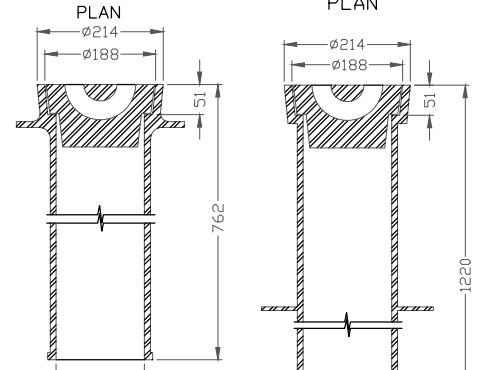
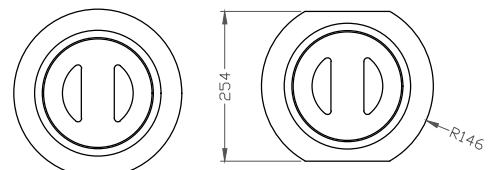
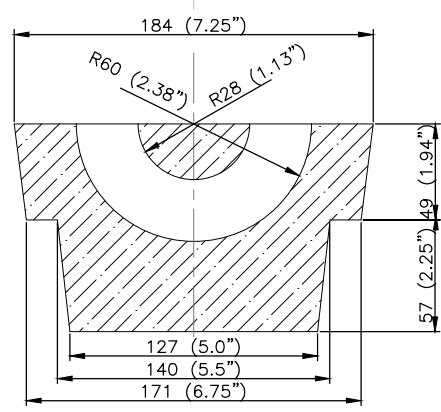
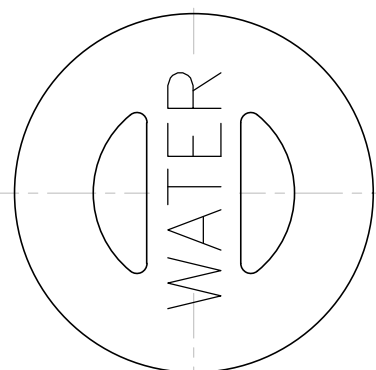
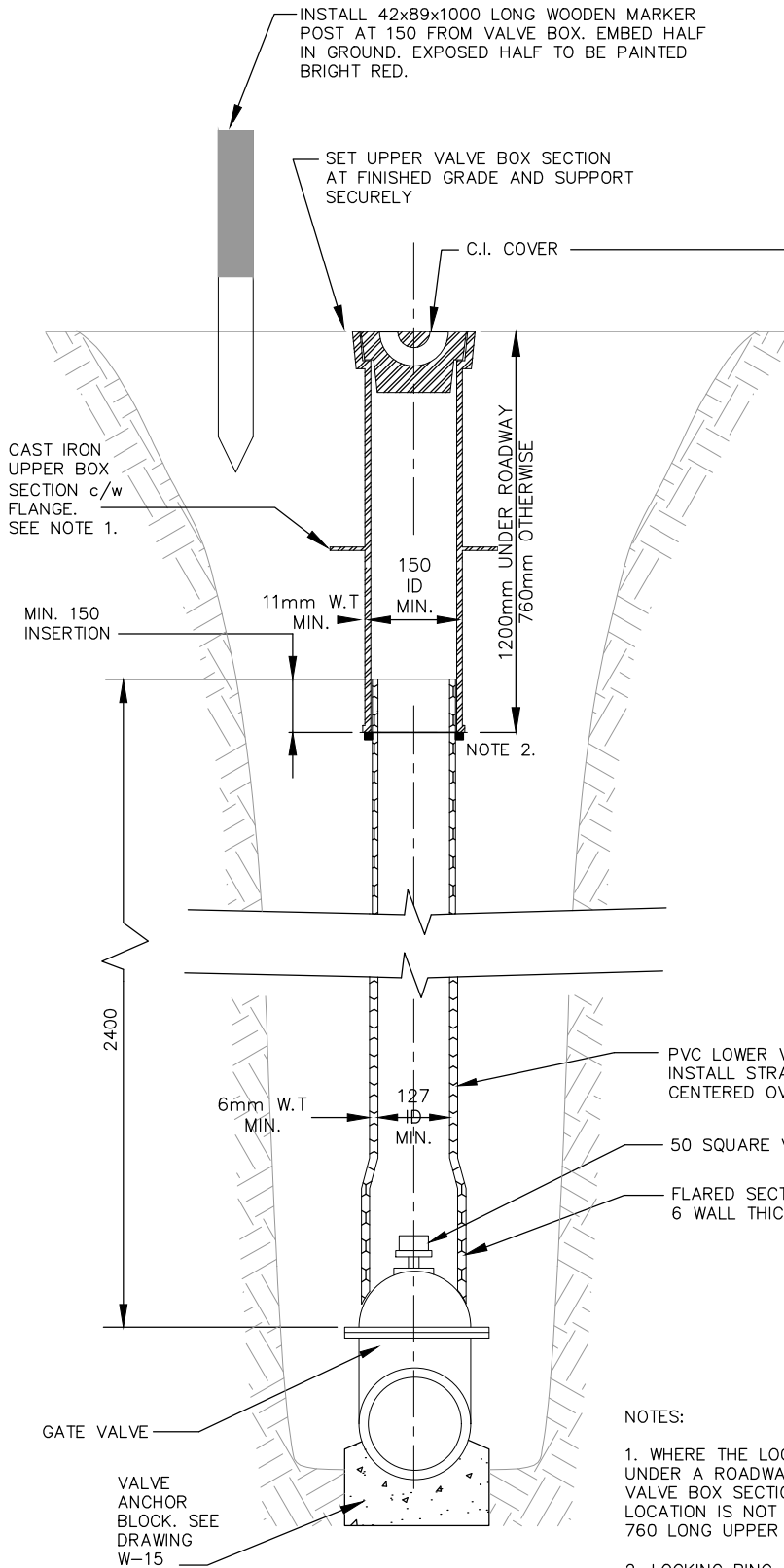

W-01	Valve Box Installation	Jan/18
W-01A	Valve Box Installation – Horizontal Direct Bury	Jan/18
W-02	Hydrant Installation	Aug/10
W-02A	Hydrant Installation in Narrow Streets	Aug/10
W-03	Support of Mains over Uncompacted Areas	Aug/10
W-04	Watermain Trench Excavation and Backfill Details	Aug/10
W-05	Gate Valve Manhole	Aug/10
W-06	Detail for Watermain Crossing Beneath Sewer Main	Aug/10
W-07	75mm Irrigation Meter – Kiosk and Equipment Installation Details	Aug/10
W-07 (det)	75mm Irrigation Meter – Kiosk and Equipment Installation Details	Aug/10
W-07A	100 mm Irrigation Service - Kiosk and Equipment Installation Details (without Booster Pump)	Feb/16
W-07A2	100 mm Irrigation Metre - Kiosk and Equipment Installation Details (without Booster Pump)	Feb/16
W-08	Winter Service Hydrant Type Irrigation Outlet	Aug/10
W-09	50 mm Above Grade Irrigation Kiosks Site Plan and Base Details	Aug/16
W-09A	100 mm Above Grade Irrigation Kiosks Site Plan and Base Details	Aug/16
W-10	No Drawing	Jan/17
W-10A	50 mm Irrigation Service - Kiosk and Equipment Installation Details (without Booster Pump)	Aug/16
W-10A2	50 mm Irrigation Service - Kiosk and Equipment Installation Details (without Booster Pump)	Aug/16
W-10B	50 mm Irrigation Service - Kiosk and Equipment Installation Details (with Booster Pump)	Aug/16
W-10B2	50 mm Irrigation Service - Kiosk and Equipment Installation Details (with Booster Pump)	Aug/16
W-11	100 mm Irrigation Service - Kiosk and Equipment Installation Details (with Booster Pump)	Aug/16
W-11A	100 mm Irrigation Service - Kiosk and Equipment Installation Details (with Booster Pump)	Aug/16
W-12	Detail for Dead-end Watermain Flushout	Aug/10
W-13	Thrust Blocks	Aug/10
W-14	Mechanical Thrust Restraints	Aug/10

W-15	Valve Anchoring	Aug/10
W-16A (100)	Details of 100mm Water Service Extensions to Irrigation Kiosks	Sep/15
W-16B (50)	Details of 50mm Water Service Extensions to Irrigation Kiosks	Sep/15
W-17	Water Service Connection – 50mm and Smaller Services	Aug/10
W-18	Water Service Curb Box – 50mm and Smaller Services	Jan/18
W-19	Multiple Service and Dead-end Watermain Connections	Aug/10
W-20	No Drawing	
W-21	No Drawing	
W-22	No Drawing	
W-23	Blowoff from Steel Pipeline	Aug/10
W-24	Drain/Blowoff Connection from Non-Steel Pipelines	Aug/10
W-25	Cathodic Protection of Cast Iron Fittings	Aug/10
W-26	Cathodic Protection of Gate Valves	Aug/10
W-27	Cathodic Protection of Hydrant Using Eyelet Connection	Aug/10
W-28	Cathodic Protection of Hydrant Using Cadweld Connection	Aug/10
W-29	Typical Cadweld Description and Details	Aug/10
W-30	Water Meter/Backflow Preventer Installation Requirements for Multi-Metered Locations (Alternative 1)	Apr/24
W-31	Water Meter/Backflow Preventer Installation Requirements for Multi-Metered Locations (Alternative 2)	Apr/24
W-32	Water Meter Installation for 40mm or 50mm Domestic Supply Pipe Sizes	Apr/24
W-33	Water Meter Installation for 75mm or 100mm Domestic Supply Pipe Sizes	Apr/24
W-34	Installation Requirements for Summer Service Irrigation Meters	Apr/24
W-35	Removed	Apr/17
W-36	Steel Watermain Hot Tap Connections	Aug/10
W-37	Residential Water Meter Installation	Apr/24
W-38	Temporary Crossing over Critical Infrastructure	Jan/18



NOTES:

1. WHERE THE LOCATION OF THE VALVE IS UNDER A ROADWAY USE A 1200 LONG UPPER VALVE BOX SECTION. WHERE THE VALVE LOCATION IS NOT UNDER A ROADWAY USE A 760 LONG UPPER VALVE BOX SECTION.

2. LOCKING RING (OPTIONAL)

ALL DIMENSIONS ARE IN MILLMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
NOV/98	REVISED/RENUMBERED	SB
SEP/97	GENERAL REVISIONS	SB
JAN/97	GENERAL REVISIONS	SB
AUG/10	TITLE BLOCK	JJA
AUG/15	DIMENSIONS ADDED	PI
SEP/15	REVISED DIMENSION AND NOTES	PI
JAN/18	REVISED UPPER BOX DETAILS	BW



CONSTRUCTION STANDARDS		
Valve Box Installation		
Designed By:	Approved: Dustin McCall	
Date	Scale	W-01
JAN/18	NTS	
Digital File:	Stdw-01.dwg	

WATER VALVE

INSTALL AN ORANGE ALUMINIUM SIGN (200X300) INDICATING WATER VALVE ON A Ø50mmx3m LONGSTEEL POST AT 300mm FROM VALVE BOX C/L. EMBED POST 1.5m IN GROUND.

SET UPPER VALVE BOX SECTION AT FINISHED GRADE AND SUPPORT SECURELY

C.I. COVER

CAST IRON UPPER BOX SECTION. SEE NOTE 1.

11mm W.T. MIN. 150 INSERTION

150 ID MIN.

1200mm UNDER ROADWAY
760mm OTHERWISE

NOTE 2

2400

GATE VALVE

6mm W.T. MIN.

127 ID MIN.

PVC LOWER VALVE BOX SECTION. INSTALL STRAIGHT AND PLUMB AND CENTERED OVER OPERATING NUT.

50 SQUARE VALVE OPERATING NUT

FLARED SECTION 194 I.D. x MINIMUM 6 WALL THICKNESS

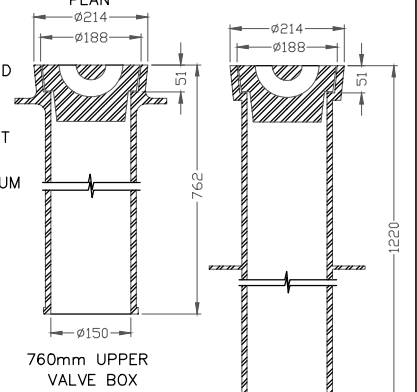
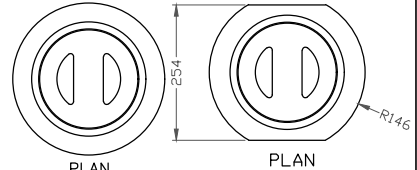
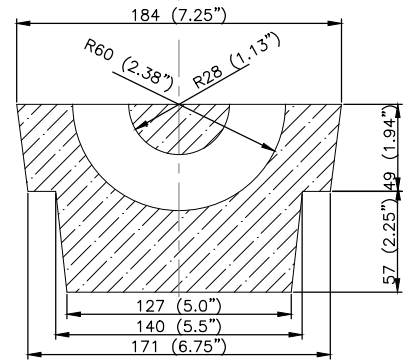
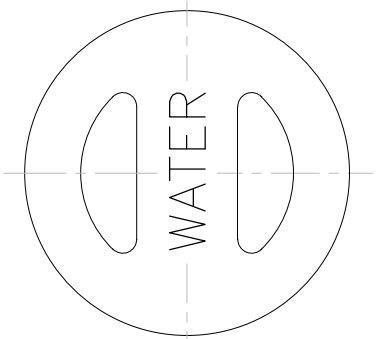
NOTES:

1. WHERE THE LOCATION OF THE VALVE IS UNDER A ROADWAY USE A 1200 LONG UPPER VALVE BOX SECTION. WHERE THE VALVE LOCATION IS NOT UNDER A ROADWAY USE A 760 LONG UPPER VALVE BOX SECTION.

2. LOCKING RING OPTIONAL.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

VALVE ANCHOR BLOCK. SEE DRAWING W-15



Date	Revisions	By
AUG/10	TITLE BLOCK	JJA
AUG/15	DIMENSIONS ADDED	PI
SEPT/15	REVISED DIMENSION AND NOTES	PI
JAN/18	REVISED UPPER VALVE BOX DETAIL	BW

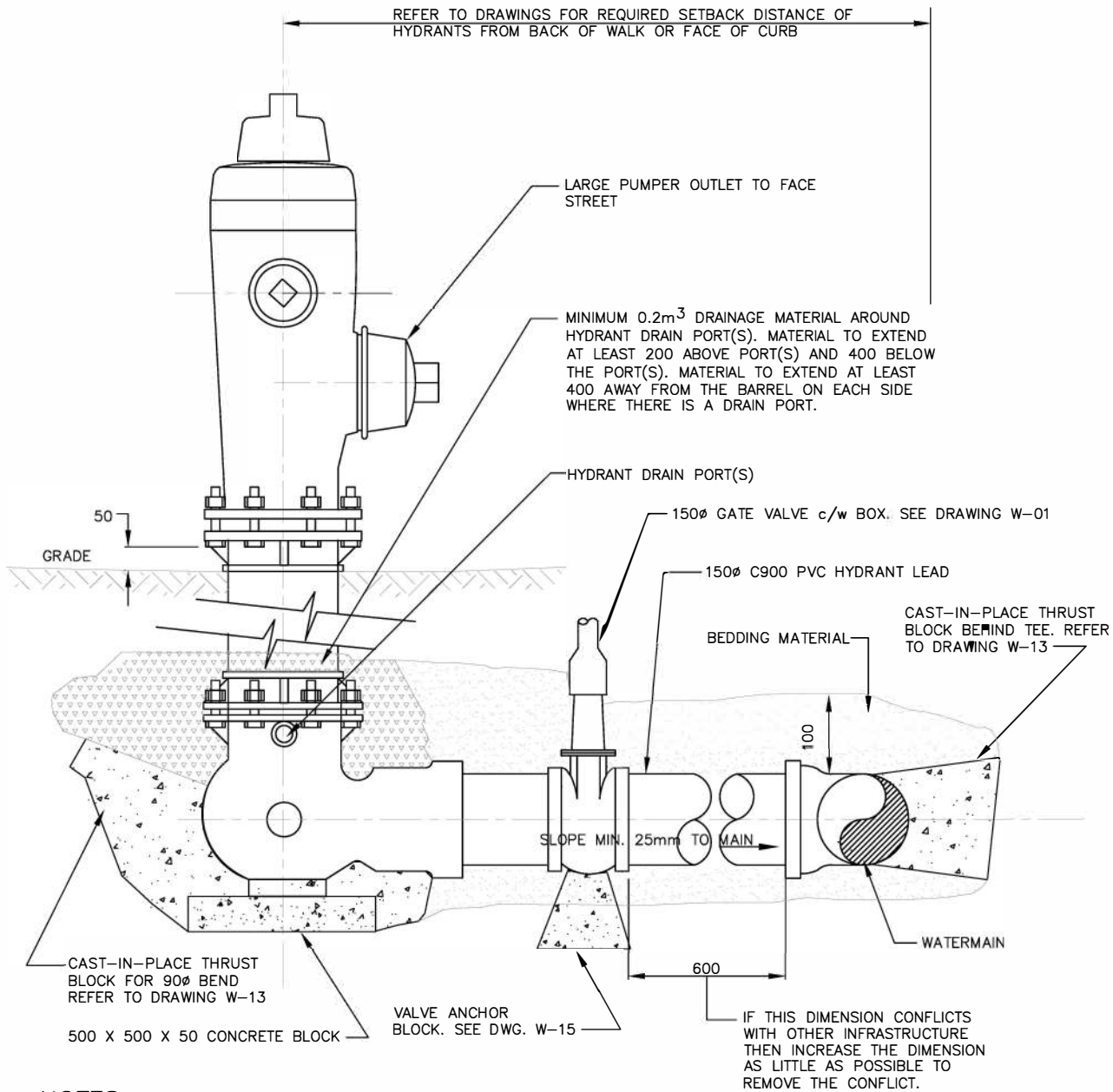


CONSTRUCTION STANDARDS
Valve Box Installation
Horizontal Direct Bury

Designed By: _____ Approved: **Dustin McCall**

Date: **JAN/18** Scale: **NTS** **W-01A**

Digital File: **Stdw-01A.dwg**



NOTES:

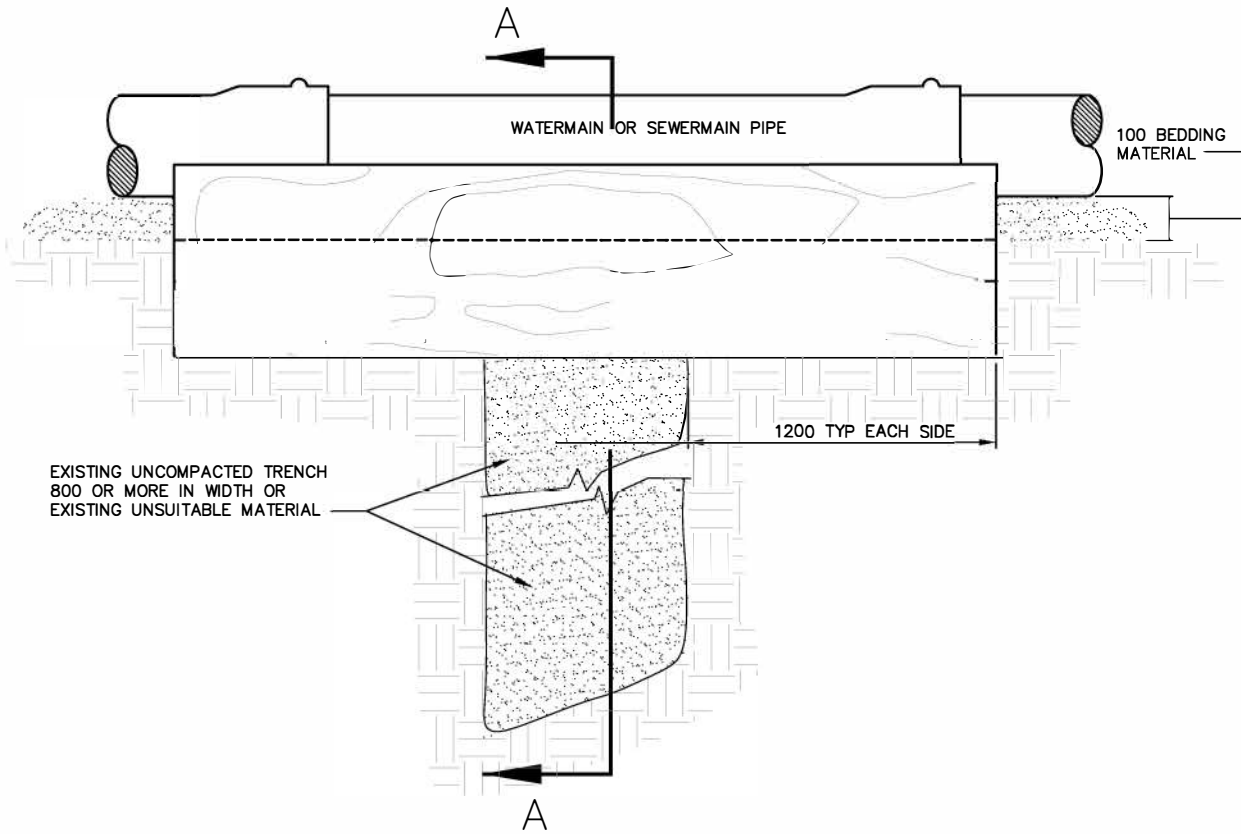
- 1) WHERE USE OF THIS DETAIL WOULD RESULT IN THE HYDRANT ISOLATING VALVE BOX BEING LOCATED UNDER EITHER GUTTER OR SIDEWALK - REFER TO AND USE THE DETAIL PRESENTED ON STANDARD DRAWING W-02A.
- 2) FOR THRUST BLOCK CONCRETE REQUIREMENTS REFER TO SPECIFICATIONS SECTION 02511-WATERMAINS

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
MAR/05	NOTES REVISED	SB
APR/01	GATE VALVE REQUIREMENT	SB
SEP/99	MINOR REVISIONS	SB
NOV/98	RENUMBERED FROM W-7	SB
AUG/10	TITLE BLOCK	JJA



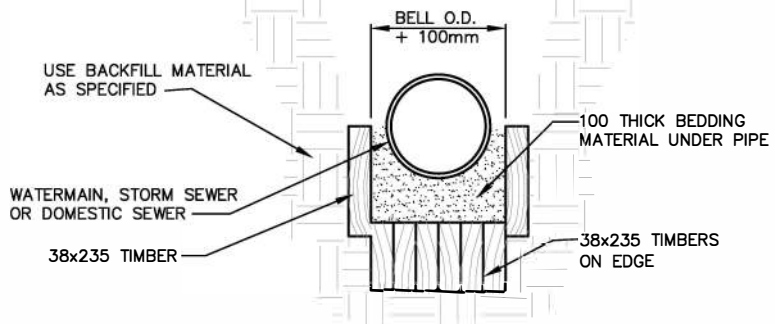
CONSTRUCTION STANDARDS		
Hydrant Installation		
Designed By:	Approved:	
Date	Scale	
JUN/83	NTS	W-02
Digital File:	Stdw-02.dwg	



EXISTING UNCOMPACTED TRENCH
800 OR MORE IN WIDTH OR
EXISTING UNSUITABLE MATERIAL

NOTES

- 1) NUMBER OF 38x235 TIMBERS USED DEPENDS ON SIZE OF PIPE AND SPAN OF TRENCH.
- 2) SUPPORT OVER TRENCH WIDTHS GREATER THAN 1500 MUST BE APPROVED BY THE ENGINEER.
- 3) USE PRESSURE TREATED TIMBER FOR SUPPORTS.
- 4) REINFORCED CONCRETE BRIDGING MAY BE USED IN LIEU OF TIMBER. DETAILS MUST BE PRE-APPROVED BY THE ENGINEER.



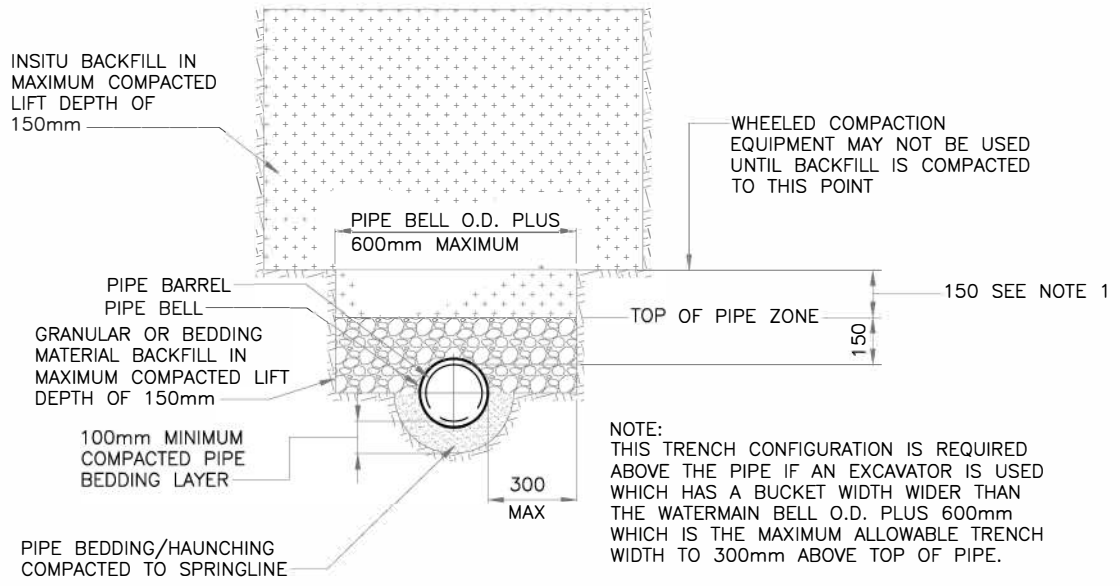
SECTION A-A

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
SEP/97	GENERAL REVISIONS	SB
MAR/98	MINOR REVISIONS/ TITLE CHANGE	SB
NOV/98	RENUMBERED FROM W-4	SB
AUG/10	TITLE BLOCK	JJA

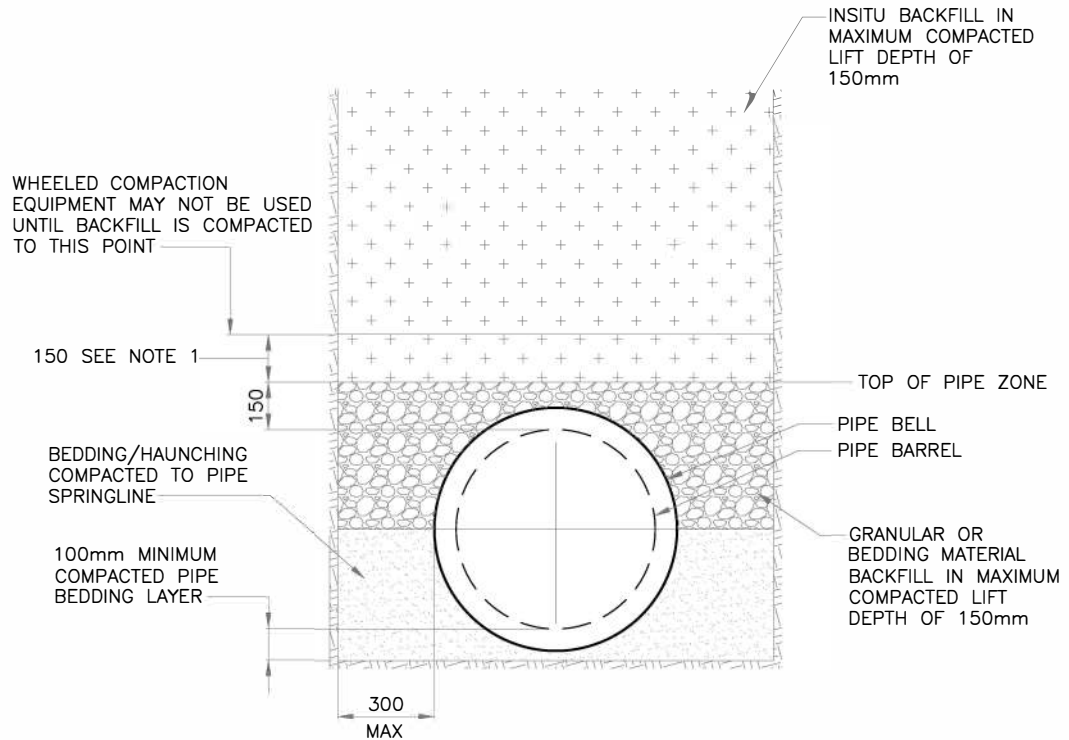


CONSTRUCTION STANDARDS		
Support of Mains Over Uncompacted Areas		
Designed By:	Approved:	
Date MAR/77	Scale NTS	W-03
Digital File: Stdw-03.dwg		



BUCKET/SPOON METHOD

NOTE 1: THE USE OF GRANULAR MATERIAL IS RECOMMENDED FOR THE LIFT INDICATED. INSITU MATERIAL MAY BE USED PROVIDED THAT IT CONFORMS TO THE SPECIFICATIONS AND THAT IT CAN BE COMPACTED TO THE SPECIFIED DENSITY WITHOUT THE USE OF WHEELED COMPACTION EQUIPMENT.

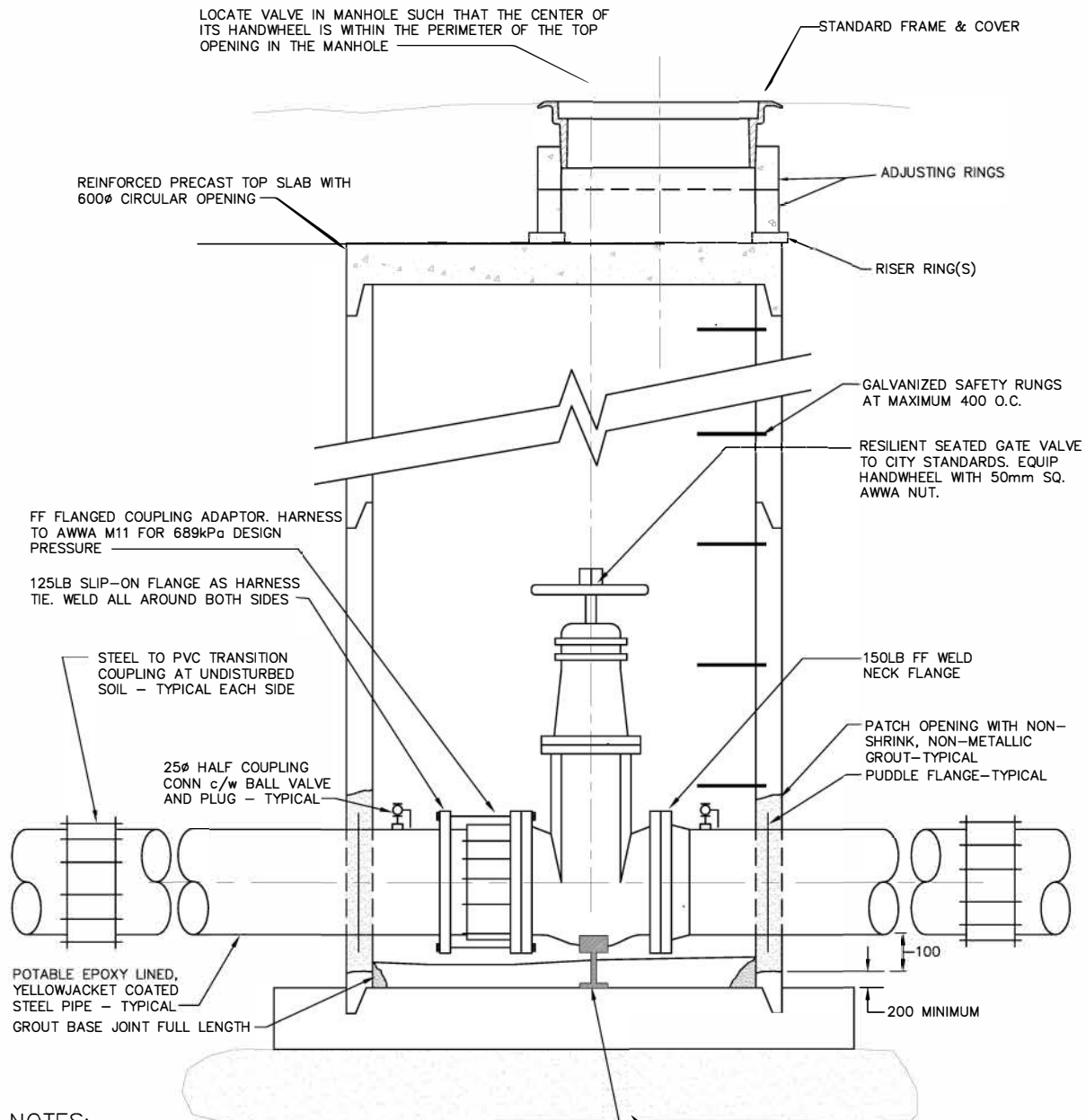


BUCKET METHOD

Date	Revisions	By
NOV/01	ISSUED AS STANDARD	SB
DEC/05	COMPACTION NOTES CLARIFIED	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Watermain Trench Excavation and Backfill Details		
Designed By:	Approved:	
Date	Scale	W-04
NOV/00	NTS	
Digital File:	Stdw-04.dwg	

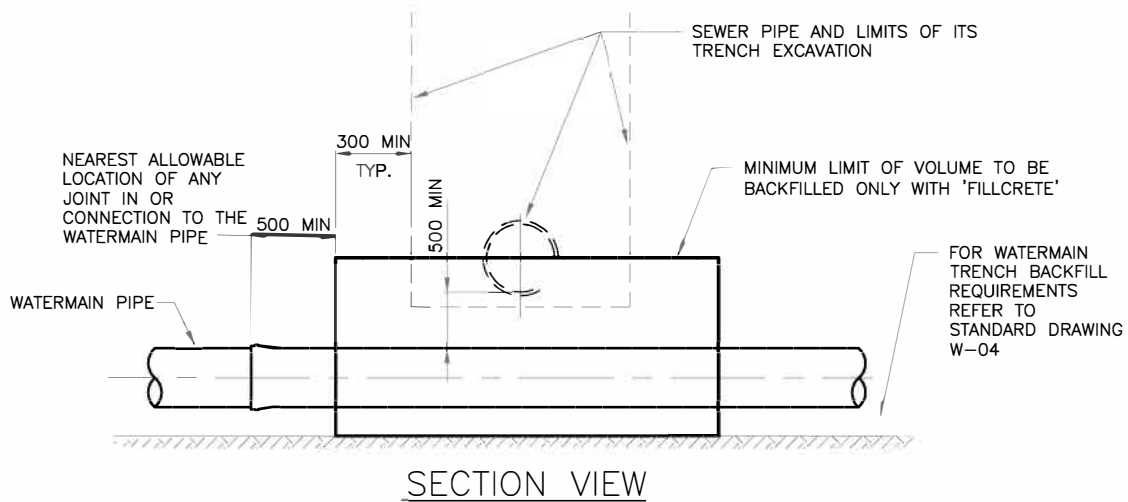
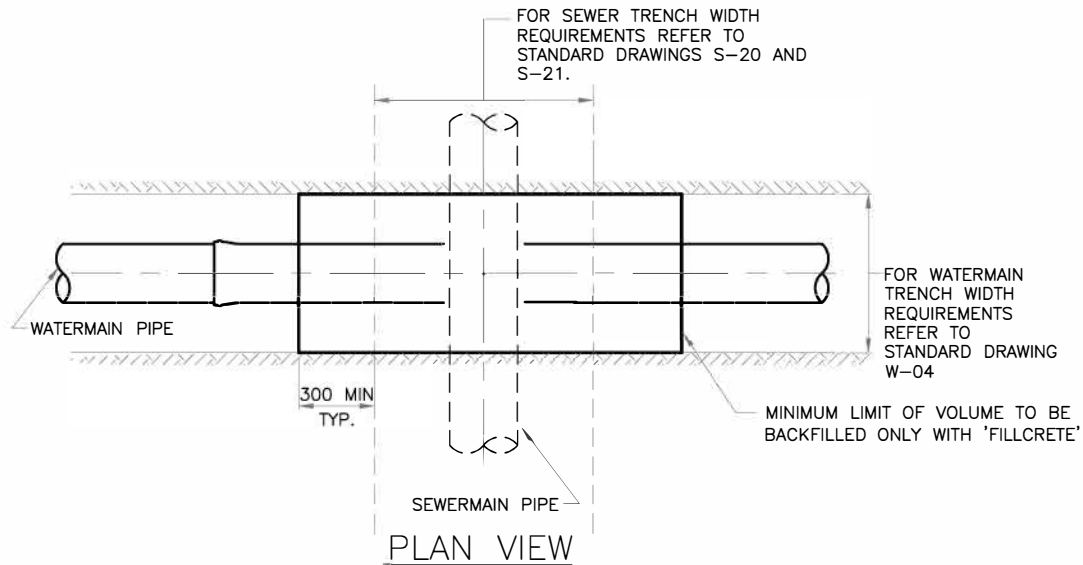


NOTES:

- 1) PIPING AND VALVING MATERIALS/INSTALLATION TO BE AS SPECIFIED IN CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS
- 2) PRECAST CONCRETE MANHOLE TO BE 1800mm MINIMUM. BOTTOM SECTION TO BE LONG AS POSSIBLE. ALL JOINTS TO BE MASTIC SEALED WITH 'RAM-NEK' OR EQUAL. GROUT ALL JOINTS OUTSIDE.
- 3) MANHOLE BASE TO BE REINFORCED, PRECAST OR CAST-IN-PLACE. AND TO BE DESIGNED BY A PROFESSIONAL ENGINEER.
- 4) PREPARE AND COAT EXPOSED METAL SURFACES PER SPECIFICATIONS SECTION 09910.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By	CONSTRUCTION STANDARDS		
JAN/97	REISSUED	SB	 Gate Valve Manhole		
SEP/98	REVISED	SB			
NOV/98	RENUMBERED FROM W-13	SB			
MAR/10	REVISED	DM			
AUG/10	TITLE BLOCK	JJA			
			Designed By:	Approved:	
Date	Scale				
APR/82	NTS	W-05			
Digital File:		Stdw-05.dwg			



NOTE 1:

THIS DETAIL IS TO BE APPLIED IN THE FOLLOWING INSTANCES WHERE THE OPEN CUT TRENCH METHOD IS USED:
 -ALL LOCATIONS WHERE NEW SANITARY SEWERMAIN IS INSTALLED OVER EITHER NEW OR EXISTING WATERMAIN.
 -ALL LOCATIONS WHERE NEW WATERMAIN IS INSTALLED UNDER EITHER EXISTING SANITARY SEWERMAIN OR EXISTING STORM SEWERMAIN.

NOTE 2:

WHERE, IN THE OPINION OF THE ENGINEER, SOIL CONDITIONS DICTATE THAT THE AREA FILLED WITH 'FILLCRETE' SHOULD BE EXPANDED FROM THAT SHOWN ON THIS DRAWING THEN THE FIELD DIRECTED EXTENT OF FILL WILL BE REQUIRED.

NOTE 3:

ENSURE MAINS ARE NOT DISPLACED DURING EITHER EXCAVATION OR 'FILLCRETE' INSTALLATION.

NOTE 4:

MAXIMUM DEPTH OF 'FILLCRETE' THAT MAY BE INSTALLED IN ANY SINGLE POUR IS 1.0 METRE. IF MORE THAN 1.0 METRE TOTAL DEPTH IS REQUIRED THEN THE INITIAL DEPTH MUST BE CURED TO THE SATISFACTION OF THE ENGINEER BEFORE FURTHER DEPTH IS ADDED ON TOP OF IT.

NOTE 5:

WHEREVER POSSIBLE, DESIGN WATER AND SEWER SERVICES SUCH THAT THE WATERMAIN CROSSES ABOVE SEWERMAIN(S).

NOTE 6:

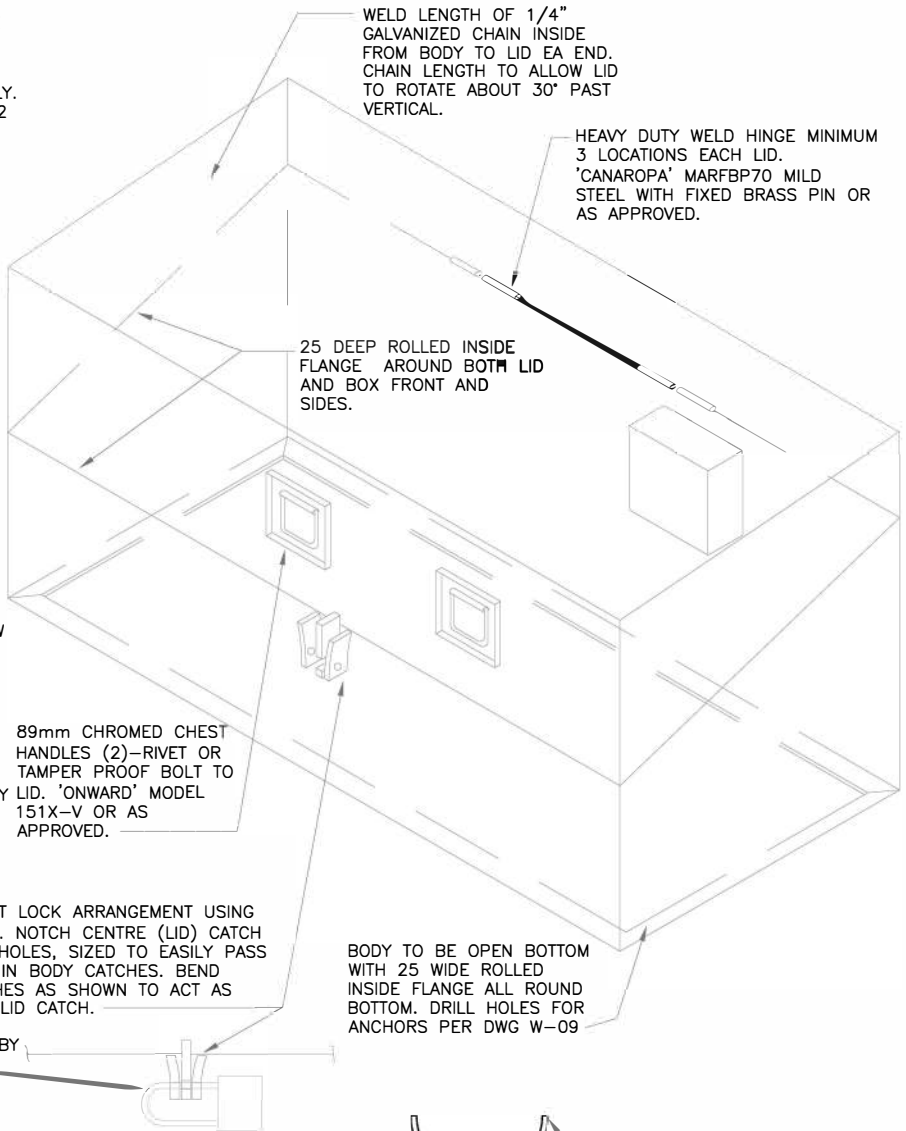
AS MUCH AS POSSIBLE CENTRE THE LENGTH OF WATERMAIN PIPE AT THE POINT OF CROSSING THE SEWER(S).

Date	Revisions	By
SEP/04	DRAFT NEW STANDARD FOR REVIEW	SB
FEB/05	REVISED, NEW STANDARD ADOPTED	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Detail for Watermain Crossing Beneath Sewer Main		
Designed By:	Approved:	
Date	Scale	W-06
02/05	NTS	
Digital File:	Stdw-06.dwg	

- ① - 100mm HDPE DR11 RISER FOR SUPPLY AND DISCHARGE FOR CONTINUATION REFER TO STANDARD DRAWINGS W-09/W-16 AND SITE PLAN.
- ② - 100mm HDPE STUB END AND BACKING FLANGE ASSEMBLY. BACKING FLANGES TO BE EPOXY COATED DUCTILE IRON - 2 REQUIRED.
- ③ - 50mm x 2000LB HALF COUPLING
- ④ - 50mm x 75 LONG SHORT NIPPLE NPT BOTH ENDS
- ⑤ - 50mm x 300LB 90° M.I. THREAD ELL.
- ⑥ - 50mm x 400 LB WOG BRONZE BALL VALVE. NPT ENDS.
- ⑦ - 50mm MALE NPT x 'GRUVLOK' ADAPTOR.
- ⑧ - 100mm x 150LB FF WN FLANGE-2 REQUIRED
- ⑨ - 75mm x 125LB CAST IRON BODY, FLANGED END RESILIENT SEATED GATE VALVE TO AWWA C509 - ONE REQUIRED.
- ⑩ - 100mm x 75 WELD REDUCER - TWO REQUIRED.
- ⑪ - NOT USED
- ⑫ - 75mm FLOWMETER/MASTER VALVE ASSEMBLY AS SPECIFIED.
- ⑬ - 75mm x 150LB FF WN FLANGE - THREE REQUIRED
- ⑭ - 75Ø PIPE SPOOL PIECE. OVERALL LENGTH APPROX. 315mm. FIELD CONFIRM.
- ⑮ - 75Ø WATTS MODEL 757 DOUBLE CHECK STYLE BACKFLOW PREVENTOR ASSEMBLY c/w NON-RISING STEM GATE STYLE ISOLATING VALVES.
- ⑯ - 15Ø x 2000LB HALF COUPLING CONNECTION c/w 15Ø x 400 LB WOG BRONZE BALL VALVE.
- ⑰ - 150 x 150 x 100 EEMAC 1 ELECTRICAL JUNCTION BOX c/w HINGED FRONT AND MIN. 2 X 25Ø CONDUIT KNOCKOUTS. BEL EUK0664 OR EQUAL. SPOT WELD TO BODY AND FINISH SAME AS KIOSK.
- ⑱ - 100Ø SHORT RADIUS 90° WELD ELLS - 2 REQUIRED
- ⑲ - 75Ø SHORT RADIUS 90° WELD ELLS - 2 REQUIRED
- ⑳ - 50mm x 65 LONG SHORT NIPPLE
- ㉑ - 50mm x 45° THREAD ELL

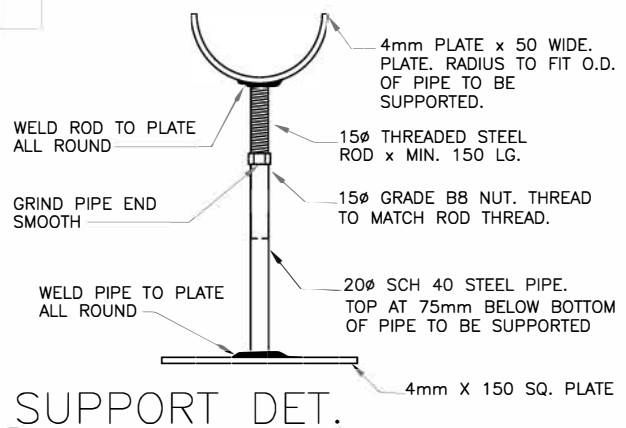


DUAL EYELET LOCK ARRANGEMENT USING 6mm PLATE. NOTCH CENTRE (LID) CATCH AND DRILL HOLES, SIZED TO EASILY PASS CITY LOCK, IN BODY CATCHES. BEND BODY CATCHES AS SHOWN TO ACT AS GUIDE FOR LID CATCH.

PADLOCK SUPPLIED BY CITY OF REGINA

NOTES:

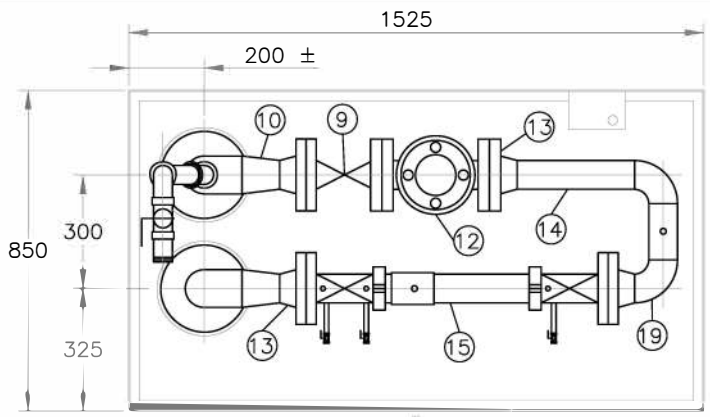
- CONSTRUCT KIOSK WITH 14 GA. STEEL PLATE. ALL WELDS TO BE FULL LENGTH AND GROUND SMOOTH. DEGREASE, BLAST TO SSPC-SP6 INSIDE AND OUT, PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL-COLOUR CGSB 503-127 (GP INDUSTRIAL 214 SIGNAL GREEN)
- MOUNT KIOSK ON PRECAST OR CAST-IN-PLACE SLAB. REFER TO STANDARD DRAWING W-09 FOR SLAB DETAILS.
- PIPE AND FITTINGS 75mm AND LARGER TO BE STANDARD WT. STEEL. PIPING 50mm AND SMALLER TO BE SCH80. STEEL.
- PROVIDE A MINIMUM OF 1 REMOVABLE/ADJUSTABLE SUPPORT. LOCATE SUPPORT WHERE INDICATED. CLEAN, PRIME AND PAINT SUPPORT WITH TWO COATS OF MARINE ENAMEL.
- DIMENSIONS OF KIOSK ARE BASED ON USE OF NON-RISING STEM GATE VALVES AND BACKFLOW PREVENTER INDICATED IN NOTES.



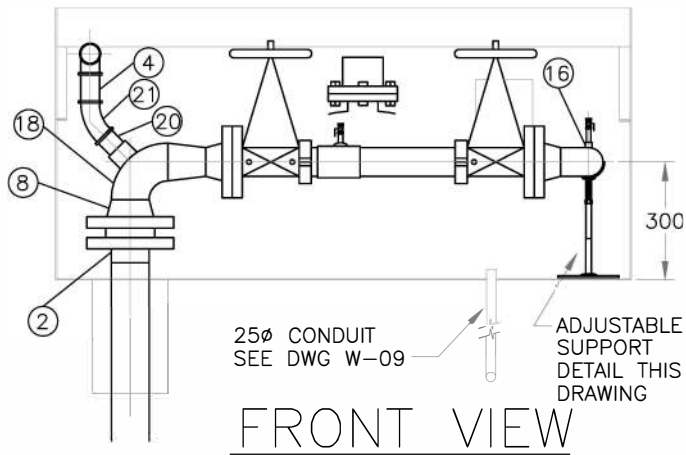
Date	Revisions	By
AUG/04	PROPOSED NEW STANDARD - ISS'D FOR REVIEW	SB
OCT/04	CS -IRRIIG REVIEW COMMENTS INCORPORATED	SB
AUG/10	TITLE BLOCK	JJA



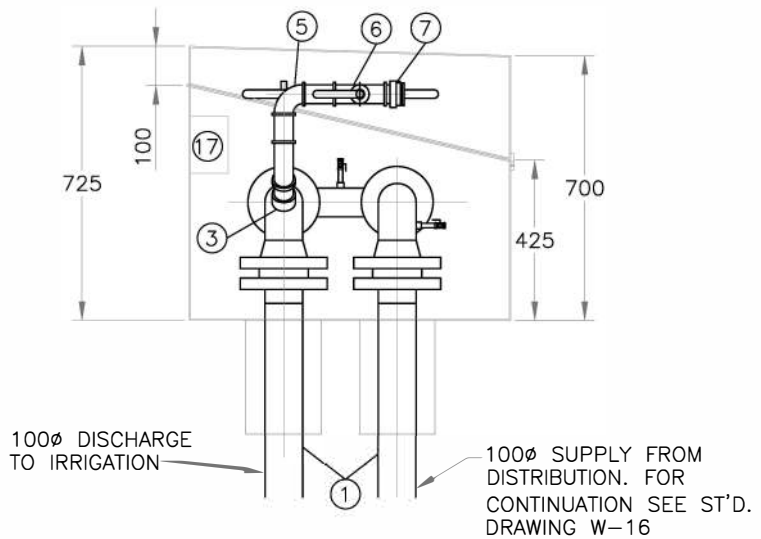
CONSTRUCTION STANDARDS		
75mm Irrigation Meter - Kiosk and Equipment Installation Details		
Designed By:	Approved:	
Date	Scale	
AUG/04	NTS	W-07
Digital File:		
	STDW-07.dwg	



PLAN VIEW



FRONT VIEW



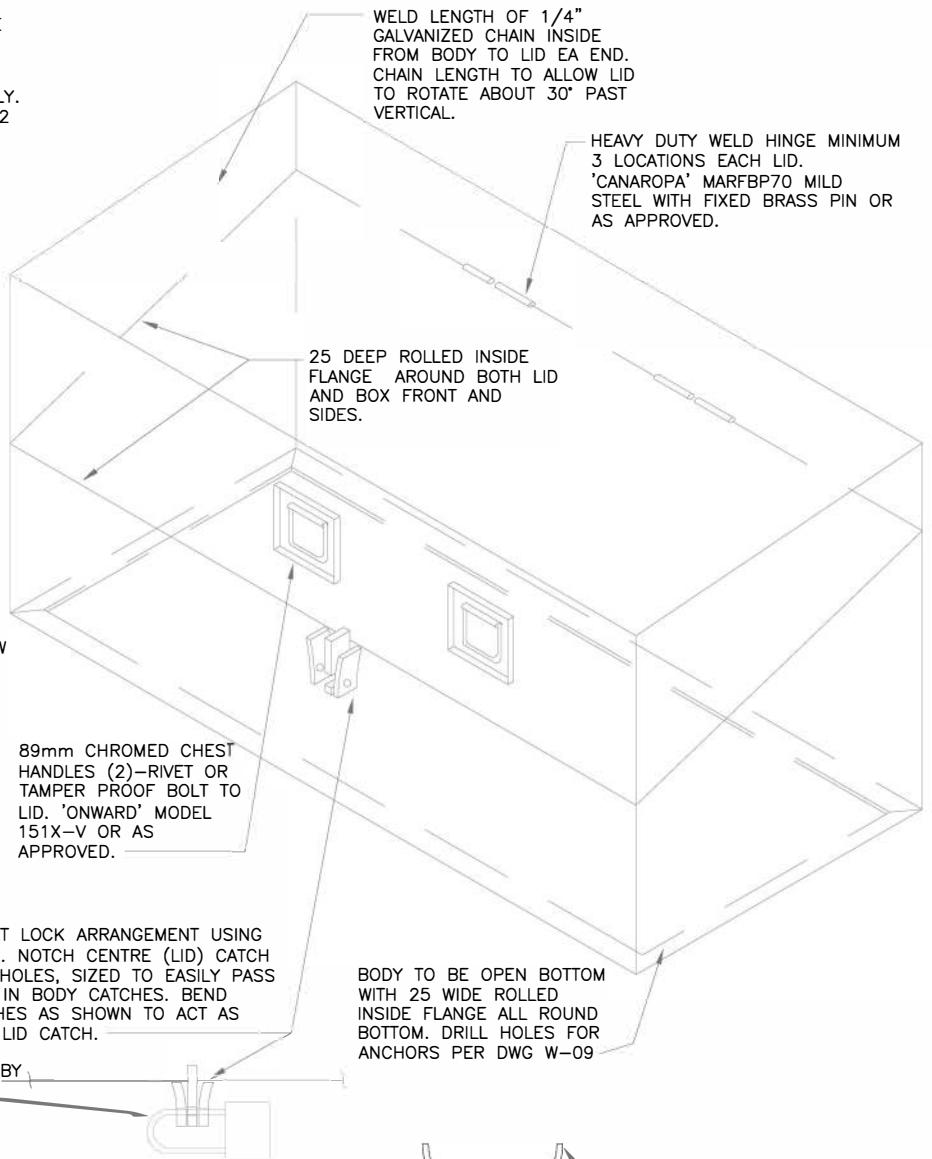
LEFT END VIEW

Date	Revisions	By
AUG/04	PROPOSED NEW STANDARD - ISS'D FOR REVIEW	SB
OCT/04	CS -IRRIG REVIEW COMMENTS INCORPORATED	SB
AUG/10	TITLE BLOCK	JJA



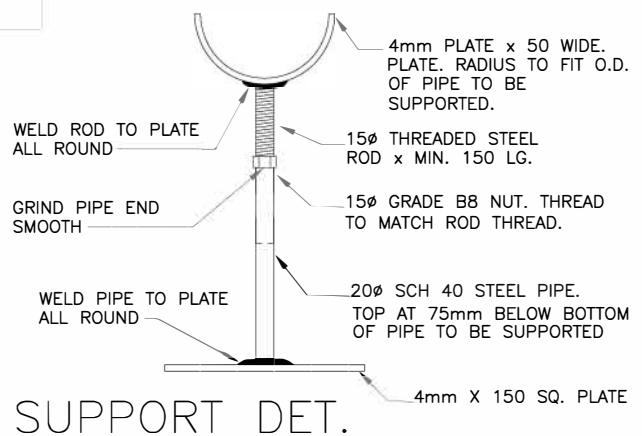
CONSTRUCTION STANDARDS			
75mm Irrigation Meter - Kiosk and Equipment Installation Details			
Designed By:		Approved:	
Date	Scale	W-07 (det)	
AUG/04	NTS		
Digital File: STDW-07.dwg			

- ① - 100mm HDPE DR11 RISER FOR SUPPLY AND DISCHARGE FOR CONTINUATION REFER TO STANDARD DRAWINGS W-09/W-16 AND SITE PLAN.
- ② - 100mm HDPE STUB END AND BACKING FLANGE ASSEMBLY. BACKING FLANGES TO BE EPOXY COATED DUCTILE IRON - 2 REQUIRED.
- ③ - 50mm x 2000LB HALF COUPLING
- ④ - 50mm x 75 LONG SHORT NIPPLE NPT BOTH ENDS
- ⑤ - 50mm x 300LB 90° M.I. THREAD ELL.
- ⑥ - 50mm x 400 LB WOG BRONZE BALL VALVE. NPT ENDS.
- ⑦ - 50mm MALE NPT x 'GRUVLOK' ADAPTOR.
- ⑧ - 100mm x 150LB FF WN FLANGE-2 REQUIRED
- ⑨ - 75mm x 125LB CAST IRON BODY, FLANGED END RESILIENT SEATED GATE VALVE TO AWWA C509 - ONE REQUIRED.
- ⑩ - 100mm x 75 WELD REDUCER - TWO REQUIRED.
- ⑪ - NOT USED
- ⑫ - 75mm FLOWMETER/MASTER VALVE ASSEMBLY AS SPECIFIED.
- ⑬ - 75mm x 150LB FF WN FLANGE - THREE REQUIRED
- ⑭ - 75ø PIPE SPOOL PIECE. OVERALL LENGTH APPROX. 315mm. FIELD CONFIRM.
- ⑮ - 75ø WATTS MODEL 757 DOUBLE CHECK STYLE BACKFLOW PREVENTOR ASSEMBLY c/w NON-RISING STEM GATE STYLE ISOLATING VALVES.
- ⑯ - 15ø x 2000LB HALF COUPLING CONNECTION c/w 15ø x 400 LB WOG BRONZE BALL VALVE.
- ⑰ - 100ø SHORT RADIUS 90° WELD ELLS - 2 REQUIRED
- ⑱ - 75ø SHORT RADIUS 90° WELD ELLS - 2 REQUIRED
- ⑲ - 50mm x 65 LONG SHORT NIPPLE
- ⑳ - 50mm x 45° THREAD ELL



NOTES:

- CONSTRUCT KIOSK WITH 14 GA. STEEL PLATE. ALL WELDS TO BE FULL LENGTH AND GROUND SMOOTH. DEGREASE, BLAST TO SSPC-SP6 INSIDE AND OUT, PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL-COLOUR CGSB 503-127 (GP INDUSTRIAL 214 SIGNAL GREEN)
- MOUNT KIOSK ON PRECAST OR CAST-IN-PLACE SLAB. REFER TO STANDARD DRAWING W-09 FOR SLAB DETAILS.
- PIPE AND FITTINGS 75mm AND LARGER TO BE STANDARD WT. STEEL. PIPING 50mm AND SMALLER TO BE SCH40. STEEL.
- PROVIDE A MINIMUM OF 1 REMOVABLE/ADJUSTABLE SUPPORT. LOCATE SUPPORT WHERE INDICATED. CLEAN, PRIME AND PAINT SUPPORT WITH TWO COATS OF MARINE ENAMEL.
- DIMENSIONS OF KIOSK ARE BASED ON USE OF NON-RISING STEM GATE VALVES AND BACKFLOW PREVENTER INDICATED IN NOTES.

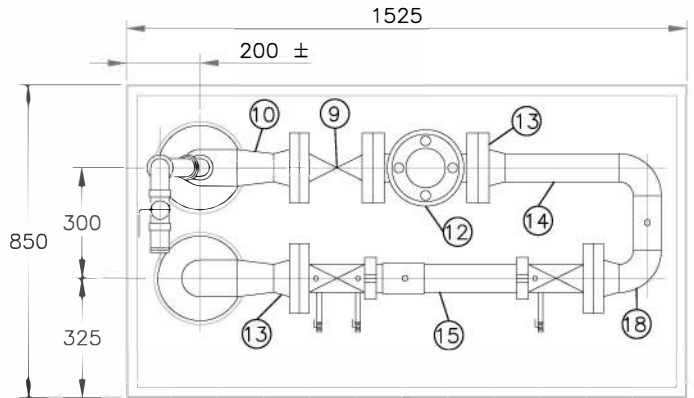


Date	Revisions	By
AUG/04	PROPOSED NEW STANDARD - ISS'D FOR REVIEW	SB
OCT/04	CS -IRRIIG REVIEW COMMENTS INCORPORATED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	TITLE CHANGE AND REMOVE JUNCTION BOX	BL

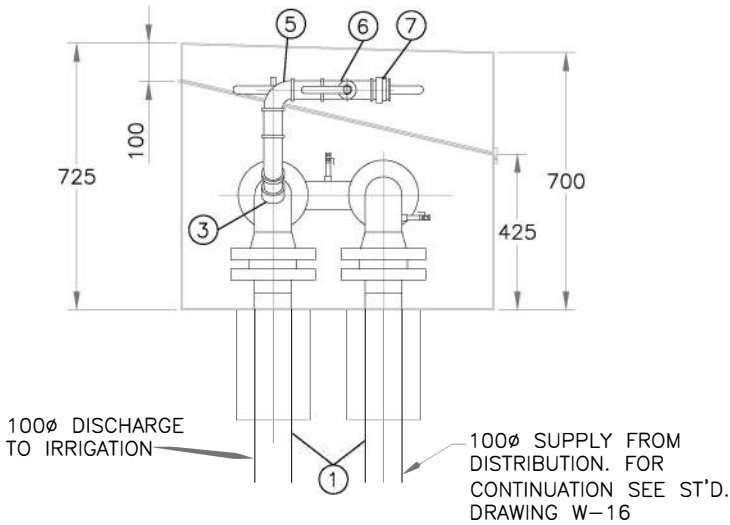


CONSTRUCTION STANDARDS
**100mm Irrigation Service - Kiosk
 and Equipment Installation Details
 (Without Booster Pump)**

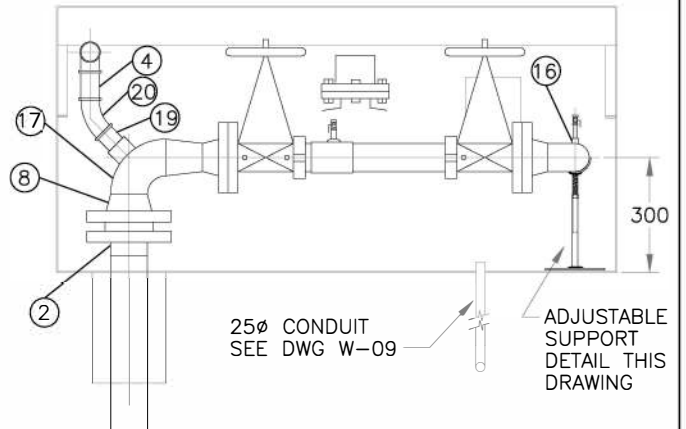
Designed By:		Approved:	
Date	Scale	W-07A	
FEB/16	NTS		
Digital File: Stdw-07.dwg			



PLAN VIEW



LEFT END VIEW



FRONT VIEW

Date	Revisions	By
AUG/04	PROPOSED NEW STANDARD - ISS'D FOR REVIEW	SB
OCT/04	CS -IRRIG REVIEW COMMENTS INCORPORATED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	TITLE CHANGE AND LAYOUT RE-POSITIONED	BL

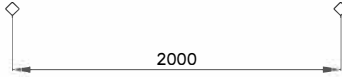


CONSTRUCTION STANDARDS
**100mm Irrigation Meter - Kiosk
 and Equipment Installation Details
 (Without Booster Pump)**

Designed By:		Approved:	
Date		Scale	
MAR/16	NTS	Dustin McCall	
Digital File:		W-07A2	
Stdw-07.dwg			

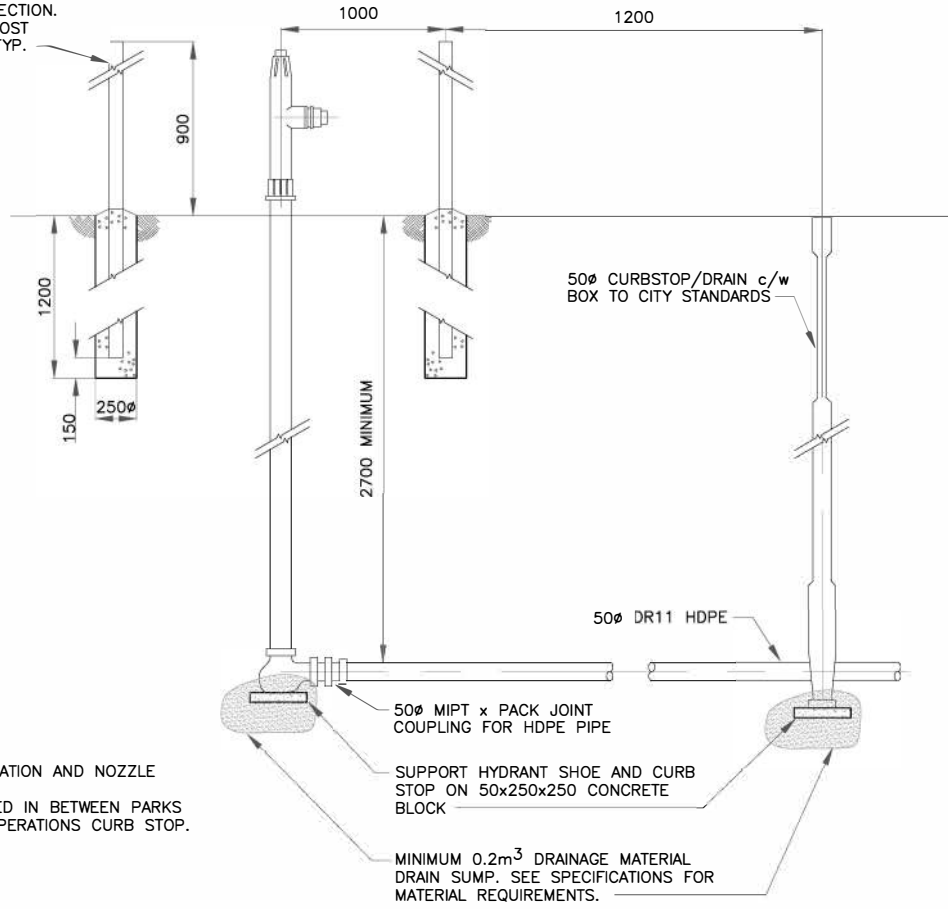
GUARD POST-4 REQUIRED. SEE VIEW BELOW FOR DETAILS

MUELLER A-411 POST HYDRANT c/w 1x65Ø NOZZLE. THREADS TO MATCH CITY OF REGINA STANDARD-SEE SPECIFICATIONS. LOWER HYDRANT CONNECTION TO BE FIPT. HYDRANT BURY TO BE MINIMUM 2.7m.



PLAN

100x100 WOODEN POST. PRESSURE TREATED ON BELOW GROUND SECTION. PAINT EXPOSED POST BRIGHT ORANGE-TYP.



NOTES:
 -DETERMINE HYDRANT LOCATION AND NOZZLE ORIENTATION IN FIELD.
 -HYDRANT TO BE INSTALLED IN BETWEEN PARKS CURB STOP AND WATER OPERATIONS CURB STOP.

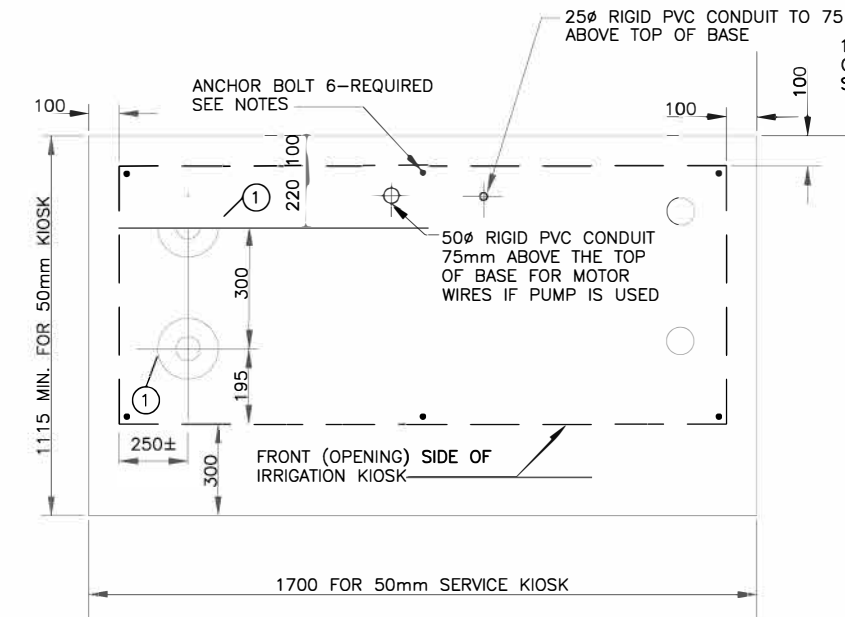
SECTION

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY NOTED OTHERWISE

Date	Revisions	By
DEC/01	NEW POST HYDRANT TYPE	SB
AUG/10	TITLE BLOCK	JJA
MAR/16	NOTE ADDED ABOUT INSTALL	BL



CONSTRUCTION STANDARDS		
Winter Service		
Hydrant Type Irrigation Outlet		
Designed By:	Approved: Bruce Liski	
Date: MAR/16	Scale: NTS	W-08
Digital File: Stdw-08.dwg		



10M @ 300 EW MID.- 250 HOOK EA. END ON OUTSIDE BARS. ADD DIAGONAL BARS AROUND SLEEVES 4 SIDES.

NOTES:

- 1) COMPACT PIPE TRENCH BACKFILL TO MINIMUM 95% STANDARD PROCTOR DENSITY TO A MINIMUM DISTANCE OF 2.5m IN ALL DIRECTIONS FROM THE EDGE OF SLAB. MAXIMUM DEPTH OF UNCOMPACTED LIFT TO BE 300mm.
- 2) PROVIDE MINIMUM 150 THICK COMPACTED GRANULAR BASE UNDER SLAB.
- 3) TOP OF SLAB TO BE SLIGHTLY ABOVE FINISHED GRADE.
- 4) PROVIDE LAYER OF "RAMNEK" OR EQUIV. SEAL BETWEEN KIOSK AND SLAB. ALL ROUND.

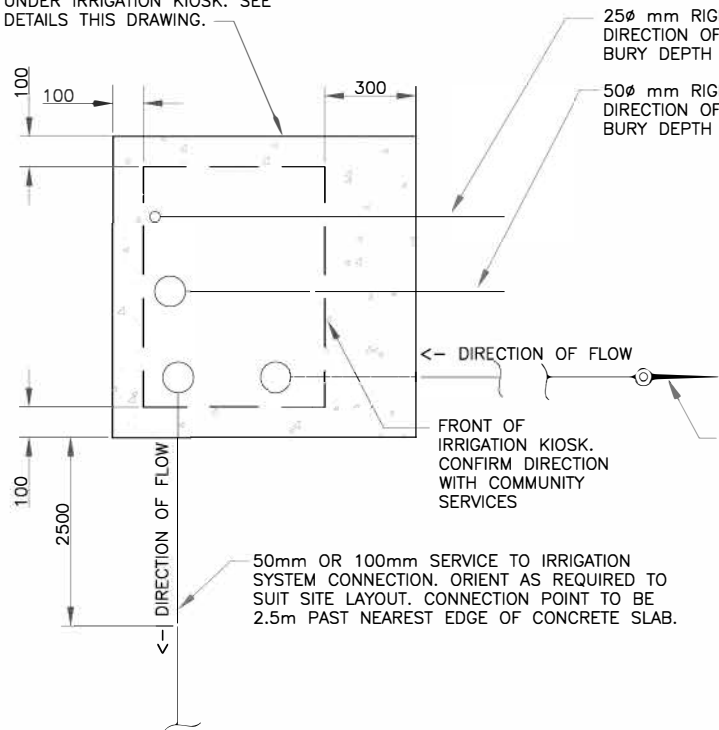
FOR CAST-IN-PLACE BASE SLAB

- 4) CONCRETE TO BE 25MPa, TYPE 50, 5% ±1 AIR CONTENT. 80mm MAX SLUMP. MOIST CURE FOR 7 DAYS.
- 5) INSTALL 6x15# SS ANCHOR BOLTS LOCATED AT CORNERS AND MID-PT. OF LONG SIDES. BOLTS TO PROTRUDE 25 MIN. BOLTS TO HAVE MIN. 50 HOOK EMBEDDED 75 IN SLAB.
- 6) INSTALL 15# SELF-DRILLING SS ANCHOR BOLTS AS ABOVE. SLAB PENETRATIONS TO BE CORED. SIZES TO MATCH SLEEVE SIZES SHOWN.

① 75# x MIN. 150 LG. SCH40 STEEL SLEEVES-2 REQUIRED. EQUIP SLEEVES WITH NELSON STUD AT MID-LENGTH. SLEEVES TO BE FLUSH WITH OR JUST BELOW TOP OF SLAB. USE FOR 50mm SERVICE KIOSK.

50mm IRRIGATION KIOSK BASE SLAB- PLAN/END VIEWS

REINFORCED CONCRETE SLAB UNDER IRRIGATION KIOSK. SEE DETAILS THIS DRAWING.



25# mm RIGID PVC CONDUIT TO 500 PAST SLAB IN DIRECTION OF INCOMING SERVICE. CAP BOTH ENDS. BURY DEPTH 450 BELOW FINISHED GRADE.

50# mm RIGID PVC CONDUIT TO 500 PAST SLAB IN DIRECTION OF INCOMING SERVICE. CAP BOTH ENDS. BURY DEPTH 450 BELOW FINISHED GRADE.

NOTES:

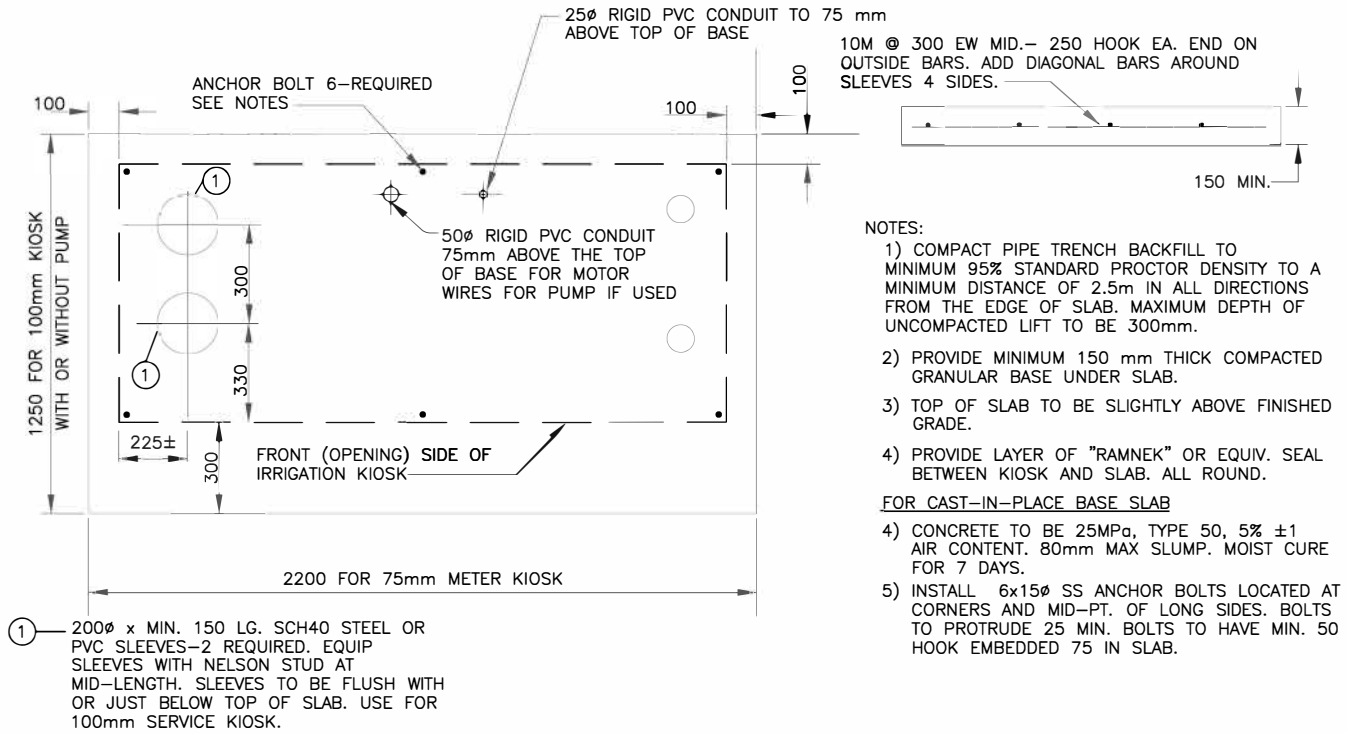
- 1) LIMITS OF IRRIGATION KIOSK PAY ITEM EXTEND 2.5m IN ALL DIRECTIONS FROM THE OUTSIDE PERIMETER OF THE CONCRETE SLAB AND INCLUDE VALVE SUPPLY, INSTALLATION AND CONNECTION AT THOSE LOCATIONS
- 2) LOCATION OF CONDUIT PENETRATION IN BASE SLAB VARIES. REFER TO DRAWING W-07 OR W-10.
- 3) CHECK AND CONFIRM ORIENTATION OF KIOSK SLAB AND REQUIRED SLAB SLEEVE PENETRATIONS PRIOR TO CONSTRUCTING SLAB.

50mm IRRIGATION KIOSK SITE PLAN (WITH OR WITHOUT PUMP)

Date	Revisions	By
JAN/00	STANDARD DRAWING ISSUED	SB
NOV/01	REVISIONS - SEE ALSO W-16	SB
AUG/04	W-09 REVISED FOR 75mm KIOSK	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	CHANGE 75mm TO 100mm KIOSK	BL
AUG/16	REV OF NOTES / DIMENSIONS-50mm CURRENT	BL

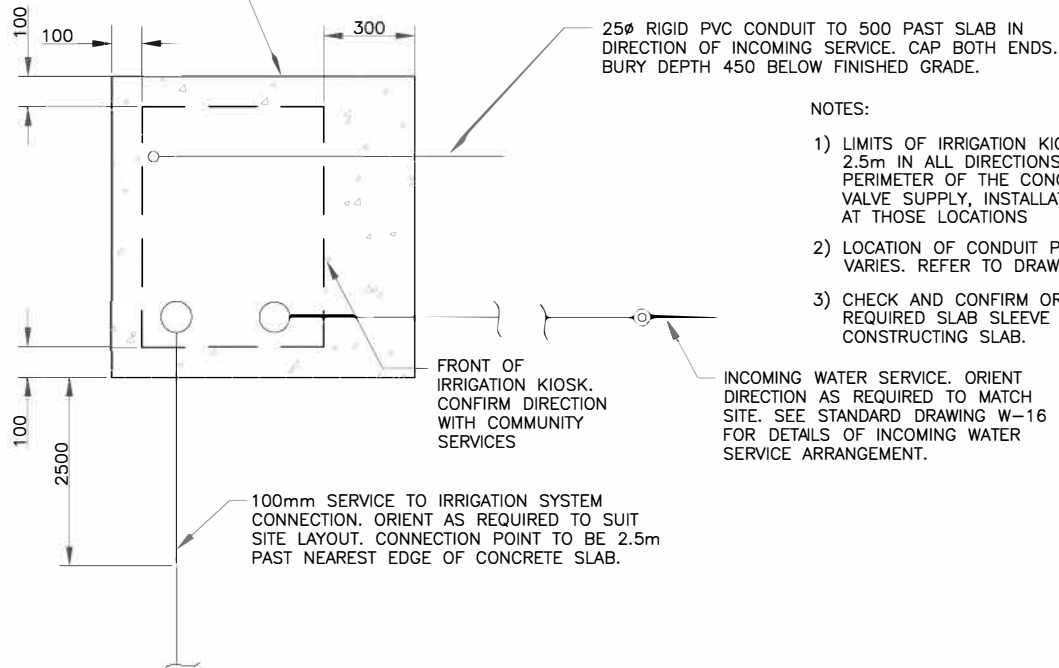


CONSTRUCTION STANDARDS		
50mm Above Grade Irrigation Kiosks Site Plan and Base Details		
Designed By:	Approved: Bruce Liski	
Date: AUG/16	Scale: NTS	W-09
Digital File: Stdw-09.dwg		



100mm IRRIGATION KIOSK BASE SLAB— PLAN/END VIEWS

REINFORCED CONCRETE SLAB UNDER IRRIGATION KIOSK. SEE DETAILS THIS DRAWING.



100mm IRRIGATION KIOSK SITE PLAN (WITH OR WITHOUT PUMP)

Date	Revisions	By
JAN/00	STANDARD DRAWING ISSUED	SB
NOV/01	REVISIONS - SEE ALSO W-16	SB
AUG/04	W-09 REVISED FOR 75mm KIOSK	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	CHANGE 75mm TO 100mm KIOSK	BL
AUG/16	REV OF NOTES / DIMENSIONS-100mm CURRENT	BL



CONSTRUCTION STANDARDS		
100mm Above Grade Irrigation Kiosks		
Site Plan and Base Details		
Designed By:	Approved: Bruce Liski	
Date: AUG/16	Scale: NTS	W-09A
Digital File: Stdw-09.dwg		

NOTES:

-CONSTRUCT KIOSK WITH 14 GA. STEEL. GRIND WELDS SMOOTH, DEGREASE AND BLAST TO SSPC-SP6 INSIDE AND OUT. PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL. CGSB 503-127 (GP INDUSTRIAL 214) - SIGNAL GREEN
 - MOUNT KIOSK ON CAST OR PRECAST SLAB. REFER TO STANDARD DRAWING W-09 FOR DETAILS.

- PIPE ABOVE GRADE TO BE SCH40 STEEL GALVANIZED WITH NPT OR GROOVED ENDS. FITTINGS TO BE 300 LB BANDED MALLEABLE IRON THREADED OR DUCTILE IRON GROOVED.

- 1 50ø HDPE DR11 OR TYPE K SOFT DRAWN COPPER LEAD FROM INCOMING WATER SERVICE LINE
- 2 50ø HDPE DR11 TO CONNECTION TO HDPE IRRIGATION LINES
- 3 FORD ADAPTOR COUPLING TO SUIT PIPE MATERIAL USED - 2 REQUIRED.
TWO (2) - REQUIRED
- 4 50ø BRONZE BODY GATE VALVE WITH FIPT ENDS. TWO (2) REQUIRED. SEE SPECIFICATIONS.
- 5 50ø x 75 LONG MIPT NIPPLE BALL VALVE. THREE (3) - REQUIRED.
- 6 50ø x 90" M.I. ELLS FIVE (5) - REQUIRED.
- 7 50ø x (LENGTHS VARY) MIPT NIPPLE TWO (2)- REQUIRED.
- 8 50ø x 50 LONG MIPT NIPPLE - 5 REQUIRED
- 9 50ø ROUGHNECK COUPLING.
- 10 50ø MIPT GROOVE END NIPPLE. LENGTHS AS REQUIRED.
- 11 50ø FLOWMETER/MASTER VALVE ASSEMBLY, FIPT ENDS. SEE SPECIFICATIONS FOR DETAILS
- 12 50ø APPROVED DOUBLE CHECK BACKFLOW PREVENTER c/w BALL TYPE ISOLATION VALVES. REFER TO SPECIFICATIONS.
- 13 50ø x 100 LONG MIPT x GROOVE END NIPPLE
- 14 50ø M.I. TEE.
- 15 50ø x 400 LB BRONZE BALL VALVE.
- 16 ADJUSTABLE SUPPORTS SEE DETAIL THIS DRAWING. INSTALL TWO ASSEMBLIES AT LOCATIONS TO BE DIRECTED IN FIELD. PAINT SUPPORT ASSEMBLIES WITH MARINE ENAMEL.
- 17 50ø FIPT M.I. UNION-GROUND JOINT BRONZE TO IRON TWO (2) REQUIRED

WELD LENGTH OF 1/4" GALVANIZED CHAIN FROM BODY TO LID INSIDE EACH END. LENGTH OF CHAIN TO ALLOW LID TO ROTATE ABOUT 30° PAST VERTICAL.

HEAVY DUTY WELD HINGE MINIMUM 3 LOCATIONS. HINGE TO BE 'CANAROPA' MODEL MARFBR70, MILD STEEL WITH FIXED BRASS PIN OR AS APPROVED.

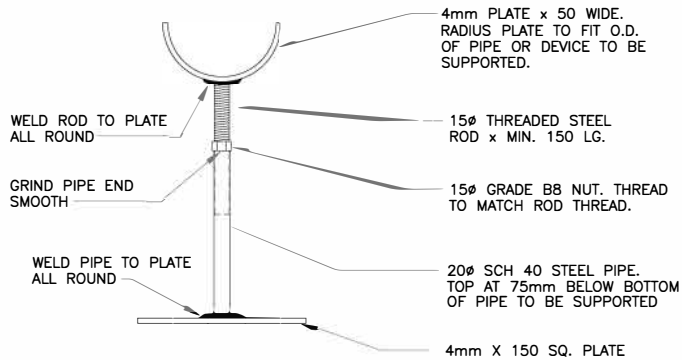
89mm CHROMED CHEST HANDLES (2) - RIVET OR TAMPER PROOF BOLT TO KIOSK LID. 'ONWARD' MODEL 151X-V OR AS APPROVED.

25mm DEEP ROLLED INSIDE FLANGE AROUND LID AND BOX FRONT AND SIDES

DUAL EYELET LOCK ARRANGEMENT USING 6mm PLATE. NOTCH CENTRE (LID) CATCH AND DRILL HOLES, SIZED TO EASILY PASS CITY LOCK, IN BODY CATCHES. BEND BODY CATCHES AS SHOWN TO ACT AS GUIDE FOR LID CATCH.

OPEN BOTTOM KIOSK WITH 25 WIDE ROLLED INSIDE FLANGE ALL ROUND. DRILL FOR BOLTS PER W-09

PADLOCK (BY OTHERS)



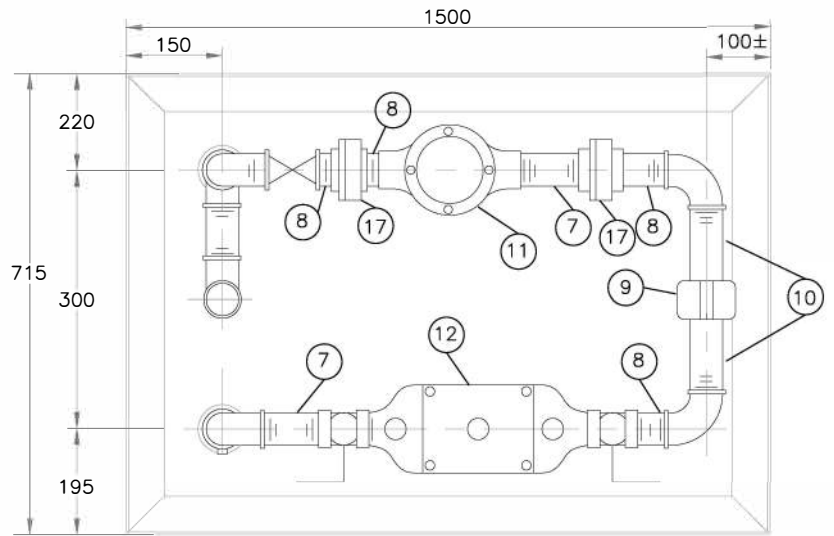
SUPPORT DET.

Date	Revisions	By
JAN/00	ISSUED AS STANDARD	SB
DEC/00	ENCLOSURE AND MISC DETAILS REVISED	SB
NOV/01	ENCLOSURE AND PIPING DETAILS REVISED	SB
OCT/04	ENCLOSURE ARRANGEMENT, MATERIAL & LATCH	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	REMOVE JUNCTION BOX & REMOVE NOTE	BL
AUG/16	CHANGE REQUIREMENTS	BL

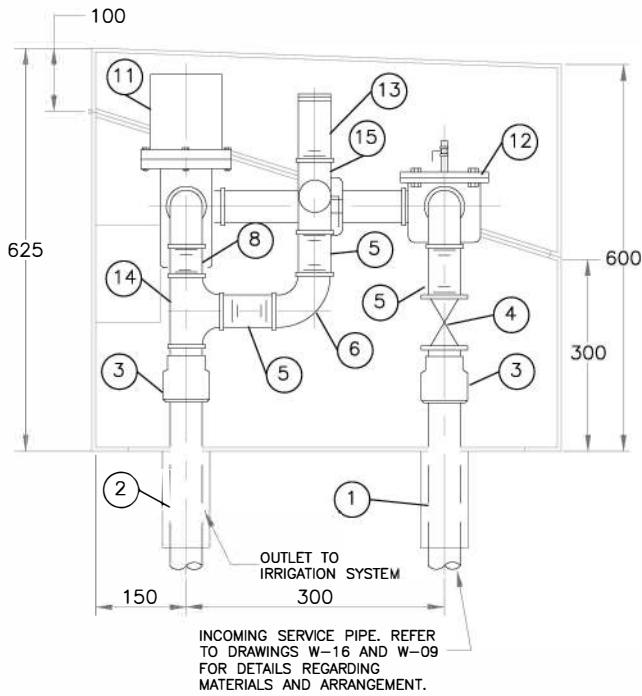


CONSTRUCTION STANDARDS
50mm Irrigation Service - Kiosk and Equipment Installation Details (Without Booster Pump)

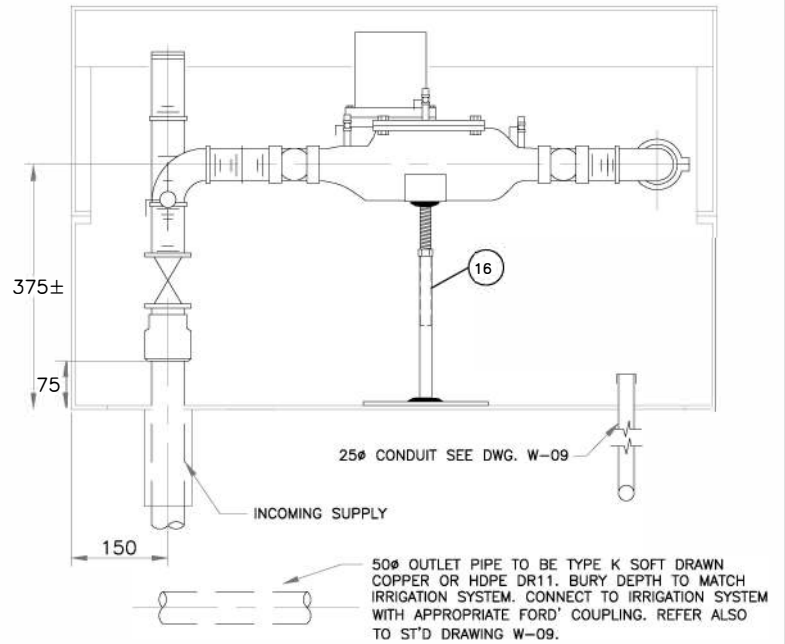
Designed By:		Approved:	
		Dustin McCall	
Date	Scale		
AUG/16	NTS	W-10A	
Digital File: Stdw-10.dwg			



PLAN VIEW



LEFT END VIEW



FRONT VIEW

Date	Revisions	By
AUG/10	TITLE BLOCK	JJA
FEB/16	CHANGE DETAIL ORIENTATION	BL
AUG/16	CHANGE DIMENSIONS / LABELS	BL



CONSTRUCTION STANDARDS
**50mm Irrigation Service - Kiosk
 and Equipment Installation Details
 (Without Booster Pump)**

Designed By:		Approved:	
		Dustin McCall	
Date	Scale	W-10A2	
AUG/16	NTS		
Digital File:	Stdw-10.dwg		

NOTES:

-CONSTRUCT KIOSK WITH 14 GA. STEEL. GRIND WELDS SMOOTH. DEGREASE AND BLAST TO SSPC-SP6 INSIDE AND OUT. PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL. CGSB 503-127 (GP INDUSTRIAL 214) - SIGNAL GREEN
 - MOUNT KIOSK ON CAST OR PRECAST SLAB. REFER TO STANDARD DRAWING W-09 FOR DETAILS.
 - PIPE ABOVE GRADE TO BE SCH40 STEEL WITH NPT OR GROOVED ENDS. FITTINGS TO BE 300 LB BANDED MALLEABLE IRON THREADED OR DUCTILE IRON GROOVED.

- 1 - 50ø HDPE DR11 OR TYPE K SOFT DRAWN COPPER LEAD FROM INCOMING WATER SERVICE LINE
- 2 - 50ø HDPE DR11 TO CONNECTION TO HDPE IRRIGATION LINES
- 3 - FORD ADAPTOR COUPLING TO SUIT PIPE MATERIAL USED - 2 REQUIRED.
TWO (2) - REQUIRED
- 4 - 50ø BRONZE BODY GATE VALVE WITH FIPT ENDS. TWO (2) REQUIRED. SEE SPECIFICATIONS.
- 5 - 50ø x 75 LONG MIPT NIPPLE THREE (3) - REQUIRED.
- 6 - 50ø x 90' M.I. ELLS FIVE (5) - REQUIRED.
- 7 - 50ø x (LENGTHS VARY) MIPT NIPPLE TWO (2)- REQUIRED.
- 8 - 50ø x 50 LONG MIPT NIPPLE - 4 REQUIRED
- 9 - 50ø ROUGHNECK COUPLING.
- 10 - 50ø MIPT x PLAIN END SPOOL. LENGTHS AS REQUIRED.
- 11 - 50ø FLOWMETER/MASTER VALVE ASSEMBLY, FIPT ENDS. SEE SPECIFICATIONS FOR DETAILS
- 12 - 50ø APPROVED DOUBLE CHECK BACKFLOW PREVENTER c/w BALL TYPE ISOLATION VALVES. REFER TO SPECIFICATIONS.
- 13 - 50ø x 100 LONG MIPT x GROOVE END NIPPLE
- 14 - 50ø M.I. TEE.
- 15 - 50ø x 400 LB BRONZE BALL VALVE.
- 16 - ADJUSTABLE SUPPORTS SEE DETAIL THIS DRAWING. INSTALL TWO ASSEMBLIES AT LOCATIONS TO BE DIRECTED IN FIELD. PAINT SUPPORT ASSEMBLIES WITH MARINE ENAMEL.
- 17 - 50ø FIPT M.I. UNION-GROUND JOINT BRONZE TO IRON
- 18 - PUMP - SIZE, LENGTH, AND HP TO BE DETERMINED BY FIELD AREA.
- 19 - 63.5mm x 150 LB FF WN FLANGE TWO (2) REQUIRED

LOUVERS WITH EXPANDED METAL FOR SCREENS 12" x 12"

WELD LENGTH OF 1/4" GALVANIZED CHAIN FROM BODY TO LID INSIDE EACH END. LENGTH OF CHAIN TO ALLOW LID TO ROTATE ABOUT 30° PAST VERTICAL.

HEAVY DUTY WELD HINGE MINIMUM 3 LOCATIONS. HINGE TO BE "CANAROPA" MODEL MARFBR70, MILD STEEL WITH FIXED BRASS PIN OR AS APPROVED.

89mm CHROMED CHEST HANDLES (2) - RIVET OR TAMPER PROOF BOLT TO KIOSK LID. 'ONWARD' MODEL 151X-V OR AS APPROVED.

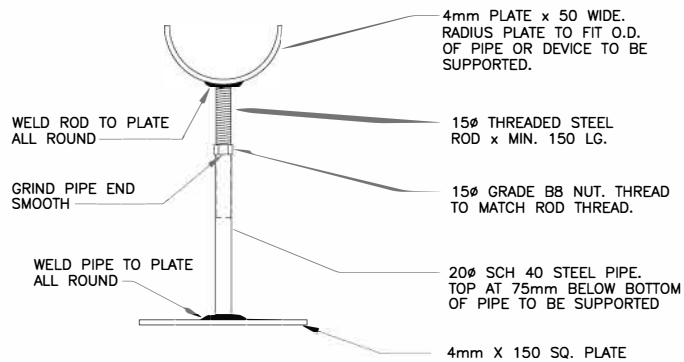
25mm DEEP ROLLED INSIDE FLANGE AROUND LID AND BOX FRONT AND SIDES

DUAL EYELET LOCK ARRANGEMENT USING 6mm PLATE. NOTCH CENTRE (LID) CATCH AND DRILL HOLES, SIZED TO EASILY PASS CITY LOCK, IN BODY CATCHES. BEND BODY CATCHES AS SHOWN TO ACT AS GUIDE FOR LID CATCH.

PADLOCK (BY OTHERS)

OPEN BOTTOM KIOSK WITH 25 WIDE ROLLED INSIDE FLANGE ALL ROUND. DRILL FOR BOLTS PER W-09

LOUVERS WITH EXPANDED METAL FOR SCREENS 12" x 12"



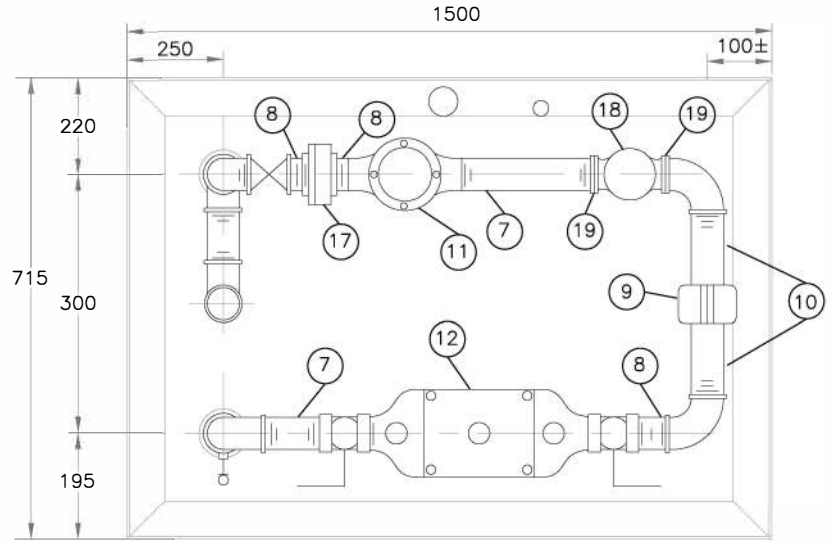
SUPPORT DET.

Date	Revisions	By
JAN/00	ISSUED AS STANDARD	SB
DEC/00	ENCLOSURE AND MISC DETAILS REVISED	SB
NOV/01	ENCLOSURE AND PIPING DETAILS REVISED	SB
OCT/04	ENCLOSURE ARRANGEMENT, MATERIAL & LATCH	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	REMOVE JUNC BOX & NOTE ADD LOUVERS	BL
AUG/16	EDIT LABELS	BL

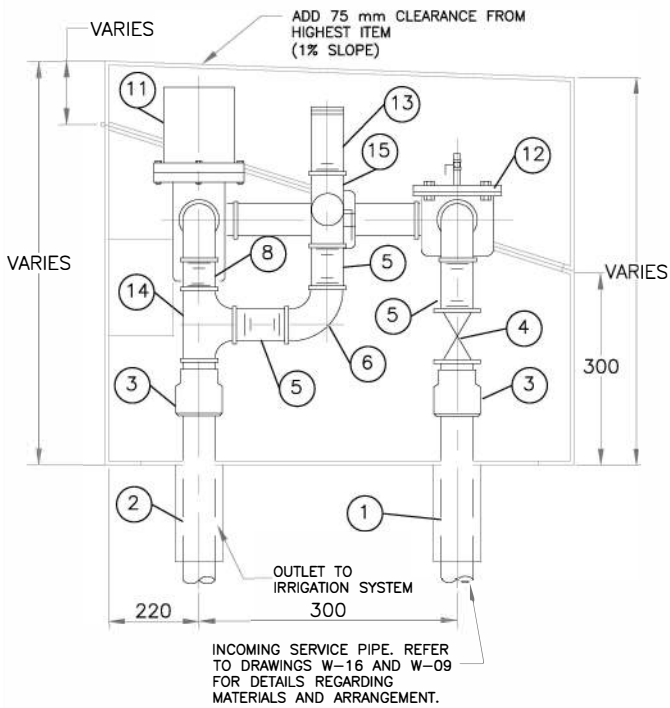


CONSTRUCTION STANDARDS
50mm Irrigation Service - Kiosk and Equipment Installation Details (With Booster Pump)

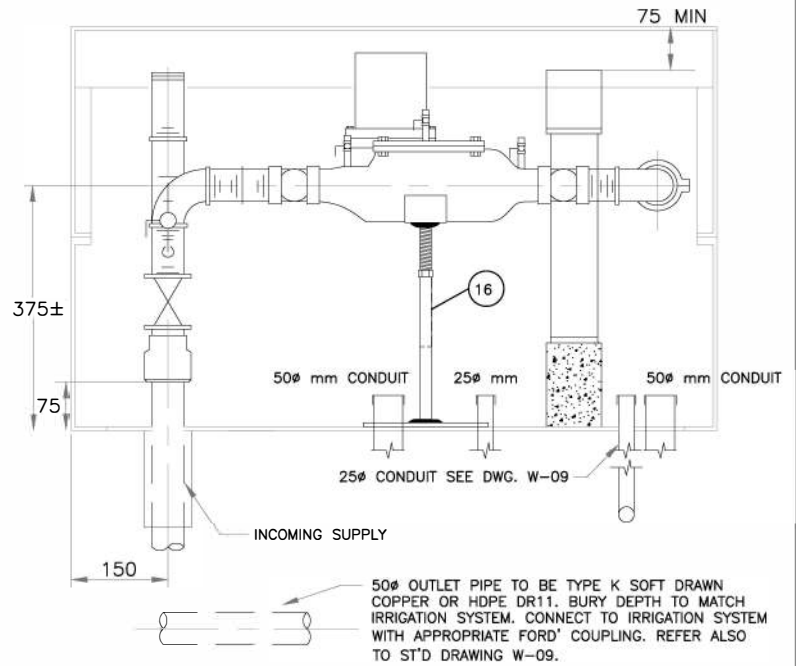
Designed By:		Approved:	
		Dustin McCall	
Date	Scale	W-10B	
AUG/16	NTS		
Digital File: Stdw-10.dwg			



PLAN VIEW



LEFT END VIEW



FRONT VIEW

Date	Revisions	By
AUG/10	TITLE BLOCK	JJA
FEB/16	CHANGE DETAIL ORIENTATION / SPEC	BL
AUG/16	CHANGE LABELS	BL



CONSTRUCTION STANDARDS
**50mm Irrigation Service - Kiosk
 and Equipment Installation Details
 (With Booster Pump)**

Date		Scale		Approved:	
AUG/16		NTS		Dustin McCall	
Digital File:		W-10B2			
Stdw-10.dwg					

NOTES:

-CONSTRUCT KIOSK WITH 14 GA. STEEL PLATE. ALL WELDS TO BE FULL LENGTH AND GROUND SMOOTH. DEGREASE, BLAST TO SSPC-SP6 INSIDE AND OUT. PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL-COLOUR CGSB 503-127 (GP INDUSTRIAL 214 SIGNAL GREEN)

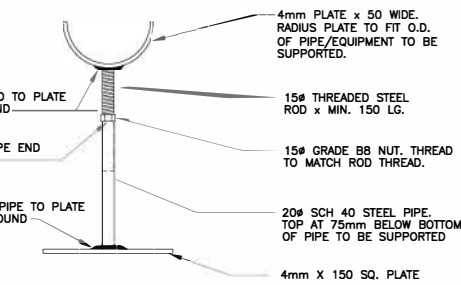
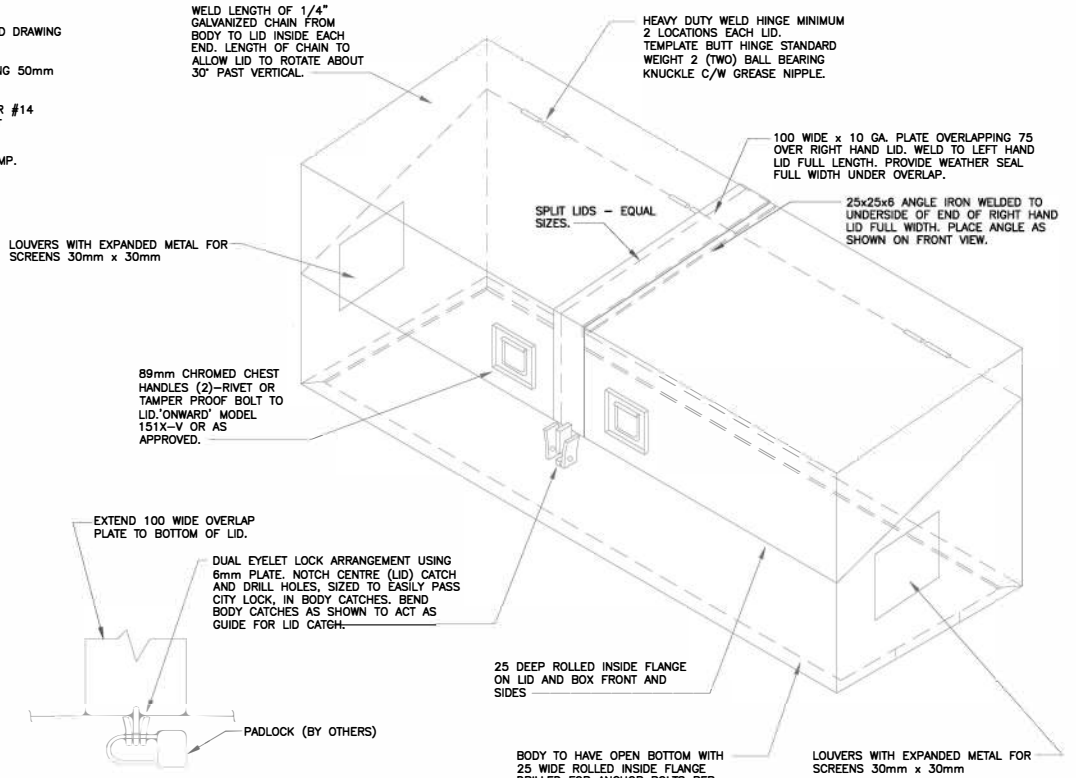
-MOUNT KIOSK ON PRECAST OR CAST-IN-PLACE SLAB. REFER TO STANDARD DRAWING W-09 FOR SLAB DETAILS AND SUPPLY/DISCHARGE PIPING ARRANGEMENTS.

-PIPE AND FITTINGS 75mm AND LARGER TO BE STANDARD WT. STEEL. PIPING 50mm AND SMALLER TO BE SCH40. STEEL.

-PROVIDE A MINIMUM OF 2 REMOVABLE/ADJUSTABLE SUPPORTS. ONE UNDER #14 SPOOL PIECE AND ONE UNDER #10 SPOOL PIECE. CLEAN, PRIME AND PAINT SUPPORTS WITH TWO COATS OF MARINE ENAMEL. SEE DETAIL THIS DRAWING.

- HEIGHT OF KIOSK SHOWN IS BASED UPON HEIGHT REQUIREMENTS OF PUMP.

- ① - 100mm HDPE DR11 RISER FOR SUPPLY AND DISCHARGE FOR CONTINUATION REFER TO STANDARD DRAWINGS W-16, W-09 AND SITE PLAN.
- ② - 100mm HDPE STUB END AND BACKING FLANGE ASSEMBLY. BACKING FLANGES TO BE EPOXY COATED DUCTILE IRON - 2 REQUIRED.
- ③ - 50mm WELDOLET
- ④ - 50mm x 75 LONG NIPPLE NPT BOTH ENDS - 2 REQUIRED.
- ⑤ - 50mm x 300LB 90° M.I. THREAD ELL.
- ⑥ - 50mm x 400 LB WOG BRONZE BALL VALVE. NPT ENDS.
- ⑦ - 50mm x 75mm NPT GRUVLOK ADAPTOR.
- ⑧ - 100mm x 150LB FF SO FLANGE - 2 REQUIRED
- ⑨ - 75mm x 125LB CAST IRON BODY, FLANGED END RESILIENT SEATED GATE VALVE C/W WITH NON-RISING STEM TO AWWA C509 - ONE REQUIRED.
- ⑩ - 75mm STEEL PIPE - 300mm CENTRE TO CENTRE.
- ⑪ - 75mm FLOWMETER/MASTER VALVE ASSEMBLY AS SPECIFIED.
- ⑫ - 63.5mm x 150LB FF WN FLANGE - 2 REQUIRED
- ⑬ - 75mm x 125LB FF SO FLANGE - 8 REQUIRED.
- ⑭ - 75mm SPOOL PIECE C/W 2-75mm 150 LB FF 80 FLANGES LENGTH DETERMINED IN FIELD
- ⑮ - 75mm DOUBLE CHECK STYLE BACKFLOW PREVENTOR ASSEMBLY c/w NON-RISING STEM GATE STYLE ISOLATING VALVES. 'WATTS' 757 OR AS APPROVED.
- ⑯ - 75mm LONG RADIUS 90° WELD ELLS - 2 REQUIRED
- ⑰ PUMP - HORSEPOWER AND LENGTH TO BE DETERMINED IN FIELD BY PARK AREA
- ⑱ - 75mm x 63.5 mm SPOOL PIECES SCHEDULE 40 IRON PIPE - 2 (TWO) REQUIRED
- ⑲ - 100mm x 75mm LONG RADIUS 90° WELD ELLS - 2 REQUIRED
- ⑳ - 50mm x 45' 300LB THREAD ELL
- ㉑ - 50mm x 65mm CLOSE NIPPLE
- ㉒ - WELDOLET 75mm x 12.7mm FIPT - 2 REQUIRED



SUPPORT DET.

KIOSK DETAIL
NOT TO SCALE

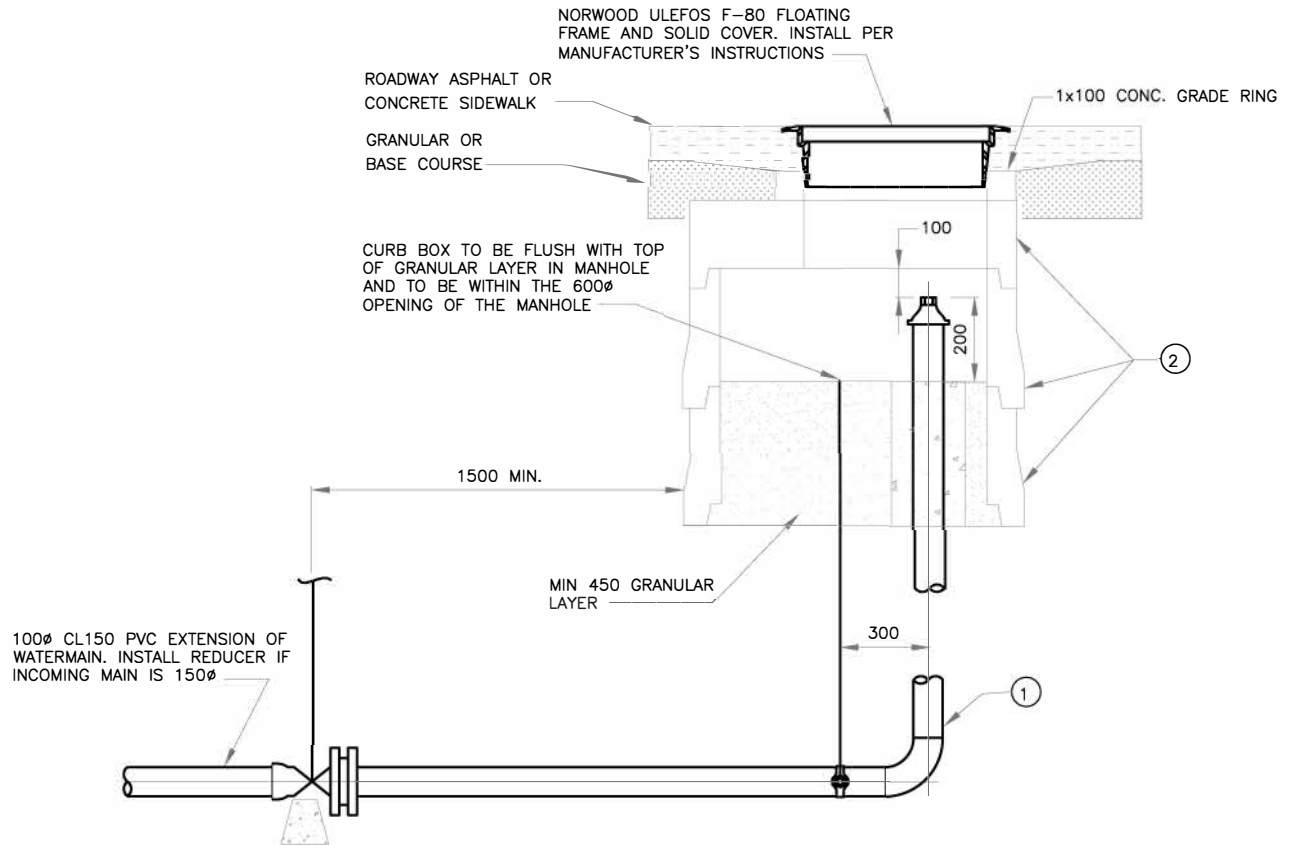
Date	Revisions	By
JAN/99	ISSUED AS STANDARD	SB
DEC/00	REVISED ENCLOSURE AND MISC. DETAILS	SB
NOV/01	REVISED PIPING DETAILS	SB
JUN/02	REVISED LOCKBOX TO MATCH 50mm KIOSK	SB
OCT/04	REVISED KIOSK MATERIALS	SB
MAR/16	UPDATE LIFTING ATTACHMENTS/DETAILS	RN
AUG/16	UPDATE NOTES	BL



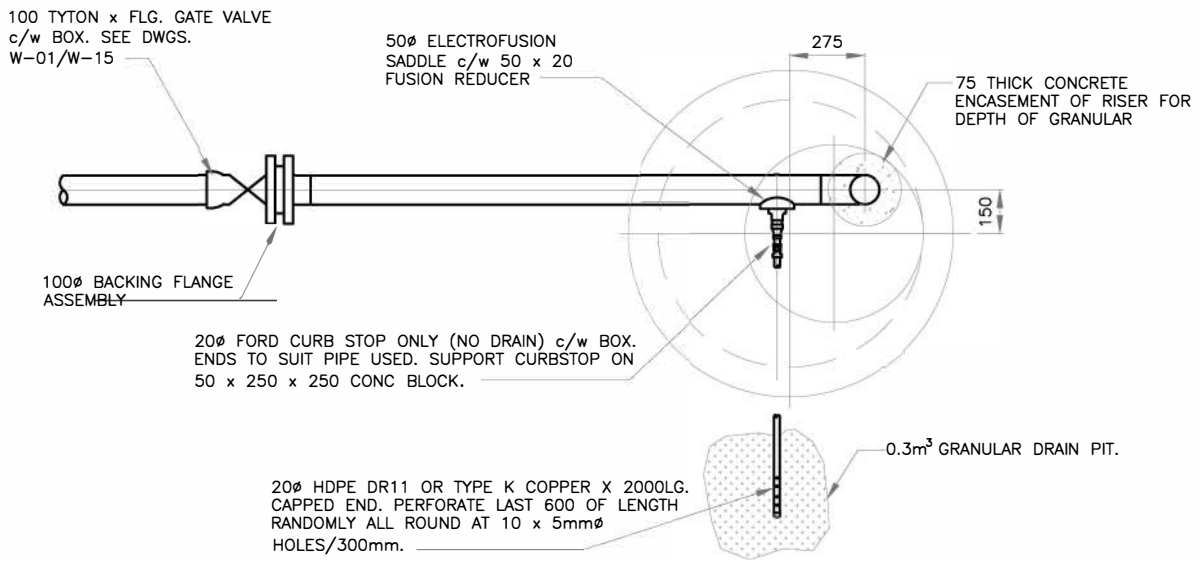
CONSTRUCTION STANDARDS
100mm Irrigation Service - Kiosk and Equipment Installation Details (With Booster Pump)

Designed By:		Approved:	
		Dustin McCall	
Date:	Scale:	W-11	
AUG/16	NTS		
Digital File: Stdw-11.dwg			

- ① 100Ø DR11 HDPE RISER ASSEMBLY c/w 100Ø 'CENTRAL' TRANSITION FITTING WITH REGINA FIRE DEP'T PUMPER THREAD. CAP WITH STANDARD HYDRANT CAP AS SHOWN. LENGTH OF RISER AS REQ'D.
- ② TWO SECTIONS OF 900Ø CATCHBASIN MANHOLE X 0.41m LONG AND ONE 900X600X300 CATCHBASIN FLAT TOP. CUT OFF ANY RUNGS IN MANHOLE SECTIONS. MORTAR ALL JOINTS.



SECTION

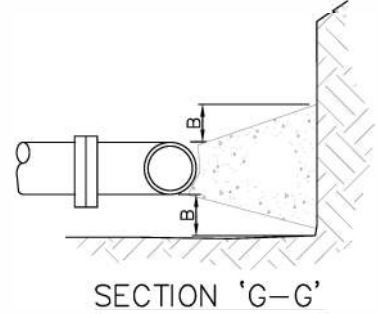
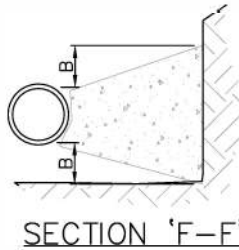
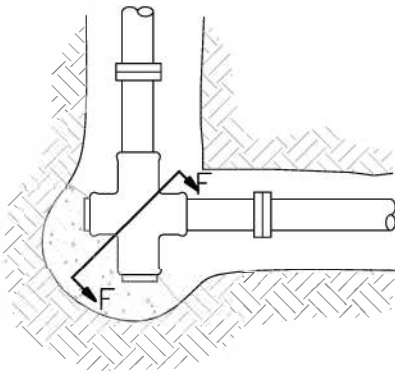
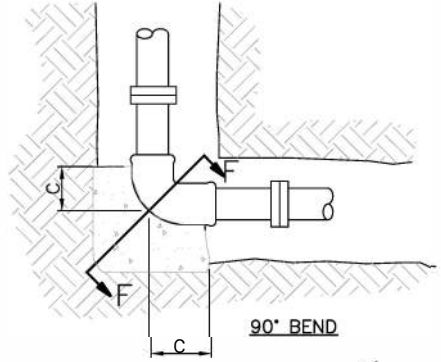
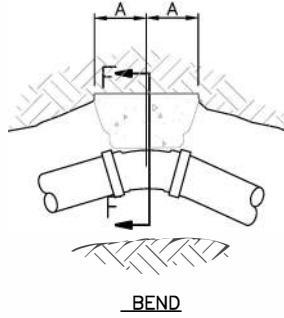
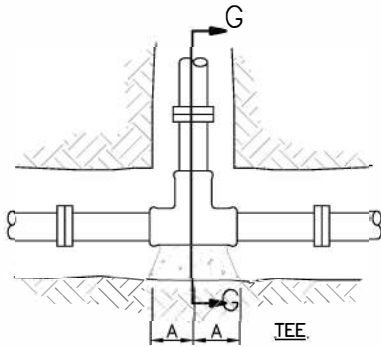
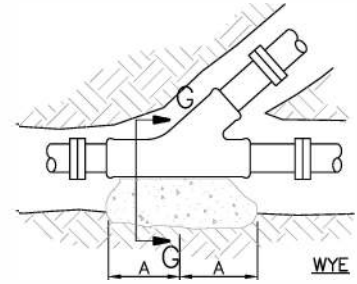
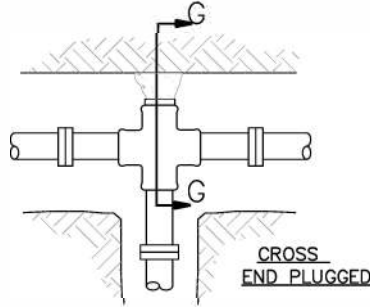
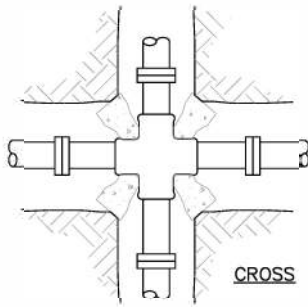


PLAN

Date	Revisions	By
11/00	PROPOSED DETAIL - FOR REVIEW	SB
09/02	REVISED PER TRIAL INSTALLATION	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Detail for Deadend Watermain Flushout		
Designed By:	Approved:	
Date	Scale	W-12
JUL/00	NTS	
Digital File: Stdw-12.dwg		



NOTES:

- DIMENSIONS OF THRUST BLOCKS AND REQUIRED BEARING AREAS SHOWN ARE BASED ON A MAXIMUM TEST/OPERATING PRESSURE OF 689 kPa (100 psi) AGAINST SOIL WHICH HAS A SAFE LOAD BEARING CAPACITY OF 70 kPa (10 psi) MINIMUM. FOR ANY CONDITIONS WHICH VARY FROM THESE, THE DIMENSIONS/AREAS MUST BE ADJUSTED ACCORDINGLY
- REFER TO SPECIFICATIONS SECTION 02511 - WATERMAINS FOR CONCRETE REQUIREMENTS

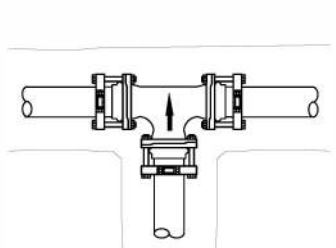
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

PIPE DIAMETER (mm)	90°BEND				45°BEND				TEE, PLUGS, WYES				22.5 & 11.25 BENDS			
	A (mm)	B (mm)	C (mm)	AREA (sq.m)	A (mm)	B (mm)	C (mm)	AREA (sq.m)	A (mm)	B (mm)	C (mm)	AREA (sq.m)	A (mm)	B (mm)	C (mm)	AREA (sq.m)
100	170	200	200	0.16	160	110	110	0.09	190	140	140	0.11	110	60	60	0.04
150	250	300	300	0.33	240	160	160	0.18	270	190	190	0.23	160	90	90	0.08
200	320	350	350	0.56	310	210	210	0.30	350	250	250	0.40	210	110	110	0.14
250	390	400	400	0.85	380	250	250	0.46	430	310	310	0.60	260	140	140	0.22
300	460	450	450	1.20	450	300	300	0.65	520	370	370	0.85	310	160	160	0.31
350	530	500	500	1.61	520	350	350	0.87	600	420	420	1.14	340	170	170	0.38
400	610	550	550	2.08	600	400	400	1.13	680	480	480	1.47	390	190	190	0.49
450	680	600	600	2.62	670	440	440	1.42	760	540	540	1.85	440	220	220	0.62
500	750	650	650	3.21	740	490	490	1.75	840	590	590	2.27	490	240	240	0.77
600	900	750	750	4.95	880	580	580	2.49	1010	710	710	3.24	590	290	290	1.22
750	1110	900	900	7.04	1090	720	720	3.81	1250	870	870	4.98	780	410	410	1.95
900	1330	1050	1050	10.09	1310	860	860	5.46	1490	1040	1040	7.14	930	480	480	2.79

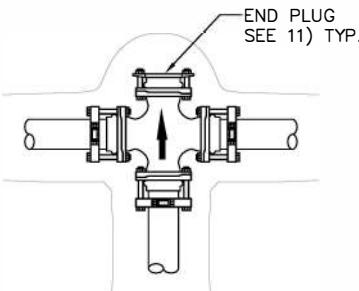
Date	Revisions	By
SEP/97	REVISED NOTES/TITLE BLOCK	SB
MAY/98	BLOCK AREAS REVISED	SB
NOV/98	RENUMBERED FROM W-5	SB
DEC/02	SPEC. No. REF. CORRECTED	SB
AUG/10	TITLE BLOCK	JJA



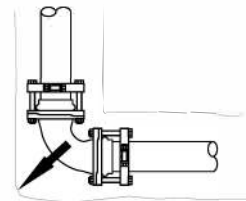
CONSTRUCTION STANDARDS		
Thrust Blocks		
Designed By:	Approved:	
Date	Scale	W-13
MAR/77	NTS	
Digital File:	Stdw-13.dwg	



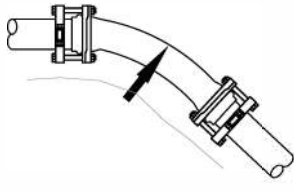
1) THRU LINE CONNECTION - TEE



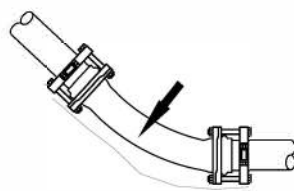
2) THRU LINE CONNECTION - CROSS



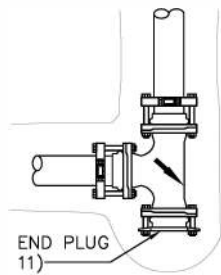
3) CHANGE OF DIRECTION - ELBOW



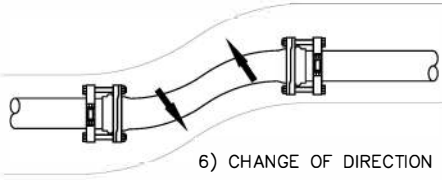
4A) CHANGE OF DIRECTION VERTICAL BEND - DOWN



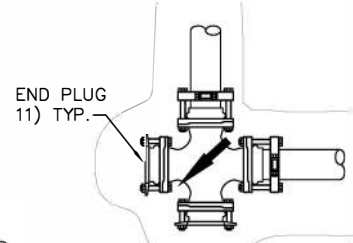
4B) CHANGE OF DIRECTION VERTICAL BEND - UP



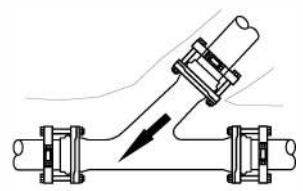
5) CHANGE OF DIRECTION - TEE USED AS ELBOW



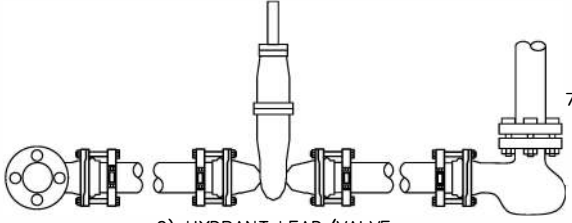
6) CHANGE OF DIRECTION



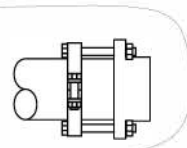
7) CHANGE OF DIRECTION - CROSS USED AS ELBOW



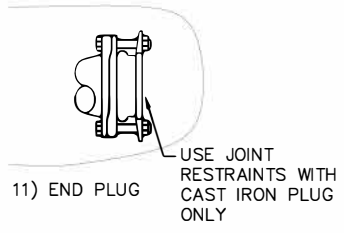
8) THRU LINE CONNECTION - WYE



9) HYDRANT LEAD/VALVE



10) END CAP



11) END PLUG

HORIZONTAL RESTRAINTS

TYPE	NOMINAL PIPE SIZE				
	100	150	200	250	300
90° BEND	1.5m	2.1m	2.7m	3.4m	4.0m
45° BEND	0.6m	0.9m	1.2m	1.5m	1.8m
22.5° BEND	0.3m	0.6m	0.6m	0.6m	0.9m
11.25° BEND	0.3m	0.3m	0.3m	0.3m	0.6m
SIZE ON SIZE TEE	Br. only	Br. only	Br. only	Br. only	Br. only
PLUGS & VALVES	3.0m	4.3m	5.5m	6.7m	7.9m

VERTICAL RESTRAINTS

- 1) THE FIRST NUMBER IN THIS TABLE IS THE RECOMMENDED RESTRAINED LENGTH OF PIPE ON EACH SIDE OF A **VERTICAL** BEND WHERE THE THRUST IS ACTING GENERALLY UPWARDS TOWARDS THE GROUND SURFACE. SEE FIGURE 4A.
- 2) THE SECOND NUMBER IN THIS TABLE IS THE RECOMMENDED RESTRAINED LENGTH OF PIPE ON EACH SIDE OF A **VERTICAL** BEND WHERE THE THRUST IS ACTING GENERALLY DOWNWARDS AWAY FROM THE GROUND SURFACE. SEE FIGURE 4B.
- 3) WHERE RECOMMENDED RESTRAINTS LENGTHS OVERLAP BETWEEN FITTINGS RESTRAIN ALL JOINTS BETWEEN THEM.

TYPE	NOMINAL PIPE SIZE				
	100	150	200	250	300
45° VERTICAL OFFSET	1.2m/0.6m	1.8m/0.9m	2.4m/1.2m	2.7m/1.5m	3.4m/1.8m
22.5° VERTICAL OFFSET	0.6m/0.3m	0.9m/0.6m	1.2m/0.6m	1.5m/0.9m	1.5m/0.9m

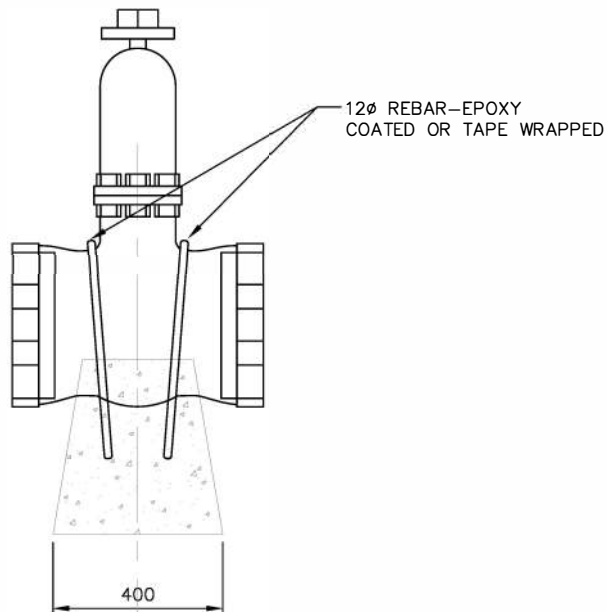
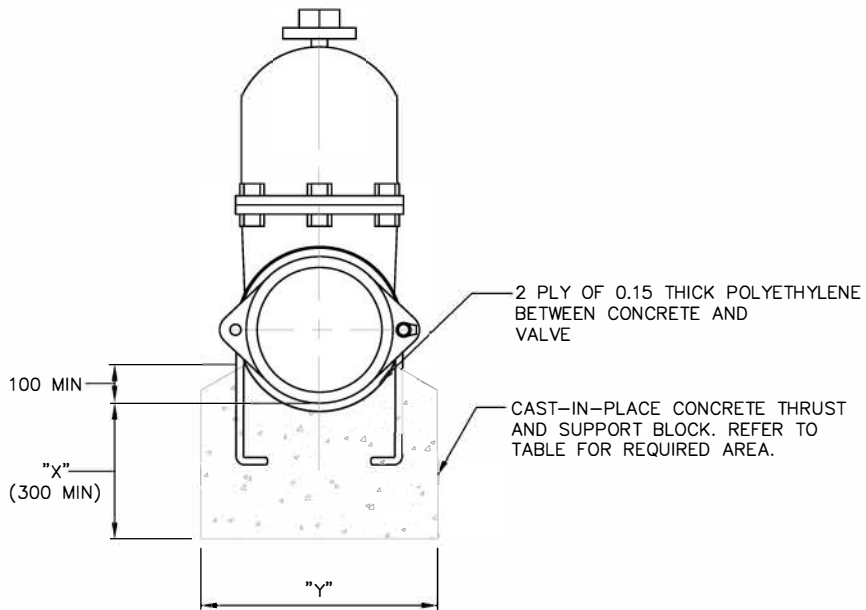
NOTES

1) RESTRAINED LENGTHS IN TABLE ARE FOR MAXIMUM TEST PRESSURE OF 690kPa WITH PIPE FULLY BEDDED IN GRANULAR MATERIAL. IF SITE CONDITIONS VARY FROM THESE - CONTACT THE ENGINEER.

Date	Revisions	By
SEP/97	NOTES/TITLE BLOCK REVISED	SB
SEP/98	END PLUGS ADDED/MINOR MODIFICATIONS	SB
NOV/98	RENUMBERED FROM W-5A	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Mechanical Thrust Restraints		
Designed By:	Approved:	
Date	Scale	W-14
SEP/97	NTS	
Digital File:	Stdw-14.dwg	



VALVE SIZE (mm)	REQUIRED AREA - SQ. M $\frac{X}{1000} \times \frac{Y}{1000} = \text{AREA}$
100	0.09
150	0.18
200	0.31
250	0.47
300	0.67
350	0.97
400	1.25
450	1.56
500	1.93
600	2.73
750	4.20
900	6.03

NOTES:

1) DIMENSIONS OF BLOCK AND REQUIRED BEARING AREA ARE BASED UPON A MAXIMUM TEST/OPERATING PRESSURE OF 689 kPa (100 psi) AGAINST SOIL WHICH HAS A SAFE LOAD BEARING CAPACITY OF 70 kPa (10 psi) MINIMUM. FOR ANY CONDITION WHICH VARIES FROM THESE CONFIRM REQUIRED AREA WITH THE ENGINEER.

2) FOR CONCRETE REQUIREMENTS REFER TO SPECIFICATIONS SECTION 02511-WATERMAINS

3) ANY VALVE WHICH HAS EITHER 'TYTON' OR MJ STYLE END CONNECTIONS MUST BE ANCHORED AS SHOWN. THIS INCLUDES GATE VALVES AND BUTTERFLY VALVES.

ALL DIMENSIONS ARE IN MILLMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
SEP/97	REVISED TITLE BLOCK	SB
MAY/98	REVISED AND TABLE ADDED	SB
NOV/98	RENUMBERED FROM W-5B	SB
NOV/01	NOTE 3 ADDED TO CLARIFY	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS

Valve Anchoring

Designed By:

Approved:

Date

NOV/96

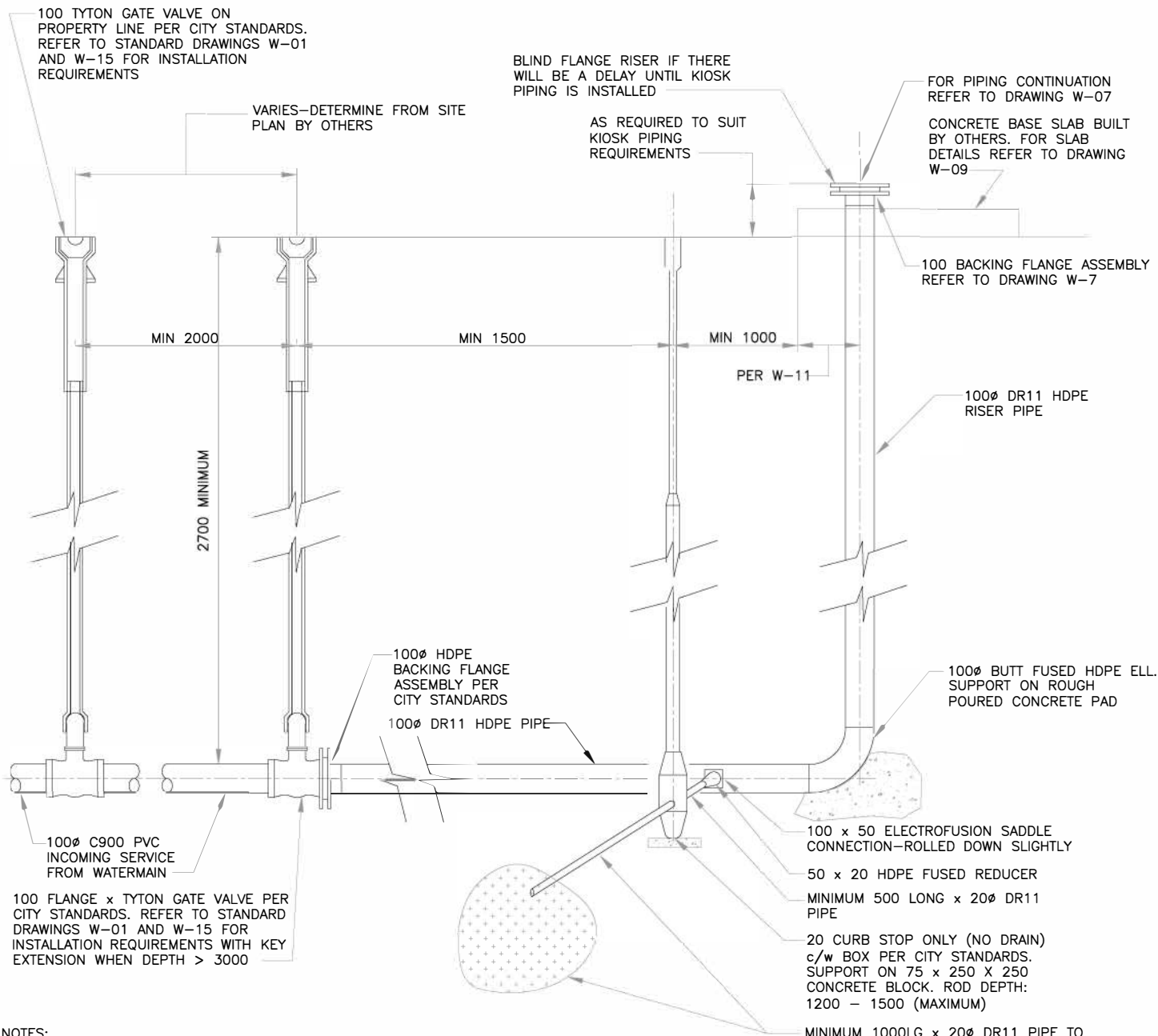
Scale

NTS

W-15

Digital File:

Stdw-15.dwg



NOTES:

THOROUGHLY COMPACT INCOMING SERVICE EXCAVATION TO AT LEAST 95% STANDARD PROCTOR DENSITY. MAXIMUM UNCOMPACTED LIFT THICKNESS TO BE 300mm.

DETERMINE PIPE AND DRAIN ORIENTATION FROM DRAWINGS AND CONFIRM WITH COMMUNITY SERVICES, IRRIGATION DIVISION, BEFORE PROCEEDING WITH INSTALLATION.

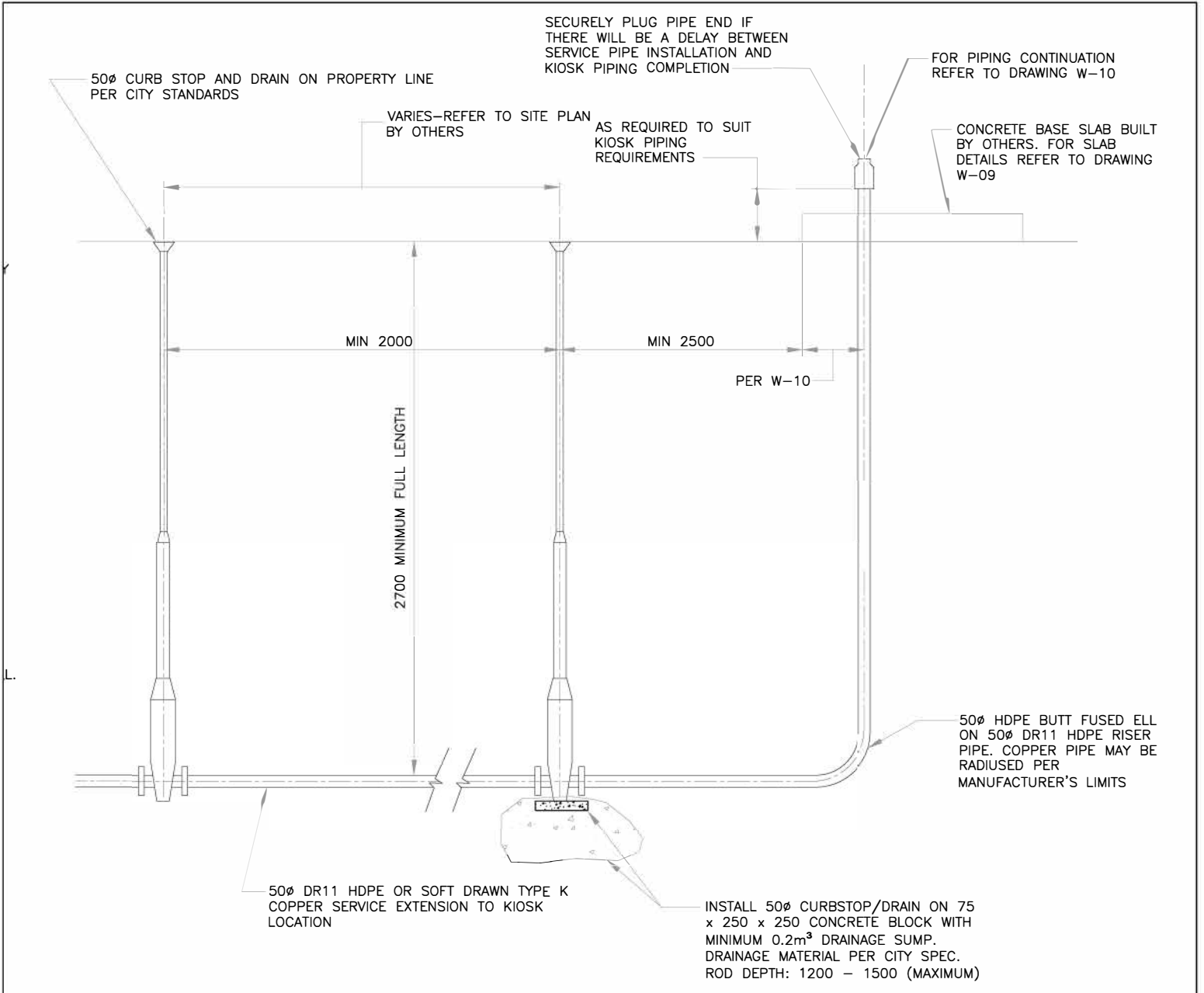
DETAIL—100mm SERVICE TO IRRIGATION KIOSK

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
NOV/01	ISSUED FOR REVIEW AND APPROVAL	SB
MAR/10	REVISED NOTES	DM
AUG/10	TITLE BLOCK	JJA
JUN/14	REVISED DIMENSION AND NOTES	MF
AUG/15	REVISED DIMENSION AND NOTES	MF
SEP/15	REVISED DIMENSION AND NOTES	BL



CONSTRUCTION STANDARDS		
Details of 100mm Water Service Extension to Irrigation Kiosks		
Designed By:	Approved: Stella Madsen	
Date: Sept/15	Scale: NTS	W-16A (100)
Digital File: Stdw-16.dwg		



NOTES:

THOROUGHLY COMPACT INCOMING SERVICE EXCAVATION TO AT LEAST 95% STANDARD PROCTOR DENSITY. MAXIMUM UNCOMPACTED LIFT THICKNESS TO BE 300mm.

DETERMINE PIPE AND DRAIN ORIENTATION FROM DRAWINGS AND CONFIRM WITH COMMUNITY SERVICES, IRRIGATION DIVISION, BEFORE PROCEEDING WITH INSTALLATION.

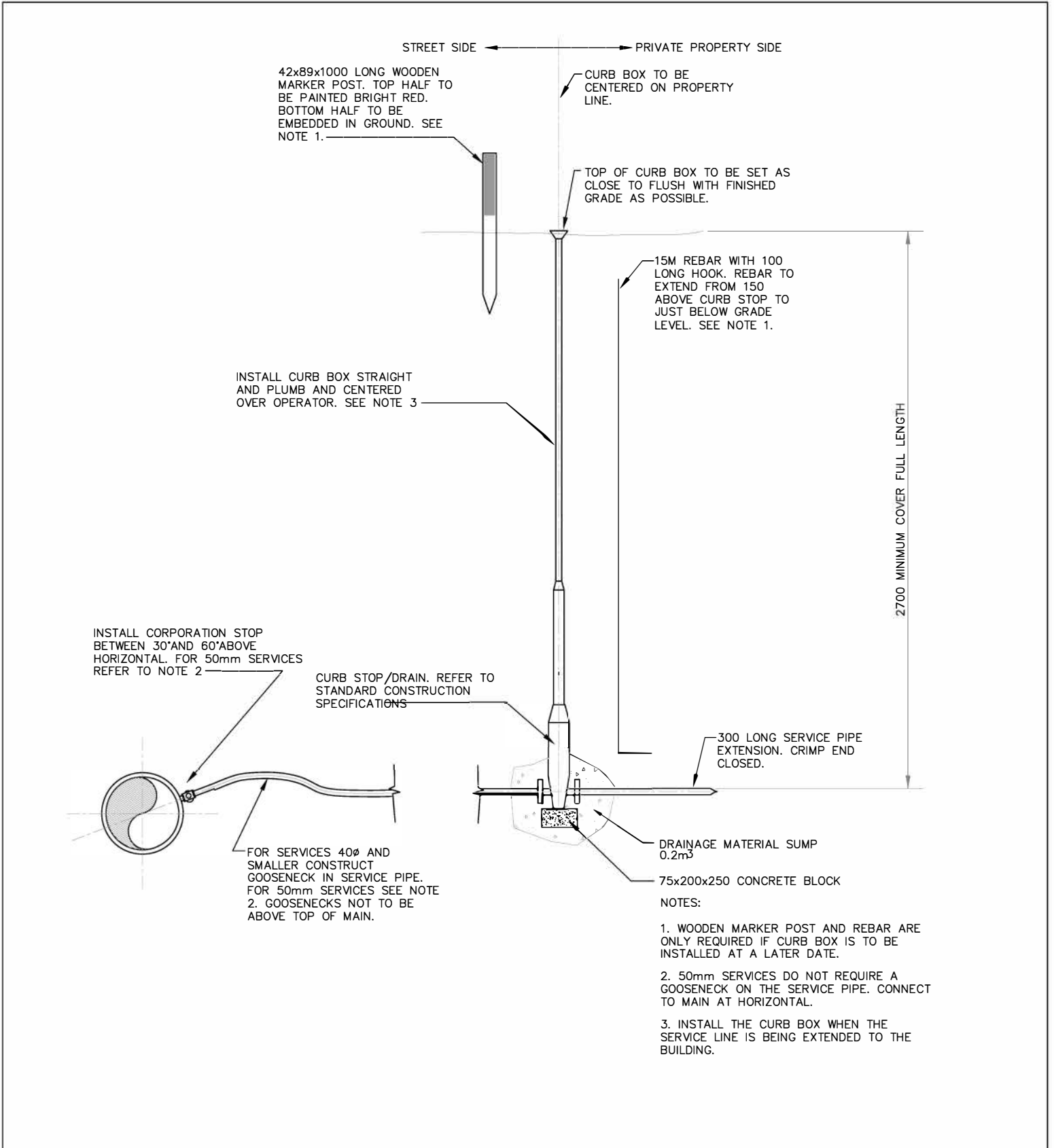
DETAIL—50mm SERVICE TO IRRIGATION KIOSK

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
NOV/01	ISSUED FOR REVIEW AND APPROVAL	SB
MAR/10	REVISED NOTES	DM
AUG/10	TITLE BLOCK	JJA
AUG/15	DIMENSIONS ADDED / REVISED NOTES	MF
SEP/15	REVISED DIMENSION AND NOTES	BL



CONSTRUCTION STANDARDS		
Details of 50mm Water Service Extension to Irrigation Kiosks		
Designed By:	Approved: Stella Madsen	
Date: Sept/15	Scale: NTS	W-16B (50)
Digital File: Stdw-16.dwg		



42x89x1000 LONG WOODEN MARKER POST. TOP HALF TO BE PAINTED BRIGHT RED. BOTTOM HALF TO BE EMBEDDED IN GROUND. SEE NOTE 1.

CURB BOX TO BE CENTERED ON PROPERTY LINE.

TOP OF CURB BOX TO BE SET AS CLOSE TO FLUSH WITH FINISHED GRADE AS POSSIBLE.

15M REBAR WITH 100 LONG HOOK. REBAR TO EXTEND FROM 150 ABOVE CURB STOP TO JUST BELOW GRADE LEVEL. SEE NOTE 1.

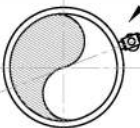
INSTALL CURB BOX STRAIGHT AND PLUMB AND CENTERED OVER OPERATOR. SEE NOTE 3

2700 MINIMUM COVER FULL LENGTH

INSTALL CORPORATION STOP BETWEEN 30' AND 60' ABOVE HORIZONTAL. FOR 50mm SERVICES REFER TO NOTE 2

CURB STOP/DRAIN. REFER TO STANDARD CONSTRUCTION SPECIFICATIONS

300 LONG SERVICE PIPE EXTENSION. CRIMP END CLOSED.



FOR SERVICES 40mm AND SMALLER CONSTRUCT GOOSENECK IN SERVICE PIPE. FOR 50mm SERVICES SEE NOTE 2. GOOSENECKS NOT TO BE ABOVE TOP OF MAIN.

DRAINAGE MATERIAL SUMP 0.2m³

75x200x250 CONCRETE BLOCK

NOTES:

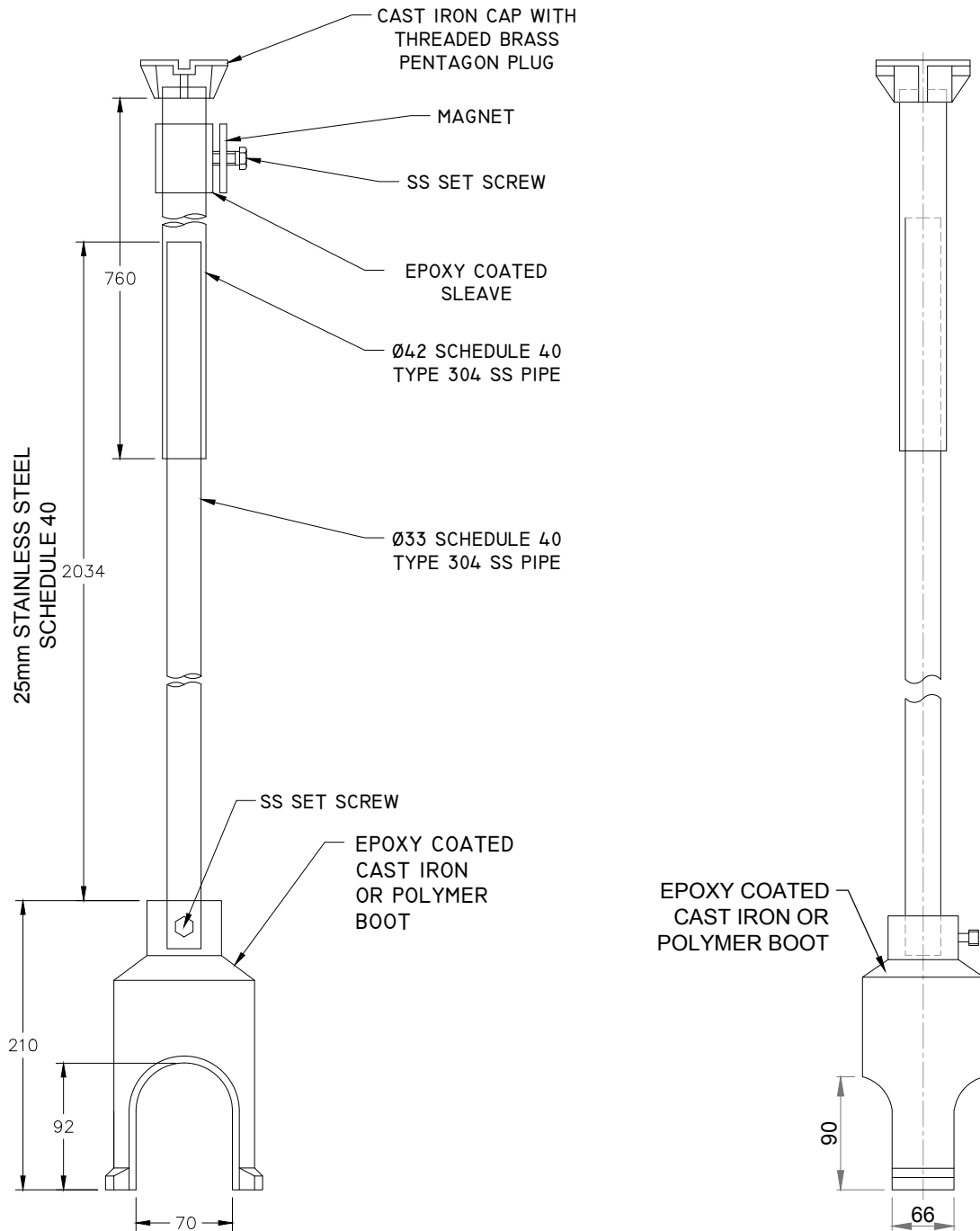
1. WOODEN MARKER POST AND REBAR ARE ONLY REQUIRED IF CURB BOX IS TO BE INSTALLED AT A LATER DATE.
2. 50mm SERVICES DO NOT REQUIRE A GOOSENECK ON THE SERVICE PIPE. CONNECT TO MAIN AT HORIZONTAL.
3. INSTALL THE CURB BOX WHEN THE SERVICE LINE IS BEING EXTENDED TO THE BUILDING.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
SEP/98	FIRST ISSUE	SB
NOV/98	RENUMBERED FROM W-20	SB
SEP/99	W-17 AND W-18 COMBINED	SB
NOV/00	NOTE 2 ADDED/ NOTES MODIFIED	SB
OCT/03	NOTE 3 ADDED / MOINOR MODIFICATIONS	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Water Service Connection		
50mm and Smaller Services		
Designed By:	Approved:	
Date	Scale	
SEP/98	NTS	W-17
Digital File:	Stdw-17.dwg	



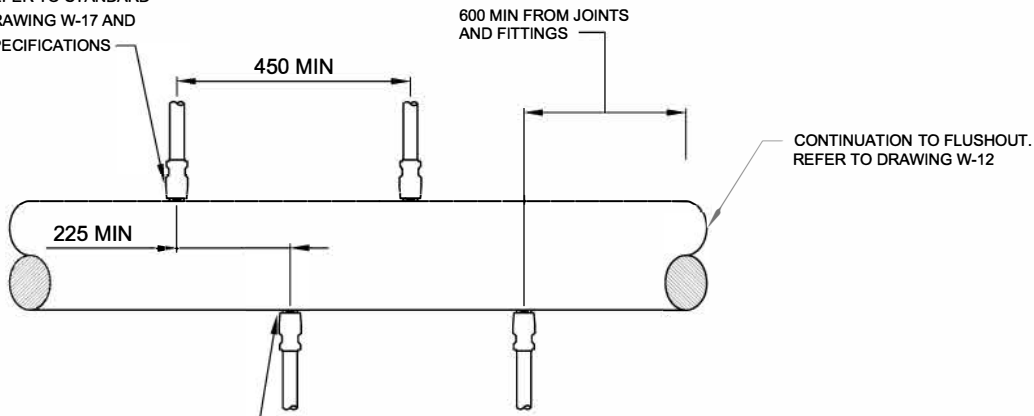
MINIMUM SIZE ALLOWED FOR SERVICES CONNECTIONS IS 25mm

Date	Revisions	By
JAN/18	FIRST ISSUE	TY



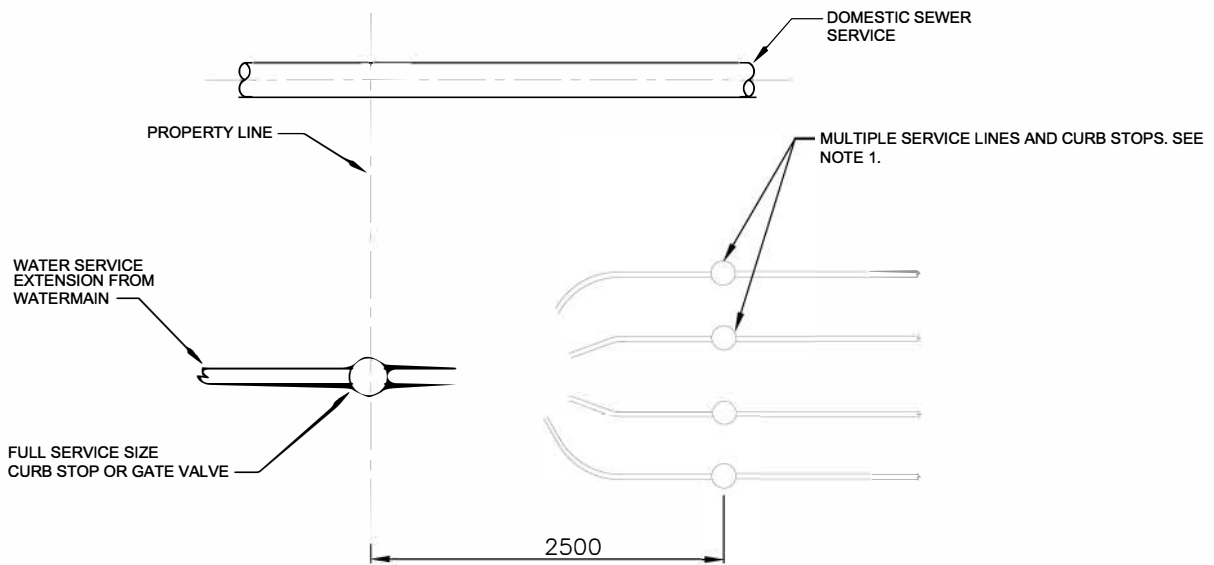
CONSTRUCTION STANDARDS		
Water Service Curb Box 50mm and Smaller Services		
Designed By:	Approved: Dustin McCall	
Date: JAN/18	Scale: NTS	W-18
Digital File: Stdw-18.dwg		

SERVICE CONNECTION-
REFER TO STANDARD
DRAWING W-17 AND
SPECIFICATIONS



DIRECT TAP AS SHOWN MAY ONLY BE USED ON MAINS WHICH ARE 150Ø OR LARGER CL150 PVC

SERVICE CONNECTIONS FROM DEADEND WATERMAINS



ARRANGEMENT OF SERVICE CONNECTIONS TO MULTIPLE METERED BUILDINGS

NOTES:

1) MULTIPLE SERVICE LINES AND CURB STOPS AS SHOWN MAY BE DELETED IF WATER METERS AND SHUTOFF VALVES ARE LOCATED IN A COMMON ROOM WHICH IS INACCESSIBLE TO THE PUBLIC IN ACCORDANCE WITH THE WATER BYLAW.

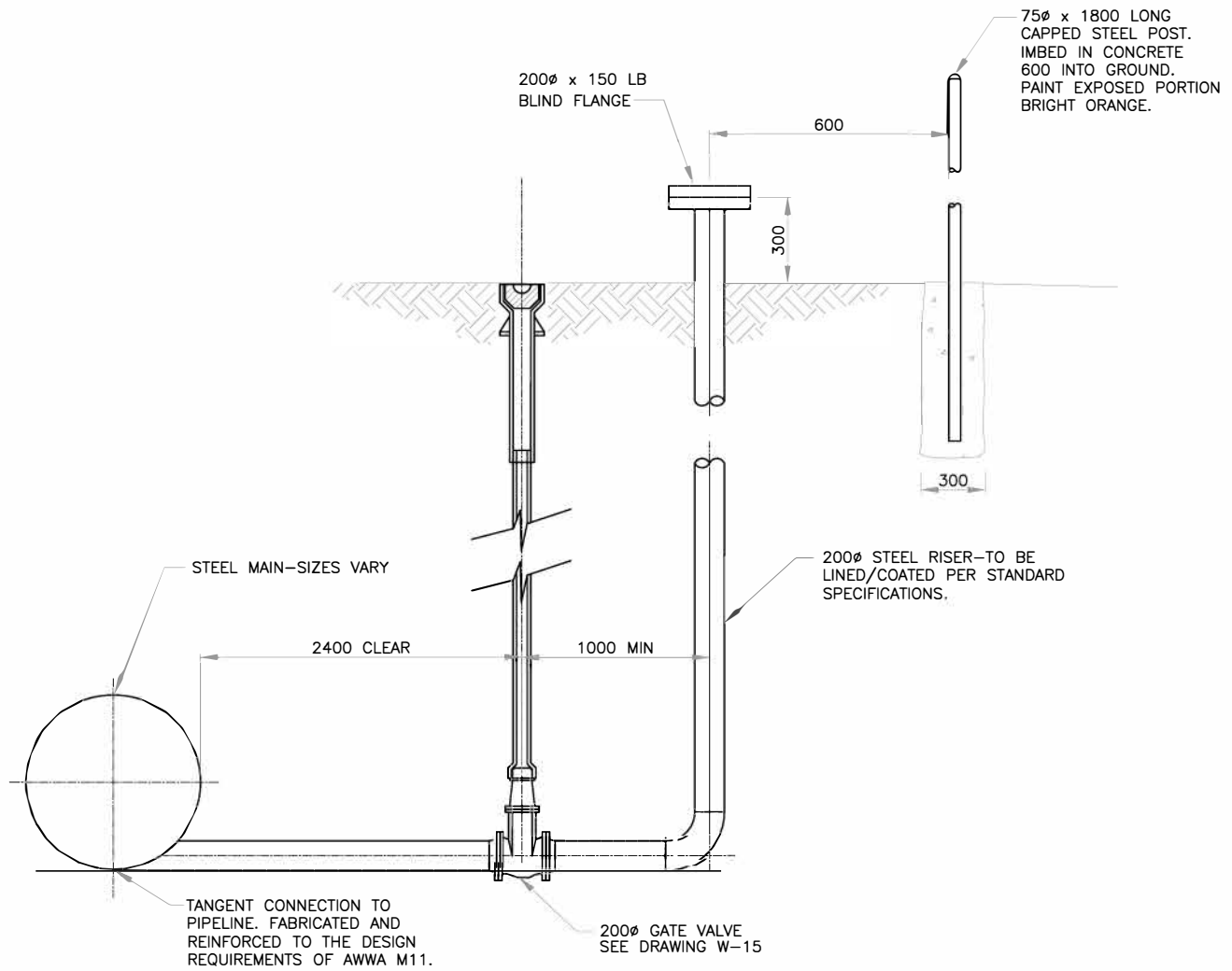
2) REFER TO SPECIFICATIONS SECTION 02516 FOR PIPING, VALVING AND INSTALLATION REQUIREMENTS

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
MAR/98	COMBINED W-15 AND W-17	SB
NOV/98	REVISED AND RENUMBERED	SB
SEP/99	GENERAL REVISION	SB
OCT/02	DEADEND REV. TO NEW FLUSHOUT	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Multiple Service and Deadend Watermain Connections		
Designed By:		Approved:
Date	Scale	W-19
JUL/02	NTS	
Digital File: Stdw-19.dwg		

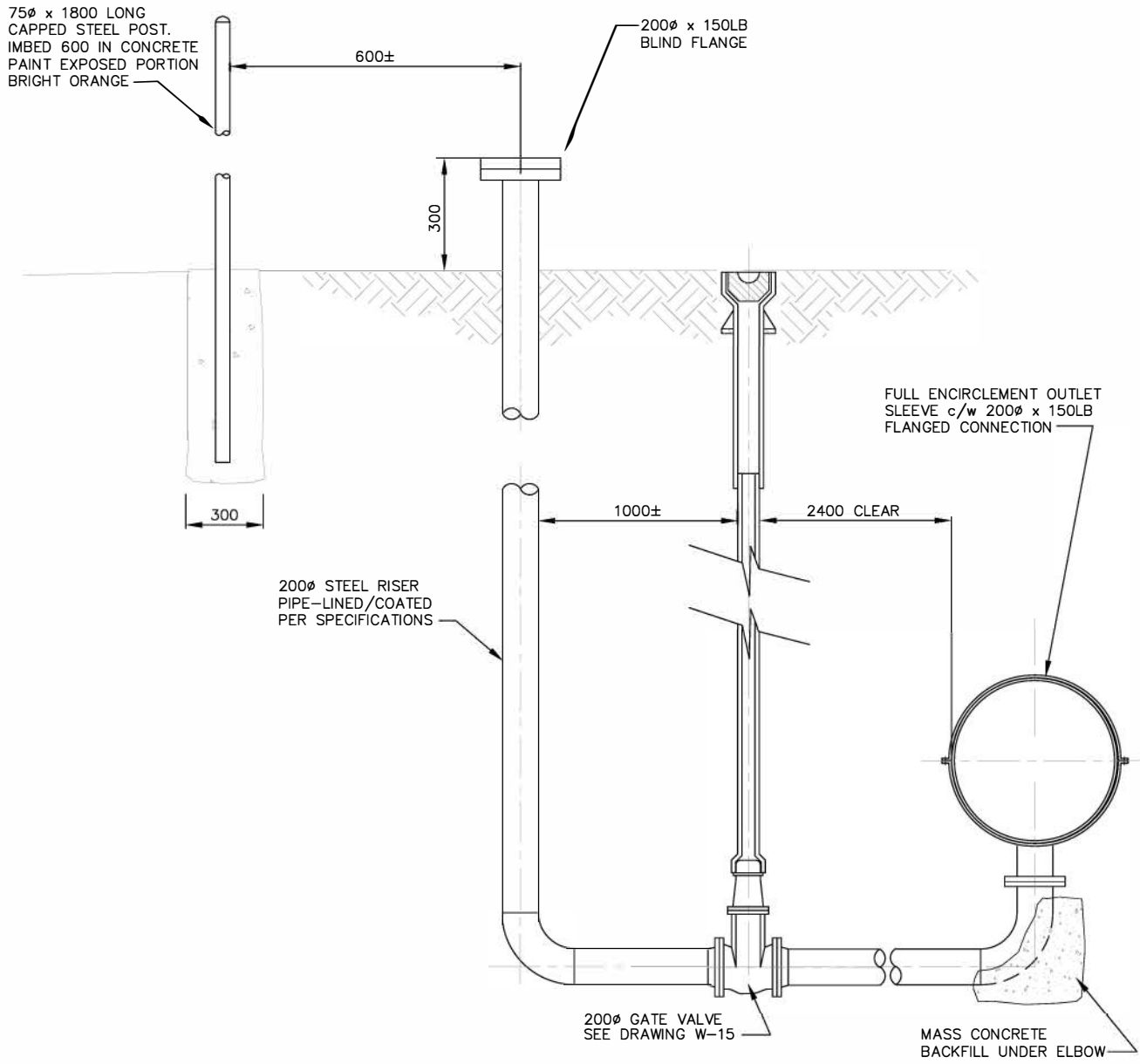


NOTES:

- 1) ALL MATERIALS/INSTALLATION TO BE IN ACCORDANCE WITH CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS FOR WATERMAIN.
- 2) REPAIR ALL LININGS/COATINGS DAMAGED BY CUTTING/WELDING OPERATIONS

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By	CONSTRUCTION STANDARDS		
JAN/97	REISSUED	SB			
SEP/97	MINOR REVISIONS	SB			
NOV/98	RENUMBERED FROM W-19	SB			
AUG/10	TITLE BLOCK	JJA			
			Blowoff from Steel Pipeline		
			Designed By:	Approved:	
			Date	Scale	W-23
			MAY/94	NTS	
			Digital File:	Stdw-23.dwg	



NOTE

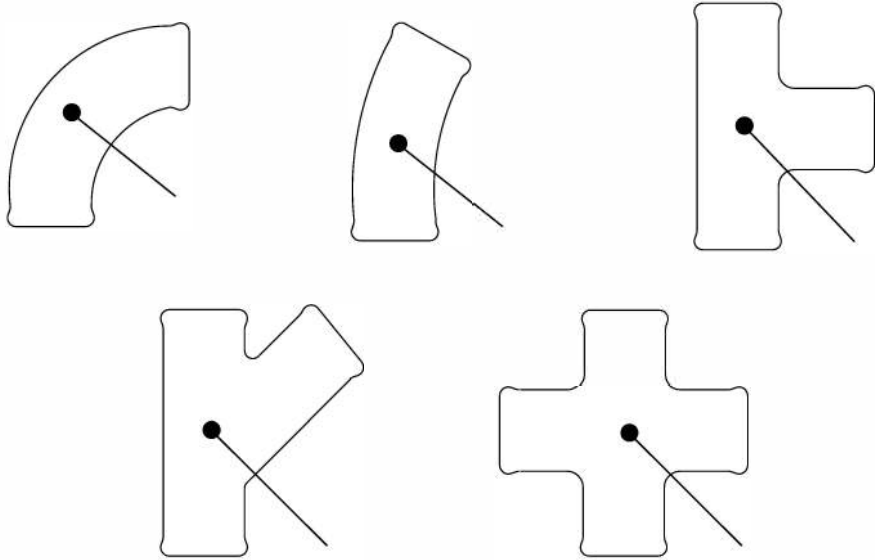
- 1) ALL MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS.
- 2) REPAIR ALL LININGS/COATINGS DAMAGED AS A RESULT OF CUTTING/WELDING OPERATIONS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

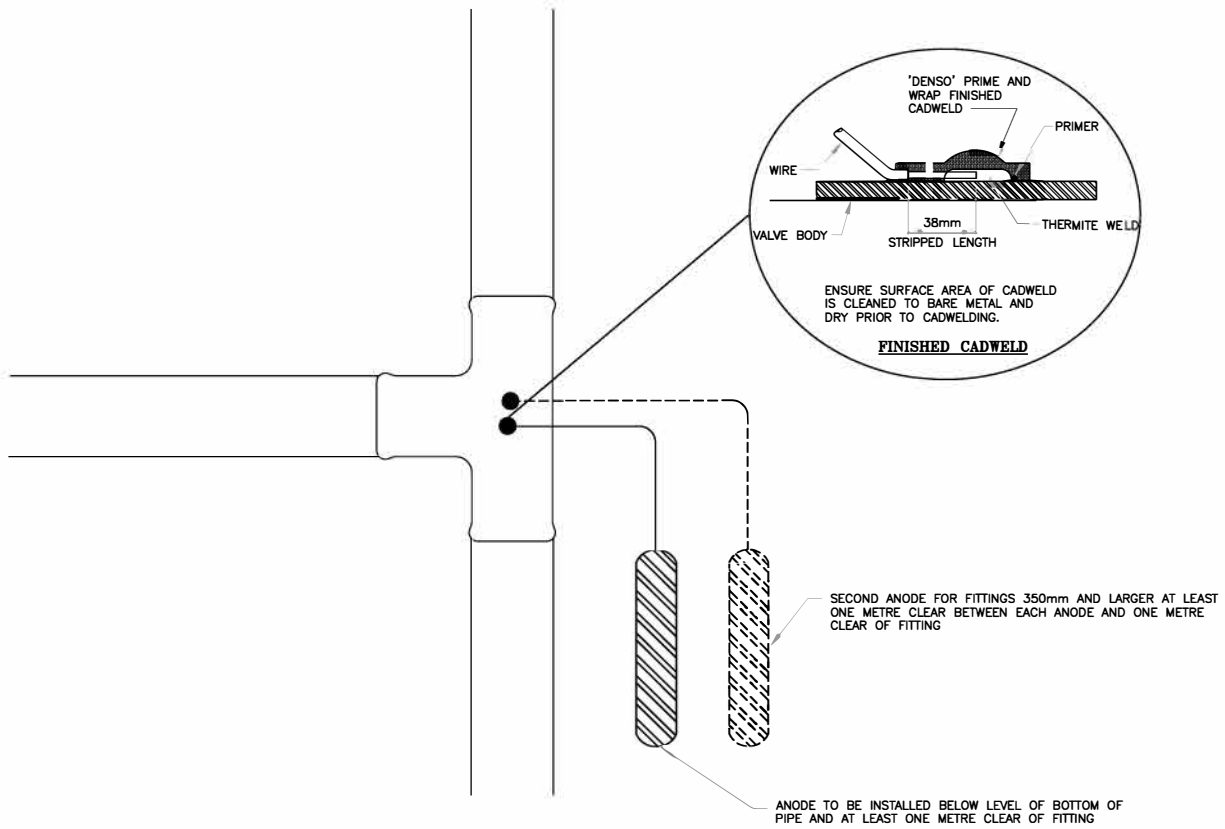
Date	Revisions	By
JAN/97	REISSUED	SB
SEP/97	MINOR REVISIONS	SB
NOV/98	RENUMBERED FROM W-19A	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Drain/Blowoff Connection from Non-Steel Pipelines		
Designed By:	Approved:	
Date MAY/94	Scale NTS	W-24
Digital File: Stdw-24.dwg		



CAST IRON FITTING—CADWELD LOCATION



NOTE:

—FITTINGS 300mm AND SMALLER REQUIRE A SINGLE ANODE. FITTINGS 350mm AND LARGER REQUIRE TWO (2) ANODES WHICH MUST BE LOCATED AS DESCRIBED AND ALSO SPACED AT LEAST ONE METRE APART.

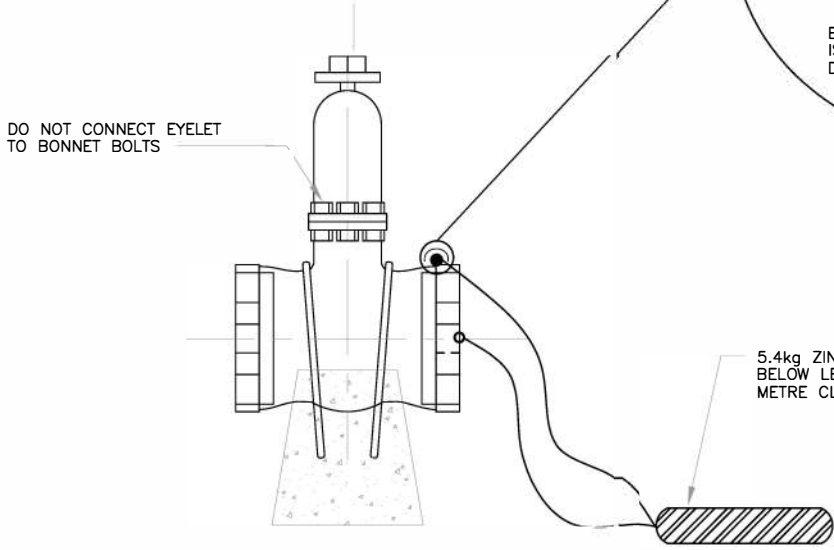
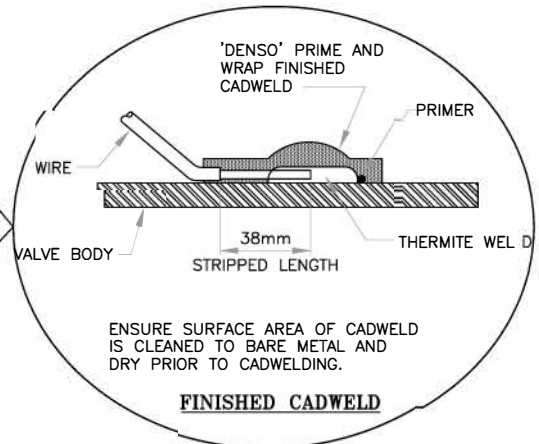
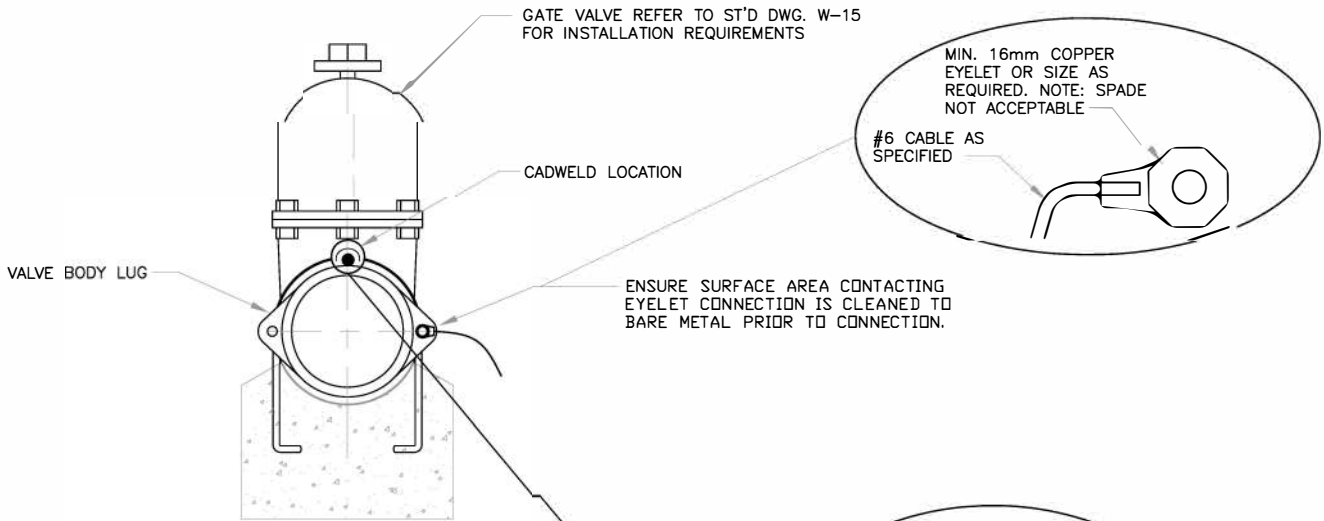
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
MAY/03	ISSUED AS STANDARD	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS
Cathodic Protection
of Cast Iron Fittings

Designed By:		Approved:	
Date	Scale	W-25	
MAR/03	NTS		
Digital File: stdw-25.dwg			



NOTE:

- VALVES 300mm AND SMALLER REQUIRE A SINGLE ANODE. VALVES 350mm AND LARGER REQUIRE TWO (2) ANODES WHICH MUST BE LOCATED AS DESCRIBED AND ALSO SPACED AT LEAST ONE METRE APART.
- ANODE LEAD ATTACHMENT TO THE VALVE MAY BE MADE BY EITHER EYELET OR CADWELD. BOTH OPTIONS ARE DEPICTED ON THIS DRAWING.
- FOR VALVES 350mm AND LARGER THE ANODE LEADS MAY BE CONNECTED TO A SINGLE POINT IF EYELET CONNECTION IS USED. IF CADWELD IS USED THEN A CADWELD CONNECTION MUST BE PROVIDED FOR EACH LEAD

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
MAY/03	ISSUED AS STANDARD	SB
AUG/10	TITLE BLOCK	JJA



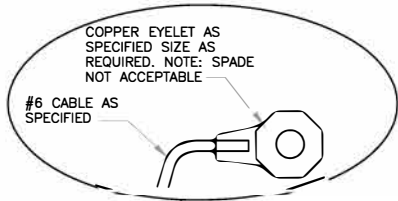
CONSTRUCTION STANDARDS

Cathodic Protection of Gate Valves

Designed By : _____ Approved: _____

Date: MAR/03 Scale: NTS **W-26**

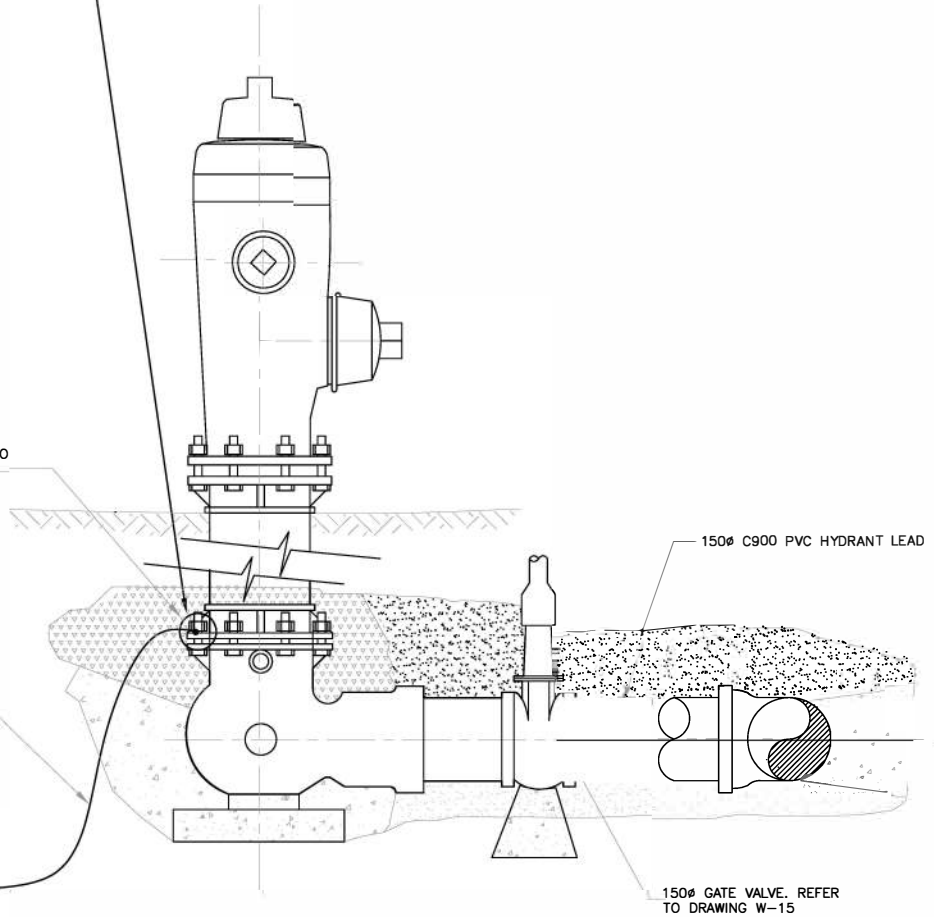
Digital File: stdw-26.dw g



ENSURE CONTACT SURFACES ARE CLEANED TO BARE SHINY METAL PRIOR TO ATTACHMENT

MINIMUM 3 METRE LONG #6 DIRECT BURIAL CABLE PER SPECIFICATIONS

ZINC ANODE PER SPECIFICATIONS. INSTALL BELOW LEVEL OF HYDRANT AND AT LEAST ONE METRE CLEAR OF PIPING.



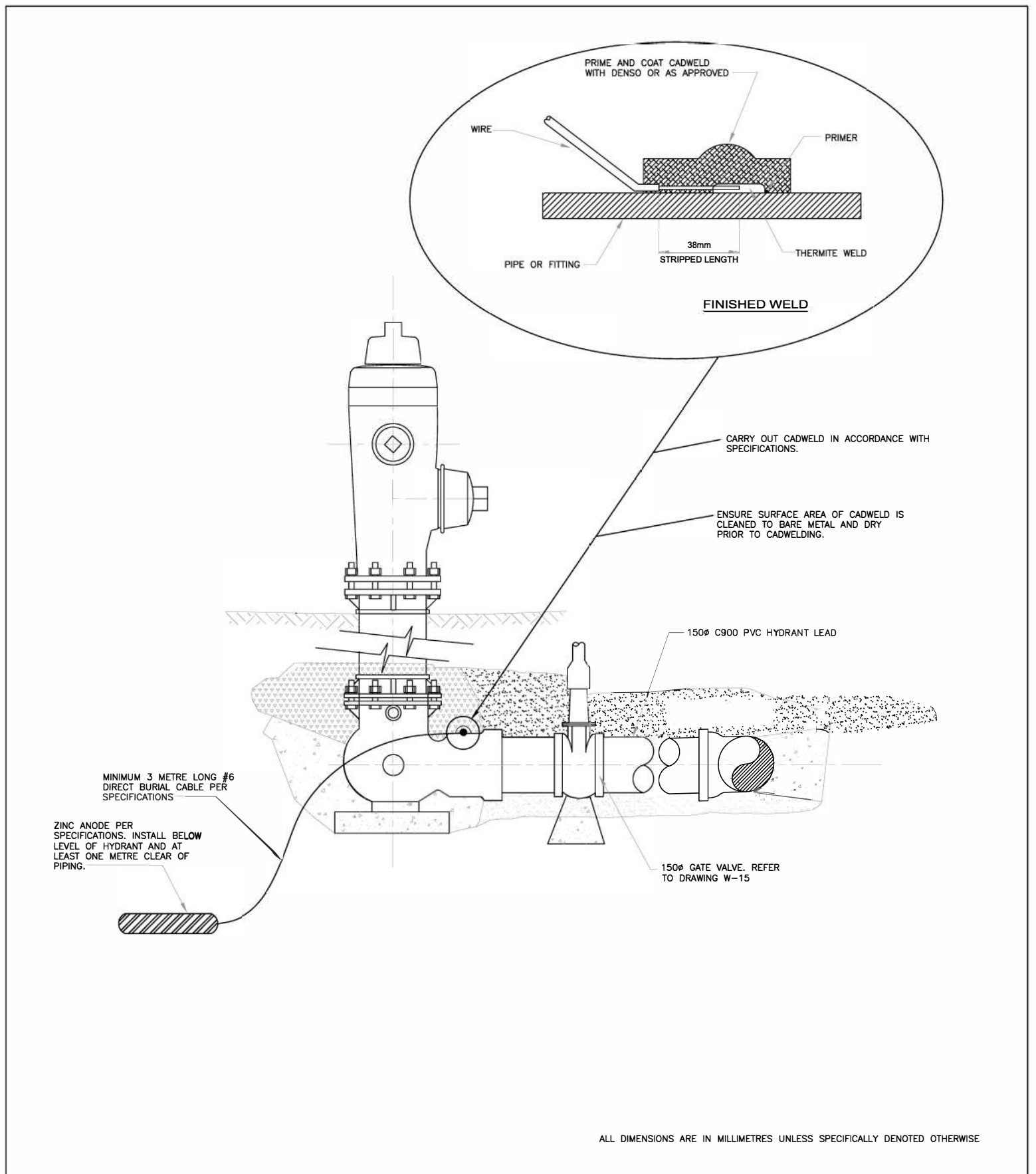
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
MAY/03	ISSUED AS STANDARD	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS
**Cathodic Protection of Hydrant
 Using Eyelet Connection**

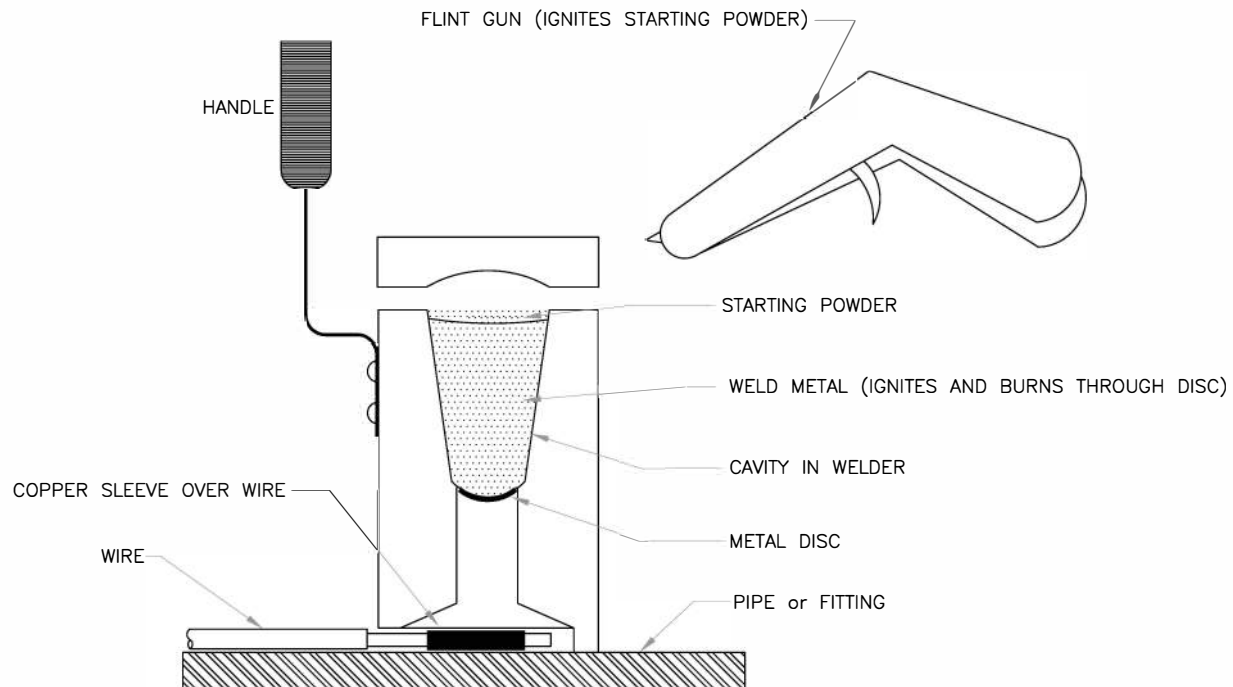
Designed By:		Approved:	
Date	Scale	W-27	
MAR/03	NTS		
Digital File: stdw-27.dwg			



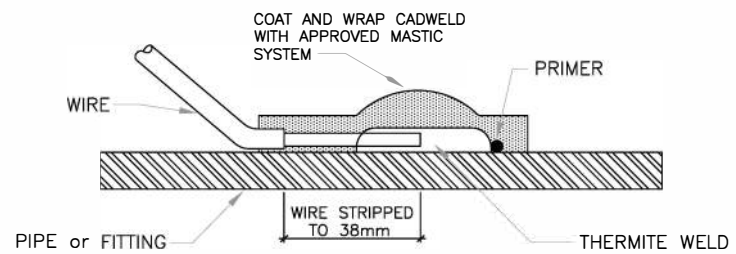
Date	Revisions	By
MAY/03	ISSUED AS STANDARD	SB
AUG/10	TITLE BLOCK	JJA



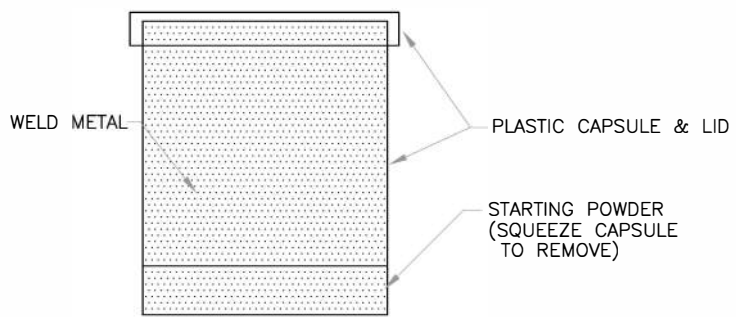
CONSTRUCTION STANDARDS		
Cathodic Protection of Hydrant using Cadweld Connection		
Designed By:		Approved:
Date	Scale	W-28
MAR/03	NTS	
Digital File: stdw-28.dwg		



CADWELD



FINISHED WELD

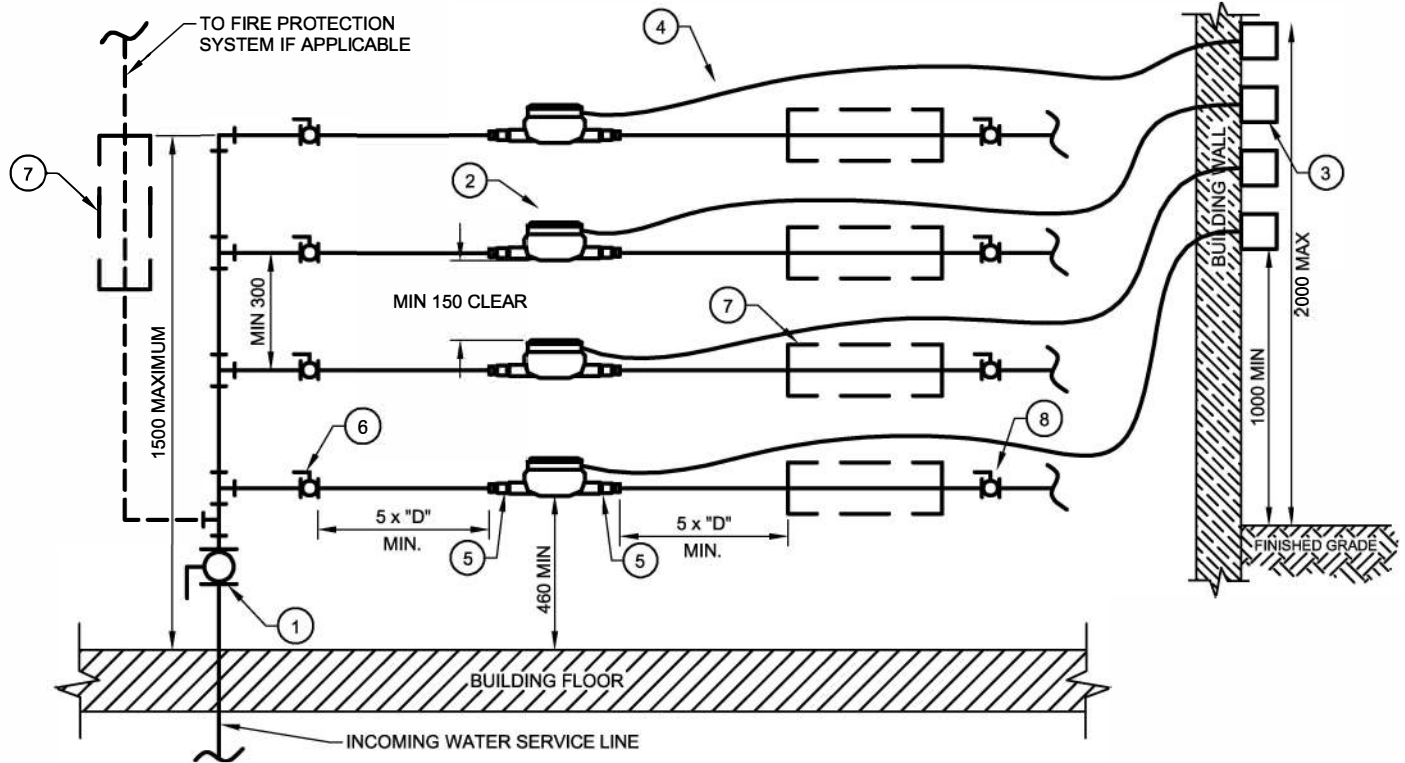


WELD METAL CAPSULE

Date	Revisions	By
MAY/03	ISSUED AS STANDARD	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Typical Cadweld Description and Details		
Designed By:		Approved:
Date	Scale	W-29
mar/03	NTS	
Digital File: stdw-29.dwg		



LEGEND:

- ① ISOLATION VALVE - REQUIRED IF SERVING A FIRE PROTECTION SYSTEM. MUST BE THE SAME SIZE AS INCOMING WATER SERVICE.
- ② WATER METER SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ③ MIU (TRANSMITTER) MODULE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ④ WIRING OPTIONS
 OPTION 1: OWNER SUPPLIED AND INSTALLED MIU WIRING. LEAVE MINIMUM 0.6M (2FT) SLACK WIRE AT BOTH METER AND MIU MODULE LOCATIONS.
 OPTION 2: OWNER SUPPLIED AND INSTALLED CONDUIT FROM LOCATION OF METER(S) TO LOCATION OF MIU(S). CITY TO SUPPLY AND INSTALL MIU WIRING.
- ⑤ WATER METER ADAPTERS INSTALLED BY OWNER.
- ⑥ FACTORY LOCKABLE BALL VALVE. SAME SIZE AS INDIVIDUAL SERVICE LINE. LOCK WILL BE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ⑦ BACKFLOW PREVENTION ASSEMBLY IF SO DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR.
- ⑧ ISOLATING BALL VALVE TO BE THE SAME SIZE AS THE SERVICE LINE.

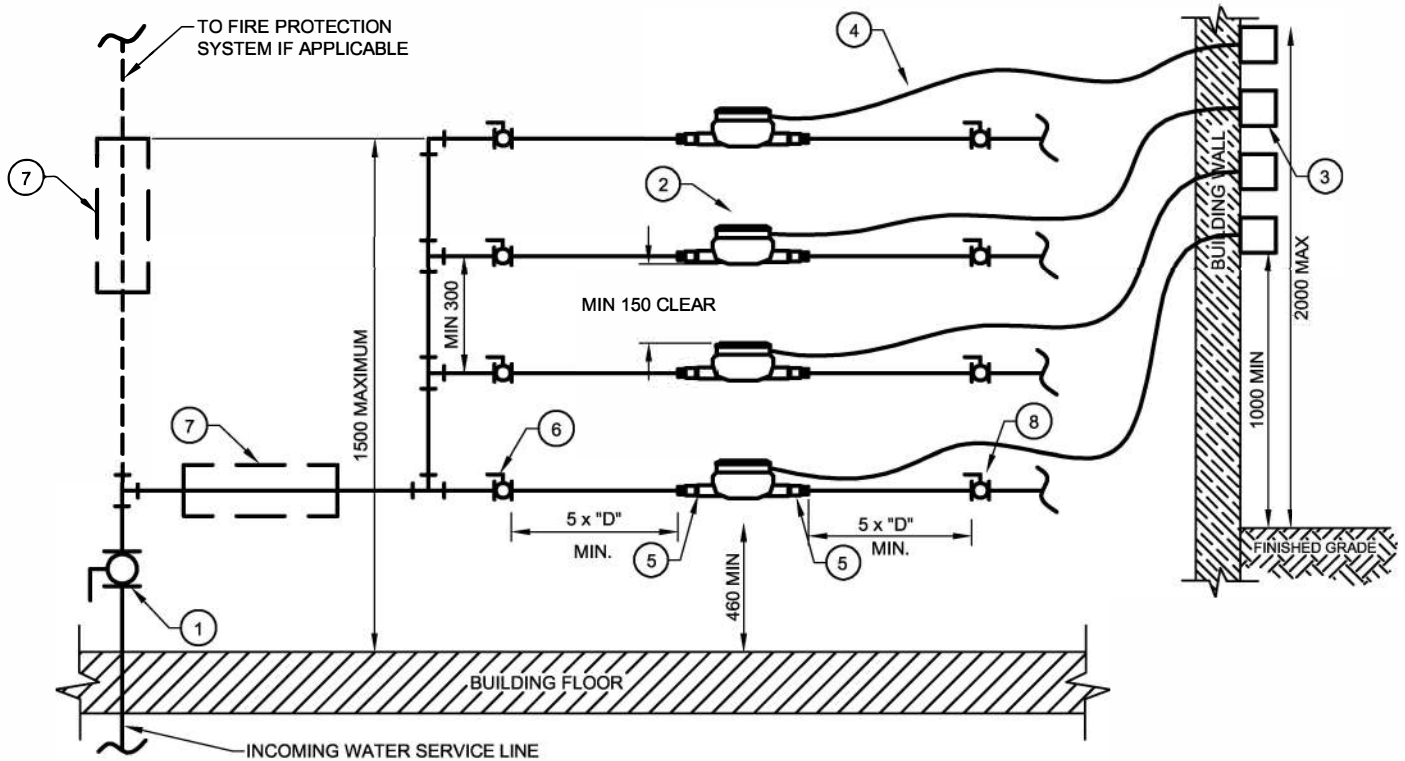
NOTES:

1. SEE SPECIFICATION SECTION 15408 IN CONJUNCTION WITH THIS DRAWING.
2. FOR ADDITIONAL INFORMATION, CLARIFICATION, OR DEVIATION FROM THE REQUIREMENTS AS PER THESE STANDARDS, CONTACT THE WATER METER OR CROSS CONNECTION CONTROL PROGRAMS PRIOR TO INSTALLATION. TO CONTACT THESE PROGRAMS SUBMIT A SERVICE REQUEST TO (306) 777-7000.

Date	Revisions	By
FEB/24	MINOR REVISIONS	MG
MAR/24	NOTES/LEGEND REVISED	MG
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTES / DIMENSIONS ADDED	BZ
FEB/17	DIMENSIONS ADDED	TY
OCT/22	REQUIREMENTS REVISION	MG
OCT/23	METER TYPE AND MINOR REVISIONS	MG



CONSTRUCTION STANDARDS		
Water Meter/Backflow Preventer Installation Requirements for Multi Metered Locations - Alt-1		
Designed By:	Kevin Lang	Approved: Brent Rostad
Date	SEP/23	Scale NTS
Digital File:	Stdw-30.dwg	W-30



LEGEND:

- ① ISOLATION VALVE - REQUIRED IF SERVING A FIRE PROTECTION SYSTEM. MUST BE THE SAME SIZE AS THE INCOMING WATER SERVICE.
- ② WATER METER SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ③ MIU (TRANSMITTER) MODULE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ④ WIRING OPTIONS
 OPTION 1: OWNER SUPPLIED AND INSTALLED MIU WIRING. ONE WIRE REQUIRED FOR EACH METER. LEAVE MINIMUM 0.6M (2FT) SLACK WIRE AT BOTH METER AND MIU MODULE LOCATIONS.
 OPTION 2: OWNER SUPPLIED AND INSTALLED CONDUIT FROM LOCATION OF METER(S) TO LOCATION OF MIU(S). CITY TO SUPPLY AND INSTALL MIU WIRING.
- ⑤ WATER METER ADAPTERS INSTALLED BY OWNER.
- ⑥ FACTORY LOCKABLE BALL VALVE. SAME SIZE AS INDIVIDUAL SERVICE LINE. LOCK WILL BE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ⑦ BACKFLOW PREVENTION ASSEMBLY IF SO DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR.
- ⑧ ISOLATING BALL VALVE TO BE THE SAME SIZE AS THE SERVICE LINE.

NOTES:

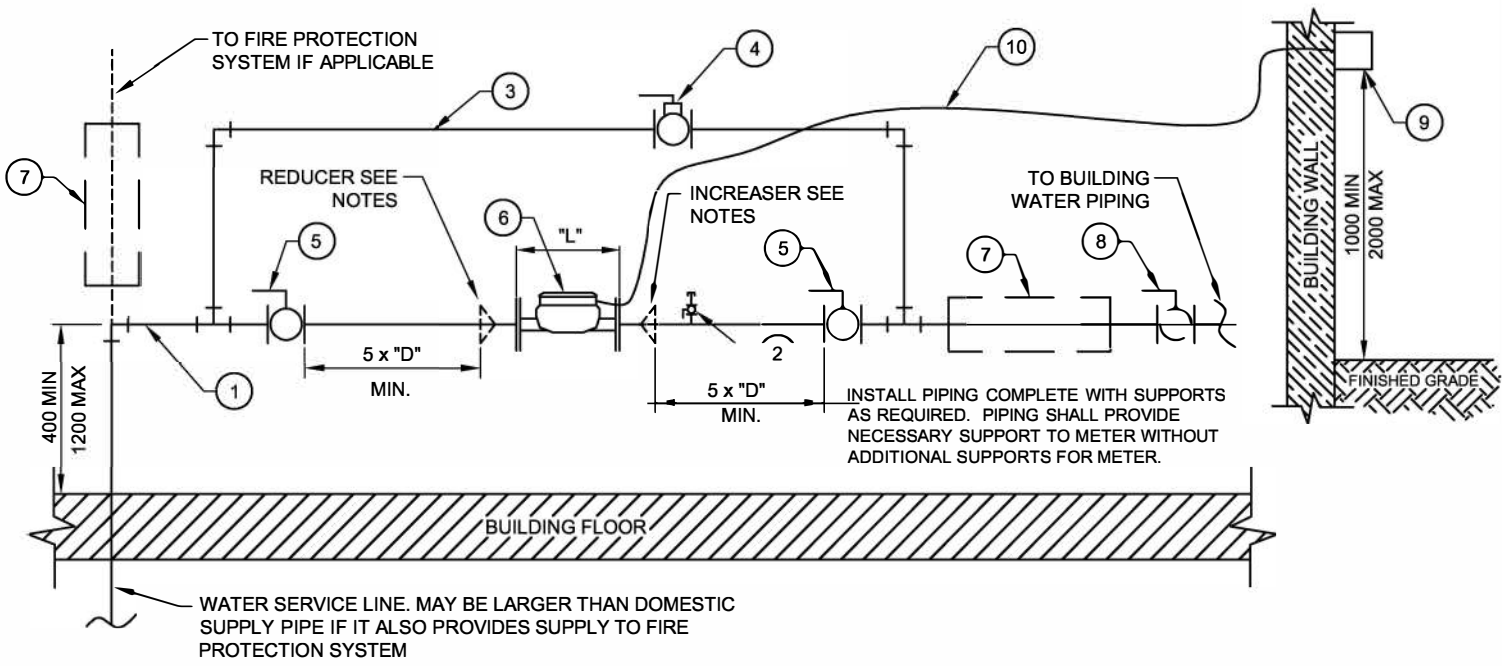
1. SEE SPECIFICATION SECTION 15408 IN CONJUNCTION WITH THIS DRAWING.
2. FOR ADDITIONAL INFORMATION, CLARIFICATION, OR DEVIATION FROM THE REQUIREMENTS AS PER THESE STANDARDS, CONTACT THE WATER METER OR CROSS CONNECTION CONTROL PROGRAMS PRIOR TO INSTALLATION. TO CONTACT THESE PROGRAMS SUBMIT A SERVICE REQUEST TO (306) 777-7000.

Date	Revisions	By
FEB/24	MINOR REVISIONS	MG
MAR/24	NOTES/LEGEND REVISED	MG
OCT/05	NOTES/LEGEND REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTE CHANGES, UPDATE DETAIL/LEGEND	BZ
OCT/22	REQUIREMENTS REVISION	MG
OCT/23	METER TYPE AND MINOR REVISIONS	MG



CONSTRUCTION STANDARDS
**Water Meter/Backflow Preventer
 Installation Requirements
 for Multi Metered Locations - Alt-2**

Designed By: Kevin Lang		Approved: Brent Rostad	
Date Feb. 24, 2016	Scale NTS	W-31	
Digital File: Stdw-31.dwg			



LEGEND:

- ① DOMESTIC WATER SUPPLY PIPE. ISOLATING AND BYPASS VALVING SHOWN MUST BE THE SAME SIZE AS THE INCOMING WATER SERVICE OR THE DOMESTIC WATER SUPPLY PIPE - WHICHEVER IS SMALLER.
- ② 12.5MM CONNECTION c/w BALL VALVE AND THREAD PLUG. ORIENT CONNECTIONS AS SHOWN.
- ③ METER BYPASS LINE. THIS PIPING MAY BE ABOVE OR BELOW OR TO EITHER SIDE OF THE METER BUT WHEN ABOVE MUST BE SPACED A MINIMUM OF 500mm ABOVE THE METER REGISTER HEAD.
- ④ METER BYPASS VALVE. THIS VALVE IS TO BE A BALL STYLE VALVE AND MUST BE EQUIPPED WITH A FACTORY SUPPLIED QUARTER TURN, LOCKABLE LEVER ACTUATOR.
- ⑤ METER ISOLATING VALVES - 2 REQUIRED AT LOCATIONS SHOWN. VALVES TO BE BALL STYLE WITH QUARTER TURN LEVER ACTUATOR. IF A FIRE PROTECTION SYSTEM IS CONNECTED TO THE WATER SERVICE LINE THE ISOLATING VALVE UPSTREAM OF THE METER MUST BE A LOCKABLE TYPE.
- ⑥ WATER METER SUPPLIED AND INSTALLED BY THE CITY OF REGINA. WATER METER ADAPTERS INSTALLED BY OWNER.
- ⑦ BACKFLOW PREVENTION ASSEMBLY c/w ISOLATING VALVES AS DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR.
- ⑧ OPTIONAL BALL TYPE ISOLATING VALVE FOR BACKFLOW PREVENTER.
- ⑨ MIU (TRANSMITTER) MODULE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ⑩ WIRING OPTIONS
 OPTION 1: OWNER SUPPLIED AND INSTALLED MIU WIRING. ONE WIRE REQUIRED FOR EACH METER. WIRE TYPE SHALL BE 3 CONDUCTOR, SOLID #22 AWG WITH BLACK, RED, AND GREEN COLOUR CONDUCTORS. LEAVE MINIMUM 0.6M (2FT) SLACK WIRE AT BOTH METER AND MIU MODULE LOCATIONS.
 OPTION 2: OWNER SUPPLIED AND INSTALLED 21MM (3/4") CONDUIT FROM LOCATION OF METER(S) TO LOCATION OF MIU(S) (ONE CONDUIT REQUIRED PER MAX 5 METERS). CITY TO SUPPLY AND INSTALL MIU WIRING.

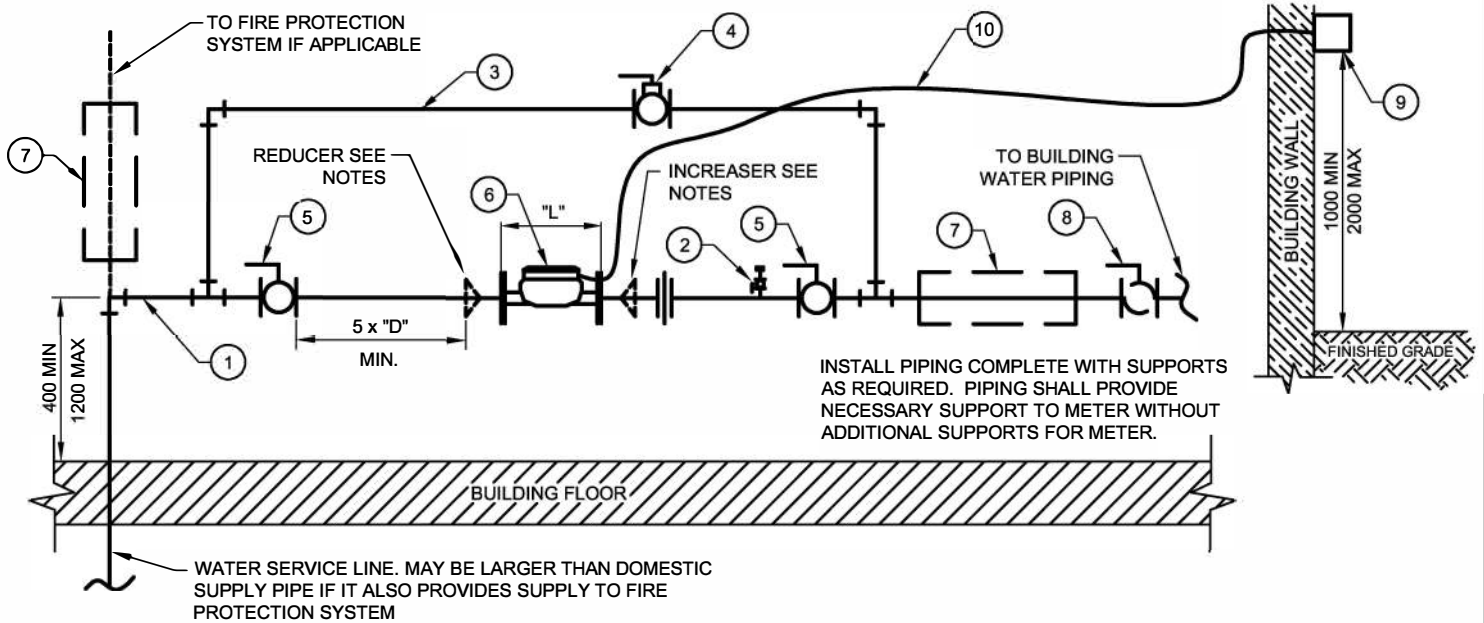
NOTES:

- 1. SEE SECTION 15408 IN CONJUNCTION WITH THIS DRAWING.
- 2. IF METER SIZE DOES NOT MATCH DOMESTIC WATER SUPPLY PIPE SIZE, PROVIDE AND INSTALL ALL REQUIRED REDUCERS AND INCREASERS. NOTE THAT USE OF THREADED REDUCING BUSHINGS IS NOT ALLOWED. REDUCERS AND INCREASERS TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER METER.
- 3. "D" IS THE NOMINAL DIAMETER OF THE DOMESTIC WATER SUPPLY PIPE.
- 4. "L" IS THE LENGTH OF A FULL DOMESTIC PIPE SIZE WATER METER. OVERALL PIPE RUN PROVIDED MUST INCLUDE THIS LENGTH.
- 5. FOR ADDITIONAL INFORMATION, CLARIFICATION, OR DEVIATION FROM THE REQUIREMENTS AS PER THESE STANDARDS, CONTACT THE WATER METER OR CROSS CONNECTION CONTROL PROGRAMS PRIOR TO INSTALLATION. TO CONTACT THESE PROGRAMS SUBMIT A SERVICE REQUEST TO (306) 777-7000.

Date	Revisions	By
FEB/24	MINOR REVISIONS	MG
MAR/24	NOTES/LEGEND REVISED	MG
OCT/05	NOTES REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTE CHANGES, UPDATE DETAIL/LEGEND	BZ
OCT/22	REQUIREMENTS REVISION	MG
OCT/23	METER TYPE AND MINOR REVISIONS	MG



CONSTRUCTION STANDARDS		
Water Meter Installation for 40mm or 50mm Domestic Supply Pipe Sizes		
Designed By:	Approved:	
Kevin Lang	Brent Rostad	
Date	Scale	W-32
Apr. 05, 2017	NTS	
Digital File: Stdw-32.dwg		



LEGEND:

- ① DOMESTIC WATER SUPPLY PIPE. ISOLATING AND BYPASS VALVING SHOWN MUST BE THE SAME SIZE AS THE INCOMING WATER SERVICE OR THE DOMESTIC WATER SUPPLY PIPE - WHICHEVER IS SMALLER.
- ② 12.5MM CONNECTION c/w BALL VALVE AND THREAD PLUG. ORIENT CONNECTIONS AS SHOWN.
- ③ METER BYPASS LINE. THIS PIPING MAY BE ABOVE OR BELOW OR TO EITHER SIDE OF THE METER BUT WHEN ABOVE MUST BE SPACED A MINIMUM OF 500mm ABOVE THE METER REGISTER HEAD.
- ④ METER BYPASS VALVE. THIS VALVE IS TO BE A BALL STYLE VALVE AND MUST BE EQUIPPED WITH A FACTORY SUPPLIED QUARTER TURN, LOCKABLE LEVER ACTUATOR.
- ⑤ METER ISOLATING VALVES - 2 REQUIRED AT LOCATIONS SHOWN. VALVES TO BE BALL STYLE WITH QUARTER TURN LEVER ACTUATOR. IF A FIRE PROTECTION SYSTEM IS CONNECTED TO THE WATER SERVICE LINE THE ISOLATING VALVE UPSTREAM OF THE METER MUST BE A LOCKABLE TYPE.
- ⑥ WATER METER SUPPLIED AND INSTALLED BY THE CITY OF REGINA. WATER METER ADAPTERS INSTALLED BY OWNER.
- ⑦ BACKFLOW PREVENTION ASSEMBLY c/w ISOLATING VALVES AS DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR.
- ⑧ OPTIONAL BALL TYPE ISOLATING VALVE FOR BACKFLOW PREVENTER.
- ⑨ MIU (TRANSMITTER) MODULE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ⑩ WIRING OPTIONS
 OPTION 1: OWNER SUPPLIED AND INSTALLED MIU WIRING. ONE WIRE REQUIRED FOR EACH METER. LEAVE MINIMUM 0.6M (2FT) SLACK WIRE AT BOTH METER AND MIU MODULE LOCATIONS.
 OPTION 2: OWNER SUPPLIED AND INSTALLED CONDUIT FROM LOCATION OF METER(S) TO LOCATION OF MIU(S). CITY TO SUPPLY AND INSTALL MIU WIRING.

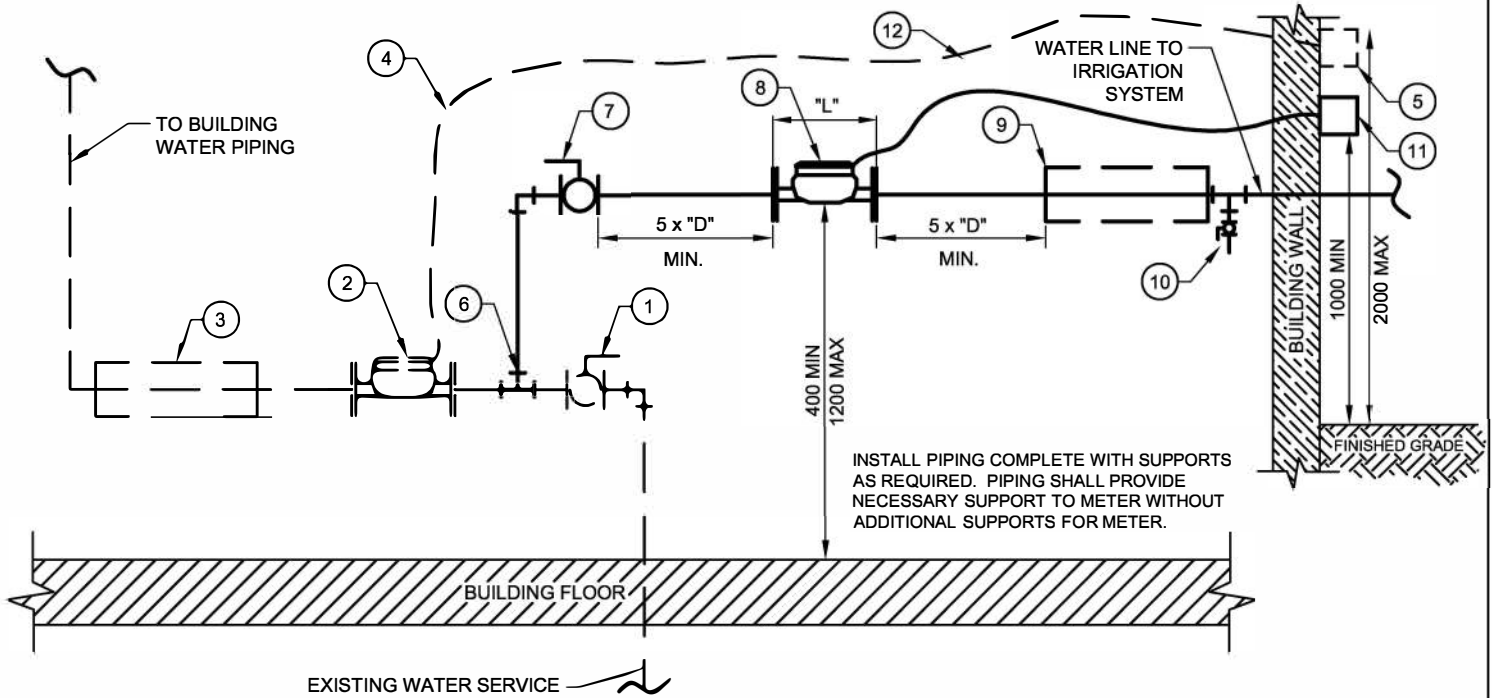
NOTES:

- 1. SEE SECTION 15408 IN CONJUNCTION WITH THIS DRAWING.
- 2. IF METER SIZE DOES NOT MATCH DOMESTIC WATER SUPPLY PIPE SIZE, PROVIDE AND INSTALL ALL REQUIRED REDUCERS AND INCREASERS. NOTE THAT USE OF THREADED REDUCING BUSHINGS IS NOT ALLOWED. REDUCERS AND INCREASERS TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER METER.
- 3. "D" IS THE NOMINAL DIAMETER OF THE DOMESTIC WATER SUPPLY PIPE.
- 4. "L" IS THE LENGTH OF A FULL DOMESTIC PIPE SIZE WATER METER. OVERALL PIPE RUN PROVIDED MUST INCLUDE THIS LENGTH.
- 5. FOR ADDITIONAL INFORMATION, CLARIFICATION, OR DEVIATION FROM THE REQUIREMENTS AS PER THESE STANDARDS, CONTACT THE WATER METER OR CROSS CONNECTION CONTROL PROGRAMS PRIOR TO INSTALLATION. TO CONTACT THESE PROGRAMS SUBMIT A SERVICE REQUEST TO (306) 777-7000.

Date	Revisions	By
FEB/24	MINOR REVISIONS	MG
MAR/24	NOTES/LEGEND REVISED	MG
OCT/05	NOTES REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTE CHANGES, UPDATE DETAIL/LEGEND	BZ
OCT/22	REQUIREMENTS REVISION	MG
OCT/23	METER TYPE AND MINOR REVISIONS	MG



CONSTRUCTION STANDARDS		
Water Meter Installation for 75mm or 100mm Domestic Supply Pipe Sizes		
Designed By:	Approved:	
Kevin Lang	Brent Rostad	
Date	Scale	W-33
Apr. 05, 2017	NTS	
Digital File:	Stdw-33.dwg	



LEGEND:

- ① EXISTING SHUTOFF VALVE.
- ② EXISTING WATER METER.
- ③ EXISTING BACKFLOW PREVENTION ASSEMBLY.
- ④ EXISTING MIU WIRING.
- ⑤ EXISTING MIU (TRANSMITTER).
- ⑥ NEW IRRIGATION SUPPLY CONNECTION. THIS CONNECTION MAY BE MADE ON THE UPSTREAM SIDE OF THE EXISTING SHUTOFF VALVE IF THERE IS NOT SUFFICIENT ROOM TO ALLOW THE PREFERRED CONNECTION SHOWN.
- ⑦ NEW LOCKABLE SHUTOFF VALVE - MUST BE THE SAME SIZE AS THE WATER SERVICE LINE.
- ⑧ WATER METER SUPPLIED AND INSTALLED BY THE CITY OF REGINA. WATER METER ADAPTERS INSTALLED BY OWNER.
- ⑨ BACKFLOW PREVENTION ASSEMBLY c/w ISOLATING VALVES AS DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR.
- ⑩ BLOWOFF VALVE MUST BE INSTALLED ON THE DOWNSTREAM (CUSTOMER SIDE) OF THE WATER METER.
- ⑪ MIU (TRANSMITTER) MODULE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ⑫ MIU WIRING SUPPLIED AND INSTALLED BY OWNER. ONE WIRE REQUIRED FOR EACH METER. LEAVE MINIMUM 0.6M (24") SLACK WIRE AT BOTH METER AND MIU MODULE LOCATIONS.

NOTES:

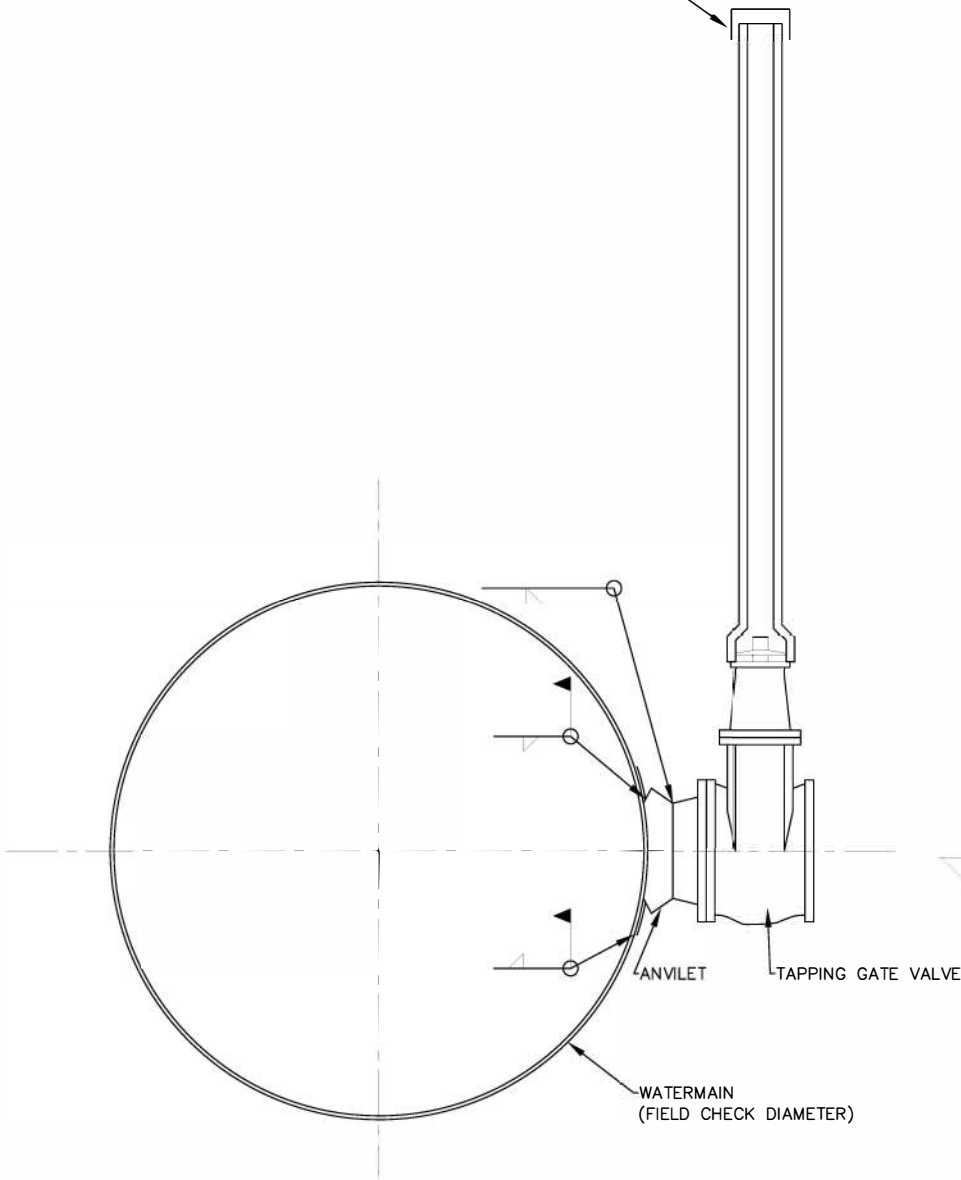
1. SEE SECTION 15408 IN CONJUNCTION WITH THIS DRAWING.
2. IF METER SIZE DOES NOT MATCH DOMESTIC WATER SUPPLY PIPE SIZE, PROVIDE AND INSTALL ALL REQUIRED REDUCERS AND INCREASERS. NOTE THAT USE OF THREADED REDUCING BUSHINGS IS NOT ALLOWED. REDUCERS AND INCREASERS TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER METER.
3. "D" IS THE NOMINAL DIAMETER OF THE DOMESTIC WATER SUPPLY PIPE.
4. "L" IS THE LENGTH OF A FULL DOMESTIC PIPE SIZE WATER METER. OVERALL PIPE RUN PROVIDED MUST INCLUDE THIS LENGTH.
5. APPLICATION FOR SUMMER WATER SERVICE MAY BE MADE IN PERSON ON THE MAIN FLOOR OF CITY HALL OR BY CALLING (306) 777-7000. THE WATER METER IS INSTALLED AFTER THE APPLICATION PROCESS.
6. FOR ADDITIONAL INFORMATION, CLARIFICATION, OR DEVIATION FROM THE REQUIREMENTS AS PER THESE STANDARDS, CONTACT THE WATER METER OR CROSS CONNECTION CONTROL PROGRAMS PRIOR TO INSTALLATION. TO CONTACT THESE PROGRAMS SUBMIT A SERVICE REQUEST TO (306) 777-7000.

Date	Revisions	By
MAR/24	NOTES/LEGEND REVISED	MG
MAR/10	NOTES REVISED	DM
AUG/10	TITLE BLOCK	JJA
FEB/17	NOTE CHANGES, UPDATE DETAIL/LEGEND	TY
OCT/22	REQUIREMENTS REVISION	MG
OCT/23	METER TYPE AND MINOR REVISIONS	MG
FEB/24	DRAWING REVISED	MG

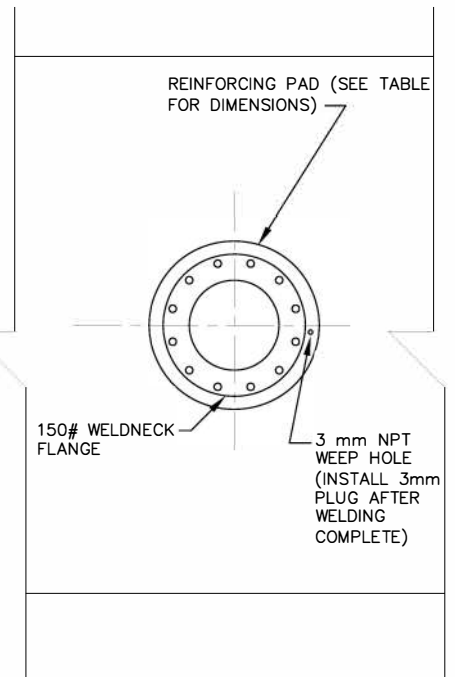


CONSTRUCTION STANDARDS		
Water Meter Installation for Summer Service Irrigation Meters		
Designed By: Kevin Lang	Approved: Brent Rostad	
Date Feb 24, 2017	Scale NTS	W-34
Digital File: Stdw-34.dwg		

CUT OFF AND CAP
VALVE BOX 600 mm
BELOW SURFACE



SECTION VIEW



**FRONT VIEW
(VALVE NOT SHOWN)**

REINFORCING PADS			
MATERIAL: MINIMUM 6.4 mm CSA G40.21/M GRADE 350W			
PIPE SIZE	REINFORCING PAD		
	610mm MAIN	914mm MAIN	1067mm MAIN
300 mm	620 O.D.	650 O.D.	610 O.D.
350 mm	680 O.D.	710 O.D.	670 O.D.
400 mm	770 O.D.	810 O.D.	750 O.D.
450 mm	SEE NOTE 4	880 O.D.	840 O.D.
500 mm	SEE NOTE 4	970 O.D.	910 O.D.
610 mm	N/A	1150 O.D.	1090 O.D.

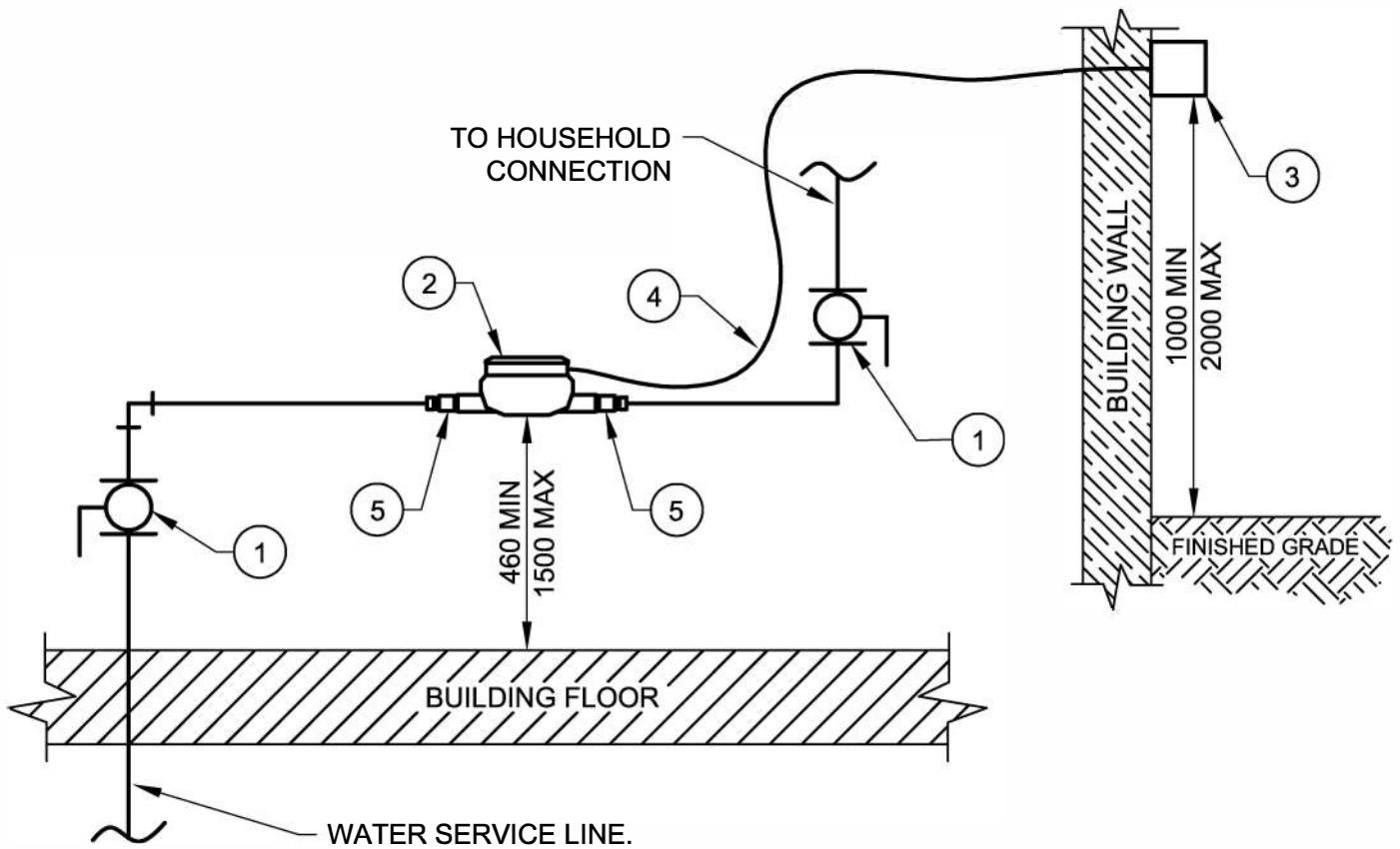
NOTES:

1. REMOVE EXISTING COATING ON MAIN PRIOR TO FITTING CONNECTION.
2. REPLACE COATING ON MAIN AND CONNECTION FITTING WITH SIMILAR TYPE AFTER WELDING COMPLETE.
3. ENCAPSULATE CONNECTION FITTING AND VALVE WITH PETROLATUM PRIMER AND TAPE PRIOR TO BACKFILLING.
4. FOR 450 mm AND 500 mm TAPS REINFORCING TO BE DESIGNED BY A PROFESSIONAL ENGINEER, AND APPROVED BY THE MANGER OF WATER, WASTEWATER AND DRAINAGE ENGINEERING PRIOR TO INSTALLATION

Date	Revisions	By
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Steel Watermain Hot Tap Connection		
Date:		Approved:
FEB/08	Scale: NTS	W-36
Digital File: Stdw-36.dwg		



LEGEND:

- ① ISOLATION VALVE - MUST BE THE SAME SIZE AS THE INCOMING WATER SERVICE LINE.
- ② WATER METER SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ③ MIU (TRANSMITTER) MODULE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
- ④ MIU WIRING SUPPLIED AND INSTALLED BY OWNER. ONE WIRE REQUIRED FOR EACH METER. LEAVE MINIMUM 0.6M (24") SLACK WIRE AT BOTH METER AND MIU MODULE LOCATIONS.
- ⑤ WATER METER ADAPTERS INSTALLED BY OWNER.

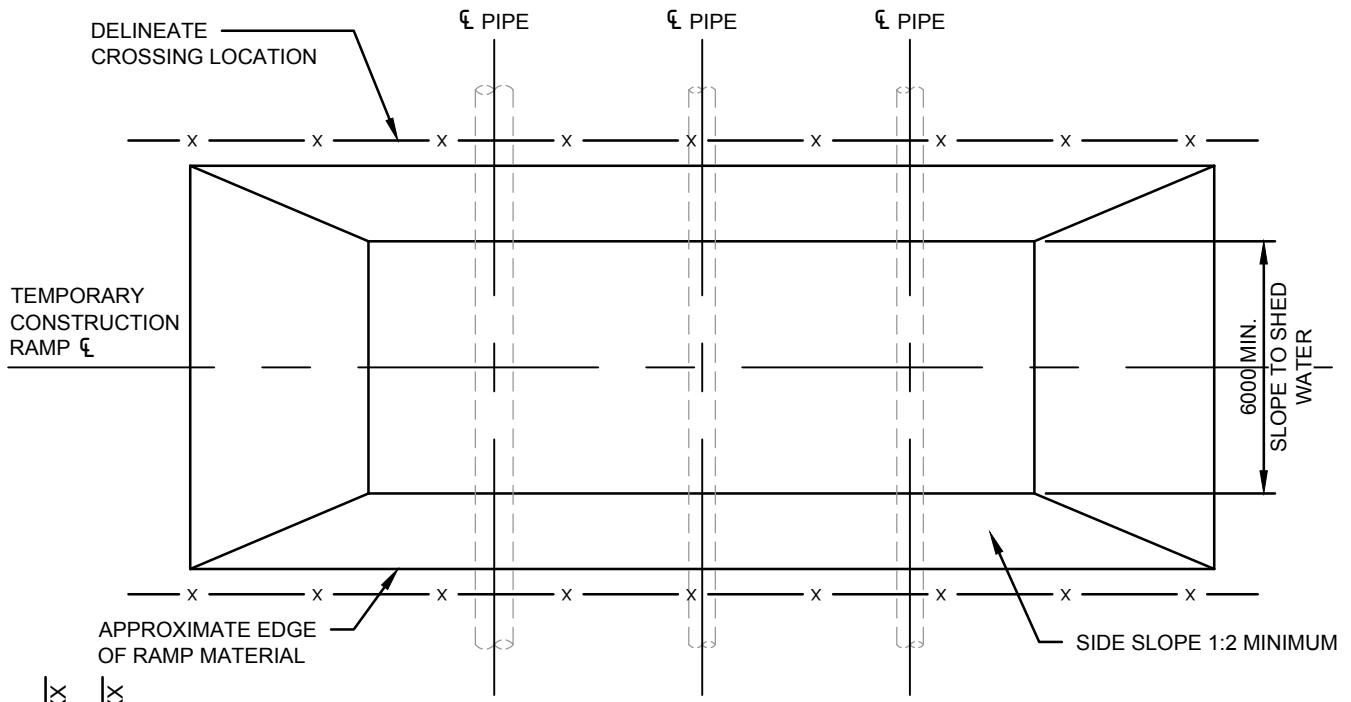
NOTES:

1. SEE SPECIFICATION SECTION 15408 IN CONJUNCTION WITH THIS DRAWING.
2. FOR ADDITIONAL INFORMATION, CLARIFICATION, OR DEVIATION FROM THE REQUIREMENTS AS PER THESE STANDARDS, CONTACT THE WATER METER OR CROSS CONNECTION CONTROL PROGRAMS PRIOR TO INSTALLATION. TO CONTACT THESE PROGRAMS SUBMIT A SERVICE REQUEST TO (306) 777-7000.

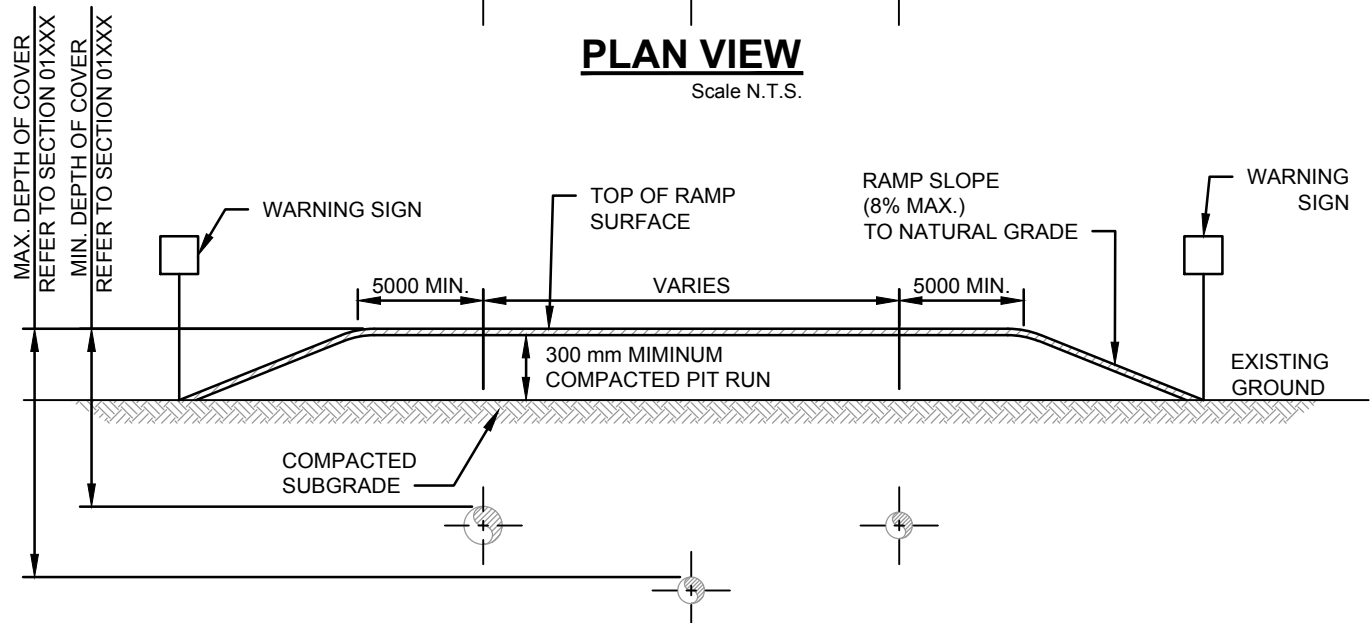
Date	Revisions	By
SEP/10	PROPOSED STANDARD FOR REVIEW	AH
APR/11	LEGEND NOTE #4 AND #5	AH
JAN/18	DIMENSIONS ADDED/REVISED TITLE	BW
OCT/22	REQUIREMENTS REVISION	MG
OCT/23	METER TYPE AND MINOR REVISIONS	MG
FEB/24	MINOR REVISIONS	MG
MAR/24	NOTES/LEGEND REVISION	MG



CONSTRUCTION STANDARDS		
RESIDENTIAL WATER METER INSTALLATION		
Designed By:	Kevin Lang	Approved: Brent Rostad
Date	SEP/23	Scale NTS
Digital File:	Stdw-37.dwg	W-37



PLAN VIEW
Scale N.T.S.



PROFILE VIEW
Scale N.T.S.

NOTES:

1. REFER TO SECTION 01500 TEMPORARY CONSTRUCTION CROSSING OVER CRITICAL INFRASTRUCTURE.
2. NO WORK, INCLUDING HAND DIGGING OR TEMPORARY CROSSING CONSTRUCTION, IS PERMITTED ON CITY OF REGINA PIPELINE RIGHT-OF-WAY WITHOUT PRIOR APPROVAL FROM THE CITY OF REGINA.
3. TEMPORARY ROAD SHALL CROSS PIPE LINES AT OR NEAR 90 DEGREES AS PRACTICAL, BUT NOT LESS THAN 45 DEGREES.
4. LENGTH OF TEMPORARY ROAD SHALL VARY IN ACCORDANCE WITH PIPE CENTERLINE AND CROSSING ANGLE.
5. ANY OVERBURDEN OR MATERIALS INSTALLED FOR THE CROSSING MUST BE REMOVED AFTER CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
7. RIG MATTING MAY BE USED IN LIEU OF GRANULAR COVER PROVIDED REQUIREMENTS OUTLINED IN SECTION XXXX ARE FOLLOWED.

CRITICAL INFRASTRUCTURE	
BUFFALO POUND WATER MAINS	MCCARTHY WASTE WATER FORCE MAINS
900mm STEEL 1050mm STEEL	1050mm PVC 1050mm STEEL 1500mm PVC

WARNING SIGN
UNAUTHORIZED CROSSING PROHIBITED
MAXIMUM SPEED 10 KM/HR
MAXIMUM PERMITTED AXLE WEIGHT 24,300 KG

Date	Revisions	By
Jan/18	Issued	B.W.



CONSTRUCTION STANDARDS		
TEMPORARY CROSSING		
OVER CRITICAL INFRASTRUCTURE		
Designed By:	Approved: Dustin McCall	
Date: JAN/18	Scale: NTS	W-38
Digital File: Std W-38 Temp Crossing.dwg		