City of Greater Sudbury

Supplemental Drawings

To the Ontario Provincial Standard Drawings

City of Greater Sudbury

Standard Drawings

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- **Greater Sudbury Standard Drawings [GSSD]**
- **Ontario Provincial Standards Drawings [OPSD]**

Notes:

1. **N/A - Denotes Non Applicable Divisions**
2. **OPSD's "not listed" require City approval prior to their use**

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The table below shows Division 300 – Entrances.				
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–	310.015	3	Monolithic Curb and Concrete Sidewalk	A1945
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–	310.033	–	Concrete Sidewalk Ramps at Unsignalized Intersections	A2492
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–	350.010	3	Urban, Industrial, Commercial, Institutional and Apartment Entrances	A1950
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The table below shows Division 400 – Frames and Grates.				
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The table below shows Division 500 – Paving.				
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OPSD #	GSSD #	Rev #	Description	GSS CAD/File Name
The table below shows Division 700 – Catch Basins and Maintenance Holes continued.				
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–	705.021	2	Cast-in-Place Twin Inlet Catch Basin 600 mm x 1450 mm Depth - 4.0 m Maximum	A1936
–	705.025	2	Cast-in-Place Twin Inlet Maintenance Hole Catch Basin 1200 mm x 1650 mm Depth - 3.7 m Maximum	A1940
–	705.035	2	Cast-in-Place Ditch Inlet Catch Basin 600 mm x 600 mm Depth - 4.0 m Maximum	A1941
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The table below shows Division 800 – Culverts and Drains.				
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The table below shows Division 900 – Fencing, Guide Rails.				
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The table below shows Division 1000 – Sanitary Sewer.				
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–	1100.030	4	Valve and Swab Launching Station Watermain sizes 100 mm to 400 mm	A1964
–	1100.040	2	PVC to PE Pipe Transition and Concrete Anchor Block 200 PVC to 250 PE or 250 PVC to 315 PE	A1915
–	1100.041	2	PVC to PE Pipe Transition and Concrete Anchor Block 300 PVC to 400 PE	A1916
–	1100.042	2	PVC to PE Pipe Transition and Concrete Anchor Block 400 PVC to 500 PE or 500 PVC to 630 PE	A1917
–	1100.043	2	PVC to PE Pipe Transition and Concrete Anchor Block 600 PVC to 710 PE	A1918
–	1101.020	1	Sliding Valve Box	A1965
–	1103.030	2	Concrete Thrust Blocks for Tees, Plugs, Horizontal Bends and Dead Ends	A1966
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–	1105.030	7	Corrosion Protection on Hydrant Installations	A1972
–	1106.030	2	Steel Casing for Pipe Installation	A1973
–	1107.010	1	Detail of 40 mm or 50 mm Water Meter Installation	A1981
–	1107.040	–	Detail - Water Connection with Meter Spacer up to 25 mm	A1974
–	1110.000	2	Tracer Wire Installation on PVC Watermain and Appurtenances	A2233
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The table below shows Division 1200 – Miscellaneous.				
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–	1226.010	–	Horizontal Control of Lateral Sewer and Water Connections in a Common Rock Trench with other Utilities	A1977
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–	1227.020	–	Rock Trench Details Rock Cut/Rock Fill	A2273
–	1228.010	–	Precast Concrete Hand Hole for Traffic Signal Ducts	A1928
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–	1230.030	1	Unreinforced Concrete Base for Traffic Controller Cabinet	A2021
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–	1231.100	–	Aluminum Traffic Signal Pole	A2204
–	1232.000	–	LED Pedestrian and LED Countdown Signal	A2206
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–	1103.020	2	Concrete Thrust Blocks for Vertical Bends	A1967
–	1104.010	6	Water Service Connection Detail in Earth Trench for	A1968
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–	1104.011	6	Insulated Duct for Water Service Connection	A1969
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–	1228.010	–	Precast Concrete Hand Hole for Traffic Signal Ducts	A1928
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–	1231.100	–	Aluminum Traffic Signal Pole	A2204
–	1232.000	–	LED Pedestrian and LED Countdown Signal	A2206
–	1233.000	–	LED Vehicular Signal Head	A2207
–	1234.000	–	LED 5-Section Traffic Signal Displays	A2272

NOTES:

1. FONTS – GIOVANNI BOLD FOR UPPER LOGO
   – HELVETICA FOR ALL OTHER LOGO (NORMAL, BOLD AND ITALIC AS INDICATED)
2. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

Greater | Grand Sudbury

STANDARD PROJECT SIGN

"FIXED"

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1983–1 (1 OF 1)
APP'D:	GSSD–125.020

PANTONE: FOREST GREEN P147
(WHITE BACKGROUND)
PANTONE: TAN P158
STAR & VERTICAL BAR

PANTONE: FOREST GREEN P147 BAR
(WHITE LETTERING)

PANTONE: FOREST GREEN P147
(WHITE BACKGROUND)

PANTONE: TAN P158

PANTONE: FOREST GREEN P147
(WHITE BACKGROUND)

PANTONE: TAN P158

NOTES:

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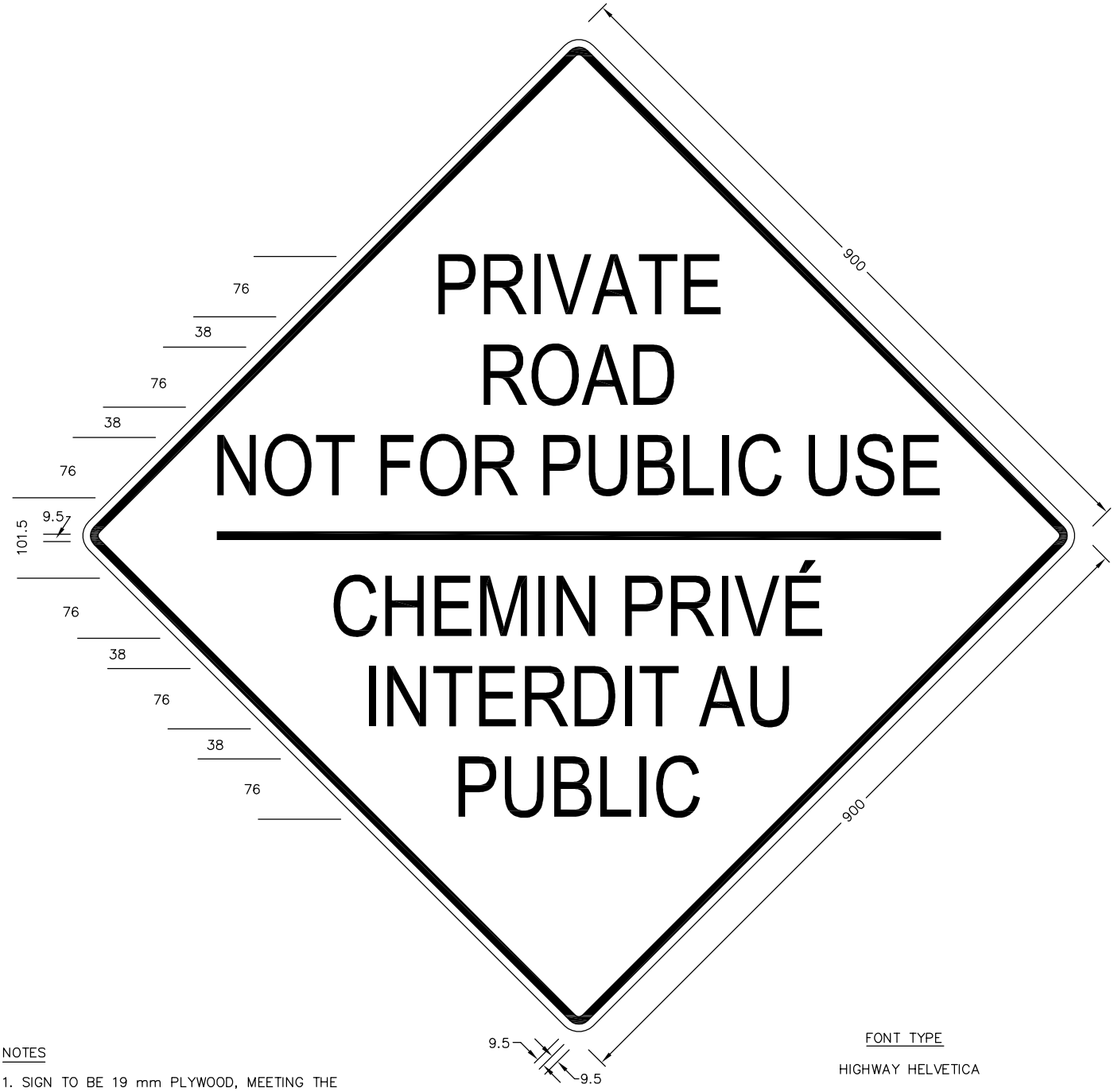
2. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

Greater | Grand Sudbury

STANDARD PROJECT SIGN

"PORTABLE"

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1984–1 (1 OF 1)
APP'D:	GSSD–125.030



NOTES

1. SIGN TO BE 19 mm PLYWOOD, MEETING THE REQUIREMENTS OF CSA SPECIFICATION 0121–M 1978 (DOUGLAS FIR) OR 0153M 1980 (POPLAR).
2. SIGN TO BE PAINTED YELLOW WITH BLACK LETTERS AS INDICATED AND BORDERS OF THE SAME COLOUR AS THE MESSAGE IN ACCORDANCE WITH THE CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. SIGN TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
4. SIGN TO BE MOUNTED ON 100 mm x 100 mm WOOD POST SUPPLIED BY CONTRACTOR. THE WOOD POST SHALL BE PRESSURE TREATED WITH A WOOD PRESERVATIVE.
5. BOTTOM OF SIGN TO BE MOUNTED A MINIMUM OF 1.5 m AND MAXIMUM OF 2.5 m ABOVE GROUND.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

FONT TYPE

HIGHWAY HELVETICA

FONT DIMENSIONS

LINE 1. 76 x 355.5
2. 76 x 241.5
3. 76 x 914.5
4. 76 x 616
5. 76 x 533.5
6. 76 x 305

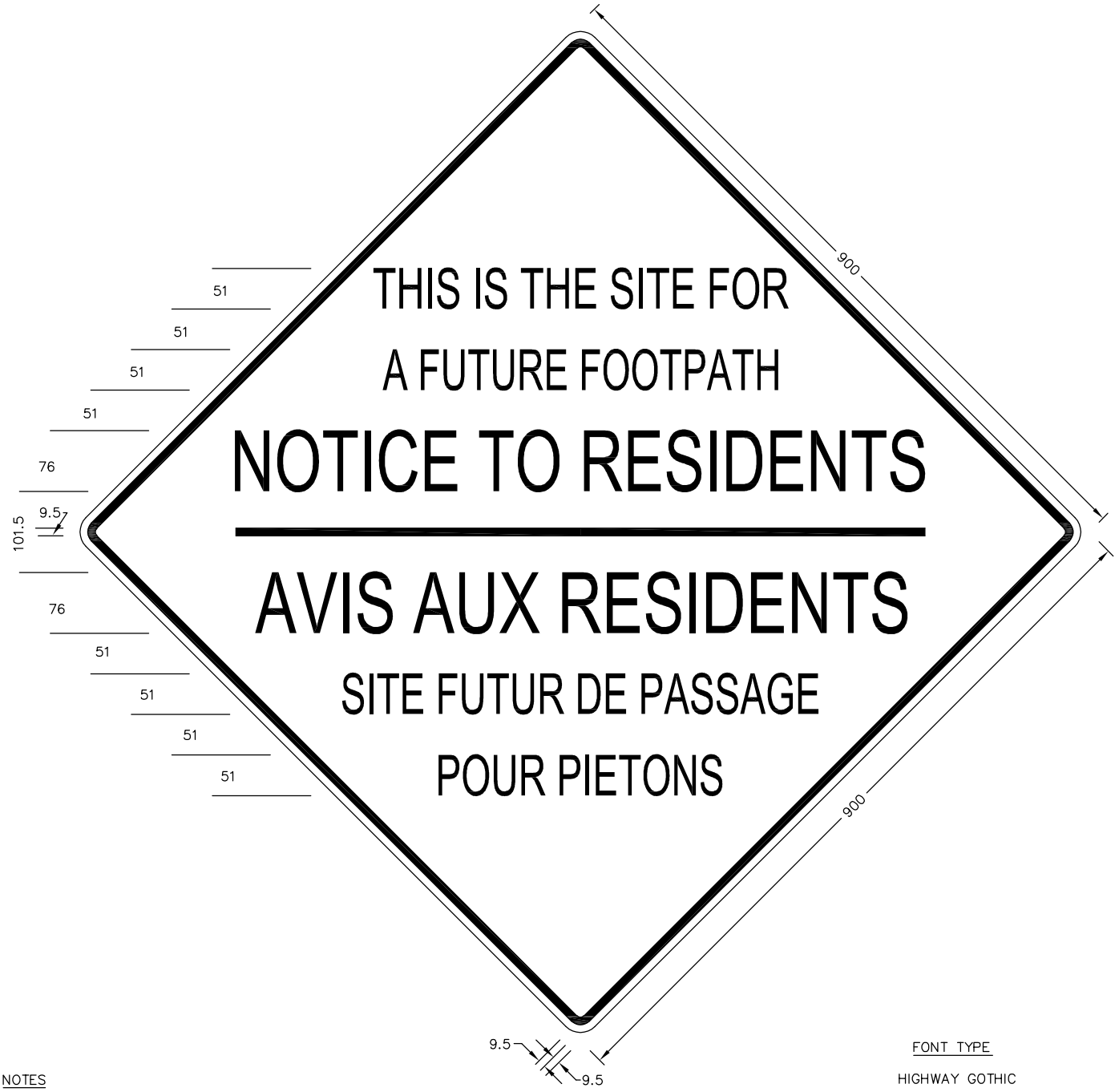
BORDER 9.5

DIVIDER 9.5 x 914.5

Greater Grand Sudbury

STANDARD SIGN "PRIVATE ROAD NOT FOR PUBLIC USE"

DRAWN BY: STS	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1921–1 (1 OF 1)
APP'D:	GSSD–125.040



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FONT TYPE

HIGHWAY GOTHIC

FONT DIMENSIONS

LINE 1. 51 x 520.5
2. 51 x 495.5
3. 76 x 863.5
4. 76 x 819
5. 51 x 597
6. 51 x 355.5

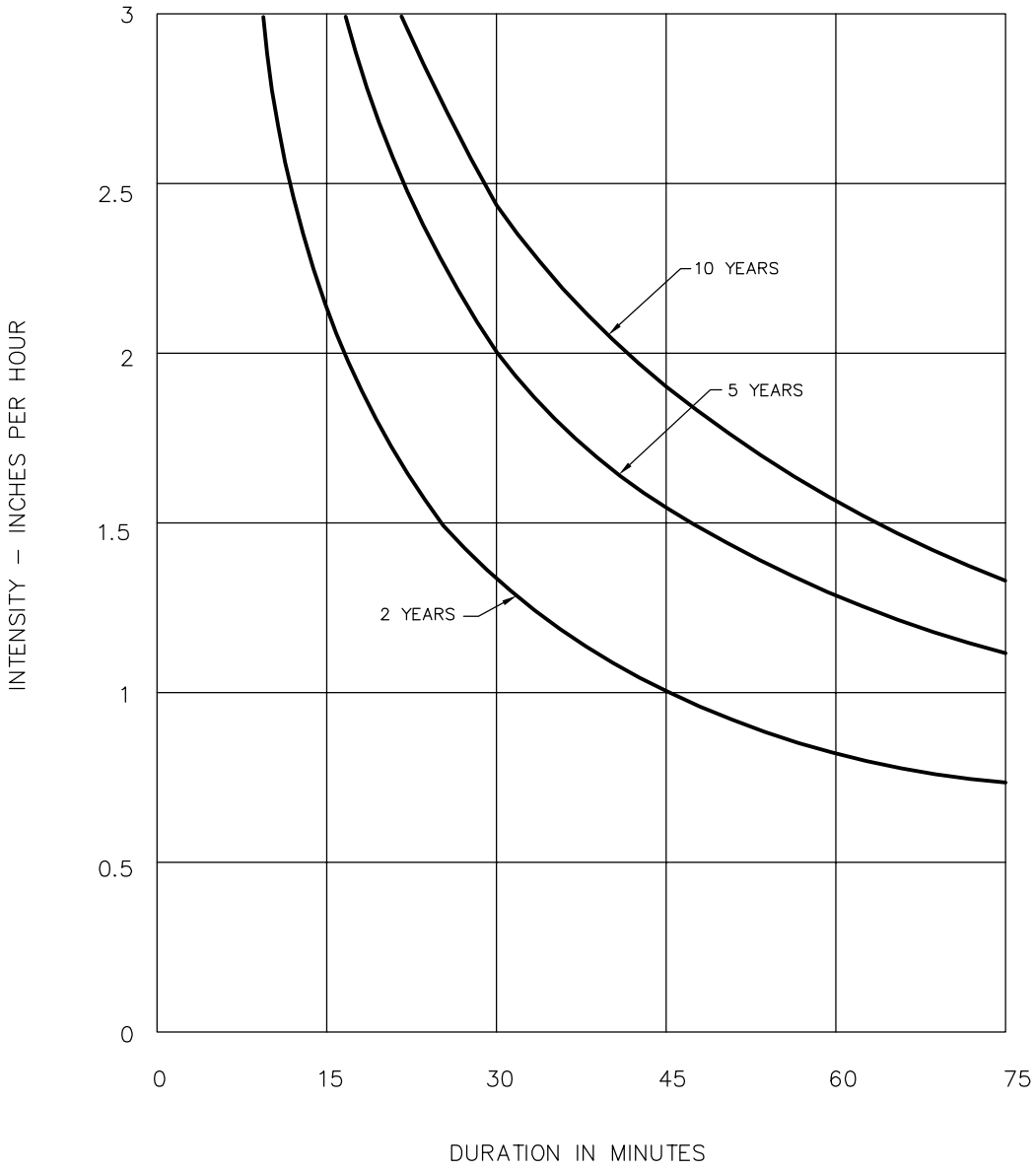
BORDER 9.5

DIVIDER 9.5 x 863.5

Greater Grand Sudbury

STANDARD SIGN
"FUTURE FOOTPATH"

DRAWN BY: STS	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1922–1 (1 OF 1)
APP'D:	GSSD–125.050

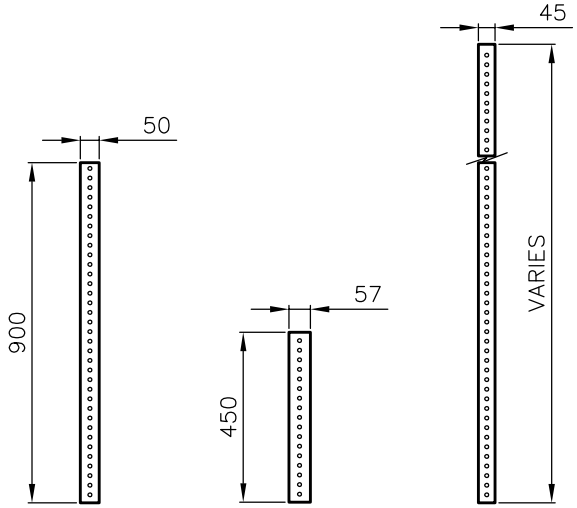


NOTE:
SEE CGS DWG B–886 FOR
25 YEAR–RETURN PERIOD STORM.

Greater Grand Sudbury

RAINFALL INTENSITY DURATION CURVES

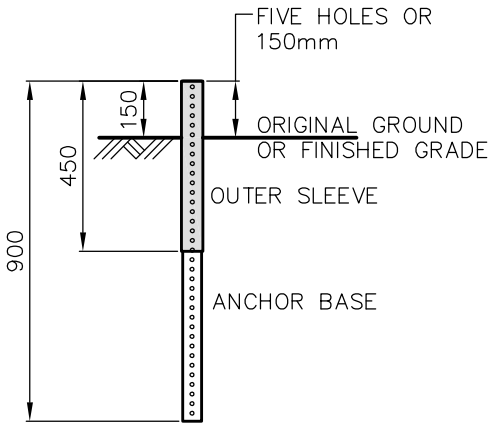
DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1985–1 (1 OF 1)
APP'D:	GSSD–126.011



ANCHOR BASE **OUTER SLEEVE** **SINGLE POST**

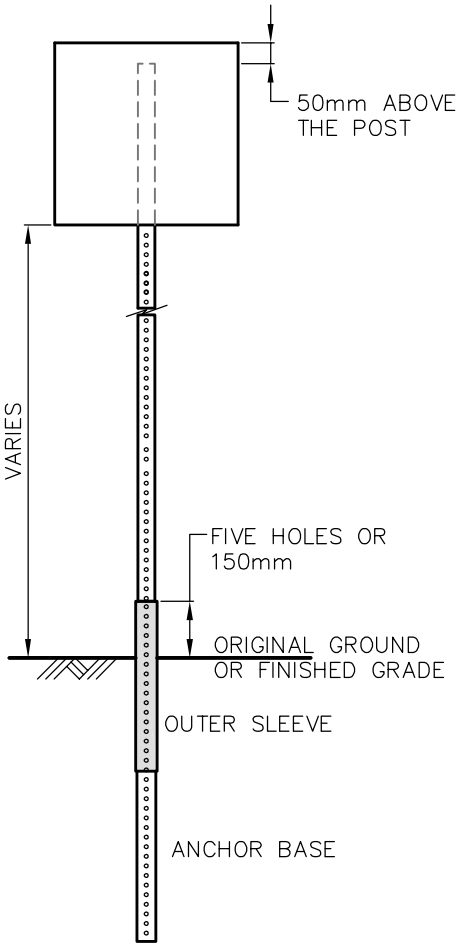
ONE SIZE LARGER
THAN ANCHOR BASE

1) ALL METAL PARTS TO BE GALVANIZED.
2) METAL GAUGE SHALL BE 12 GUAGE.
3) ALL FITTINGS,ACCESSORIES,NUTS AND BOLTS
FOR SIGN MOUNTING ARE AVAILABLE FROM MANUFACTURER.
4) ALL DIMENSIONS IN MILLIMETRES.



YIELDING BREAKAWAY

1) OUTER SLEEVE OVER ANCHOR BASE.
2) TOP OF OUTER SLEEVE TO BE FLUSH WITH TOP OF ANCHOR BASE.
3) OUTER SLEEVE AND ANCHOR BASE DRIVEN INTO GROUND TOGETHER
4) DRIVE CAP MUST BE USED FOR SLEDGE HAMMER USE.
5) FIVE HOLES OR 150mm ABOVE ORIGINAL OR FINISHED GRADE.



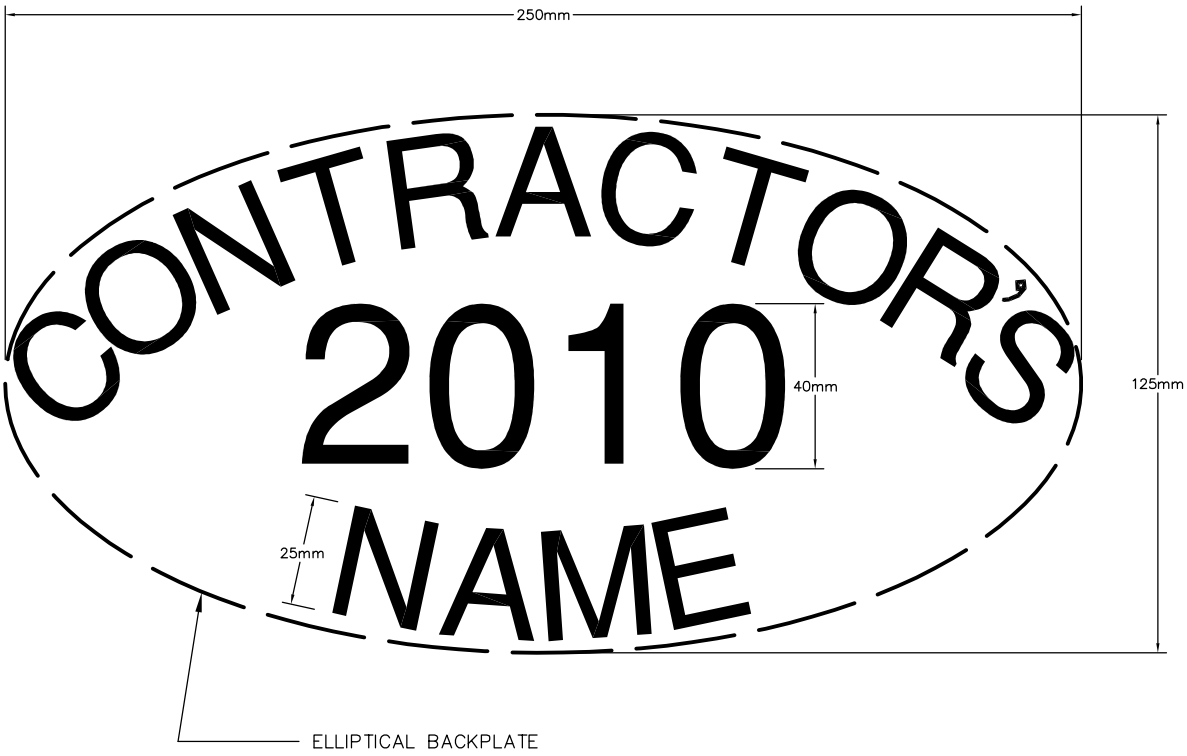
SIGN INSTALLATION

1) SIGN POST TO BE PLACED INSIDE YIELDING BREAKAWAY 5 HOLES OR 150mm
2) SIGN MOUNTING HEIGHT TO BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL.

Greater Sudbury | Grand

TYPICAL SIGN MOUNTING

DRAWN BY: R. TILSON	REV No: 1
DATE: 2006–10–03	REV DATE: 2017–04–10
SCALE: 1:20	CAD/FILE No.: A2135–1 (1 OF 1)
APP'D:	GSSD–127.000



NOTE

CONTRACTOR TO USE SHARP GOTHIC LETTERS

	HEIGHT	WIDTH	THICKNESS
NUMBERS	40mm	20mm	6mm
LETTERS	25mm	20mm	5mm

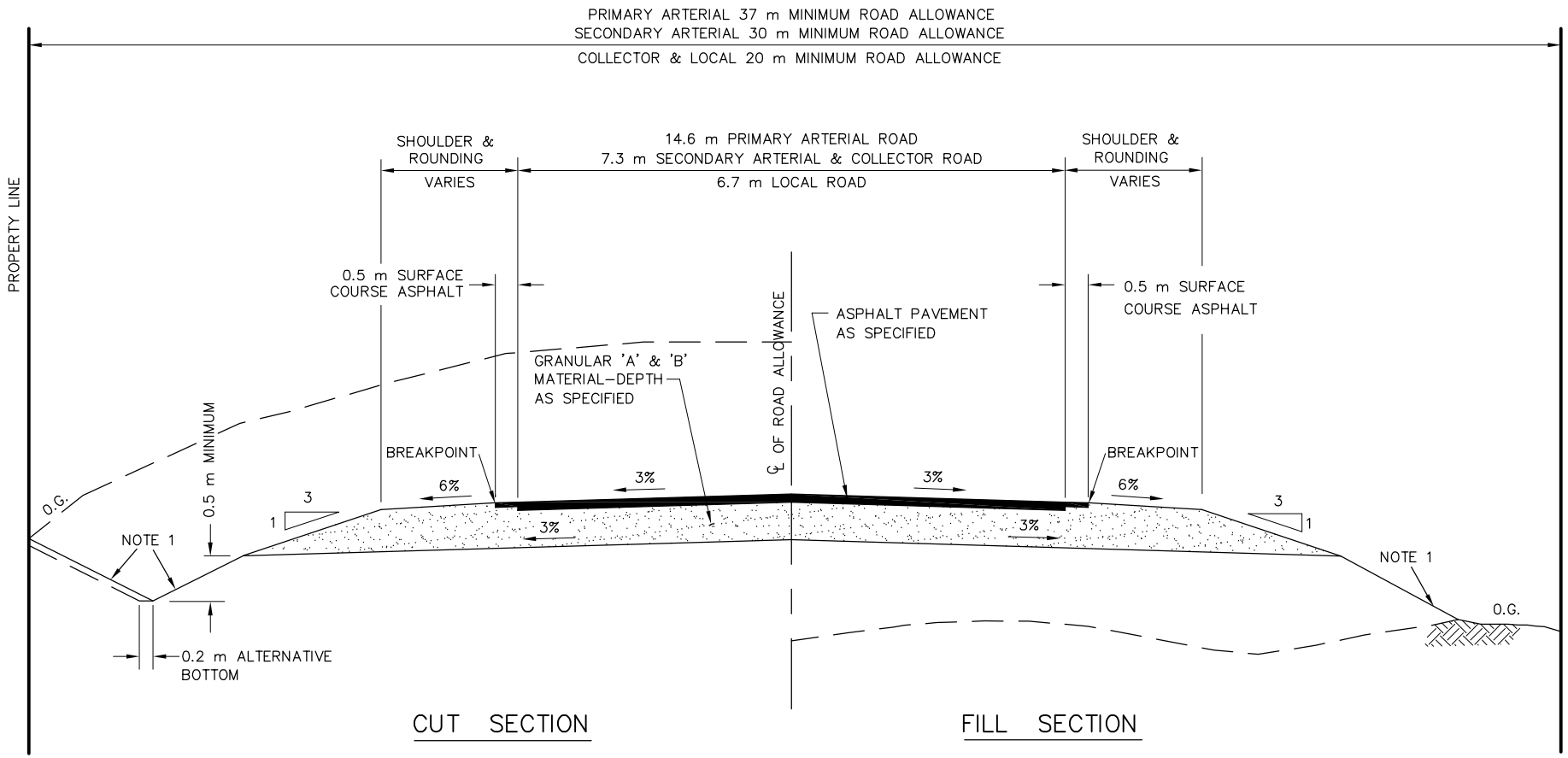
NOTES:

1. CONCRETE STAMP IMPRESSION SHALL NOT BE PLACED IN DIRECTIONAL LINES.
2. CONCRETE STAMP IMPRESSION TO BE PLACED AT EXPANSION OR DUMMY JOINTS, BUT NOT WITHIN THE EDGING TOOL FINISH AND CENTERED IN SLAB.
3. CONCRETE STAMP IMPRESSION SHALL BE PLACED ON THE CONTINUOUS RUN OF NEW SIDEWALK AS FOLLOWS:
   a) <50 METRES, IMPRESSION @ EACH END.
   b) ≥50 METRES BUT ≤100 METRES, @ EACH END PLUS MIDPOINT.
   c) >100 METRES, @ EACH END PLUS EQUALLY SPACED NOT TO EXCEED 50 METRE INTERVALS, (ROTATE STAMP EVERY 50 METRES).

Greater Grand Sudbury

STANDARD SIDEWALK STAMP

DRAWN BY: BWK	REV No:
DATE: 2010-10-20	REV DATE:
SCALE: NTS	CAD/FILE No.: A2200-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-128.000



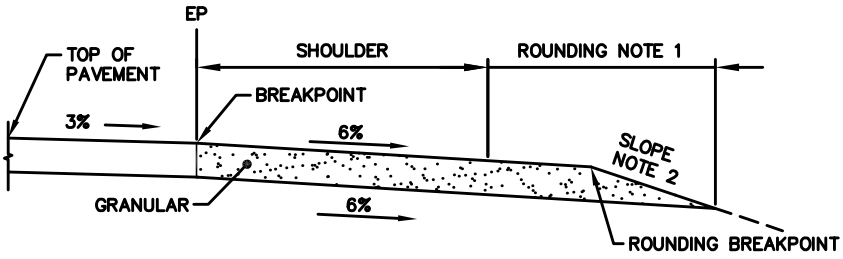
NOTES :

1. SLOPES:
   - FOR HEIGHTS OF FILL OR DEPTHS OF CUT 1 m OR LESS, USE 3:1 SLOPE
   - FOR HEIGHTS OF FILL OR DEPTHS OF CUT OVER 1 m, USE 2:1 SLOPE
2. ALL TOPSOIL IS TO BE STRIPPED PRIOR TO GRANULAR MATERIAL BEING PLACED, IF DEPTH IS LESS THAN 1 m.

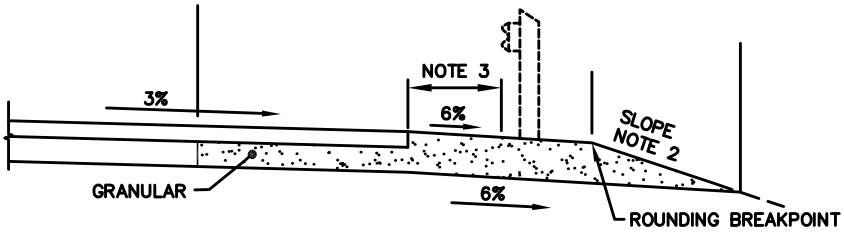
Greater Grand Sudbury

STANDARD ROAD SECTION RURAL

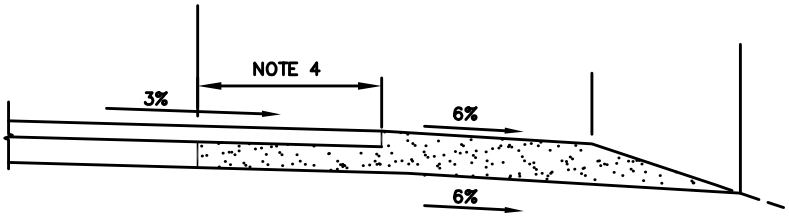
DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1952–1 (1 OF 1)
APP'D:	GSSD–206.010



TYPE 1 – GRANULAR SHOULDER



TYPE 2 – FULLY PAVED SHOULDER

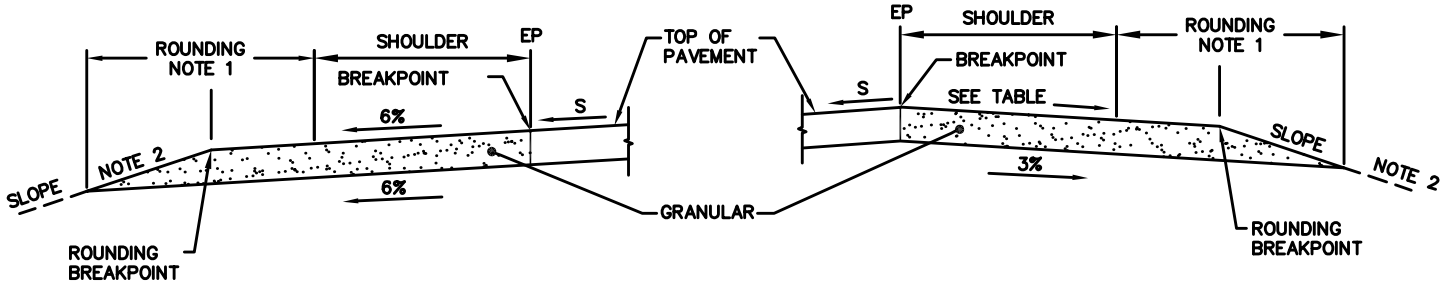


TYPE 3 – PARTIALLY PAVED SHOULDER

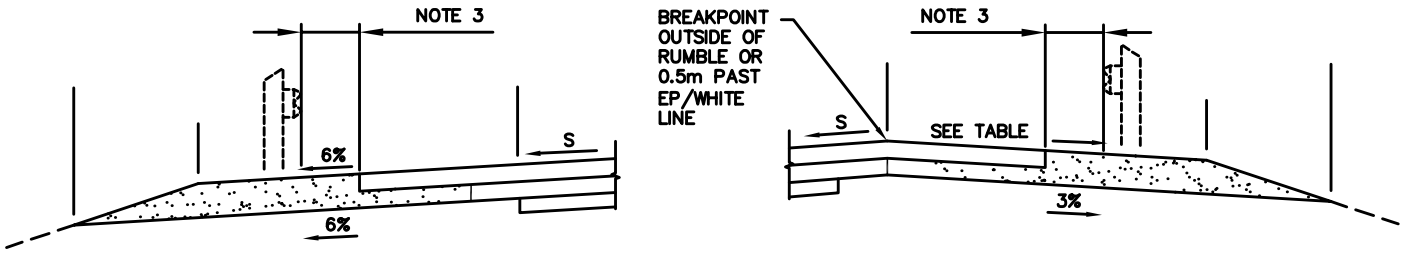
NOTES:

1. ROUNDING SHALL BE 0.5m OR GREATER WHEN SPECIFIED.
2. SLOPE SHALL BE 3H:1V OR FLATTER WHEN SPECIFIED.
3. WHERE CABLE AND STEEL BEAM GUIDE RAIL HAS BEEN INSTALLED PRIOR TO SHOULDER PAVING AND WHERE SHOULDER PAVING IS TO BE PLACED ADJACENT TO THE GUIDE RAIL, THE OUTSIDE EDGE OF SHOULDER PAVING SHALL END 300mm FROM THE FACE OF THE GUIDE RAIL.
4. PARTIALLY PAVED SHOULDER WIDTH SHALL BE 0.5m MINIMUM.

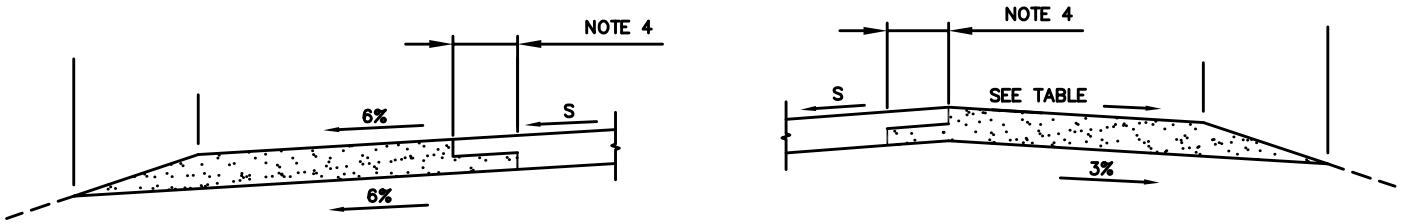
Greater Sudbury / Grand Sudbury	TANGENT SHOULDERS RURAL	DRAWN BY: KB/OTS	REV No:
		DATE: 2025-03-19	REV DATE:
		SCALE: N.T.S.	CAD/FILE No.: A2655-1 (1 OF 1)
		APP'D:	GSSD 210.010



TYPE 1 – GRANULAR SHOULDER



TYPE 2 – FULLY PAVED SHOULDER



TYPE 3 – PARTIALLY PAVED SHOULDER

CROSSFALL, %													
PAVED DRIVING LANE & PARTIALLY PAVED SHOULDER/0.5m PAST EP TO OUTSIDE OF RUMBLE STRIP	+6	+5	+4	+3	+2	+1	0	−1	−2	−3	−4	−5	−6
1.5m PAVED SHOULDER	−2	−2	−2	−3	−3	−3	−3	−3	−3	−3	−4	−5	−6
GRAVEL SHOULDER	−2	−2	−2	−3	−3	−3	−4	−5	−6	−6	−6	−6	−6

NOTES:

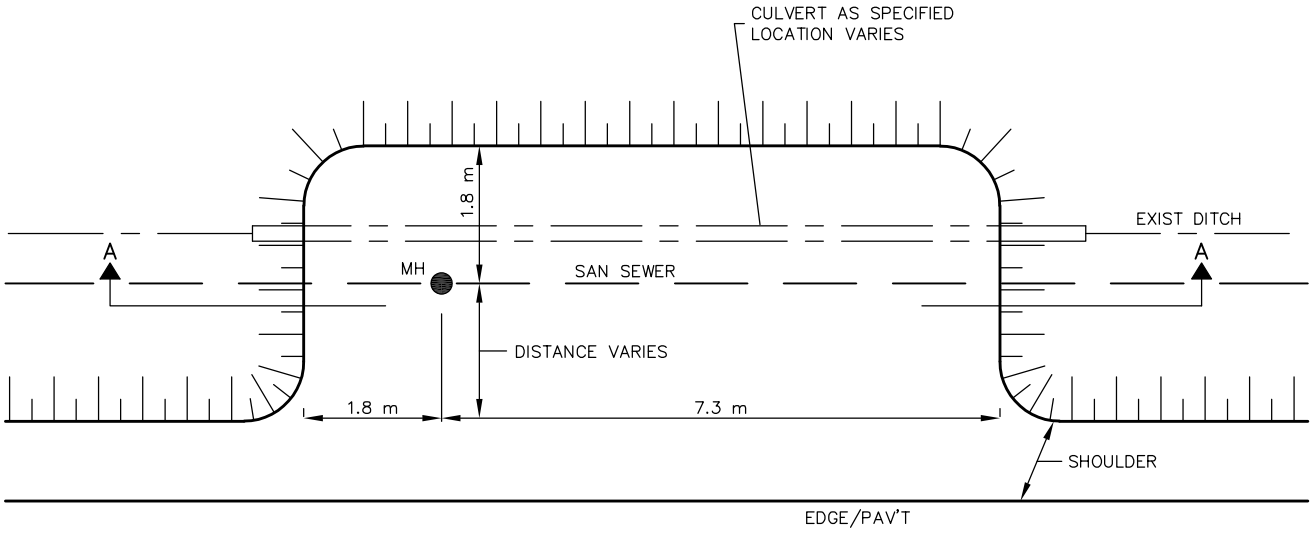
1. ROUNDING SHALL BE 0.5m OR GREATER WHEN SPECIFIED.
2. SLOPE SHALL BE 3H:1V OR FLATTER WHEN SPECIFIED.
3. WHERE CABLE AND STEEL BEAM GUIDE RAIL HAS BEEN INSTALLED PRIOR TO SHOULDER PAVING AND WHERE SHOULDER PAVING IS TO BE PLACED ADJACENT TO THE GUIDE RAIL, THE OUTSIDE EDGE OF SHOULDER PAVING SHALL END 300mm FROM THE FACE OF THE GUIDE RAIL.
4. PARTIALLY PAVED SHOULDER WIDTH SHALL BE 0.5m MINIMUM.

A. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

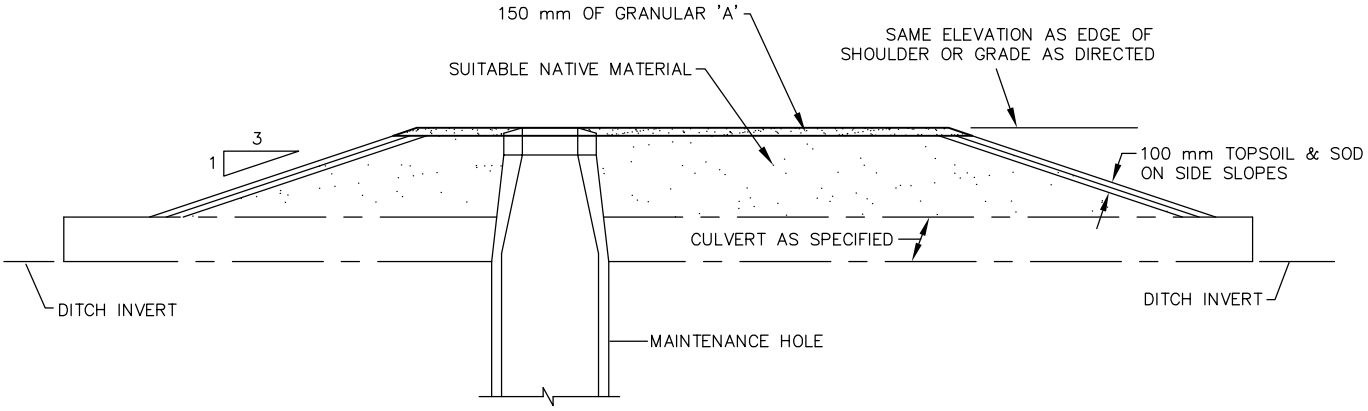
Greater Sudbury Grand

SUPERELEVATED SHOULDERS RURAL

DRAWN BY: KB/OTS	REV No:
DATE: 2025-03-19	REV DATE:
SCALE: N.T.S.	CAD/FILE No.: A2654-1 (1 OF 1)
APP'D:	GSSD 210.020

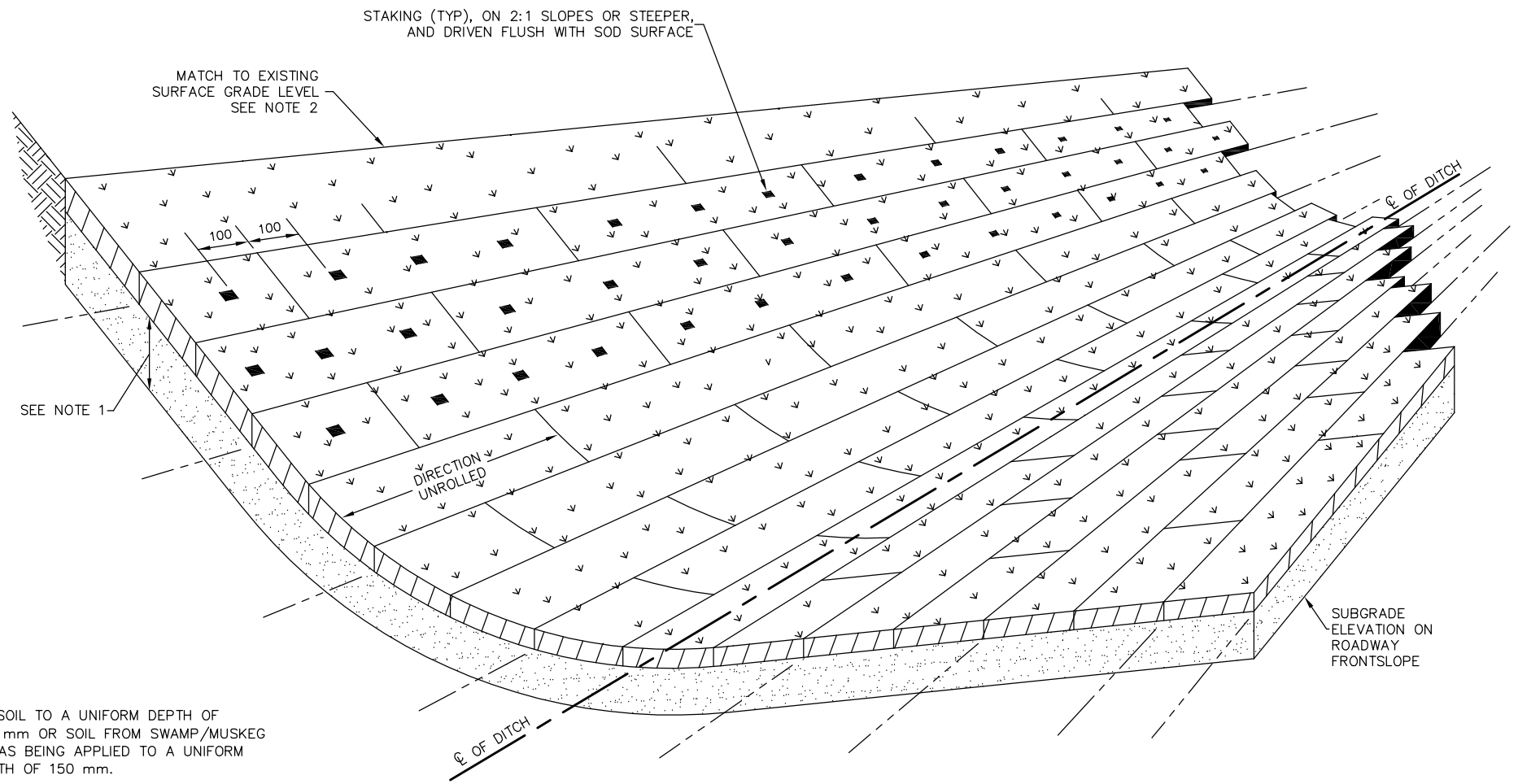


PLAN



SECTION A–A

Sudbury Greater Grand	MAINTENANCE HOLE ACCESS ENTRANCE AT DITCHES	DRAWN BY: STS/RFRANK	REV No:
		DATE: 2003–03–03	REV DATE:
		SCALE: NTS	CAD/FILE No.: A1949–1 (1 OF 1)
		APP'D:	GSSD–217.051



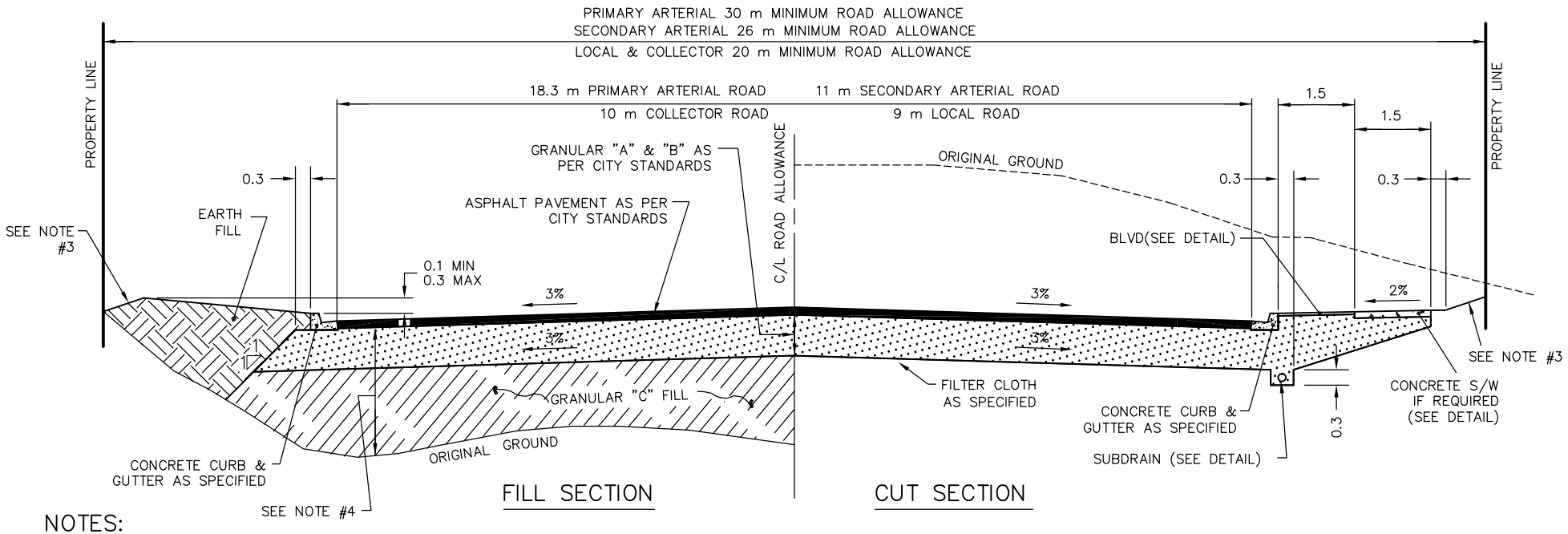
NOTES:

1. TOPSOIL TO A UNIFORM DEPTH OF 100 mm OR SOIL FROM SWAMP/MUSKEG AREAS BEING APPLIED TO A UNIFORM DEPTH OF 150 mm.
2. SODDING TO BE COUNTERSUNK TO EXISTING SURFACE GRADE LEVEL AT ALL MATCH-IN POINTS.
3. STAKES FOR PEGGING SHALL BE 19 mm x 19 mm x 300 mm IN LENGTH.
4. APPLY SOD TO DESIGNATED AREAS.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater | Grand Sudbury

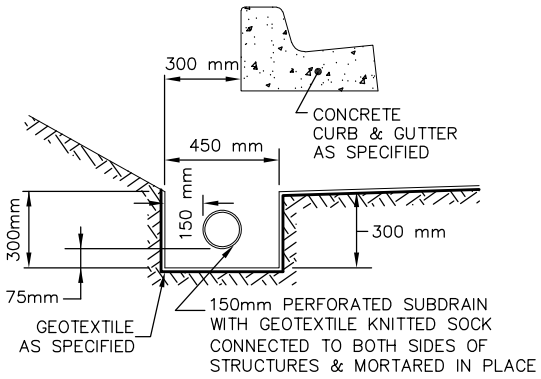
SODDING OF SIDE SLOPES

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003-03-03	REV DATE:
SCALE: NTS	CAD/FILE No.: A2019-1 (1 OF 1)
APP'D:	GSSD-218.010

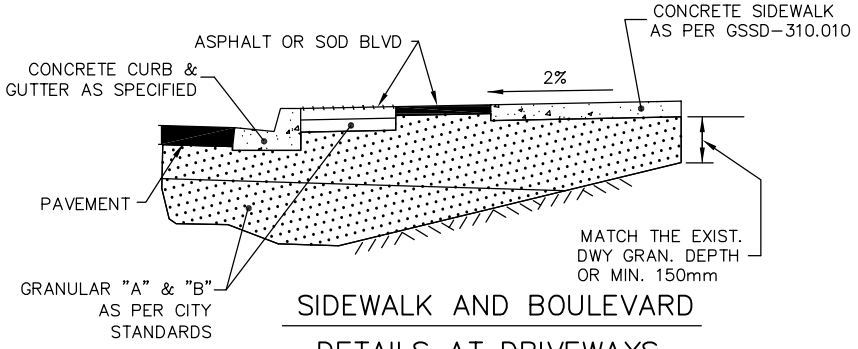


NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE INDICATED.
2. DIMENSIONS SHOWN ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
3. SLOPES : FOR HEIGHTS OF FILL OR DEPTHS OF CUT 1 m OR LESS, USE A 3 : 1 SLOPE.
   FOR HEIGHTS OF FILL OR DEPTHS OF CUT OVER 1 m, USE A 2 : 1 SLOPE.
   SLOPES TO BE SURFACE DRESSED AS SPECIFIED IN THE CONTRACT.
4. ALL TOPSOIL IS TO BE STRIPPED PRIOR TO GRANULAR MATERIAL BEING PLACED, IF DEPTH IS LESS THAN 1 m.
5. UTILITY LOCATIONS TO BE APPROVED BY THE CITY ENGINEER.
6. SEE GSSD–225.030 FOR TYPICAL SERVICE LOCATIONS.



SUBDRAIN DETAIL

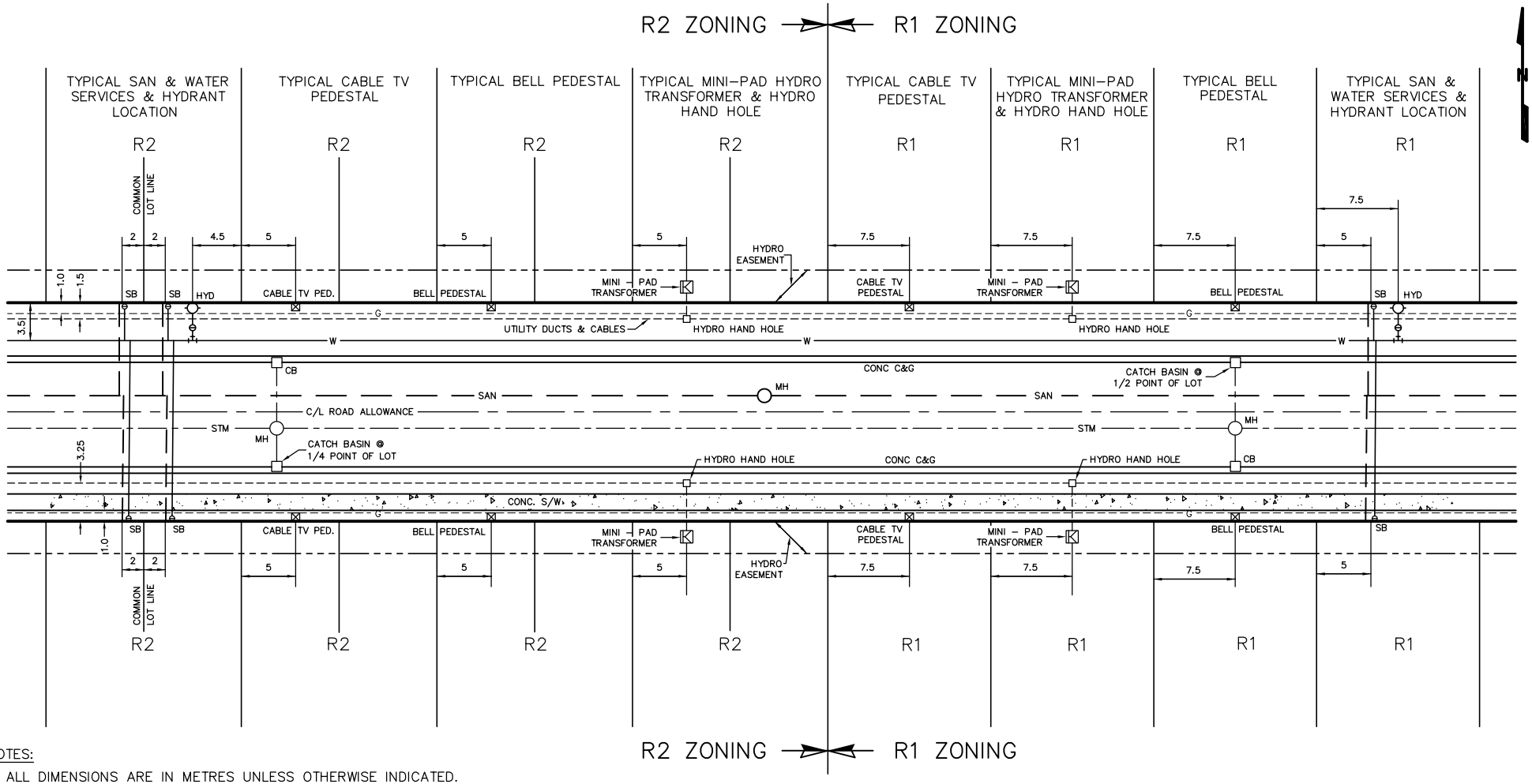


SIDEWALK AND BOULEVARD DETAILS AT DRIVEWAYS

Greater Sudbury

STANDARD ROAD SECTION URBAN

DRAWN BY: WK/SS/RF/BK	REV No: 1
DATE: 2003–03–03	REV DATE: OCT 2010
SCALE: NTS	CAD/FILE No.: A1924–1 (1 OF 1)
APP'D: PETER CHIESA	GSSD–225.010



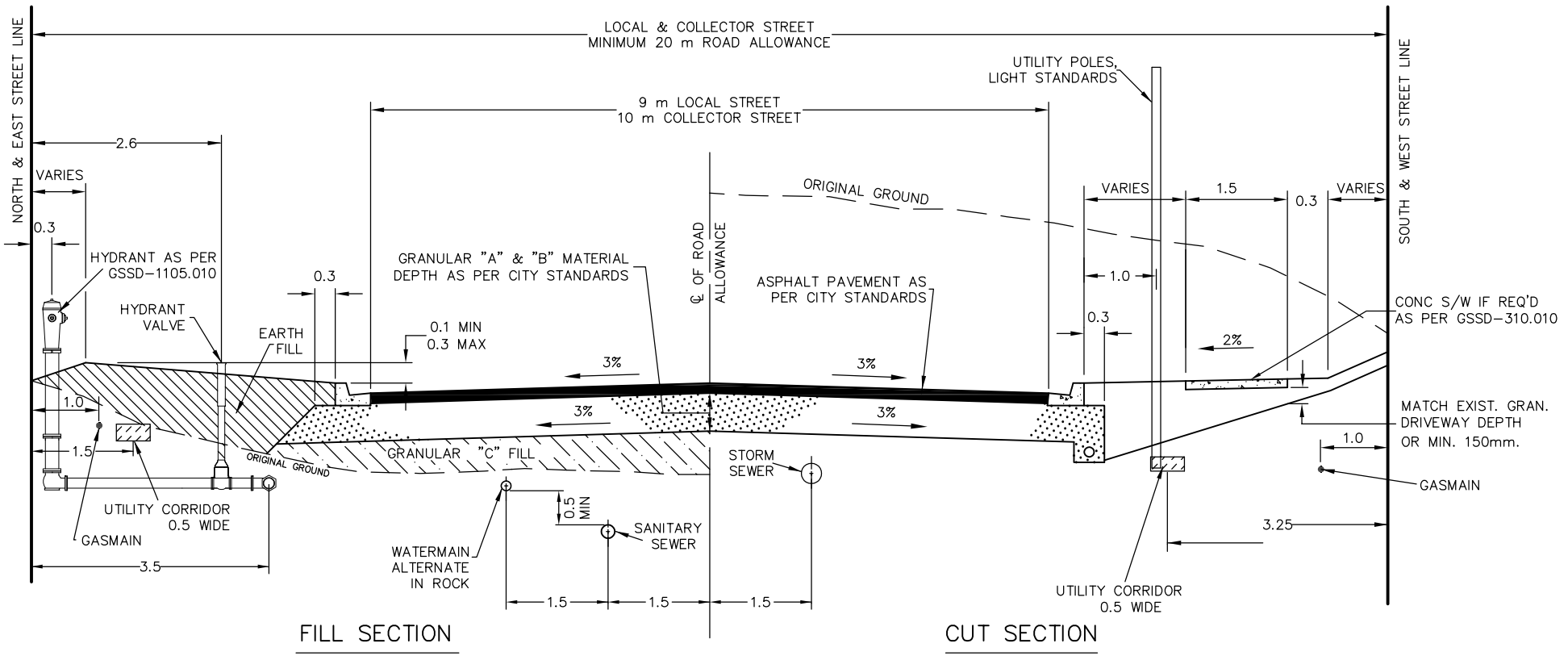
NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE INDICATED.
2. WHERE A MINI–PAD TRANSFORMER IS INSTALLED IN AN R2 LOT, THE SEWER & WATER SERVICE IS 1.5 m FROM LOT LINE RATHER THAN THE NORMAL LOCATION OF 2 m.
3. REFER TO GSSD–1226.010 FOR INSTALLATION OF SERVICES IN A ROCK TRENCH.
4. WHEN SIDEWALK IS ON THE NORTH OR EAST SIDE, THE LOCATION OF THE UTILITY DUCTS AND CABLES ARE REVERSED.
5. IF IT IS PROPOSED TO HAVE A DRIVEWAY DOWN A COMMON LOT LINE, MINI–PAD TRANSFORMER TO BE INSTALLED 5 m FROM COMMON LOT LINE.
6. SEE GSSD–225.010 FOR TYPICAL SECTION.
7. SEE GSSD–1006.030 FOR STANDARD DUAL SERVICE CONNECTIONS IN A COMMON TRENCH (SEWER & WATER).

Greater Grand Sudbury

UTILITY SERVICES LOCATION PLAN

DRAWN BY: RF	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1923–1 (1 OF 1)
APP'D:	GSSD–225.030



FILL SECTION

CUT SECTION

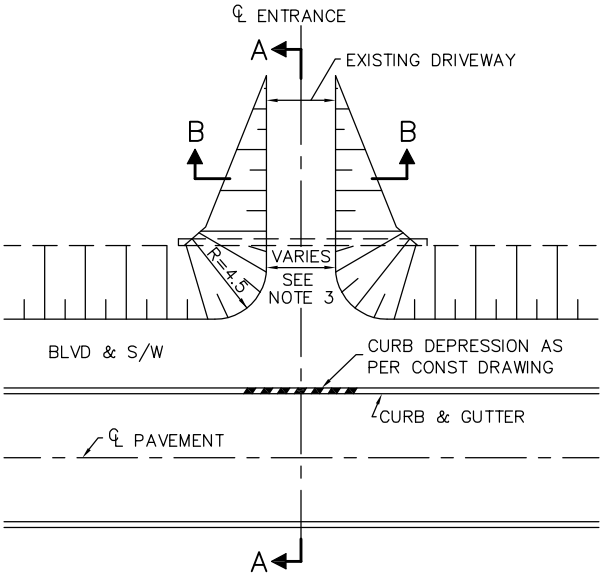
NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE INDICATED.
2. DIMENSIONS SHOWN ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
3. UTILITY CONDUITS & CABLES WITHIN BOULEVARD TO HAVE 0.75 m MINIMUM COVER.
4. WHEN SIDEWALK IS ON NORTH OR EAST SIDE, UTILITY CORRIDOR LOCATION IS REVERSED.
5. SEE GSSD-225.030 FOR TYPICAL SERVICE LOCATIONS.

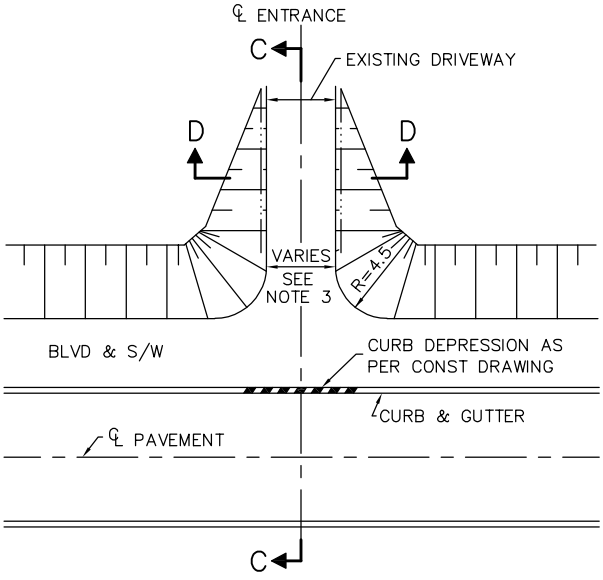
Greater Grand Sudbury

UTILITY SERVICES LOCATION SECTION

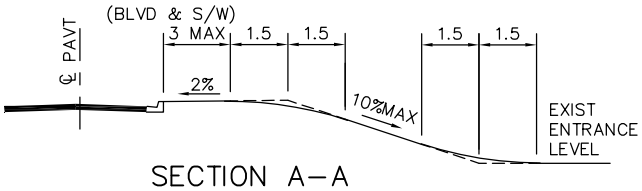
DRAWN BY: SS/RF/MP/BK	REV No: 2
DATE: 2003-03-03	REV DATE: OCT 2010
SCALE: NTS	CAD/FILE No.: A1986-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-225.040



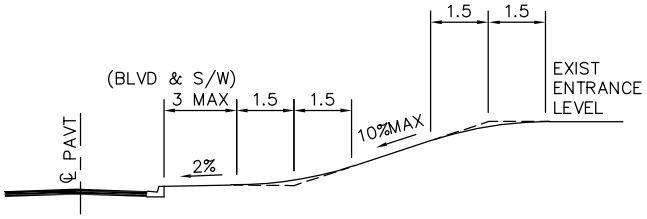
PLAN – FILL



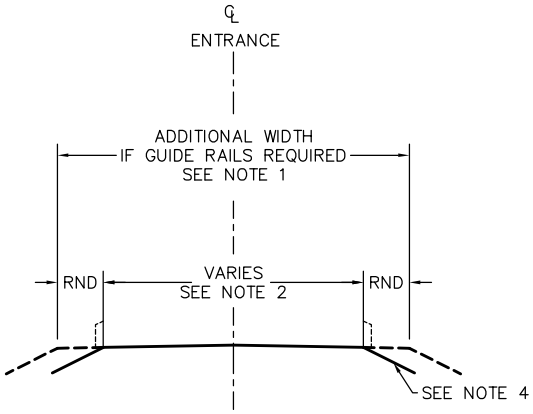
PLAN – CUT



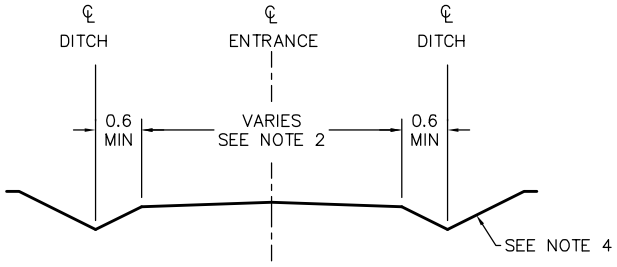
SECTION A–A



SECTION C–C



SECTION B–B



SECTION D–D

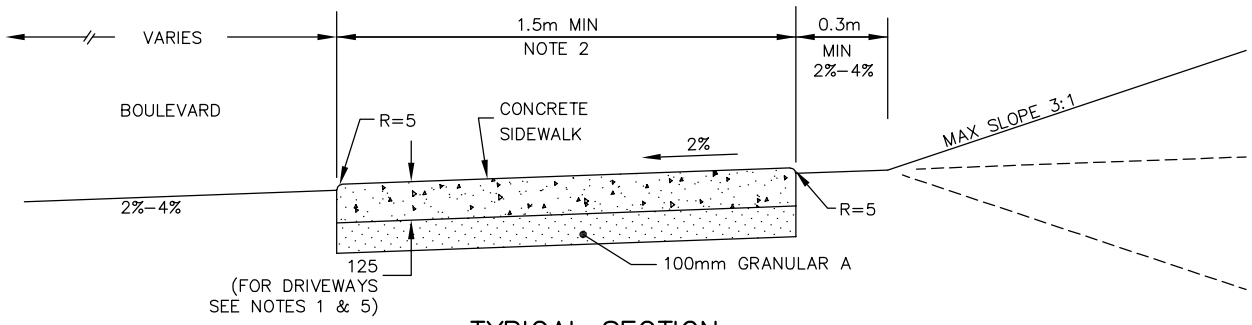
NOTES

1. GUIDE RAILS ARE REQUIRED ON FILLS 3 m IN HEIGHT OR MORE. WHERE STEEL BEAM GUIDE RAIL IS INDICATED WIDTH OF ROUNDING SHALL BE 1 m.
2. WIDTH OF DRIVEWAY TAPERS FROM END OF RADIUS TO MEET EXISTING DRIVEWAY.
3. DRIVEWAY WIDTH VARIES – MINIMUM 3 m, MAXIMUM 6.1 m.
4. SLOPES: FOR HEIGHTS OF FILL OR DEPTHS OF CUT 1 m OR LESS, USE 3:1 SLOPE.
   FOR HEIGHTS OF FILL OR DEPTHS OF CUT OVER 1 m, USE A 2:1 SLOPE.
5. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.

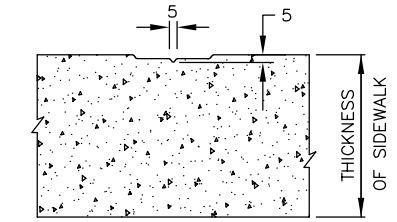
Greater Sudbury

TYPICAL URBAN PRIVATE ENTRANCE WITH BOULEVARD & SIDEWALK

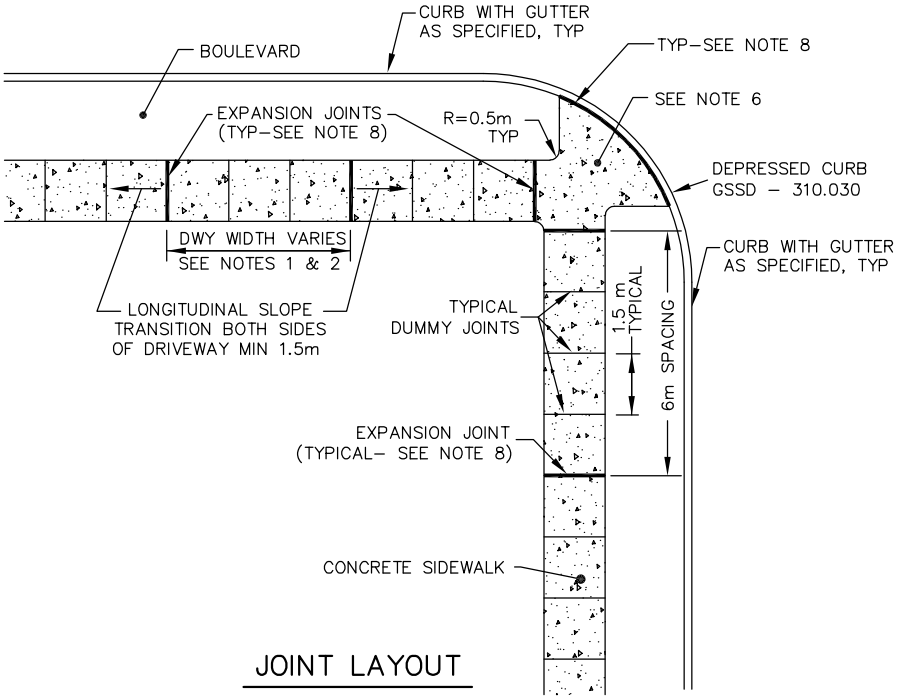
DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1925–1 (1 OF 1)
APP'D:	GSSD–303.020



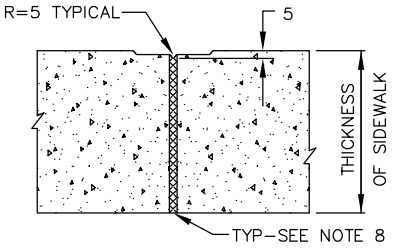
TYPICAL SECTION



DUMMY JOINT



JOINT LAYOUT



EXPANSION JOINT

NOTES:

1. SIDEWALK THICKNESS AT RESIDENTIAL DRIVEWAYS SHALL BE 150mm. AT COMMERCIAL AND INDUSTRIAL DRIVEWAYS THE THICKNESS SHALL BE 200mm.

   DEPTH OF CONCRETE SHALL TAPER TO THE NORMAL DEPTH FOR A DISTANCE OF 1.5m AT EACH SIDE OF THE DRIVEWAY.

2. AT DRIVEWAYS WHERE THE SIDEWALK ABUTS THE CURB, EXPANSION JOINTS ARE REQUIRED AT BOTH SIDES OF THE DRIVEWAY.

   IF THE DISTANCE FROM THE PREVIOUS JOINT IS LESS THAN 1.5m, THIS DISTANCE SHALL BE ADDED TO THE NEXT BAY AND A DUMMY JOINT PLACED AT MID–SPAN. DUMMY JOINTS ARE REQUIRED IN DRIVEWAYS AT INTERVALS OF 1.5m BUT IN NO CASE LESS THAN 1m.

   IF THE DRIVEWAY IS GREATER THAN 6m IN WIDTH, AN EXPANSION JOINT WILL BE REQUIRED AT MID–SPAN.

3. EXPANSION JOINTS SHALL BE USED TO ISOLATE OBSTRUCTIONS FROM THE SIDEWALK (EG. HYDRANTS, LIGHT STANDARDS, BUILDINGS, ETC.) SEE GSSD–310.040.

4. CONCRETE TO BE AS PER GSSS 351 & GSSS 353.

5. FOR SIDEWALKS ABUTTING CURB & GUTTER AT A DRIVEWAY ENTRANCE – SEE GSSD–351.010.

6. FOR SIDEWALK RAMP AND TACTILE WARNING SURFACE SEE GSSD–310.030, 310.031, AND 310.033.

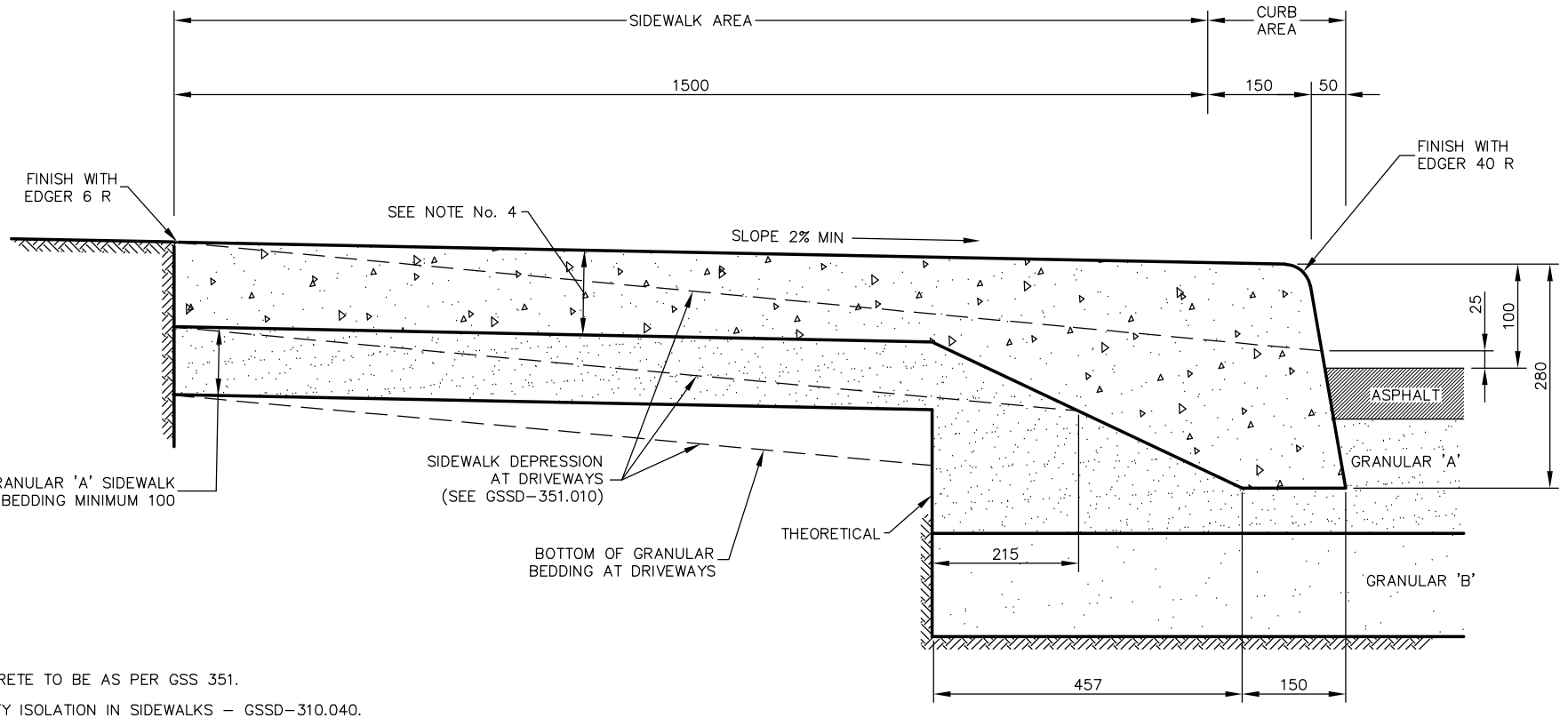
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

8. EXPANSION JOINT AS PER OPSS 351.

Greater Grand Sudbury

CONCRETE SIDEWALK

DRAWN BY: KLR/ARP	REV No: 7
DATE: 2003–03–03	REV DATE: JAN 2021
SCALE: NTS	CAD/FILE No.: A1929–1 (1 OF 1)
APP'D:	**GSSD–310.010**



NOTES:

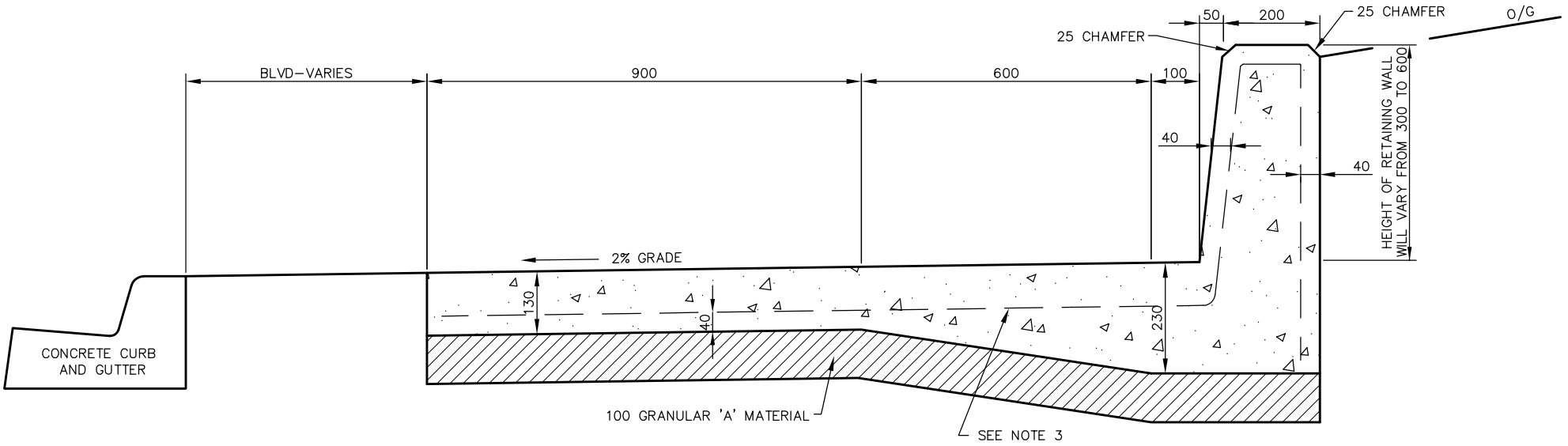
1. CONCRETE TO BE AS PER GSS 351.
2. UTILITY ISOLATION IN SIDEWALKS – GSSD-310.040.
3. EXPANSION JOINTS ARE REQUIRED AT BOTH SIDES OF THE DRIVEWAY. THESE JOINTS SHALL CONTINUE THROUGH THE CURB AREA IF THE DISTANCE FROM THE PREVIOUS JOINT IS LESS THAN 1.5 m. THIS DISTANCE SHALL BE ADDED TO THE NEXT BAY AND A DUMMY JOINT PLACED AT MID-SPAN. DUMMY JOINTS ARE REQUIRED IN DRIVEWAYS AT INTERVALS OF 1.5 m, BUT IN NO CASE LESS THAN 1 m.

   IF THE DRIVEWAY IS GREATER THAN 6 m IN WIDTH, AN EXPANSION JOINT WILL BE REQUIRED AT MID-SPAN AND CONTINUE THROUGH THE CURB AREA. DEPTH OF CONCRETE SHALL TAPER TO THE NORMAL DEPTH FOR A DISTANCE OF 1.5 m AT EACH SIDE OF DRIVEWAY.
4. SIDEWALK THICKNESS AT RESIDENTAIL DRIVEWAYS SHALL BE 150 mm. AT COMMERCIAL AND INDUSTRIAL DRIVEWAYS, THE THICKNESS SHALL BE 200 mm.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Sudbury | Grand

MONOLITHIC CURB AND CONCRETE SIDEWALK

DRAWN BY: STS/ARP	REV No: 3
DATE: 2003-03-03	REV DATE: JAN 2021
SCALE: NTS	CAD/FILE No.: A1945-1 (1 OF 1)
APP'D:	GSSD-310.015



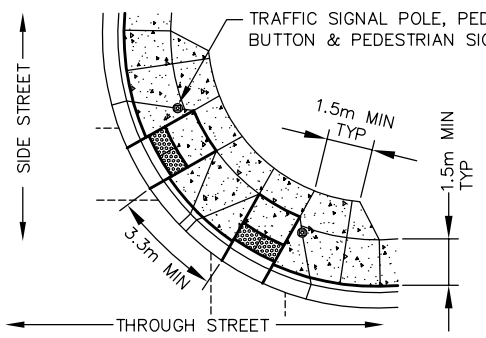
NOTES

1. EXPANSION JOINTS AS PER GSSD–310.010 FOR THE SIDEWALK AND RETAINING WALL TO BE COMMON.
2. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
3. UNCOATED 150 mm SQUARE STEEL WIRE FABRIC (No.3.8) FOR CONCRETE REINFORCEMENT CONFORMING TO C.S.A. G30.5, 1998 SHALL BE PLACED IN THE SIDEWALK AND RETAINING WALL.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

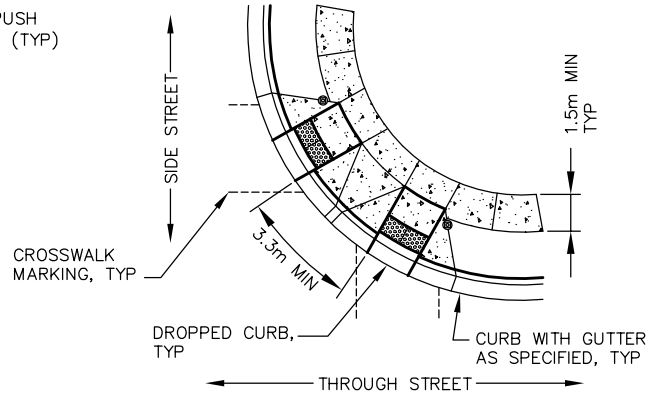
Greater Grand Sudbury

MONOLITHIC CONCRETE SIDEWALK AND RETAINING WALL

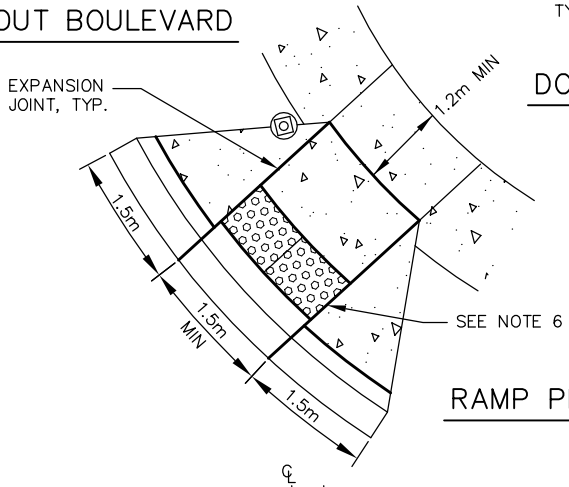
DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1931–1 (1 OF 1)
APP'D:	GSSD–310.018



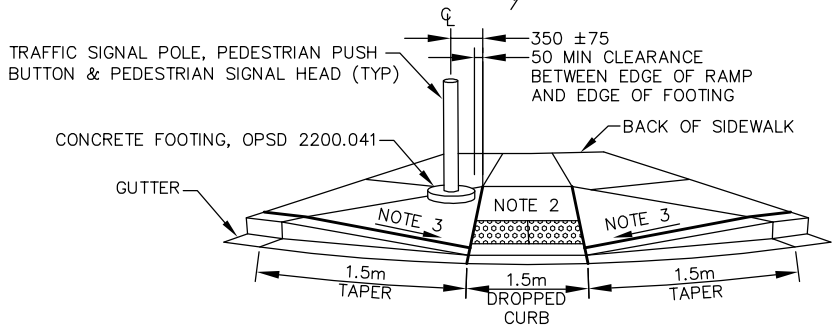
DOUBLE RAMP WITHOUT BOULEVARD



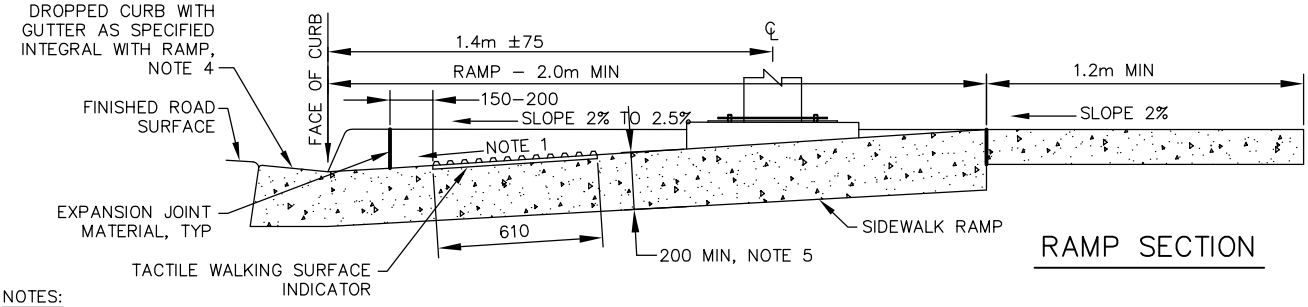
DOUBLE RAMP WITH BOULEVARD



RAMP PLAN



RAMP ELEVATION



RAMP SECTION

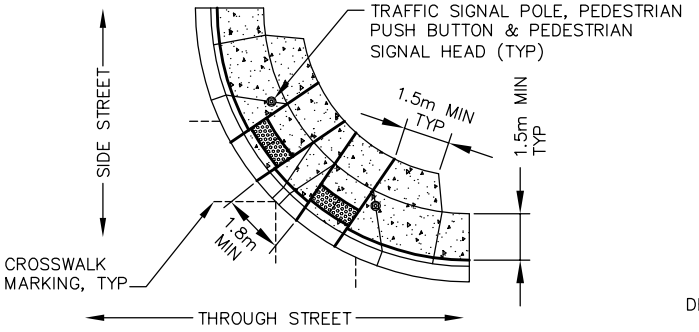
NOTES:

1. SLOPE OF RAMP SHALL NOT EXCEED 8%.
2. CROSS SLOPE OF RAMP SHALL NOT EXCEED 2% IN EITHER DIRECTION.
3. CROSS SLOPE OF FLARED SIDE OF RAMP SHALL NOT EXCEED 8%.
4. DROPPED CURB AT RAMP SHALL BE MODIFIED TO ELIMINATE 30mm STEP AT GUTTER LINE.
5. MINIMUM THICKNESS OF RAMP IS 200mm. MINIMUM THICKNESS OF SIDEWALK AND FLARED SIDES ADJACENT TO RAMP IS 150mm.
6. TACTILE WARNING PLATES SHALL BE SQUARE OR RADIAL PLATES TO MATCH CURB RADIUS. REFER TO GSSS 351.
7. WHERE ONLY ONE CROSSWALK IS PRESENT AT AN INTERSECTION, ONLY ONE CURB RAMP IS REQUIRED.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

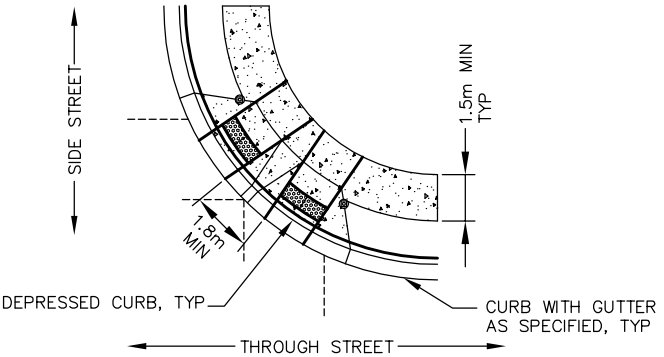
Greater Sudbury

CONCRETE SIDEWALK RAMPS AT SIGNALIZED INTERSECTIONS

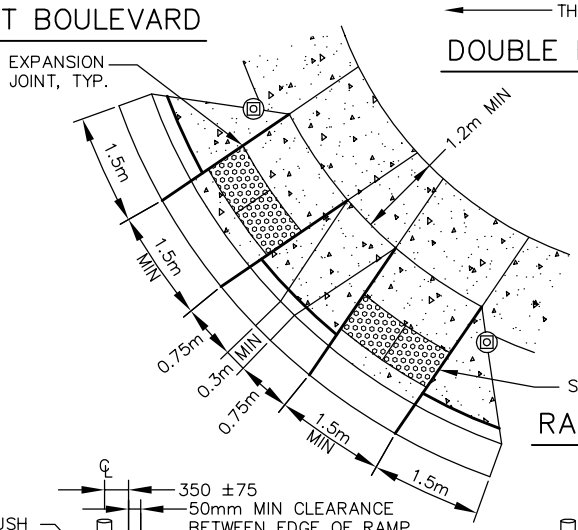
DRAWN BY: KLR	REV No:
DATE: 2019–03–01	REV DATE:
SCALE: NTS	CAD/FILE No.: A2490–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–310.030



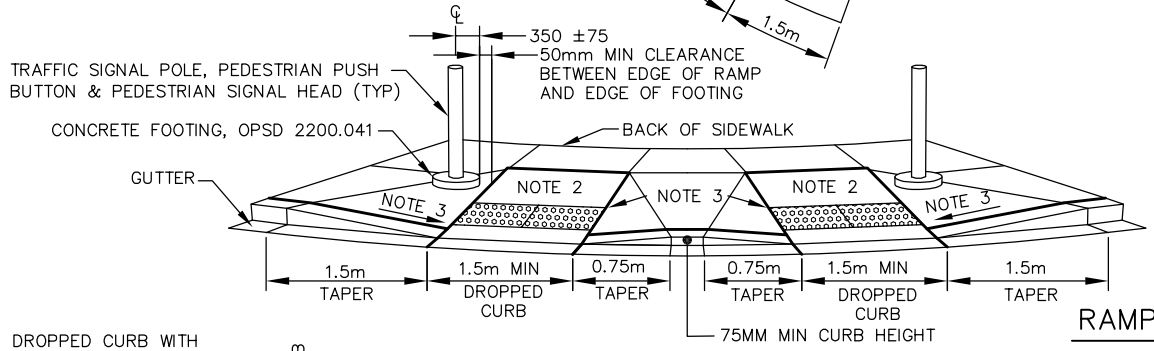
DOUBLE RAMP WITHOUT BOULEVARD



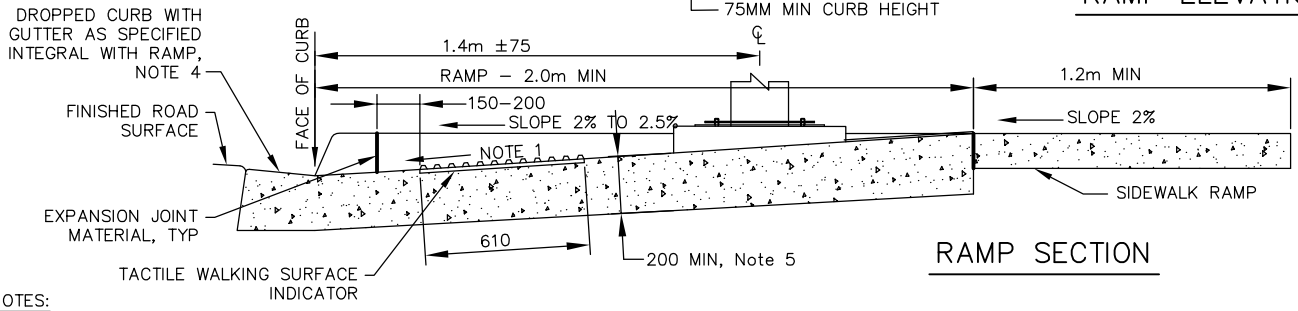
DOUBLE RAMP WITH BOULEVARD



RAMP PLAN



RAMP ELEVATION



RAMP SECTION

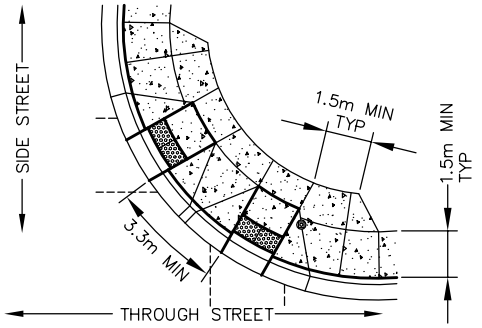
NOTES:

1. SLOPE OF RAMP SHALL NOT EXCEED 8%.
2. CROSS SLOPE OF RAMP SHALL NOT EXCEED 2% IN EITHER DIRECTION.
3. CROSS SLOPE OF FLARED SIDE OF RAMP SHALL NOT EXCEED 8%.
4. DROPPED CURB AT RAMP SHALL BE MODIFIED TO ELIMINATE 30mm STEP AT GUTTER LINE.
5. MINIMUM THICKNESS OF RAMP IS 200mm. MINIMUM THICKNESS OF SIDEWALK AND FLARED SIDES ADJACENT TO RAMP IS 150mm.
6. TACTILE WARNING PLATES SHALL BE SQUARE OR RADIAL PLATES TO MATCH CURB RADIUS. REFER TO GSSS 351.
7. WHERE CROSSWALK SEPARATION IS LESS THAN 1.8m, THE TACTILE WARNING SURFACE AND CURB SHALL BE CONTINUOUS.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

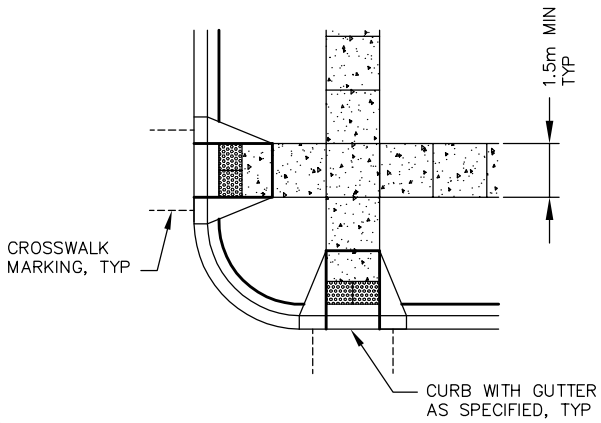
Greater Sudbury

CONCRETE SIDEWALK RAMPS AT SIGNALIZED INTERSECTIONS WITH INTERSECTING CROSSWALKS

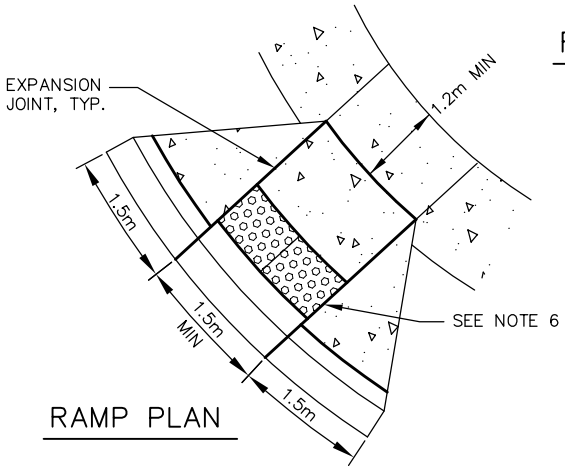
DRAWN BY: KLR	REV No:
DATE: 2019-03-01	REV DATE:
SCALE: NTS	CAD/FILE No.: A2491-1 (1 OF 1)
APP'D: M. FRAYNE	GSSD-310.031



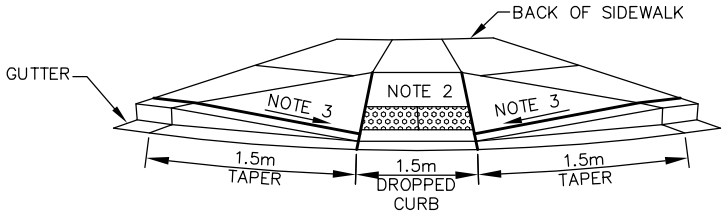
DOUBLE RAMP WITHOUT BOULEVARD



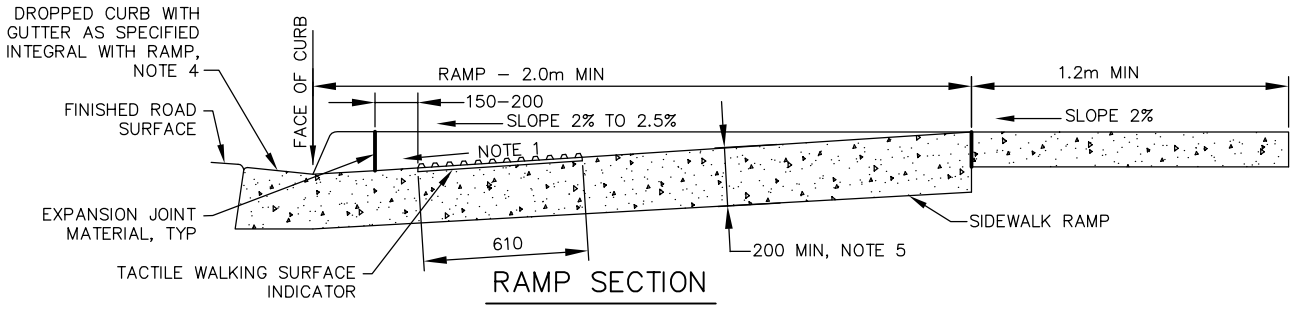
RAMPS WITH BOULEVARD



RAMP PLAN



RAMP ELEVATION



RAMP SECTION

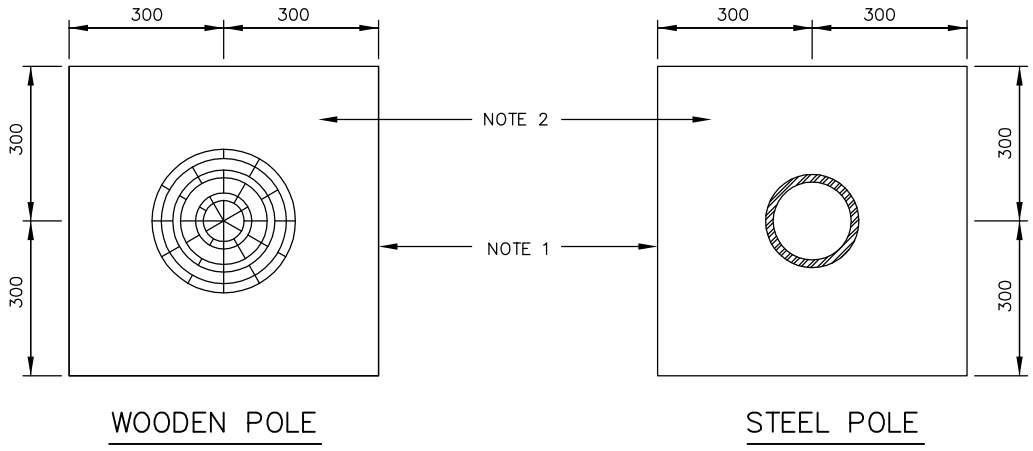
NOTES:

1. SLOPE OF RAMP SHALL NOT EXCEED 8%.
2. CROSS SLOPE OF RAMP SHALL NOT EXCEED 2% IN EITHER DIRECTION.
3. CROSS SLOPE OF FLARED SIDE OF RAMP SHALL NOT EXCEED 8%.
4. DROPPED CURB AT RAMP SHALL BE MODIFIED TO ELIMINATE 30mm STEP AT GUTTER LINE.
5. MINIMUM THICKNESS OF RAMP IS 200mm. MINIMUM THICKNESS OF SIDEWALK AND FLARED SIDES ADJACENT TO RAMP IS 150mm.
6. TACTILE WARNING PLATES SHALL BE SQUARE OR RADIAL PLATES TO MATCH CURB RADIUS. REFER TO GSSS 351.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Sudbury

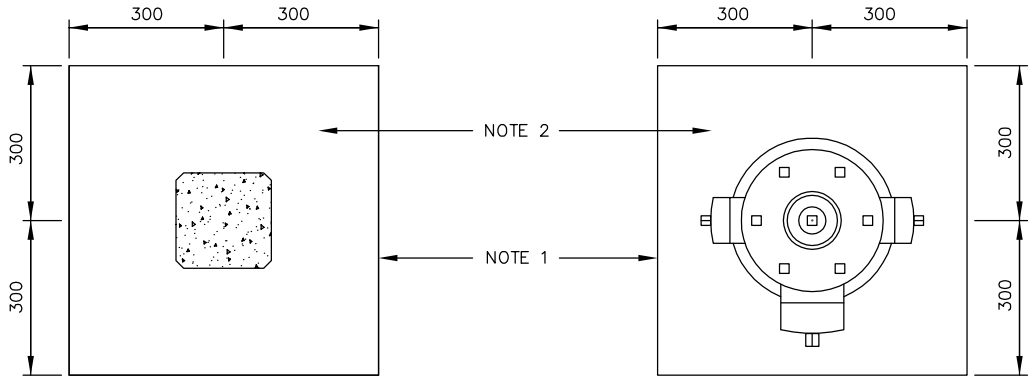
CONCRETE SIDEWALK RAMPS AT UNSIGNALIZED INTERSECTIONS

DRAWN BY: KLR	REV No:
DATE: 2019–03–01	REV DATE:
SCALE: NTS	CAD/FILE No.: A2492–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–310.033



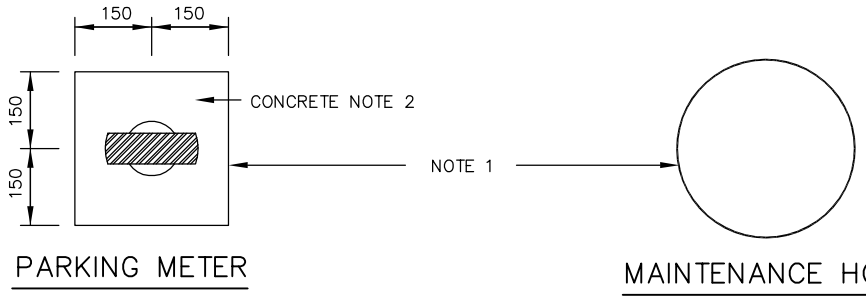
WOODEN POLE

STEEL POLE



CONCRETE POLE

HYDRANT



PARKING METER

MAINTENANCE HOLE

NOTES:

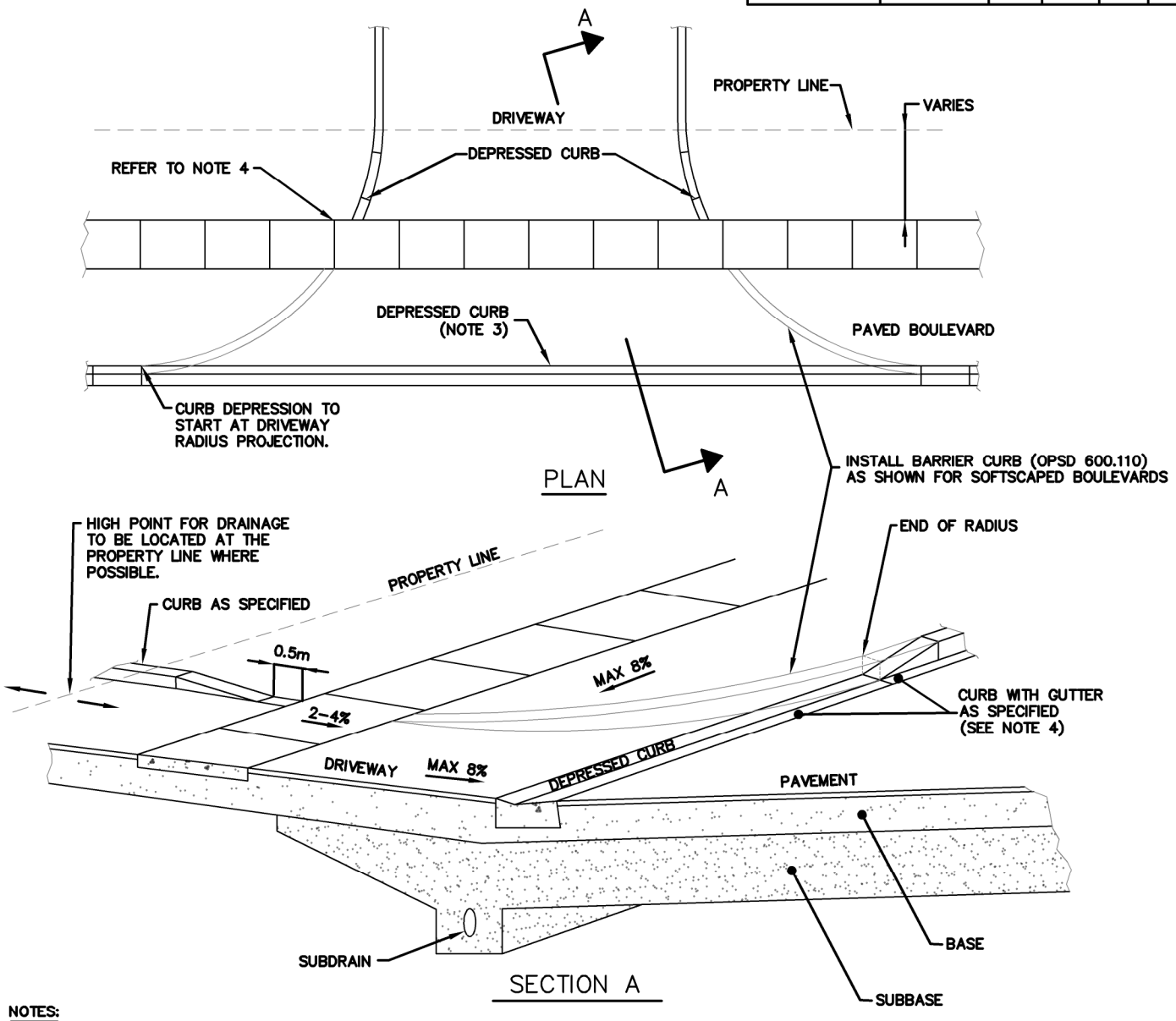
1. EXPANSION JOINT MATERIAL ALL AROUND.
2. 32 MPa CONCRETE AT 28 DAYS, UNLESS OTHERWISE STATED.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Sudbury | Grand

UTILITY ISOLATION IN SIDEWALKS

DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1988-1 (1 OF 1)
APP'D:	GSSD-310.040

DRIVEWAY DIMENSIONS					
LAND USE	WIDTH (m)			RADIUS (m)	
	ONE-WAY	TWO-WAY			
	MIN	MIN	MAX	MIN	MAX
Light Industrial, Commercial, and Apartment	4.0	6.0	9.1	5.0	9.0
Heavy Industrial	4.0	6.0	12.0	9.0	12.0



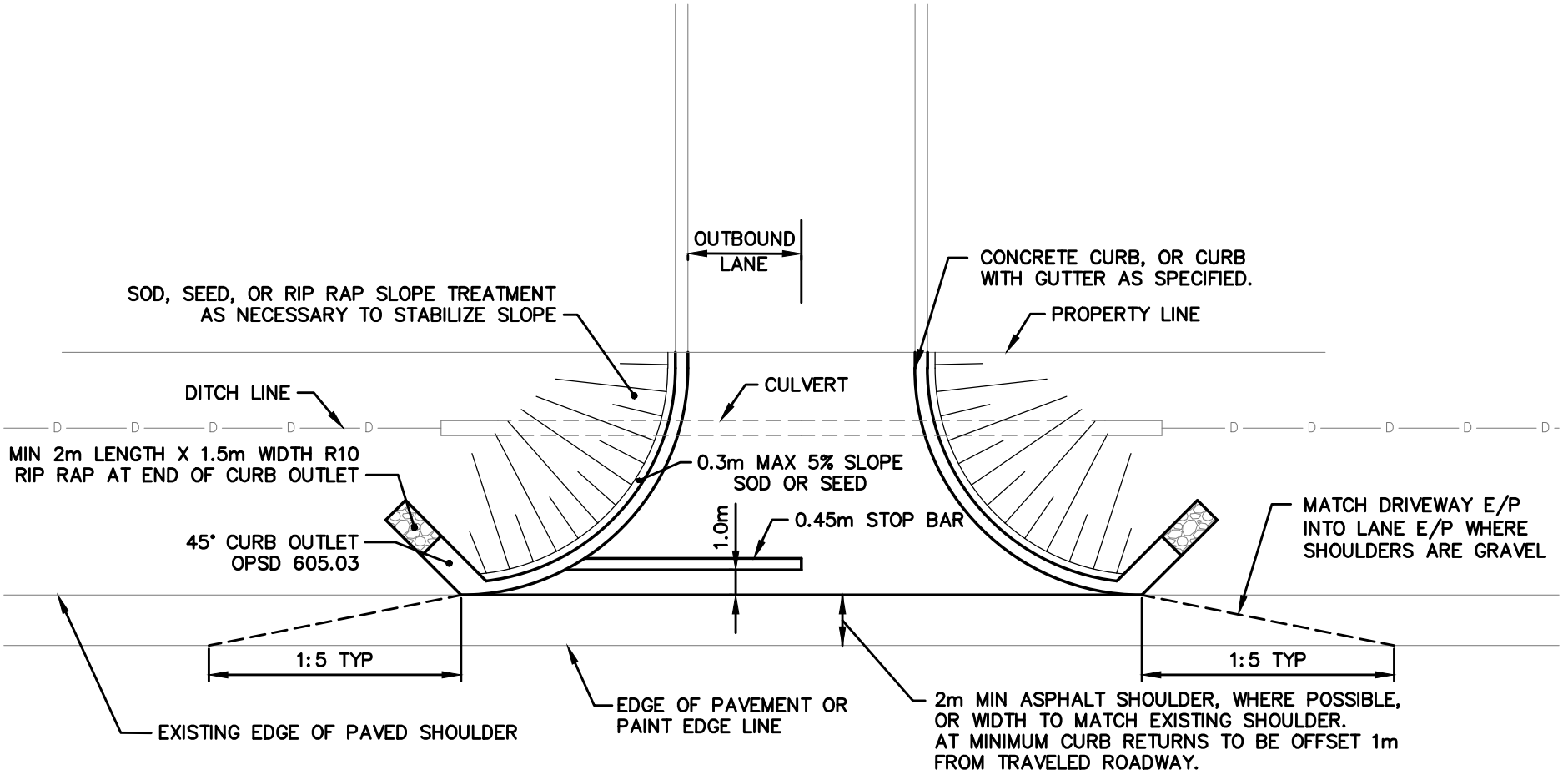
NOTES:

1. PAVEMENT AND SIDEWALK STRUCTURE AT ENTRANCES SHALL BE CONSTRUCTED USING MATERIALS AND THICKNESSES AS SPECIFIED ELSEWHERE.
2. THIS STANDARD DOES NOT APPLY TO SIGNALIZED ENTRANCES.
3. THE DEPRESSED CURB THROUGH THE SIDE ENTRANCE SHALL BE A STRAIGHT VEE AND SHALL NOT INCORPORATE THE 25mm LIP.
4. FOR SIDEWALK DETAIL SEE GSSD-310.010.
5. WHERE THE BOULEVARD IS LESS THAN 1.5m WIDE, THE SIDEWALK MAY BE LOWERED TO MAINTAIN MAXIMUM ENTRANCE GRADES.
6. INCLUDE BICYCLE LANE MARKINGS PER OTM WHERE THE BOULEVARD IS A DESIGNATED BIKE LANE.

Sudbury Greater Grand

URBAN INDUSTRIAL, COMMERCIAL, INSTITUTIONAL & APARTMENT ENTRANCES

DRAWN BY: OTS	REV No: 3
DATE: 2003-03-03	REV DATE: 2025-03-19
SCALE: NTS	CAD/FILE No.: A1950-1 (1 OF 1)
APP'D: M&G	GSSD-350.010



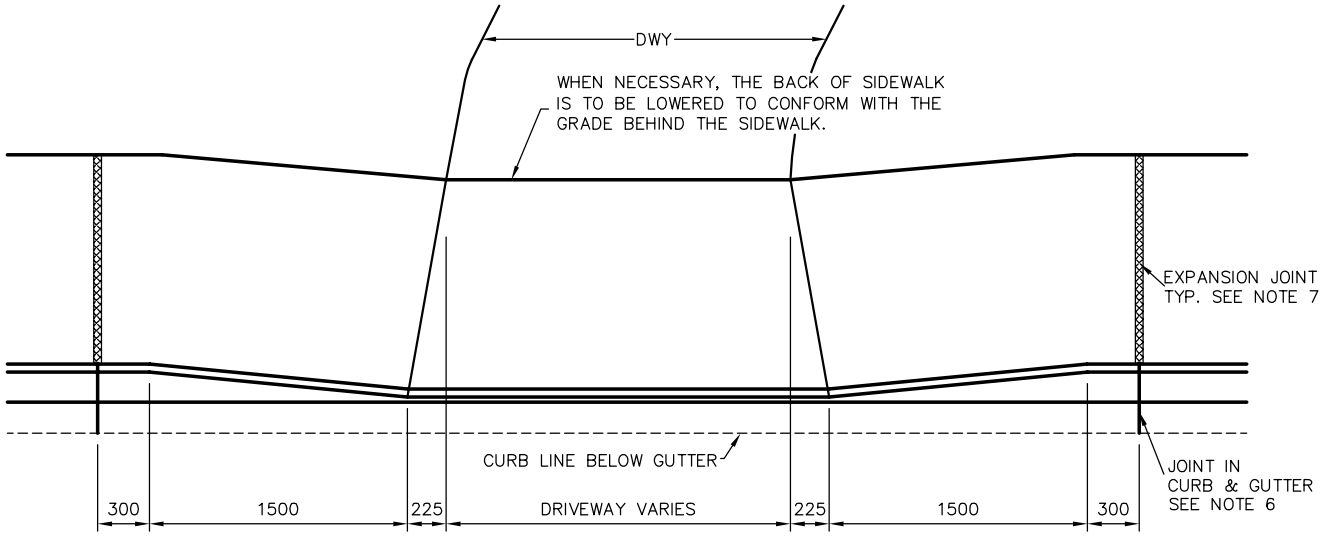
NOTES:

1. CURB OUTLETS TO BE PROVIDED AT THE PROPERTY LINE WHERE THE ENTRANCE SLOPES AWAY FROM THE ROAD.
2. REFER TO GSSD–350.010 FOR CURB RADIUS AND ENTRANCE WIDTH.
3. IT IS THE RESPONSIBILITY OF THE DESIGNER TO VERIFY IF THE EXISTING PAVED SHOULDER NEEDS TO BE MODIFIED.

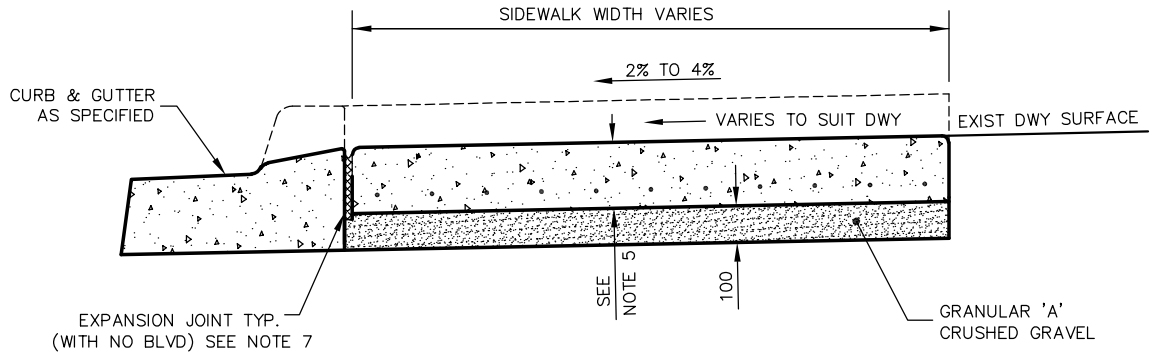
Greater Sudbury

URBANIZED ENTRANCE AT RURAL ROADS

DRAWN BY: GGV	REV No:
DATE: NOVEMBER 4,2024	REV DATE:
SCALE: N.T.S.	CAD/FILE No.: A2660–1 (1 OF 1)
APP'D: M&G	GSSD–350.020



SCHEMATIC PLAN



TYPICAL SECTION AT DRIVEWAY

NOTES:

1. AT DRIVEWAYS WHERE THE SIDEWALK ABUTS THE CURB, EXPANSION JOINTS ARE REQUIRED AT BOTH SIDES OF THE DRIVEWAY.

   DEPTH OF CONCRETE SHALL TAPER TO THE NORMAL DEPTH FOR A DISTANCE OF 1.5 m AT EACH SIDE TO THE DRIVEWAY.

   IF THE DISTANCE FROM THE PREVIOUS JOINT IS LESS THAN 1.5 m, THIS DISTANCE SHALL BE ADDED TO THE NEXT BAY AND A DUMMY JOINT PLACED AT MID-SPAN. DUMMY JOINTS ARE REQUIRED IN DRIVEWAYS AT INTERVALS OF 1.5 m BUT IN NO CASE LESS THAN 1 m.

   IF THE DRIVEWAY IS GREATER THAN 6 m IN WIDTH, AN EXPANSION JOINT WILL BE REQUIRED AT MID-SPAN.

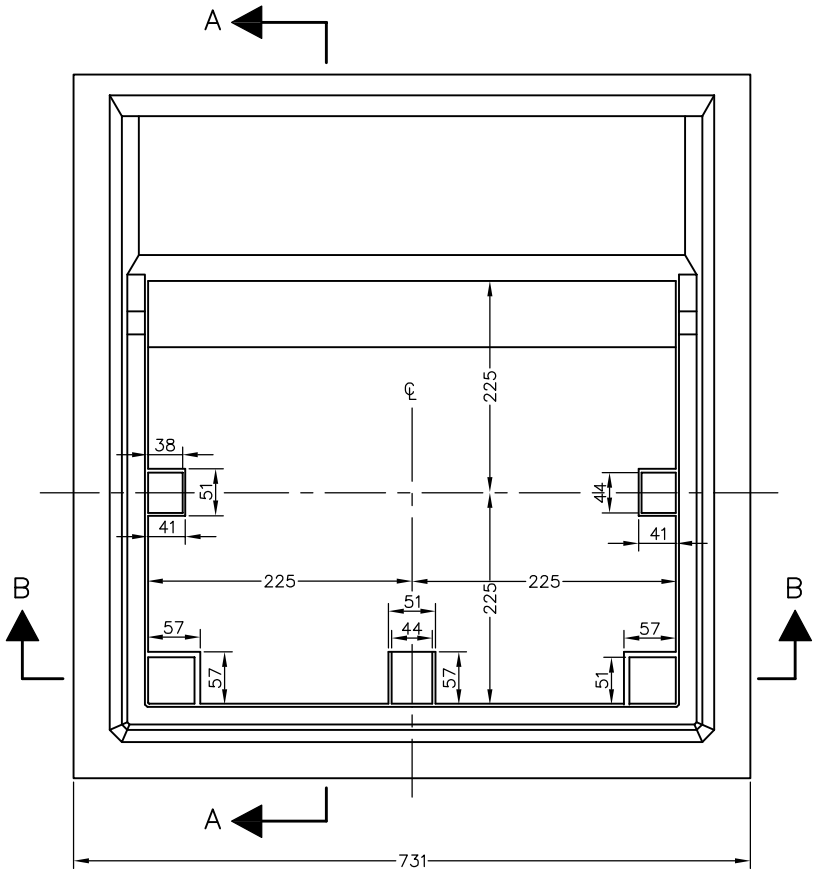
2. UTILITY ISOLATION IN SIDEWALKS – SEE GSSD-310.040.
3. CONCRETE TO BE AS PER GSSS 351 & GSSS 353.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. SIDEWALK THICKNESS AT RESIDENTIAL DRIVEWAYS SHALL BE 150 mm. AT COMMERCIAL AND INDUSTRIAL DRIVEWAYS THE THICKNESS SHALL BE 200 mm.
6. A CONTRACTION JOINT SHALL BE SAWCUT WHEN UTILIZING A CONCRETE CURB MACHINE WHILE THE STANDARD BITUMINOUS EXPANSION JOINT SHALL BE CONTINUED ON THROUGH BOTH THE SIDEWALK AND CURB & GUTTER WHEN HAND PLACED FORM BOARDS ARE USED DURING CURB CONSTRUCTION.
7. EXPANSION JOINT AS PER OPSS 351.

Greater Sudbury

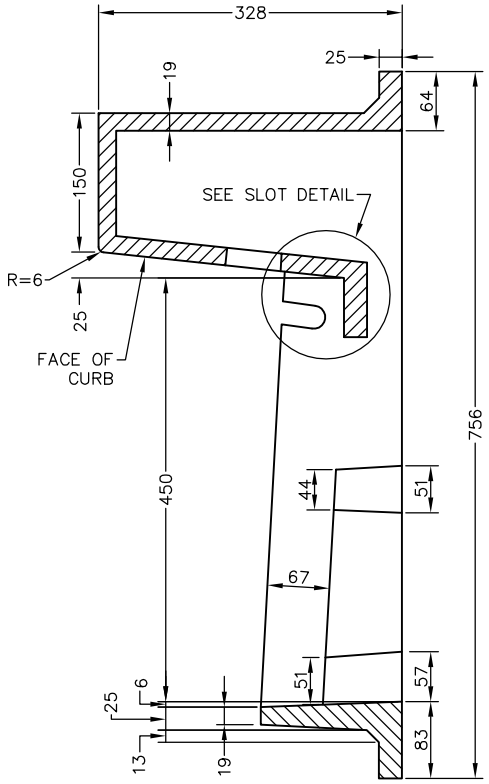
DRIVEWAY ENTRANCE

SIDEWALK DEPRESSION

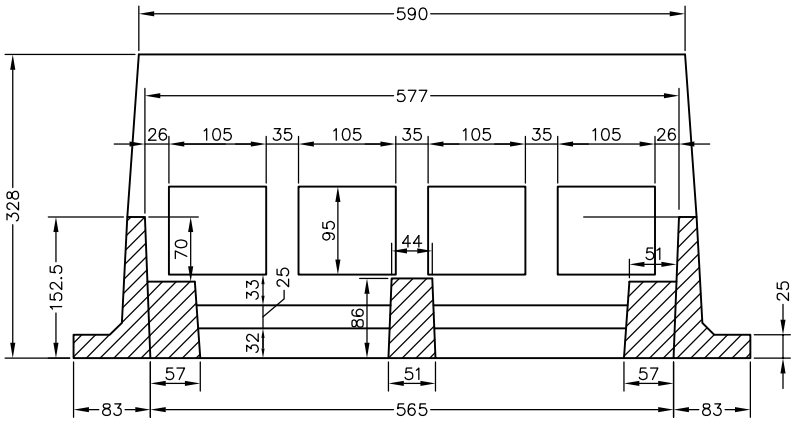
DRAWN BY: RF/ARP	REV No: 3
DATE: 2003-03-03	REV DATE: JAN 2021
SCALE: NTS	CAD/FILE No.: A1951-1 (1 OF 1)
APP'D:	**GSSD-351.010**



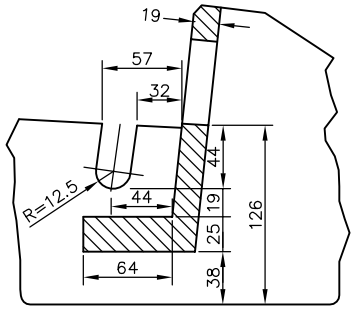
FRAME PLAN



SECTION A–A



SECTION B–B



SLOT DETAIL

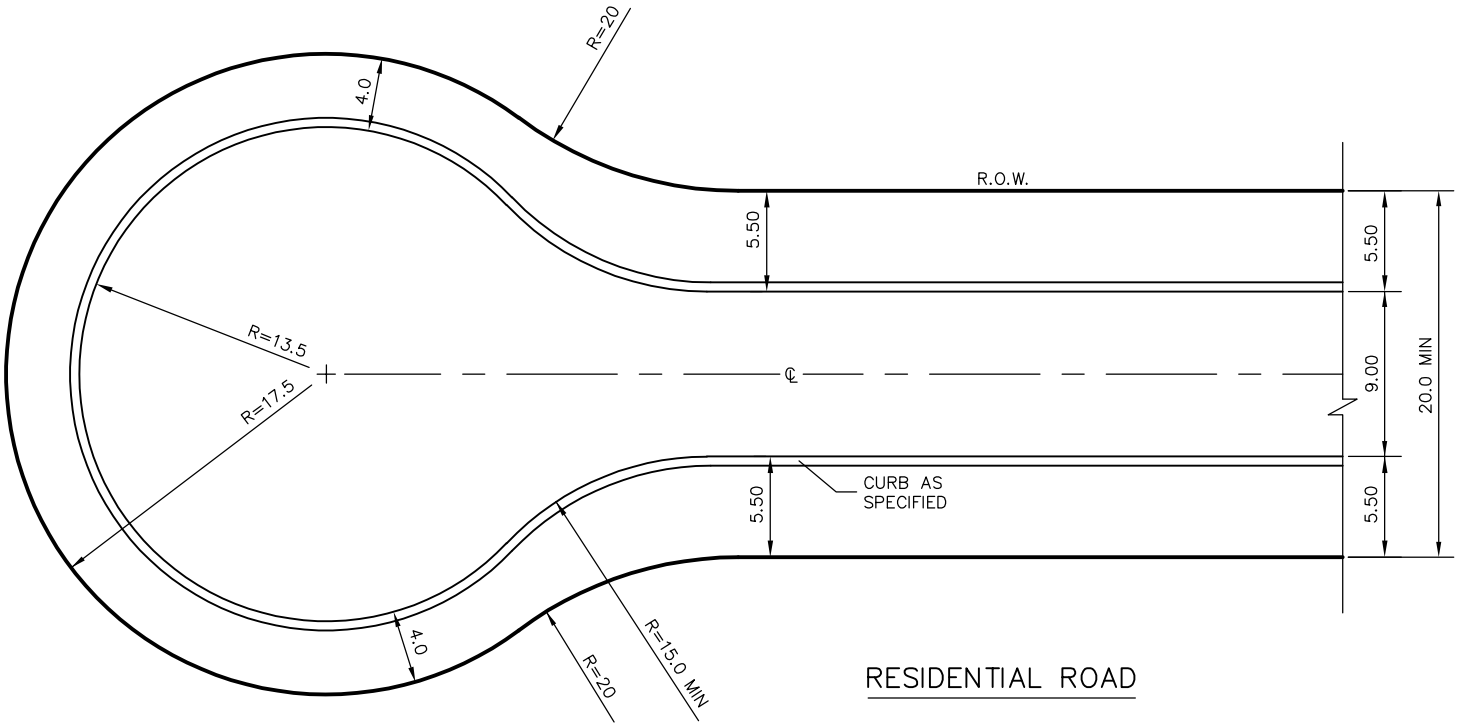
NOTES:

1. FRAME AND GRATE, BICYCLE PROOF, AS FABRICATED BY H. IMBLEAU AND SON LTD.–RENFREW ONT.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Grand Sudbury

CATCH BASIN, CAST IRON SIDE INLET FRAME

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A2022–1 (1 OF 1)
APP'D:	GSSD–400.080



RESIDENTIAL ROAD

NOTES:

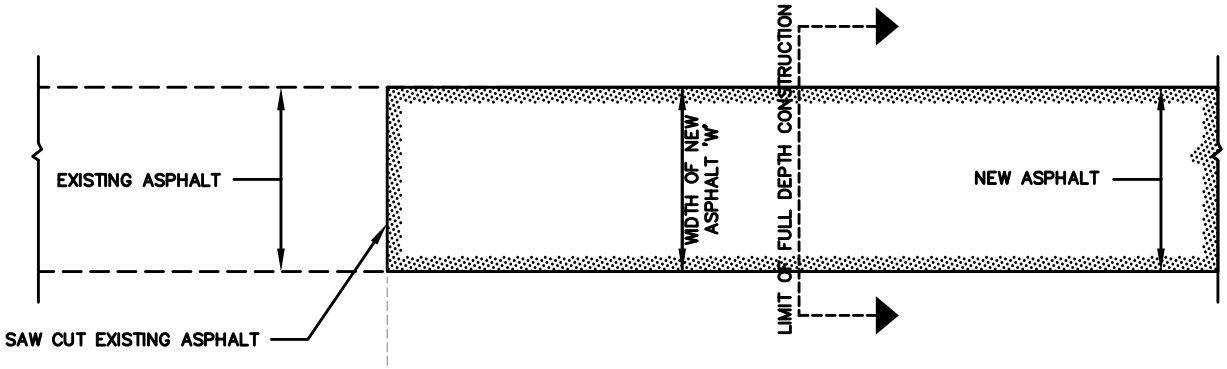
1. OFFSETTING CUL–DE–SACS MAY BE ALLOWED BUT NOT WITHOUT PRIOR WRITTEN PERMISSION OF THE CITY OF GREATER SUDBURY.
2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.

Greater Grand Sudbury

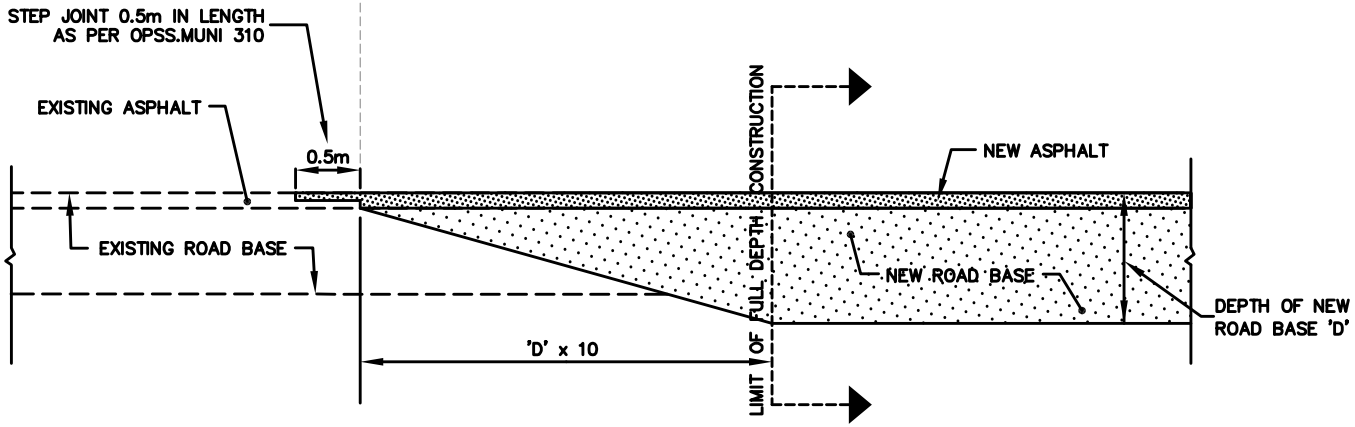
CUL–DE–SAC

FOR TERMINATED URBAN ROADWAYS IN SUBDIVISIONS

DRAWN BY: STS/RF/BWK	REV No: 1
DATE: 2003–03–03	REV DATE: OCT 2010
SCALE: NTS	CAD/FILE No.: A2013–1 (1 OF 1)
APP'D: PETER CHIESA	GSSD–500.020



PLAN



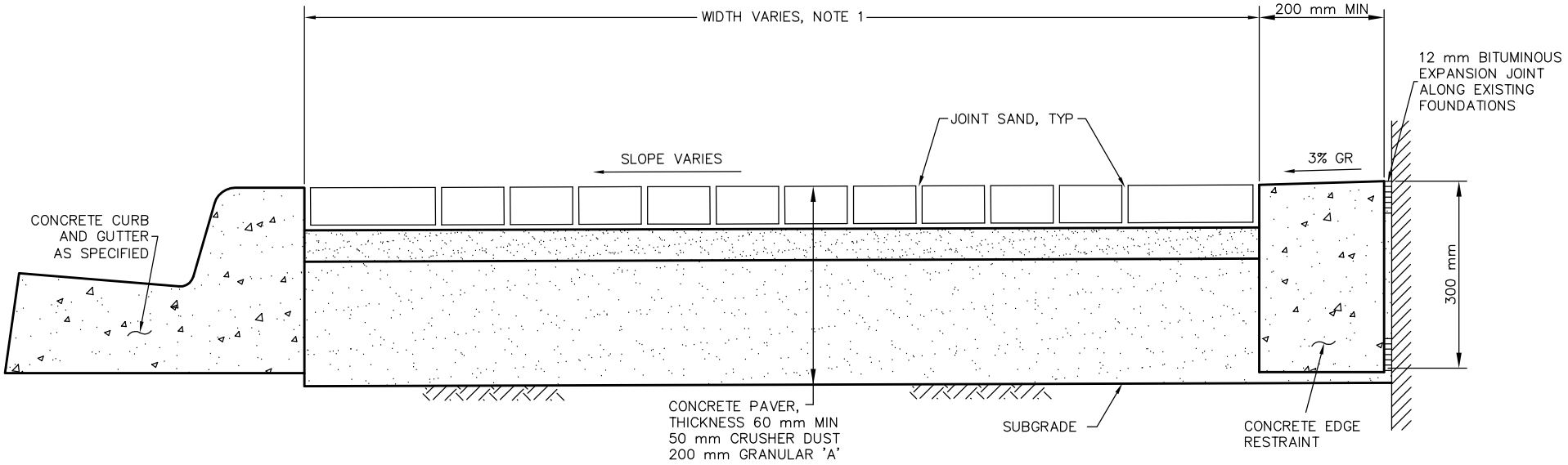
ELEVATION

Sudbury Greater Grand

TRANSITION POINT TREATMENT

NEW ROAD TO EXISTING ROAD

DRAWN BY: RF/KLB/OTS	REV No: 1
DATE: 2003-03-03	REV DATE: 2025-03-19
SCALE: NTS	CAD/FILE No.: A1920-1 (1 OF 1)
APP'D:	GSSD-525.010



TYPICAL SECTION

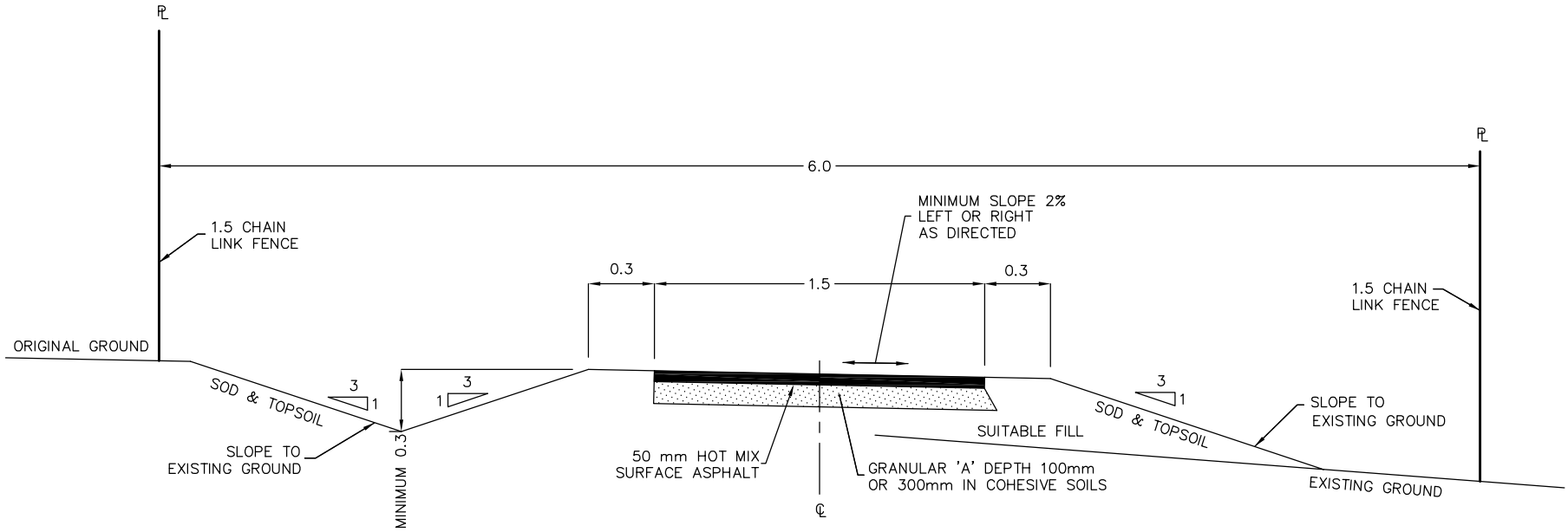
NOTE:

1. SIDEWALK WIDTH SHALL BE TO AN EVEN MULTIPLE OF 0.10 m PLUS JOINT SPACING ALLOWANCE OF 1.0 cm PER METRE OF CONCRETE PAVER.
2. CONCRETE PAVERS SHALL CONFORM WITH CAN/CSA3–A231.2.
3. CONCRETE PAVER COLOUR AND PATTERN AS DIRECTED BY THE ENGINEER.

Greater Grand Sudbury

INTERLOCKING CONCRETE PAVER SIDEWALK ON GRANULAR BASE

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1946–1 (1 OF 1)
APP'D:	GSSD–561.010



CUT SECTION

FILL SECTION

NOTES

1. LONGITUDINAL GRADE: MIN 1%, MAX 8%
2. FENCE SHALL BE 0.75 HIGH FROM ROAD ALLOWANCE TO BUILDING LINE.
3. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.

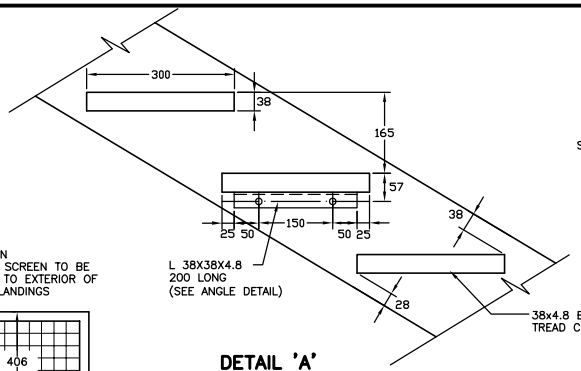
Greater | Grand Sudbury

STANDARD ASPHALT FOOTPATH

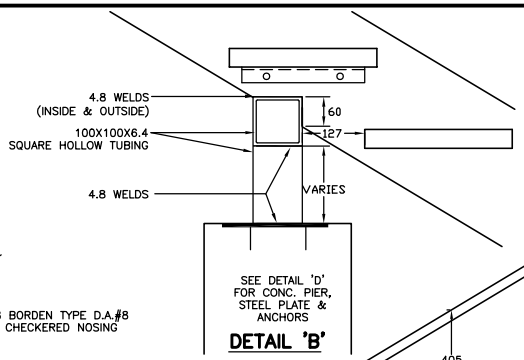
DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003-03-03	REV DATE: 2005-07-29
SCALE: NTS	CAD/FILE No.: A1930-1 (1 OF 1)
APP'D:	GSSD-570.010

NOTES:

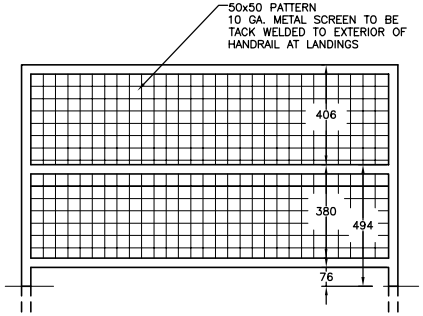
1. ALL LANDINGS TO BE 32 x 4.8 WELDED GRATING BORDEN TYPE D.A.#6 (1520 WIDE)
2. ALL STEPS TO BE 38 x 4.8 BORDEN TYPE D.A.#8 TREAD CHECKERED NOSING 1520 LONG
3. ALL WELDS TO BE 4.8
4. ALL METAL TO BE HOT DIPPED GALVANIZED,
5. ALL CONCRETE SHALL BE 30 MPA
6. MAX. RISERS BETWEEN LANDINGS IS 10.
7. AFTER CONSTRUCTION ALL NUTS TO BE TACK WELDED TO BOLTS
8. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED



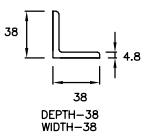
DETAIL 'A'
(TYPICAL FOR ALL STEPS)



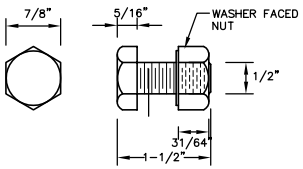
DETAIL 'B'



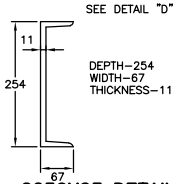
HANDRAIL DETAIL AT APPROACHES
(IF REQUIRED)



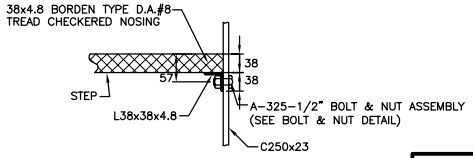
ANGLE DETAIL
L38X38X4.8



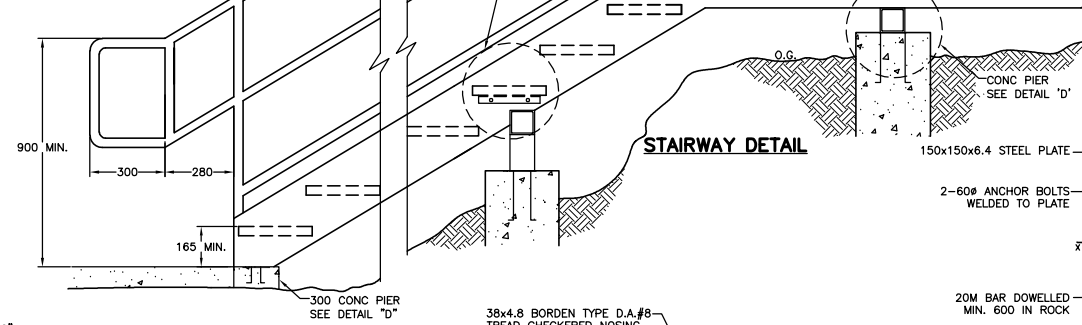
NUT & BOLT DETAIL
IMPERIAL



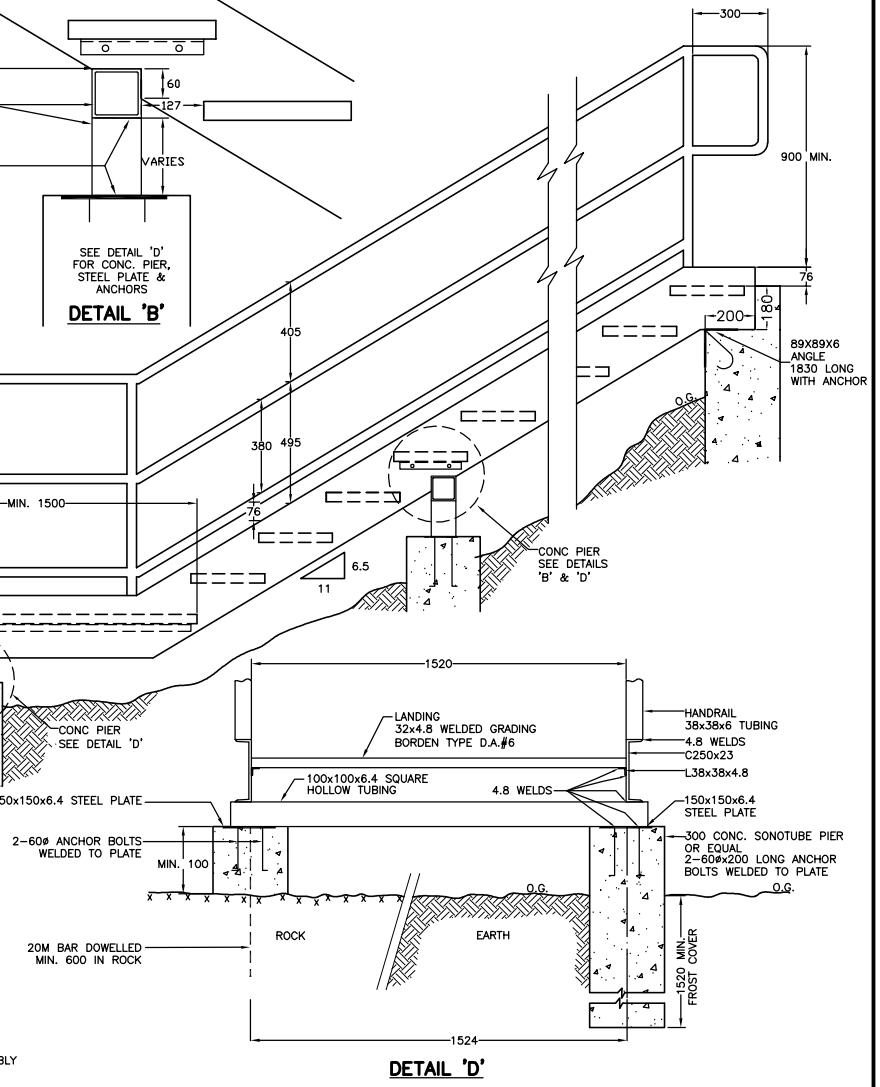
C250X23 DETAIL



DETAIL 'C'



STAIRWAY DETAIL

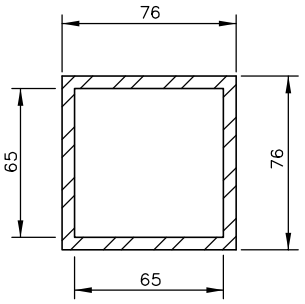


DETAIL 'D'

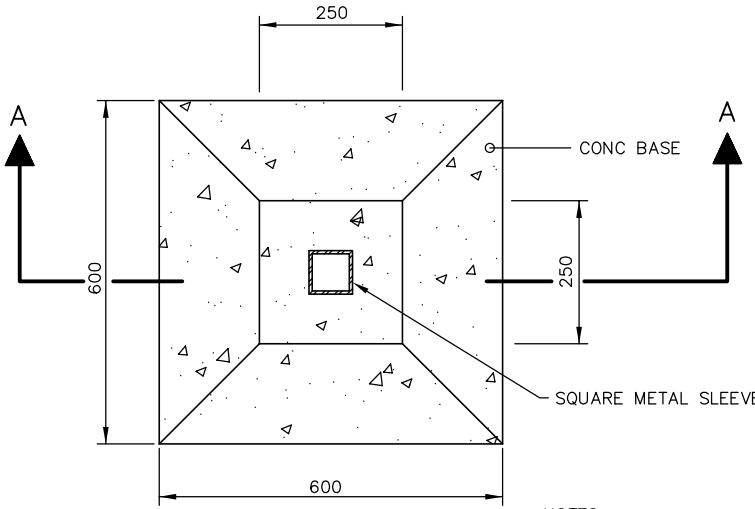
Greater Sudbury / Grand Sudbury

STEEL STAIRWAY
(HOT DIPPED GALVANIZED)

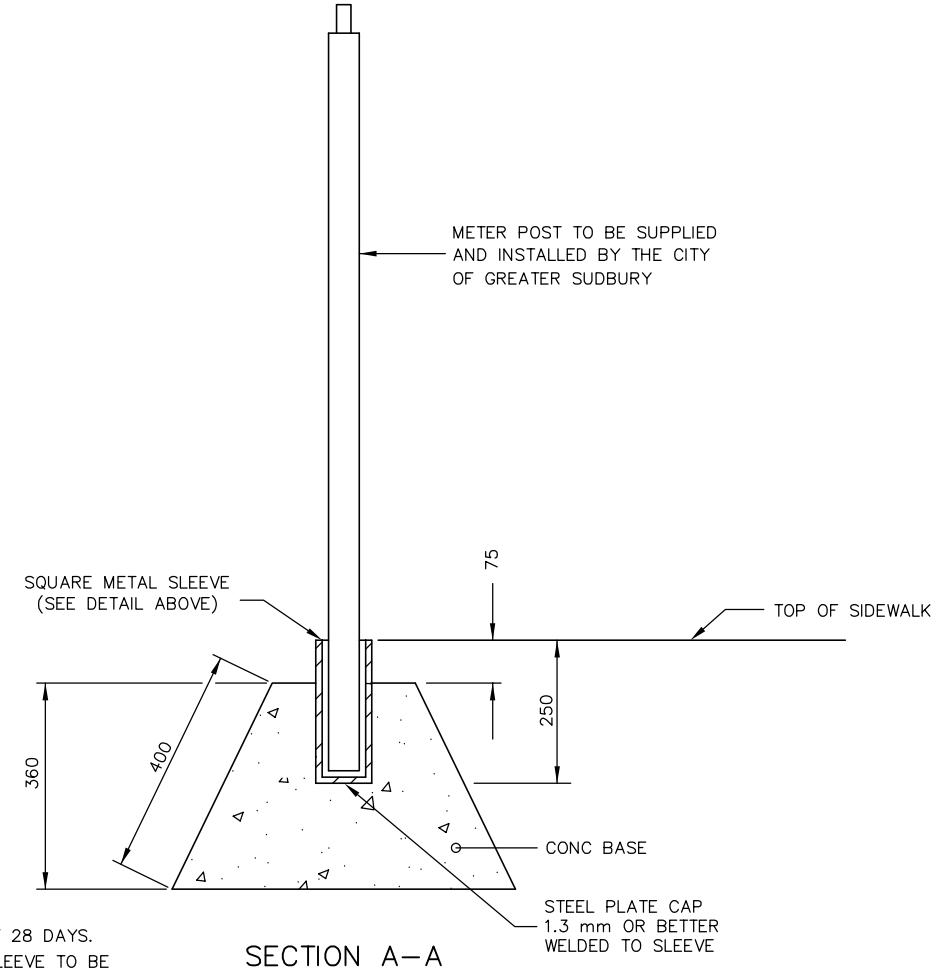
DRAWN BY: KEZ	REV No:
DATE: 2004–12–16	REV DATE: 2005–07–29
SCALE: NTS	CAD/FILE No.: B1139–1 (1 OF 1)
APP'D:	GSSD–571.010



SQUARE METAL SLEEVE DETAIL



PLAN



SECTION A–A

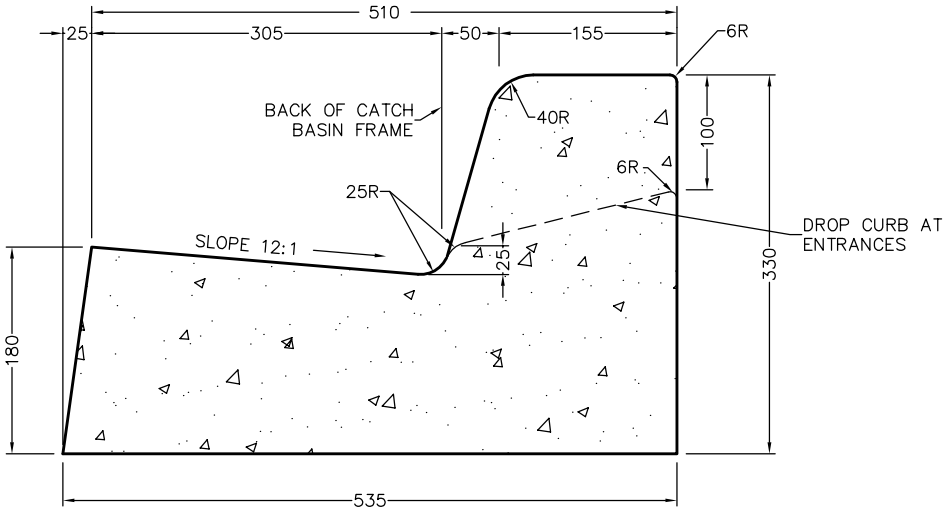
NOTES:

1. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
2. 5.5 mm THICK SQUARE METAL SLEEVE TO BE HOT DIP–GALVANIZED ACCORDING TO CSA G–164.
3. WELDING ACCORDING TO CSA W59.
4. ALL DIMENSIONS ARE IN MILLIMETRES.

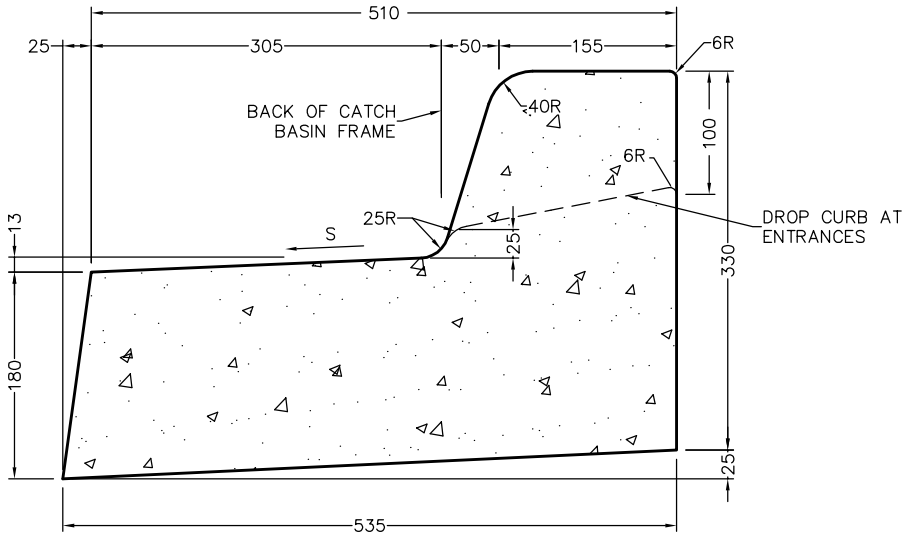
Greater Grand Sudbury

CONCRETE PARKING METER BASE

DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1948–1 (1 OF 1)
APP'D:	GSSD–580.010



TANGENT



SUPERELEVATED

NOTES:

1. TOP EDGE OF BACK OF CURB & GUTTER TO BE ROUNDED WITH A 6 mm ROUNDING TOOL.
2. CLASS OF CONCRETE 32 MPa AT 28 DAYS.
3. TOP OF EXPANSION JOINTS TO BE 6 mm LOWER THAN FINISHED CONCRETE SURFACE.
4. TREATMENT AT ENTRANCES SHALL CONFORM WITH GSSD–351.010.
5. THE LENGTH OF TRANSITION FROM ONE CURB TYPE TO ANOTHER SHALL BE 3.0 m.
6. VOLUME OF CONCRETE FOR:
   - FULL TANGENT CURB: 0.115 m^3 PER LINEAR METER.
   - FULL DROPPED TANGENT CURB: 0.093 m^3 PER LINEAR METER.
   - FULL SUPERELEVATED CURB: 0.118 m^3 PER LINEAR METER.
   - FULL DROPPED SUPERELEVATED CURB: 0.098 m^3 PER LINEAR METER.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

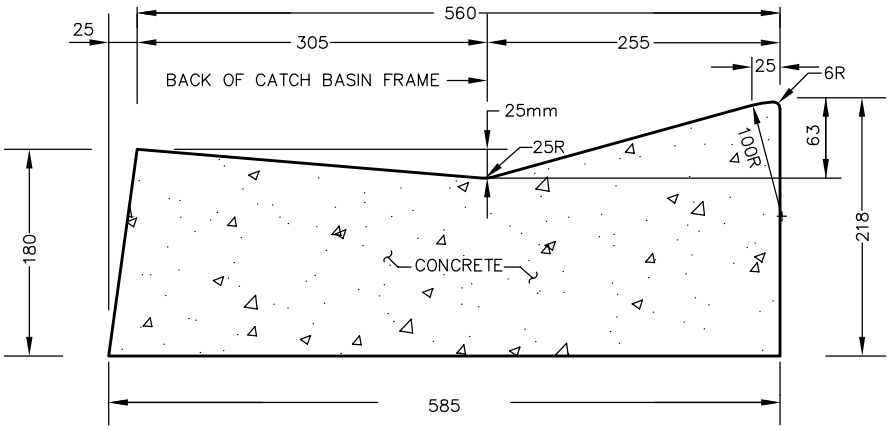
LEGEND

S – RATE OF SUPERELEVATION IN %

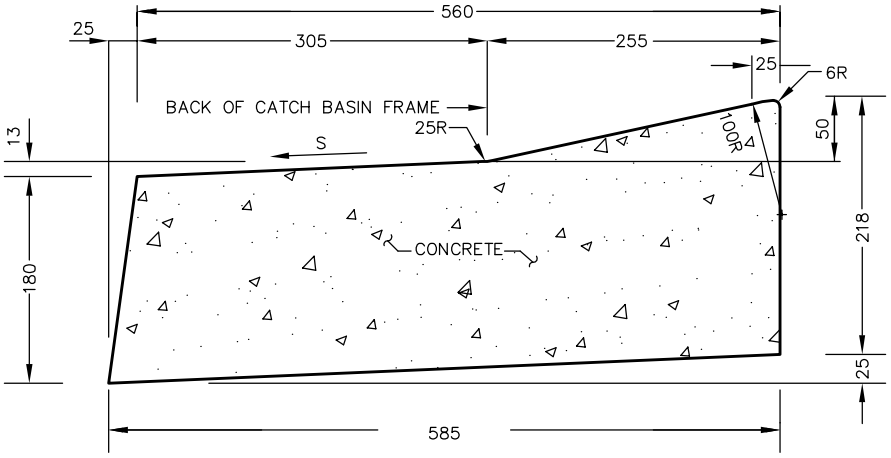
Sudbury Greater | Grand

CONCRETE BARRIER CURB WITH STANDARD GUTTER

DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1926–1 (1 OF 1)
APP'D:	GSSD–600.010



TANGENT

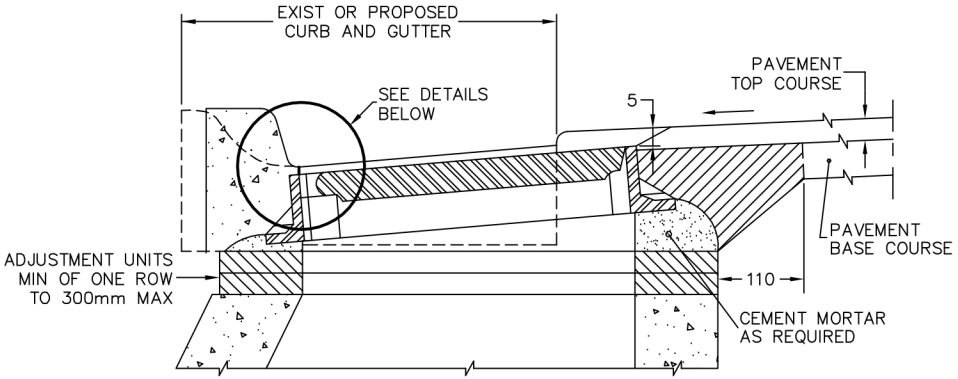


SUPERELEVATED

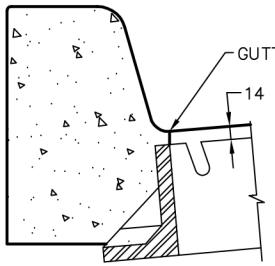
NOTES:

1. TOP EDGE OF BACK OF CURB & GUTTER TO BE ROUNDED WITH A 6 mm ROUNDING TOOL.
2. CLASS OF CONCRETE 32 MPa AT 28 DAYS.
3. TOP OF EXPANSION JOINTS TO BE 6 mm LOWER THAN FINISHED CONCRETE SURFACE.
4. THE LENGTH OF TRANSITION FROM ONE CURB TYPE TO ANOTHER SHALL BE 3.0 m.
5. VOLUME OF CONCRETE FOR:
   - FULL TANGENT CURB: 0.102 m^3 PER LINEAR METER.
   - FULL SUPERELEVATED CURB: 0.108 m^3 PER LINEAR METER.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

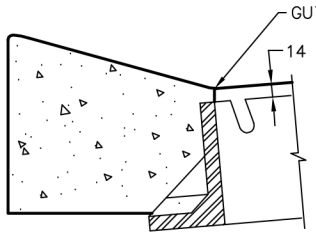
Sudbury Greater Grand	CONCRETE MOUNTABLE CURB	DRAWN BY: STS/RFRANK	REV No: 2
		DATE: 2003-03-03	REV DATE: JAN/2013
		SCALE: NTS	CAD/FILE No.: A1927-1 (1 OF 1)
		APP'D:	GSSD-600.030



SECTION Y–Y

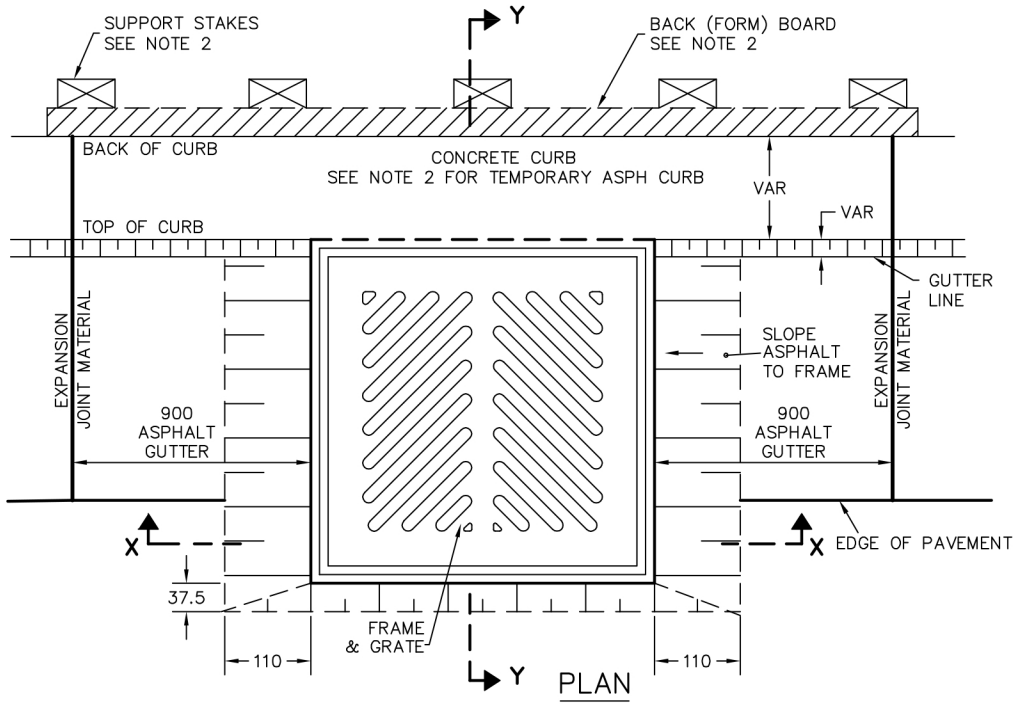


BARRIER CURB

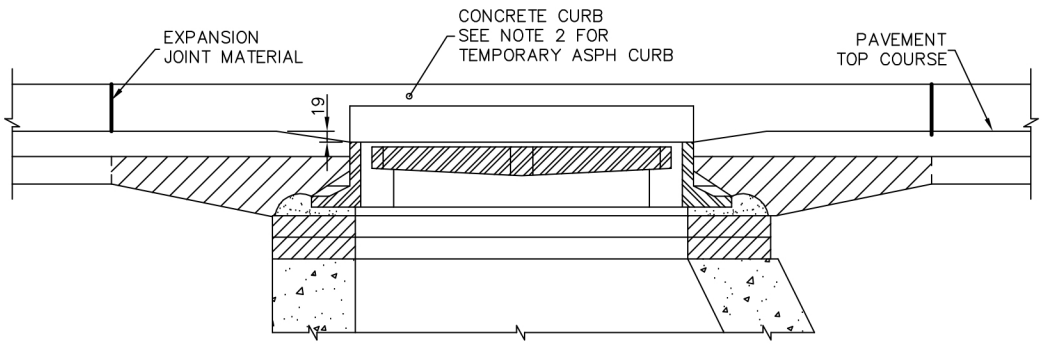


SEMI–MOUNTABLE OR
MOUNTABLE CURB

DETAILS



PLAN



SECTION X–X

NOTES:

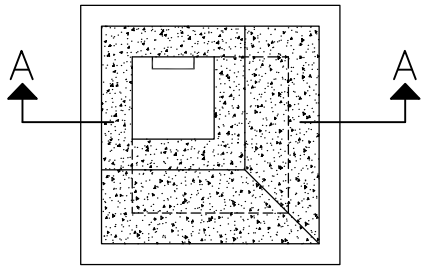
1. HATCHED AREAS ▨ : PAVEMENT BASE COURSE.
2. WHEN TEMPORARY ASPHALT CURB AND GUTTER IS TO BE CONSTRUCTED, 50 mm x 100 mm x 1 m LONG SUPPORT STAKES AND NECESSARY 50 mm THICK BACK (FORM) BOARD ARE TO BE LEFT IN PLACE AND THE CATCHBASIN GRATE SHALL BE SET TO BASE ASPHALT GRADE.
3. ADJUSTMENT UNITS TO BE PARGED ON OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. CLASS OF CONCRETE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
6. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.

Greater Grand Sudbury

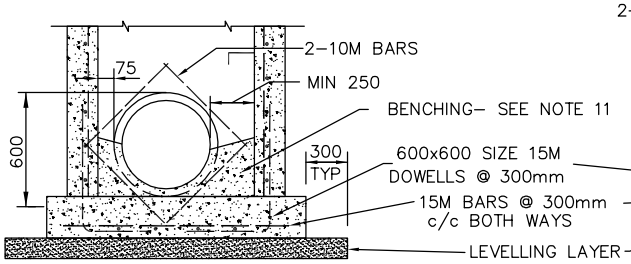
CONCRETE CURB AND ASPHALT GUTTER

TREATMENT AT CATCH BASIN

DRAWN BY: STS/RF/ADP	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1933–1 (1 OF 1)
APP'D:	GSSD–610.010

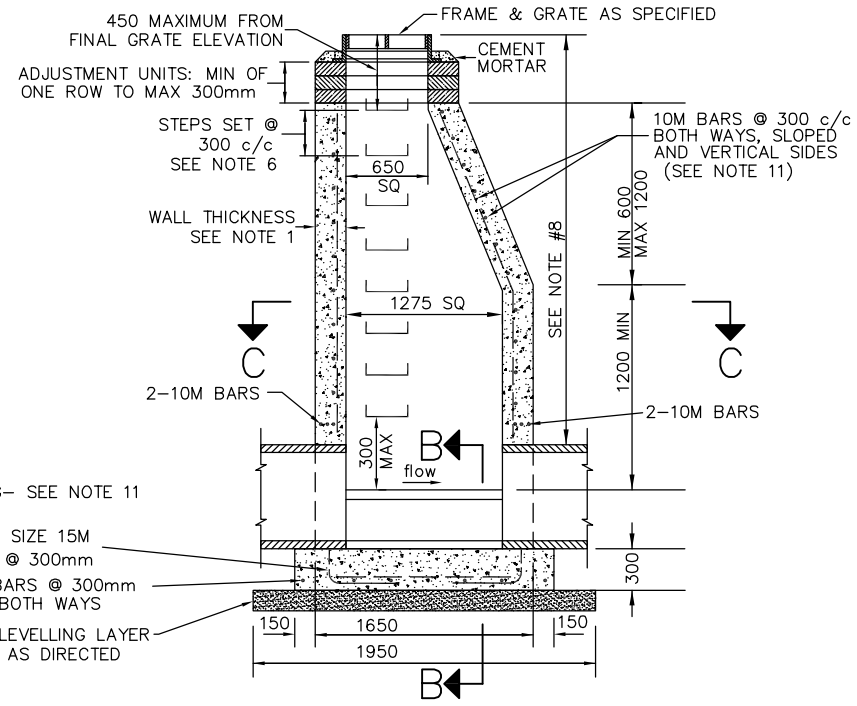


PLAN VIEW



SECTION B – B

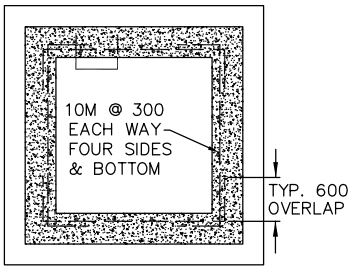
WITH BENCHING



SECTION A – A

NOTES:

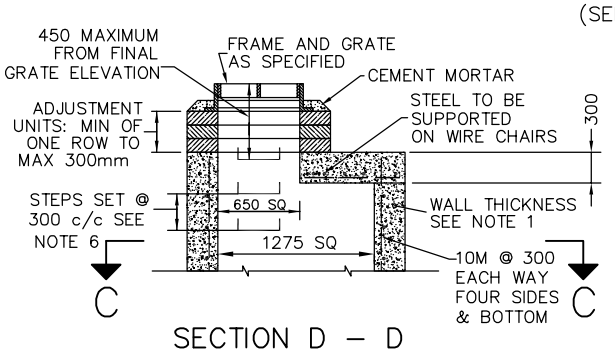
1. WALL THICKNESS: 230 mm TO 4 m DEPTH, 300 mm FOR 4 m TO 9 m DEPTH, SPECIAL DESIGN FOR DEPTH GREATER THAN 9 m.
2. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
3. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
5. STRUCTURES EXCEEDING 5 m IN DEPTH TO INCLUDE SAFETY GRATE AS PER OPSD–404.020.
6. MAINTENANCE HOLE STEPS CIRCULAR HOLLOW ALUMINUM AS PER OPSD–405.010
7. ALTERNATIVE FLAT TOP SHALL BE USED WHEN DISTANCE FROM TOP OF PIPE TO FINISHED GRADE IS LESS THAN 2000 mm.
8. 600 mm DEEP SUMP TO BE CONSTRUCTED ON CB's AND MHCB's.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
10. CONCRETE BENCHING: SLOPE 1:12 CLASS OF CONCRETE 20 MPa AT 28 DAYS.
11. TWO SEPARATE VERTICAL BARS HAVING A MINIMUM 600mm OVERLAP MAY BE USED IN LIEU OF THE ONE CONTINUOUS BENT VERTICAL BAR WHEN DIRECTED.
12. WHEN CURB INLET CB FRAME & GRATE IS SPECIFIED, THE INSIDE BACK WALL OF MHCB SHALL BE LOCATED DIRECTLY BELOW THE BACK OF CURB.
13. FOR LARGER DIAMETER PIPE SEE GSSD–700.040
14. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.



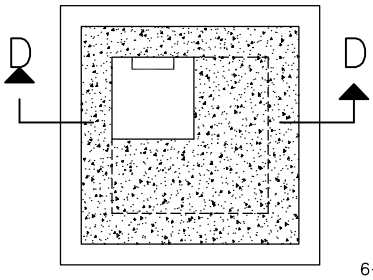
SECTION C – C

ALTERNATIVE – FLAT TOP

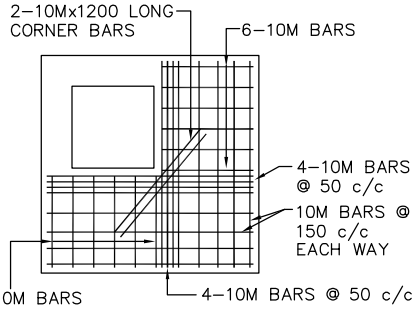
(SEE NOTE #8)



SECTION D – D



PLAN VIEW



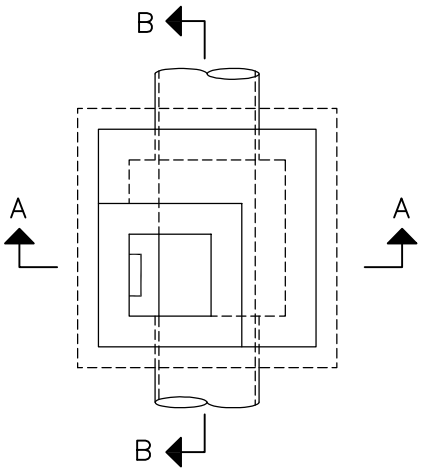
SLAB REINFORCING SCHEDULE

Sudbury Greater Grand

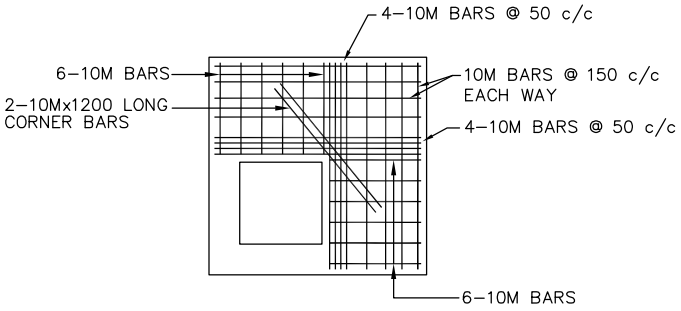
CAST–IN–PLACE MAINTENANCE HOLE OR MAINTENANCE HOLE CATCHBASIN

MAX PIPE SIZE 825 mm
1275 mm x 1275 mm
DEPTH 9.0 m MAXIMUM

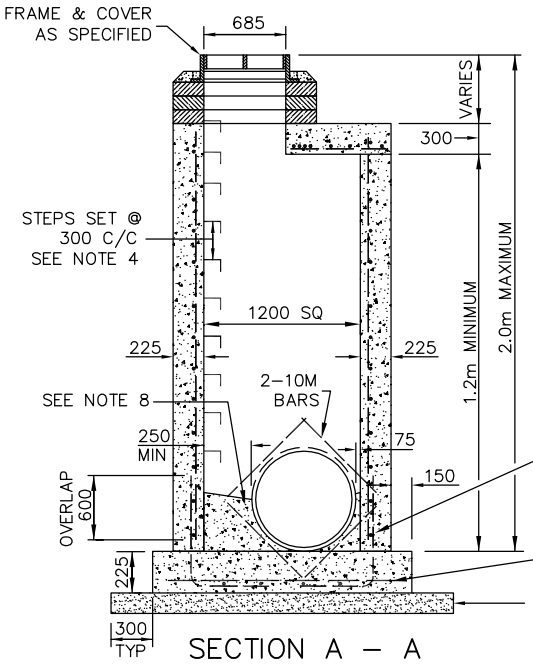
DRAWN BY: STS/RF/SGI	REV No: 3
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1934–1 (1 OF 1)
APP'D:	GSSD–700.030



PLAN–COVER REMOVED

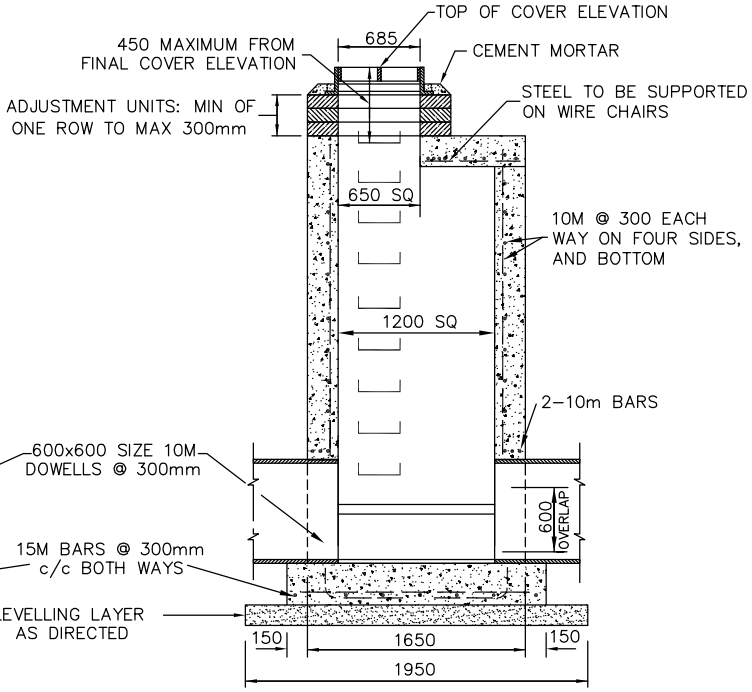


SLAB REINFORCING SCHEDULE



SECTION A – A

WITH BENCHING



SECTION B – B

NOTES:

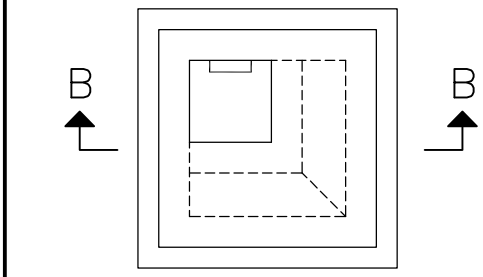
1. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
2. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
3. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
4. MAINTENANCE HOLE STEPS CIRCULAR ALUMINUM AS PER OPSD–405.010.
5. 600 mm DEEP SUMP TO BE CONSTRUCTED ON MHCB.
6. WHEN STRUCTURE IS TO ACT AS A MAINTENANCE HOLE CATCHBASIN, THE CONCRETE GUTTER SHALL END 900 mm ON EITHER SIDE OF THE MHCB WITH AN ASPHALT GUTTER BEING CONSTRUCTED FROM END OF CONCRETE GUTTER TO MHCB FRAME, AS PER GSSD–610.010.
7. WHEN CURB INLET CB FRAME & GRATE IS SPECIFIED, THE INSIDE BACK WALL OF THE CB SHALL BE LOCATED DIRECTLY BELOW THE BACK OF CURB.
8. CONCRETE BENCHING:
   - SLOPE 1:12
   - CLASS OF CONCRETE: 20 MPa AT 28 DAYS
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
10. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.

Sudbury Greater Grand

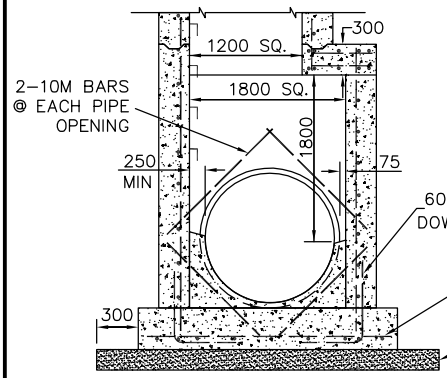
STORM SEWER CAST–IN–PLACE SHALLOW MAINTENANCE HOLE OR MAINTENANCE HOLE CATCHBASIN

MAX PIPE SIZE 825 mm
1200 mm x 1200 mm
DEPTH 2.2 m MAX

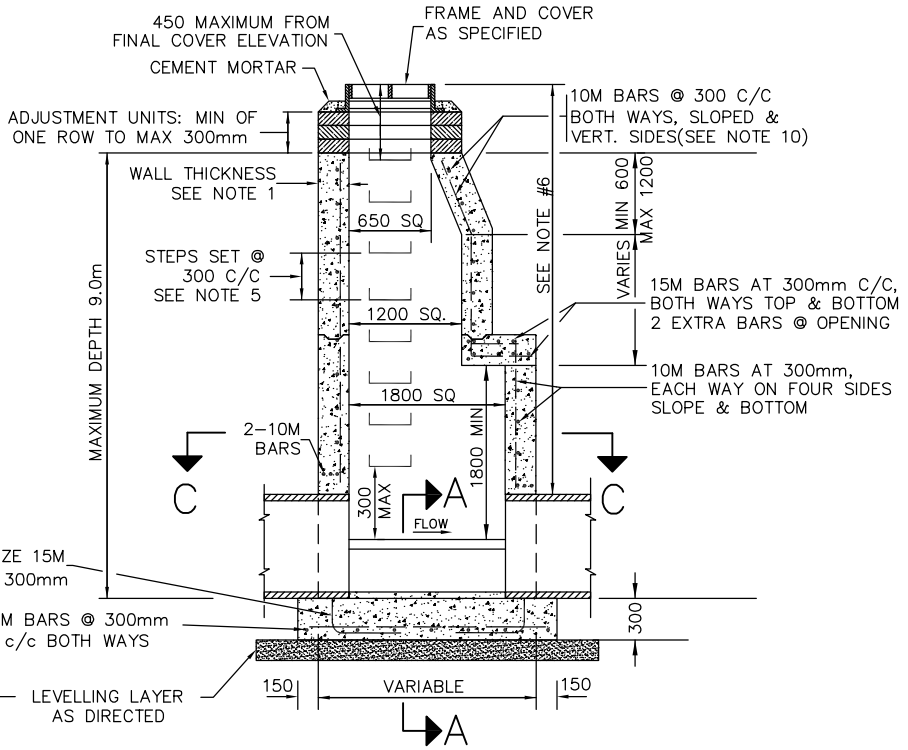
DRAWN BY: RF/STS/SGI	REV No: 3
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1937–1 (1 OF 1)
APP'D:	GSSD–700.031



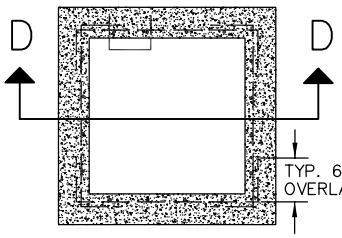
PLAN VIEW



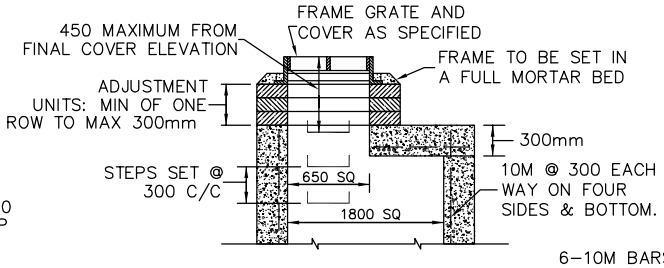
SECTION A – A



SECTION B – B

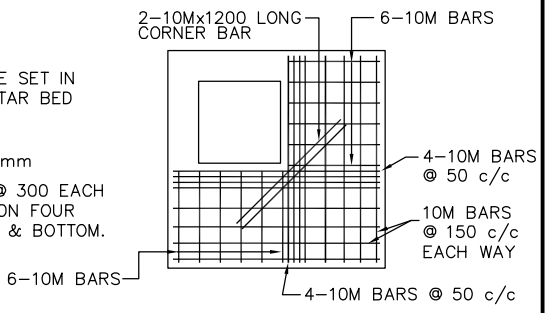


SECTION C – C



SECTION D – D

ALTERNATIVE FLAT TOP



SLAB REINFORCING SCHEDULE

NOTES:

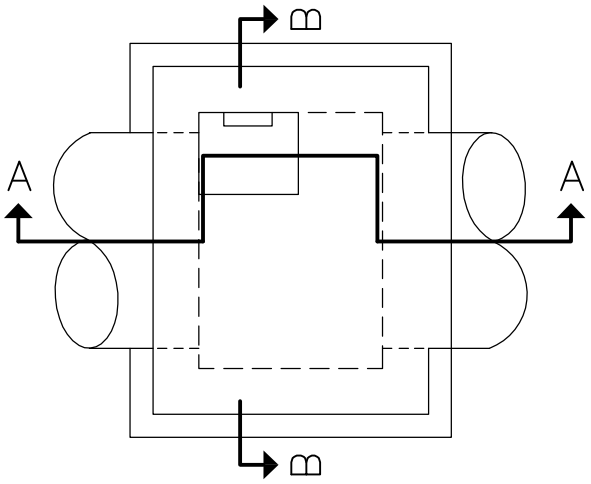
1. WALL THICKNESS: 230 mm TO 4 m DEPTH, 300 mm FOR 4 m TO 9 m DEPTH, SPECIAL DESIGN FOR DEPTHS GREATER THAN 9 m.
2. CLASS OF CONCRETE: 32 MPa AT 28 DAYS. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
3. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
4. STRUCTURES EXCEEDING 5 m IN DEPTH TO INCLUDE SAFETY GRATE AS PER GSSD–404.010
5. MAINTENANCE HOLE STEPS CIRCULAR HOLLOW ALUMINUM AS PER OPSD–405.010
6. ALTERNATIVE FLAT TOP SHALL BE USED WHEN THE DISTANCE FROM TOP OF PIPE TO FINISHED GRADE IS LESS THAN 2000 mm.
7. 600 mm DEEP SUMP TO BE CONSTRUCTED ON MHCB.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
9. CONCRETE BENCHING: SLOPE 1:12 CLASS OF CONCRETE 20 MPa AT 28 DAYS.
10. TWO SEPARATE VERTICAL BARS HAVING A MINIMUM 600mm OVERLAP MAY BE USED IN LIEU OF THE ONE CONTINUOUS BENT VERTICAL BAR WHEN DIRECTED.
11. WHEN STRUCTURE IS TO ACT AS A MAINTENANCE CATCHBASIN, THE CONCRETE GUTTER SHALL END 900 mm ON EITHER SIDE OF THE MHCB WITH AN ASPHALT GUTTER BEING CONSTRUCTED FROM END OF CONCRETE GUTTER TO MHCB FRAME, AS PER GSSD–610.010.
12. FOR LARGER DIAMETER PIPE SEE GSSD–700.041
13. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.

Greater Sudbury

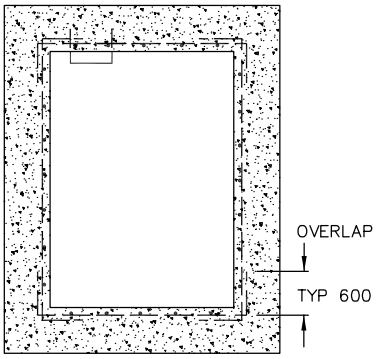
CAST–IN–PLACE MAINTENANCE HOLE OR MAINTENANCE HOLE CATCHBASIN

PIPE DIAMETER FROM 900 mm TO 1200 mm
1800 mm x 1800 mm
DEPTH 9.0 m MAXIMUM

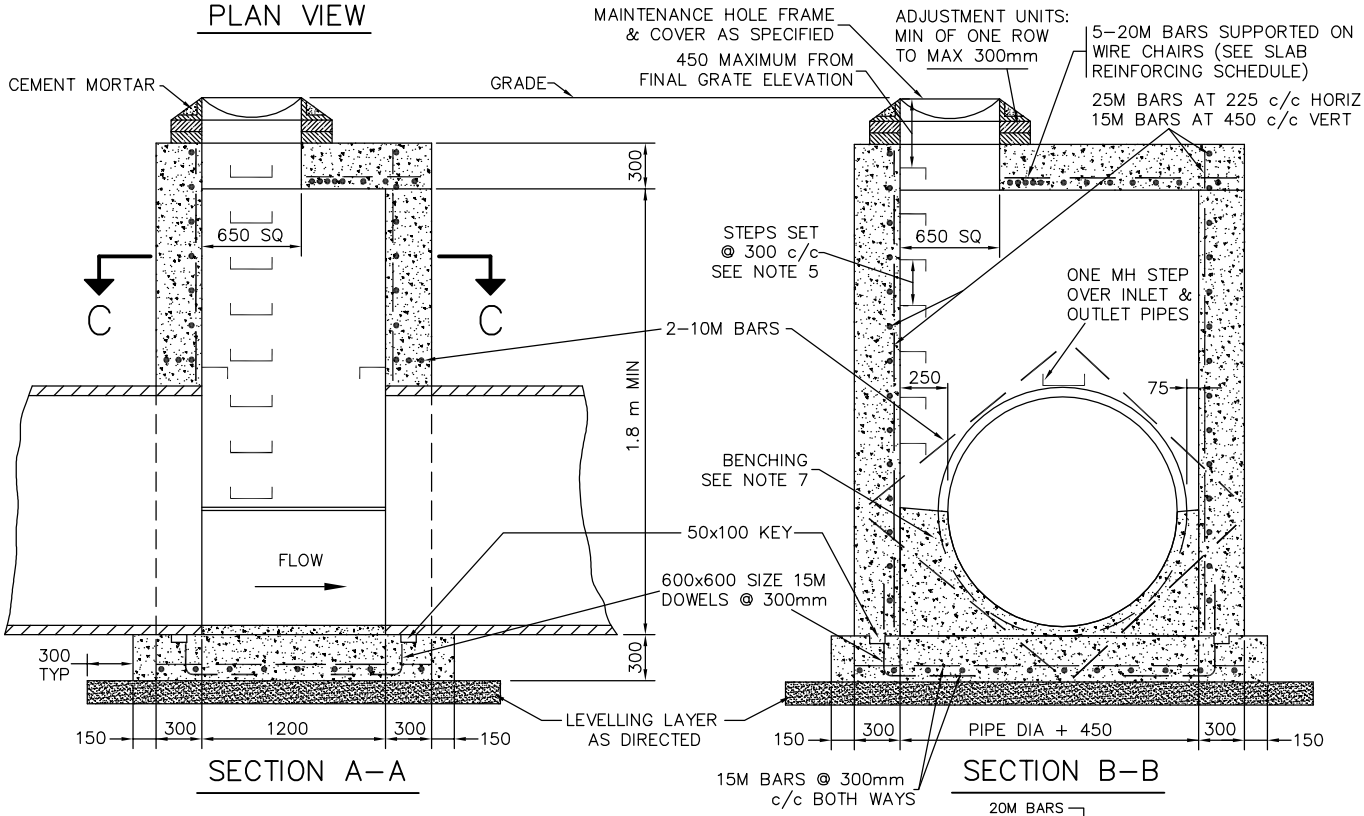
DRAWN BY: STS/RF/SGI	REV No: 3
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1935–1 (1 OF 1)
APP'D:	GSSD–700.040



PLAN VIEW



SECTION C–C

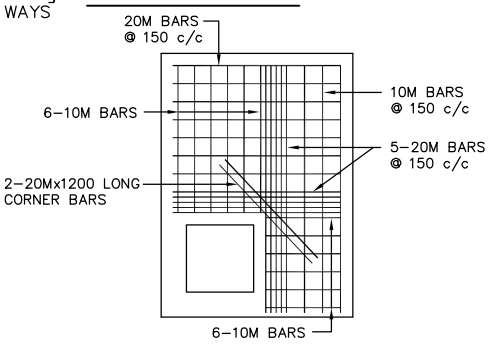


SECTION A–A

SECTION B–B

NOTES:

1. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
2. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
3. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
4. STRUCTURES EXCEEDING 5m IN DEPTH TO INCLUDE SAFETY GRATE AS PER OPSD–404.020.
5. MAINTENANCE HOLE STEPS CIRCULAR HOLLOW ALUMINUM AS PER OPSD–405.010.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
7. CONCRETE BENCHING: SLOPE 1:12 CLASS OF CONCRETE 20 MPa AT 28 DAYS.
8. 600 mm DEEP SUMP TO BE CONSTRUCTED ON MHCB.
9. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.



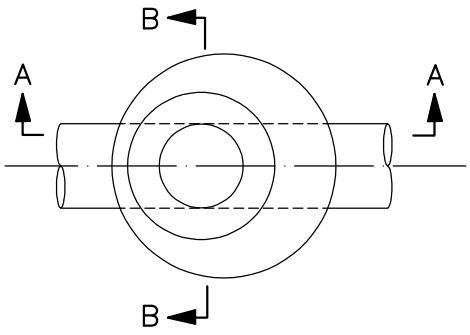
SLAB REINFORCING SCHEDULE

Sudbury Greater Grand

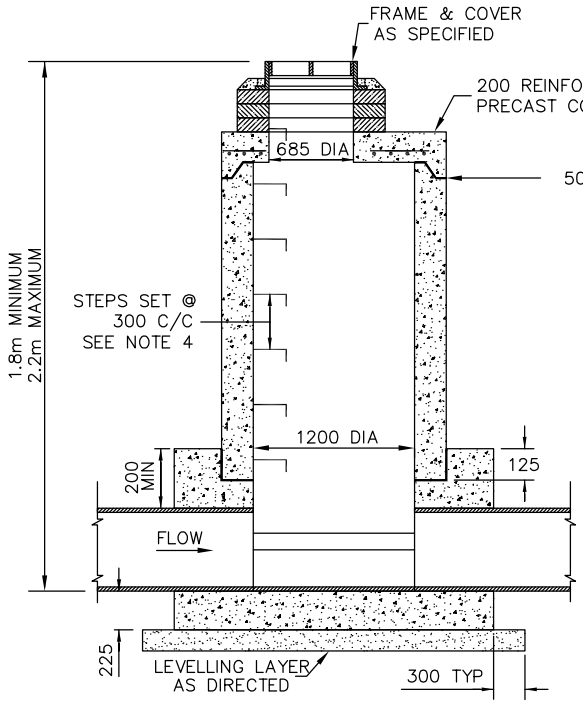
CAST–IN–PLACE MAINTENANCE HOLE OR MAINTENANCE HOLE CATCHBASIN

FOR 1350 mm AND LARGER PIPES

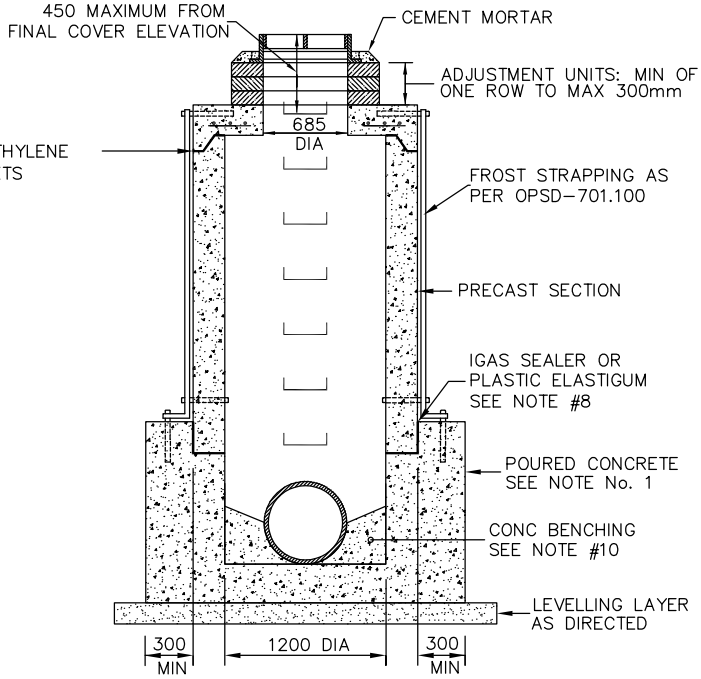
DRAWN BY: STS/RF/SGI	REV No: 3
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A2016–1 (1 OF 1)
APP'D:	GSSD–700.041



PLAN–COVER REMOVED



SECTION A – A



SECTION B – B

NOTES:

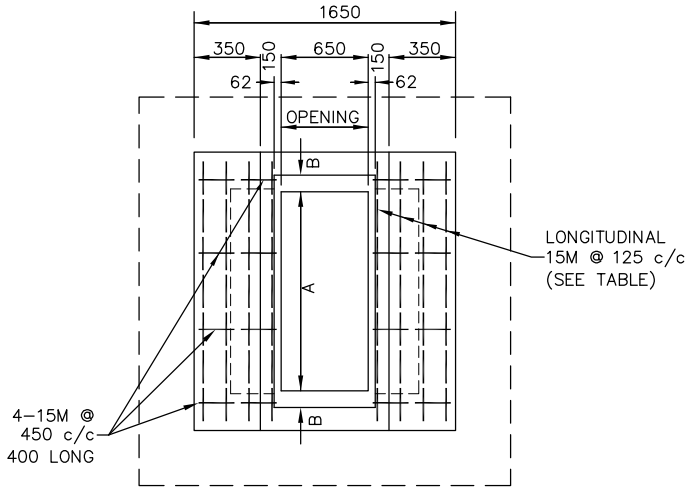
1. POURED CONCRETE BASE CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
2. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
3. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
4. MAINTENANCE HOLE STEPS CIRCULAR HOLLOW ALUMINUM AS PER OPSD–405.010
5. 600 mm DEEP SUMP TO BE CONSTRUCTED WHEN USED AS AN MHCB.
6. WHEN STRUCTURE IS TO ACT AS A MAINTENANCE HOLE CATCHBASIN, THE CONC GUTTER SHALL END 900 mm ON EITHER SIDE OF THE MHCB WITH AN ASPHALT GUTTER BEING CONSTRUCTED FROM END OF CONC GUTTER TO MHCB FRAME, AS PER GSSD–610.010.
7. WHEN CURB INLET CB FRAME & GRATE IS SPECIFIED, THE INSIDE BACK WALL OF THE CB SHALL BE LOCATED DIRECTLY BELOW THE BACK OF CURB.
8. MIN 7 mm x 125 mm IGAS SEALER OR PLASTIC ELASTIGUM TO BE APPLIED TO FIRST SECTION OF MH BARREL BEFORE POURING CONCRETE BASE.
9. FROST STRAP INSTALLATION, AS PER OPSD–701.100
10. CONCRETE BENCHING:
    - SLOPE 1:12
    - CLASS OF CONCRETE: 20 MPa AT 28 DAYS
11. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.
12. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Grand Sudbury

STORM SEWER PRECAST SHALLOW MAINTENANCE HOLE OR MAINTENANCE HOLE CATCHBASIN

MAX PIPE SIZE 825 mm
1200 mm x 1200 mm
DEPTH 2.2 m MAX

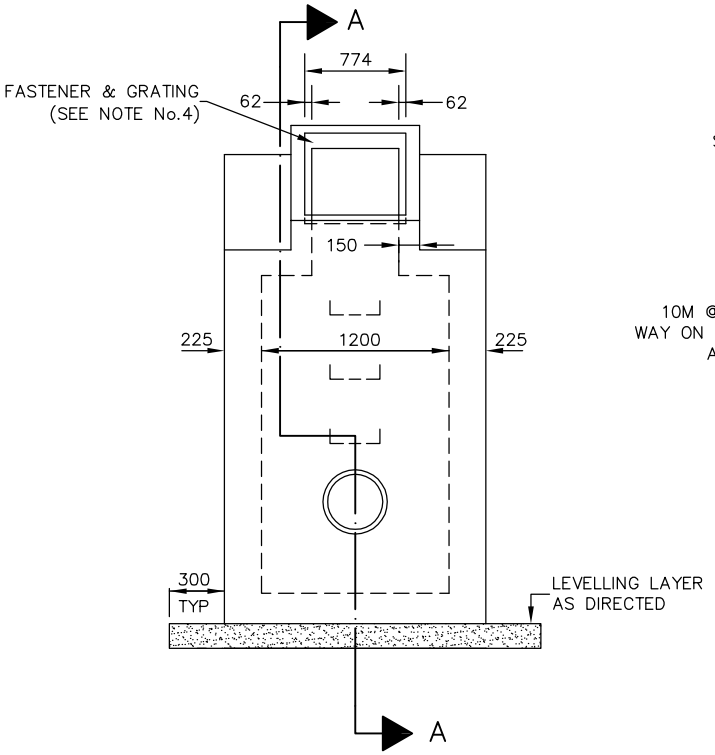
DRAWN BY: RF/STS/KLB	REV No: 3
DATE: 2003–03–03	REV DATE: FEB/2025
SCALE: NTS	CAD/FILE No.: A1938–1 (1 OF 1)
APP'D:	**GSSD–701.017**



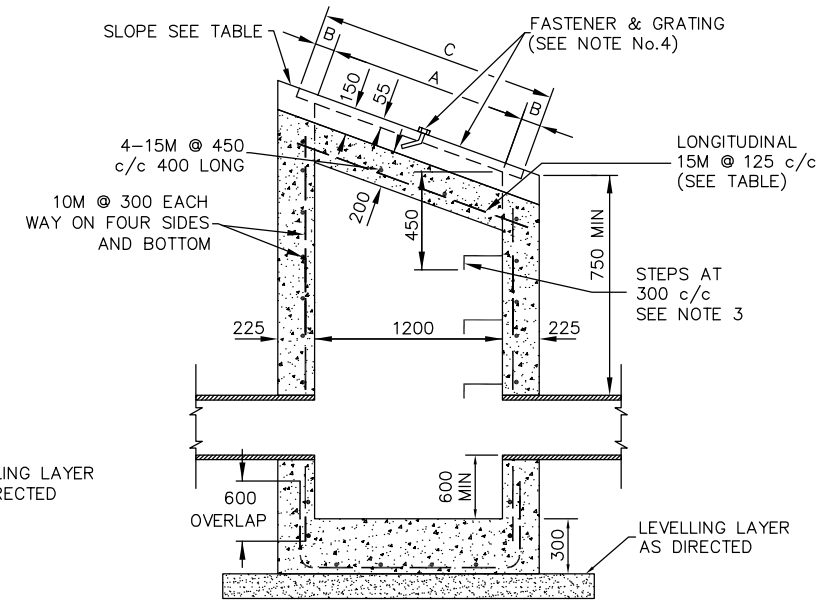
TOP VIEW

TABLE – SLOPE DIMENSIONS
OPENING DIMENSIONS & BAR LENGTHS (mm)
GRATE TYPE C

SLOPE	A	B	C	LONGITUDINAL BAR LENGTHS
2:1	1341	66	1473	1732
3:1	1265	104	1473	1633
4:1	1237	118	1473	1597



FRONT VIEW



SECTION A – A

NOTES:

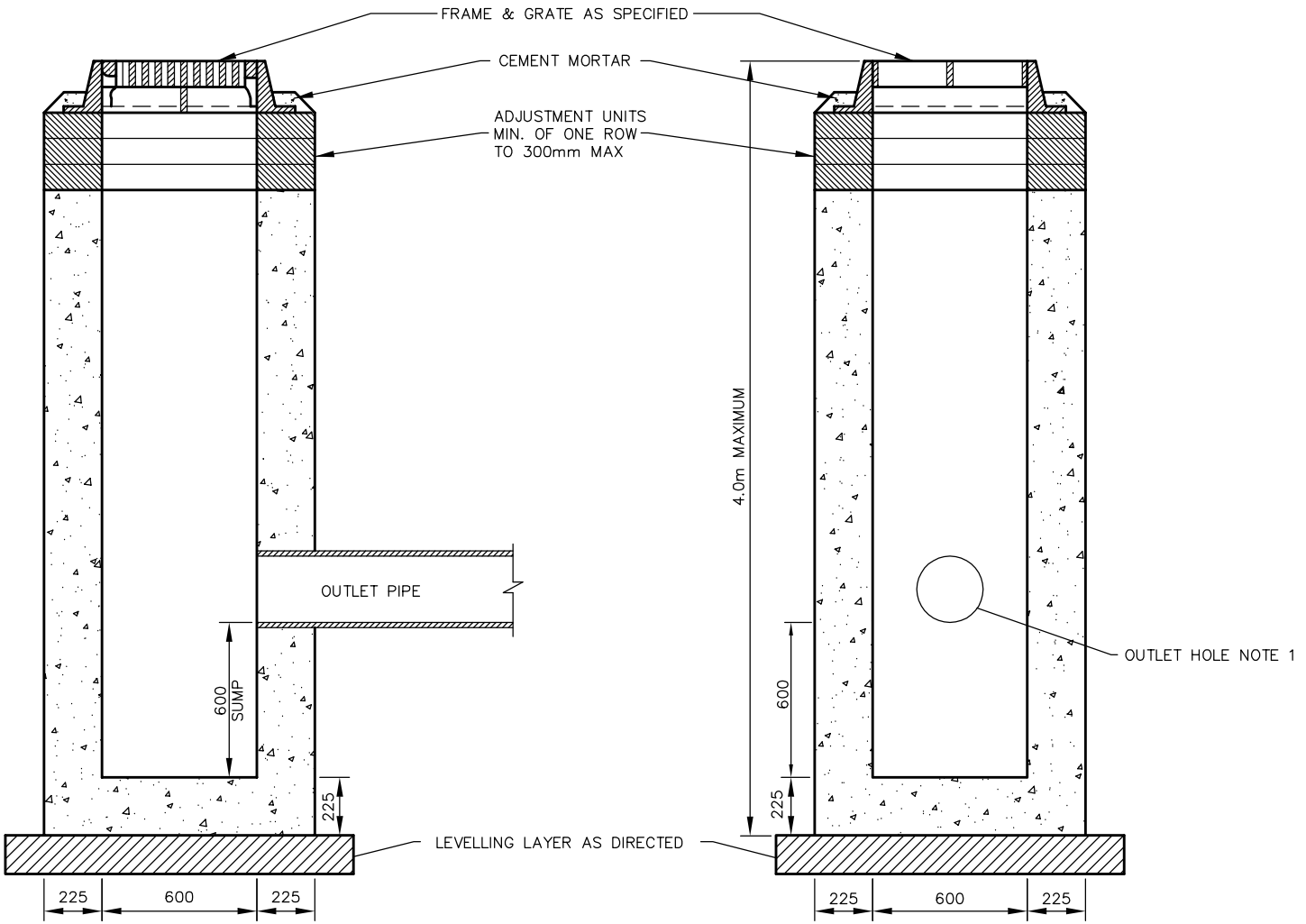
1. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
2. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
3. MAINTENANCE HOLE STEPS CIRCULAR HOLLOW ALUMINUM AS PER OPSD–405.010.
4. GRATING AND FASTENER DETAILS AS PER OPSD–403.010.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Sudbury Greater Grand

CAST–IN–PLACE DITCH INLET MAINTENANCE HOLE CATCHBASIN

MAX PIPE SIZE 825 mm
1200 mm x 1200 mm
DEPTH 4.0 m MAX

DRAWN BY: RF/STS	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1939–1 (1 OF 1)
APP'D:	GSSD–702.040



NOTES:

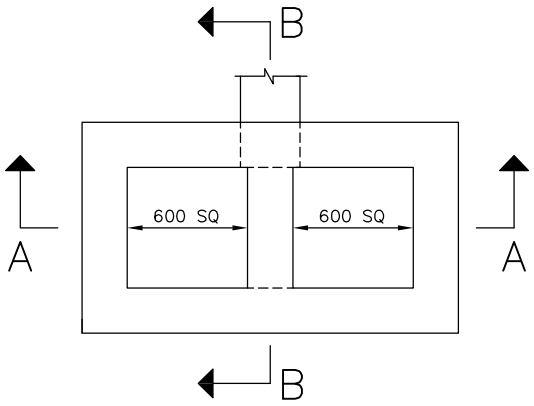
1. OUTLET HOLE SIZE 525 mm DIAMETER MAXIMUM, WITH LOCATION AS REQUIRED.
2. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
3. CONCRETE GUTTER SHALL END 900 mm ON EITHER SIDE OF CATCHBASIN WITH AN ASPHALT GUTTER BEING CONSTRUCTED FROM END OF CONCRETE GUTTER TO CATCH BASIN FRAME. SEE GSSD–610.010
4. WHEN CURB INLET CATCHBASIN FRAME AND GRATE IS SPECIFIED, THE INSIDE BACK WALL OF THE CATCHBASIN SHALL BE LOCATED DIRECTLY BELOW BACK OF CURB.
5. ADJUSTMENT UNITS TO BE PARGED ON OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
6. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Grand Sudbury

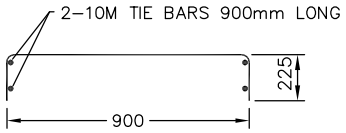
POURED CONCRETE CATCHBASIN

600 mm x 600 mm DEPTH 4.0 m MAX

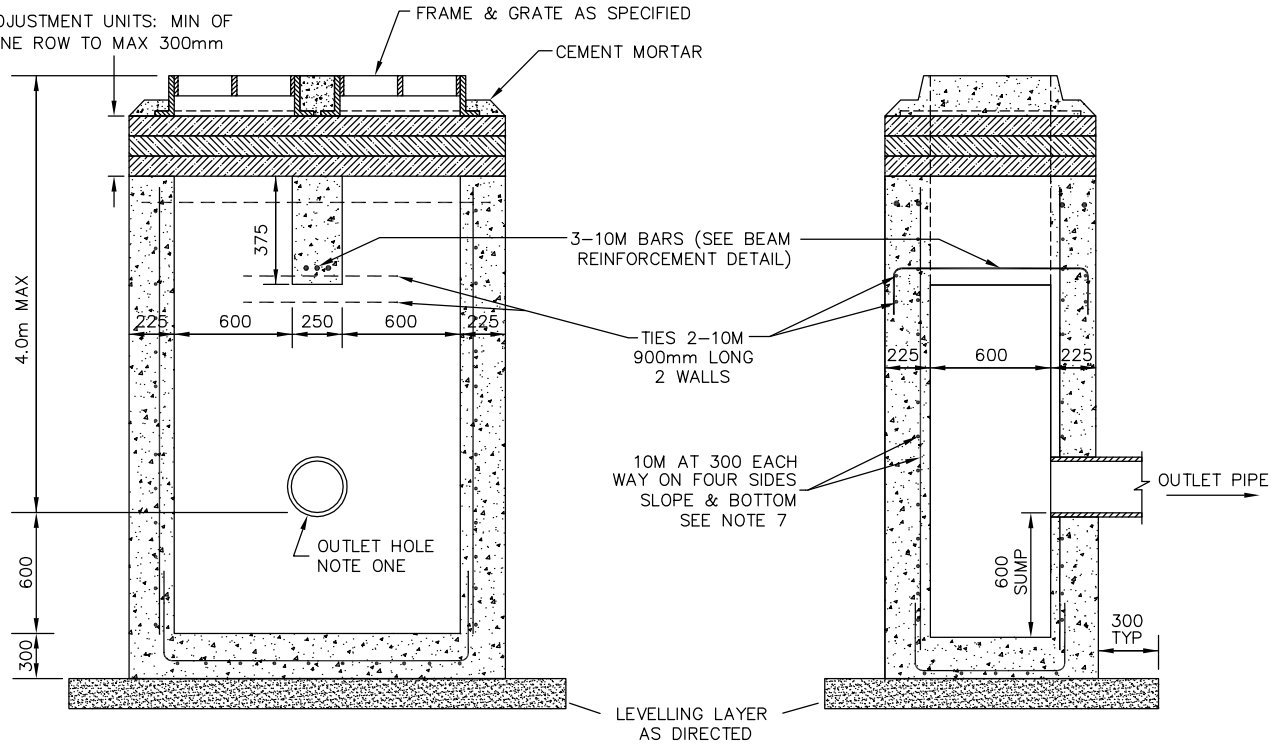
DRAWN BY: STS/RF	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1932–1 (1 OF 1)
APP'D:	GSSD–705.011



PLAN



BEAM REINFORCEMENT DETAIL



SECTION A – A

SECTION B – B

NOTES:

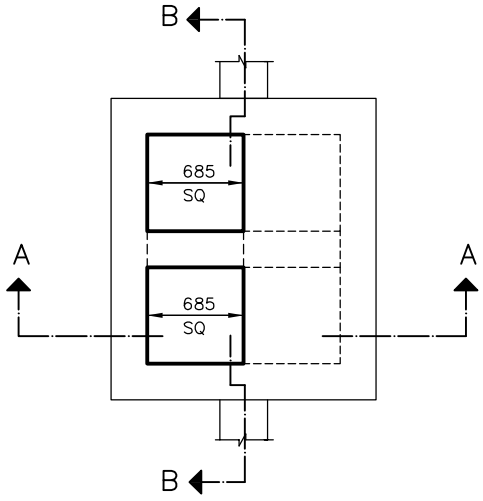
1. OUTLET HOLE LOCATIONS AS REQUIRED.
2. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
3. CONCRETE GUTTER SHALL END 900 mm ON EITHER SIDE OF CATCH BASIN WITH AN ASPHALT GUTTER BEING CONSTRUCTED FROM END OF CONCRETE GUTTER TO CATCHBASIN FRAME, SEE GSSD–610.010.
4. WHEN CURB INLET CATCHBASIN FRAME AND GRATE IS SPECIFIED, THE INSIDE BACK WALL OF THE CATCHBASIN SHALL BE LOCATED DIRECTLY BELOW THE BACK OF CURB.
5. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
6. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.
7. TWO SEPARATE VERTICAL BARS HAVING A MINIMUM 600 mm OVERLAP MAY BE USED IN LIEU OF THE ONE CONTINUOUS BENT VERTICAL BAR WHEN DIRECTED.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Sudbury

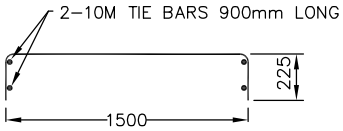
CAST–IN–PLACE TWIN INLET CATCHBASIN

600 mm x 1450 mm
DEPTH 4.0 m MAX

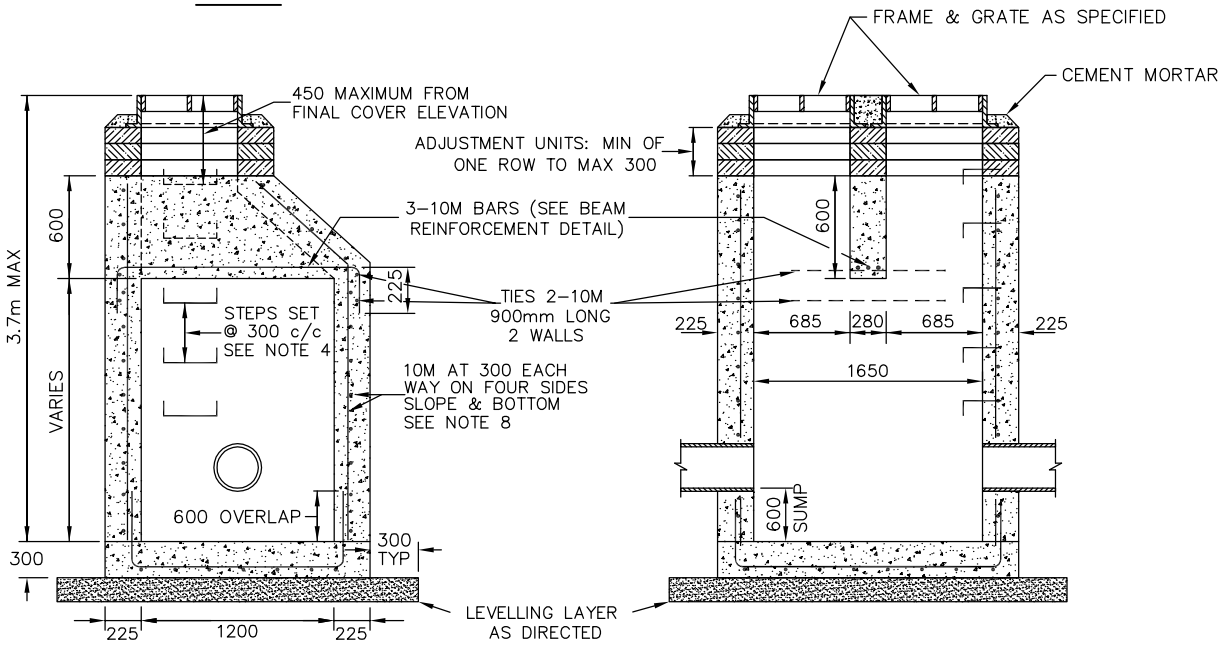
DRAWN BY: RF/STS	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1936–1 (1 OF 1)
APP'D:	GSSD–705.021



PLAN



BEAM REINFORCEMENT DETAIL



SECTION A – A

SECTION B – B

NOTES:

1. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
2. MINIMUM COVER TO REINFORCEMENT IS TO BE 50 mm.
3. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON–SHRINK MORTAR MIX, APPLIED 15 mm THICK.
4. MAINTENANCE HOLE STEPS CIRCULAR HOLLOW ALUMINUM AS PER OPSD–405.010.
5. WHEN THE STRUCTURE IS TO ACT AS A MAINTENANCE HOLE CATCHBASIN THE CONCRETE GUTTER SHALL END 900 mm ON EITHER SIDE OF THE MAINTENANCE HOLE CATCHBASIN WITH AN ASPHALT GUTTER BEING CONSTRUCTED FROM END OF CONCRETE GUTTER TO MAINTENANCE HOLE CATCHBASIN FRAME, AS PER GSSD–610.010.
6. WHEN CURB INLET CATCHBASIN FRAME AND GRATE IS SPECIFIED, THE INSIDE BACK WALL OF THE CATCHBASIN SHALL BE LOCATED DIRECTLY BELOW THE BACK OF CURB.
7. CONCRETE BENCHING:
   - SLOPE 1:12
   - CLASS OF CONCRETE 20 MPa @ 28 DAYS
8. TWO SEPARATE VERTICAL BARS HAVING A MINIMUM 600 mm OVERLAP MAY BE USED IN LIEU OF THE ONE CONTINUOUS BENT VERTICAL BAR WHEN DIRECTED.
9. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.
10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

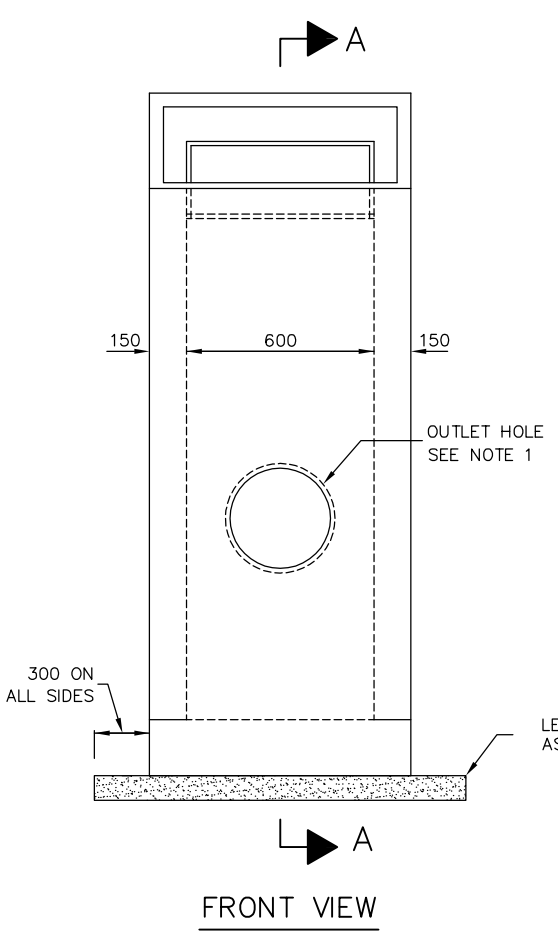
Greater Sudbury | Grand

CAST–IN–PLACE TWIN INLET MAINTENANCE HOLE CATCHBASIN

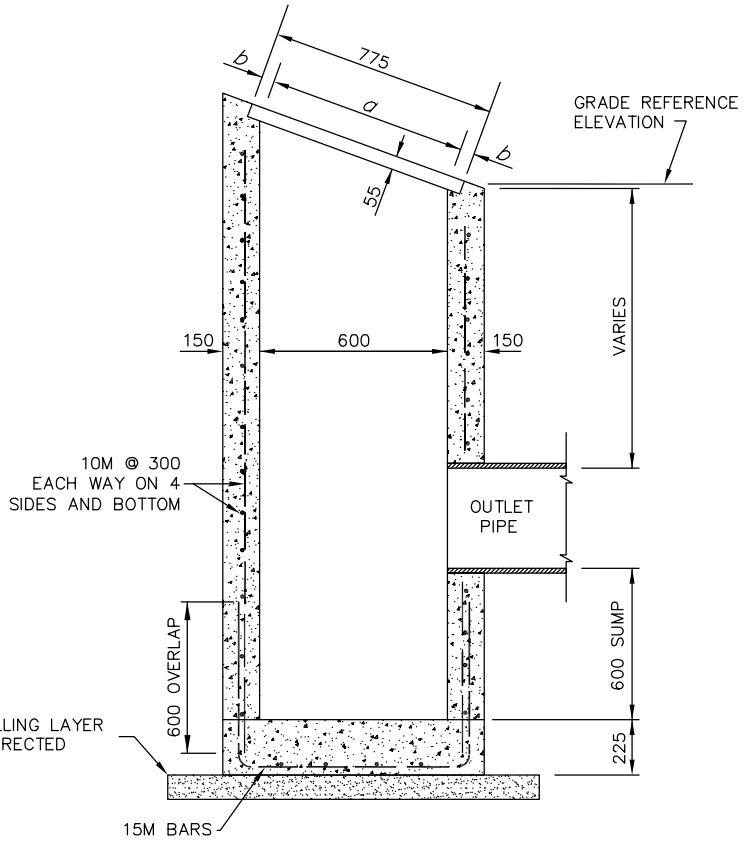
1200 mm x 1650 mm
DEPTH 3.7 m MAX.

DRAWN BY: RF/STS	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1940–1 (1 OF 1)
APP'D:	GSSD–705.025

OPENING DIMENSIONS IN MILLIMETRES			
GRATE		*a*	*b*
TYPE	SLOPE		
A	2:1	670	52
	3:1	632	72
	4:1	618	79
	6:1	608	83
	8:1	605	85
	10:1	603	86
	HOR.	600	87



FRONT VIEW



SECTION A – A

NOTES:

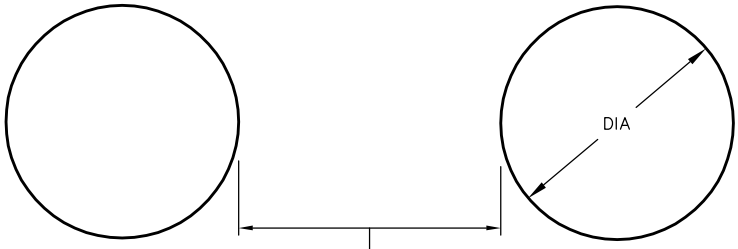
1. OUTLET HOLE SIZE 525 mm MAXIMUM DIAMETER, LOCATION AS REQUIRED.
2. WHERE THE INLET IS PLACED ACROSS DITCH AND IS ACCESSIBLE TO VEHICULAR TRAFFIC, GRATING SLOPE IS TO BE 6:1 OR BETTER.
3. MINIMUM COVER TO REINFORCEMENT TO BE 50 mm.
4. GRATING AND FASTENER DETAILS AS PER OPSD–403.010.
5. CLASS OF CONCRETE: 32 MPa @ 28 DAYS.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

Greater Sudbury

CAST–IN–PLACE DITCH INLET CATCHBASIN

600 mm x 600 mm
DEPTH 4.0 m MAX.

DRAWN BY: RF/STS	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1941–1 (1 OF 1)
APP'D:	GSSD–705.035



DIAMETER	MINIMUM SPACE BETWEEN PIPES
LESS THAN OR EQUAL TO 1000	600
1200 TO 2400 INCL	ONE–HALF (0.5) PIPE DIA
GREATER THAN OR EQUAL TO 2400	1200

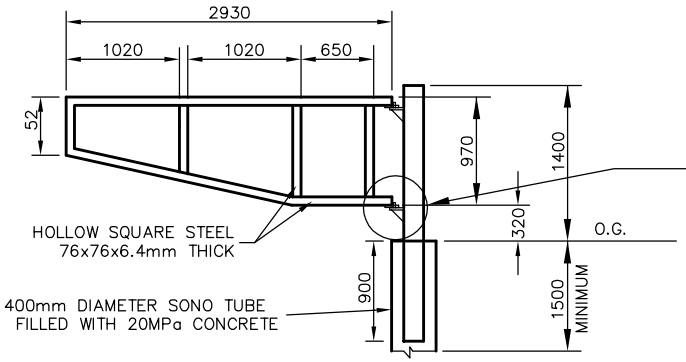
NOTE

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

Sudbury Greater | Grand

SPACING FOR MULTIPLE CULVERT INSTALLATIONS

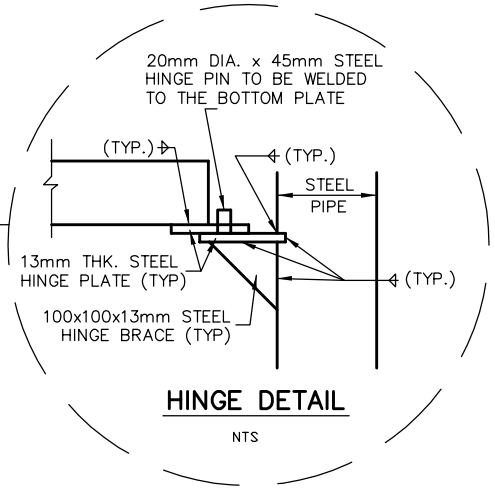
DRAWN BY: STS/RF/BWK	REV No: 1
DATE: 2003–03–03	REV DATE: OCT 2010
SCALE: NTS	CAD/FILE No.: A1943–1 (1 OF 1)
APP'D: PETER CHIESA	GSSD–820.010



FRONT VIEW

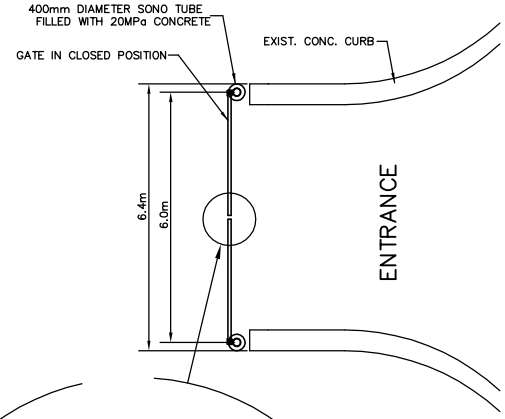
OPEN POSITION

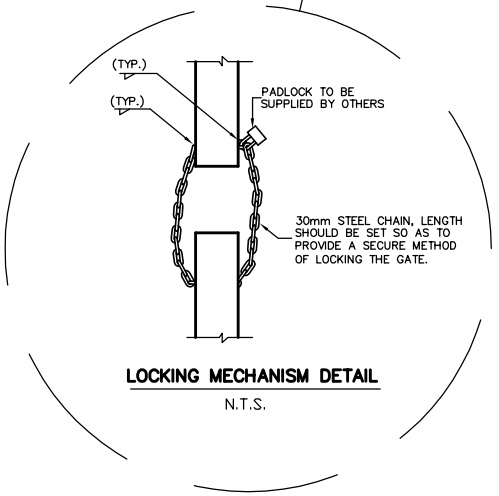
N.T.S.



HINGE DETAIL

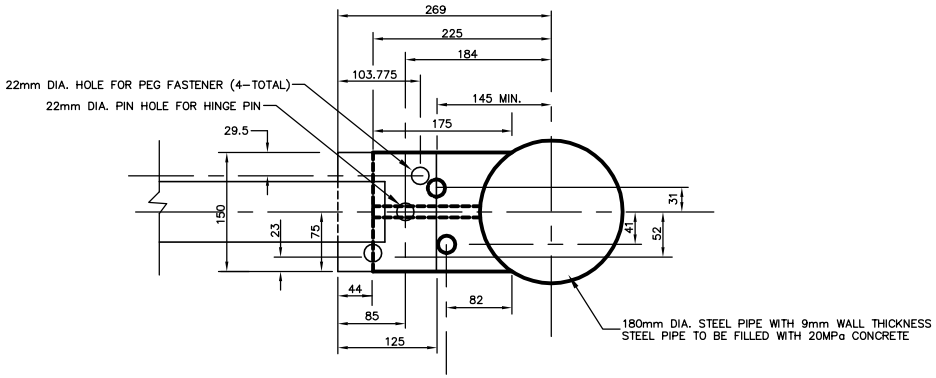
NTS





LOCKING MECHANISM DETAIL

N.T.S.



TOP VIEW DETAIL

OPEN POSITION

N.T.S.

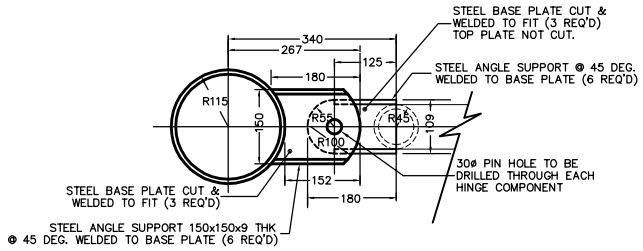
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERES UNLESS OTHERWISE INDICATED.
2. THE ENTIRE GATE ASSEMBLY IS TO RECEIVE THREE COATS OF PAINT AFTER INSTALLATION. THE FIRST COAT SHALL BE A FAST DRYING WHITE PRIMER COAT 'PITTSBURG MULTI-PRIME' OR APPROVED EQUAL, ALONG WITH TWO ADDITIONAL BROWN TOP COATS OF 'PITTSBURG FAST DRY ALKYD' OR APPROVED EQUAL.
3. AN ADDITIONAL 100x20mm DIA. STEEL PEG ATTACHED TO A LENGTH OF 30mm STEEL CHAIN IS TO BE WELDED TO EACH 180mm DIA. STEEL PIPE. THE PEG IS TO BE SITUATED SO THAT THE GATE MAY BE FASTENED IN THE OPEN OR CLOSED POSITION.

Greater Sudbury | Grand

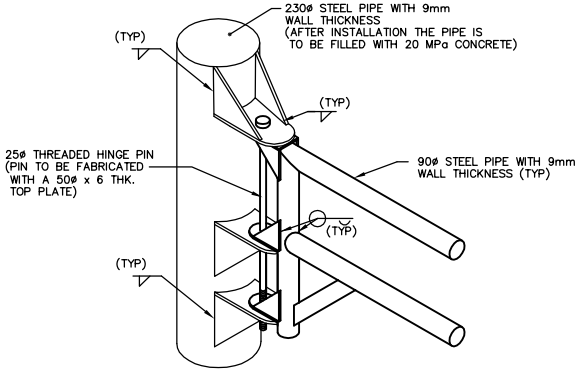
SITE GATE ASSEMBLY AND DETAILS

DRAWN BY: R. FRANK	REV No:
DATE: 2003-03-03	REV DATE:
SCALE: AS SHOWN	CAD/FILE No.: B1128-1 (1 of 1)
APP'D:	GSSD-972.120



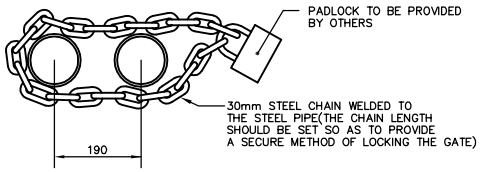
TOP VIEW

NTS



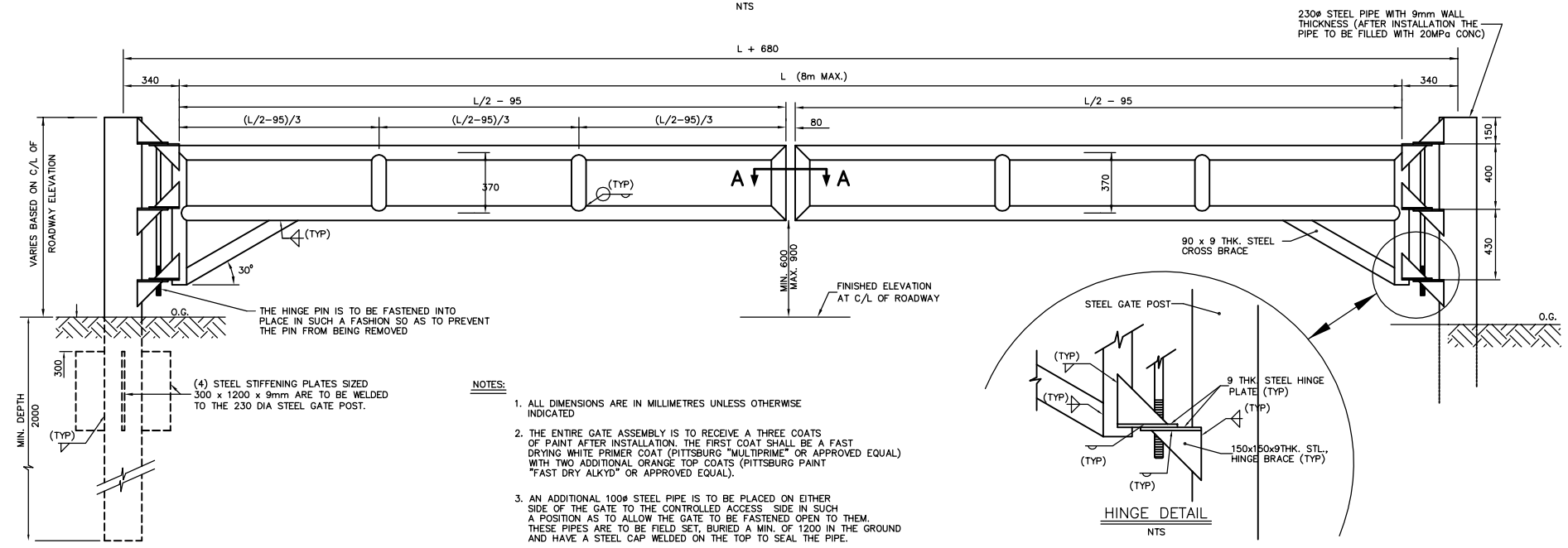
ISOMETRIC VIEW

NTS



SECTION A–A

NTS



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED
2. THE ENTIRE GATE ASSEMBLY IS TO RECEIVE A THREE COATS OF PAINT AFTER INSTALLATION. THE FIRST COAT SHALL BE A FAST DRYING WHITE PRIMER COAT (PITTSBURG "MULTIPRIME" OR APPROVED EQUAL) WITH TWO ADDITIONAL ORANGE TOP COATS (PITTSBURG PAINT "FAST DRY ALKYD" OR APPROVED EQUAL).
3. AN ADDITIONAL 100ø STEEL PIPE IS TO BE PLACED ON EITHER SIDE OF THE GATE TO THE CONTROLLED ACCESS SIDE IN SUCH A POSITION AS TO ALLOW THE GATE TO BE FASTENED OPEN TO THEM. THESE PIPES ARE TO BE FIELD SET, BURIED A MIN. OF 1200 IN THE GROUND AND HAVE A STEEL CAP WELDED ON THE TOP TO SEAL THE PIPE.

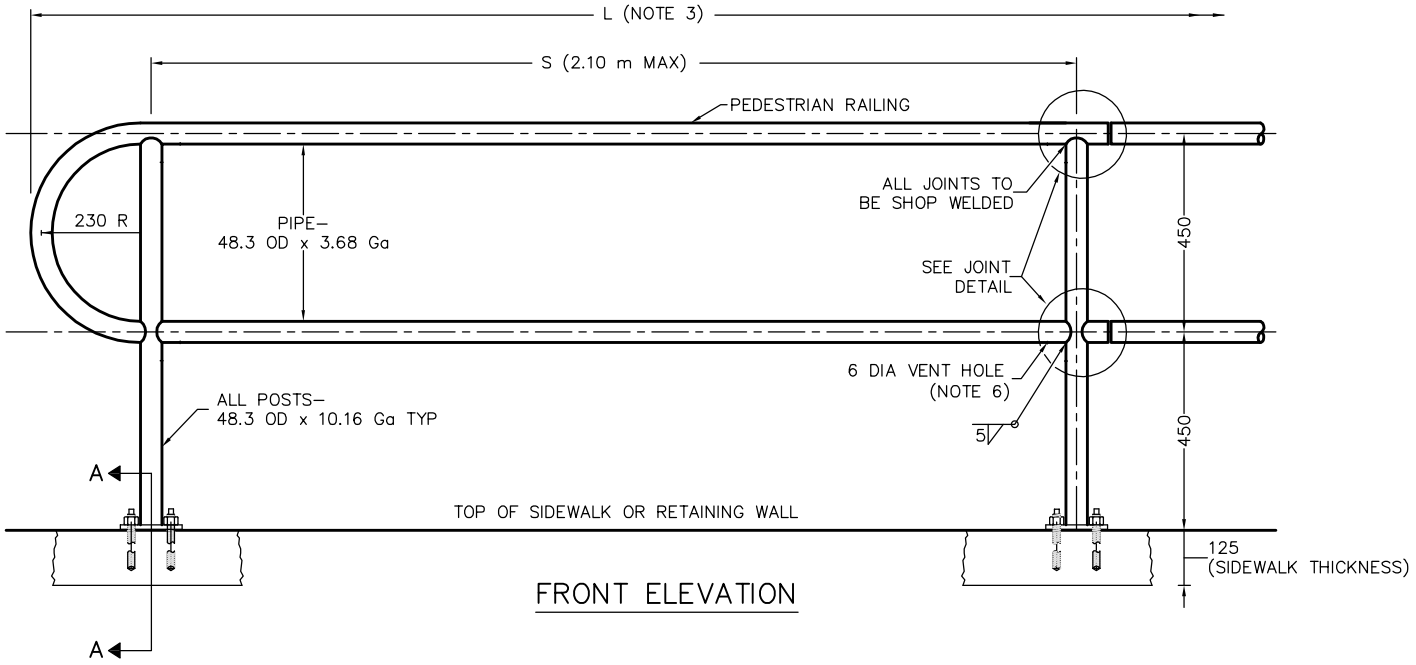
HINGE DETAIL

NTS

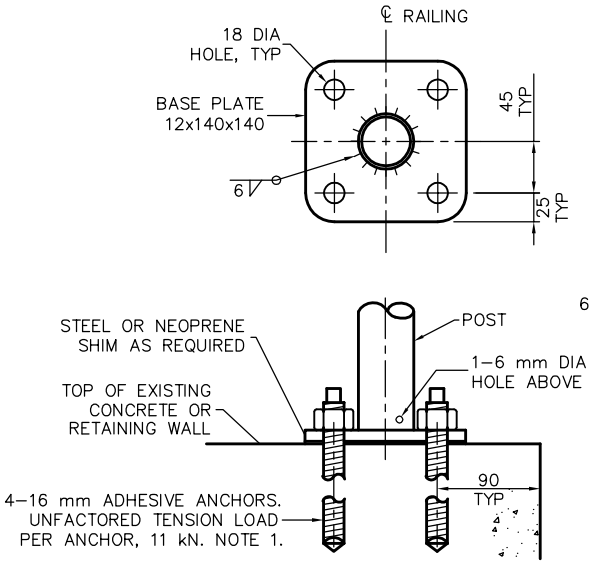
Greater Sudbury | Grand Sudbury

LANDFILL SITE ENTRANCE GATE

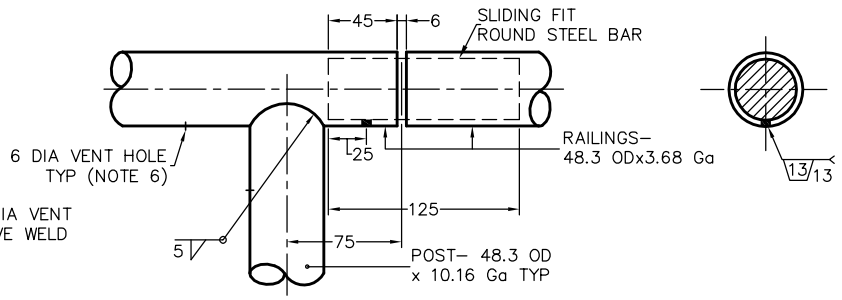
DRAWN BY: ROH/RFrank	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: B1131–1 (1 OF 1)
APP'D:	GSSD–972.121



FRONT ELEVATION



SECTION A–A



TYPICAL JOINT DETAIL

NOTES:

1. ADHESIVE ANCHOR INSTALLATION AND EMBEDMENT DEPTH SHALL BE AS PER MANUFACTURER'S REQUIREMENTS. THE EMBEDMENT DEPTH SHALL NOT BE GREATER THAN 80% OF CONCRETE THICKNESS.
2. THREADED ROD ADHESIVE ANCHORS SHALL BE EQUIVALENT TO ASTM A325.
3. NUMBER OF PANELS = $\frac{\text{TOTAL LENGTH (L) – 600 mm}}{\text{LENGTH OF PANELS (S)}}$
4. ALL PIPE / POSTS SHALL BE ACCORDING TO ASTM SPECIFICATION A53, GRADE 'B' AND THEY ARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION IN CONFORMANCE WITH CSA G–164.
5. STEEL PLATE SHALL BE ACCORDING TO CSA G40.20 / G40.21–98, GRADE 300W.
6. 6 mm DIA VENT HOLES ARE TO PERMIT GASES TO ESCAPE DURING GALVANIZING.
7. POSTS SHALL BE VERTICAL AND ALL EXPOSED CORNERS TO BE GROUND SMOOTH.
8. WELDING SHALL CONFORM TO THE LATEST ISSUE OF CSA SPECIFICATION W59.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

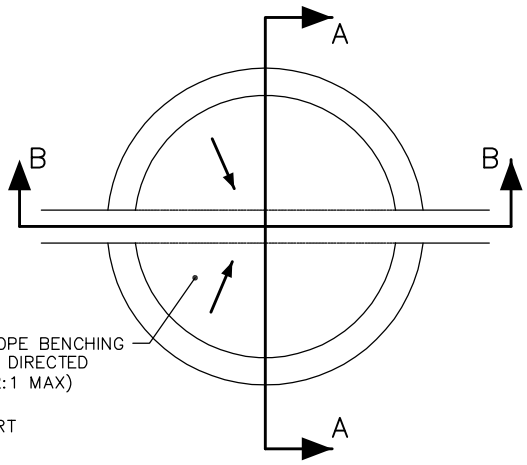
Greater Sudbury | Grand

PEDESTRIAN HAND RAIL

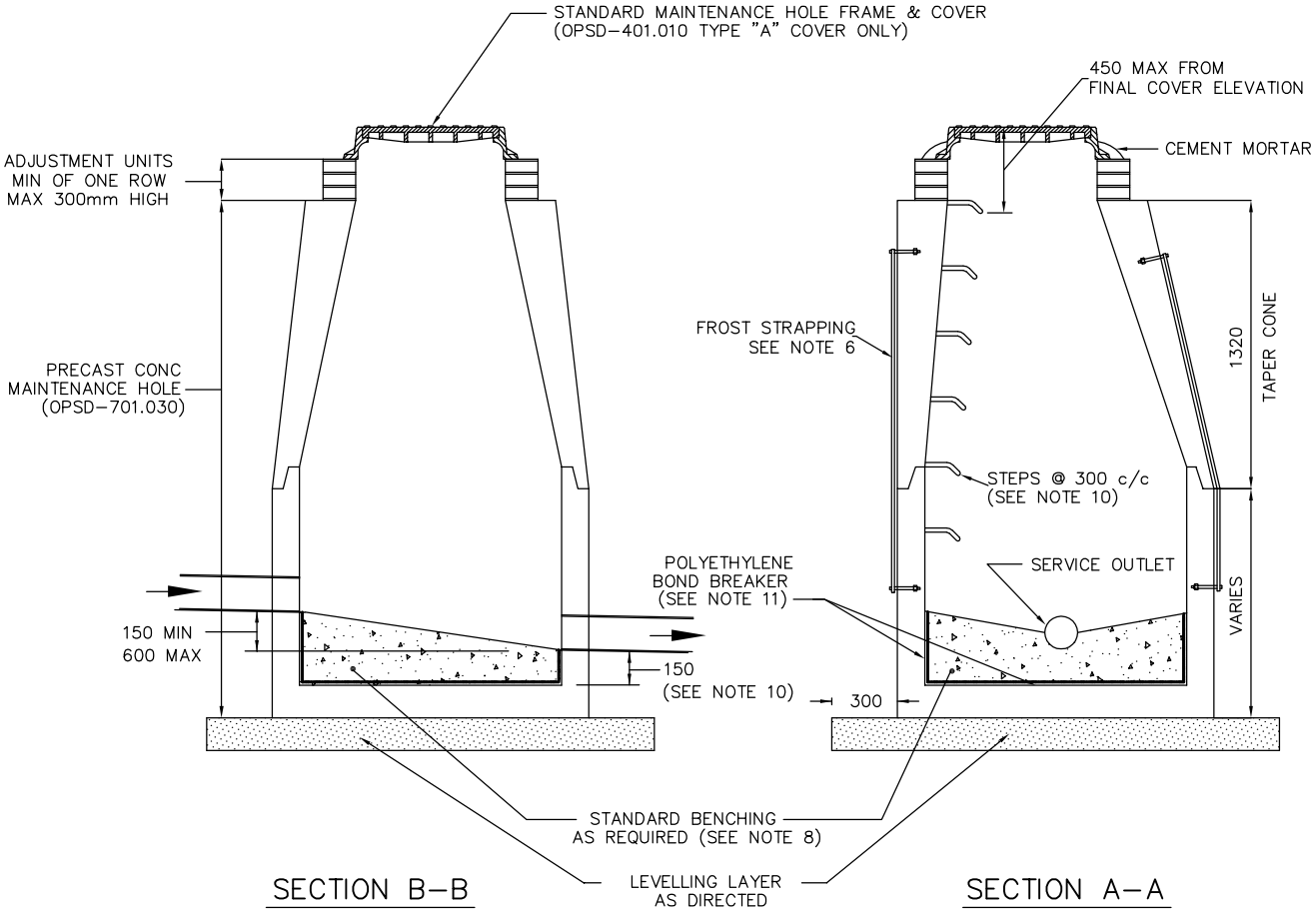
DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1942–1 (1 OF 1)
APP'D:	GSSD–980.101

NOTES:

1. THIS MAINTENANCE HOLE IS TO BE CONSTRUCTED ON ALL NON–RESIDENTIAL SERVICE CONNECTIONS.
2. ALTERNATES ARE NOT TO BE USED WITHOUT PRIOR APPROVAL FROM THE SEWER AND WATER ENGINEER.
3. MAINTENANCE HOLE INSTALLATION TO CONFORM WITH THE SPECIFICATIONS OUTLINED IN OPSS 407 AND GSSS 407.
4. FORM FOR THE INVERT SHALL BE MADE OF PVC.
5. FOR ELEVATION CHANGES, BETWEEN INLET & OUTLET, IN EXCESS OF 600 mm REFER TO OPSD–1003.010.
6. FOR STRAPPING DETAILS REFER TO OPSD–701.100.
7. ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS OTHERWISE INDICATED.
8. CLASS OF CONCRETE: 20 MPa AT 28 DAYS.
9. MAINTENANCE HOLE STEPS CIRCULAR ALUMINUM AS PER OPSD–405.010.
10. MAINTENANCE HOLE BASE TO BE A MINIMUM OF 150 mm BELOW THE INVERT OF THE OUTLET PIPE.
11. 150 mm SUMP TO BE BENCHED WITH A POLYETHYLENE BOND BREAKER MATERIAL BETWEEN THE MAINTENANCE HOLE BASE AND THE BENCHING.
12. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.



PLAN



SECTION B–B

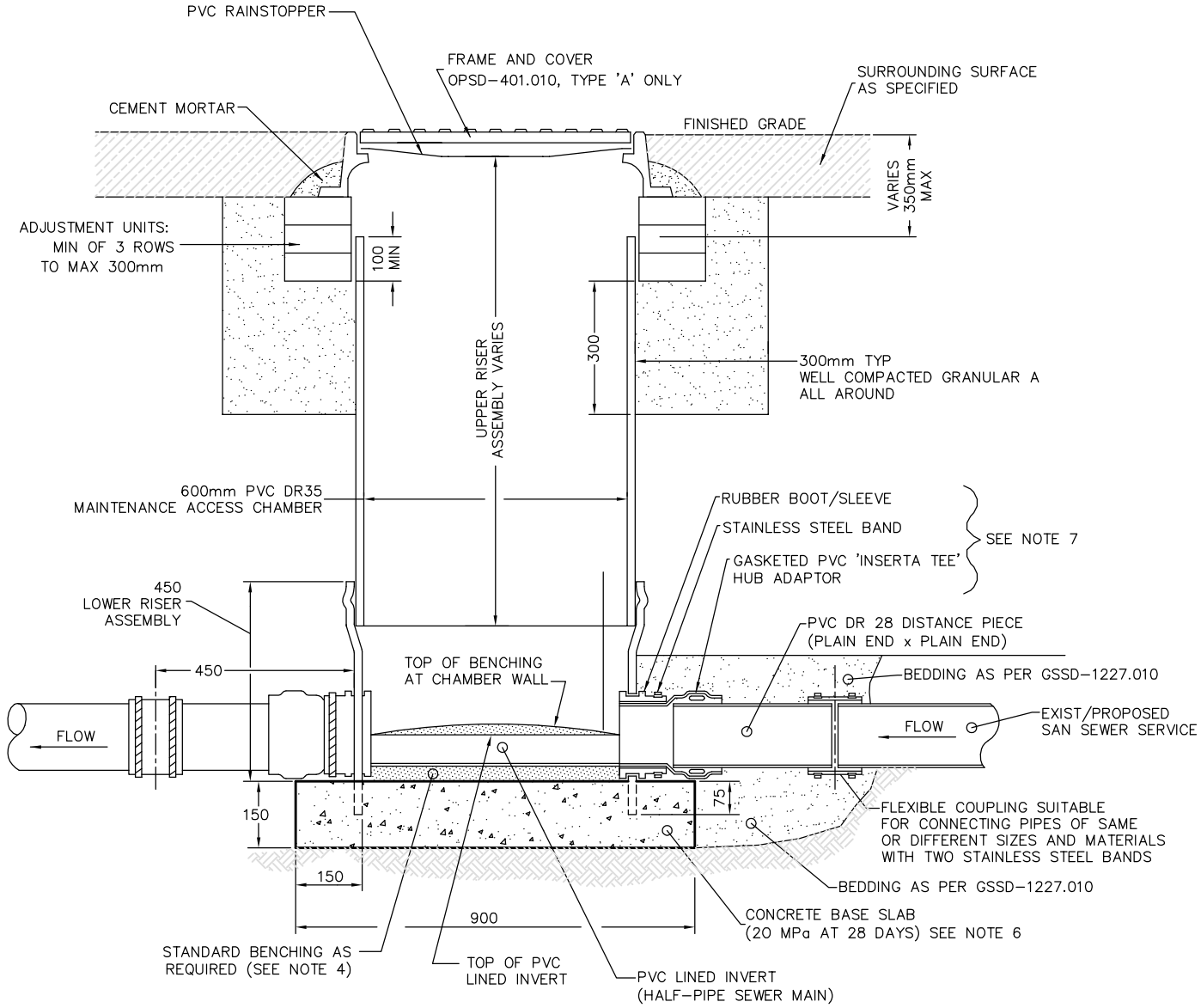
SECTION A–A

Greater Sudbury

PRECAST TEST MAINTENANCE HOLE

SANITARY SEWER SERVICE CONNECTION

DRAWN BY: STS/RF	REV No: 1
DATE: 2003–03–03	REV DATE: 2012–02–01
SCALE: NTS	CAD/FILE No.: A1953–1 (1 OF 1)
APP'D:	GSSD–1001.030



NOTES:

1. THIS MAINTENANCE ACCESS CHAMBER IS TO BE CONSTRUCTED ON ALL NON-RESIDENTIAL SERVICE CONNECTIONS.
2. ALTERNATES ARE NOT TO BE USED WITHOUT PRIOR APPROVAL FROM THE SEWER AND WATER ENGINEER.
3. MAINTENANCE ACCESS CHAMBER INSTALLATION TO CONFORM WITH THE SPECIFICATIONS OUTLINED IN OPSS 407 AND GSSS 407.
4. CONCRETE BENCHING SLOPE 1:12, CLASS OF CONCRETE 20 MPa AT 28 DAYS.
5. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX, APPLIED 15 mm THICK.
6. CONCRETE BASE SLAB: (20 MPa @ 28 DAYS) CONCRETE SHALL BE PLACED DIRECTLY AGAINST UNDISTURBED EARTH WALLS WHERE POSSIBLE.
7. "INSERTA TEE" METHOD OF INSTALLATION:
   a) CORE/CUT REQUIRED HOLES (WITH HOLE SAW FOR PVC PIPE) INTO SIDES OF 600 mm ACCESS CHAMBER/PIPE.

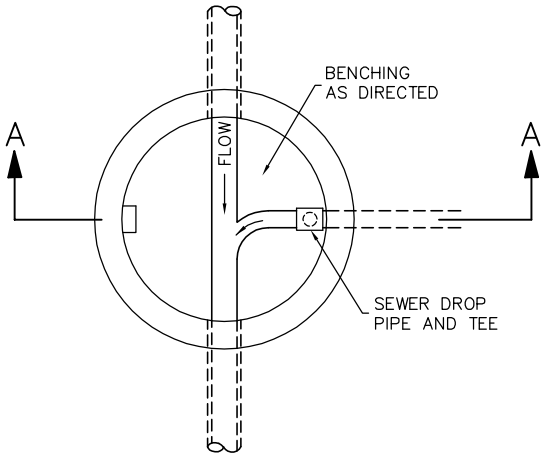
INSERTA TEE SIZE	HOLE DIA
100 mm	112.5 mm
150 mm	162.5 mm
200 mm	218.8 mm

   b) INSERT RUBBER BOOT/SLEEVE INTO CORED HOLE
   c) APPLY INSERTA TEE SOLUTION TO THE INSIDE OF THE RUBBER BOOT/SLEEVE AND TO THE OUTSIDE OF THE PVC HUB ADAPTOR. DO NOT USE OIL BASED LUBRICANT.
   d) INSERT THE PVC HUB ADAPTOR INTO THE RUBBER BOOT/SLEEVE
   e) TIGHTEN THE STAINLESS STEEL BAND
8. THIS CHAMBER IS NOT DESIGNED TO SUPPORT VEHICULAR LOADS. THIS CHAMBER TO BE CONSTRUCTED IN LANDSCAPED AREAS. GSSD 1001.030 SHALL BE USED IN AREA OF VEHICULAR LOADING.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

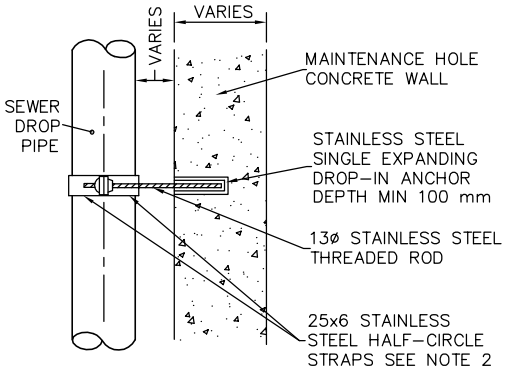
Greater Sudbury

MAINTENANCE ACCESS CHAMBER
SANITARY SEWER SERVICE CONNECTION

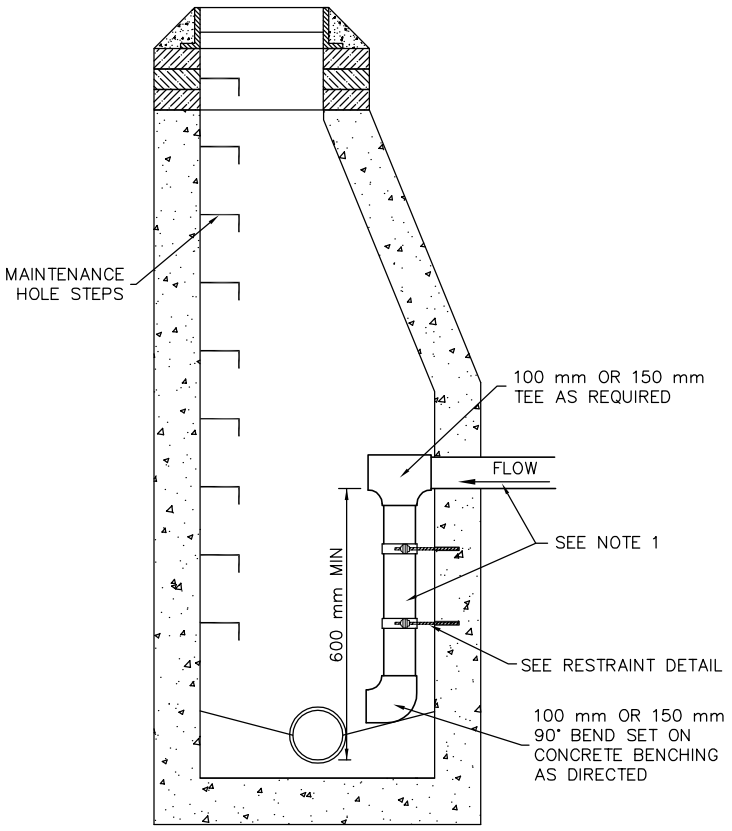
DRAWN BY: STS/WJK/RF	REV No: 1
DATE: 2003-03-03	REV DATE: 2012-02-01
SCALE: NTS	CAD/FILE No.: A2024-1 (1 OF 1)
APP'D:	GSSD-1001.040



PLAN VIEW



RESTRAINT DETAIL



SECTION A – A

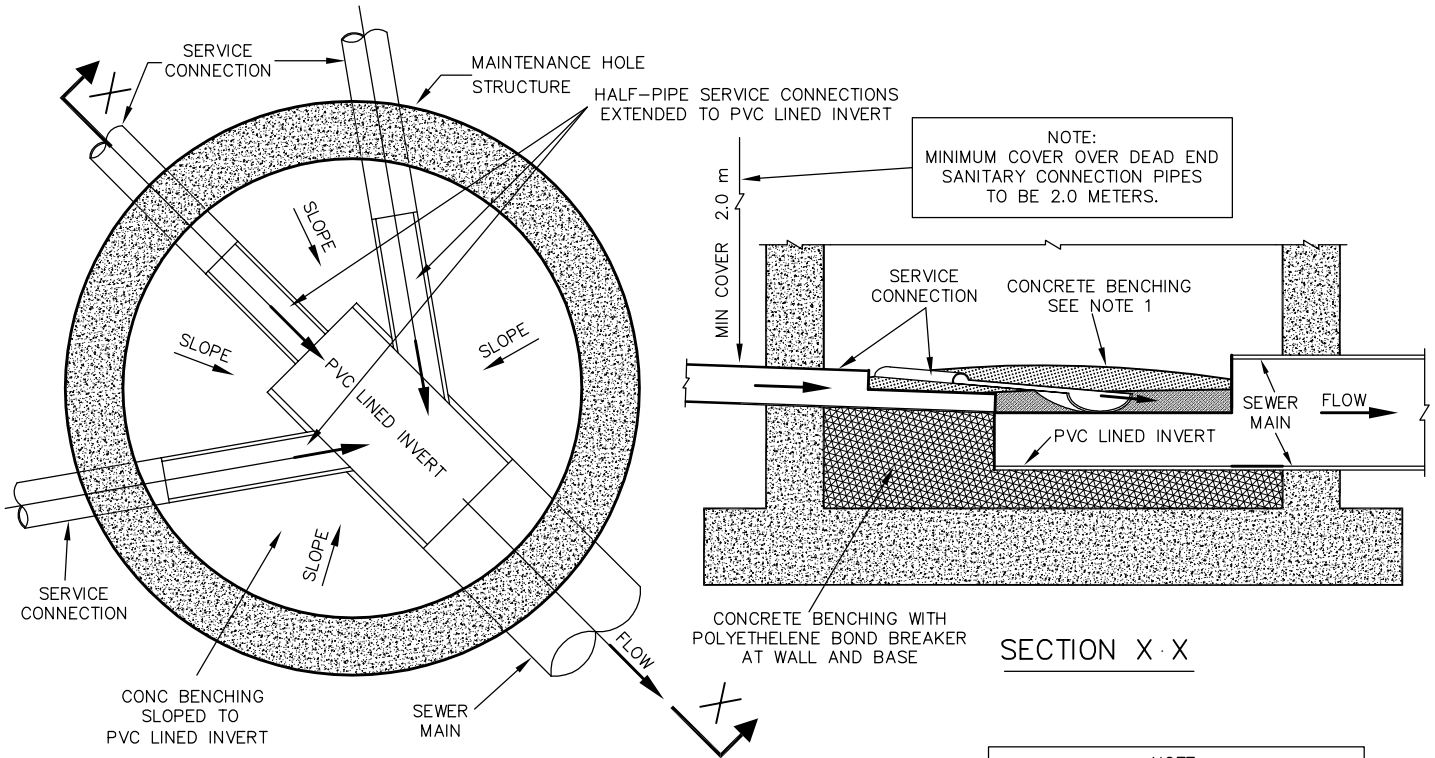
NOTES:

1. MAXIMUM PIPE SIZE 150 mm.
2. MINIMUM TWO RESTRAINTS PER DROP PIPE.

Sudbury Greater Grand

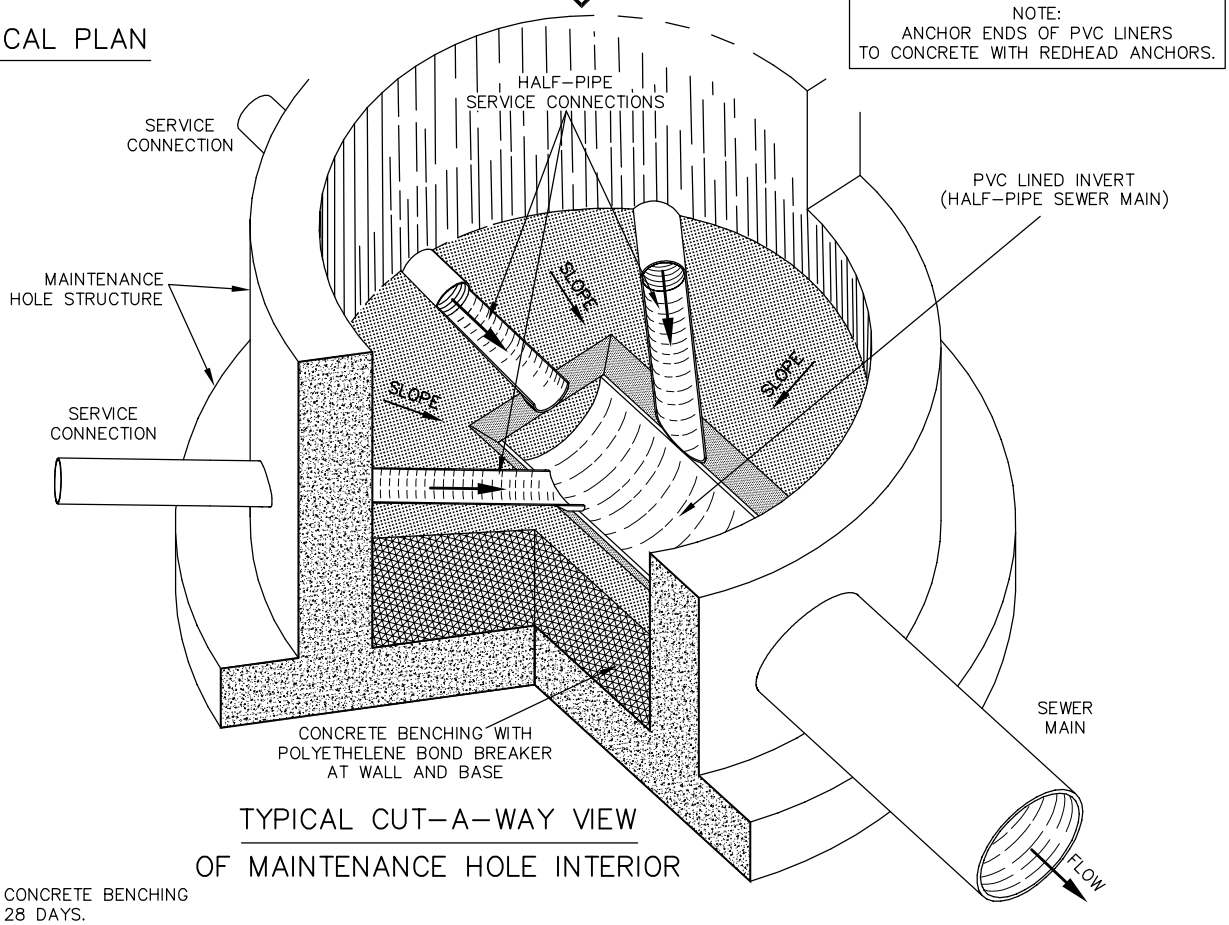
INTERNAL DROP STRUCTURE FOR SANITARY SEWER SERVICE FOR EXISTING MAINTENANCE HOLE

DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003–03–03	REV DATE: MAY/08
SCALE: NTS	CAD/FILE No.: A2017–1 (1 OF 1)
APP'D:	GSSD–1003.030



TYPICAL PLAN

SECTION X-X



TYPICAL CUT-A-WAY VIEW OF MAINTENANCE HOLE INTERIOR

NOTES:

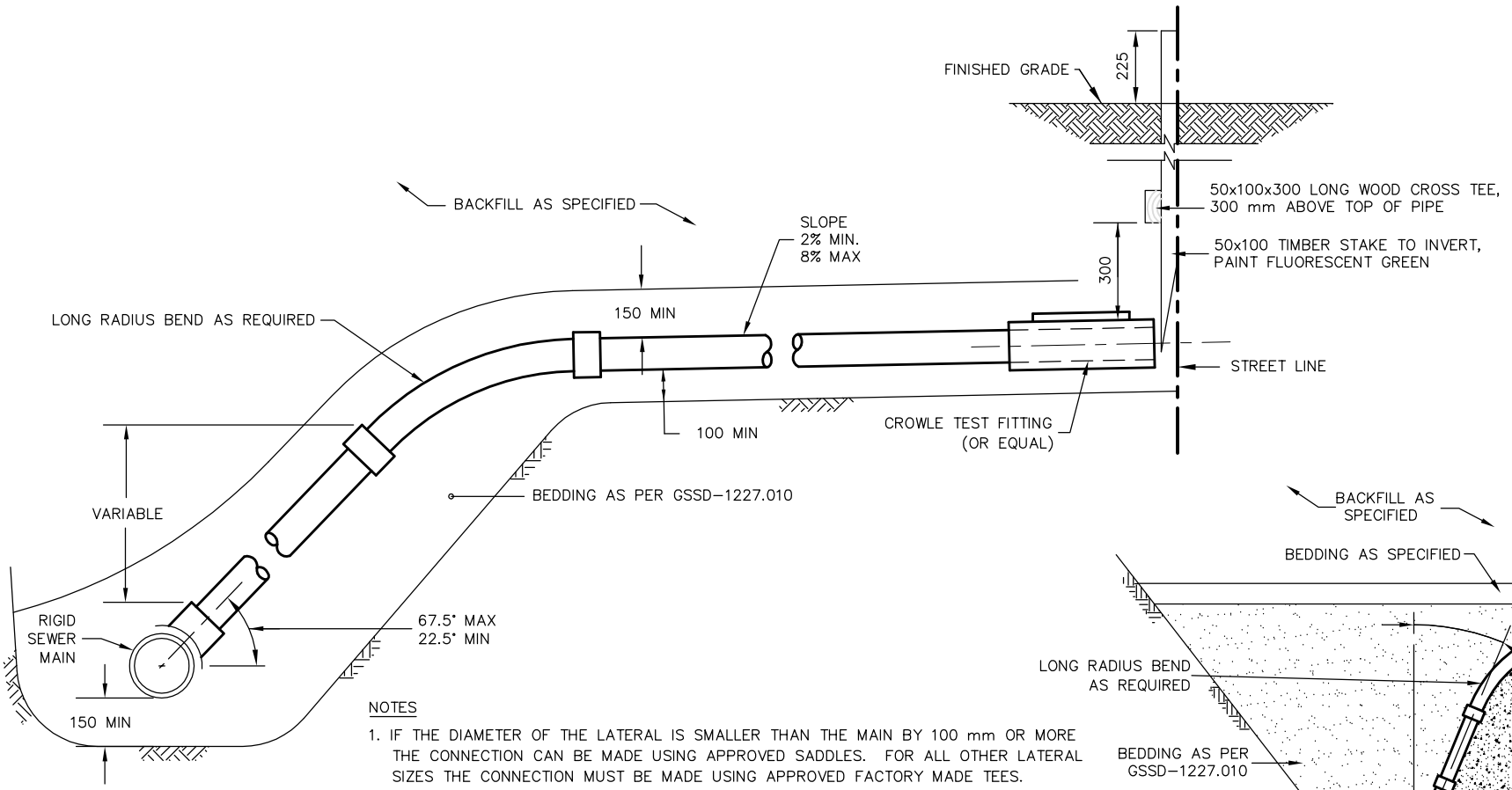
1. CLASS OF CONCRETE BENCHING 20 MPa @ 28 DAYS.

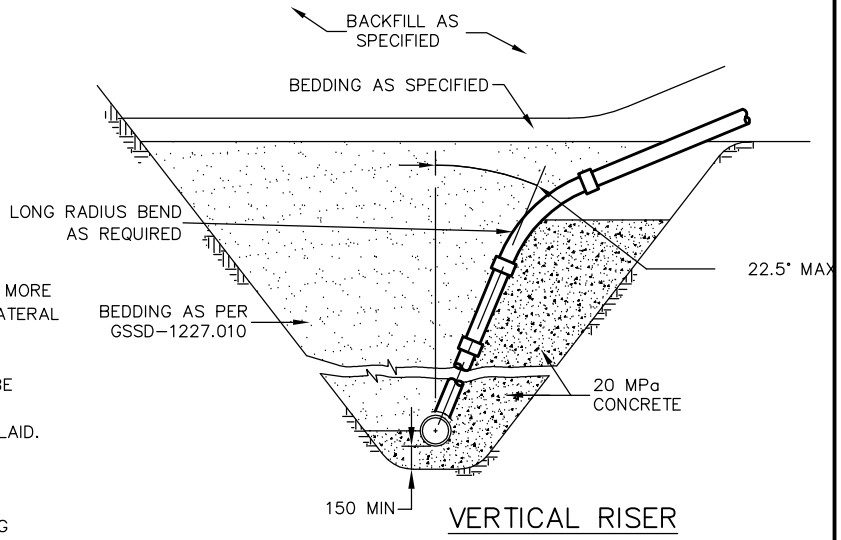
Sudbury Greater Grand

DEAD END MAINTENANCE HOLE

BENCHING DETAILS FOR SANITARY SERVICE CONNECTIONS & OUTLET

DRAWN BY: STS/RF	REV No:
DATE: 2003-03-03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1919-1 (1 OF 1)
APP'D:	GSSD-1004.020





VERTICAL RISER

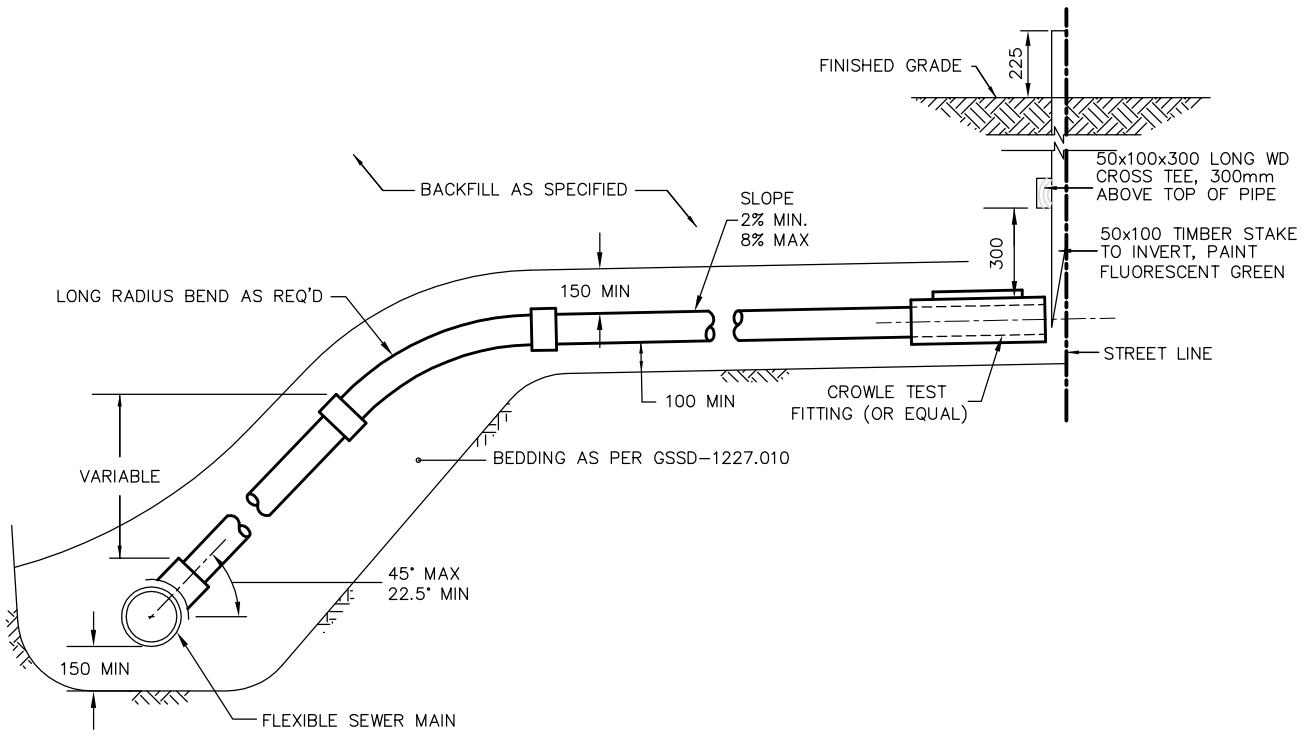
NOTES

1. IF THE DIAMETER OF THE LATERAL IS SMALLER THAN THE MAIN BY 100 mm OR MORE THE CONNECTION CAN BE MADE USING APPROVED SADDLES. FOR ALL OTHER LATERAL SIZES THE CONNECTION MUST BE MADE USING APPROVED FACTORY MADE TEES. FOR NEW MAIN CONSTRUCTION, FACTORY TEES ONLY TO BE USED.
2. FOR LATERALS EQUAL TO OR GREATER THAN 200 mm THE CONNECTION MUST BE MADE UTILIZING A MAINTENANCE HOLE AT THE MAIN.
3. SADDLES MUST BE INSTALLED ON THE MAIN PIPE BEFORE THE SERVICE PIPE IS LAID.
4. APPROVED CUT–IN TOOL MUST BE USED FOR FIELD MADE TEES.
5. SERVICE CONNECTION MUST BE SECURELY PLUGGED AT PROPERTY LINE WITH A CROWLE TEST FITTING.
6. PLUG AT PROPERTY LINE SHALL BE ADEQUATELY BRACED TO WITHSTAND TESTING PRESSURES.
7. TEST MAINTENANCE HOLE AT LOT LINE AS PER GSSD–1001.030 OR A MAINTENANCE ACCESS CHAMBER AS PER GSSD–1001.040 TO BE INSTALLED ON ALL NON–RESIDENTIAL SERVICES.
8. FOR VERTICAL RISER DETAIL CONCRETE BEDDING TO HAVE MINIMUM WIDTH OF 600mm.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Greater Grand Sudbury

SEWER SERVICE CONNECTIONS
FOR RIGID MAIN PIPE SEWER

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1954–1 (1 OF 1)
APP'D:	GSSD–1006.010



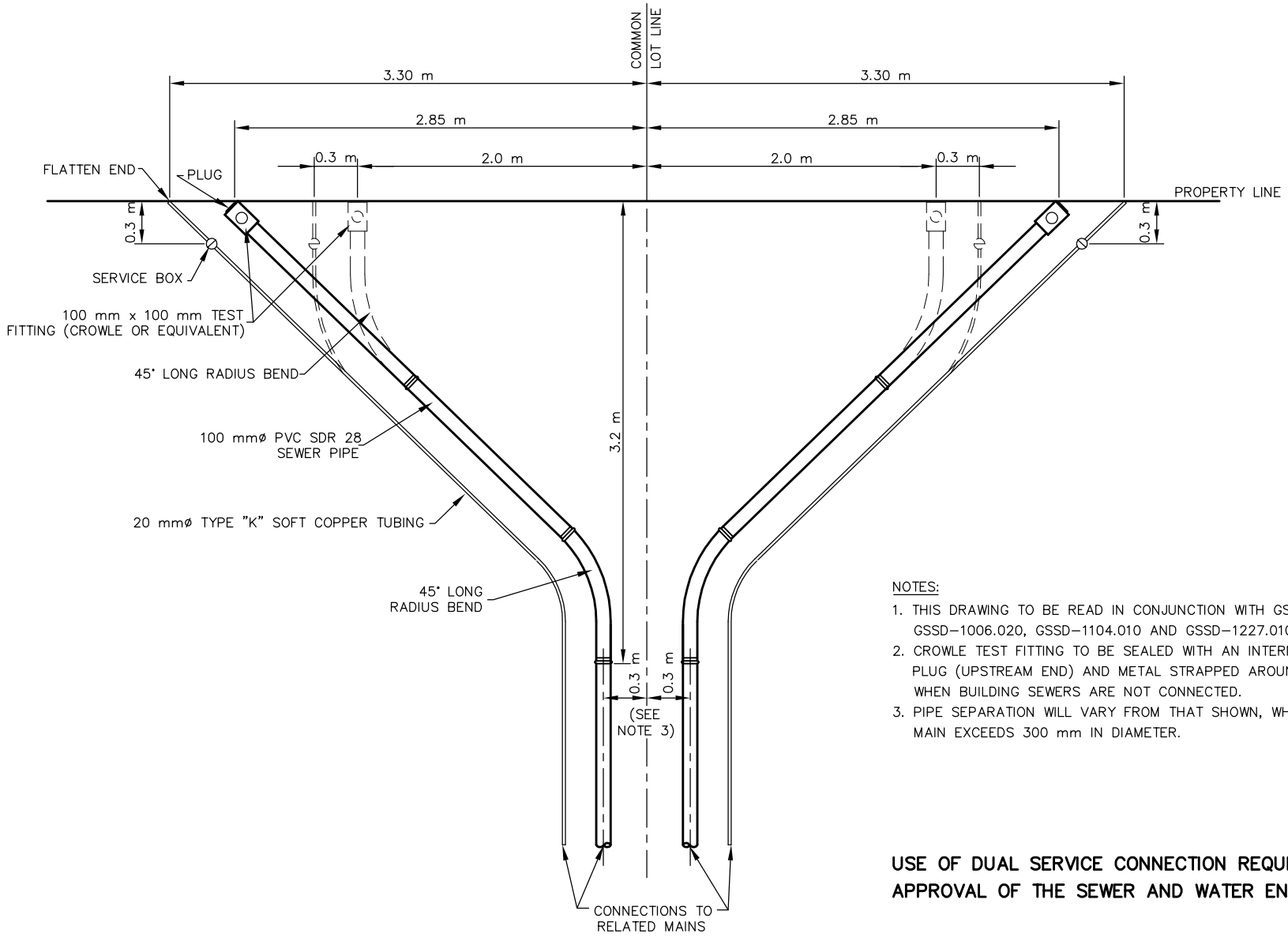
NOTES

1. IF THE DIAMETER OF THE LATERAL IS SMALLER THAN THE MAIN BY 100 mm OR MORE THE CONNECTION CAN BE MADE USING APPROVED SADDLES. FOR ALL OTHER LATERAL SIZES THE CONNECTION MUST BE MADE USING APPROVED FACTORY MADE TEES. FOR NEW MAIN CONSTRUCTION, FACTORY TEES ONLY TO BE USED.
2. FOR LATERALS EQUAL TO OR GREATER THAN 200 mm THE CONNECTION MUST BE MADE UTILIZING A MAINTENANCE HOLE AT THE MAIN.
3. SADDLES MUST BE INSTALLED ON THE MAIN PIPE BEFORE THE SERVICE PIPE IS LAID.
4. APPROVED CUT-IN TOOL MUST BE USED FOR FIELD MADE TEES.
5. SERVICE CONNECTION MUST BE SECURELY PLUGGED AT PROPERTY LINE WITH A CROWLE TEST FITTING.
6. PLUG AT PROPERTY LINE SHALL BE ADEQUATELY BRACED TO WITHSTAND TESTING PRESSURES.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
8. MAINTENANCE HOLE AT LOT LINE AS PER GSSD-1001.030 TO BE INSTALLED ON ALL NON-RESIDENTIAL SERVICES.

Greater Sudbury

SEWER SERVICE CONNECTIONS
FOR FLEXIBLE MAIN PIPE SEWER

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003-03-03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1955-1 (1 OF 1)
APP'D:	GSSD-1006.020



NOTES:

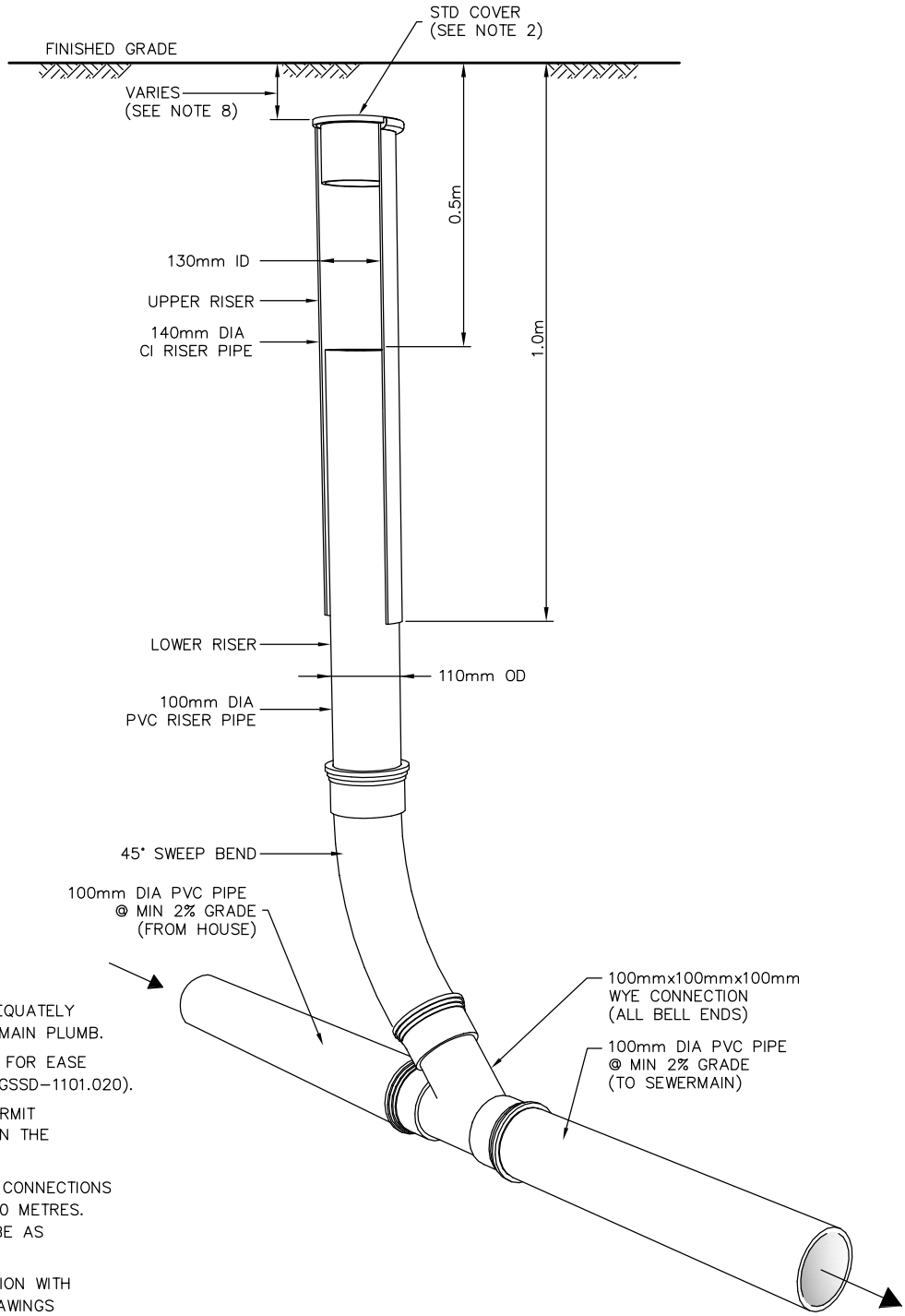
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH GSSD–1006.010, GSSD–1006.020, GSSD–1104.010 AND GSSD–1227.010.
2. CROWLE TEST FITTING TO BE SEALED WITH AN INTERNAL–EXPANDING PLUG (UPSTREAM END) AND METAL STRAPPED AROUND EXTERIOR WHEN BUILDING SEWERS ARE NOT CONNECTED.
3. PIPE SEPARATION WILL VARY FROM THAT SHOWN, WHEN THE SEWER MAIN EXCEEDS 300 mm IN DIAMETER.

USE OF DUAL SERVICE CONNECTION REQUIRES WRITTEN APPROVAL OF THE SEWER AND WATER ENGINEER.

Greater Sudbury | Grand

DUAL SERVICE CONNECTIONS IN A COMMON TRENCH (SEWER & WATER)

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1956–1 (1 OF 1)
APP'D:	GSSD–1006.030



NOTES:

1. UPPER AND LOWER ASSEMBLIES TO BE ADEQUATELY BRACED WHILE BACKFILLING, AND MUST REMAIN PLUMB.
2. CLEANOUT COVER SHALL BE OF STD. IRON FOR EASE OF LOCATING WITH DIP NEEDLE (SEE STD. GSSD–1101.020).
3. DEPTH OF WYE MUST BE ADEQUATE TO PERMIT CONNECTION TO OUTLET PIPE AND MAINTAIN THE MINIMUM GRADE OF 2%.
4. THIS STANDARD SHALL APPLY FOR SEWER CONNECTIONS WHEN THE LENGTH OF SERVICE EXCEEDS 30 METRES. LOCATION OF VERTICAL CLEANOUT SHALL BE AS SPECIFIED BY THE ENGINEER.
5. THIS STANDARD TO BE READ IN CONJUNCTION WITH CITY OF GREATER SUDBURY STANDARD DRAWINGS GSSD–1006.030 AND GSSD–1227.010.
6. ALL PVC PIPE SHALL BE S.D.R. 28.
7. BACKFILL MATERIAL SHALL CONSIST OF COMPACTED SAND BEDDING IN 300 mm LAYERS.
8. COVER SHALL BE 100mm BELOW FINISHED GRADE IN SODDED OR GRAVEL AREAS. COVER SHALL BE FLUSH WITH FINISHED GRADE IF IN ASHPALT OR CONCRETE.

Greater Grand Sudbury

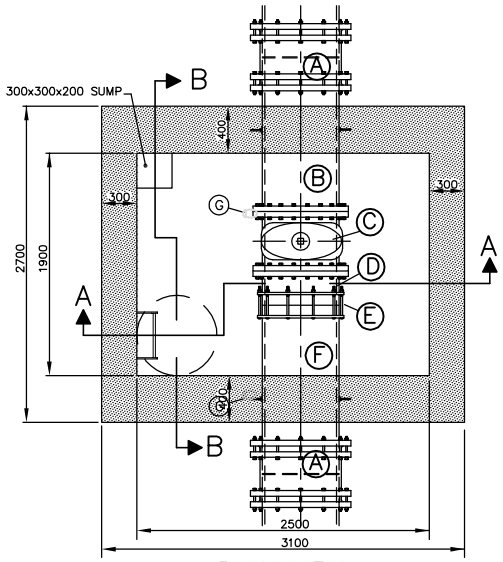
STANDARD VERTICAL CLEANOUT ON A SANITARY SEWER SERVICE

DRAWN BY: SAG	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1957–1 (1 OF 1)
APP'D:	GSSD–1025.010

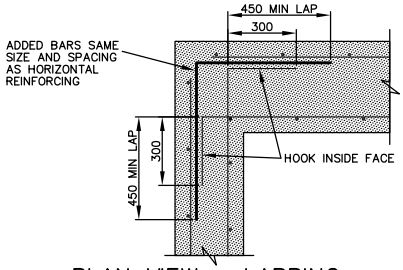
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5. a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
   TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
   BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
   b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
   ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS B & F WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'B', 'D', AND 'F' SHALL BE MIN. CL 53 DUCTILE IRON CONFORMING TO AWWA C150/C151 HAVING A CEMENT LINING C104 AND EXTERIOR ASPHALTIC/BITUMINOUS COATING.
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN OVERALL VALVE HEIGHT OF 1240 mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE WALL THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CAULKING BOTH SIDES..
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

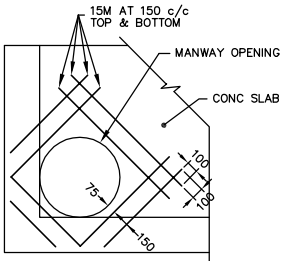
ITEM	DESCRIPTION (SEE SECTION B-B & NOTES)	ENDS	CORROSION PROTECTION
A	400 mm CAST IRON MECHANICAL JOINT SOLID SLEEVES	———	FULL
B	400 mm X 1350 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	FLANGE & PLAIN	FULL
C	400 mm RESILIENT WEDGE GATE VALVE MEETING THE REQUIREMENTS OF AWWA C509	FLANGE & FLANGE	FULL
D	400 mm DUCTILE IRON JOINT ADAPTER DISTANCE PIECE (CEMENT LINED) CL 53	FLANGE & PLAIN	FULL
E	400 mm SMITH-BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
F	400 mm X 1450 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	PLAIN & PLAIN	FULL
G	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



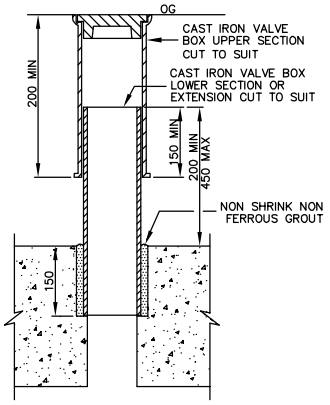
PLAN VIEW



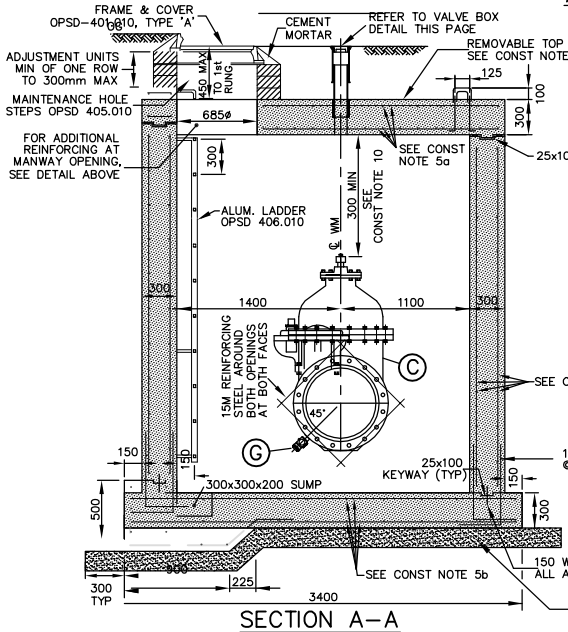
PLAN VIEW – LAPPING DETAIL AT CORNERS



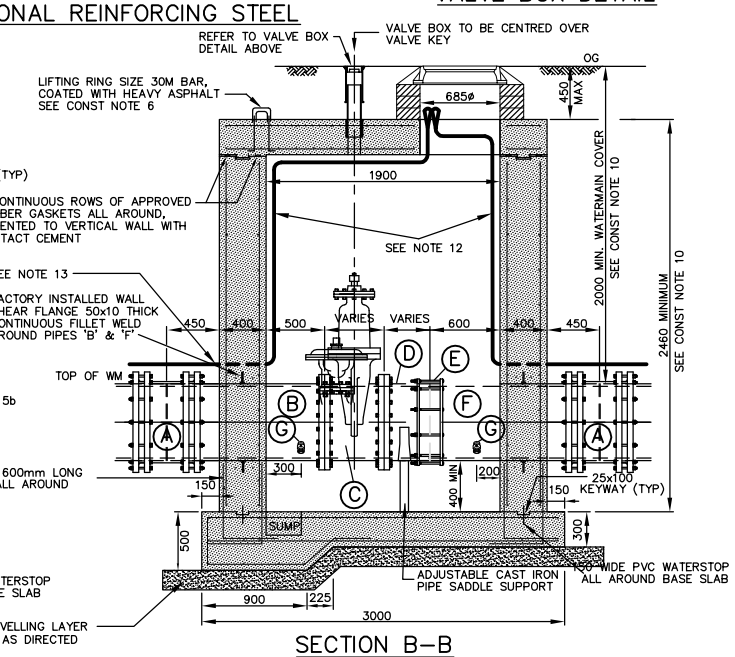
MANWAY OPENING ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A–A



SECTION B–B

Sudbury Greater Grand

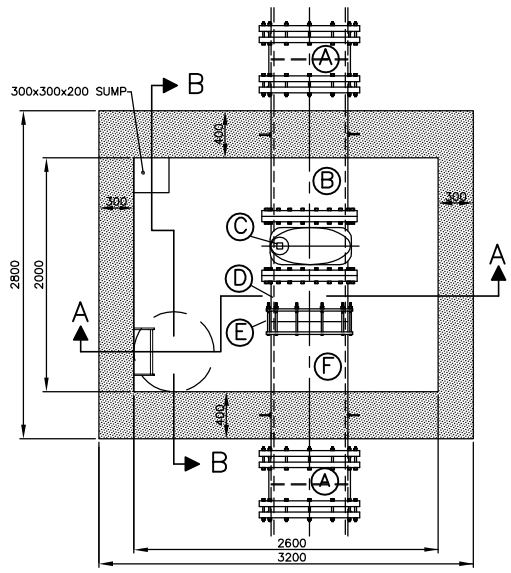
CAST IN PLACE VALVE CHAMBER FOR 400 mmø WATERMAIN

DRAWN BY: WK/SS/RF/BK	REV No: 4
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1959-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-1100.012

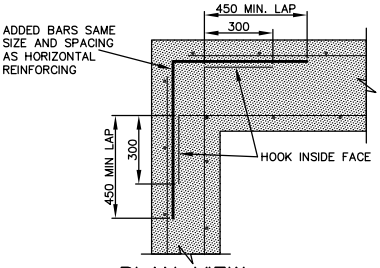
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5. a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
   TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
   BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
   b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
   ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS B & F WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'B', 'D', AND 'F' SHALL BE MIN. CL 53 DUCTILE IRON CONFORMING TO AWWA C150/C151 HAVING A CEMENT LINING C104 AND EXTERIOR ASPHALTIC/BITUMINOUS COATING.
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN OVERALL VALVE HEIGHT OF 1475 mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING IN CONCRETE, ALL METALLIC FITTING & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE WALL THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CAULKING BOTH SIDES.
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

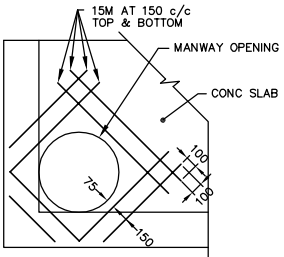
ITEM	DESCRIPTION (SEE SECTION B-B & NOTES)	ENDS	CORROSION PROTECTION
A	500 mm CAST IRON MECHANICAL JOINT SOLID SLEEVES	———	FULL
B	500 mm X 1350 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	FLANGE & PLAIN	FULL
C	500 mm RESILIENT WEDGE GATE VALVE MEETING THE REQUIREMENTS OF AWWA C509	FLANGE & FLANGE	FULL
D	500 mm DUCTILE IRON JOINT ADAPTER DISTANCE PIECE (CEMENT LINED) CL 53	FLANGE & PLAIN	FULL
E	500 mm SMITH-BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
F	500 mm X 1450 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	PLAIN & PLAIN	FULL
G	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



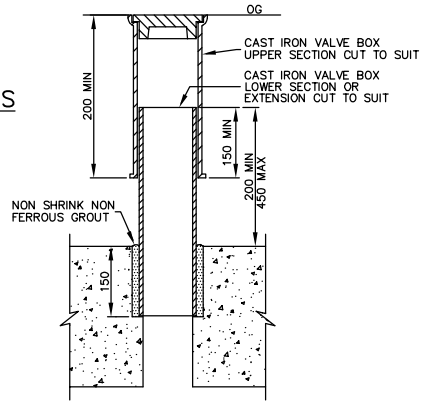
PLAN VIEW



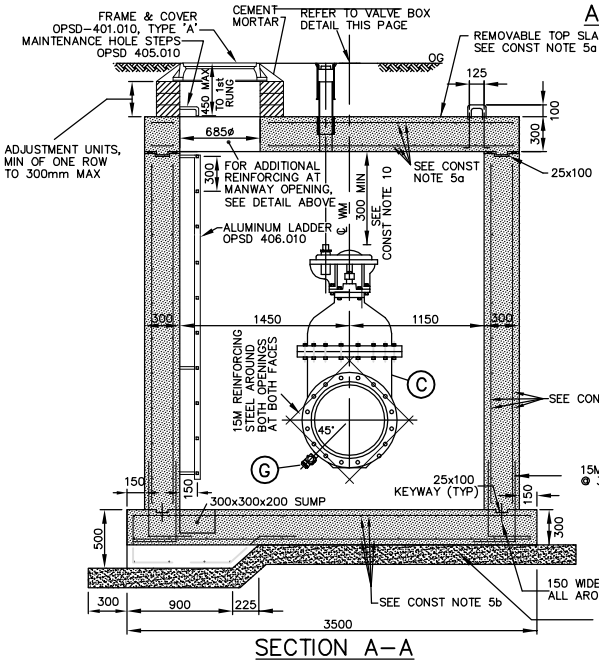
PLAN VIEW
LAPPING DETAIL AT CORNERS



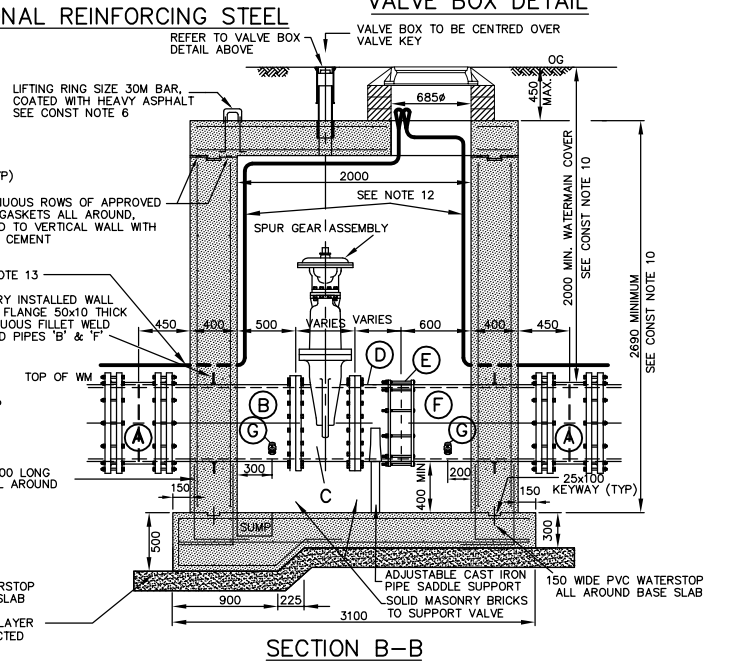
MANWAY OPENING
ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A-A



SECTION B-B

Sudbury Greater Grand

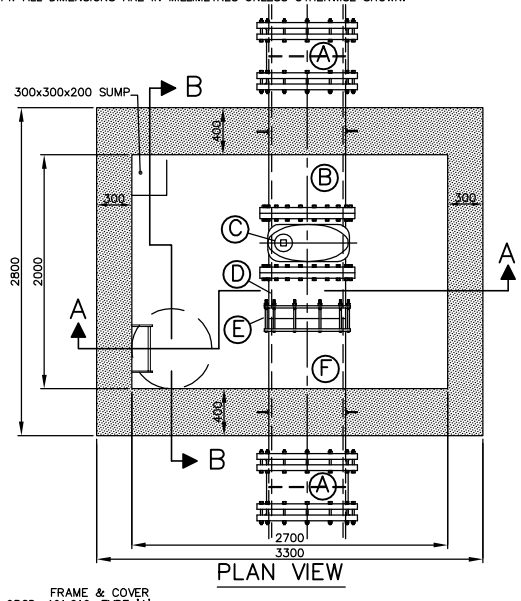
CAST IN PLACE VALVE CHAMBER FOR 500 mmø WATERMAIN

DRAWN BY: WK/SS/RF/BK	REV No: 4
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1960-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-1100.013

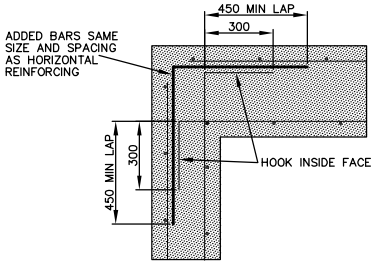
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5. a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
   TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
   BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
   b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
   ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS B & F WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'B', 'D', AND 'F' SHALL BE MIN. CL 53 DUCTILE IRON CONFORMING TO AWWA C150/C151 HAVING A CEMENT LINING C104 AND EXTERIOR ASPHALTIC/BITUMINOUS COATING.
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN OVERALL VALVE HEIGHT OF 1570 mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHAL HAVE CORROSION PROTECTION.
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE WALL THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CAULKING BOTH SIDES.
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

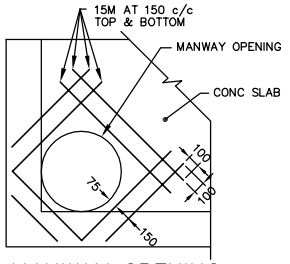
ITEM	DESCRIPTION (SEE SECTION B-B & NOTES)	ENDS	CORROSION PROTECTION
A	600 mm CAST IRON MECHANICAL JOINT SOLID SLEEVES	———	FULL
B	600 mm X 1350 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	FLANGE & PLAIN	FULL
C	600 mm GATE VALVE MEETING THE REQUIREMENTS OF AWWA C500	FLANGE & FLANGE	FULL
D	600 mm DUCTILE IRON JOINT ADAPTER DISTANCE PIECE (CEMENT LINED) CL 53	FLANGE & PLAIN	FULL
E	600 mm SMITH-BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
F	600 mm X 1450 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	PLAIN & PLAIN	FULL
G	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



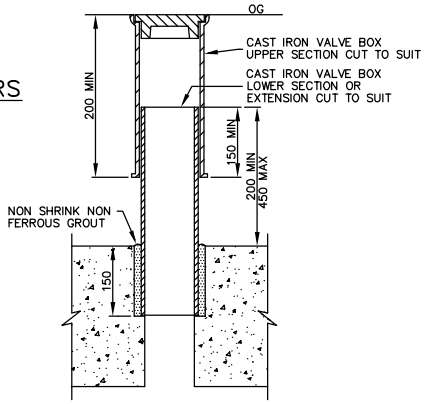
PLAN VIEW



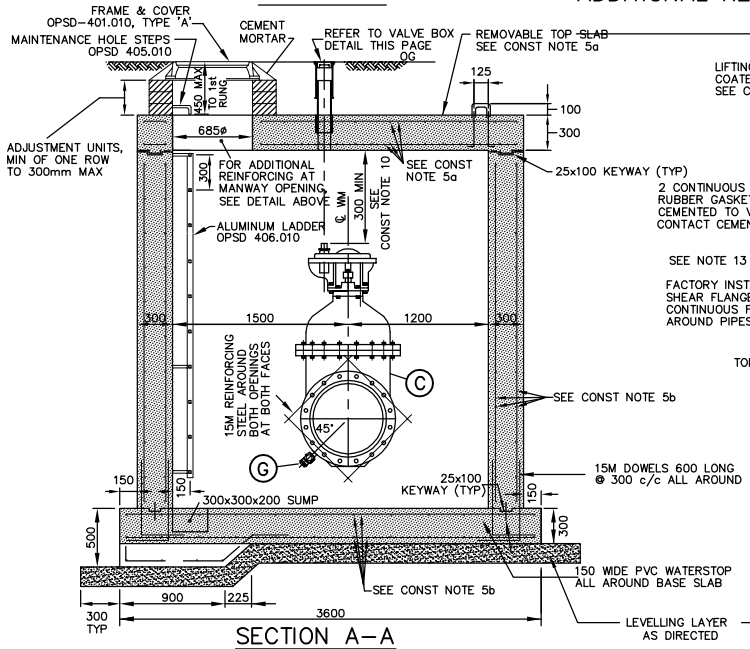
PLAN VIEW
LAPPING DETAIL AT CORNERS



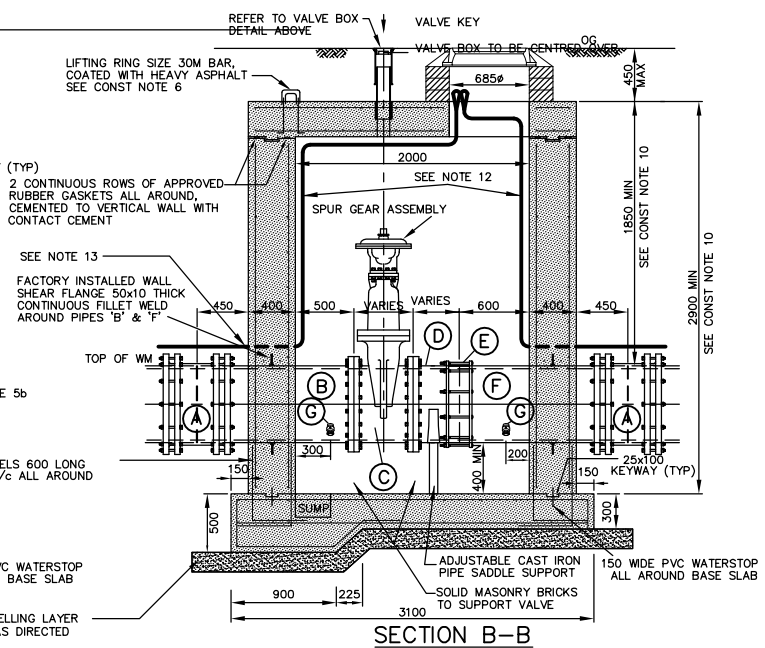
MANWAY OPENING
ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A-A



SECTION B-B

Sudbury Greater Grand

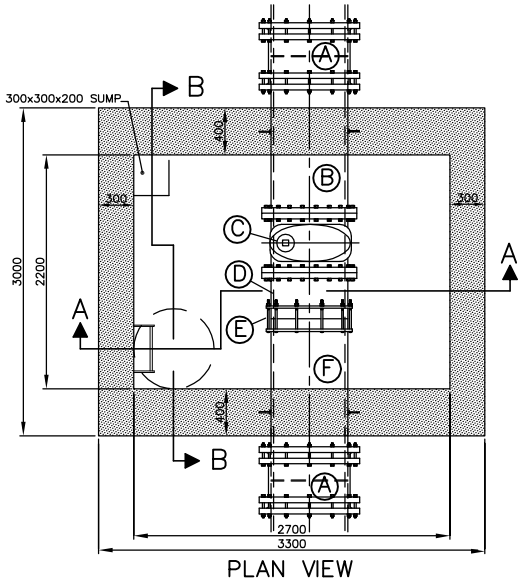
CAST IN PLACE VALVE CHAMBER FOR 600 mmø WATERMAIN

DRAWN BY: WK/SS/RF/BK	REV No: 4
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1961-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-1100.014

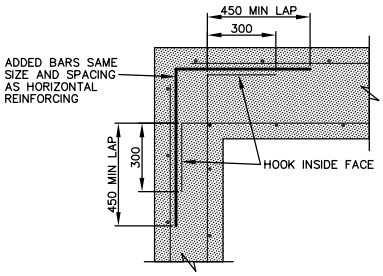
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5. a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
   TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
   BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
   b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
   ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS B & F WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'B', 'D', AND 'F' SHALL BE MIN. CL 53 DUCTILE IRON CONFORMING TO AWWA C150/C151 HAVING A CEMENT LINING C104 AND EXTERIOR ASPHALTIC/BITUMINOUS COATING.
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN OVERALL VALVE HEIGHT OF 1950 mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE WALL THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CAULKING BOTH SIDES.
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

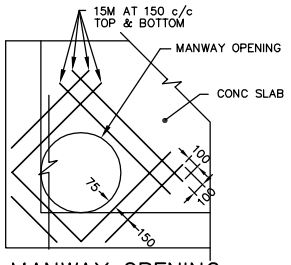
ITEM	DESCRIPTION (SEE SECTION B-B & NOTES)	ENDS	CORROSION PROTECTION
A	750 mm CAST IRON MECHANICAL JOINT SOLID SLEEVES	———	FULL
B	750 mm X 1350 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	FLANGE & PLAIN	FULL
C	750 mm GATE VALVE MEETING THE REQUIREMENTS OF AWWA C500	FLANGE & FLANGE	FULL
D	750 mm DUCTILE IRON JOINT ADAPTER DISTANCE PIECE (CEMENT LINED) CL 53	FLANGE & PLAIN	FULL
E	750 mm SMITH-BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
F	750 mm X 1450 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	PLAIN & PLAIN	FULL
G	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



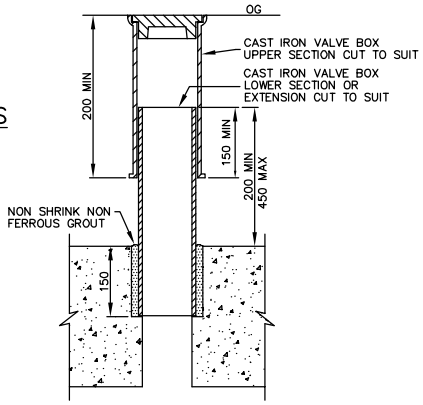
PLAN VIEW



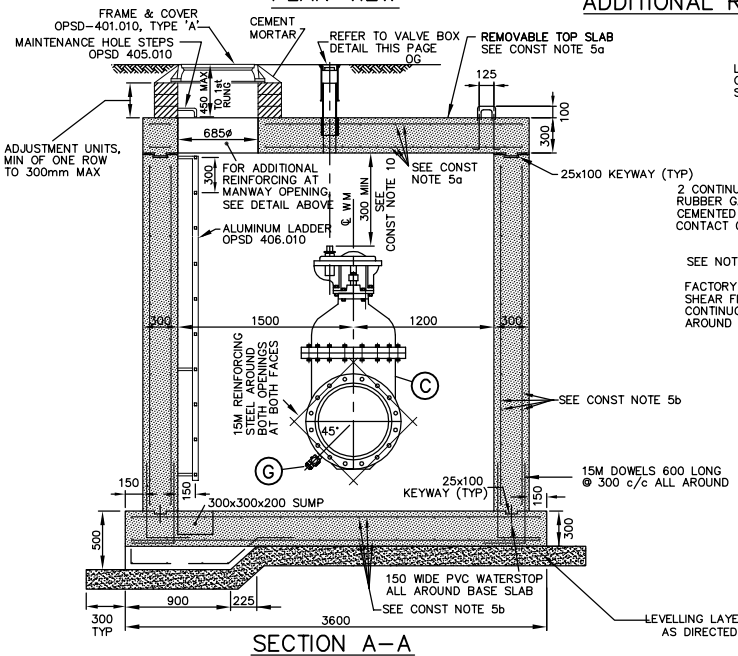
PLAN VIEW
LAPPING DETAIL AT CORNERS



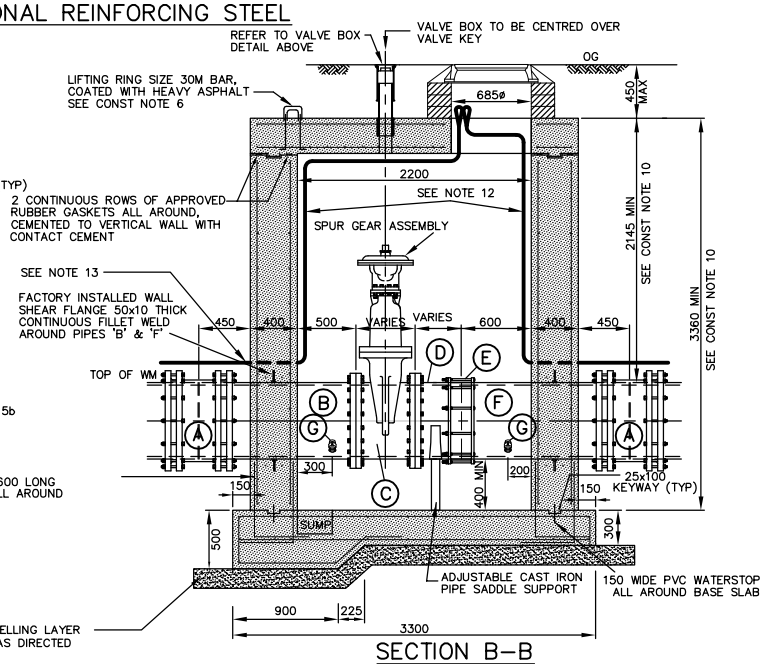
MANWAY OPENING
ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A-A



SECTION B-B

Sudbury Greater Grand

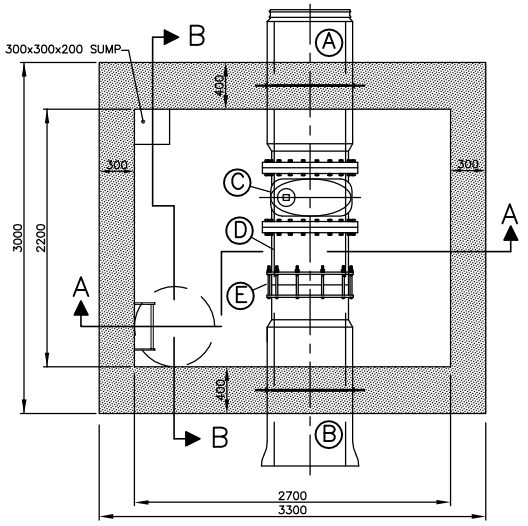
CAST IN PLACE VALVE CHAMBER FOR 750 mmø WATERMAIN WITH PVC & DI PIPE

DRAWN BY: STS/RF/BWK	REV No: 4
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1962-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-1100.015

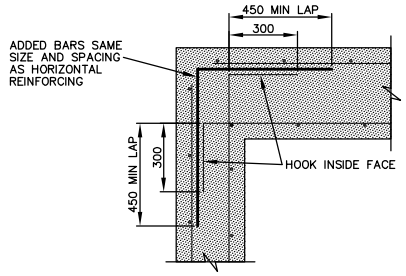
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5. a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
   TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
   BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
   b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
   ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS A & B WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'A', 'B', AND 'D' SHALL BE CONCRETE PRESSURE PIPE TO AWWA C301 CLASS 18 HAVING AN EXTERIOR MORTAR COATING OF SULPHATE RESISTING CEMENT.
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN OVERALL VALVE HEIGHT OF 1950mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE WALL THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CAULKING ON BOTH SIDES.
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

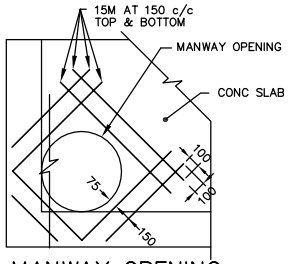
ITEM	DESCRIPTION (SEE SECTION B–B & NOTES)	ENDS	CORROSION PROTECTION
A	750 mm x 1400 mm CONC. PRESSURE PIPE C/W WALL FLANGE	SPIGOT & FLANGE END	FULL
B	750 mm x 1500 mm CONC. PRESSURE PIPE C/W WALL FLANGE	PLAIN STEEL END & BELL	FULL
C	750 mm GATE VALVE MEETING THE REQUIREMENTS OF AWWA C500	FLANGE & FLANGE	FULL
D	750 mm JOINT ADAPTER DISTANCE PIECE WITH INTERIOR CONCRETE CORE.	FLANGE & PLAIN	FULL
E	750 mm SMITH–BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
F	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



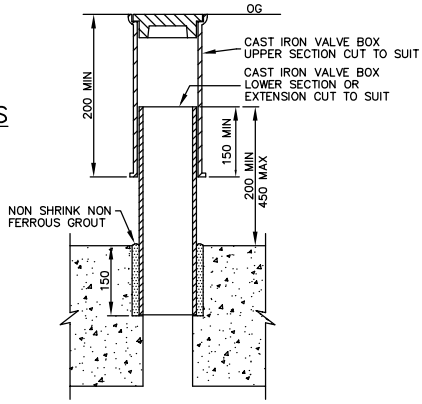
PLAN VIEW



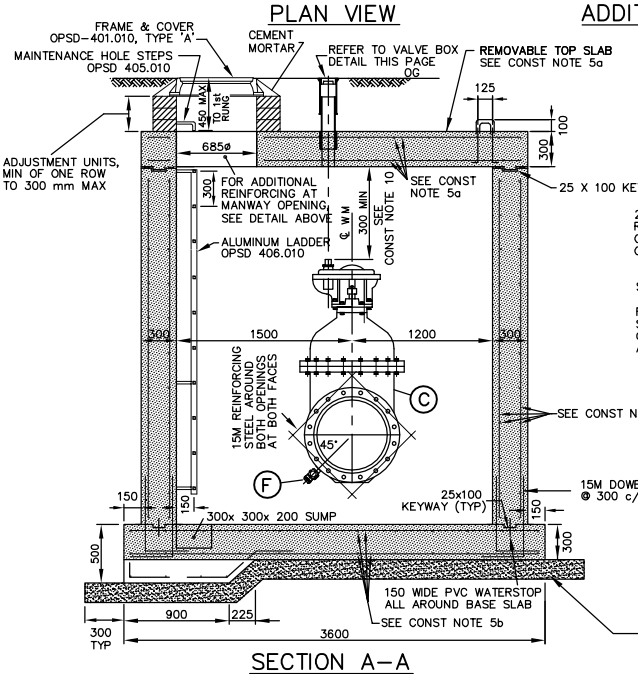
PLAN VIEW
LAPPING DETAIL AT CORNERS



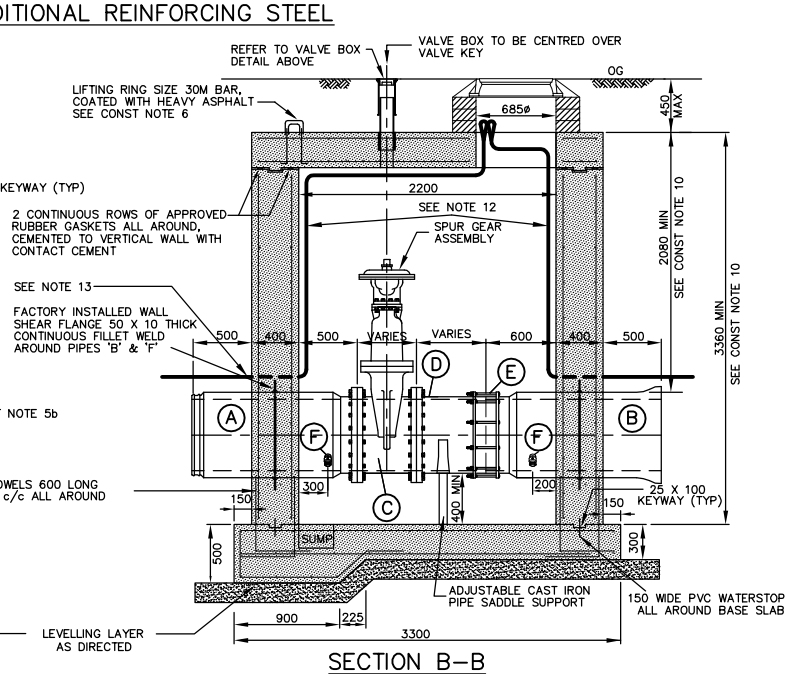
MANWAY OPENING
ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A–A



SECTION B–B

Sudbury Greater Grand

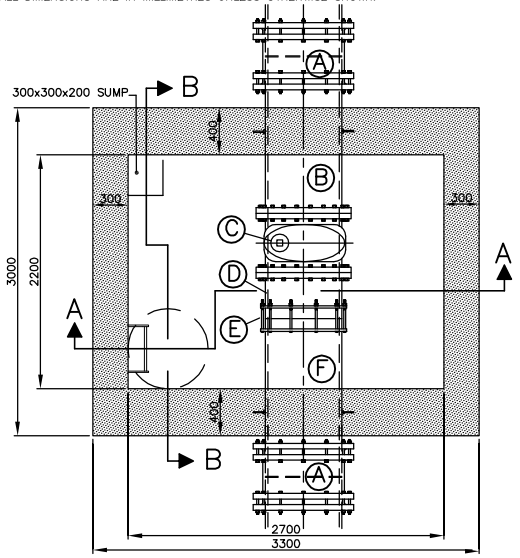
CAST IN PLACE VALVE CHAMBER FOR 750 mmø WATERMAIN WITH CONC PRESSURE PIPE

DRAWN BY: WJK/STS/RF	REV No: 2
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1963-1 (1 OF 1)
APP'D:	GSSD–1100.016

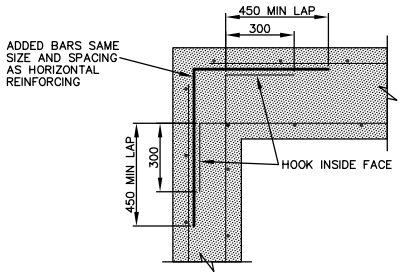
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5. a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
   TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
   BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
   b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
   ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS B & F WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'B', 'D'& 'F' SHALL BE CL 53 DUCTILE IRON CONFORMING TO AWWA C150/151 HAVING A CEMENT LINING C104 AND EXTERIOR ASPHALT/ BITUMOUS COATING
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN OVERALL VALVE HEIGHT OF 2245mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CAULKING BOTH SIDES.
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

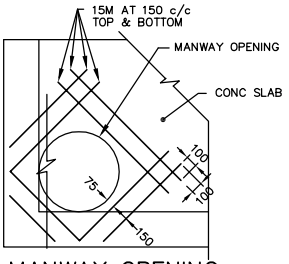
ITEM	DESCRIPTION (SEE SECTION B-B & NOTES)	ENDS	CORROSION PROTECTION
A	900 mm CAST IRON MECHANICAL JOINT SOLID SLEEVES	———	FULL
B	900 mm X 1350 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	FLANGE & PLAIN	FULL
C	900 mm GATE VALVE MEETING THE REQUIREMENTS OF AWWA C500	FLANGE & FLANGE	FULL
D	900 mm DUCTILE IRON JOINT ADAPTER DISTANCE PIECE (CEMENT LINED) CL 53	FLANGE & PLAIN	FULL
E	900 mm SMITH-BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
F	900 mm X 1450 mm DUCTILE IRON (CEMENT LINED) CL 53 c/w WALL SHEAR FLANGE	PLAIN & PLAIN	FULL
G	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



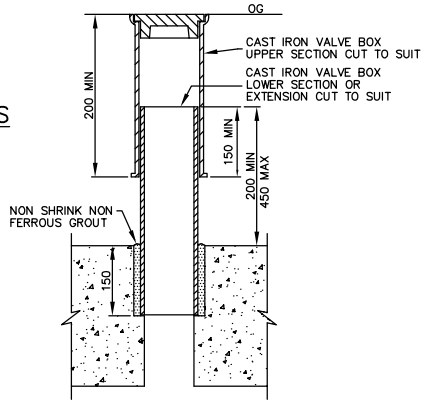
PLAN VIEW



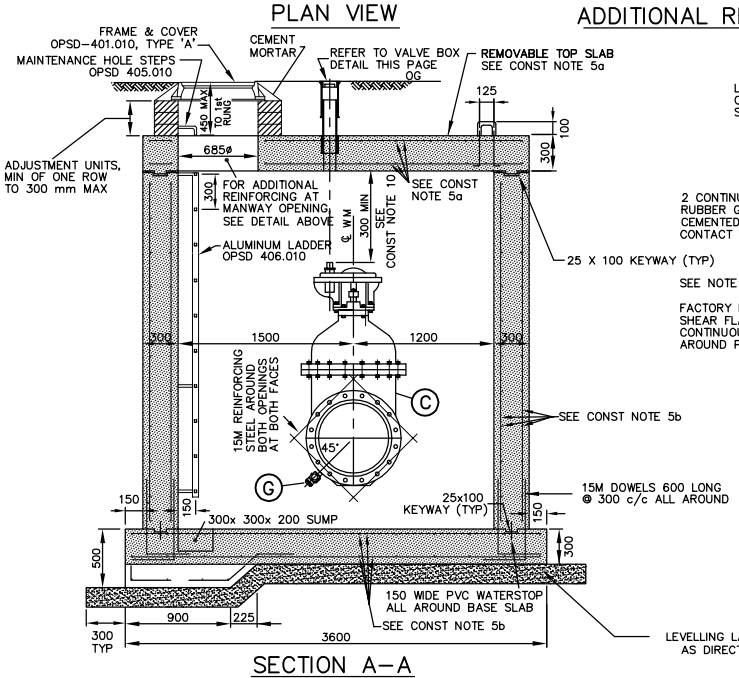
PLAN VIEW
LAPPING DETAIL AT CORNERS



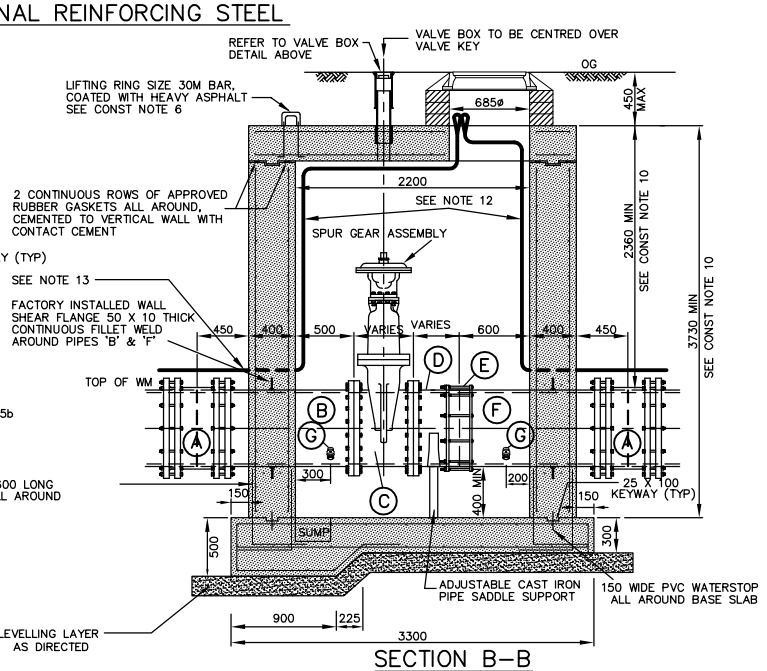
MANWAY OPENING
ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A-A



SECTION B-B

Sudbury Greater Grand

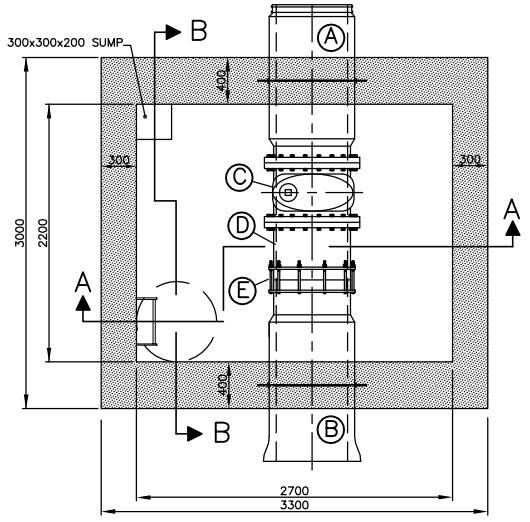
CAST IN PLACE VALVE CHAMBER FOR 900 mmø WATERMAIN WITH PVC & DI PIPE

DRAWN BY: STS/RF/BWK	REV No: 2
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A2014-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-1100.017

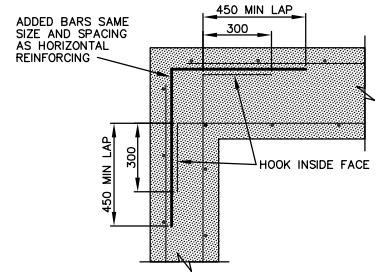
CONSTRUCTION NOTES:

1. REINFORCING STEEL TO HAVE MINIMUM 50 mm CLEAR COVER.
2. CLASS OF CONCRETE TO BE 32 MPa (AIR ENTRAINED) AT 28 DAYS.
3. IN OFF ROAD AREAS, ORIGINAL GROUND IMMEDIATELY ABOUT CHAMBER SHALL BE SLOPED TO DIRECT SURFACE RUNOFF AWAY FROM STRUCTURE ACCESS.
4. ADJUSTMENT UNITS TO BE PARGED ON THE OUTSIDE WITH 1:3 NON-SHRINK MORTAR MIX APPLIED 15 mm THICK.
5a. REINFORCING STEEL FOR REMOVEABLE TOP SLAB:
TOP BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
BOTTOM BARS TO BE SIZE 15M AT 150 mm c/c BOTH WAYS.
b. REINFORCING STEEL FOR WALLS AND BASE SLAB:
ALL BARS TO BE SIZE 15M AT 300 mm c/c BOTH WAYS.
6. FOUR LIFTING RINGS TO BE INSTALLED IN ROOF SLAB IN POSITIONS AS TO PROVIDE A BALANCED REMOVAL OF SLAB SHOULD IT BE NECESSARY.
7. THE WALL SECTION OF THE VALVE CHAMBER IS TO BE POURED DIRECTLY AROUND BOTH ITEMS A & B WHICH SHALL BE IN PLACE PRIOR TO ANY CONCRETE BEING POURED.
8. PIECES 'A', 'B', AND 'D' SHALL BE CONCRETE PRESSURE PIPE TO AWWA C301 CLASS 18 HAVING AN EXTERIOR MORTAR COATING OF SULPHATE RESISTING CEMENT.
9. ALL FLANGES ARE TO BE FACTORY WELDED TO AWWA C207 CLASS D.
10. HEIGHT OF VALVE CHAMBER STRUCTURE AND DEPTH OF WATERMAIN WILL BE BASED ON AN AN OVERALL VALVE HEIGHT OF 2245mm FROM THE CENTRELINE OF THE WATERMAIN TO THE TOP OF THE VALVE OPERATING NUT, IF THE VALVE IS TALLER THE CONTRACTOR IS TO INCREASE THESE DIMENSIONS.
11. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
12. TRACER WIRE TO BE ATTACHED TO WALL AND BOTTOM OF DECK USING APPROVED CABLE STRAPS AT 600 mm SPACING.
13. TRACER WIRE CONTINUES THROUGH CONCRETE AWLL THROUGH 6 mm ø DRILL HOLE. HOLE TO BE SEALED WITH EXTERIOR SILICONE CALKING BOTH SIDES.
14. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

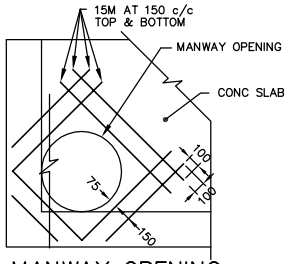
ITEM	DESCRIPTION (SEE SECTION B–B & NOTES)	ENDS	CORROSION PROTECTION
Ⓐ	900 mm x 1400 mm CONC. PRESSURE PIPE C/W WALL FLANGE	SPIGOT & FLANGE END	FULL
Ⓑ	900 mm x 1500 mm CONC. PRESSURE PIPE C/W WALL FLANGE	PLAIN STEEL END & BELL	FULL
Ⓒ	900 mm GATE VALVE MEETING THE REQUIREMENTS OF AWWA C500	FLANGE & FLANGE	FULL
Ⓓ	900 mm JOINT ADAPTER DISTANCE PIECE WITH INTERIOR CONCRETE CORE.	FLANGE & PLAIN	FULL
Ⓔ	900 mm SMITH–BLAIR #411 STEEL COUPLING OR APPROVED EQUAL	———	FULL
Ⓕ	50 mm CORPORATION MAIN STOPS AS PER GSSS 701	———	FULL



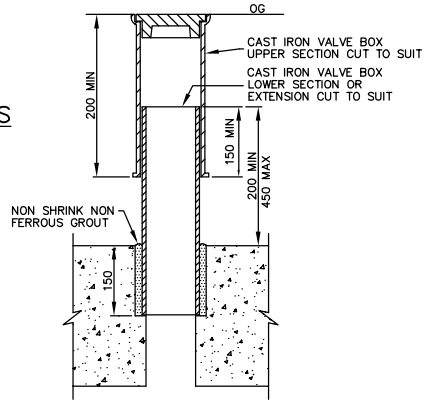
PLAN VIEW



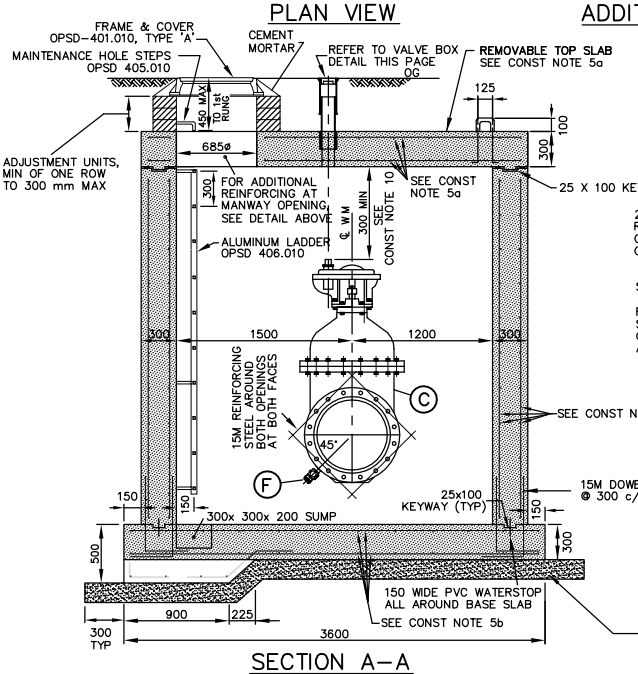
PLAN VIEW
LAPPING DETAIL AT CORNERS



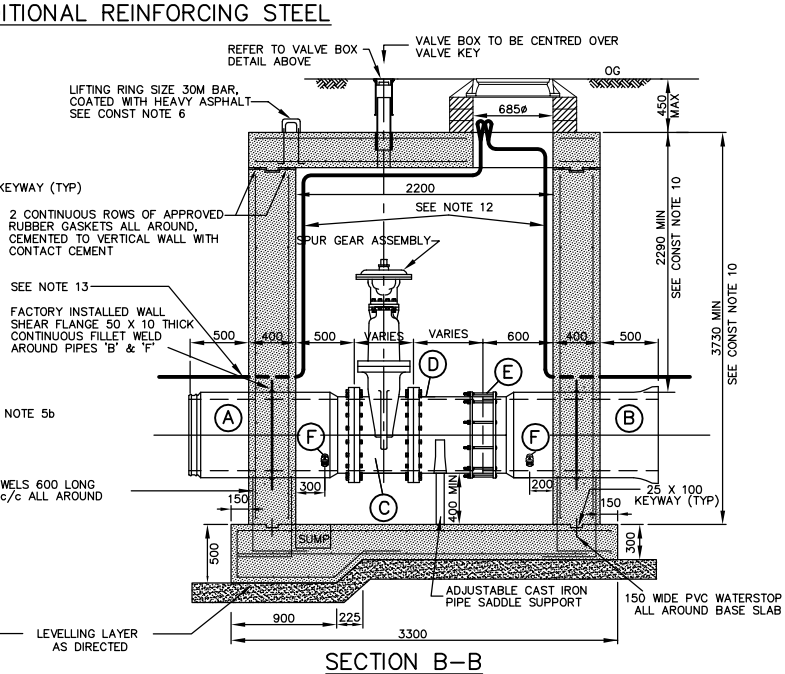
MANWAY OPENING
ADDITIONAL REINFORCING STEEL



VALVE BOX DETAIL



SECTION A–A

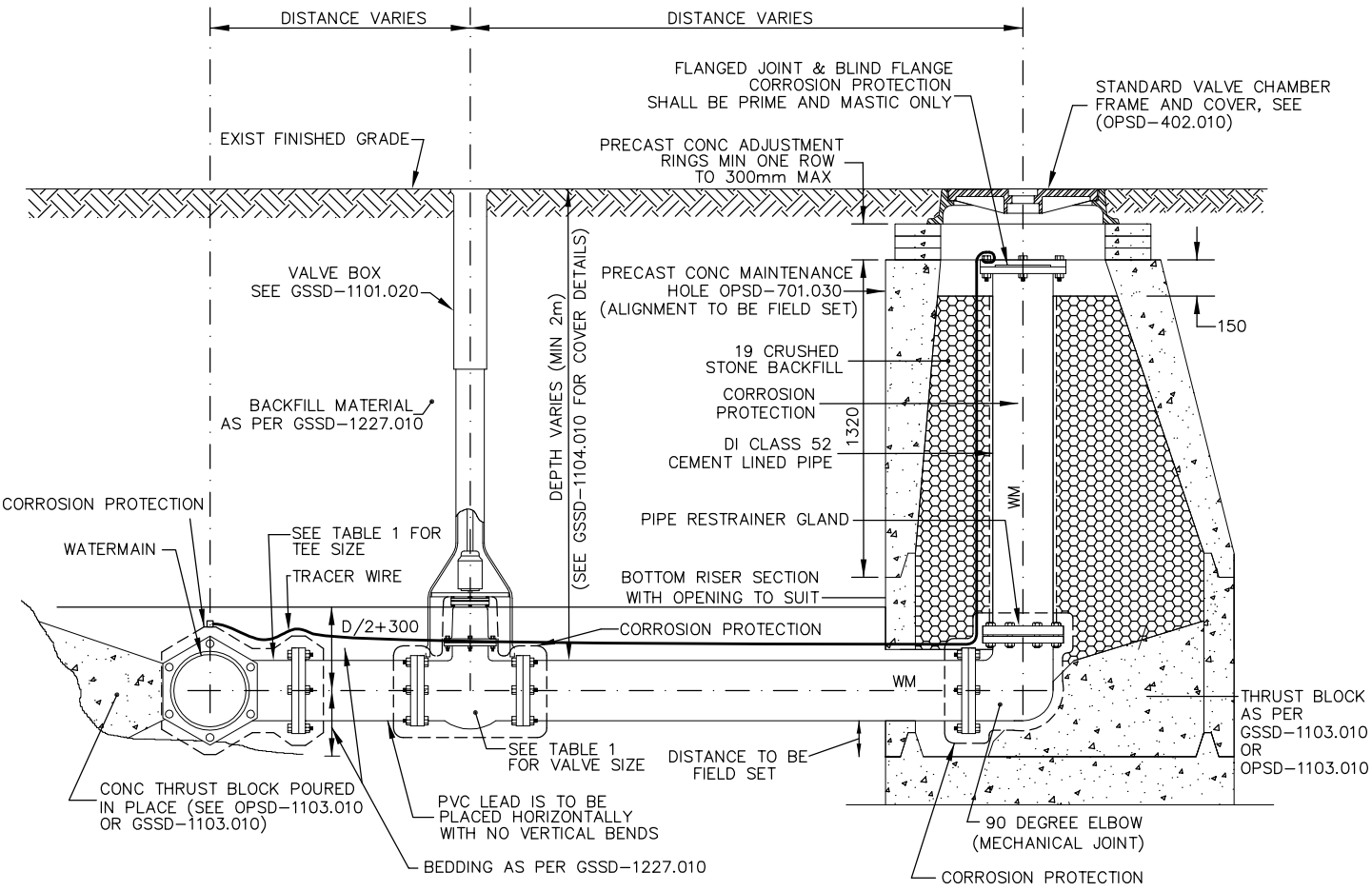


SECTION B–B

Sudbury Greater Grand

CAST IN PLACE VALVE CHAMBER FOR 900 mmø WATERMAIN WITH CONC PRESSURE PIPE

DRAWN BY: WJK/STS/RF	REV No: 2
DATE: 2003-03-03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A2015-1 (1 OF 1)
APP'D:	GSSD-1100.018



NOTE:

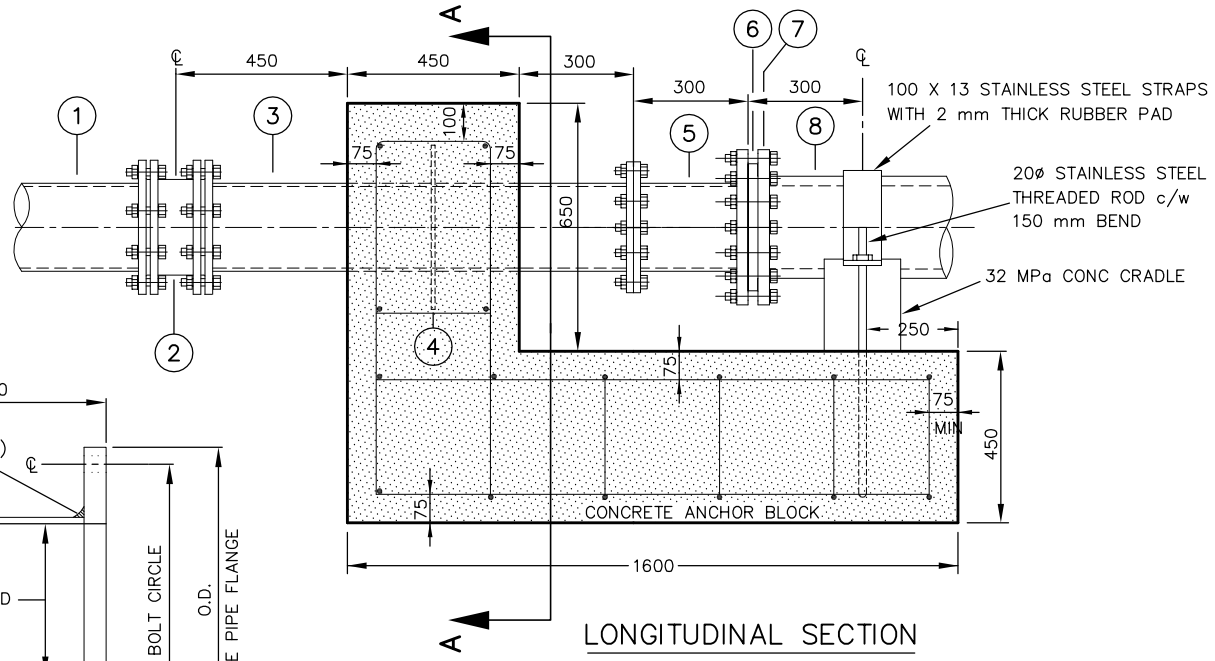
1. A POLYETHYLENE BOND BREAKER IS TO BE USED BETWEEN ALL CONCRETE THRUST BLOCKS AND FITTINGS.
2. ALL METALLIC FITTINGS & VALVES SHALL HAVE CORROSION PROTECTION
3. FROST STRAP INSTALLATION, AS PER OPSD-701.100.
4. ADJUSTMENT UNITS TO BE SET IN 12 mm MORTAR MIX.
5. TRACER WIRE AS PER GSSD-1110.000
6. ALL DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE INDICATED.

TABLE 1	
WM SIZE	SIZE OF TEE, PIPING, GATE VALVE AND FITTING
100	100
150	150
200	200
250	250
300	300
400	300

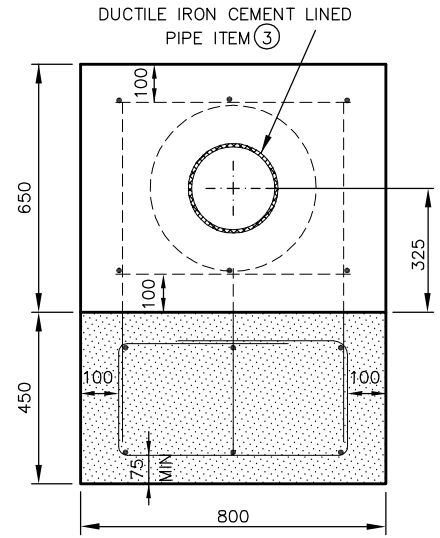
Greater Sudbury

VALVE AND SWAB LAUNCHING STATION WATERMAIN SIZES 100 mm TO 400 mm

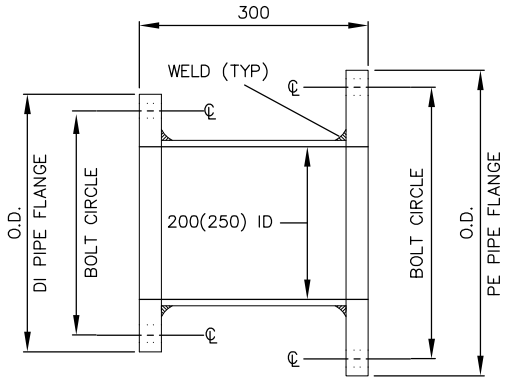
DRAWN BY: BWK/MHD	REV No: 5
DATE: 2003-03-03	REV DATE: 2013-01-01
SCALE: NTS	CAD/FILE No.: A1964-1 (1 OF 1)
APP'D: PETER CHIESA	GSSD-1100.030



LONGITUDINAL SECTION



SECTION A–A



ITEM ⑤ TRANSITION SPOOL PIECE

CONTRACTOR SHALL ENSURE THAT THE TRANSITION SPOOL FLANGES ARE MANUFACTURED TO MATCH THE FLANGED BOLT CIRCLE PATTERN FOR DI AND PE PIPE

NOTES:

1. PIPE SHALL BE 200 mm (250) DIA., MINIMUM STANDARD WEIGHT STEEL.
2. FLANGES SHALL BE 30 mm THICK STEEL WELDED TO PIPE ALL AROUND.
3. FLANGES SHALL CONFORM TO AWWA C110/A21.10
4. AFTER CASTING CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHAL HAVE CORROSION PROTECTION.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

ITEM LEGEND

1. 200 (OR 250 mmø) PVC WATERMAIN
2. 200 OR (250 mmø) CAST IRON MECHANICAL JOINT SOLID SLEEVE
3. 200 OR (250 mmø) CLASS 52 DUCTILE IRON CEMENT LINED PIPE (FLANGE X PLAIN), C/W FACTORY INSTALLED WALL FLANGE
4. 100 mm X 10 mm THICK WALL FLANGE CONTINUOUS FILLET WELD ALL AROUND PIPE
5. 200 X 300 OR (250 X 300) TRANSITION SPOOL PIECE (SEE DETAIL THIS PAGE)
6. BUTT FUSE FLANGE ADAPTER C/W ITEM #7
7. SLIP METAL FLANGE
8. 250 OR (315 mmø) PE DR11 WATERMAIN

NOTE:

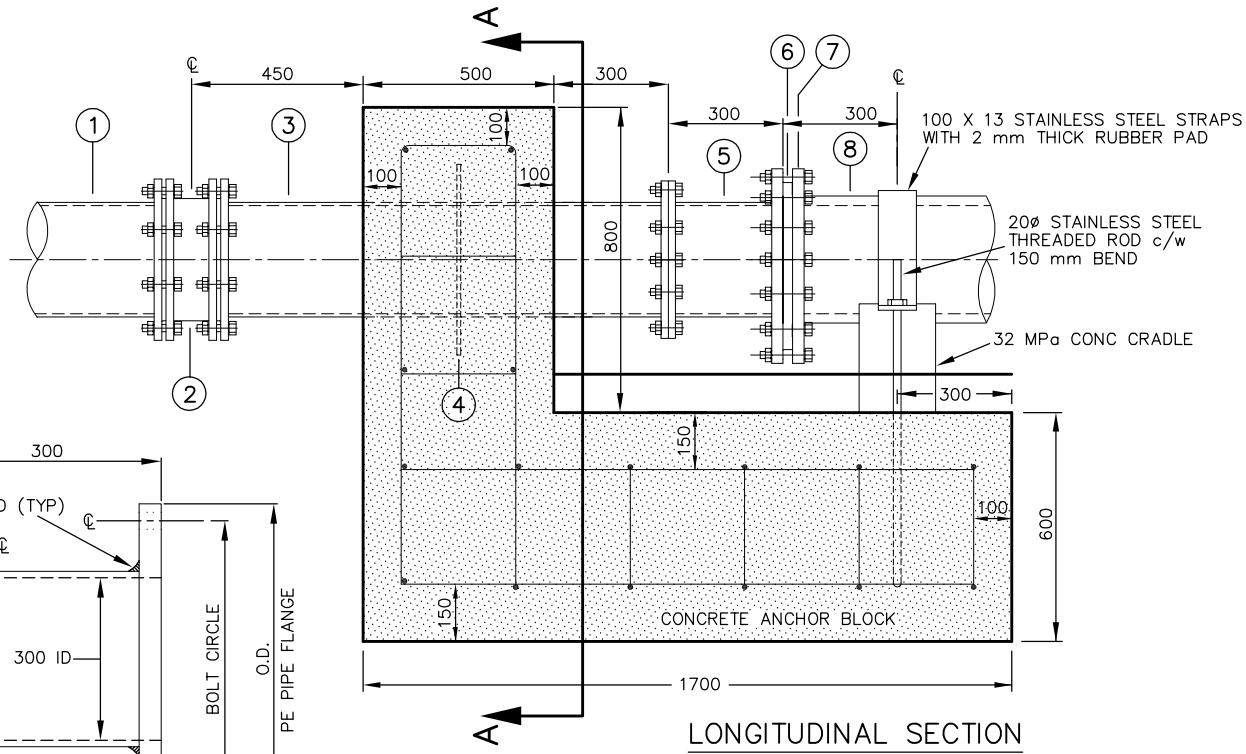
- ANCHOR BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND
- ALL REINF BARS TO BE SIZE 15M AT 300 mm CC
- CONCRETE STRENGTH TO BE 32 MPa AT 28 DAYS

Greater Grand Sudbury

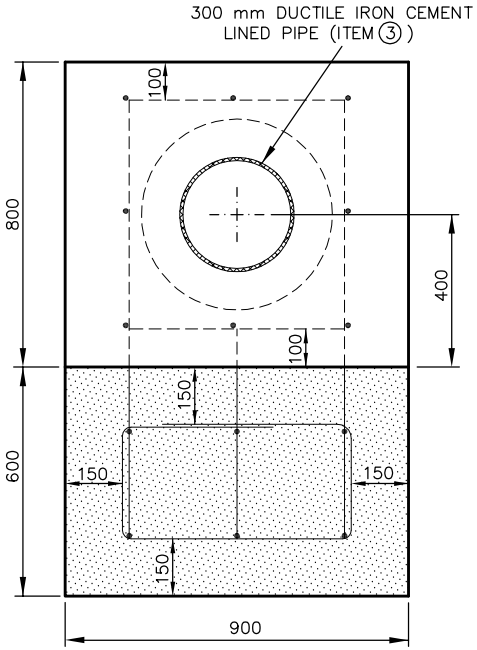
PVC TO PE PIPE TRANSITION & CONCRETE ANCHOR BLOCK

200 PVC TO 250 PE
OR
250 PVC TO 315 PE

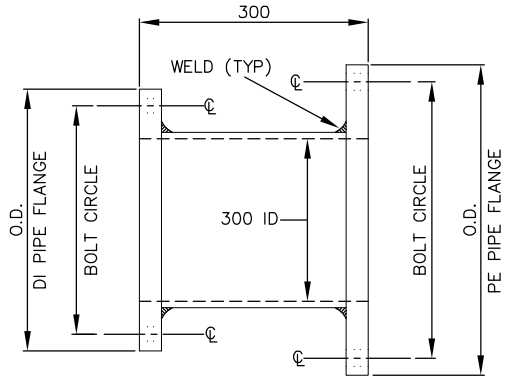
DRAWN BY: STS/RFRANK	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1915–1 (1 OF 1)
APP'D:	GSSD–1100.040



LONGITUDINAL SECTION



SECTION A–A



ITEM ⑤ TRANSITION SPOOL PIECE

CONTRACTOR SHALL ENSURE THAT THE TRANSITION SPOOL FLANGES ARE MANUFACTURED TO MATCH THE FLANGED BOLT CIRCLE PATTERN FOR DI AND PE PIPES.

NOTES:

1. PIPE SHALL BE 300 mm DIA., MINIMUM STANDARD WEIGHT STEEL.
2. FLANGES SHALL BE 30 mm THICK STEEL WELDED TO PIPE ALL AROUND.
3. FLANGES SHALL CONFORM TO AWWA C110/A21.10
4. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

ITEM LEGEND

1. 300 mmø PVC WATERMAIN
2. 300 mmø CAST IRON MECHANICAL JOINT SOLID SLEEVE
3. 300 mmø CLASS 52 DUCTILE IRON CEMENT LINED PIPE (FLANGE X PLAIN), C/W FACTORY INSTALLED WALL FLANGE (SEE ITEM #4).
4. 100 mm X 10 mm THICK WALL FLANGE CONTINUOUS FILLET WELD ALL AROUND PIPE
5. 300 mm DIA TRANSITION SPOOL PIECE (SEE DETAIL THIS PAGE)
6. BUTT FUSE FLANGE ADAPTER C/W ITEM #7.
7. SLIP METAL FLANGE.
8. 400 mmø PE DR11 WATERMAIN

NOTE:

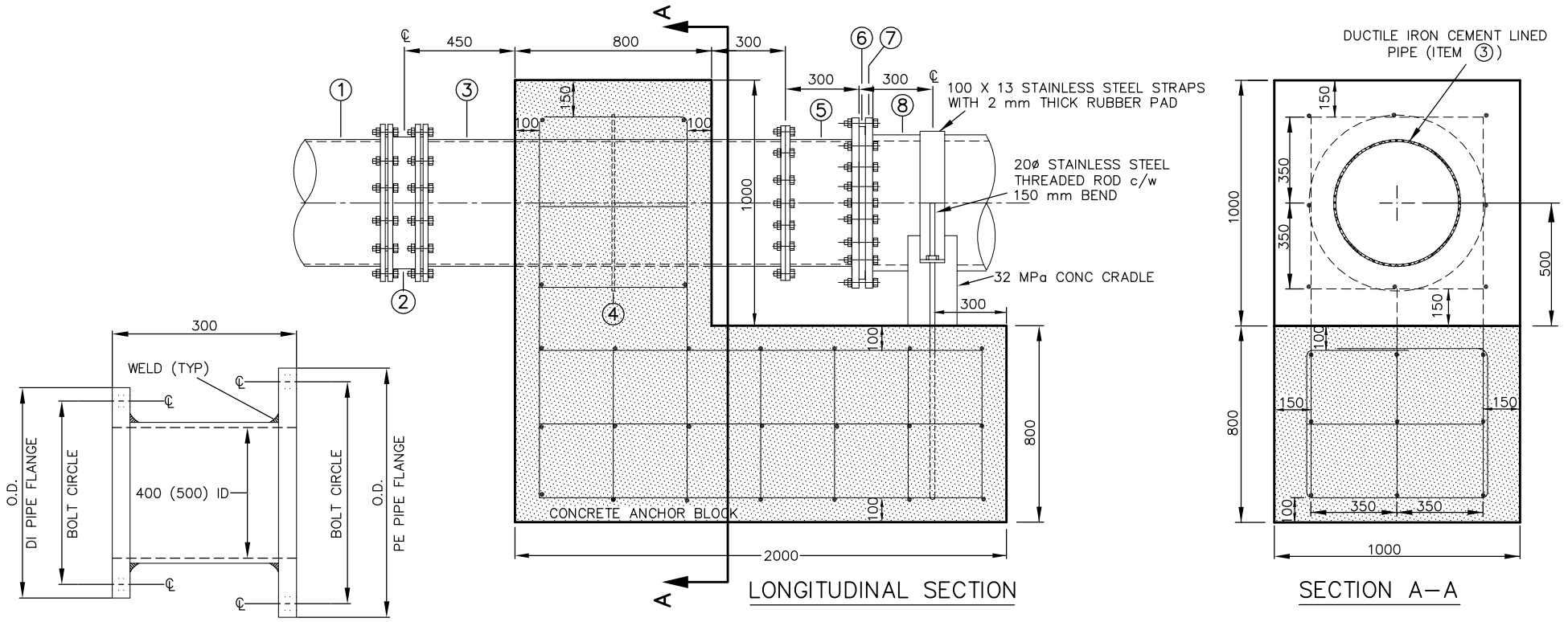
- ANCHOR BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND
- ALL REINF BARS TO BE SIZE 15M AT 300 mm CC
- CONCRETE STRENGTH TO BE 32 MPa AT 28 DAYS

Greater Grand Sudbury

PVC TO PE PIPE TRANSITION & CONCRETE ANCHOR BLOCK

300 PVC TO 400 PE

DRAWN BY: STS/R.FRANK	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1916–1 (1 OF 1)
APP'D:	GSSD–1100.041



ITEM ⑤ TRANSITION SPOOL PIECE

CONTRACTOR SHALL ENSURE THAT THE TRANSITION SPOOL FLANGES ARE MANUFACTURED TO MATCH THE FLANGED BOLT CIRCLE PATTERN FOR DI AND PE PIPES.

NOTES:

1. PIPE SHALL BE 400 mm (500) DIA., MINIMUM STANDARD WEIGHT STEEL.
2. FLANGES SHALL BE 30 mm THICK STEEL WELDED TO PIPE ALL AROUND.
3. FLANGES SHALL CONFORM TO AWWA C110/A21.10
4. AFTER CASTING IN CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

ITEM LEGEND

1. 400 OR (500 mmø) PVC WATERMAIN
2. 400 OR (500 mmø) CAST IRON MECHANICAL JOINT SOLID SLEEVE
3. 400 OR (500 mmø) CLASS 52 DUCTILE IRON CEMENT LINED PIPE (FLANGE X PLAIN), C/W FACTORY INSTALLED WALL FLANGE (SEE ITEM #4).
4. 100 mm X 10 mm THICK WALL FLANGE CONTINUOUS FILLET WELD ALL AROUND PIPE
5. 400 X 300 OR (500 X 300) TRANSITION SPOOL PIECE (SEE DETAIL THIS PAGE)
6. BUTT FUSE FLANGE ADAPTER C/W ITEM #7.
7. SLIP METAL FLANGE.
8. 500 OR (630 mmø) PE DR11 WATERMAIN

NOTE:

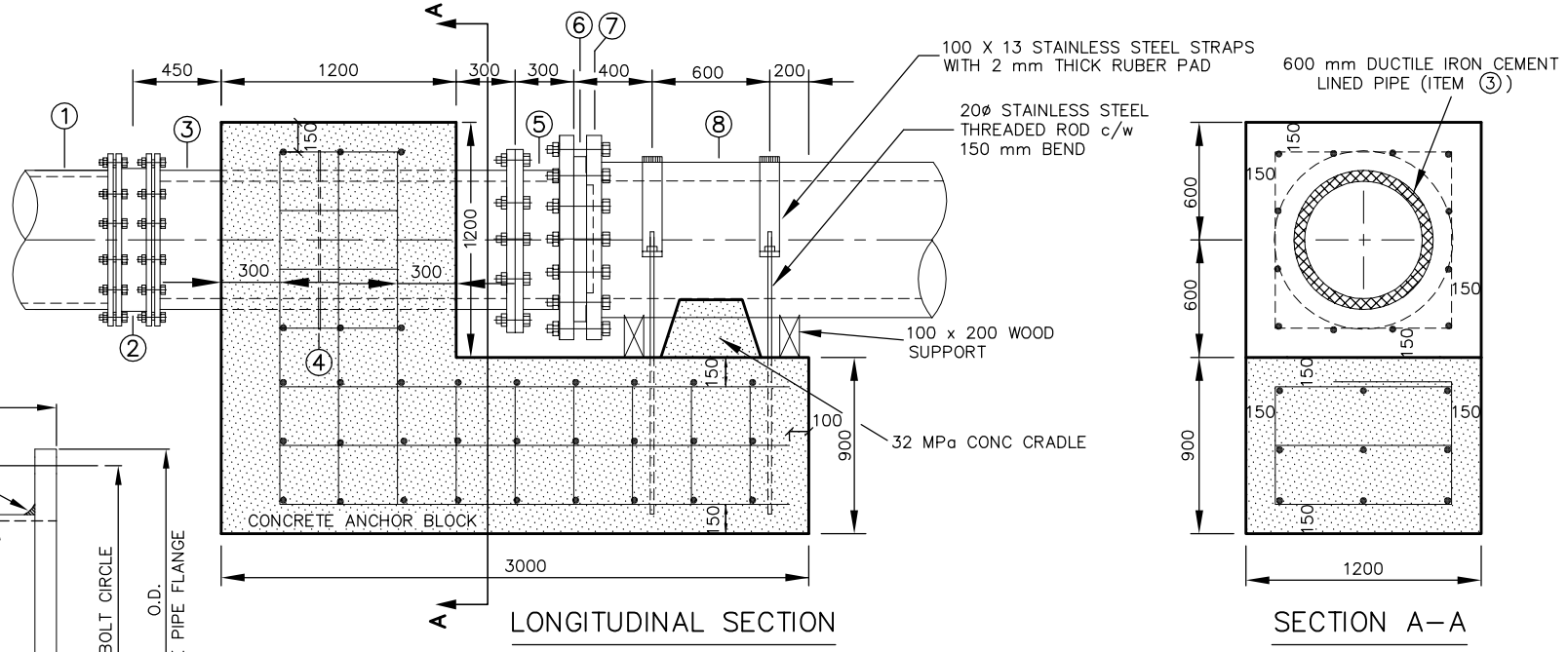
- ANCHOR BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND
- ALL REINF BARS TO BE SIZE 15M AT 300 mm CC
- CONCRETE STRENGTH TO BE 32 MPa AT 28 DAYS

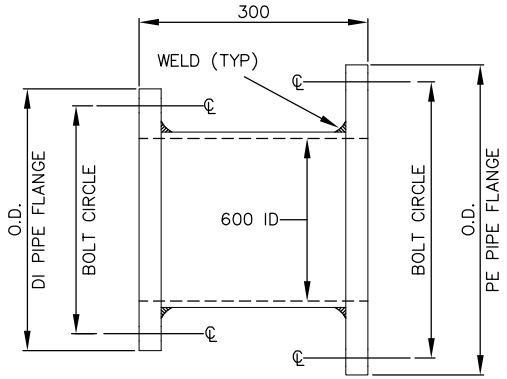
Greater Grand Sudbury

PVC TO PE PIPE TRANSITION & CONCRETE ANCHOR BLOCK

400 PVC TO 500 PE
OR
500 PVC TO 630 PE

DRAWN BY: STS/RF	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1917–1 (1 OF 1)
APP'D:	GSSD–1100.042





ITEM ⑤ TRANSITION SPOOL PIECE

CONTRACTOR SHALL ENSURE THAT THE TRANSITION SPOOL FLANGES ARE MANUFACTURED TO MATCH THE FLANGED BOLT CIRCLE PATTERN FOR DI AND PE PIPES.

NOTES:

1. PIPE SHALL BE 600 mm DIA., MINIMUM STANDARD WEIGHT STEEL.
2. FLANGES SHALL BE 30 mm THICK STEEL WELDED TO PIPE ALL AROUND.
3. FLANGES SHALL CONFORM TO AWWA C110/A21.10
4. AFTER CASTING CONCRETE, ALL METALLIC FITTINGS & METALLIC PIPE SHALL HAVE CORROSION PROTECTION.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

ITEM LEGEND

1. 600 mmø PVC WATERMAIN
2. 600 mmø CAST IRON MECHANICAL JOINT SOLID SLEEVE
3. 600 mmø CLASS 52 DUCTILE IRON CEMENT LINED PIPE (FLANGE X PLAIN), C/W FACTORY INSTALLED WALL FLANGE (SEE ITEM #4).
4. 100 mm X 10 mm THICK WALL FLANGE CONTINUOUS FILLET WELD ALL AROUND PIPE
5. 600 x 710 TRANSITION SPOOL PIECE (SEE DETAIL THIS PAGE)
6. BUTT FUSE FLANGE ADAPTER C/W ITEM #7.
7. SLIP METAL FLANGE.
8. 710 mmø PE DR11 WATERMAIN

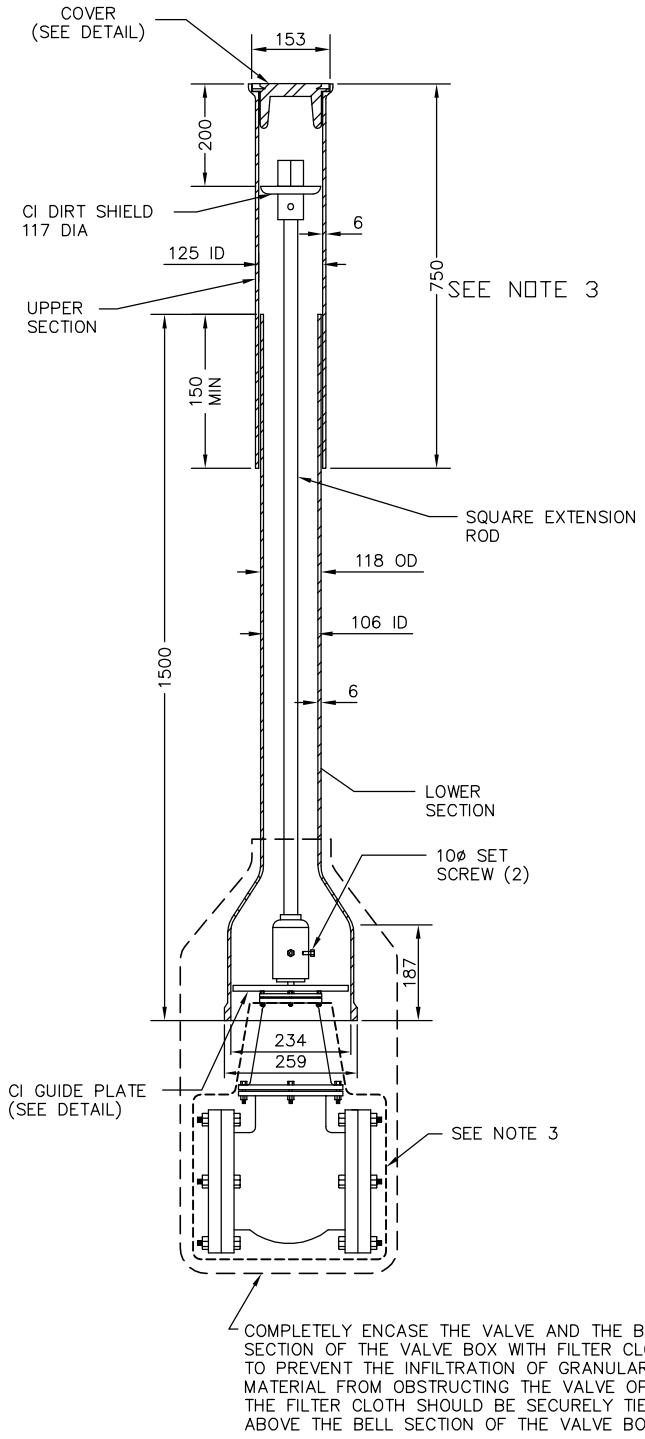
NOTE:
- ANCHOR BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND
- ALL REINF BARS TO BE SIZE 15M AT 300 mm CC
- CONCRETE STRENGTH TO BE 32 MPa AT 28 DAYS

Greater Grand Sudbury

PVC TO PE PIPE TRANSITION & CONCRETE ANCHOR BLOCK

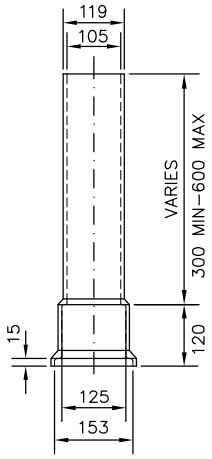
600 PVC TO 710 PE

DRAWN BY: STS/RF	REV No: 2
DATE: 2003–03–03	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A1918–1 (1 OF 1)
APP'D:	GSSD–1100.043

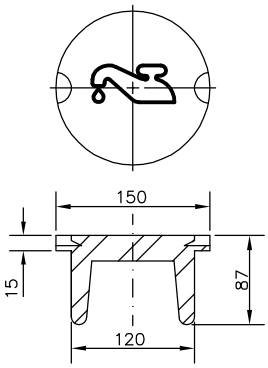


COMPLETELY ENCASE THE VALVE AND THE BELL SECTION OF THE VALVE BOX WITH FILTER CLOTH TO PREVENT THE INFILTRATION OF GRANULAR MATERIAL FROM OBSTRUCTING THE VALVE OPERATION. THE FILTER CLOTH SHOULD BE SECURELY TIED OFF ABOVE THE BELL SECTION OF THE VALVE BOX.

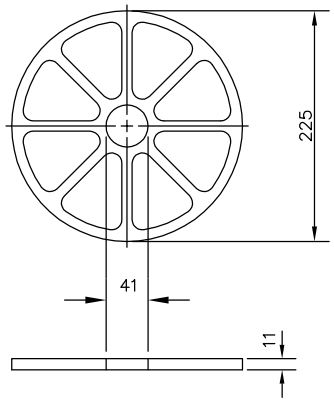
VALVE BOX SECTION



CENTRE EXTENSION



COVER

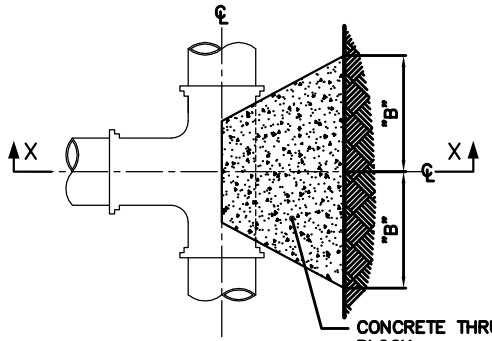


GUIDE PLATE

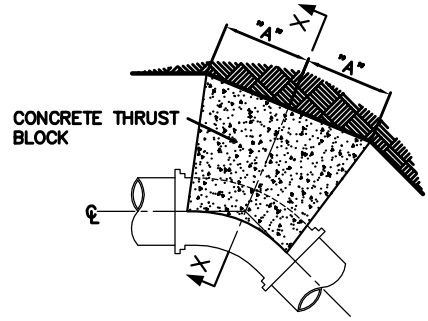
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED.
2. BEDDING DETAILS AS PER GSSD–1227.010
3. METALLIC FITTING & VALVE SHALL HAVE CORROSION PROTECTION.

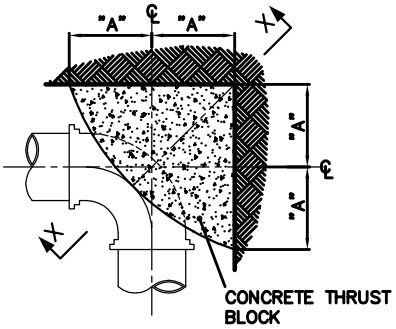
Sudbury Greater Grand	SLIDING VALVE BOX	DRAWN BY: ROH/STS/RF	REV No: 1
		DATE: 2003–03–03	REV DATE: MAY/08
		SCALE: NTS	CAD/FILE No.: A1965–1 (1 OF 1)
		APP'D:	GSSD–1101.020



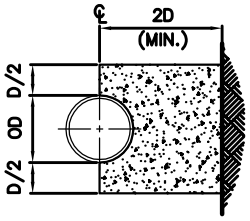
PLAN VIEW – TEE



PLAN VIEW – 11 1/4°, 22 1/2°, 45° BEND

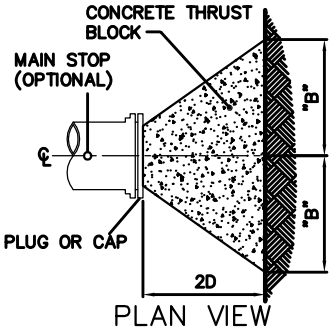


PLAN VIEW – 90° BEND

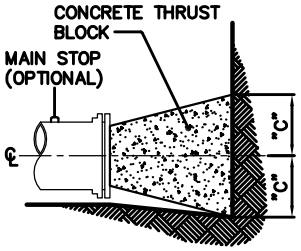


SECTION X–X

NOTE:
D = INSIDE DIAMETER OF PIPE
OD = OUTSIDE DIAMETER OF PIPE



PLAN VIEW



ELEVATION VIEW

DEAD END SECTION

ROCK, GRAVEL, COMPACT SAND

PIPE SIZE (mm)	BEND ANGLE WIDTH "A" (m) 11.25°	22.5°	45°	90°	DEAD END/TEE "B" (m)	"C" (m)	
400	0.3	0.3	0.3	0.3	0.3	0.4	MINIMUM DIMENSIONS
450	0.3	0.3	0.3	0.3	0.3	0.5	
500	0.3	0.3	0.3	0.3	0.3	0.5	
600	0.3	0.3	0.3	0.3	0.3	0.7	
750	0.3	0.3	0.3	0.3	0.4	0.8	
900	0.3	0.3	0.3	0.3	0.4	1.0	
1050	0.3	0.3	0.4	0.3	0.5	1.1	
1200	0.3	0.3	0.4	0.4	0.6	1.3	

HARD DRY CLAY, COMPACT SAND

PIPE SIZE (mm)	BEND ANGLE WIDTH "A" (m) 11.25°	22.5°	45°	90°	DEAD END/TEE "B" (m)	"C" (m)	
400	0.3	0.3	0.3	0.3	0.4	0.4	MINIMUM DIMENSIONS
450	0.3	0.3	0.3	0.3	0.4	0.5	
500	0.3	0.3	0.4	0.3	0.5	0.5	
600	0.3	0.3	0.4	0.4	0.6	0.7	
750	0.3	0.3	0.5	0.5	0.7	0.8	
900	0.3	0.3	0.6	0.6	0.8	1.0	
1050	0.3	0.4	0.7	0.7	1.0	1.1	
1200	0.3	0.4	0.8	0.8	1.0	1.3	

FIRM OR STIFF CLAY, MEDIUM COMPACT SAND/SILT

PIPE SIZE (mm)	BEND ANGLE WIDTH "A" (m) 11.25°	22.5°	45°	90°	DEAD END/TEE "B" (m)	"C" (m)	
400	0.3	0.3	0.6	0.6	0.8	0.4	MINIMUM DIMENSIONS
450	0.3	0.3	0.7	0.6	0.9	0.5	
500	0.3	0.4	0.7	0.7	0.9	0.5	
600	0.3	0.4	0.9	0.8	1.1	0.7	
750	0.3	0.6	1.1	1.0	1.4	0.8	
900	0.3	0.7	1.3	1.2	1.7	1.0	
1050	0.4	0.8	1.5	1.4	1.9	1.1	
1200	0.4	0.9	1.7	1.6	2.2	1.3	

MEDIUM SOFT CLAY, LOOSE SATURATED SAND/CLAY

PIPE SIZE (mm)	BEND ANGLE WIDTH "A" (m) 11.25°	22.5°	45°	90°	DEAD END/TEE "B" (m)	"C" (m)	
400	0.5	0.9	1.8	1.6	2.3	0.4	MINIMUM DIMENSIONS
450	0.5	1.0	2.0	1.8	2.6	0.5	
500	0.6	1.1	2.2	2.0	2.8	0.5	
600	0.7	1.3	2.6	2.4	3.4	0.7	
750	0.8	1.6	3.2	3.0	4.2	0.8	
900	1.0	2.0	3.8	3.6	5.0	1.0	
1050	1.1	2.2	4.4	4.1	5.8	1.1	
1200	1.3	2.6	5.0	4.7	6.6	1.3	

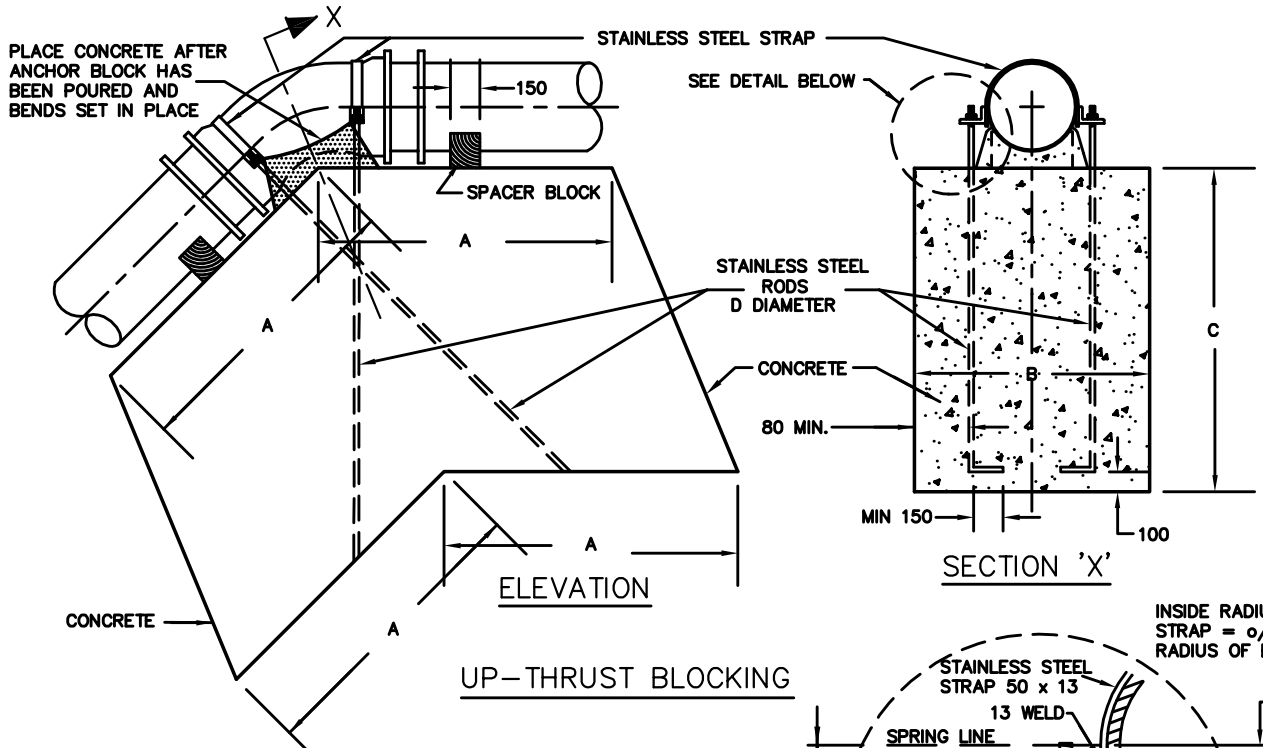
NOTES:

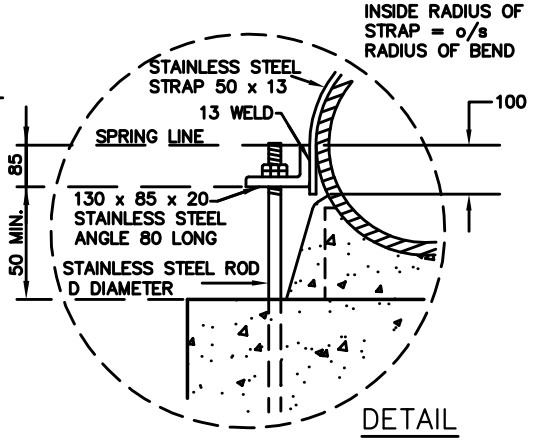
1. ALL CONCRETE THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND.
2. CLEARANCE OF 80 mm TO BE MAINTAINED FROM FACE OF BELL TO CONCRETE.
3. POLYETHYLENE BOND BREAKER TO BE USED BETWEEN CONCRETE AND CORROSION PROCTECTION.
4. THIS BLOCKING DESIGN APPLIES ONLY WHERE 1100 kPa PRESSURE IS NOT EXCEEDED.
5. PRIOR TO POURING CONCRETE, ALL METALLIC FITTINGS SHALL HAVE CORROSION PROTECTION.

Greater Sudbury

CONCRETE THRUST BLOCKS FOR TEES, PLUGS, HORIZONTAL BENDS, AND DEAD ENDS

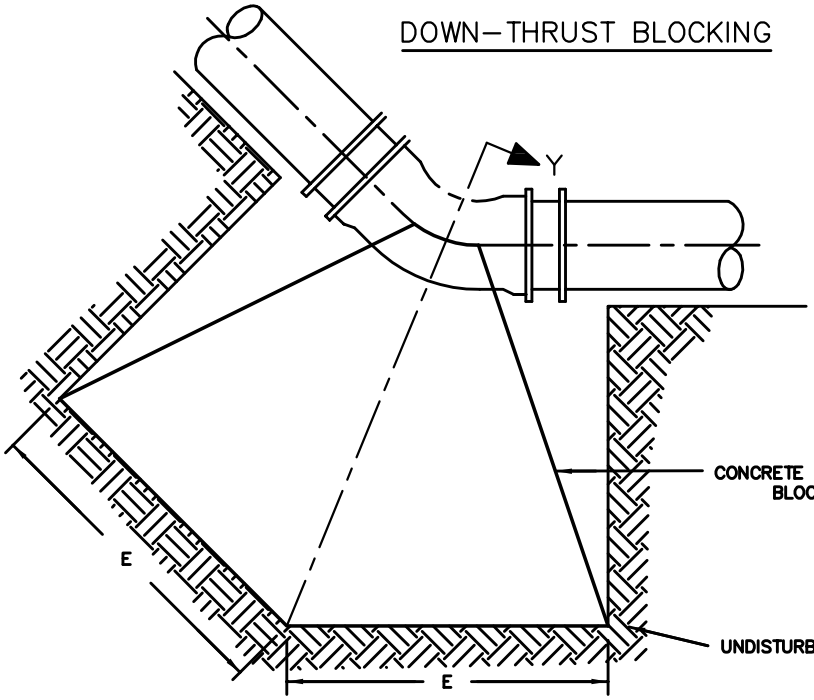
DRAWN BY: WJK/STS/RF	REV No: 2
DATE: 2003–03–03	REV DATE: MAR/2025
SCALE: NTS	CAD/FILE No.: A1966–1 (1 OF 1)
APP'D:	GSSD–1103.030





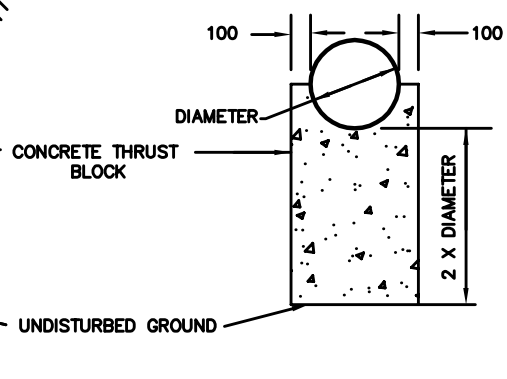
NOTES:

1. ALL CONCRETE THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND.
2. CLEARANCE OF 80 mm TO BE MAINTAINED FROM FACE OF BELL TO CONCRETE.
3. POLYETHYLENE BOND BREAKER TO BE USED BETWEEN CONCRETE AND FITTINGS.
4. THIS BLOCKING DESIGN APPLIES ONLY WHERE 1100 kPa PRESSURE IS NOT EXCEEDED.
5. THIS BLOCKING IS FOR BENDS UP TO 45° ONLY.
6. THIS BLOCKING DESIGN APPLIES WHERE THE SOIL HAS A MINIMUM SOIL BEARING CAPACITY OF 50 kPa.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
8. CLASS OF CONCRETE: 32 MPa AT 28 DAYS.
9. PRIOR TO POURING OF CONCRETE, ALL METALLIC FITTINGS SHALL HAVE CORROSION PROTECTION



MINIMUM DIMENSIONS					
PIPE SIZE (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
400	1300	1200	1650	25	1650
450	1500	1200	1650	25	2050
500	1500	1500	1650	25	2100
600	2000	1650	1650	2–25*	3000

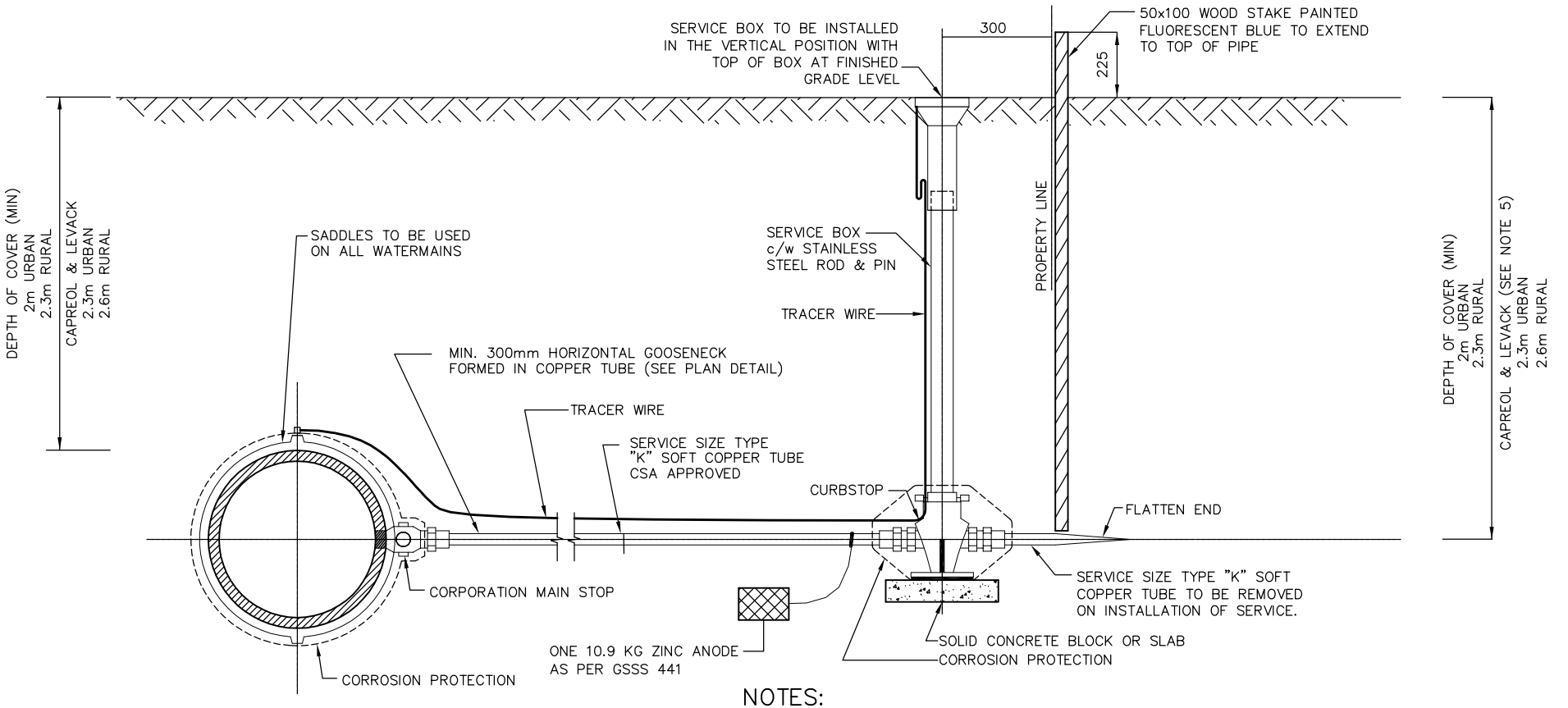
*USE DOUBLE WIDTH STRAPS (100 mm x 13 mm)

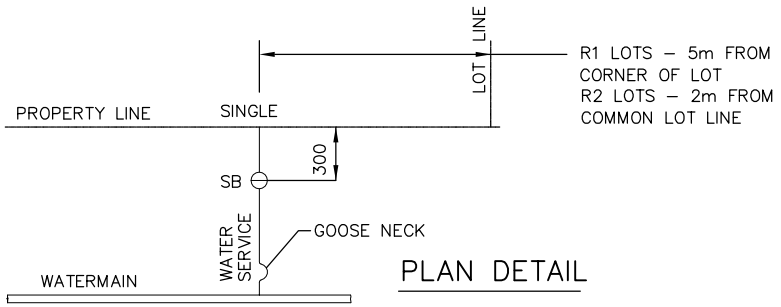


Sudbury Greater Grand

CONCRETE THRUST BLOCKS FOR VERTICAL BENDS

DRAWN BY: STS/RFRANK	REV No: 3
DATE: 2003–03–03	REV DATE: MAR/2025
SCALE: NTS	CAD/FILE No.: A1967–1 (1 OF 1)
APP'D:	GSSD–1103.040





PLAN DETAIL

NOTES:

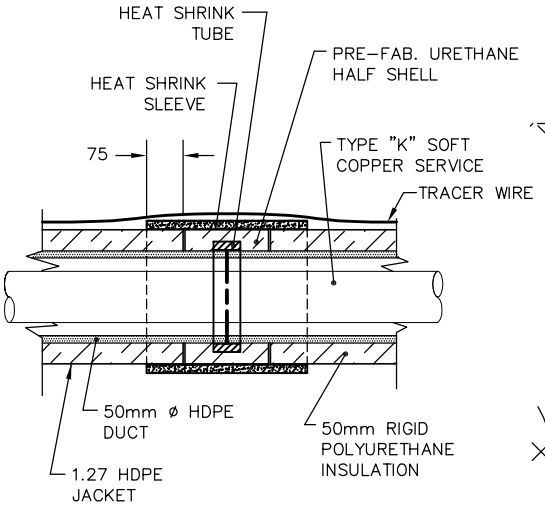
1. THIS STANDARD TO BE READ IN CONJUNCTION WITH GSSS 441.
2. FOR POLYETHYLENE SERVICE PIPE REFER TO GSSD–1104.020.
3. DOUBLE SERVICES ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF CITY ENGINEER.
4. ALL SERVICE CONNECTIONS SHALL BE SINGLE TAP ONLY, UTILIZING APPROPRIATELY SIZED FITTINGS.
5. CAPREOL AND LEVACK SERVICES SHALL BE INSULATED. SEE GSSD–1104.011.
6. FOR WATER SERVICE IN ROCK TRENCH SEE GSSD–1104.011
7. TRENCH CONSTRUCTION AND PIPE BEDDING AS PER GSSD–1227.010.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
9. CURB STOP SHALL HAVE CORROSION PROTECTION PRIOR TO PLACEMENT OF SERVICE BOX.
10. TRACER WIRE AS PER GSSD–1110.000.
11. CORROSION PROTECTION AS PER GSSS 442

Greater Grand Sudbury

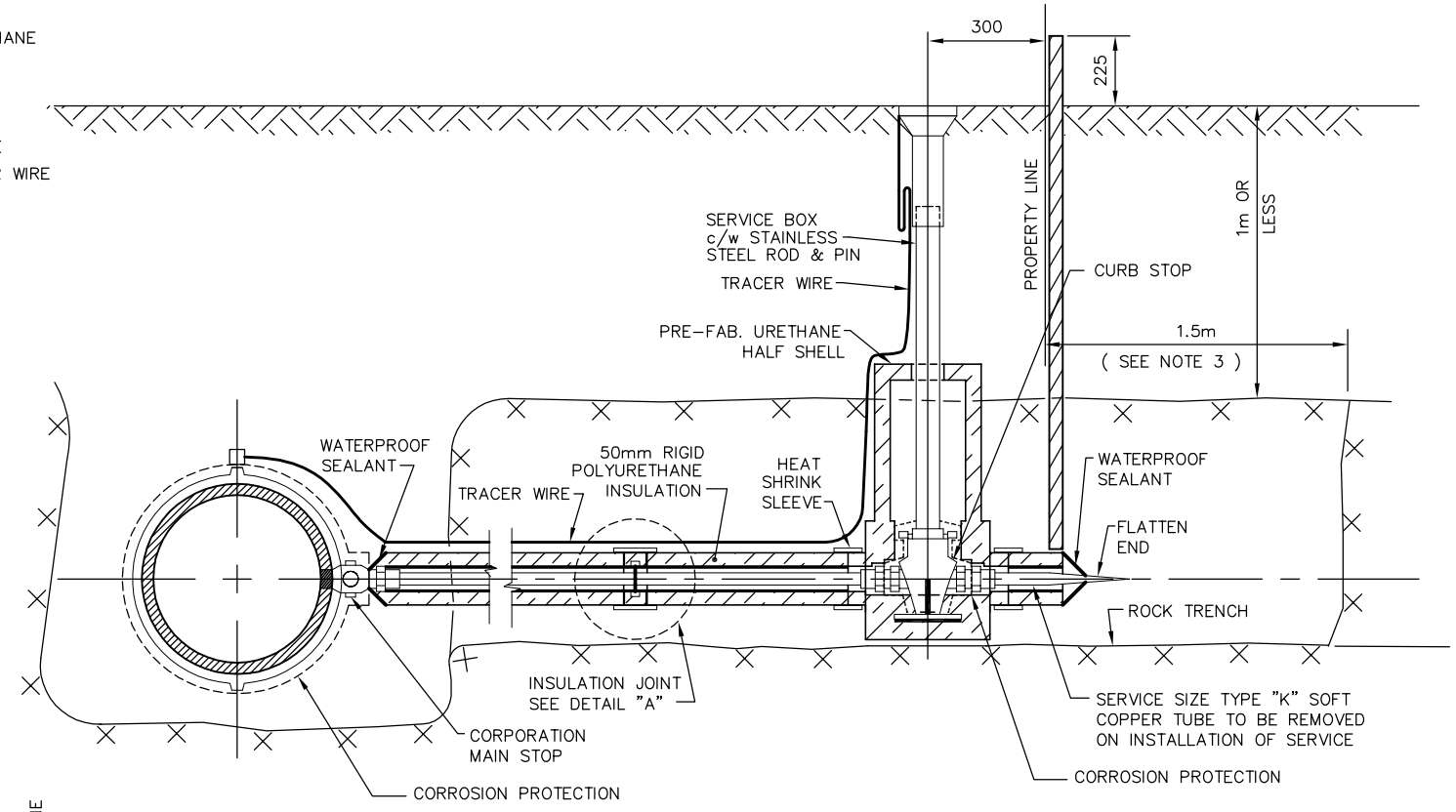
WATER SERVICE CONNECTION DETAIL IN EARTH TRENCH

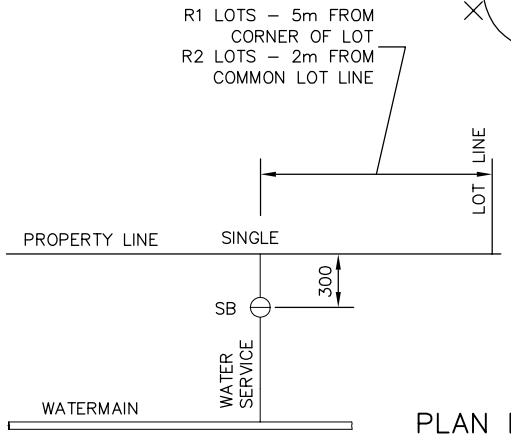
20 mm TO 50 mm DIA SIZES

DRAWN BY: RF/SAG/KLR	REV No: 6
DATE: 2003–03–03	REV DATE: 2019–02–25
SCALE: NTS	CAD/FILE No.: A1968–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1104.010



DETAIL "A"
INSULATION JOINT





PLAN DETAIL

NOTE

1. THIS STANDARD TO BE READ IN CONJUNCTION WITH GSSS 441 & GSSD–1104.010.
2. FOR POLYETHYLENE SERVICE PIPE REFER TO GSSD–1104.020.
3. ROCK SHALL BE BLASTED AND REMOVED TO 1.5 m BEYOND PROPERTY LINE.
4. DOUBLE SERVICES ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE CITY ENGINEER
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
6. THIS DRAWING TO BE USED IN CONJUNCTION WITH GSSD–1104.010.
7. TRACER WIRE AS PER GSSD–1110.000.
8. CORROSION PROTECTION AS PER GSSS 442

Greater Grand Sudbury

INSULATED DUCT FOR WATER SERVICE CONNECTION
20 mm TO 50 mm DIA SIZES

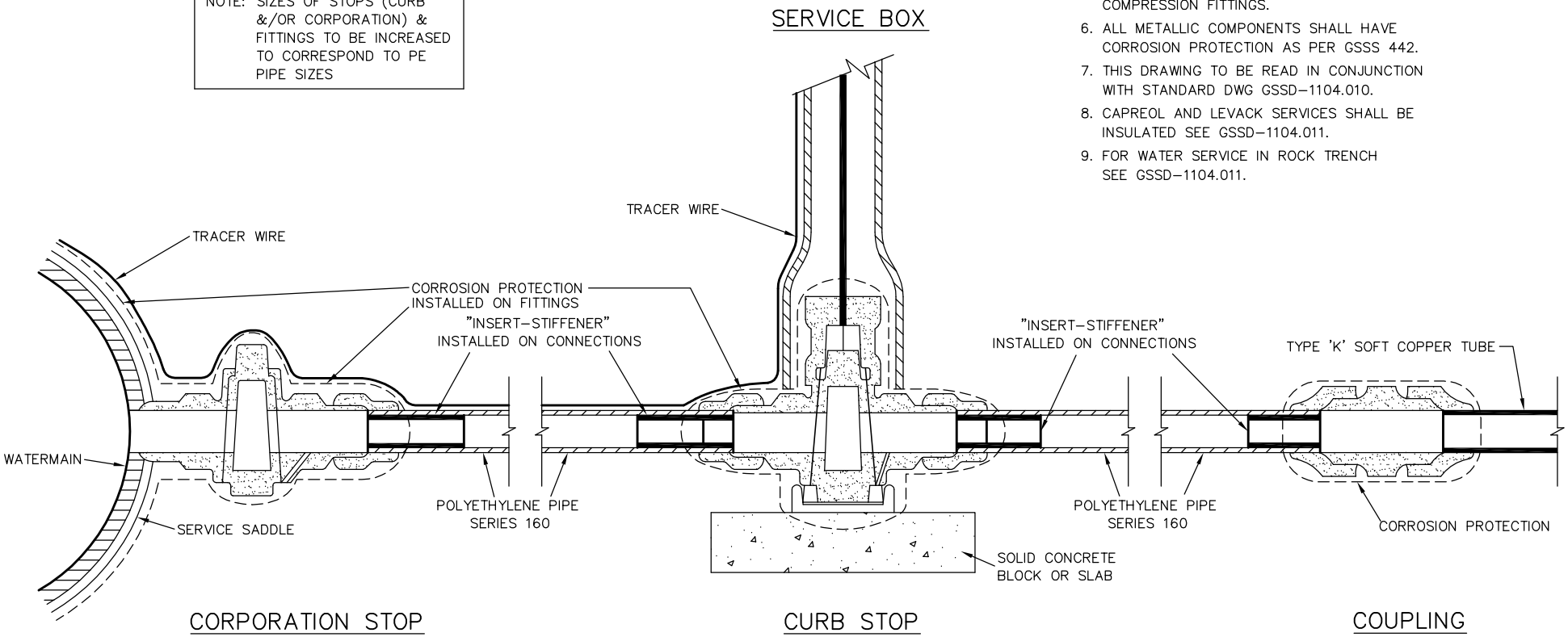
DRAWN BY: BK/SAG/KLR	REV No: 6
DATE: 2003–03–03	REV DATE: 2019–02–25
SCALE: NTS	CAD/FILE No.: A1969–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1104.011

ALLOWABLE SIZE FOR PE PIPE		
COPPER	POLYETHYLENE (PE)	
SIZE	SIZE	I.D.
20 mm	25 mm	21 mm
25 mm	40 mm	31 mm
40 mm	50 mm	41 mm
50 mm	50 mm	41 mm

NOTE: SIZES OF STOPS (CURB &/OR CORPORATION) & FITTINGS TO BE INCREASED TO CORRESPOND TO PE PIPE SIZES

NOTES:

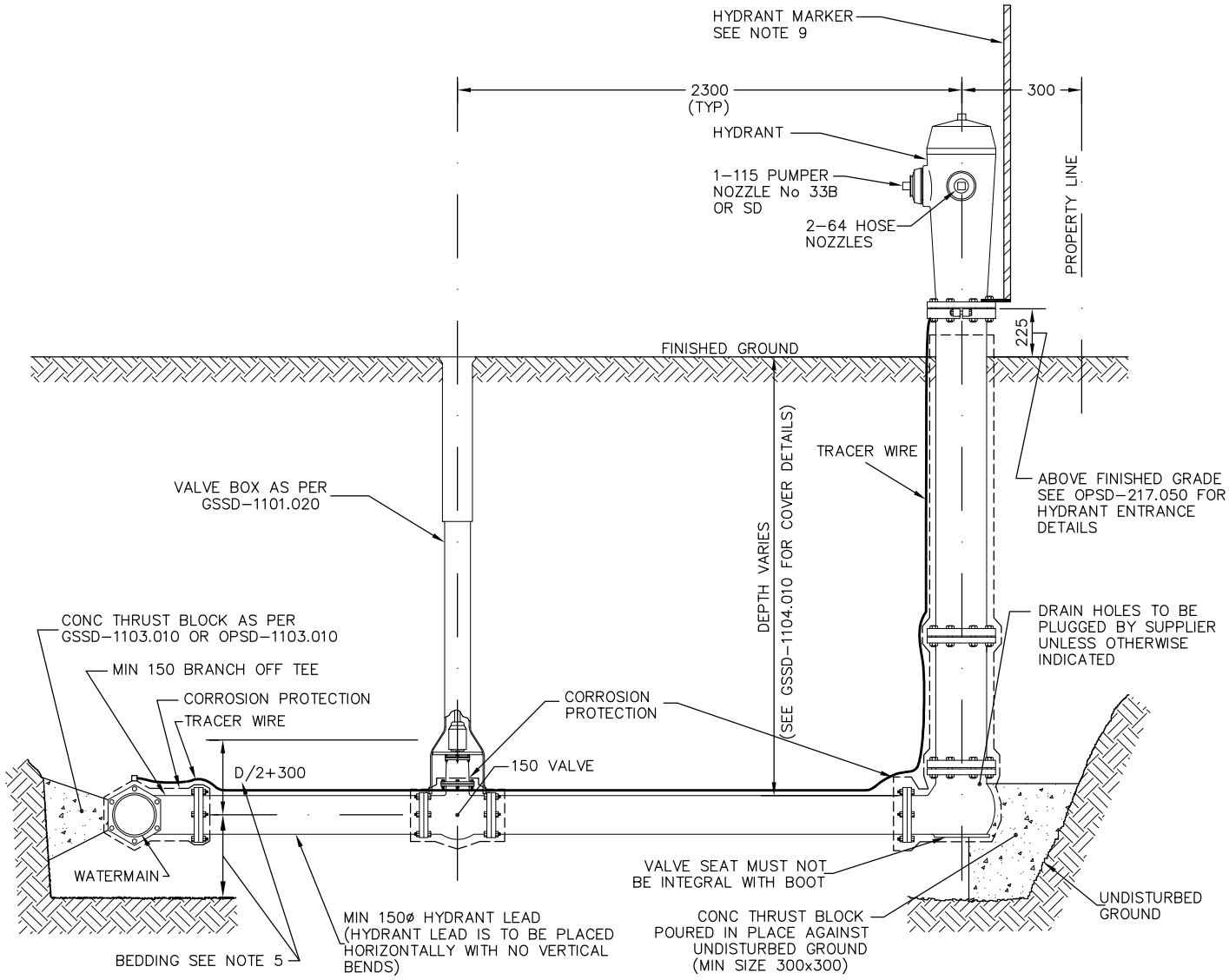
1. THIS STANDARD TO BE READ IN CONJUCTION WITH GSSS 441.
2. "INSERT–STIFFENERS" TO BE USED INSIDE POLYETHYLENE (PE) PIPE FOR WATER SERVICES.
3. "INSERT–STIFFENERS" TO BE MADE OF STAINLESS STEEL
4. "INSERT–STIFFENERS" TO BE USED AT ALL CORPORATION STOPS, CURB STOPS, COUPLINGS AND ADAPTERS.
5. ALL CONNECTIONS TO BE MADE WITH COMPRESSION FITTINGS.
6. ALL METALLIC COMPONENTS SHALL HAVE CORROSION PROTECTION AS PER GSSS 442.
7. THIS DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DWG GSSD–1104.010.
8. CAPREOL AND LEVACK SERVICES SHALL BE INSULATED SEE GSSD–1104.011.
9. FOR WATER SERVICE IN ROCK TRENCH SEE GSSD–1104.011.



Greater Grand Sudbury

POLYETHYLENE WATER SERVICE CONNECTION DETAIL FOR 25 mm TO 50 mm DIAMETER SIZES

DRAWN BY: RF/SAG/KLR	REV No: 5
DATE: 2003–03–03	REV DATE: 2019–02–25
SCALE: NTS	CAD/FILE No.: A1970–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1104.020



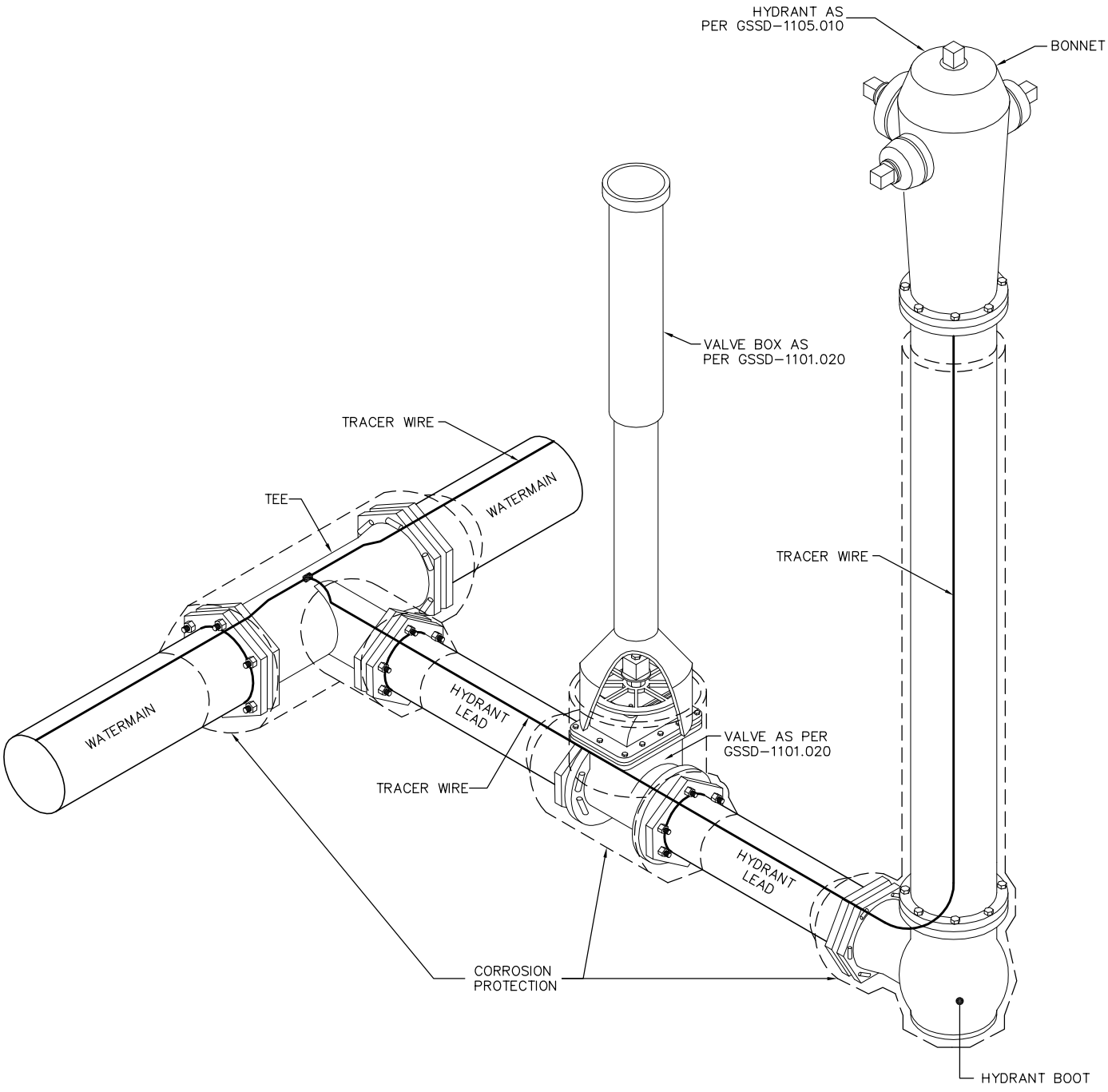
NOTES:

1. ALL HYDRANTS TO CONFORM TO AWWA C502.
2. ALL HYDRANTS ARE TO BE PAINTED IN ACCORDANCE WITH GSSS 441.
3. HYDRANT EXTENSIONS IF REQUIRED MUST BE PLACED AT THE BOOT OF THE HYDRANT (MAX. ONE EXTENSION PER HYDRANT). INTERNAL ROD EXTENSIONS ARE TO BE PLACED AT THE TOP OF THE HYDRANT SO THE VALVE BALL RUBBER REMAINS AT THE BOTTOM.
4. A POLYETHYLENE BOND BREAKER IS TO BE USED BETWEEN ALL CONCRETE THRUST BLOCKS AND CORROSION PROTECTION
5. BEDDING FOR HYDRANT INSTALLATION AS PER GSSD–1227.010.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED.
7. CORROSION PROTECTION FOR HYDRANT AS PER GSSD–1105.030.
8. TRACER WIRE AS PER GSSD–1110.000
9. ALL HYDRANTS SHALL HAVE HYDRANT MARKERS INSTALLED. HYDRANT MARKERS SHALL BE MOUNTED ON THE BASE OF THE HYDRANT AT THE BACK. THE MARKERS SHALL BE YELLOW IN COLOUR, 1219 MM IN LENGTH AND CONSTRUCTED OF POLYCARBONATE MATERIAL OR APPROVED EQUIVALENT. THE MATERIAL SHALL BE FLEXIBLE IN TEMPERATURES OF –40 DEG. CELSIUS. THE MARKERS SHALL ALSO BE FADE RESISTANT AND RESISTANT TO UV DAMAGE.

Greater Sudbury

HYDRANT INSTALLATION

DRAWN BY: MHD/SAG/KLR	REV No: 6
DATE: 2003–03–03	REV DATE: 2019–02–25
SCALE: NTS	CAD/FILE No.: A1971–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1105.010



NOTES

1. ALL DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE INDICATED.
2. THIS STANDARD DRAWING IS TO BE READ IN CONJUNCTION WITH GSSS 442.
3. TRACER WIRE AS PER GSSD–1110.000.

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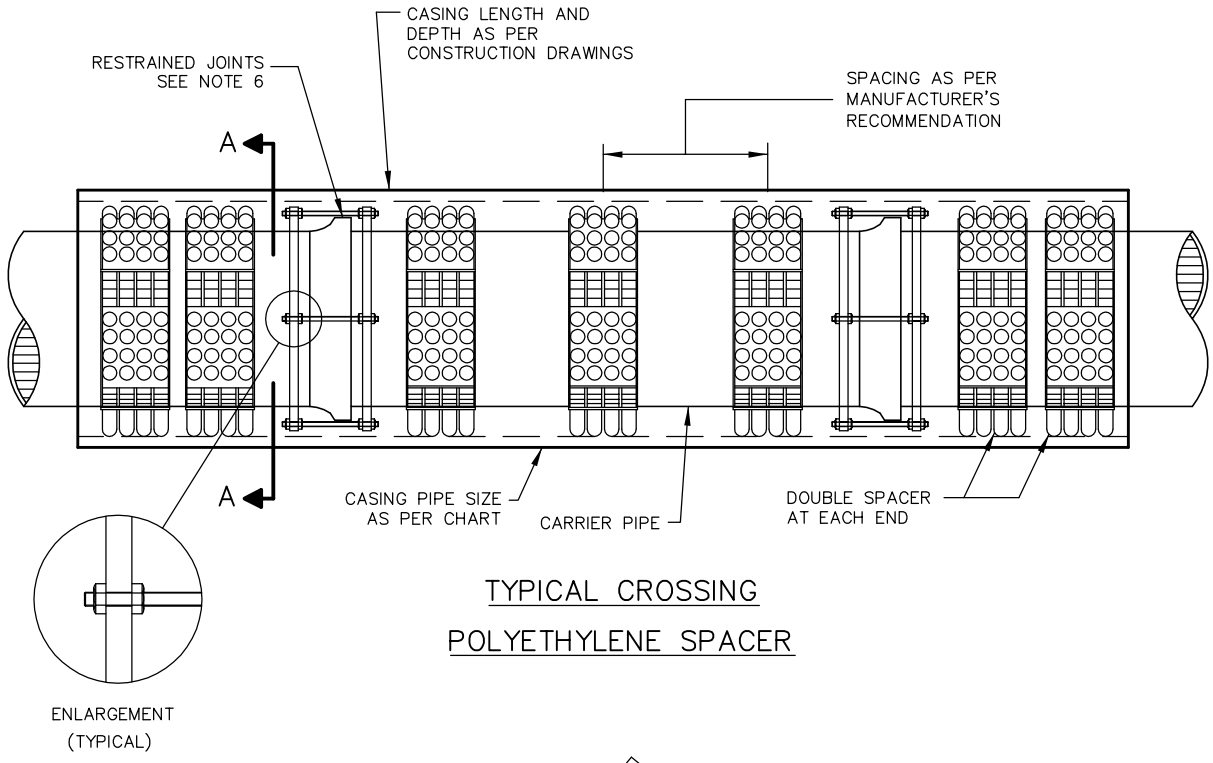
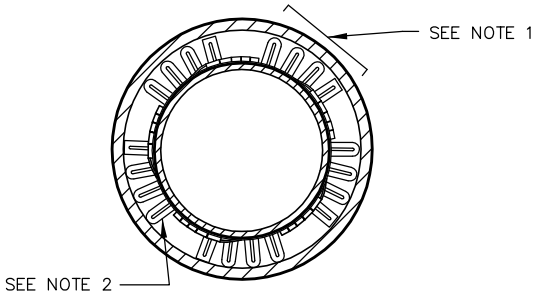
CORROSION PROTECTION ON HYDRANT INSTALLATIONS

DRAWN BY: RF/SAG/KLR	REV No: 7
DATE: 2003–03–03	REV DATE: 2019–02–25
SCALE: NTS	CAD/FILE No.: A1972–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1105.030



TYPICAL CROSSING
POLYETHYLENE SPACER



SECTION A–A

RECOMMENDED CASING SIZE				
WATERMAIN DIAMETER (mm)		GRAVITY SEWERMAIN DIAMETER (mm)	CASING DIAMETER (mm)	CASING WALL THICKNESS (mm)
PVC	PE	PVC	STEEL	STEEL
N/A	200	N/A	400	9.53
200	250	200	450	9.53
250	300	250	500	9.53
300	350	300	550	9.53
350	400	375	650	9.53
400	N/A	N/A	750	9.53
450	N/A	450	800	9.53
500	N/A	525	900	9.53
600	N/A	600	1050	12.70
750	N/A	N/A	1230	12.70
N/A	N/A	675	1050	12.70
N/A = NOT APPLICABLE				

NOTES:

1. NUMBER OF SPACER ELEMENTS REQUIRED TO COMPLETE ONE RING AS PER MANUFACTURER'S RECOMMENDATIONS.
2. ELEMENT SUPPORT HEIGHT VARIES FOR SMALL TO LARGE PIPE, AS PER MANUFACTURER'S RECOMMENDATIONS.
3. CASING END SEAL TO BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION UNLESS OTHERWISE INDICATED.
4. CATHODIC PROTECTION ON STEEL CASING AS PER GSSS 442. (ONE 14.5 Kg PACKAGED MAGNESIUM ANODE AT EACH END OF THE CASING.)
5. FOR OTHER CARRIER PIPE MATERIAL, A SITE SPECIFIC CASING DESIGN WILL BE NECESSARY.
6. APPROVED RESTRAINED JOINTS TO BE INSTALLED ON WATERMAIN THROUGH CASING. RESTRAINTS TO HAVE 4 NUTS PER BOLT. (SEE ENLARGEMENT) CORROSION PROTECTION SHALL BE APPLIED.

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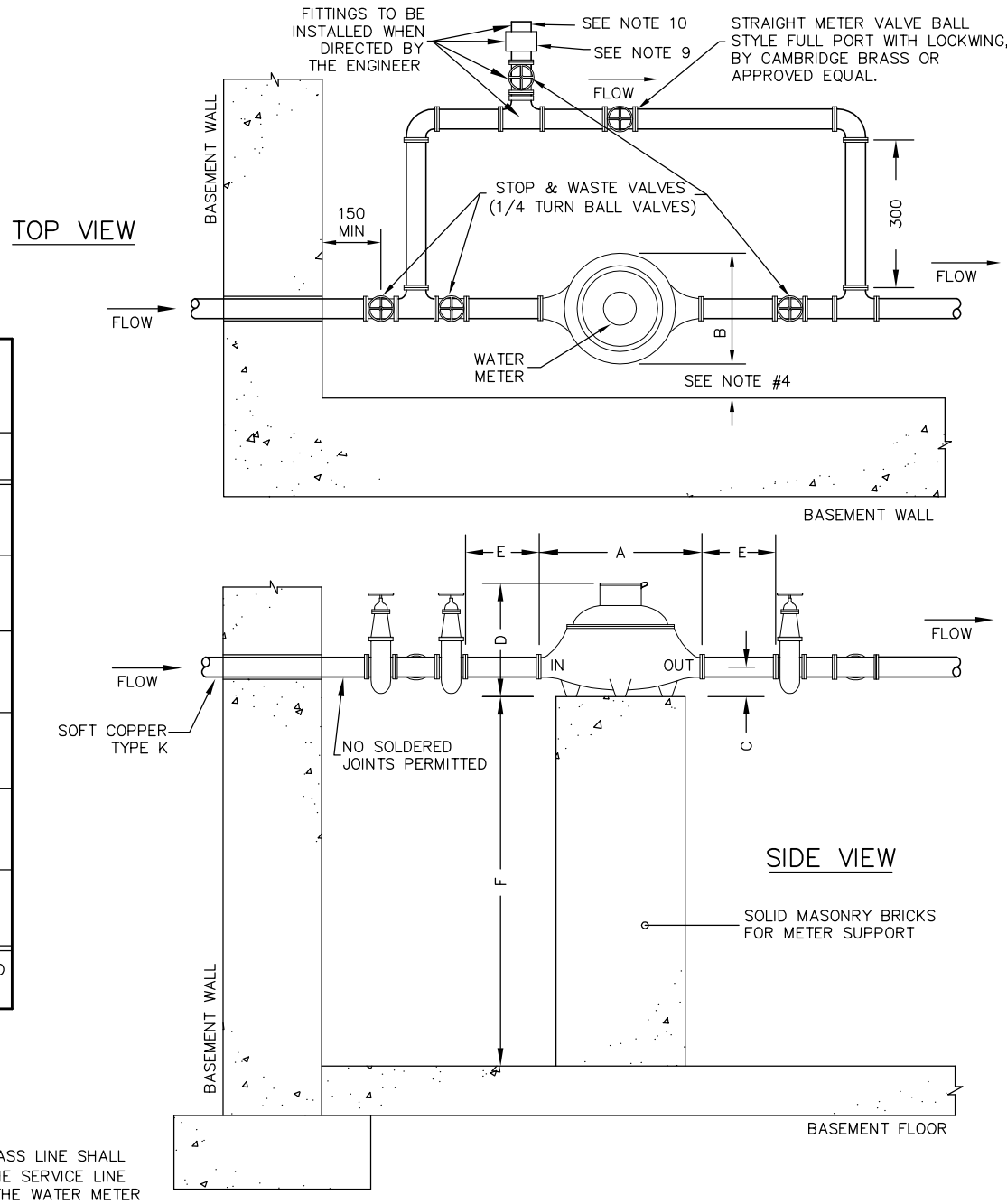
STEEL CASING FOR PIPE INSTALLATION

DRAWN BY: LRC/SAG	REV No: 2
DATE: 2003–03–03	REV DATE: 2016–02–26
SCALE: NTS	CAD/FILE No.: A1973–1 (1 OF 1)
APP'D:	GSSD–1106.030



DIMENSIONS	METER SIZE	
	40	50
A	330	430
B	255	310
C	60	85
D	230	255
E	150	150
F	750	750
ENDS	FLANGED END	FLANGED END

NOTES:

1. THE DIAMETER OF THE BY–PASS LINE SHALL BE OF THE SAME SIZE AS THE SERVICE LINE ON THE PRESSURE SIDE OF THE WATER METER AS IT IS USED TO GIVE ADEQUATE AND UNINTERRUPTED SERVICE ONLY DURING TEST OR REPAIR OF THE METER.
2. IF THE BY–PASS IS TO BE INSTALLED ABOVE THE METER, THE MINIMUM CLEARANCE REQUIRED FROM THE TOP OF THE METER TO THE BOTTOM OF THE BY–PASS IS 800 mm.
3. REQUEST DELIVERY OF THE NEPTUNE METER FOR THE SAME TIME THE PIPING IS TO BE INSTALLED.
4. MINIMUM CLEARANCE FROM WALL IS 300 mm.
5. NO SOLDERED JOINT IS PERMITTED ON THE STREET SIDE OF THE MAIN SHUT–OFF.
6. CONTRACTOR SHALL HAVE METER INSTALLED BY A LICENSED PLUMBER.
7. OPERATIONS METER SHOP IS TO BE CONTACTED FOR FINAL INSPECTION ONCE INSTALLATION IS COMPLETE.
8. BY–PASS VALVE TO BE TAGGED AND SEALED FOLLOWING FINAL INSPECTION.
9. 40 OR 50 mm N.P.T. MALE x 63.5 mm C.S.A. FEMALE (BRASS ONLY) SWIVEL SUITED FOR STANDARD 63.5 mm MALE END PUMPER HOSE CONNECTION.
10. 63.5 mm BRASS PLUG.
11. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

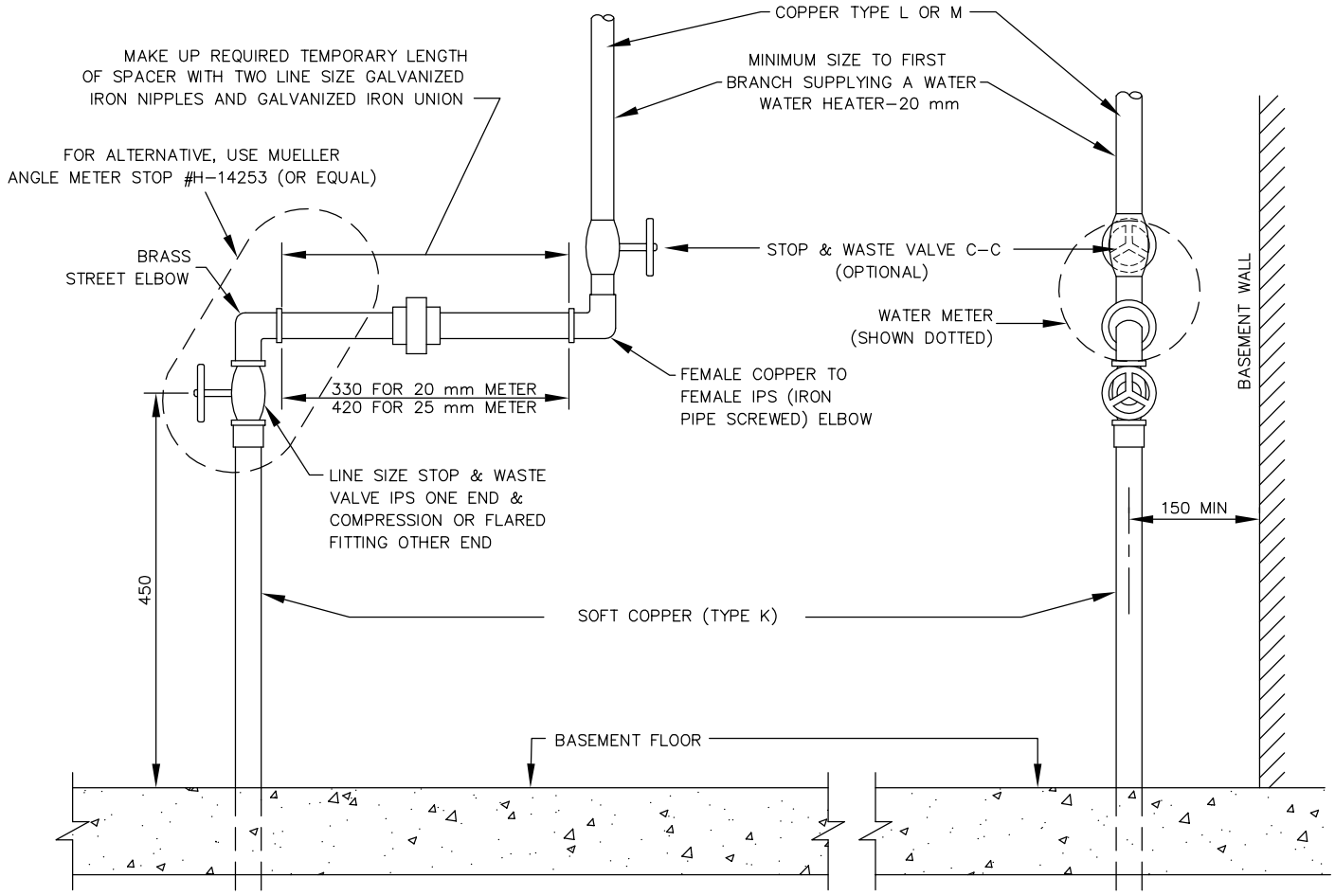
Greater Sudbury

DETAIL OF 40 OR 50 mm WATER METER INSTALLATION

DRAWN BY: LRC/STS/RF	REV No: 1
DATE: 2003–03–03	REV DATE: 2012–02–01
SCALE: NTS	CAD/FILE No.: A1981–1 (1 OF 1)
APP'D:	GSSD–1107.010

NOTE: METER SPACER TO BE LOCATED
IN AREA THAT IS FULLY ACCESSIBLE
AND WITH MIN 1.5 m HEADROOM

NO SOLDERED JOINTS PERMITTED ON
THE STREET SIDE OF METER



SIDE ELEVATION

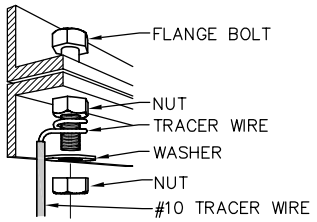
END ELEVATION

NOTE: METRIC – ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN

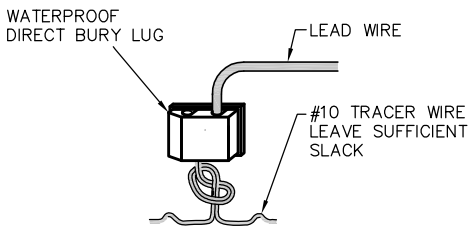
Sudbury Greater Grand

DETAIL– WATER CONNECTION WITH METER SPACER UP TO 25 mm

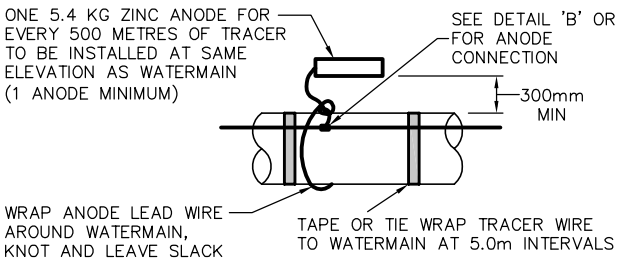
DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1974–1 (1 OF 1)
APP'D:	GSSD–1107.040



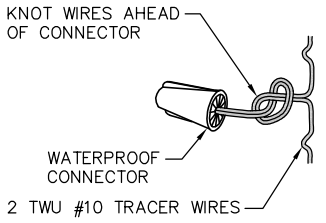
DETAIL 'A'
HYDRANT TRACER WIRE ATTACHMENT
N.T.S.



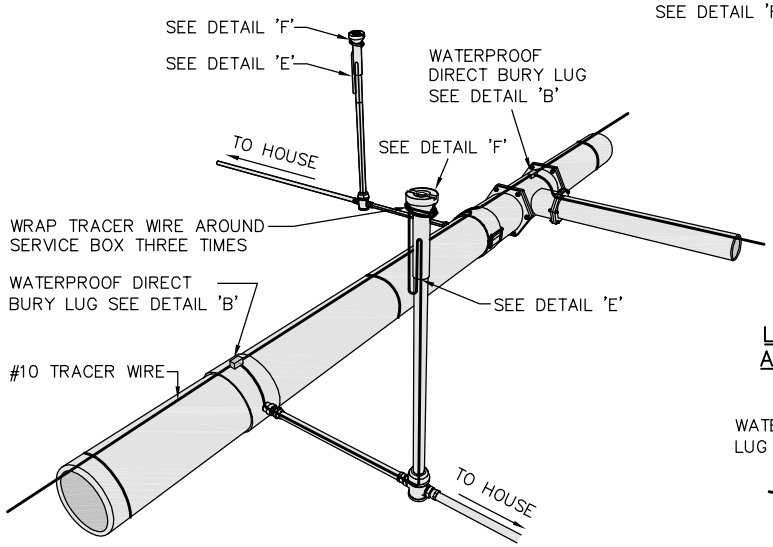
DETAIL 'B'
CONNECTION
N.T.S.



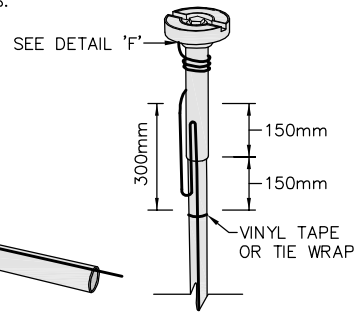
DETAIL 'C'
ANODE INSTALLATION
N.T.S.



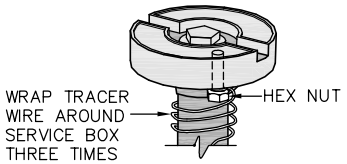
DETAIL 'D'
SPLICE CONNECTION
N.T.S.

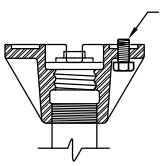


TRACER WIRE
ON SERVICE BOX INSTALLATIONS
N.T.S.

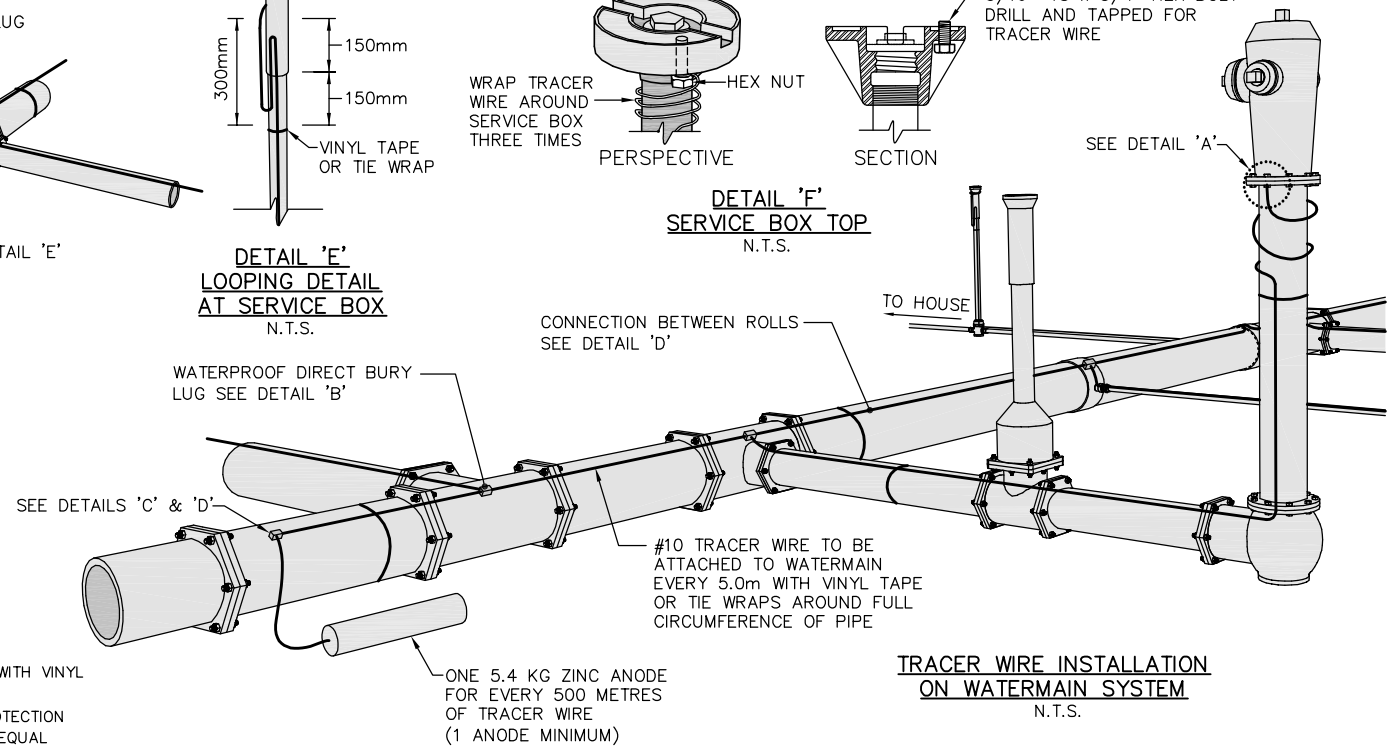


DETAIL 'E'
LOOPING DETAIL AT SERVICE BOX
N.T.S.





DETAIL 'F'
SERVICE BOX TOP
N.T.S.



TRACER WIRE INSTALLATION
ON WATERMAIN SYSTEM
N.T.S.

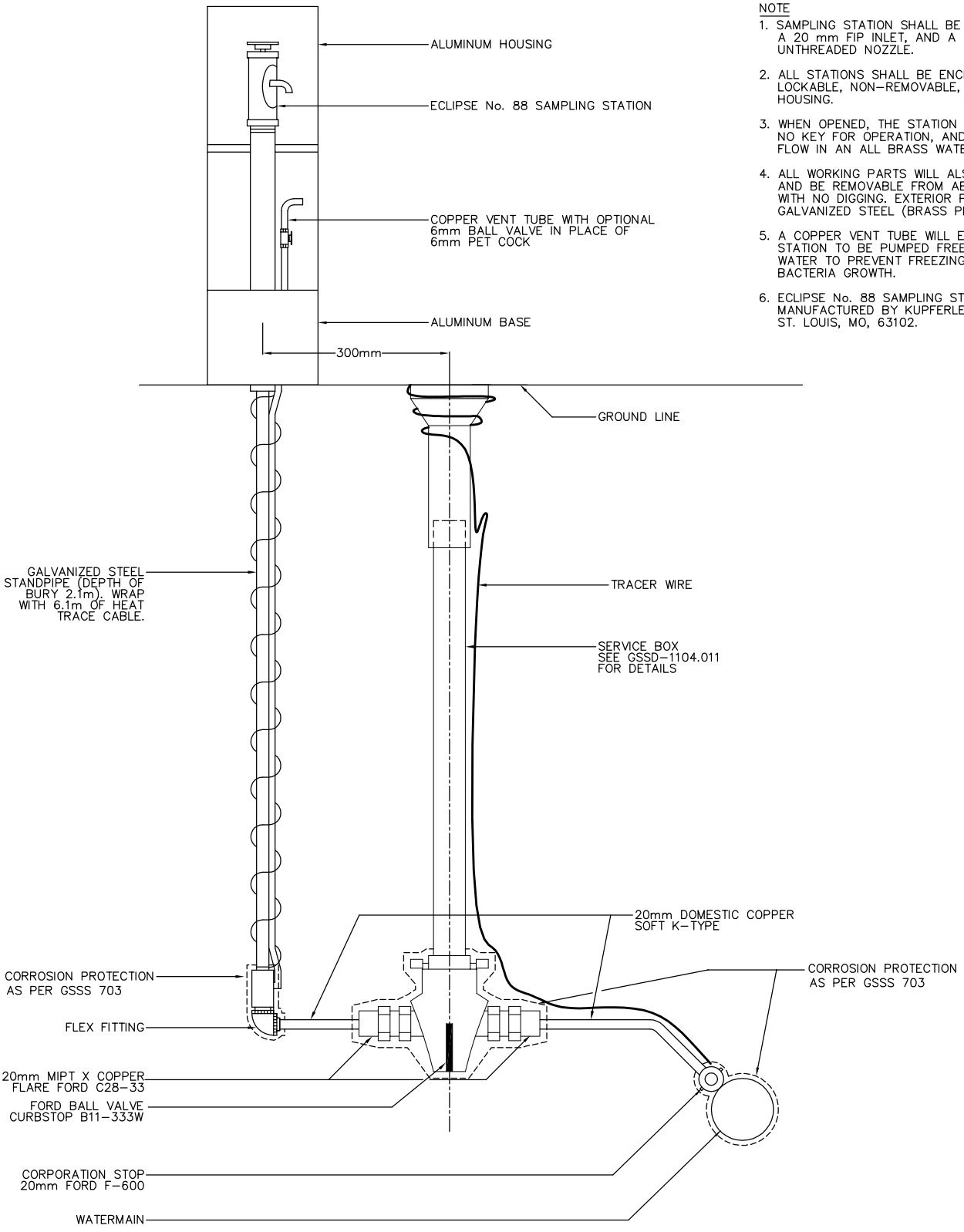
NOTES:

1. THIS STANDARD DRAWING IS TO BE READ IN CONJUNCTION WITH GSSS 441 AND GSSD–1105.030
2. TRACER WIRE SHALL BE #10 RW 90 XLPE
3. #10 TRACER WIRE TO BE ATTACHED TO WATERMAIN EVERY 5.0 m WITH VINYL TAPE OR TIE WRAPS AROUND FULL CIRCUMFERENCE OF PIPE
4. TRACER WIRE NOT TO BE PLACED IN OR THROUGH CORROSION PROTECTION
5. WATERPROOF CONNECTOR TO BE DRYCONN #10999 OR APPROVED EQUAL
6. WATERPROOF DIRECT BURY LUG TO BE DRYCONN #90220 OR APPROVED EQUAL

Greater Grand Sudbury

TRACER WIRE INSTALLATION ON PVC WATERMAIN AND APPURTENANCES

DRAWN BY: SAG/KLR	REV No: 2
DATE: 2012–02–01	REV DATE: 2019–02–25
SCALE: NTS	CAD/FILE No.: A2233–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1110.000



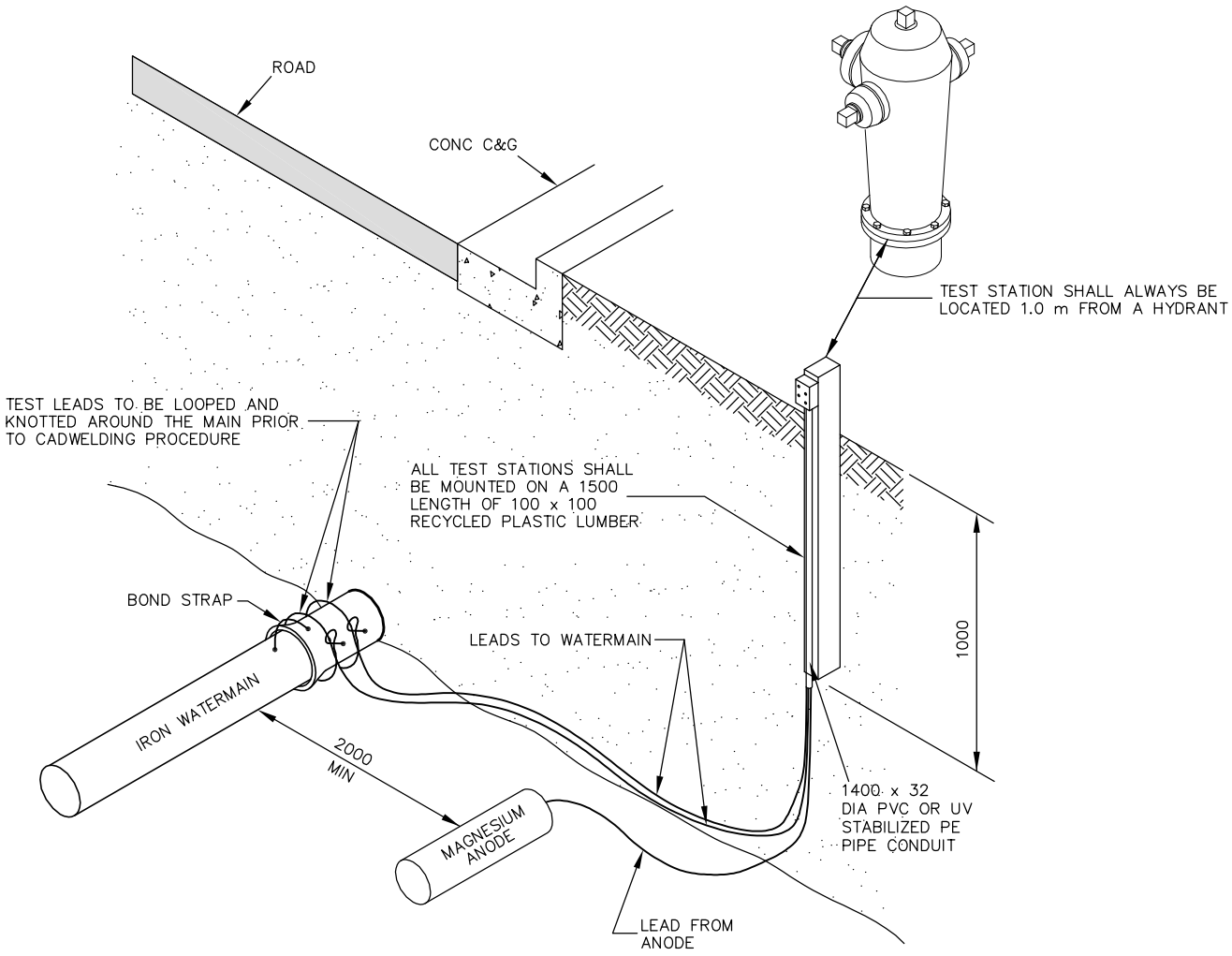
NOTE

1. SAMPLING STATION SHALL BE 2.1 m BURY, WITH A 20 mm FIP INLET, AND A 20 mm HOSE OR UNTHREADED NOZZLE.
2. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NON-REMOVABLE, ALUMINUM-CAST HOUSING.
3. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.
4. ALL WORKING PARTS WILL ALSO BE OF BRASS AND BE REMOVABLE FROM ABOVE GROUND WITH NO DIGGING. EXTERIOR PIPING SHALL BE GALVANIZED STEEL (BRASS PIPE ALSO AVAILABLE).
5. A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.
6. ECLIPSE No. 88 SAMPLING STATION SHALL BE MANUFACTURED BY KUPFERLE FOUNDRY, ST. LOUIS, MO, 63102.

Greater Sudbury

ECLIPSE No. 88
WATERMAIN SAMPLING STATION

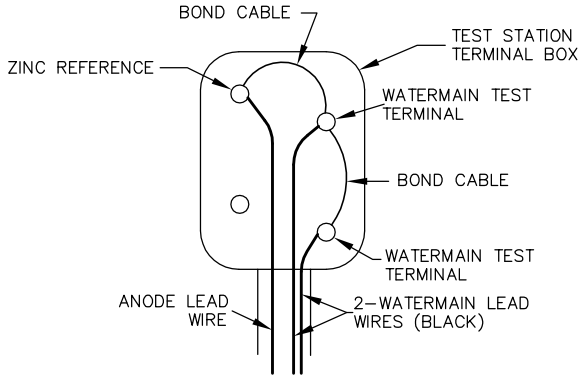
DRAWN BY: BWK/ADP	REV No: 1
DATE: 2012-02-01	REV DATE: JAN/2013
SCALE: NTS	CAD/FILE No.: A2199-1 (1 OF 1)
APP'D:	GSSD-1115.000



TEST STATION INSTALLATION

NOTES

1. ALL DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE INDICATED.
2. THIS STANDARD DRAWING IS TO BE READ IN CONJUNCTION WITH GSSS 442.
3. THE WATERMAIN LEAD WIRES ARE TO BE #10–7 STR TWH BLACK WIRES.
4. IN AREAS WHERE THE TEST STATION CANNOT BE LOCATED ADJACENT TO A UTILITY POLE OR HYDRANT, AN ALTERNATIVE POSITION CAN BE SELECTED ON APPROVAL OF THE ENGINEER.
5. THE APPROVED TEST STATION IS: COTT MANUFACTURING Co. "LITTLE FINK".

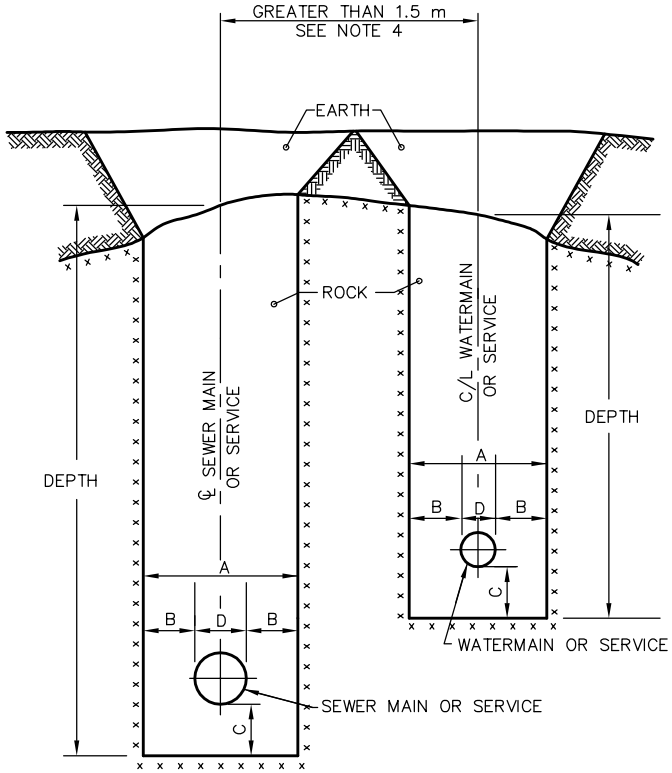


TEST STATION WIRING DIAGRAM

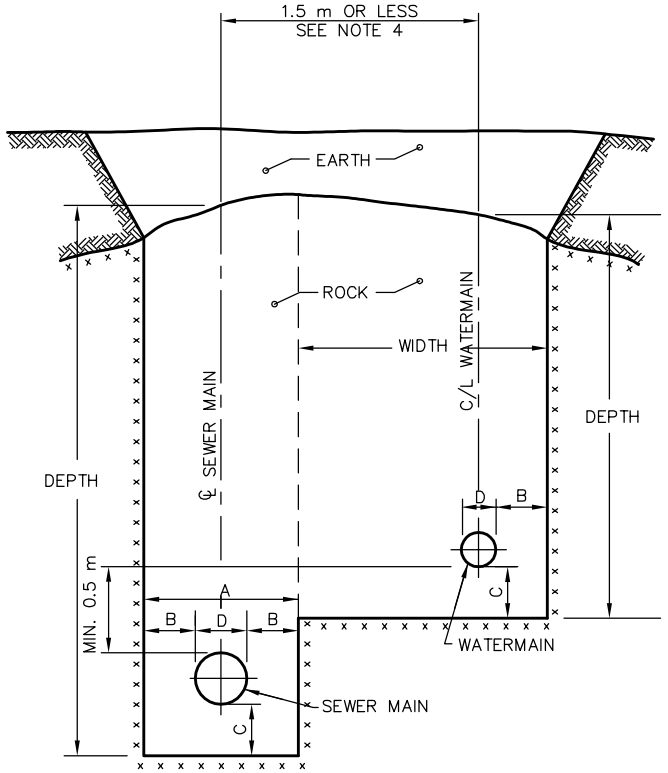
Sudbury Greater | Grand

TEST STATIONS FOR CATHODIC PROTECTION ON IRON WATERMAINS

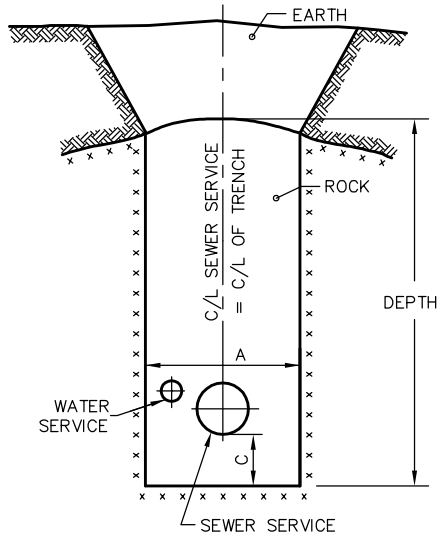
DRAWN BY: ROH/SAG	REV No: 3
DATE: 2003–03–03	REV DATE: 2016–03–02
SCALE: NTS	CAD/FILE No.: A1975–1 (1 OF 1)
APP'D:	GSSD–1125.010



PAYMENT OF ROCK EXCAVATION, SEWER, WATERMAIN AND LATERAL SERVICES IN SEPARATE TRENCHES



PAYMENT OF ROCK EXCAVATION, SEWER AND WATERMAIN IN A COMMON TRENCH



PAYMENT OF ROCK EXCAVATION, SEWER AND WATER SERVICES IN A COMMON TRENCH

NOTES:

1. D (O.D. OF PIPE) MEASUREMENT IS NOT TO INCLUDE PIPE BELL.
2. THIS STANDARD TO BE READ IN CONJUNCTION WITH APPLICABLE SPECIFICATIONS, PLUS GSSD–1227.010.
3. ALL TRENCHING SHALL BE DONE IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT.
4. ALL MAINS WITH A HORIZONTAL SEPARATION (CENTRE TO CENTRE) OF 1.5 METRE OR LESS, SHALL BE CONSIDERED TO BE IN A COMMON TRENCH. WHILE MAINS WITH A HORIZONTAL SEPARATION GREATER THAN 1.5 METRES, SHALL BE CONSIDERED TO BE IN SEPARATE TRENCHES.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

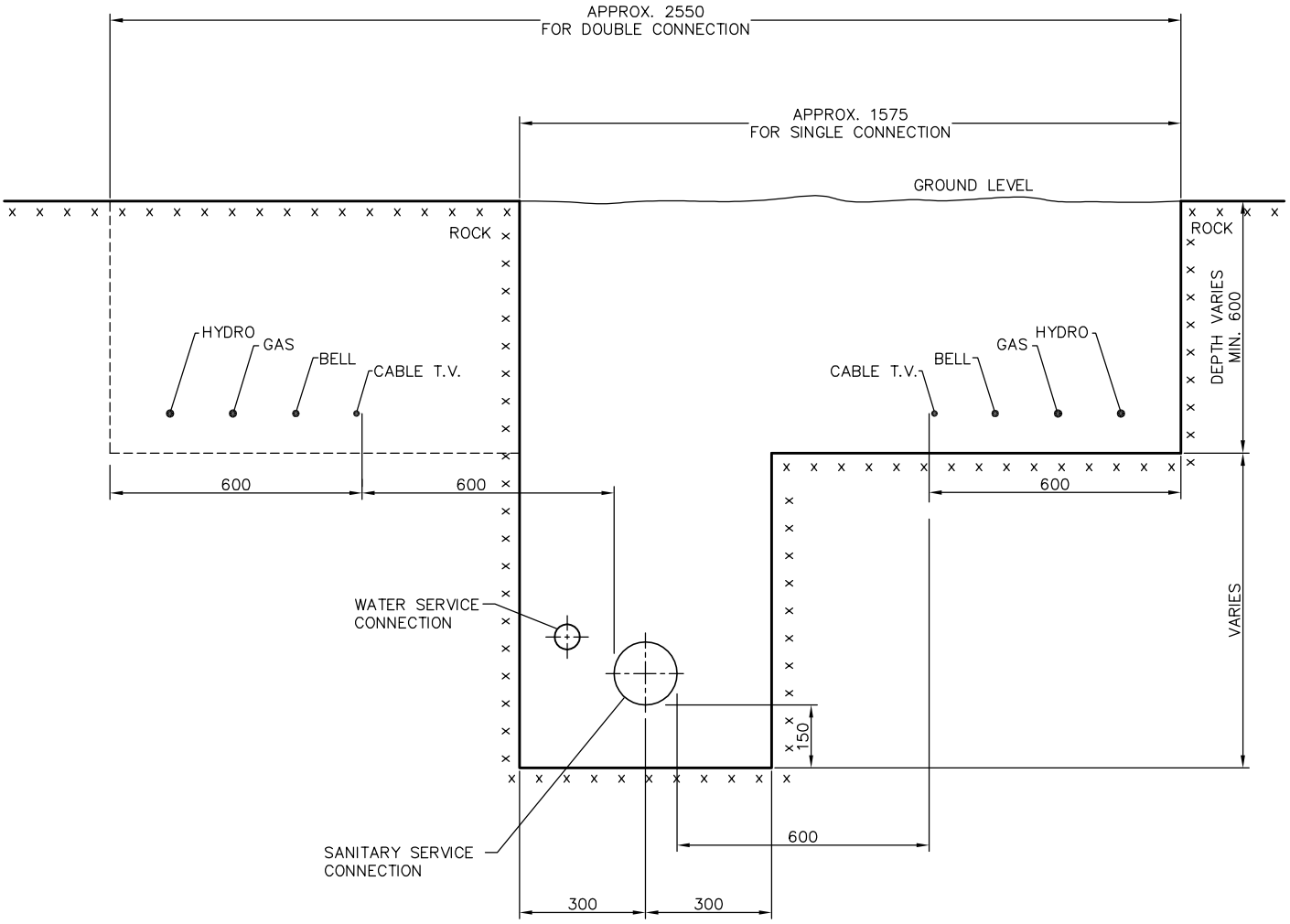
DIMENSIONS

SYMBOL	ROCK TRENCH	
	MAINS	SERVICES
A	D+600	600
B	300	––
C	300	150
D	O.D. OF PIPE	O.D. OF PIPE

Greater Grand Sudbury

DIMENSIONS FOR PAYMENT OF ROCK EXCAVATION IN TRENCHES FOR SEWERS, WATERMAINS & LATERAL SERVICES

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1976–1 (1 OF 1)
APP'D:	GSSD–1225.010



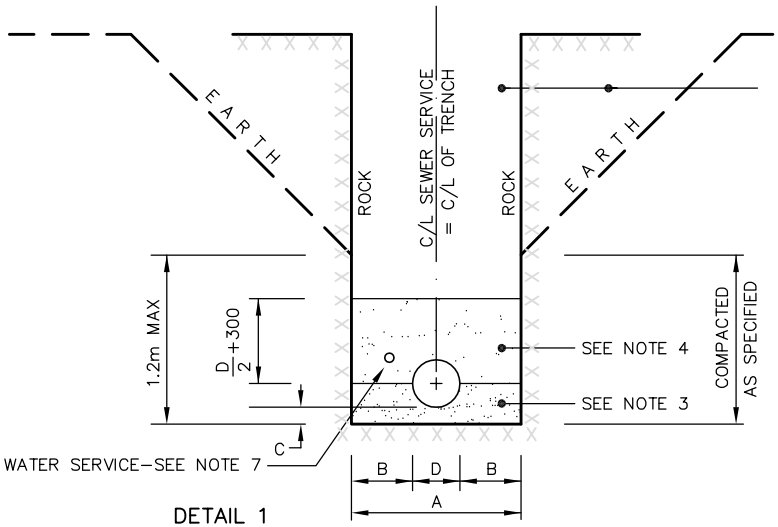
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
2. THIS STANDARD TO BE READ IN CONJUNCTION WITH APPLICABLE SPECIFICATIONS AND GSSD–1227.010.
3. MINIMUM HORIZONTAL DISTANCE BETWEEN SANITARY SERVICE AND FIRST UTILITY MUST BE 600 mm.
4. WATER SERVICE MUST BE INSTALLED ON THE OPPOSITE SIDE OF THE SANITARY SERVICE IN COMPARISON TO THE UTILITIES IN A SINGLE UTILITY TRENCH.
5. WHERE SERVICE CONNECTIONS ARE INSTALLED IN ROCK, THE ROCK SHALL BE BLASTED AND REMOVED TO 1.5 m BEYOND THE STREET LINE.

Sudbury Greater Grand

HORIZONTAL CONTROL OF LATERAL SEWER & WATER CONNECTIONS IN A COMMON ROCK TRENCH WITH OTHER UTILITIES

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1977–1 (1 OF 1)
APP'D:	GSSD–1226.010



DETAIL 1

SANITARY SEWERS, STORM SEWERS,
WATERMAINS & SERVICES IN A SEPARATE TRENCH

BACK FILL NOTES

EARTH TRENCH

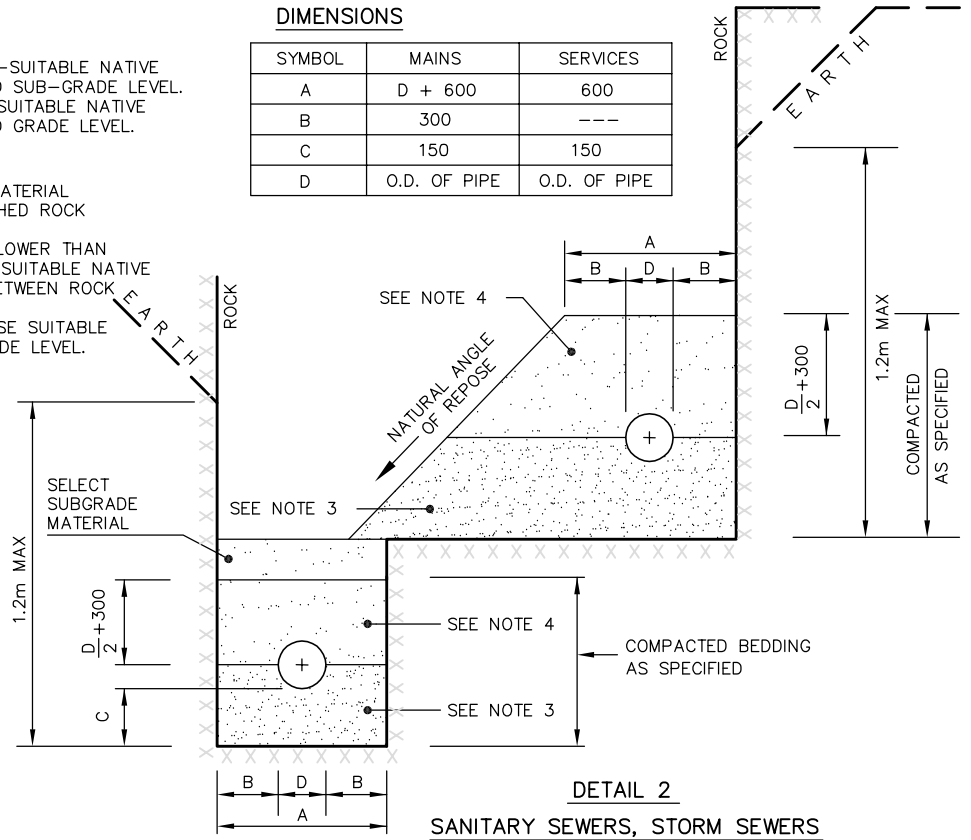
1. UNDER ROAD ALLOWANCE–SUITABLE NATIVE MATERIAL TO BE USED TO SUB–GRADE LEVEL.
2. OFF ROAD ALLOWANCE– SUITABLE NATIVE MATERIAL TO BE USED TO GRADE LEVEL.

ROCK TRENCH

1. UNDER ROAD ALLOWANCE
   a) USE SELECT SUBGRADE MATERIAL OR 150 mm MINUS CRUSHED ROCK TO TOP OF ROCK.
   b) WHERE TOP OF ROCK IS LOWER THAN BOTTOM OF SUB–GRADE, SUITABLE NATIVE MATERIAL TO BE USED BETWEEN ROCK AND SUB–GRADE.
2. OFF ROAD ALLOWANCE–USE SUITABLE NATIVE MATERIAL TO GRADE LEVEL.

DIMENSIONS

SYMBOL	MAINS	SERVICES
A	D + 600	600
B	300	---
C	150	150
D	O.D. OF PIPE	O.D. OF PIPE

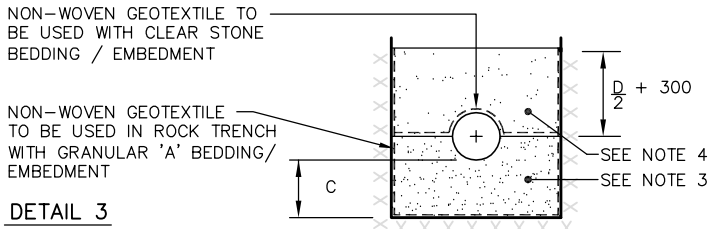


DETAIL 2

SANITARY SEWERS, STORM SEWERS
& WATERMAINS IN A COMMON TRENCH

NOTES:

1. D (O.D. OF PIPE) MEASUREMENT DOES NOT INCLUDE PIPE BELL.
2. THIS STANDARD TO BE READ IN CONJUNCTION WITH APPLICABLE SPECIFICATIONS, PLUS STANDARD GSSD–1225.010.
3. TRENCH BEDDING / EMBEDMENT MATERIALS TO SPRINGLINE OF PIPE SHALL CONSIST OF:
   –IN ROCK TRENCH –GRANULAR 'A' OR 19mm CLEAR STONE (SEE NOTE 9)
   –IN EARTH TRENCH –UNDER DRY CONDITIONS –BEDDING SAND OR GRANULAR 'A'
   –UNDER WET CONDITIONS –GRANULAR 'A' OR 19mm CLEAR STONE (SEE NOTE 9)
4. UNLESS OTHERWISE SPECIFIED, THE COVER / EMBEDMENT MATERIAL FROM THE SPRINGLINE OF THE PIPE TO 300 mm ABOVE THE PIPE SHALL CONSIST OF:
   –IN ROCK TRENCH –GRANULAR 'A' (SEE NOTE 9)
   –IN EARTH TRENCH –BEDDING SAND, GRANULAR 'A' (SEE NOTE 9)
5. THIS STANDARD IS TO BE APPLIED IN STABLE CONDITIONS, OR AFTER THE TRENCH HAS BEEN BROUGHT TO A STABLE CONDITION.
6. SLAG SHALL NOT BE USED FOR BEDDING OR BACKFILL MATERIAL.
7. DETAIL No. 1 SHALL ALSO APPLY FOR SEWER AND WATER SERVICES IN A COMMON TRENCH, WITH THE INVERT OF THE WATER SERVICE EQUALLING THE OBVERT ELEVATION OF THE SEWER SERVICE, UNLESS OTHERWISE SPECIFIED. THE WATER SERVICE SHALL HAVE 75 mm MIN. EMBEDMENT / BEDDING MATERIAL AROUND IT.
8. ALL MAINS WITH A HORIZONTAL SEPARATION (CENTRE TO CENTRE) OF 1.5 METRES OR LESS, SHALL BE CONSIDERED TO BE IN A COMMON TRENCH, WHILE MAINS WITH A HORIZONTAL SEPARATION GREATER THAN 1.5 METRES, SHALL BE CONSIDERED TO BE IN SEPARATE TRENCHES.
9. NON–WOVEN GEOTEXTILE SHALL BE PLACED TO SEPARATE ROCK TRENCH OR CLEAR STONE FROM OTHER EMBEDMENT MATERIAL. (SEE DETAIL 3)
10. TRENCH WALLS TO BE SLOPED IN ACCORDANCE WITH SOIL TYPES AS DEFINED IN THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
11. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.



DETAIL 3

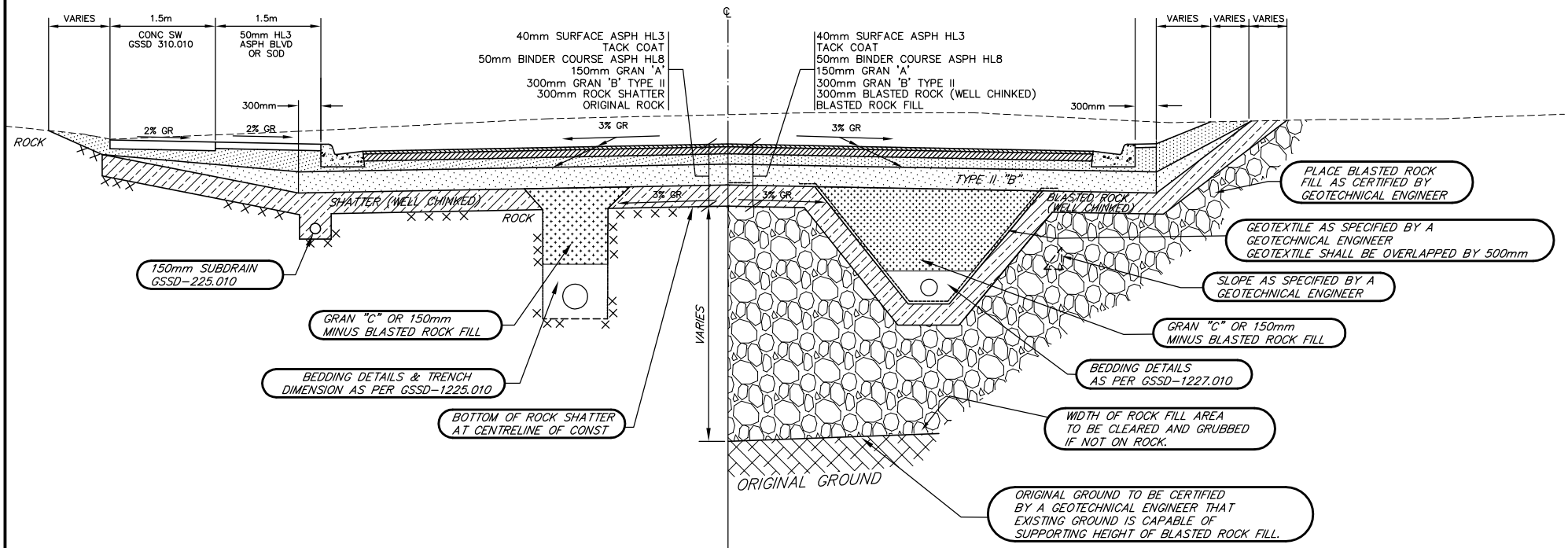
GEOTEXTILE TREATMENT FOR
ROCK TRENCH AND CLEAR STONE APPLICATION

Greater Sudbury

PIPE TRENCH DETAILS

SANITARY SEWERS, STORM SEWERS,
WATERMAINS & SERVICES

DRAWN BY: SAG/KLR	REV No: 4
DATE: 2003–03–03	REV DATE: 2019–02–26
SCALE: NTS	CAD/FILE No.: A1944–1 (1 OF 1)
APP'D: M. FRAYNE	GSSD–1227.010



TYPICAL ROCK CUT SECTION

N.T.S.

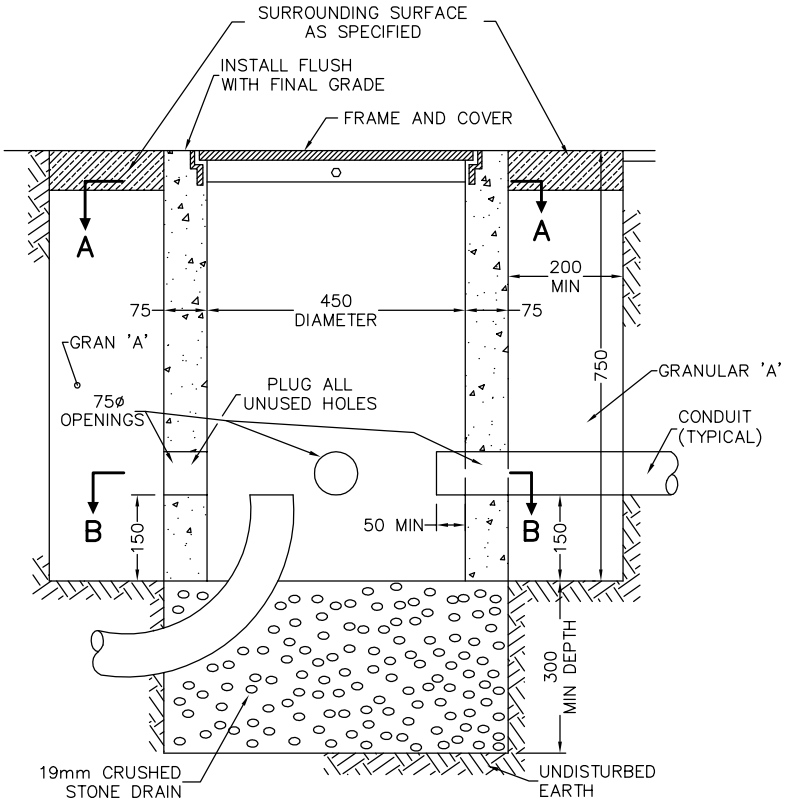
TYPICAL ROCK FILL SECTION

N.T.S.

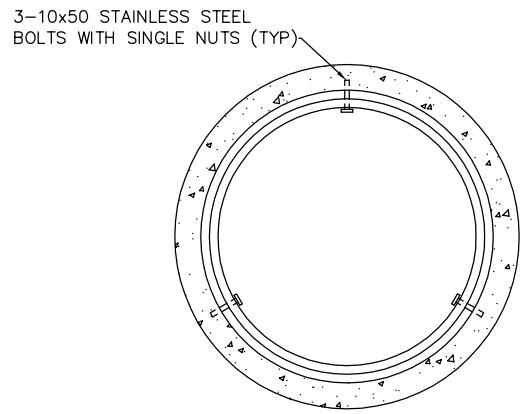
Greater Grand Sudbury

ROCK TRENCH DETAILS
ROCK CUT/ROCK FILL

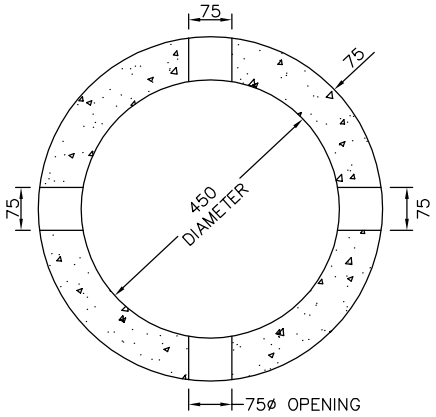
DRAWN BY: MHD	REV No: 6
DATE: 2013-01-01	REV DATE: 2019-02-25
SCALE: NTS	CAD/FILE No.: A2273-1 (1 OF1)
APP'D:	GSSD-1227.020



TYPICAL SECTION



SECTION A-A



SECTION B-B

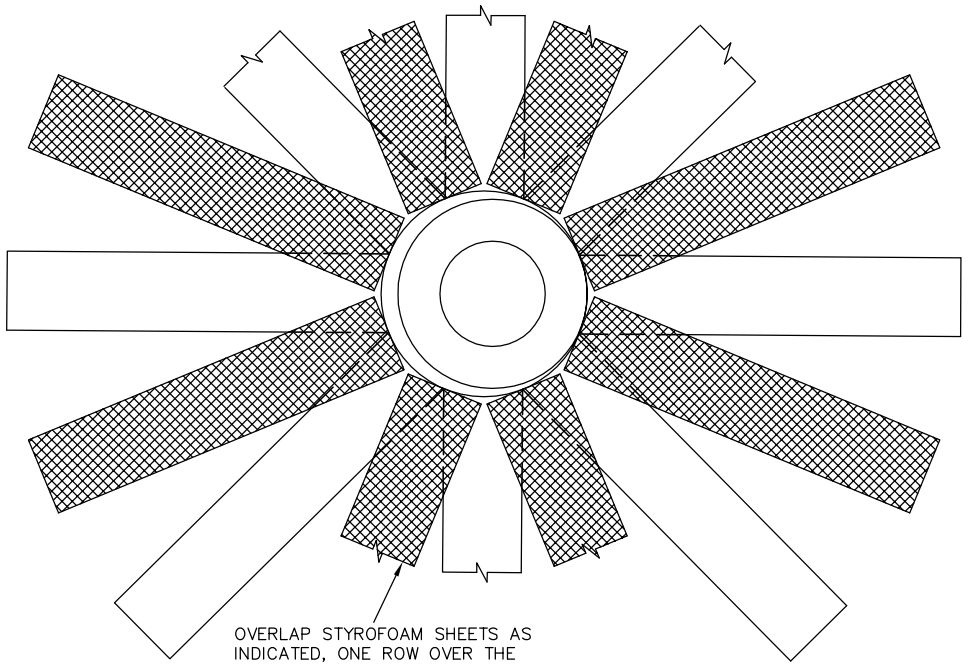
NOTES

1. ALL CONCRETE TO BE 20 MPa COMPRESSIVE STRENGTH AT 28 DAYS.
2. FRAME & COVER TO BE THAT SUPPLIED BY KONDU MFG. CO. LTD. PRESTON, ONT; OR EQUAL.
3. CONCRETE HANDHOLE SHOULD BE ORDERED WITH 2, 3, OR 4 OPENINGS AS REQUIRED.
4. A SEALANT ACCEPTABLE TO THE ENGINEER SHALL BE UTILIZED TO PROVIDE A WATERPROOF SEAL BETWEEN DUCTS AND HANDHOLE STRUCTURE.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
6. OPENINGS NOT USED ARE TO BE PLUGGED TO PREVENT EARTH INFILTRATION.
7. GRANULAR 'A' AND 19 mm CRUSHED STONE TO BE WELL COMPACTED.

Sudbury Greater | Grand

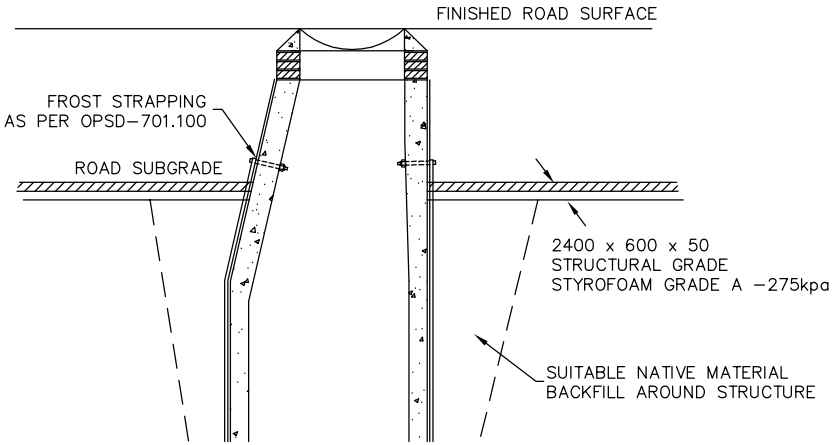
PRECAST CONCRETE HANDHOLE FOR TRAFFIC SIGNAL DUCTS

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003-03-03	REV DATE:
SCALE: NTS	CAD/FILE No.: A1928-1 (1 OF 1)
APP'D:	GSSD-1228.010



TOP VIEW

COVER REMOVED



TYPICAL SECTION

STYROFOAM FROST PROTECTION

UNDER ROADS & SHOULDERS ONLY

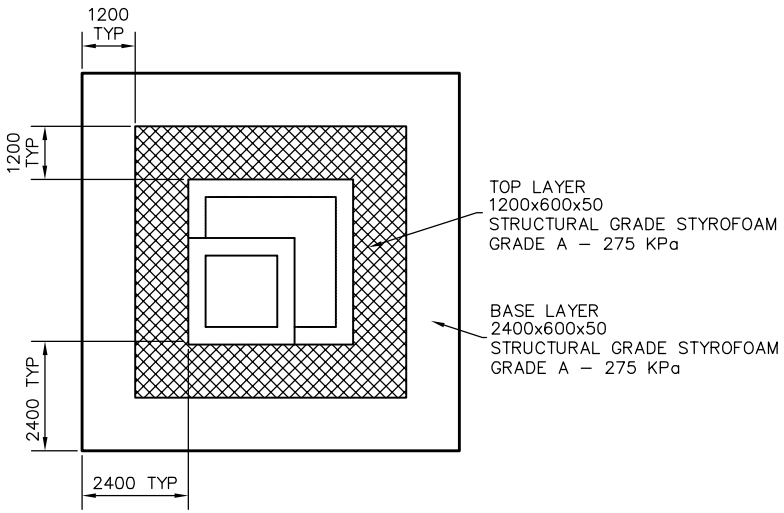
NOTES

1. STYROFOAM TO BE INSTALLED ONLY AT LOCATIONS INDICATED IN THE CONTRACT DOCUMENTS OR WHEN DIRECTED BY THE ENGINEER.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

Greater Grand Sudbury

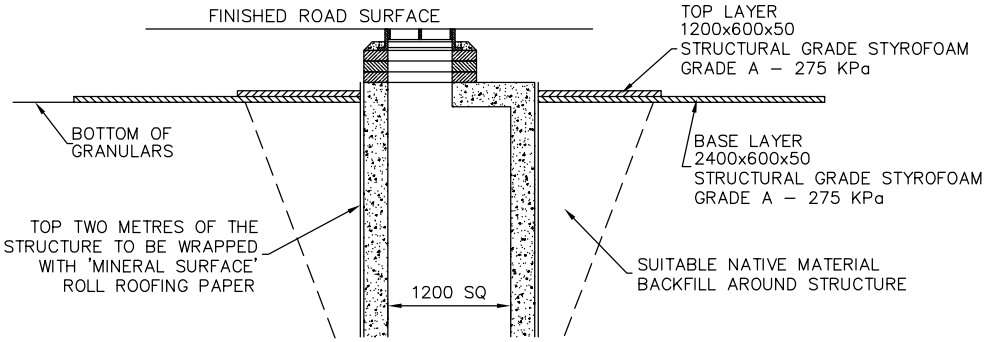
FROST PROTECTION FOR UNDERGROUND ROUND STRUCTURES

DRAWN BY: STS/KLR	REV No: 1
DATE: 2003-03-03	REV DATE: 2016-03-16
SCALE: NTS	CAD/FILE No.: A1979-1 (1 OF 1)
APP'D:	GSSD-1229.010



TOP VIEW

COVER REMOVED



TYPICAL SECTION

STYROFOAM FROST PROTECTION

UNDER ROADS & SHOULDERS ONLY

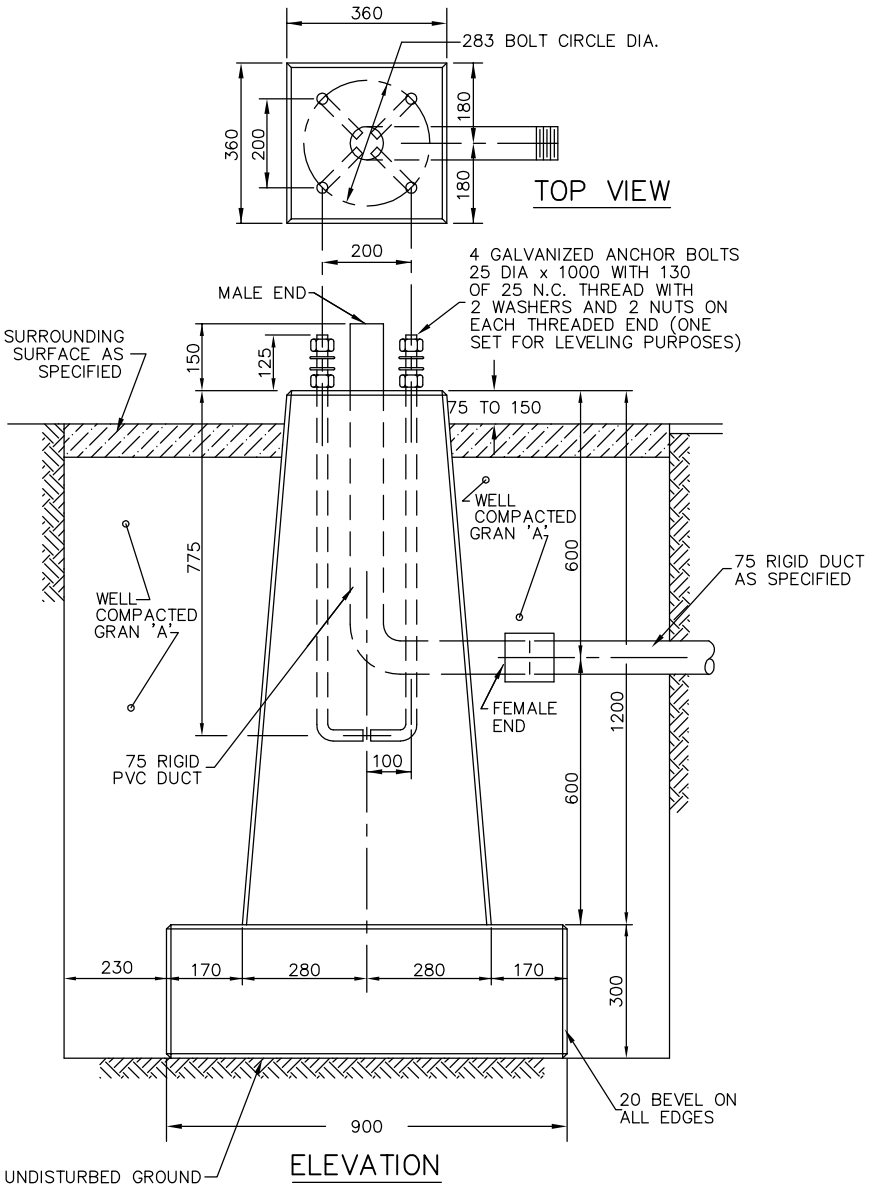
NOTES

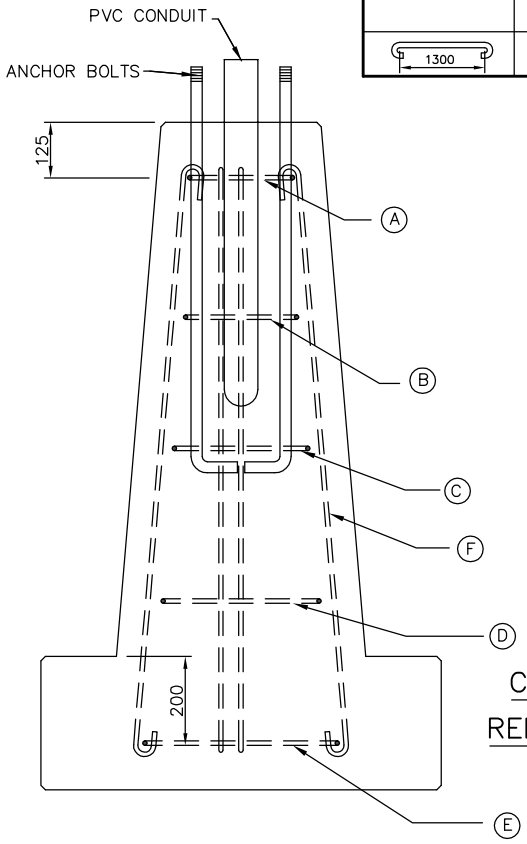
1. STYROFOAM TO BE INSTALLED ONLY AT LOCATIONS INDICATED IN THE CONTRACT DOCUMENTS OR WHEN DIRECTED BY THE ENGINEER.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

Greater Grand Sudbury

FROST PROTECTION FOR UNDERGROUND SQUARE STRUCTURES

DRAWN BY: STS/RFRANK	REV No:
DATE: 2003–03–03	REV DATE:
SCALE: NTS	CAD/FILE No.: A2018–1 (1 OF 1)
APP'D:	GSSD–1229.020





CROSS–SECTION
REINFORCING BARS

DETAILS OF REINFORCING BARS

BAR DIAGRAMS	CODE	DIA x LENGTH	DIM X	DIM Y	No. REQ'D
	A	10M x 1000	230	230	1
	B	10M x 1250	250	250	1
	C	10M x 1500	300	300	1
	D	10M x 1750	350	350	1
	E	10M x 2000	400	400	1
	F	10M x 1700	–	–	4

MATERIAL FOR BASE

NOTES:

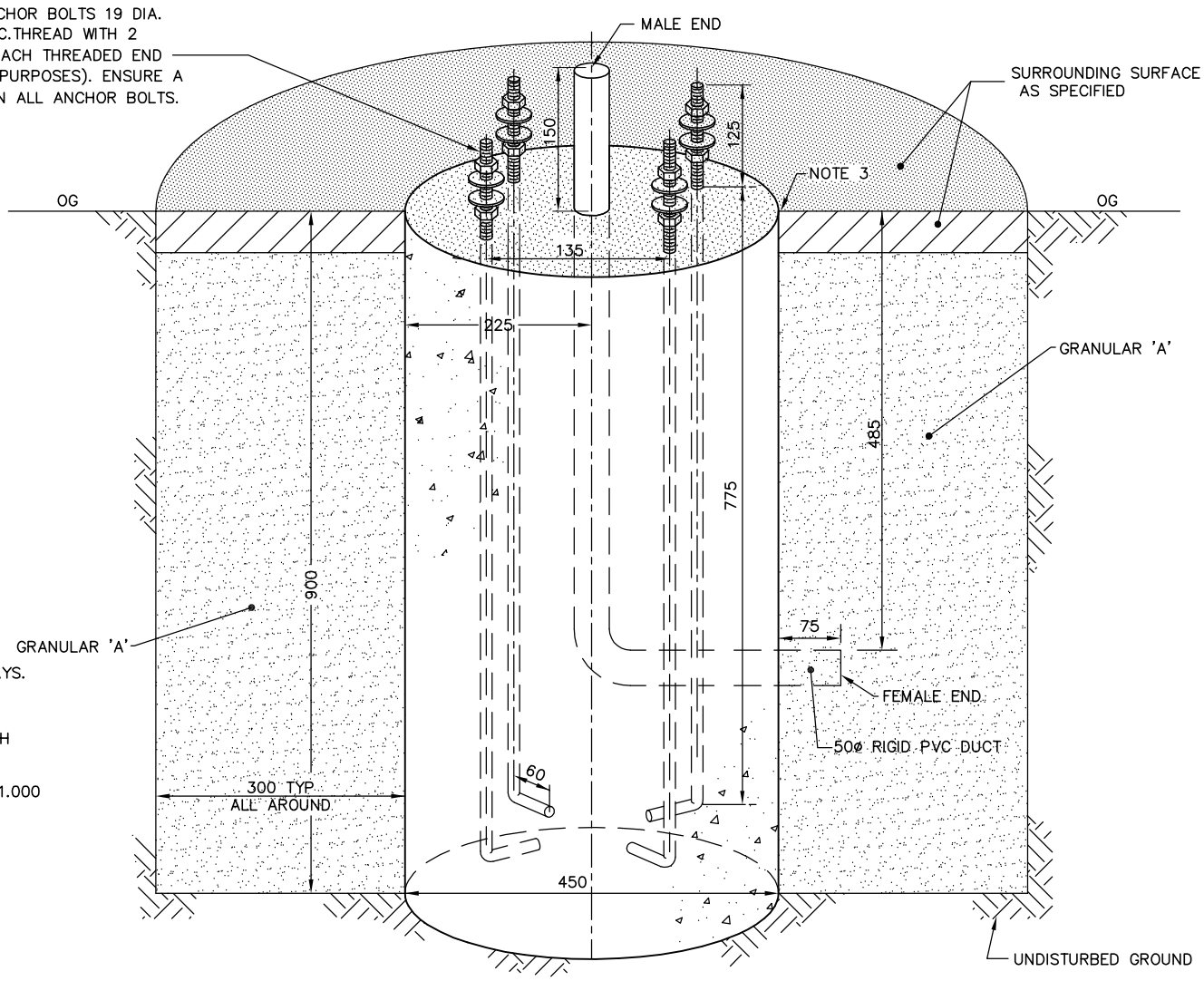
1. CLASS OF CONCRETE: 30 MPa AT 28 DAYS.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. THE COMPLETE ANCHORAGE ASSEMBLY INCLUDING BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED ACCORDING TO CSA STD G164–M92.
4. ALL EXPOSED ANCHORAGE ASSEMBLY TO BE GIVEN A LIBERAL COATING OF WHITE NON–STAINING GREASE.
5. COVER TO REINFORCING STEEL 65 mm.

Greater Grand Sudbury

REINFORCED CONCRETE BASE

FOR 203mm DIA TRAFFIC SIGNAL POLES

DRAWN BY: STS/RFRANK	REV No: 1
DATE: 2003–03–03	REV DATE: 2014–03–06
SCALE: NTS	CAD/FILE No.: A1980–1 (1 OF 1)
APP'D:	GSSD–1230.010



NOTES:

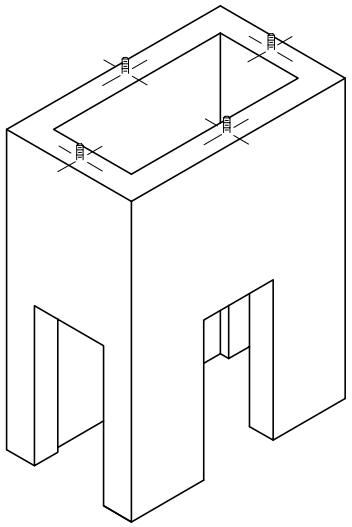
1. CLASS OF CONCRETE: 30 MPa AT 28 DAYS.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. TOP OF CONCRETE BASE SHALL BE FLUSH WITH SURROUNDING SURFACE.
4. FOR POLE DETAILS, REFER TO GSSD–1231.000
5. ALL EXPOSED ANCHORAGE ASSEMBLY TO BE GIVEN A LIBERAL COATING OF WHITE NON–STAINING GREASE.
6. THE COMPLETE ANCHORAGE ASSEMBLY INCLUDING BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED ACCORDING TO CSA STD G164–M92.

Greater Sudbury | Grand

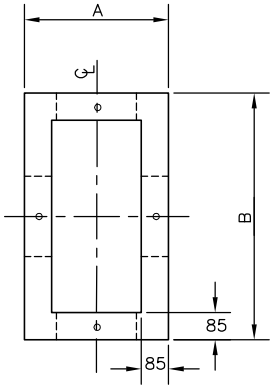
UNREINFORCED CONCRETE BASE

FOR 127 mm DIA TRAFFIC SIGNAL POLES

DRAWN BY: MHD	REV No: 1
DATE: 2013–01–01	REV DATE: 2014–03–13
SCALE: NTS	CAD/FILE No.: A2276–1 (1 OF 1)
APP'D:	**GSSD–1230.021**



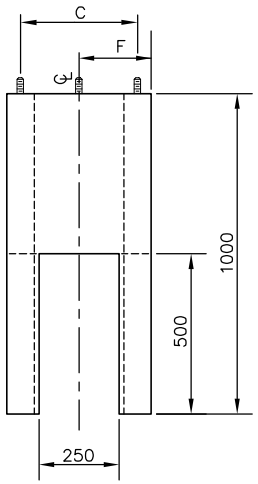
ISOMETRIC VIEW



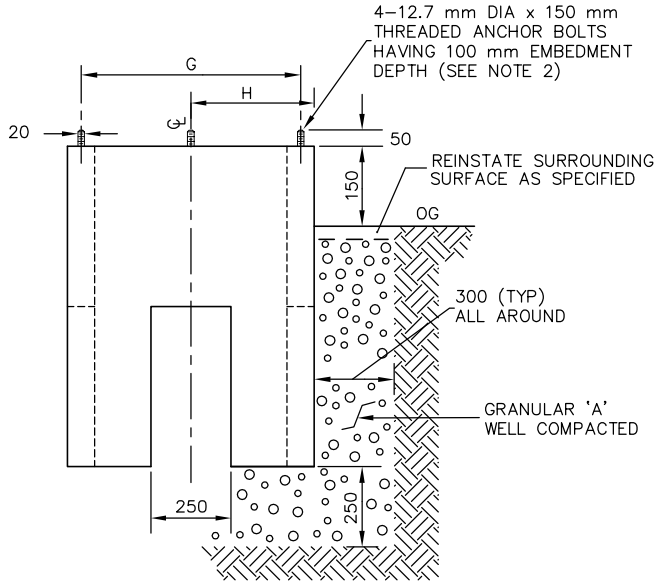
TOP VIEW

DIMENSION	CABINET TYPE	
	M1	P1
A	430	660
B	762	962
C	345	575
F	215	330
G	677	877
H	381	481

CABINET MANUFACTURER – TACEL



END VIEW



SIDE VIEW

NOTES:

1. CLASS OF CONCRETE: 30 MPa AT 28 DAYS.
2. EXPOSED ANCHOR BOLTS TO BE GIVEN A LIBERAL COATING OF WHITE NON–STAINING GREASE.
3. ALL DIMENSIONS ARE IN MILLIMETRES.

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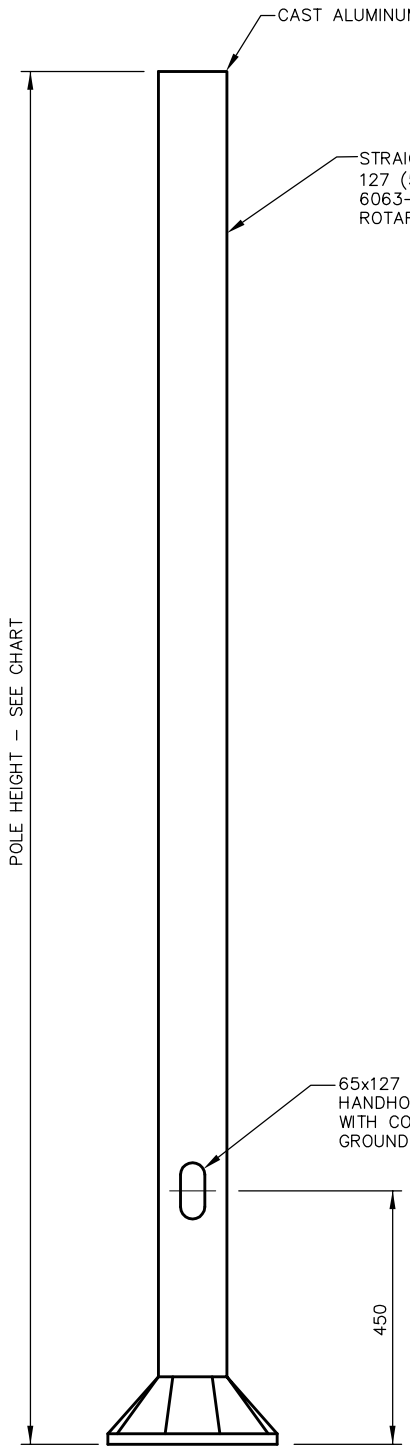
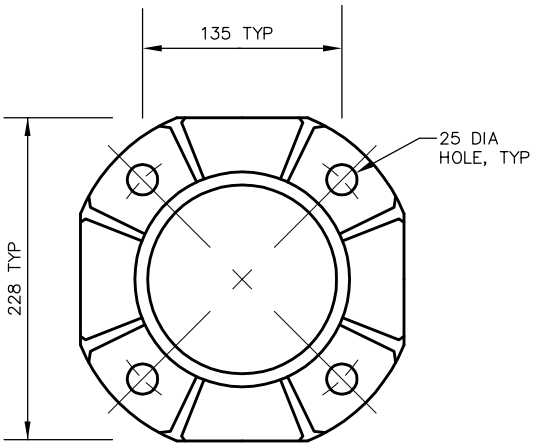
UNREINFORCED CONCRETE BASE FOR TRAFFIC CONTROLLER CABINET

DRAWN BY: STS/RF/BWK	REV No: 1
DATE: 2003–03–03	REV DATE: OCT 2010
SCALE: NTS	CAD/FILE No.: A2021–1 (1 OF 1)
APP'D: PETER CHIESA	GSSD–1230.030





350T–6 CAST ALUMINUM ALLOY BASE FLANGE

TYPE OF POLE	POLE HEIGHT (X)
ISLAND POLE	6.10 METRES
PEDESTRIAN POLE	3.66 METRES
CONTROLLER CABINET POLE	3.05 METRES

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. TRAFFIC SIGNAL POLE SHALL INCLUDE 4 – GALVANIZED ANCHOR BOLTS 19mm (¾") DIA. x 610mm (24") LONG AND 8 – 19mm (¾") GALVANIZED NUTS & WASHERS.
3. FOR CONCRETE BASE DETAILS, REFER TO GSSD–1230.021 UNREINFORCED CONCRETE BASE FOR 127mm DIA TRAFFIC SIGNAL POLES.

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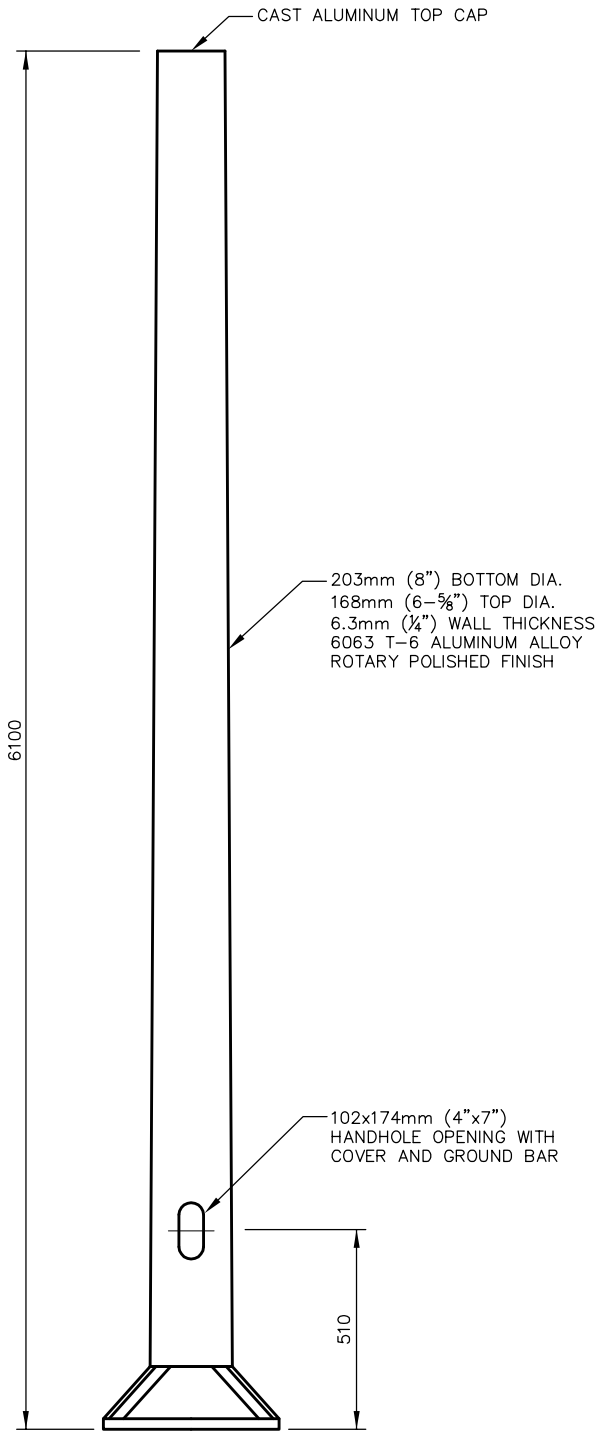
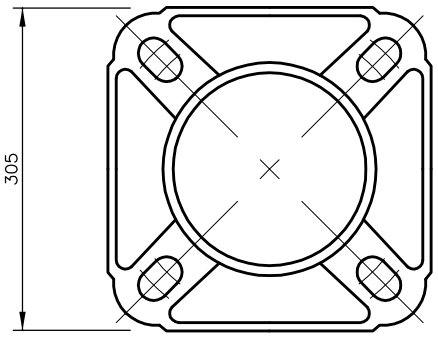
ALUMINUM TRAFFIC SIGNAL POLE FOR ISLAND, PEDESTRIAN & CONTROLLER CABINET

DRAWN BY: SAG	REV No: 1
DATE: 2013–01–01	REV DATE: 2014–03–06
SCALE: NTS	CAD/FILE No.: A2205–1 (1 OF 1)
APP'D:	GSSD–1231.000





350T–6 CAST ALUMINUM ALLOY BASE FLANGE
279–305mm (11"–12") BOLT CIRCLE DIAMETER
FOR 25mm(1") ANCHOR HOLES

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. TRAFFIC SIGNAL POLE SHALL INCLUDE 4 – GALVANIZED ANCHOR BOLTS 25.4mm (1") DIA. x 762mm (30") LONG AND 8 – 25.4mm (1") GALVANIZED NUTS & WASHERS.
3. FOR CONCRETE BASE DETAILS, REFER TO GSSD–1230.010 REINFORCED CONCRETE BASE 203mm DIA TRAFFIC SIGNAL POLES.

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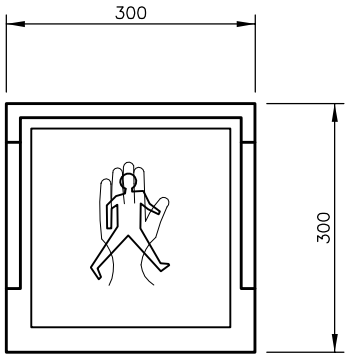
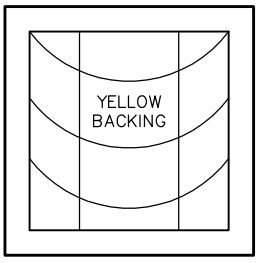
ALUMINUM TRAFFIC SIGNAL POLE
203mm (8") DIAMETER

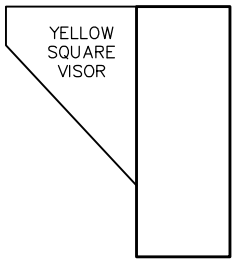
DRAWN BY: SAG	REV No:
DATE: 2014–03–06	REV DATE:
SCALE: NTS	CAD/FILE No.: A2204–1 (1 OF 1)
APP'D:	**GSSD–1231.100**



FRONT VIEW

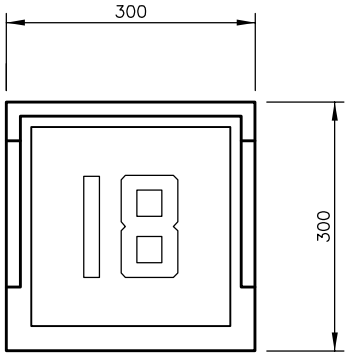


BACK VIEW

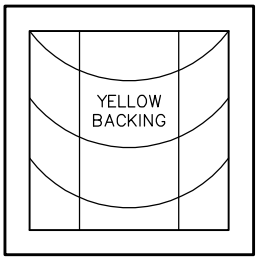


SIDE VIEW

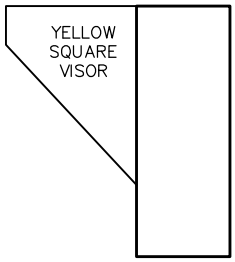
PEDESTRIAN SIGNALS



FRONT VIEW



BACK VIEW



SIDE VIEW

COUNT DOWN SIGNALS

NOTES:

1. LED PEDESTRIAN SIGNAL IS TO BE BIMODAL. ALL LED MODULE AND HOUSINGS SHALL CONFORM TO THE SIZE, COLOUR AND DESIGN IDENTIFIED IN THE ONTARIO HIGHWAY TRAFFIC ACT (HTA) REGULATIONS AND THE ONTARIO TRAFFIC MANUAL (OTM), BOOK 12 – TRAFFIC SIGNALS.
2. THE COUNTDOWN MODULE MUST OPERATE IN THE CLEARANCE CYCLE COUNTDOWN MODE. THE MODULE WILL START COUNTING WHEN THE FLASHING DON'T WALK SIGNAL TURNS ON AND WILL COUNT DOWN TO "0" AND TURN OFF WHEN THE SOLID "HAND" SIGNAL TURNS ON.
3. BIRD STOPS SHALL COME WITH A RUBBER GASKET, BE FULLY THREADED AND HAVE THE SAME YELLOW COLOURED FINISH AS THE SIGNAL HEAD.
4. THE COUNT DOWN UNIT SHALL INCLUDE A POLY JOINER & NUT.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

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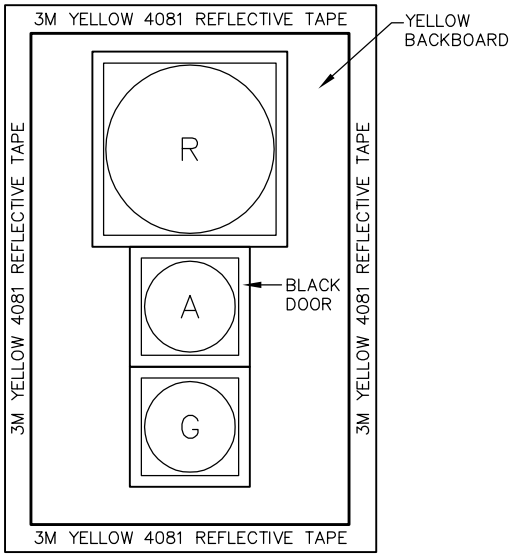
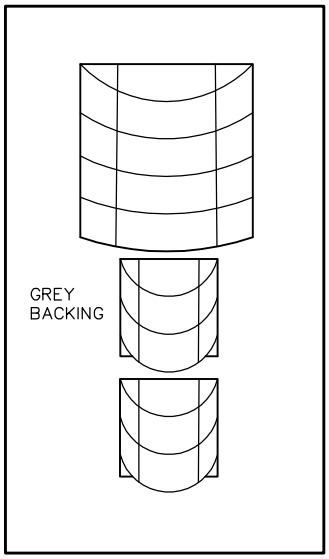
LED PEDESTRIAN AND LED COUNTDOWN SIGNALS

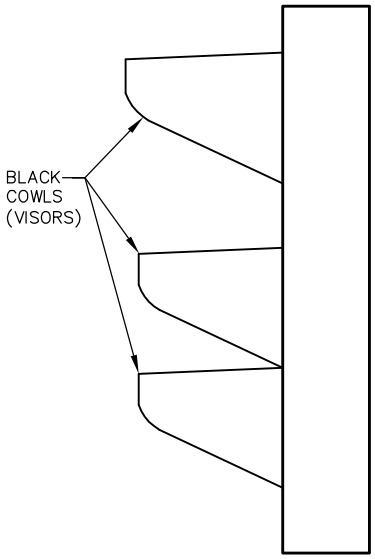
DRAWN BY: SAG	REV No:
DATE: 2013-01-01	REV DATE:
SCALE: NTS	CAD/FILE No.: A2206-1 (1 OF 1)
APP'D:	**GSSD-1232.000**



FRONT VIEW



BACK VIEW



SIDE VIEW

TYPE (mm)	HOUSING	BACKBOARD	SPECIFICATION	APPROVAL
R–A–G 300x200x200	POLY MATERIAL	FLEXIBLE POLY PLUMBIZER ALLOWANCE	MEET OR EXCEEDS ITE SPECS	CSA OR ESA
R–A–G 300x300x300	POLY MATERIAL	FLEXIBLE POLY PLUMBIZER ALLOWANCE	MEET OR EXCEEDS ITE SPECS	CSA OR ESA
R–A–GA 300x300x300	POLY MATERIAL	FLEXIBLE POLY PLUMBIZER ALLOWANCE	MEET OR EXCEEDS ITE SPECS	CSA OR ESA
R–A–G–GA 300x300x300x300	POLY MATERIAL	FLEXIBLE POLY PLUMBIZER ALLOWANCE	MEET OR EXCEEDS ITE SPECS	CSA OR ESA

NOTES:

1. ALL LED VEHICLE TRAFFIC SIGNAL HEAD REQUIREMENTS SHALL CONFORM TO THE SIZE, COLOUR AND DESIGN IDENTIFIED IN THE ONTARIO HIGHWAY TRAFFIC ACT (HTA) REGULATIONS AND THE ONTARIO TRAFFIC MANUAL (OTM), BOOK 12 – TRAFFIC SIGNALS.
2. ALL VEHICLE TRAFFIC SIGNAL HEADS ON MAST ARMS SHALL BE MOUNTED WITH A PLUMBIZER ARM, UNLESS OTHER SPECIFIED. THE FULL SIZE STAINLESS STEEL REINFORCING PLATES WILL BE MOUNTED INSIDE AND OUTSIDE OF THE AMBER SECTION HOUSING.
3. IF A VEHICLE TRAFFIC SIGNAL HEAD ON MAST ARM IS SUPPORTED BY A CUSHION HANGER, FULL SIZE STAINLESS STEEL REINFORCING PLATES ARE REQUIRED PER MOUNTING INSIDE AND OUTSIDE OF THE RED SECTION HOUSING.
4. BACKBOARD SHALL BE POLY MATERIAL AND THE PAINT SHALL BE IMPREGNATED ON BOTHSIDES OF THE BACKBOARD YELLOW FRONT AND GREY BACK. PAINTED MATERIAL IS NOT ACCEPTABLE.
5. 3M BRAND DIAMOND GRADE VIP YELLOW 4081 REFLECTIVE MARKING TAPE TO BE PLACED AROUND THE PERIMETER OF ALL TRAFFIC SIGNAL BACKBOARDS.
6. BIRDS STOPS SHALL COME WITH A RUBBER GASKET, BE FULLY THREADED AND HAVE THE SAME YELLOW COLOURED FINSH AS THE SIGNAL HEAD.
7. DOOR MOUNTING HARDWARE: STAINLESS STEEL EYEBOLT AND WING NUT ASSEMBLIES.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

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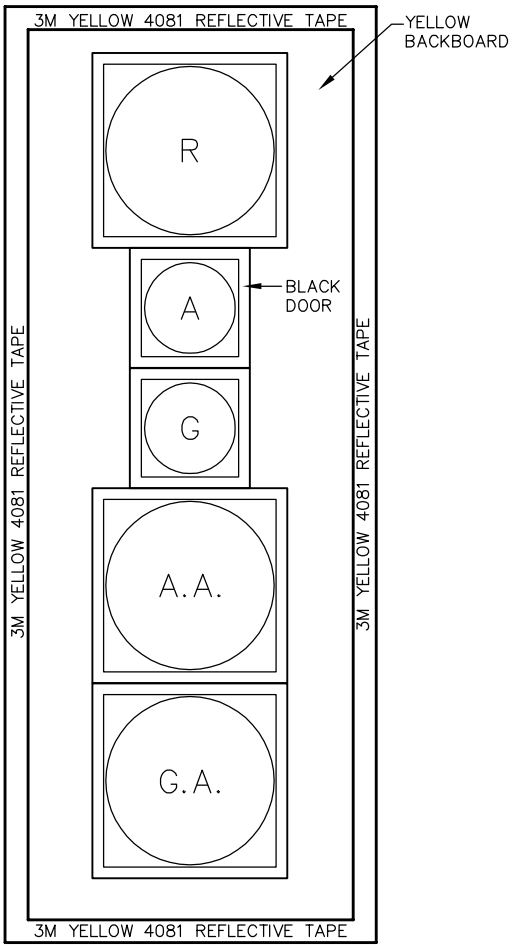
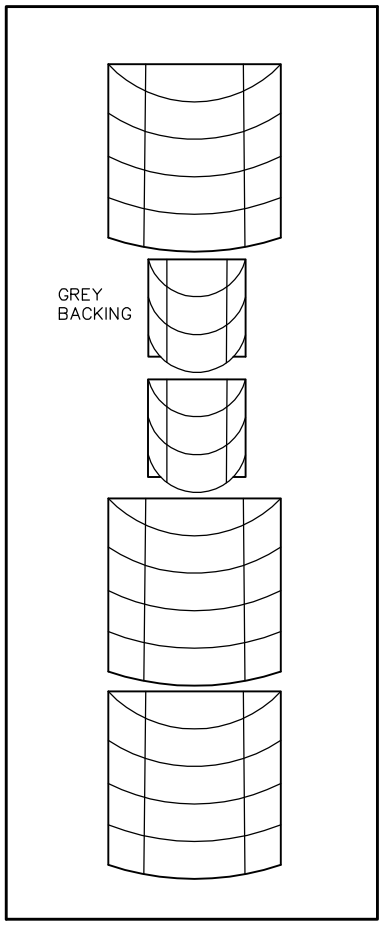
LED TRAFFIC VEHICULAR SIGNAL HEADS

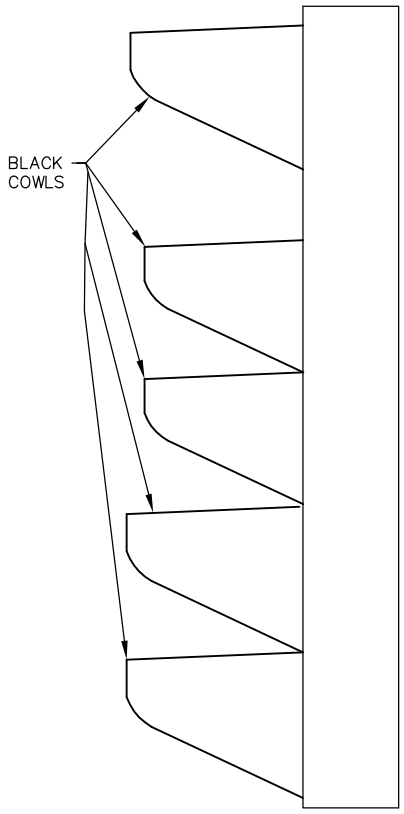
DRAWN BY: SAG	REV No:
DATE: 2013–01–01	REV DATE:
SCALE: NTS	CAD/FILE No.: A2207–1 (1 OF 1)
APP'D:	**GSSD–1233.000**



FRONT VIEW



BACK VIEW



SIDE VIEW

NOTES:

1. 5–SECTION TRAFFIC SIGNAL DISPLAYS REQUIREMENTS SHALL CONFORM TO THE SIZE, COLOUR AND DESIGN IDENTIFIED IN THE ONTARIO HIGHWAY TRAFFIC ACT (HTA) REGULATIONS AND THE ONTARIO TRAFFIC MANUAL (OTM), BOOK 12 – TRAFFIC SIGNALS.
2. 5–SECTION TRAFFIC SIGNAL HEADS ON MAST ARMS SHALL BE MOUNTED WITH A PLUMBIZER ARM, UNLESS OTHER SPECIFIED. THE FULL SIZE STAINLESS STEEL REINFORCING PLATES WILL BE MOUNTED INSIDE AND OUTSIDE OF THE AMBER AND GREEN SECTION HOUSING.
3. IF A 5–SECTION TRAFFIC SIGNAL HEAD ON A MAST ARM IS SUPPORTED BY A CUSHION HANGER, FULL SIZE STAINLESS STEEL REINFORCING PLATES ARE REQUIRED PER MOUNTING INSIDE AND OUTSIDE OF THE RED SECTION HOUSING.
4. BACKBOARD SHALL BE POLY MATERIAL AND THE PAINT SHALL BE IMPREGNATED ON BOTHSIDES OF THE BACKBOARD, YELLOW FRONT AND GREY BACK. PAINTED MATERIAL IS NOT ACCEPTABLE.
5. 3M BRAND DIAMOND GRADE VIP YELLOW 4081 REFLECTIVE MARKING TAPE IS TO BE PLACED AROUND THE PERIMETER OF ALL TRAFFIC SIGNAL BACKBOARDS ACCORDING TO THE MANUFACTURER'S INSTRUCTION.
6. BIRD STOPS SHALL COME WITH A RUBBER GASKET, BE FULLY THREADED AND HAVE THE SAME YELLOW COLOURED FINSH AS THE SIGNAL HEAD.
7. DOOR MOUNTING HARDWARE: STAINLESS STEEL EYEBOLTS AND WING NUT ASSEMBLIES ARE TO BE USED.
8. RED DISPLAY–300mm(12"), AMBER DISPLAY–200mm(8"), GREEN DISPLAY–200mm(8"), AMBER ARROW DISPLAY–300mm(12") and GREEN ARROW DISPLAY–300mm(12").

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LED 5–SECTION TRAFFIC SIGNAL DISPLAYS

DRAWN BY: SAG	REV No:
DATE: 2013–01–01	REV DATE:
SCALE: NTS	CAD/FILE No.: A2272–1 (1 OF 1)
APP'D:	**GSSD–1234.000**