit, the adjustment unit shall be of the type manufactured with a step in place.  
2 Centre reinforcing in adjustment unit ±10mm.  
3 Round and square adjustment units are available in sizes of 50, 75, 100, 150, and 300mm.  
A Adjustment units shall not extend beyond the outside edge of the structure.  
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 3

**PRECAST CONCRETE ADJUSTMENT UNITS FOR MAINTENANCE HOLES, CATCH BASINS, AND VALVE CHAMBERS**

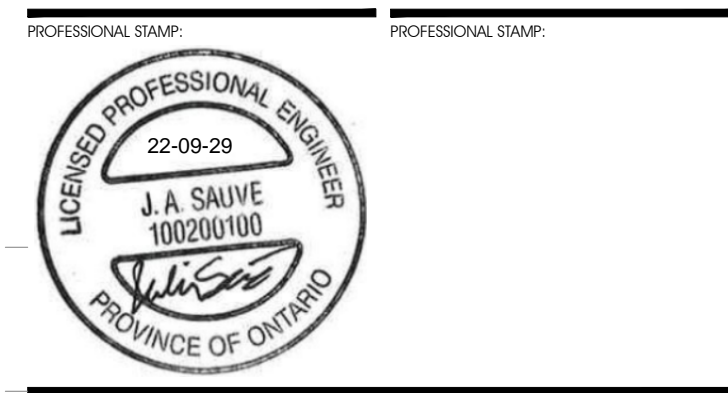
OPSD 704.010





RECORD OF REVISIONS

NO.	REVISION	DATE (MM/DD/YYYY)
1	ISSUED FOR SITE PLAN CONTROL REV. 3	SEPTEMBER 29, 2022
2	ISSUED FOR 66% REVIEW	JULY 15, 2022
3	ISSUED FOR SITE PLAN CONTROL REV. 2	JUNE 7, 2022
4	ISSUED FOR SITE PLAN APPROVAL	DECEMBER 16, 2021



PROJECT TITLE:  
**FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY**

SCALE: NONE

SOMME ST, OTTAWA, ON

DRAWING TITLE:

**DETAILS**

DRAWN BY: D.CANN DRAWING NUMBER:  
DATE: \_\_\_\_\_ PROJECT #:  
REVIEWED BY: J.SAUVÉ **C017**  
APPROVED BY: \_\_\_\_\_  
PRINT DATE: \_\_\_\_\_ REVISION NUMBER:  
ISSUED DATE: NOVEMBER 26, 2021  
CLIENT PROJECT #:

**A001083**

DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND OBTAINING THE SERVICES OF ANY DISCIPLINES BEFORE CONSTRUCTION COMMENCES. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL AND OTHER CONSULTANT DRAWINGS. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SOBBED BY THE ARCHITECT. COPYRIGHT RESERVED. ALL PARTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE ARCHITECT AND SHALL NOT BE REPRODUCED WITHOUT THE EXPRESSED PERMISSION FROM THE ARCHITECT.

**TABLE 1 - NUMBER OF RODS IN FRAME**

PIPE DIA	No of RODS
450	1
525	2
600	3
675	4
750	5
825	6
900	7
975	8
1050	9
1200	10

**TABLE 2 - NUMBER OF RODS IN FIXED UPPER FRAME**

PIPE DIA	No of RODS
1350	1
1500	2
1650	3
1800	4
1950	5
2100	6
2250	7
2400	8

**PIPE DIA 1350 to 2400mm**

**NOTES:**  
1 Grates shall be secured by either a bolt and nut or a locking device as specified.  
A Metal surfaces shall be either painted with 2 coats of self priming abrasion resistant immersion grade epoxy or hot dip galvanized, as specified.  
B Frame, hinge strap, mounting bracket, and steel rods shall be medium grade steel.  
C All welding shall be according to CSA W59 and W47.1.  
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2018 Rev 2  
**GRATING FOR CONCRETE ENDWALL**  
OPSD 804.050

**SPLICE BOLT AND NUT**

SPLICE BOLT LENGTH	LENGTH
LOCATION	32
At posts	32
At structure anchor	38

**ARRANGEMENT AT POST WOODEN POST SHOWN**

**NOTES:**  
1 Base metal thickness of rail shall be 2.87mm nominal and 2.44mm minimum.  
2 Holes only in rail.  
A All dimensions subject to manufacturing tolerances unless otherwise indicated.  
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2010 Rev 2  
**GUIDE RAIL SYSTEM, STEEL BEAM RAIL COMPONENT**  
OPSD 912.101

**POST BOLT AND HOLE**

Note	Post Bolt Size and Type
1	16x460 BH
2	18x310 CoB

**NOTES:**  
1 Washer shall not be installed at front face of rail. One bolt located at centre of steel beam guide rail.  
A Wooden posts and offset blocks shall be 150x150mm. Tops to have 25mm chamfer.  
B Steel beam guide rail mounting heights shall be as specified.  
C This OPSD to be read in conjunction with OPSD 912.101 and 912.102.  
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2010 Rev 2  
**GUIDE RAIL SYSTEM, STEEL BEAM WOODEN POST ASSEMBLY INSTALLATION - SINGLE RAIL**  
OPSD 912.140

**LEGEND:**  
Ø - Inside diameter

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

**CLEARANCE TABLE**

Soil Type	Clearance mm
900 or less	300
Over 900	500

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

**LEGEND:**  
S - Span of pipe arch

**NOTES:**  
1 Height of fill is measured from the finished surface to top of pipe.  
2 Height of fill over pipe shall be according to OPSD 805.020.  
3 For width 0.75S, granular material shall be uncompacted for its full depth and fine graded to shape of bottom of the pipe arch.  
4 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.  
5 Condition of excavation is symmetrical about centreline of pipe.  
A Granular material placed in the haunch area, other than the area included in Note 2, shall be compacted prior to placing and compacting the remainder of the embedment material.  
B Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.  
C All dimensions are in metres unless otherwise shown.

**CLEARANCE TABLE**

Pipe Span mm	Clearance mm
900 or less	300
Over 900	500

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2015 Rev 3  
**FLEXIBLE PIPE ARCH EMBEDMENT AND BACKFILL EARTH EXCAVATION**  
OPSD 802.020



