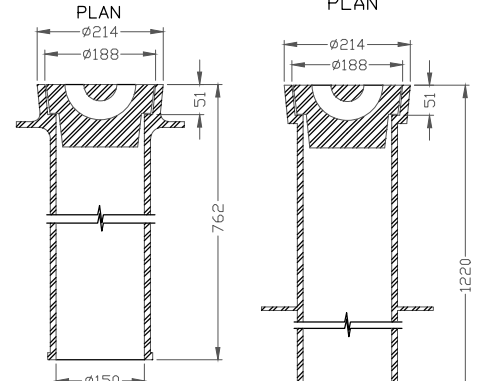
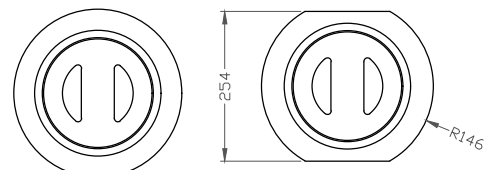
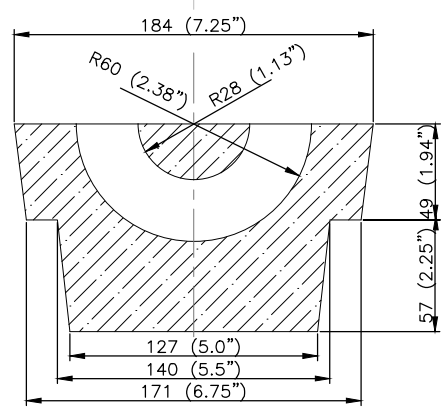
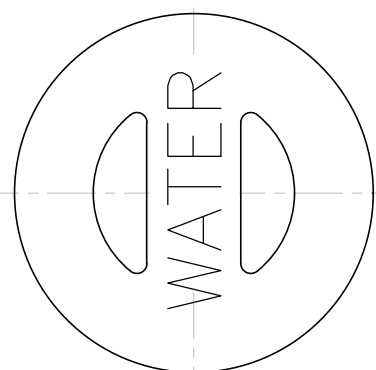
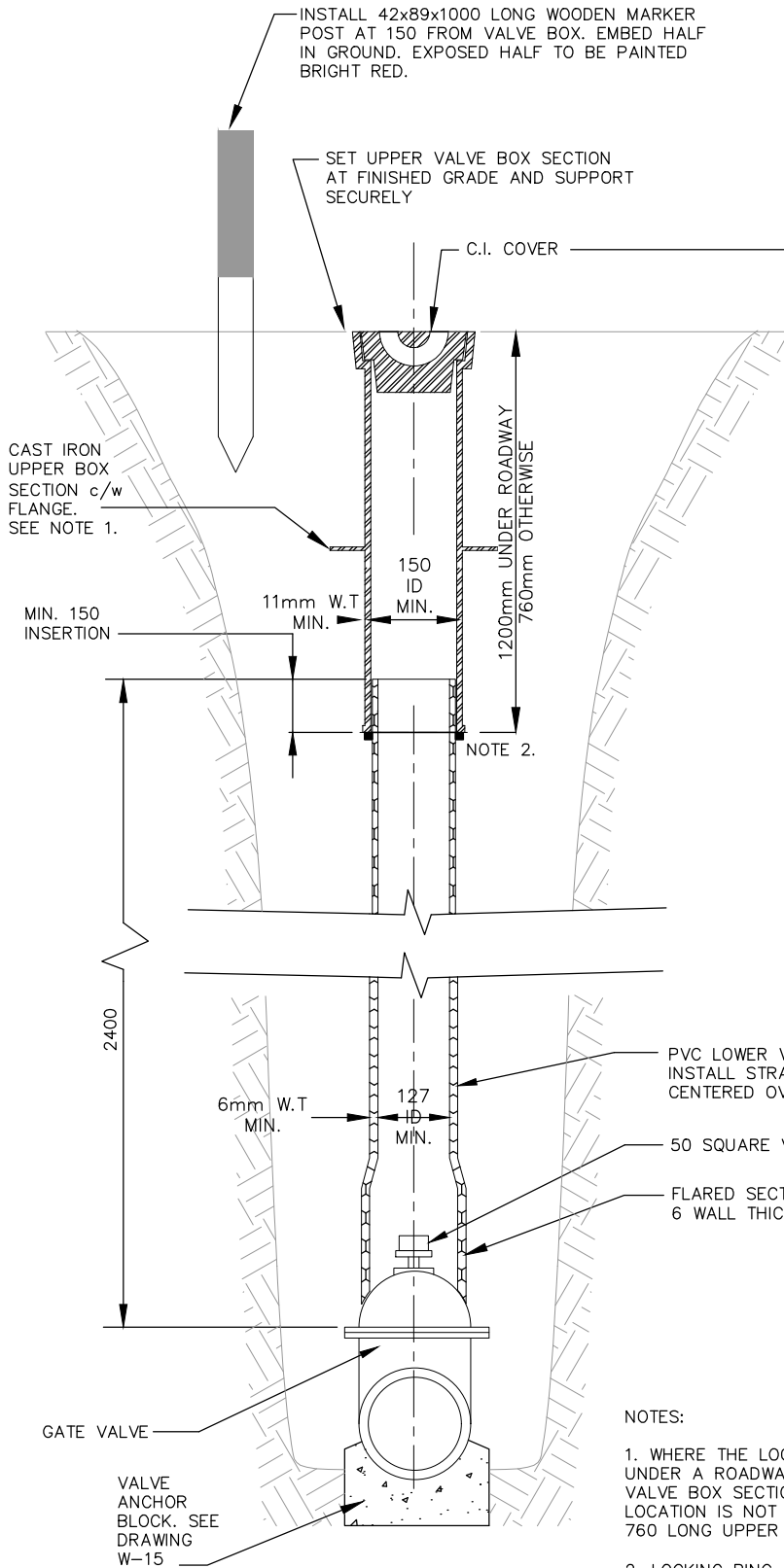

W-01	Valve Box Installation	Jan/18
W-01A	Valve Box Installation – Horizontal Direct Bury	Jan/18
W-02	Hydrant Installation	Aug/10
W-02A	Hydrant Installation in Narrow Streets	Aug/10
W-03	Support of Mains over Uncompacted Areas	Aug/10
W-04	Watermain Trench Excavation and Backfill Details	Aug/10
W-05	Gate 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)	Feb/17
W-31	Water Meter/Backflow Preventer Installation Requirements for Multi-Metered Locations (Alternative 2)	Feb/16
W-32	Water Meter Installation for 40mm or 50mm Domestic Supply Pipe Sizes	Apr/17
W-33	Water Meter Installation for 75mm or 100mm Domestic Supply Pipe Sizes	Apr/17
W-34	Installation Requirements for Summer Service Irrigation Meters	Feb/17
W-35	Removed	Apr/17
W-36	Steel Watermain Hot Tap Connections	Aug/10
W-37	Residential Water Meter Installation	Jan/18
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 MILLIMETRES 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

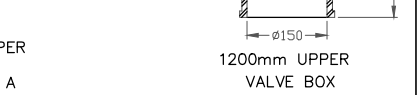
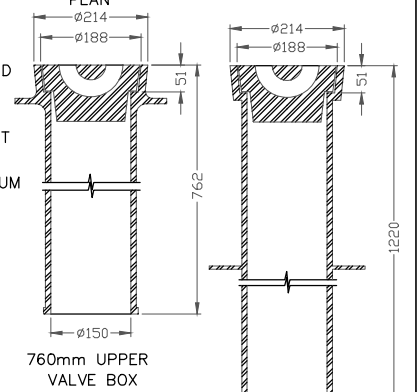
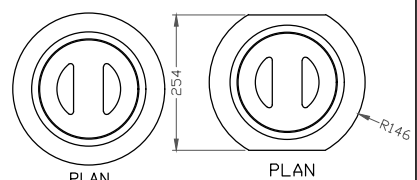
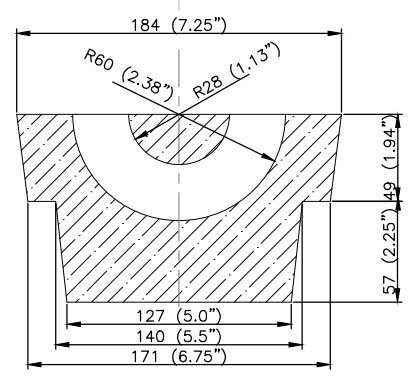
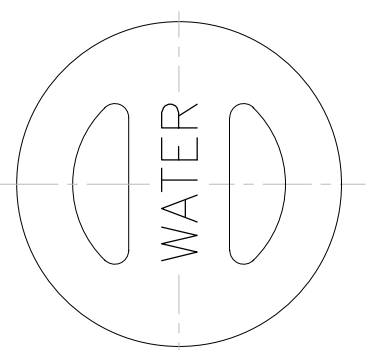
FLARED SECTION 194 I.D. x MINIMUM 6 WALL THICKNESS

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

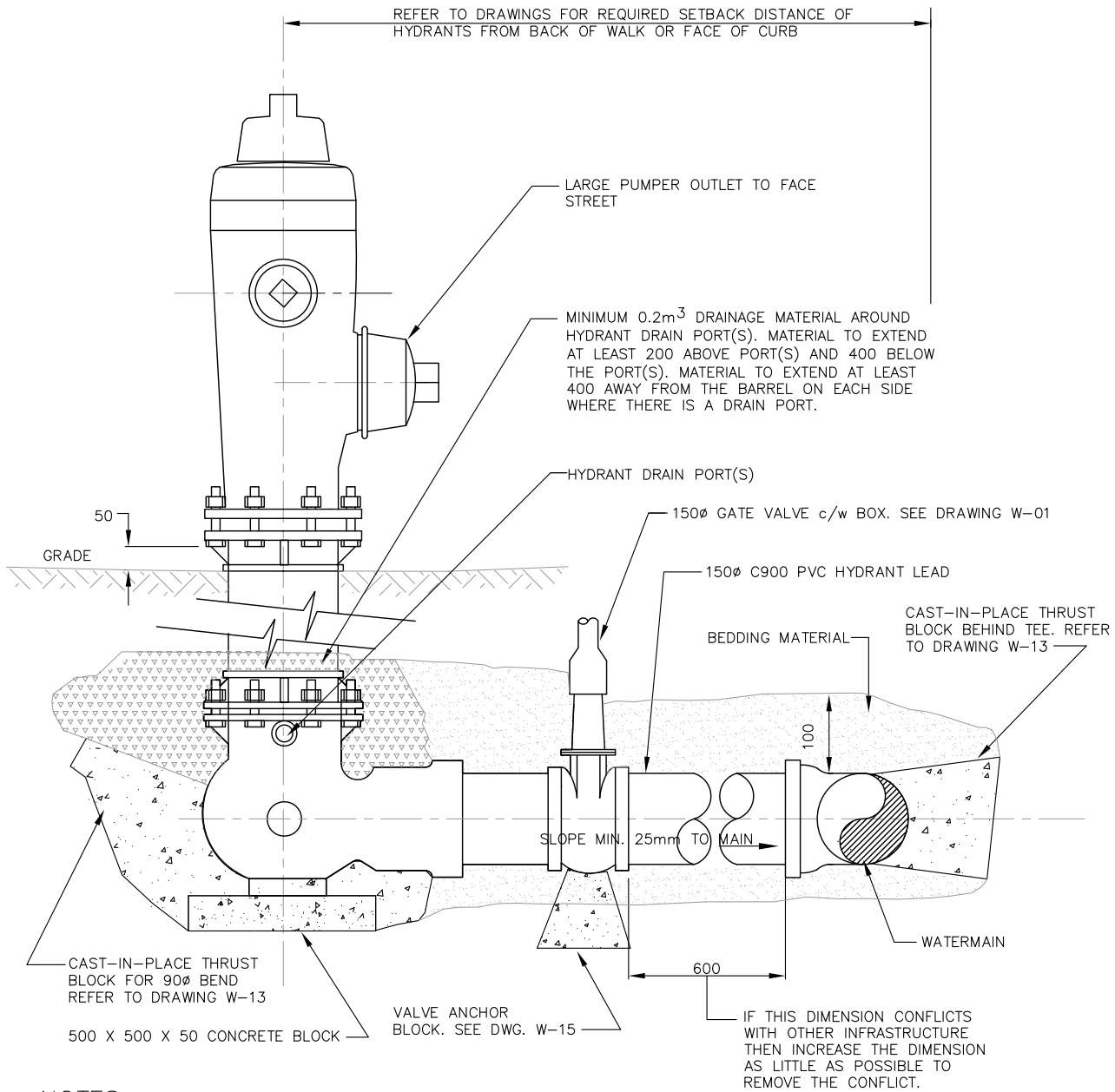


CONSTRUCTION STANDARDS
Valve Box Installation
Horizontal Direct Bury

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

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

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



NOTES:

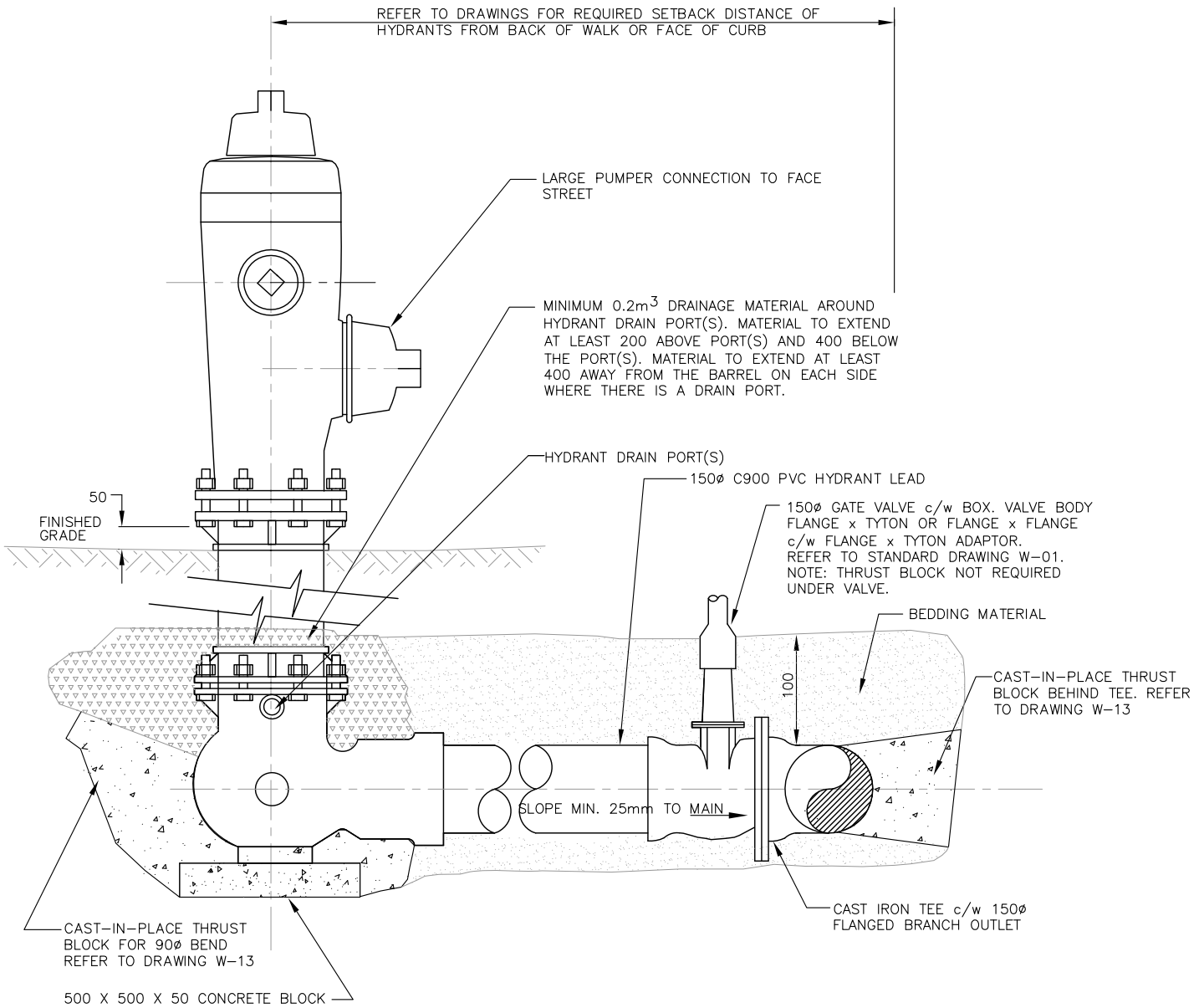
- 1) WHERE USE OF THIS DETAIL WOULD RESULT IN THE HYDRANT ISOLATING VALVE BOX BEING LOCATED UNDER EITHER GUTTER OR SIDEWALK – REFER TO AND USE THE DETAIL PRESENTED ON STANDARD DRAWING W-02A.
- 2) FOR THRUST BLOCK CONCRETE REQUIREMENTS REFER TO SPECIFICATIONS SECTION 02511-WATERMAINS

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	



NOTES:

USE THIS DETAIL IN THOSE LOCATIONS WHERE USE OF THE DETAIL ON STANDARD DRAWING W-02 WOULD RESULT IN THE VALVE BOX BEING INSTALLED UNDER EITHER GUTTER OR SIDEWALK.

FOR MATERIALS AND INSTALLATION REQUIREMENTS REFER TO STANDARD CONSTRUCTION SPECIFICATIONS SECTIONS 02315 AND 02511.

IN LOCATIONS WHERE THE EXISTING WATERMAIN IS UNDER THE SIDEWALK OR GUTTER CONSULT ENGINEERING AND WORKS PRIOR TO PROCEEDING.

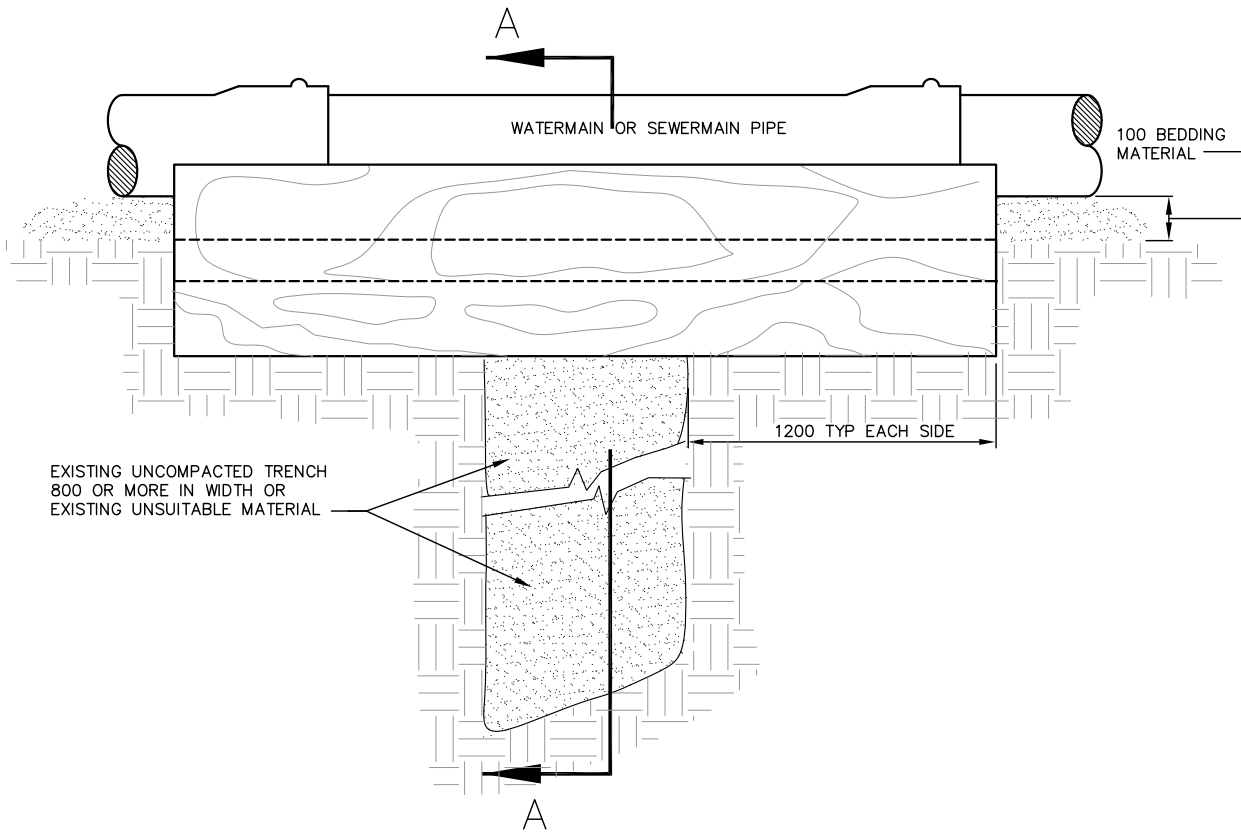
CORROSION PROTECTION FOR HYDRANT BODY TO BE SACRIFICIAL ANODE NOT PETROLATUM ENCAPSULATION.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
FEB/05	NEW NARROW STREET OPTION	SB
JUL/04	GATE VALVE MOVED TO TEE	SB
APR/01	GATE VALVE REQUIREMENT	SB
SEP/99	MINOR REVISIONS	SB
NOV/98	RENUMBERED FROM W-7	SB
AUG/10	TITLE BLOCK	JJA

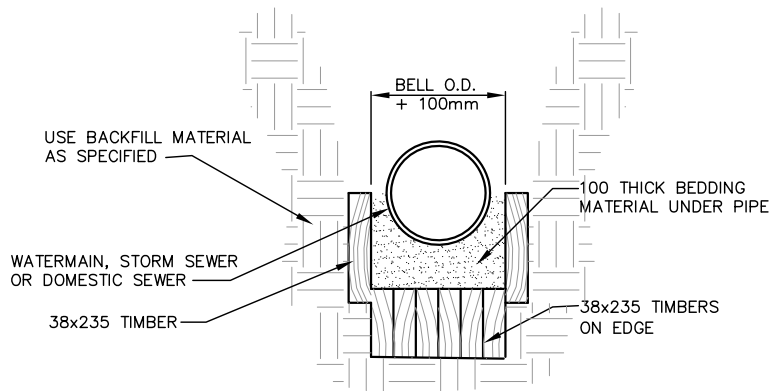


CONSTRUCTION STANDARDS		
Hydrant Installation in Narrow Streets		
Designed By:	Approved:	
Date	Scale	
FEB/05	NTS	W-02A
Digital File:	Stdw-02A.dwg	



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.



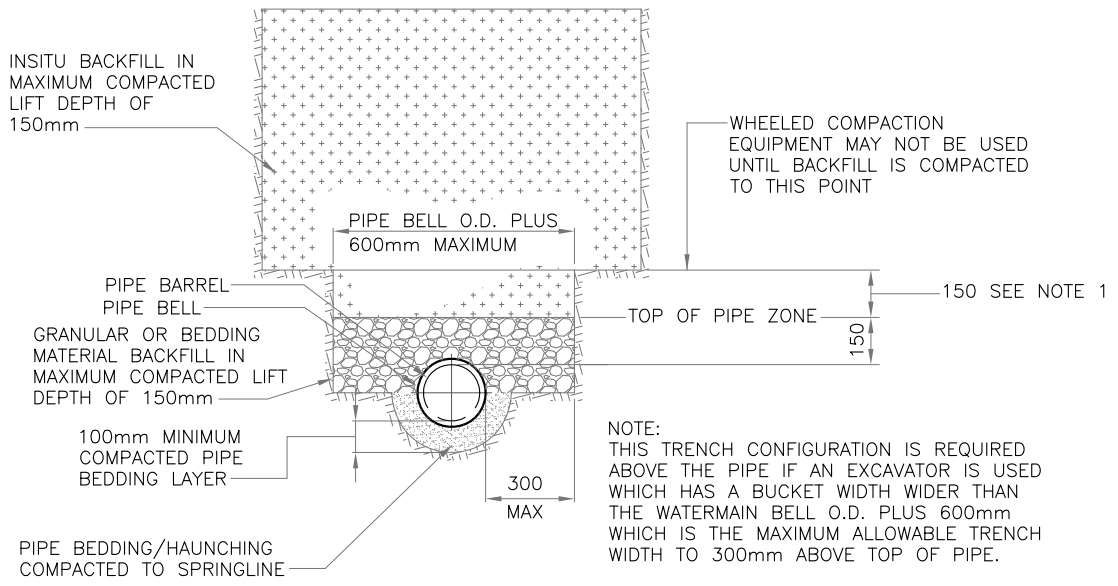
SECTION A-A

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

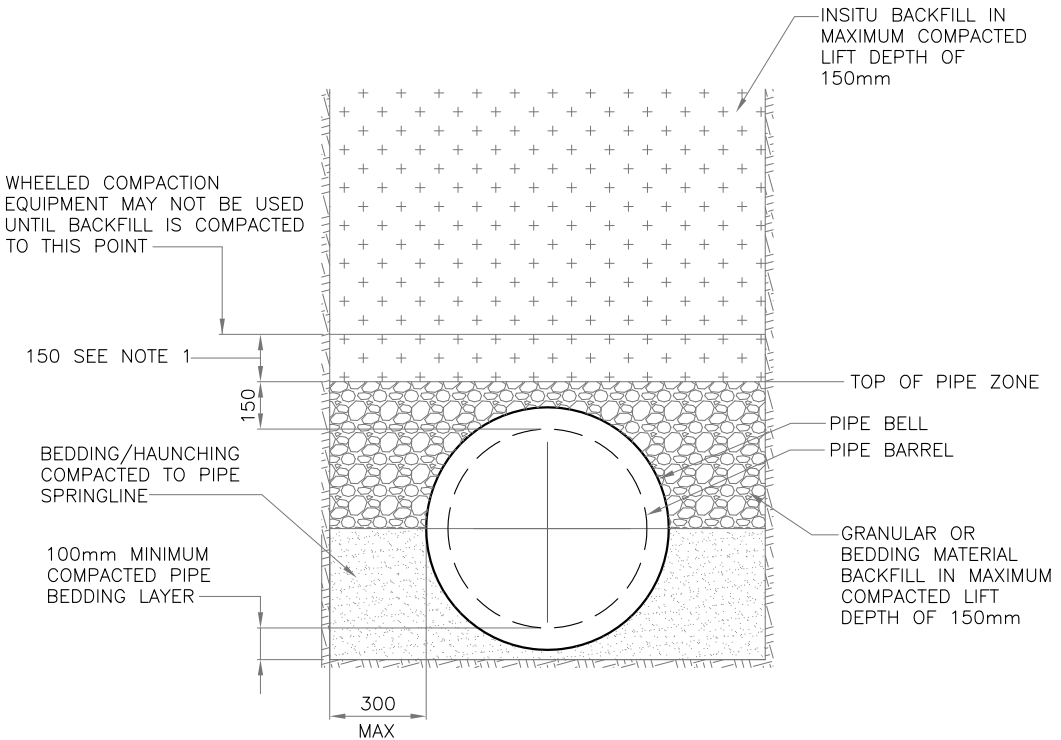


CONSTRUCTION STANDARDS		
Support of Mains Over Uncompacted Areas		
Designed By:	Approved:	
Date	Scale	
MAR/77	NTS	W-03
Digital File:	Stdw-03.dwg	



BUCKET/SPOON METHOD

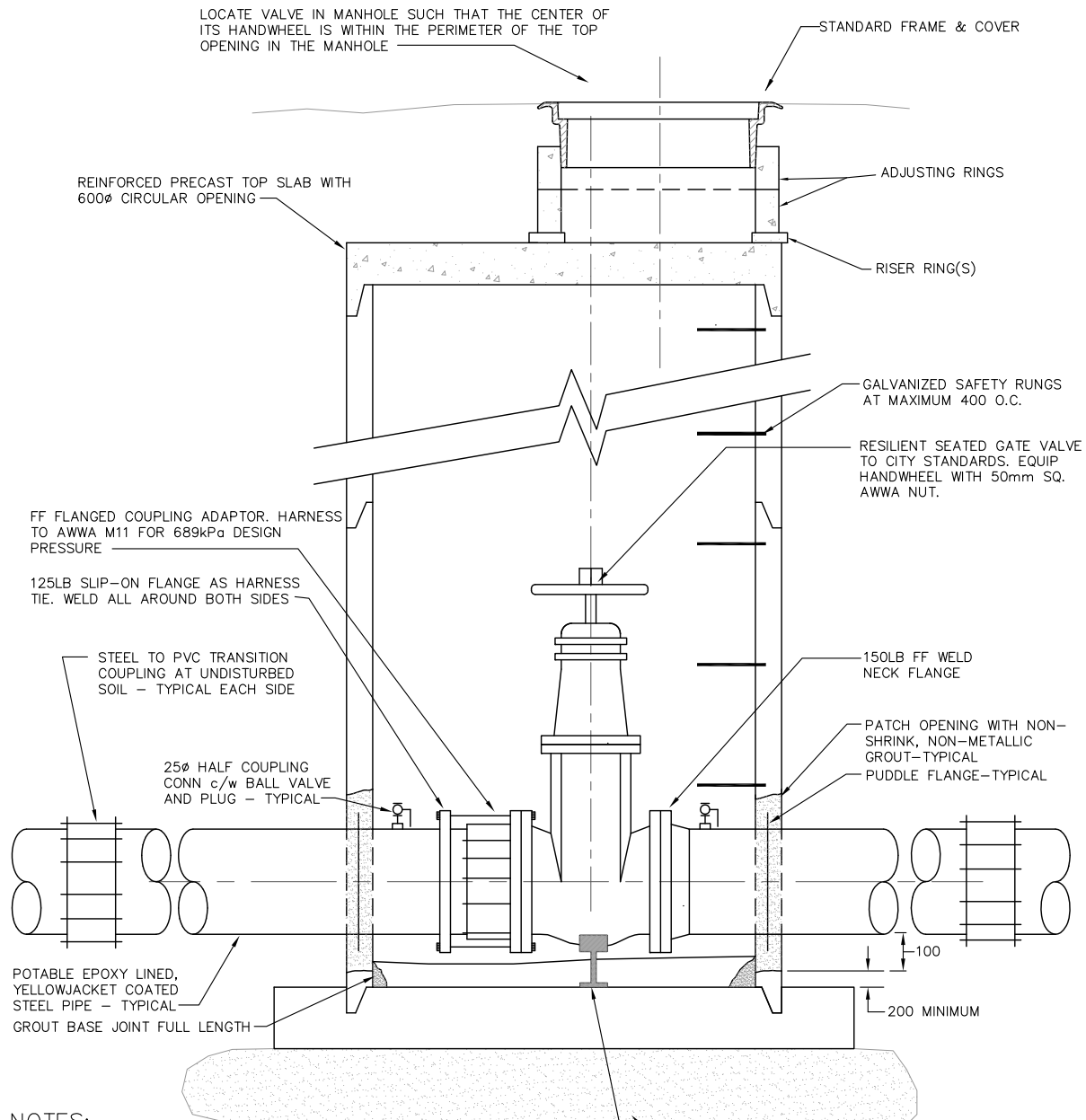
NOTE 1: THE USE OF GRANULAR MATERIAL IS RECOMMENDED FOR THE LIFT INDICATED. INSITU MATERIAL MAY BE USED PROVIDED THAT IT CONFORMS TO THE SPECIFICATIONS AND THAT IT CAN BE COMPACTED TO THE SPECIFIED DENSITY WITHOUT THE USE OF WHEELED COMPACTION EQUIPMENT.



BUCKET METHOD

Date	Revisions	By	CONSTRUCTION STANDARDS		
NOV/01	ISSUED AS STANDARD	SB	Watermain Trench Excavation and Backfill Details		
DEC/05	COMPACTION NOTES CLARIFIED	SB			
AUG/10	TITLE BLOCK	JJA	Designed By: _____ Approved: _____ Date: NOV/00 Scale: NTS W-04 Digital File: Stdw-04.dwg		





LOCATE VALVE IN MANHOLE SUCH THAT THE CENTER OF ITS HANDWHEEL IS WITHIN THE PERIMETER OF THE TOP OPENING IN THE MANHOLE

STANDARD FRAME & COVER

REINFORCED PRECAST TOP SLAB WITH 600Ø CIRCULAR OPENING

ADJUSTING RINGS

RISER RING(S)

GALVANIZED SAFETY RUNGS AT MAXIMUM 400 O.C.

RESILIENT SEATED GATE VALVE TO CITY STANDARDS. EQUIP HANDWHEEL WITH 50mm SQ. AWWA NUT.

FF FLANGED COUPLING ADAPTOR. HARNESS TO AWWA M11 FOR 689kPa DESIGN PRESSURE

125LB SLIP-ON FLANGE AS HARNESS TIE. WELD ALL AROUND BOTH SIDES

STEEL TO PVC TRANSITION COUPLING AT UNDISTURBED SOIL - TYPICAL EACH SIDE

25Ø HALF COUPLING CONN c/w BALL VALVE AND PLUG - TYPICAL

150LB FF WELD NECK FLANGE

PATCH OPENING WITH NON-SHRINK, NON-METALLIC GROUT-TYPICAL
PUDDLE FLANGE-TYPICAL

POTABLE EPOXY LINED, YELLOWJACKET COATED STEEL PIPE - TYPICAL
GROUT BASE JOINT FULL LENGTH

100

200 MINIMUM

NOTES:

- 1) PIPING AND VALVING MATERIALS/INSTALLATION TO BE AS SPECIFIED IN CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS
- 2) PRECAST CONCRETE MANHOLE TO BE 1800Ø 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.

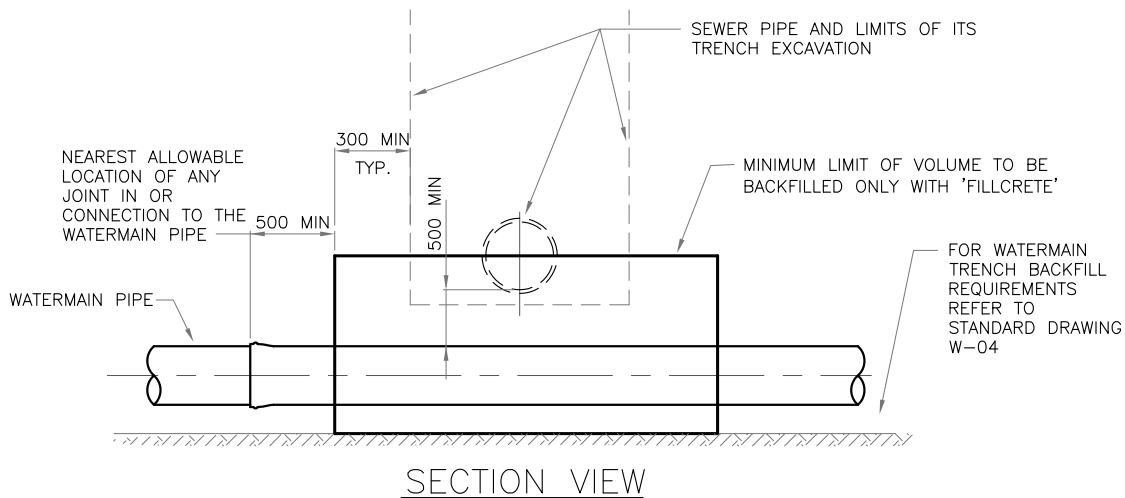
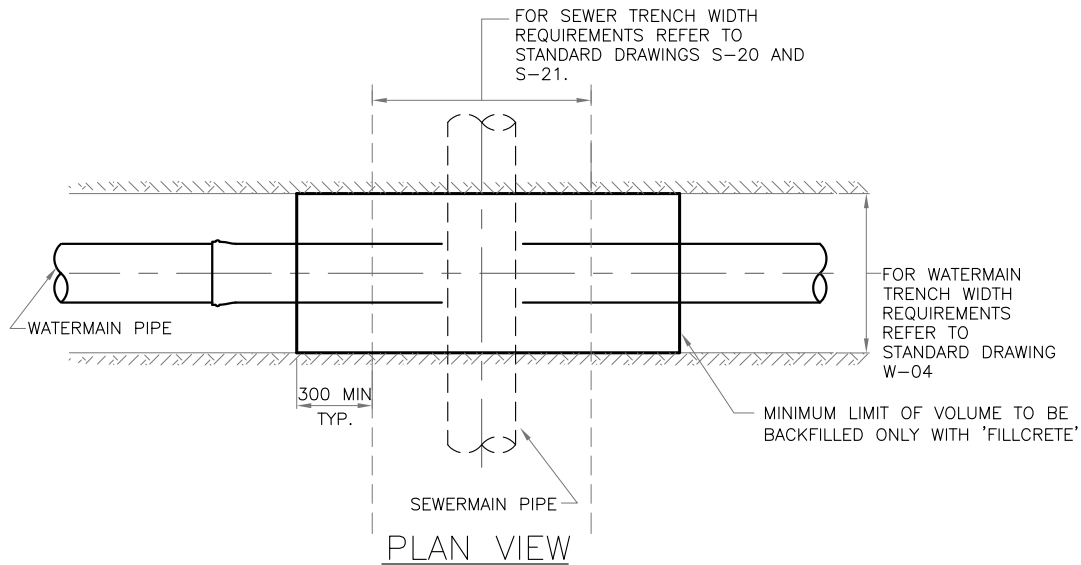
200 THICK GRANULAR BASE COMPACTED TO 100% STANDARD PROCTOR DENSITY OR 50 THICK MUD SLAB ON UNDISTURBED SOIL
PIPE SUPPORTS TO BE ADJUSTABLE AND REMOVABLE.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By
JAN/97	REISSUED	SB
SEP/98	REVISED	SB
NOV/98	RENUMBERED FROM W-13	SB
MAR/10	REVISED	DM
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS		
Gate Valve Manhole		
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:

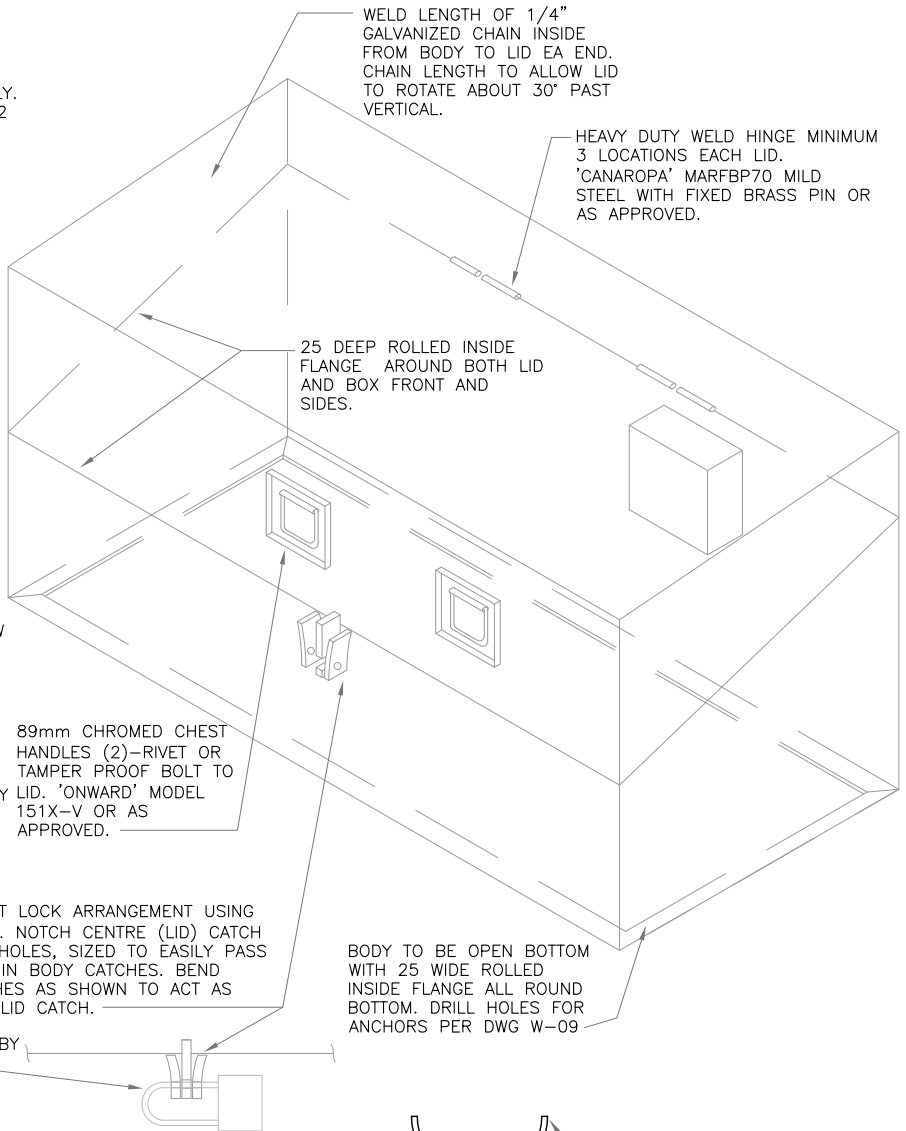
AS MUCH AS POSSIBLE CENTRE THE LENGTH OF WATERMAIN PIPE AT THE POINT OF CROSSING THE SEWER(S).

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



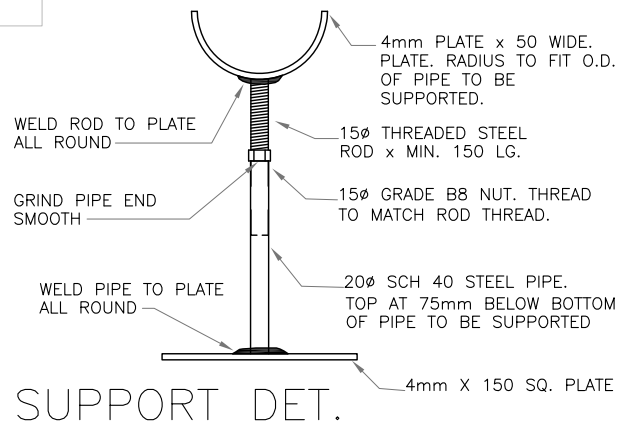
CONSTRUCTION STANDARDS		
Detail for Watermain Crossing Beneath Sewer Main		
Designed By:	Approved:	
Date	Scale	W-06
02/05	NTS	
Digital File:	Stdw-06.dwg	

- 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



NOTES:

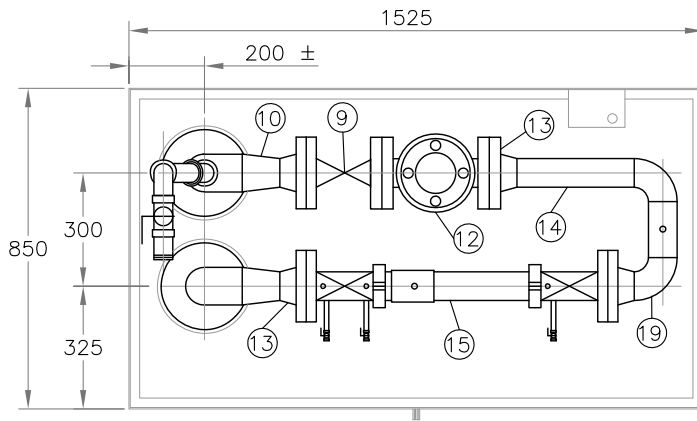
- CONSTRUCT KIOSK WITH 14 GA. STEEL PLATE. ALL WELDS TO BE FULL LENGTH AND GROUND SMOOTH. DECREASE, BLAST TO SSPC-SP6 INSIDE AND OUT, PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL-COLOUR CGSB 503-127 (GP INDUSTRIAL 214 SIGNAL GREEN)
- MOUNT KIOSK ON PRECAST OR CAST-IN-PLACE SLAB. REFER TO STANDARD 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.



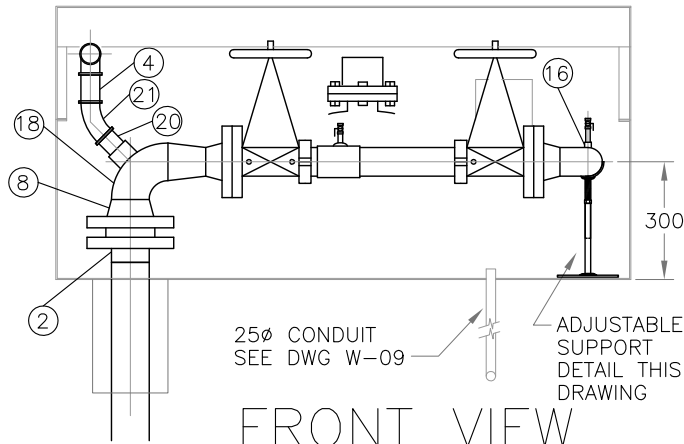
Date	Revisions	By
AUG/04	PROPOSED NEW STANDARD - ISS'D FOR REVIEW	SB
OCT/04	CS -IRRIG REVIEW COMMENTS INCORPORATED	SB
AUG/10	TITLE BLOCK	JJA



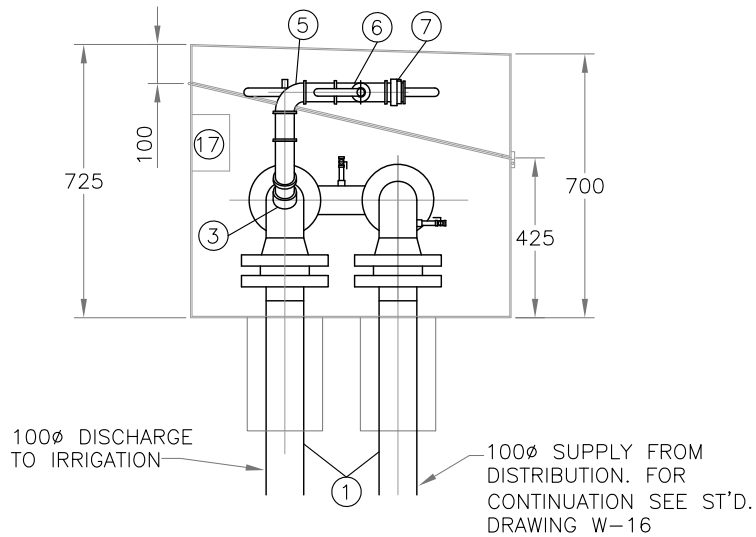
CONSTRUCTION STANDARDS		
75mm Irrigation Meter - Kiosk and Equipment Installation Details		
Designed By:	Approved:	
Date	Scale	
AUG/04	NTS	W-07
Digital File:	STDW-07.dwg	



PLAN VIEW



FRONT VIEW



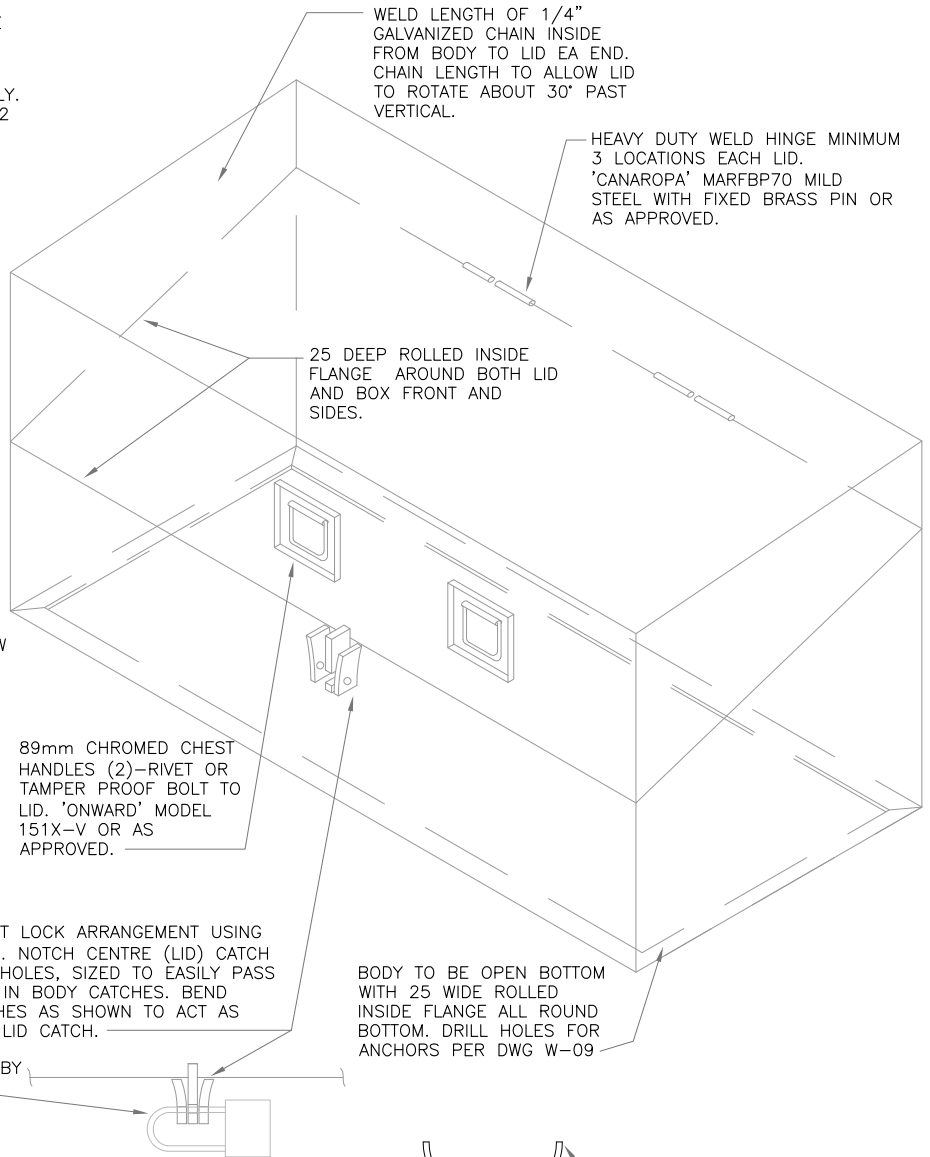
LEFT END VIEW

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 AUG/04	Scale NTS	W-07 (det)
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:

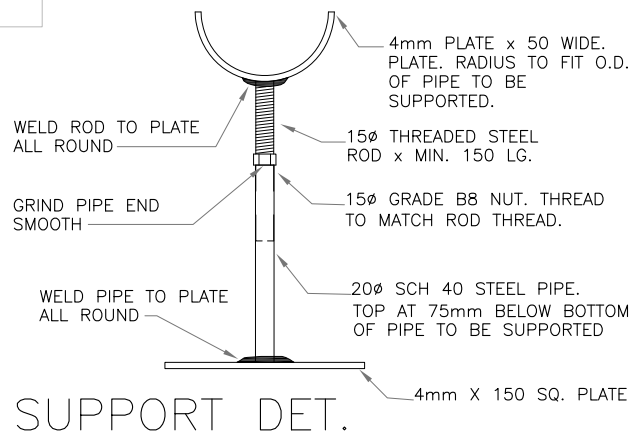
-CONSTRUCT KIOSK WITH 14 GA. STEEL PLATE. ALL WELDS TO BE FULL LENGTH AND GROUND SMOOTH. DEGREASE, BLAST TO SSPC-SP6 INSIDE AND OUT, PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL-COLOUR CGSB 503-127 (GP INDUSTRIAL 214 SIGNAL GREEN)

-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.

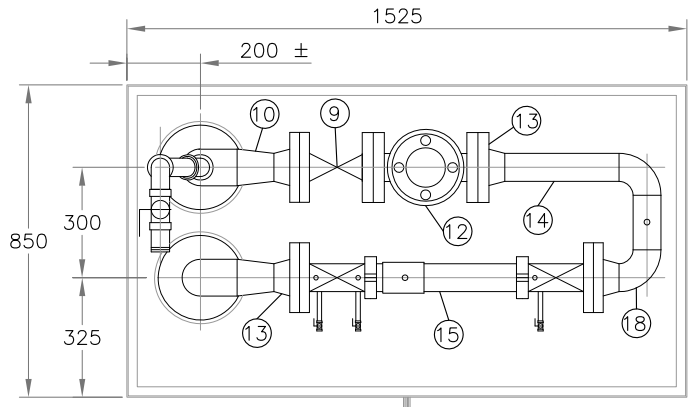


Date	Revisions	By
AUG/04	PROPOSED NEW STANDARD - ISS'D FOR REVIEW	SB
OCT/04	CS -IRRIG REVIEW COMMENTS INCORPORATED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	TITLE CHANGE AND REMOVE JUNCTION BOX	BL

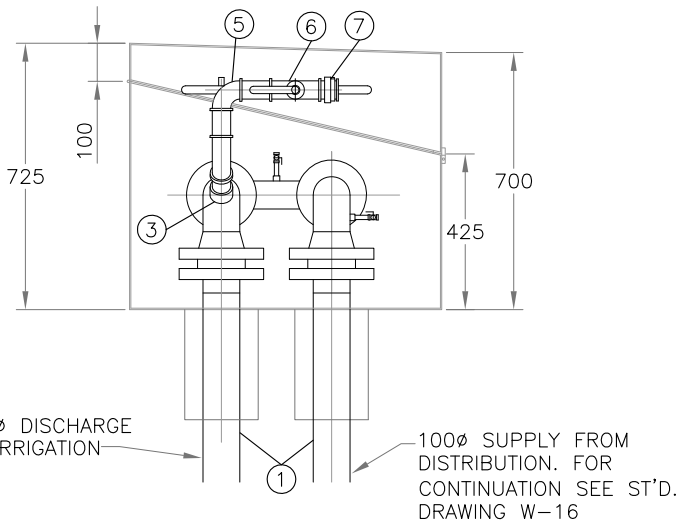


CONSTRUCTION STANDARDS
**100mm Irrigation Service - Kiosk
 and Equipment Installation Details
 (Without Booster Pump)**

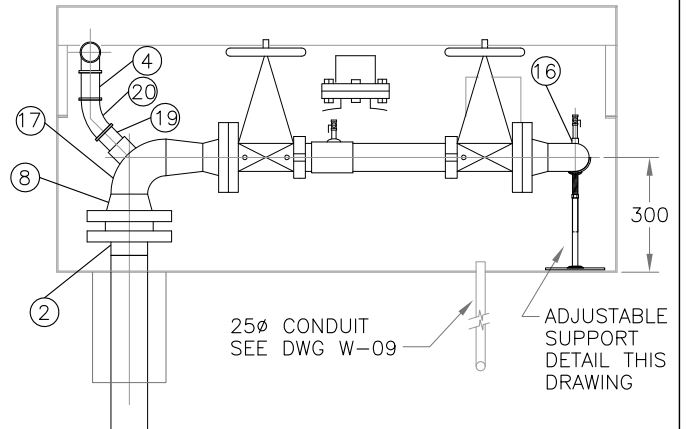
Designed By:		Approved:	
Date	Scale	W-07A	
FEB/16	NTS		
Digital File: Stdw-07.dwg			



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

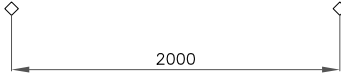


CONSTRUCTION STANDARDS
**100mm Irrigation Meter - Kiosk
 and Equipment Installation Details
 (Without Booster Pump)**

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

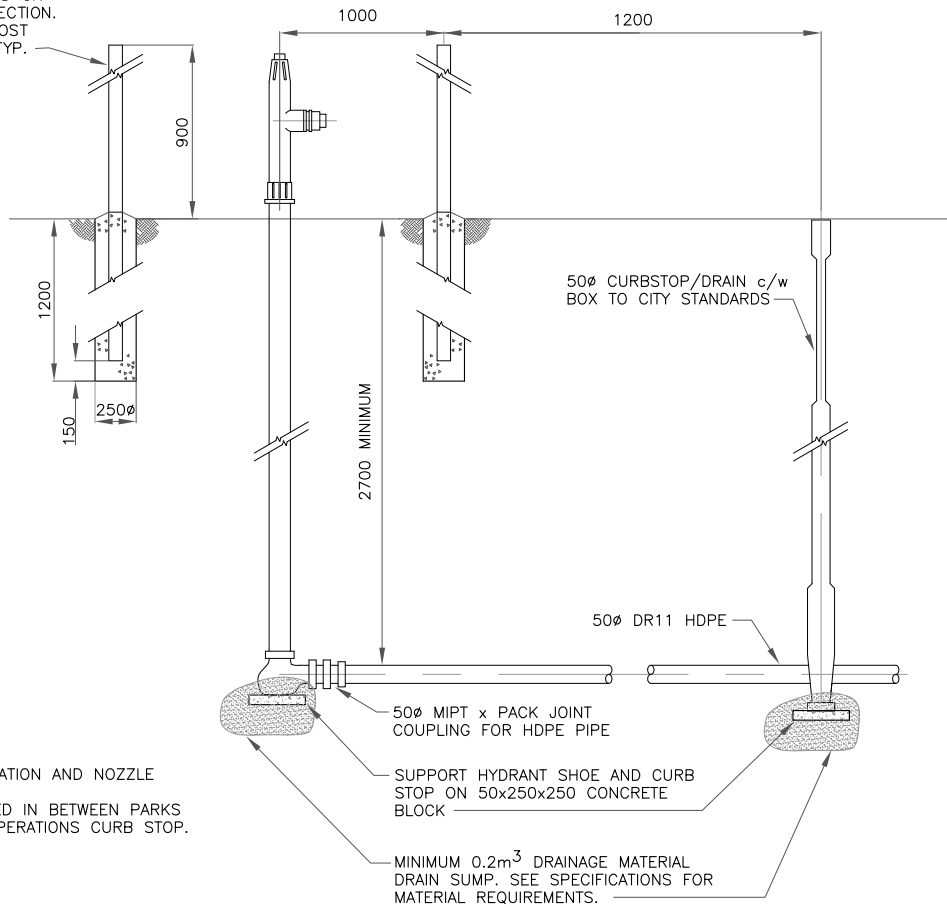
GUARD POST-4 REQUIRED. SEE VIEW BELOW FOR DETAILS

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.

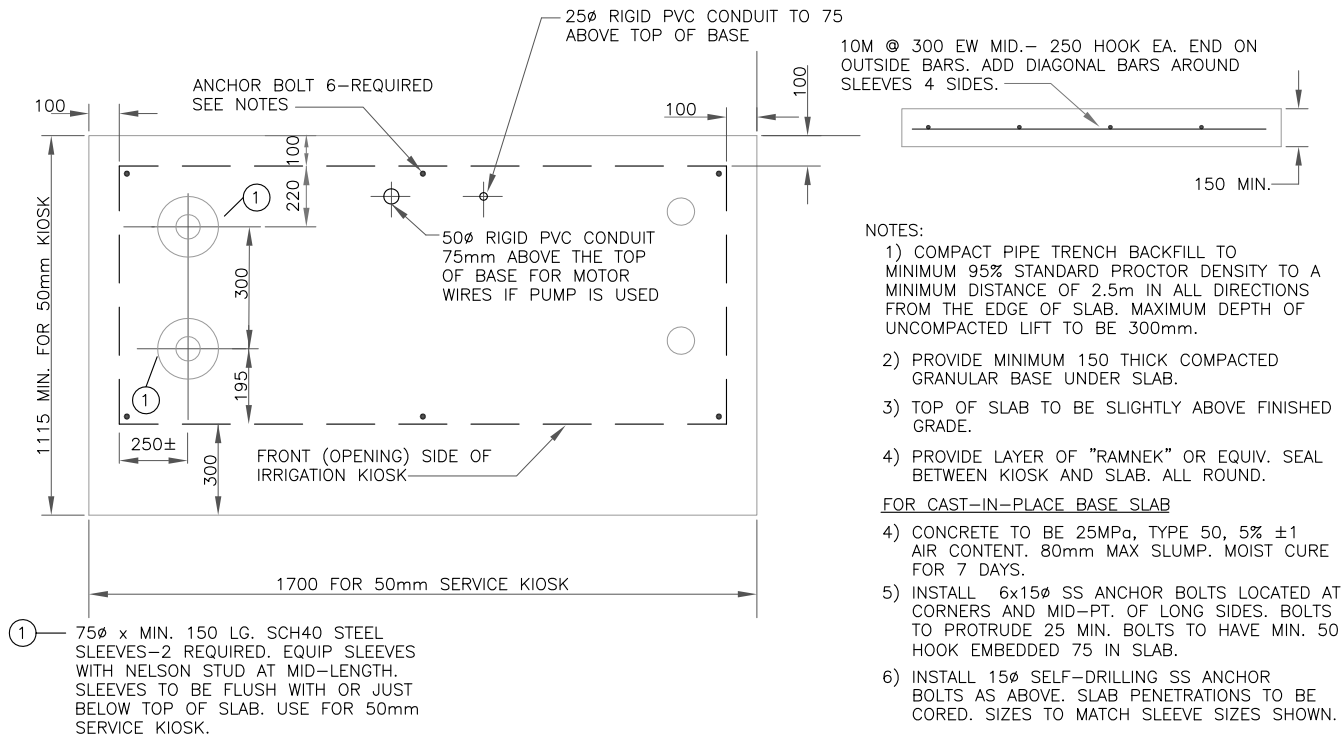
SECTION

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

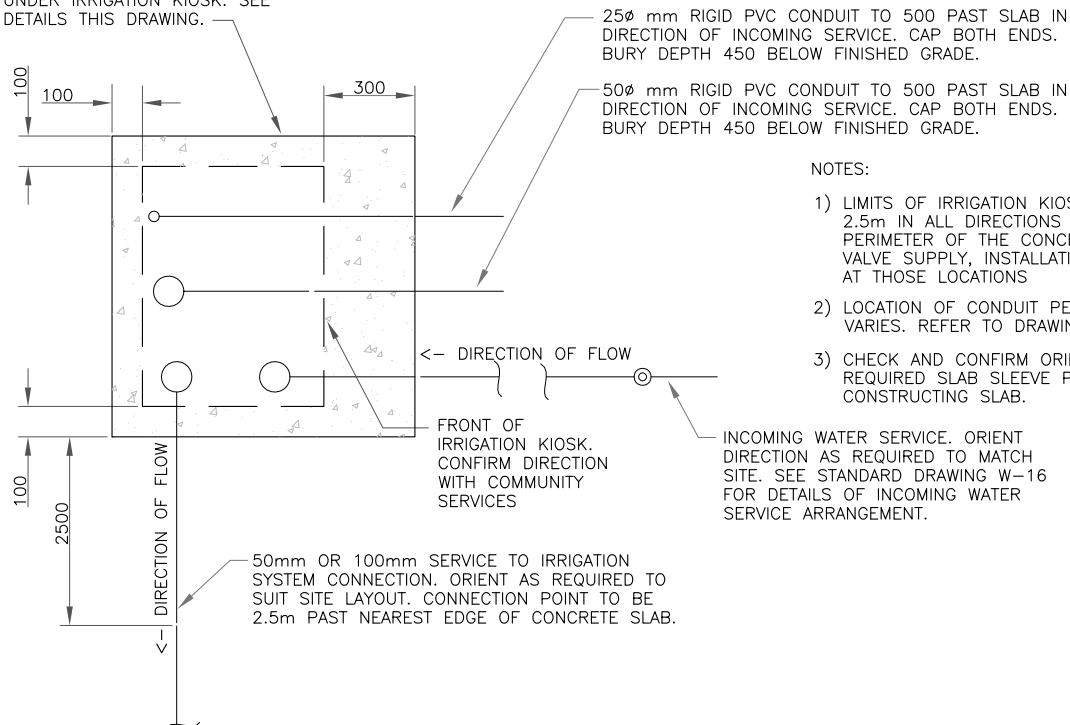


CONSTRUCTION STANDARDS		
Winter Service Hydrant Type Irrigation Outlet		
Designed By:	Approved: Bruce Liski	
Date: MAR/16	Scale: NTS	W-08
Digital File: Stdw-08.dwg		



50mm IRRIGATION KIOSK BASE SLAB- PLAN/END VIEWS

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

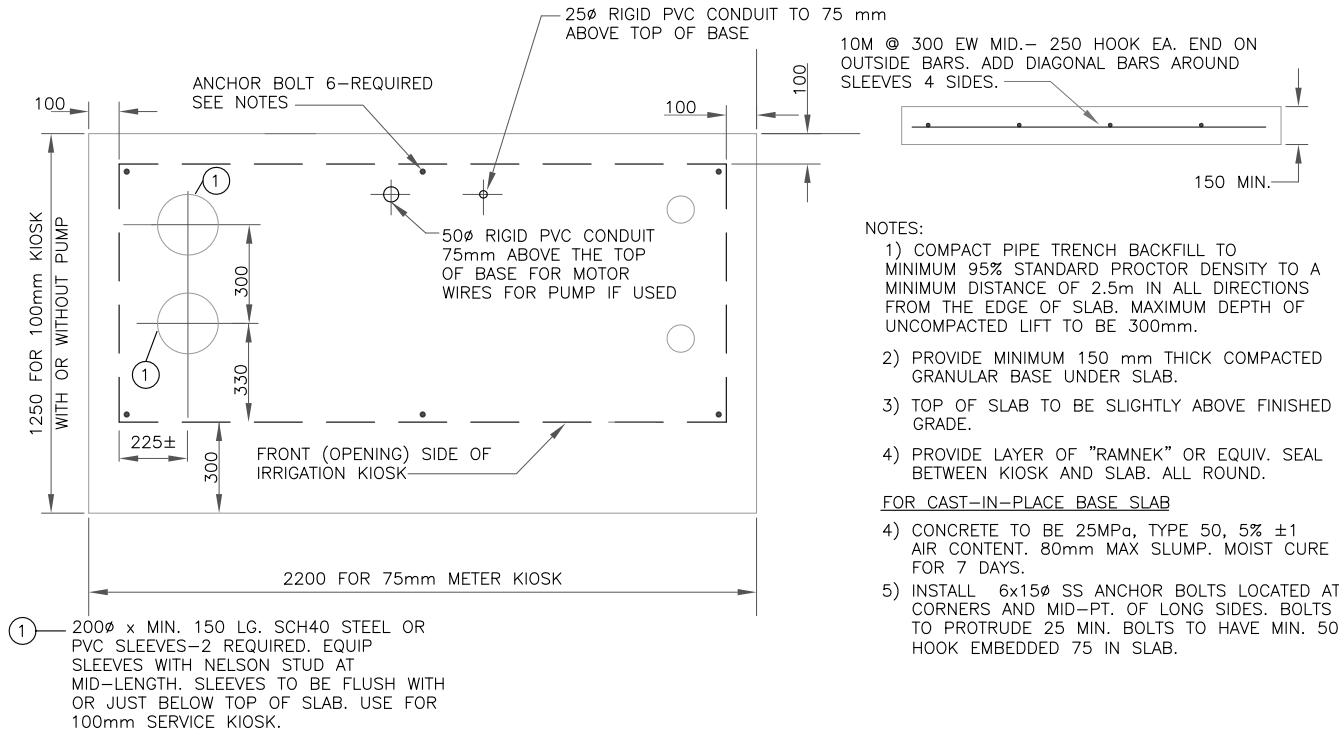


50mm IRRIGATION KIOSK SITE PLAN (WITH OR WITHOUT PUMP)

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



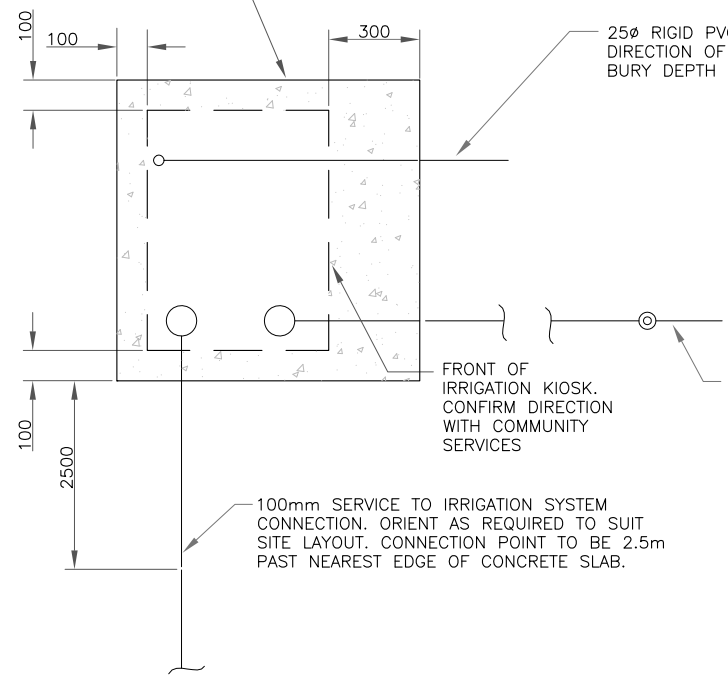
CONSTRUCTION STANDARDS		
50mm Above Grade Irrigation Kiosks Site Plan and Base Details		
Designed By:	Approved: Bruce Liski	
Date AUG/16	Scale NTS	W-09
Digital File: Stdw-09.dwg		



- 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 mm 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 6x15mm 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.

100mm IRRIGATION KIOSK BASE SLAB- PLAN/END VIEWS

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



- 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.

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.

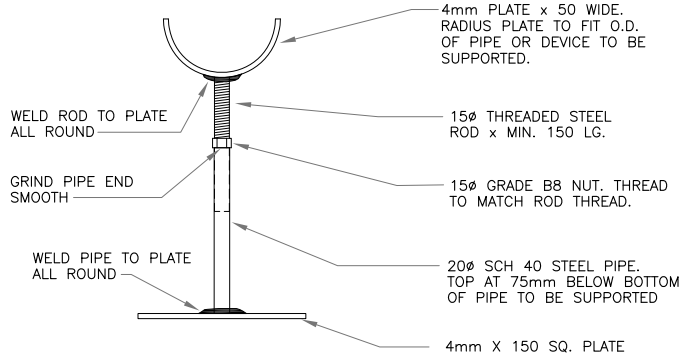
89mm CHROMED CHEST HANDLES (2) - RIVET OR TAMPER PROOF BOLT TO KIOSK LID. 'ONWARD' MODEL 151X-V OR AS APPROVED.

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)



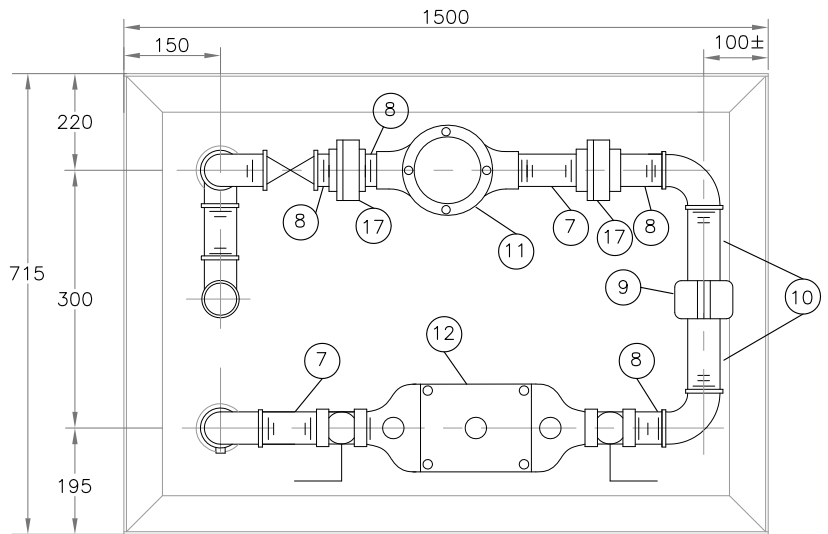
SUPPORT DET.

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

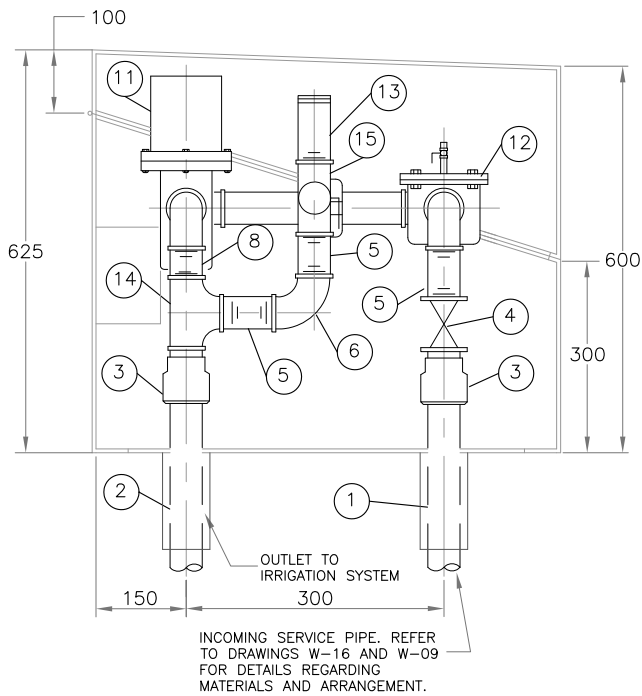


CONSTRUCTION STANDARDS
50mm Irrigation Service - Kiosk and Equipment Installation Details (Without Booster Pump)

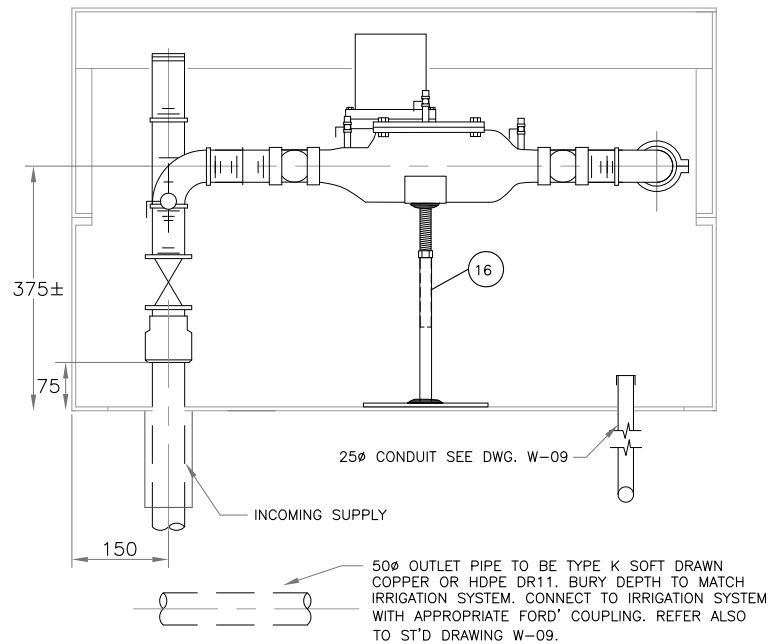
Designed By:	Approved:	
	Dustin McCall	
Date	Scale	
AUG/16	NTS	W-10A
Digital File:	Stdw-10.dwg	



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	
AUG/16	NTS	W-10A2
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.

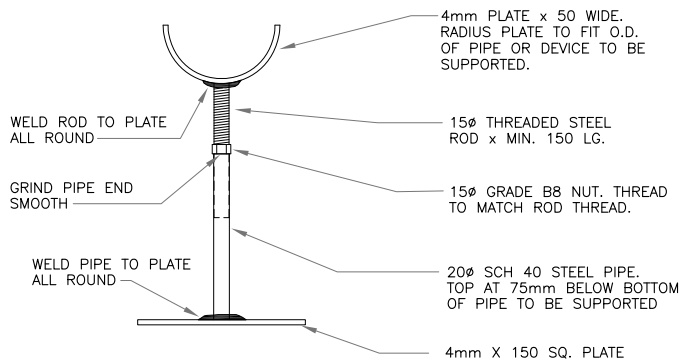
25mm DEEP ROLLED INSIDE FLANGE AROUND LID AND BOX FRONT AND SIDES

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.

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"

PADLOCK (BY OTHERS)



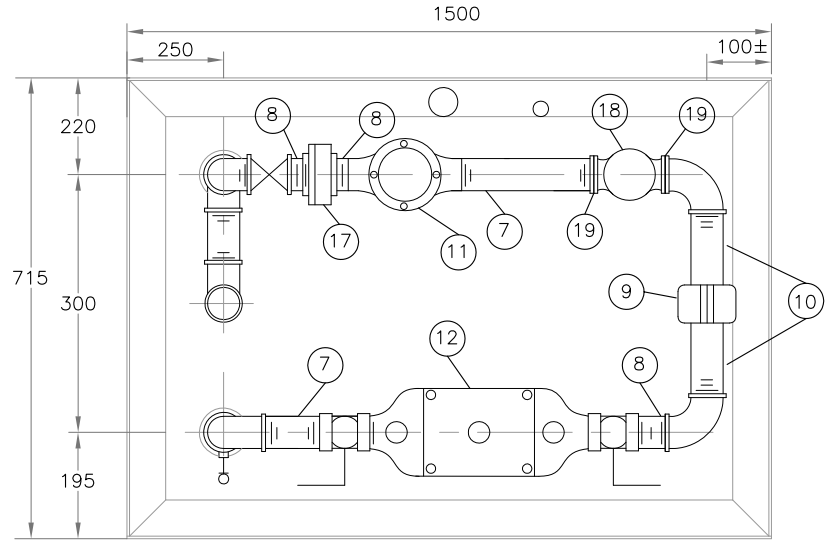
SUPPORT DET.

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 JUNC BOX & NOTE ADD LOUVERS	BL
AUG/16	EDIT LABELS	BL

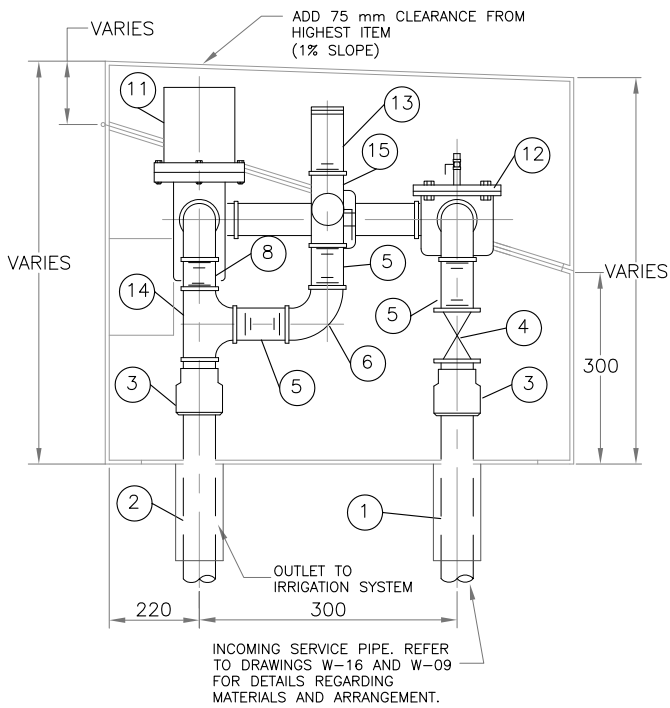


CONSTRUCTION STANDARDS
50mm Irrigation Service - Kiosk and Equipment Installation Details (With Booster Pump)

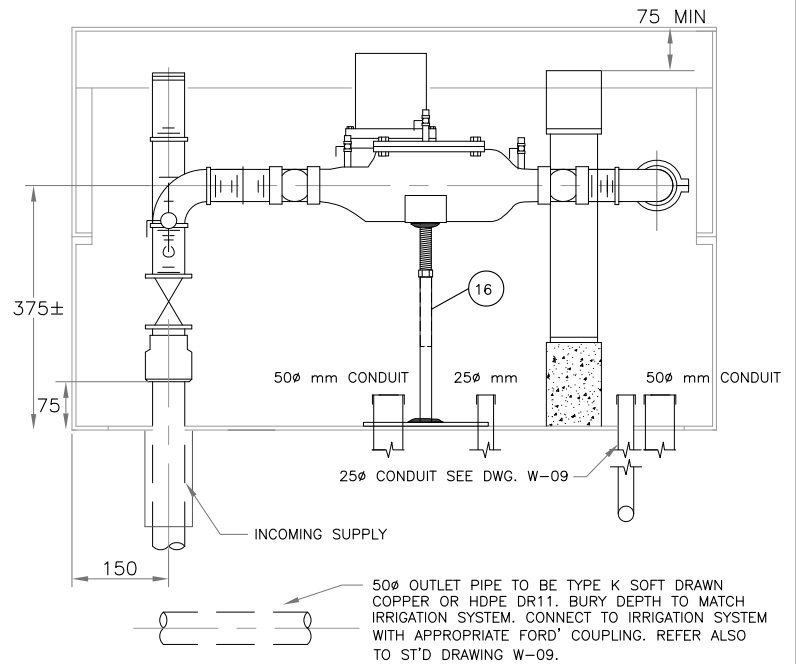
Designed By:		Approved:	
		Dustin McCall	
Date	Scale		
AUG/16	NTS	W-10B	
Digital File: Stdw-10.dwg			



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)**

Designed By:		Approved:	
		Dustin McCall	
Date	Scale	W-10B2	
AUG/16	NTS		
Digital File:		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)

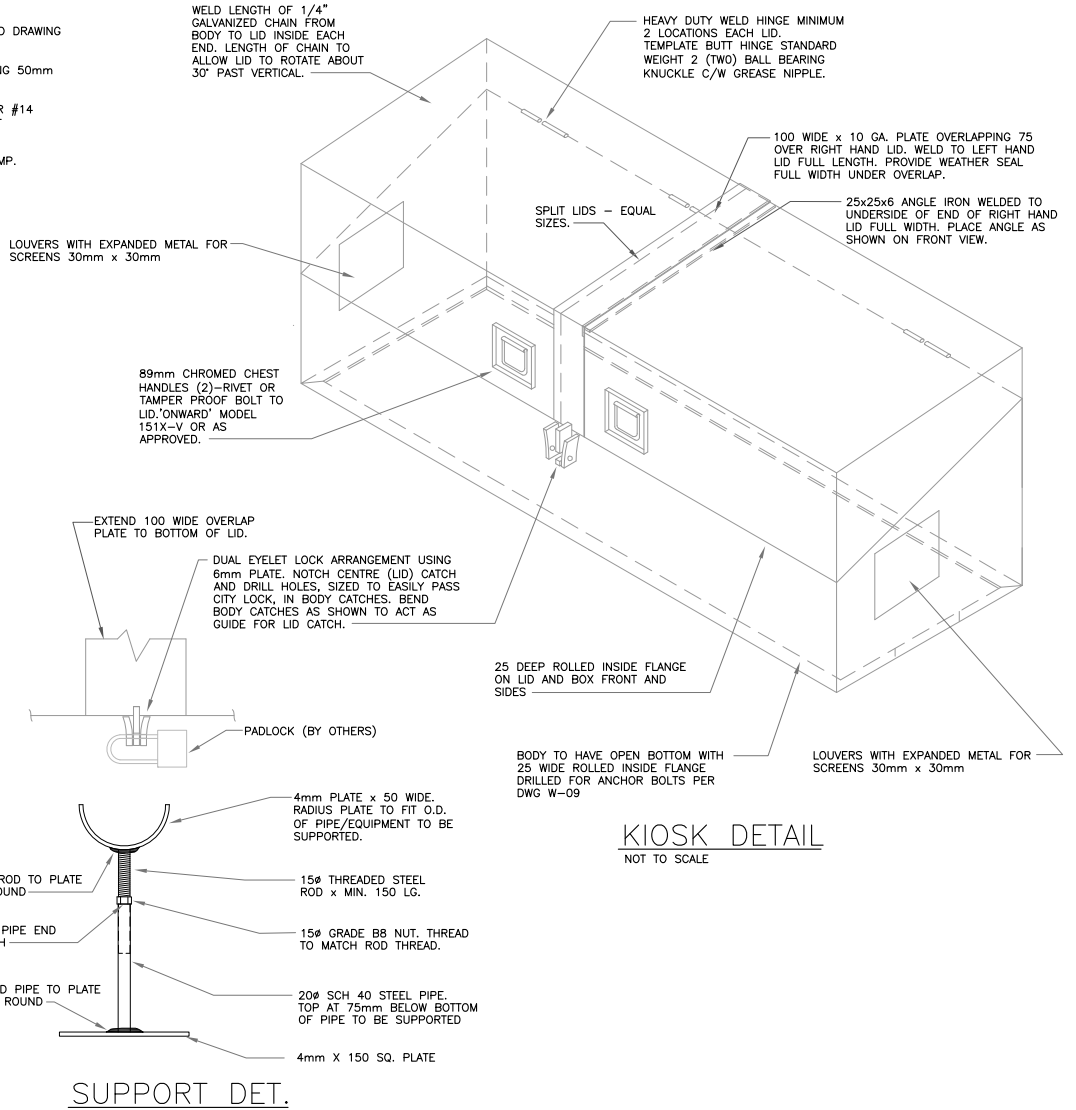
-MOUNT KIOSK ON PRECAST OR CAST-IN-PLACE SLAB. REFER TO STANDARD DRAWING W-09 FOR SLAB DETAILS AND SUPPLY/DISCHARGE PIPING ARRANGEMENTS.

-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

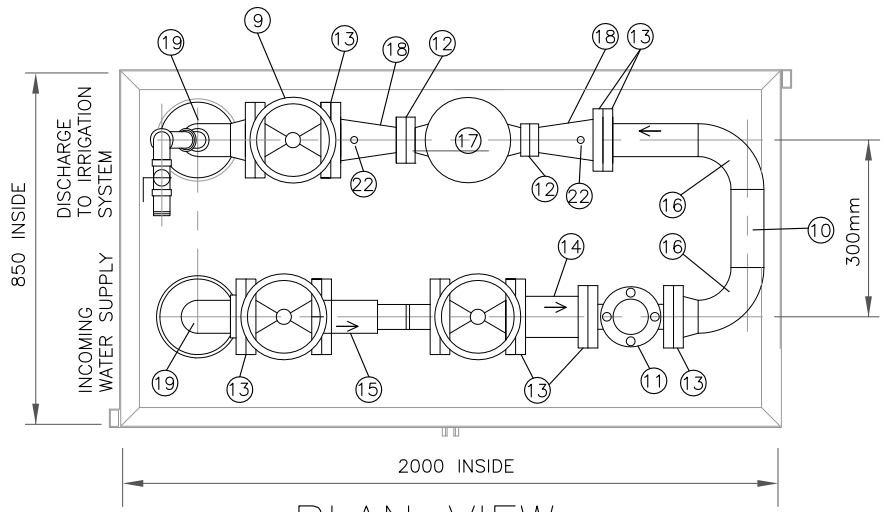


Date	Revisions	By
JAN/99	ISSUED AS STANDARD	SB
DEC/00	REVISED ENCLOSURE AND MISC. DETAILS	SB
NOV/01	REVISED PIPING DETAILS	SB
JUN/02	REVISED LOCKBOX TO MATCH 50mm KIOSK	SB
OCT/04	REVISED KIOSK MATERIALS	SB
MAR/16	UPDATE LIFTING ATTACHMENTS/DETAILS	RN
AUG/16	UPDATE NOTES	BL



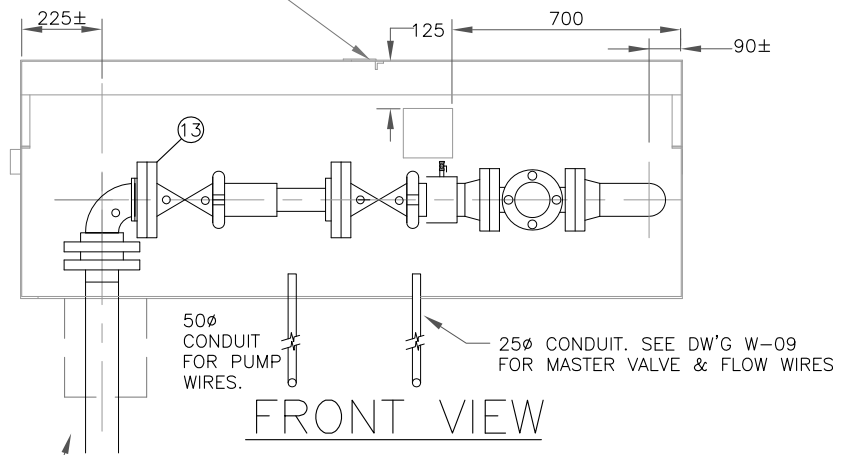
CONSTRUCTION STANDARDS
100mm Irrigation Service - Kiosk and Equipment Installation Details (With Booster Pump)

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

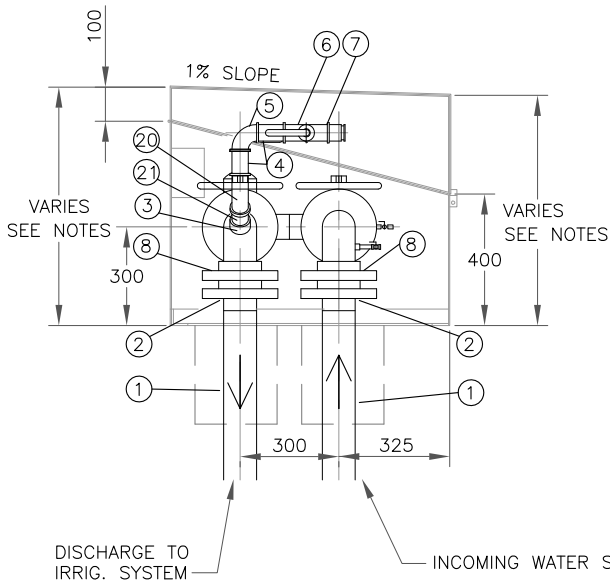


PLAN VIEW

ANGLE IRON. LEG UNDER EDGE OF OVERLAP PLATE—FULL WIDTH. SEE ENCLOSURE DETAIL.



FRONT VIEW



LEFT END VIEW

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
AUG16	UPDATE NOTES	BL



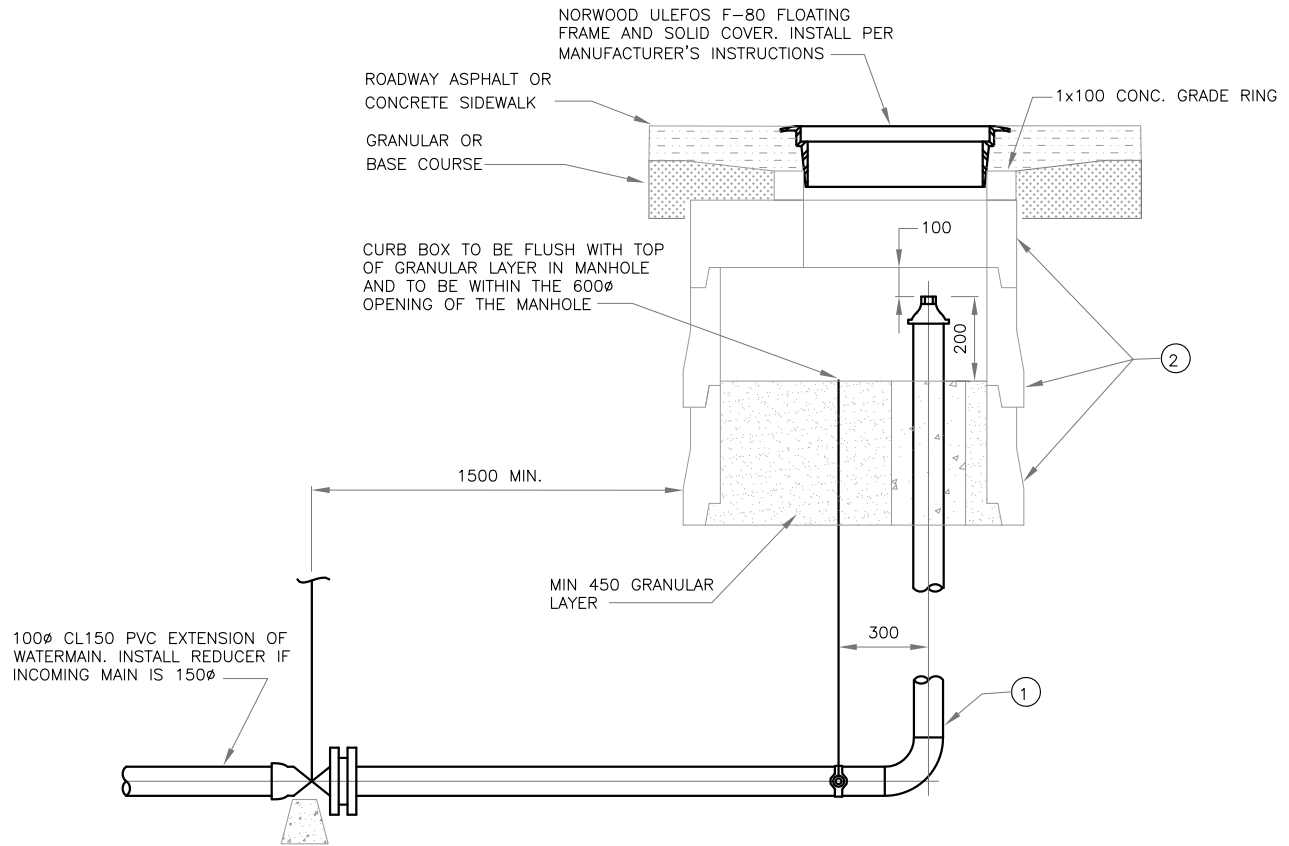
CONSTRUCTION STANDARDS
**100mm Irrigation Service - Kiosk
 and Equipment Installation Details
 (With Booster Pump)**

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

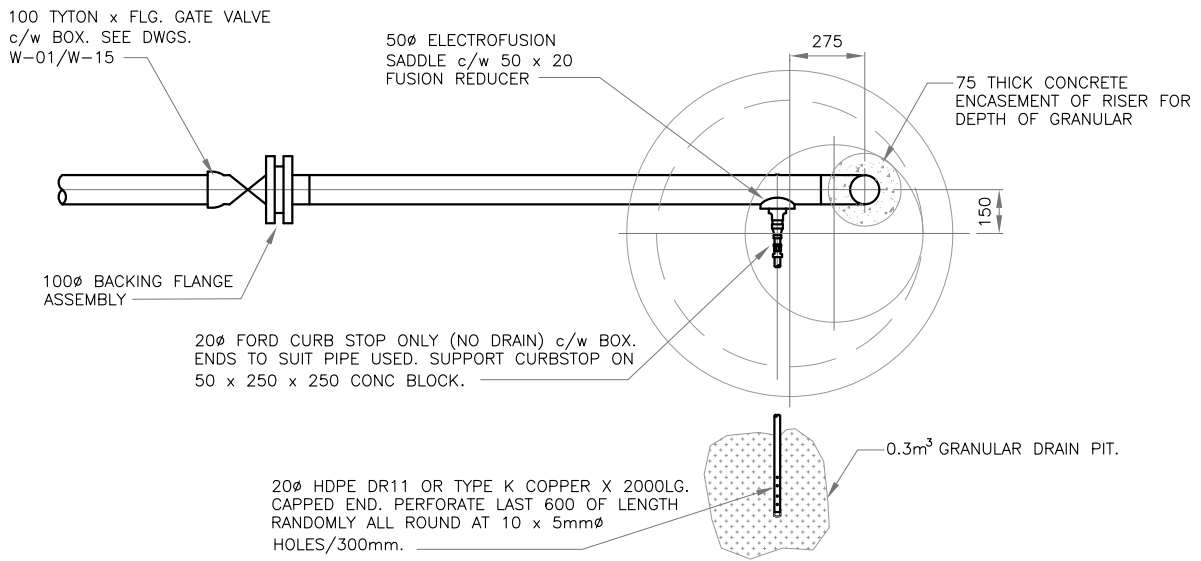
Date: **AUG/16** Scale: **NTS** **W-11A**

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

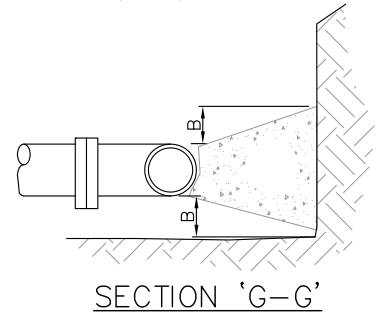
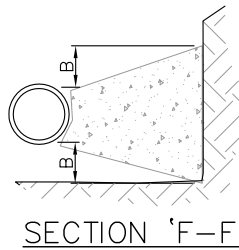
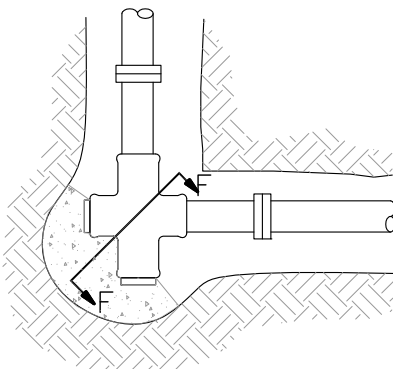
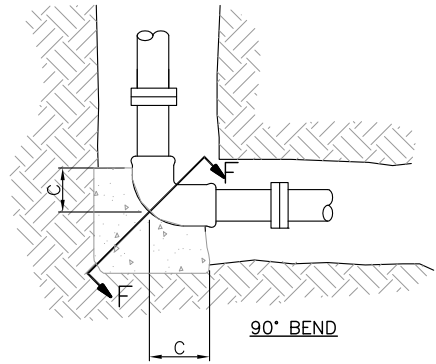
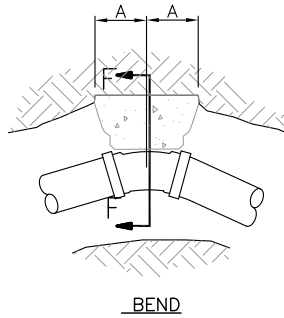
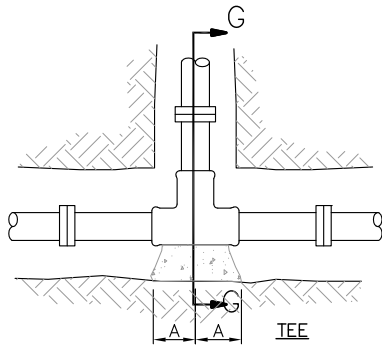
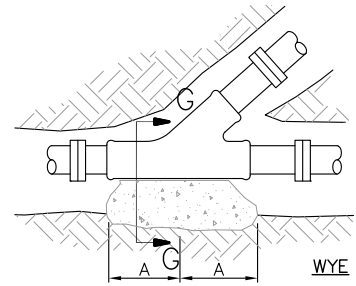
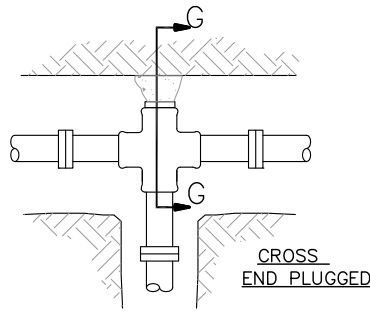
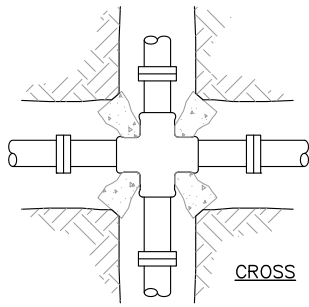


PLAN

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

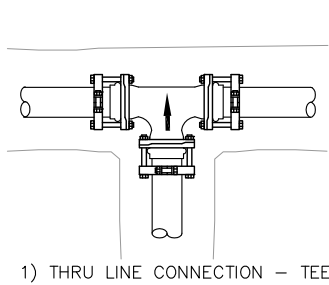
City of Regina | **REGINA**
Infinite Horizons

CONSTRUCTION STANDARDS
Thrust Blocks

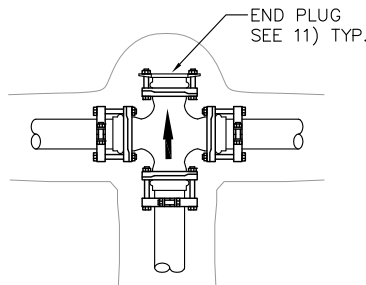
Designed By: _____ Approved: _____

Date: MAR/77 Scale: NTS **W-13**

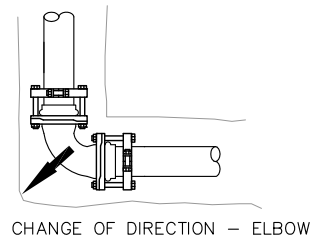
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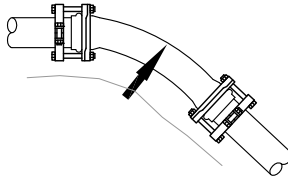
1) THRU LINE CONNECTION - TEE



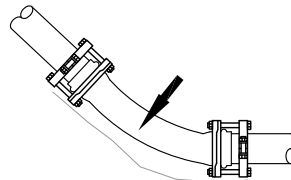
2) THRU LINE CONNECTION - CROSS



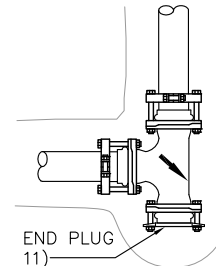
3) CHANGE OF DIRECTION - ELBOW



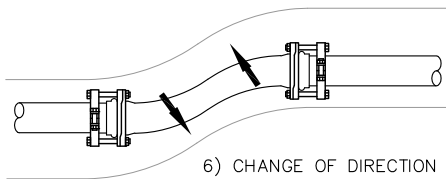
4A) CHANGE OF DIRECTION VERTICAL BEND - DOWN



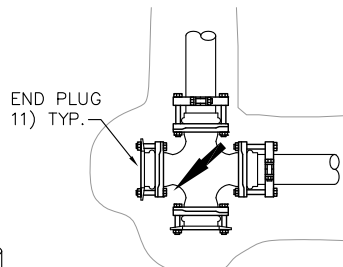
4B) CHANGE OF DIRECTION VERTICAL BEND - UP



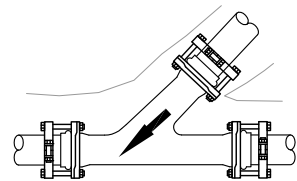
5) CHANGE OF DIRECTION - TEE USED AS ELBOW



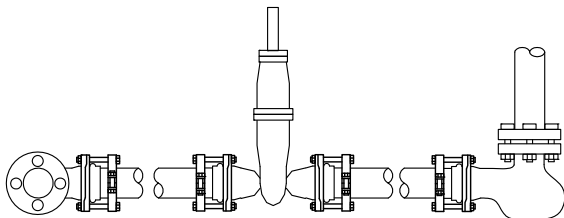
6) CHANGE OF DIRECTION



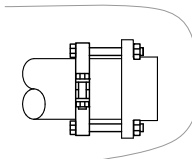
7) CHANGE OF DIRECTION - CROSS USED AS ELBOW



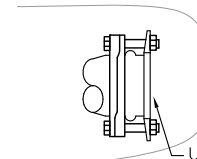
8) THRU LINE CONNECTION - WYE



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

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.

VERTICAL RESTRAINTS

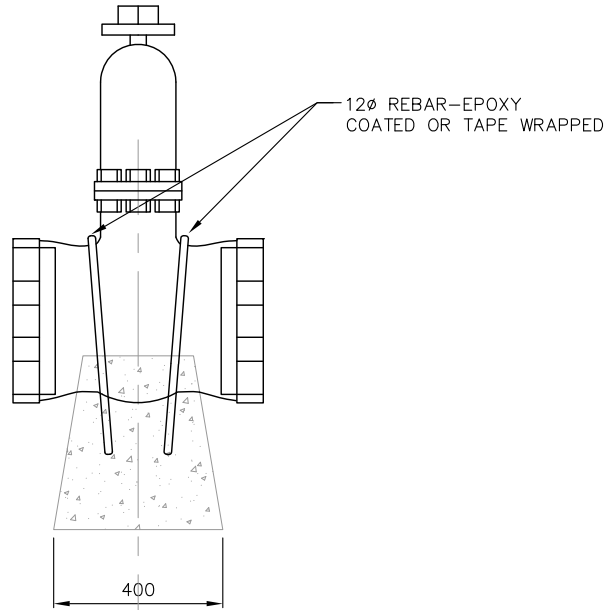
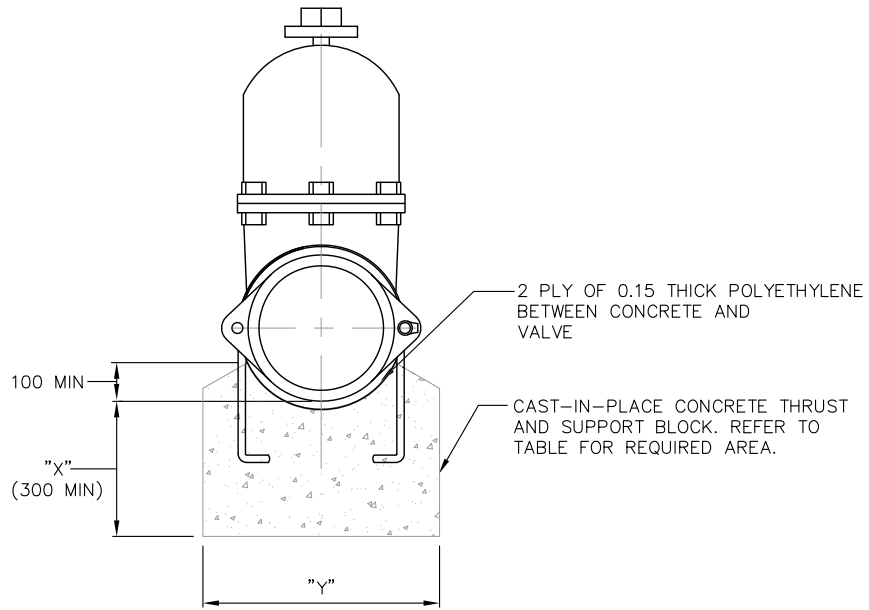
- 1) THE FIRST NUMBER IN THIS TABLE IS THE RECOMMENDED RESTRAINED LENGTH OF PIPE ON EACH SIDE OF A VERTICAL BEND WHERE THE THRUST IS ACTING GENERALLY UPWARDS TOWARDS THE GROUND SURFACE. SEE FIGURE 4A.
- 2) THE SECOND NUMBER IN THIS TABLE IS THE RECOMMENDED RESTRAINED LENGTH OF PIPE ON EACH SIDE OF A 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

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 $\frac{"X" \times "Y"}{1000 \times 1000} = \text{AREA}$
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

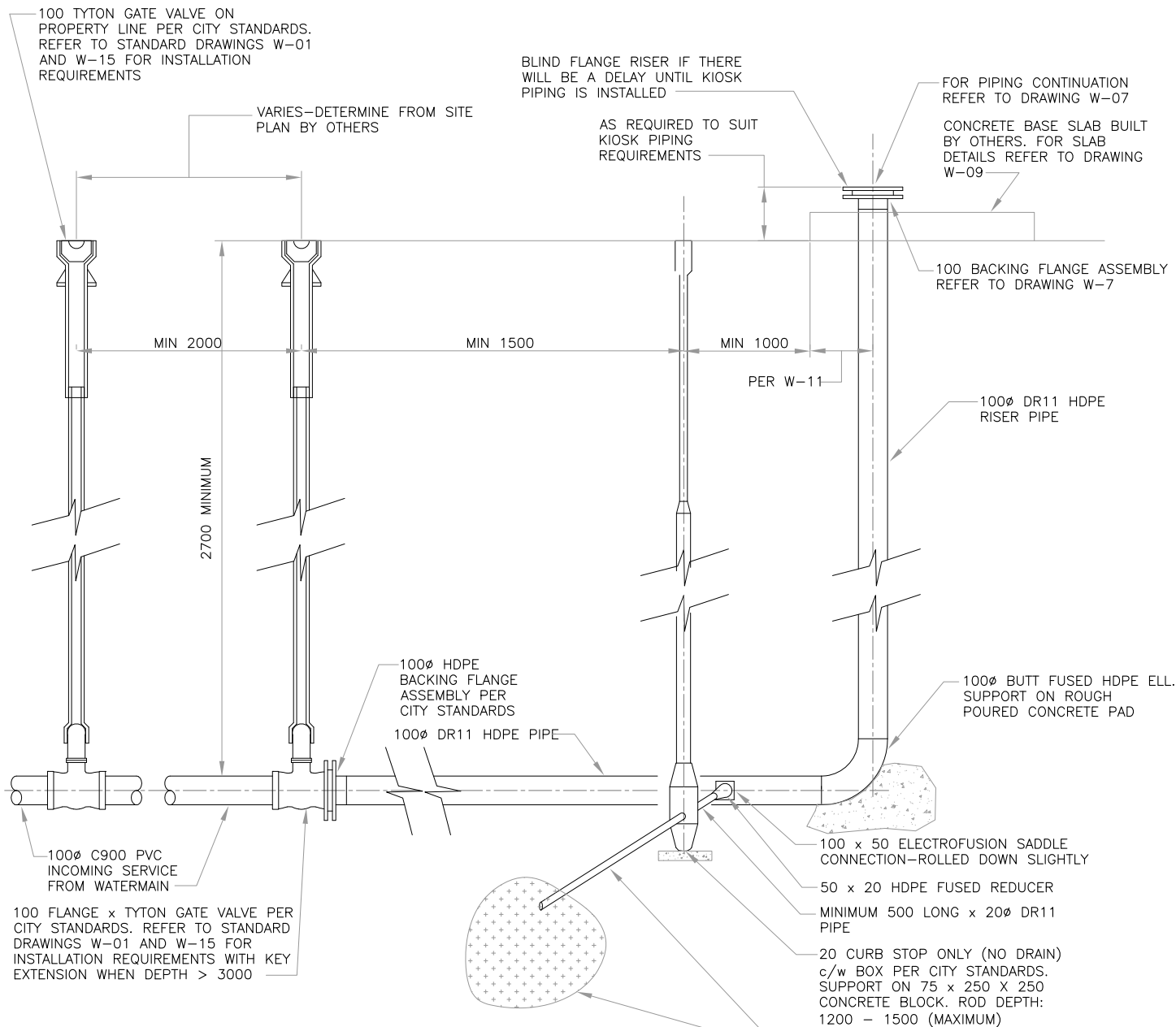
Date	Revisions	By
SEP/97	REVISED TITLE BLOCK	SB
MAY/98	REVISED AND TABLE ADDED	SB
NOV/98	RENUMBERED FROM W-5B	SB
NOV/01	NOTE 3 ADDED TO CLARIFY	SB
AUG/10	TITLE BLOCK	JJA



CONSTRUCTION STANDARDS

Valve Anchoring

Designed By:		Approved:	
Date	Scale	W-15	
NOV/96	NTS		
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.

MINIMUM 1000LG x 20Ø DR11 PIPE TO MINIMUM 0.2m³ DRAINAGE SUMP. DRAINAGE MATERIAL PER CITY SPEC. PERFORATE LAST 300mm OF PIPE WITHIN SUMP. TOP OF SUMP TO BE BELOW BOTTOM OF 100Ø PIPE

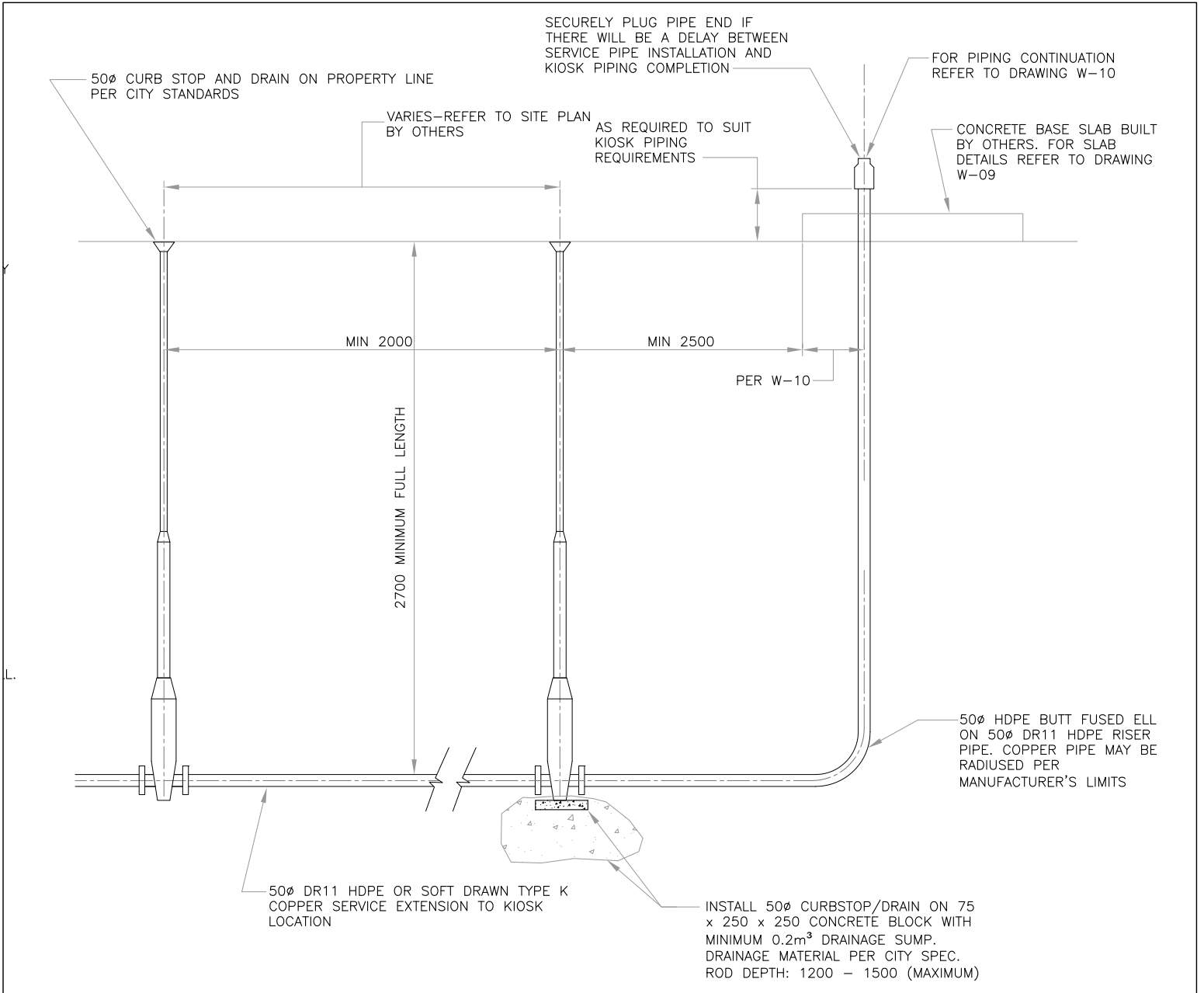
DETAIL-100mm SERVICE TO IRRIGATION KIOSK

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.

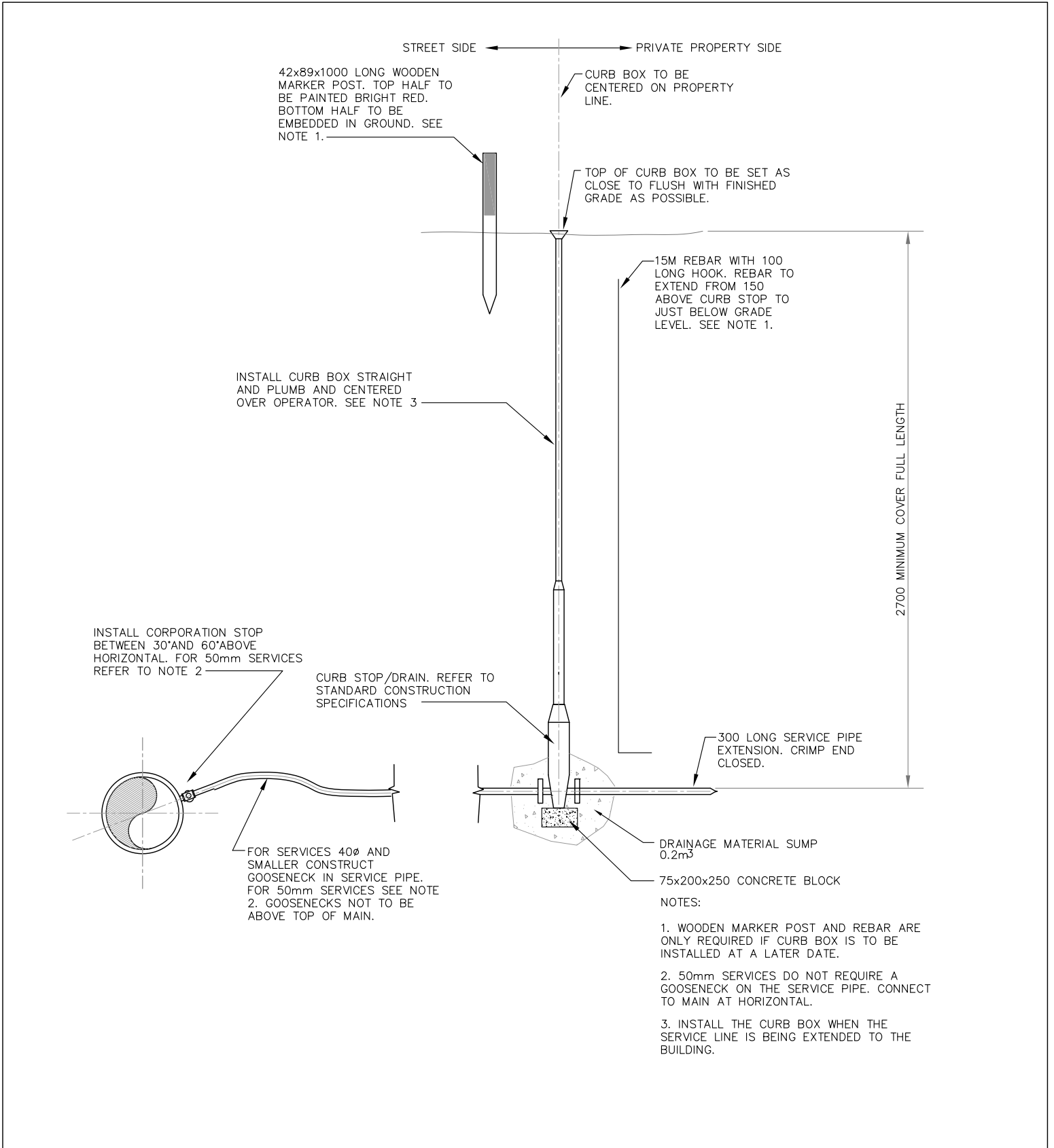
DETAIL—50mm SERVICE TO IRRIGATION KIOSK

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		

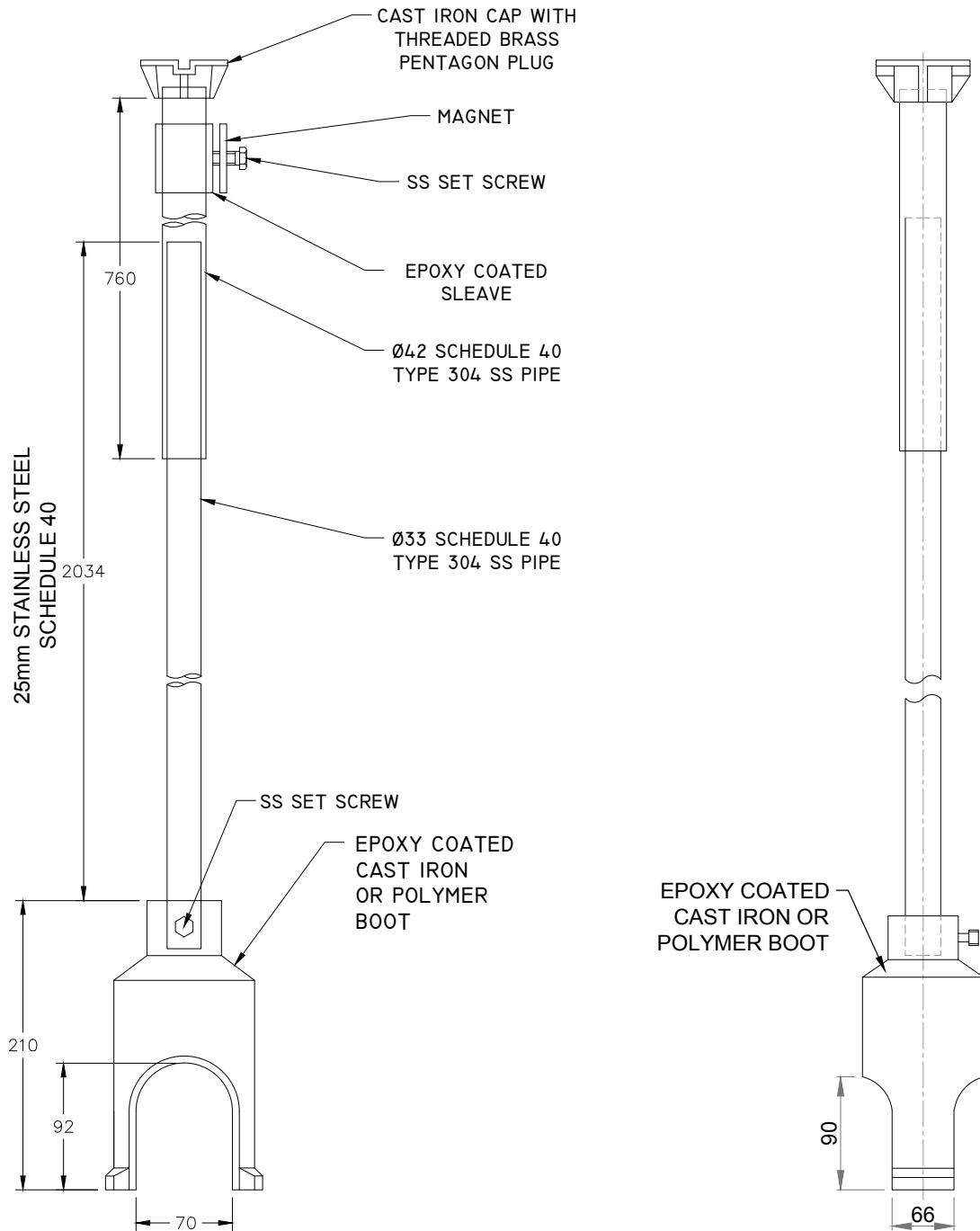


ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

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 SEP/98	Scale NTS	W-17
Digital File: Stdw-17.dwg		



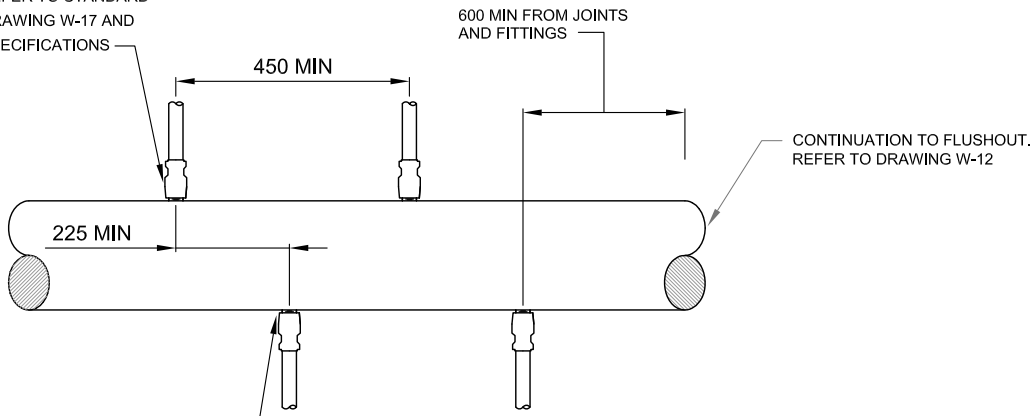
MINIMUM SIZE ALLOWED FOR SERVICES CONNECTIONS IS 25mm

Date	Revisions	By
JAN/18	FIRST ISSUE	TY



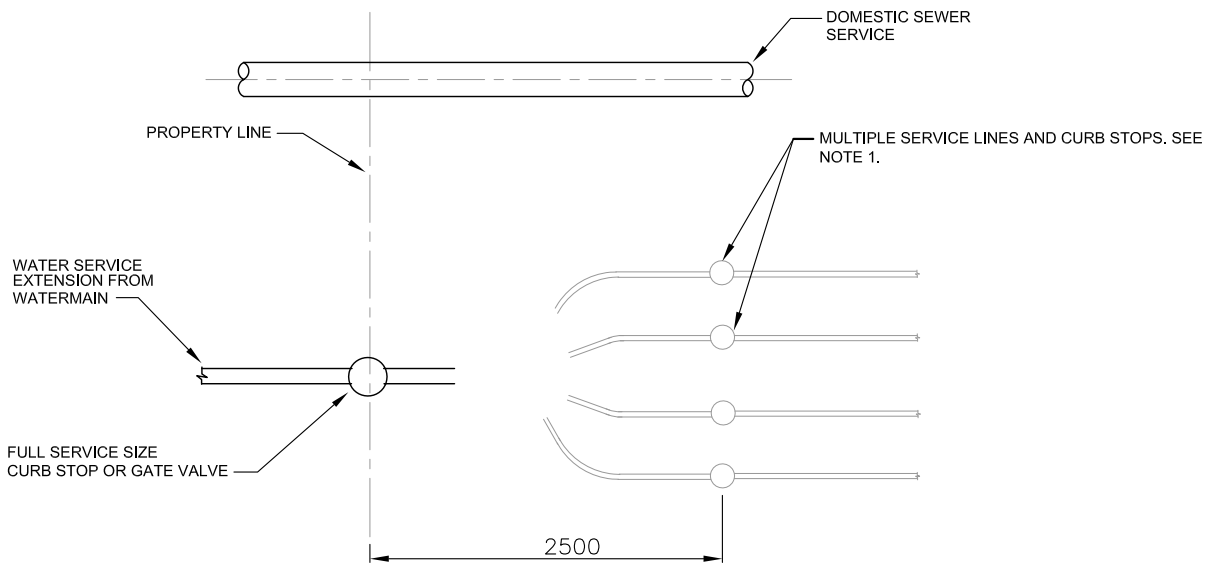
CONSTRUCTION STANDARDS		
Water Service Curb Box 50mm and Smaller Services		
Designed By:	Approved: Dustin McCall	
Date: JAN/18	Scale: NTS	W-18
Digital File: Stdw-18.dwg		

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.

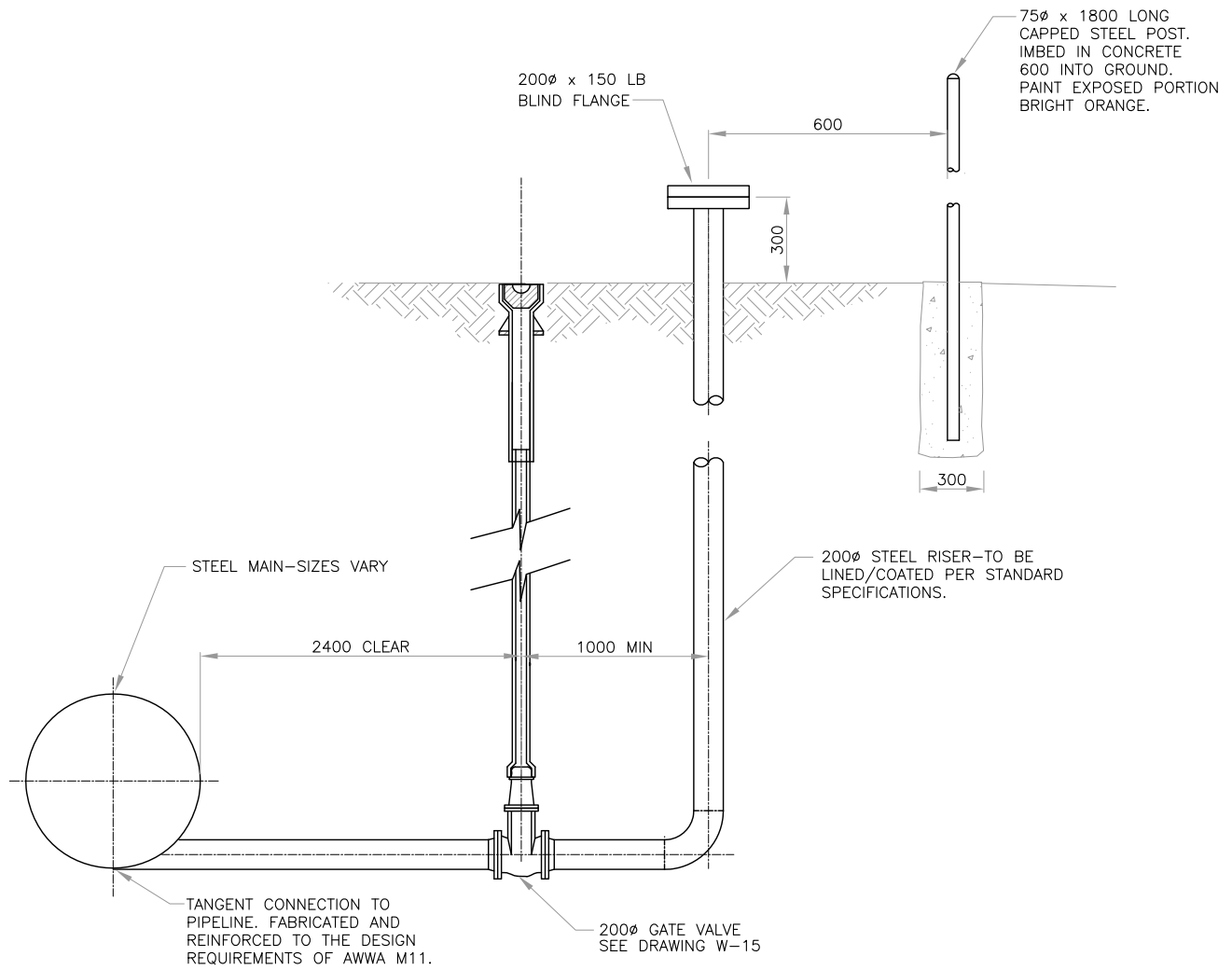
2) REFER TO SPECIFICATIONS SECTION 02516 FOR PIPING, VALVING AND INSTALLATION REQUIREMENTS

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 JUL/02	Scale NTS	W-19
Digital File: Stdw-19.dwg		



NOTES:

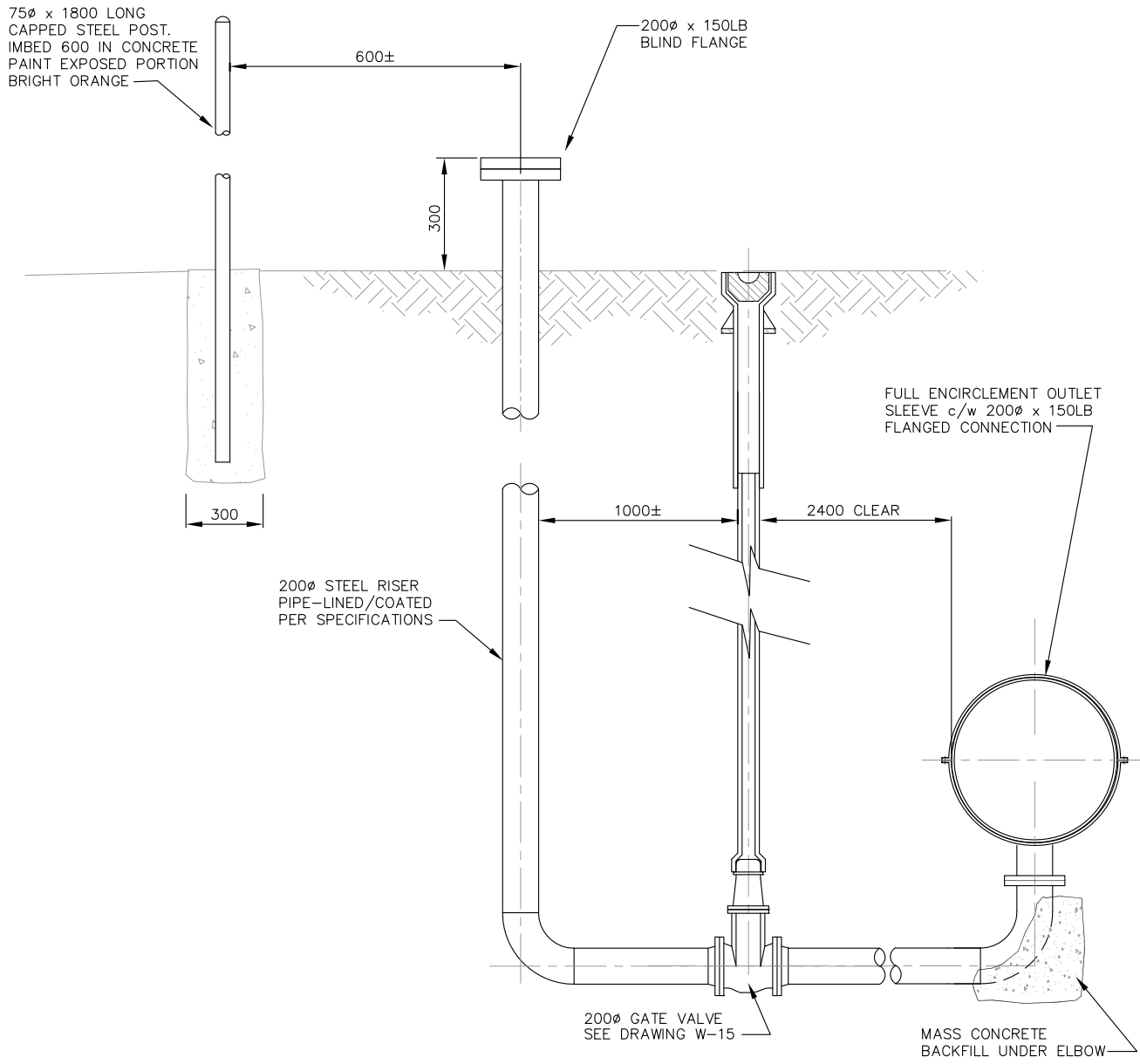
- 1) ALL MATERIALS/INSTALLATION TO BE IN ACCORDANCE WITH CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS FOR WATERMAIN.
- 2) REPAIR ALL LININGS/COATINGS DAMAGED BY CUTTING/WELDING OPERATIONS

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

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



CONSTRUCTION STANDARDS		
Blowoff from Steel Pipeline		
Designed By:	Approved:	
Date	Scale	W-23
MAY/94	NTS	
Digital File:	Stdw-23.dwg	



NOTE

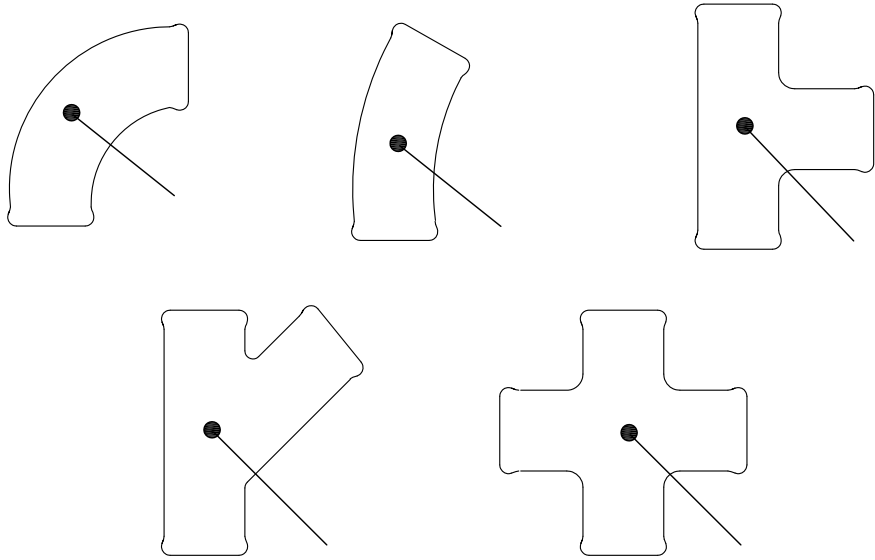
- 1) ALL MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS.
- 2) REPAIR ALL LININGS/COATINGS DAMAGED AS A RESULT OF CUTTING/WELDING OPERATIONS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

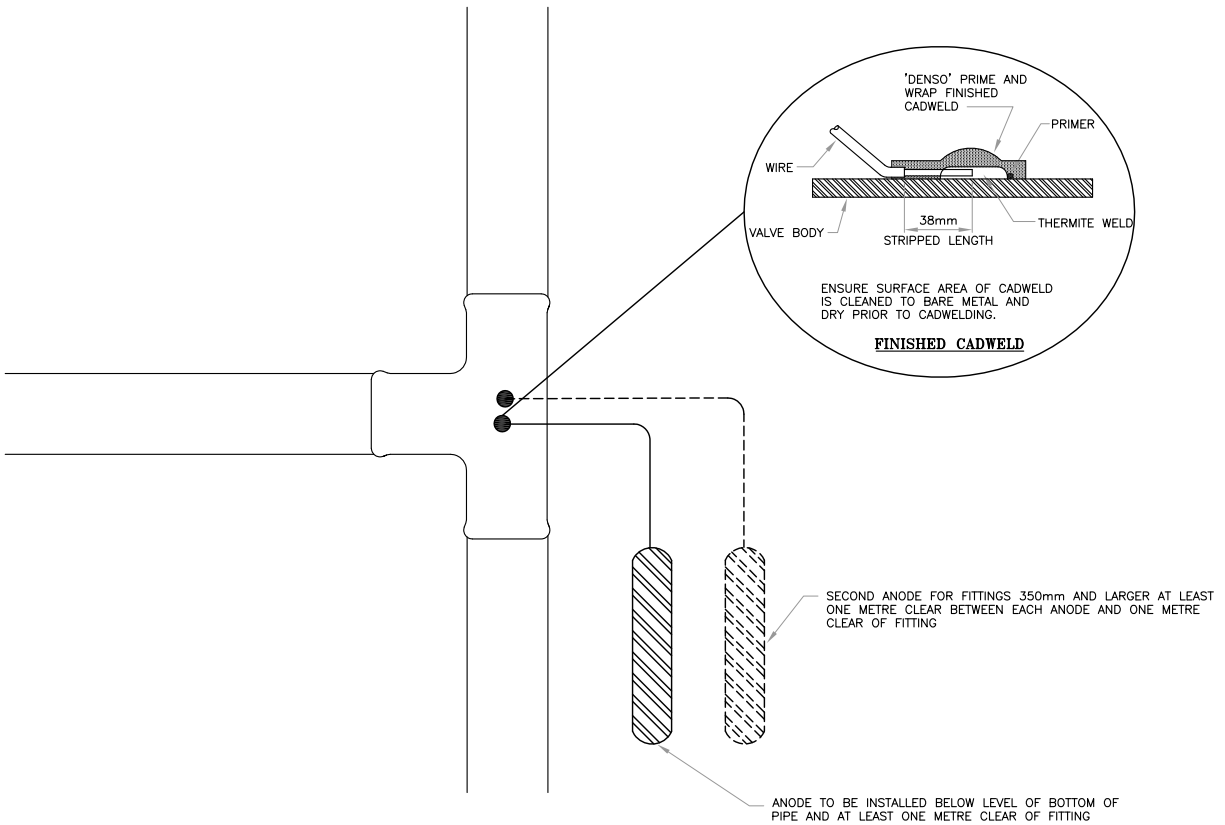
Date	Revisions	By
JAN/97	REISSUED	SB
SEP/97	MINOR REVISIONS	SB
NOV/98	RENUMBERED FROM W-19A	SB
AUG/10	TITLE BLOCK	JJA



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

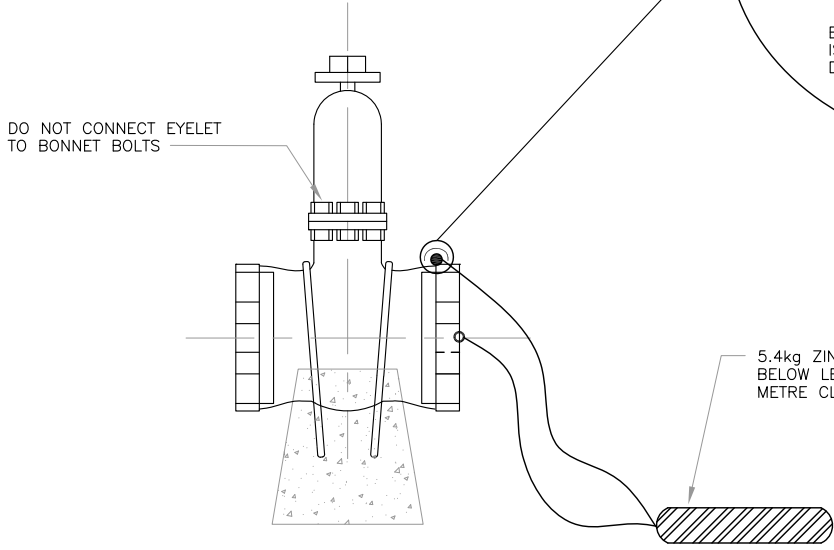
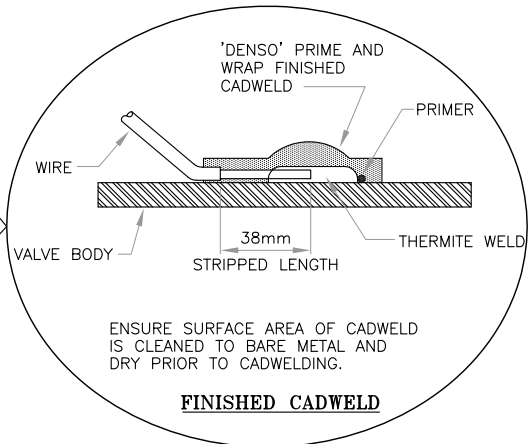
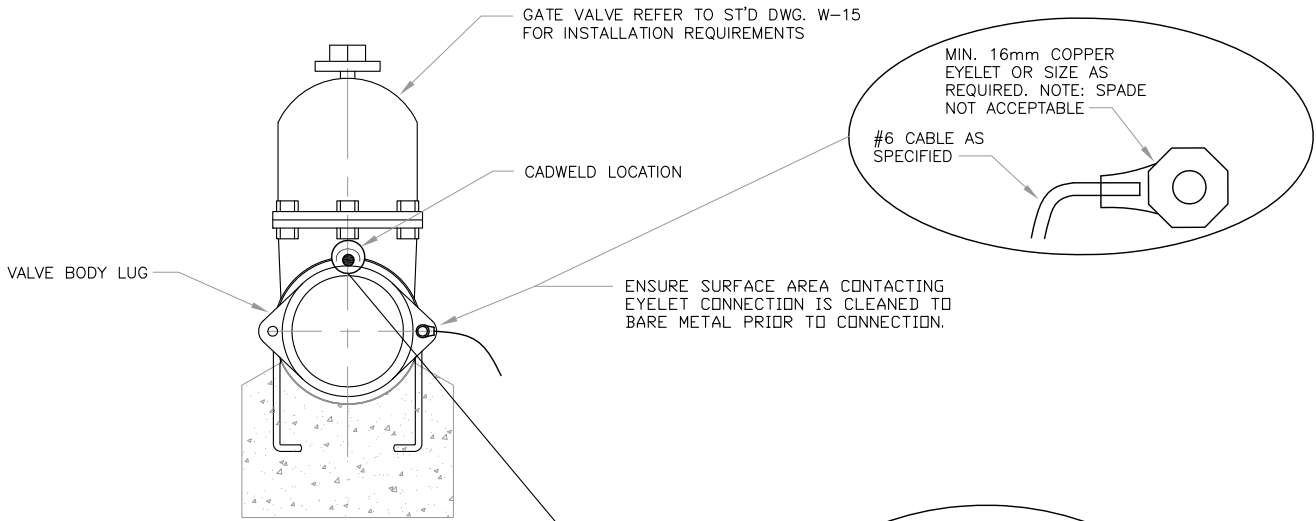


NOTE:
 -FITTINGS 300mm AND SMALLER REQUIRE A SINGLE ANODE. FITTINGS 350mm AND LARGER REQUIRE TWO (2) ANODES WHICH MUST BE LOCATED AS DESCRIBED AND ALSO SPACED AT LEAST ONE METRE APART.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

Date	Revisions	By	CONSTRUCTION STANDARDS		
MAY/03	ISSUED AS STANDARD	SB	Cathodic Protection of Cast Iron Fittings		
AUG/10	TITLE BLOCK	JJA			
			Designed By:	Approved:	
			Date	Scale	W-25
			MAR/03	NTS	
			Digital File:	stdw-25.dwg	





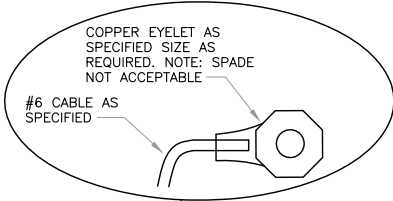
NOTE:
 -VALVES 300mm AND SMALLER REQUIRE A SINGLE ANODE. VALVES 350mm AND LARGER REQUIRE TWO (2) ANODES WHICH MUST BE LOCATED AS DESCRIBED AND ALSO SPACED AT LEAST ONE METRE APART.
 -ANODE LEAD ATTACHMENT TO THE VALVE MAY BE MADE BY EITHER EYELET OR CADWELD. BOTH OPTIONS ARE DEPICTED ON THIS DRAWING.
 -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



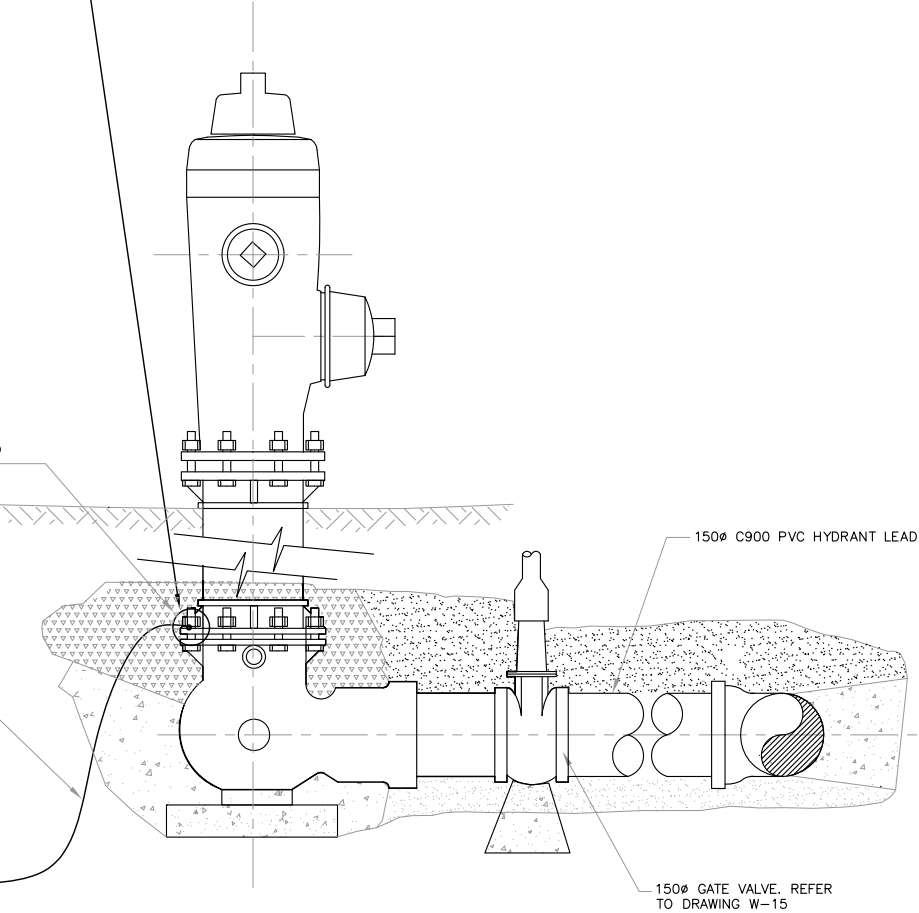
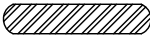
CONSTRUCTION STANDARDS		
Cathodic Protection of Gate Valves		
Designed By:	Approved:	
Date	Scale	
MAR/03	NTS	W-26
Digital File:	stdw-26.dwg	



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.

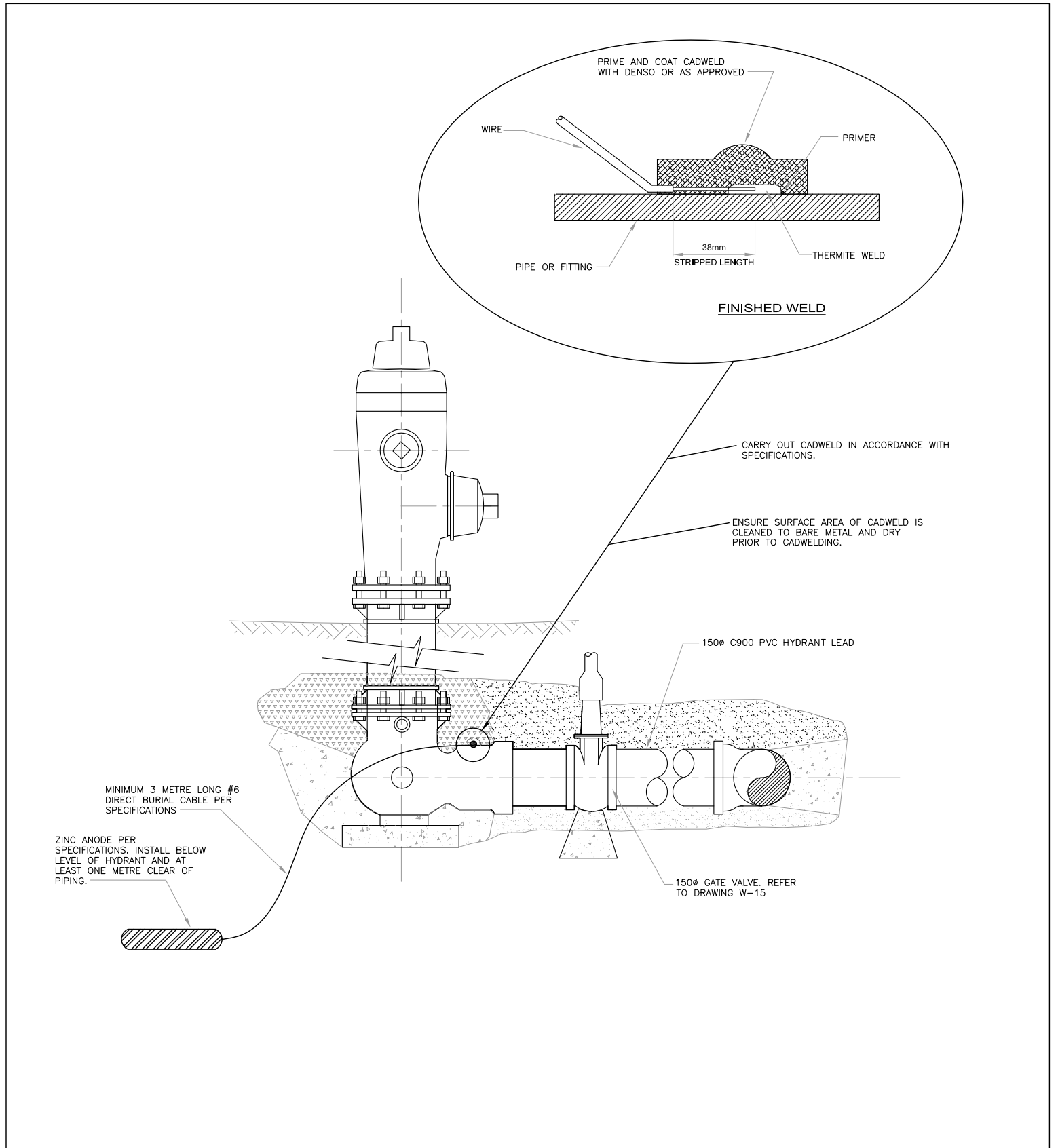


ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

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	
MAR/03	NTS	W-27
Digital File:	stdw-27.dwg	

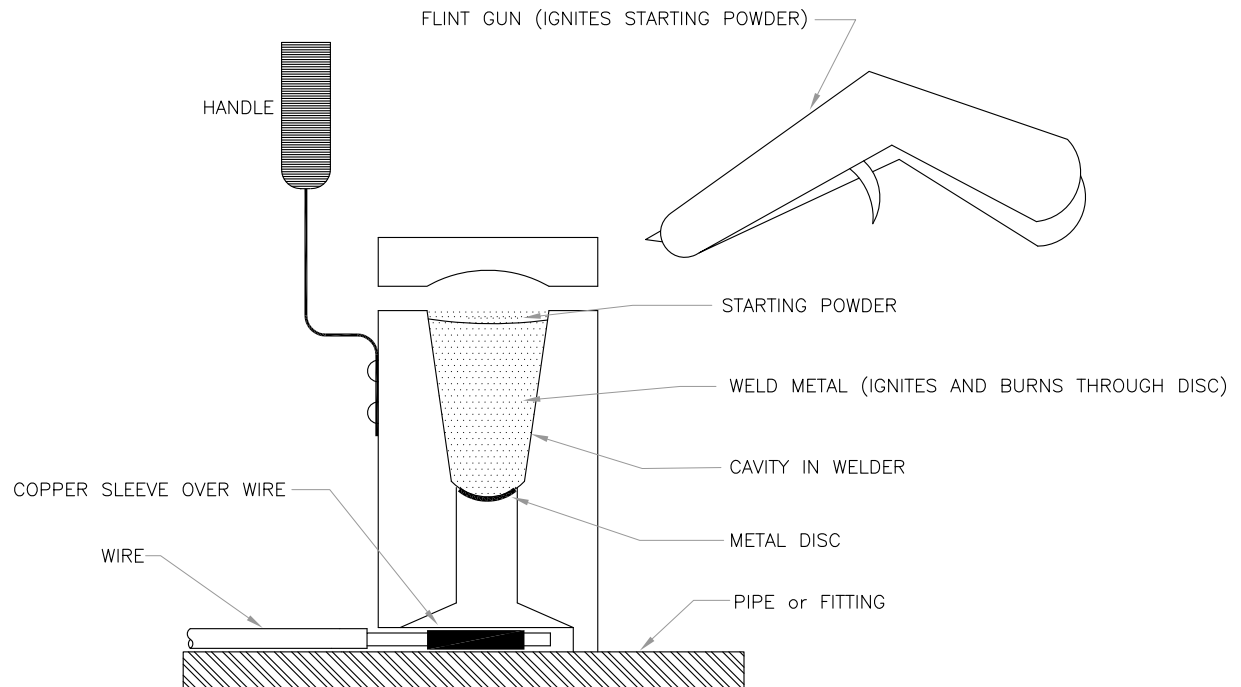


ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

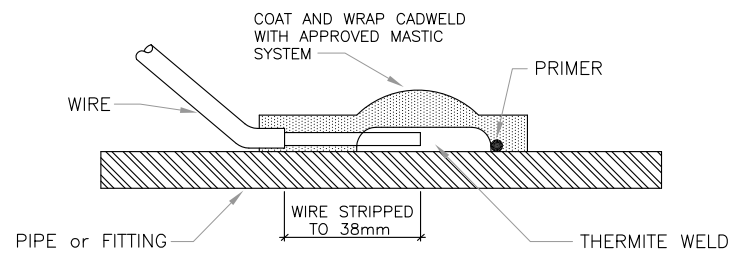
Date	Revisions	By
MAY/03	ISSUED AS STANDARD	SB
AUG/10	TITLE BLOCK	JJA



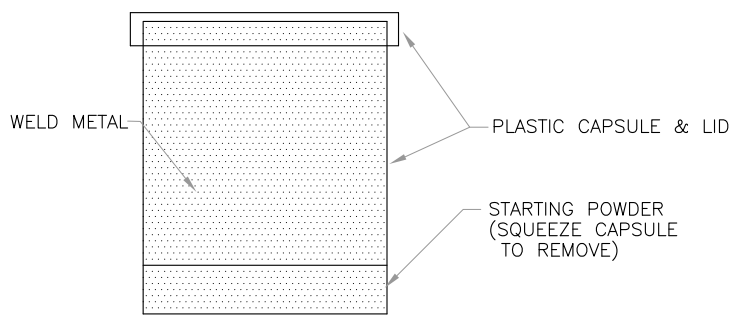
CONSTRUCTION STANDARDS		
Cathodic Protection of Hydrant using Cadweld Connection		
Designed By:	Approved:	
Date	Scale	W-28
MAR/03	NTS	
Digitl File:	stdw-28.dwg	



CADWELD



FINISHED WELD

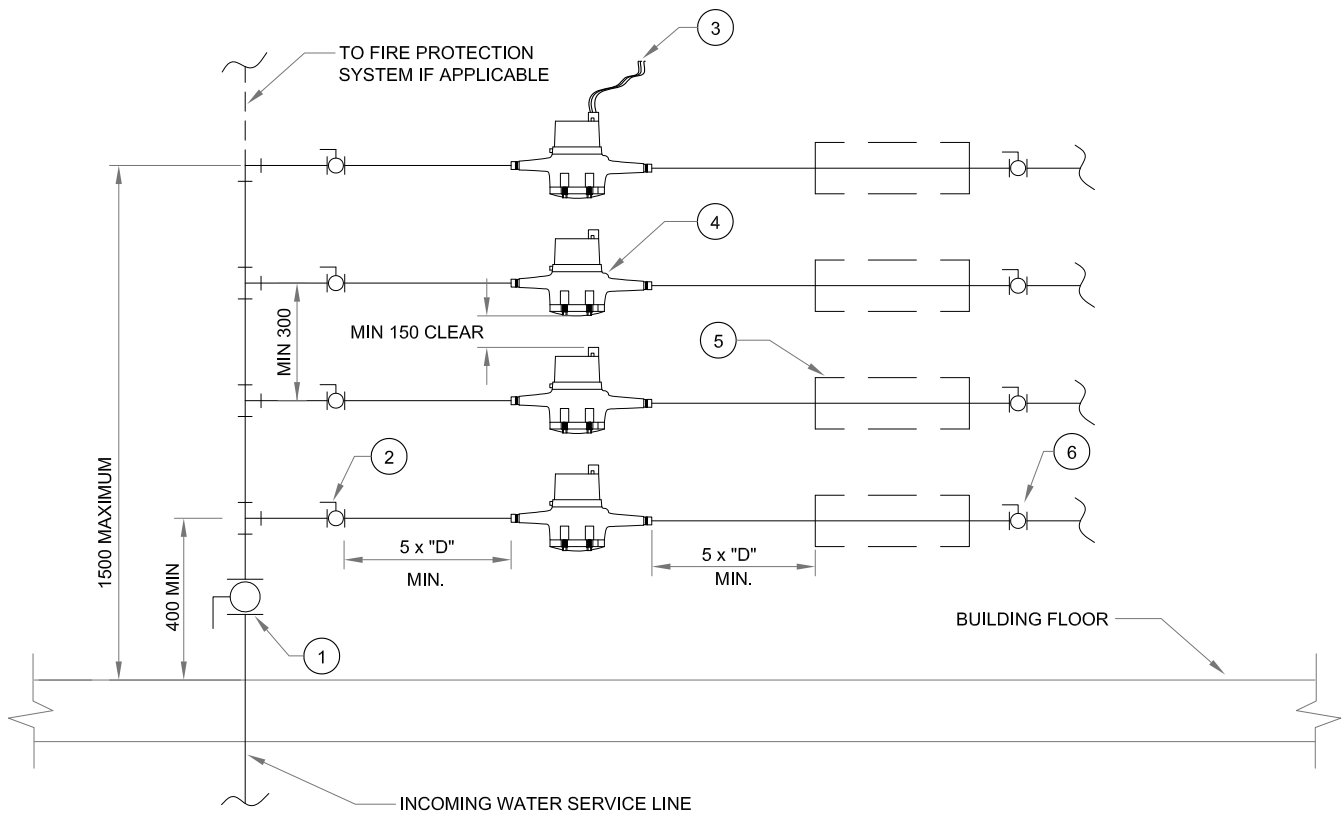


WELD METAL CAPSULE

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. ISOLATING VALVE - MUST BE THE SAME SIZE AS THE INCOMING WATER SERVICE IF IT SERVES A FIRE PROTECTION SYSTEM..
2. FACTORY LOCKABLE BALL VALVE. SAME SIZE AS INDIVIDUAL SERVICE LINE. LOCK WILL BE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
3. THREE WIRE LEADS FROM EACH METER TO 'MULTI-READ' MXU MODULE SUPPLIED BY THE CITY OF REGINA.
4. WATER METER TYP. - SUPPLIED AND INSTALLED BY THE CITY OF REGINA - METERS WILL BE ROLLED OUTWARD APPROX. 30° SO THAT REGISTER CAN BE READ WITHOUT BEING DIRECTLY OVER TOP OF THE METER.
5. BACKFLOW PREVENTION ASSEMBLY IF SO DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR. UNIT TO BE FACTORY SUPPLIED c/w ISOLATING VALVES. ASSEMBLY SHALL BE CSA APPROVED AND BE INSTALLED AS PER MANUFACTURER SPECIFICATION. CSA APPROVED FOR THAT MOUNTING ORIENTATION. BACKFLOW PREVENTERS MAY ONLY BE INSTALLED DOWNSTREAM OF THE METER.
6. ISOLATING BALL VALVE TO BE THE SAME SIZE AS THE SERVICE LINE. THIS VALVE IS RECOMMENDED IF A BACKFLOW PREVENTER IS INSTALLED AND IS MANDATORY IF A BACKFLOW PREVENTER IS NOT REQUIRED.

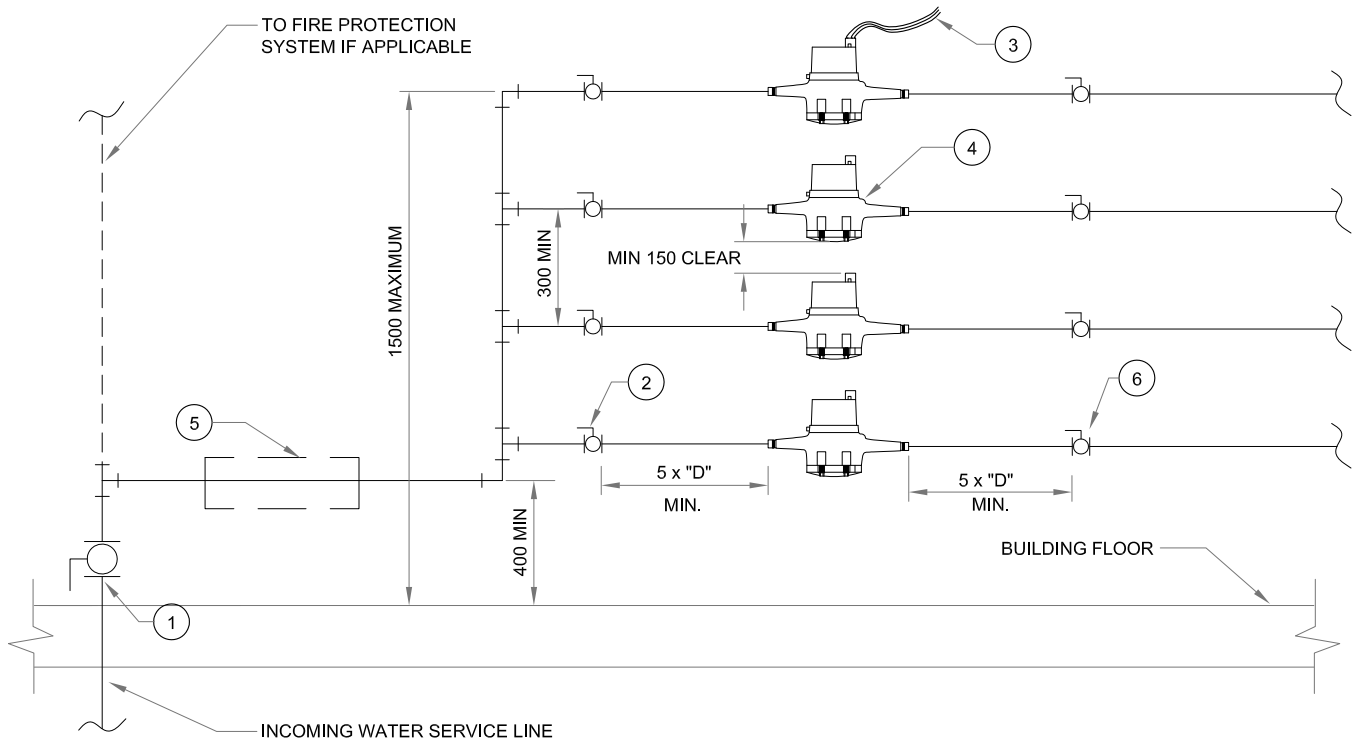
NOTES:

- PIPING MATERIALS AND INSTALLATION MUST COMPLY WITH THE CANADIAN PLUMBING CODE AND THE CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS. PROVIDE ADDITIONAL PIPING SUPPORT AS REQUIRED TO ELIMINATE STRAIN ON METER AND BACKFLOW PREVENTER.
- "D" IS THE NOMINAL DIAMETER OF THE SERVICE PIPE TO WHICH THE METER IS ATTACHED. METER SIZE(S) WILL BE DETERMINED BY THE CITY OF REGINA.
- METERS SHOWN MANIFOLDED VERTICALLY. HORIZONTAL MANIFOLDING OF METERS IS ACCEPTABLE. MINIMUM CLEAR SPACING BETWEEN PIPING IS 300mm. IF METERS ARE MOUNTED IN THIS MANNER THE 'REACHOVER' DISTANCE TO THE FURTHEST METER MAY NOT EXCEED 1000mm.
- METERS MUST BE MOUNTED A MINIMUM OF 50mm CLEAR FROM WALLS.
- FOR LOCATIONS REQUIRING IN EXCESS OF 16 METERS CONSULT THE CITY OF REGINA FOR INSTALLATION REQUIREMENTS.
- ADDITIONAL PROTECTION DEVICES MAY BE REQUIRED ON INSTALLATIONS AS DETERMINED BY CROSS CONNECTION CONTROL COORDINATOR.
- ALL DISTRIBUTION LINES MUST BE PROPERLY MARKED TO SHOW WHAT AREA/UNIT THE LINE IS SERVING.

Date	Revisions	By
APR/03	PROPOSED STANDARD FOR REVIEW	SB
JUN/03	NEW STANDARD	SB
OCT/05	NOTES/LEGEND REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTES / DIMENSIONS ADDED	BZ
FEB/17	DIMENSIONS ADDED	TY



CONSTRUCTION STANDARDS		
Water Meter/Backflow Preventer Installation Requirements for Multi Metered Locations - Alt-1		
Designed By:	Approved: Dustin McCall	
Date: Apr. 05, 2017	Scale: NTS	W-30
Digital File: Stdw-30.dwg		



LEGEND:

1. ISOLATING VALVE - MUST BE THE SAME SIZE AS THE INCOMING WATER SERVICE IF IT SERVES A FIRE PROTECTION SYSTEM.
2. FACTORY LOCKABLE BALL VALVE. SAME SIZE AS INDIVIDUAL SERVICE LINE. LOCK WILL BE SUPPLIED AND INSTALLED BY THE CITY OF REGINA.
3. THREE WIRE LEADS FROM EACH METER TO 'MULTI-READ' MXU MODULE SUPPLIED BY THE CITY OF REGINA.
4. WATER METER TYP. - SUPPLIED AND INSTALLED BY THE CITY OF REGINA - METERS WILL BE ROLLED OUTWARD APPROX. 30° SO THAT REGISTER CAN BE READ WITHOUT BEING DIRECTLY OVER TOP OF THE METER.
5. BACKFLOW PREVENTION ASSEMBLY IF SO DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR. UNIT TO BE FACTORY SUPPLIED c/w ISOLATING VALVES. ASSEMBLY SHALL BE CSA APPROVED AND BE INSTALLED AS PER MANUFACTURED SPECIFICATIONS, CSA APPROVED FOR THAT MOUNTING ORIENTATION.
6. ISOLATING BALL VALVE TO BE THE SAME SIZE AS THE SERVICE LINE.

NOTES:

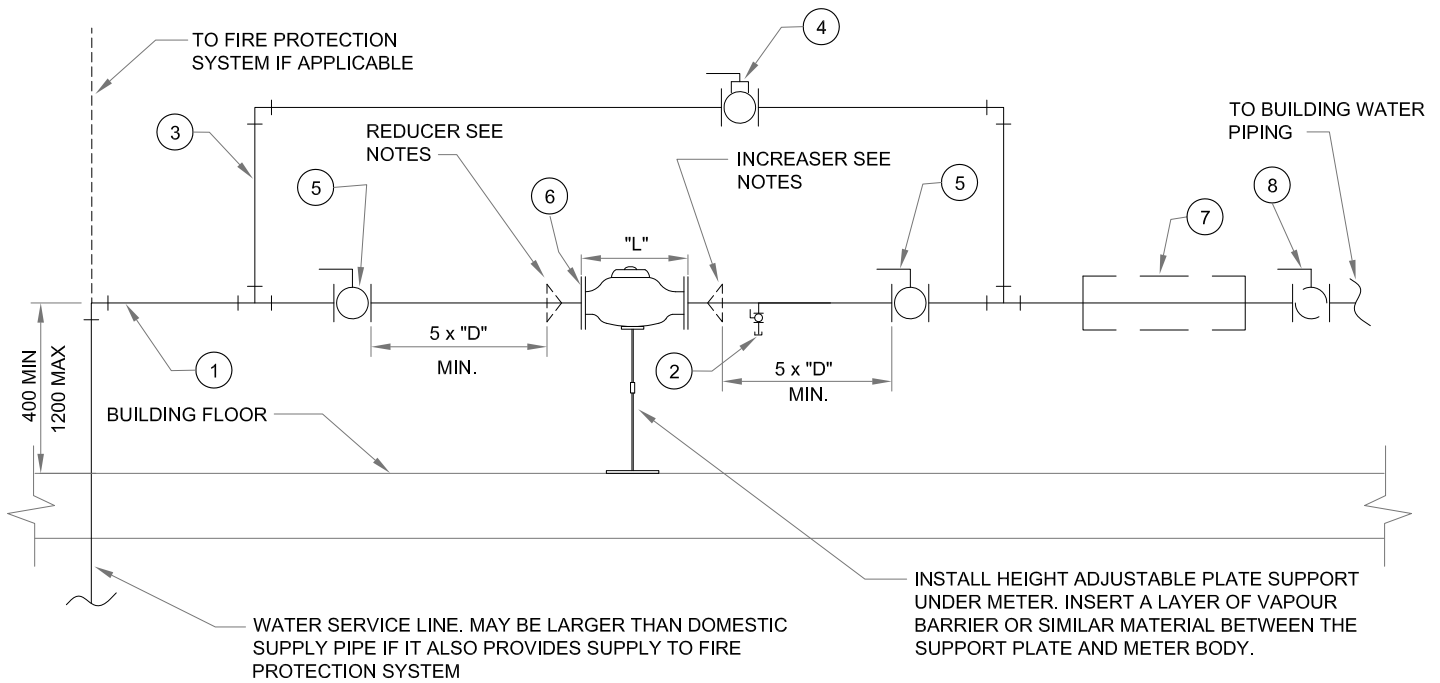
- METER INSTALLATION/BACKFLOW PREVENTION REQUIREMENTS WILL BE ADVISED AS A PART OF THE PLAN REVIEW PROCESS
- PIPING MATERIALS AND INSTALLATION MUST COMPLY WITH THE CANADIAN PLUMBING CODE AND THE CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS. PROVIDE ADDITIONAL PIPING SUPPORT AS REQUIRED TO ELIMINATE STRAIN ON METER AND BACKFLOW PREVENTER.
- "D" IS THE NOMINAL DIAMETER OF THE SERVICE PIPE TO WHICH THE METER IS ATTACHED. METER SIZE(S) WILL BE DETERMINED BY THE CITY OF REGINA.
- METERS SHOWN MANIFOLDED VERTICALLY. HORIZONTAL MANIFOLDING OF METERS IS ACCEPTABLE. MINIMUM CLEAR SPACING BETWEEN PIPING IS 300mm. IF METERS ARE MOUNTED IN THIS MANNER THE 'REACHOVER' DISTANCE TO THE FURTHEST METER MAY NOT EXCEED 1000mm.
- METERS MUST BE MOUNTED A MINIMUM OF 50mm CLEAR FROM WALLS.
- FOR LOCATIONS REQUIRING IN EXCESS OF 16 METERS CONSULT THE CITY OF REGINA FOR INSTALLATION REQUIREMENTS.
- ADDITIONAL PROTECTION DEVICES MAY BE REQUIRED ON INSTALLATIONS AS DETERMINED BY CROSS CONNECTION CONTROL COORDINATOR.
- ALL DISTRIBUTION LINES MUST BE PROPERLY MARKED TO SHOW WHAT AREA/UNIT THE LINE IS SERVING.

Date	Revisions	By
APR/03	PROPOSED STANDARD FOR REVIEW	SB
JUN/03	NEW STANDARD	SB
OCT/05	NOTES/LEGEND REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTE CHANGES, UPDATE DETAIL/LEGEND	BZ



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

Designed By:		Approved: Andrew Polson	
Date	Scale	W-31	
Feb. 24, 2016	NTS		
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. LOCK WILL BE PROVIDED AND INSTALLED BY THE CITY OF REGINA.

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. METER SIZE WILL BE DIRECTED BY THE CITY OF REGINA. METER WILL BE SUPPLIED AND INSTALLED ONLY BY THE CITY OF REGINA. WATER METER MUST BE INSTALLED ONLY IN THE HORIZONTAL POSITION. PROVIDE PIPING CONNECTIONS AS REQUIRED FOR METER INSTALLATION. METER SPACER WILL BE PROVIDED BY THE CITY OF REGINA FOR USE BY THE PIPING CONTRACTOR.

7. BACKFLOW PREVENTION ASSEMBLY c/w ISOLATING VALVES AS DIRECTED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR. ASSEMBLY SHALL BE INSTALLED AS PER MANUFACTURER SPECIFICATION, CSA APPROVED FOR THAT MOUNTING ORIENTATION. BACKFLOW PREVENTERS MAY ONLY BE INSTALLED DOWNSTREAM OF THE METER BYPASS CONNECTION AS SHOWN.

8. BALL TYPE ISOLATING VALVE FOR BACKFLOW PREVENTER. NOTE - PROVISION OF THIS VALVE IS RECOMMENDED BUT IS NOT MANDATORY.

NOTES:

- PIPING MATERIALS AND INSTALLATION MUST COMPLY WITH THE CANADIAN PLUMBING CODE AND THE CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS. PROVIDE ADDITIONAL PIPING SUPPORT AS REQUIRED TO ELIMINATE STRAIN ON METER AND BACKFLOW PREVENTER.

-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.

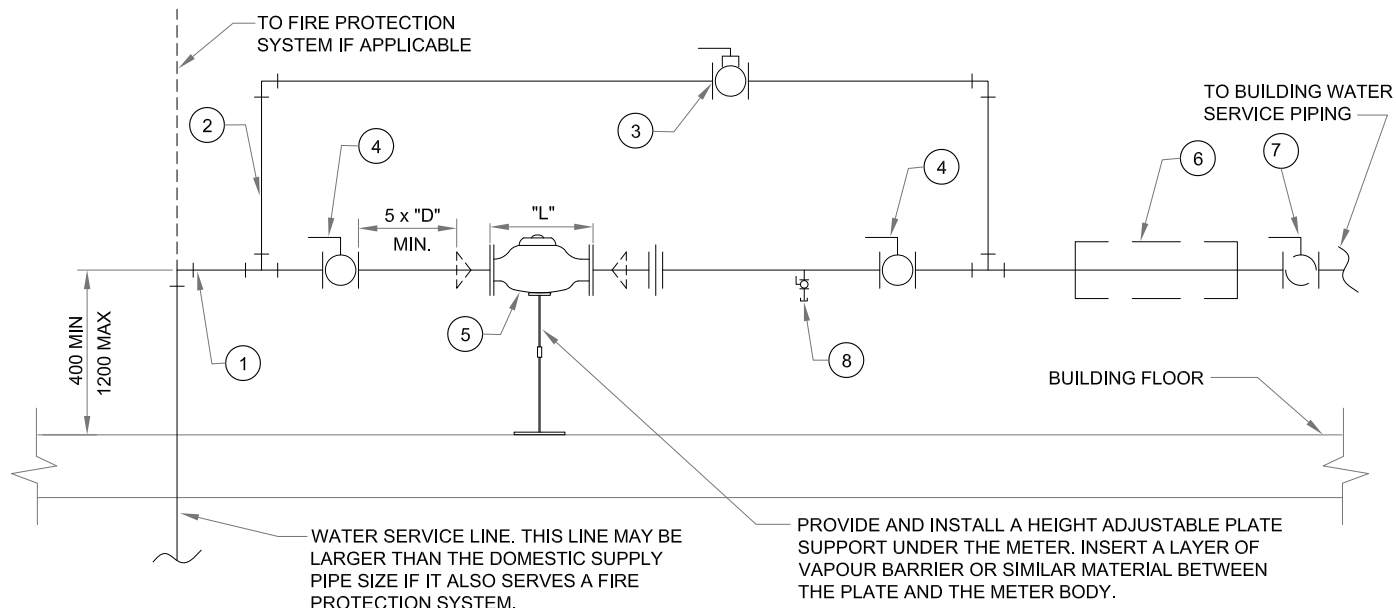
-"D" IS THE NOMINAL DIAMETER OF THE DOMESTIC WATER SUPPLY PIPE.

-"L" IS THE LENGTH OF A FULL DOMESTIC PIPE SIZE WATER METER. OVERALL PIPE RUN PROVIDED MUST INCLUDE THIS LENGTH.

Date	Revisions	By
SEP/02	PROPOSED STANDARD FOR REVIEW	SB
DEC/02	REVISED PROPOSED STANDARD FOR REVIEW	SB
JUN/03	NEW STANDARD	SB
OCT/05	NOTES REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTE CHANGES, UPDATE DETAIL/LEGEND	BZ



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



LEGEND:

1. DOMESTIC WATER SUPPLY PIPE. ISOLATING VALVES AND BYPASS VALVE MUST BE THE SAME SIZE AS THIS LINE OR THE INCOMING WATER SERVICE LINE - WHICHEVER IS SMALLER.
2. METER BYPASS LINE. THIS PIPING MAY BE ABOVE OR BELOW OR TO EITHER SIDE OF THE METER BUT IF IT IS ABOVE IT MUST BE A MINIMUM OF 500mm CLEAR ABOVE THE METER REGISTER HEAD.
3. METER BYPASS VALVE. THIS VALVE IS TO BE EITHER A BALL OR BUTTERFLY STYLE VALVE AND MUST BE EQUIPPED WITH A FACTORY SUPPLIED, QUARTER TURN ,LOCKABLE LEVER ACTUATOR. LOCK WILL BE PROVIDED AND INSTALLED BY THE CITY OF REGINA.
4. METER ISOLATING VALVES - 2 REQUIRED AT LOCATIONS SHOWN. VALVES TO BE EITHER BALL OR BUTTERFLY STYLE WITH QUARTER TURN LEVER ACTUATOR. IF THERE IS A FIRE PROTECTION SYSTEM SERVED FROM THE WATER SERVICE THE ISOLATING VALVE UPSTREAM OF THE METER MUST BE A LOCKABLE TYPE.
5. WATER METER. METER SIZE WILL BE DETERMINED BY THE CITY OF REGINA. METER WILL BE SUPPLIED AND INSTALLED ONLY BY THE CITY OF REGINA. WATER METER MUST BE MOUNTED IN THE HORIZONTAL POSITION. PROVIDE PIPING CONNECTIONS AS REQUIRED FOR METER INSTALLATION. METER SPACER WILL BE PROVIDED BY THE CITY OF REGINA FOR USE BY THE PIPING CONTRACTOR.
6. BACKFLOW PREVENTION ASSEMBLY c/w ISOLATING VALVES AS DETERMINED BY THE CITY OF REGINA CROSS CONNECTION CONTROL COORDINATOR. ASSEMBLY SHALL BE INSTALLED AS PER MANUFACTURER SPECIFICATION, CSA APPROVED FOR MOUNTING IN THAT ORIENTATION. BACKFLOW PREVENTERS MAY ONLY BE INSTALLED DOWNSTREAM OF THE WATER METER AS SHOWN.
7. BALL OR BUTTERFLY TYPE ISOLATING VALVE FOR BACKFLOW PREVENTER. NOTE - PROVISION OF THIS VALVE IS RECOMMENDED BUT IS NOT MANDATORY.
8. 12.5mm CONNECTION c/w BALL VALVE AND THREADED PLUG. ORIENT CONNECTION AS SHOWN.

NOTES:

- PIPING MATERIALS AND INSTALLATION MUST COMPLY WITH THE CANADIAN PLUMBING CODE AND THE CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS. PROVIDE ADDITIONAL SUPPORT IF REQUIRED TO ENSURE NO STRAIN IS TRANSMITTED TO EITHER THE METER OR BACKFLOW PREVENTER.
- IF METER SIZE DOES NOT MATCH WATER SERVICE 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 TO THE METER AS POSSIBLE.
- DIMENSION "D" IS THE NOMINAL DIAMETER OF THE DOMESTIC WATER SUPPLY PIPE.
- DIMENSION "L" IS THE LENGTH OF A FULL DOMESTIC PIPE SIZE WATER METER. OVERALL PIPE RUN PROVIDED MUST ALLOW FOR INSTALLATION OF A METER OF THIS LENGTH.

Date	Revisions	By
SEP/02	PROPOSED STANDARD FOR REVIEW	SB
DEC/02	REVISED PROPOSED STANDARD FOR REVIEW	SB
JUN/03	NEW STANDARD	SB
OCT/05	NOTES REVISED	SB
AUG/10	TITLE BLOCK	JJA
FEB/16	NOTE CHANGES, UPDATE DETAIL/LEGEND	BZ



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

NOTES:

Customers must obtain, complete and return a Water Meter Sizing Form so that the proper meter size for the installation can be determined. Forms are available from the City of Regina.

The customer is responsible for having the operation of the backflow preventer certified by an approved technician on an annual basis and for all costs for each certification.

The customer is responsible for supply and installation of all piping and accessories except the water meter which is supplied and installed by the City of Regina. For details refer to other WM series drawings.

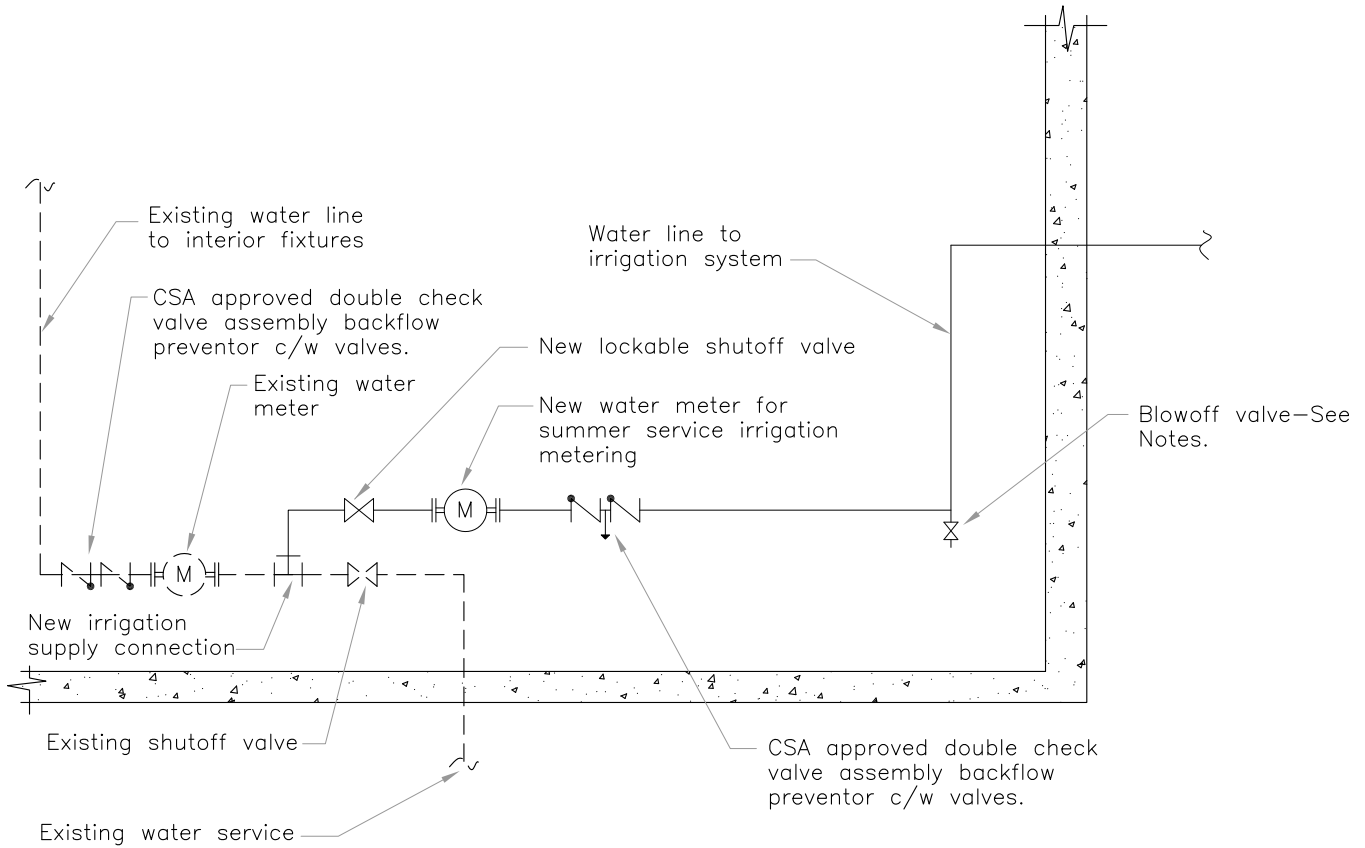
Application for summer water service may be made in person on the main floor of City Hall or by calling 777-7000. The water meter is installed after process of the application.

Installation of new piping and components must conform to the plumbing code. Backflow preventor may be installed horizontal or vertical as per manufacturer specifications.

New irrigation supply connection may be made on the upstream side of the existing shutoff valve if there is not sufficient room to allow the preferred connection location shown.

Blowoff valve must be installed on the downstream (customer) side of the water meter.

Installed height of summer service meter may not exceed 1.5 metres above floor level. Meter must be in an accessible location

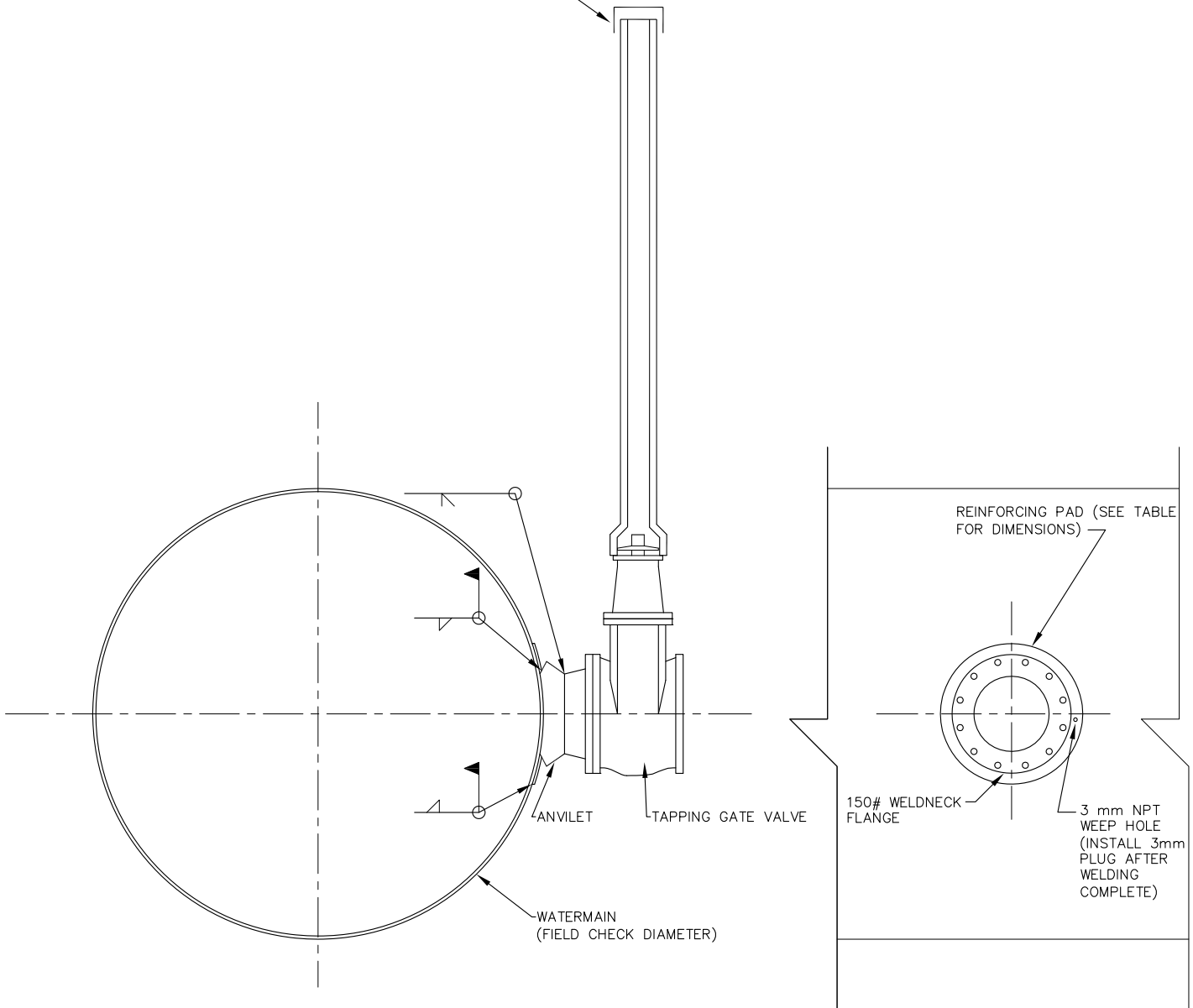


Date	Revisions	By
JUN/03	NOTES REVISED/EXPANDED	SB
MAR/10	NOTES REVISED	DM
AUG/10	TITLE BLOCK	JJA
FEB/17	NOTE CHANGES, UPDATE DETAIL/LEGEND	TY



CONSTRUCTION STANDARDS		
Installation Requirements for Summer Service Irrigation Meters		
Designed By:	Approved: Dustin McCall	
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.

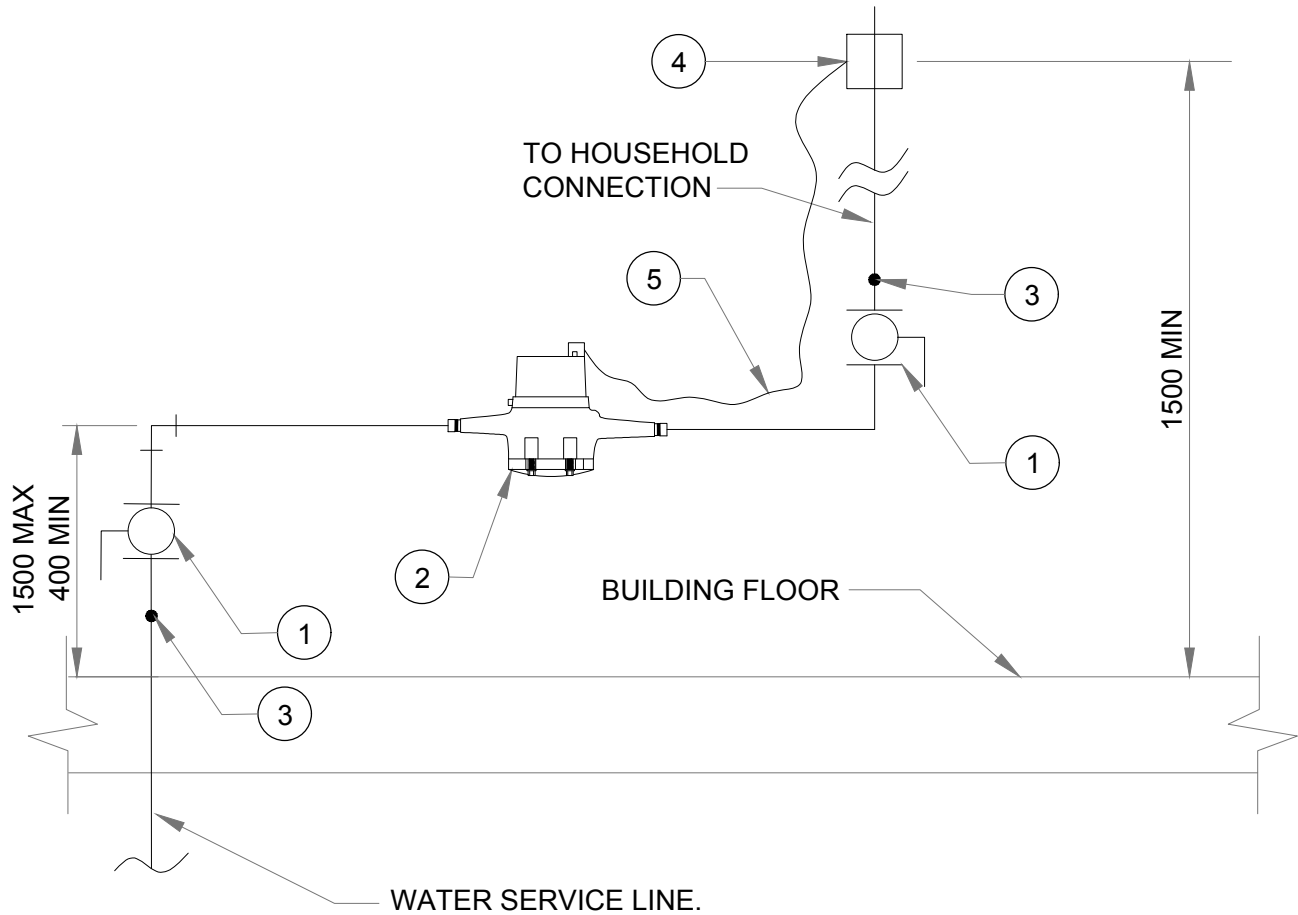
NOTES:

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			
Designed By:		Approved:	
Date	Scale	W-36	
FEB/08	NTS		
Digital File: Stdw-36.dwg			



LEGEND:

1. ISOLATION VALVES - MUST BE SAME SIZE AS WATER SERVICE LINE.
2. 15MM WATER METER (SUPPLIED AND INSTALLED BY CITY OF REGINA)
3. WATER LINE SUPPORTS.
4. MXU (SUPPLIED AND INSTALLED BY CITY OF REGINA)
5. MXU /METER WIRE (SUPPLIED AND INSTALLED BY CITY OF REGINA)

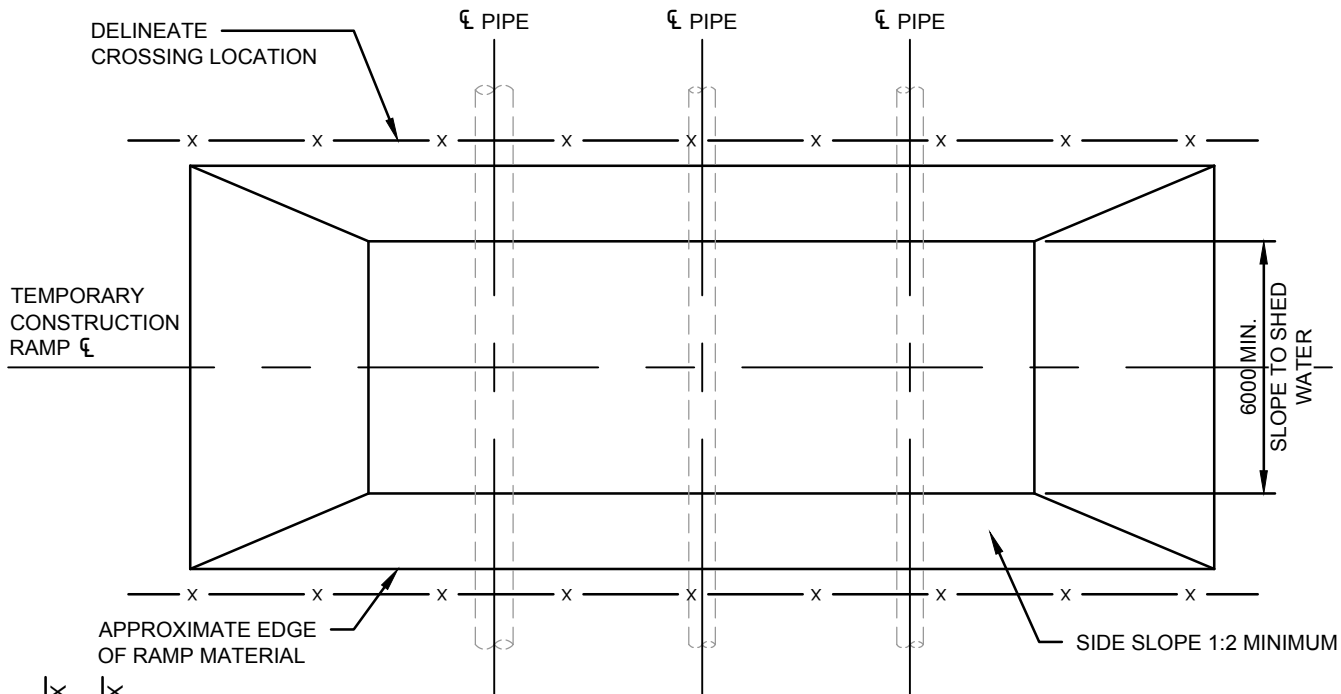
NOTES:

1. PIPING MATERIALS AND INSTALLATION MUST COMPLY WITH THE CANADIAN PLUMBING CODE AND THE CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS.
2. WATER METERS SHALL BE INSTALLED HORIZONTALLY ALLOWING CONVENIENT ACCESS TO THE METER AT ALL TIMES AND WITH A CLEAR SPACE OF AT LEAST 460MM AROUND THE METER.
3. ISOLATING VALVES TO BE INSTALLED ON BOTH SIDES OF THE WATER METER, BEING THE INLET OR UPSTREAM SIDE AND THE OUTLET OR DOWNSTREAM SIDE. EACH VALVE TO BE INSTALLED WITHIN 300MM OF THE WATER METER.
4. WATER LINE SUPPORTS SHALL BE INSTALLED ON BOTH SIDES OF THE WATER METER, WITH EACH SUPPORT TO BE INSTALLED WITHIN 450MM OF THE WATER METER.

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

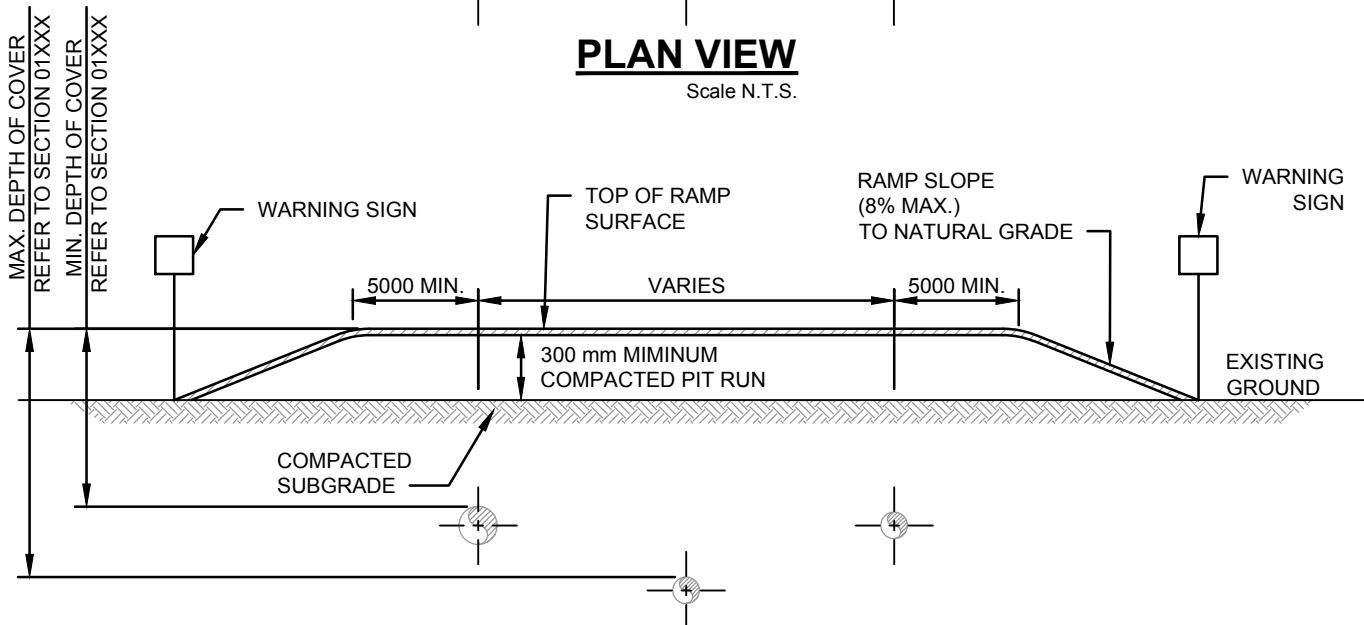


CONSTRUCTION STANDARDS		
RESIDENTIAL WATER METER INSTALLATION		
Designed By:	Approved: Dustin McCall	
Date	Scale	W-37
JAN/18	NTS	
Digital File: Stdw-37.dwg		



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
Digital File: Std W-38 Temp Crossing.dwg	W-38