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INSTALL 42x88x1000 LONG WOODEN MARKER POST AT 150 FROM VALVE BOX. EMBED HALF IN GROUND, EXPOSED HALF TO BE PAINTED BRIGHT RED.

CAST IRON UPPER BOX SECTION c/w FLANGE SEE NOTE 1.

6mm W.T MIN.

150 ID MIN.

120mm UNDER ROADWAY OTHERWISE

GATE VALVE

VALVE ANCHOR BLOCK. SEE DRAWING W-15

NOTE 2:

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

50 SQUARE VALVE OPERATING NUT

FLARED SECTION 184 ID. X MINIMUM 0 WALL THICKNESS

127 (5.0") MIN.

2400

6mm W.T MIN.

127 (5.0") MIN.

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
INSTALL AN ORANGE ALUMINIUM SIGN (200X300) INDICATING WATER VALVE ON A #50mm 3m LONG STEEL POST AT 300mm FROM VALVE BOX C/L EMBED POST 1.5m IN GROUND.

GATE VALVE

CAST IRON UPPER BOX SECTION. SEE NOTE 1.

150 ID MIN.

1200mm UNDER ROADWAY 760mm UPPER VALVE BOX

G.C. COVER

NOTE 2

2400

VALVE ANCHOR BLOCK. SEE DRAWING W-15

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

CONSTRUCTION STANDARDS

Valve Box Installation
Horizontal Direct Bury

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

Designed By: Dustin McCall
Approved:

City of Regina | REGINA
Infinite Horizons

W-01A
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
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.
NOTES

1) Number of 38x235 timbers used depends on size of pipe and span of trench.

2) Support over trench widths greater than 1.5m 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.
BUCKET/SPOON METHOD

NOTE 1: THE USE OF GRANULAR MATERIAL IS RECOMMENDED FOR THE LIFT INDICATED. IN SITU 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
LOCATE VALVE IN MANHOLE SUCH THAT THE CENTER OF ITS HANDHEELE IS WITHIN THE PERIMETER OF THE TOP OPENING IN THE MANHOLE

STANDARD FRAME & COVER

REINFORCED PRECAST TOP SLAB WITH 600# CIRCULAR OPENING

ADJUSTING RINGS

RISER RING(S)

GALVANIZED SAFETY RUNGS AT MAXIMUM 400 O.C.

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

125LB SUP-ON FLANGE AS HARNESSTIE WELD ALL AROUND BOTH SIDES

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

25# HALF COUPLING CONN. w/ BALL VALVE AND PLUG - TYPICAL

NOTES:
1) PIPING AND VALVING MATERIALS/INSTALLATION TO BE AS SPECIFIED IN CITY OF REGINA STANDARD CONSTRUCTION SPECIFICATIONS
2) PRECAST CONCRETE MANHOLE TO BE 1800# MINIMUM. BOTTOM SECTION TO BE LONG AS POSSIBLE. ALL JOINTS TO BE MASTIC SEALED WITH "HAM-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

CONSTRUCTION STANDARDS
Gate Valve
Manhole

City of Regina | REGINA
Infinite Horizons

Designed By: [Signature]
Date: APR/82
Scale: NTS

By [Signature]
Date: [Signature]
Scale: Sides-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 SEWER MAINTAIN IS INSTALLED OVER EITHER NEW OR EXISTING WATERMAIN.
- ALL LOCATIONS WHERE NEW WATERMAIN IS INSTALLED UNDER EITHER EXISTING SANITARY SEWER MAIN OR EXISTING STORM SEWER MAIN.

NOTE 2:
WHERE IN THE OPINION OF THE ENGINEER, SOIL CONDITIONS Dictate THAT THE AREA FILLED WITH ‘FILLCORY’ 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 ‘FILLCORY’ INSTALLATION.

NOTE 4:
MAXIMUM DEPTH OF ‘FILLCORY’ THAT MAY BE INSTALLED IN ANY SINGLE POOL IS 1.0 METER. IF MORE THAN 1.0 METER 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 SEWER MAIN(S).

NOTE 6:
AS MUCH AS POSSIBLE CENTRE THE LENGTH OF WATERMAIN PIPE AT THE POINT OF CROSSING THE SEWER MAIN(S).
1. 100mm HOPE DR11 RISER FOR SUPPLY AND DISCHARGE FOR CONTINUATION REFER TO STANDARD DRAWINGS W-09/W-16 AND SITE PLAN.
2. 100mm HOPE 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° W.C. 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 12SLG 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. 75mm PIPE SPOOL PIECE, OVERALL LENGTH APPROX. 315mm. FIELD CONFIRM.
15. 75mm WATTS MODEL 757 DOUBLE CHECK STYLE BACKFLOW PREVENTER ASSEMBLY C/W NON-RISING STEM GATE STYLE EQUATING VALVES.
16. 150mm x 2000LB HALF COUPLING CONNECTION C/W 150mm x 400 LB WOG BRONZE BALL VALVE.
17. 150mm x 150mm x 100mm EEMAC 1 ELECTRICAL JUNCTION BOX C/W HINGED FRONT AND MIN. 2 X 25mm CONDUIT KNOCKOUTS. BEL EURO564 OR EQUAL. SPOT WELD TO BODY AND FINISH SAME AS KIOSK.
18. 100mm SHORT RADIUS 90° WELD ELLS - 2 REQUIRED
19. 75mm 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, DEGREASE, BLAST TO SSPE-3PIE INSIDE AND OUT, PRIME AND FINISH WITH TWO COATS OF MARINE ENAMEL-COLOUR CSSB 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.
GUARD POST-4 REQUIRED. SEE VIEW BELOW FOR DETAILS.

MUELLER A-411 POST HYDRANT 3/4" x 1 1/2" NOZZLE THREADS TO MATCH CITY OF REGINA STANDARD-SEE SPECIFICATIONS. LOWER HYDRANT CONNECTION TO BE FPT. HYDRANT SURF TO BE MINIMUM 2.7m.

PLAN

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

500 CURB STOP/DRAIN c/w BOX TO CITY STANDARDS

500 MBPT X PACK JOINT COUPLING FOR HOPE PIPE

SUPPORT HYDRANT SHOE AND CURB STOP ON 50x250x250 CONCRETE BLOCK

MINIMUM 0.2m³ DRAINAGE MATERIAL, DRAIN SUMP. SEE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

SECTION

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

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY NOTED OTHERWISE.
50mm IRRIGATION KIOSK BASE SLAB - PLAN/END VIEWS

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

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

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

INCOMING WATER SERVICE ORIENT DIRECTION AS REQUIRED TO MATCH SITE. SEE STANDARD DRAWING W-16 FOR DETAILS OF INCOMING WATER SERVICE ARRANGEMENT.

NOTES:
1) LIMITS OF IRRIGATION KIOSK PAVEMENT DEFINE THE 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)

CONSTRUCTION STANDARDS
50mm Above Grade Irrigation Kiosks
Site Plan and Base Details

Designed By: 
Approved By: 
City of Regina
REGINA
Infinite Horizons

Date: AUG/16
Scale: NTS

JAN/00 STANDARD DRAWING ISSUED
SB

NOV/01 REVISIONS - SEE ALSO W-16
SB

AUG/04 W-09 REVISION 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
250 Rigid PVC conduit to 75 mm above top of base.

100 mm 300 E-W MD - 250 hook EA end on outside bars, add diagonal bars around sleeves 4 sides. 150 min.

Notes:
1) Compact pipe trench backfill to minimum 50% 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 "Ramnel" or equiv. seal between kiosk and slab. All round.
5) Concrete to be 25MPa, Type 50, 5% ± 1 air content, 80mm max slump, moist cure for 7 days.
6) Install 6x150 SS anchor bolts located at corners and mid-PT of long sides. Bolts to protrude 25 mm. Bolts to have min. 20 hook embedded 75 in slab.

2000 x Min. 150 LG, SCH40 steel or PVC sleeves - 2 required, equip sleeves with Nelson stud at mid-length. SLEEVES TO BE FLUSH with or just below top of slab. Use for 100mm service kiosk.

100mm IRRIGATION KIOSK BASE SLAB - PLAN/END VIEWS

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

CONSTRUCTION STANDARDS

100mm Above Grade Irrigation Kiosks
Site Plan and Base Details

City of Regina | REGINA

Designed By: [Signature]  Approved By: [Signature]

Date: AUG16  Scale: NTS

W-09A
NOTES:

1. CONSTRUCT KIOSK WITH 14 GA. STEEL, GRIND WELDS SMOOTH. DESCRIBE AND BLAST TO
   SPC-SP6 STANDARD AND PAINT OR PRIME AND FINISH
   WITH TWO COATS OF MARINE ENAMEL.

2. HINGE MINIMUM 3 LOCATIONS. HINGE TO BE "CANARROW" MODEL

3. MOUNT KIOSK ON CAST OR PRECAST SLAB.
   REFER TO STANDARD DRAWING W-09 FOR DETAILS.

4. 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.

5. 50# HOPE DR11 OR TYPE K SOFT DRAWN COPPER LEAD
   FROM INCOMING WATER SERVICE LINE.

6. 50# HOPE DR11 TO CONNECTION TO
   HOPE IRRIGATION LINES

7. FORD ADAPTOR COUPLING TO SUIT PIPE MATERIAL
   USED = 2 REQUIRED.
   TWO (2) - REQUIRED

8. 50# BRONZE BODY GATE VALVE
   WITH NPT ENDS. TWO (2) REQUIRED.
   SEE SPECIFICATIONS.

9. 50# x 75 LONG MPT NIPPLE
   BALL VALVE THREE (3) - REQUIRED.

10. 50# x 90° M.I. ELBOW
    FIVE (5) - REQUIRED.

11. 50# x (LENGTHS VARY) MPT NIPPLE
    TWO (2) - REQUIRED.

12. 50# x 50 LONG MPT NIPPLE - 5 REQUIRED

13. 50# ROUGHNECK COUPLING.

14. 50# MPT GROOVE END NIPPLE. LENGTHS
    AS REQUIRED.

15. 50# FLOWMETER/MASTER VALVE
    ASSEMBLY. NPT ENDS. SEE
    SPECIFICATIONS FOR DETAILS.

16. 50# APPROVED CHECK BACKFLOW
    PREVENTER W/BALL TYPE ISOLATION
    VALVES. REFER TO SPECIFICATIONS.

17. 50# x 100 LONG MPT X GROOVE END NIPPLE

18. 50# M.I. TEE.

19. 50# x 400 LB BRONZE BALL VALVE.

20. ADJUSTABLE SUPPORTS SEE DETAIL DRAWING. INSTALL TWIN
    ASSEMBLIES AT LOCATION TO BE DIRECTED IN FIELD. PART
    SUPPORT ASSEMBLIES WITH MARINE ENAMEL.

21. 50# FIFT MI. UNION-GROUND BRONZE TO IRON
    TWO (2) REQUIRED.
PLAN VIEW

LEFT END VIEW

FRONT VIEW

OUTLET TO IRRIGATION SYSTEM

INCOMING SERVICE PIPE, REFER TO DRAWINGS W-16 AND W-09 FOR DETAILS REGARDING MATERIALS AND ARRANGEMENT.

INCOMING SUPPLY

50mm OUTLET PIPE TO BE TYPE K SOFT DRAWN COPPER OR HOPE DRILL. BURY DEPTH TO MATCH IRRIGATION SYSTEM. CONNECT TO IRRIGATION SYSTEM WITH APPROPRIATE FORBI COUPLING. REFER ALSO TO STD DRAWING W-09.

25# CONDUIT SEE DWG. W-09

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

City of Regina | Regina

Designed By: Dustin McCall

Revision History:
- AUG/16 TITLE BLOCK
- FEB/16 CHANGE DETAIL ORIENTATION
- AUG/16 CHANGE DIMENSIONS / LABELS

Datum: 85
Scale: NTS

Page 10 of 10
NOTES:

- CONSTRUCT Kiosk WITH 14 GA. STEEL, GRIND WELDS SMOOTH, DESCRIBE AND BLAST TO SSPC-SP6 INSIDE AND OUT. Prime AND Finish WITH TWO COATS OF MARINE ENAMEL. CGSB 503-127 (UP INDUSTRIAL 214) - SIGNAL GREEN.
- MOUNT Kiosk ON CAST OR PRECAST SLAB. Refer TO STANDARD DRAWING W-29 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. 50# HOPE DR11 OR TYPE K SOFT DRAWN COPPER LEAD FROM INCOMING WATER SERVICE LINE.
2. 50# HOPE DR11 TO CONNECTION TO HOPE IRRIGATION LINES.
3. FORD ADAPTOR COUPLING TO SUIT PIPE MATERIAL USED - 2 REQUIRED.
4. 50# BRONZE BODY GATE VALVE WITH FIPT ENDS - 2 (2) REQUIRED. SEE SPECIFICATIONS.
5. 50# X 75 LONG MPT NIPPLE THREE (3) REQUIRED.
6. 50# X 90° M.I. ELLS FIVE (5) REQUIRED.
7. 50# (LENGTHS VARY) MPT NIPPLE TWO (2) REQUIRED.
8. 50# X 50 LONG MPT NIPPLE - 4 REQUIRED.
9. 50# ROUNDNK COUPLING.
10. 50# MPT x PLAIN END SPOOLS LENGTHS AS REQUIRED.
11. 50# FLOWMETER/MASTER VALVE ASSEMBLY, FIPT ENDS SEE SPECIFICATIONS FOR DETAILS.
12. 50# APPROVED DOUBLE CHECK BACKFLOW PREVENTER x/a BALL TYPE ISOLATION VALVES. REFER TO SPECIFICATIONS.
13. 50# X 100 LONG MPT x GROOVE END NIPPLE
14. 50# M.I. TEE.
15. 50# 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. 50# 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 W NIPPLE TWO (2) REQUIRED.

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

CONSTRUCTION STANDARDS

50mm Compression Joint, Malleable Iron, 300 lb, Threaded Steel, 89mm Compression Joint, 63mm Compression Joint, 150mm Stainless Steel, 316 Stainless Steel.

Heave Duty Weld Hinge Minimum 3 Locks, Hinge to be "Cananopic" Model MFRS8070, Malleable Iron with Fixed Brass Pin or as Approved.

DUAL EYELET LOCK ARRANGEMENT USING 3/4" PLATE, NOTCH CENTRE (LE) CATCH AND HOLE 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)

4mm PLATE x 50 WIDE RADIUS PLATE TO FIT D.O. OF PIPE OR DEVICE TO BE SUPPORTED.

15# THREADED STEEL ROD x MIN. 150 LS.

15# GRADE BB NUT, THREAD TO MATCH ROD THREAD.

20# SCH 80 STEEL PIPE TOP AT 75mm BELOW BOTTOM OF PIPE TO BE SUPPORTED

4mm X 150 SQ. PLATE

Support Det.

Date Revisions By
JAN00 ISSUED AS STANDARD SB
DEC00 ENCLOSURE AND MISC DETAILS REVISIJD SB
NOV01 ENCLOSURE AND PIPING DETAILS REVISIJD SB
OCT04 ENCLOSURE ARRANGEMENT, MATERIAL & LATCH SB
AUG10 TITLE BLOCK JJA
FEB16 REMOVE JUNC BOX & NOTE ADD LOUVERS BL
AUG16 EDIT LABELS BL

Date Signed: 3Nov-10, dwg

Designed By: Dustin McCall
Approved: W-10B

City of Regina | REGINA
Infinite Horizons
CONSTRUCTION STANDARDS
50mm Irrigation Service - Kiosk
and Equipment Installation Details
(With Booster Pump)

Date: AUG/16  Title: TITLE BLOCK  JJA
FEB/16  CHANGE DETAIL ORIENTATION / SPEC  BL
AUG/16  CHANGE LABELS  BL

City of Regina  REGINA
Infinite Horizons

Designed By: Dustin McCall
Approved:

Scale: NTS

Sheet: W-10B2
100# DR11 HOPE RISER ASSEMBLY c/w 100# 'CENTRAL' TRANSITION FITTING WITH REGINA FIRE DEPT. PUMPER THREAD CAP WITH STANDARD HYDRANT CAP AS SHOWN. LENGTH OF RISER AS REQ'D.

TWO SECTIONS OF 800# CATCHBASIN MANHOLE X 0.41m LONG AND ONE 900X600X300 CATCHBASIN FLAT TOP. CUT OFF ANY RUNGS IN MANHOLE SECTIONS. MORTAR ALL JOINTS.

NORWOOD ULEFOS F-80 FLOATING FRAME AND SOLID COVER, INSTALL PER MANUFACTURER'S INSTRUCTIONS

ROADWAY ASPHALT OR CONCRETE SIDEWALK

GRANULAR OR BASE COURSE

CURB BOX TO BE FLUSH WITH TOP OF GRANULAR LAYER IN MANHOLE AND TO BE WITHIN THE 600MM OPENING OF THE MANHOLE

1500 MIN.

MIN 450 GRANULAR LAYER

100# CL150 PVC EXTENSION OF WATERMAIN. INSTALL REDUCER IF INCOMING MAIN IS 100#

100# TYTON x FLG. GATE VALVE c/w BOX. SEE DWGS. W-01/W-15

50# ELECTROFUSION SADDLE c/w 50 x 20 FUSION REDUCER

20# FORD CURB STOP ONLY (NO DRAIN) c/w BOX. ENDS TO SUIT PIPE USED. SUPPORT CURBSTOP ON 50 x 250 x 250 CONC BLOCK.

20# HOPE DR11 OR TYPE K COPPER X 2000LM. CAPPED END. PERFORATE LAST 600 OF LENGTH RANDOMLY ALL ROUND AT 10 x 5mm2 HOLES/300mm.

0.3m² GRANULAR DRAIN PIT.

SECTION

PLAN

CONSTRUCTION STANDARDS

Detail for Deadend Watermain Flushout

City of Regina | Regina

Designed By: JIA

Date JUL/00 Scale NTS

W-12
-DIMENSIONS OF THRUST BLOCKS AND REQUIRED BEARING AREAS SHOWN ARE BASED ON A MAXIMUM TEST/OPERATING PRESSURE OF 689 kPa (100 psig) AGAINST SOIL WHICH HAS A SAFE LOAD BEARING CAPACITY OF 70 kPa (10 psig) MINIMUM. FOR ANY CONDITIONS WHICH VARY FROM THESE, THE DIMENSIONS/AREAS MUST BE ADJUSTED ACCORDINGLY.

-REFER TO SPECIFICATIONS SECTION 02511 – WATERMINS FOR CONCRETE REQUIREMENTS

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

| PIPE DIA. (mm) | 90° BEND A (mm) | 90° BEND B (mm) | 90° BEND C (mm) | 45° BEND AREA (sq.m) | 45° BEND A (mm) | 45° BEND B (mm) | 45° BEND C (mm) | 45° BEND AREA (sq.m) | TEE, PLUGS, WYES | TEE, PLUGS, WYES A (mm) | TEE, PLUGS, WYES B (mm) | TEE, PLUGS, WYES C (mm) | TEE, PLUGS, WYES AREA (sq.m) | 22.5° & 11.25° BENDS | 22.5° & 11.25° BENDS A (mm) | 22.5° & 11.25° BENDS B (mm) | 22.5° & 11.25° BENDS C (mm) | 22.5° & 11.25° BENDS AREA (sq.m) |
|---------------|----------------|----------------|----------------|---------------------|----------------|----------------|----------------|---------------------|----------------|-----------------------------|---------------------|-----------------------------|---------------------|---------------------|----------------------------|-----------------|---------------------|-----------------|---------------------|---------------------|---------------------|
| 100           | 170            | 200            | 0.16           | 160                 | 110            | 0.09           | 190            | 140                 | 0.11           | 110                         | 90                 | 0.04                        |                     |                     |                            |                 |                     |                 |
| 150           | 230            | 250            | 0.33           | 240                 | 160            | 0.18           | 270            | 190                 | 0.23           | 160                         | 90                 | 0.06                        |                     |                     |                            |                 |                     |                 |
| 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: SEP97, MAY98, NOV98, DEC02, AUG10
Revisions: REVISED NOTES/TITLE BLOCK, BLOCK AREAS REVISED, RENUMBERED FROM W-5, SPEC, No, REF, CORRECTED, TITLE BLOCK

CONSTRUCTION STANDARDS

Thrust Blocks

Designed By: City of Regina, Regina

Date: MAR97
Scale: NTS

Number: W-13

File: Slide-13.png
HORIZONTAL RESTRAINTS

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<td>200</td>
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<tr>
<td></td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>300</td>
</tr>
<tr>
<td>90° BEND</td>
<td>1.5m</td>
</tr>
<tr>
<td>45° BEND</td>
<td>0.6m</td>
</tr>
<tr>
<td>22.5° BEND</td>
<td>0.3m</td>
</tr>
<tr>
<td>11.25° BEND</td>
<td>0.3m</td>
</tr>
<tr>
<td>SIZE ON SIZE TEE</td>
<td>Br. only</td>
</tr>
<tr>
<td>PLUGS &amp; VALVES</td>
<td>3.0m</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
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<tr>
<td></td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>300</td>
</tr>
<tr>
<td>45° VERTICAL OFFSET</td>
<td>1.2m/0.6m</td>
</tr>
<tr>
<td>22.5° VERTICAL OFFSET</td>
<td>0.6m/0.3m</td>
</tr>
</tbody>
</table>

NOTES

1) Restraint lengths in table are for maximum test pressure of 690 kPa with pipe fully bedded in granular material. If site conditions vary from these, contact the engineer.
2 PLY OF 0.15 THICK POLYETHYLENE BETWEEN CONCRETE AND VALVE

CAST-IN-PLACE CONCRETE THRUST AND SUPPORT BLOCK. REFER TO TABLE FOR REQUIRED AREA.

"x" (300 MIN)

100 MIN

"y"

12" REBAR-EPoxy COATED OR TAPE WRAPPED

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 CONFORM 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 MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE
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
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.

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

CURB STOP/DRAIN REFER TO STANDARD CONSTRUCTION SPECIFICATIONS.

FOR SERVICES 40 AND SMALLER CONSTRUCT GOOSENECK IN SERVICE PIPE FOR 50MM SERVICES. SEE NOTE 2. GOOSENECK 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 NOTED OTHERWISE.

City of Regina | REGINA

CONSTRUCTION STANDARDS
Water Service Connection
50mm and Smaller Services

Designed By: SB
Approved: NTS

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/00 NOTE 3 ADDED / MINOR MODIFICATIONS SB
AUG/10 TITLE BLOCK JJA

Scale: 1:20
Sheet: 17
MINIMUM SIZE ALLOWED FOR SERVICES CONNECTIONS IS 25mm
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 BY-LAW.
2) REFER TO SPECIFICATIONS SECTION 02516 FOR PIPING, VALVING AND INSTALLATION REQUIREMENTS

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFICALLY DENOTED OTHERWISE

<table>
<thead>
<tr>
<th>Date</th>
<th>Revisions</th>
<th>By</th>
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<tr>
<td>MAR/98</td>
<td>COMBINED W-15 AND W-17</td>
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<td>DEADEND REV. TO NEW FLUSHOUT</td>
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<tr>
<td>AUG/10</td>
<td>TITLE BLOCK</td>
<td>JJA</td>
</tr>
</tbody>
</table>

CONSTRUCTION STANDARDS

Multiple Service and Deadend Watermain Connections

Designed By: City of Regina
Approved By: Regina

Sheet: 19
200# x 150 LB BLIND FLANGE

75# x 1800 LONG CAPPED STEEL POST,
IMBED IN CONCRETE 600 INTO GROUND.
PINT EXPOSED PORTION BRIGHT ORANGE

200# STEEL RISER—TO BE
LINED/COATED PER STANDARD
SPECIFICATIONS.

STEEL MAIN—SIZES VARY

TANGENT CONNECTION TO
PIPELINE, FABRICATED AND
REINFORCED TO THE DESIGN
REQUIREMENTS OF AWWA M11.

200# GATE VALVE
SEE DRAWING W-15

2400 CLEAR
1000 MIN

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
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.
GATE VALVE REFER TO STG DWG. W-15 FOR INSTALLATION REQUIREMENTS.

ENSURE SURFACE AREA CONTACTING EYELET CONNECTION IS CLEANED TO BARE METAL PRIOR TO CONNECTION.

FINISHED CADWELD

"DENSO" PRIME AND WRAP FINISHED CADWELD

WIRE

VALVE BODY

38mm STRIPPED LENGTH

THERMITE WELD

ENSURE SURFACE AREA OF CADWELD IS CLEANED TO BARE METAL AND DRY PRIOR TO CADWELLING.

5.4kg ZINC ANODE(S) AS SPECIFIED, INSTALL BELOW LEVEL OF VALVE AND AT LEAST ONE METRE CLEAR OF VALVE

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.
Copper eyelet as specified size as required, more space not acceptable.

No. 6 cable as specified.

Ensure contact surfaces are cleaned to bare shiny metal prior to attachment.

Minimum 3 metre long No. 6 direct burial cable per specifications.

Zinc anode per specifications, install below level of hydrant at least one metre clear of piping.

150# gate valve refer to drawing W-15.

150# PVC hydrant lead.

All dimensions are in millimetres unless specifically denoted otherwise.
PRIME AND COAT CADWELD WITHペンソ OR AS APPROVED

WIRE

PIPE OR FITTING

38mm STRIPPED LENGTH

THERMITE WELD

FINISHED WELD

CARRY OUT CADWELD IN ACCORDANCE WITH SPECIFICATIONS.

ENSURE SURFACE AREA OF CADWELD IS CLEANED TO BARE METAL AND DRY PRIOR TO CADWELDING.

MINIMUM 3 METER LONG #6 DIRECT BURIAL CABLE PER SPECIFICATIONS

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

150# C900 PVC HYDRANT LEAD

150# GATE VALVE REFER TO DRAWING #15

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SPECIFICALLY DENOTED OTHERWISE

CONSTRUCTION STANDARDS
Cathodic Protection of Hydrant using Cadweld Connection

City of Regina | Regina

Designed By: [Signature]

Date: MAR/3

Scale: NTS

File: stdw-28.dwg
FLINT GUN (IGNITES STARTING POWDER)

COPPER SLEEVE OVER WIRE

WIRE

HANDLE

STARTING POWDER

WELD METAL (IGNITES AND BURNS THROUGH DISC)

CAVITY IN WELDER

METAL DISC

PIPE or FITTING

CADWELD

COAT AND WRAP CADWELD WITH APPROVED MASTIC SYSTEM

PRIMER

PISTOL GRIP

WIRE STRIPPED TO 38mm

THERMITE WELD

WIRE

PIPE or FITTING

WELD METAL CAPSULE

STARTING POWDER (SQUEEZE CAPSULE TO REMOVE)

PLASTIC CAPSULE & LID
TO FIRE PROTECTION SYSTEM IF APPLICABLE

MIN 300

MIN 150 CLEAR

INCOMING WATER SERVICE LINE

BUILDING FLOOR

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 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.
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 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.
WATER SERVICE LINE, MAY BE LARGER THAN DOMESTIC SUPPLY PIPE IF IT ALSO PROVIDES SUPPLY TO FIRE PROTECTION SYSTEM

INSTALL HEIGHT ADJUSTABLE PLATE SUPPORT UNDER METER. INSERT A LAYER OF VAPOUR BARRIER OR SIMILAR MATERIAL BETWEEN THE SUPPORT PLATE AND METER BODY.

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.
TO FIRE PROTECTION SYSTEM IF APPLICABLE

WATER SERVICE LINE. THIS LINE MAY BE LARGER THAN THE DOMESTIC SUPPLY PIPE SIZE IF IT ALSO SERVES A FIRE PROTECTION SYSTEM.

BUILDING FLOOR

TO BUILDING WATER SERVICE PIPING

5 x "D" MIN.

"L"

PROVIDE AND INSTALL A HEIGHT ADJUSTABLE PLATE SUPPORT UNDER THE METER. INSERT A LAYER OF VAPOUR BARRIER OR SIMILAR MATERIAL BETWEEN THE PLATE AND THE METER BODY.

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.
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.
REINFORCING PADS

MATERIAL: MINIMUM 6.4 mm CSA G40.21/M GRADE 350W

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>REINFORCING PAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>610 mm</td>
<td>610 mm MAIN</td>
</tr>
<tr>
<td>300 mm</td>
<td>620 O.D.</td>
</tr>
<tr>
<td>350 mm</td>
<td>680 O.D.</td>
</tr>
<tr>
<td>400 mm</td>
<td>770 O.D.</td>
</tr>
<tr>
<td>450 mm</td>
<td>880 O.D.</td>
</tr>
<tr>
<td>500 mm</td>
<td>970 O.D.</td>
</tr>
<tr>
<td>610 mm</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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. FDR 450 mm AND 500 mm TAPS REINFORCING TO BE DESIGNED BY A PROFESSIONAL ENGINEER, AND APPROVED BY THE MANAGER OF WATER, WASTEWATER AND DRAINAGE ENGINEERING PRIOR TO INSTALLATION.
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.
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 XXX ARE FOLLOWED.

CRITICAL INFRASTRUCTURE

<table>
<thead>
<tr>
<th>BUFFALO POUND WATER MAINS</th>
<th>MCCARTHY WASTE WATER FORCE MAINS</th>
</tr>
</thead>
<tbody>
<tr>
<td>900mm STEEL</td>
<td>1050mm PVC</td>
</tr>
<tr>
<td>1050mm STEEL</td>
<td>1050mm STEEL</td>
</tr>
<tr>
<td>1500mm PVC</td>
<td></td>
</tr>
</tbody>
</table>

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

DESIGNED AND APPROVED:

Dustin McCall
JAN/18