

**CITY OF LETHBRIDGE  
CONSTRUCTION SPECIFICATIONS**

**PARKS AND OPEN SPACE STANDARD DRAWINGS**

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12.5.2 MANUAL DRAIN VALVE – HDPE

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12.6.2 CONTROL VALVE – HDPE

12.6.3 CONTROL VALVE DECODER – PVC

12.6.4 CONTROL VALVE DECODER – HDPE

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- 12.10.4 BOOSTER PUMP STATION DETAILS
- 12.10.5 BOOSTER PUMP STATION – INTERIOR PLAN
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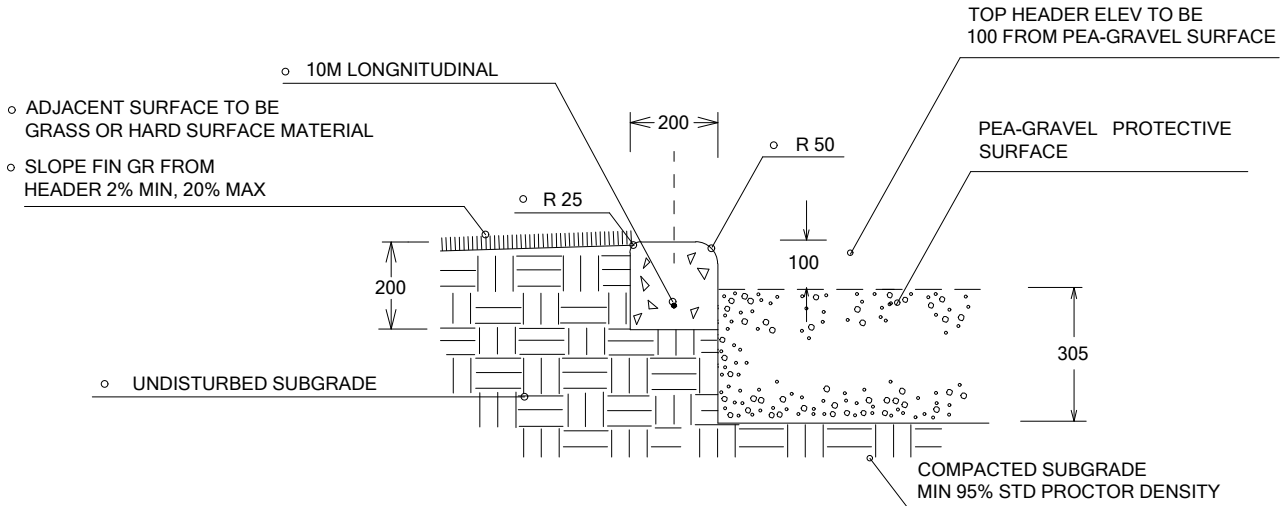
### **SECTION 13.0 BOAT LAUNCH**

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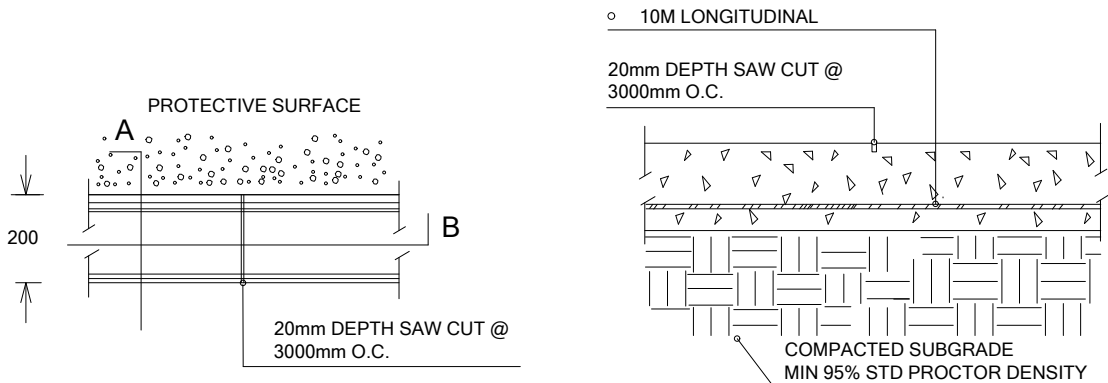
GENERAL NOTES

- CONCRETE SUPPLY AND INSTALLATION TO CONFORM TO THE LATEST EDITION CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS

PLAN



SECTION A



PLAN

SECTION B



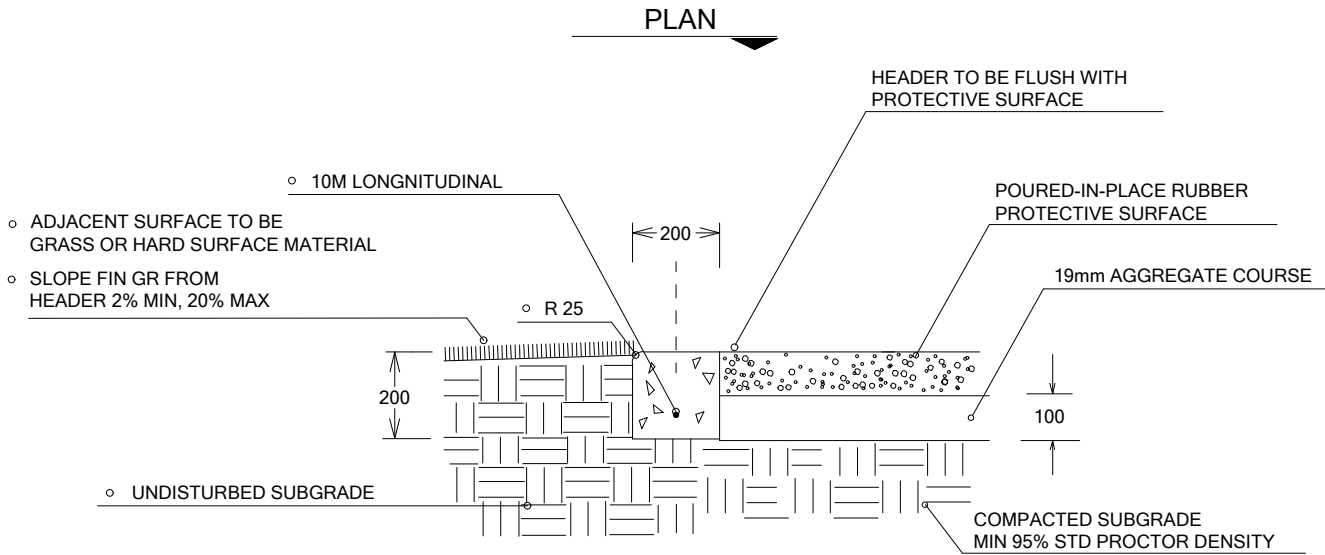
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONCRETE HEADER DETAIL (PEA GRAVEL SURFACE)

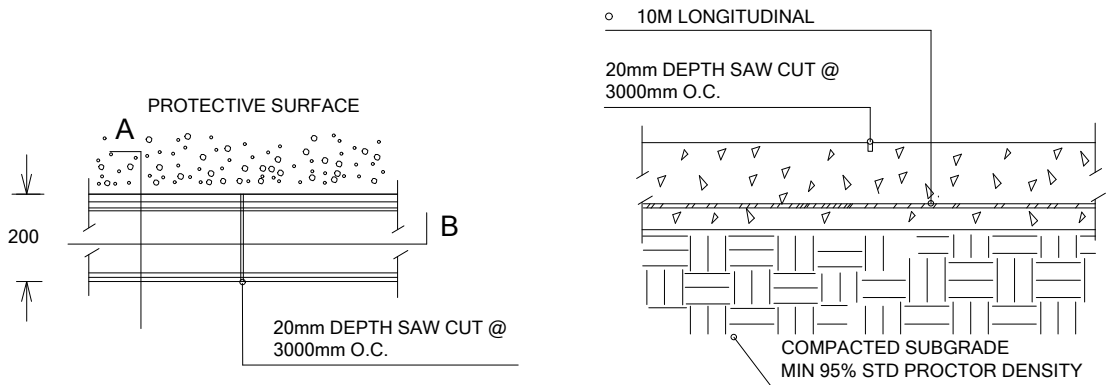
REVISIONS	
1. 8 - 13 - 2012	HEADER WIDTH 150mm
2. 1 - 05 - 2016	SLOPE FINAL GRADE MAX
3. 10 - 12 - 2017	HEADER WIDTH, REINFORCEMENT
DRAWN	GD / CR
SCALE	NOT TO SCALE
DATE	09 - 05 - 2000
DWG NO	1.1.1

GENERAL NOTES

- CONCRETE SUPPLY AND INSTALLATION TO CONFORM TO THE LATEST EDITION CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS



**SECTION A**



**PLAN**

**SECTION B**



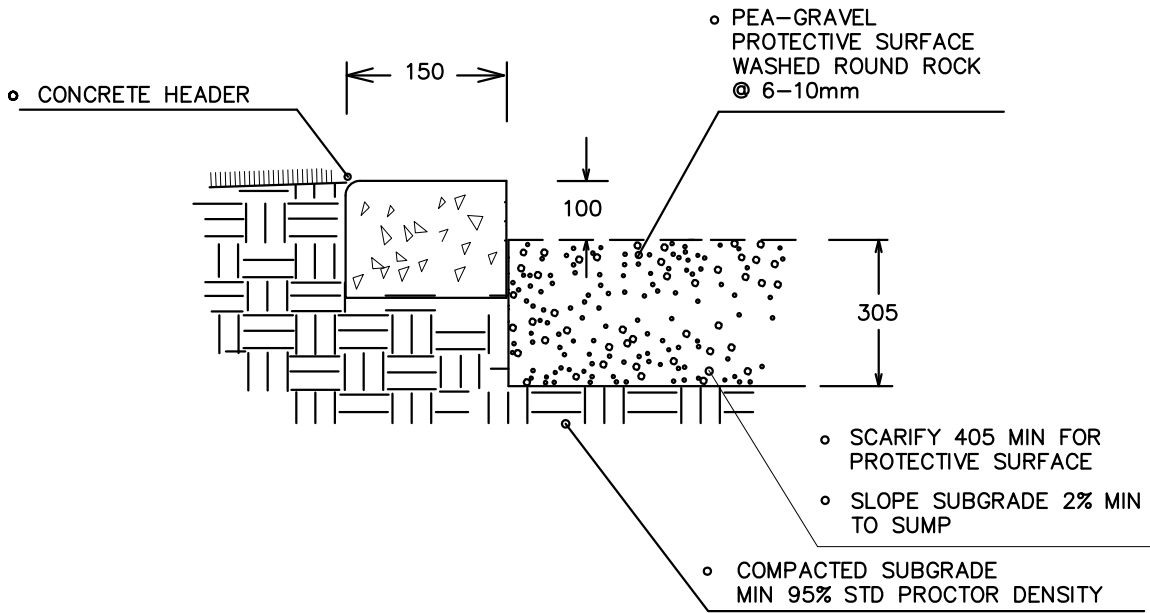
CITY OF  
*Lethbridge*

**INFRASTRUCTURE SERVICES  
CONCRETE HEADER DETAIL (RUBBER SURFACE)**

REVISIONS	
1. 8 - 13 - 2012	HEADER WIDTH 150 mm
2. 1 - 05 - 2016	SLOPE FINAL GRADE MAX
3. 10 - 12 - 2017	HEADER WIDTH, REINFORCEMENT
DRAWN	GD / CR
SCALE	NOT TO SCALE
DATE	08 - 28 - 2008
DWG NO	1.1.2

GENERAL NOTES

- CONCRETE SUPPLY AND INSTALLATION TO CONFORM TO THE LATEST EDITION CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS



SECTION



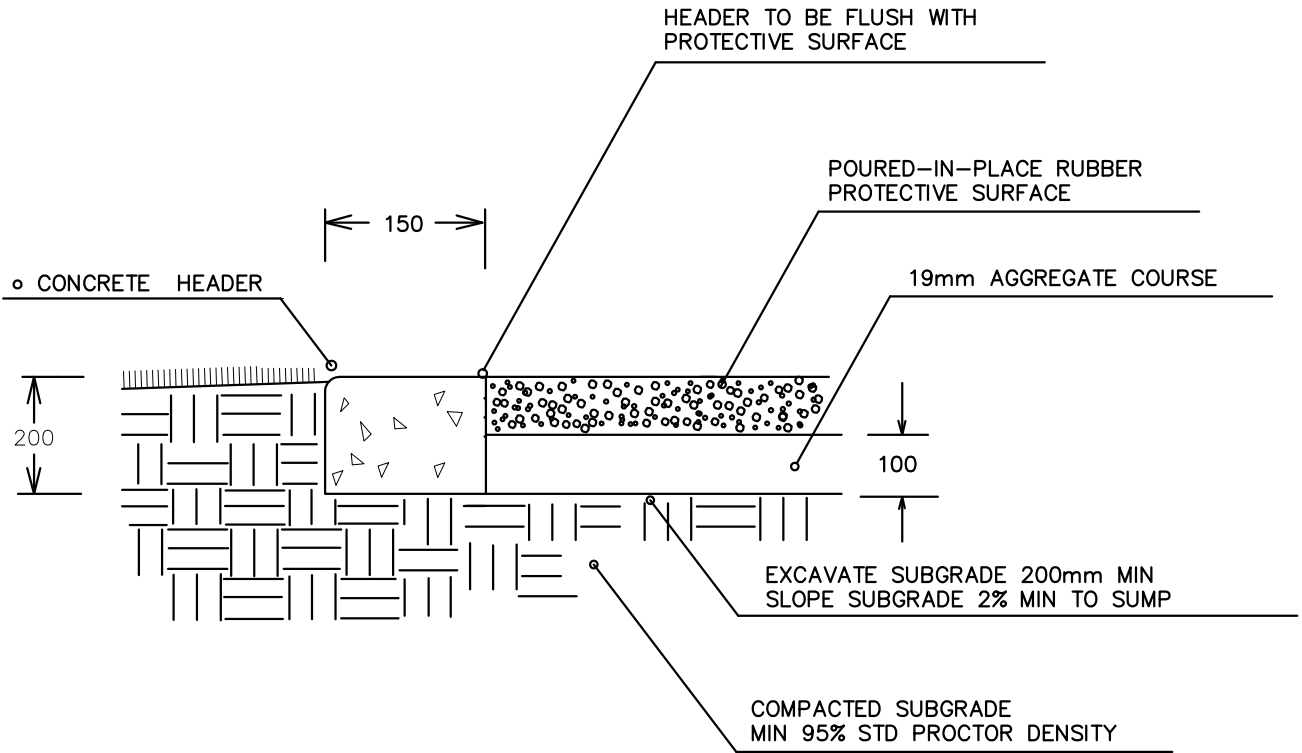
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
PEA-GRAVEL PROTECTIVE SURFACE

REVISIONS	
2.12-07-2004	HEADER WIDTH 150mm
3.11-22-2006	PORTLAND MIX
4.07-13-2012	DWG NO.
DRAWN	GD
SCALE	NOT TO SCALE
DATE	09-05-2000
DWG NO	1.2.1

GENERAL NOTES

- CONCRETE SUPPLY AND INSTALLATION TO CONFORM TO THE LATEST EDITION CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS



SECTION



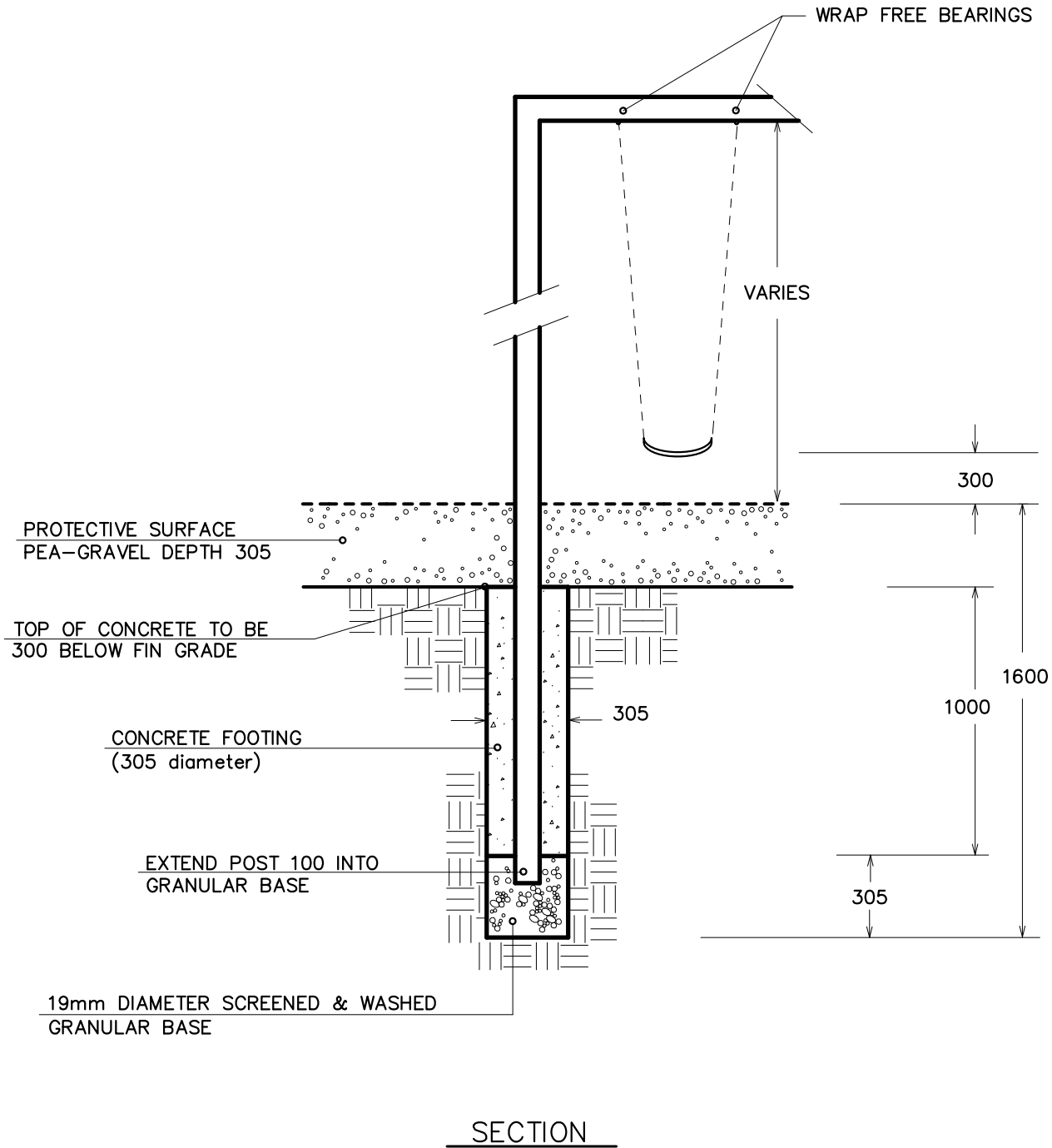
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
RUBBER PROTECTIVE SURFACE

REVISIONS	
1. 07-13-2010	HEADER WIDTH 150mm
DRAWN	GD
SCALE	NOT TO SCALE
DATE	08-28-2008
DWG NO	1.2.2

GENERAL NOTES

- INSTALL JR SWING WITH CROSSBEAM 2.44M ABOVE SURFACE FIN GR
- INSTALL SR SWING WITH CROSSBEAM 3.05M ABOVE SURFACE FIN GR
- WRAP FREE BEARINGS AND GALVANIZED STEEL PIPE MUST MEET OR EXCEED CSA STANDARDS. ANY DEVIATIONS MUST BE APPROVED BY THE PARKS CONSTRUCTION MANAGER
- ALTERNATIVE POST AND BEAM MATERIAL MUST BE APPROVED BY THE PARKS CONSTRUCTION MANAGER



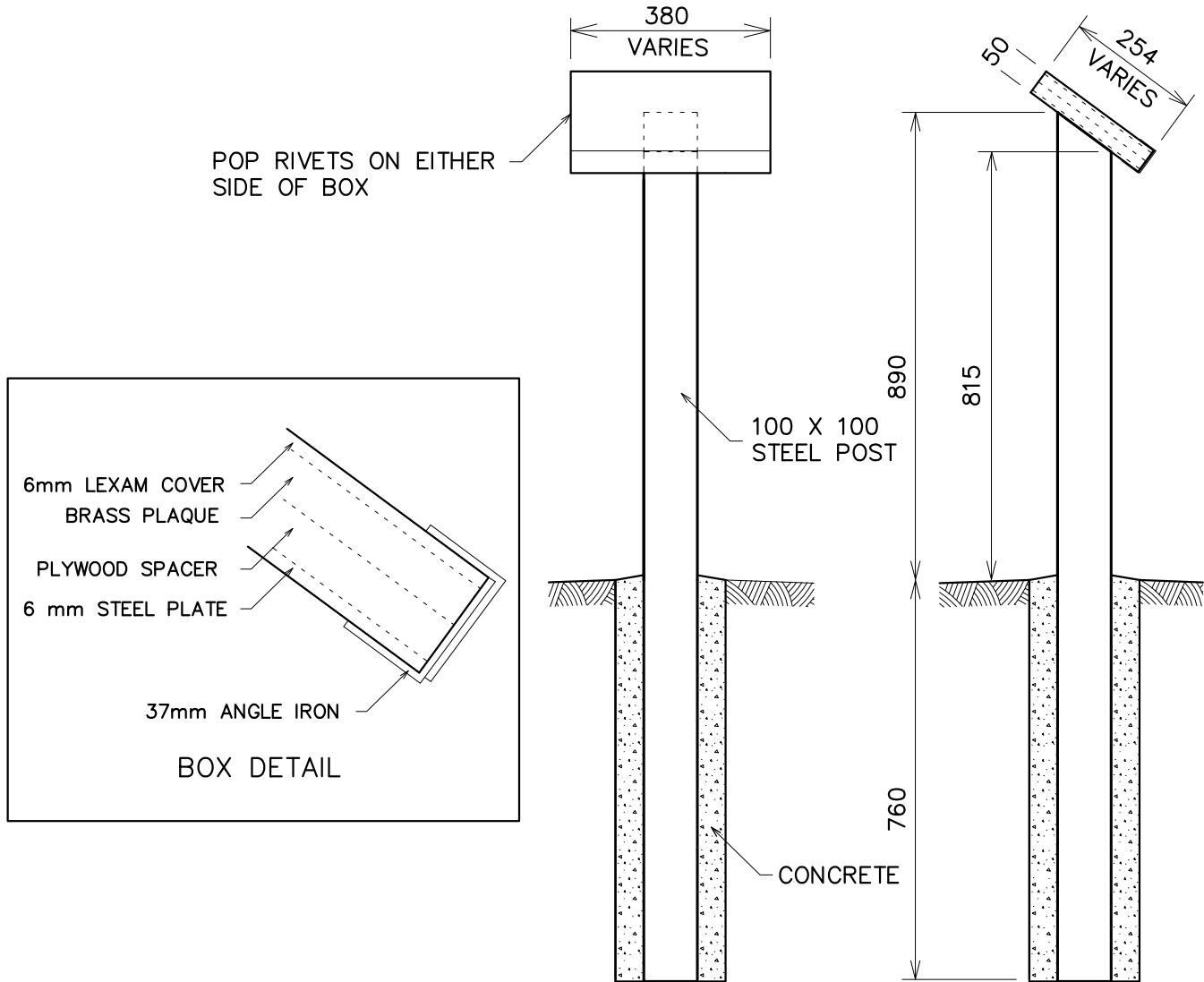
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
SWING

REVISIONS	
1. 10-04-2005	GALV STEEL PIPE AT POSTS & BEAM
2. 10-20-2005	WRAP FREE BEARINGS
3. 12-12-2005	BEARINGS, POSTS & BEAM TO CSA
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-11-1998
DWG NO	1.3

GENERAL NOTES

- o BOX TO BE CONSTRUCTED FROM 37mm ANGLE IRON SIDES  
C/W 6mm PLATE BOTTOM WELDED INSIDE
- o TOP TO BE REMOVABLE W/ POP RIVETS ON SIDES
- o BRASS PLAQUE TO BE RAISED WITH PLYWOOD TO FIT BOX
- o SLOPE CONCRETE COLLAR 5% AT FIN GR
- o WOOD TO BE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



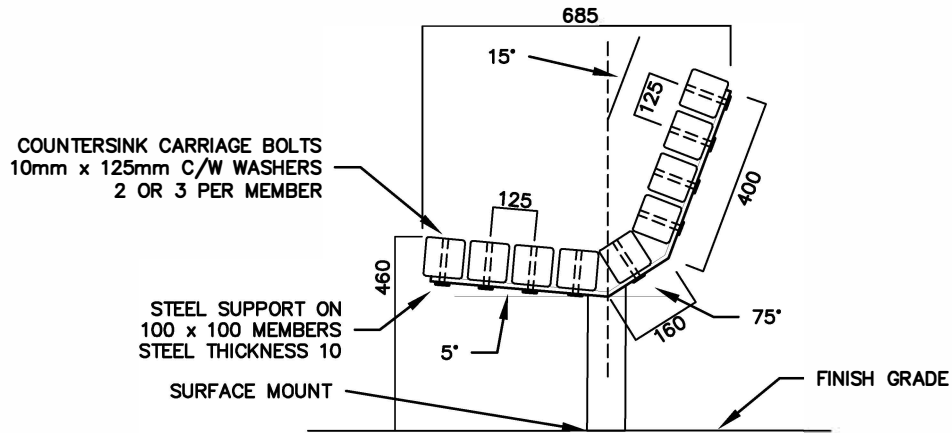
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DEDICATION STAND

REVISIONS	
1. 11-20-2003	ACQ PRESERVATIVE
DRAWN	Mc
SCALE	NOT TO SCALE
DATE	07-21-1998
DWG NO	1.4

**GENERAL NOTES**

- WOOD AND PLASTIC MEMBERS TO BE BEVELED 25mm MAX
- USE ZINC-PLATED BOLTS, WASHERS AND NYLON LOCK NUTS
- WOOD TO BE PRESSURE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- BENCHES TO BE SET ON A CONCRETE PAD – 1200 x 3678 x 100 DEPTH  
OFFSET BENCH SO ONE END OF BENCH IS 307mm FROM END OF PAD
- BACK OF BENCH TO BE IN LINE WITH BACK EDGE OF CONCRETE PAD
- BENCH LEGS TO BE INSTALLED PLUMB



SECTION



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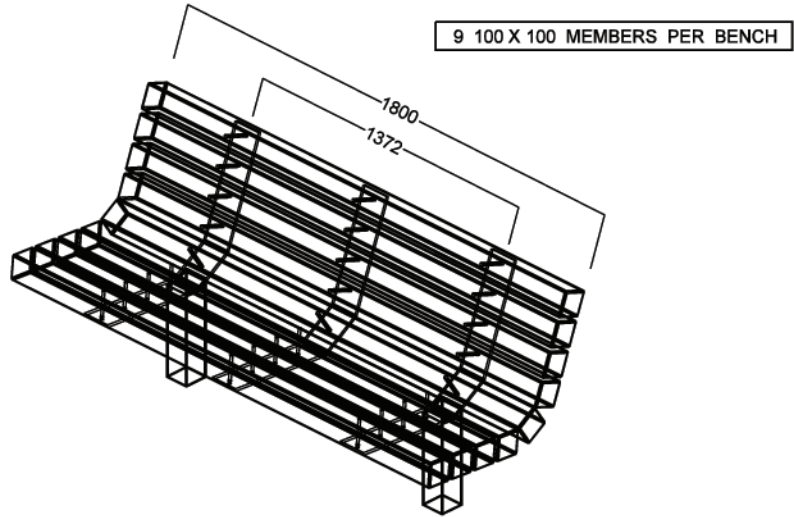
INFRASTRUCTURE SERVICES  
POLYMER COMPOSITE OR WOOD BENCH

REVISIONS	
1. 02/20/13	TOP OF SEAT TO FIN GRADE 460
2. 02/20/13	NOTE FOR PAD DIMENSIONS
DRAWN	GD
SCALE	NTS
DATE	12-18-2003
DWG NO	2.1.1



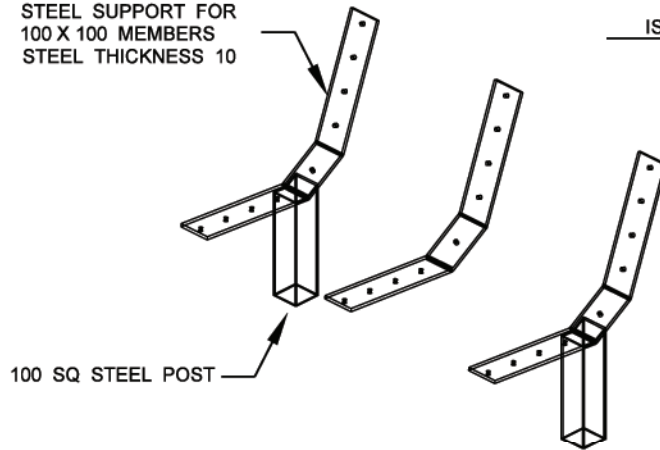
GENERAL NOTES

- WOOD TO BE SPRUCE, PINE OR FIR
- USE ZINC-PLATED BOLTS, WASHERS AND NYLON LOCK NUTS
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



STEEL SUPPORT FOR  
100 X 100 MEMBERS  
STEEL THICKNESS 10

ISOMETRIC VIEW



CITY OF  
*Lethbridge*

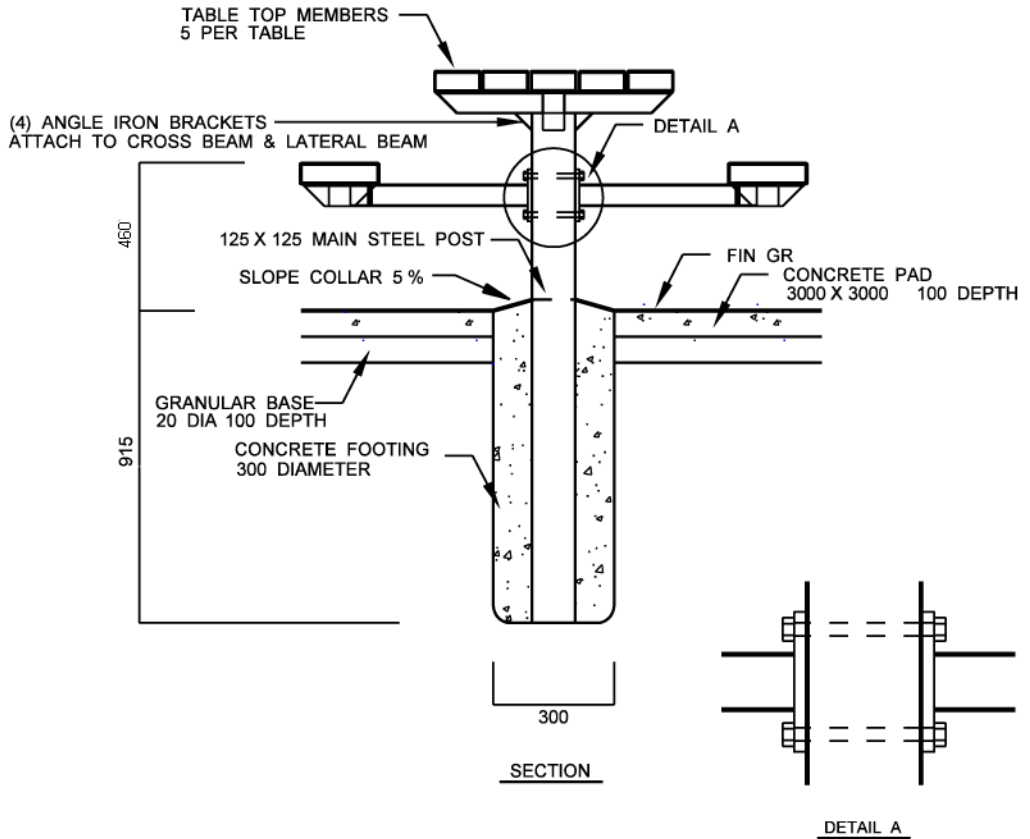
INFRASTRUCTURE SERVICES  
WOOD BENCH


REVISIONS	
1. 11-29-2007	UPDATE
DRAWN	GD
SCALE	NTS
DATE	12-18-2003
DWG NO	2.1.2

**GENERAL NOTES**

- WOOD AND PLASTIC MEMBERS TO BE BEVELLED 25mm MAX
- USE ZINC-PLATED BOLTS, WASHERS AND NYLON LOCK NUTS
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- TABLE TOP MEMBERS TO BE 50 X 250mm

**NOTE:**  
 PK-2000 MODEL:  
 ALIGN BOARDS AND DRILL 5/16" HOLES.  
 ATTACH USING 5/16"x2-1/4" JOINT BOLTS &  
 LOCK NUTS.  
 PK-3000 MODEL:  
 ALIGN BOARDS AND DRILL 1/4" PILOT HOLES.  
 ATTACH USING 3/8"x2" LAG SCREWS.



 <p>CITY OF <i>Lethbridge</i></p>	<p>REVISIONS</p> <table border="1"> <tr> <td>1. 11-29-2007</td> <td>TOP OF SEAT TO FIN GR 460mm</td> </tr> <tr> <td>2. 12-04-2007</td> <td>TABLE TOP MEMBER SIZE TO 50 X 250mm</td> </tr> <tr> <td>3. 02-20-2013</td> <td>CONCRETE PAD SIZE</td> </tr> </table>	1. 11-29-2007	TOP OF SEAT TO FIN GR 460mm	2. 12-04-2007	TABLE TOP MEMBER SIZE TO 50 X 250mm	3. 02-20-2013	CONCRETE PAD SIZE
	1. 11-29-2007	TOP OF SEAT TO FIN GR 460mm					
2. 12-04-2007	TABLE TOP MEMBER SIZE TO 50 X 250mm						
3. 02-20-2013	CONCRETE PAD SIZE						
<p>INFRASTRUCTURE SERVICES POLYMER COMPOSITE OR WOOD PICNIC TABLE</p>	<p>DRAWN GD</p> <p>SCALE NTS</p> <p>DATE 07-27-2006</p> <p>DWG NO 2.2.1</p>						

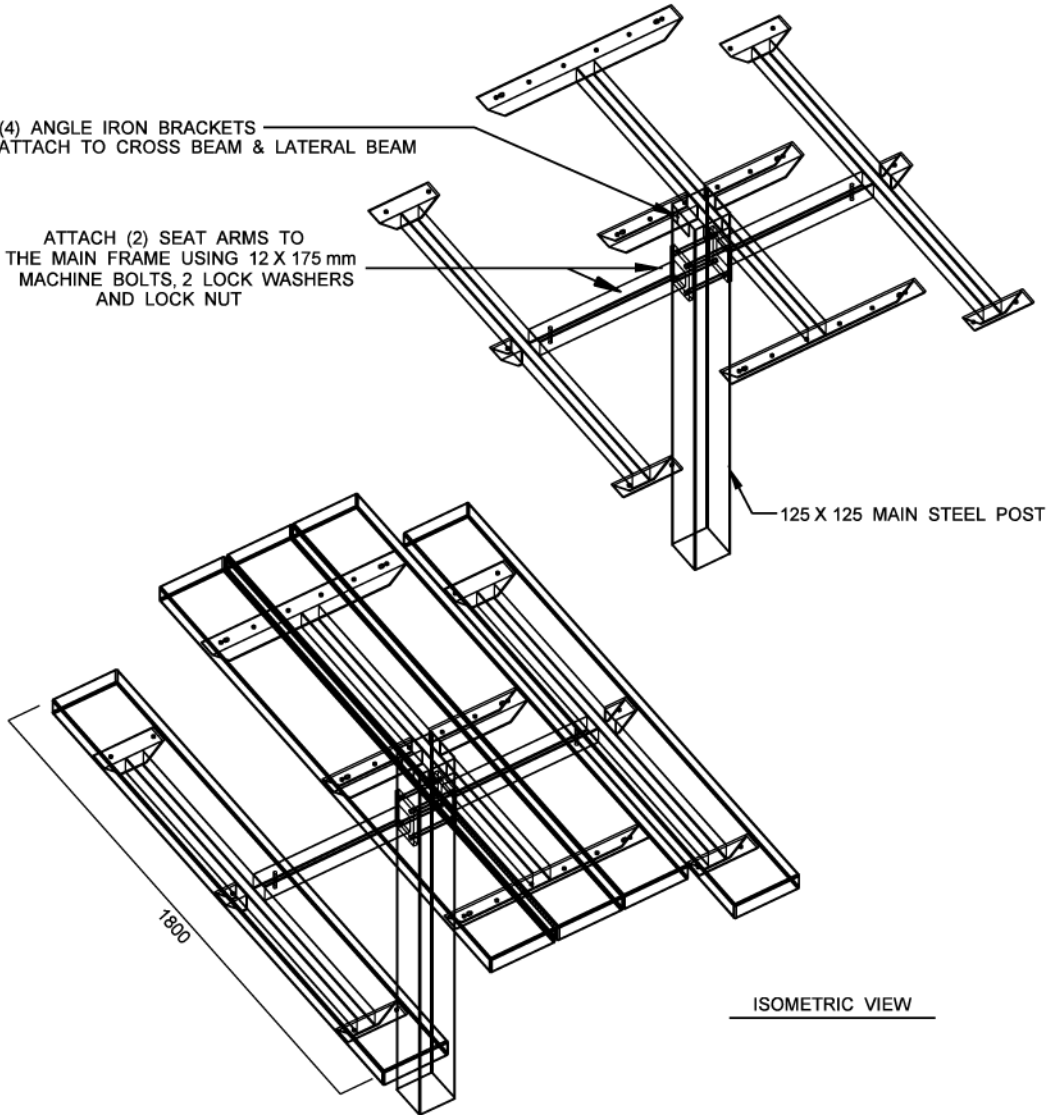
**GENERAL NOTES**

- WOOD AND PLASTIC MEMBERS TO BE BEVELLED 25mm MAX
- USE ZINC-PLATED BOLTS, WASHERS AND NYLON LOCK NUTS
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL

(4) ANGLE IRON BRACKETS  
ATTACH TO CROSS BEAM & LATERAL BEAM

ATTACH (2) SEAT ARMS TO  
THE MAIN FRAME USING 12 X 175 mm  
MACHINE BOLTS, 2 LOCK WASHERS  
AND LOCK NUT

125 X 125 MAIN STEEL POST



ISOMETRIC VIEW



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
POLYMER COMPOSITE OR WOOD PICNIC TABLE

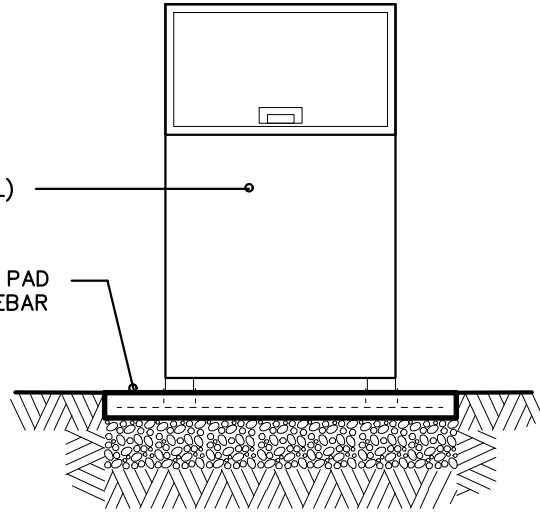
REVISIONS	
1. 11-29-2007	UPDATE
DRAWN	GD
SCALE	NTS
DATE	07-27-2006
DWG NO	2.2.2

GENERAL NOTES

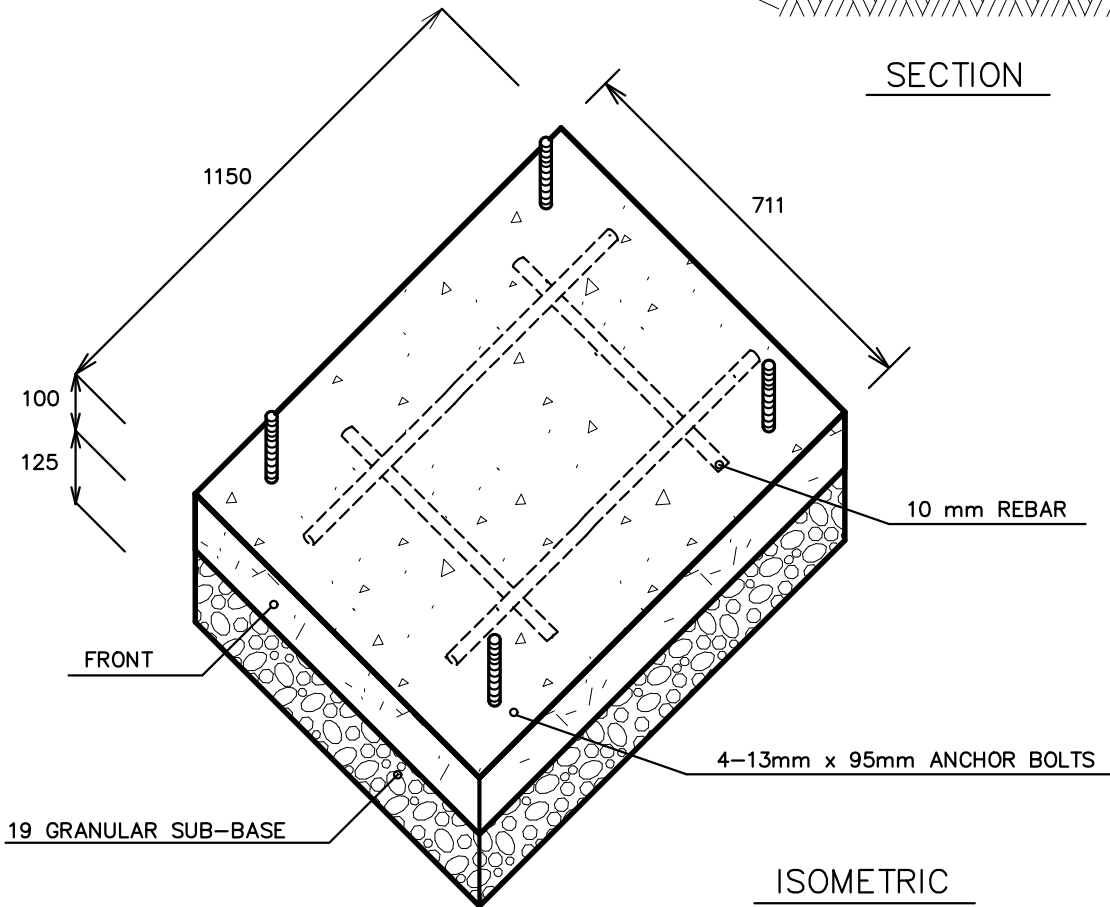
- TOP OF CONCRETE TO BE FLUSH WITH SURROUNDING FINISH GRADE
- CONCRETE MOUNTING PAD TO BE SUPPLIED WITH UNIT (HAUL-ALL PREFAB UNIT AS EXAMPLE)
- ATTACH REFUSE CONTAINER TO BOLTS AS SHOWN
- PROVIDE KEY LOCK ON UNLOADING DOOR
- INSTALL REFUSE CONTAINER 2m MIN FROM BENCHES AND TABLES, DOWNWIND IF POSSIBLE

EXAMPLE SHOWN  
HAUL-ALL HIDE-A-BAG HB 1 N (70 GAL)  
C/W CONCRETE MOUNTING PAD  
FELT GREEN COLOR

100 mm CONC. PAD  
WITH 10 mm REBAR



SECTION



ISOMETRIC



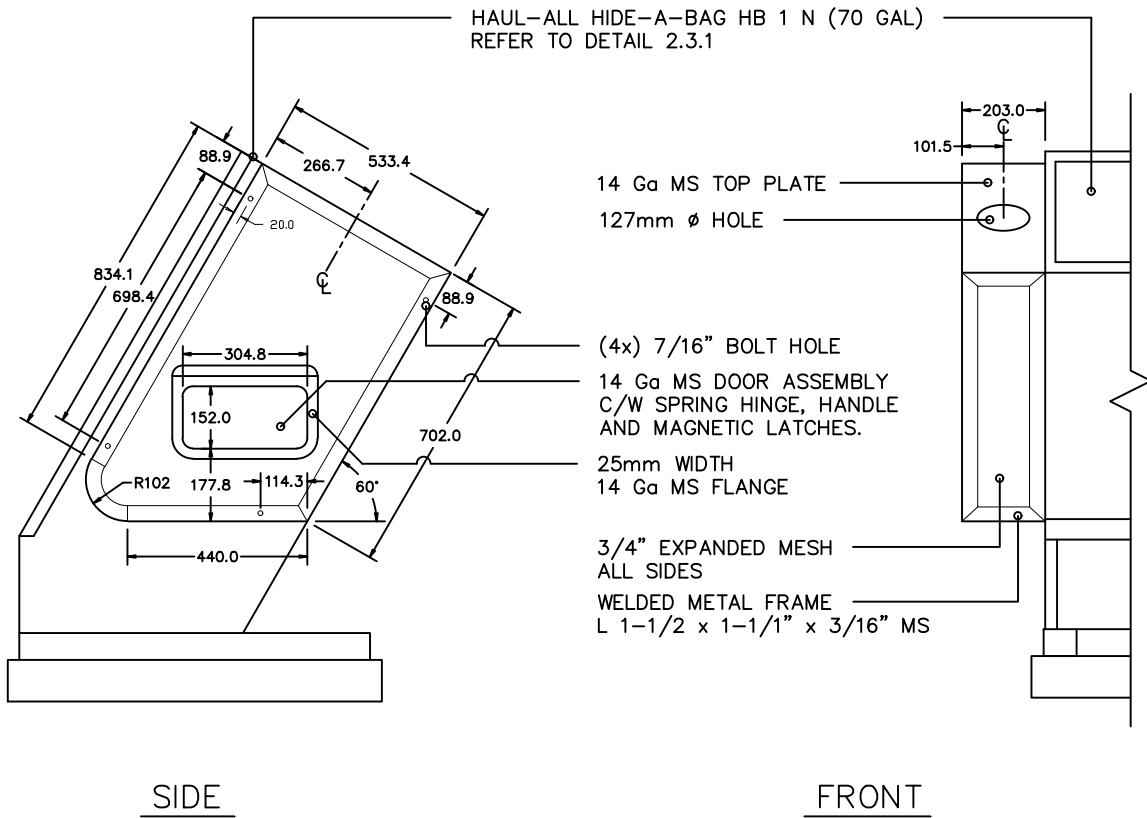
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
REFUSE CONTAINER

REVISIONS	
1.	11/19/01 LOCK ON UNLOADING DOOR
2.	02/15/05 ADDED 1 REBAR
3.	12/12/17 LENGTH OF PAD, NEW COLOR
DRAWN	GD
SCALE	NTS
DATE	12-12-2017
DWG NO	2.3.1

GENERAL NOTES

- DRILL FOUR (4) 7/16" DIAMETER BOLT HOLES IN SIDES OF REFUSE CONTAINER AND FRAME IN LOCATIONS INDICATED.
- PROVIDE FOUR (4) 7/16" STAINLESS STEEL TAMPER PROOF BOLTS, INCLUDING ONE (1) LOCK NUT AND TWO (2) WASHERS EACH, TO SECURE RECYCLING STATION TO REFUSE CONTAINER.
- POWDER COAT RECYCLING STATION PANELS, DOOR FLAP AND FLANGES BLUE, PANTONE COLOR CODE PQ-2191C.
- MANUFACTURING TOLERANCES:  
METRIC: ± 0.8mm  
IMPERIAL: ± 1/32"
- ENSURE ALL WELDS ON EXTERIOR OF FRAME AND AROUND OPENINGS ARE SMOOTH TO PREVENT CUTS AND ABRASIONS TO USERS.

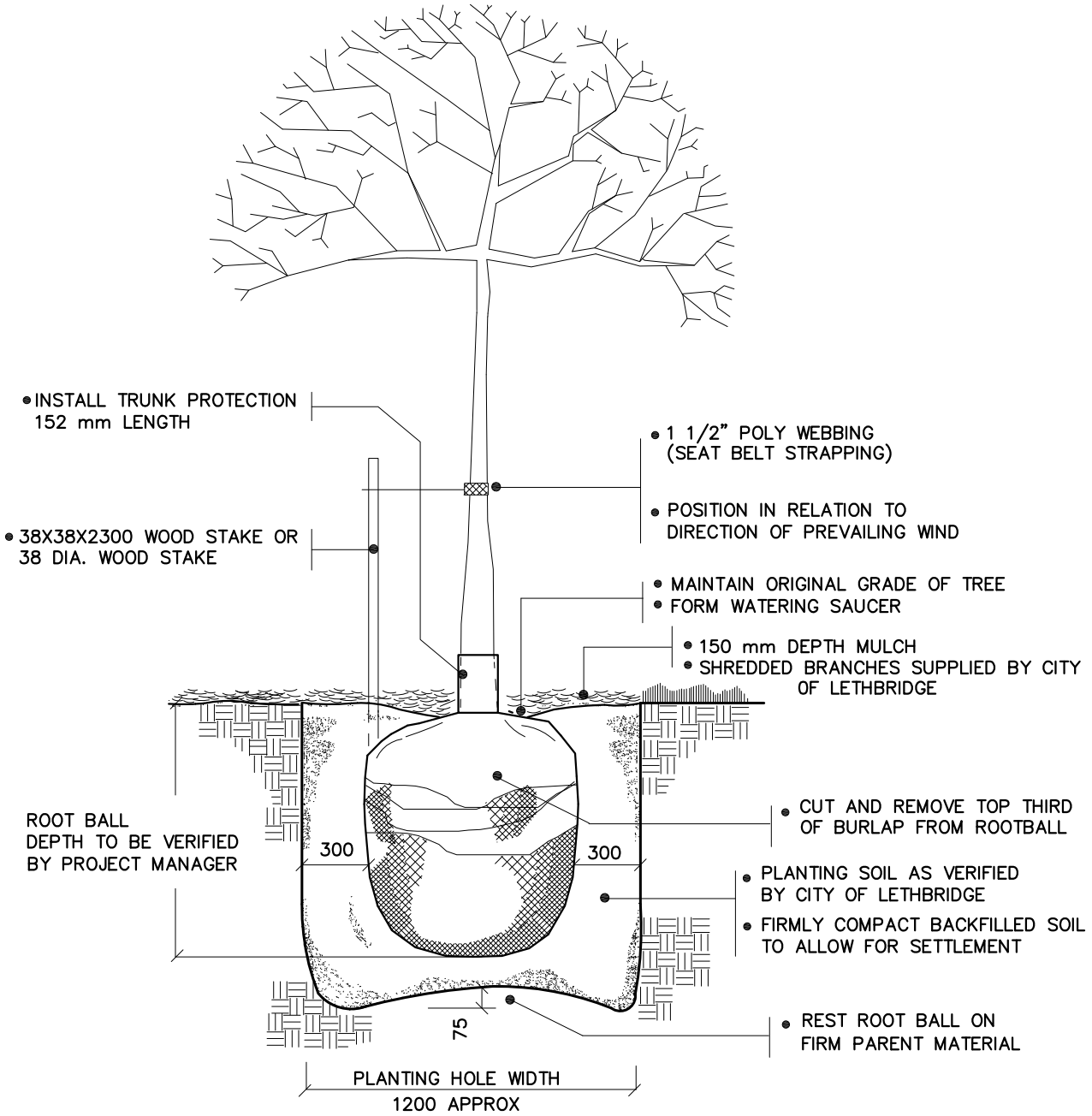


INFRASTRUCTURE SERVICES  
REFUSE CONTAINER WITH RECYCLING STATION

REVISIONS	
1.	
2.	
3.	
DRAWN	CR
SCALE	NTS
DATE	09-28-2017
DWG NO	2.3.2

GENERAL NOTES

- POSITION FIN GR OF TREE AT ORIGINAL TREE GRADE
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL TREE SHAPE



SECTION



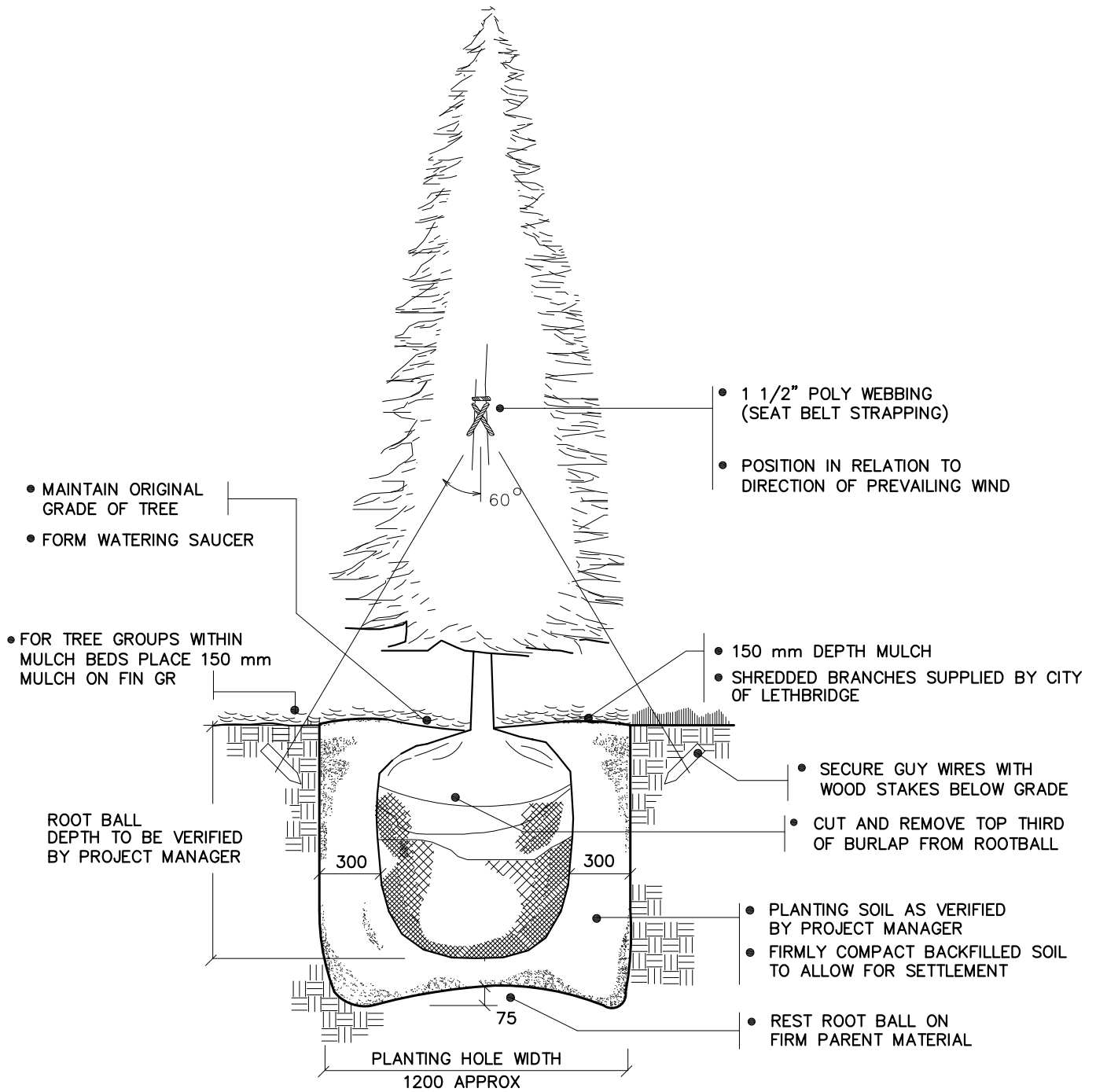
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DECIDUOUS TREE

REVISIONS	
1. 01-24-2005	2003 REVISIONS
2. 10-25-2005	WOOD STAKE & TRUNK SLEEVE
3. 02-20-2013	SEAT BELT STRAPPING
DRAWN	GD AD
SCALE	NOT TO SCALE
DATE	09-15-2000
DWG NO	3.1

**GENERAL NOTES**

- POSITION FIN GR OF TREE AT ORIGINAL TREE GRADE
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL TREE SHAPE



**SECTION**



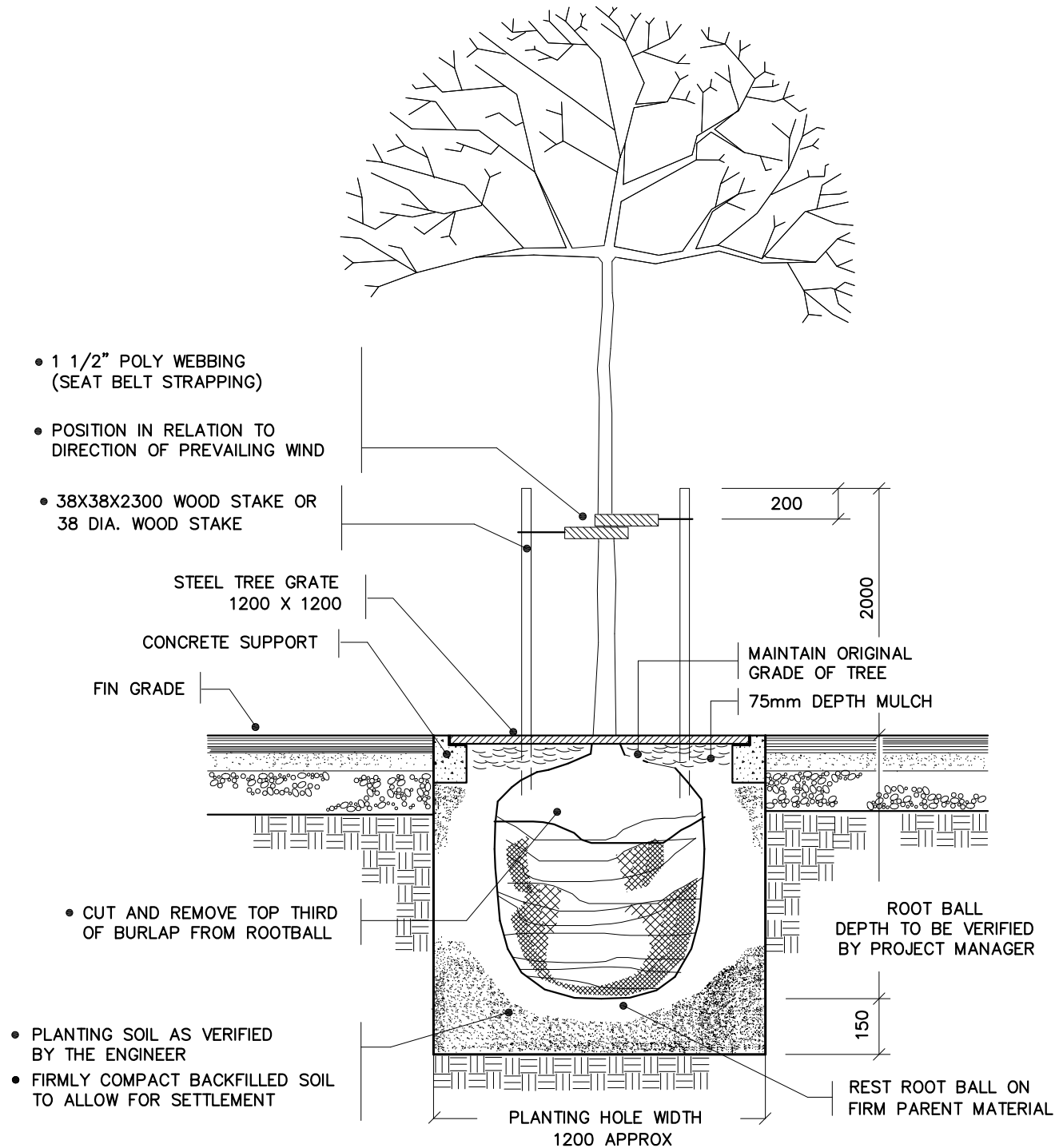
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONIFEROUS TREE

REVISIONS	
1. 01/24/04	2003 REVISIONS
2. 02/20/13	SEAT BELT STRAPPING
DRAWN	GD AD
SCALE	NOT TO SCALE
DATE	09-15-2000
DWG NO	3.2

GENERAL NOTES

- POSITION FIN GR OF TREE AT ORIGINAL TREE GRADE
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL TREE SHAPE



SECTION



CITY OF  
*Lethbridge*

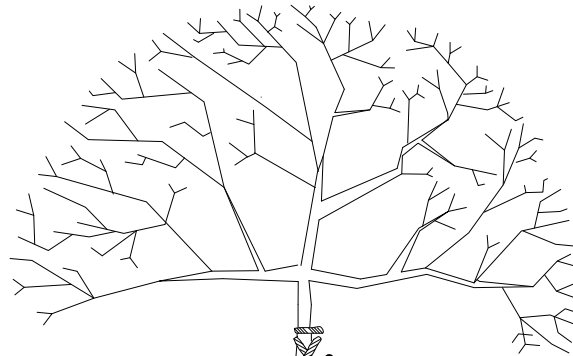
INFRASTRUCTURE SERVICES  
STREET TREE

REVISIONS	
1. 01-24-2004	2003 REVISIONS
2. 10-25-2005	WOOD STAKE
3. 02-20-2013	SEAT BELT STRAPPING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	09-15-2000
DWG NO	3.3



**GENERAL NOTES**

- POSITION FIN GR OF TREE AT ORIGINAL TREE GRADE
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL TREE SHAPE
- WATER THOROUGHLY AFTER PLANTING
- THIS DETAIL IS VALID FOR DECIDUOUS AND CONIFEROUS TREES



- 75mm DEPTH MULCH SHREDDED BRANCHES SUPPLIED BY CITY OF LETHBRIDGE PARKS SECTION

- 1 1/2" POLY WEBBING (SEAT BELT STRAPPING)

- NUMBER 10 GALVANIZED GUY WIRE

- SECURE GUY WIRE WITH WOOD STAKES BELOW GRADE

- MAINTAIN ORIGINAL GRADE OF TREE

100mm

TREE SPADE ROOT PLUG

- ROOT PLUG SIZE TO BE VERIFIED BY ENGINEER

- EXCAVATE PLANTING HOLE 100mm LARGER THAN TREE ROOT PLUG

- UNDISTURBED SUBSOIL

- PLANTING SOIL AS VERIFIED BY THE ENGINEER

- FIRMLY COMPACT BACKFILLED SOIL TO ALLOW FOR SETTLEMENT

**SECTION**



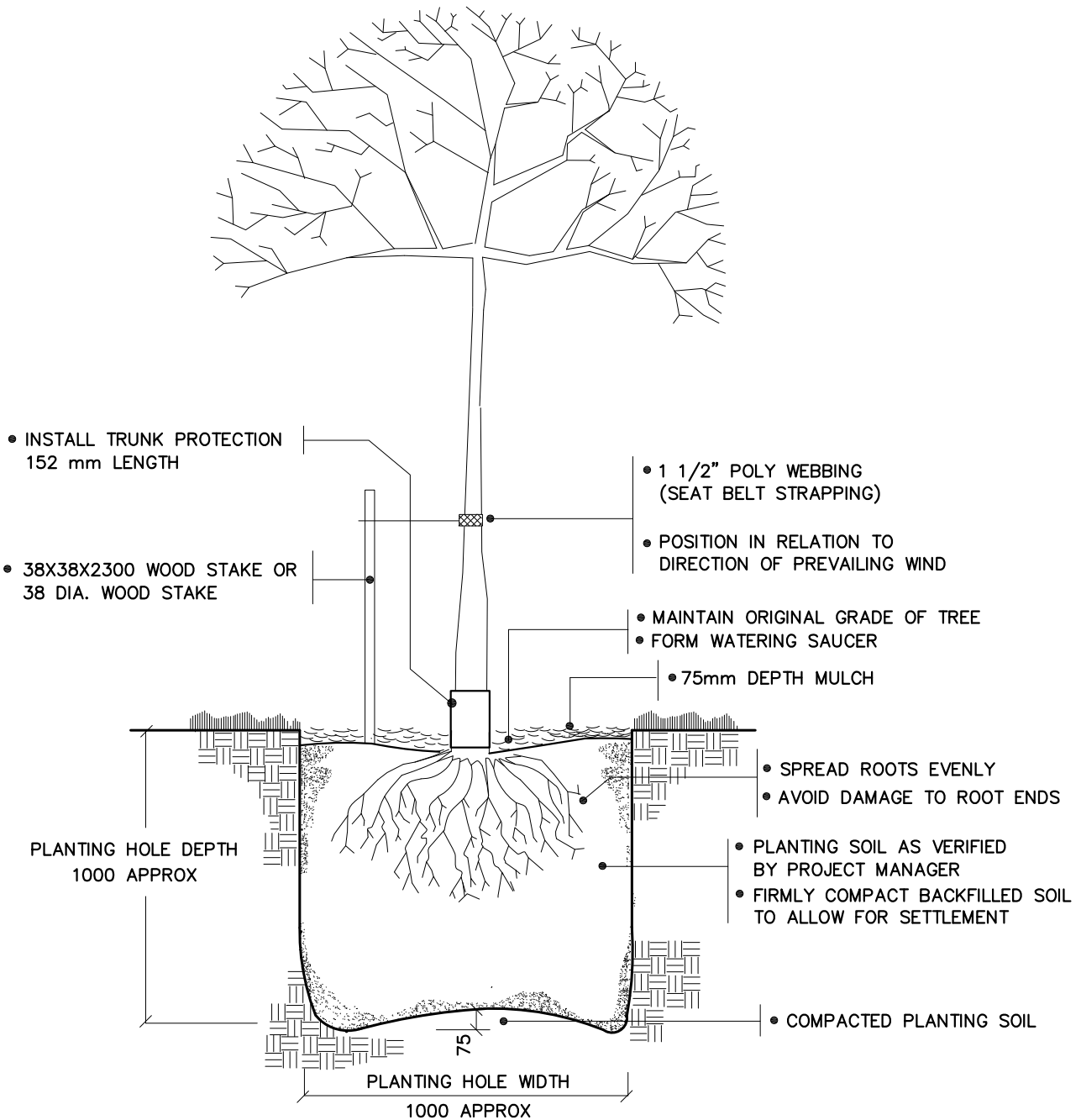
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
TREE SPADE

REVISIONS	
1. 02-20-2013	SEAT BELT STRAPPING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	04-18-2000
DWG NO	3.4

**GENERAL NOTES**

- POSITION FIN GR OF TREE AT ORIGINAL TREE GRADE
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL TREE SHAPE
- USE FOR TREES 25–38 mm CAL



SECTION



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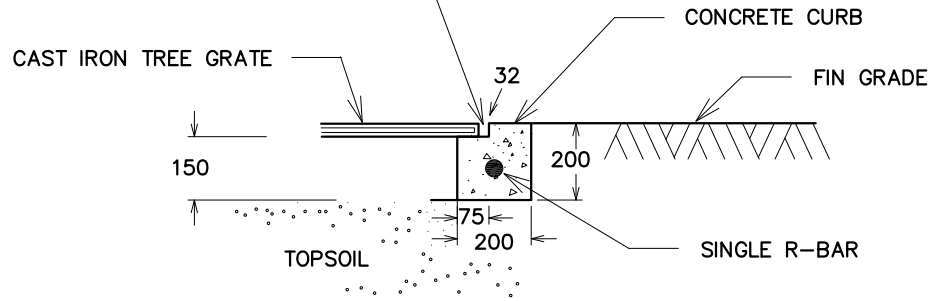
INFRASTRUCTURE SERVICES  
BARE ROOT TREE

REVISIONS	
1. 01-24-2005	2003 REVISIONS
2. 10-25-2005	WOOD STAKE & TRUNK SLEEVE
3. 02-20-2013	SEAT BELT STRAPPING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-15-1998
DWG NO	3.5

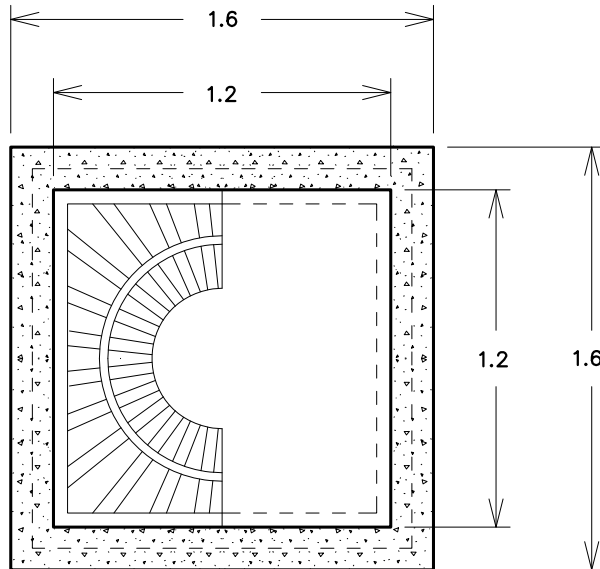
GENERAL NOTES

- ENSURE STYLE MATCHES SOVEREIGN CASTINGS 48 in SUNBURST PATTERN

ENSURE GAP IS MAINTAINED BETWEEN FABRICATED CURB COLLAR & TREE GRATE TO ACCOMODATE INSTALLATION



SECTION



PLAN



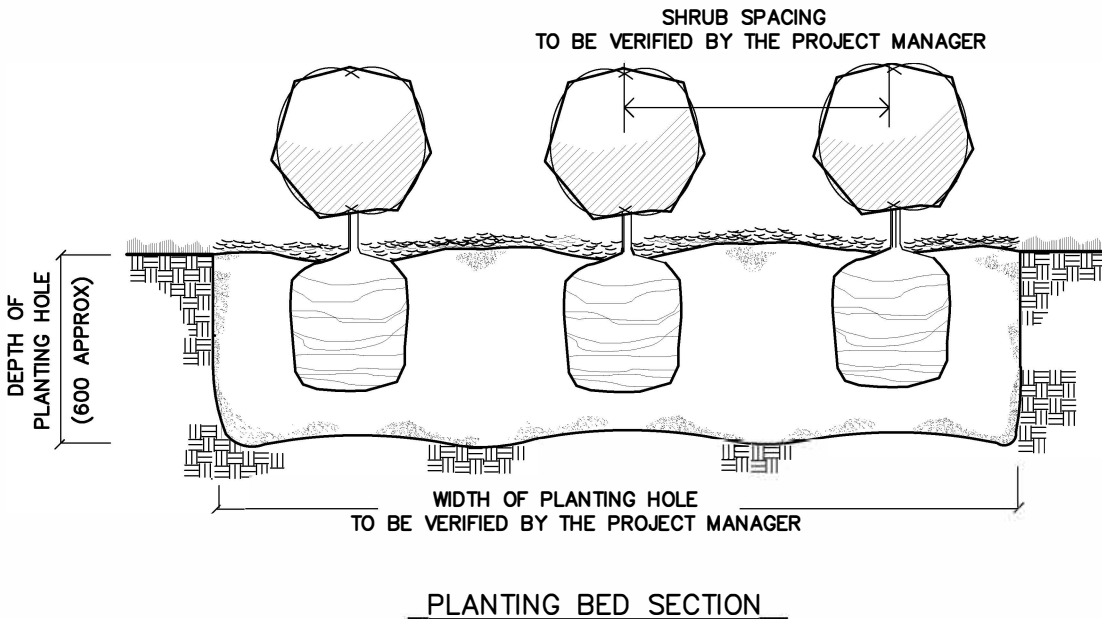
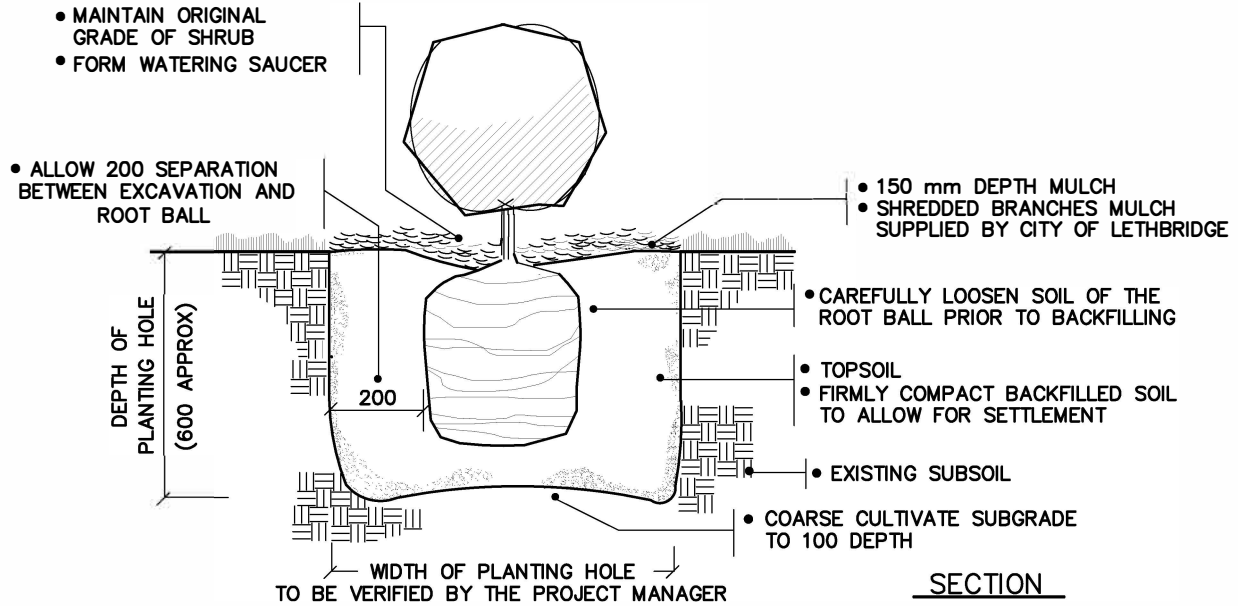
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
TREE GRATE

REVISIONS	
1. 11-23-2006	SUNBURST PATTERN
DRAWN DM	
SCALE NOT TO SCALE	
DATE 05-11-1998	
DWG NO 3.6	

**GENERAL NOTES**

- POSITION FIN GR OF SHRUB AT ORIGINAL SHRUB GR
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL SHRUB SHAPE
- WATER THOROUGHLY AFTER PLANTING
- REMOVE CONTAINERS CAREFULLY TO AVOID ROOT DAMAGE



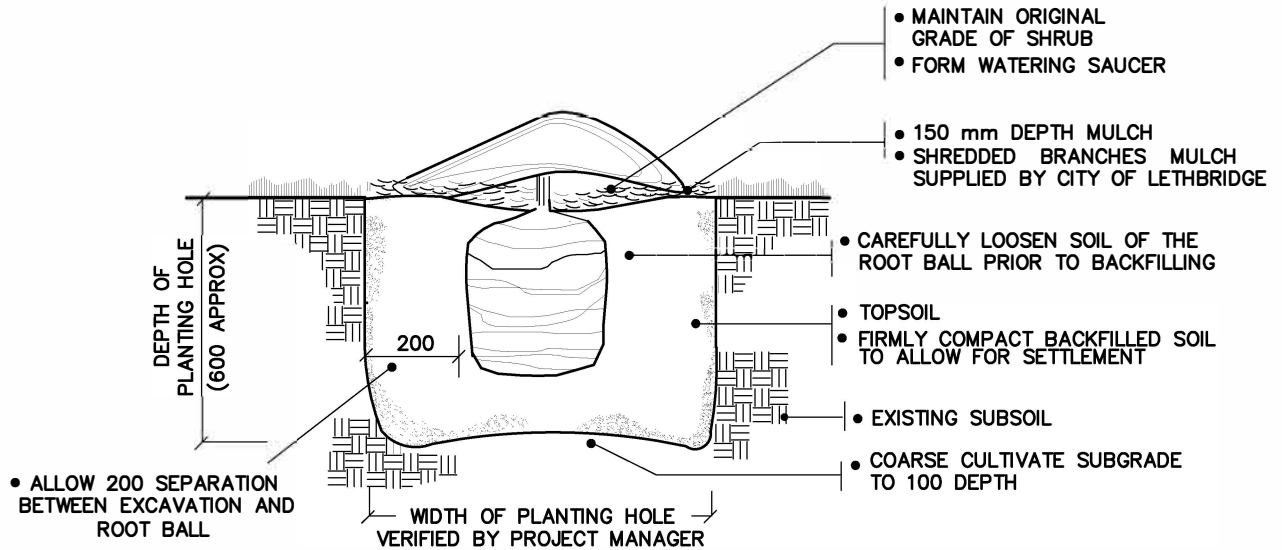
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DECIDUOUS SHRUB

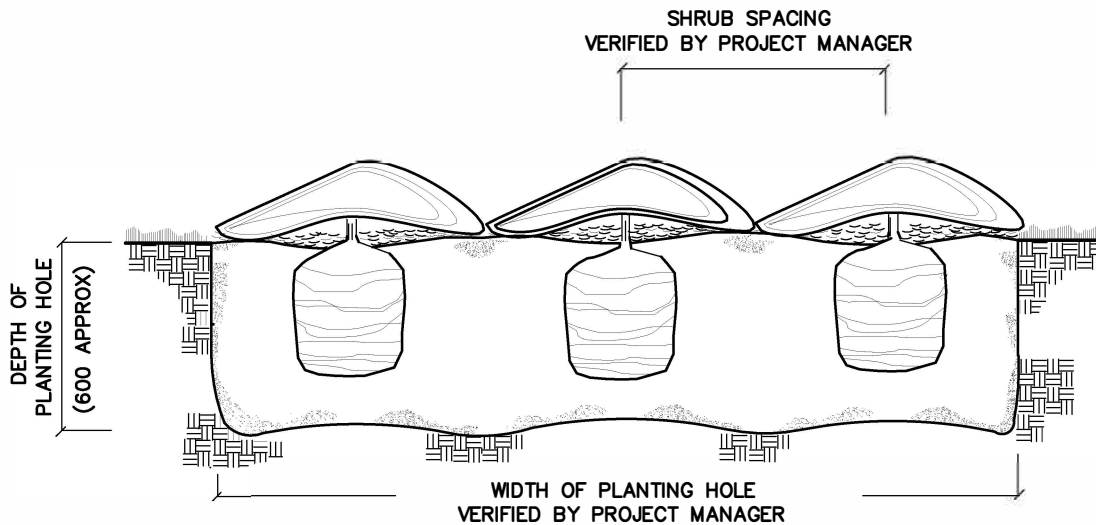
REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	09-15-2000
DWG NO	3.7

**GENERAL NOTES**

- POSITION FIN GR OF SHRUB AT ORIGINAL SHRUB GR
- PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL SHRUB SHAPE
- WATER THOROUGHLY AFTER PLANTING
- REMOVE CONTAINERS CAREFULLY TO AVOID ROOT DAMAGE



**SECTION**



**PLANTING BED SECTION**



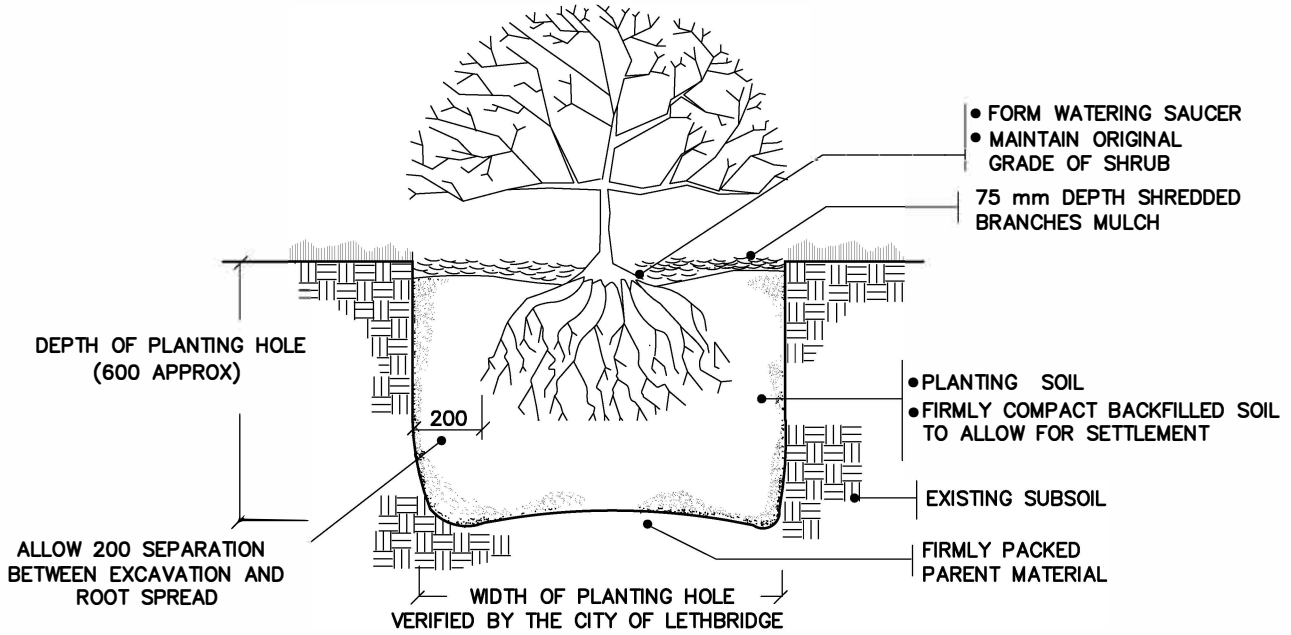
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONIFEROUS SHRUB

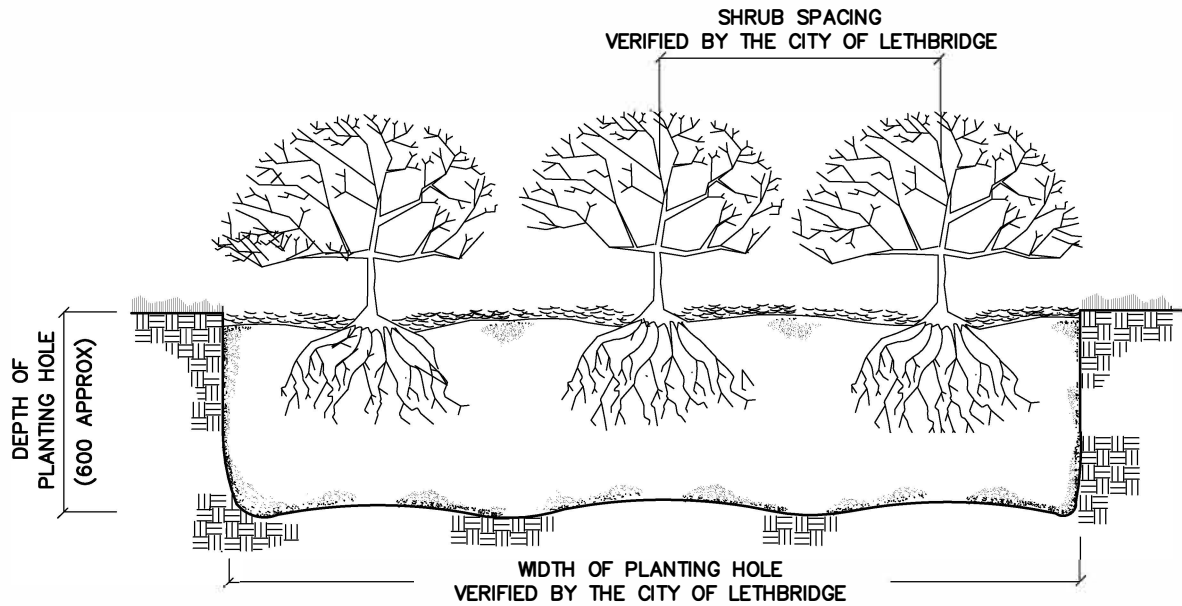
REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	09-15-2000
DWG NO	3.8

**GENERAL NOTES**

- o POSITION FIN GR OF SHRUB AT ORIGINAL SHRUB GR
- o PRUNE BROKEN & DISEASED BRANCHES & MAINTAIN NATURAL SHRUB SHAPE
- o SPREAD ROOTS EVENLY IN PLANTING BED AVOID DAMAGE TO ROOT ENDS
- o WATER THOROUGHLY AFTER PLANTING



SECTION



PLANTING BED SECTION



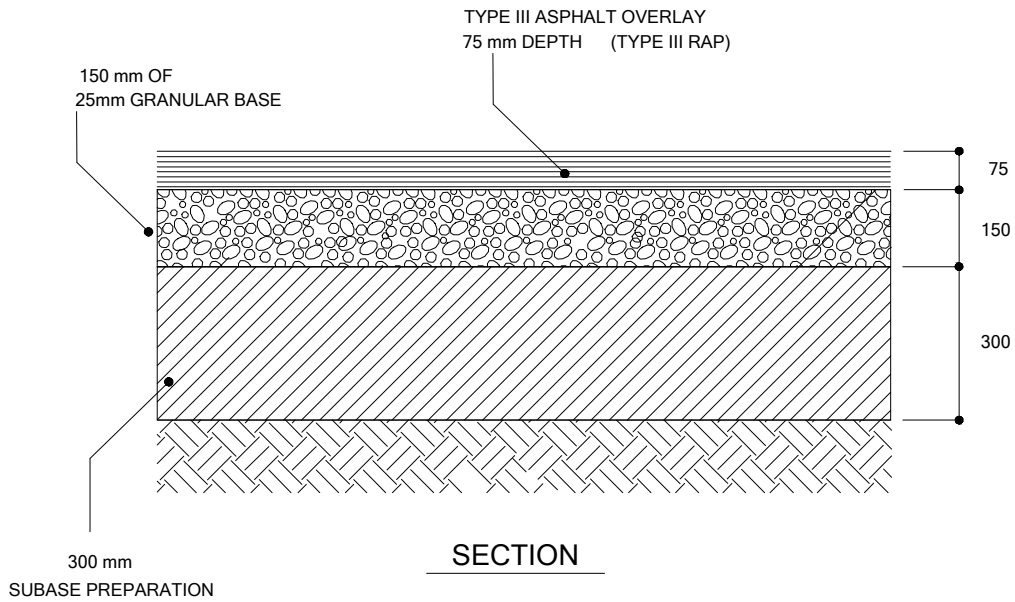
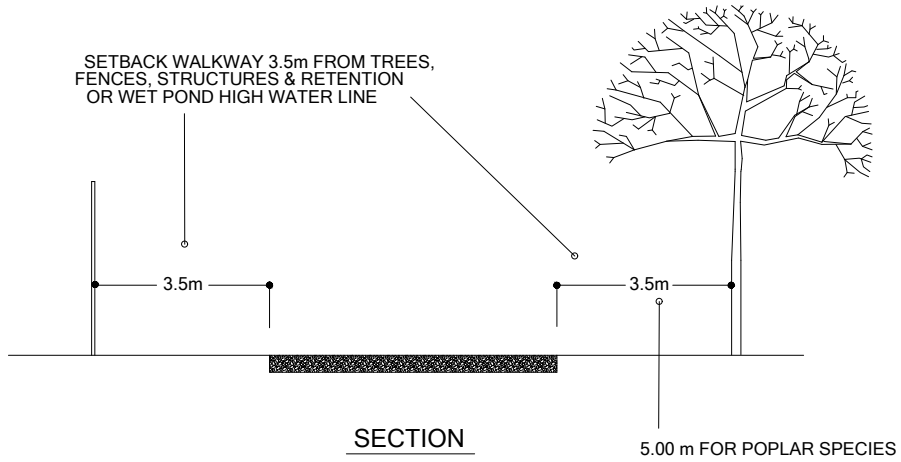
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BARE ROOT SHRUB

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	09-15-2000
DWG NO	3.9

GENERAL NOTES

- PATHWAYS CONSTRUCTED ADJACENT TO CONCRETE CURBS WILL BE CONSTRUCTED TO TIE INTO THE TOP OF THE CURB & WILL BE CONSTRUCTED WITH 2% CROSS-SLOPE FROM THIS POINT
- TRAILS THAT INTERSECT ROADWAYS WILL BE CONSTRUCTED WITH DROPPED CURB CONCRETE CURB & GUTTER & SIDEWALK WHEELCHAIR RAMPS TO BE CONSTRUCTED AS PER CURRENT CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS
- EXCAVATE TO A DEPTH OF 175mm APPROX & DISPOSE OFFSITE OR AS DIRECTED BY THE ENGINEER
- CONTRACTOR WILL REMOVE AN ADDITIONAL 1.0M OF TOPSOIL ON EACH SIDE OF THE TRAIL WHERE THE FINISHED ELEV OF THE PATHWAY VARIES MORE THAN 100mm FROM EXISTING TERRAIN
- RESTORE DISTURBED AREAS WITH A MIN DEPTH OF 100mm SALVAGED TOPSOIL SUPPLY & PLACE SEED OR SOD
- SLOPE CROSSFALL OF 2% +/- 0.2%



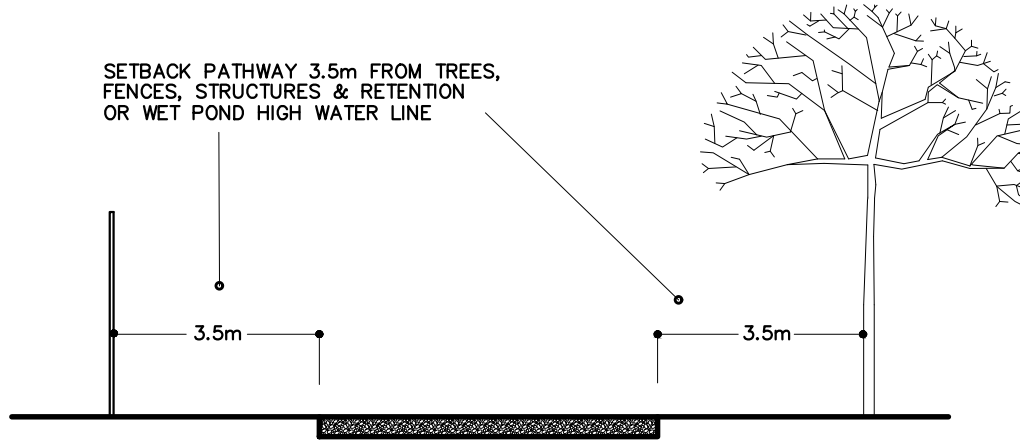
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
REGIONAL TRAIL

REVISIONS	
1. 12-01-2004	SETBACK STANDARD J.Sm
2. 12-12-2017	5.0M SETBACK FOR POPLAR, 2nd NOTE
DRAWN	GD
SCALE	NOT TO SCALE
DATE	10-15-2000
DWG NO	4.1

GENERAL NOTES

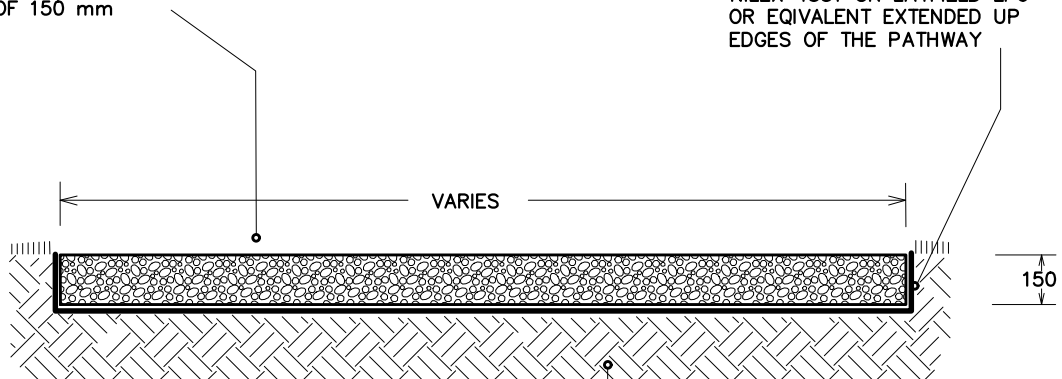
- REPAIR DISTURBED EDGES OF PATHWAY WITH TOPSOIL & SEED
- GRADE CROSS-SLOPE @ 2% MIN
- 10mm LIMESTONE FINES



SECTION

COMPACT TO 95% STANDARD PROCTOR DENSITY  
ONE LIFT OF SCREENINGS TO A UNIFORM  
THICKNESS OF 150 mm

WOVEN GEOTEXTILE FABRIC  
NILEX 4551 OR LAYFIELD LP6  
OR EQUIVALENT EXTENDED UP  
EDGES OF THE PATHWAY



SECTION

COMPACT SUBGRADE TO 95%  
STANDARD PROCTOR DENSITY



CITY OF  
*Lethbridge*

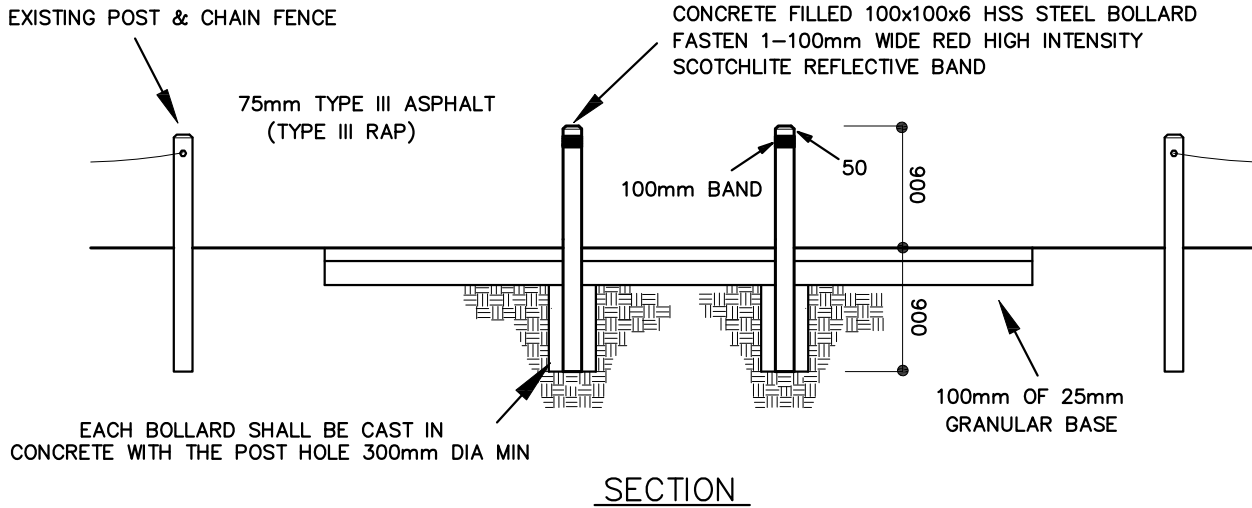
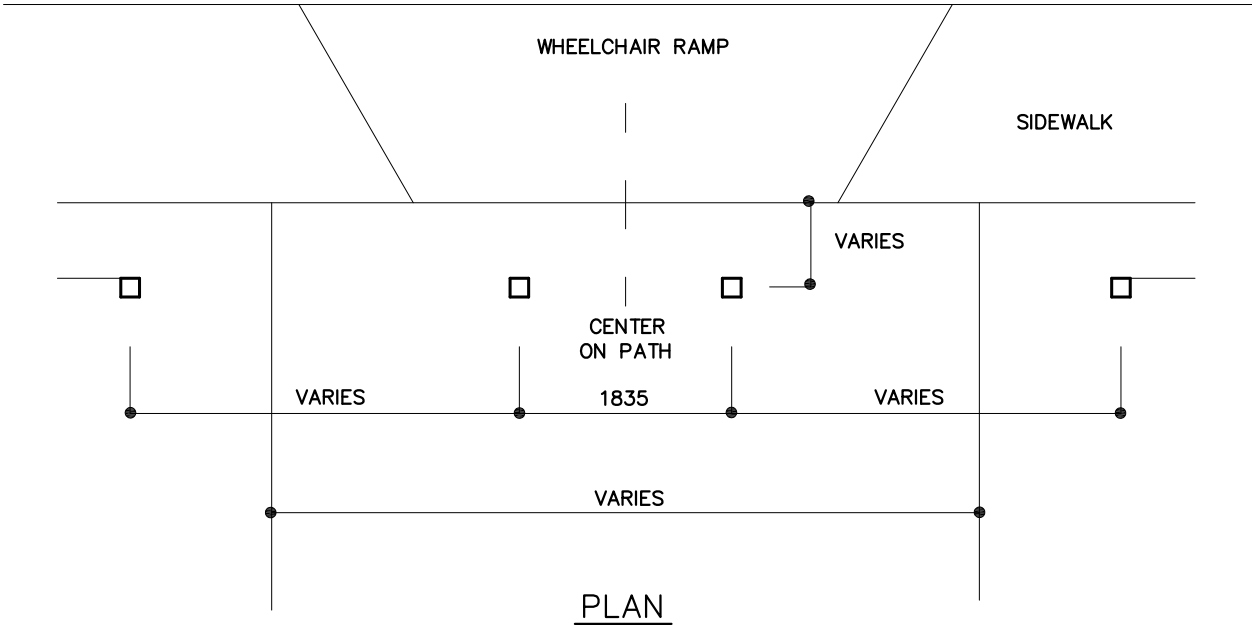
INFRASTRUCTURE SERVICES  
LIMESTONE OR SHALE PATHWAY

REVISIONS	
1.	11-22-2005 LIMESTONE OPTION
2.	12-29-2015 GEOTEXTILE FABRIC
3.	12-12-2017 MATERIAL SPECIFICATION
DRAWN	GD
SCALE	NOT TO SCALE
DATE	12-01-2004
DWG NO	4.2



GENERAL NOTES

- PATHWAYS CONSTRUCTED ADJACENT TO CONCRETE CURBS WILL BE CONSTRUCTED TO TIE INTO THE TOP OF THE CURB & WILL BE CONSTRUCTED WITH 2% CROSS-SLOPE FROM THIS POINT
- TRAILS THAT INTERSECT ROADWAYS WILL BE CONSTRUCTED WITH DROPPED CURB, CONCRETE CURB & GUTTER & 1.37M WIDE SIDEWALK WHEELCHAIR RAMPS TO BE CONSTRUCTED AS PER CURRENT CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS
- PAINT BOLLARDS WITH 2 COATS ASA 61 GREY OR BLACK EPOXY WEATHER-PROOF PAINT



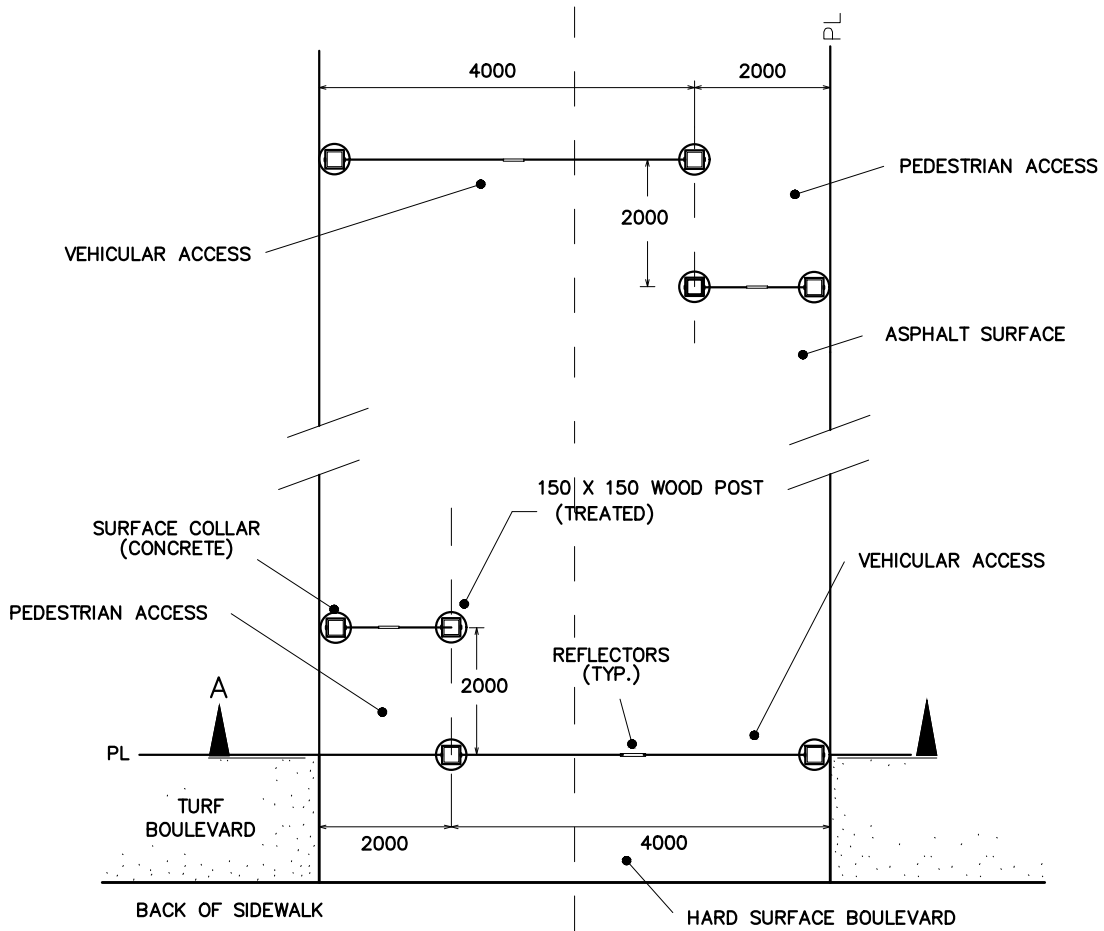
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
REGIONAL TRAIL BOLLARD

REVISIONS	
1. 10-27-2005	BOLLARD CENTER TO 1835 mm
2. 11-29-2007	POST HOLE TO 300mm DIA MIN
3. 12-04-2007	REFLECTIVE BAND TO 100mm
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	4.3.1

GENERAL NOTES

- o CENTER POSTS AS FOLLOWS:
  - o VEHICULAR ACCESS 3.6m
  - o PEDESTRIAN ACCESS 2.0m
- o WOOD TO BE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



PLAN VIEW



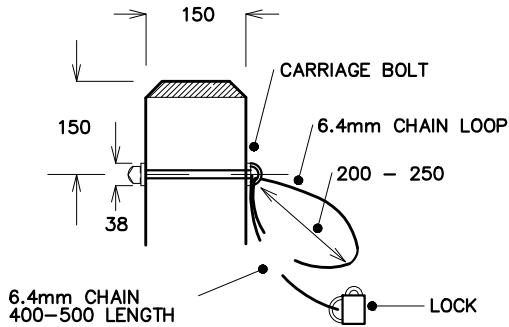
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
6m ASPHALT PATHWAY WOOD POST & CHAIN FENCE  
PLAN

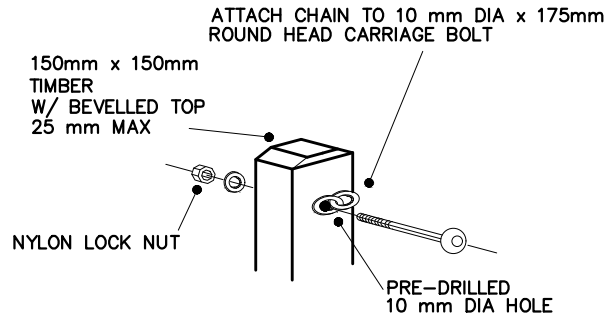
REVISIONS	
1. 10-27-2005	BOLLARD CENTERS TO 1835
2. 02-07-2006	VEHICULAR ACCESS TO 3600
3. 02-01-2007	BOLLARD LOCATION
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	4.4.1

**GENERAL NOTES**

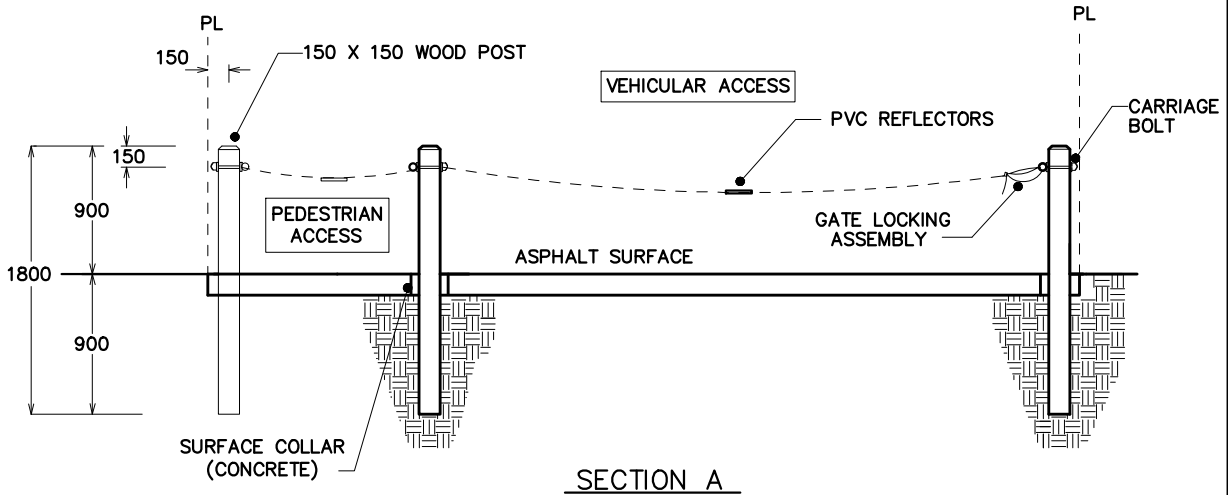
- CHAIN TO BE 6.4mm BRIGHT ZINC-PLATED, PROOF COIL GRADE 30, LONG LINK. CHAIN SAG TO BE 150 mm MAX
- BOLTS AND FASTENERS TO BE ZINC-PLATED
- WOOD TO BE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



GATE LOCKING ASSEMBLY



PEDESTRIAN POST



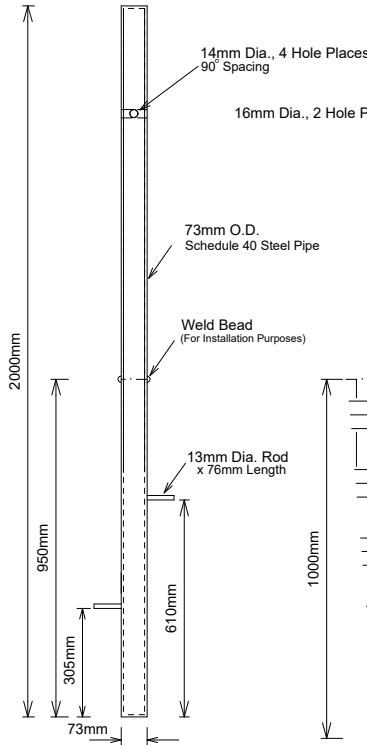
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
6m ASPHALT PATHWAY WOOD POST & CHAIN FENCE  
ELEVATION & DETAILS

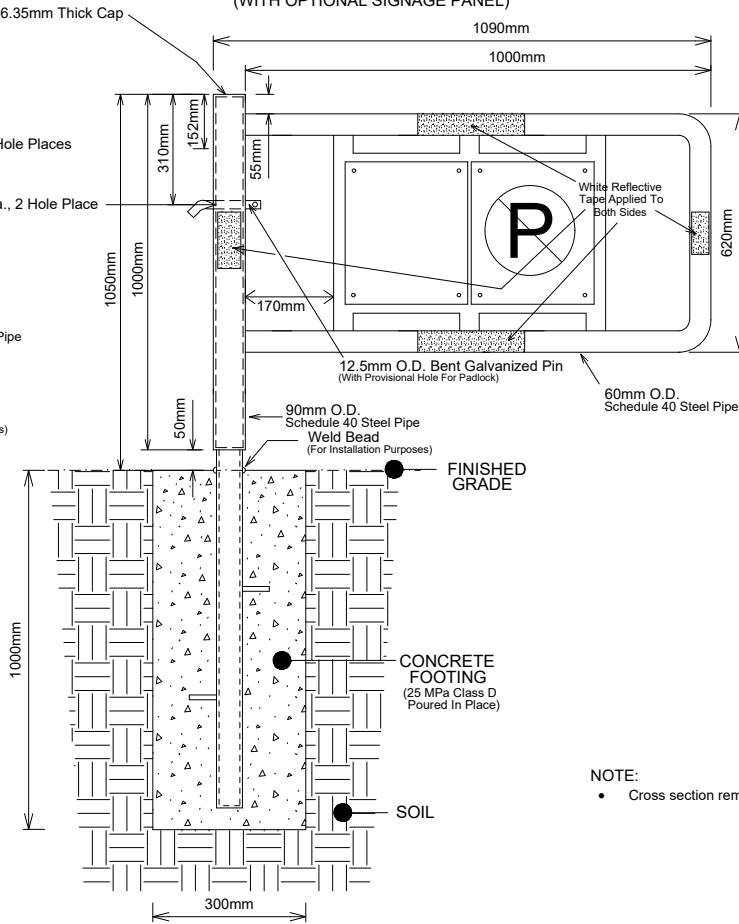
REVISIONS	
1.	12-04-2007 CHAIN TO 6.4mm
DRAWN GD	
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	4.4.2

# ELEVATION

## INGROUND POST DETAIL

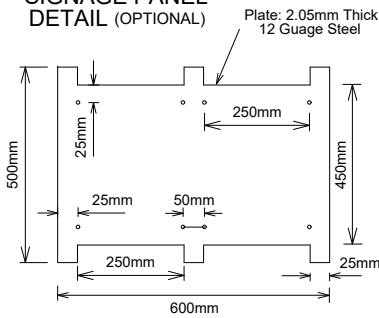


## TOP P - BOLLARD DETAIL (WITH OPTIONAL SIGNAGE PANEL)

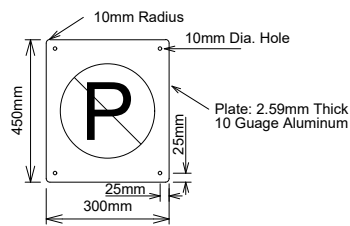


NOTE:  
• Cross section removed

## SIGNAGE PANEL DETAIL (OPTIONAL)



## SIGNAGE PLATE



### NOTES:

- 6.35MM THICK STEEL PLATE (WELDED POST CAPS).
- THE WELD BEAD MARK WILL BE LEVEL TO EXISTING GRADE TO DETERMINE BOLLARD HEIGHT.
- SANDBLAST STEEL PLATE AND COAT WITH ZINC RICH PRIMER (POWDER COATING), THEN TOP COAT.
- STEEL COMPONENTS RECEIVE CORROSION PROTECTION FROM AN E-COAT PRIMER.
- ALL CEMENT TAILINGS WILL BE CLEANED OFF BOLLARD IMMEDIATELY AFTER INSTALLATION.
- ALL AREAS SURROUNDING INSTALLED BOLLARD WILL BE COMPLETED TO FINISHED GRADE & NOT EXCEED 50MM VARIATION.
- DIMENSIONS ARE IN MILLIMETERS.
- PINS AND LOCKS MUST BE SPOT WELDED TO THE POST WITH CHAINLINK TO PREVENT LOSS.

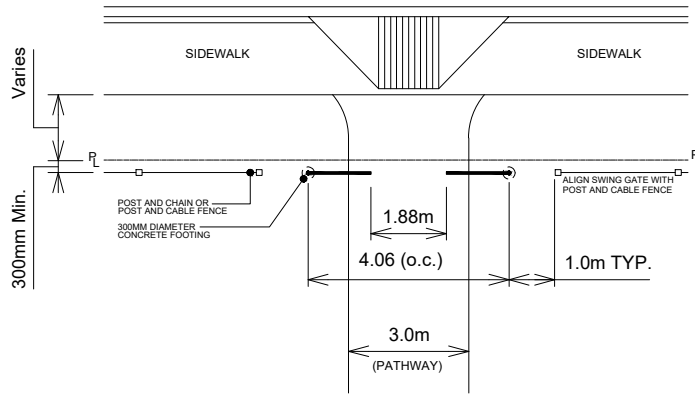


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*Lethbridge*

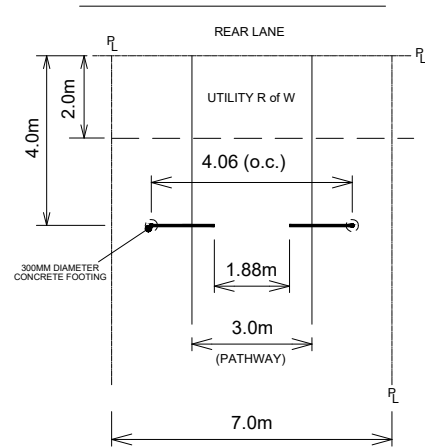
## SWING GATE DETAIL

REVISIONS	
12-12-2017	REMOVED LAYOUT PLAN
DRAWN	
SCALE	NOT TO SCALE
DATE	12-29-2015
DWG NO	4.5.1

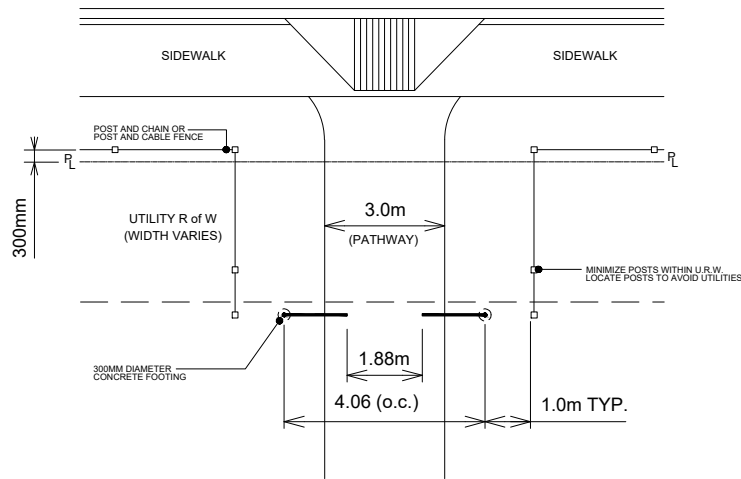
Typical P Bollard Layout @ Street



Typical P Bollard Layout In 7.0m PUL



P Bollard Layout @ Street With U.R.W.



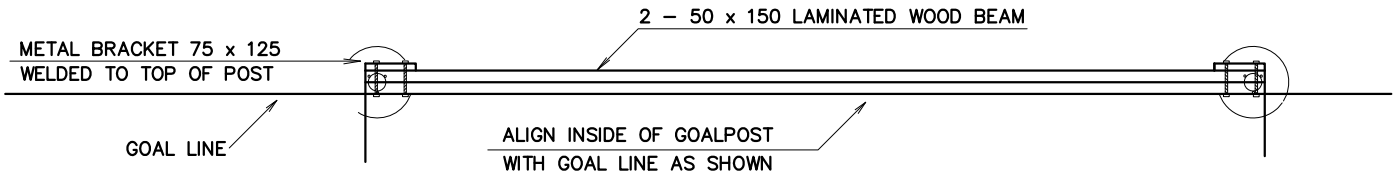
CITY OF  
*Lethbridge*

SWING GATE DETAIL  
(PUL LAYOUT)

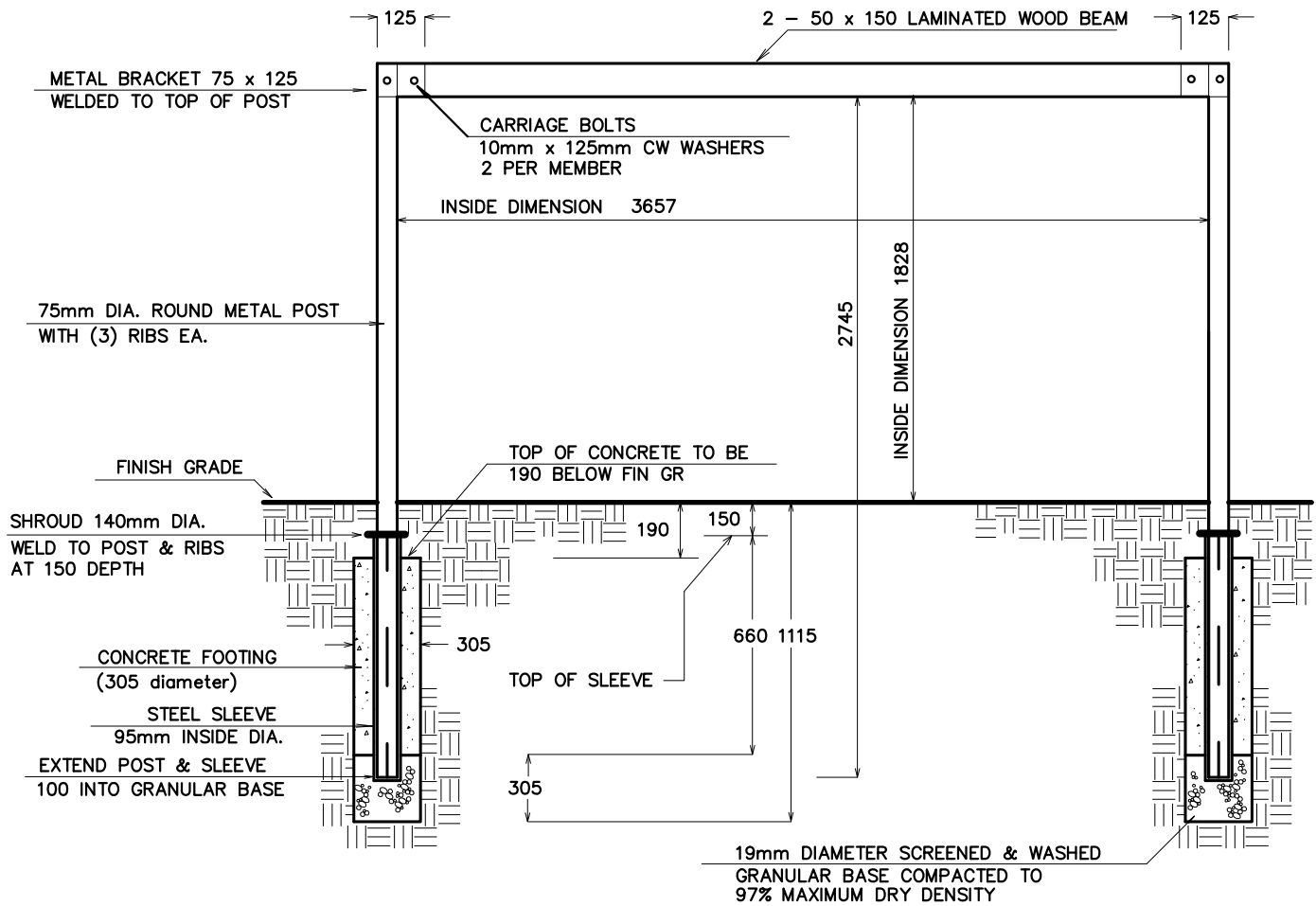
REVISIONS	
12-12-2017	REVISED LAYOUT PLANS
DRAWN	ISL
SCALE	NOT TO SCALE
DATE	12-29-2015
DWG NO	4.5.2

**GENERAL NOTES**

- o USE ZINC-PLATED BOLTS, NUTS AND WASHERS
- o ALL WELDS TO BE CONTINUOUS & GROUND SMOOTH
- o STEEL PLATES & POSTS TO BE 6.3mm THICK THROUGHOUT
- o WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



PLAN



SECTION



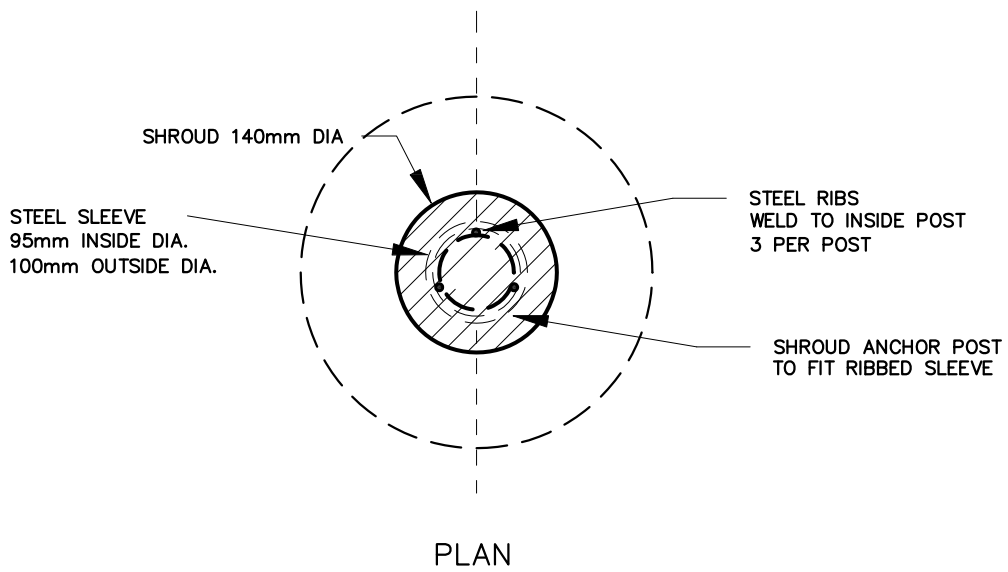
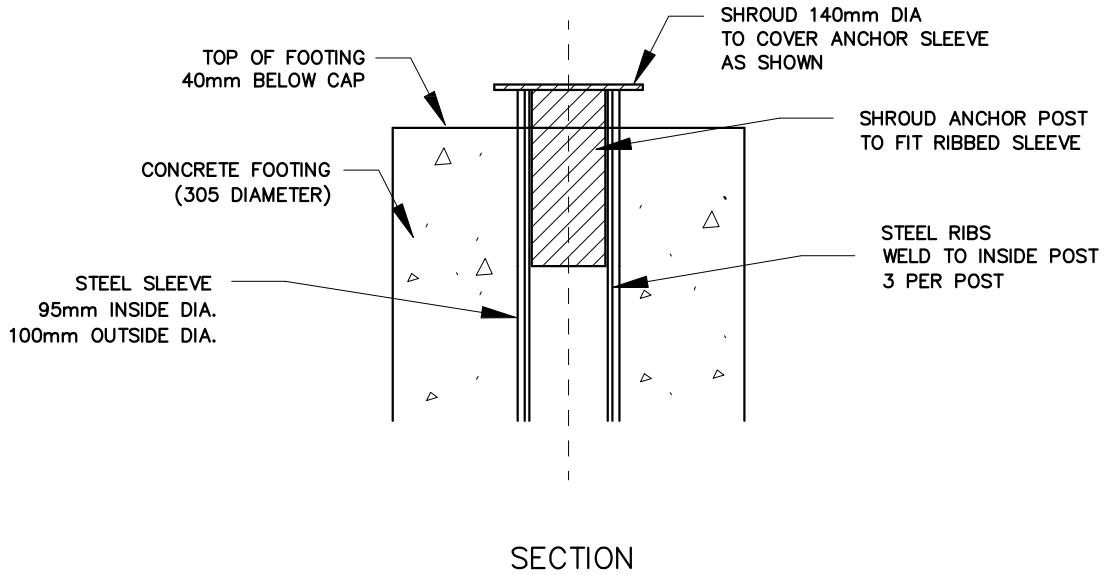
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
MINI-SOCCER GOAL POSTS  
PLAN AND SECTION

REVISIONS	
1. 11-20-2003	ACQ PRESERVATIVE
2. 02-14-2005	SHROUD SIZING
3. 11-30-2007	BRACKET 75 X 125 AT POST TOP
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-11-1998
DWG NO	5.1.1

GENERAL NOTES

- o ALL WELDS TO BE CONTINUOUS & GROUND SMOOTH
- o STEEL PLATES & POSTS TO BE 10mm THICK THROUGHOUT
- o ANCHOR SLEEVE TO BE USED FOR POST MAINTENANCE



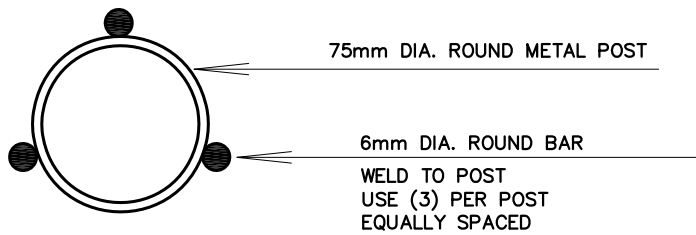
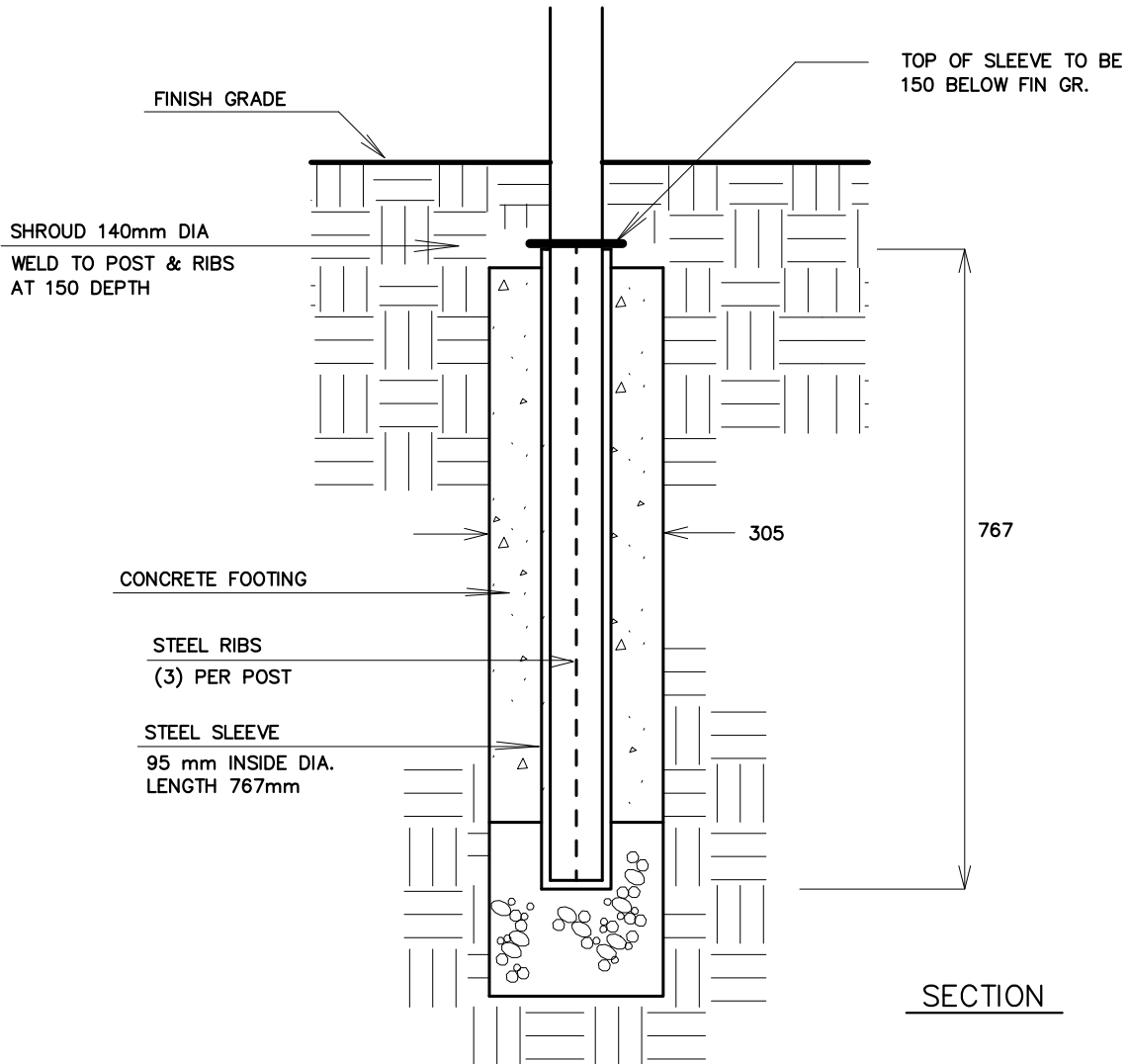
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
MINI-SOCCER GOAL POSTS  
CAP ASSEMBLY

REVISIONS	
1. 12-16-2003	CAP DIMENSION ADJUSTED
2. 02-14-2005	SHROUD SIZING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	05-08-2002
DWG NO	5.1.2

GENERAL NOTES

- o ALL WELDS TO BE CONTINUOUS & GROUND SMOOTH
- o STEEL PLATES & POSTS TO BE 10mm THICK THROUGHOUT



CITY OF  
*Lethbridge*

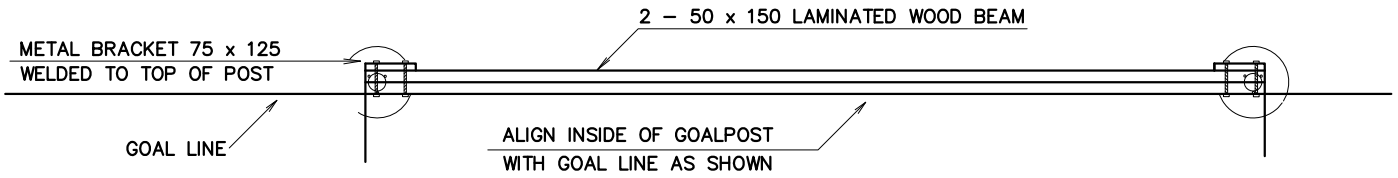
INFRASTRUCTURE SERVICES  
MINI-SOCCER GOAL POSTS  
SLEEVE ASSEMBLY

REVISIONS	
1. 05/08/02	POST ASSEMBLY
2. 08/08/02	SLEEVE ASSEMBLY
3. 02/14/2005	SHROUD SIZING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	05-08-2002
DWG NO	5.1.3

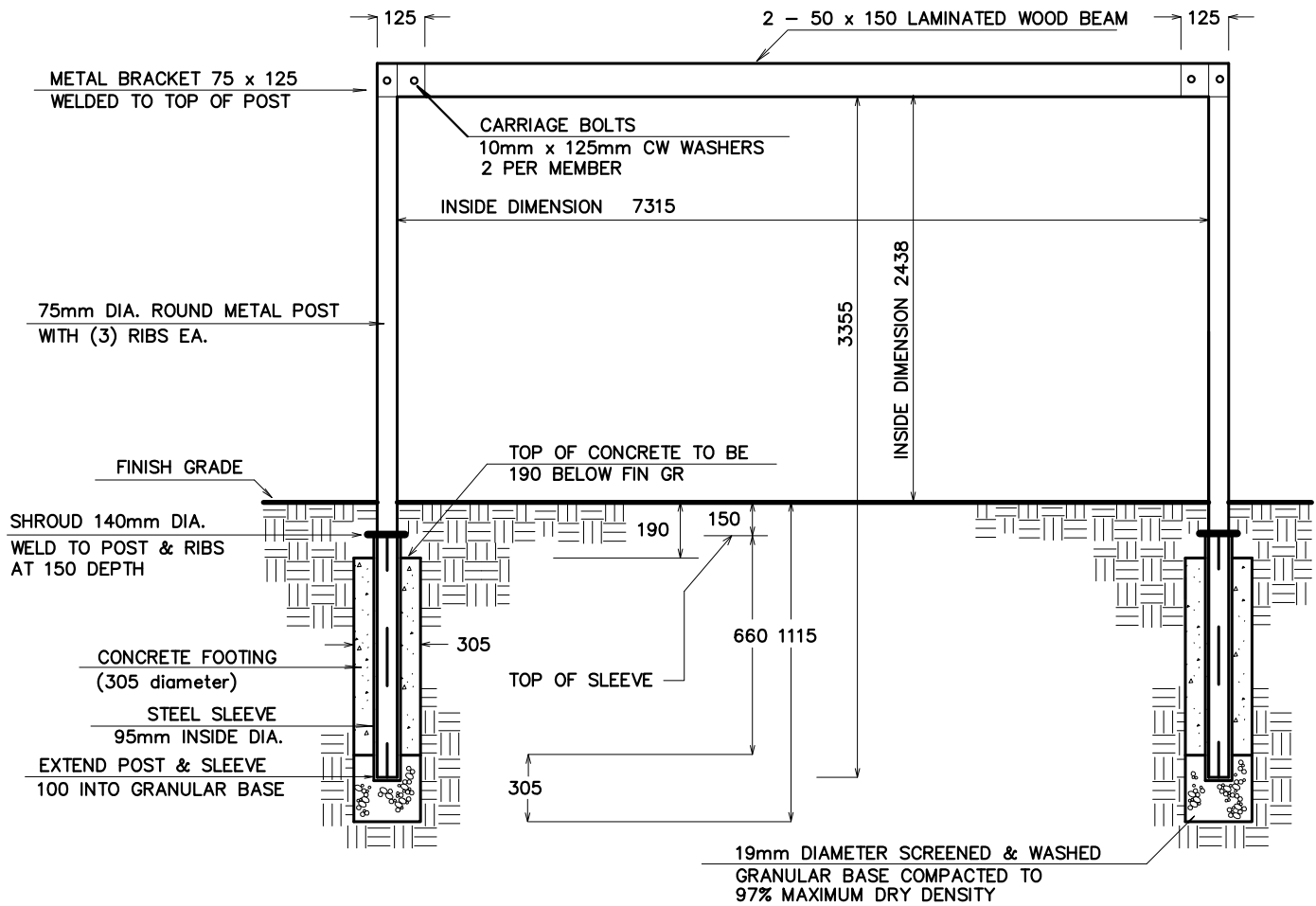


**GENERAL NOTES**

- o USE ZINC-PLATED BOLTS, NUTS AND WASHERS
- o ALL WELDS TO BE CONTINUOUS & GROUND SMOOTH
- o STEEL PLATES & POSTS TO BE 6.3mm THICK THROUGHOUT
- o WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



PLAN



SECTION



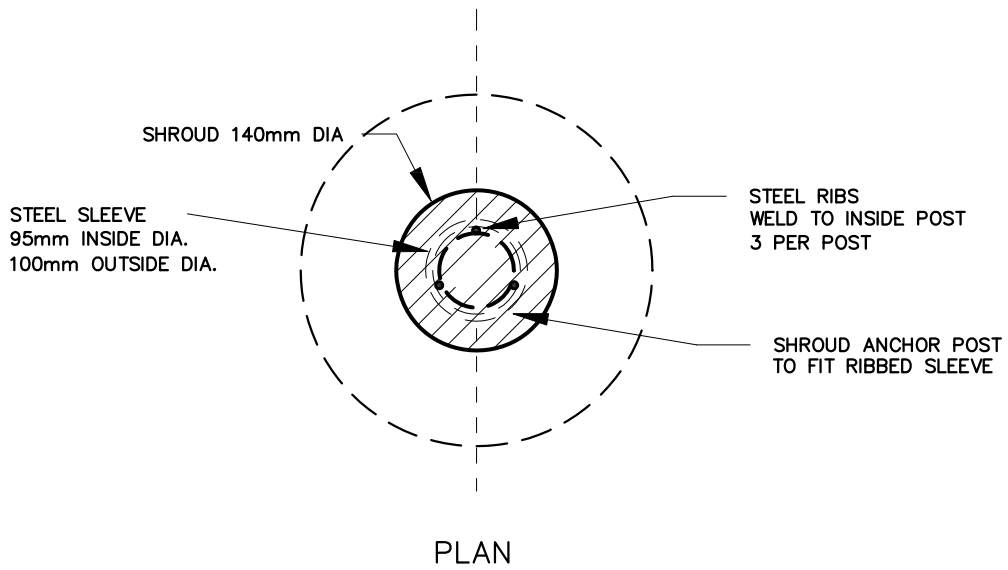
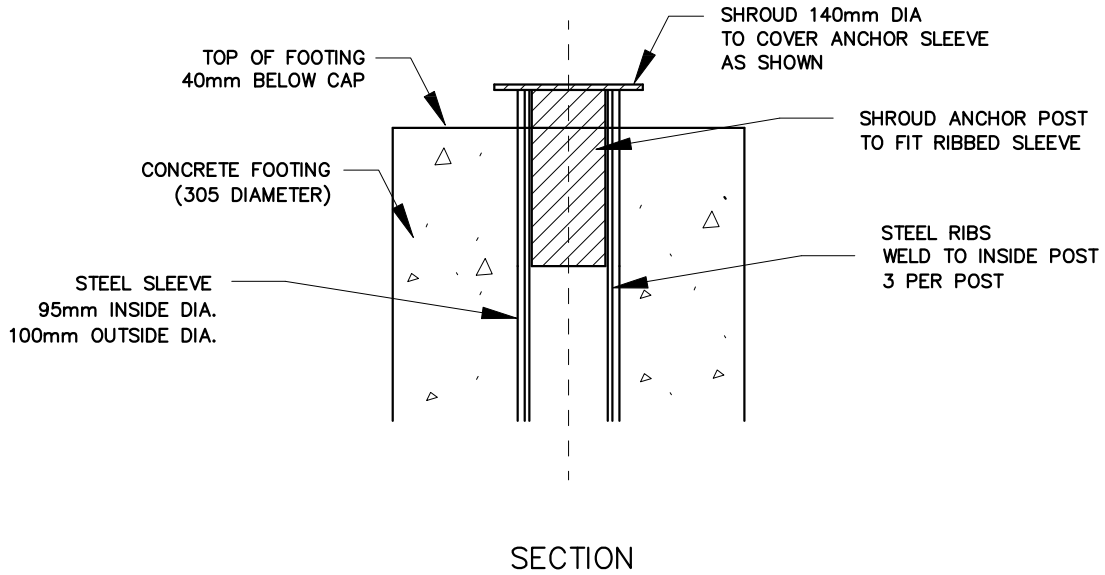
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
REGULATION SOCCER GOAL POSTS  
PLAN AND SECTION

REVISIONS	
1. 11-20-2003	ACQ PRESERVATIVE
2. 02-14-2005	SHROUD SIZING
3. 11-30-2007	BRACKET 75 X 125 AT POST TOP
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-11-1998
DWG NO	5.2.1

GENERAL NOTES

- o ALL WELDS TO BE CONTINUOUS & GROUND SMOOTH
- o STEEL PLATES & POSTS TO BE 10mm THICK THROUGHOUT
- o ANCHOR SLEEVE TO BE USED FOR POST MAINTENANCE



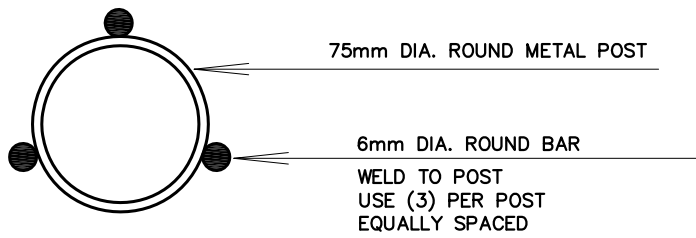
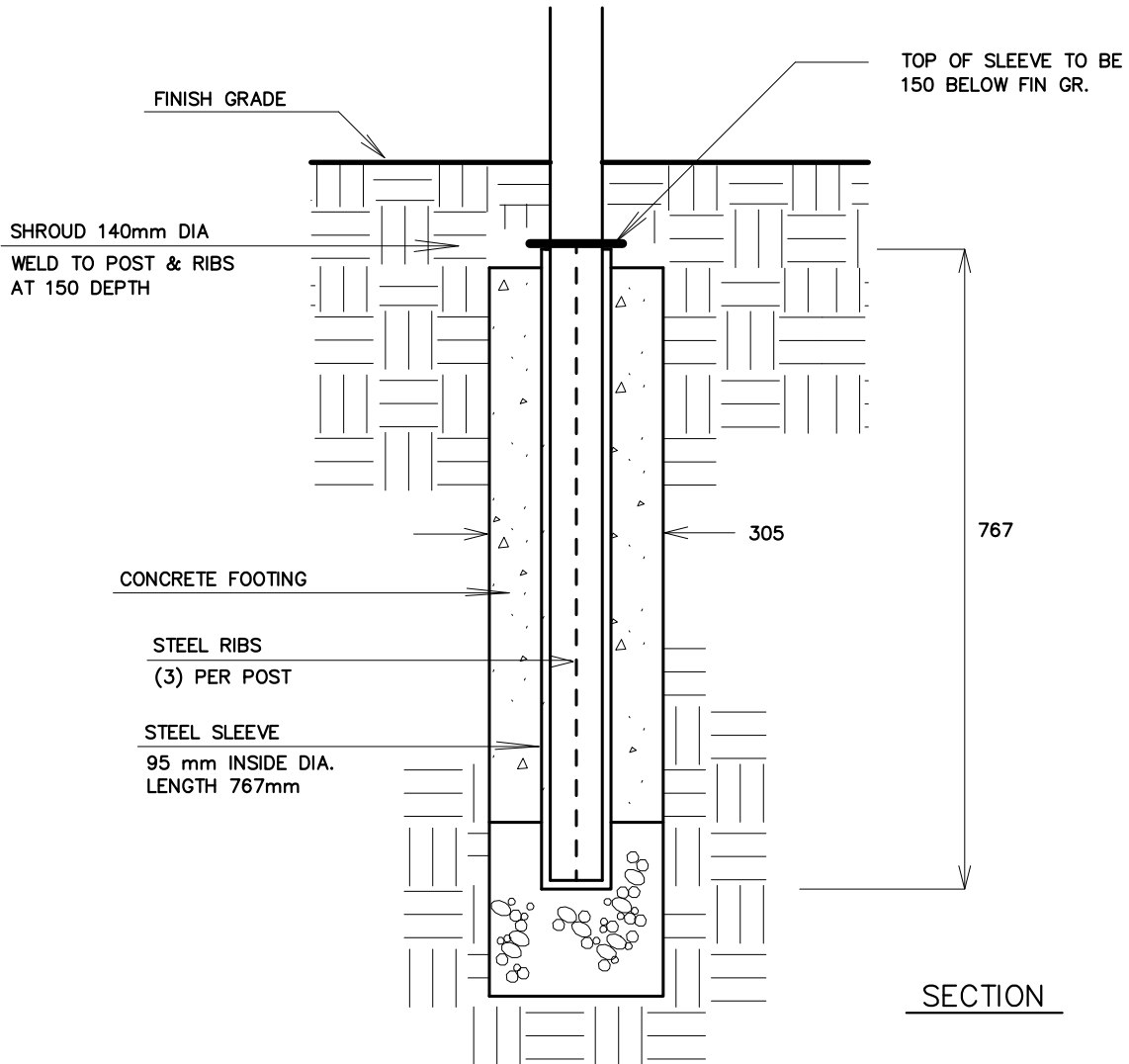
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
REGULATION GOAL POSTS  
CAP ASSEMBLY

REVISIONS	
1. 12-16-2003	CAP DIMENSION ADJUSTED
2. 02-14-2005	SHROUD SIZING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	05-08-2002
DWG NO	5.2.2

GENERAL NOTES

- o ALL WELDS TO BE CONTINUOUS & GROUND SMOOTH
- o STEEL PLATES & POSTS TO BE 10mm THICK THROUGHOUT



CITY OF  
*Lethbridge*

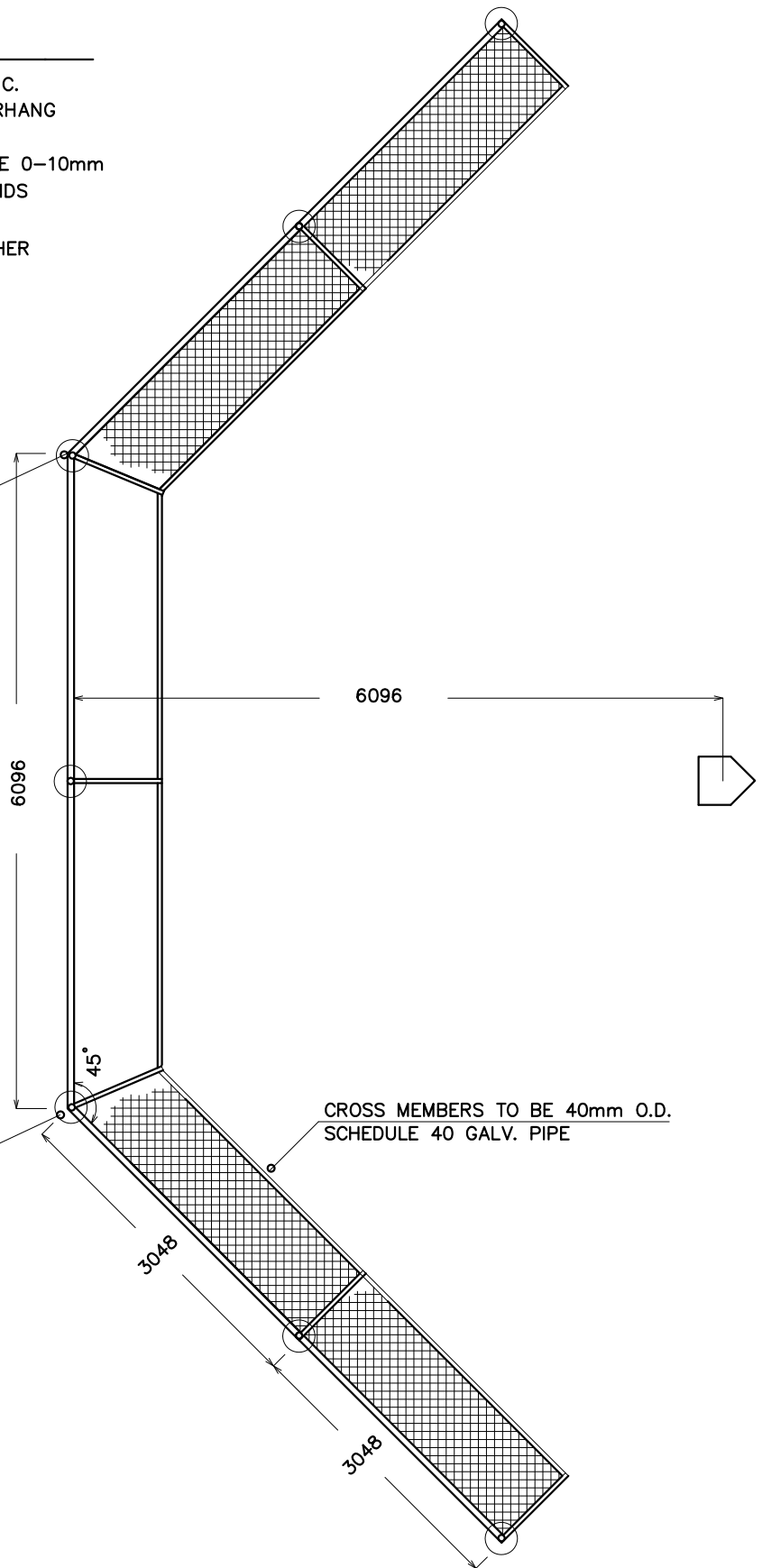
INFRASTRUCTURE SERVICES  
REGULATION GOAL POSTS  
SLEEVE ASSEMBLY

REVISIONS	
1. 05/08/02	POST ASSEMBLY
2. 08/08/02	SLEEVE ASSEMBLY
3. 02/14/2005	SHROUD SIZING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	05-08-2002
DWG NO	5.2.3

GENERAL NOTES

- o SPACE WIRE TIES AND TENSION BANDS 300 O.C.
- o MESH TO BE 9 GAUGE GALV FOR TOP & OVERHANG
- o MESH TO BE 6 GAUGE GALV FOR BOTTOM
- o CLEARANCE BETWEEN BOTTOM & FIN GR TO BE 0-10mm
- o USE STANDARD DOME CAPS FOR ALL POST ENDS
- o WELD ALL PIPE CONNECTIONS
- o WIRE UPPER & LOWER MESH SECTIONS TOGETHER & WIRE TIE TO CROSSMEMBERS

VERTICAL POSTS TO BE 88mm O.D.  
SCHEDULE 40 GALV. PIPE



CONCRETE FOOTING  
(305 DIAMETER)

CROSS MEMBERS TO BE 40mm O.D.  
SCHEDULE 40 GALV. PIPE

PLAN



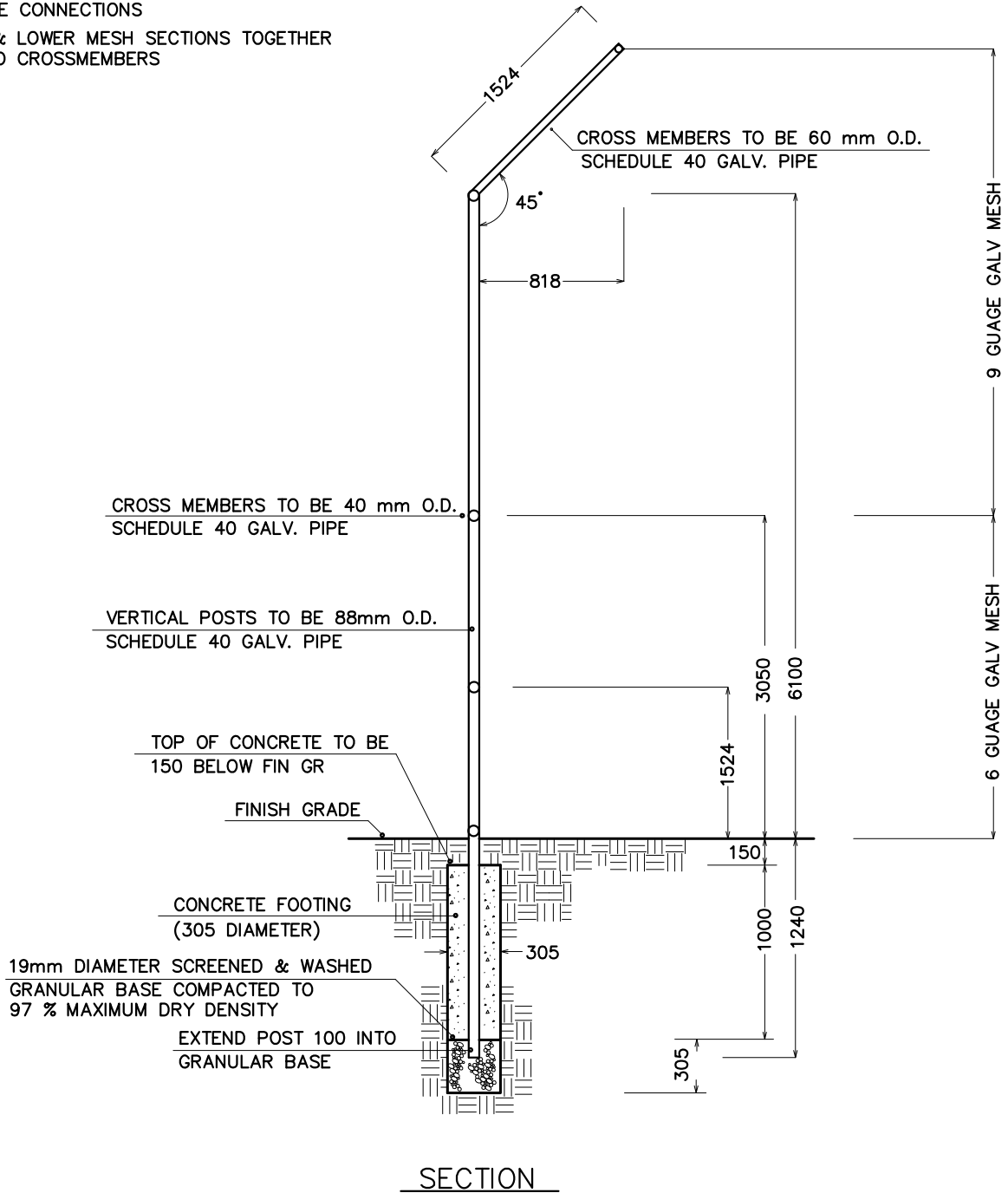
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BASEBALL BACKSTOP  
PLAN

REVISIONS	
1. 02-14-2005	WIRE MESH VARIOUS
DRAWN	GD
SCALE	NOT TO SCALE
DATE	11-02-1998
DWG NO	5.3.1

GENERAL NOTES

- SPACE WIRE TIES AND TENSION BANDS 300 O.C.
- MESH TO BE 9 GAUGE GALV FOR TOP & OVERHANG
- MESH TO BE 6 GAUGE GALV FOR BOTTOM
- CLEARANCE BETWEEN BOTTOM & FIN GR TO BE 0-10mm
- USE STANDARD DOME CAPS FOR ALL POST ENDS
- WELD ALL PIPE CONNECTIONS
- WIRE UPPER & LOWER MESH SECTIONS TOGETHER & WIRE TIE TO CROSSMEMBERS



SECTION

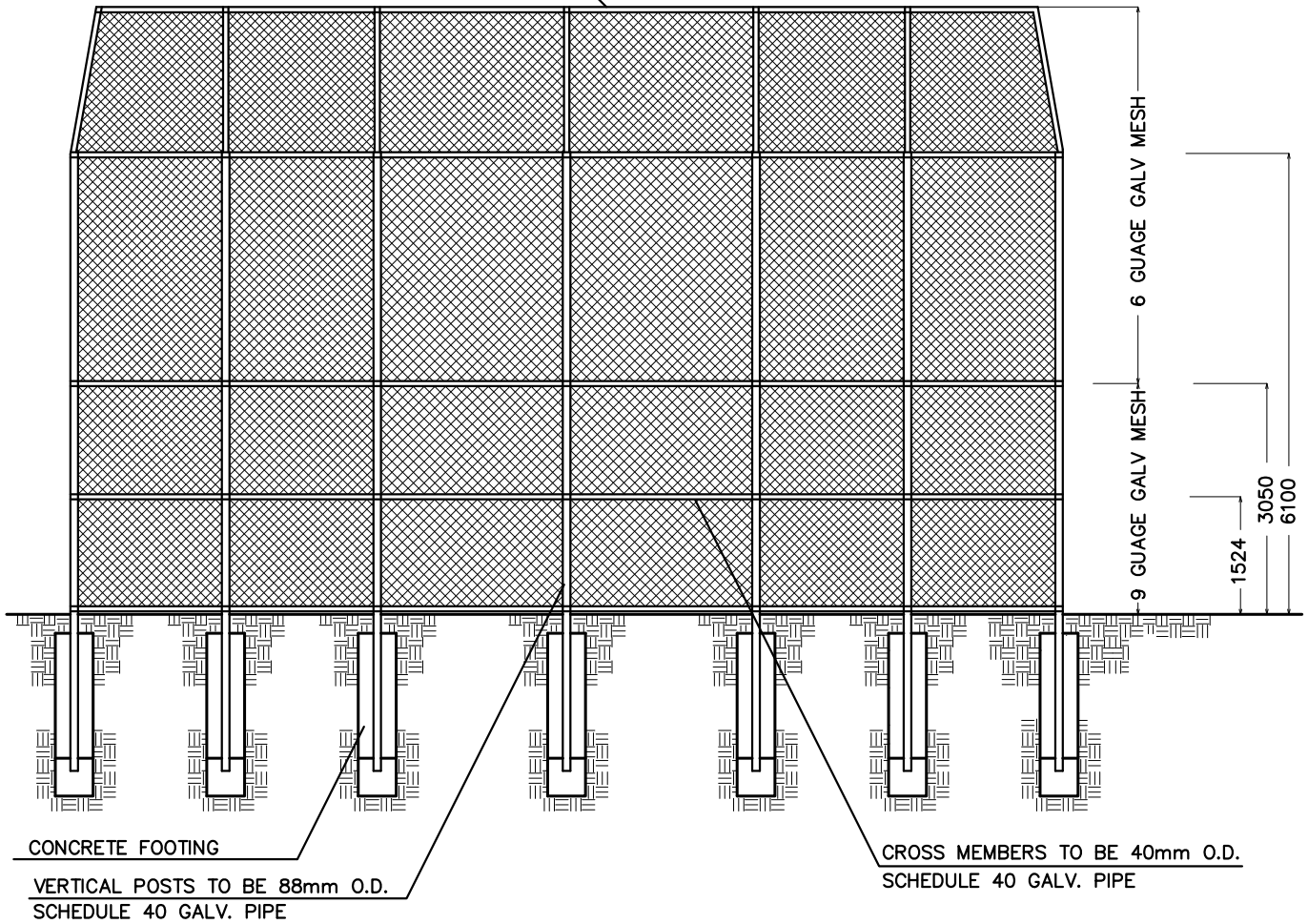


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BASEBALL BACKSTOP  
SECTION

REVISIONS	
1. 02-14-2005	WIRE MESH VARIOUS
DRAWN GD	
SCALE NOT TO SCALE	
DATE 11-02-1998	
DWG NO 5.3.2	

CROSS MEMBERS TO BE 60mm O.D.  
SCHEDULE 40 GALV. PIPE



ELEVATION



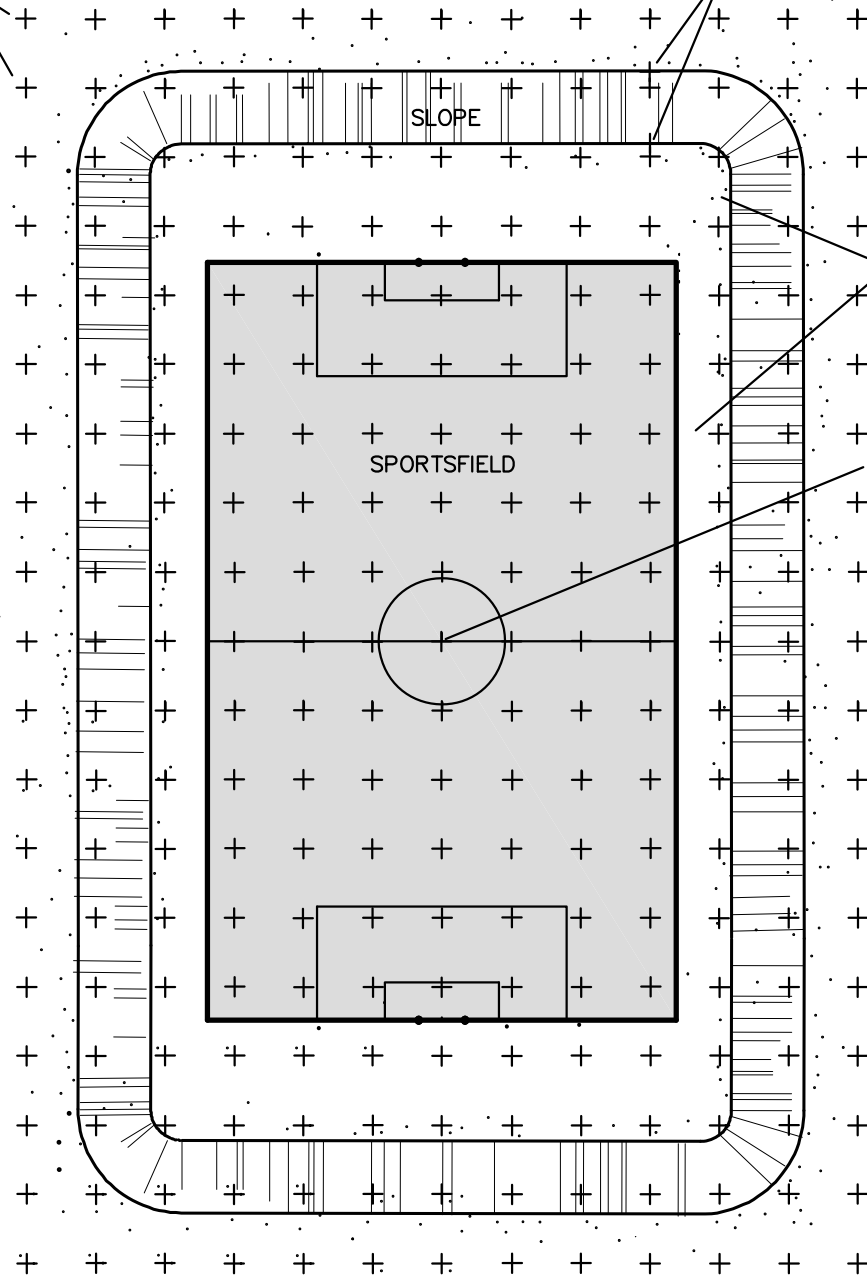
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BASEBALL BACKSTOP  
ELEVATION

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	11-23-2006
DWG NO	5.3.3

EXTENDED GRADE POINTS  
BEYOND SLOPE

SUPPLEMENTARY GRADE POINTS  
AT CREST & TOE OF SLOPE  
AS REQUIRED



10 m  
INTERVALS  
THROUGHOUT

GRADE POINT ORIGIN

GENERAL NOTES

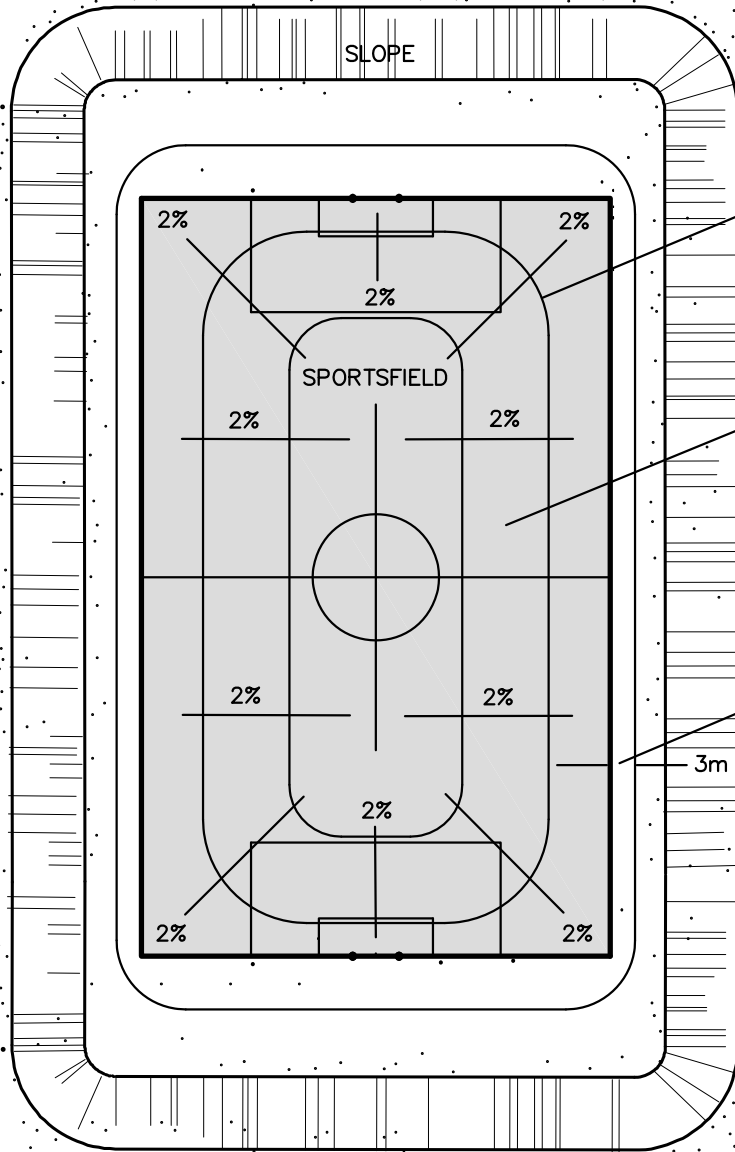
- USE WITH PARK DRY PONDS, SPORTSFIELD & SCHOOL DRY PONDS
- USE IN RELATION TO COMBINATION SPORTSFIELDS eg SOCCER & FOOTBALL
- ESTABLISH GRADE POINTS AT 10m INTERVALS THROUGHOUT
- THE GRADE POINT ORIGIN MUST BE COINCIDENT TO THE SPORTSFIELD CENTER & POND CENTER
- VERIFY THE GRADE POINT ORIGIN PRIOR TO CONSTRUCTION WITH THE PROJECT MANAGER
- EXTEND GRADE POINTS BEYOND TOP OF SLOPE
- PROVIDE SUPPLEMENTARY GRADE POINTS AT TOP & BOTTOM OF SLOPE IF DIRECTED BY THE PROJECT MANAGER
- EXTEND GRADE POINTS BEYOND TOP OF SLOPE
- CHANGES TO GRADE POINT LAYOUT MUST BE APPROVED BY THE PROJECT MANAGER



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DETENTION POND  
GRADE POINT COORDINATE LAYOUT

REVISIONS	
DRAWN	GD
SCALE	NTS
DATE	05-17-2006
DWG NO	6.1



CONTOUR INTERVAL  
0.25m

TYPICAL GRADING PATTERN

MAINTAIN 3m WIDE  
BUFFER AT 2%  
OUTSIDE SPORTSFIELD

GENERAL NOTES

- SPORTSFIELDS & POND BASINS TO BE GRADED AT 2% (1:50) THROUGHOUT
- SHEET DRAINAGE OF THE FULL HORIZONTAL ALIGNMENT IS NOT PERMITTED
- CROWN SPORTSFIELDS & POND BASINS ON CENTER AXIS
- REVISIONS TO THE GRADING PLAN TO BE APPROVED BY THE PROJECT MANAGER

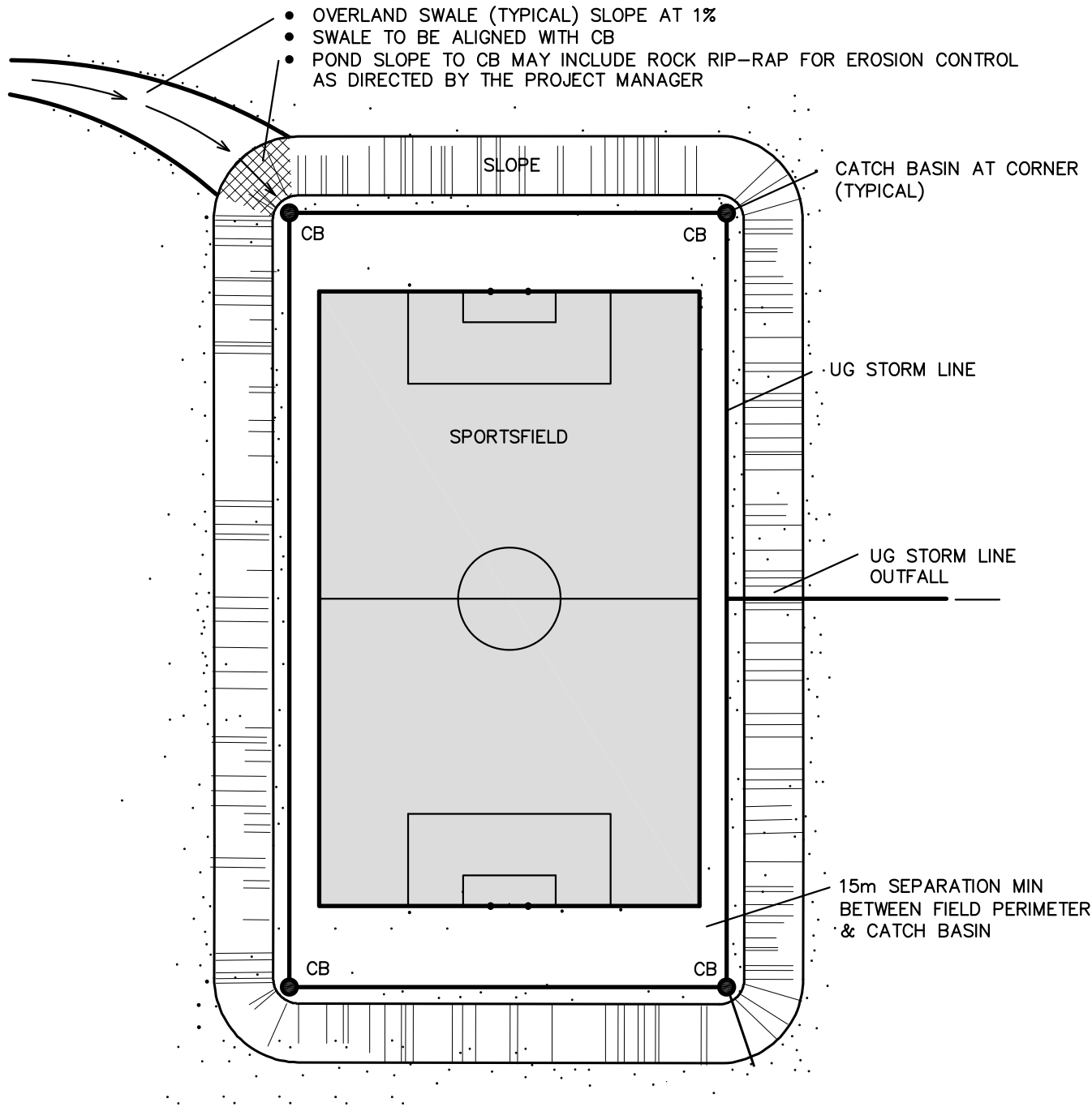


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DETENTION POND  
SPORTSFIELD & POND BASIN GRADING

REVISIONS	
DRAWN	GD
SCALE	NTS
DATE	05-17-2006
DWG NO	6.2





- OVERLAND SWALE (TYPICAL) SLOPE AT 1%
- SWALE TO BE ALIGNED WITH CB
- POND SLOPE TO CB MAY INCLUDE ROCK RIP-RAP FOR EROSION CONTROL AS DIRECTED BY THE PROJECT MANAGER

GENERAL NOTES

- SPORTSFIELDS TO HAVE (4) CATCH BASINS LOCATED EQUIDISTANT FROM CORNERS
- MAINTAIN 15m SEPARATION BETWEEN FIELD CORNERS & CB LOCATIONS
- UG STORM LINE VARIES IN ACCORDANCE WITH LOCAL SITE CONDITIONS
- LOCATION OF SWALE OUTLET TO BE 15m MIN FROM SPORTSFIELDS PERIMETER
- STORM OUTLET LOCATION VARIES IN RELATION TO LOCAL CONDITIONS
- EROSION CONTROL METHODS INCLUDE STONE RIP-RAP & GEOTEXTILES



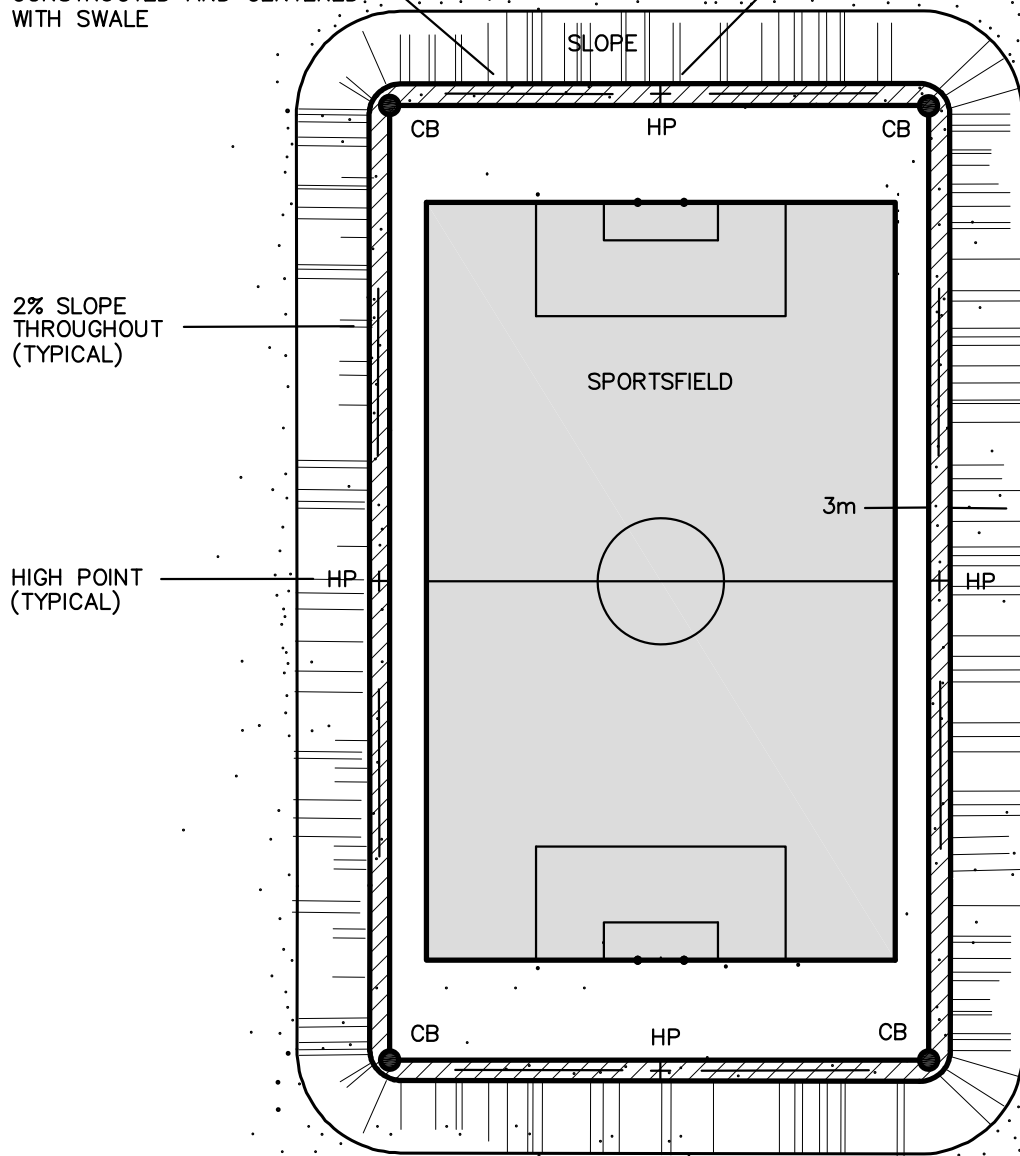
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DETENTION POND  
CATCH BASIN LAYOUT

REVISIONS	
DRAWN	GD
SCALE	NTS
DATE	05-17-2006
DWG NO	6.3

- SWALE WITH TILE DRAINAGE TO BE 3m WIDE APPROX. BEGIN SWALE AT TOE OF SLOPE
- FRENCH DRAIN OPTION TO BE CONSTRUCTED AND CENTERED WITH SWALE

CONSTRUCT HIGH POINTS AT SPORTSFIELD CENTERLINE



2% SLOPE THROUGHOUT (TYPICAL)

HIGH POINT (TYPICAL)

GENERAL NOTES

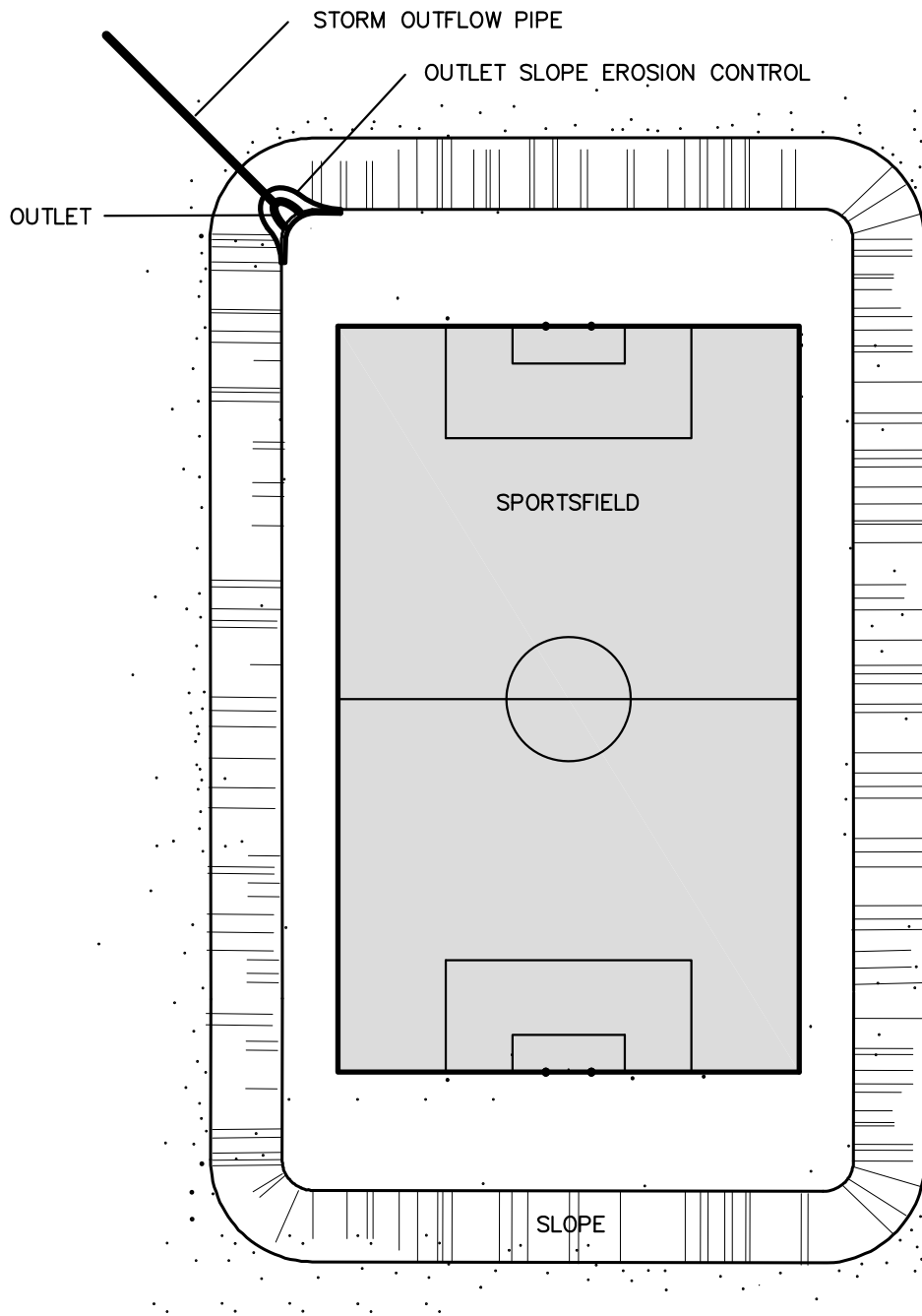
- DRAINAGE OPTIONS ARE 1. SWALE WITH TILE DRAINS  
2. FRENCH DRAINS OR SURFACE AGGREGATE DRAINAGE
- DRAINAGE OPTION TO BE VERIFIED BY THE PROJECT MANAGER
- FRENCH DRAINS OR SURFACE AGGREGATE DRAINAGE TO BE CONSTRUCTED AT 2m WIDTH



CITY OF  
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INFRASTRUCTURE SERVICES  
DETENTION POND  
SURFACE & SUBSURFACE PERIMETER DRAINAGE

REVISIONS	
DRAWN	GD
SCALE	NTS
DATE	05-17-2006
DWG NO	6.4



GENERAL NOTES

- LOCATION OF STORM OUTLET TO BE 15m MIN FROM SPORTSFIELDS PERIMETER
- STORM OUTLET LOCATION VARIES IN RELATION TO LOCAL CONDITIONS
- EROSION CONTROL METHODS INCLUDE STONE RIP-RAP & GEOTEXTILES

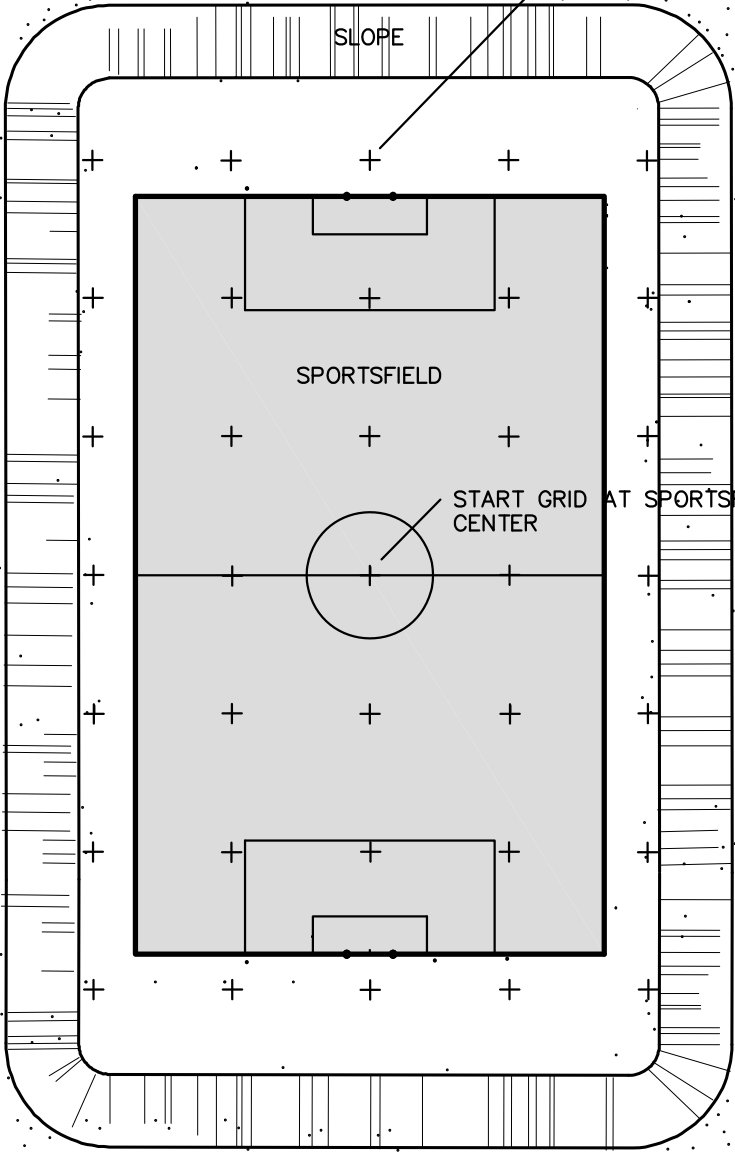


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DETENTION POND  
STORM OUTLET EROSION CONTROL

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	05-02-2006
DWG NO	6.5

20m GRID TO EXTEND  
PAST SPORTSFIELD PERIMETER  
AS VERIFIED BY THE PROJECT  
MANAGER



GENERAL NOTES

- TOPSOIL TO BE PLACED AT 150mm DEPTH THROUGHOUT
- SOIL DEPTH VERIFICATION SHALL BE DONE VIA 20m GRID TEST HOLE ANALYSIS
- GRID COORDINATES COINCIDENT WITH SURVEY GRID



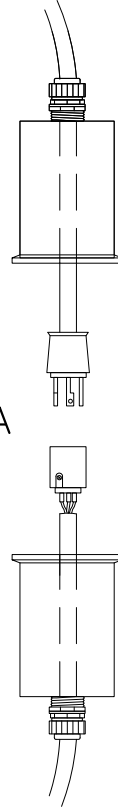
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DETENTION POND  
TOPSOIL & PROJECT VERIFICATION

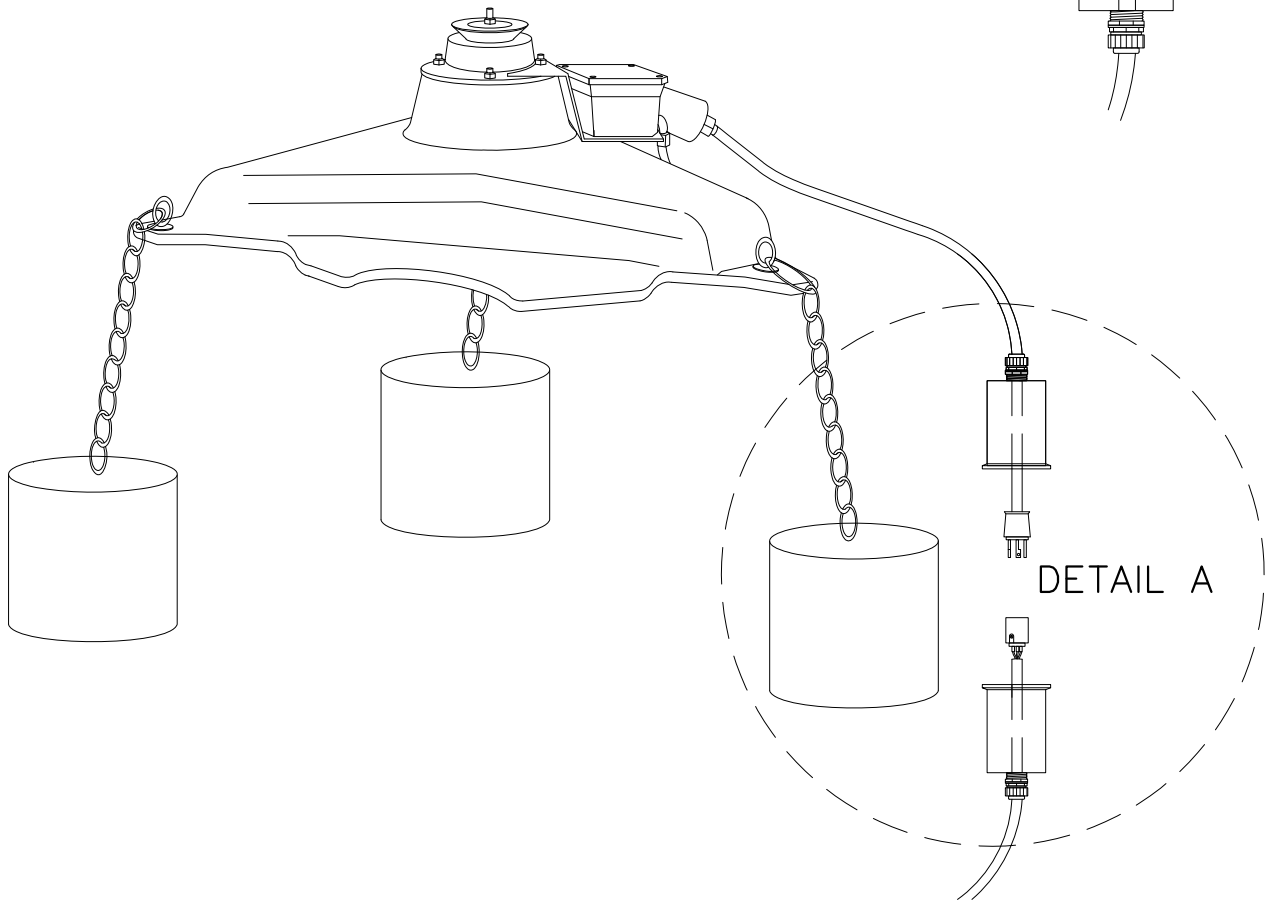
REVISIONS	
DRAWN	GD
SCALE	NTS
DATE	05-17-2006
DWG NO	6.6

GENERAL NOTES:

- 3 POINT ANCHORING SYSTEM.
- 2 TO 3 GAL. CONCRETE ANCHORS WITH EYELETS FOR CHAIN.
- 3/16 STAINLESS STEEL OR GALVANIZED CHAIN AND CONNECTORS.
- QUICK DISCONNECT KIT (#81500) WITH 30 AMP, 250 VOLT
- 4 WIRE TWIST LOCK CONNECTORS OR APPROVED ALTERNATE.
- SUBMERSIBLE RATED POWER SUPPLY CABLE - CABLE SIZE DEPENDANT ON DISTANCE FROM SOURCE TO FOUNTAIN.
- LIGHT CABLE (IF EQUIPPED) REQUIRES QUICK DISCONNECT KIT(#81500) WITH 15 AMP, 125 VOLT, 3 WIRE CONNECTOR OR APPROVED ALTERNATIVE.
- 2 HP, 1 PHASE PUMP MOTOR.
- AERATING FOUNTAIN SUPPLY & INSTALLATION TO CONFORM TO THE LATEST EDITION CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS.



DETAIL A



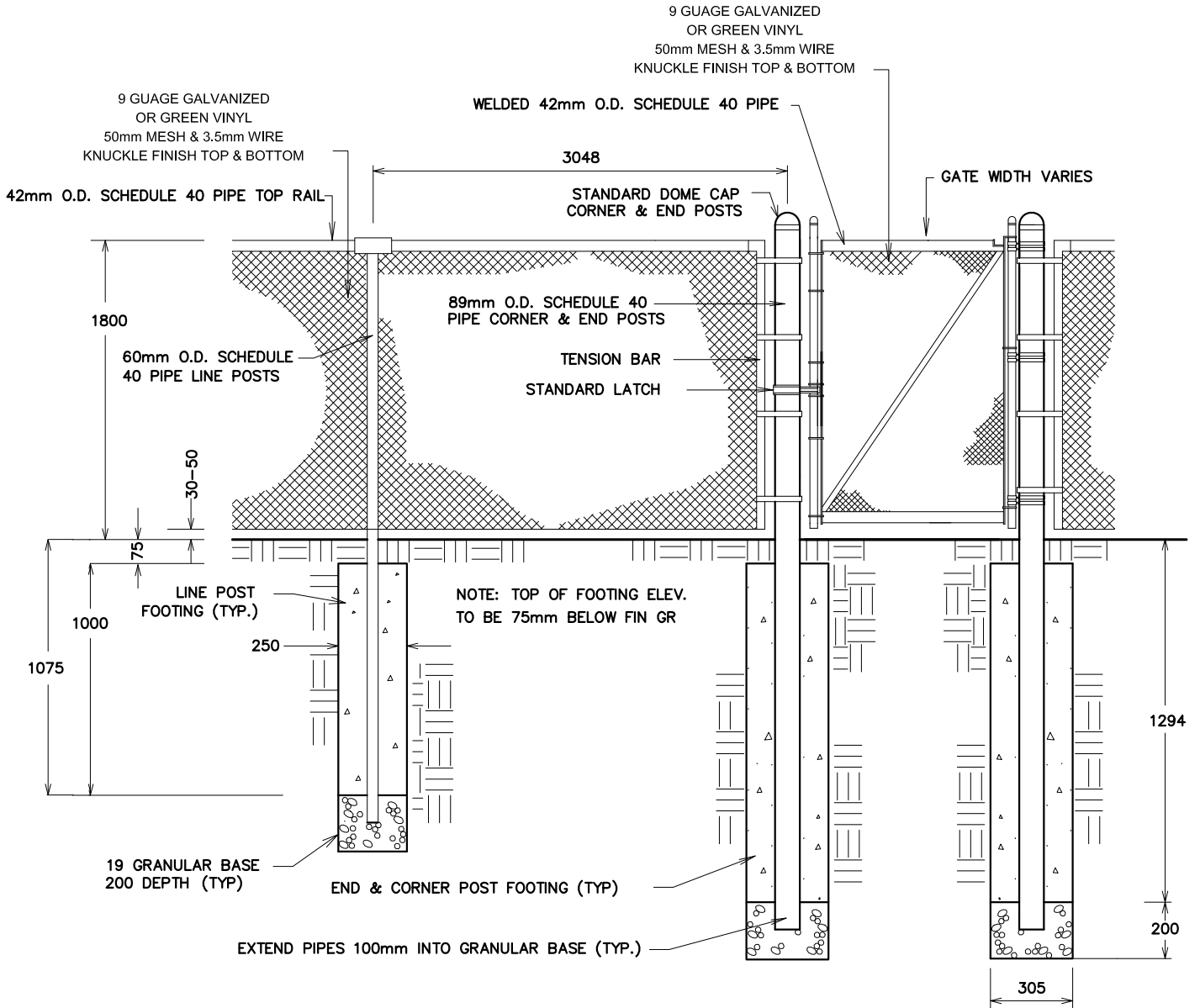
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
AERATING FOUNTAIN

REVISIONS	
1.	
2.	
3.	
DRAWN	D.Mc.
SCALE	NOT TO SCALE
DATE	01-22-2010
DWG NO	6.7

**GENERAL NOTES**

- BOTTOM TENSION WIRE TO 5mm GALVANIZED CLEARANCE BETWEEN BOTTOM TENSION WIRE & FINISHED GRADE TO BE 30mm MINIMUM & 50mm MAXIMUM
- BRACE END SECTIONS WITH DIAGONAL OR MID-RAIL AS PER MANUFACTURERS SPECIFICATIONS  
BRACE 42mm O.D. SCHEDULE 40 PIPE
- LOCATE POSTS 3.048M OC THROUGHOUT
- MATCH MESH TO POSTS AND RAILS



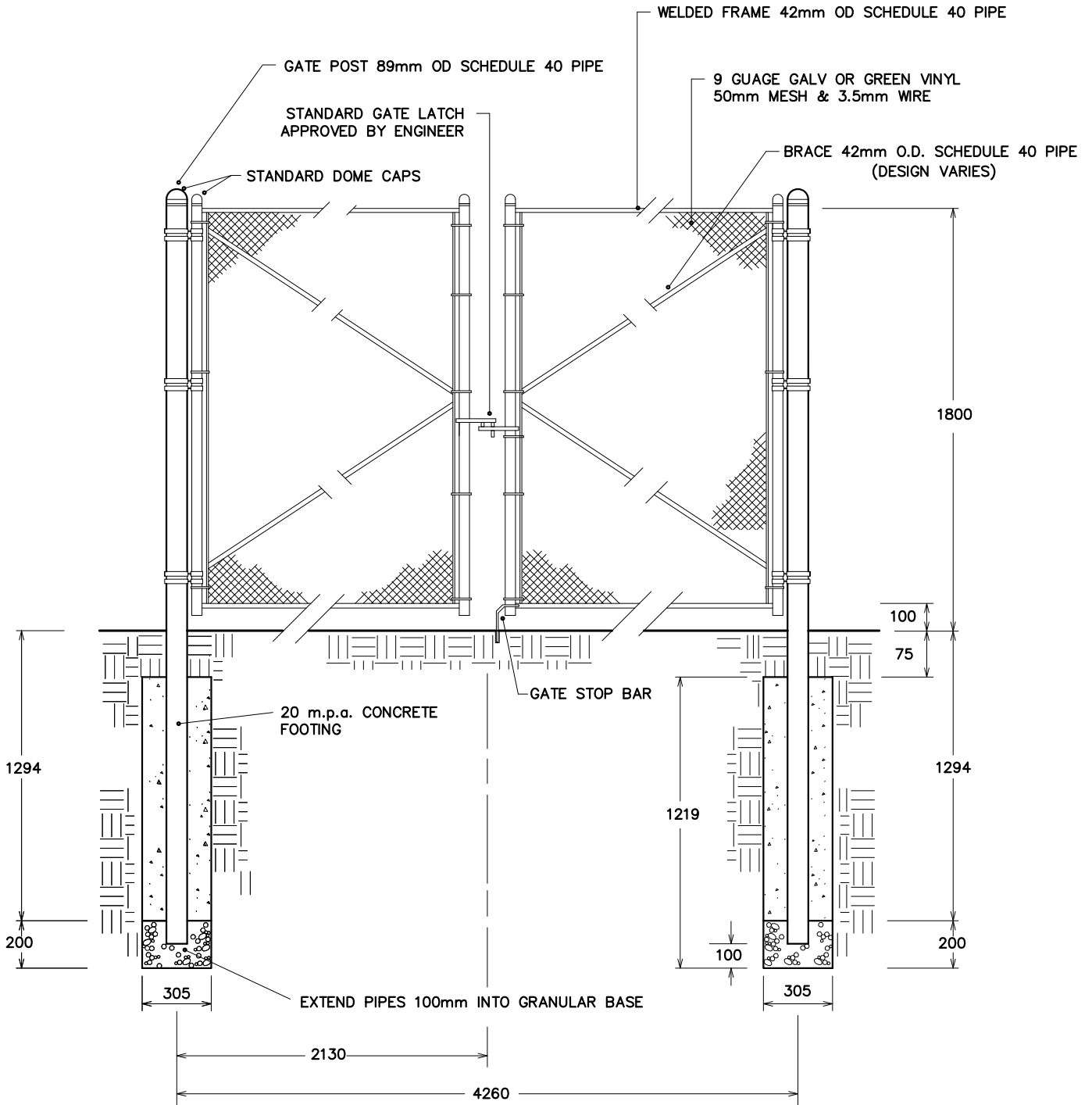
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CHAINLINK FENCE & PEDESTRIAN GATE

REVISIONS	
1. 11/19/01	ADDED GATE
2. 12-03-2003	POSTS 3048 OC
3. 02-14-2005	POST SIZING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	08-15-2001
DWG NO	7.1.1



SECTION



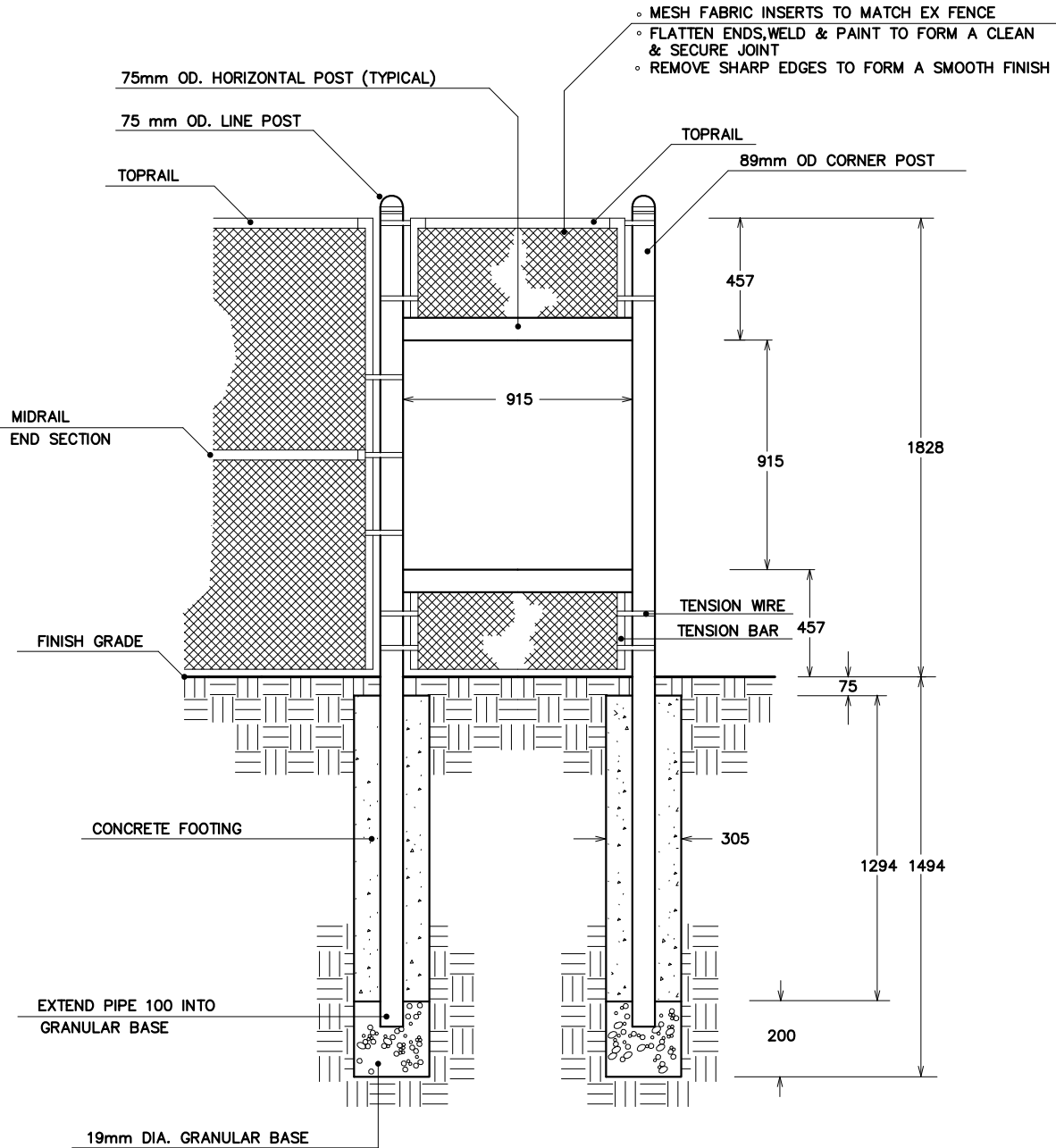
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CHAINLINK FENCE VEHICULAR GATE

REVISIONS	
1. 02-14-2005	POST & WIRE SIZING
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-1998
DWG NO	7.1.2

GENERAL NOTES

- ACCESS HOLE TO BE POSITIONED ADJACENT TO CORNER POSTS



SECTION



CITY OF  
*Lethbridge*

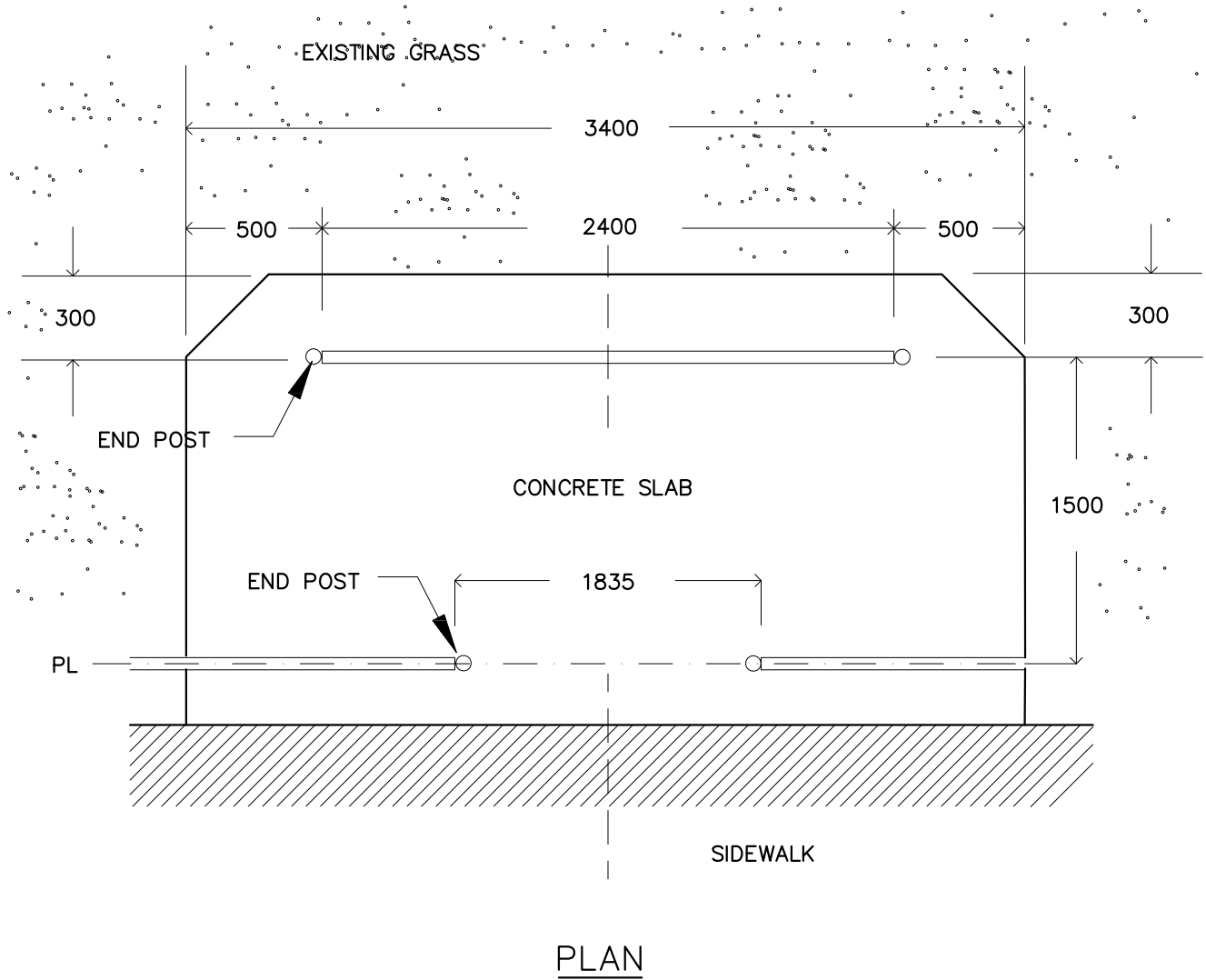
INFRASTRUCTURE SERVICES  
CHAINLINK FENCE MIDRAIL ACCESS

REVISIONS	
1. 02-14-2005	PIPE SIZING & DEPTH
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-1998
DWG NO	7.1.3



GENERAL NOTES

- CONCRETE SLAB TO BE 100mm THICK



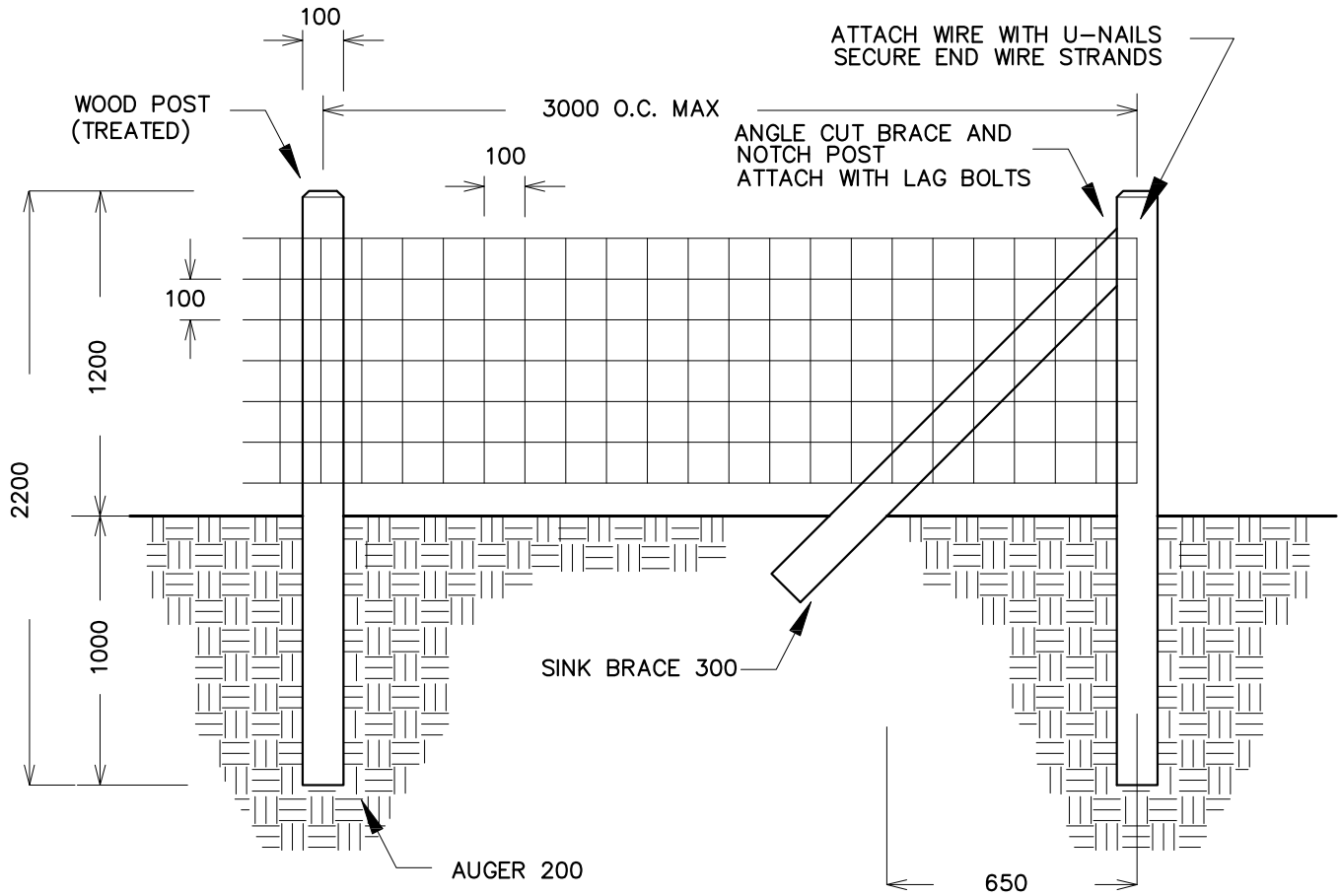
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CHAINLINK FENCE PEDESTRIAN ACCESS

REVISIONS	
1. 10-27-2005	BOLLARD CENTERS TO 1835
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-1998
DWG NO	7.1.4

GENERAL NOTES

- o BACKFILL AND COMPACT SOIL AROUND POSTS TO SECURE IN VERTICAL POSITION
- o USE DIAGONAL BRACING FOR ALL TERMINAL AND CORNER POSTS
- o ALL WIRE AND FASTENINGS TO BE ZINC-PLATED
- o WOOD TO BE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



SECTION



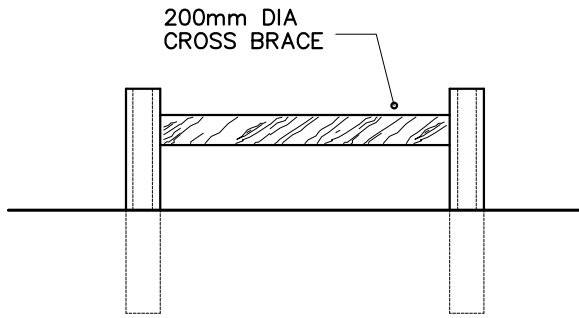
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
PAGE WIRE FENCE

REVISIONS	
1. 11-24-2003	ACQ WOOD PRESERVATIVE
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	7.2

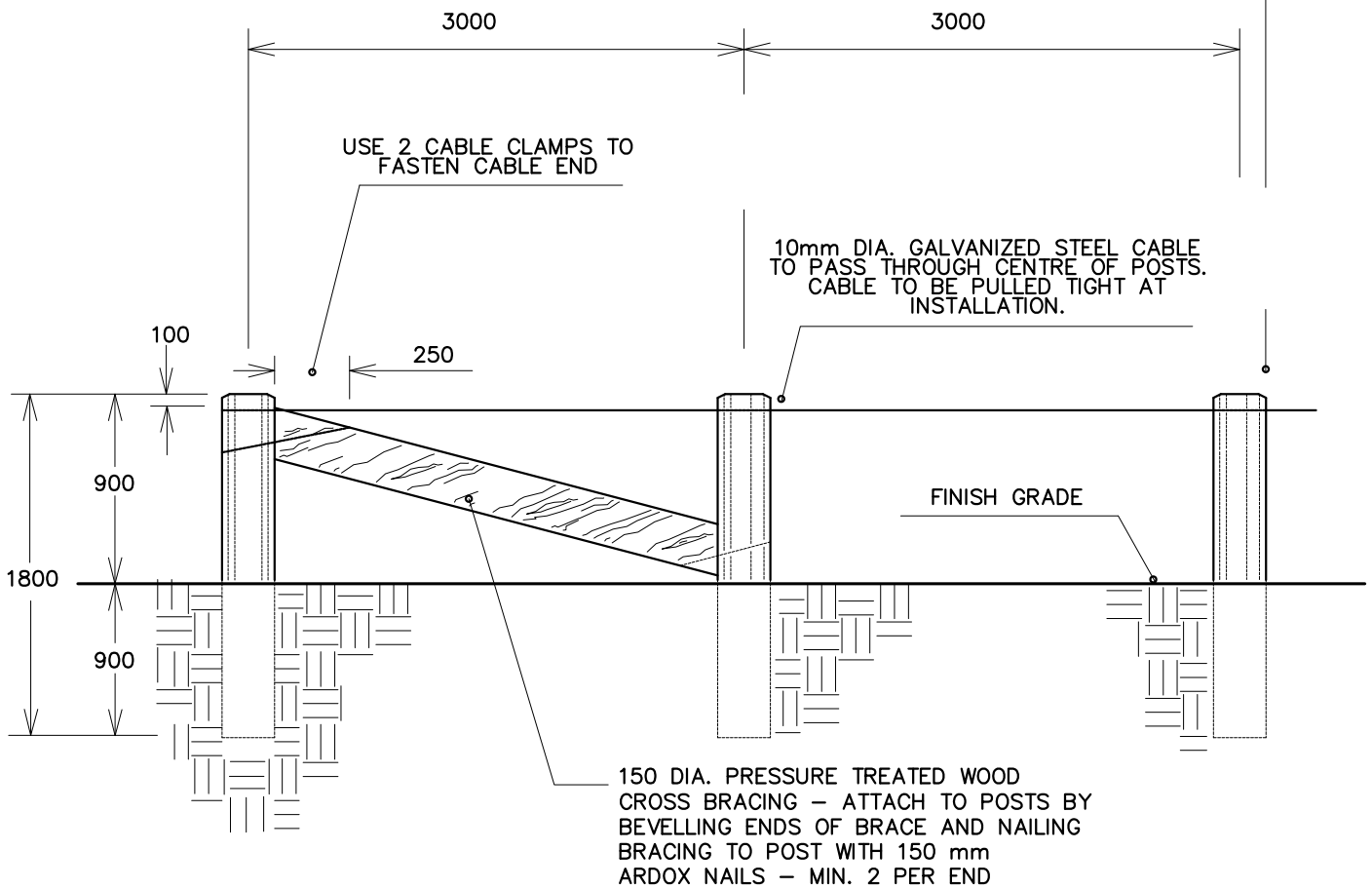
GENERAL NOTES

- ALL BOLTS & FASTENINGS TO BE ZINC-PLATED
- ALL WOOD CUTS AND HOLES TO BE TREATED W/ 2 COATS OF CLEAR PENETRATING WOOD PRESERVATIVE.
- CROSS BRACE TO BE LOCATED 100mm FROM TOP OF WOOD POSTS.
- TO BE USED ONLY IN RIVER VALLEY PARKS UNLESS OTHERWISE APPROVED
- WOOD TO BE PRESSURE-TREATED WITH GREEN PRESERVATIVE OR APPROVED EQUAL



ELEVATION-CROSSING BARRIER

150 DIA. PRESSURE-TREATED WOOD POSTS - ANGLE TOP EDGE OF POST (SEE SIDE VIEW ON DWG 7.3.2). POSTS TO BE COMPACTED FIRMLY INTO GROUND - ROUND EDGE 50mm



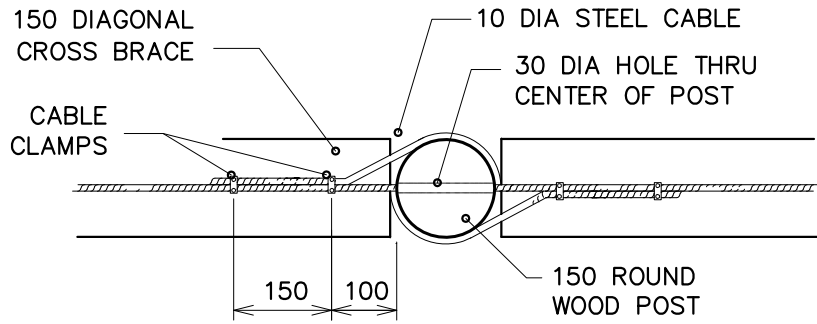
SECTION



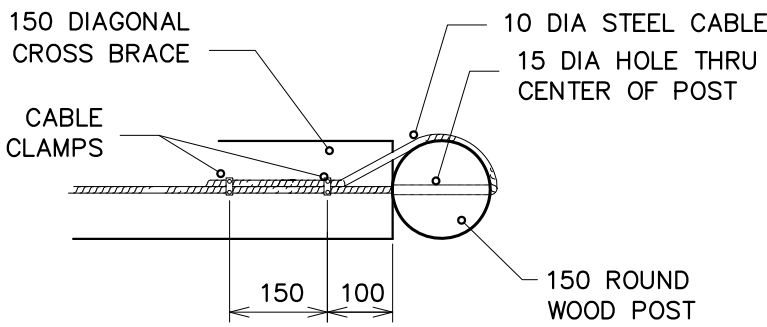
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
POST & CABLE FENCE  
SECTIONS

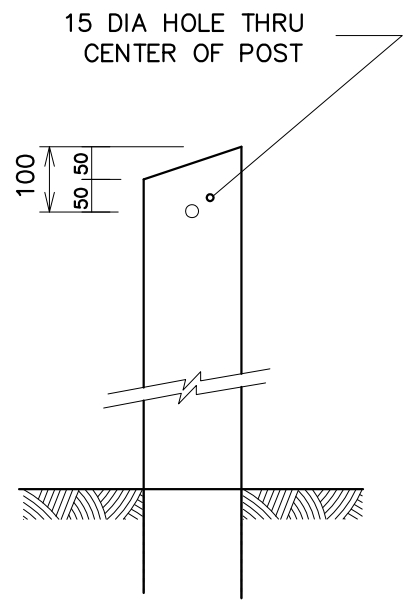
REVISIONS	
1. 11-24-2003	ACQ PRESERVATIVE
2. 12-02-2003	POST LENGTH TO 1800
3. 02-08-2013	POST DIA TO 150
DRAWN DB	
SCALE	NOT TO SCALE
DATE	09-09-1998
DWG NO	7.3.1



TOP VIEW OF BRACED POST



TOP VIEW OF END POST



SIDE VIEW



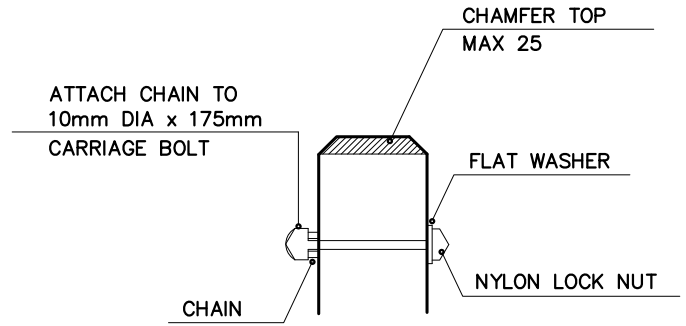
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
POST & CABLE FENCE  
BRACING

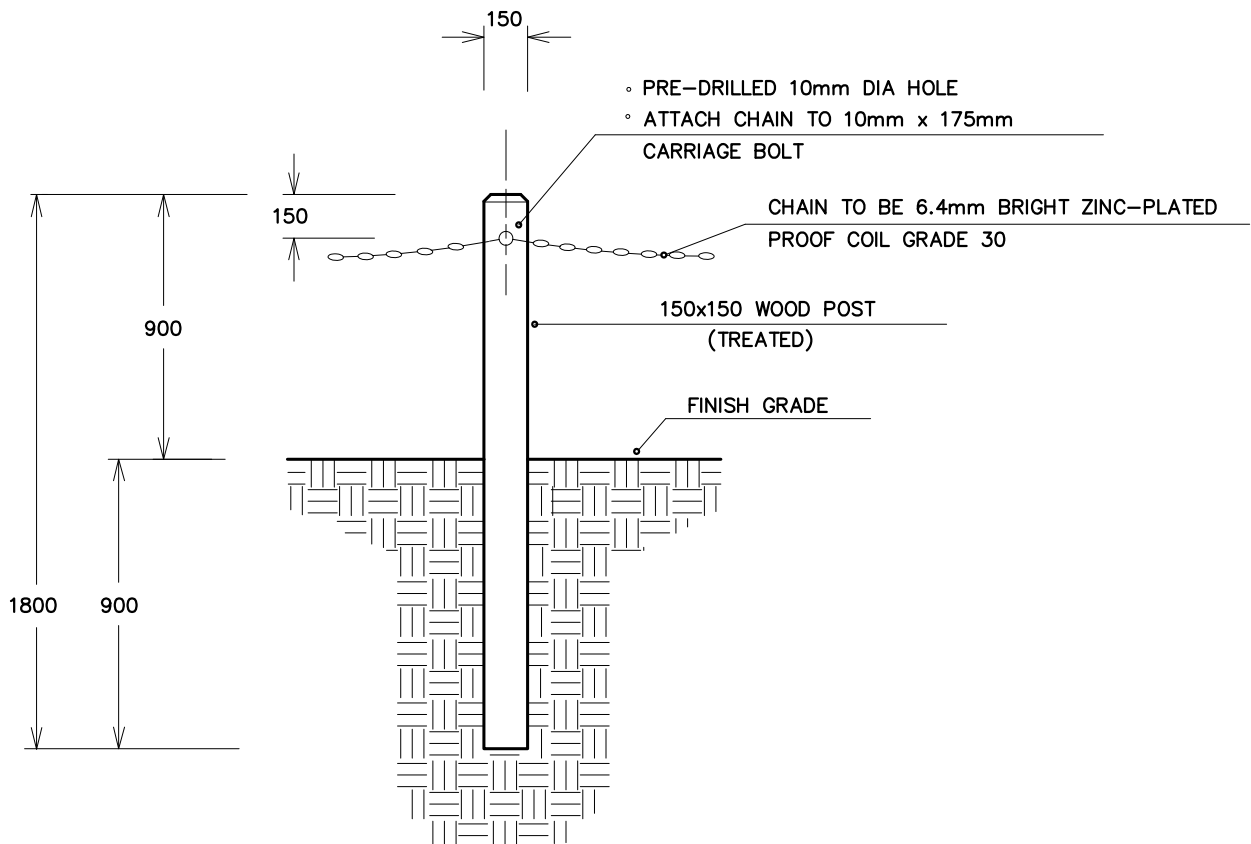
REVISIONS	
1. 02-08-2013	POST DIA TO 150
DRAWN	DB
SCALE	NOT TO SCALE
DATE	07-14-1998
DWG NO	7.3.2

GENERAL NOTES

- SET POSTS 900 ABOVE AND 900 BELOW FIN GRADE
- BACKFILL AND COMPACT SOIL AROUND POST TO SECURE IN PLACE
- FOR OPEN SPACE SITUATIONS :
  1. LINEAR PLACEMENT @ 3.05 M MAX.
  2. VEHICULAR ACCESS 3.65 M INTERVAL
- CHAIN SAG TO BE 150 MAX & 100 MIN
- BOLTS AND FASTENERS TO BE ZINC-PLATED
- WOOD TO BE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- BOLTS NOT TO EXCEED 2 THREADS BEYOND POST EXCESS LENGTH TO BE CUT & PEENED OR FILED
- CROSS BRACING WITH 100x100 REQUIRED AT TERMINAL POSTS, DIRECTIONAL CHANGE IN FENCE LINE AND AT GATES (SEE DWG 7.3.1)



SIDE VIEW



SECTION



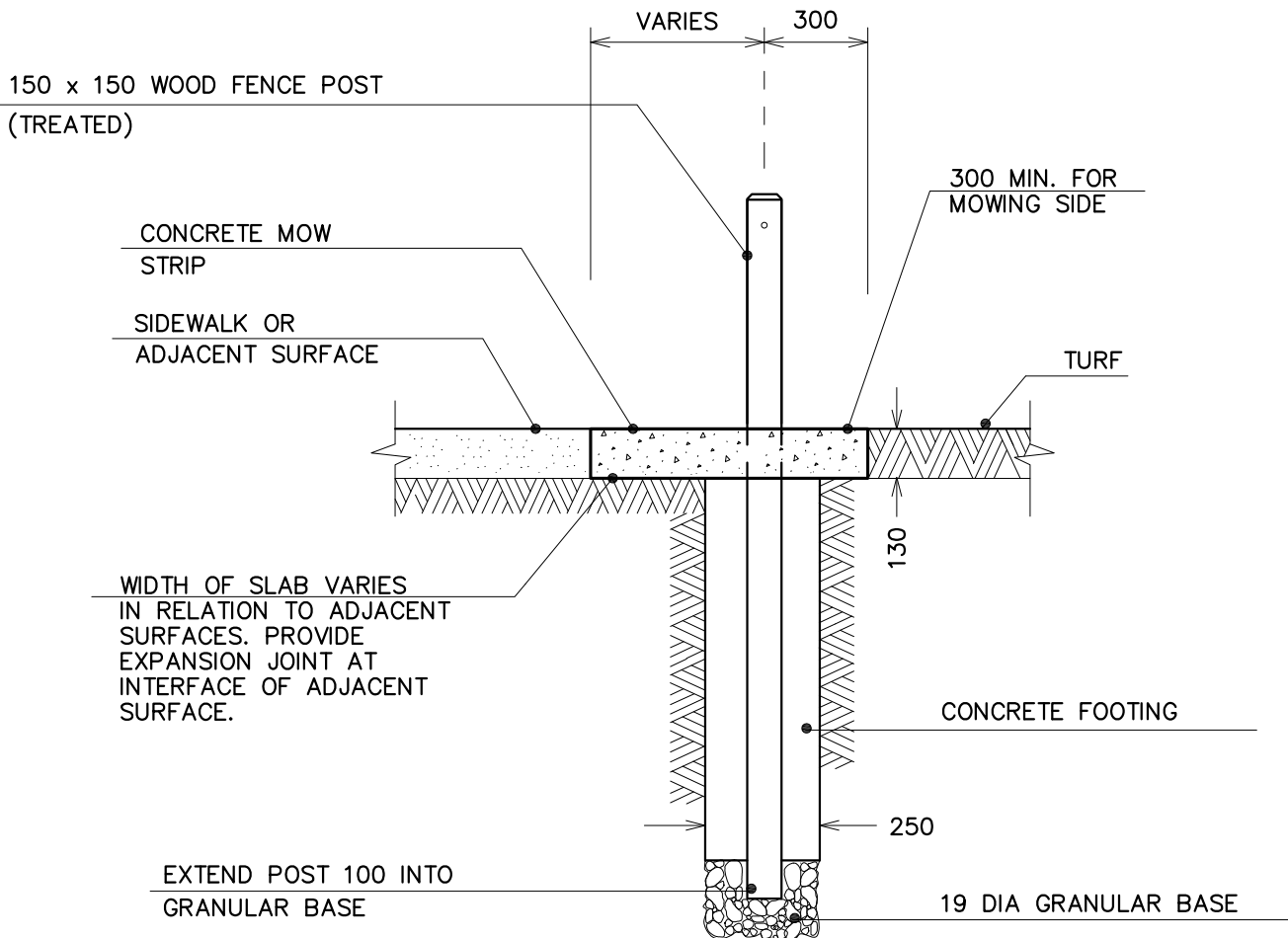
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WOOD POST & CHAIN FENCE

REVISIONS	
1. 12-02-2003	POST LENGTH TO 1800
2. 11-29-2007	EXCESS BOLT LENGTH
3. 02-08-2013	CROSS BRACING NOTE
DRAWN	
	GD
SCALE	NOT TO SCALE
DATE	02-10-1999
DWG NO	7.4

GENERAL NOTES

- FOR POSTS ADJACENT TO ST. LT. MAINTAIN 100 mm SEPARATION BETWEEN ST. LT. BASE & PIPE O.D.
- CONC. FOOTING TOP ELEV TO BE 130 BELOW FIN. GR.
- ENSURE POSTS ARE INSTALLED PLUMB
- PROVIDE EXPANSION JOINTS LONGITUDINALLY 3.M O.C. MAX
- PLACE POSTS LONGITUDINALLY 3M O.C. MAX
- FOR CHAIN INSTALLATION SEE DWG 7.4



SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONCRETE MOW STRIP

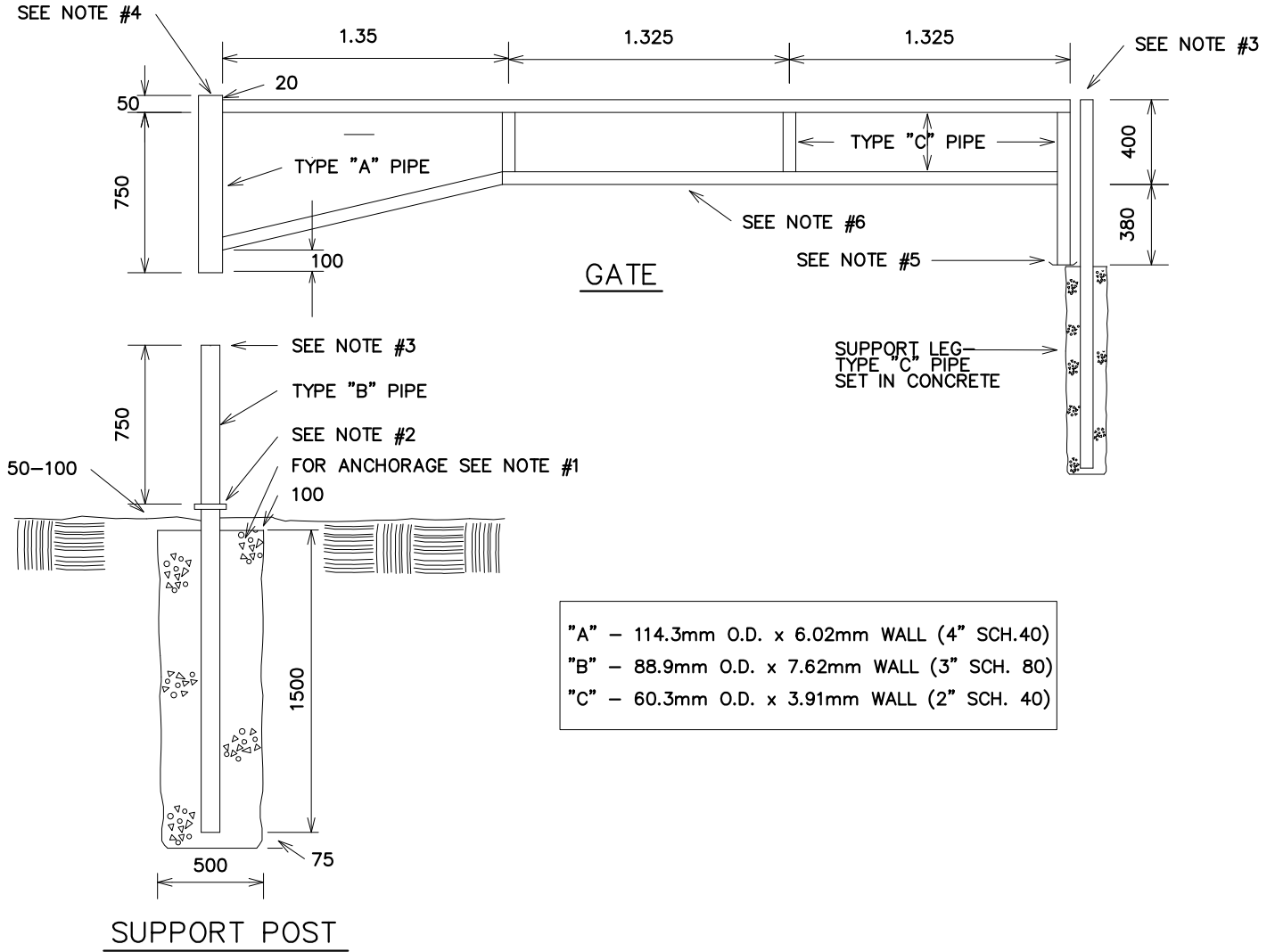
REVISIONS	
DRAWN	DM
SCALE	NOT TO SCALE
DATE	07-07-1998
DWG NO	7.5

**GENERAL NOTES:**

- ALLOW CONCRETE TO HARDEN THEN REPOSITION UNDAMAGED POST CAPS
- REPOSITION GATE CONNECT HINGES AND HARDWARE
- VEHICLE CONTROL GATE SUPPLY AND INSTALLATION TO CONFORM TO THE LATEST EDITION CITY OF LETHBRIDGE INFRASTRUCTURE SERVICES ENGINEERING STANDARDS

**CONSTRUCTION NOTES:**

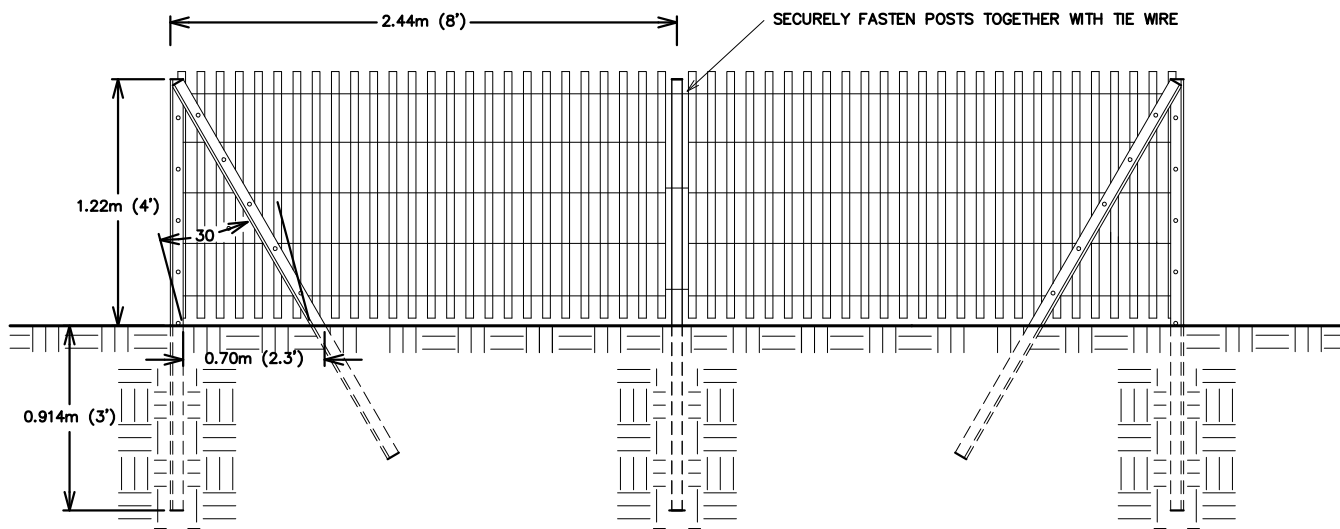
1. CONCRETE TO BE CITY STANDARD 25MPA OR BETTER
2. 4" SCH 40 COLLAR FOR GATE TO SIT ON
3. TOP OF PIPE CAPPED - 3/16" MATERIAL
4. TOP OF PIPE CAPPED - 3/16" MATERIAL
5. 1/4" THICK FOOT FOR END OF GATE TO SLIDE ON
6. WRAP EACH HORIZONTAL SECTION WITH 4" REFLECTIVE SAFETY TAPE



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
VEHICLE CONTROL GATE

REVISIONS	
DRAWN	D.Mc.
SCALE	NOT TO SCALE
DATE	01-22-2010
DWG NO	7.6



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
SNOWFENCE

REVISIONS	
1.	
2.	
3.	
DRAWN	D Mc
SCALE	NOT TO SCALE
DATE	08-13-2010
DWG NO	7.7



GENERAL NOTES

ROCK

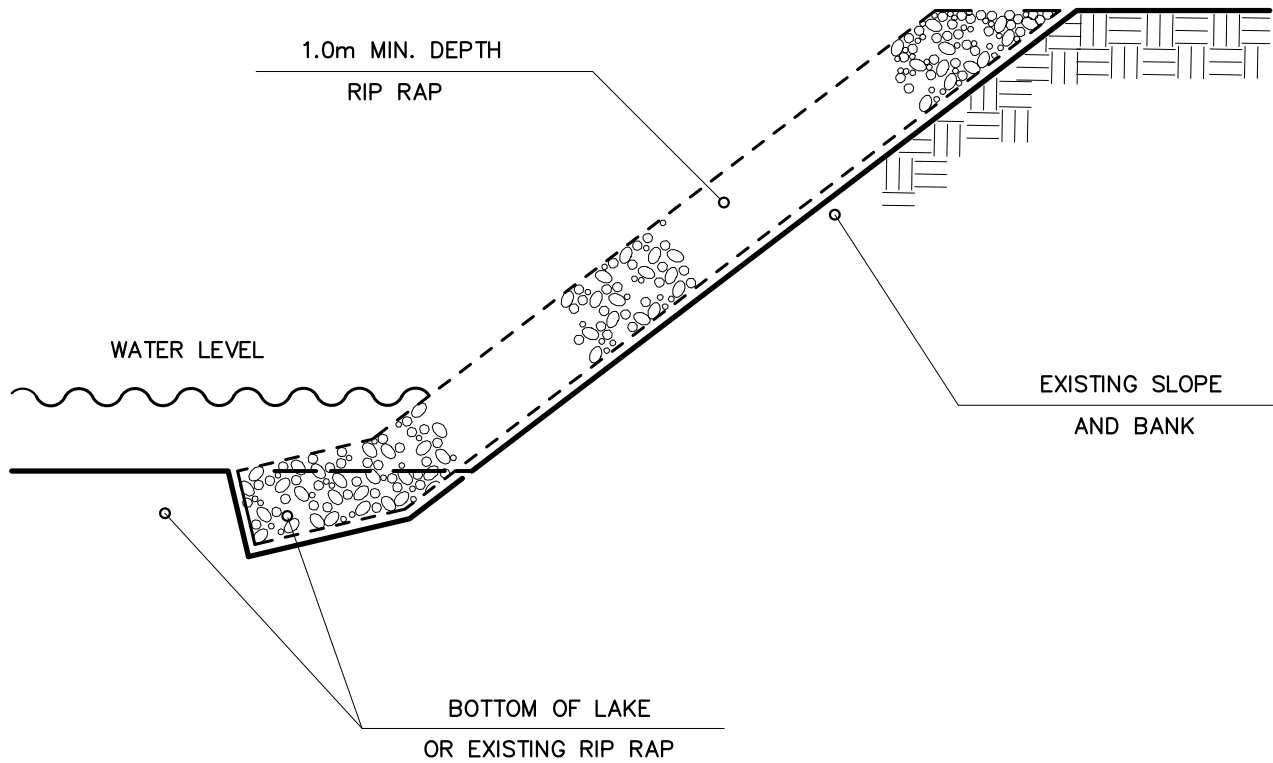
- HARD, DURABLE, ROUND, NON-FRACTURED, WEATHER & WATER ACTION RESISTANT FREE FROM OVERBURDEN, SPOIL, SHALE OR SHALE SEAMS & ORGANIC MATERIAL, 450mm TO 1000mm MAX SIZE

PLACING

- AT BASE AND PROCEED UP THE SLOPE  
HEIGHT OF DROP LIMITED TO 1.0m OR LESS, NOT ALLOWED TO ROLL DOWN SLOPE

SURFACE

- NO LARGE CAVITIES OR STONES PROJECTING ABOVE SURFACE REASONABLY UNIFORM, FREE FROM BUMPS OR DEPRESSIONS
- AREA VOIDS BETWEEN RIP-RAP & SHORELINE AT TOP OF BANK TO BE FILLED WITH 20 mm WASHED STONE



SECTION



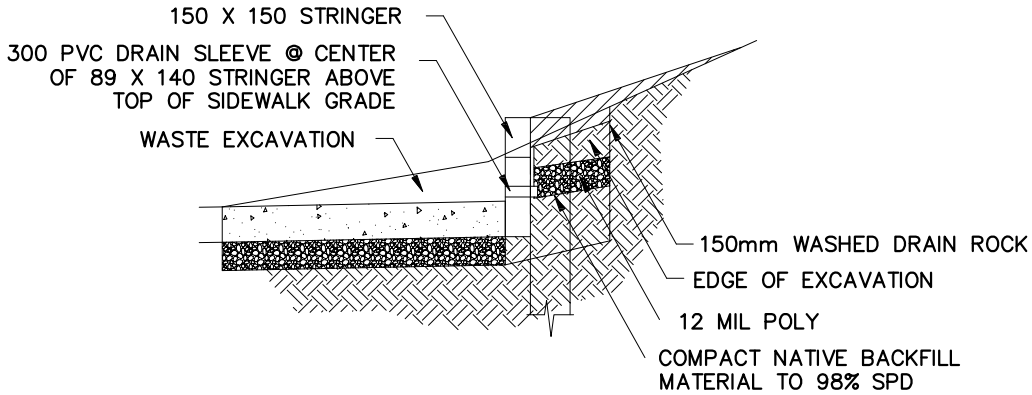
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WATER FEATURE RIPRAP

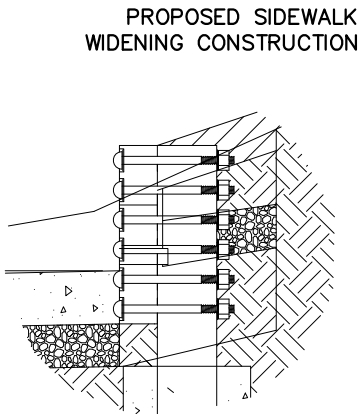
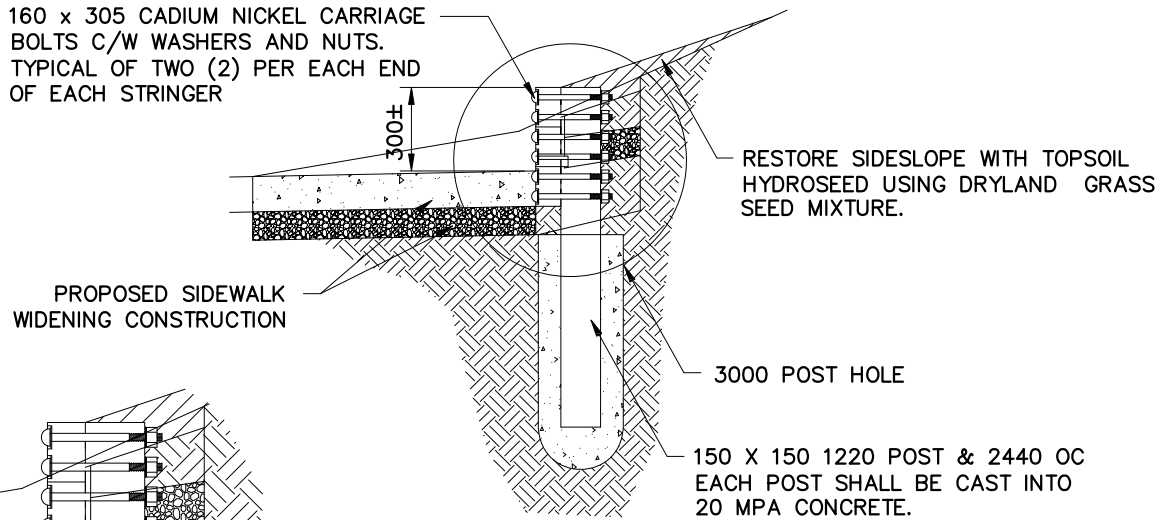
REVISIONS	
1. 12-2-2004	ROUND ROCK DESCRIPTION
DRAWN	DB
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	8.1

GENERAL NOTES

- ALL TIMBERS TO BE 150 X 150 MEMBERS UNLESS OTHERWISE SPECIFIED
- SLOPE AND TERRACE TIMBERS TO MATCH EXISTING AND PROPOSED GRADES
- 30 DIA. PVC DRAIN SLEEVES AT THE DISCRETION OF THE ENGINEER
- WOOD TO BE TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL  
ALL CUT WOOD SHALL BE TREATED WITH A SEALANT PRIOR TO INSTALLATION



STRINGER DETAIL



POST DETAIL



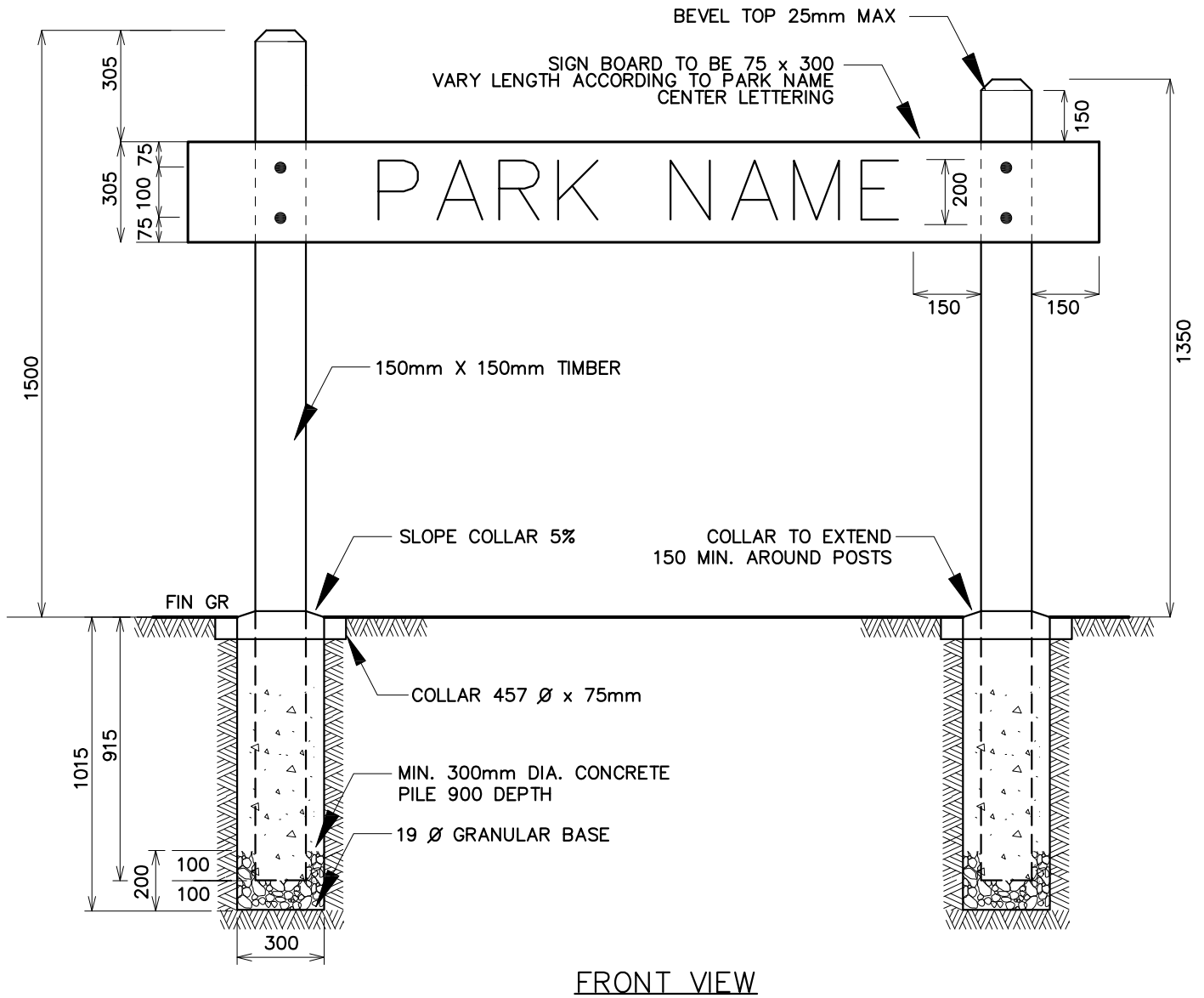
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
TIMBER RETAINING WALL

REVISIONS	
1. 11-20-2003	ACQ PRESERVATIVE
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	8.2

GENERAL NOTES

- ENSURE POSTS ARE INSTALLED PLUMB
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- ALL BOLTS TO BE ZINC-PLATED WITH NYLON LOCK NUTS AND WASHERS
- USE 2 – 10 x 225mm BOLTS PER POST, NUTS TO BE COUNTERSUNK
- 25mm ROUND-OVER BIT FOR LETTERS, 5mm DEPTH
- PARK NAME LETTER HEIGHT TO BE 200mm. TO ACCOMMODATE A LONGER NAME, 150mm LETTER HEIGHT CAN BE USED OR ADD A SECOND SIGN BOARD BELOW.
- PARK NAME LETTERS TO BE PAINTED SPANISH YELLOW – ENAMEL



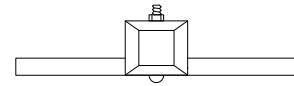
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
PARK SIGN

REVISIONS	
1. 02/12/2013	DIMENSION REVISIONS
DRAWN	GD
SCALE	NTS
DATE	12-19-2003
DWG NO	9.1

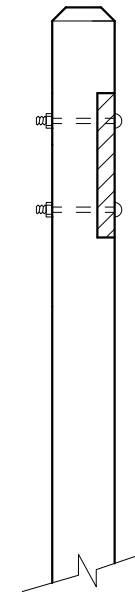
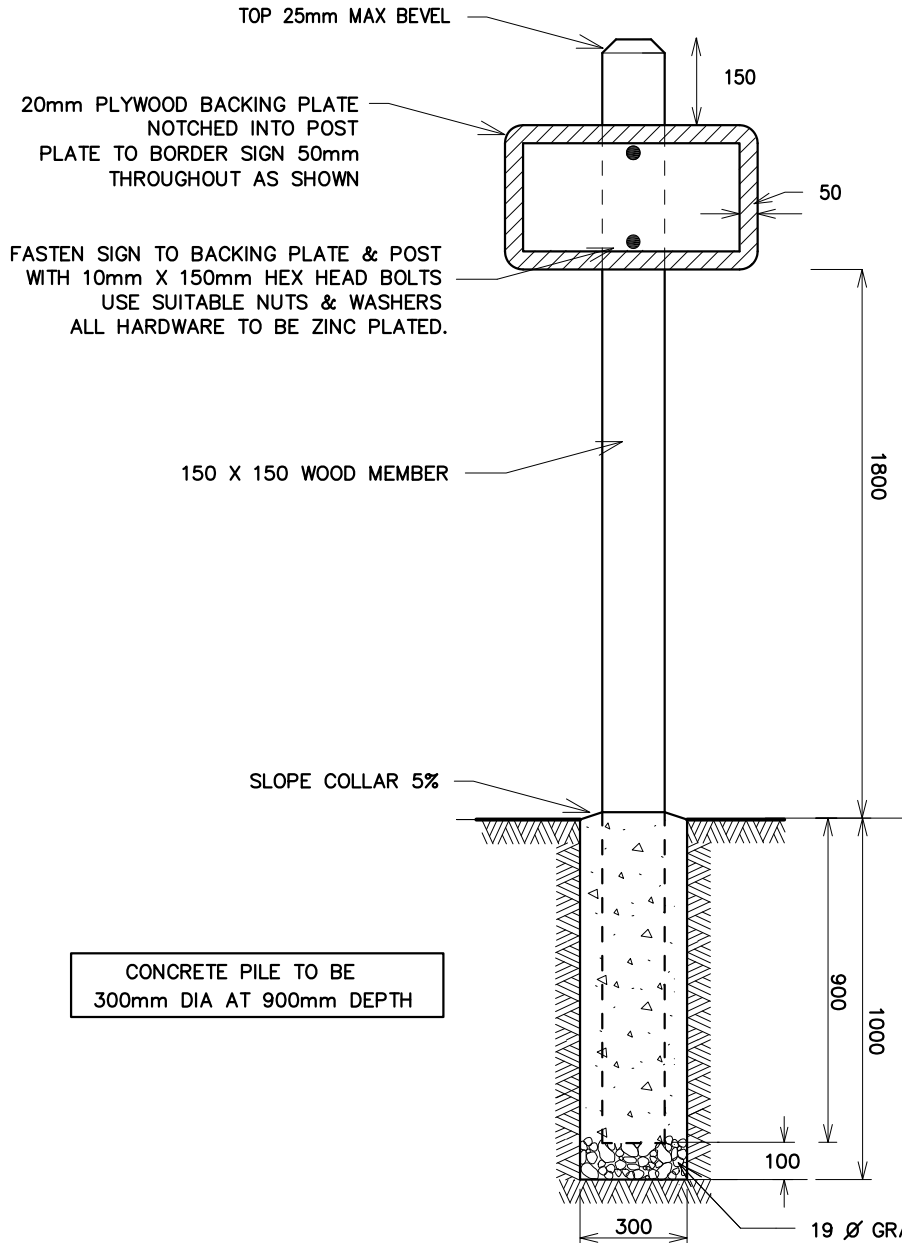
GENERAL NOTES

- ENSURE POSTS ARE INSTALLED PLUMB
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL



TOP VIEW

FRONT VIEW



SIDE VIEW



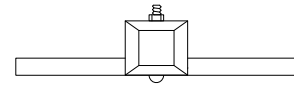
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
SIGN POST

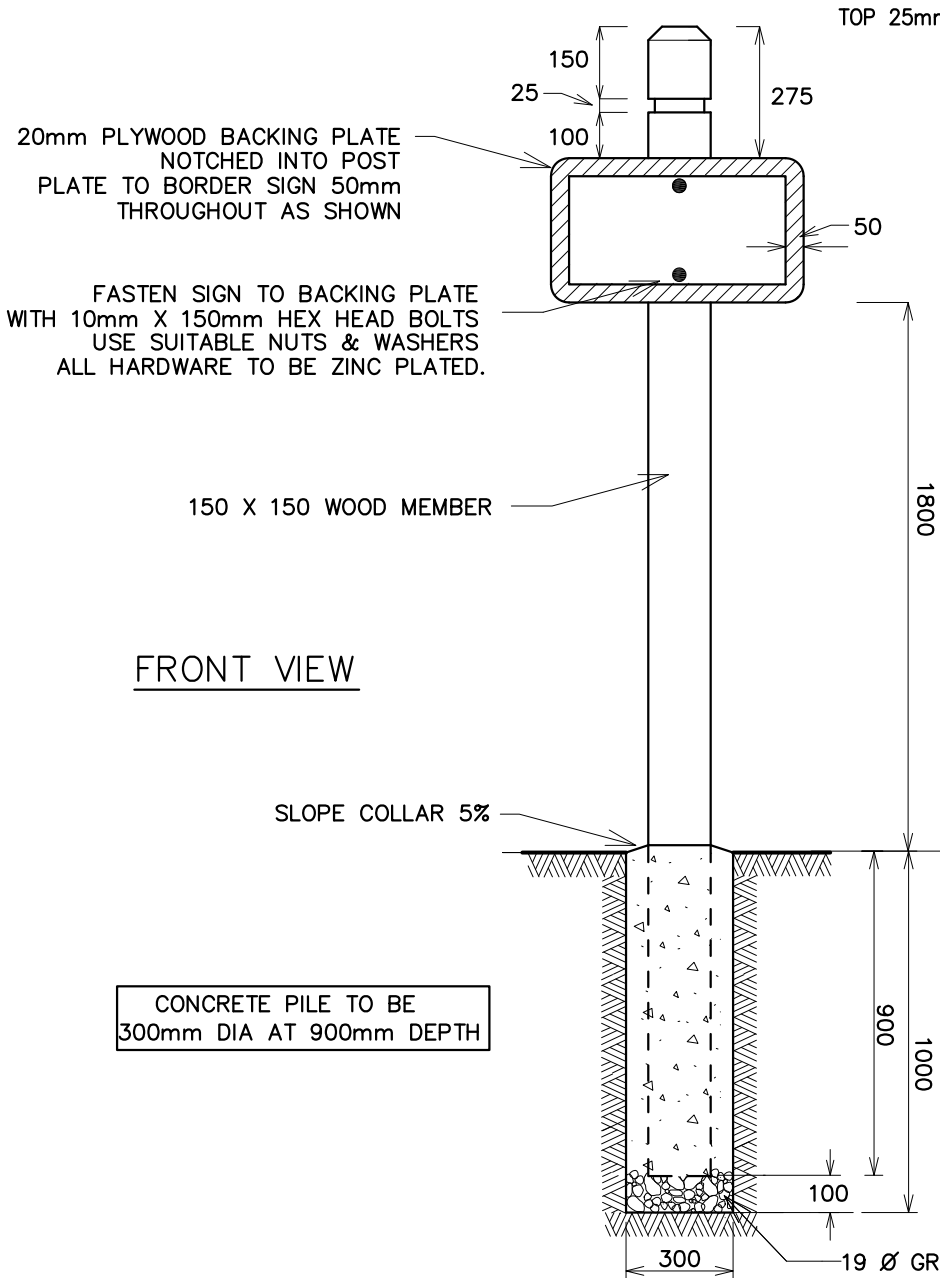
REVISIONS	
1. 05-20-2007	UPDATE
2. 11-30-2007	SIGN POSITION
3. 02-20-2013	NEW DWG NO.
DRAWN	DMc
SCALE	NTS
DATE	12-15-1999
DWG NO	9.2.1

GENERAL NOTES

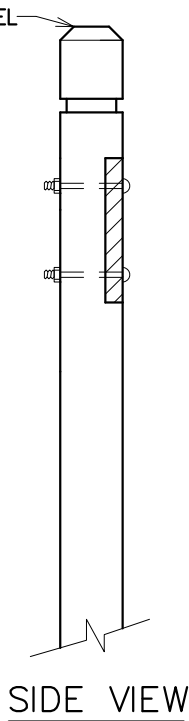
- ENSURE POSTS ARE INSTALLED PLUMB
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- POST AND BACKING PLATE TO BE STAINED HERITAGE BLUE
- 25mm ROUTERED BAND TO BE AT A DEPTH OF 12mm AND IS TO BE STAINED SPANISH YELLOW



TOP VIEW



FRONT VIEW



SIDE VIEW

CONCRETE PILE TO BE  
300mm DIA AT 900mm DEPTH

SLOPE COLLAR 5%

TOP 25mm MAX BEVEL

150 X 150 WOOD MEMBER

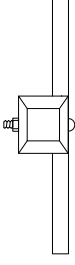
20mm PLYWOOD BACKING PLATE  
NOTCHED INTO POST  
PLATE TO BORDER SIGN 50mm  
THROUGHOUT AS SHOWN

FASTEN SIGN TO BACKING PLATE  
WITH 10mm X 150mm HEX HEAD BOLTS  
USE SUITABLE NUTS & WASHERS  
ALL HARDWARE TO BE ZINC PLATED.

 <p>CITY OF <i>Lethbridge</i></p>	REVISIONS	
<p>INFRASTRUCTURE SERVICES URBAN PARKS SIGN POST</p>	DRAWN	DMc
	SCALE	NTS
	DATE	02-20-2013
	DWG NO	9.2.2

**GENERAL NOTES**

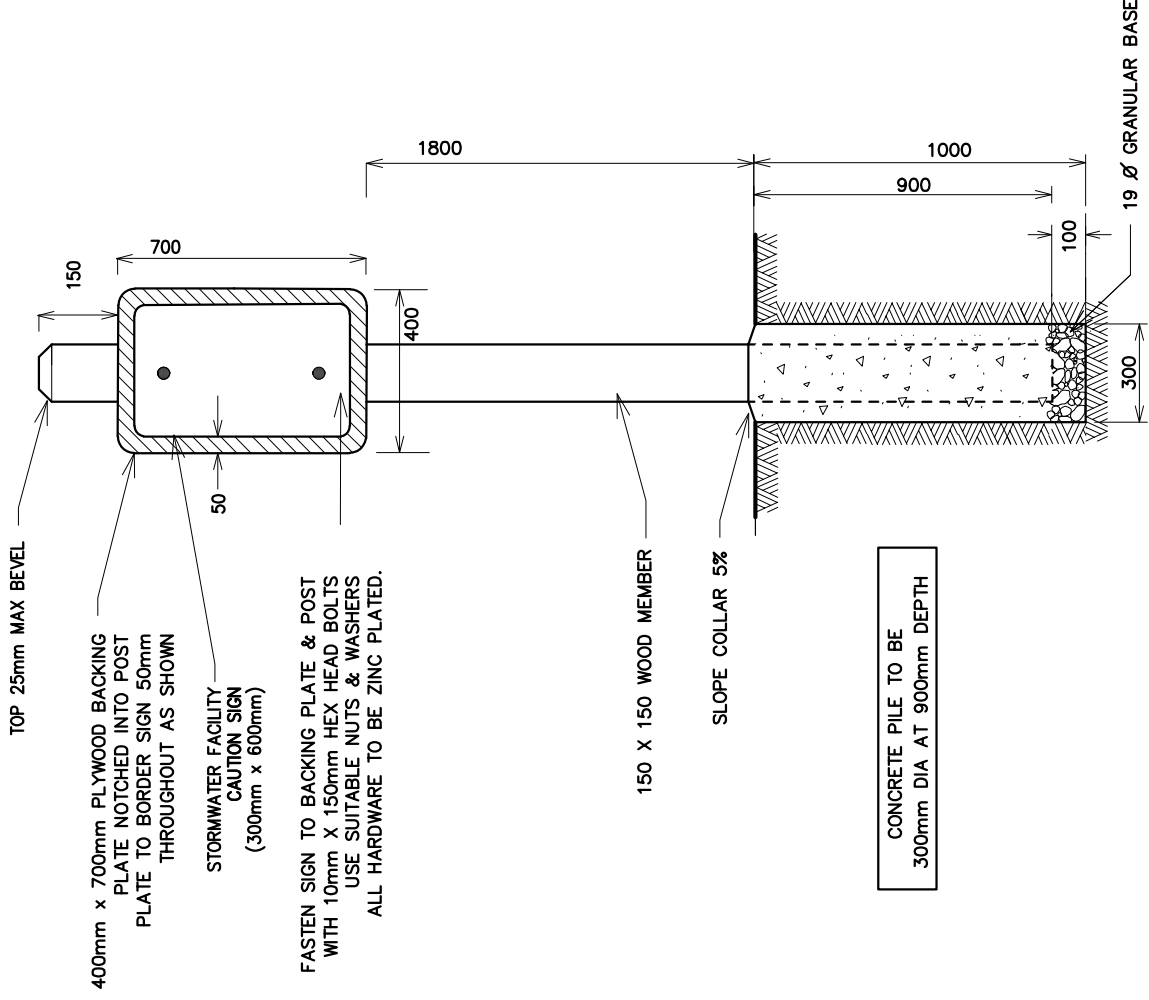
- ENSURE POSTS ARE INSTALLED PLUMB
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- SIGN LETTERS TO BE 50mm X 50mm



**TOP VIEW**

PLYWOOD TO BE INSTALLED FLUSH WITH FRONT OF POST

**FRONT VIEW**



TOP 25mm MAX BEVEL

400mm x 700mm PLYWOOD BACKING PLATE NOTCHED INTO POST PLATE TO BORDER SIGN 50mm THROUGHOUT AS SHOWN

STORMWATER FACILITY CAUTION SIGN (300mm x 600mm)

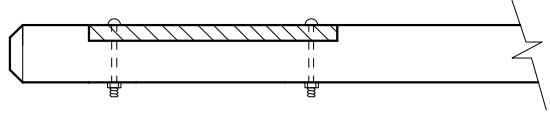
FASTEN SIGN TO BACKING PLATE & POST WITH 10mm X 150mm HEX HEAD BOLTS USE SUITABLE NUTS & WASHERS ALL HARDWARE TO BE ZINC PLATED.

150 X 150 WOOD MEMBER

SLOPE COLLAR 5%

CONCRETE PILE TO BE 300mm DIA. AT 900mm DEPTH

**SIDE VIEW**



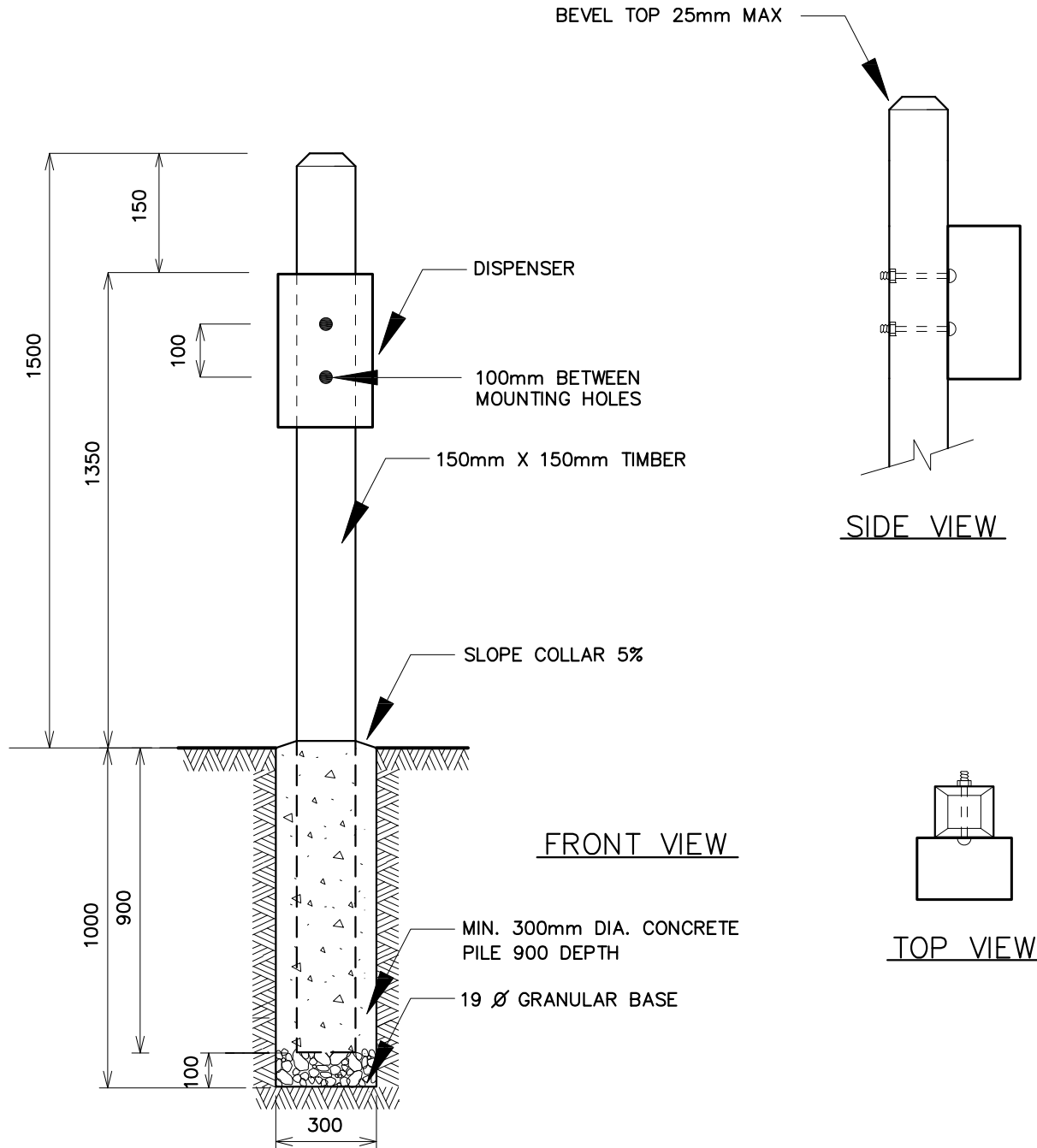
City of *Lethbridge*

INFRASTRUCTURE SERVICES  
SIGN POST – STORMWATER FACILITY

REVISIONS	
1.	12-29-2015 SIGN DIMENSIONS
DRAWN DMC	
SCALE NTS	
DATE	02-15-2013
DWG NO	9.2.3

GENERAL NOTES

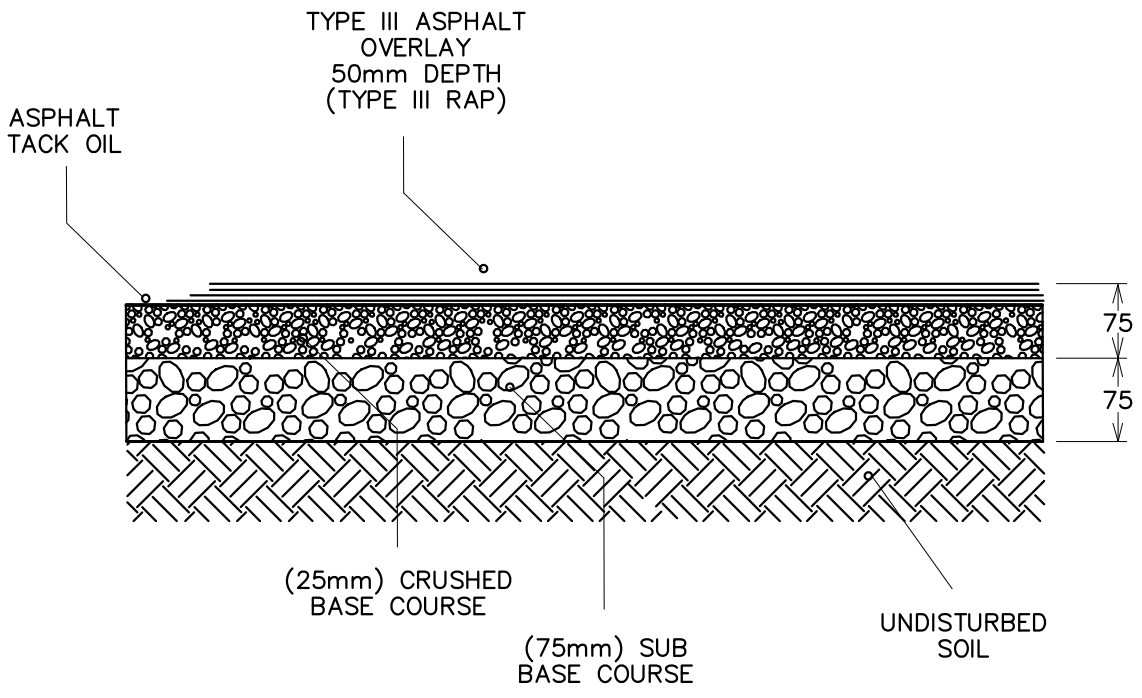
- ENSURE POSTS ARE INSTALLED PLUMB
- WOOD TO BE PRESSURE-TREATED WITH ACQ PRESERVATIVE OR APPROVED EQUAL
- DISPENSER TO BE PRACTICA BRAND OR APPROVED EQUAL
- DISPENSER TO BE 14 GAUGE GALV STEEL POWDER COATED YELLOW
- DISPENSER TO BE LOCKABLE & RUST RESISTANT
- DISPENSER CAPACITY – 500 BAGS
- NUTS ON BACK OF POST TO BE COUNTERSUNK FLUSH WITH POST



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
DOG DIRT WASTE DISPOSAL SIGN

REVISIONS	
1. 11-30-2007	POST HT. DECREASED TO 1500
2. 12-04-2007	POST HT. TO DISPENSER TO 150mm
3. 02-20-2013	COUNTERSUNK NUTS
DRAWN	GD DM
SCALE	NTS
DATE	12-17-2003
DWG NO	9.3



SECTION



CITY OF  
*Lethbridge*

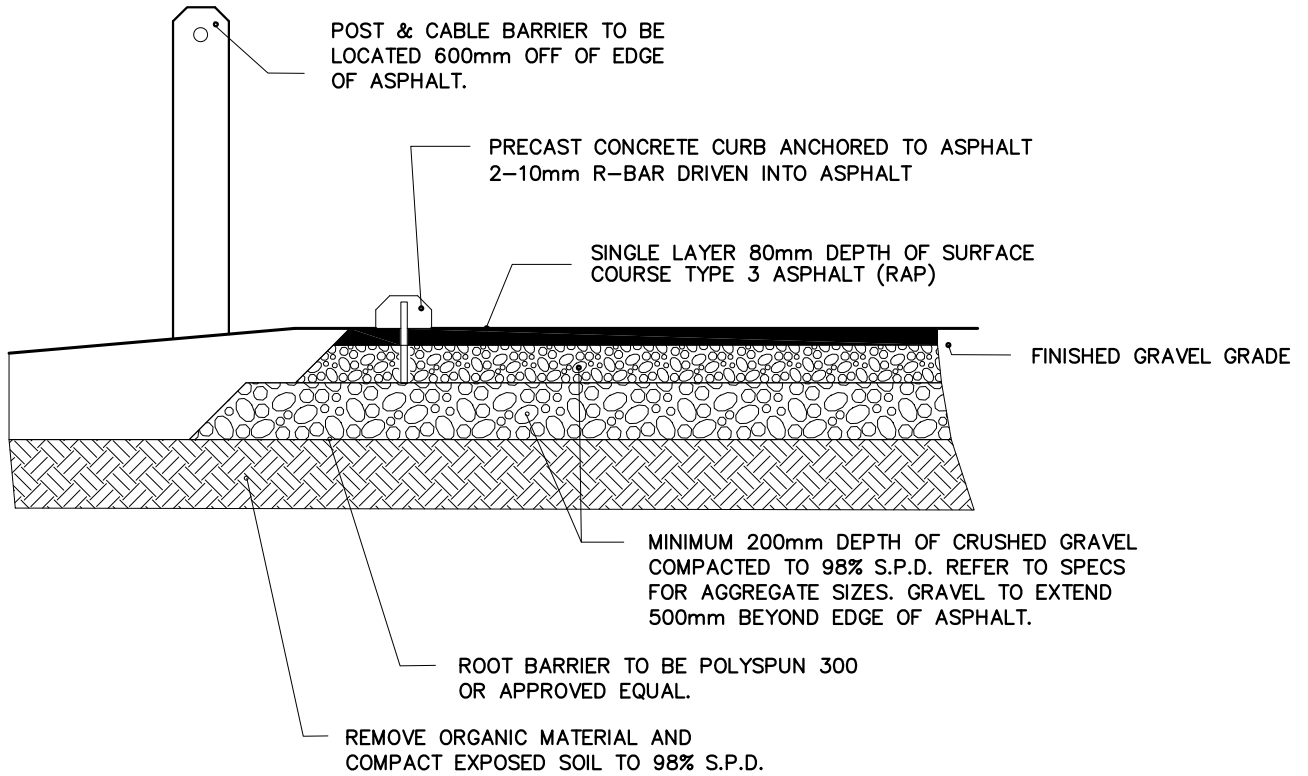
INFRASTRUCTURE SERVICES  
ASPHALT OVERLAY

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	10.1



GENERAL NOTES

- REPAIR INCIDENTAL DAMAGE TO TURF PER DETAIL 11.1
- ROLL/TAMP ASPHALT EDGES
- GRADE CROSS-SLOPE @ 2% MIN



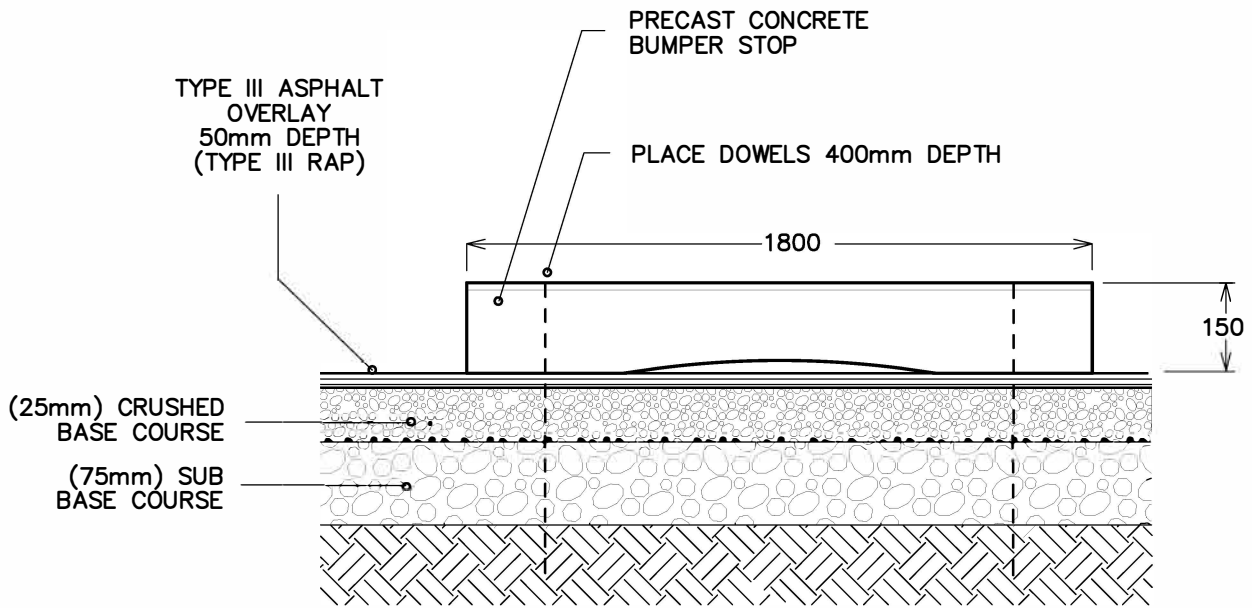
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
ASPHALT SURFACE & GRAVEL SUBSURFACE

REVISIONS	
DRAWN	AD
SCALE	NOT TO SCALE
DATE	02-10-2000
DWG NO	10.2



SECTION



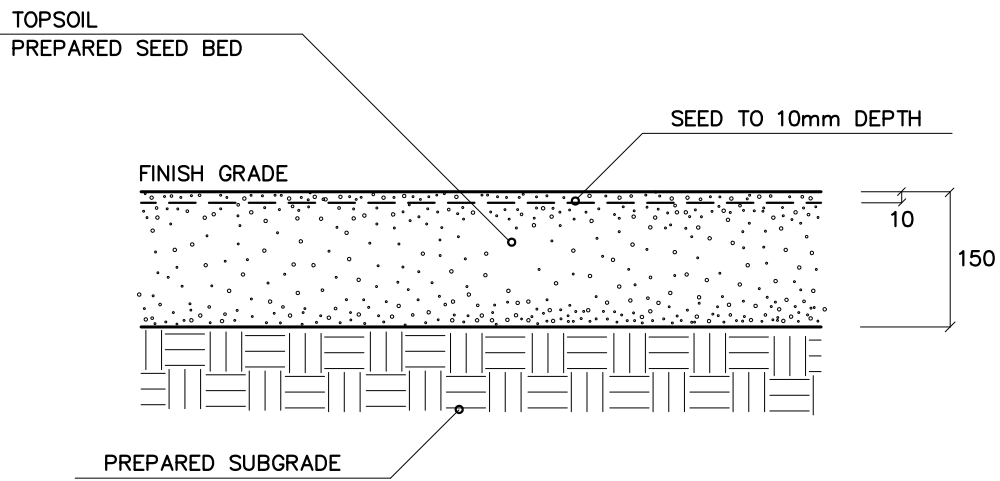
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BUMPER STOP

REVISIONS	
DRAWN	GD / AD
SCALE	NOT TO SCALE
DATE	02-11-1998
DWG NO	10.3

GENERAL NOTES

- SEED MIXTURE TO BE SUPPLIED BY PROJECT MANAGER



SECTION

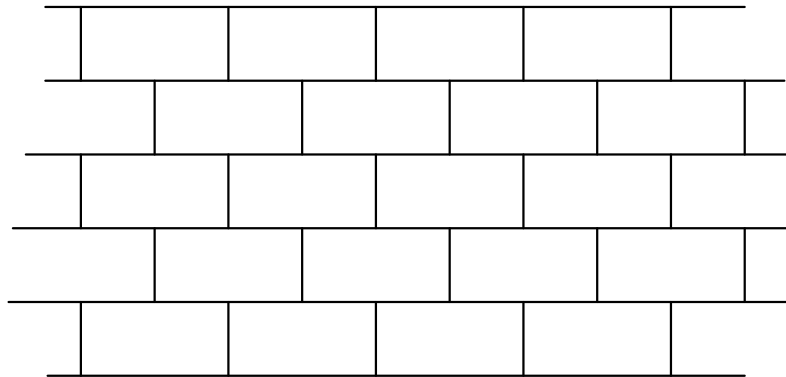


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
TURF REPAIR

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	02-06-1998
DWG NO	11.1

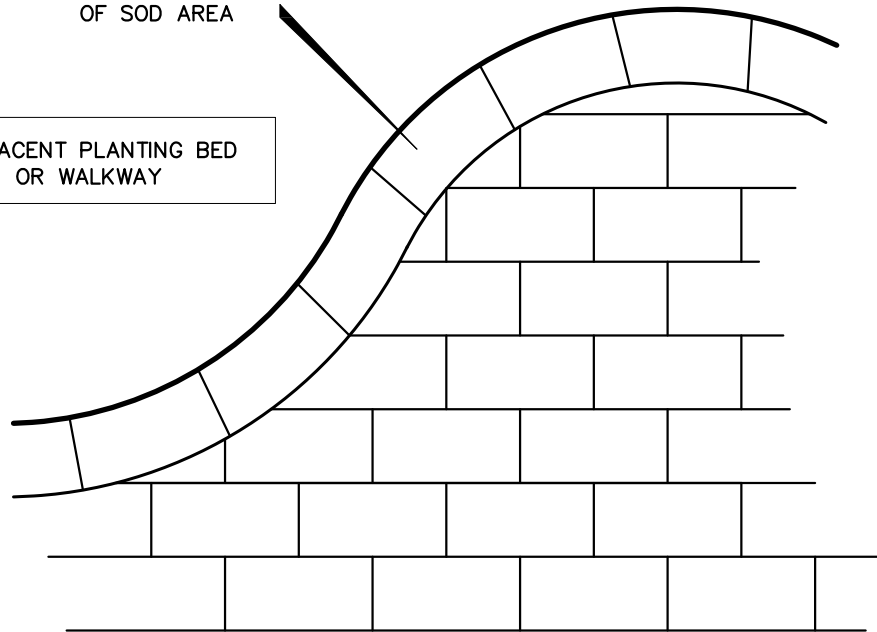
- SOD TO BE LAID CLOSELY KNIT TOGETHER WITH NO OPEN JOINTS OR OVERLAP
- LAYOUT PATTERN TO BE OFFSET AS SHOWN



PLAN

FULL SOD COURSE ON PERIMETER OF SOD AREA

ADJACENT PLANTING BED OR WALKWAY



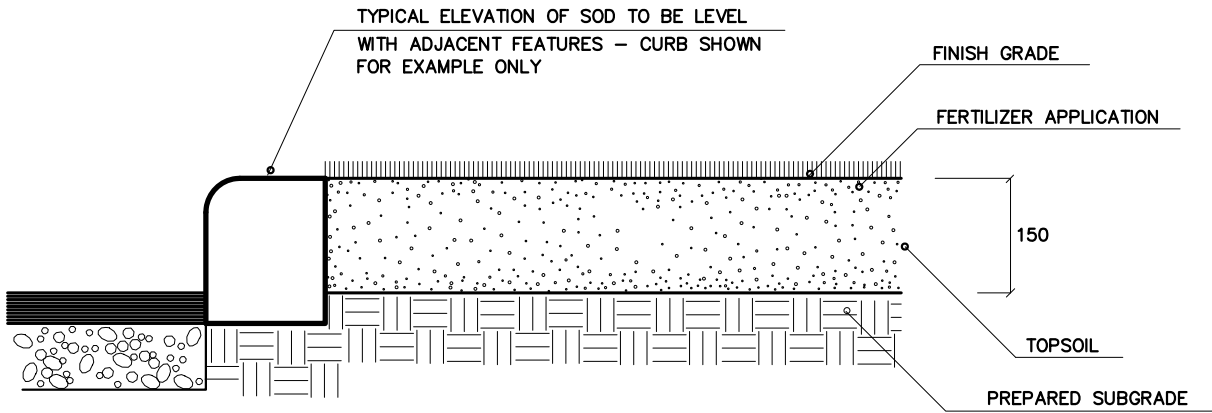
PLANTING BED OR WALKWAY  
SOD LAYOUT



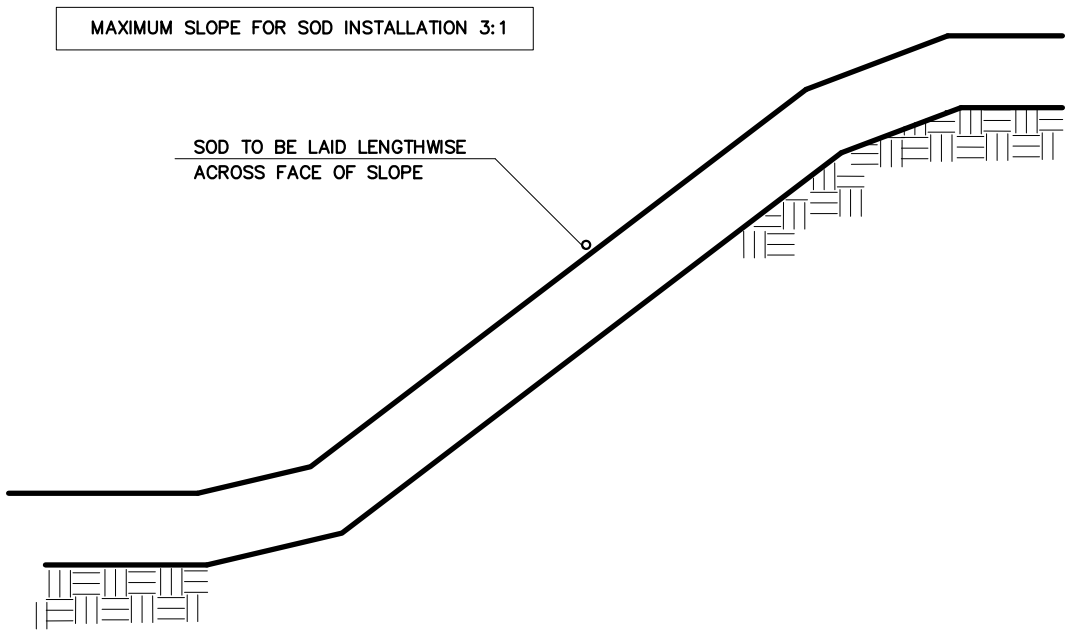
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
SOD LAYOUT

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	11-25-2006
DWG NO	11.2.1



SECTION



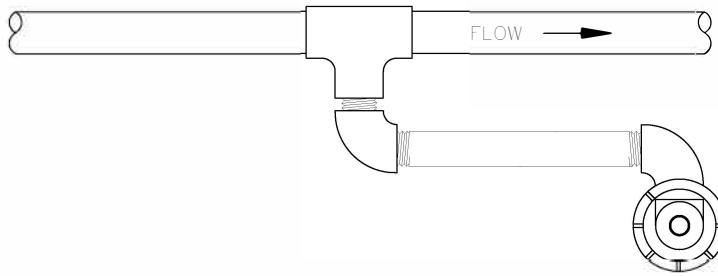
SLOPE SECTION



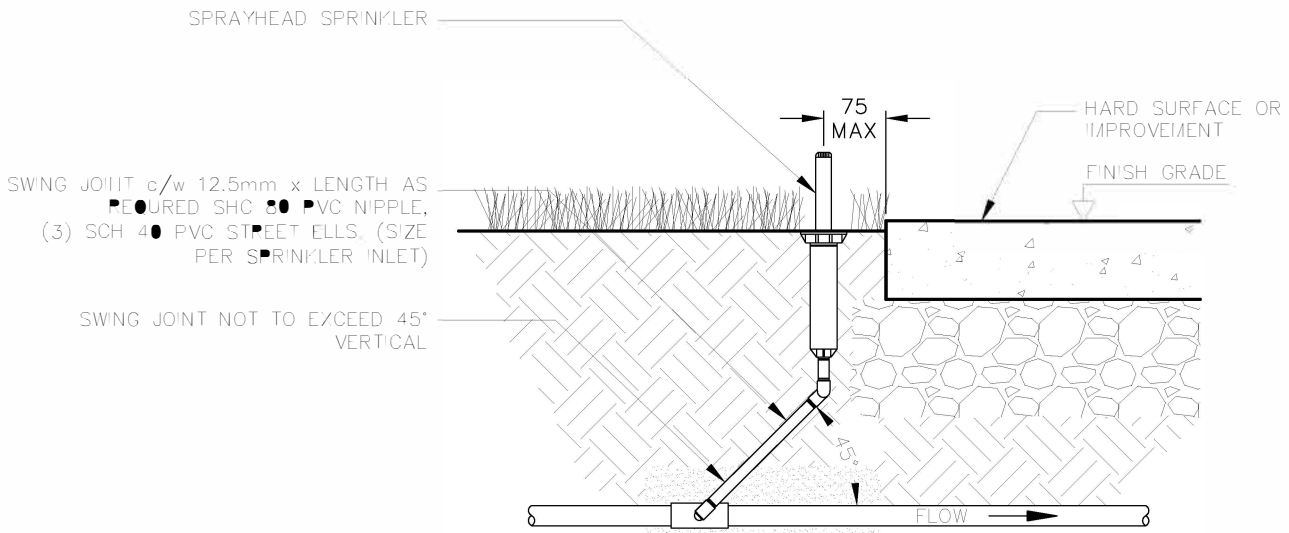
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
SOD SECTIONS

REVISIONS	
DRAWN	GD
SCALE	NOT TO SCALE
DATE	11-25-2006
DWG NO	11.2.2



PLAN



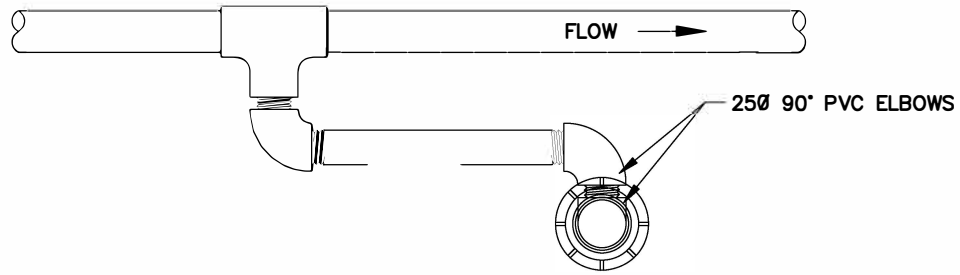
SECTION



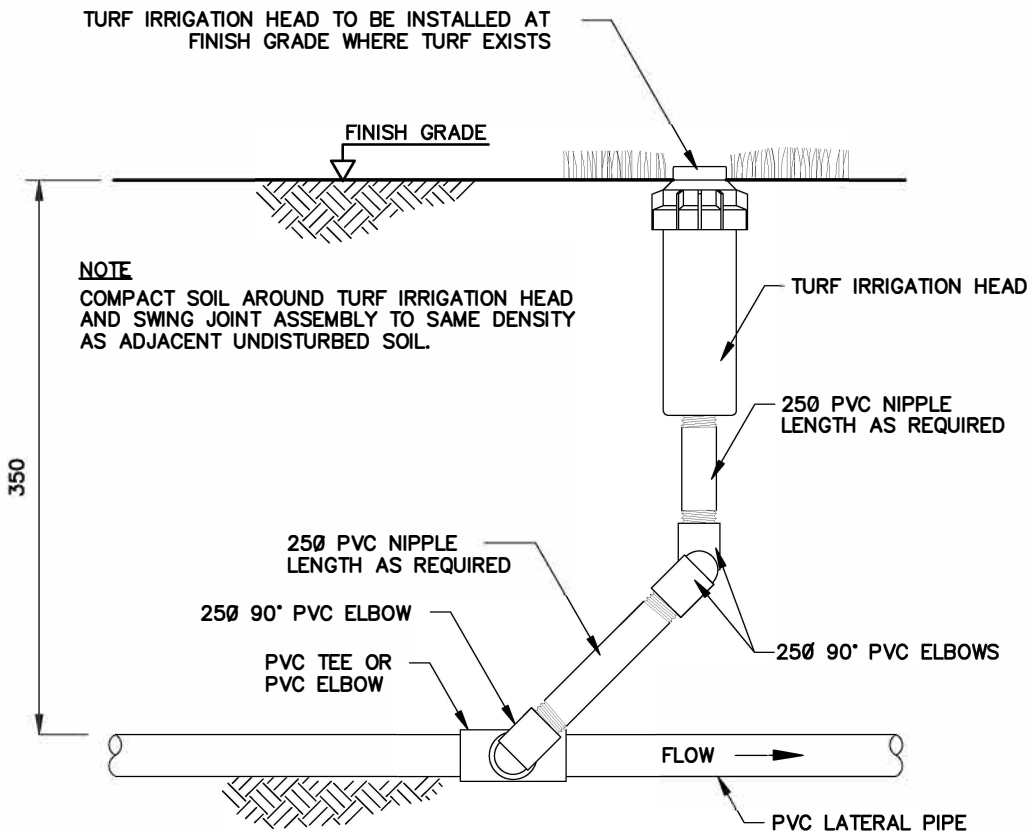
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
SPRAY SPRINKLER HEAD INSTALLATION

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.1.1



PLAN



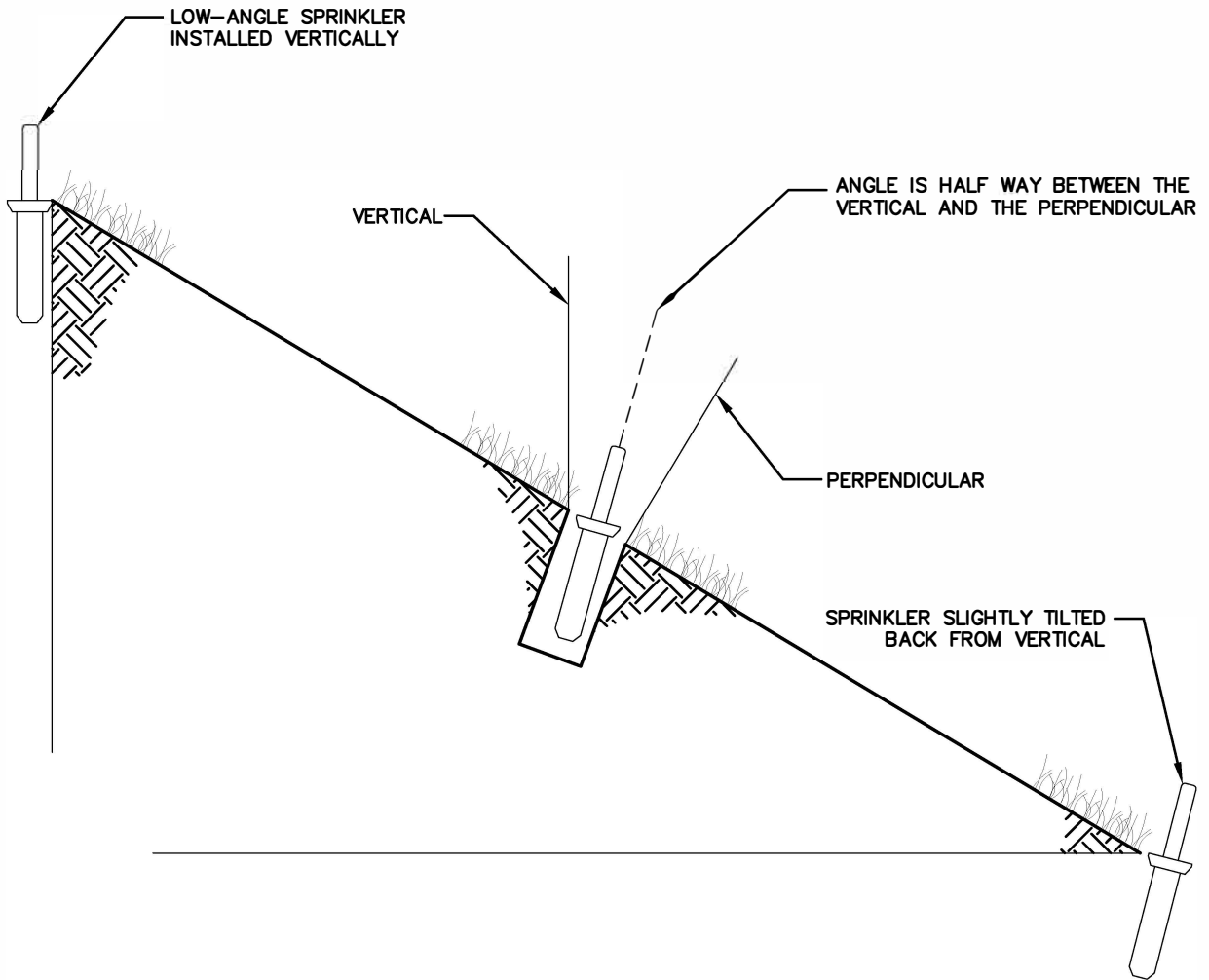
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
TURF IRRIGATION HEAD & SWING JOINT ASSEMBLY

<b>REVISIONS</b>	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 07/18/2018	2018 REVISIONS
<b>DRAWN</b>	MPE
<b>SCALE</b>	NTS
<b>DATE</b>	02-09-2000
<b>DWG NO</b>	12.1.2



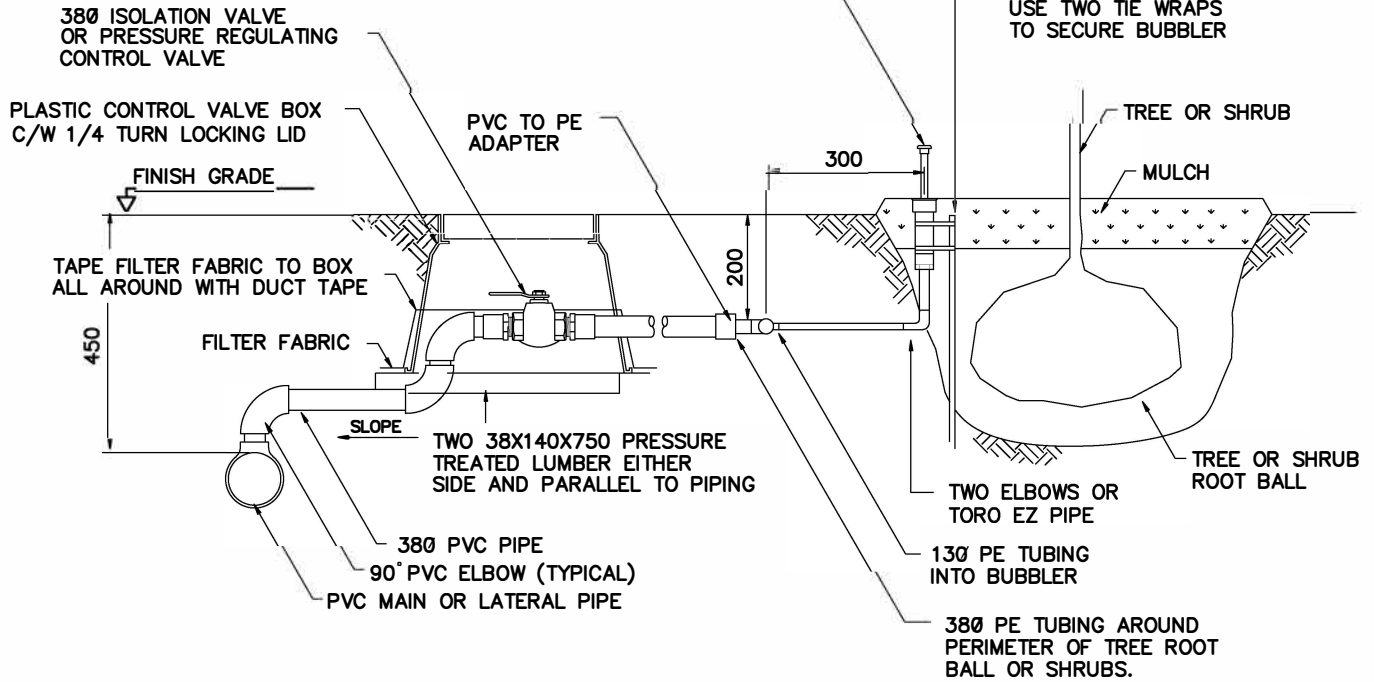
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
INSTALL SPRINKLER ON SLOPE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.1.3



POP-UP BUBBLER AS REQUIRED BY TREE OR SHRUB TYPE. (0.5 TO 2.0 USgpm)



SECTION

NOTE

1. INSTALL BUBBLER ON HIGH SIDE OF TREE WELL



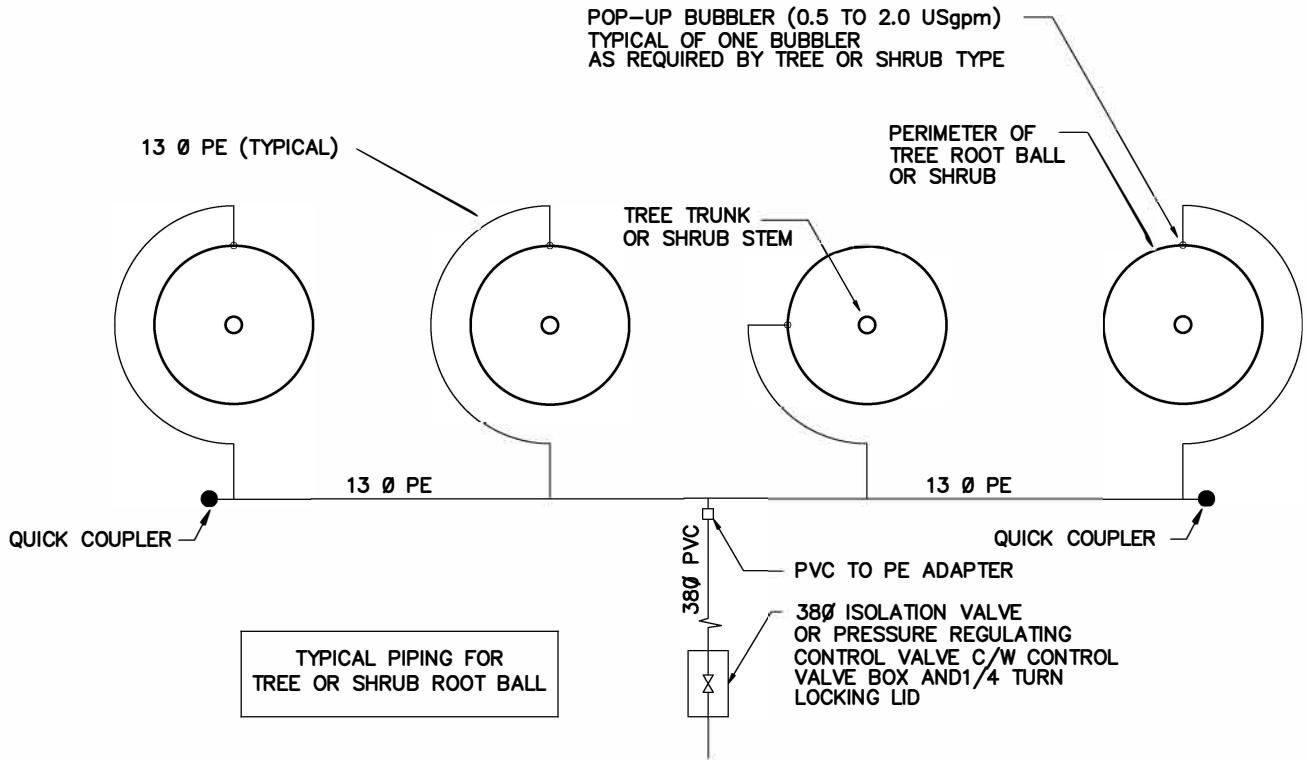
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BUBBLER

REVISIONS	
1. 01/08/03	2003 REVISIONS
2. 07/18/2018	2018 REVISIONS
DRAWN	MPE
SCALE	NTS
DATE	02-09-2000
DWG NO	12.2.1

NOTE

1. INSTALL BUBBLER ON HIGH SIDE OF TREE WELL



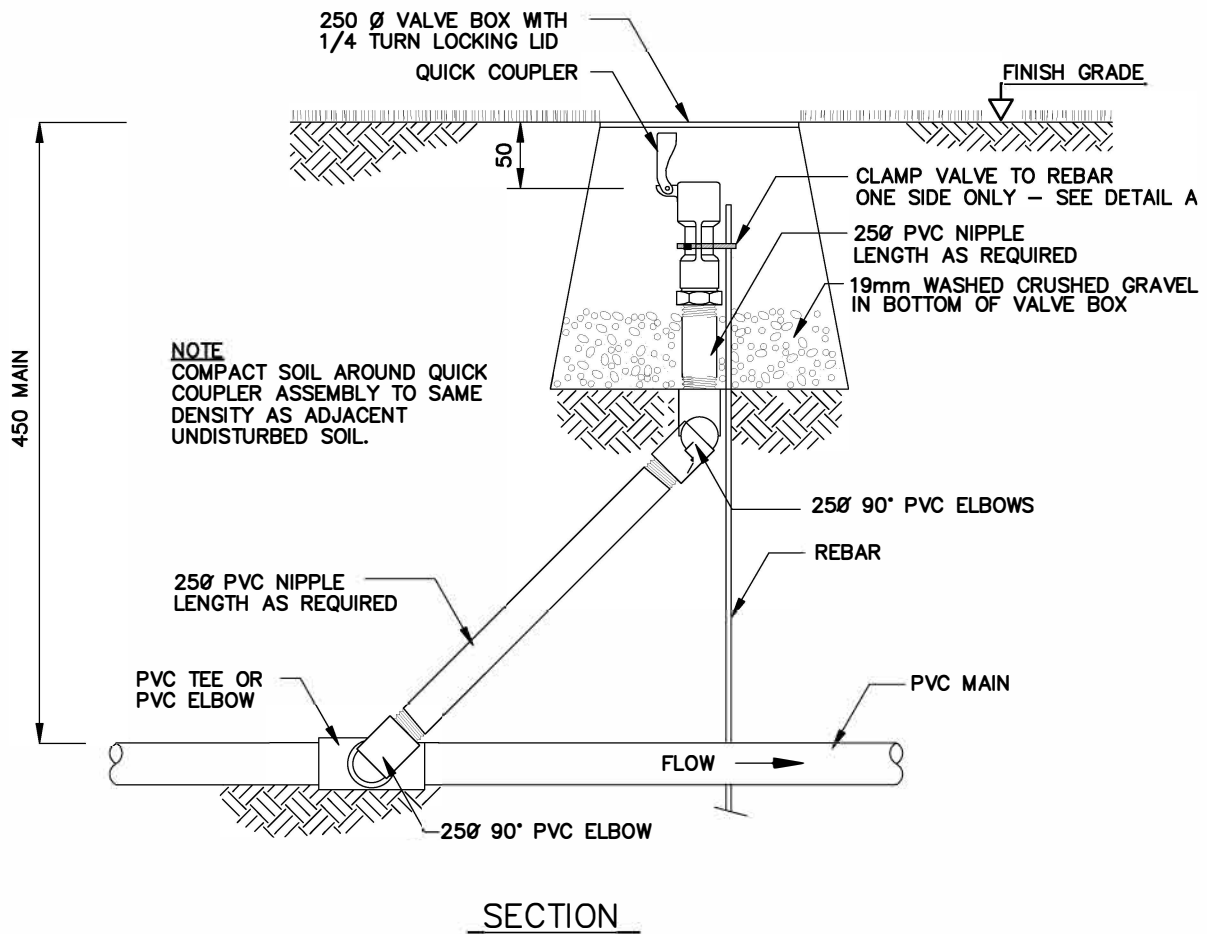
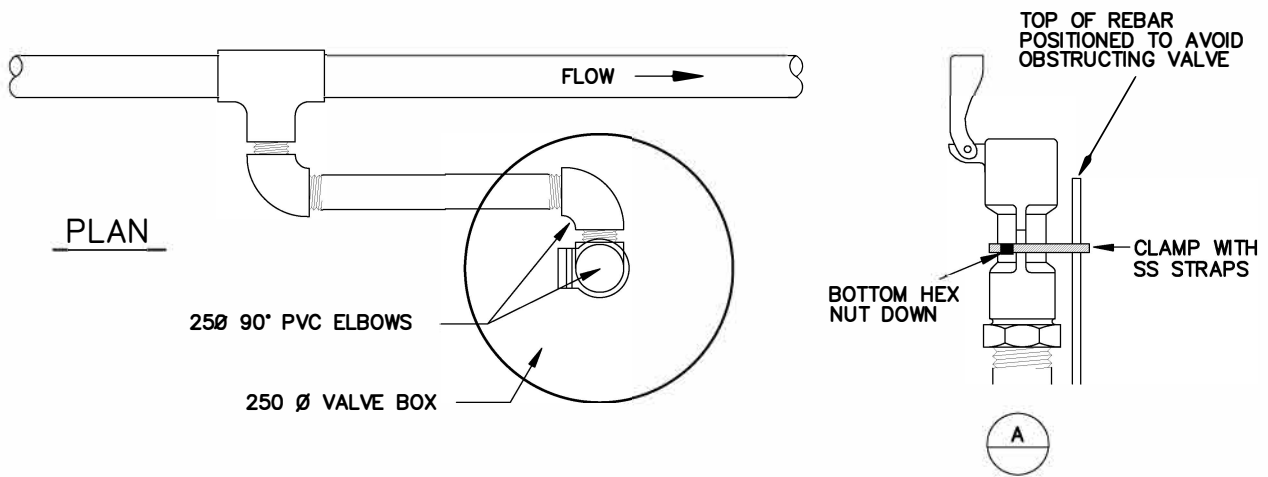
LAYOUT



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BUBBLER

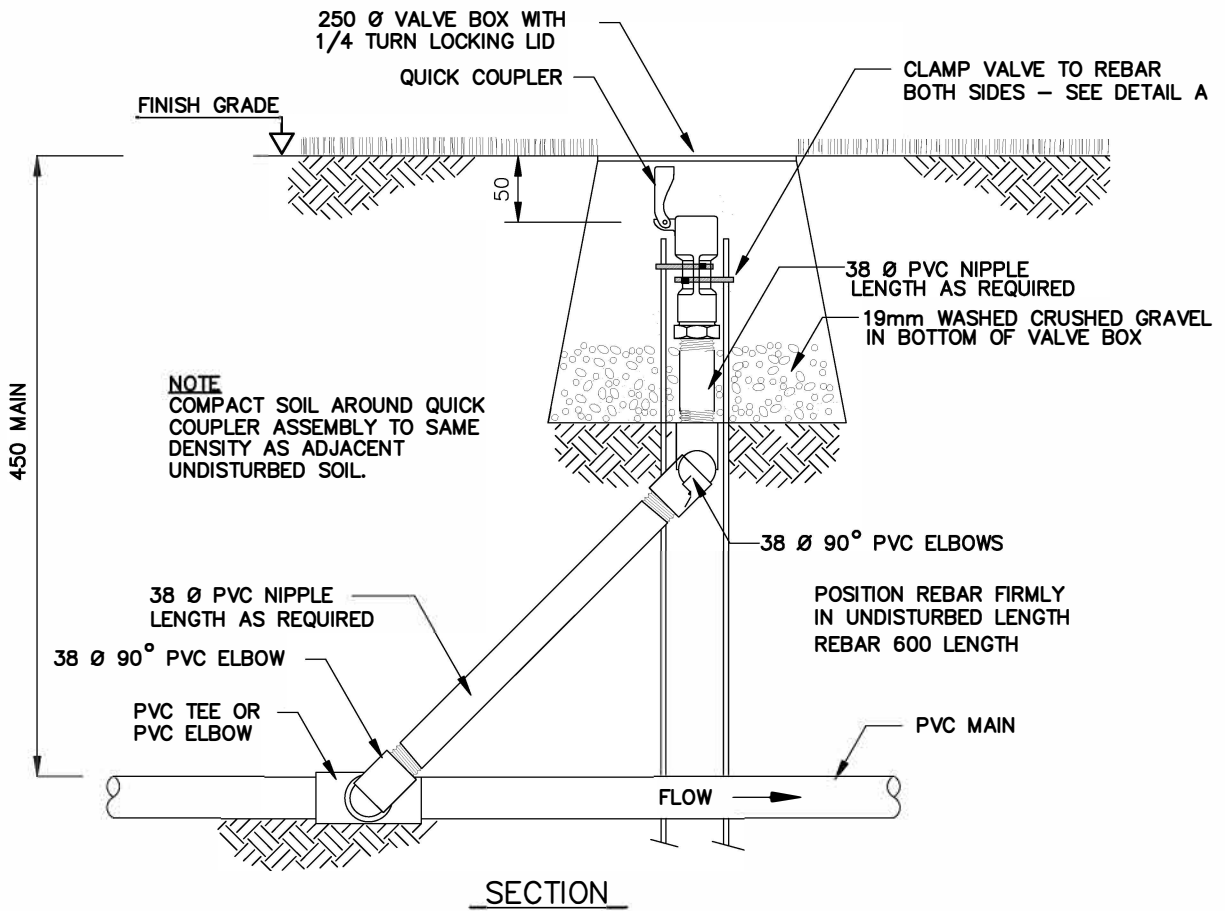
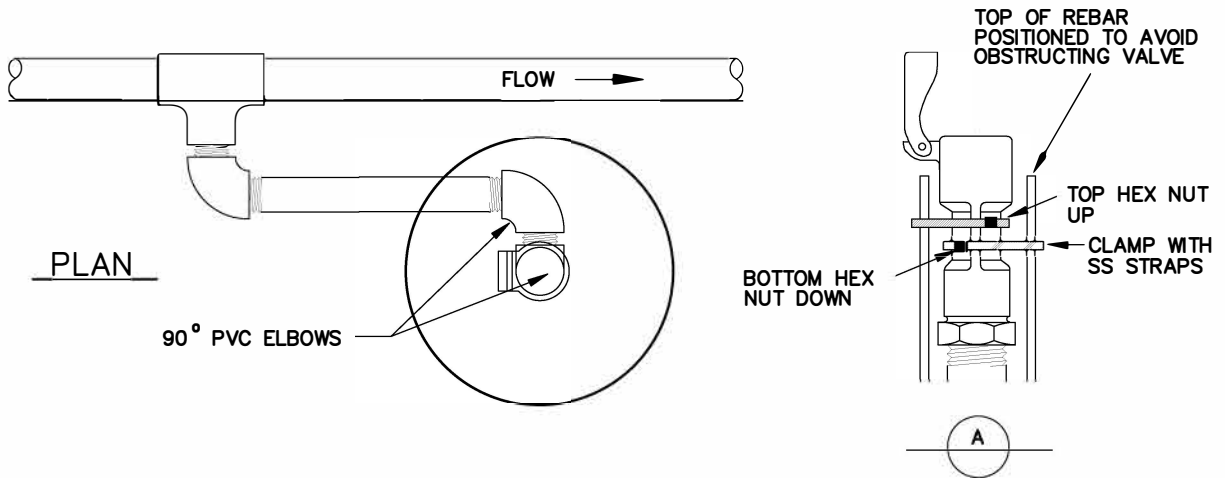
REVISIONS	
1. 01-08-2003	2003 REVISIONS
2. 12-01-2004	ADDED QC
3. 07/18/2018	2018 REVISIONS
DRAWN	MPE
SCALE	NTS
DATE	02-09-2000
DWG NO	12.2.2



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
QUICK COUPLER VALVE FOR 19mm & 25mm PIPE

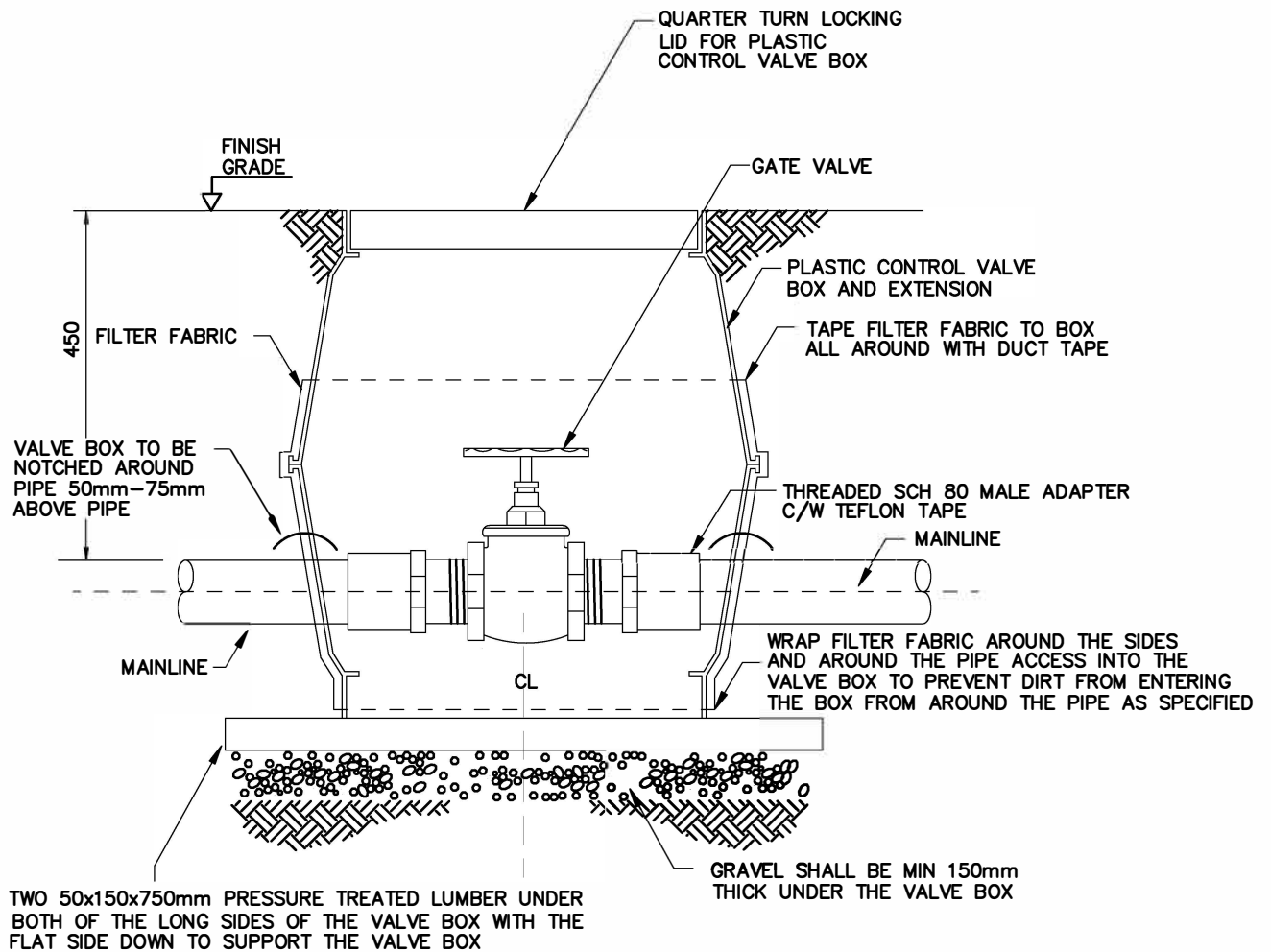
REVISIONS	
1. 11-13-2001	ADDED 19mm & 25mm PIPE
2. 01-13-2003	2003 REVISIONS
3. 12-01-2004	REBAR & CLAMP DETAIL
DRAWN	
MPE	
SCALE	
NOT TO SCALE	
DATE	
02-09-2000	
DWG NO	
12.3.1	



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
QUICK COUPLER VALVE FOR 38 mm PIPE & SWING  
JOINT ASSEMBLY

REVISIONS	
1. 11/13/01	ADDED 38mm PIPE & R-BAR
2. 01/14/03	2003 REVISIONS
3. 07/18/2018	2018 REVISIONS
DRAWN	
SCALE	NTS
DATE	02/09/00
DWG NO	12.3.2



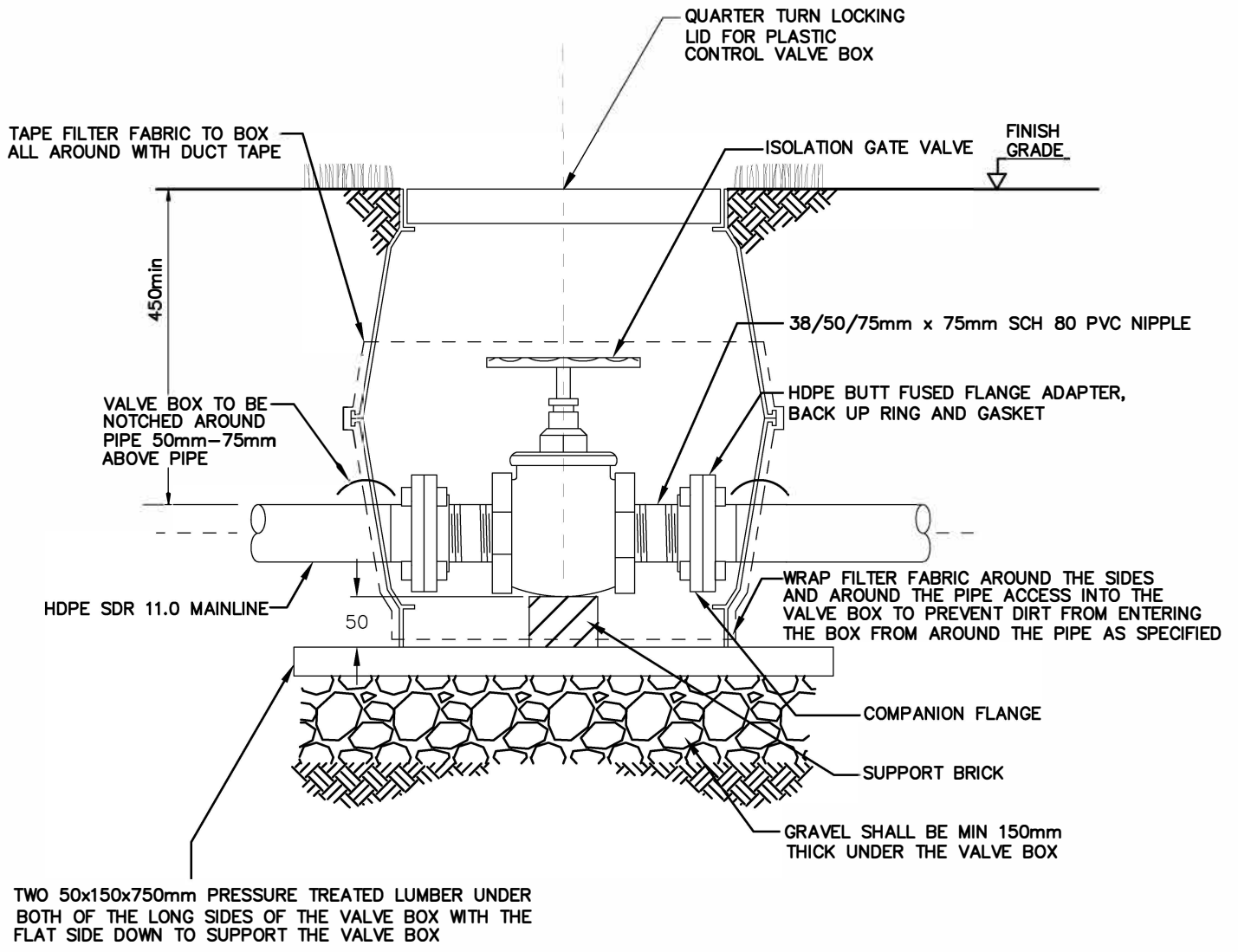
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
ISOLATION VALVE 75mm or SMALLER BLOCKING  
VALVE

REVISIONS	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 01/02/18	2018 REVISIONS
DRAWN	
	ION
SCALE	
	NTS
DATE	
	01-02-2018
DWG NO	
	12.4.1



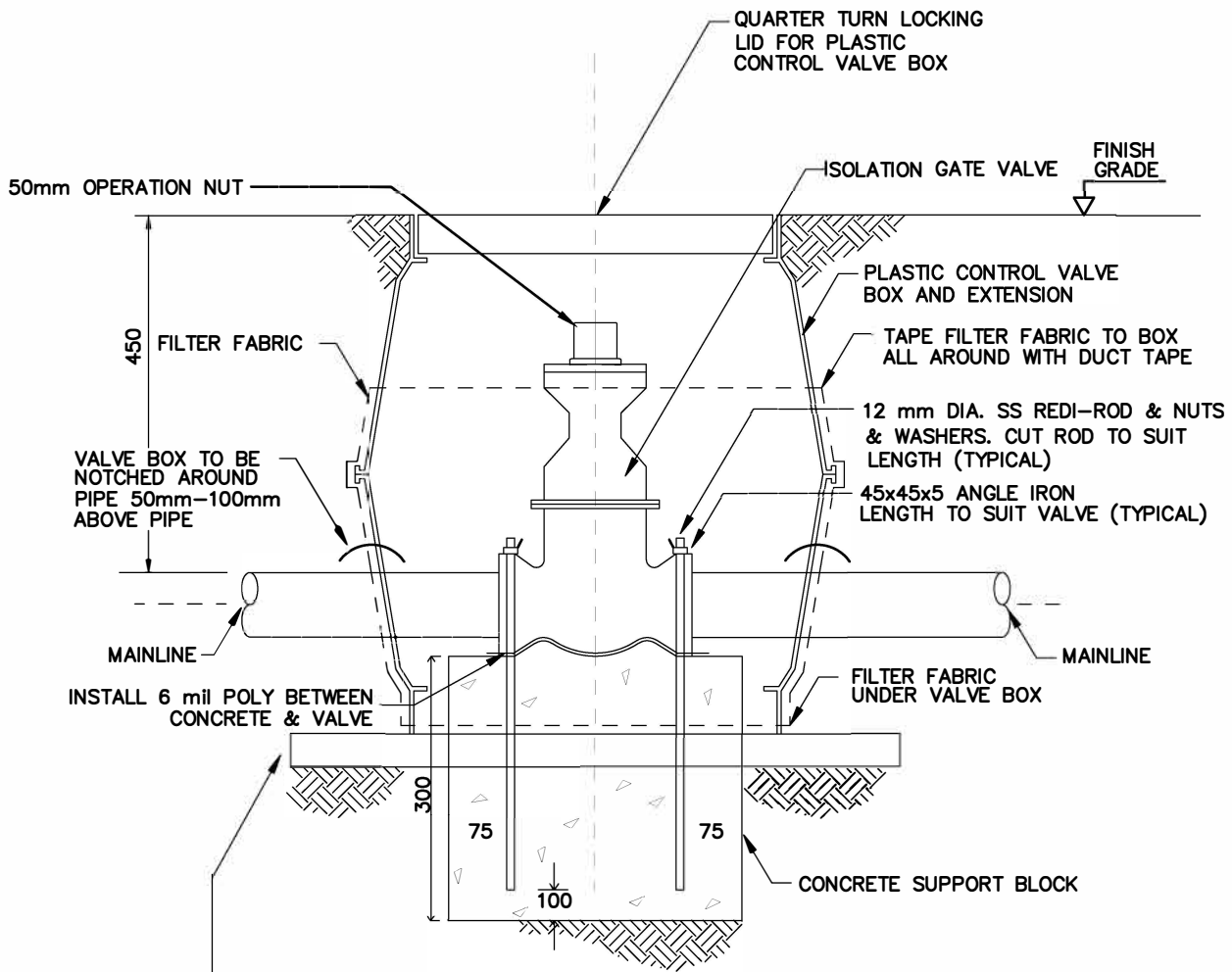
SECTION



CITY OF  
*Lethbridge*

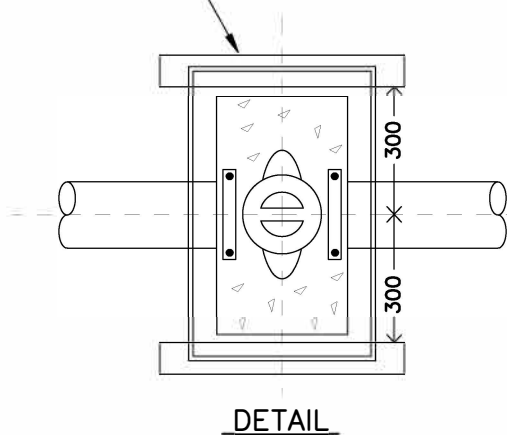
INFRASTRUCTURE SERVICES  
ISOLATION VALVE 75mm OR SMALLER HDPE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.4.2



TWO 38x140x750 PRESSURE TREATED TIMBERS TO BE INSTALLED ON EACH SIDE OF CONCRETE SUPPORT BLOCK & PARALLEL WITH MAINLINE PIPE FULL LENGTH OF VALVE BOX

SECTION



NOTE

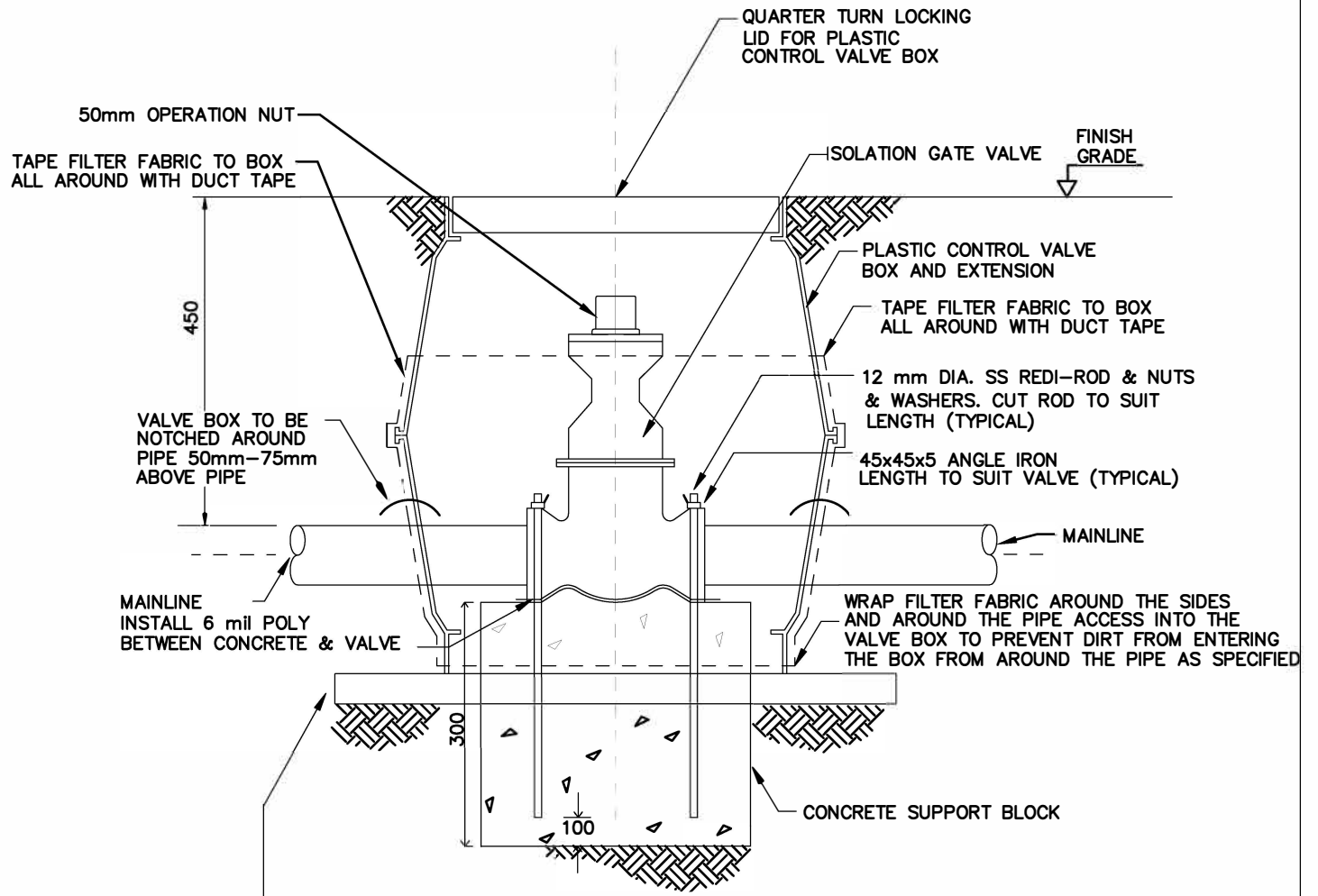
- INSTALL 6 mil POLY BETWEEN CONCRETE & VALVE
- CONCRETE SHALL OBTAIN A MIN COMPRESSIVE STRENGTH OF 20 mpa @ 28 DAYS. ALL CEMENT TO BE TYPE 50 ( SULPHATE RESISTANT )



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
PVC ISOLATION VALVE 100mm

REVISIONS	
1. 11/13/01	NOTCH NOTE
2. 11/13/01	LUMBER NOTE
3. 07/18/2018	2018 REVISIONS
DRAWN	
SCALE	NTS
DATE	02/09/00
DWG NO	12.4.3



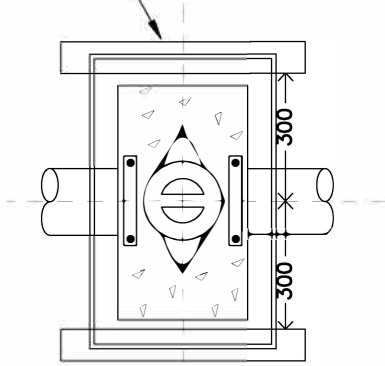
VALVE BOX TO BE NOTCHED AROUND PIPE 50mm-75mm ABOVE PIPE

MAINLINE  
INSTALL 6 mil POLY BETWEEN CONCRETE & VALVE

WRAP FILTER FABRIC AROUND THE SIDES AND AROUND THE PIPE ACCESS INTO THE VALVE BOX TO PREVENT DIRT FROM ENTERING THE BOX FROM AROUND THE PIPE AS SPECIFIED

CONCRETE SUPPORT BLOCK

SECTION



DETAIL

NOTE

- INSTALL 6 mil POLY BETWEEN CONCRETE & VALVE
- CONCRETE SHALL OBTAIN A MIN COMPRESSIVE STRENGTH OF 20 mpa @ 28 DAYS. ALL CEMENT TO BE TYPE 50 ( SULPHATE RESISTANT )

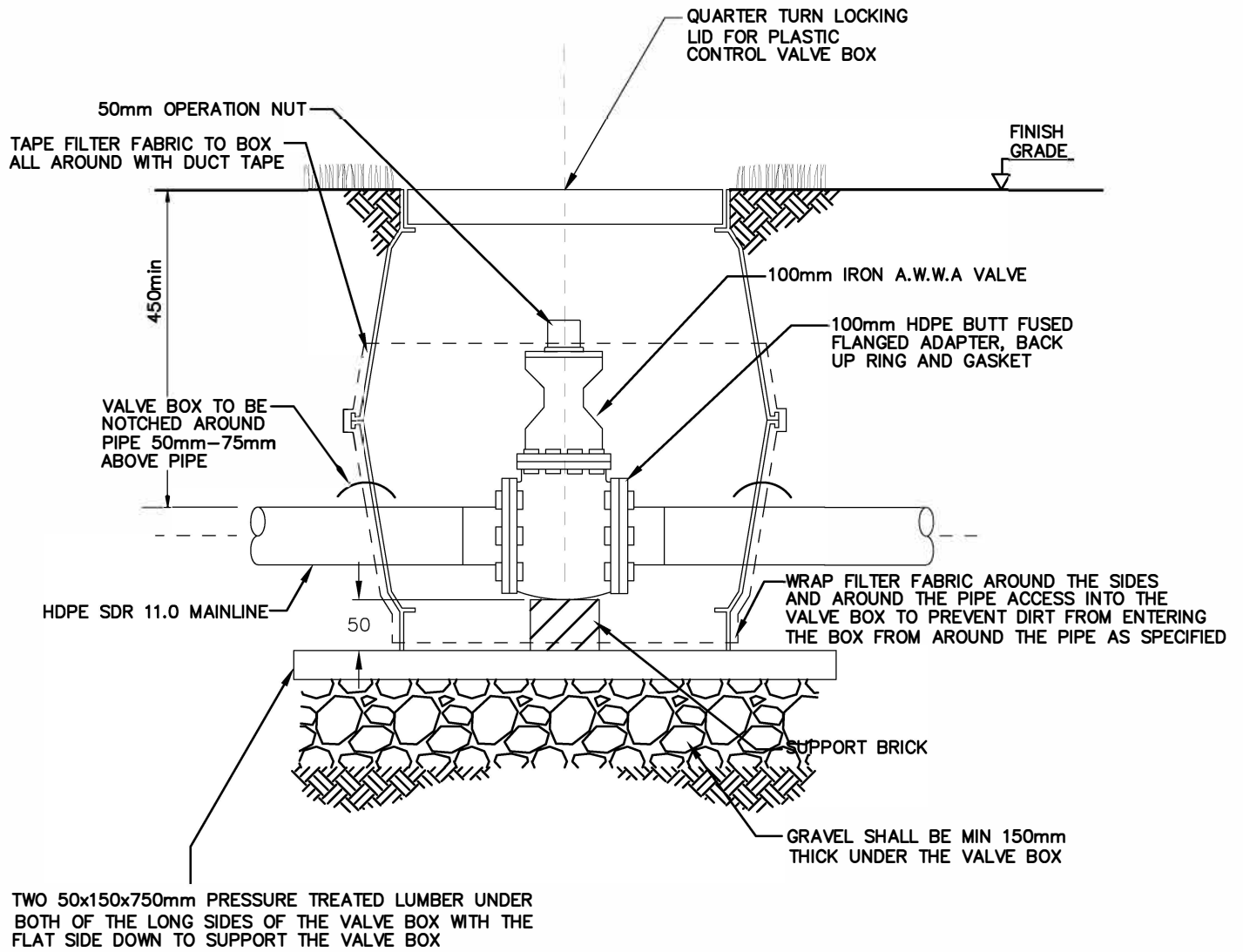


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
ISOLATION VALVE 150mm

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.4.4





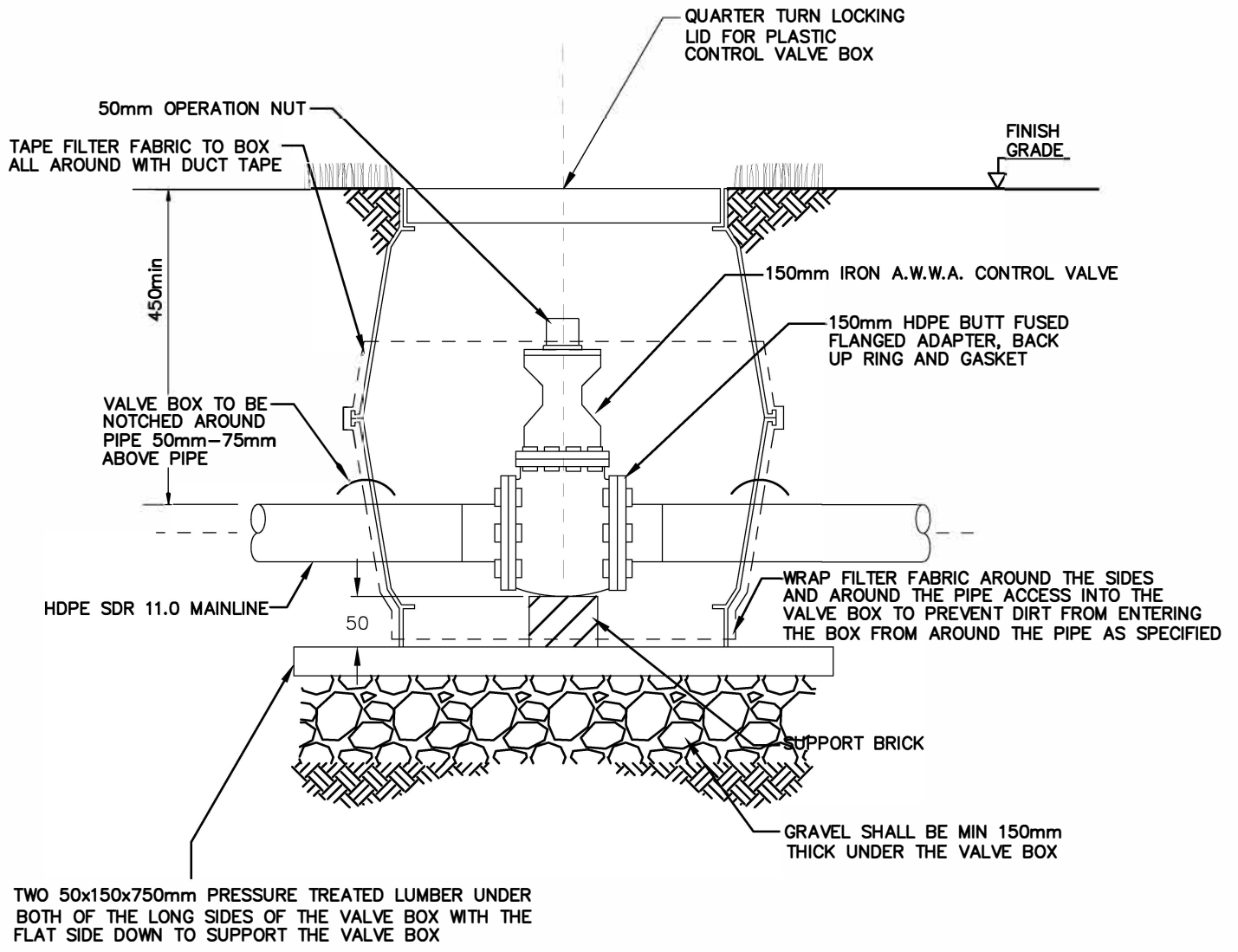
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
100mm HDPE ISOLATION VALVE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	24-01-2018
DWG NO	12.4.5



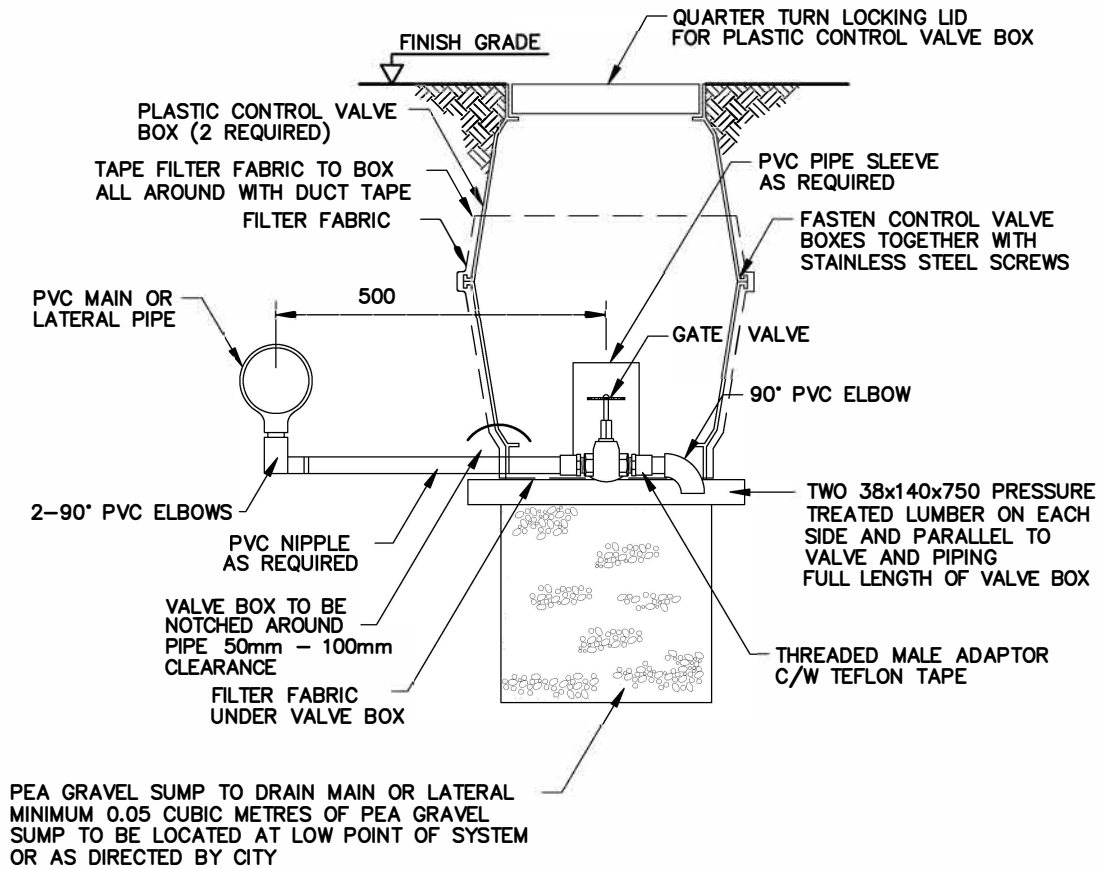
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
150mm HDPE ISOLATION VALVE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.4.6



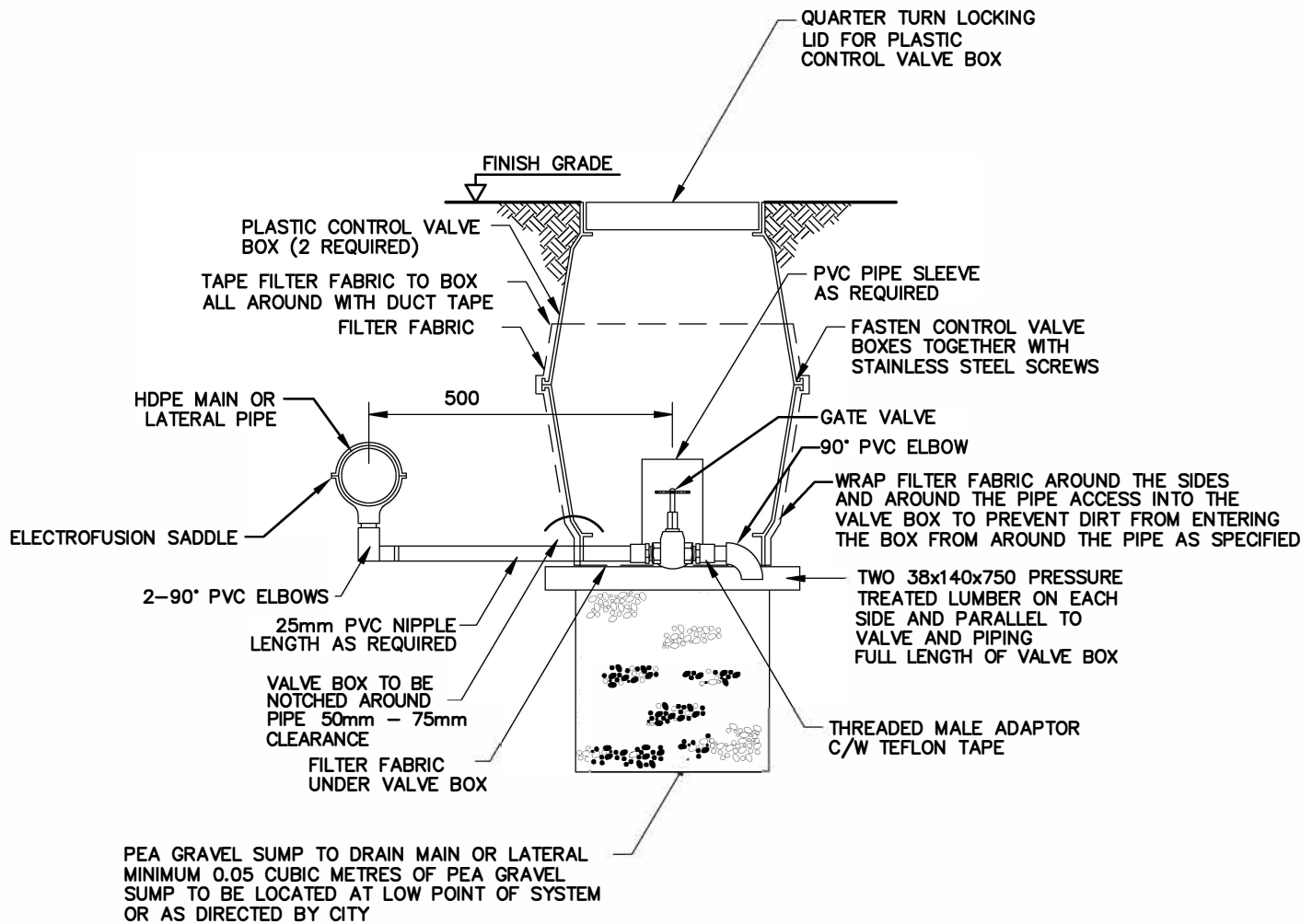
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
MANUAL DRAIN VALVE

REVISIONS	
1. 11/13/01	NOTCH NOTE
2. 11/13/01	LUMBER NOTE
3. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	07-18-2018
DWG NO	12.5.1



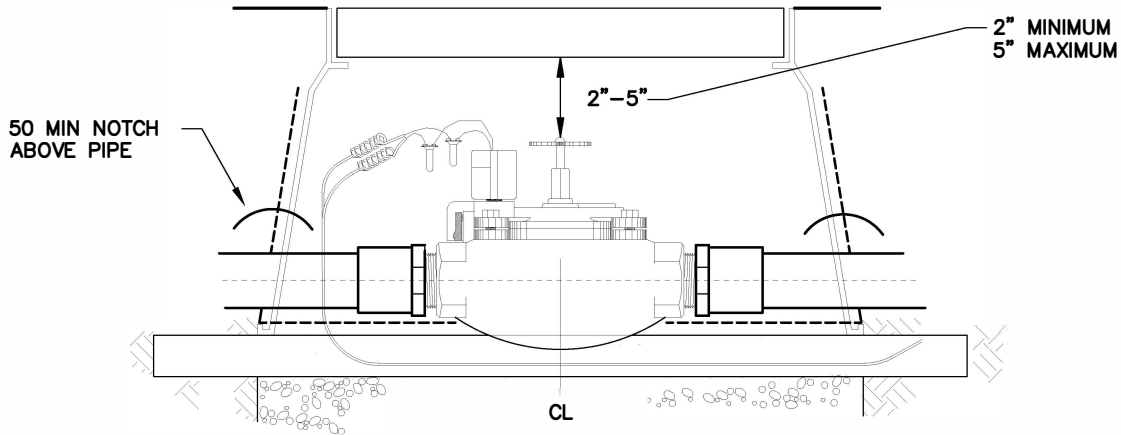
SECTION



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
MANUAL DRAIN VALVE - HDPE

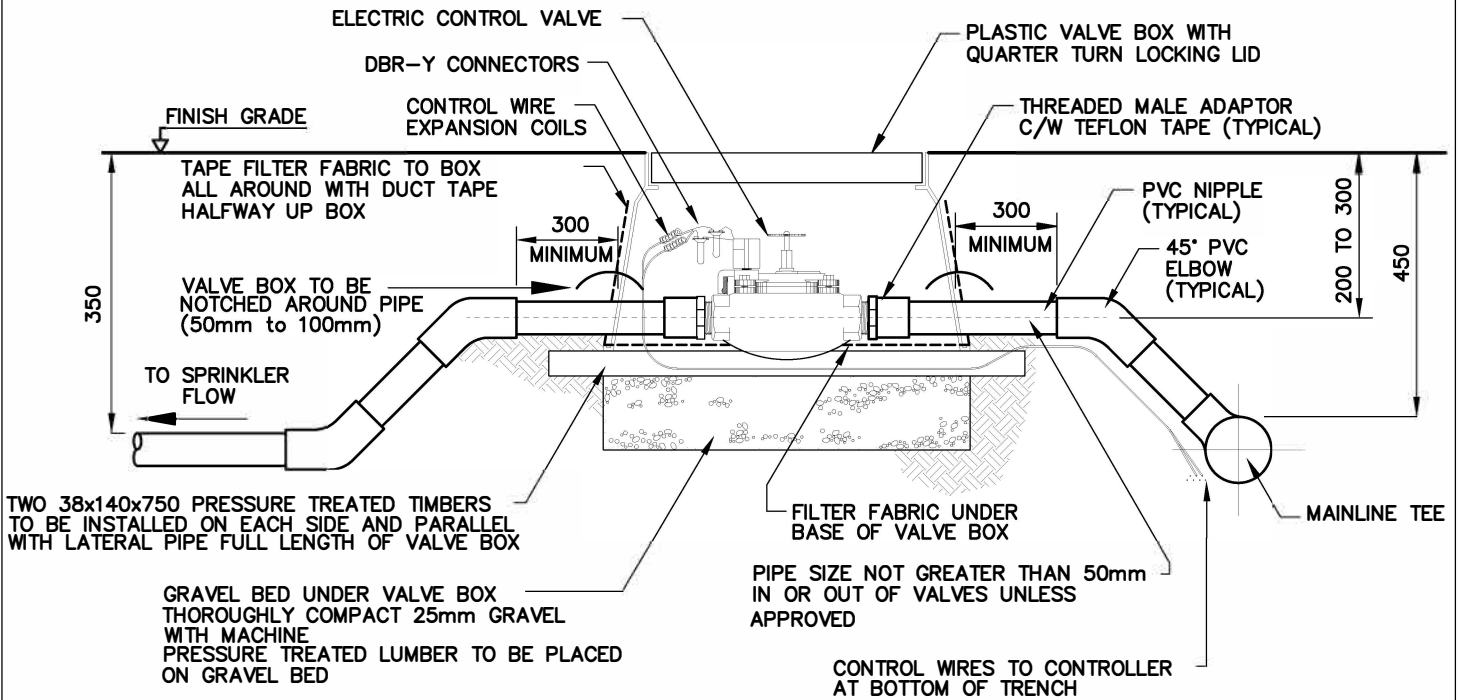
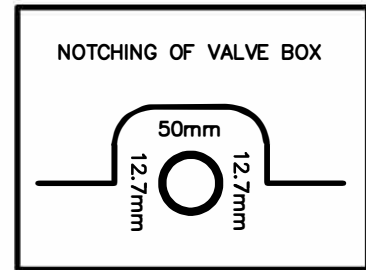
REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.5.2



**GENERAL NOTES**

- 50 MIN CLEARANCE ON TOP OF PIPE
- 50 MIN CLEARANCE ON SIDES OF PIPE

**DETAIL**



**SECTION**

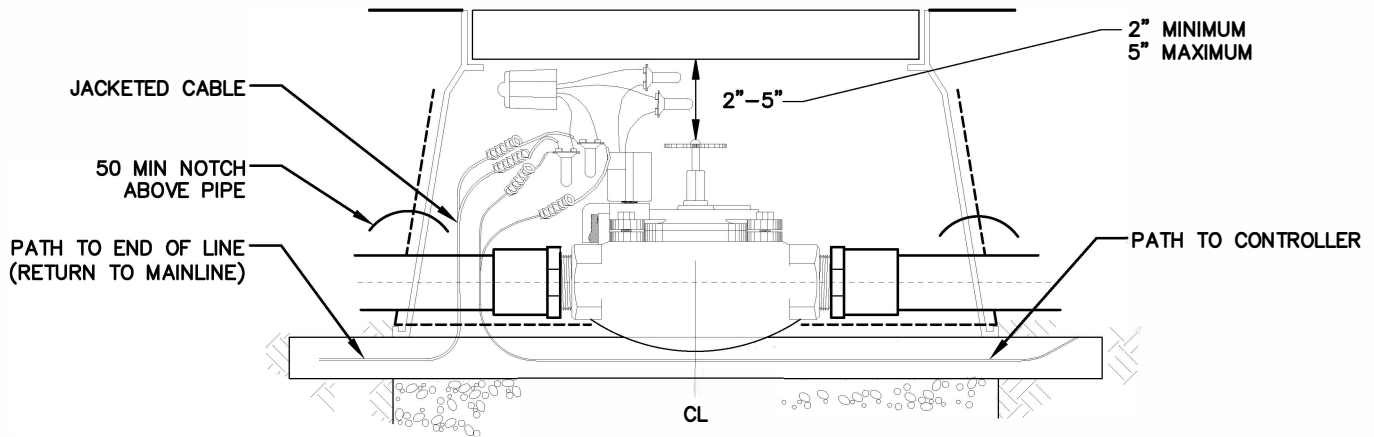


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONTROL VALVE

REVISIONS	
1. 11-30-2007	VALVE BOX NOTCHING & GRAVEL
2. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	07-18-2018
DWG NO	12.6.1

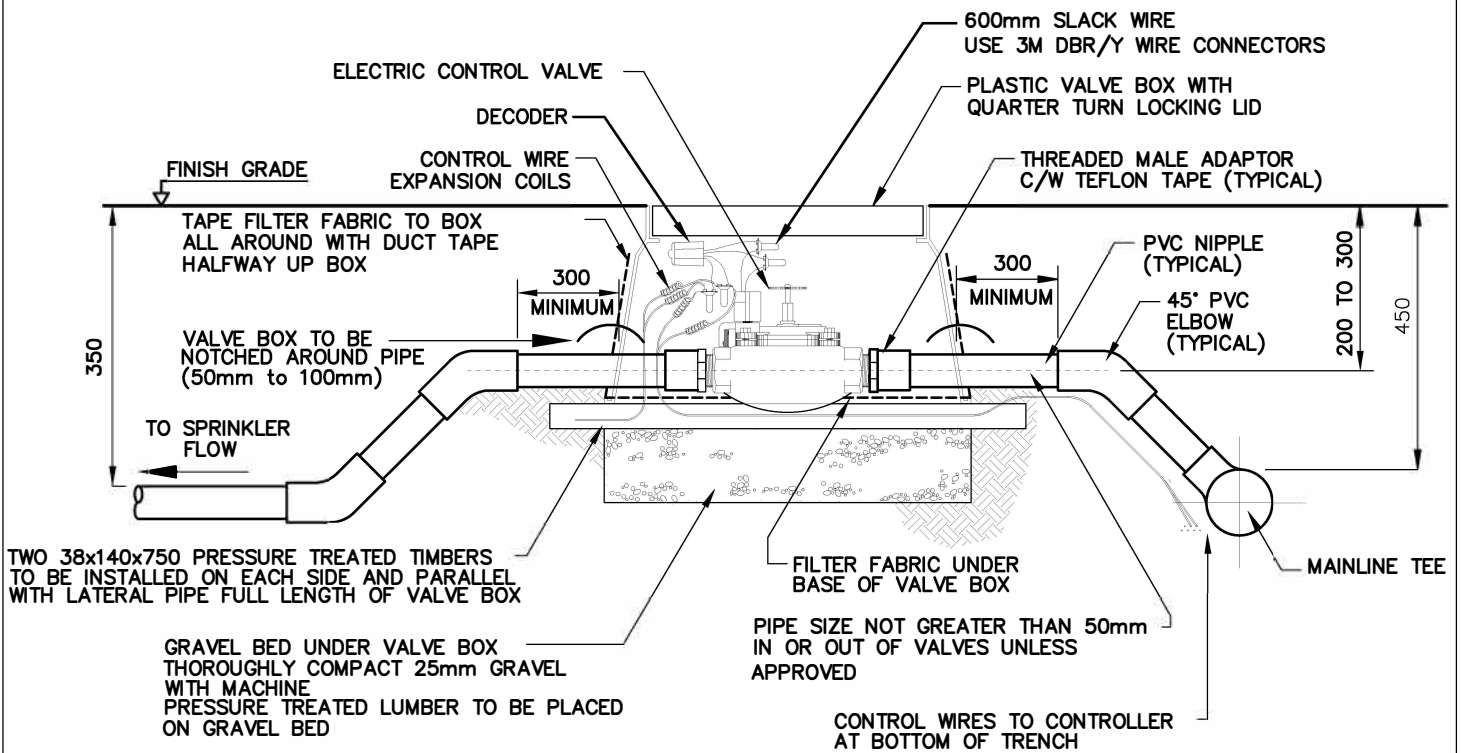
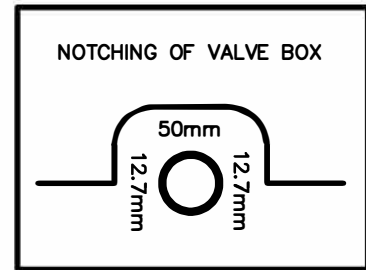




**GENERAL NOTES**

- 50 MIN CLEARANCE ON TOP OF PIPE
- 50 MIN CLEARANCE ON SIDES OF PIPE

**DETAIL**



**SECTION**

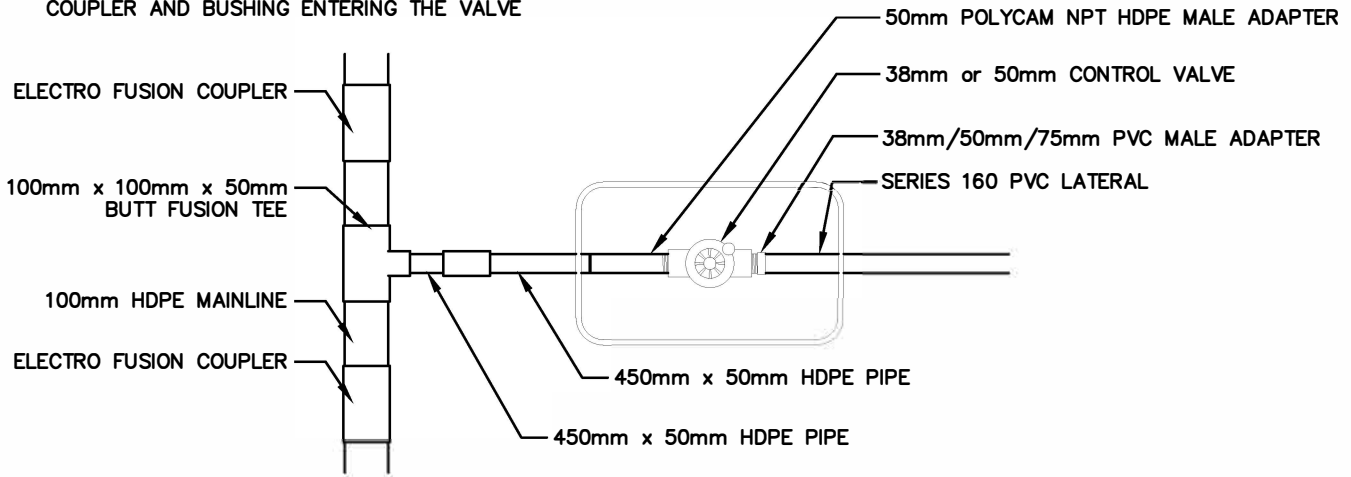


CITY OF  
*Lethbridge*

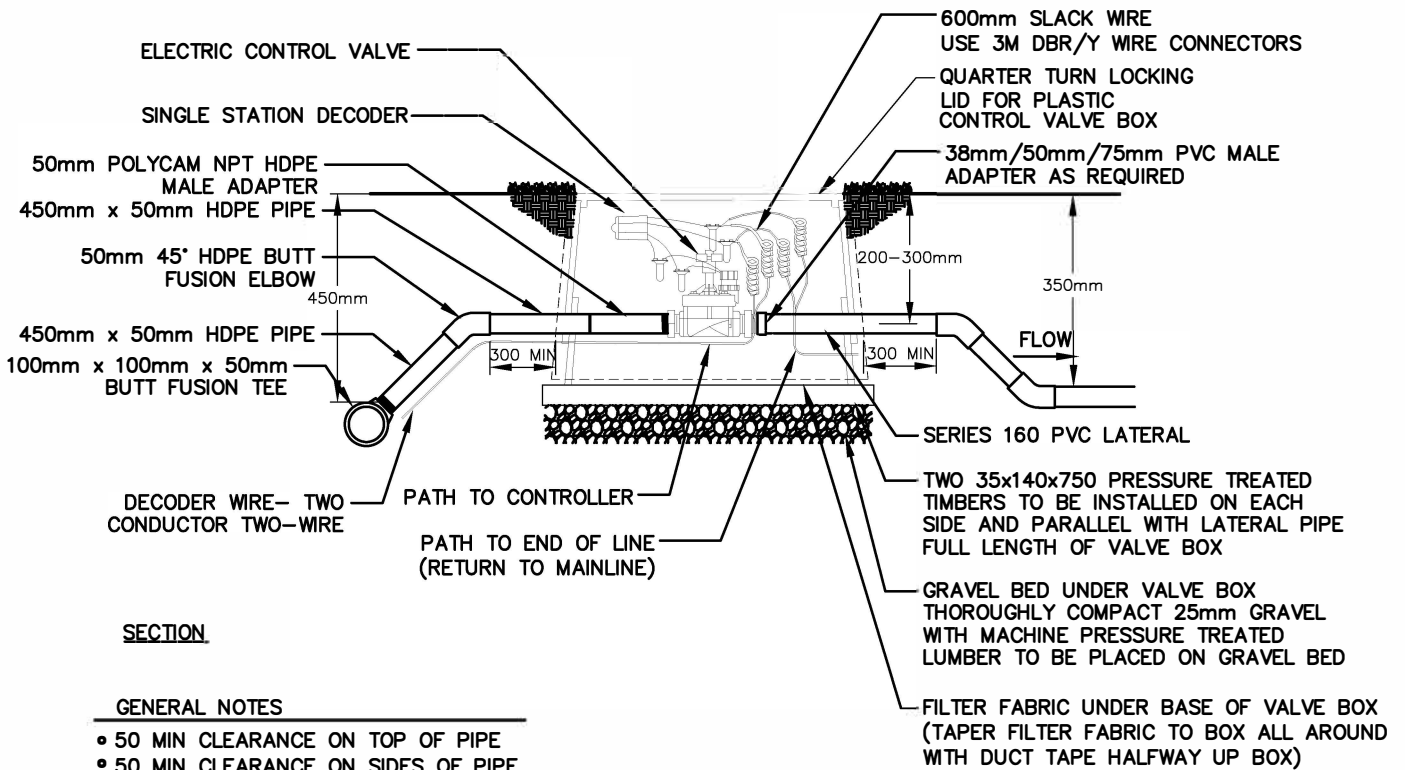
INFRASTRUCTURE SERVICES  
CONTROL VALVE DECODER PVC

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.6.3

NOTE:  
FOR 38mm ELECTRIC CONTROL VALVES ADD 38mm  
COUPLER AND BUSHING ENTERING THE VALVE



PLAN



SECTION

GENERAL NOTES

- 50 MIN CLEARANCE ON TOP OF PIPE
- 50 MIN CLEARANCE ON SIDES OF PIPE



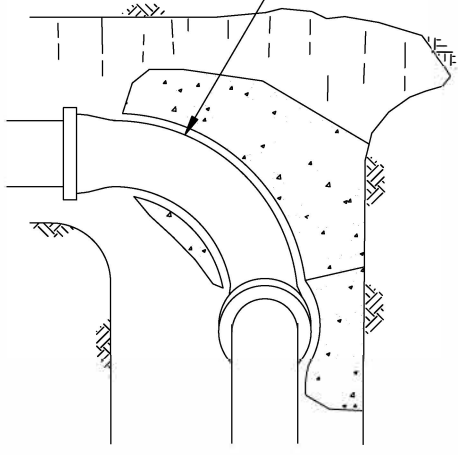
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONTROL VALVE DECODER HDPE

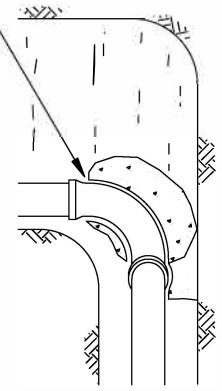
REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.6.4



ALL BENDS, REDUCERS  
ISOLATION VALVES AND  
FITTINGS SHALL BE WRAPPED  
IN 6 MIL. PLASTIC SHEETING.



FOR LARGE PIPE



FOR SMALL PIPE

TABLE 'A'					
THRUST AT FITTINGS FOR 100 LBS PER SQ. IN.					
PIPE SIZE IMPERIAL	PIPE SIZE METRIC	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND
4"	100	1,400	2,030	1,100	600
6"	150	3,100	4,400	2,400	1,200

TABLE 'B'	
SOIL TYPE	SAFE BEARING LOAD LBS. PER SQ. FOOT
SOFT CLAY	1,000
FIRM CLAY	1,500
DENSE CLAY TILL	3,000
DENSE SILT	1,500
LOOSE SAND	1,000
DENSE SAND	2,000
GRAVEL	3,000

THE SAFE BEARING LOADS IN TABLE 'B' ARE FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE IS 450mm AND GREATER AND FOR PRESSURES NOT EXCEEDING 100 PSI.

**NOTE:**

- TO DETERMINE THE BEARING AREA FOR VARIOUS SOIL CONDITIONS DIVIDE THE VALUES FOUND IN TABLE 'A' BY THOSE IN TABLE 'B'  
 ie. A 6"-90° BEND TO BE LAID IN A FIRM CLAY TRENCH WILL REQUIRE A BEARING AREA THUS:  

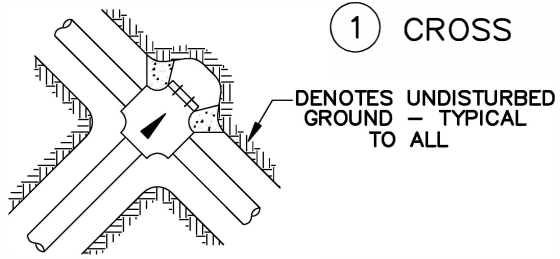
$$\frac{4,400}{1,500} = 2.9 \text{ SQ. FT.}$$
- CONCRETE SHALL CONSIST OF TYPE 50 CEMENT AND HAVE A 28 DAY COMPRESSIVE STRENGTH OF 25 MPA.
- NO CONCRETE CONTACT WITH PIPE, FITTING OR CONTROL WIRING



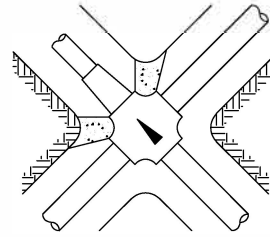
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
THRUST BLOCK DATA (PVC ONLY)

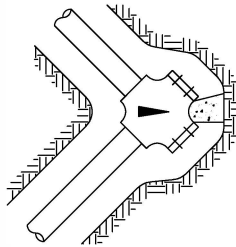
REVISIONS	
1. 01/07/03	ALL FITTINGS WRAPPED
2. 07/18/2018	2018 REVISIONS
DRAWN	
ION	
SCALE	
N.T.S.	
DATE	
07-18-2018	
DWG NO	
12.7.1	



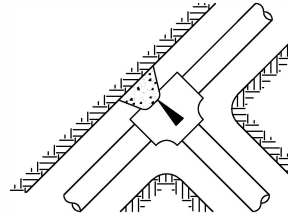
① CROSS



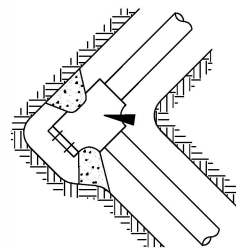
② REDUCER



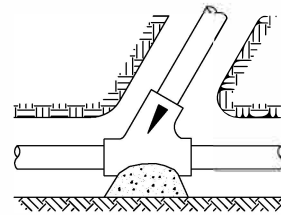
③ CROSS



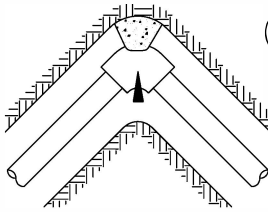
④ TEE



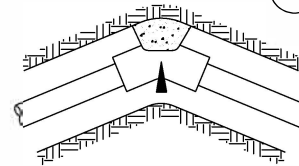
⑤ TEE



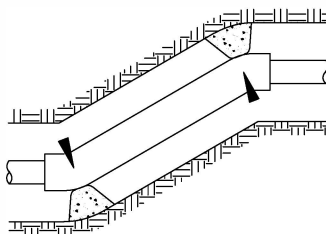
⑥ WYE



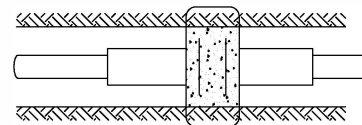
⑦ 90° BEND



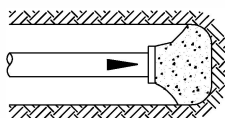
⑧ 45° BEND  
22.5° BEND  
11.25° BEND



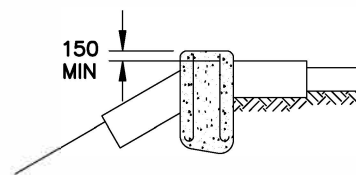
⑨ OFFSET BEND



⑩ VERTICAL BEND



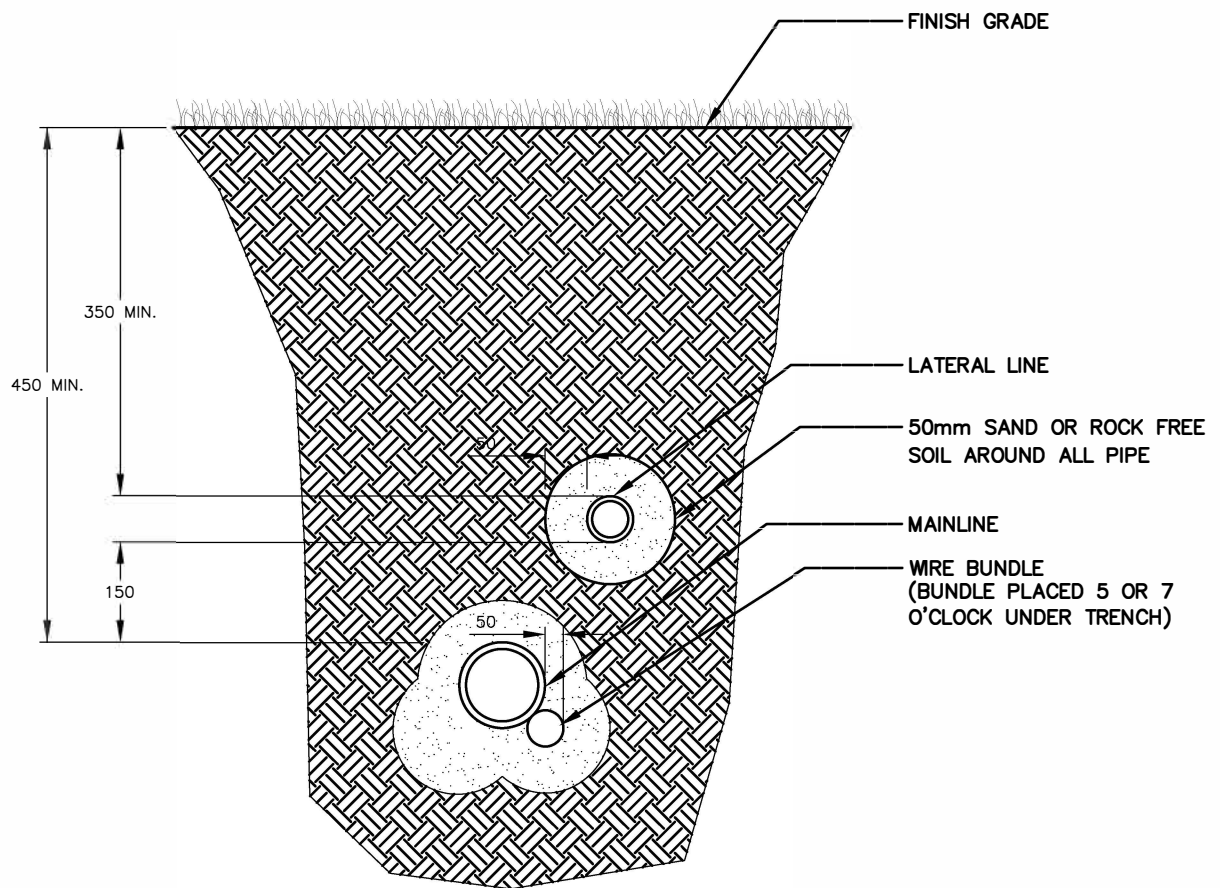
⑪ CAP



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
THRUST BLOCK LOCATIONS

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	N.T.S.
DATE	07-18-2018
DWG NO	12.7.2



NOTE:  
450mm HORIZONTAL SEPARATION  
BETWEEN MAINLINE AND LATERAL

SECTION



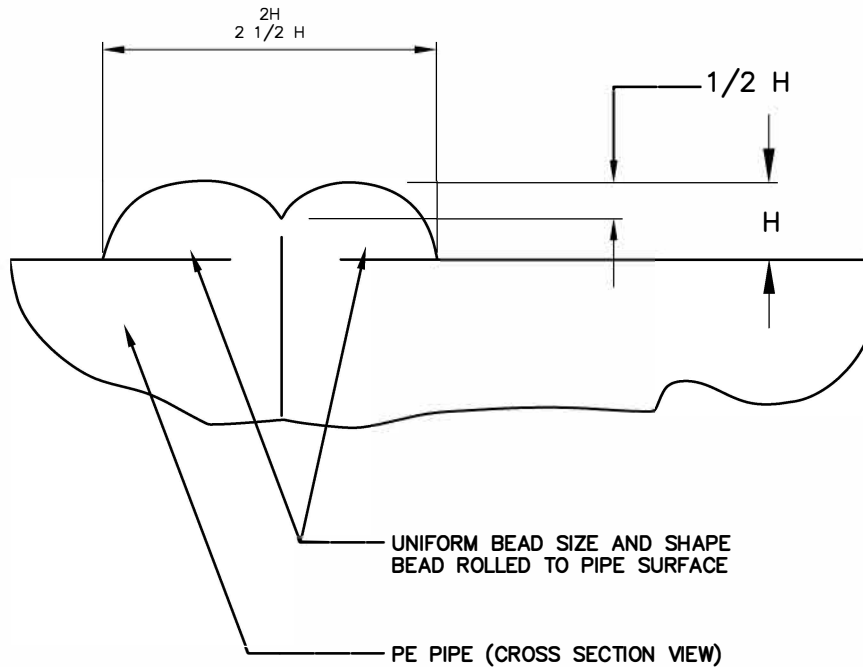
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
PIPE IN TRENCH

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.7.3

HDPE BEAD MELT DETAIL

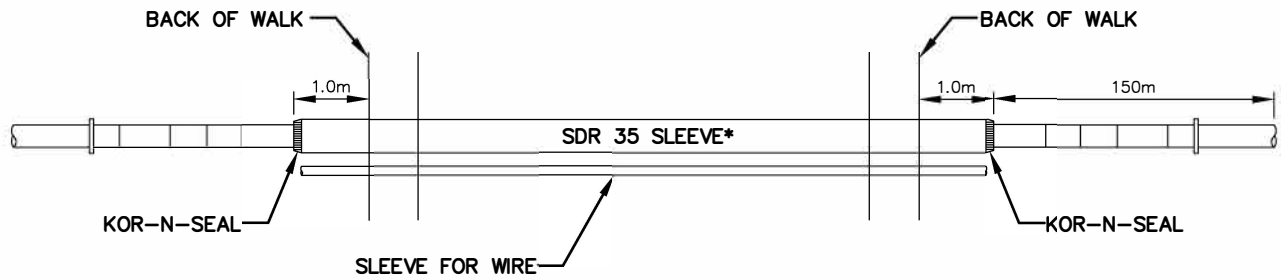
PIPE SIZE		APPROX. MELT BEAD SIZE	
Inches	Millimeters	Inches	Millimeters
<2.37	<60	1/32	1
>2.37 to 3.5	60 to 89	1/16	1.5
>3.5 to 8.62	89 to 219	3/16	5
>8.62 to 12.75	219 to 324	1/4	6
>12.75 to 24	324 to 610	3/8	10
>24 to 36	610 to 900	7/16	11
>36 to 65	900 to 6525	9/16	14



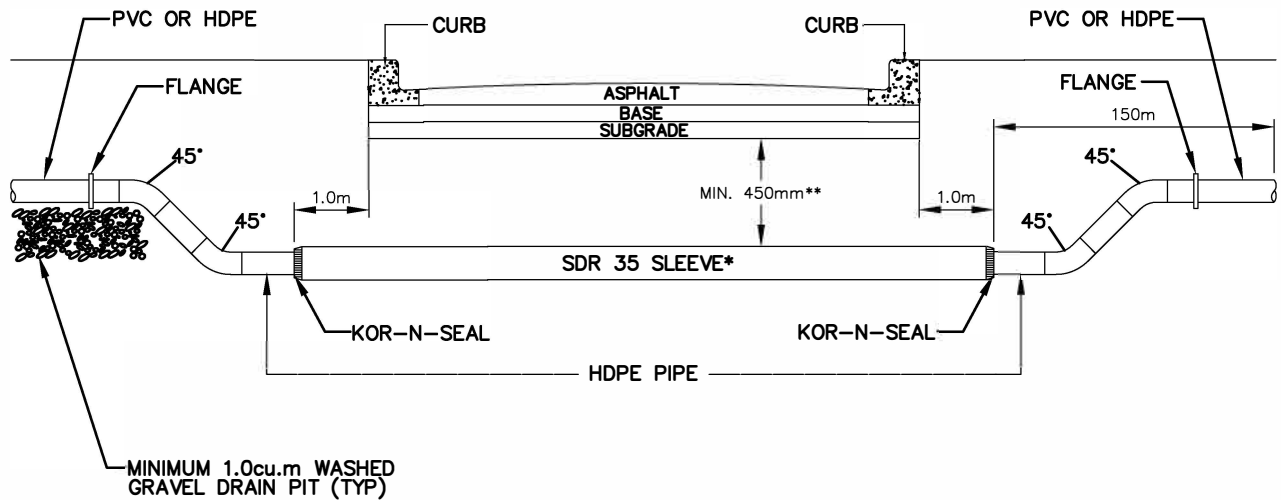
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BEAD MELT DETAIL

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.7.4



PLAN



SECTION

**NOTE:**

\*SEE TABLE 16.1 CASTING PIPE SIZE CHART, CITY OF LETHBRIDGE PARKS PLANNING AND DEVELOPMENT IRRIGATION DESIGN STANDARD, CURRENT EDITION.

\*\*THE TOP OF THE CASTING SHALL BE A MINIMUM 450mm BELOW GRANULAR ROAD STRUCTURE

TRANSITION HDPE TO PVC AT FLANGE

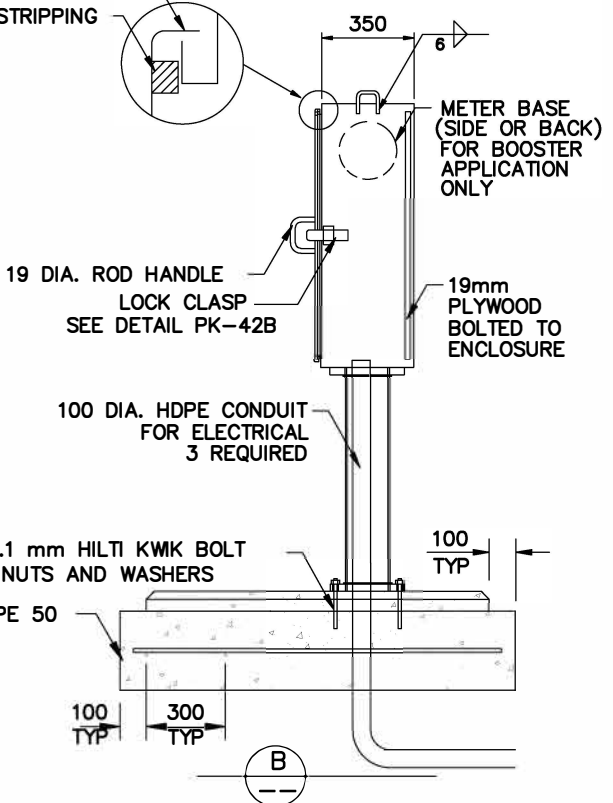
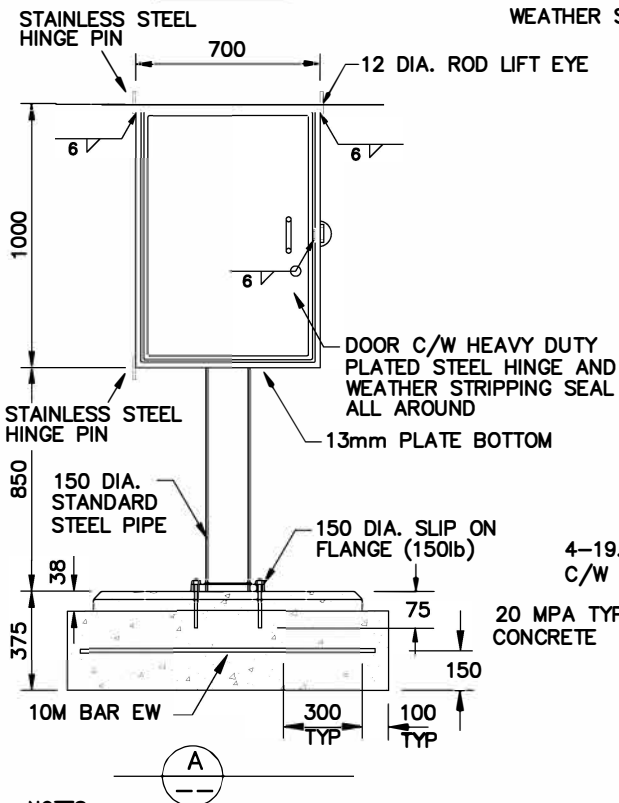
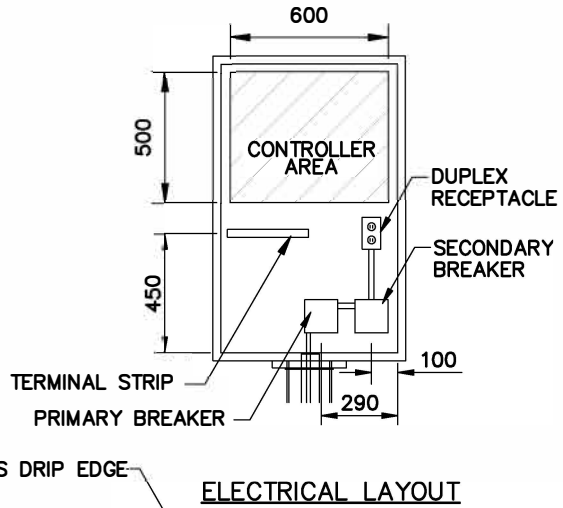
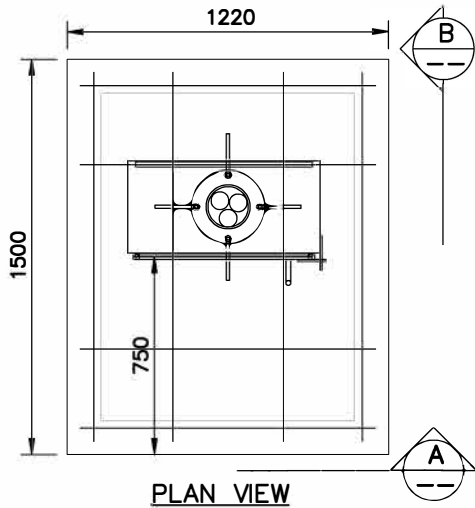
SEE CITY OF LETHBRIDGE CONSTRUCTION SPECIFICATIONS PAVEMENT STRUCTURES STR 18a/b FOR ROAD DETAIL.



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
HDPE ROAD CROSSING

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.7.5



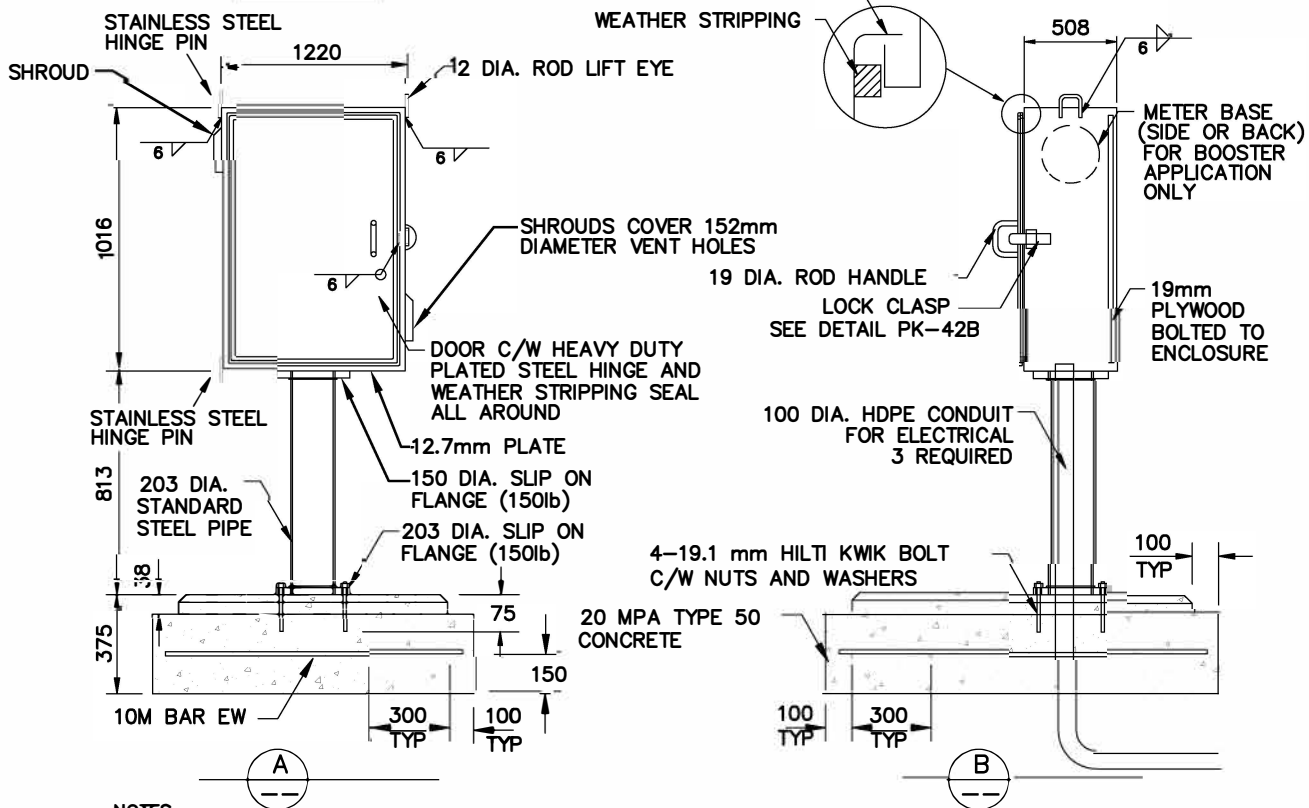
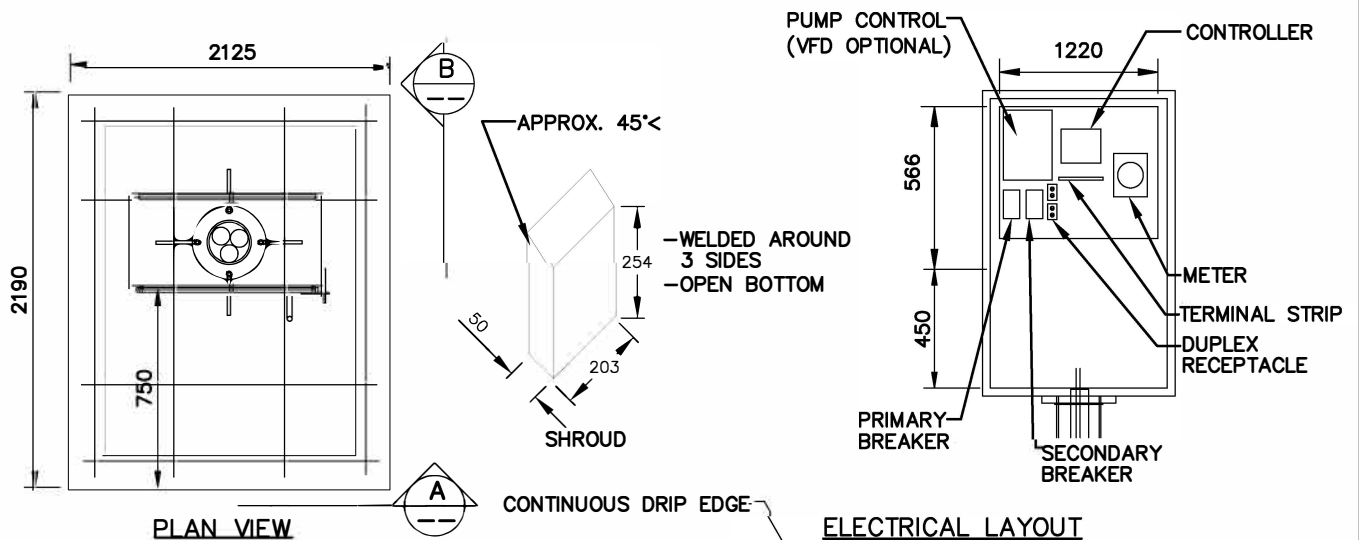
- NOTES**
- DIFFERENT COLOURED CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
  - ORIENTATION OF CONTROLLER ENCLOSURE TO BE CONFIRMED WITH THE CITY
  - ENCLOSURE DOOR AND WALLS TO BE 10 GAUGE STEEL PLATE
  - INSTALL GROUND ROD AND WIRE AS PER SPECIFICATIONS.
  - ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES. MANUFACTURERS NAME TO BE WELDED/BRAZED ON REAR OF UNIT



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONTROLLER ENCLOSURE SMALL

REVISIONS	
1.	2003 REVISIONS
2.	12/03/2014 LATCH DETAIL
3.	07/18/2018 2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	07-2001
DWG NO	12.8.1



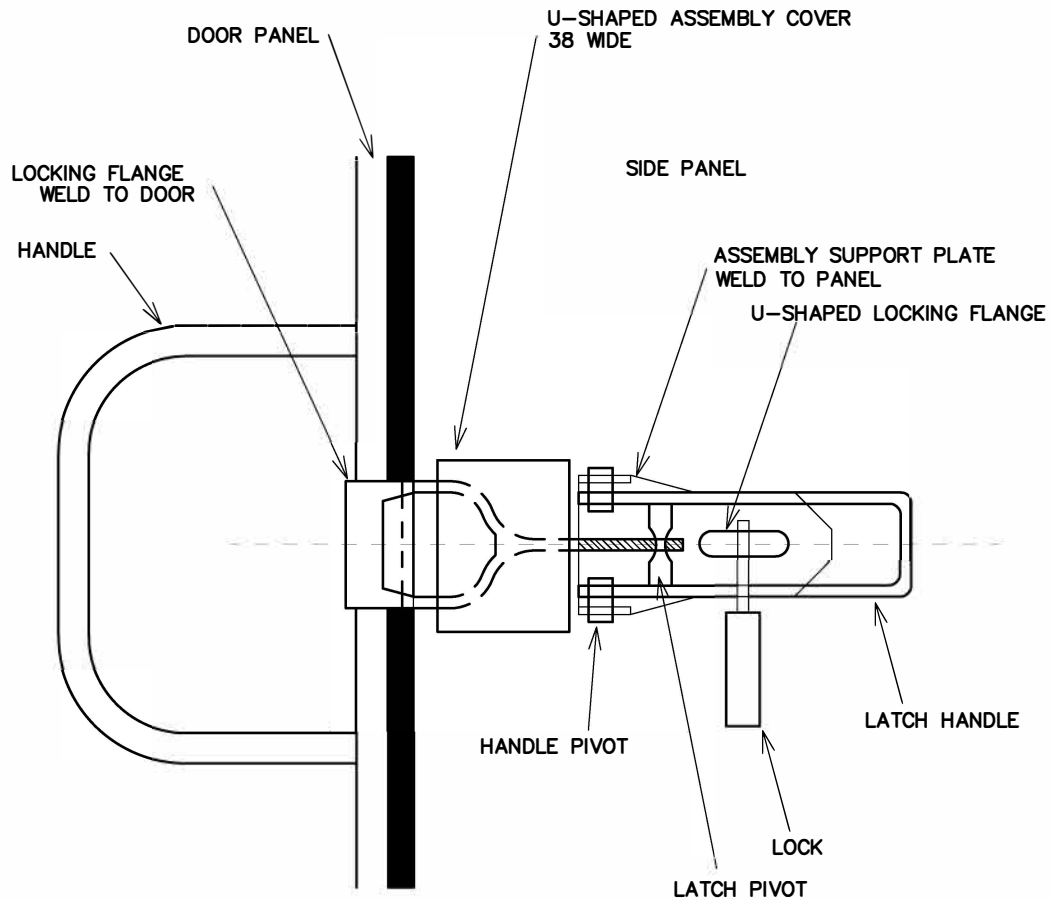
- NOTES**
- DIFFERENT COLOURED CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
  - ORIENTATION OF CONTROLLER ENCLOSURE TO BE CONFIRMED WITH THE CITY
  - ENCLOSURE DOOR AND WALLS TO BE 10 GAUGE STEEL PLATE
  - INSTALL GROUND ROD AND WIRE AS PER SPECIFICATIONS.
- MANUFACTURERS NAME TO BE WELDED/BRAZED ON REAR OF UNIT



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONTROLLER ENCLOSURE LARGE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.8.2



DETAIL

**NOTES**

ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES.

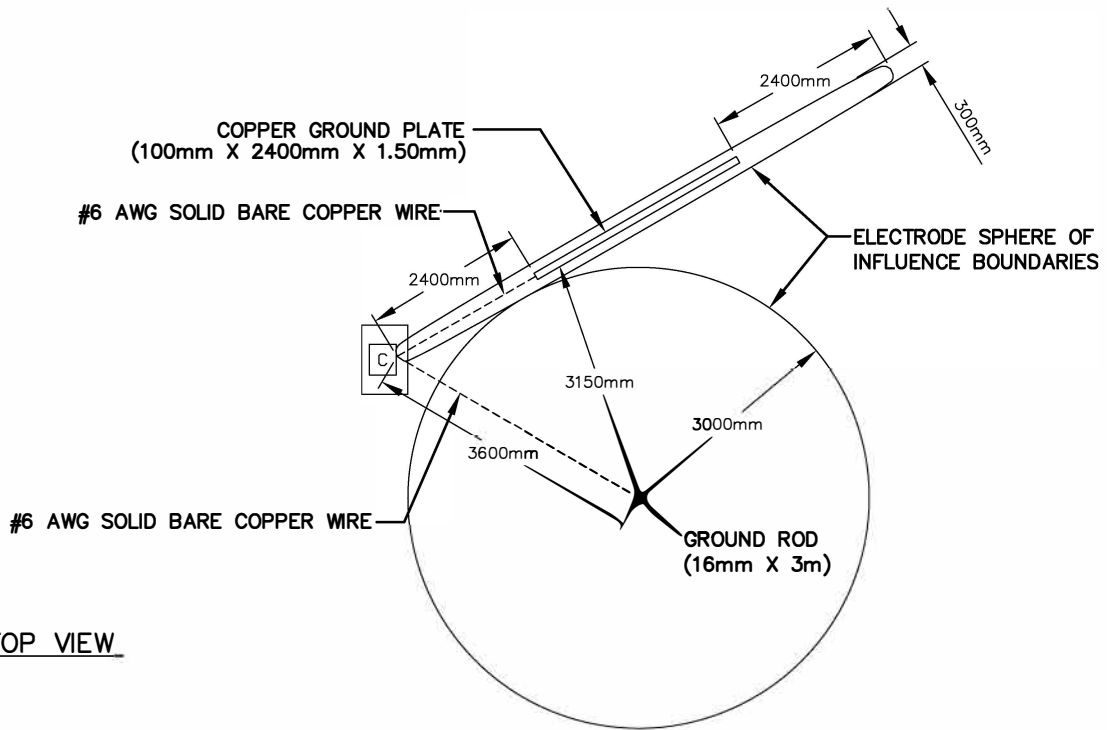


CITY OF  
*Lethbridge*

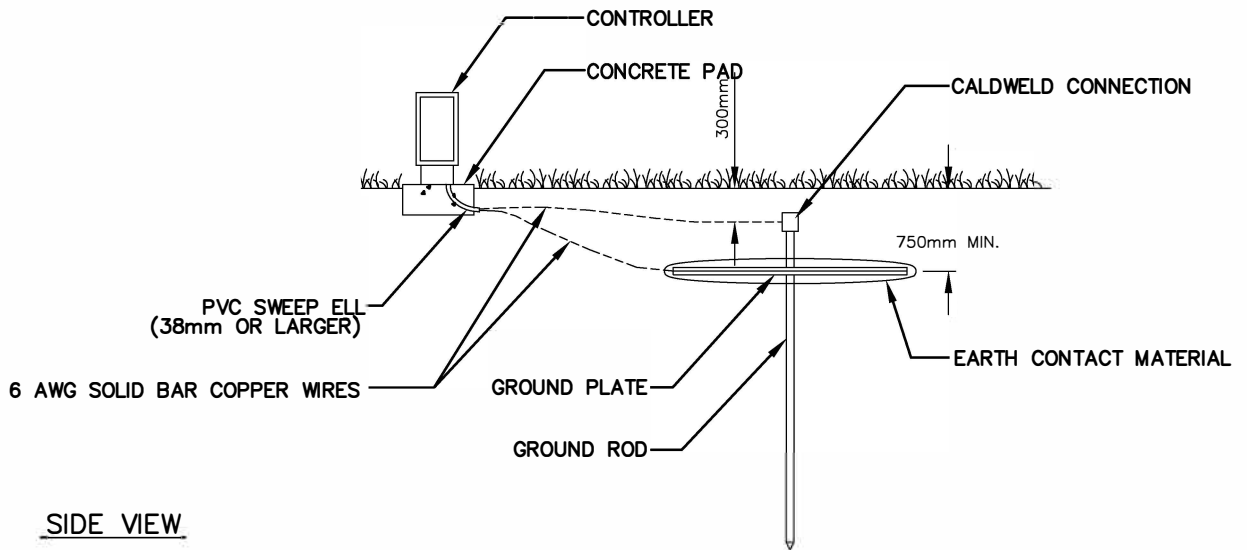
INFRASTRUCTURE SERVICES  
CONTROLLER LATCH DETAIL

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	12-03-2004
DWG NO	12.8.3





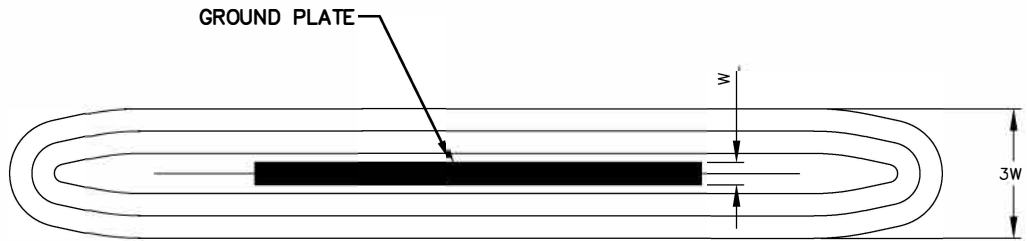
**NOTE:**  
DO NOT INSTALL ANY OTHER WIRES OR  
CABLE WITHIN THE SPHERE OF INFLUENCE



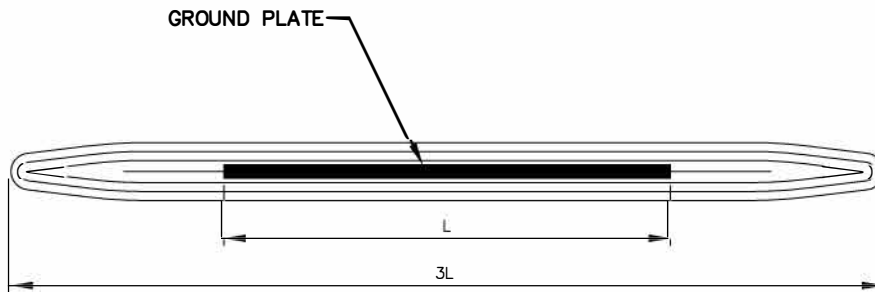
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
CONTROLLER GROUNDING

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.8.4



TOP VIEW



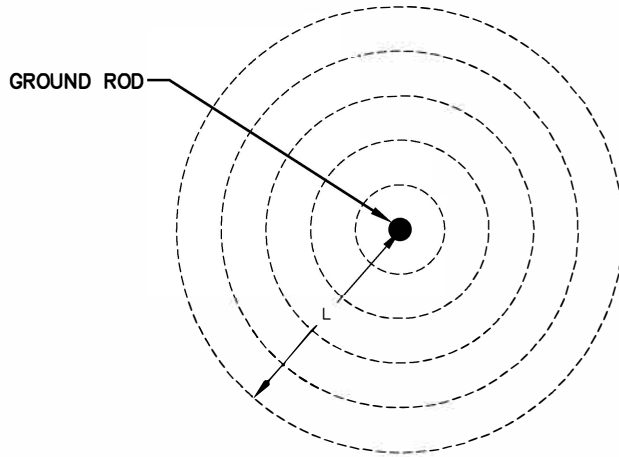
SIDE VIEW



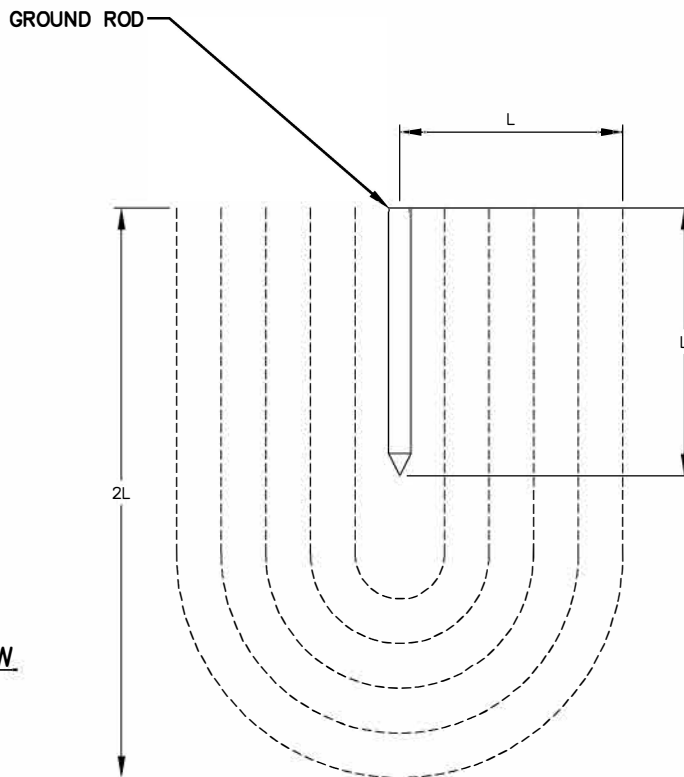
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
GROUND PLATE SPHERE OF INFLUENCE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.8.5



TOP VIEW



SIDE VIEW

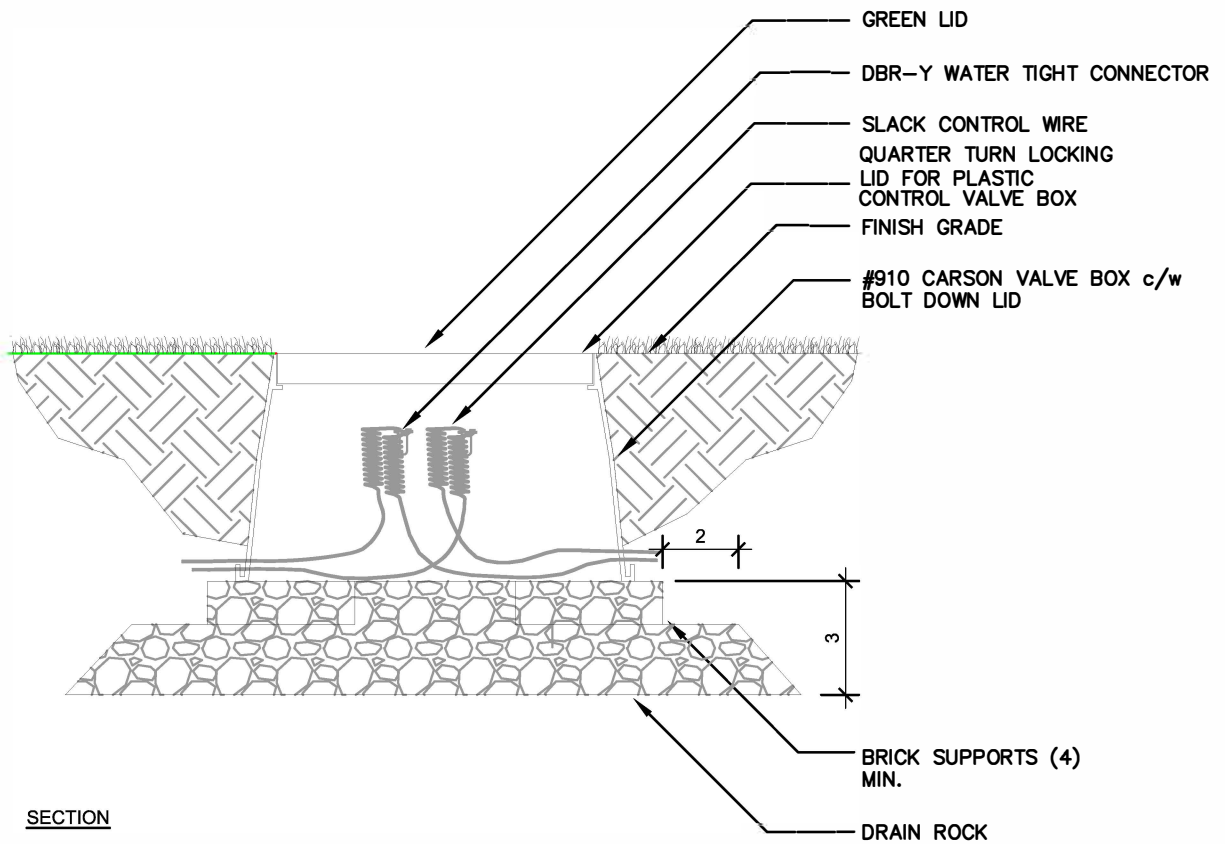


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
GROUND ROD SPHERE OF INFLUENCE

REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.8.6

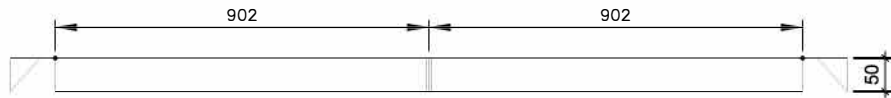
**NOTE:**  
ENSURE REQUIRED WIRE DEPTHS ARE OBSERVED.



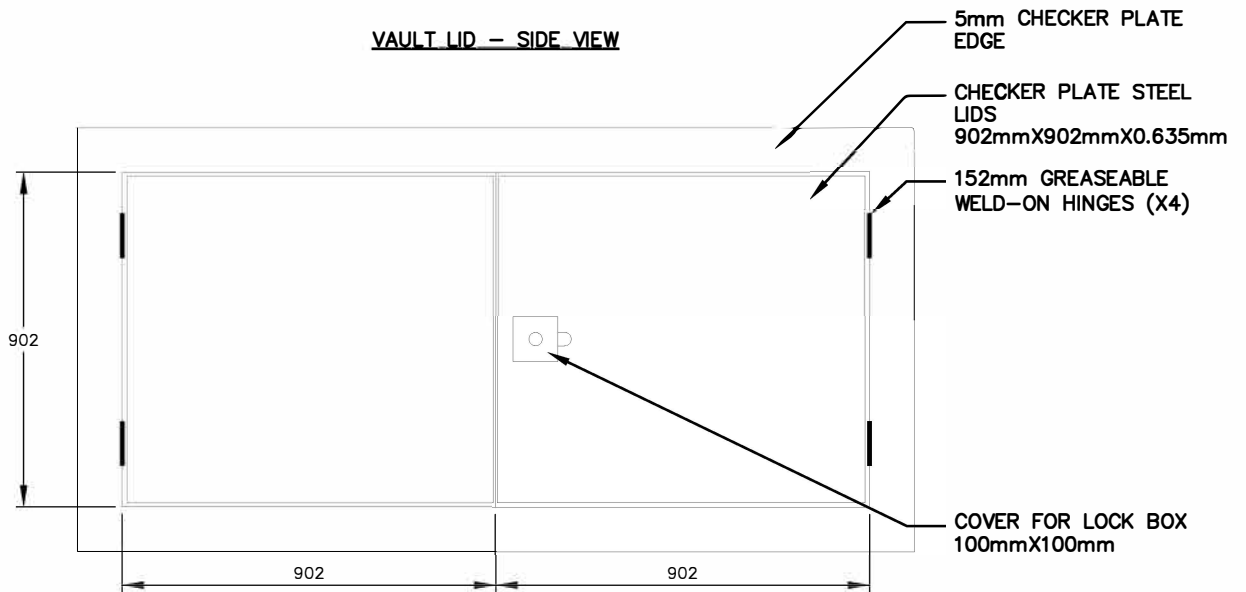
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WIRE SPLICE BOX

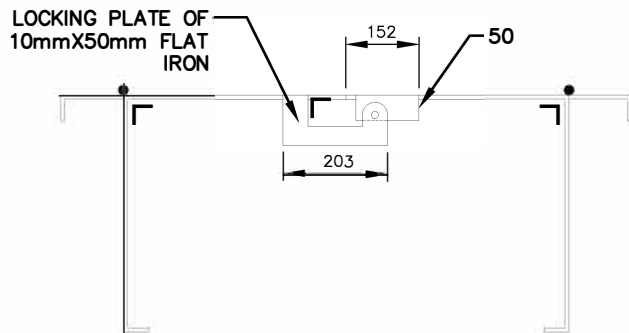
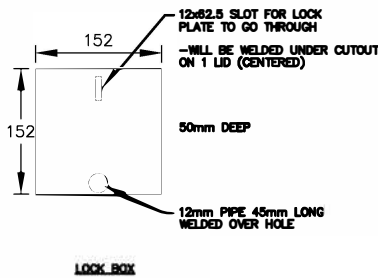
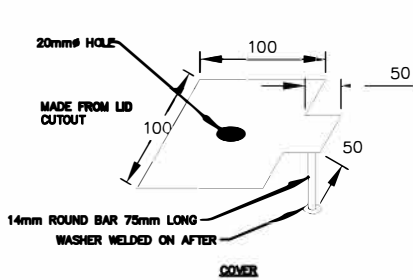
REVISIONS	
1. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.8.7



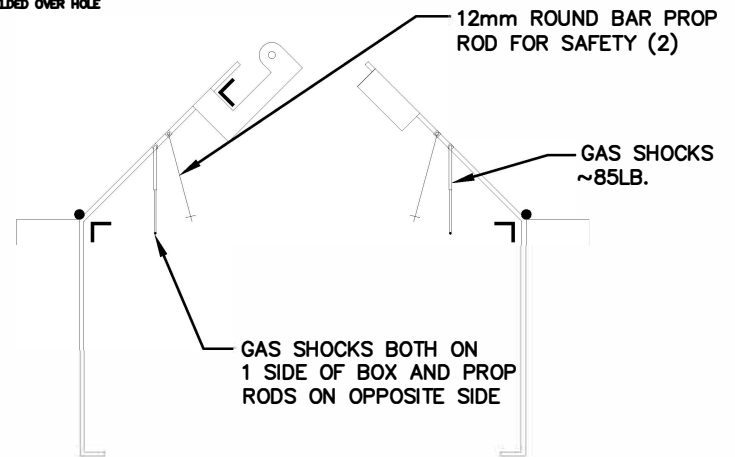
**VAULT LID – SIDE VIEW**



**VAULT LID – TOP VIEW**



**CROSS SECTION – SIDE WHEN CLOSED**



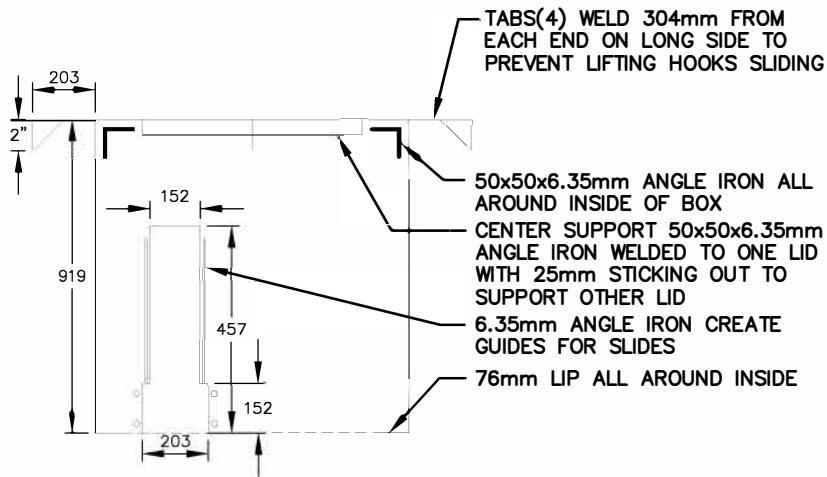
**CROSS SECTION – SIDE WHEN OPENED**



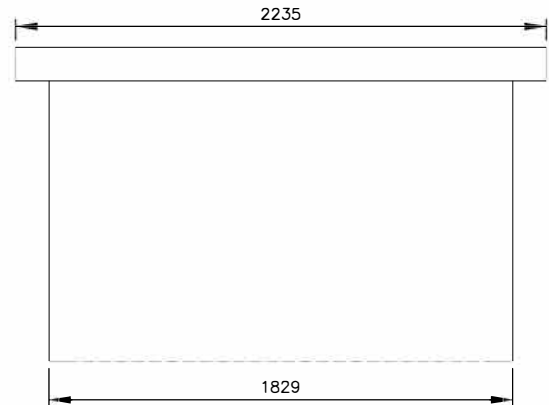
CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
 WATER SERVICE UNDERGROUND VAULT LID

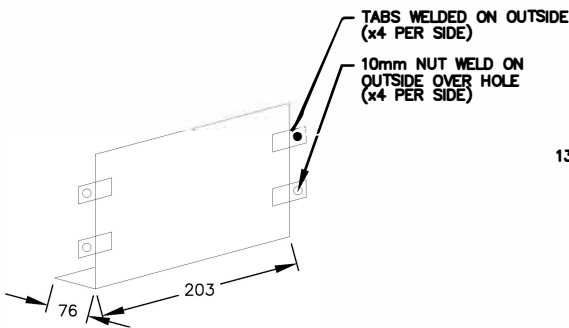
REVISIONS	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 01/02/18	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.9.1



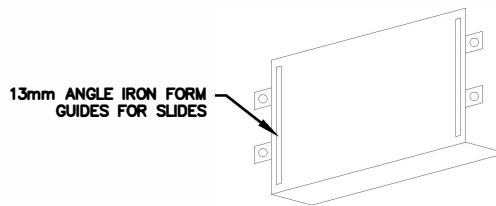
**CROSS SECTION - END**



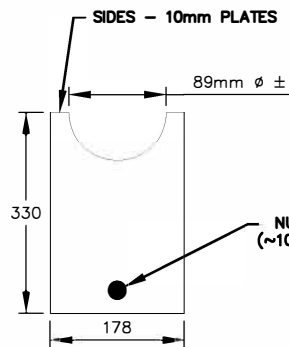
**CROSS SECTION - SIDE**



**REMOVABLE BOTTOM - OUTSIDE VIEW**

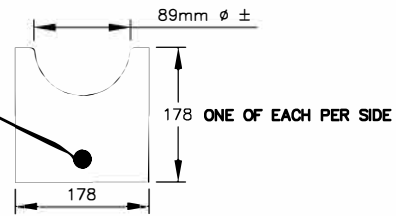


**REMOVABLE BOTTOM - INSIDE VIEW**



**UPPER SIDE**

PUTTING A BOLT THROUGH THE NUT ALLOWS SLIDES TO BE FASTENED IN PLACE



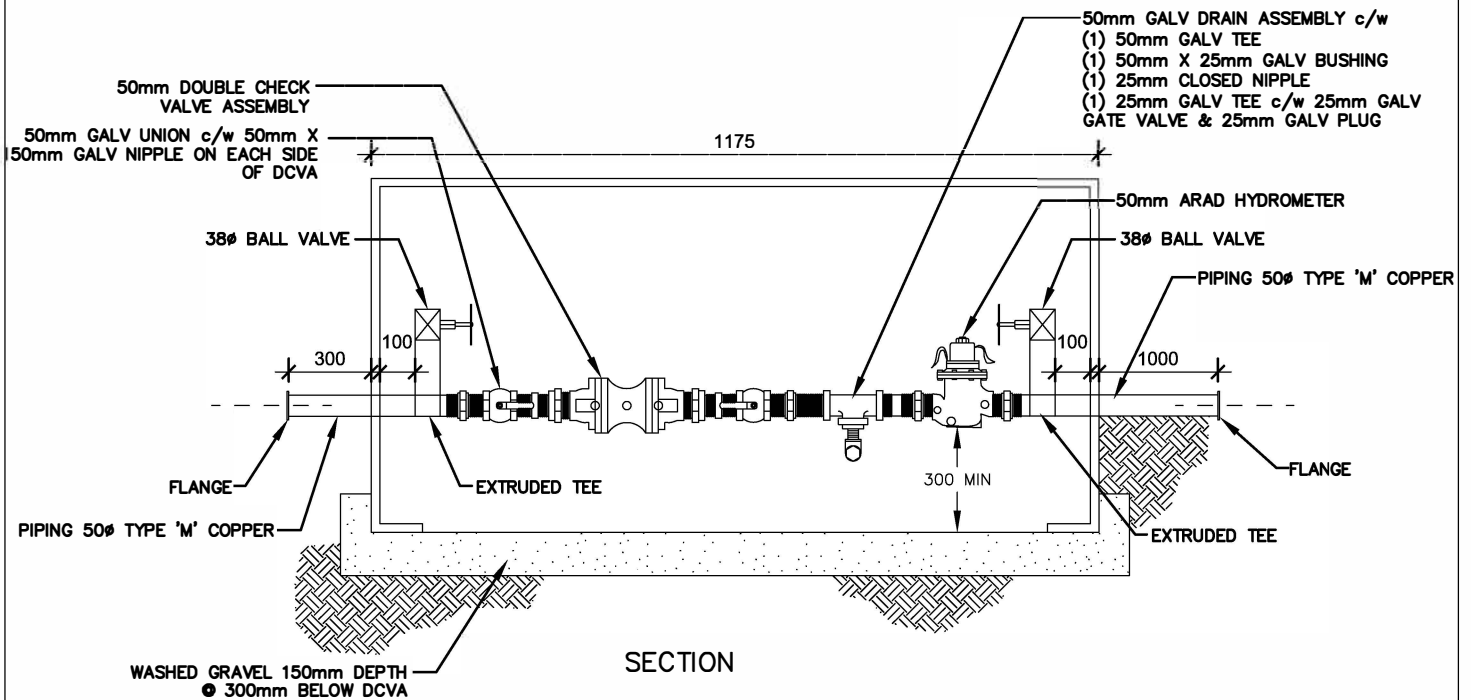
**LOWER SIDE**



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WATER SERVICE UNDERGROUND VAULT BODY

REVISIONS	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 01/02/18	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.9.2



**NOTE**

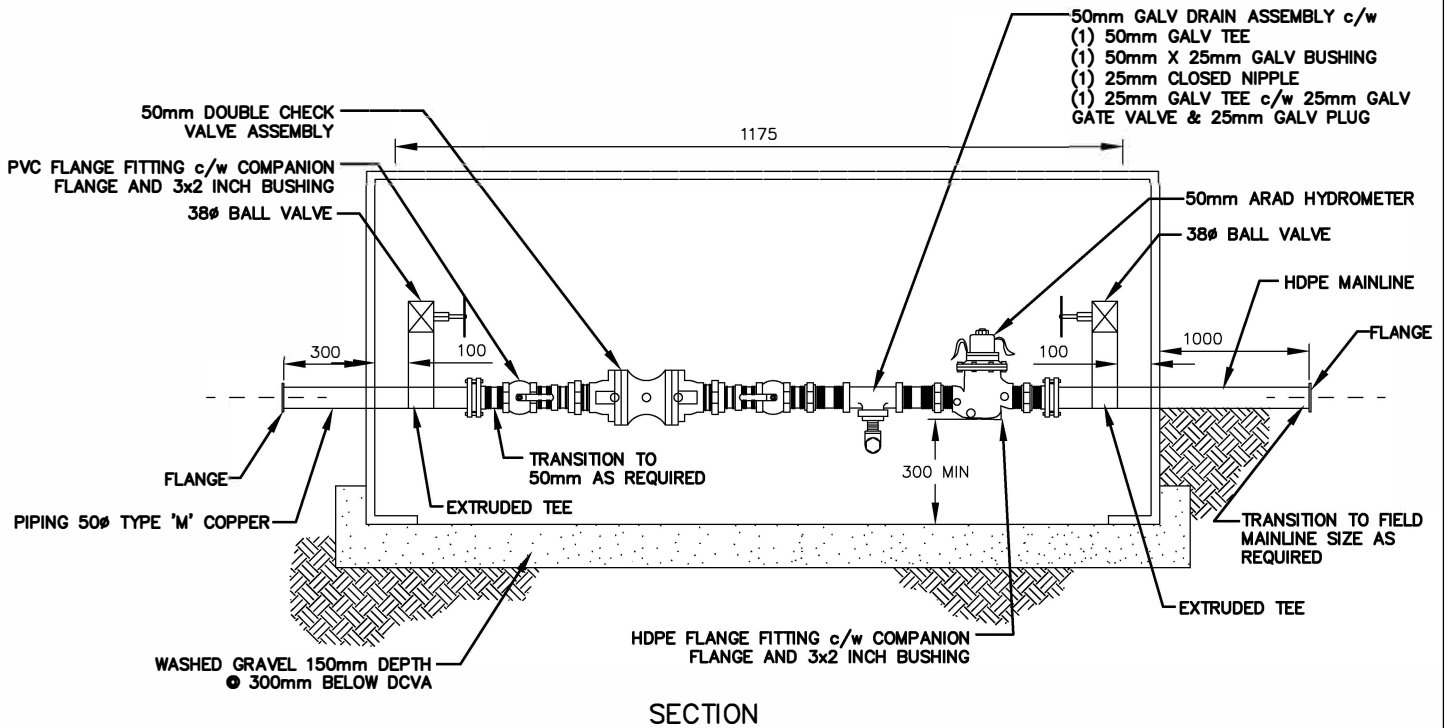
- ALL PIPING & FITTINGS SHALL BE COPPER & GALV FROM 'G' TO 'G'
- HYDROMETER CONTROL WIRES (5) - 14 AWG - (5) DIFFERENT COLORS
- ALL PLUMBING TO BE MINIMUM 300mm CLEARANCE FROM WALLS OF VAULT AND 300mm FROM FLOOR
- DCVA TEST PORTS REQUIRE PROTECTOR CAPS



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WATER SERVICE 50/75 PVC c/w  
HYDROMETER

REVISIONS	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 01/02/18	2018 REVISIONS
DRAWN	
	ION
SCALE	
	NTS
DATE	
	01-02-2018
DWG NO	
	12.9.3



SECTION

NOTE

- ALL PIPING & FITTINGS SHALL BE COPPER & GALV FROM 'G' TO 'G'
- HYDROMETER CONTROL WIRES (5) - 14 AWG - (5) DIFFERENT COLORS
- ALL PLUMBING TO BE MINIMUM 300mm CLEARANCE FROM WALLS OF VAULT AND 300mm FROM FLOOR
- DCVA TEST PORTS REQUIRE PROTECTOR CAPS

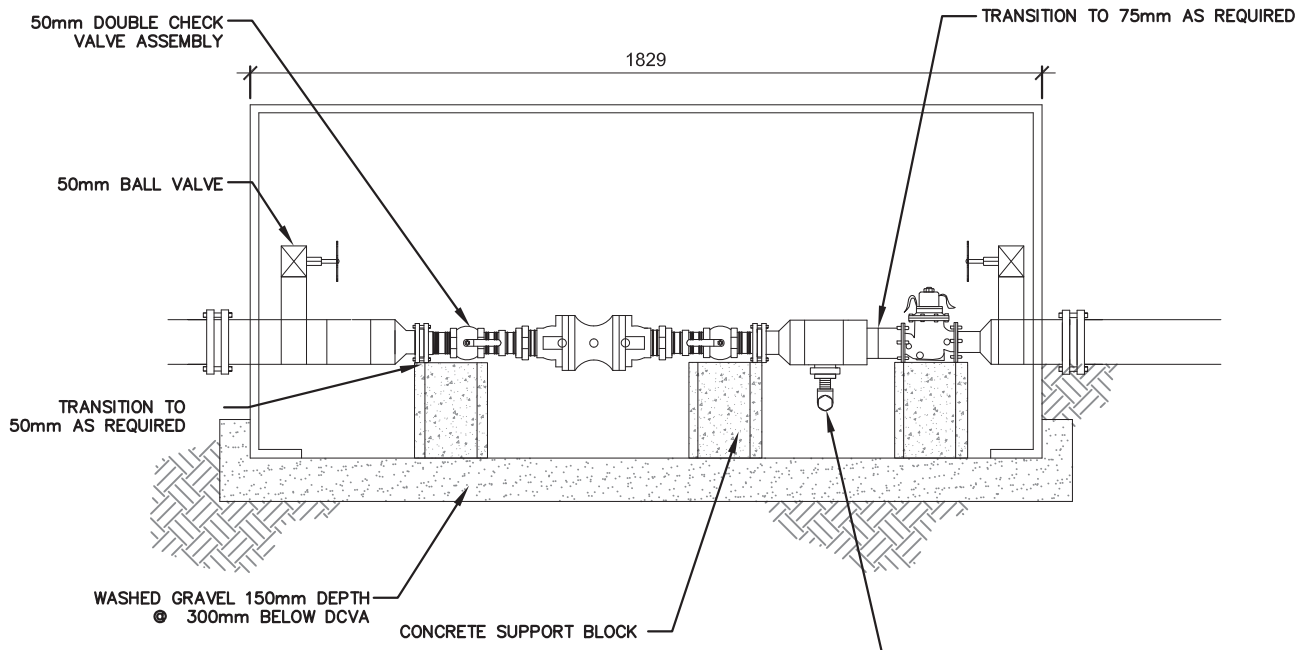
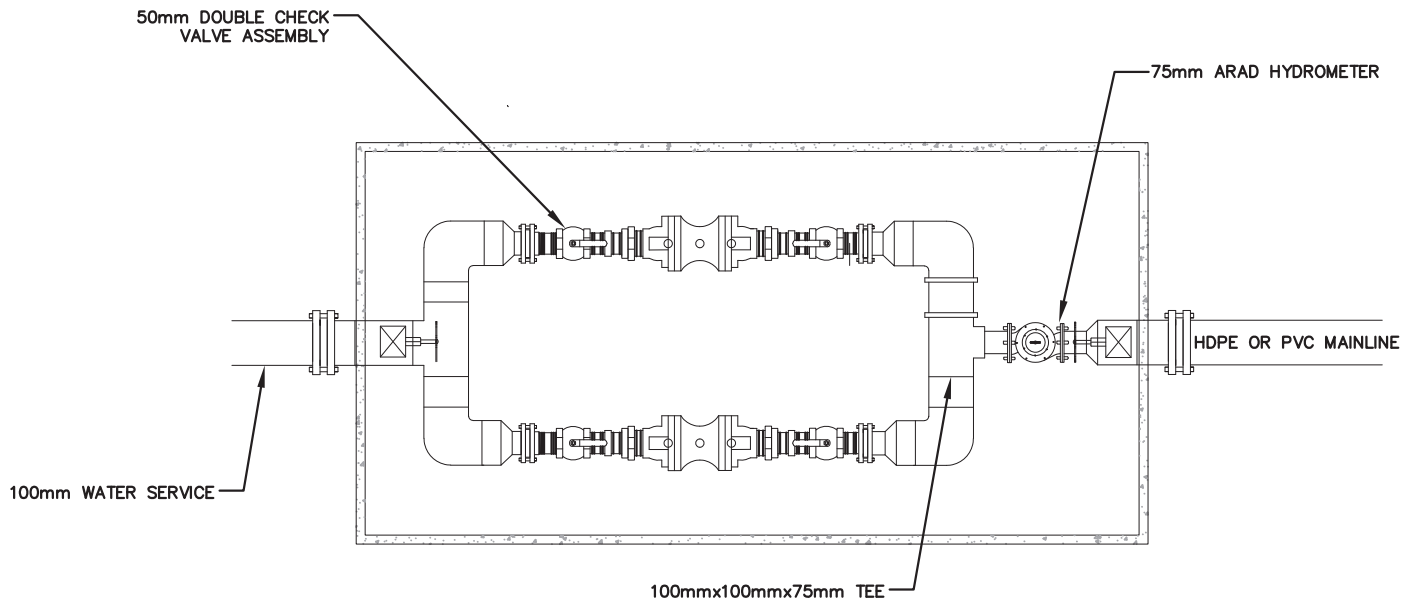


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WATER SERVICE 50/75mm HDPE c/w  
HYDROMETER

REVISIONS	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 01/02/18	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.9.4





SECTION

NOTE

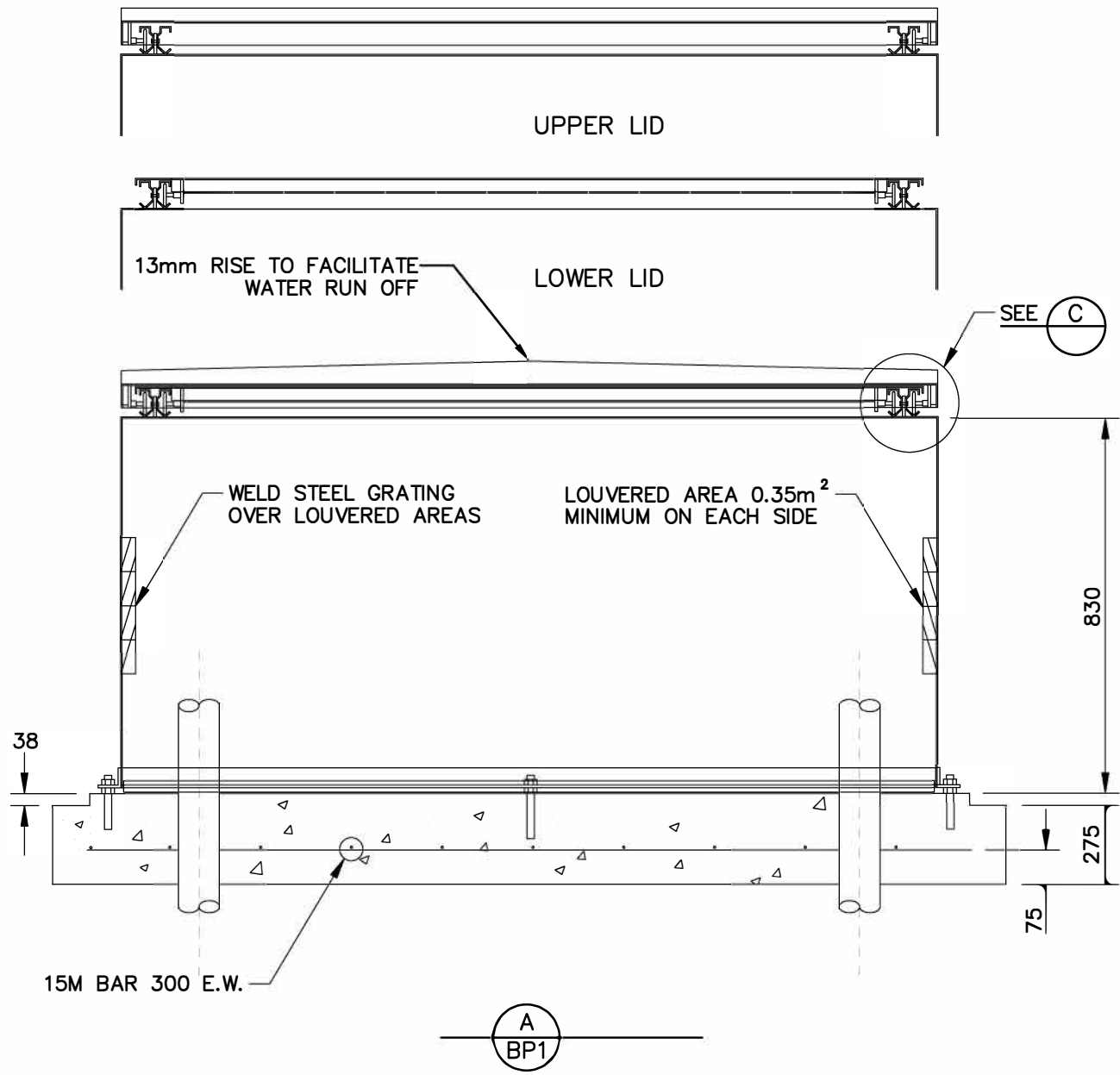
- ALL PIPING & FITTINGS SHALL BE sch 40 epoxy coated welded
- HYDROMETER CONTROL WIRES (5) - 14 AWG - (5) DIFFERENT COLORS
- ALL PLUMBING TO BE MINIMUM 300mm CLEARANCE FROM WALLS OF VAULT AND 300mm FROM FLOOR
- DCVA TEST PORTS REQUIRE PROTECTOR CAPS



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
WATER SERVICE 100mm

REVISIONS	
1. 11/08/01	350 DEPTH LATERAL PIPE
2. 01/08/03	2003 REVISIONS
3. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	24-01-2018
DWG NO	12.9.5



**NOTES**

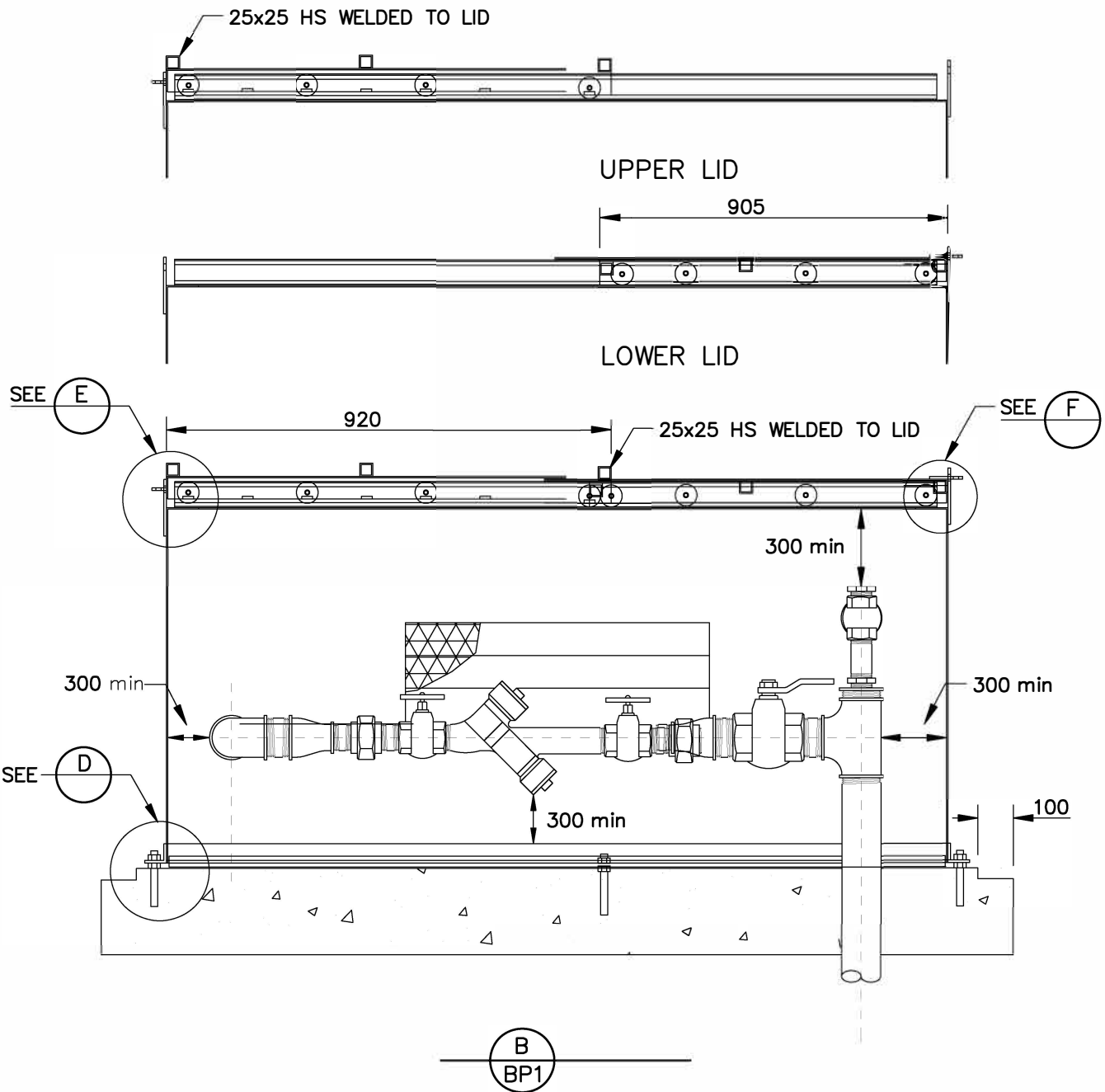
- DIFFERENT COLOURED CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
- ORIENTATION OF BOOSTER PUMP STATION TO BE CONFIRMED WITH THE ENGINEER
- DOOR AND WALLS TO BE 10 GAUGE STEEL PLATE
- INSTALL GROUND ROD AND WIRE AS PER SPECIFICATIONS.
- ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS
- ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES
- MANUFACTURERS NAME TO BE WELDED/BRAZED ON OUTSIDE OF ONE WALL



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOOSTER PUMP STATION SECTION

REVISIONS	
1. 01-07-2003	PAD BOLTS & 38 LIP
2. 11-29-2004	DIFFERENT WIRE COLOURS
3. 01-02-2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	01-02-2018
DWG NO	12.10.1



**NOTES**

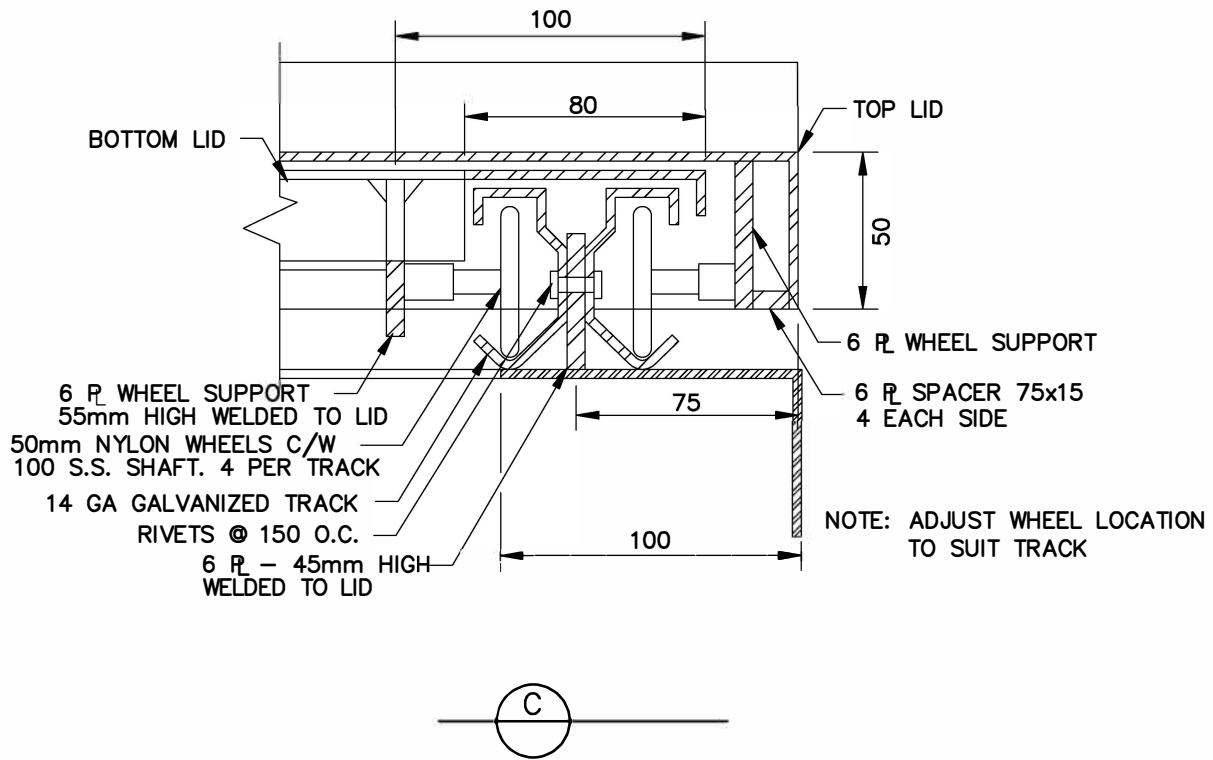
- DIFFERENT COLOURED CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
- ORIENTATION OF BOOSTER PUMP STATION TO BE CONFIRMED WITH THE ENGINEER
- DOOR AND WALLS TO BE 10 GAUGE STEEL PLATE
- INSTALL GROUND ROD AND WIRE AS PER SPECIFICATIONS.
- ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS
- ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOOSTER PUMP STATION SECTION

REVISIONS	
1. 01-07-2003	URETHANE ALKYD GLOSS PAINT
2. 11-29-2004	DIFFERENT WIRE COLOURS
3. 07-18-2018	2018 REVISIONS
DRAWN	
	ION
SCALE	
	NTS
DATE	
	01-02-2018
DWG NO	
	12.10.2



**NOTES**

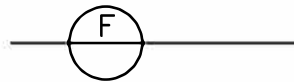
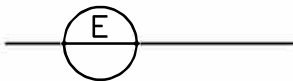
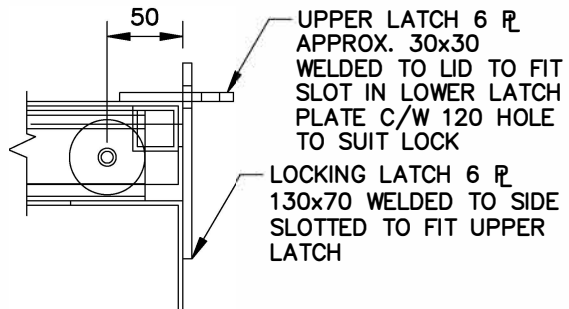
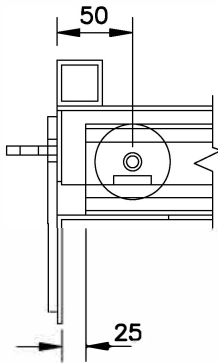
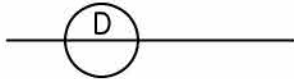
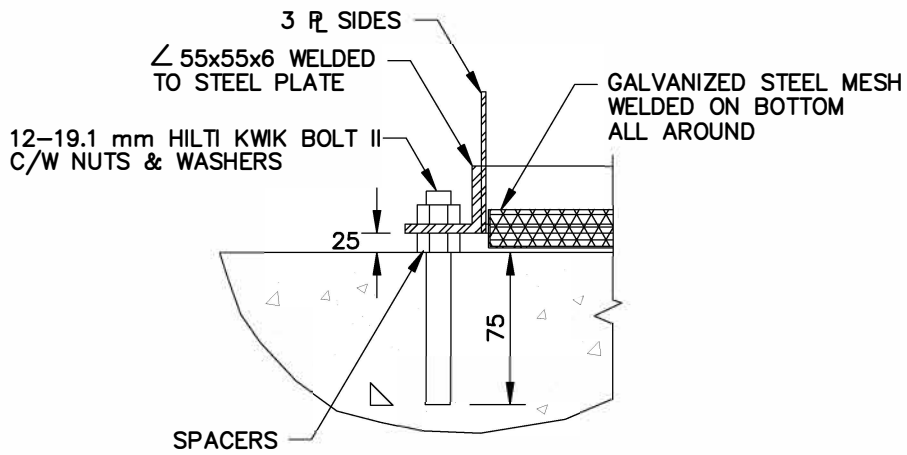
- CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
- ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOOSTER PUMP STATION DETAILS

REVISIONS	
1. 01/07/03	URETHANE ALKYD GLOSS PAINT
2. 07/18/2018	2018 REVISIONS
DRAWN	
	ION
SCALE	
	NTS
DATE	
	07-18-2018
DWG NO	
	12.10.3



**NOTES**

- CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
- ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES

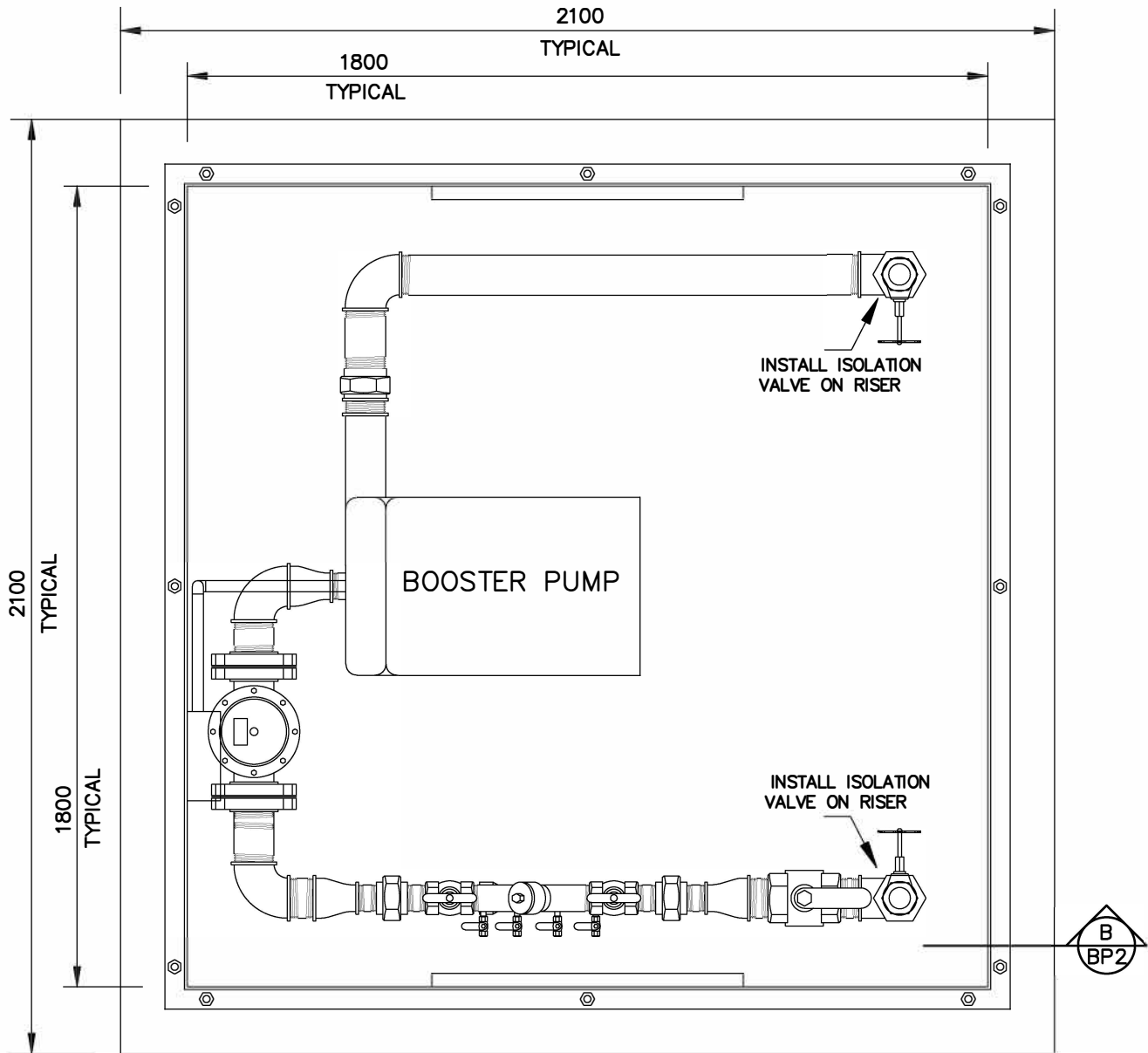


CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOOSTER PUMP STATION DETAILS

REVISIONS	
1. 01/07/03	2003 REVISIONS
2. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	07-18-2018
DWG NO	12.10.4

- NOTES:**  
 1. INSTALL ALL PIPING WITH A MINIMUM CLEARANCE OF 300 mm FROM SIDE OF ENCLOSURE AND FLOOR



**INTERIOR PLAN**

**NOTES**

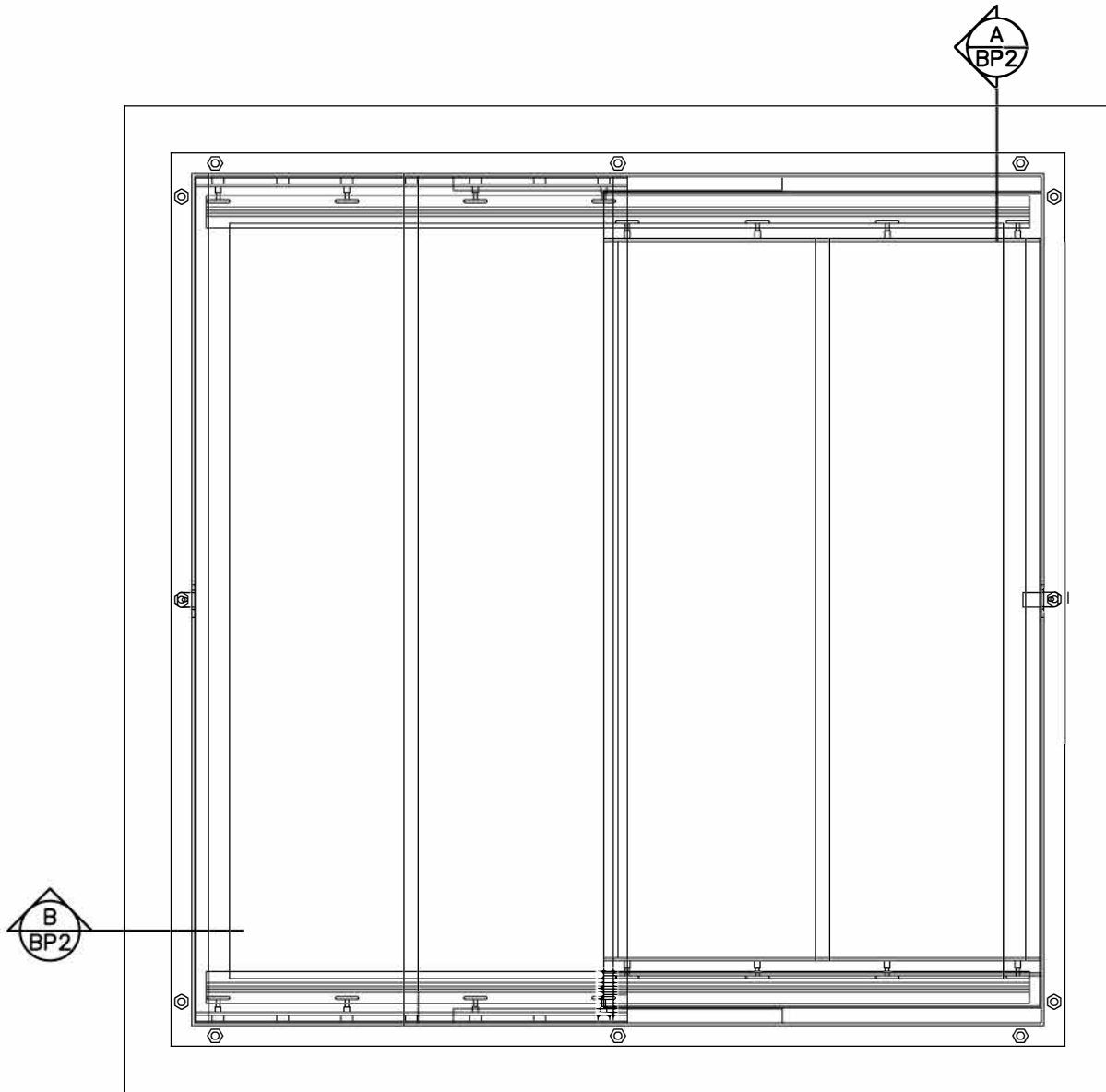
- DIFFERENT COLOURED CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
- ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES



CITY OF  
*Lethbridge*

**INFRASTRUCTURE SERVICES  
 BOOSTER PUMP STATION PLAN**

<b>REVISIONS</b>	
1. 01-07-2003	2003 REVISIONS
2. 11-29-2004	DIFFERENT WIRE COLOURS
3. 07/18/2018	2018 REVISIONS
<b>DRAWN</b>	ION
<b>SCALE</b>	NTS
<b>DATE</b>	07-18-2018
<b>DWG NO</b>	12.10.5



EXTERIOR PLAN

**NOTES**

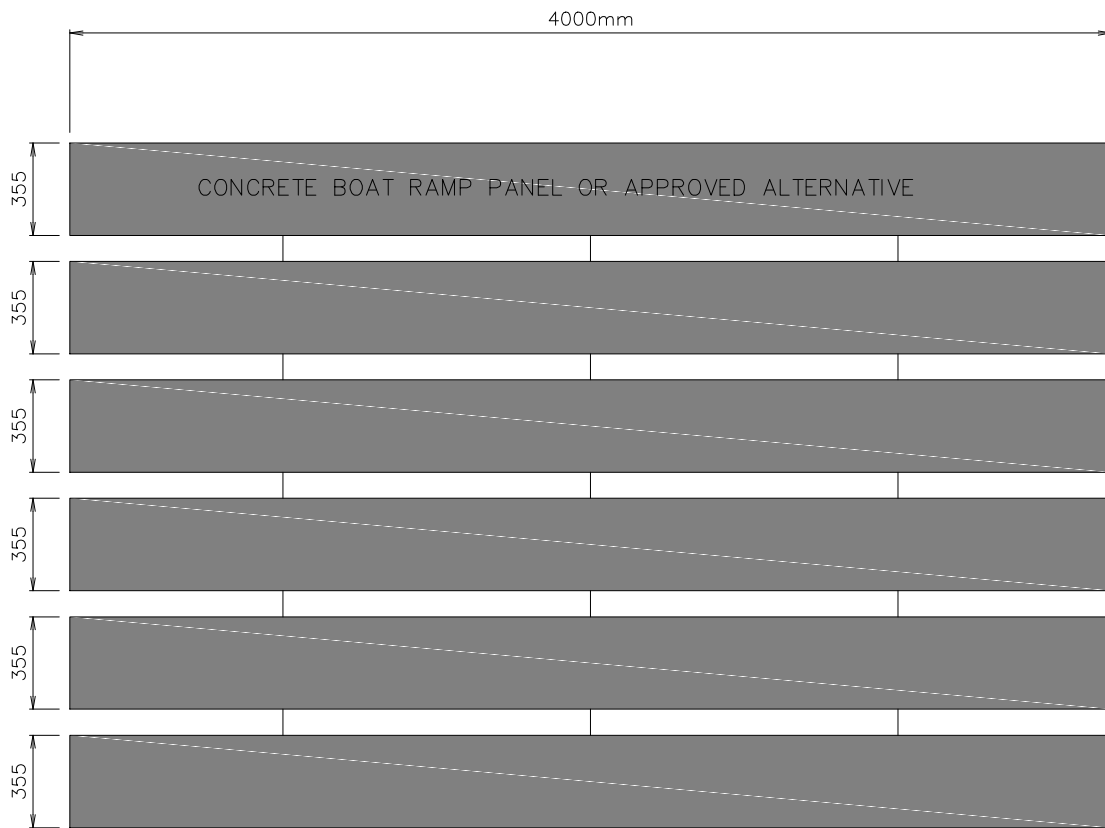
- CONTROL WIRES (5)-14 AWG WIRES BETWEEN THE FLOW METER AND THE CONTROLLER ENCLOSURE
- ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH. PAINT ENCLOSURE AND PEDESTAL WITH 2 COATS ASA 61 GREY URETHANE ALKYD GLOSS PAINT, INSIDE AND OUTSIDE SURFACES



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOOSTER PUMP STATION PLAN

REVISIONS	
1. 01/07/03	2003 REVISIONS
2. 07/18/2018	2018 REVISIONS
DRAWN	ION
SCALE	NTS
DATE	07-18-2018
DWG NO	12.10.6



PLAN

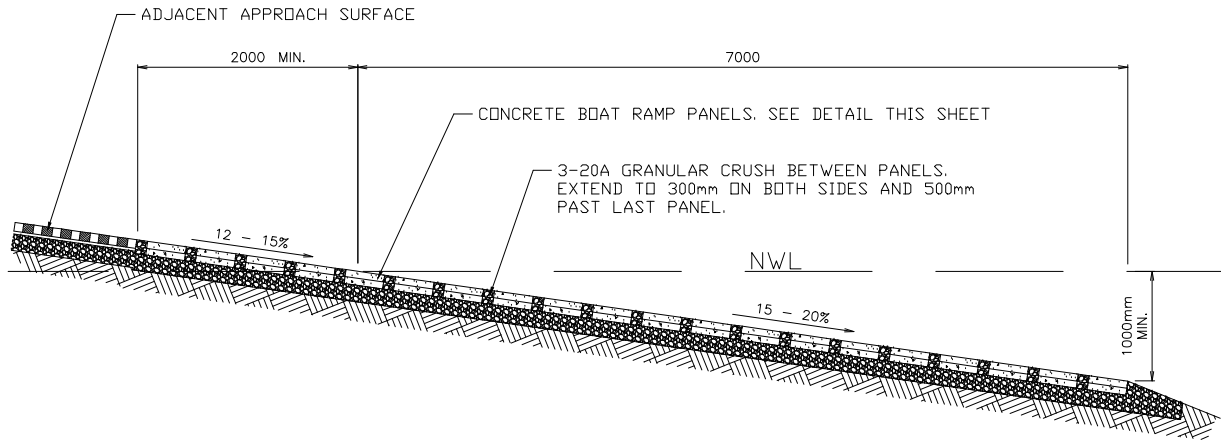


**CITY OF**  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOAT LAUNCH PLAN

REVISIONS	
1.02-16-2018	UPDATE THE DESCRIPTION
DRAWN	ISL
SCALE	NOT TO SCALE
DATE	02-16-2018
DWG NO	13.1

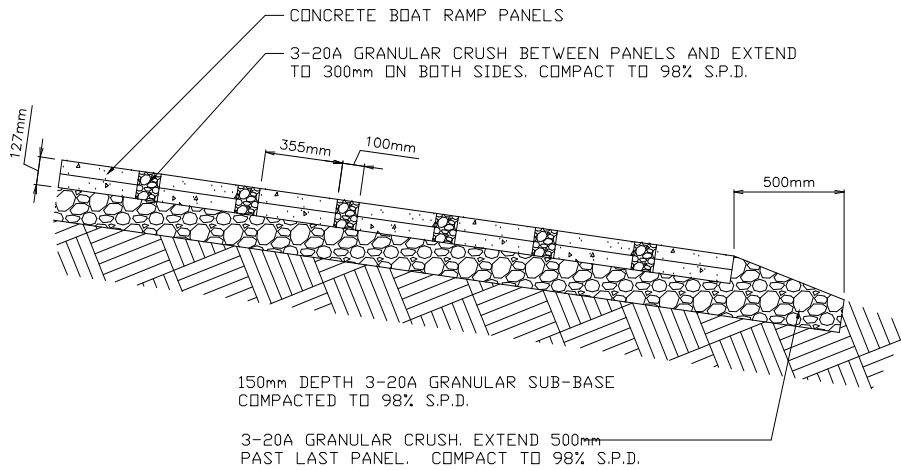




SECTION

NOTE:

PANELS TO BE LAFARGE CONCRETE BOAT RAMP 9337 OR APPROVED EQUAL.



CONCRETE PANEL DETAILS



CITY OF  
*Lethbridge*

INFRASTRUCTURE SERVICES  
BOAT LAUNCH SECTIONS

REVISIONS	
DRAWN	ISL
SCALE	NOT TO SCALE
DATE	12-12-2017
DWG NO	13.2