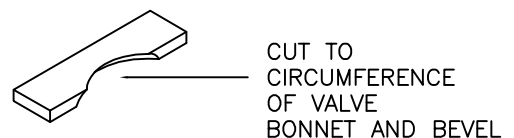


PROCEDURE:

- STEP 1. BUILD A 609 mm X 609 mm LEVEL FLAT BASE OF COMPACTED CLAY USING A FLAT TAMPER UP TO WITHIN 12 mm OF THE TOP OF THE TOP FLANGE.
- STEP 2. CUT OR NOTCH OUT TWO OF THE 50X200X600 CONCRETE BLOCKS THE WIDTH OF VALVE FLANGE AND LAY ON BASE PARALLEL TO PIPE.
- STEP 3. INSTALL TWO 50x200x600 CONCRETE BLOCKS TRANSVERSELY OR AT RIGHT ANGLES TO THE FIRST SET AND NO CLOSER TO THE FLANGE THAN THE CUTOUT SO THAT THEY DO NOT PROTRUDE OVER THE FLANGE.
- STEP 4. ADD ALTERNATE LAYERS OF CONCRETE BLOCKS MAKING SURE EDGES ARE NO CLOSER TO VALVE THAN CUTOUT, CONTINUE UNTIL MINIMUM REQUIRED CLEARANCE (100 mm) FROM TOP OF VALVE BONNET TO VALVE NUT IS OBTAINED.

- STEP 5. TWO PIECES OF CONCRETE BLOCKS ARE NOW CUT OUT TO OUTSIDE CIRCUMFERENCE OF BONNET AND UNDERCUT TO COMODATE BONNET THICKNESS.



- STEP 6. APPROPRIATE LENGTHS OF BOTTOM AND TOP SECTION OF CASING ARE NOW INSTALLED AND BACKFILLED WITH COMPACTED CLAY TO ABOVE JOINT.

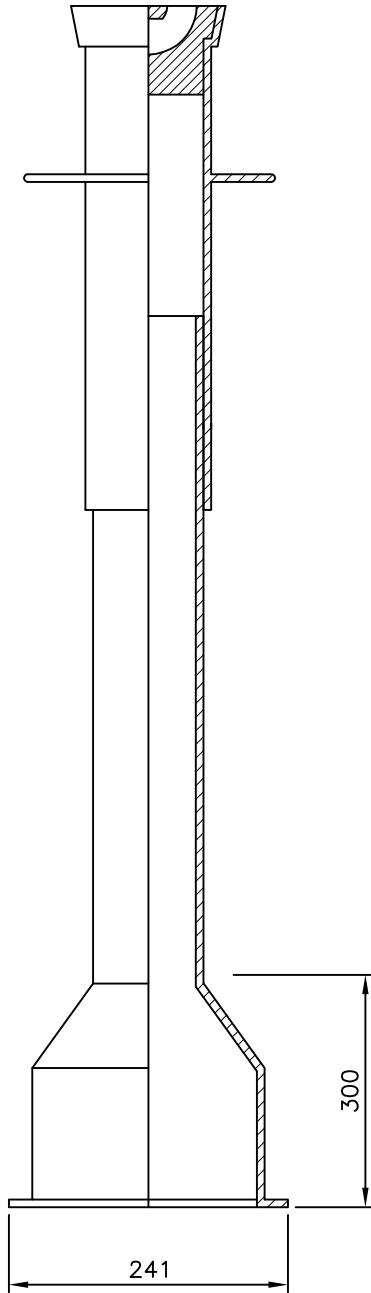


TITLE:
VALVE BOX CONSTRUCTION DETAIL

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	4-100



STANDARD VALVE PLUG

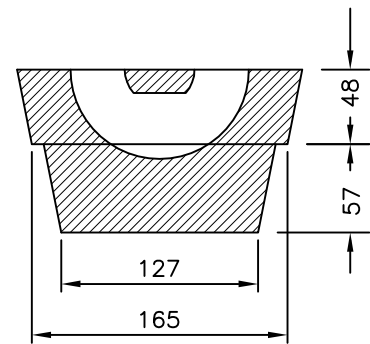
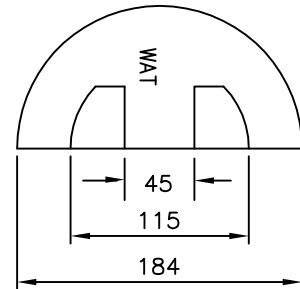


SLIDING TYPE A

NOTES:

1. VALVE BOXES SHALL BE EXTERNALLY AND INTERNALLY COATED WITH ASPHALTIC OR EPOXY COATING.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

PLUG C/W CORED HANDHOLES AND MARKED 'WATER'



TITLE:

VALVE BOX DETAIL —
SLIDING TYPE A

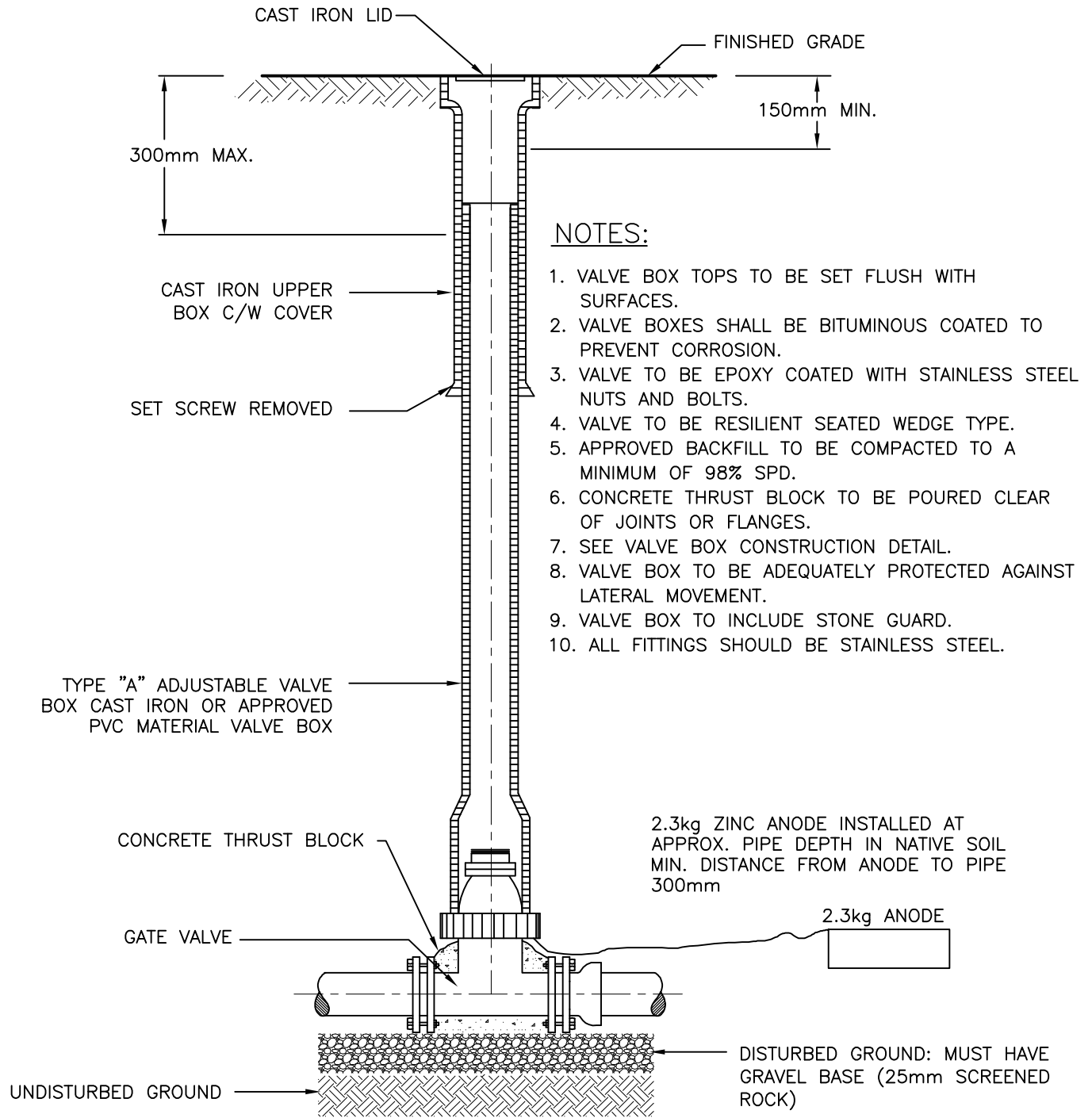
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-101



NOTES:

1. VALVE BOX TOPS TO BE SET FLUSH WITH SURFACES.
2. VALVE BOXES SHALL BE BITUMINOUS COATED TO PREVENT CORROSION.
3. VALVE TO BE EPOXY COATED WITH STAINLESS STEEL NUTS AND BOLTS.
4. VALVE TO BE RESILIENT SEATED WEDGE TYPE.
5. APPROVED BACKFILL TO BE COMPACTED TO A MINIMUM OF 98% SPD.
6. CONCRETE THRUST BLOCK TO BE POURED CLEAR OF JOINTS OR FLANGES.
7. SEE VALVE BOX CONSTRUCTION DETAIL.
8. VALVE BOX TO BE ADEQUATELY PROTECTED AGAINST LATERAL MOVEMENT.
9. VALVE BOX TO INCLUDE STONE GUARD.
10. ALL FITTINGS SHOULD BE STAINLESS STEEL.



TITLE:

MAIN VALVE CASING DETAIL

STANDARD DETAILS

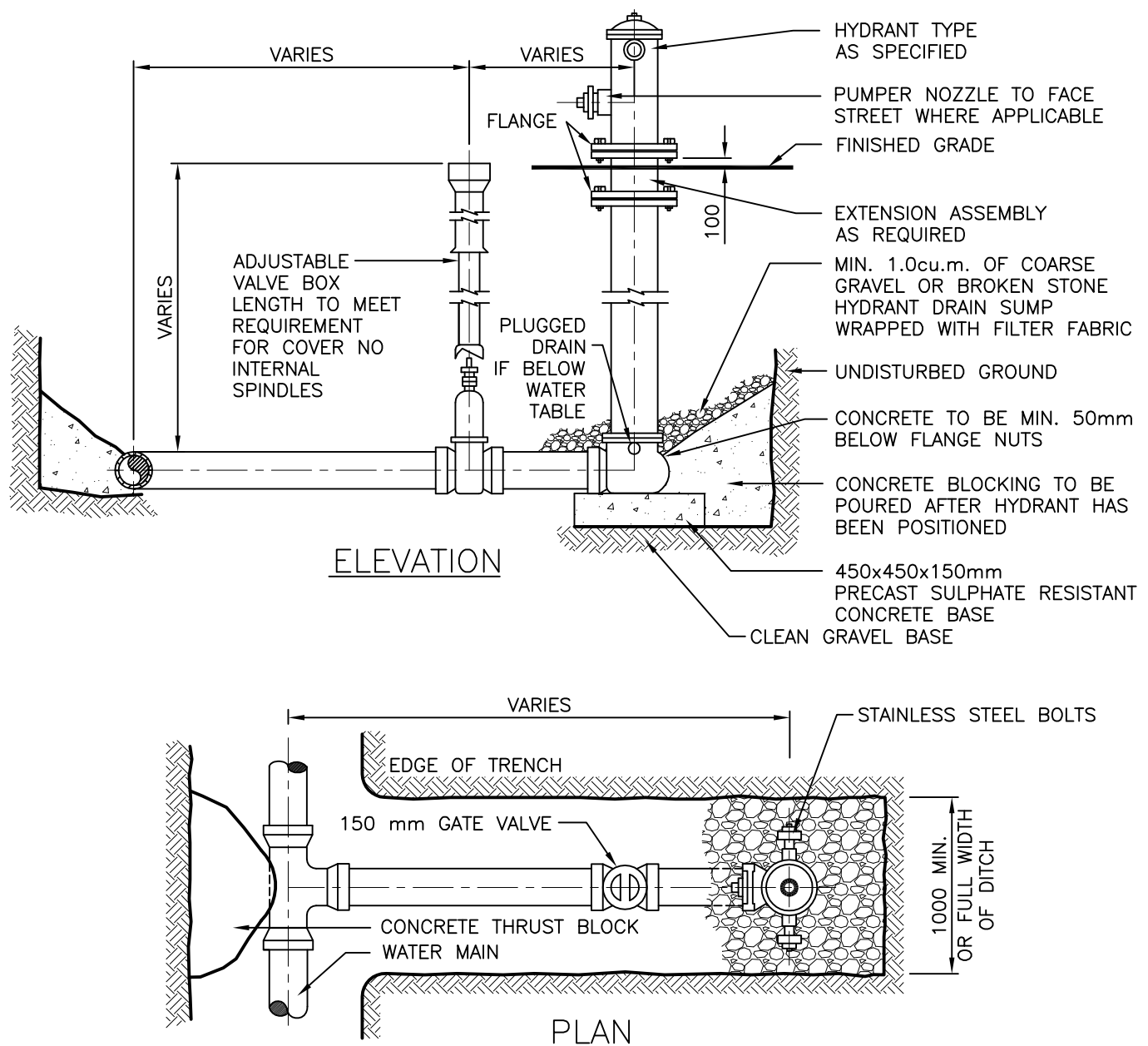
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-102

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NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. CONCRETE TO BE 25MPa @ 28 DAYS.
3. HYDRANTS SHALL BE COMPRESSION TYPE CONFORMING TO AWWA C502 COMPLETE WITH PLUGGED DRAINS, STAINLESS STEEL BOLTS AND FITTINGS AND ASPHALTIC COATED HYDRANT COMPONENTS.
4. PROVIDE CATHODIC PROTECTION AS SHOWN ON STD. DWG. NO. A-110.
5. THRUST BLOCKS TO BE PLACED AGAINST UNDISTURBED GROUND HAVING A MINIMUM BEARING OF 7300kg/m²
6. CONCRETE TO BE POURED CLEAR OF ALL FLANGES, JOINTS, AND HYDRANT DRAIN.
7. APPROVED BACKFILL TO BE COMPACTED TO A MINIMUM OF 98% SPD.
8. DO NOT ALLOW PONDING OR STANDING WATER AROUND HYDRANT.
9. PLACEMENT OF HYDRANT AND ORIENTATION OF PUMPER NOZZLE TO BE APPROVED.
10. HYDRANT TO BE PLUGGED OR DRAINING AS DICTATED BY SITE CONDITIONS.
11. THREAD SIZES SHOULD CONFORM TO AMERICAN STANDARD THREAD SIZES.

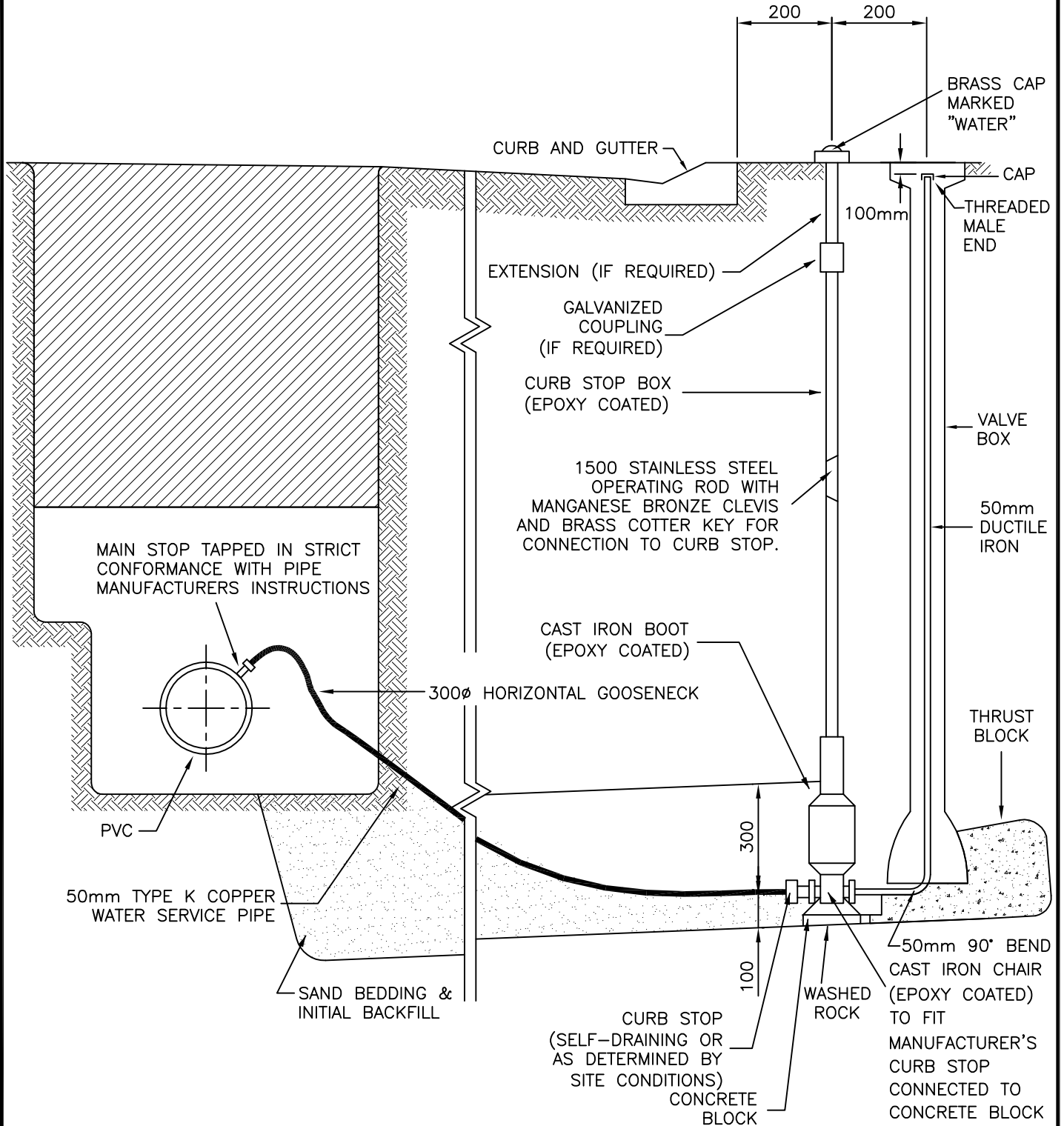


TITLE:
TYPICAL HYDRANT & VALVE DETAIL

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	4-200

NOTES:

1. COPPER LINE SHALL BE ONE CONTINUOUS PIECE, UNLESS LENGTH EXCEEDS 30m MIN. AND ONLY THEN WILL A DOUBLE UNION BE ALLOWED.
2. INVERT ELEVATION SHALL BE 2.4m BELOW ESTABLISHED FINISHED GRADE UNLESS APPROVED BY THE COUNTY
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.



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TITLE:

FLUSHING VALVE

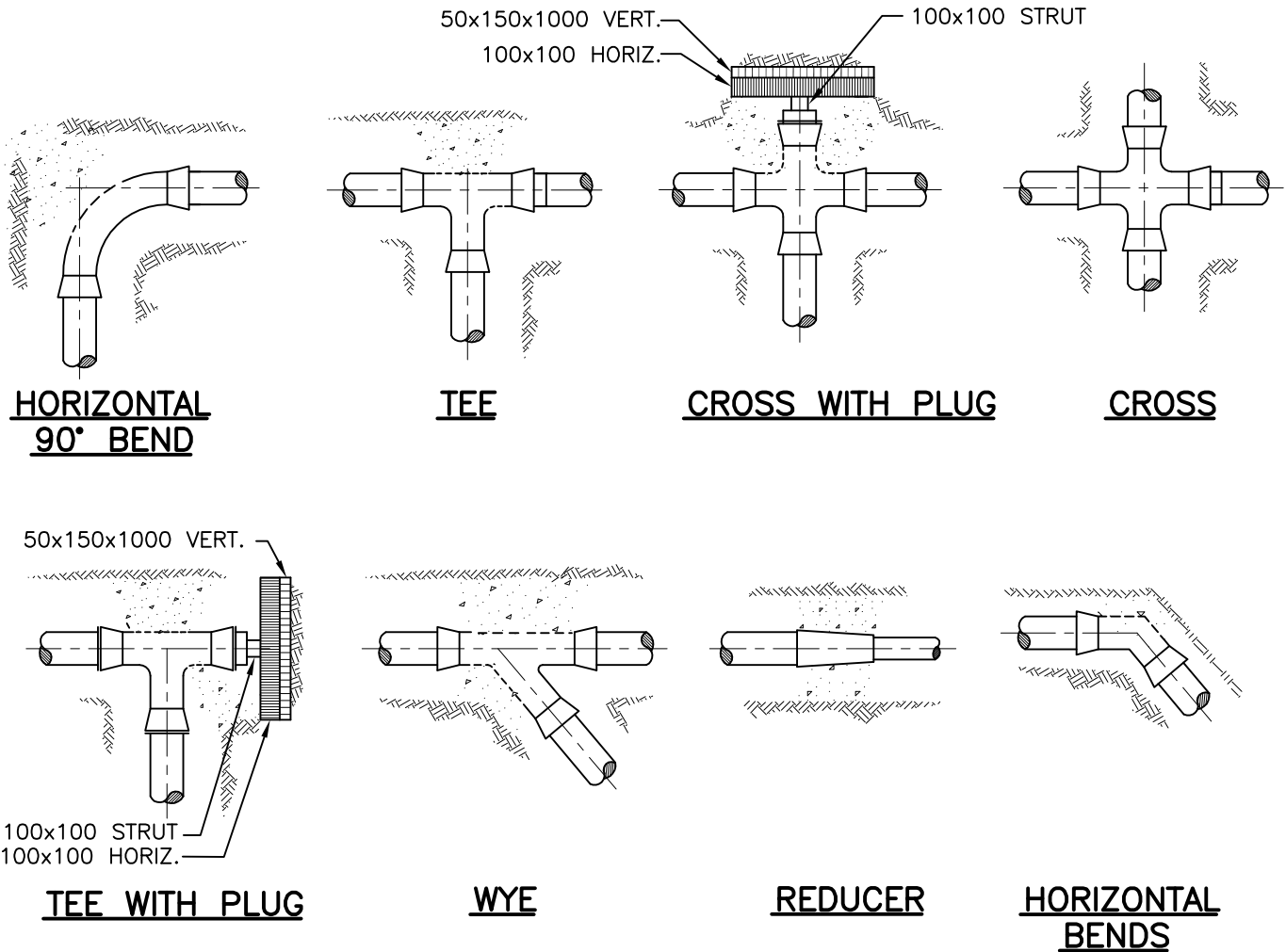
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-201



NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. ALL FITTINGS TO BE WRAPPED IN 6MIL POLYETHYLENE PRIOR TO POURING CONCRETE.
3. ALL CONCRETE TO BE MIN. 28MPa @ 28 DAYS.
4. THE REQUIRED BEARING AREA SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT SOIL CONDITIONS AND AS APPROVED BY THE COUNTY.

HORIZONTAL THRUST BLOCK BEARING AREA						
MINIMUM CONCRETE AREA IN CONTACT WITH UNDISTURBED SOIL (sq. m)						
FITTING	SIZE OF MAIN (mm)					
	150	200	250	300	400	500
DEAD END MAIN & TEE	0.35	0.62	0.97	1.40	2.49	3.90
11 1/4 DEGREE BEND	0.07	0.12	0.20	0.28	0.50	0.78
22 1/2 DEGREE BEND	0.14	0.24	0.38	0.55	0.97	1.52
45 DEGREE BEND	0.27	0.48	0.75	1.07	1.91	2.98
90 DEGREE BEND	0.50	0.88	1.38	1.98	3.53	5.51
VALVE & REDUCER	0.35	0.62	0.97	1.40	2.49	3.90

NOTE:

- BEARING AREA CALCULATED USING THE FOLLOWING:
(a) HYDRAULIC PRESSURE 1380kPa.
(b) SOIL BEARING CAPACITY 72kPa.
- CONCRETE STRENGTH TO BE 20MPa.
- CONCRETE TO BE CLEAR OF BELLS & PIPE.
- PLACE 6MIL POLYETHYLENE BETWEEN CONCRETE AND PIPE.
- SEE DWG. 6-500 FOR "CLASS B BEDDING DETAILS" FOR "d" DEPTH.



TITLE:

THRUST BLOCK DETAILS

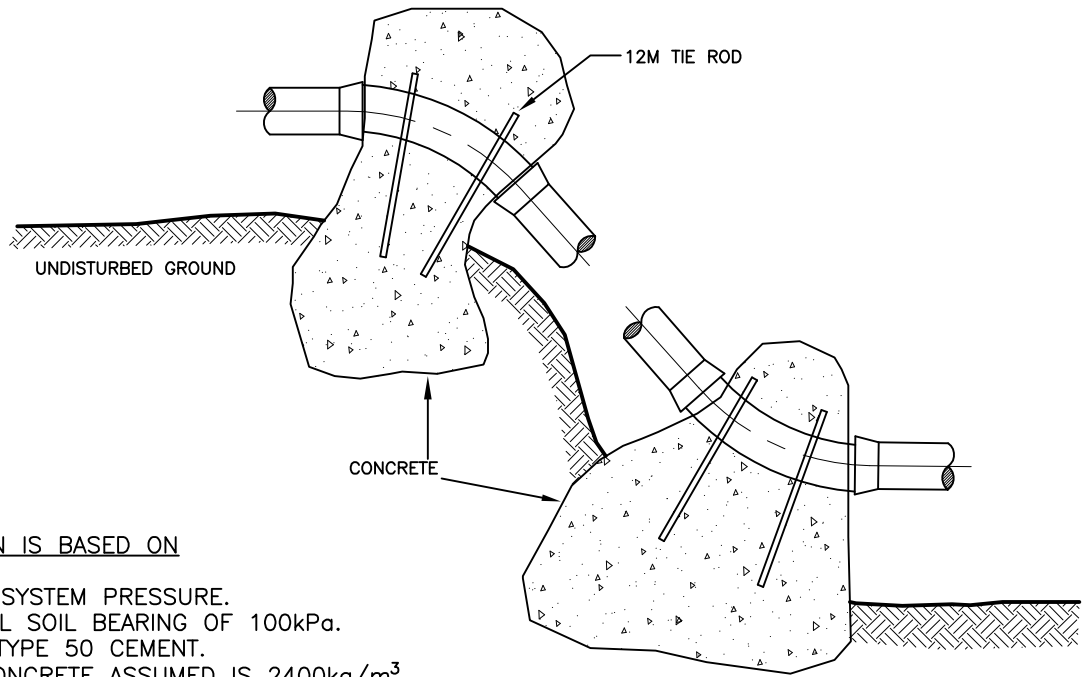
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-300



THRUST BLOCK DESIGN IS BASED ON

1. 1035kPa MAXIMUM SYSTEM PRESSURE.
2. A MINIMUM VERTICAL SOIL BEARING OF 100kPa.
3. CONCRETE 20MPa TYPE 50 CEMENT.
4. UNIT WEIGHT OF CONCRETE ASSUMED IS 2400kg/m³

UPWARD THRUST (GRAVITY) TABLE

FOR CALCULATION OF BASIC THRUST BEARING AREA (m²)

PIPE SIZE BEND	150	200	250	300	350	400	450
11.25°	0.16	0.28	0.45	0.64	0.87	1.14	1.44
22.50°	0.32	0.57	0.88	1.27	1.73	2.26	2.82
30°	0.42	0.75	1.17	1.69	2.3	3.00	3.80
45°	0.62	1.11	1.73	2.50	3.40	4.44	5.62

DOWNWARD THRUST TABLE

FOR CALCULATION OF BASIC THRUST BEARING AREA (m²)

PIPE SIZE BEND	150	200	250	300	350	400	450
11.25°	0.04	0.07	0.11	0.15	0.21	0.27	0.34
22.50°	0.08	0.13	0.21	0.30	0.41	0.53	0.67
30°	0.10	0.18	0.28	0.40	0.54	0.71	0.89
45°	0.15	0.26	0.41	0.59	0.80	1.05	1.32



TITLE:

VERTICAL BEND
THRUST BLOCK DETAIL

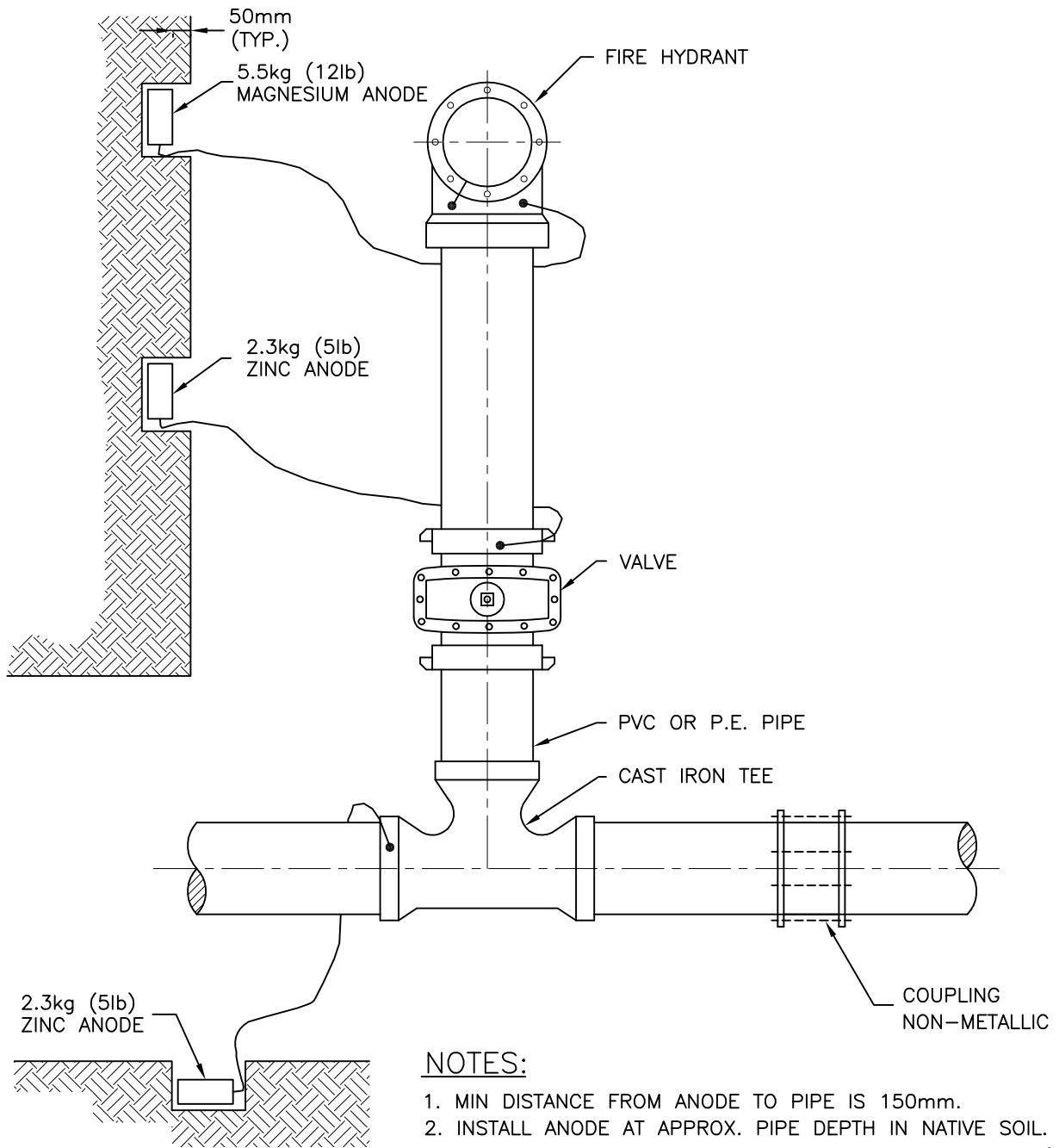
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-301



NOTES:

1. MIN DISTANCE FROM ANODE TO PIPE IS 150mm.
2. INSTALL ANODE AT APPROX. PIPE DEPTH IN NATIVE SOIL.
3. ALL ZINC ANODES ON FITTINGS AND VALVES ARE 2.3kg (5lb).
4. ALL ZINC ANODES ON HYDRANTS ARE 5.5kg (12lb).
5. ZINC ANODES TO BE EMBEDDED INTO TRENCH WALL TO PROVIDE FOR A MINIMUM OF 50mm OF NATIVE CLAY COMPLETELY SURROUNDING THE ANODE.
6. ANODES TO BE AT LEAST 300mm CLEAR OF THRUST BLOCK.
7. REPLACE CLAY OVER ANODES AND COMPACT.



TITLE:

TYPICAL ANODE
INSTALLATION AT VALVES
IRON FITTINGS & HYDRANTS

STANDARD DETAILS

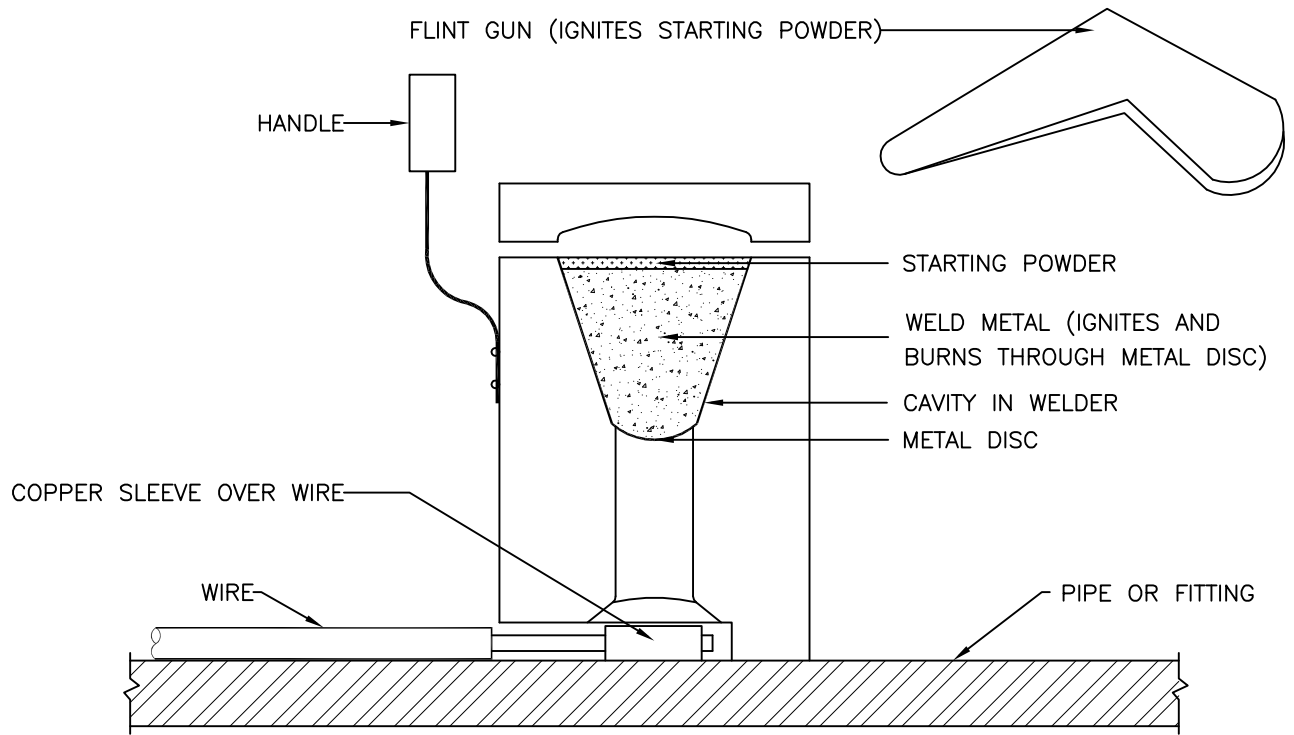
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DATE: SEPTEMBER 2010

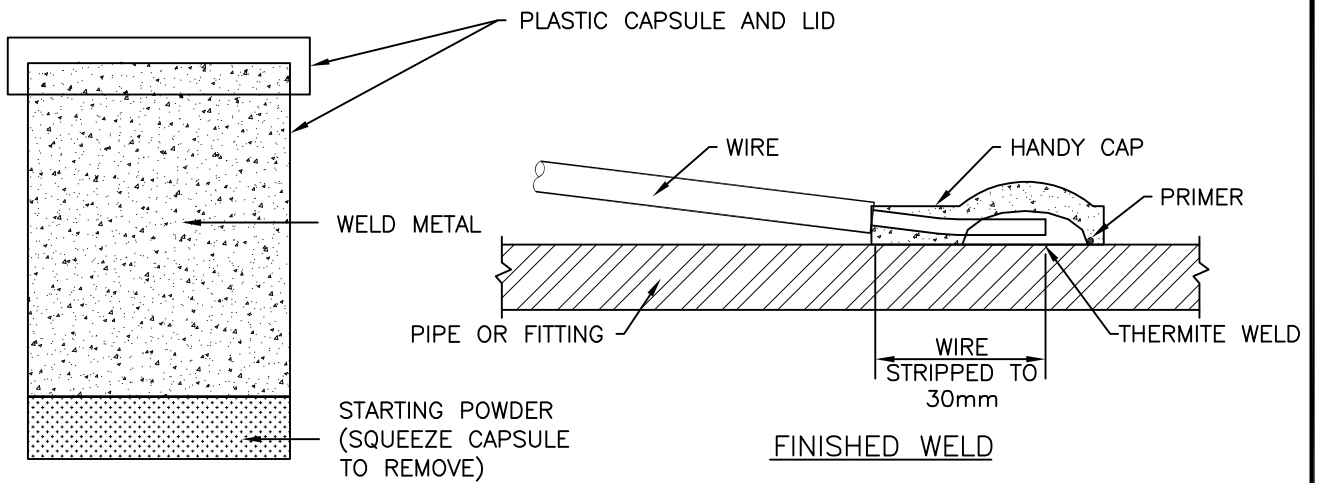
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4-400

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CADWELD



WELD METAL CAPSULE

NOTE:

CADWELD TO BE PERFORMED AS PER MANUFACTURERS SPECIFICATIONS



TITLE:

ANODE INSTALLATION CADWELD

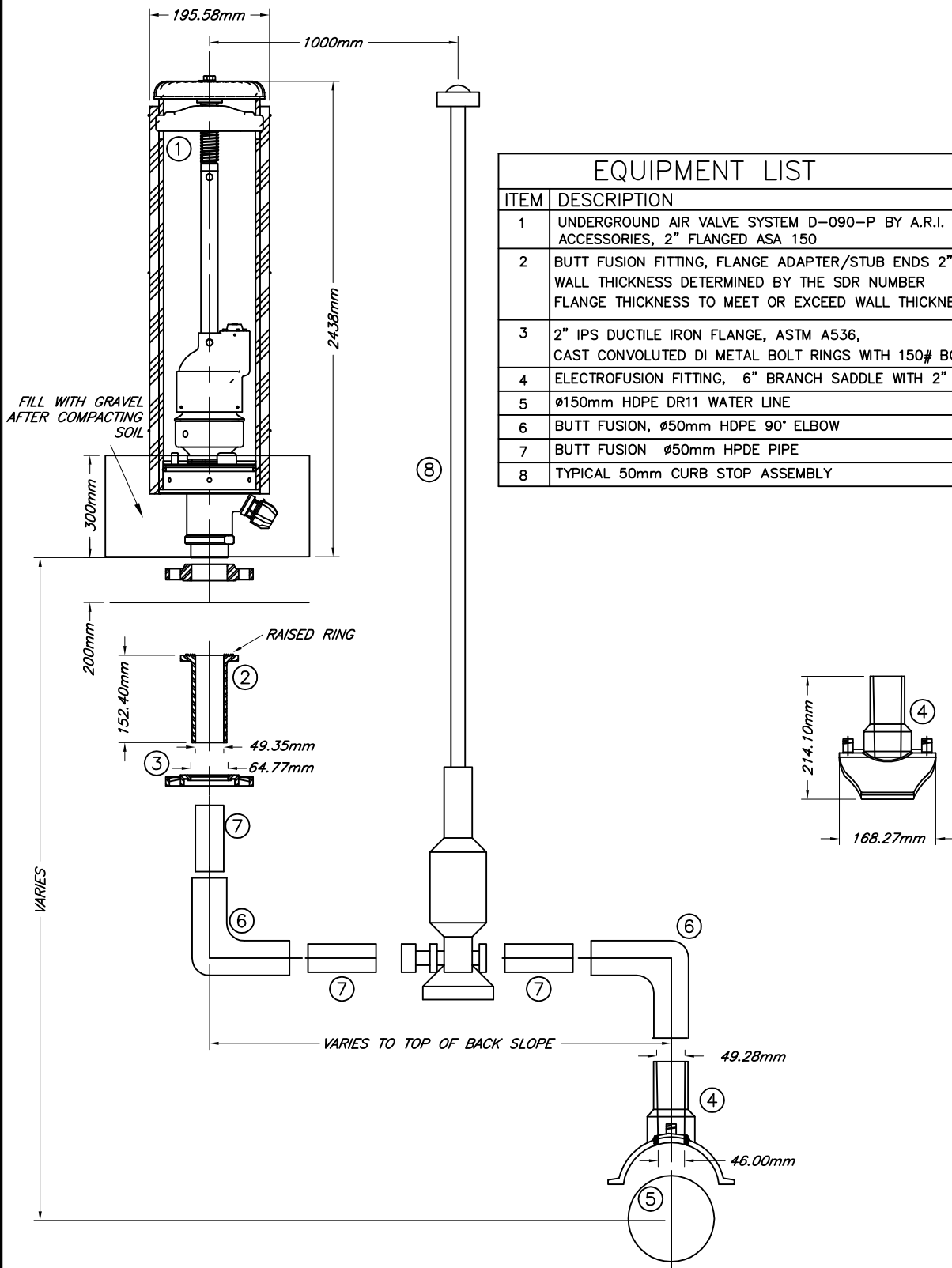
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-401



EQUIPMENT LIST	
ITEM	DESCRIPTION
1	UNDERGROUND AIR VALVE SYSTEM D-090-P BY A.R.I. FLOW CONTROL ACCESSORIES, 2" FLANGED ASA 150
2	BUTT FUSION FITTING, FLANGE ADAPTER/STUB ENDS 2" IPS, WALL THICKNESS DETERMINED BY THE SDR NUMBER FLANGE THICKNESS TO MEET OR EXCEED WALL THICKNESS
3	2" IPS DUCTILE IRON FLANGE, ASTM A536, CAST CONVOLUTED DI METAL BOLT RINGS WITH 150# BOLT HOLE PATTERN
4	ELECTROFUSION FITTING, 6" BRANCH SADDLE WITH 2" IPS BUTT OUTLET
5	Ø150mm HDPE DR11 WATER LINE
6	BUTT FUSION, Ø50mm HDPE 90° ELBOW
7	BUTT FUSION Ø50mm HPDE PIPE
8	TYPICAL 50mm CURB STOP ASSEMBLY



TITLE:

AIR RELIEF VALVE

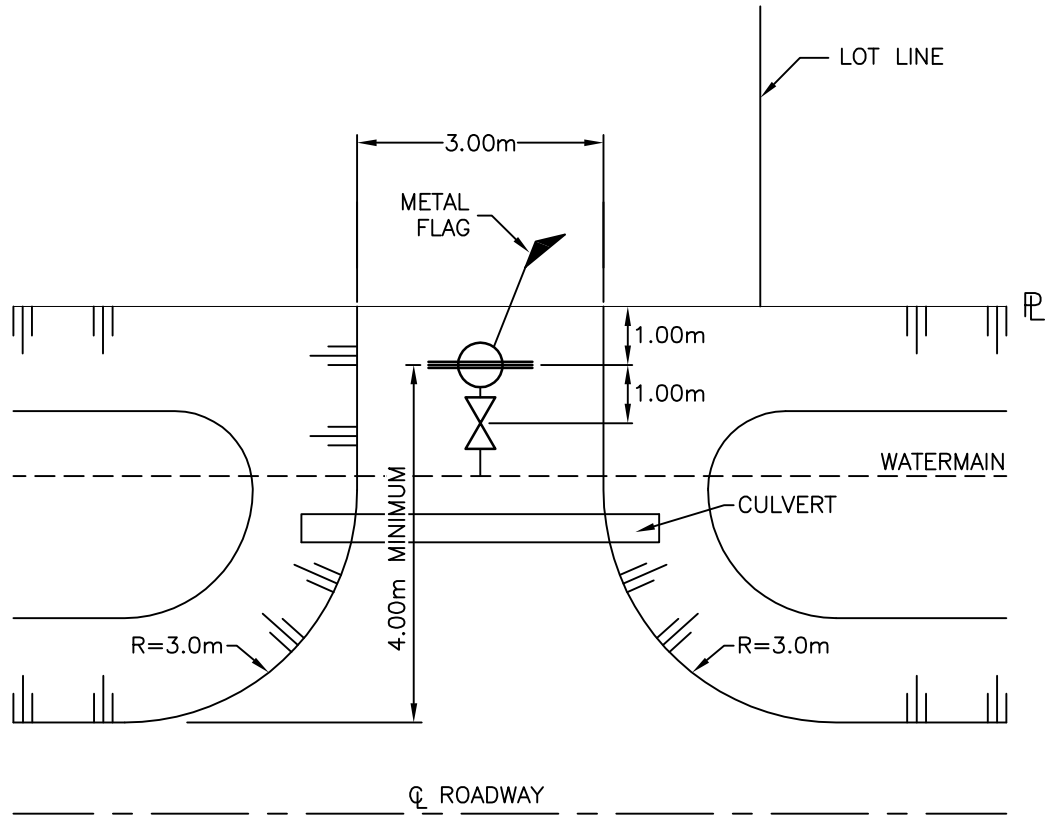
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-500



NOTES:

1. WHEN CULVERTS ARE REQUIRED THEY MUST BE C.S.P. CULVERTS AND BE THE FOLLOWING MIN. DIAMETER OF 0.400mm.
2. CULVERTS MUST BE SET BACK A MINIMUM OF 4m FROM SHOULDER OF ROAD.
3. MINIMUM OF 4.0m FROM SHOULDER.
4. INCLUDES DRY HYDRANTS



TITLE:

HYDRANT LOCATION
AND APPROACH DETAIL

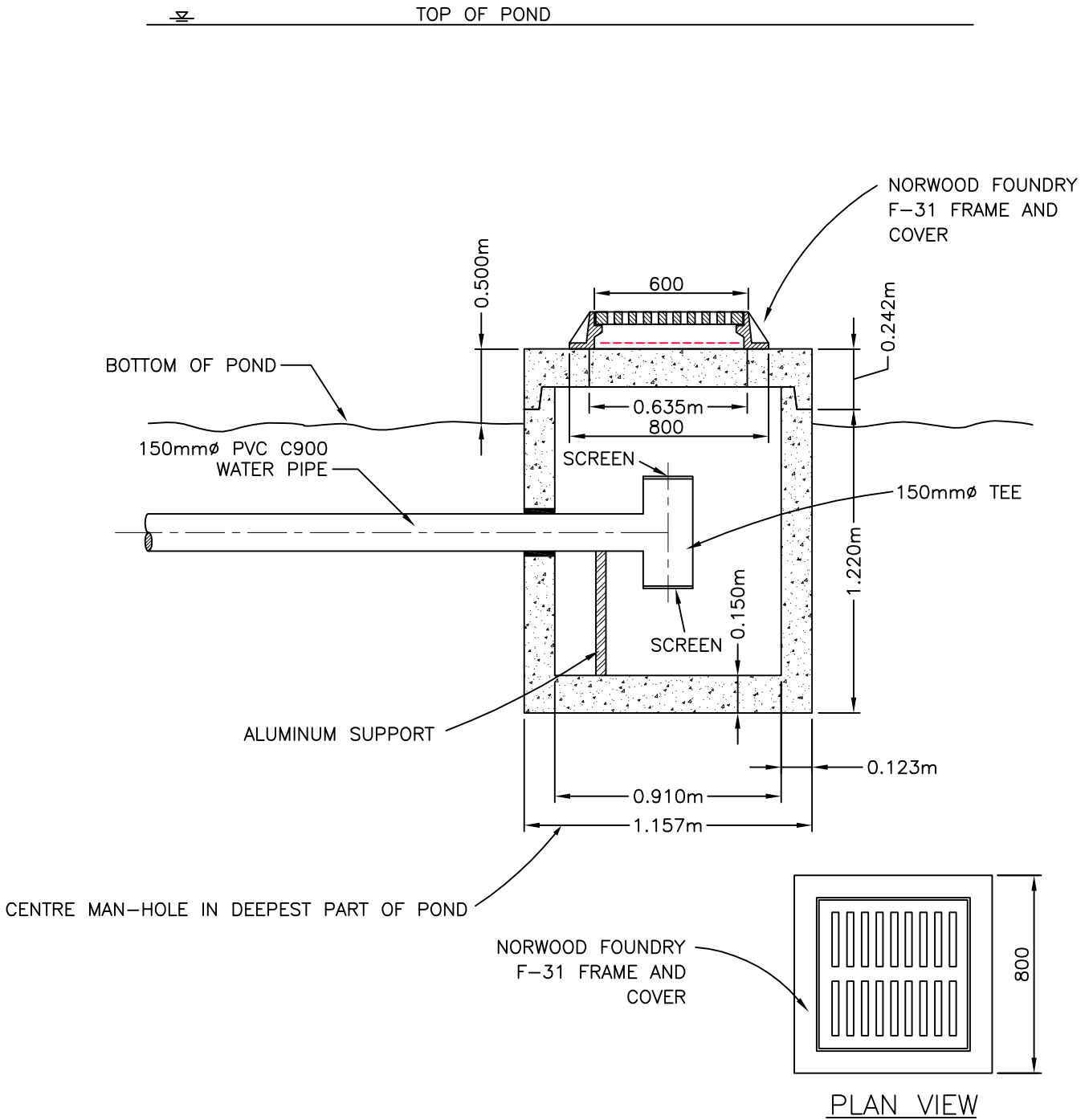
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SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO. 4-600

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NOTE:

PLACE PVC SLOTTED DRAIN COVERS IN 150mmØ TEE OR MANUFACTURE A SCREEN ASSEMBLY TO REDUCE PARTICLE SIZE ENTERING DRY HYDRANT.



TITLE:

CATCH BASIN BARREL- DRY HYDRANT

STANDARD DETAILS

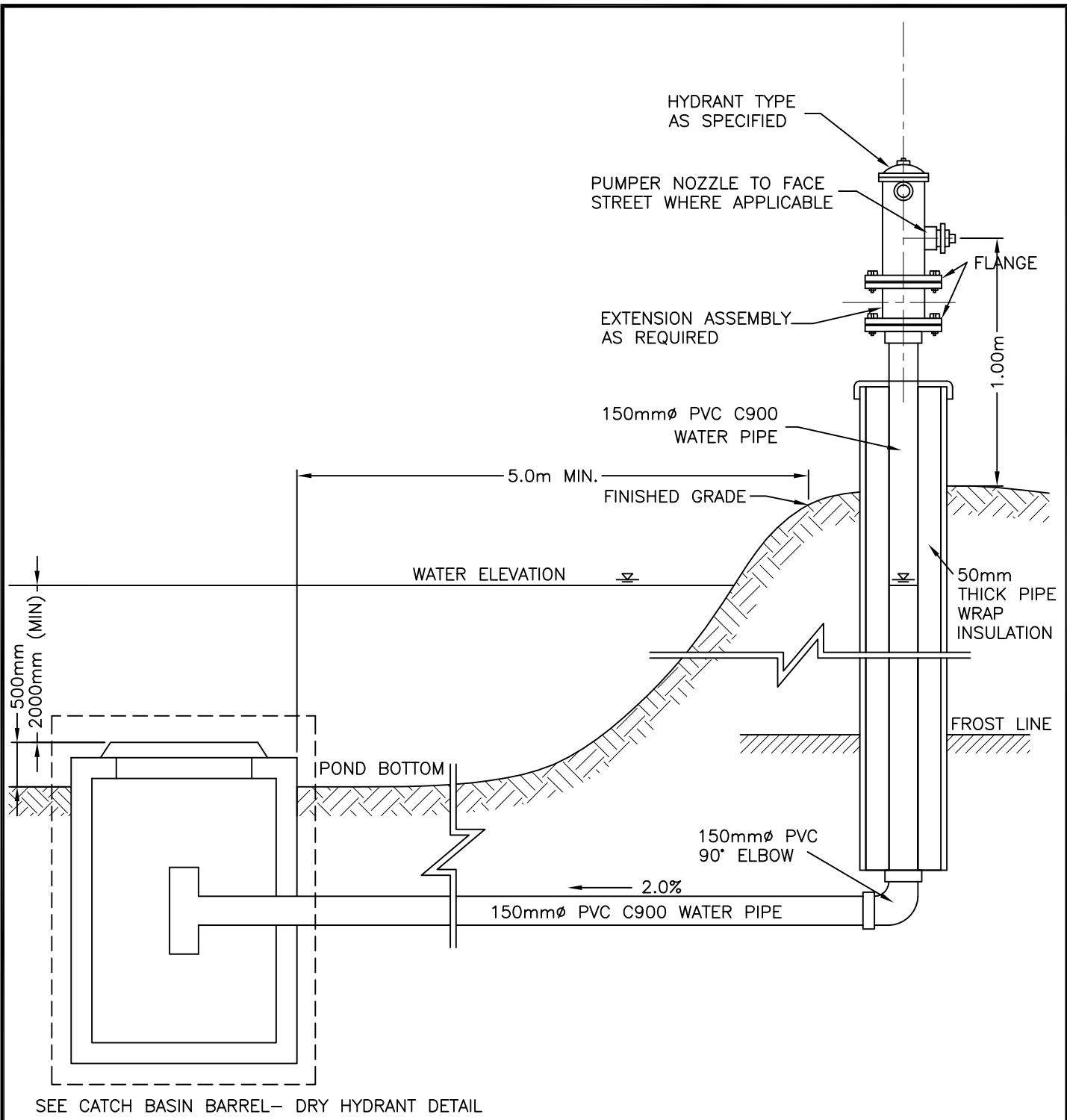
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

4-700

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TITLE:

TYPICAL DRY HYDRANT

STANDARD DETAILS

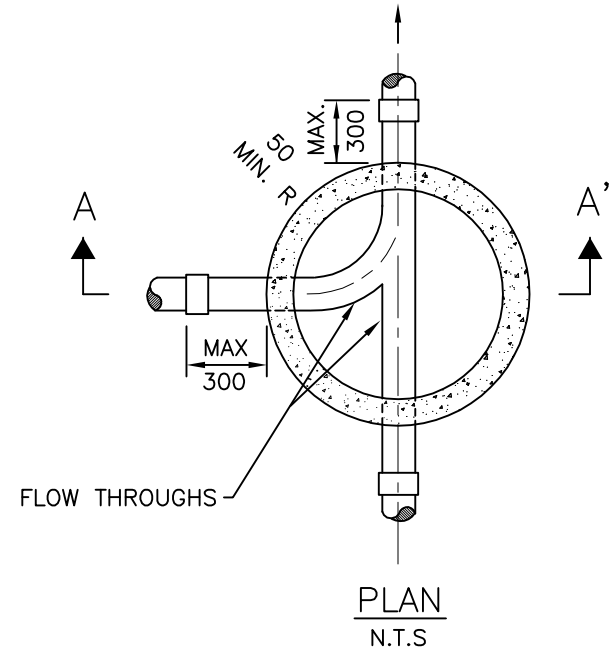
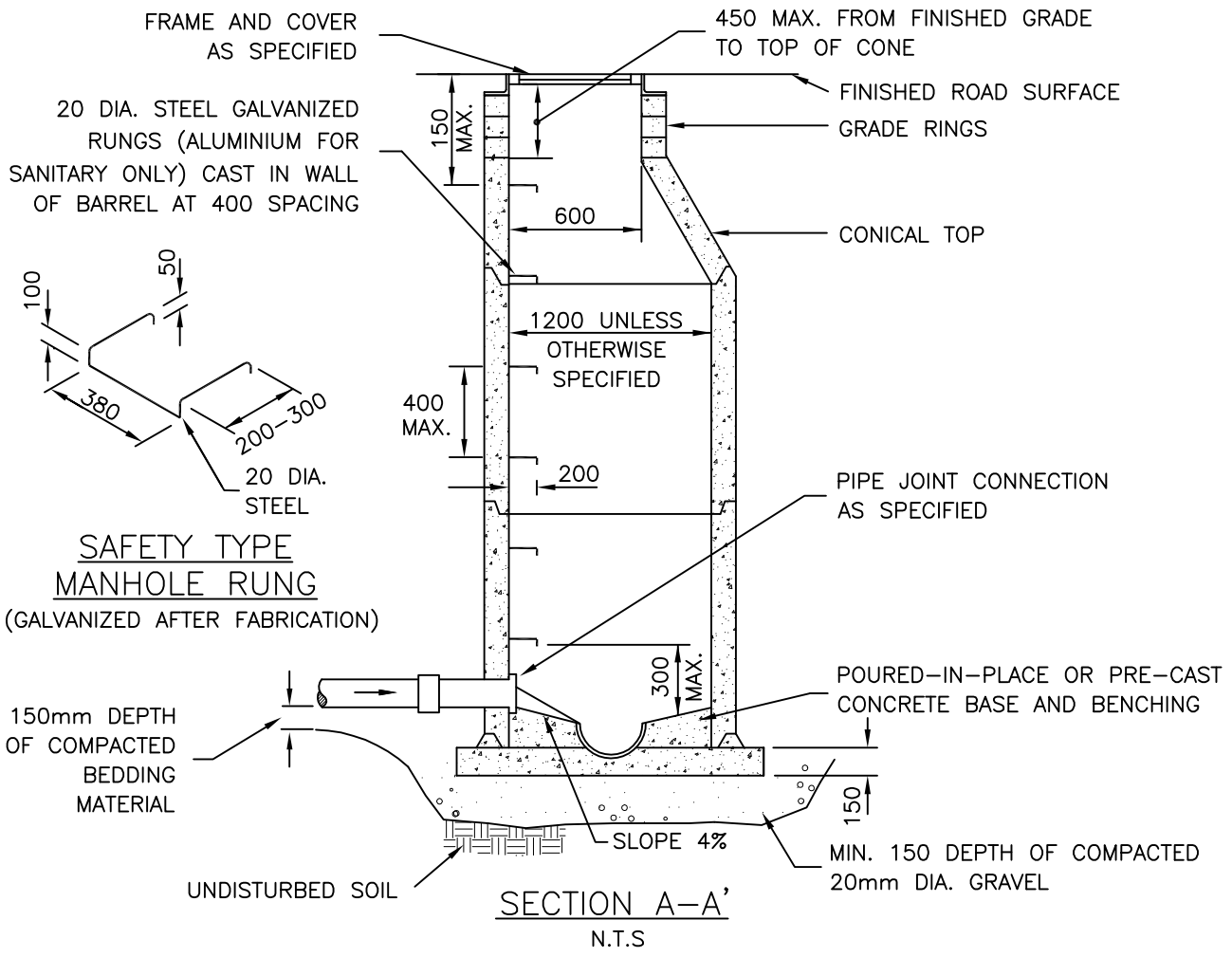
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DATE: SEPTEMBER 2010

STD. DWG NO.

4-701

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NOTES:

1. ALL PRE-CAST MANHOLES MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
2. POURED-IN-PLACE CONCRETE SHALL HAVE 28 DAYS COMPRESSIVE STRENGTH OF AT LEAST 25MP_a.
3. ALL JOINTS TO BE SET WITH RUBBER GASKET AND SET WITH NON-SHRINK GROUT, INSIDE AND OUT, FOR THE FULL CIRCUMFERENCE.
4. FORM FLOW TROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
5. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
6. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIAL. COMPACT TO 98% S.P.D.
7. FLAT TOP SECTION TO BE USED FOR MANHOLES UP TO 1.8m BURY.
8. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
9. FOR MANHOLES 5.0m IN DEPTH OR GREATER, A SAFETY PLATFORM SHALL BE INSTALLED.
10. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
11. SAFETY STEPS TO BE PROVIDED, SPACED AT 400 MAX. FIRST STEP 150 MAX. BELOW FRAME, LAST STEP 300 MAX. ABOVE BASE.

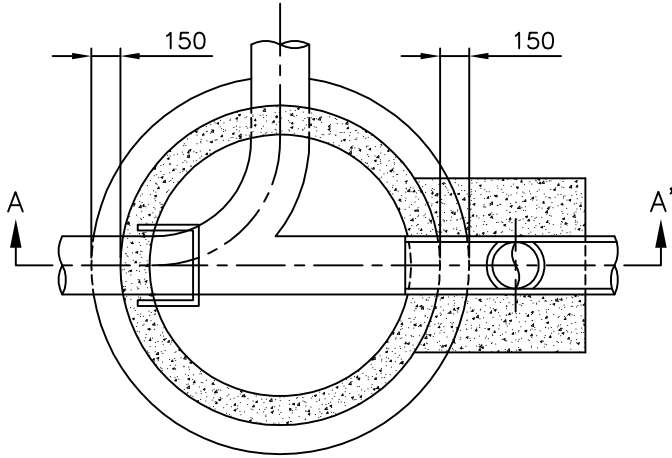


TITLE:

TYPE 5A PRE-CAST
MANHOLE DETAIL

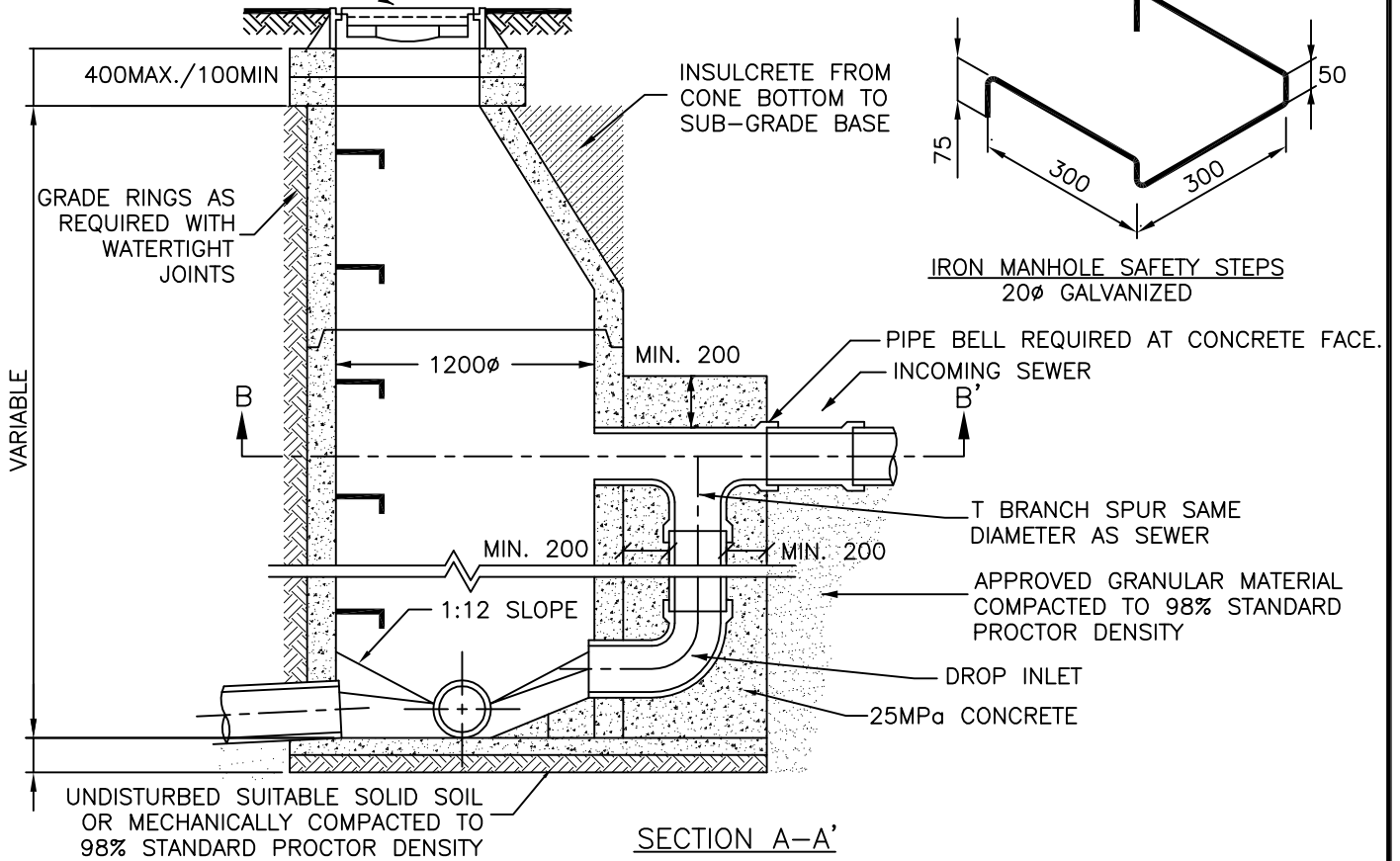
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DATE: SEPTEMBER 2010	
STD. DWG NO.	6-100

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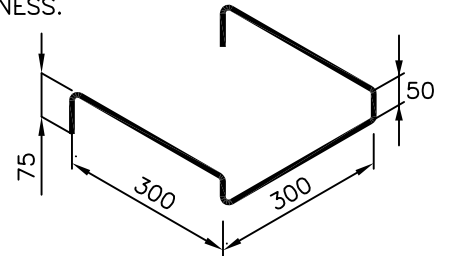


PLAN SECTION B-B'

MANHOLE FRAME & COVER AS SPECIFIED - TOP ELEVATION AS SPECIFIED IN STREET SPECIFICATIONS



SECTION A-A'



IRON MANHOLE SAFETY STEPS
20Ø GALVANIZED

NOTES:

1. ALL PRE-CAST MANHOLES MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
2. POURED-IN-PLACE CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF AT LEAST 25MPa.
3. ALL JOINTS TO BE SET WITH RUBBER GASKET AND SET WITH NON-SHRINK GROUT, INSIDE AND OUT, AROUND FULL CIRCUMFERENCE.
4. FORM FLOW TROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
5. ALL DIMENSIONS GIVEN IN MILLIMETRES.
6. MAX. DIST. FROM RIM TO TOP RUNG IS 800.
7. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIAL COMPACT TO 98% S.P.D.
8. FLAT TOP SECTION TO BE USED FOR MANHOLES UP TO 1.8m BURY.
9. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
10. FOR MANHOLES 5.0m IN DEPTH OR GREATER, A SAFETY PLATFORM SHALL BE INSTALLED.
11. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
12. SAFETY STEPS TO BE PROVIDED, SPACED AT 400 MAX. FIRST STEP 150 MAX. BELOW FRAME, LAST STEP 300 MAX. ABOVE BASE.
13. CHANNELING AND BENCHING TO BE FINISHED TO TROWEL SMOOTHNESS.

VARIABLE

UNDISTURBED SUITABLE SOLID SOIL OR MECHANICALLY COMPACTED TO 98% STANDARD PROCTOR DENSITY



TITLE:

EXTERNAL DROP MANHOLE

STANDARD DETAILS

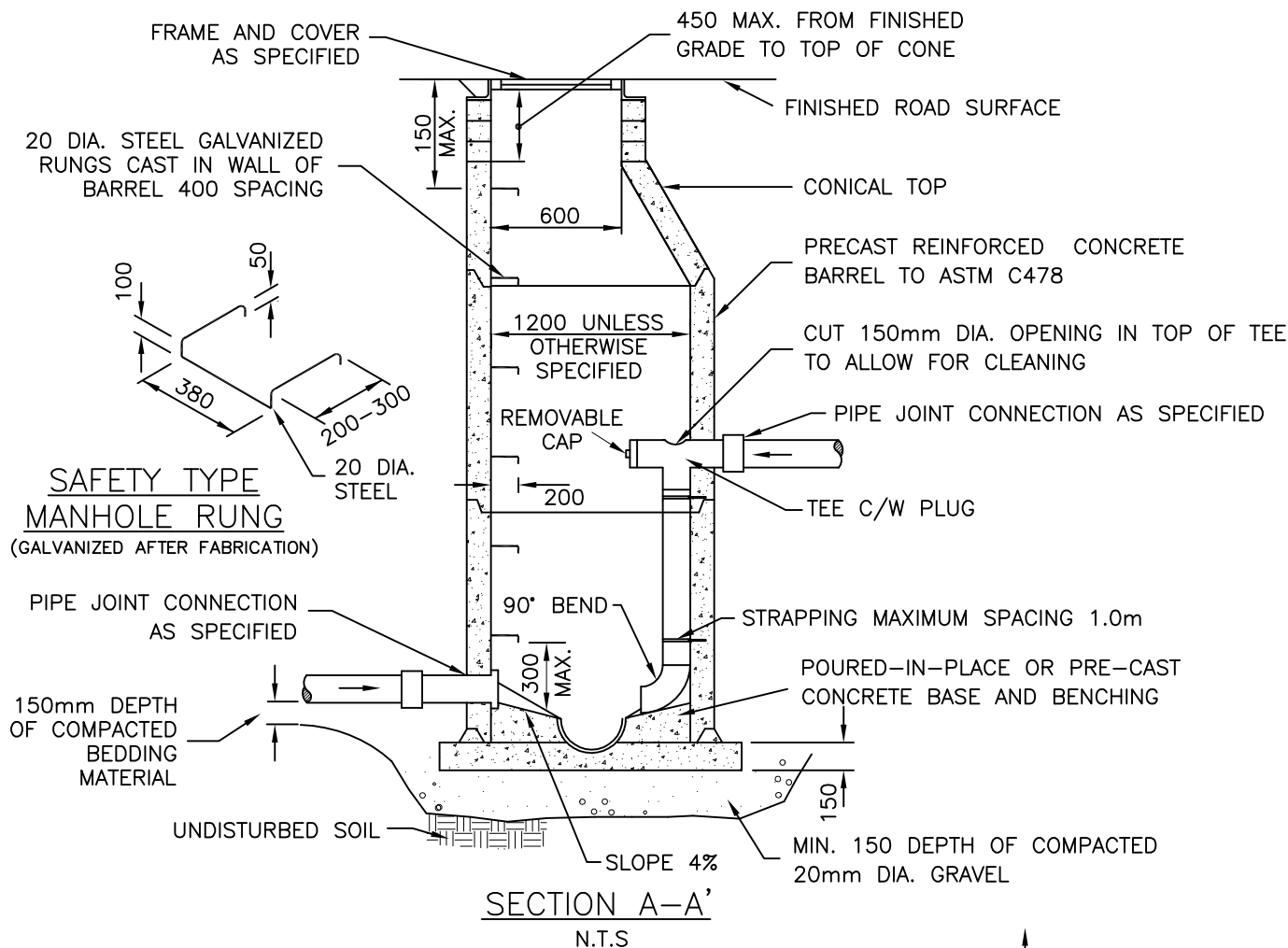
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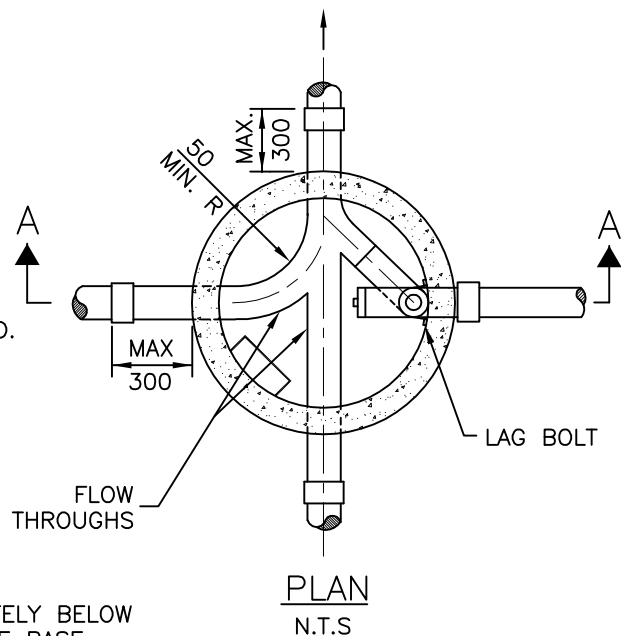
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NOTES:

1. ALL PRE-CAST MANHOLES MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
2. POURED-IN-PLACE CONCRETE SHALL HAVE 28 DAYS COMPRESSIVE STRENGTH OF AT LEAST 25MPa.
3. ALL JOINTS TO BE SET WITH RUBBER GASKET AND SET WITH NON-SHRINK GROUT, INSIDE AND OUT, FOR THE FULL CIRCUMFERENCE.
4. FORM FLOW THROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
5. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
6. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIAL AND COMPACT TO 98% S.P.D.
7. FLAT TOP SECTION TO BE USED FOR MANHOLES UP TO 1.8m BURY.
8. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
9. FOR MANHOLES 5.0m IN DEPTH AND GREATER, A SAFETY PLATFORM SHALL BE INSTALLED.
10. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
11. LAG BOLTS AND STRAPPING ARE TO BE INSTALLED IMMEDIATELY BELOW THE TEE AND A CONTINUAL 1.0m VERTICAL SPACING TO THE BASE.
12. DIAMETER, SIZE, AND TYPE OF VERTICAL PIPE TO MATCH INLET PIPE.
13. SAFETY STEPS TO BE PROVIDED, SPACED AT 400 MAX. FIRST STEP 150 MAX. BELOW FRAME, LAST STEP 300 MAX. ABOVE BASE.



TITLE:

INTERIOR DROP MANHOLE DETAIL

STANDARD DETAILS

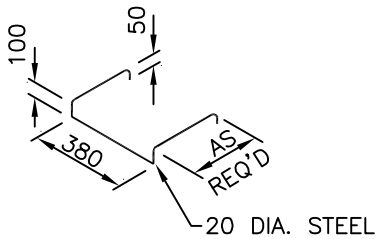
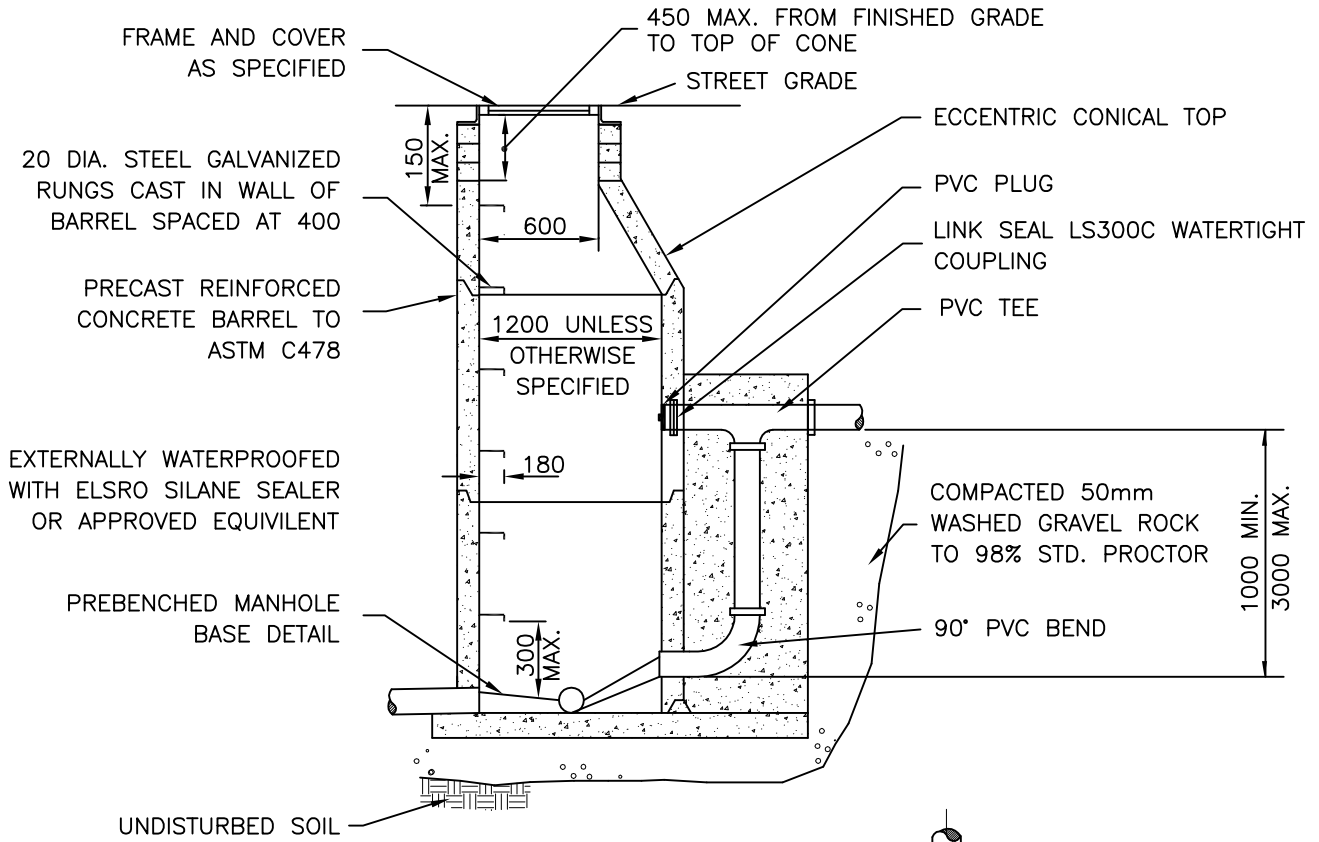
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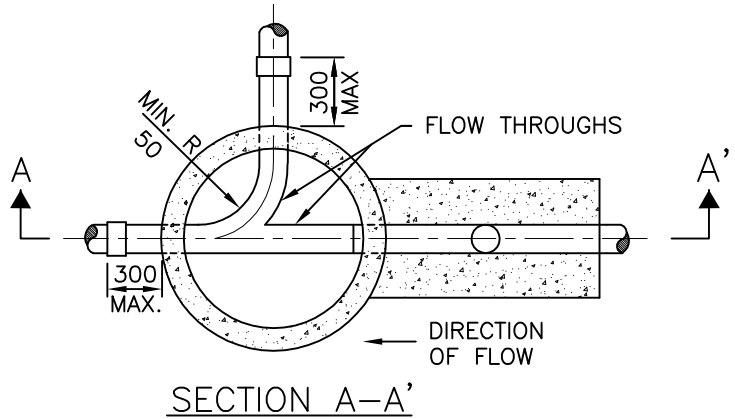
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SAFETY TYPE MANHOLE RUNG
(GALVANIZED AFTER FABRICATION)



NOTES:

1. ALL PRE-CAST MANHOLES MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
2. POURED-IN-PLACE CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF AT LEAST 25MP_a.
3. ALL JOINTS TO BE SET WITH RUBBER GASKET AND SET WITH NON-SHRINK GROUT, INSIDE AND OUT, AROUND FULL CIRCUMFERENCE.
4. FORM FLOW TROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
5. ALL DIMENSIONS IN MILLIMETRES.
6. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIAL COMPACT TO 98% S.P.D.
7. FLAT TOP SECTION TO BE USED FOR MANHOLES UP TO 1.8m BURY.
8. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
9. FOR MANHOLES 5.0m IN DEPTH OR GREATER, A SAFETY PLATFORM SHALL BE INSTALLED. SEE DETAIL B-110.
10. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
11. SAFETY STEPS TO BE PROVIDED, SPACED AT 400 MAX. FIRST STEP 150 MAX. BELOW FRAME, LAST STEP 300 MAX. ABOVE BASE.
12. CHANNELING AND BENCHING TO BE FINISHED TO TROWEL SMOOTHNESS.



TITLE:

EXTERIOR DROP MANHOLE DETAIL

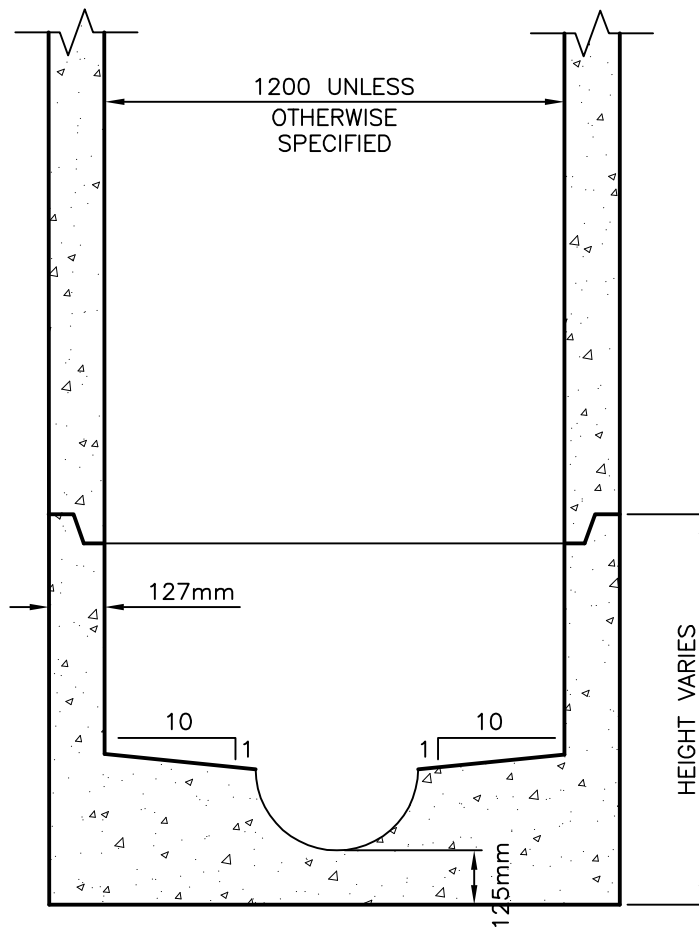
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

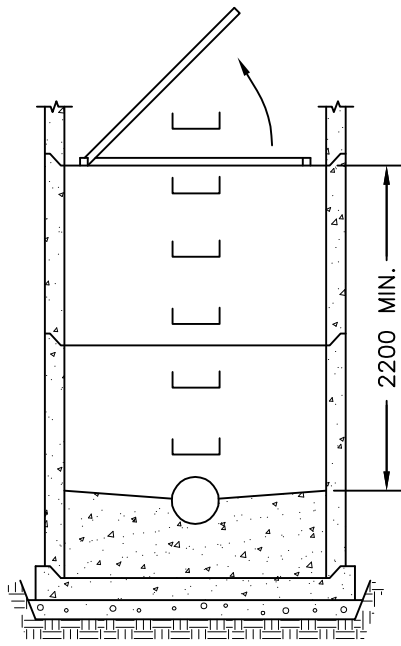
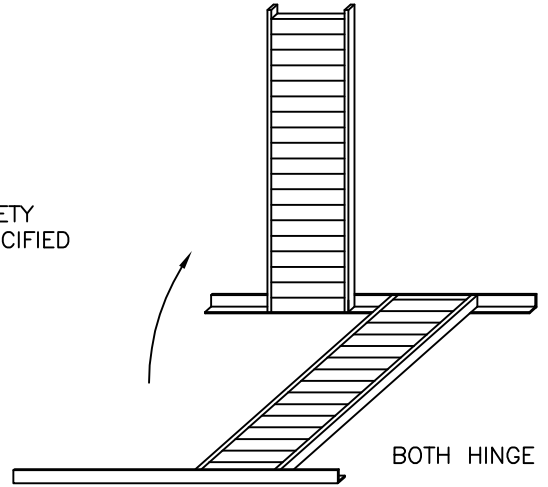
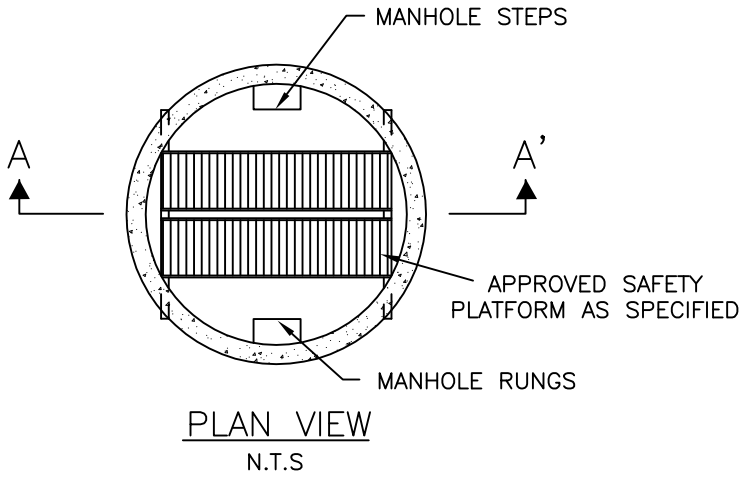
6-203



NOTES:

1. PREBENCHED MANHOLE BASES AS SUPPLIED BY CONCRETE MANUFACTURER.
2. SULPHATE RESISTANT CEMENT TO BE USED.
3. PIPE PENETRATIONS THROUGH MANHOLE WALL TO BE MADE USING KOR-N-SEAL MANHOLE TO PIPE SEALS.

	TITLE:	STANDARD DETAILS	
	PREBENCHED MANHOLE BASE	SCALE: N.T.S.	
		DATE: SEPTEMBER 2010	
		STD. DWG NO.	6-300



NOTES:

1. TO BE INSTALLED ON MANHOLES GREATER THAN 5.0m DEEP.
2. MAXIMUM SPACING BETWEEN PLATFORMS TO BE 5.0m.
3. ALUMINUM GRATES TO BE MSU MISSISSAUGA OR APPROVED EQUAL.
4. TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.



TITLE:

MANHOLE SAFETY PLATFORM

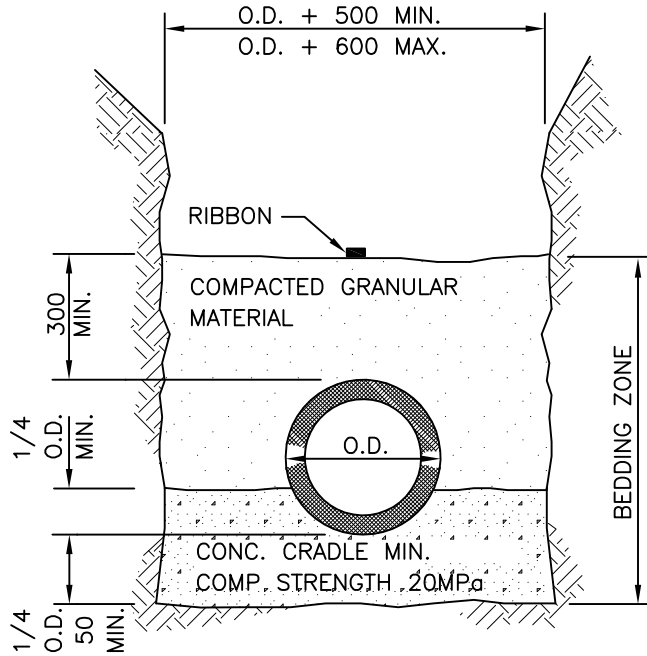
STANDARD DETAILS

SCALE: N.T.S.

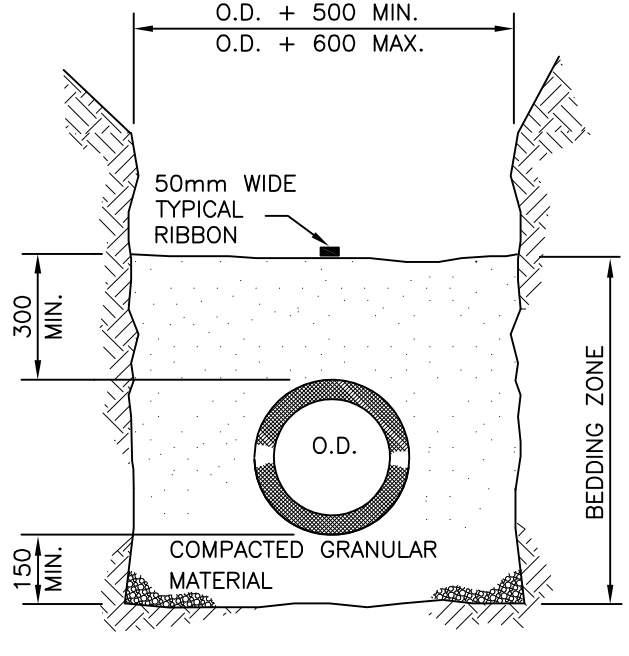
DATE: SEPTEMBER 2010

STD. DWG NO.

6-400



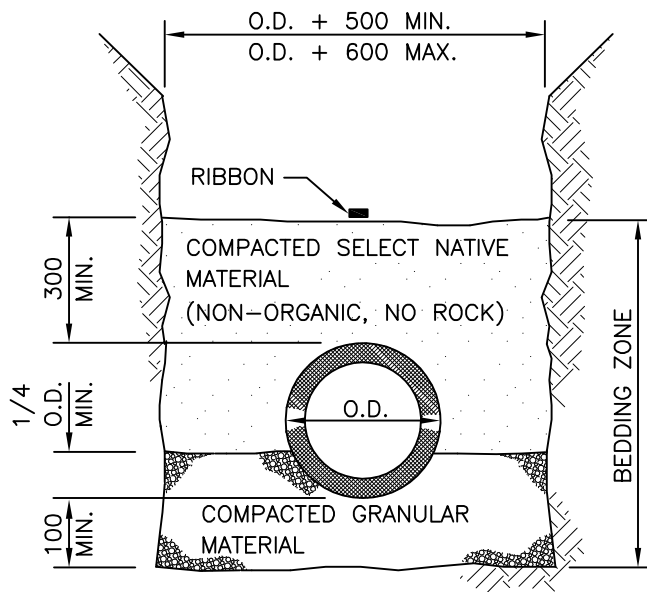
CLASS 'A' BEDDING



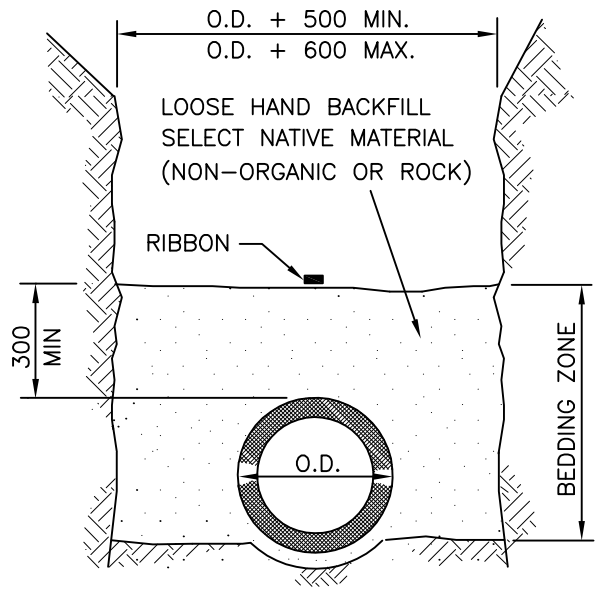
CLASS 'B' BEDDING

NOTES:

1. COMPACTION OF BEDDING ZONE SHALL BE AS PER SPECIFICATIONS. (MIN. 95% S.P.D.).
TOP METRE MUST CONFORM TO SPECIFICATIONS (MIN 98% S.P.D.)
2. ALL DIMENSIONS ARE GIVEN IN MILLIMETRES UNLESS OTHERWISE STATED.
3. BACKFILL COMPACTION REQUIREMENTS WILL VARY. BACKFILL ABOVE PIPE ZONE TO BE APPROVED MATERIAL.
4. TRENCH SIDE SLOPES TO BE CONSISTENT WITH OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS.



CLASS 'C' BEDDING



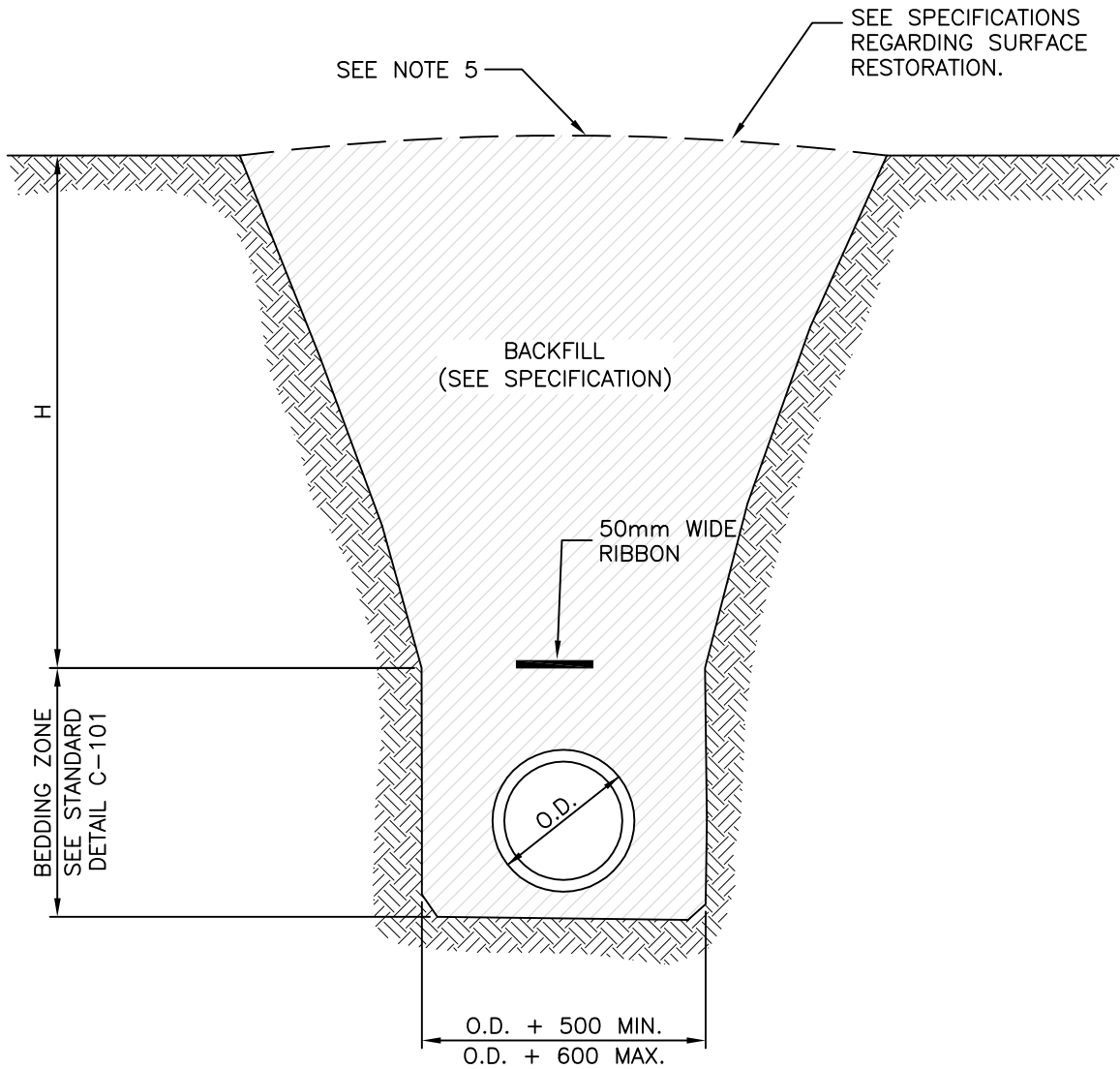
CLASS 'D' BEDDING



TITLE:

PIPE BEDDING DETAILS

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	6-500



NOTES:

1. WHEN CUT BACK SLOPES ARE TO BE USED IN LIEU OF CAGES AND SHORING, THESE SLOPES ARE TO MEET REQUIREMENTS OF LOCAL CODES.
2. SEE SPECIFICATIONS FOR MINIMUM COVER ABOVE PIPE.
3. MIN. PIPE ZONE WIDTH IS SPECIFIED TO ALLOW PROPER PIPE ZONE COMPACTION.
4. O.D. = OUTSIDE PIPE DIAMETER.
5. FOR UNCOMPACTED BACKFILL, CROWN TRENCH BY 0.1 x H.
6. RIBBON SHOULD BE PLACED ABOVE BURIED PIPE AS PER DETAIL C-101.



TITLE:

TYPICAL TRENCH DETAIL

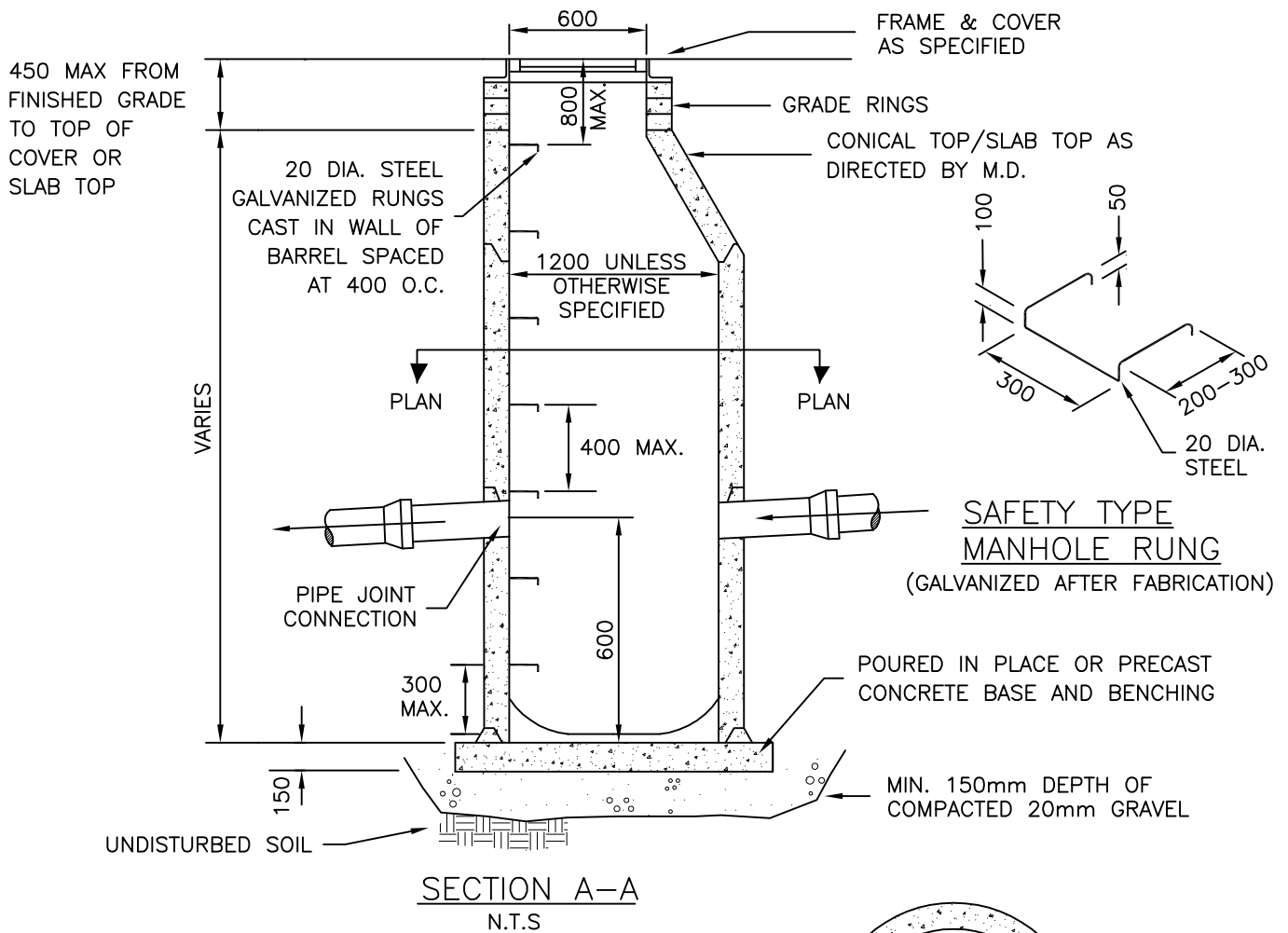
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

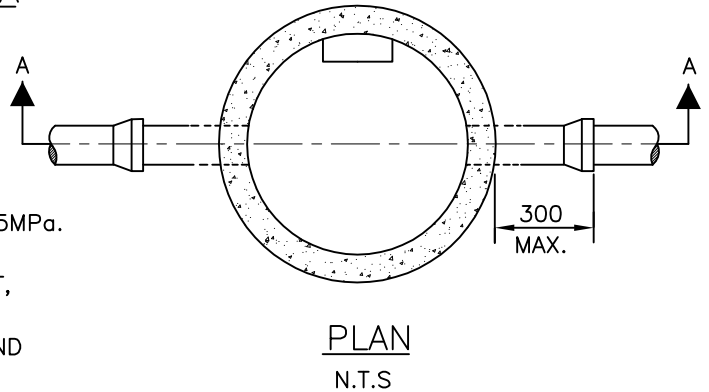
STD. DWG NO.

6-600



NOTES:

1. ALL PRE-CAST MANHOLES MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
2. POURED-IN-PLACE CONCRETE SHALL HAVE A 28 DAYS COMPRESSIVE STRENGTH OF AT LEAST 25MPa.
3. ALL JOINTS TO BE SET WITH RUBBER GASKETS AND SET WITH NON-SHRINK GROUT, INSIDE AND OUT, FOR THE FULL CIRCUMFERENCE.
4. FORM FLOW TROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
5. PIPES TO BE FLUSH WITH WALL.
6. MAX. DIST. FROM RIM TO TOP RUNG IS 800mm.
7. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIAL AND COMPACT TO 98% S.P.D.
8. FLAT TOP SECTION TO BE USED FOR MANHOLES UP TO 1.8m BURY.
9. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
10. FOR MANHOLES 5.0m IN DEPTH OR GREATER, A SAFETY PLATFORM SHALL BE INSTALLED.
11. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
12. DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
13. CHANNELING AND BENCHING TO BE FINISHED TO TROWEL SMOOTHNESS.
14. SAFETY STEPS TO BE PROVIDED, SPACED AT 400 MAX. FIRST STEP 150 MAX. BELOW FRAME, LAST STEP 300 MAX. ABOVE BASE.



TITLE:

CATCH BASIN MANHOLE

STANDARD DETAILS

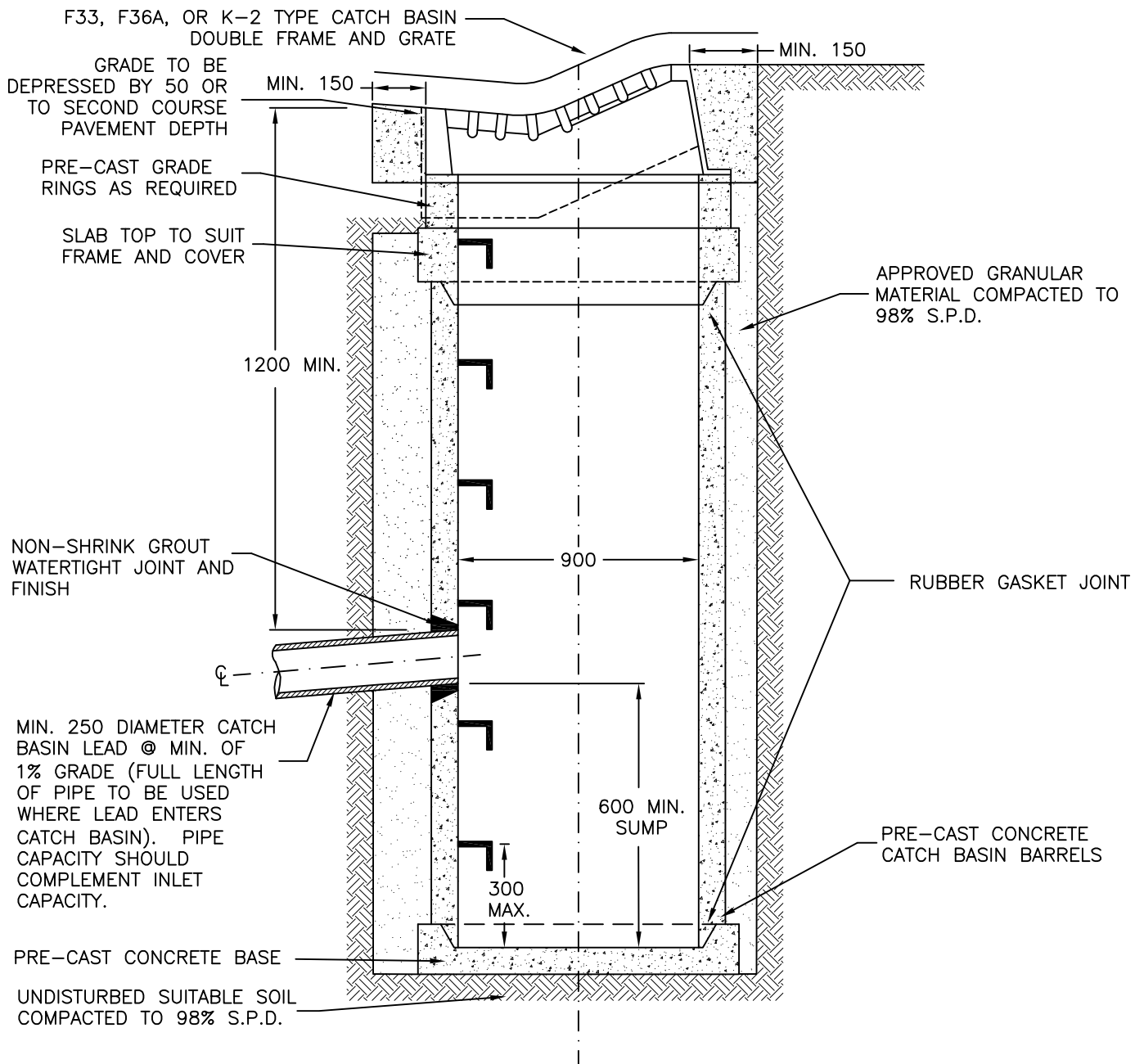
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

7-100

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NOTES:

1. SAFETY STEPS TO BE SPACED AT 400 MAX. FIRST STEP 150 MAX. BELOW FRAME, LAST STEP 300 MAX. ABOVE BENCHING.
2. PRE-CAST CONCRETE COMPONENTS TO MEET CURRENT A.S.T.M. C478 STANDARDS.
3. CAST-IN-PLACE-CONCRETE TO BE 25MPa AT 28 DAYS.
4. ALL JOINTS TO BE WATERTIGHT; SET WITH RUBBER GASKET WITH NON-SHRINK GROUT INSIDE AND OUTSIDE FOR THE FULL CIRCUMFERENCE. THIS INCLUDES JOINTS BETWEEN GRADE RINGS, GRADE RINGS AND FRAMES, AND BETWEEN GRADE RINGS AND SLAB TOPS.
5. PRE-CAST CONCRETE BASE THICKNESS AND REINFORCEMENT MUST BE DESIGNED FOR THE SPECIFIC CATCHBASIN DEPTH AND SOIL CONDITIONS.
6. JOINTS BETWEEN GRADE RINGS, GRADE RINGS AND CONES, AND RINGS AND FRAMES MUST BE WATERTIGHT. RAM NECK MATERIAL FINISHED MATERIAL FINISHED WITH NON-SHRINK GROUT MAY BE USED IF WATERTIGHT JOINTS CAN BE ACHIEVED.
7. WICK DRAINS TO CONNECT TO CATCH BASIN SUCH AS TO ENSURE WATERTIGHT JOINTS.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.



TITLE:

CATCH BASIN
TYPICAL 900mm

STANDARD DETAILS

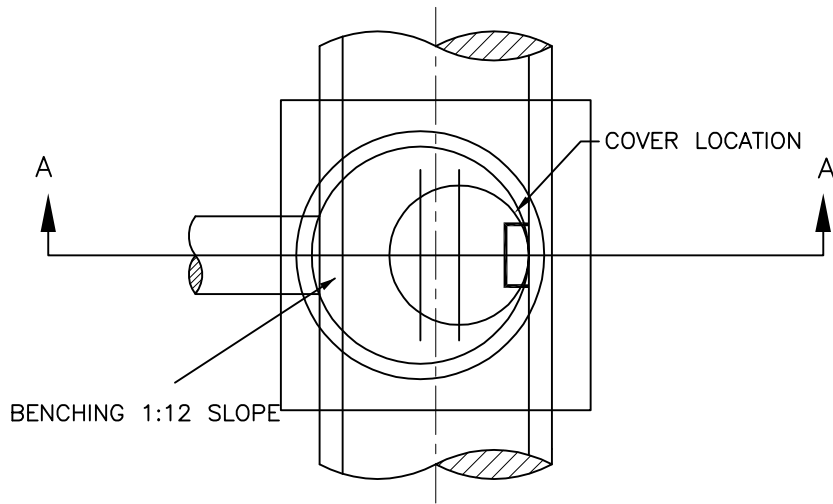
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DATE: SEPTEMBER 2010

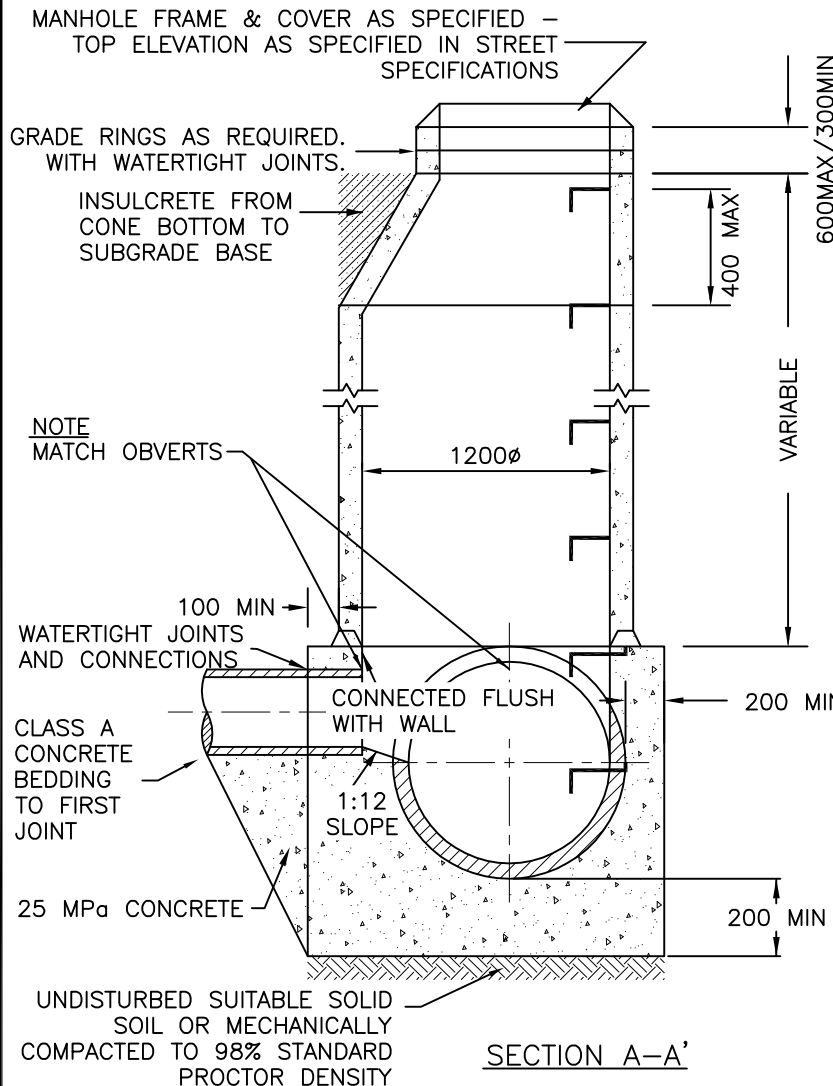
STD. DWG NO.

7-101

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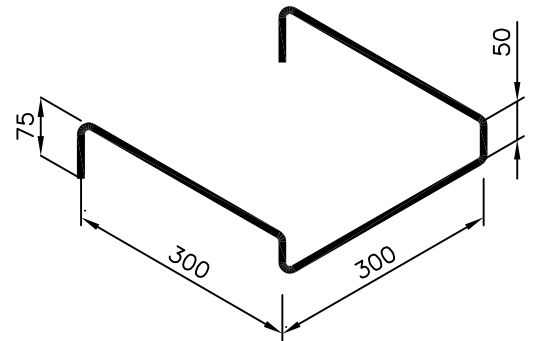
PLAN



SECTION A-A'

NOTES:

1. PRE-CAST CONCRETE COMPONENTS MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
2. POURED-IN-PLACE CONCRETE TO HAVE 28 DAYS COMPRESSIVE STRENGTH OF AT LEAST 25MPa.
3. ALL JOINTS TO BE SET WITH RUBBER GASKET AND FINISHED WITH NON-SHRINK GROUT, INSIDE AND OUTSIDE, FOR THE FULL CIRCUMFERENCE.
4. FORM FLOW TROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
5. ALL DIMENSIONS GIVEN IN MILLIMETRES UNLESS OTHERWISE STATED.
6. MAX. DIST. FROM RIM TO TOP RUNG IS 800.
7. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIAL COMPACT TO 98% S.P.D.
8. FLAT TOP SECTION TO BE USED FORMANHOLES UP TO 1.8m BURY.
9. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
10. FOR MANHOLES 5.0m IN DEPTH OR GREATER, A SAFETY PLATFORM SHALL BE INSTALLED.
11. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
12. SAFETY STEPS TO BE SPACED AT 400 MAX. DISTANCE. FIRST STEP TO BE 150 MAX. BELOW FRAME, LAST STEP TO BE 300 MAX. ABOVE BENCHING.
13. CHANNELLING AND BENCHING TO BE FINISHED TO TROWEL SMOOTHNESS.



20Ø GALVANIZED IRON MANHOLE
USAFETY STEPS



TITLE:

TYPICAL PERCHED MANHOLE
FOR 600 TO 1050mm DIAMETER PIPES

STANDARD DETAILS

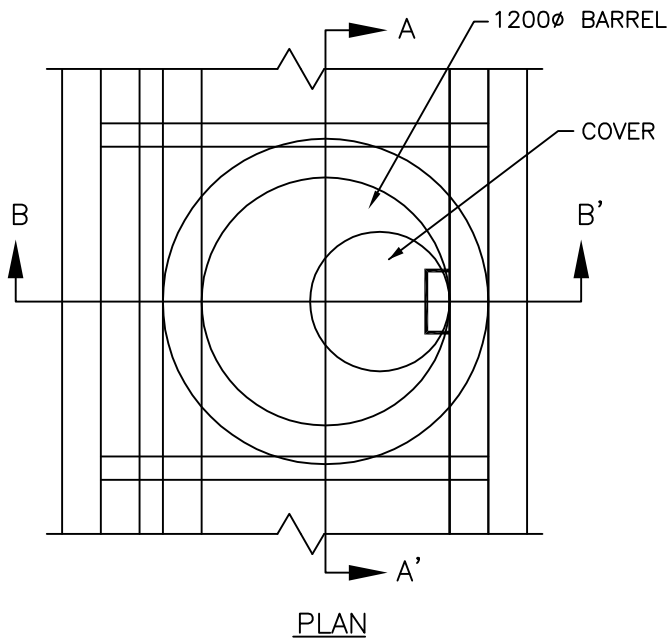
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DATE: SEPTEMBER 2010

STD. DWG NO.

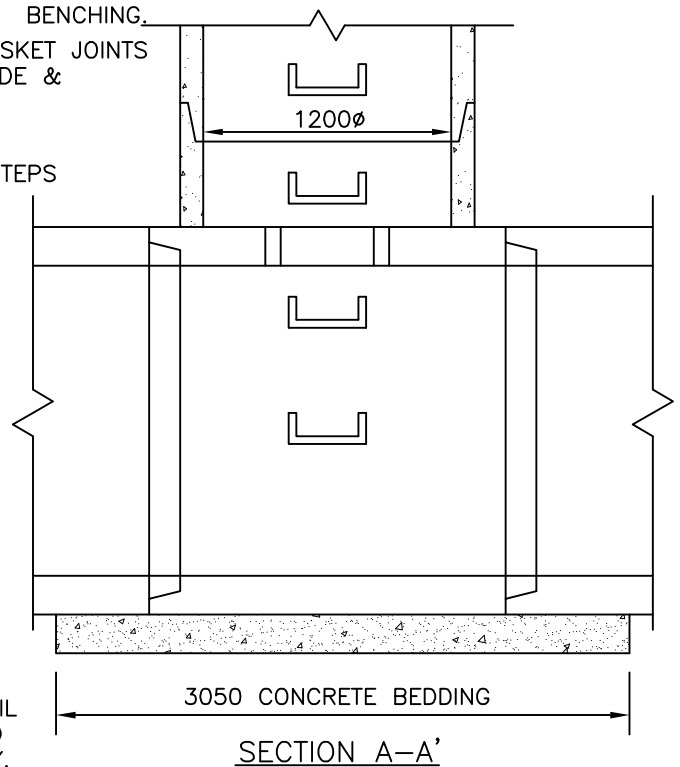
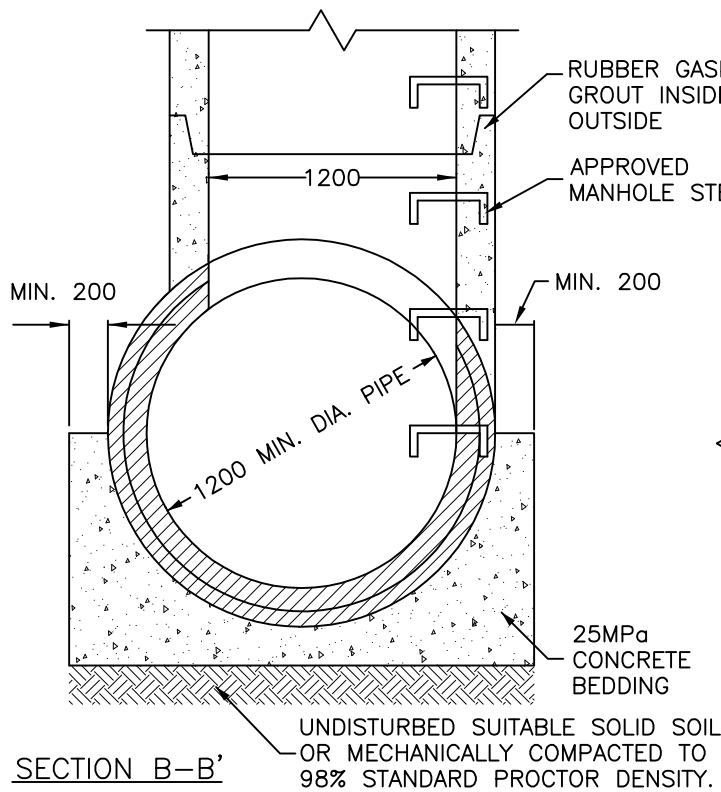
7-102

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NOTES:

1. THIS TYPE OF MANHOLE IS TO BE BUILT ONLY ON MAINS OF 1200 DIAMETER OR LARGER AND WHERE THERE IS NO CHANGE IN DIRECTION OF FLOW.
2. ALL PRE-CAST MANHOLES MUST CONFORM TO A.S.T.M. SPECIFICATIONS C478.
3. POURED-IN-PLACE CONCRETE SHALL HAVE A 28 DAYS COMPRESSIVE STRENGTH OF AT LEAST 25MPa.
4. ALL JOINTS TO BE SET WITH RUBBER GASKETS AND SET WITH NON-SHRINK GROUT, INSIDE AND OUT, FOR THE FULL CIRCUMFERENCE.
5. FORM FLOW TROUGH IN PARTIALLY SET CONCRETE AND TROWEL SMOOTH.
6. ALL DIMENSIONS GIVEN IN MILLIMETRES UNLESS OTHERWISE STATED.
7. MAX. DIST. FROM RIM TO TOP RUNG IS 800mm.
8. BACKFILL AROUND MH. WITH SELECT NATIVE MATERIALS AND COMPACT TO 98% S.P.D.
9. ALL JOINTS TO BE WATERTIGHT. METHODS TO BE CONSISTENT WITH SITE CONDITIONS.
10. FOR MANHOLES 5.0m IN DEPTH OR GREATER, A SAFETY PLATFORM SHALL BE INSTALLED.
11. MANHOLES TO MEET REQUIREMENTS OF MANHOLE DETAILS AND SPECIFICATIONS.
12. SEE DETAIL C-4 FOR TOP OF MANHOLE AND STEP DETAILS.
13. SAFETY STEPS TO BE SPACED AT 400 MAX. DISTANCE. FIRST STEP TO BE 150 MAX. BELOW FRAME, LAST STEP TO BE MAX. 300 ABOVE BENCHING.



TITLE:

T-RISER MANHOLE
FOR PIPES 1200mm AND LARGER

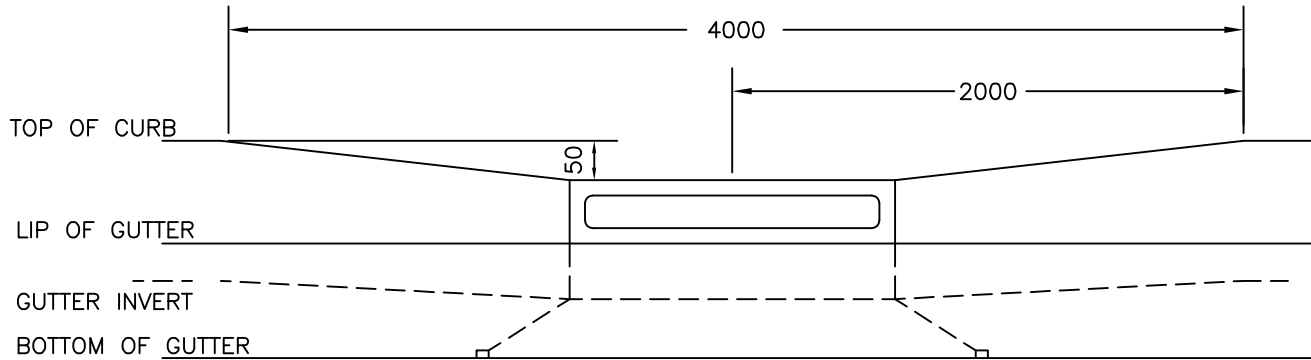
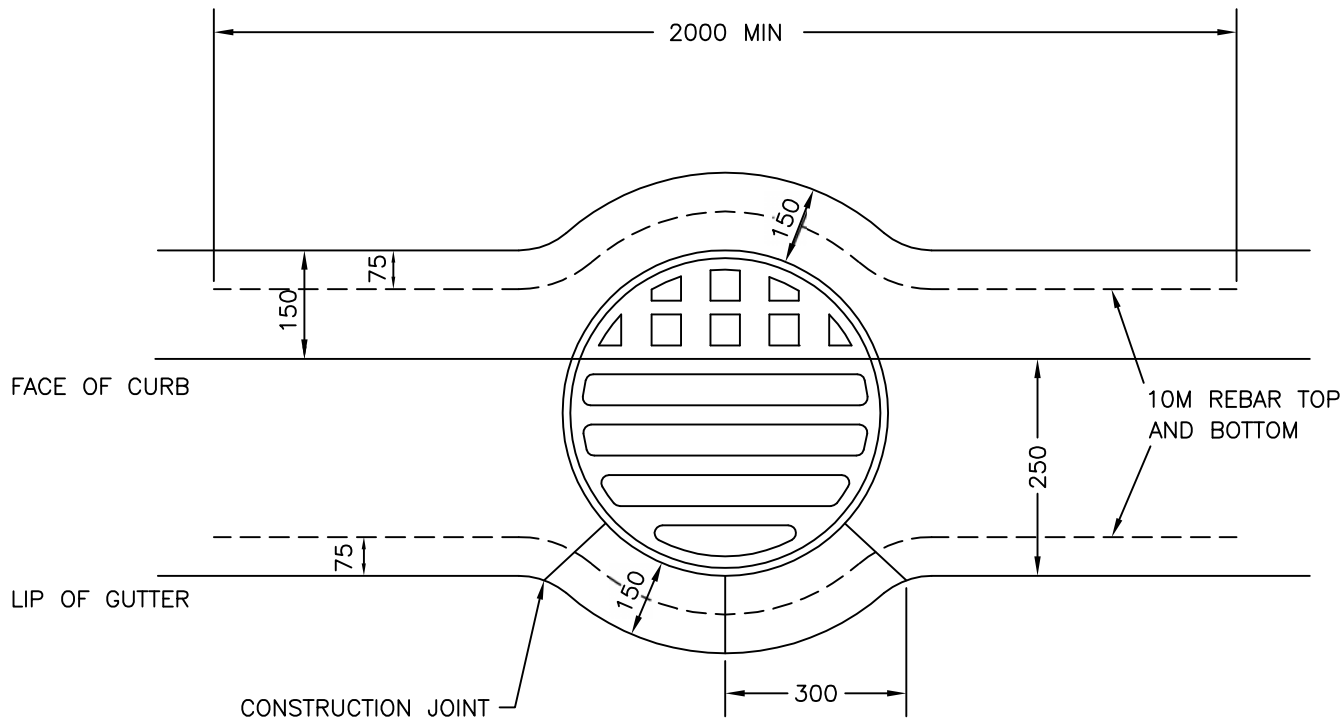
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO. 7-103

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NOTE:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.



TITLE:

TYPICAL CATCH BASIN
INSTALLATION
150 CURB & 250 GUTTER

STANDARD DETAILS

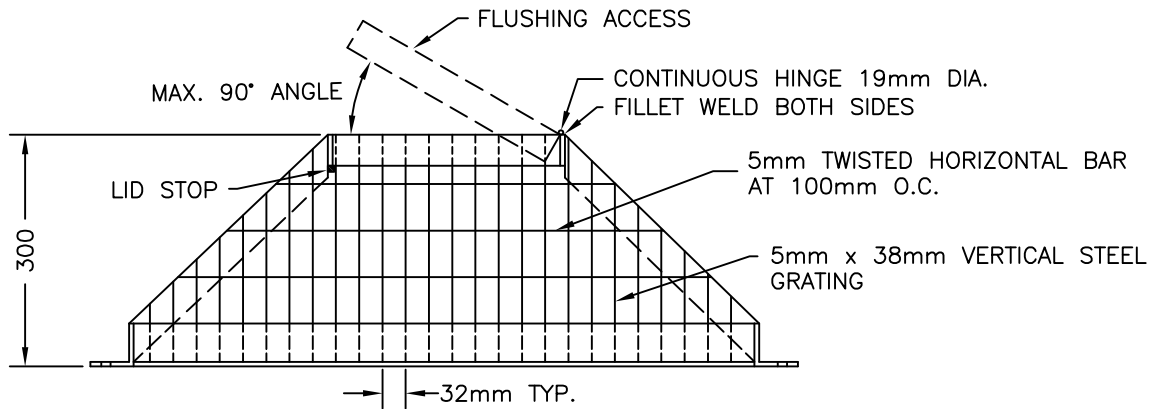
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DATE: SEPTEMBER 2010

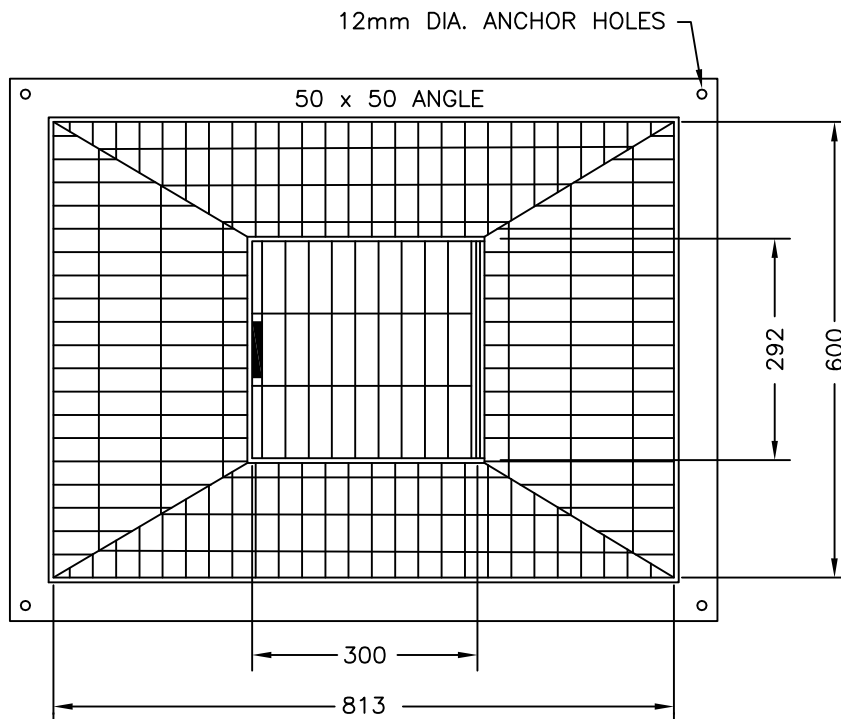
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7-200

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PROFILE



PLAN VIEW

NOTES:

1. DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. GALVANIZED STEEL MATERIAL.



TITLE:

TRASH GRATE INLET

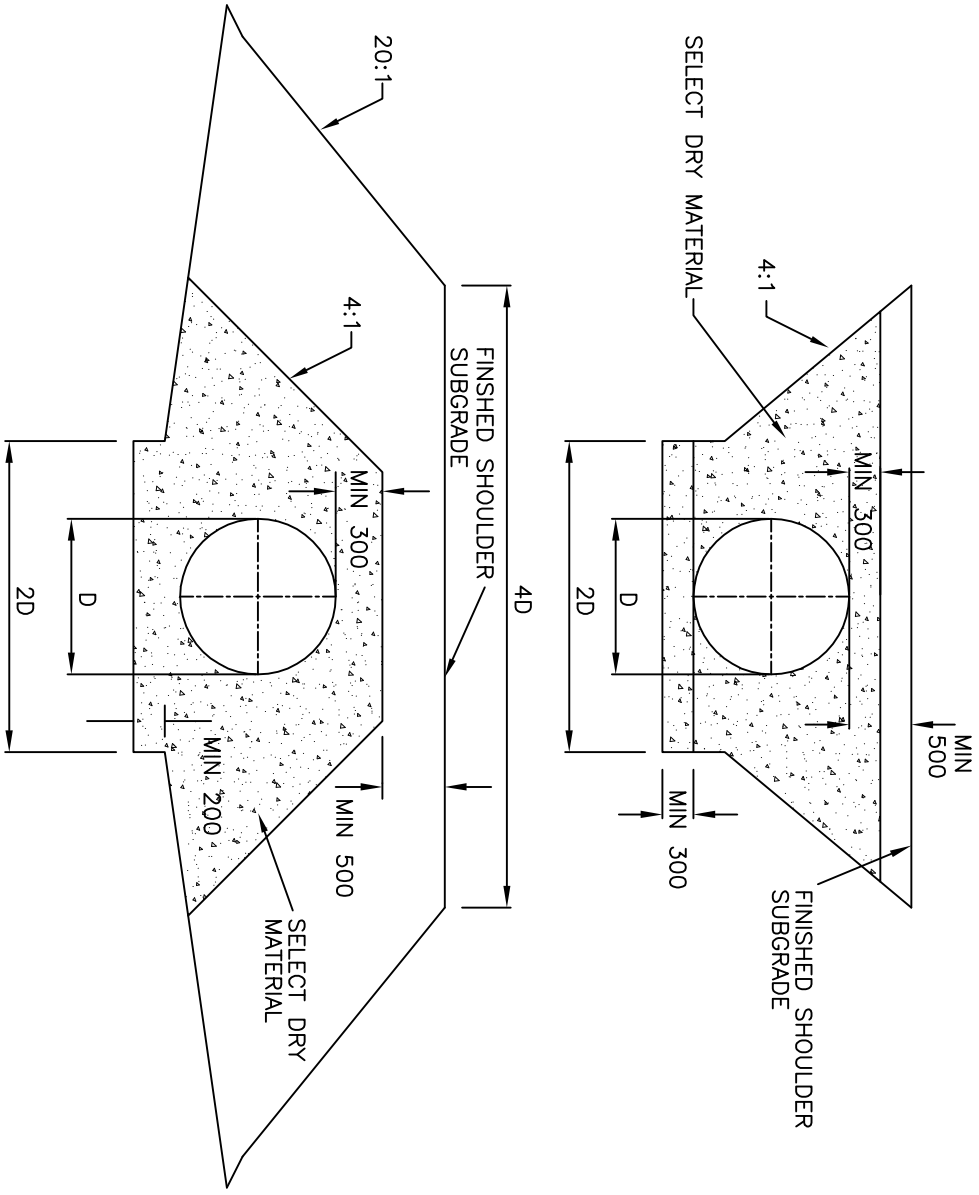
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

7-300



1. SELECT DRY MATERIAL SHALL BE PLACED IN 150mm COMPACTED LIFTS. A 600mm CLAY PLUG SHALL BE PLACED ON INLET AND OUTLET ENDS OF THE PIPE.
2. IN SOFT WET AREAS (IE MUSKEG) DEPTH OF SUBCUT BELOW THE PIPE WILL BE DETERMINED BY THE DEVELOPERS ENGINEER AS APPROVED BY THE DIRECTOR.
3. WHEN PIPES ARE PLACED PRIOR TO EMBANKMENT CONSTRUCTION, A MINIMUM OF 1000mm OF MATERIAL SHALL BE PLACED OVER TOP OF PIPES FOR PROTECTION DURING CONSTRUCTION.
4. ALL CULVERT INVERTS WILL BE STAKED IN THE FIELD BY THE DEVELOPERS ENGINEER.
5. GEOTEXTILE FABRIC TO BE WOVEN POLYPROPYLENE MONOFILAMENT WHICH FORMS A DIMENSIONALLY STABLE CONSTRUCTION FABRIC AND WITH A MINIMUM OPEN PERCENTAGE OF 10%.

ALL UNITS ARE mm UNLESS OTHERWISE NOTED



TITLE:

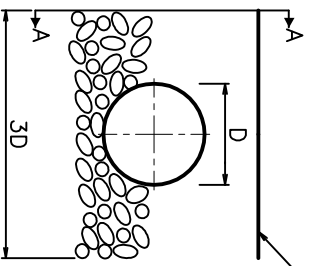
TYPICAL CULVERT INSTALLATION

STANDARD DETAILS

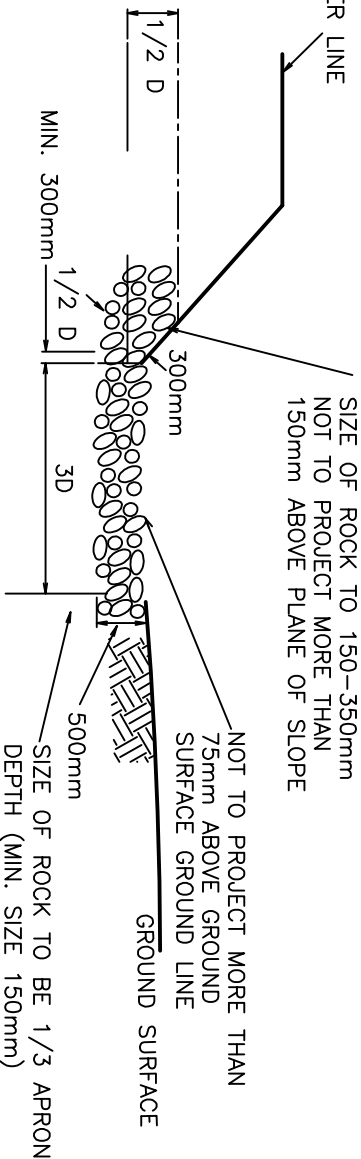
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DATE: SEPTEMBER 2010

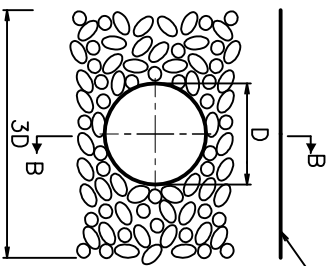
STD. DWG NO. 7-301



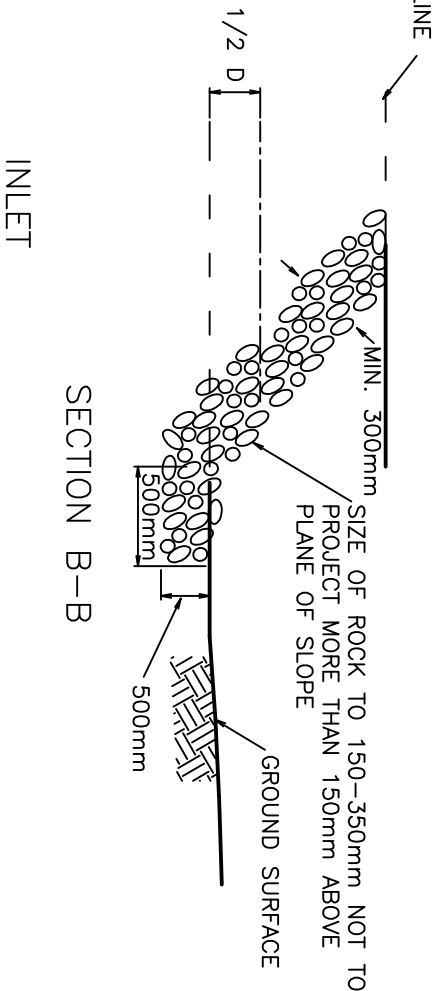
FRONT ELEVATION - OUTLET



OUTLET



FRONT ELEVATION - INLET



INLET

D	400	500	600	700	800	900	1000	1200
APRON DEPTH	500							

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS

TITLE:

TYPICAL RIP-RAP FOR CULVERT
SIZE 400-1200 DIA

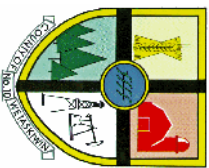
STANDARD DETAILS

SCALE: N.T.S.

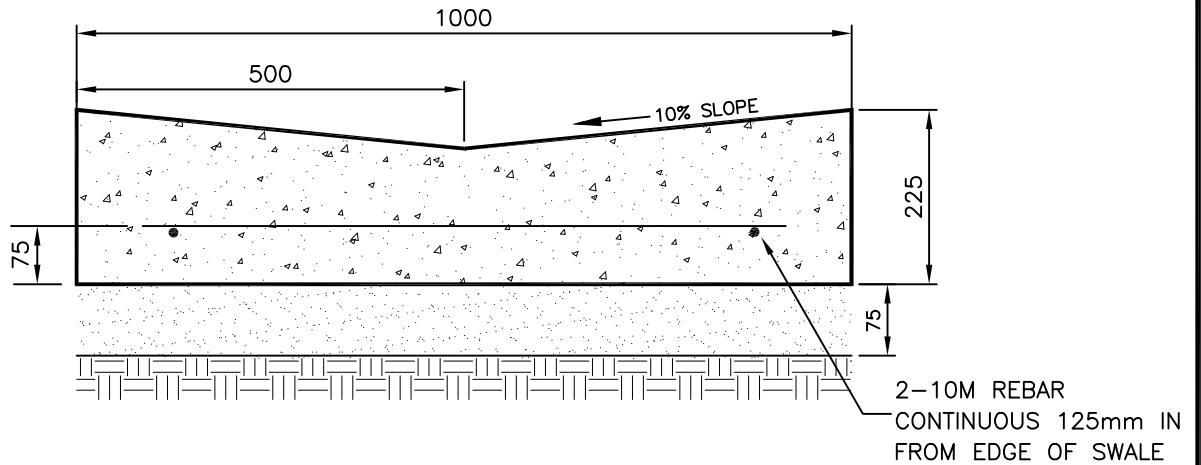
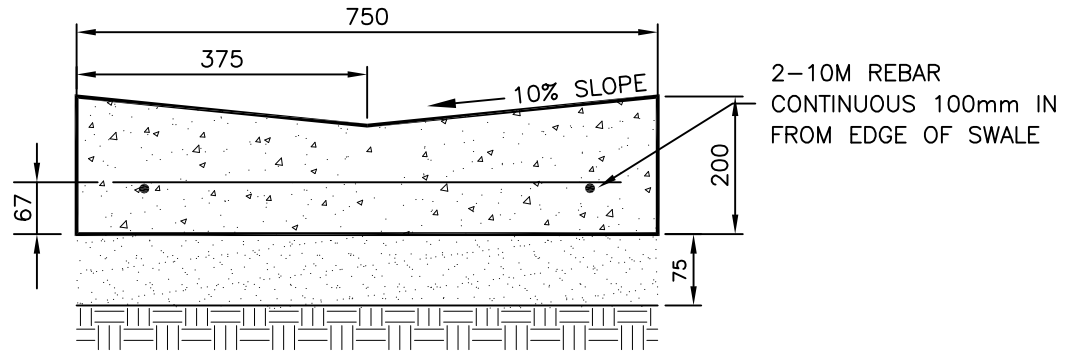
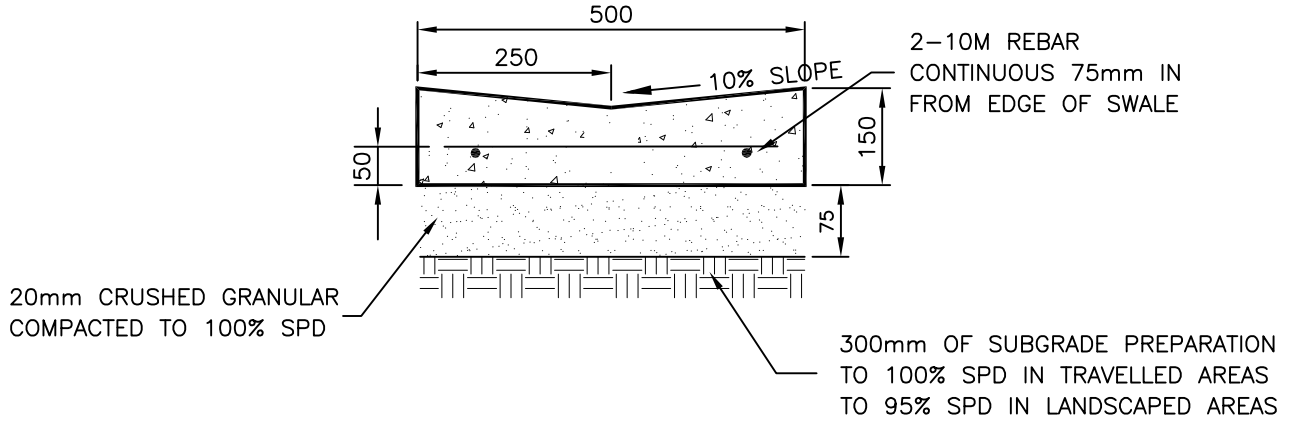
DATE: SEPTEMBER 2010

STD. DWG NO.

7-302



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NOTES:

1. REINFORCING BARS ARE REQUIRED AT CONSTRUCTION JOINTS AND FUTURE TIE-IN LOCATIONS.
2. REINFORCING BARS SHALL EXTEND INTO CONCRETE A MINIMUM OF 300mm.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. CONCRETE TO MEET REQUIREMENTS OF SPECIFICATIONS.



TITLE:

CONCRETE DRAINAGE SWALE

STANDARD DETAILS

SCALE: N.T.S.

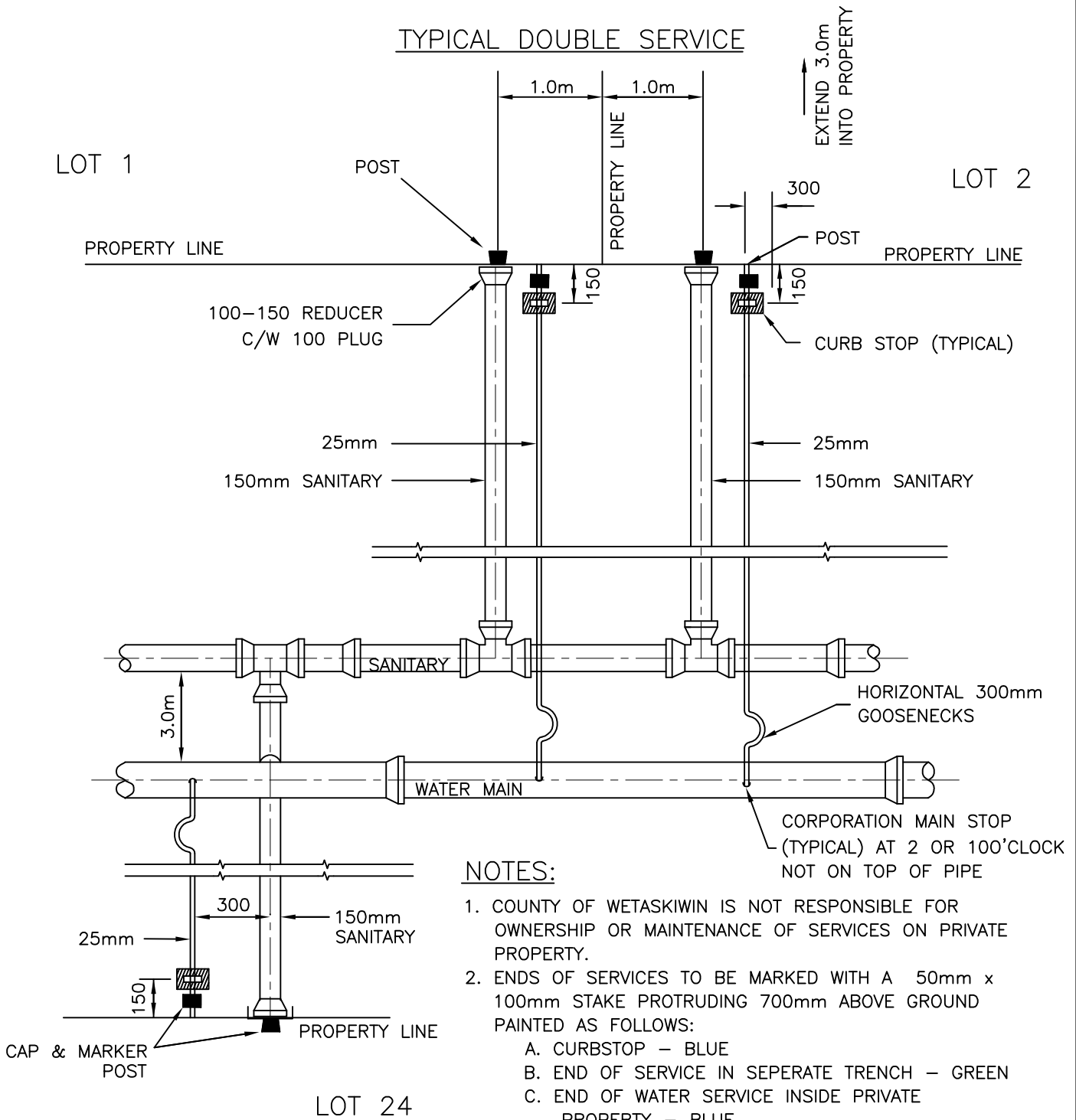
DATE: SEPTEMBER 2010

STD. DWG NO.

7-400

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TYPICAL DOUBLE SERVICE



NOTES:

1. COUNTY OF WETASKIWIN IS NOT RESPONSIBLE FOR OWNERSHIP OR MAINTENANCE OF SERVICES ON PRIVATE PROPERTY.
2. ENDS OF SERVICES TO BE MARKED WITH A 50mm x 100mm STAKE PROTRUDING 700mm ABOVE GROUND PAINTED AS FOLLOWS:
 - A. CURBSTOP - BLUE
 - B. END OF SERVICE IN SEPERATE TRENCH - GREEN
 - C. END OF WATER SERVICE INSIDE PRIVATE PROPERTY - BLUE
3. WHERE STORM SEWER SERVICE IS TO BE INSTALLED, PLACE 0.3m FROM SANITARY ON FAR SIDE FROM WATER.
4. SEWER SERVICES MUST BE PROPERLY CAPPED.
5. ALL DIMENSIONS GIVEN IN MILLIMETRES UNLESS OTHERWISE STATED.
6. COUNTY OF WETASKIWIN MAY REQUIRE ALTERNATE PLACEMENT OF CURB STOP.
7. SINGLE SERVICE TO ENTER LOT WITHIN 2.25m OF CENTER.

TYPICAL SINGLE SERVICE



TITLE:

SINGLE AND DOUBLE SERVICE LAYOUT

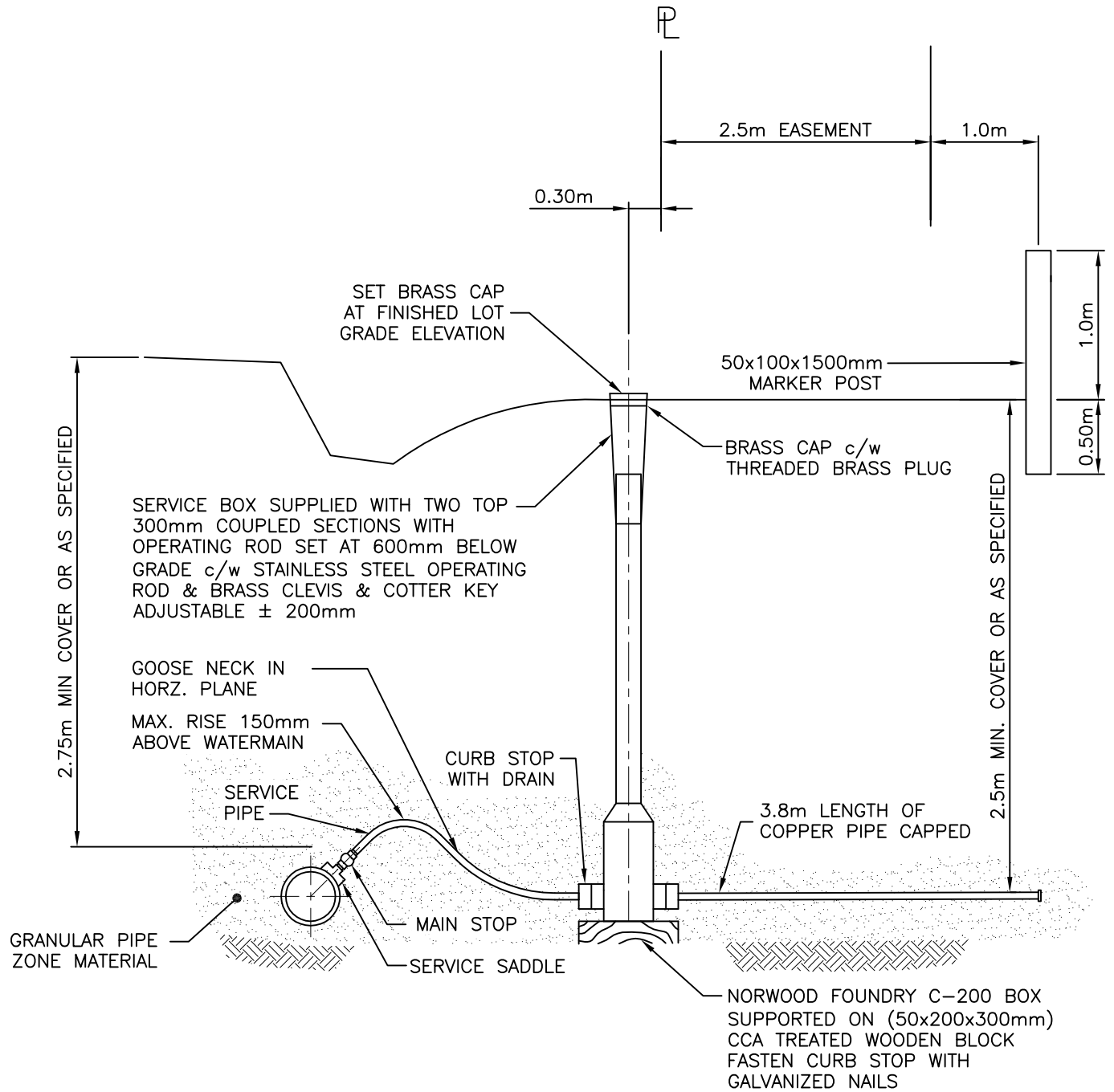
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

8-100



TITLE:

TYPICAL WATER SERVICE CONNECTION

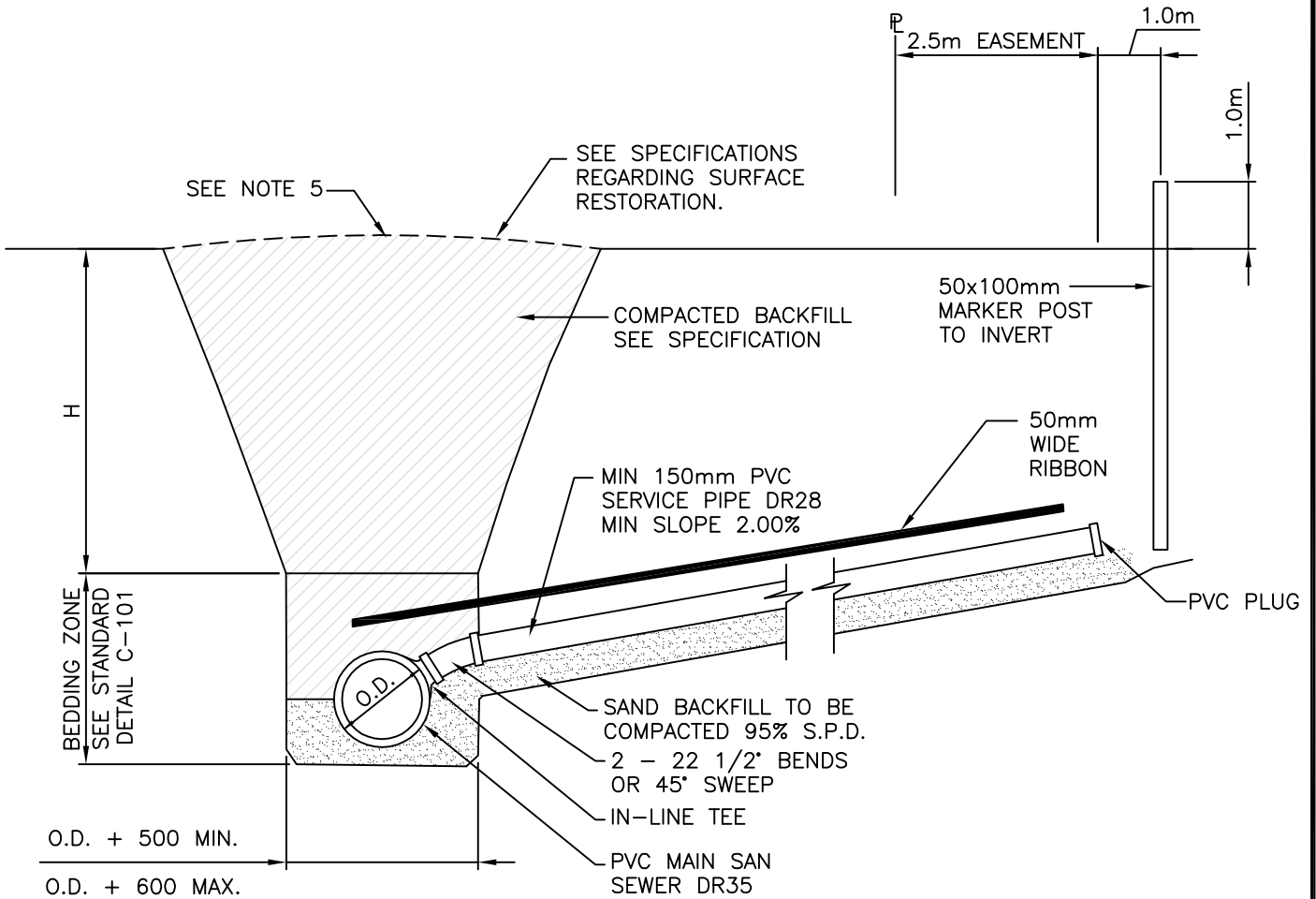
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

8-101



NOTES:

1. WHEN CUT BACK SLOPES ARE TO BE USED IN LIEU OF CAGES AND SHORING, THESE SLOPES ARE TO MEET REQUIREMENTS OF LOCAL CODES.
2. SEE SPECIFICATIONS FOR MINIMUM COVER ABOVE PIPE.
3. MIN. PIPE ZONE WIDTH IS SPECIFIED TO ALLOW PROPER PIPE ZONE COMPACTION.
4. O.D. = OUTSIDE PIPE DIAMETER.
5. FOR UNCOMPACTED BACKFILL, CROWN TRENCH BY $0.1 \times H$.



TITLE:

TYPICAL SANITARY
SERVICE CONNECTION

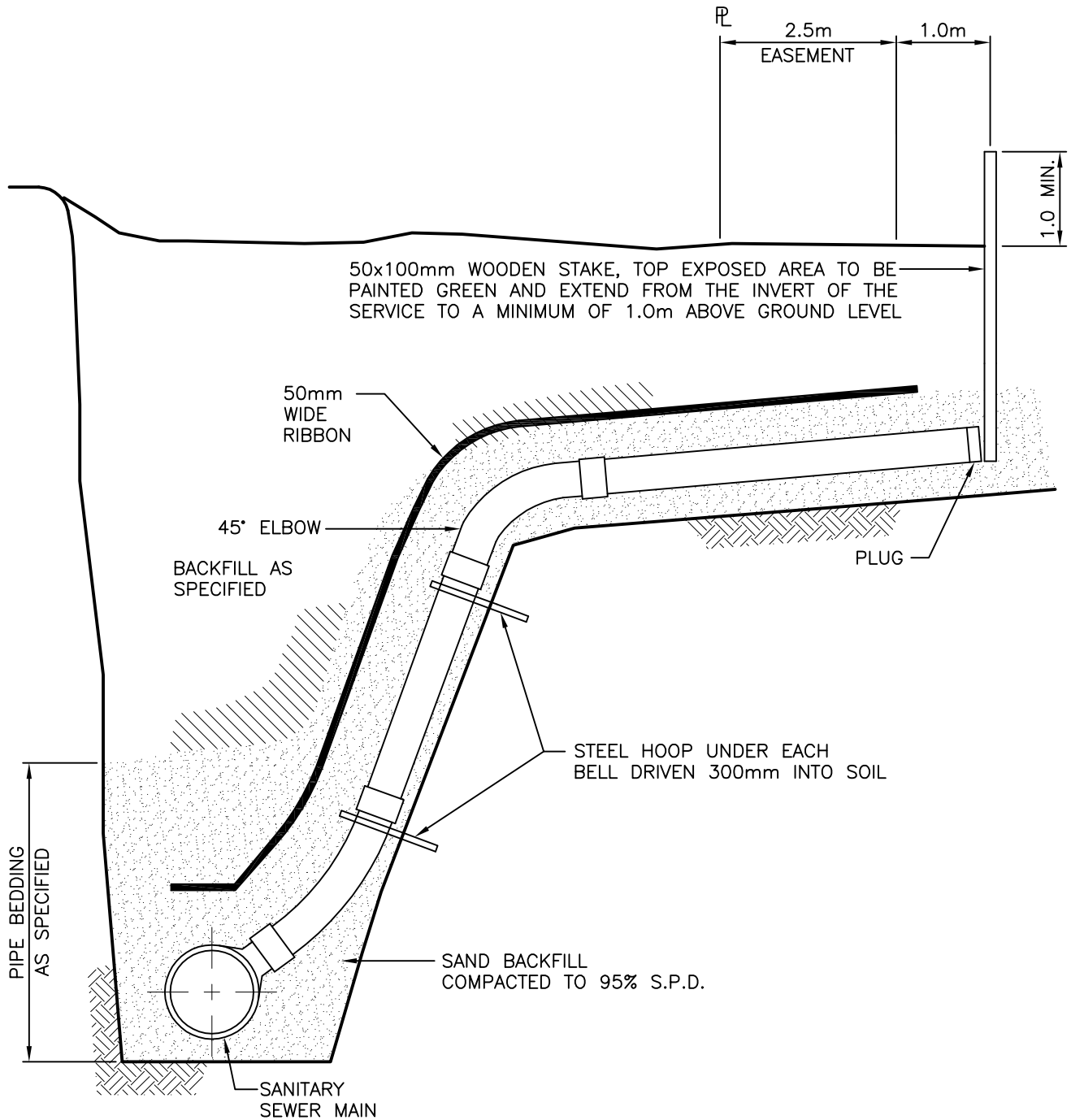
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

8-102



NOTES:

1. WHEN CUT BACK SLOPES ARE TO BE USED IN LIEU OF CAGES AND SHORING. THESE SLOPES ARE TO MEET REQUIREMENTS OF LOCAL CODES.
2. MINIMUM COVER ABOVE PIPE 2.5m.
3. MINIMUM PIPE WIDTH IS SPECIFIED TO ALLOW PROPER PIPE ZONE COMPACTION.
4. FOR UNCOMPACTIONED BACKFILL, CROWN TRENCH BY H X 0.1
5. RIBBON SHOULD BE PLACED ABOVE BURRIED PIPE AS PER DETAIL C-101.



TITLE:

TYPICAL STANDARD RISER DETAIL

STANDARD DETAILS

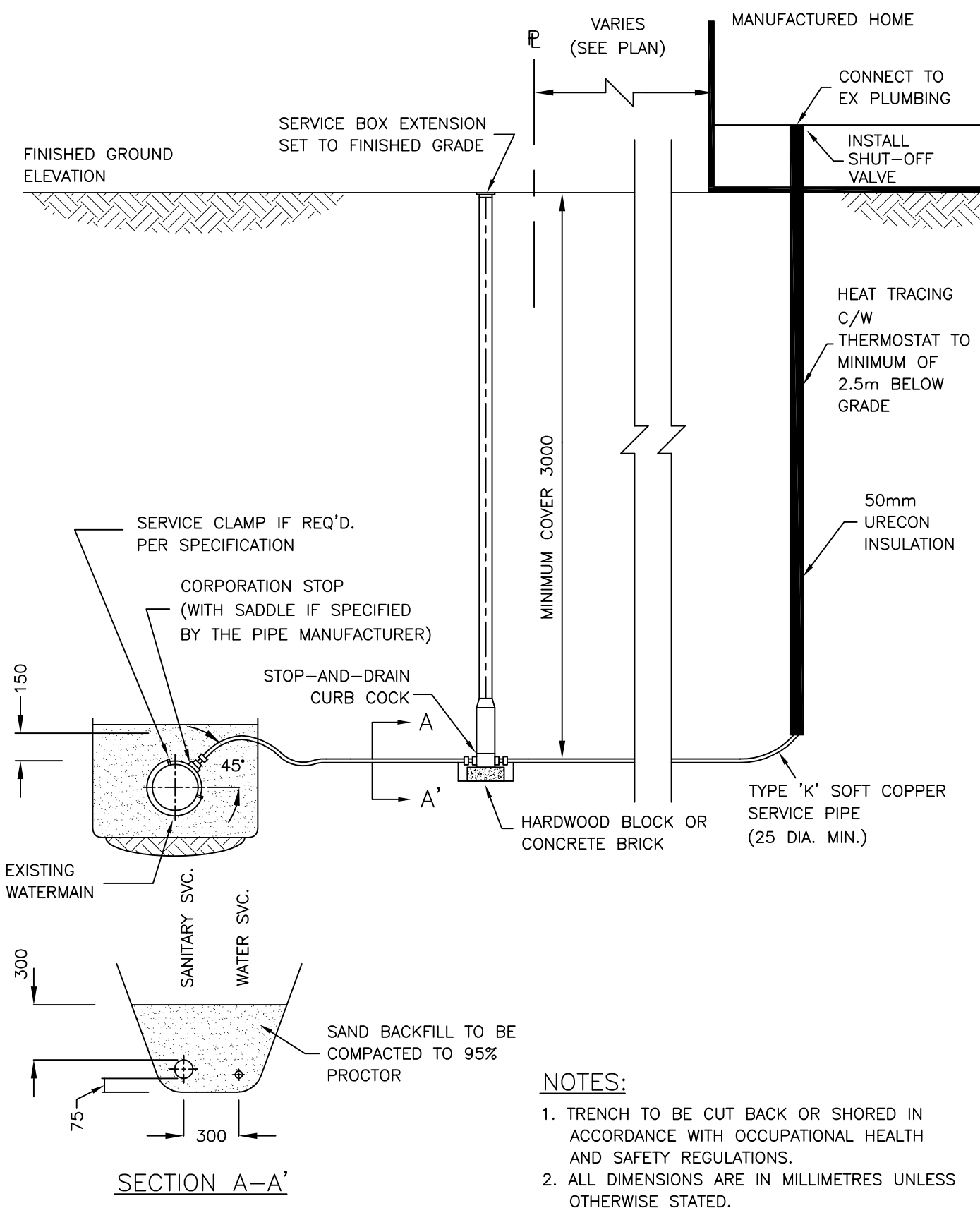
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

8-103

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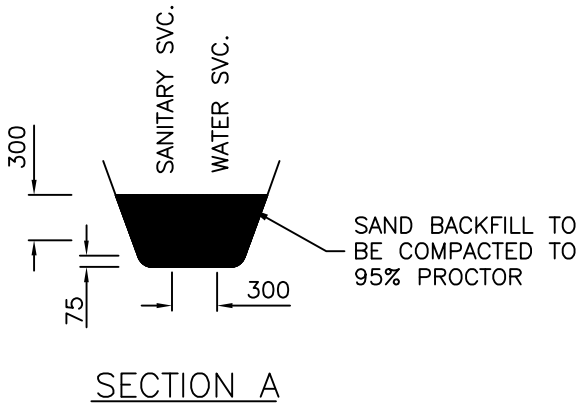
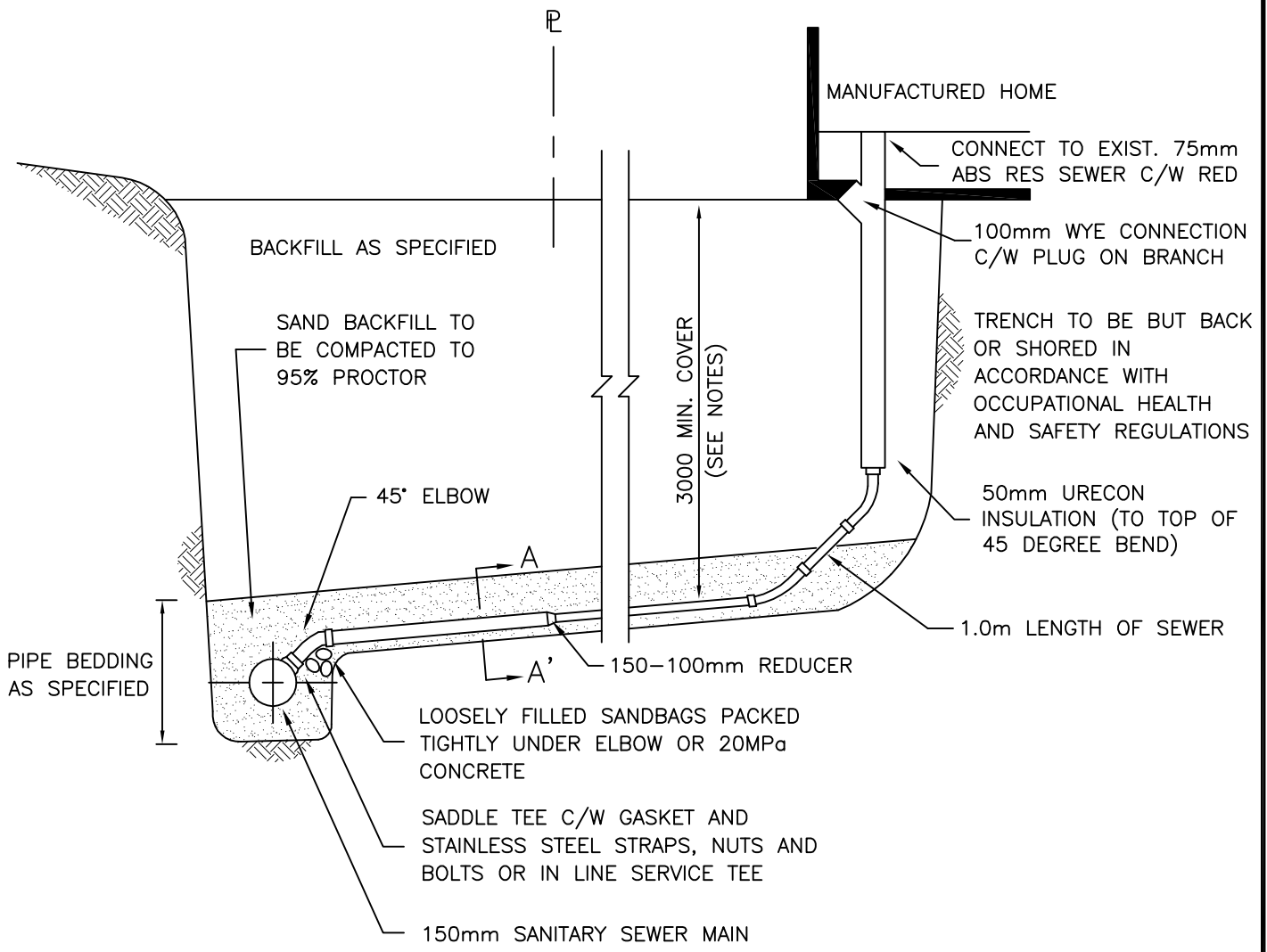
NOTES:

1. TRENCH TO BE CUT BACK OR SHORED IN ACCORDANCE WITH OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.



TITLE:
**WATER SERVICE CONNECTION
 MANUFACTURED HOME**

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	8-200



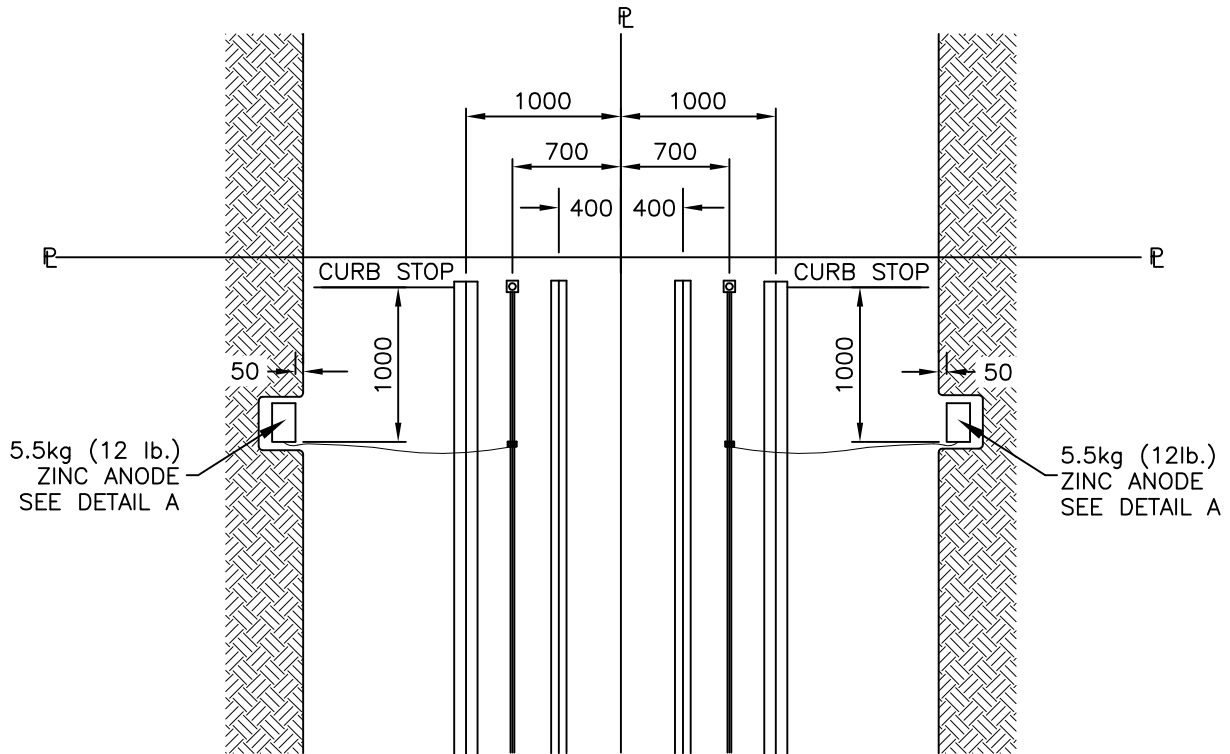
NOTES:

1. MIN. SLOPE FOR 100mm DIA. PIPE IS 2%.
2. SERVICE CONNECTIONS SHALL BE 100mm UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS.
3. 50mm URECON INSULATION WILL BE REQUIRED.
4. TRENCH TO BE CUT BACK OR SHORED IN ACCORDANCE WITH OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
5. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.

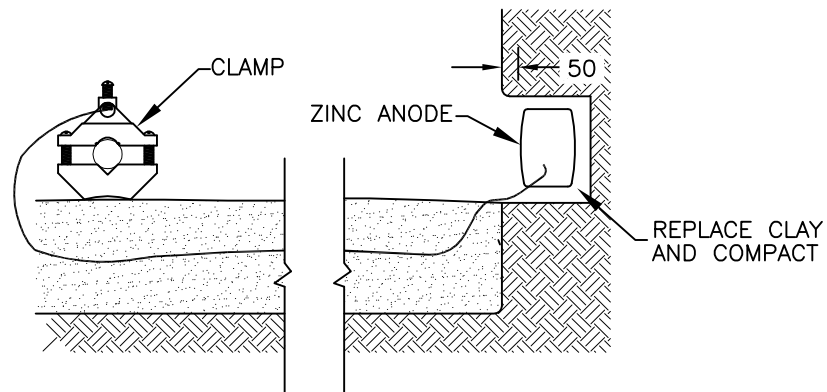


TITLE:
 SANITARY SERVICE CONNECTION
 MANUFACTURED HOME

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	8-201



PLAN VIEW



DETAIL A

NOTES:

1. PIPE CLAMP TO BE ALL BRASS OR APPROVED EQUIVALENT
2. ZINC ANODES TO BE EMBEDDED INTO TRENCH WALL TO PROVIDE FOR A MINIMUM OF 50mm COMPACTED SOIL COMPLETELY AROUND ANODES.
3. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.



TITLE:

ANODE ON 50mm AND SMALLER
COPPER WATER SERVICE

STANDARD DETAILS

SCALE: N.T.S.

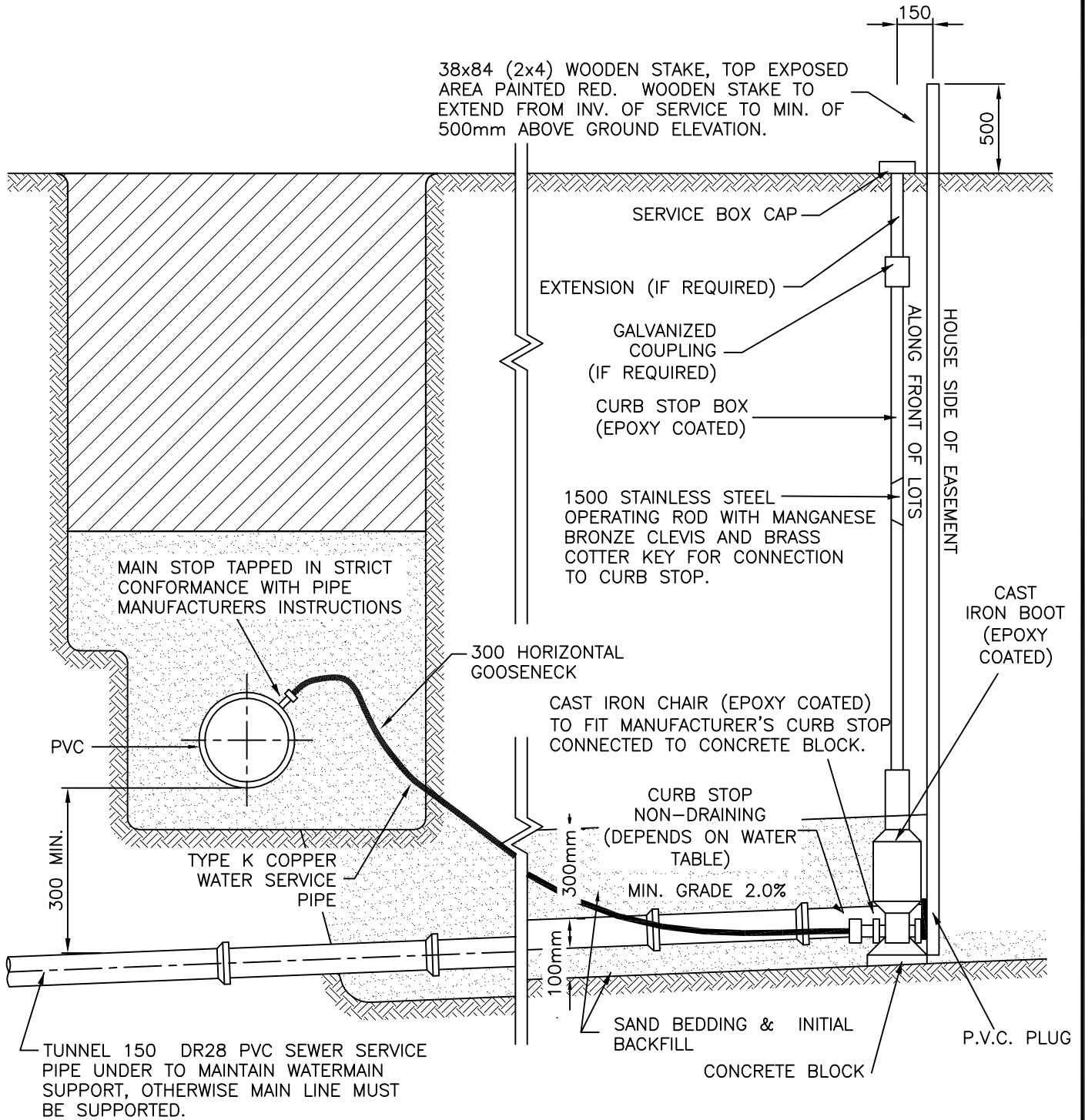
DATE: SEPTEMBER 2010

STD. DWG NO.

8-300

NOTES:

1. AN ADDITIONAL GOOSENECK IS REQUIRED AT EACH SEWER CROSSING.
2. MAIN STOP TAPS SHALL BE A MINIMUM OF 600mm APART, AND NO LESS THAN 300 TO A COUPLING OR COLLAR.
3. COPPER SERVICE SHALL BE ONE CONTINUOUS PIECE, UNLESS LENGTH EXCEEDS 30m MIN, AND ONLY THEN WILL A DOUBLE UNION BE ALLOWED.
4. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
5. M.D. MAY REQUIRE ALTERNATE LOCATION FOR CURB STOP.



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TITLE:

TYPICAL 50mm AND SMALLER RESIDENTIAL WATER AND 150mm SANITARY SEWER

STANDARD DETAILS

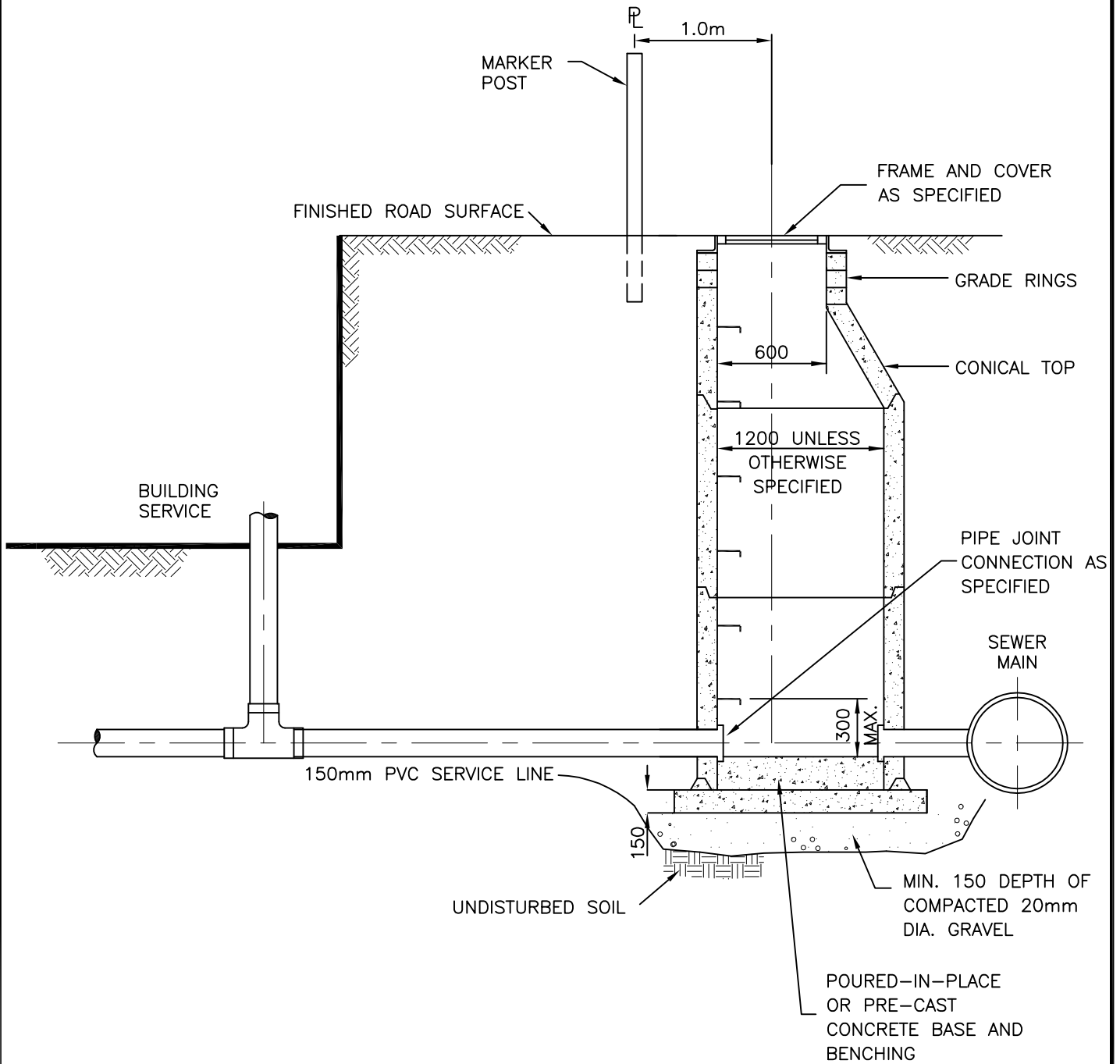
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

8-400

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NOTE:
INSPECTION CHAMBER TO BE LOCATED IN A NON-TRAFFIC AREA AND APPROPRIATELY MARKED



TITLE:

INSPECTION MANHOLE DETAIL

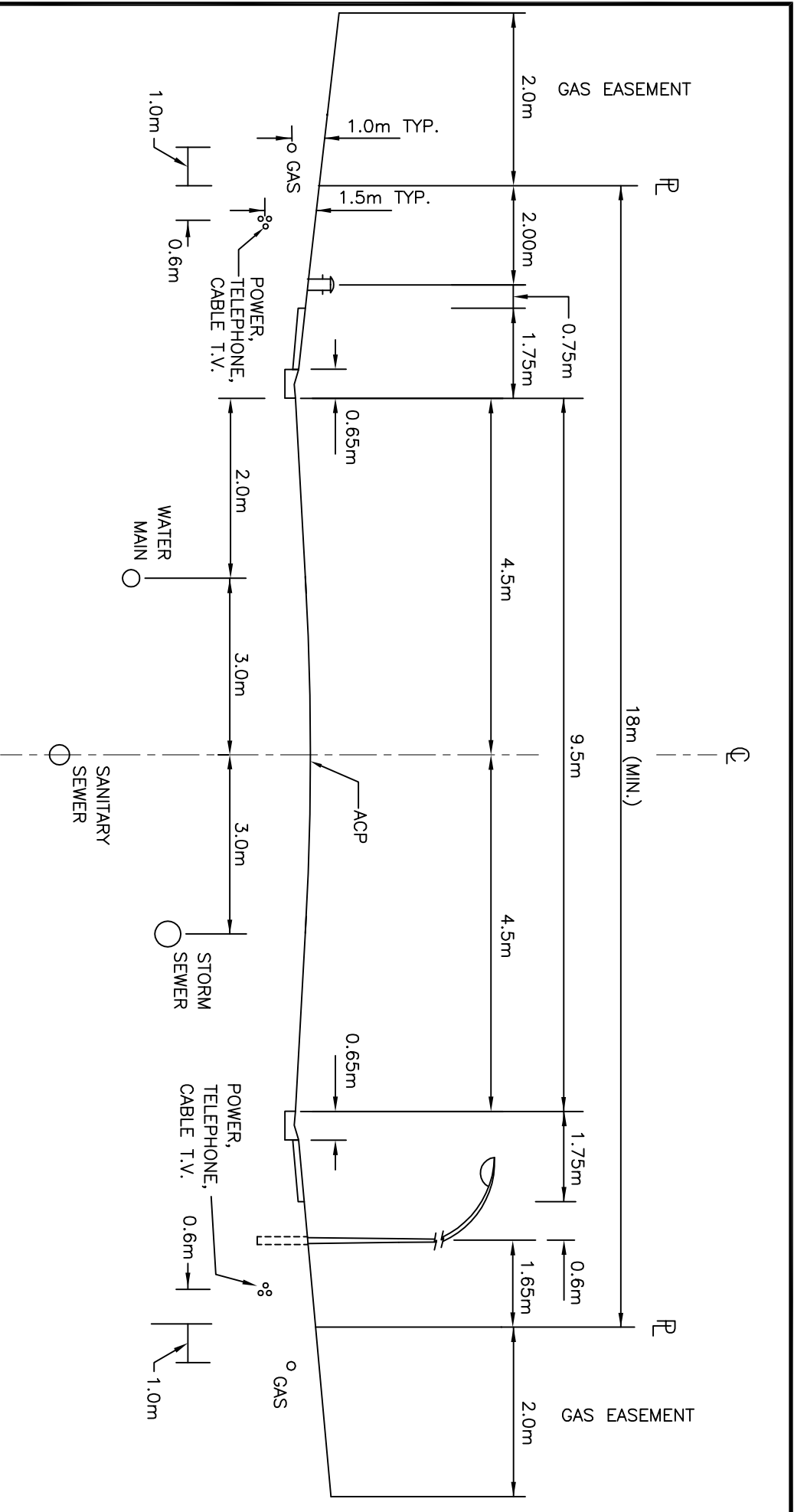
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

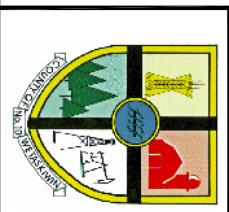
STD. DWG NO.

8-500



SECTION
N.T.S.

NOTE:
1. IF NO GAS EASEMENT, CURB STOP TO BE INSTALLED 0.15m INSIDE ROAD RIGHT OF WAY.



TITLE:

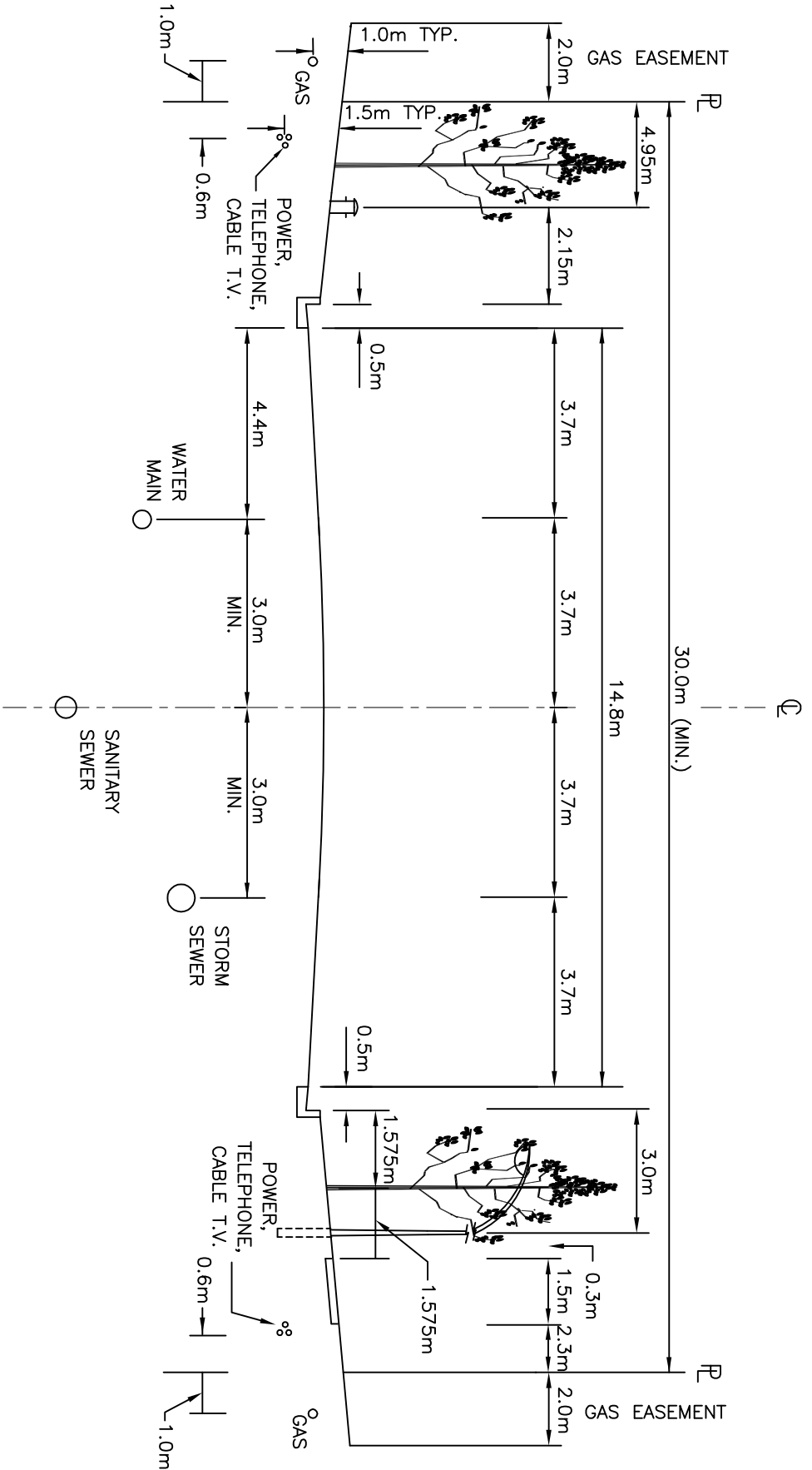
LOCAL RESIDENTIAL
(URBAN)

STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

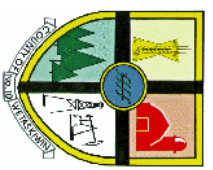
STD. DWG NO. 9-100



SECTION
N.T.S

NOTES:

1. SIDEWALK MAY BE EITHER SEPERATE OR MONOLITHIC AS REQUIRED BY COUNTY.
2. IF NO GAS EASEMENT, CURB STOP TO BE INSTALLED 0.15m INSIDE ROAD RIGHT OF WAY.



TITLE:

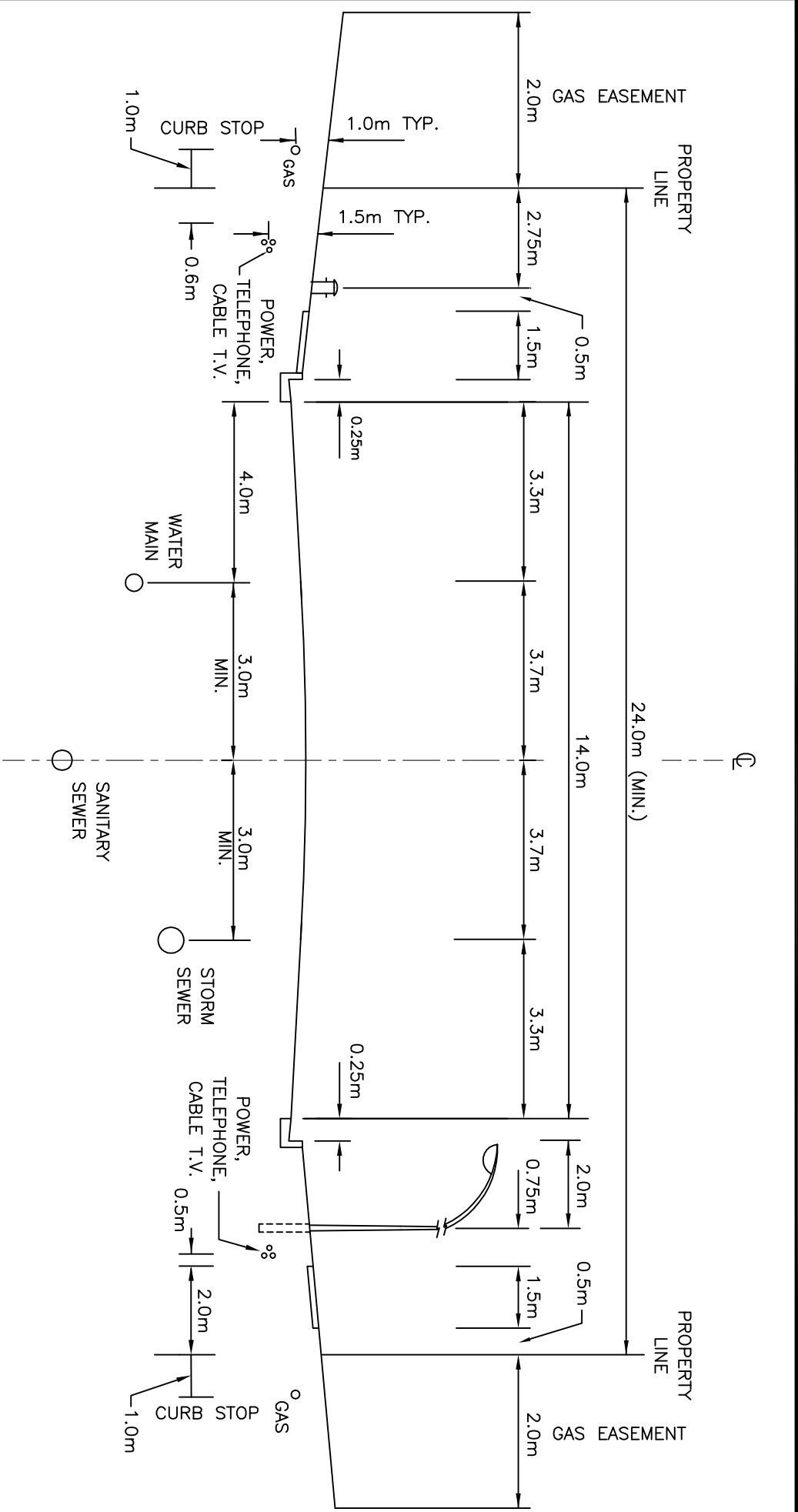
UNDIVIDED ARTERIAL
(URBAN)

STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO. 9-102



NOTES:

1. SIDEWALK MAY BE EITHER SEPERATE OR MONOLITHIC AS REQUIRED BY COUNTY.
2. IF NO GAS EASEMENT, CURB STOP TO BE INSTALLED 0.15m INSIDE ROAD RIGHT OF WAY.

SECTION
N.T.S

TITLE:

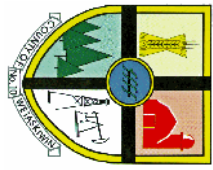
MAJOR RESIDENTIAL COLLECTOR
(URBAN)

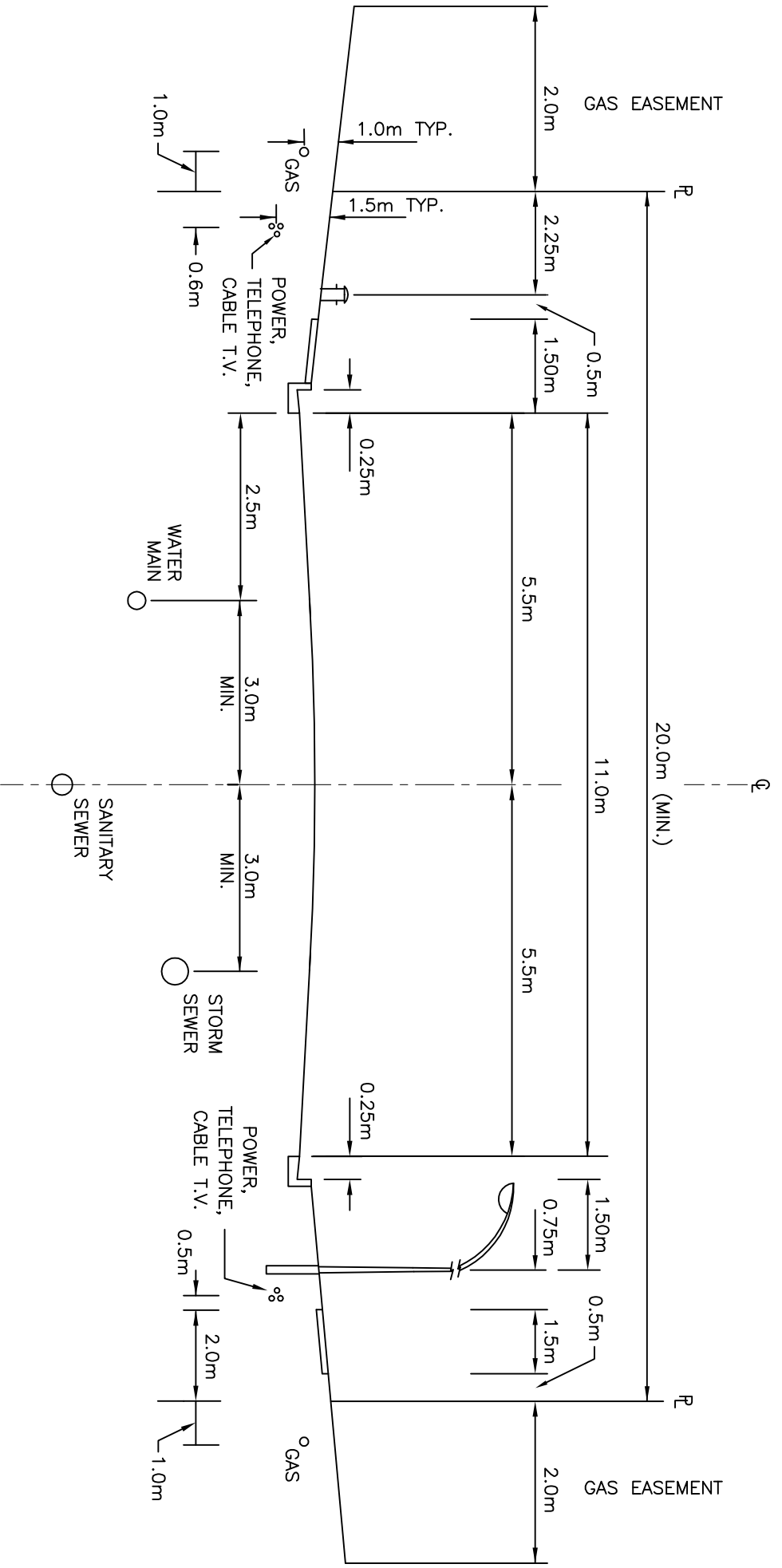
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO. 9-103





SECTION
N.T.S

NOTES:

1. SIDEWALK MAY BE EITHER SEPERATE OR MONOLITHIC AS REQUIRED BY COUNTY.
2. IF NO GAS EASEMENT, CURB STOP TO BE INSTALLED 0.15m INSIDE ROAD RIGHT-OF-WAY.

TITLE:

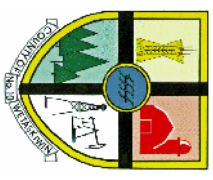
MINOR RESIDENTIAL COLLECTOR
(URBAN)

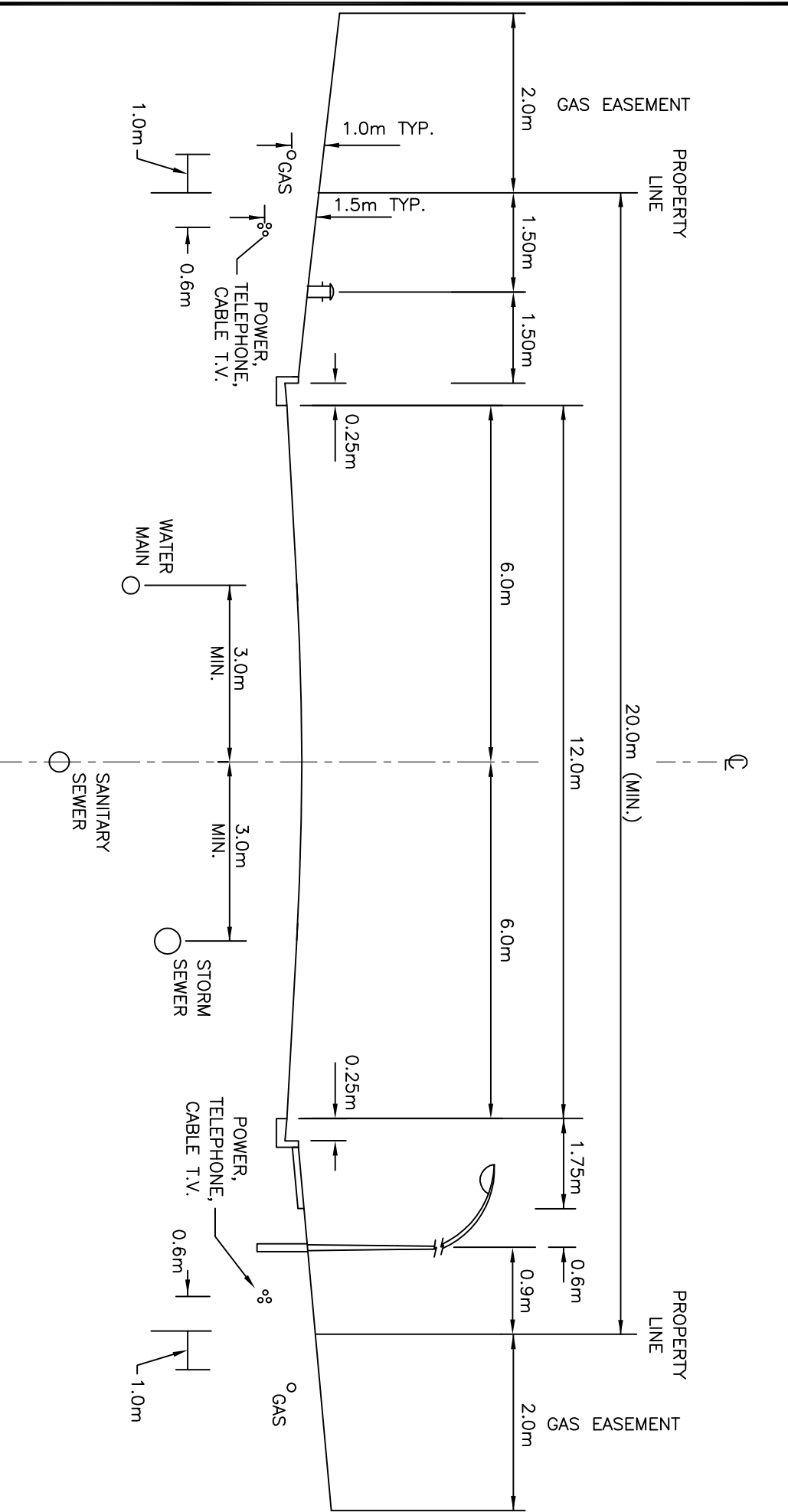
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO. 9-104





NOTES:

1. SIDEWALK MAY BE EITHER SEPERATE OR MONOLITHIC AS REQUIRED BY COUNTY.
2. IF NO GAS EASEMENT, CURB STOP TO BE INSTALLED 0.15m INSIDE ROAD RIGHT-OF-WAY.

SECTION
N.T.S

TITLE:

LOCAL INDUSTRIAL
(URBAN)

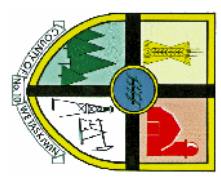
STANDARD DETAILS

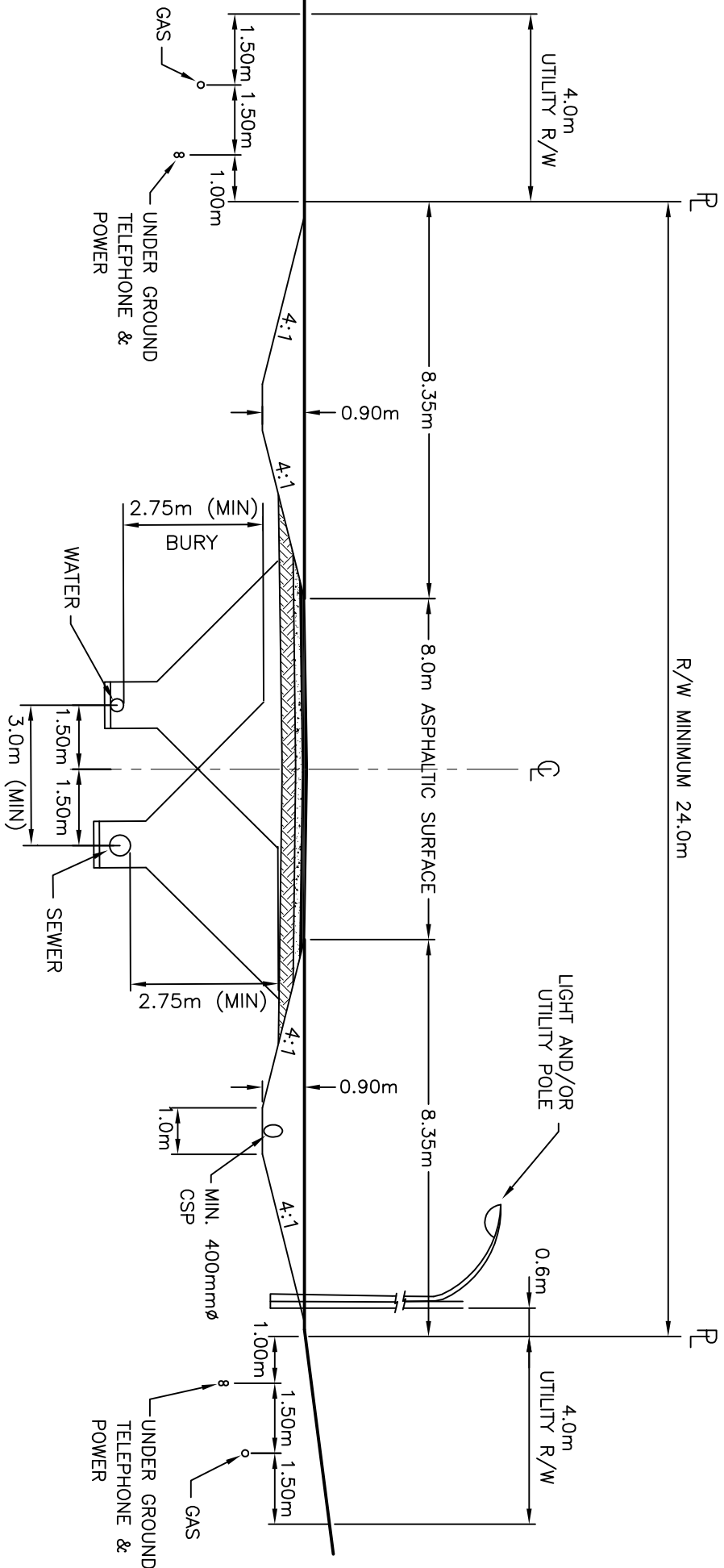
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-105





TITLE:

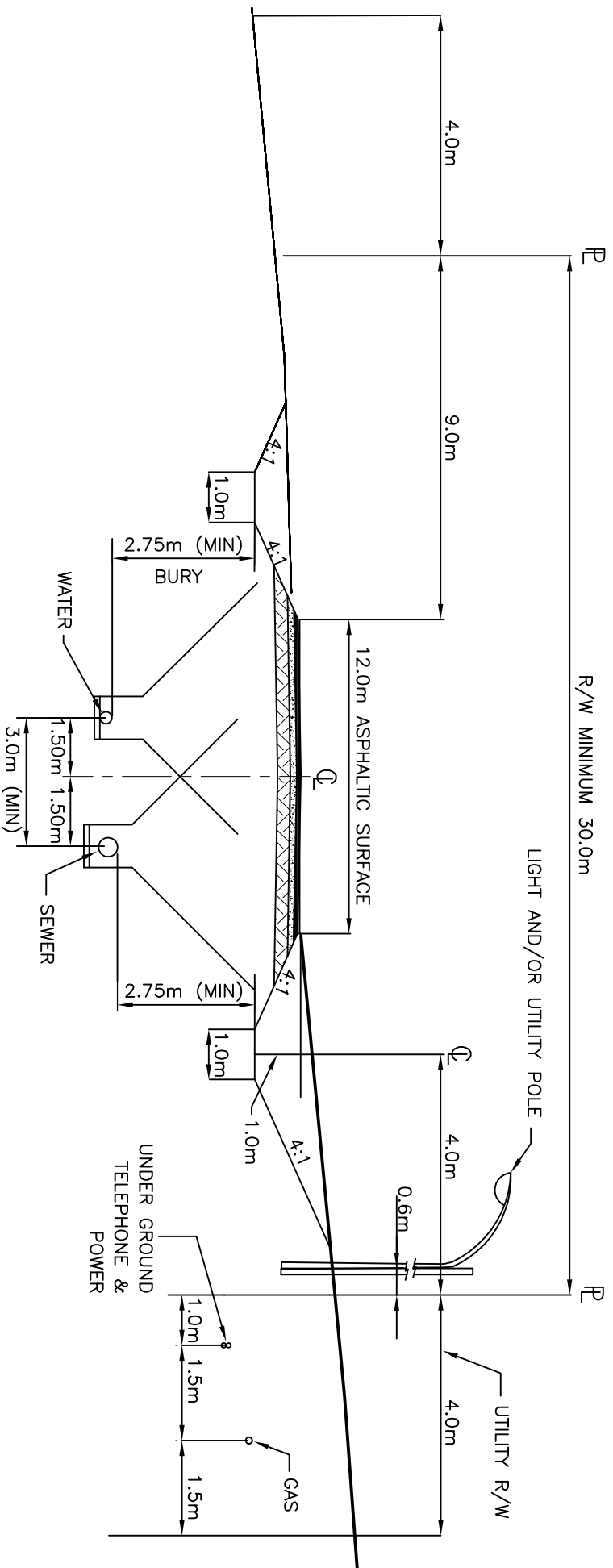
RURAL RESIDENTIAL—24.0m R/W

STANDARD DETAILS

SCALE: N.T.S.

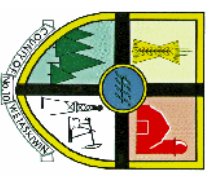
DATE: SEPTEMBER 2010

STD. DWG NO. 9-107



TITLE:

RURAL INDUSTRIAL—30.0m R/W

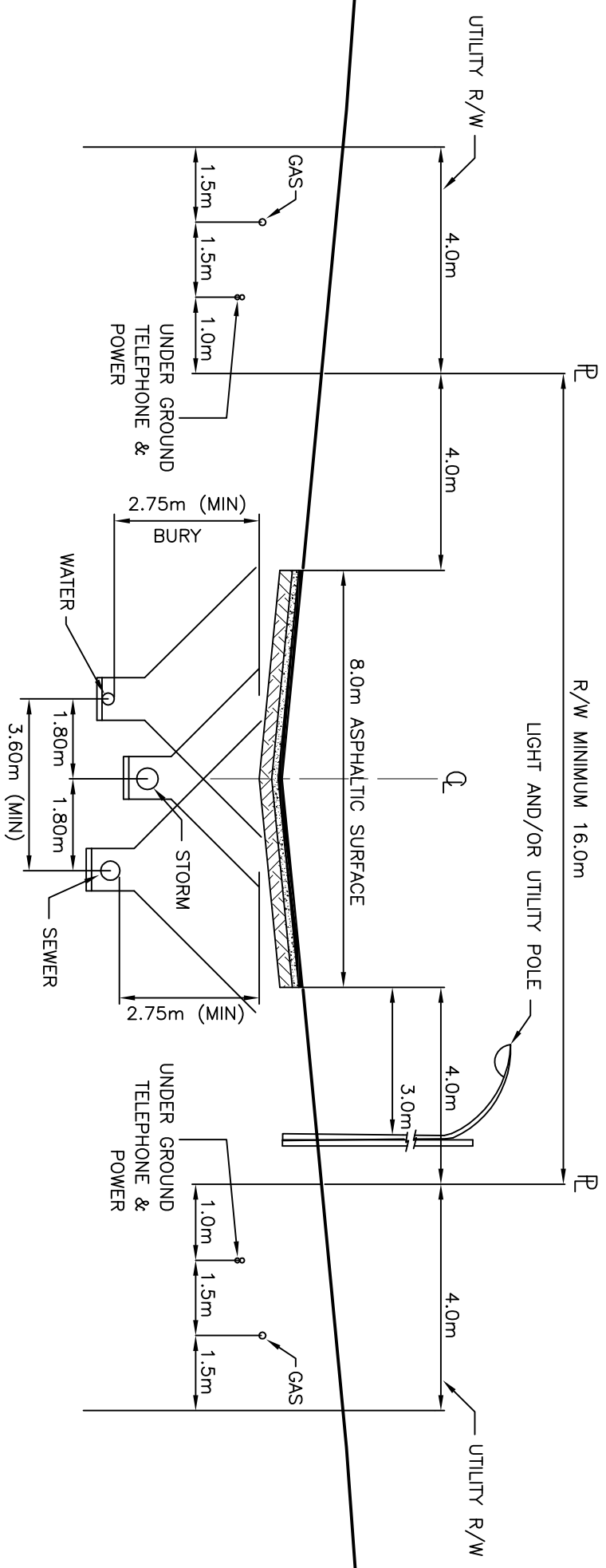


STANDARD DETAILS

SCALE: N.T.S.

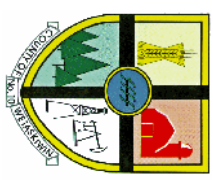
DATE: SEPTEMBER 2010

STD. DWG NO. 9-108



TITLE:

RV RESORT CROSS SECTION



STANDARD DETAILS

SCALE: N.T.S.

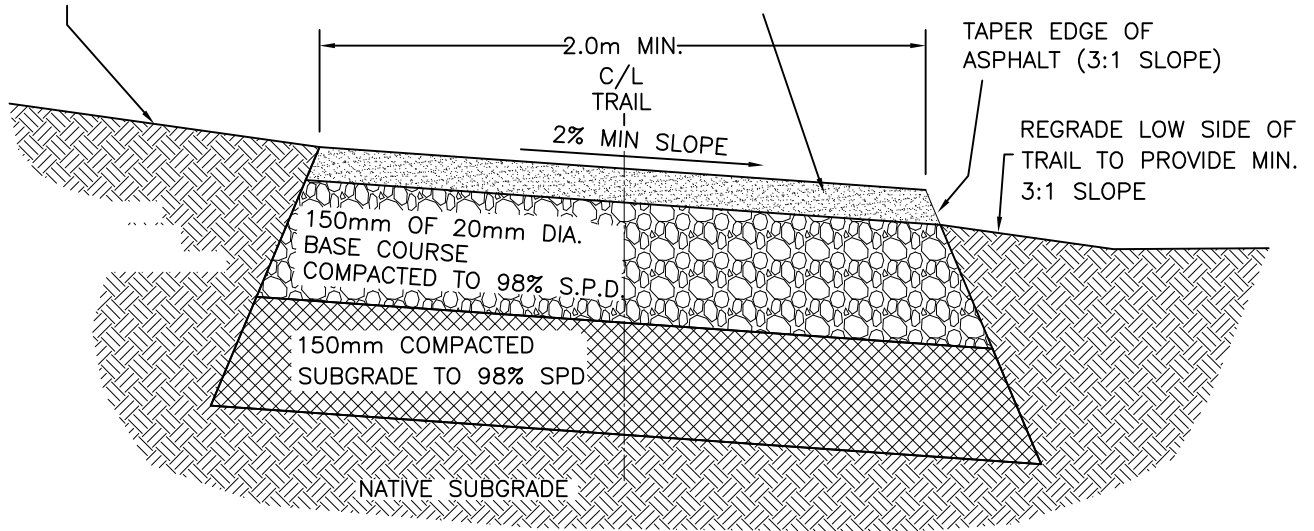
DATE: SEPTEMBER 2010

STD. DWG NO. 9-110

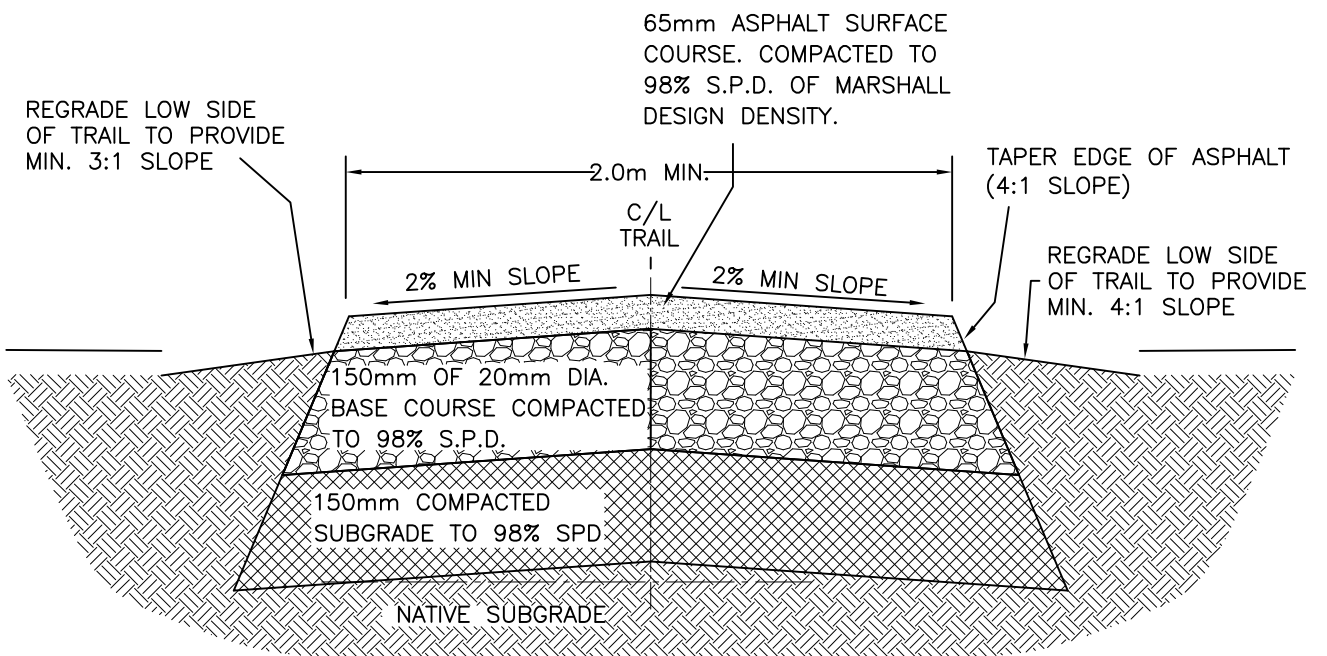
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REGRADE HIGH SIDE OF TRAIL TO PROVIDE MIN. 3:1 SLOPE (GRADE TO MATCH TOP OF ASPHALT TO ENSURE DRAINAGE)

65mm ASPHALT SURFACE COURSE. COMPACTED TO 98% S.P.D. OF MARSHALL DESIGN DENSITY.



TYPICAL TRAIL SECTION – CROSSFALL
NTS



TYPICAL TRAIL SECTION – CROWN
NTS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. MAKE ALL JOINTS WITH EXISTING VEGETATION SMOOTH AND CONTINUOUS, WHERE NECESSARY TRIM BACK ROOTS AND CLEAR DEBRIS
3. WHERE COUNTY OF WETASKIWIN CHOOSES TO DELETE ASPHALT, INCREASE GRAVEL THICKNESS ACCORDINGLY. MAINTAIN GRADE AS SHOWN.
4. SUBSTITUTE ALTERNATE SURFACE WITH COUNTY PERMISSION.
5. TRAIL WIDTH TO BE CONFIRMED WITH COUNTY.



TITLE:

TYPICAL TRAIL
CROSS-SECTIONS

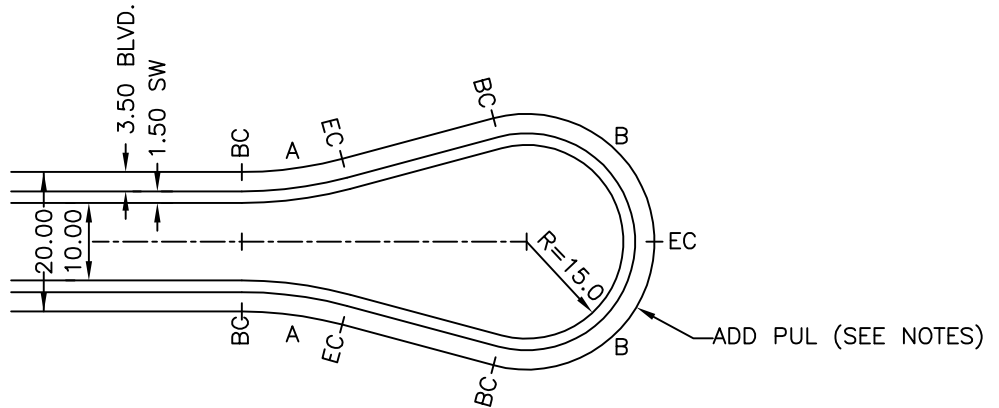
STANDARD DETAILS

SCALE: N.T.S.

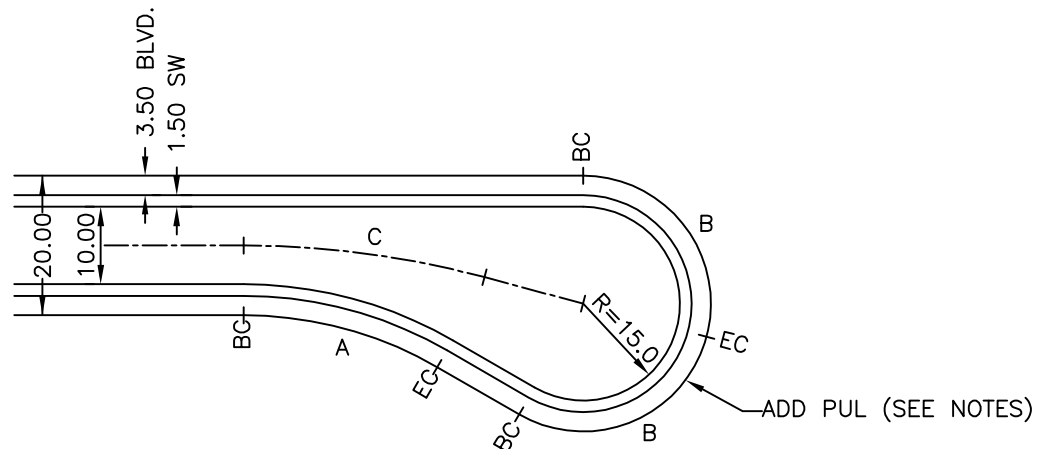
DATE: SEPTEMBER 2010

STD. DWG NO.

9-111



CURVE "A"	CURVE "B"
$\Delta = 15^{\circ}00'00''$	$\Delta = 105^{\circ}00'00''$
R = 50.00	R = 20.0
ARC = 13.09	ARC = 32.99
TAN = 6.58	TAN = 23.46
(at property line)	(at property line)



CURVE "A"	CURVE "B"	CURVE "C"
$\Delta = 30^{\circ}00'00''$	$\Delta = 105^{\circ}00'00''$	$\Delta =$
R = 50.00	R = 20.0	15^{\circ}00'00'' R
ARC = 26.18	ARC = 32.99	= 122.11
TAN = 13.40	TAN = 23.46	ARC = 31.97
(at property line)	(at property line)	TAN = 16.08

NOTES:

1. A PUL WITH A WIDTH NO LESS THAN 6.0m MUST BE ADDED TO ALLOW FOR SNOW MOVEMENT AND STORAGE.
2. THE CURB AND GUTTER MUST BE DEPRESSED AT THE PUL TO ALLOW FOR SNOW MOVEMENT.



TITLE:

URBAN RESIDENTIAL
CUL - DE - SAC

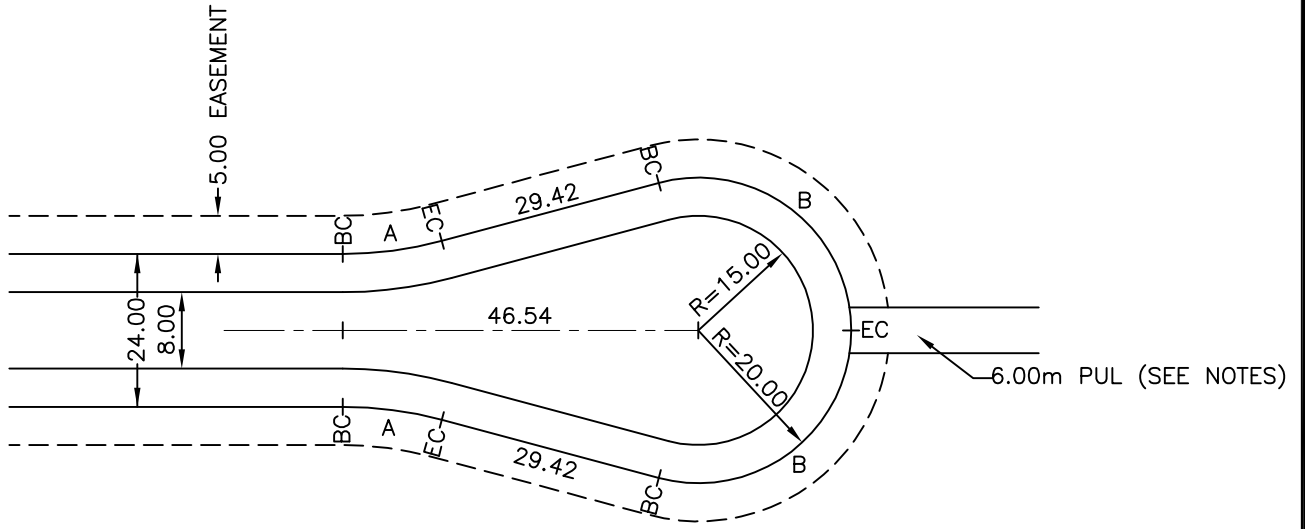
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-112



CURVE "A"	CURVE "B"
$\Delta = 15^{\circ}00'00''$	$\Delta = 105^{\circ}00'00''$
R = 50.00	R = 20.00
ARC = 13.09	ARC = 36.65
TAN = 6.58	TAN = 26.06
(at property line)	(at property line)

NOTE:

- A PUL WITH A WIDTH NO LESS THAN 6.0m MUST BE PROVIDED TO ALLOW FOR STORM DRAINAGE AND SNOW MOVEMENT AND STORAGE IF THE CUL-DE-SAC CAN NOT BE GRADED TO DRAIN TOWARDS THE INTERSECTION.



TITLE:

RURAL RESIDENTIAL
CUL - DE - SAC

STANDARD DETAILS

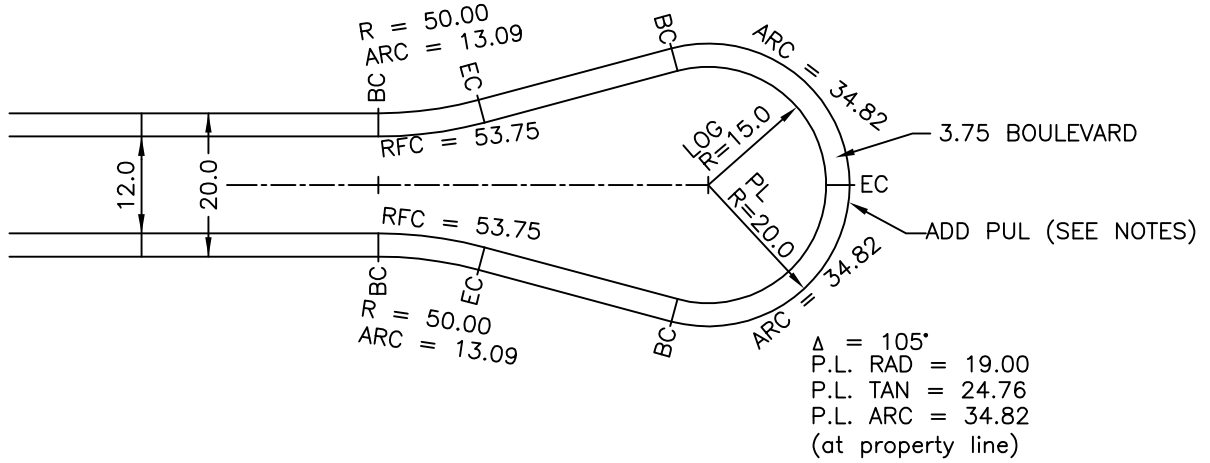
SCALE: N.T.S.

DATE: SEPTEMBER 2010

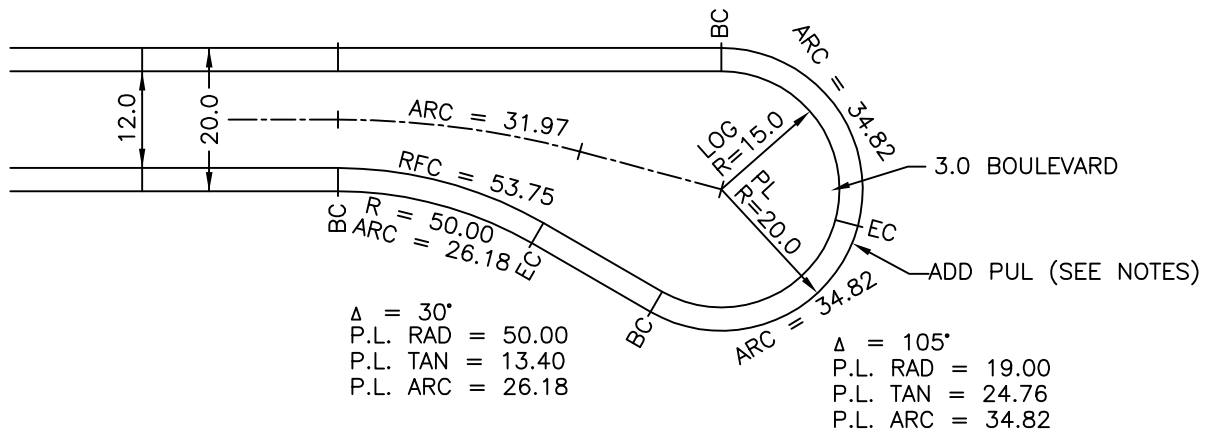
STD. DWG NO.

9-114

$\Delta = 15^\circ$
 P.L. RAD = 20.0
 P.L. TAN = 6.58
 P.L. ARC = 13.09
 (at property line)



$\Delta = 15^\circ$
 C.L. RAD = 122.11
 C.L. TAN = 16.08
 C.L. RAD = 31.97



NOTES:

1. A PUL WITH A WIDTH NO LESS THAN 6.0m AND DEPTH OF LOT MUST BE ADDED TO ALLOW FOR SNOW MOVEMENT AND STORAGE
2. THE CURB AND GUTTER MUST BE DEPRESSED AT THE PUL TO ALLOW FOR SNOW MOVEMENT



TITLE:

LOCAL INDUSTRIAL/COMMERCIAL
 CUL - DE - SAC
 CURB AND GUTTER

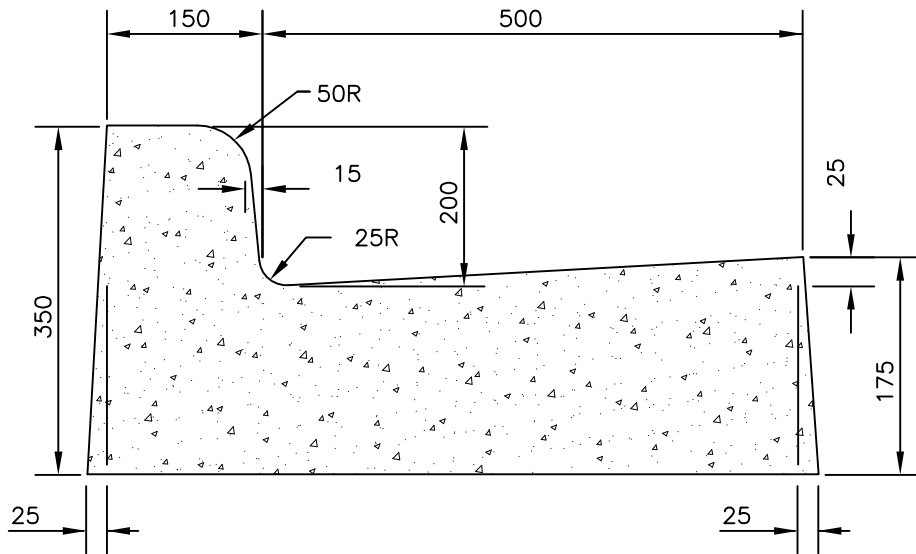
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-115



NOTES:

1. 25mm BATTER NOT REQUIRED FOR HANDFORMED.
2. ALL DIMENSIONS IN MILLIMETRES.



TITLE:

500mm CURB & GUTTER
FOR ARTERIAL ROADWAYS

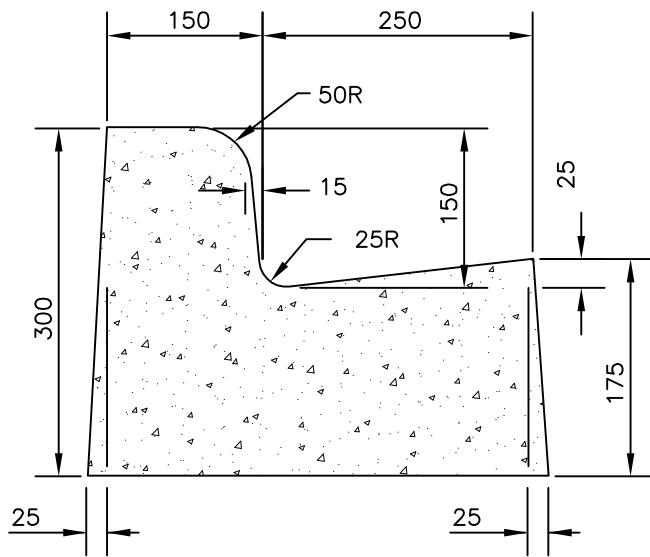
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-200



NOTES:

1. 25mm BATTER NOT REQUIRED FOR HANDFORMED.
2. ALL DIMENSIONS IN MILLIMETRES.



TITLE:

250mm STANDARD
CURB & GUTTER

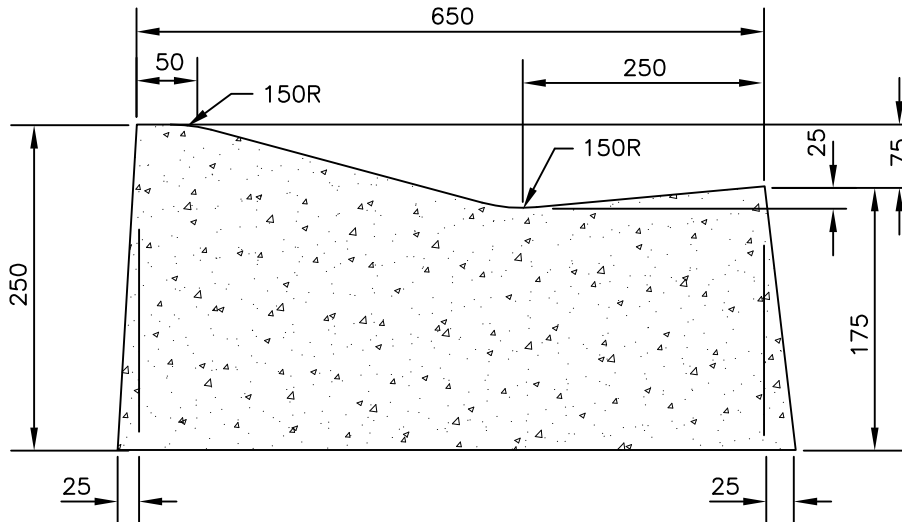
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-201



NOTES:

1. 25mm BATTER NOT REQUIRED FOR HANDFORMED.
2. ALL DIMENSIONS IN MILLIMETRES.



TITLE:

250mm ROLLED
CURB AND GUTTER

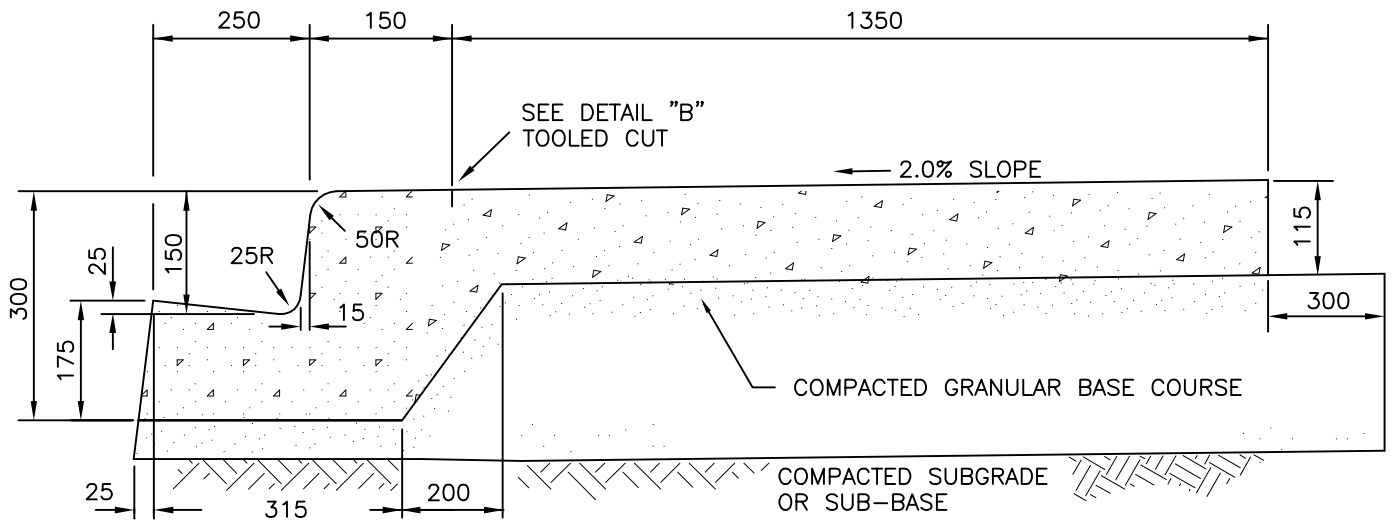
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

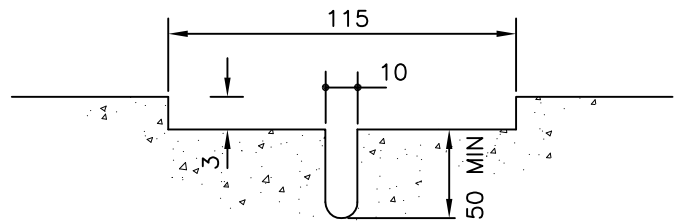
STD. DWG NO.

9-202



NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETRES.



DETAIL "B"



TITLE:

1.50m STANDARD
MONOLITHIC SIDEWALK

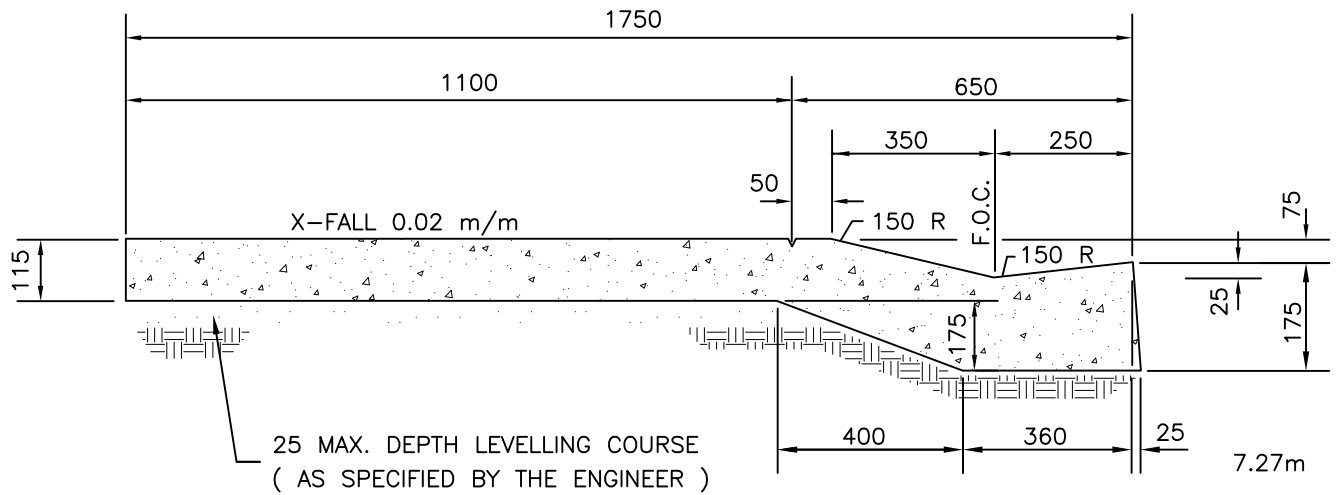
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-203



NOTES:

1. 25mm BATTER NOT REQUIRED FOR HANDFORMED.
2. ALL DIMENSIONS IN MILLIMETRES.



TITLE:

1.50m ROLLED
MONOLITHIC SIDEWALK

STANDARD DETAILS

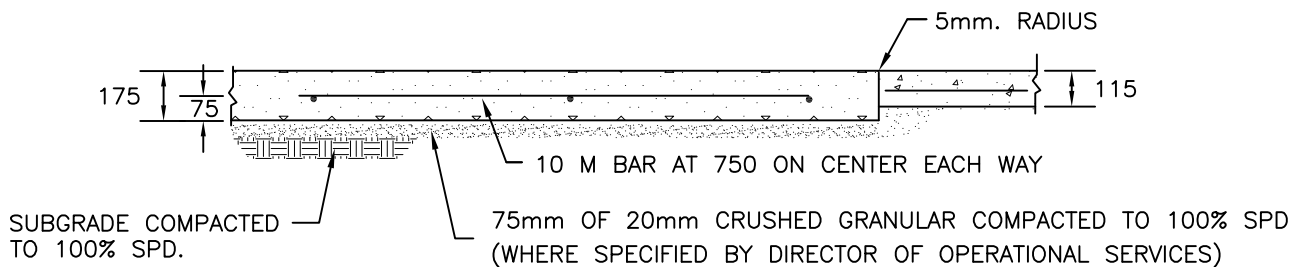
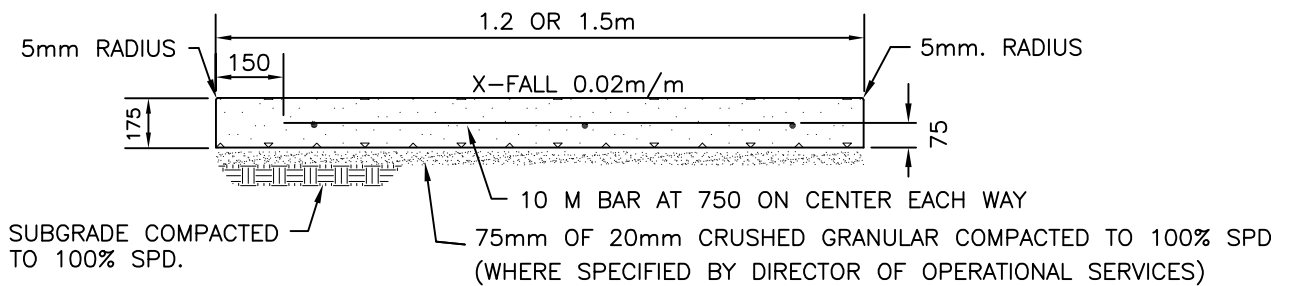
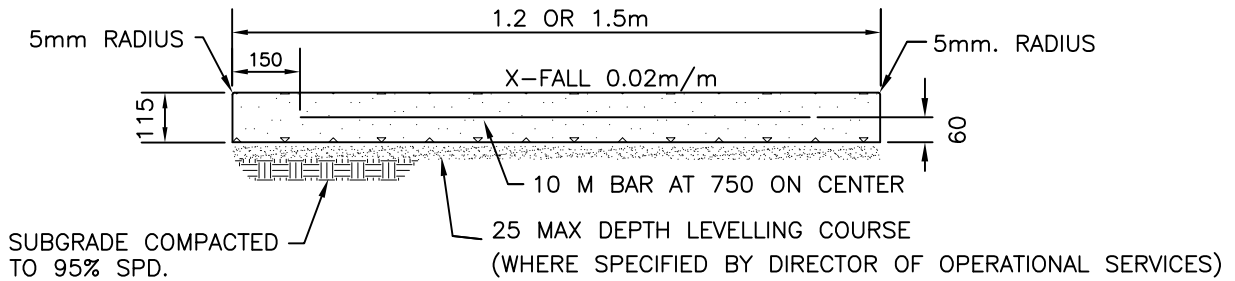
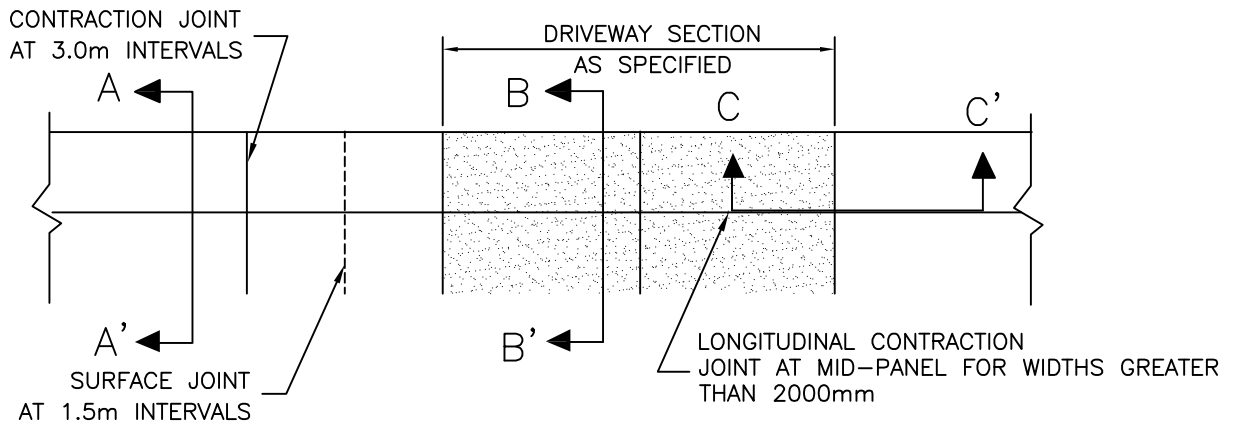
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-204

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NOTE:

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.



TITLE:

1.20m OR 1.50m
SEPARATE SIDEWALK

STANDARD DETAILS

SCALE: N.T.S.

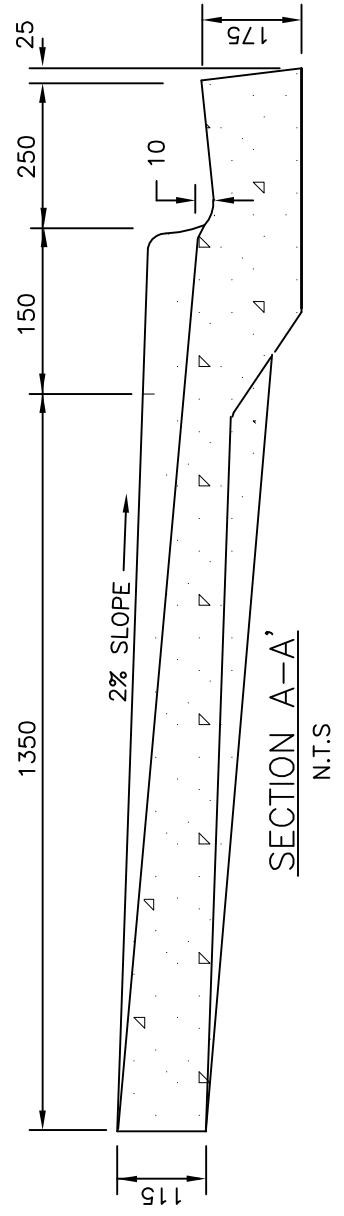
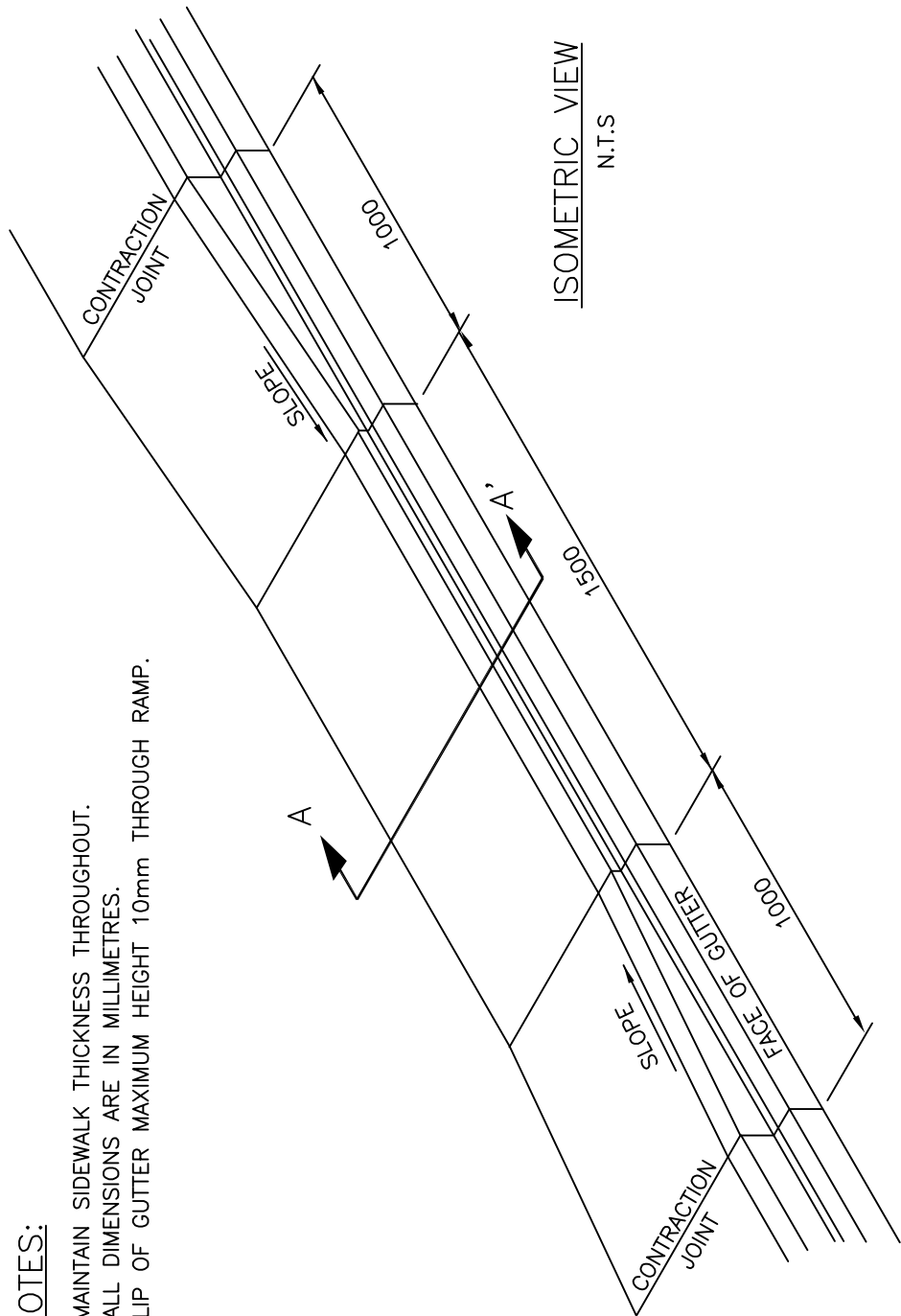
DATE: SEPTEMBER 2010

STD. DWG NO.

9-205

NOTES:

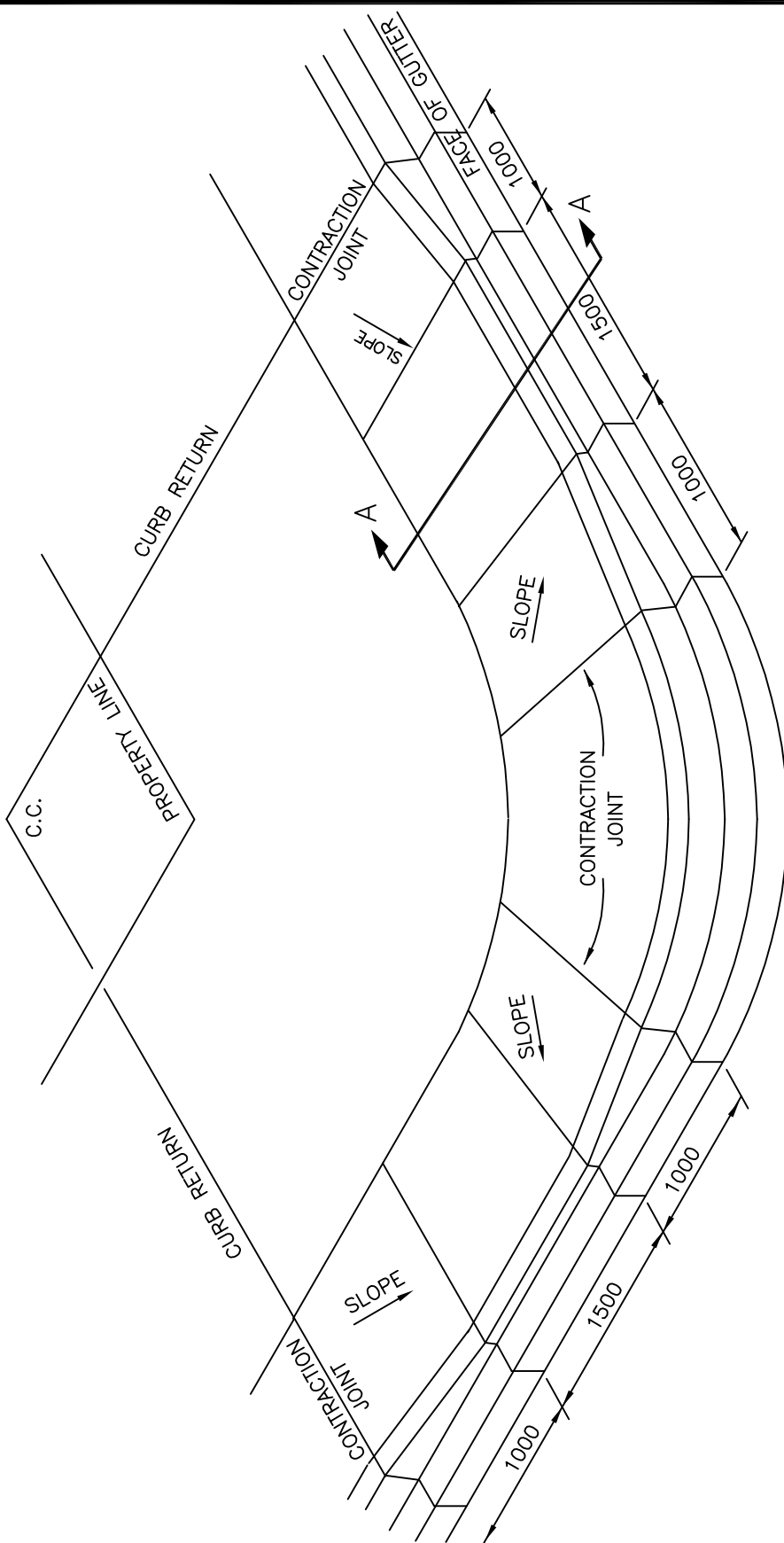
1. MAINTAIN SIDEWALK THICKNESS THROUGHOUT.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. LIP OF GUTTER MAXIMUM HEIGHT 10mm THROUGH RAMP.



TITLE:

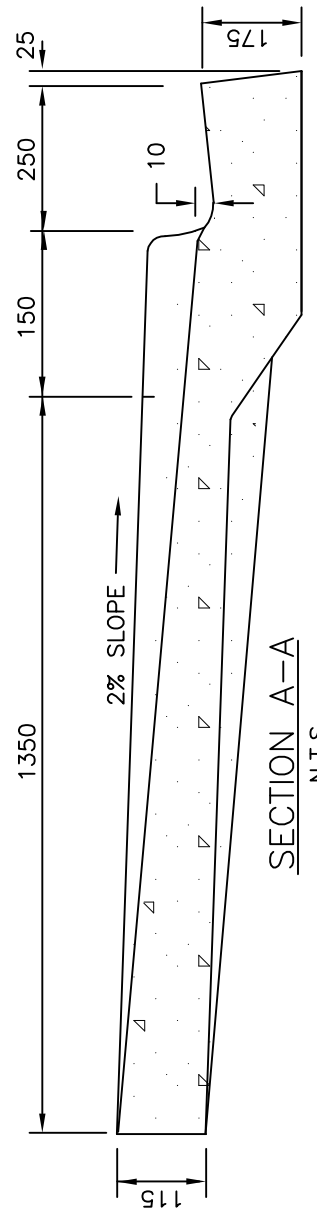
PARAPLEGIC RAMP
DETAILS ON TANGENT

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	9-300



ISOMETRIC VIEW

N.T.S



SECTION A-A

N.T.S

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. MAINTAIN SIDEWALK DEPTH THROUGHOUT.
3. LIP OF GUTTER MAXIMUM HEIGHT 10mm THROUGH RAMP.



TITLE:

PARAPLEGIC RAMP DETAILS
AT BOTH CURB RETURNS

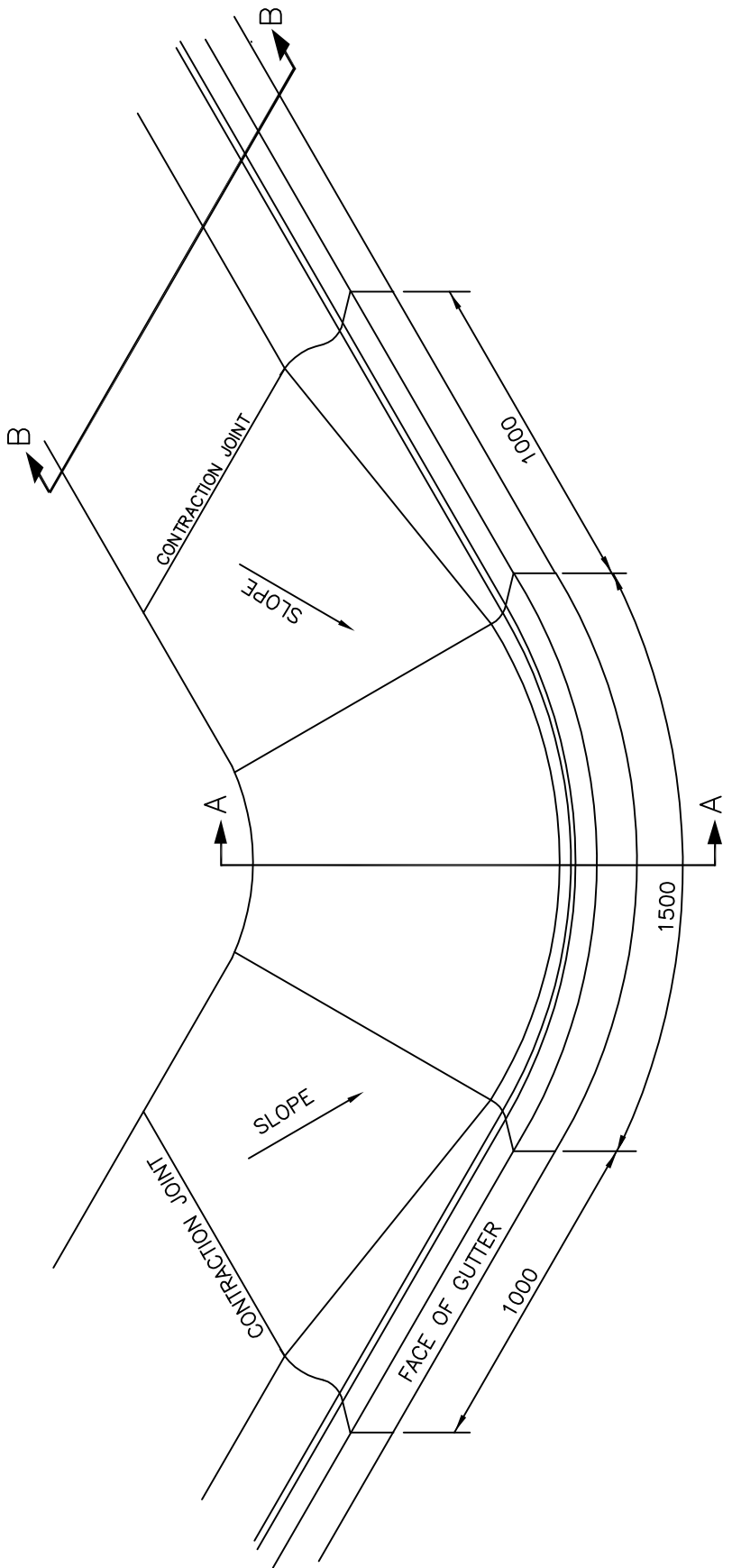
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

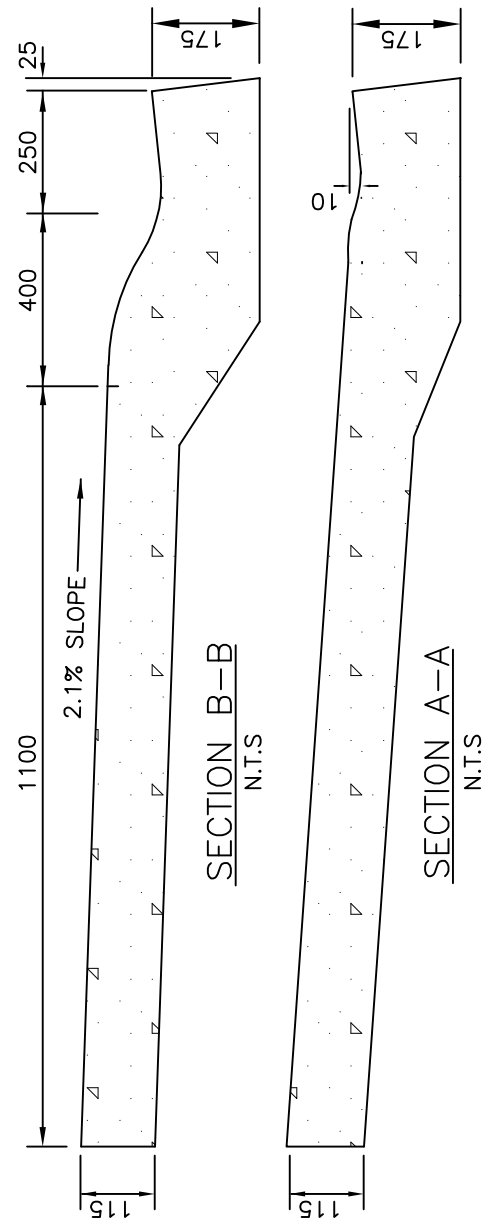
9-301



ISOMETRIC VIEW
N.T.S

NOTES:

1. MAINTAIN SIDEWALK DEPTH THROUGHOUT.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. LIP OF GUTTER MAXIMUM HEIGHT 10mm THROUGH LIP.

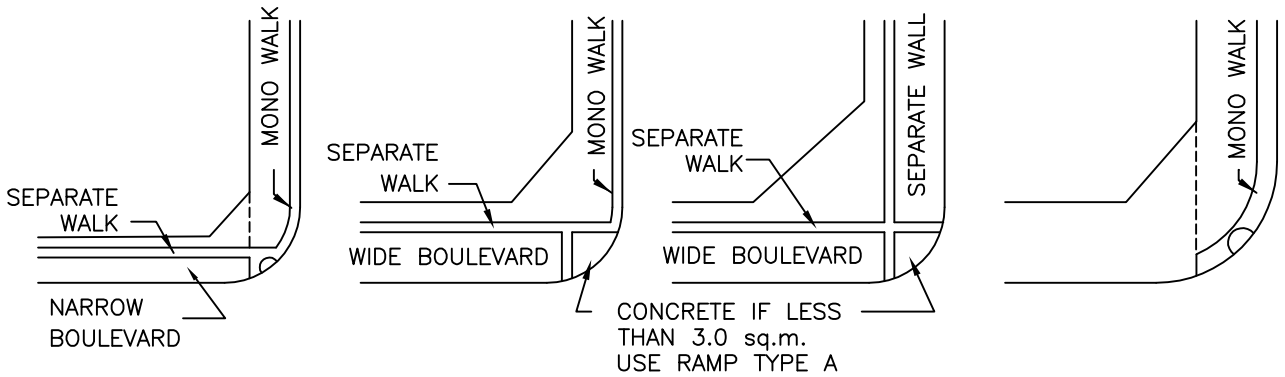


TITLE:

PARAPLEGIC RAMP
DETAILS AT CENTRE
OF CURB RETURN
-ROLLED CURB

STANDARD DETAILS	
SCALE: N.T.S.	
DATE: SEPTEMBER 2010	
STD. DWG NO.	9-302

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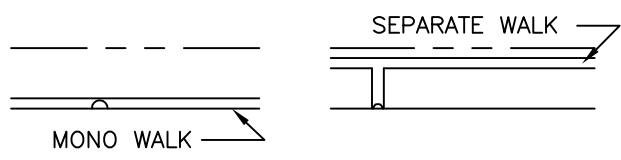
RAMP TYPE A

RAMP TYPE B

RAMP TYPE B

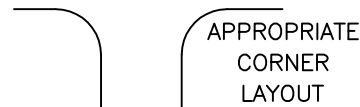
RAMP TYPE A

CORNER LAYOUT



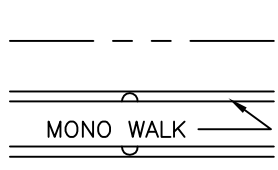
LOCATE RAMPS DIRECTLY ACROSS FROM CORNER RAMPS

RAMP TYPE C

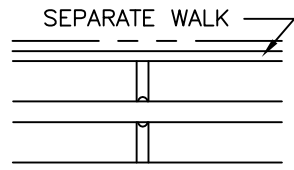


LOCATE RAMPS DIRECTLY ACROSS FROM CORNER RAMPS

RAMP TYPE D

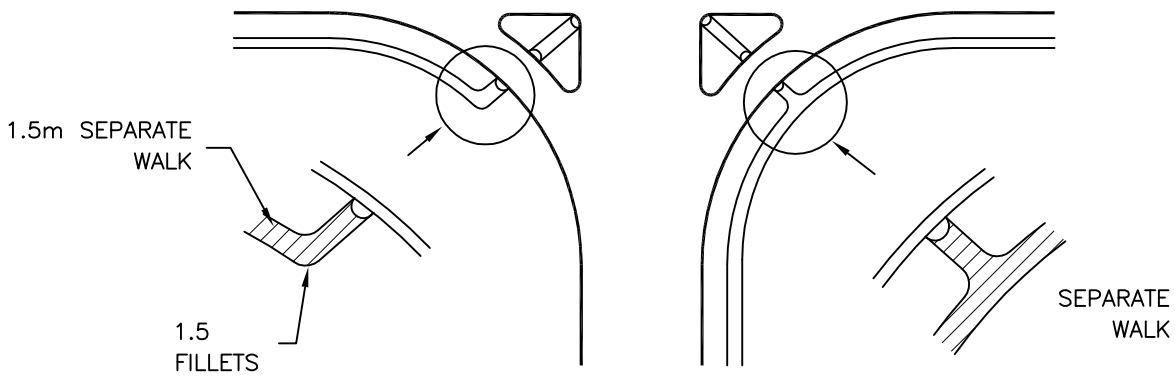


RAMP TYPE C



RAMP TYPE D

TANGENT LAYOUT



RAMP TYPE D

INTERSECTION LAYOUT

N.T.S.



TITLE:

WHEELCHAIR / BIKE RAMP LOCATIONS

STANDARD DETAILS

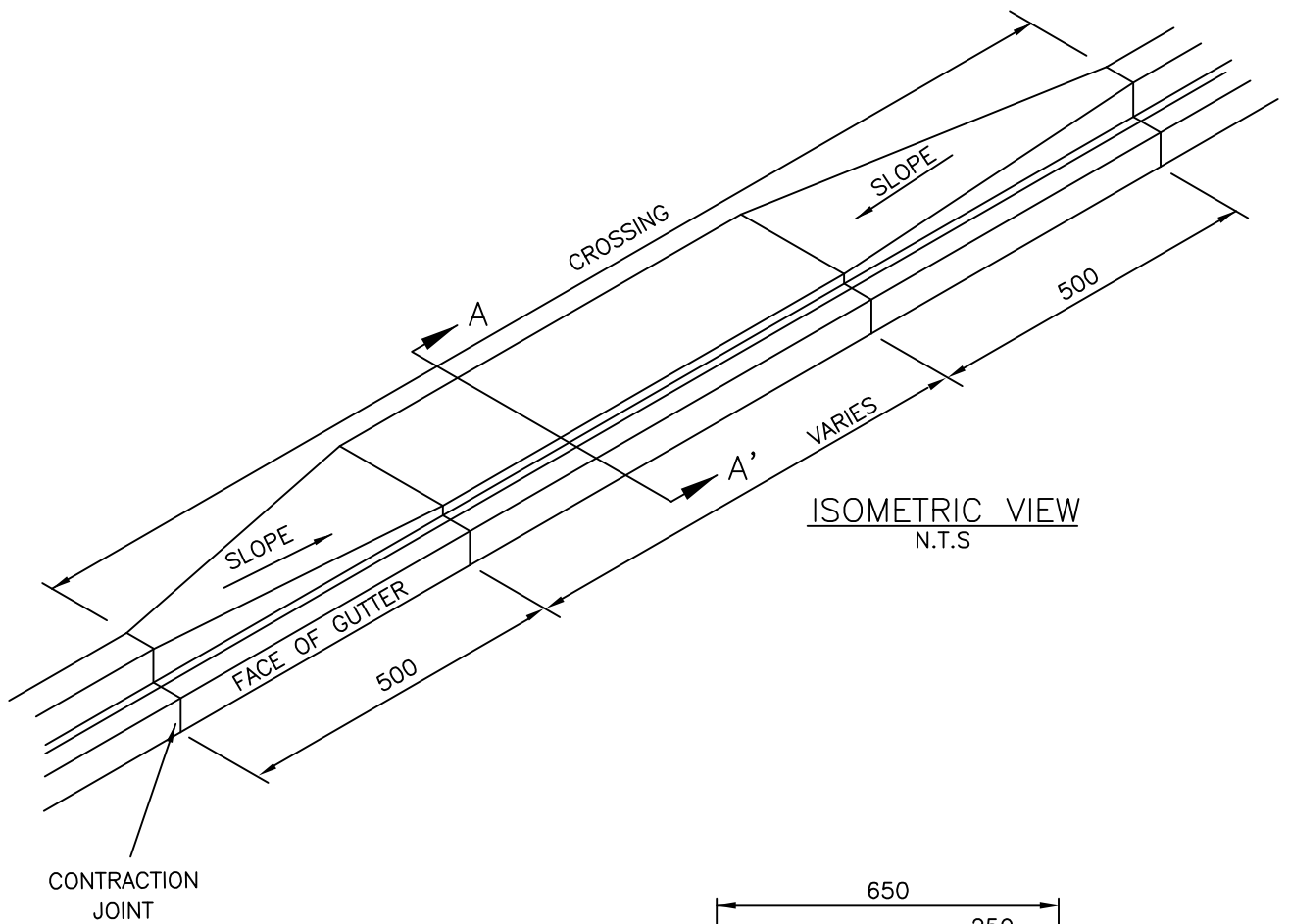
SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

9-303

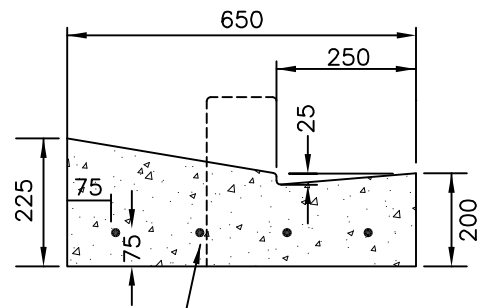
R:\MUNI\PROJECTS\2009\4009002 Cnty. Wetaskiwin General\Design Guidelines\Revised Drawings\September Drawings\9-400.dwg - 9-400 - Sep. 27, 2010 8:48am - scott.massey



ISOMETRIC VIEW
N.T.S

NOTES:

1. MAINTAIN THICKENED DEPTH THROUGHOUT.
2. ALL DIMENSIONS ARE IN MILLIMETRES.



4-10M REBAR
@ 100 O.C.

SECTION A-A'



TITLE:

INDUSTRIAL / COMMERCIAL
CURB & GUTTER CROSSING

STANDARD DETAILS

SCALE: N.T.S.

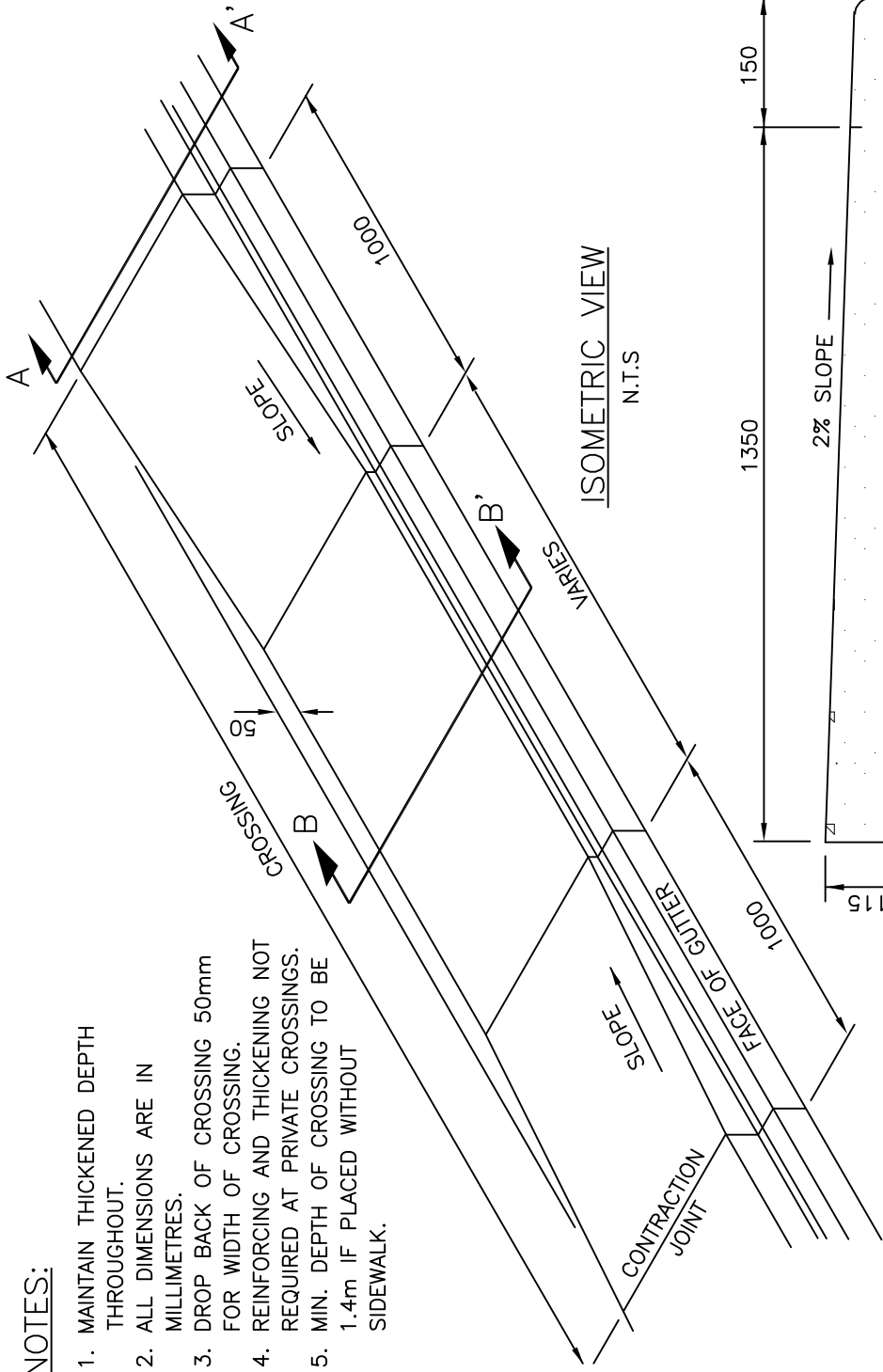
DATE: SEPTEMBER 2010

STD. DWG NO.

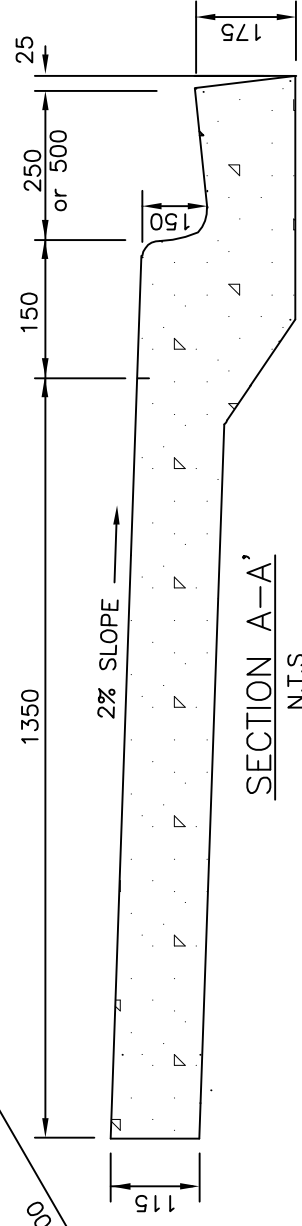
9-400

NOTES:

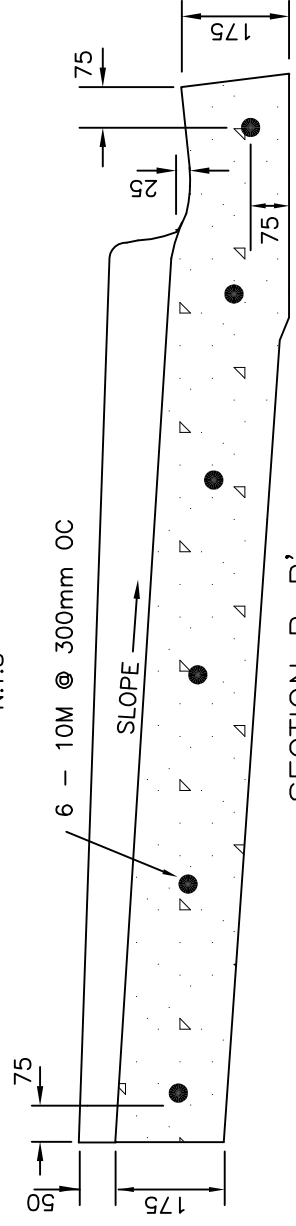
1. MAINTAIN THICKENED DEPTH THROUGHOUT.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. DROP BACK OF CROSSING 50mm FOR WIDTH OF CROSSING.
4. REINFORCING AND THICKENING NOT REQUIRED AT PRIVATE CROSSINGS.
5. MIN. DEPTH OF CROSSING TO BE 1.4m IF PLACED WITHOUT SIDEWALK.



ISOMETRIC VIEW
N.T.S.



SECTION A-A'
N.T.S.



SECTION B-B'
N.T.S.



TITLE:

TYPICAL MONOLITHIC
LANE AND DRIVEWAY
CROSSING

STANDARD DETAILS

SCALE: N.T.S.

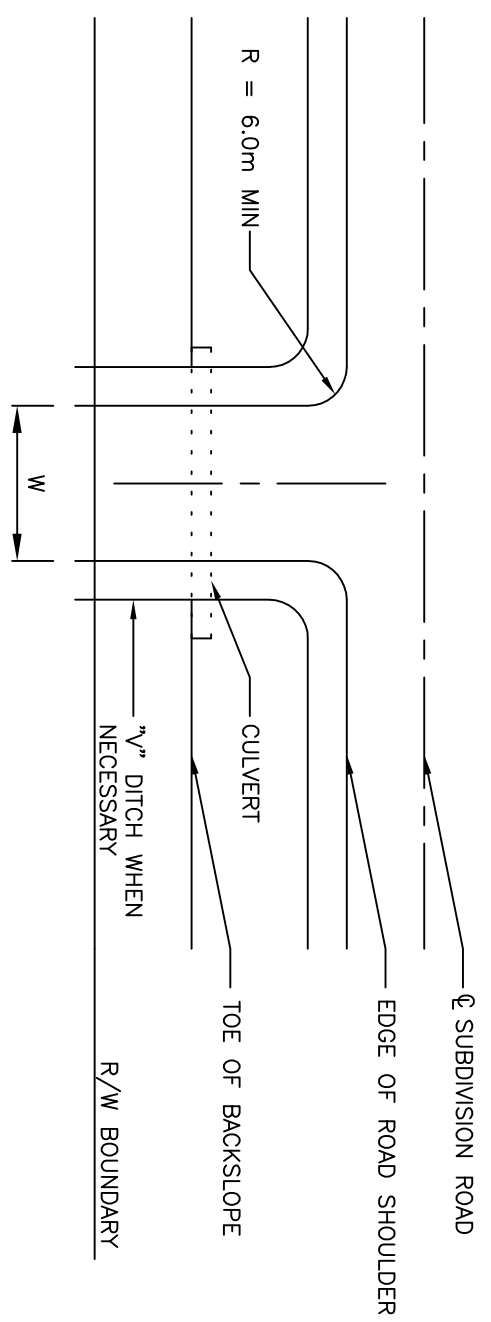
DATE: SEPTEMBER 2010

STD. DWG NO.

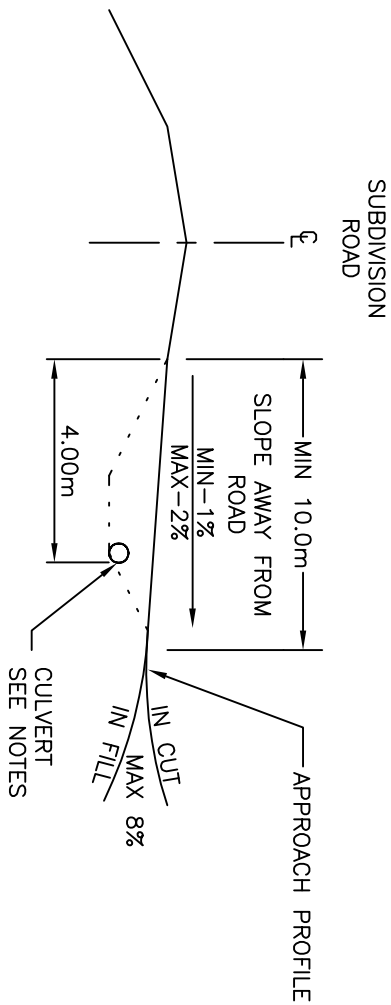
9-401

NOTES:

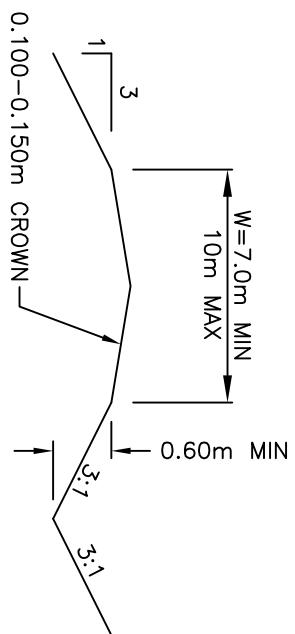
1. WHEN CULVERTS ARE REQUIRED THEY MUST BE C.S.P. CULVERTS AND BE A MINIMUM DIAMETER OF 0.400m.
2. CULVERTS MUST BE SET BACK A MINIMUM OF 4m FROM SHOULDER OF ROAD.
3. ALL DIMENSIONS SHOWN ARE IN METERS.



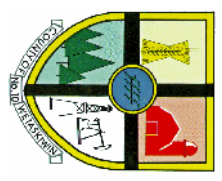
APPROACH PLAN



DITCH AND CULVERT LOCATION



APPROACH CROSS SECTION



TITLE:

TYPICAL RESIDENTIAL APPROACHES

STANDARD DETAILS

SCALE: N.T.S.

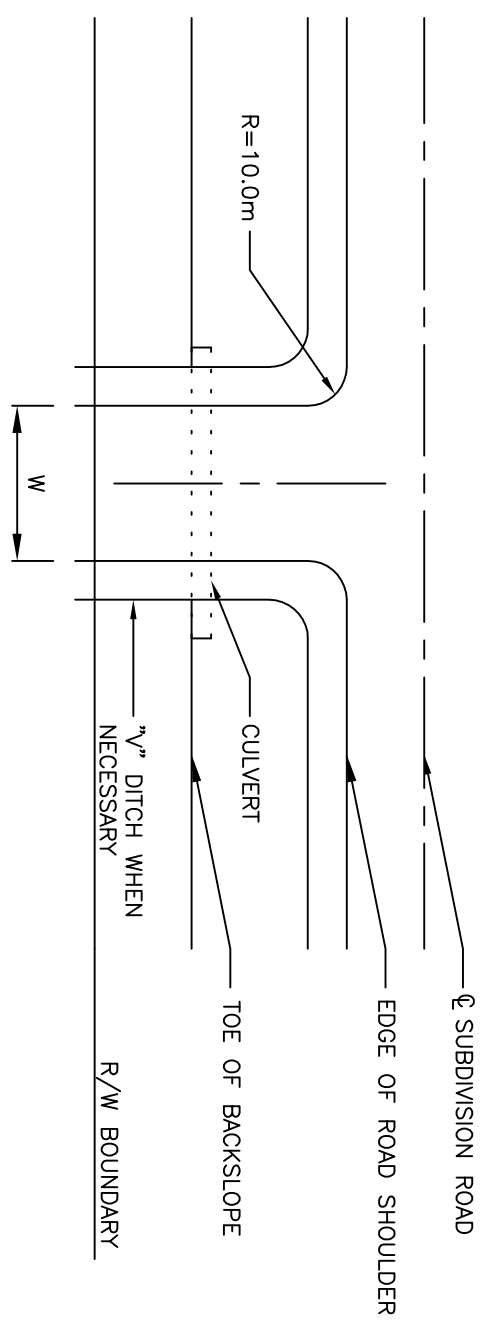
DATE: SEPTEMBER 2010

STD. DWG NO.

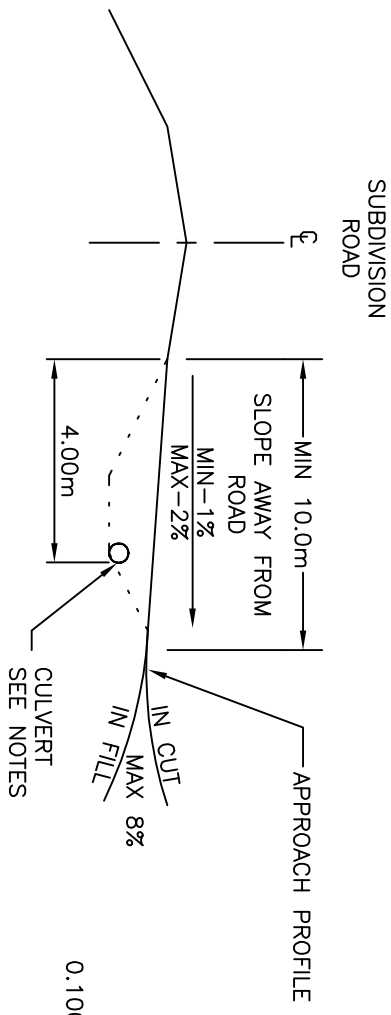
9-501

NOTES:

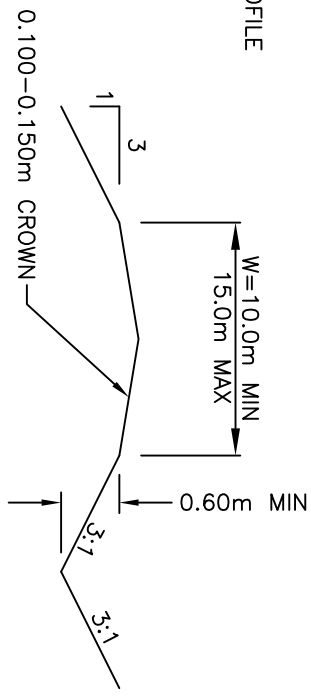
1. WHEN CULVERTS ARE REQUIRED THEY MUST BE C.S.P. CULVERTS AND BE A MINIMUM DIAMETER OF 0.400m.
2. CULVERT MUST BE SET BACK MINIMUM OF 4m FROM SHOULDER OF ROAD.
3. ALL DIMENSIONS SHOWN ARE IN METERS.



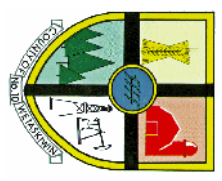
APPROACH PLAN



DITCH AND CULVERT LOCATION



APPROACH CROSS SECTION



TITLE:

TYPICAL INDUSTRIAL APPROACHES

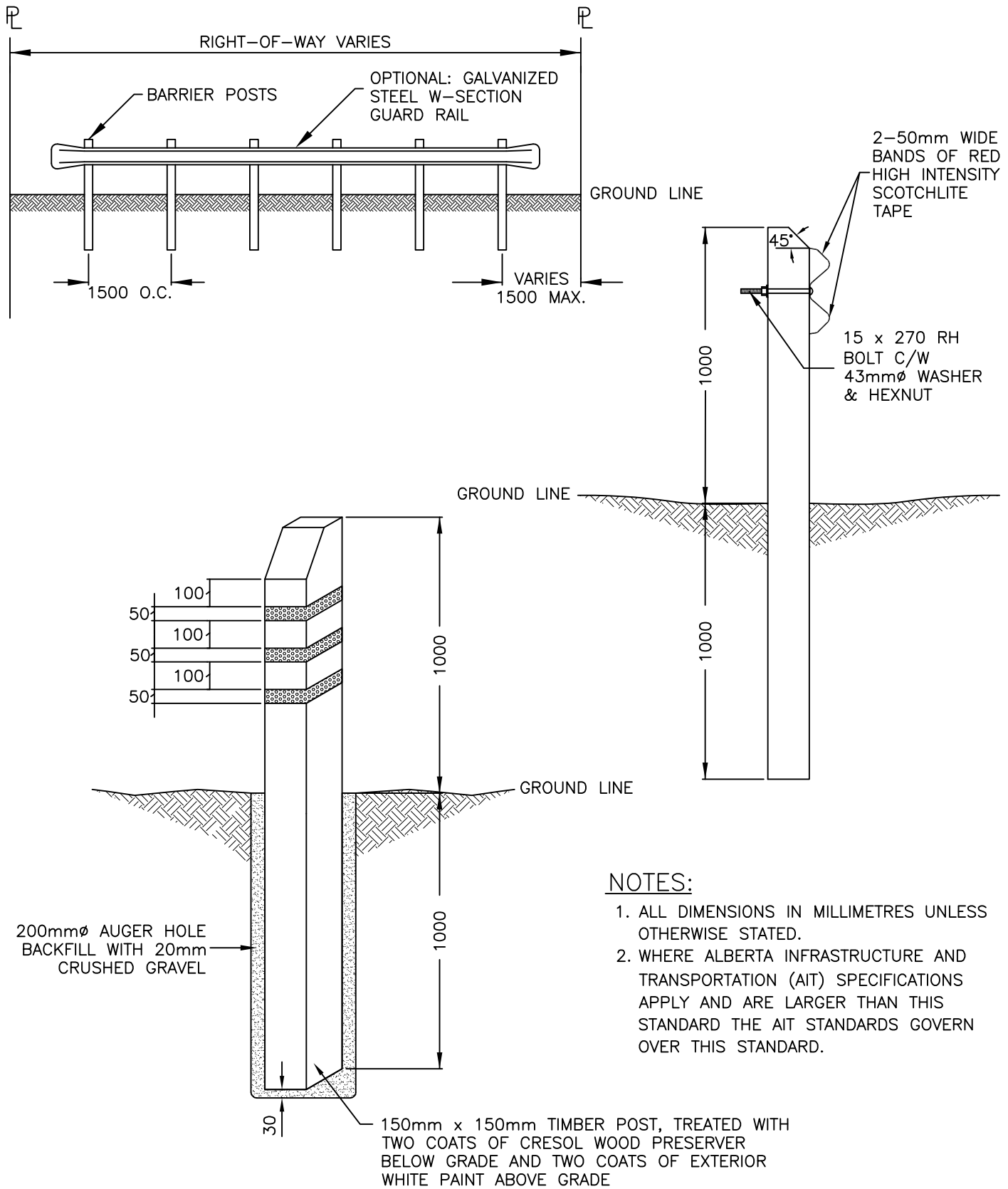
STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO. 9-502

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TITLE:

BARRIER POSTS

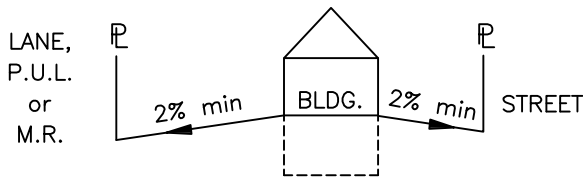
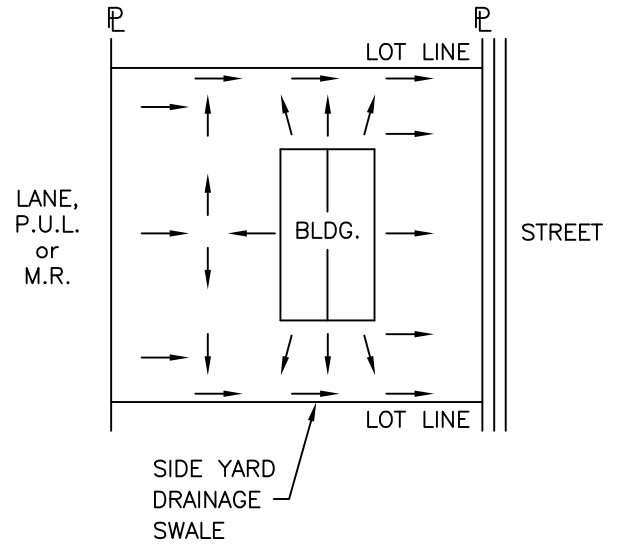
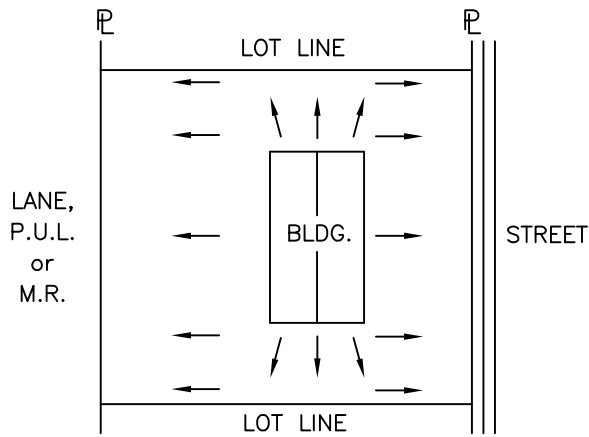
STANDARD DETAILS

SCALE: N.T.S.

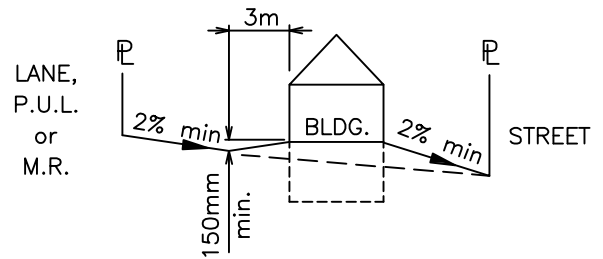
DATE: SEPTEMBER 2010

STD. DWG NO.

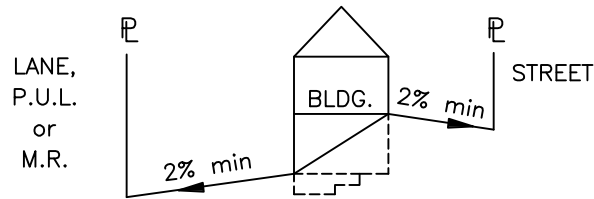
9-700



SPLIT DRAINAGE



BACK TO FRONT DRAINAGE



REARYARD BASEMENT WALKOUT SPLIT DRAINAGE



TITLE:

TYPICAL LOT GRADING

STANDARD DETAILS

SCALE: N.T.S.

DATE: SEPTEMBER 2010

STD. DWG NO.

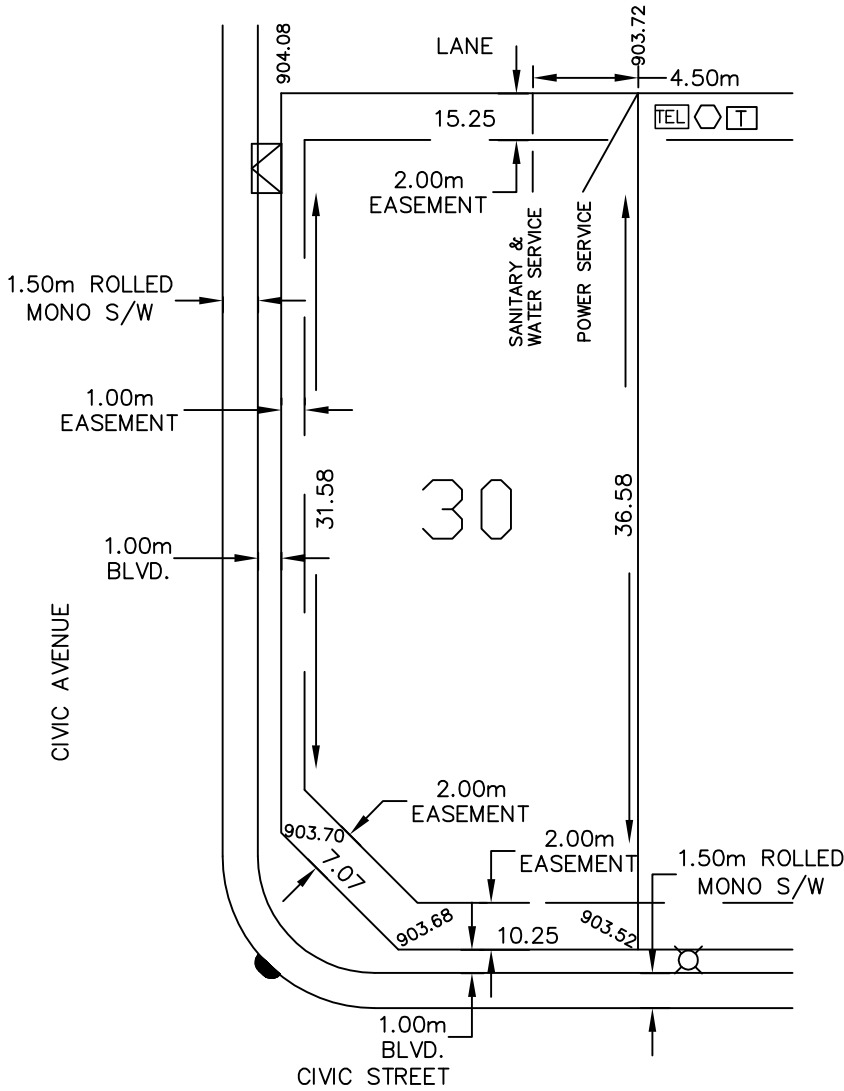
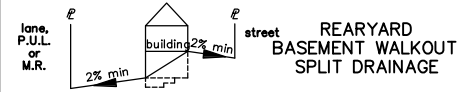
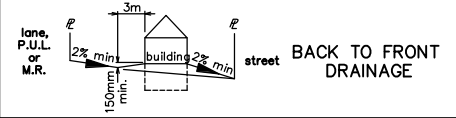
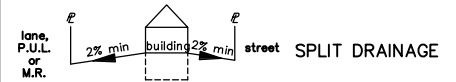
12-100

Building Grade Certificate

Issued by:

No.

1. When excavating in a right-of-way (easement), check for utilities.
2. Standing at the water shut-off and facing the building, the sanitary service is on the left side of the water service.
3. All dimensions are in metres and decimals thereof. The elevations are in metres above geodetic mean sea level.
4. Elevations noted on the Certificate are within 100mm of actual.
5. The builder must construct to within 100mm of the design landscape elevation and illustrated drainage patterns unless otherwise approved by the Development Officer.
6. If the information on this Certificate has been prepared by a private developer or their agent, the MD accepts no responsibility for its accuracy.



- ☐ TRANSFORMER
- ELECTRICAL BOX
- TEL TELUS PEDESTAL
- △ CA.T.V. PEDESTAL
- ☒ MAIL BOX
- ⊗ LIGHT STANDARD
- HYDRANT
- ▬ CATCH BASINS
- DRAINAGE PATTERN

TOP OF FOOTING ELEVATIONS:
 Max. depth below average sidewalk = DEPTH
 Lowest elevation = LTF

AS-BUILT SEWER INVERT ELEVATIONS:
 Sanitary at right-of-way line = SANI
 Storm at right-of-way line = STM

DESIGN LANDSCAPE ELEVATIONS:
 Elevation at the front of house = GRADE
 Elevation at the rear of house = GRADE

Civic Address: CIVIC
 Lot: LOT Block: BLOCK Plan No.: PLAN
 Developer: DEV Scale: SCALE
 Drawn By: XYZ ENGINEERING SERVICES LTD. Date: DATE
 Approved By: _____ Date: _____
 Received By: _____ Date: _____

I certify that the final landscape grade will be (front) _____ (rear) _____
 Signature of owner or representative _____
 Print full name _____