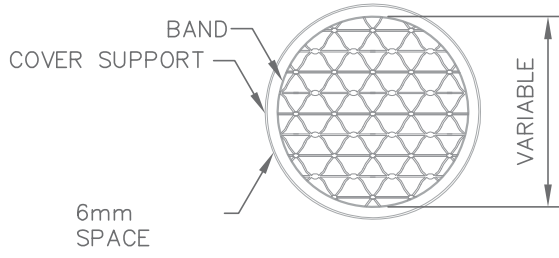


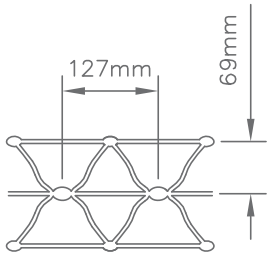
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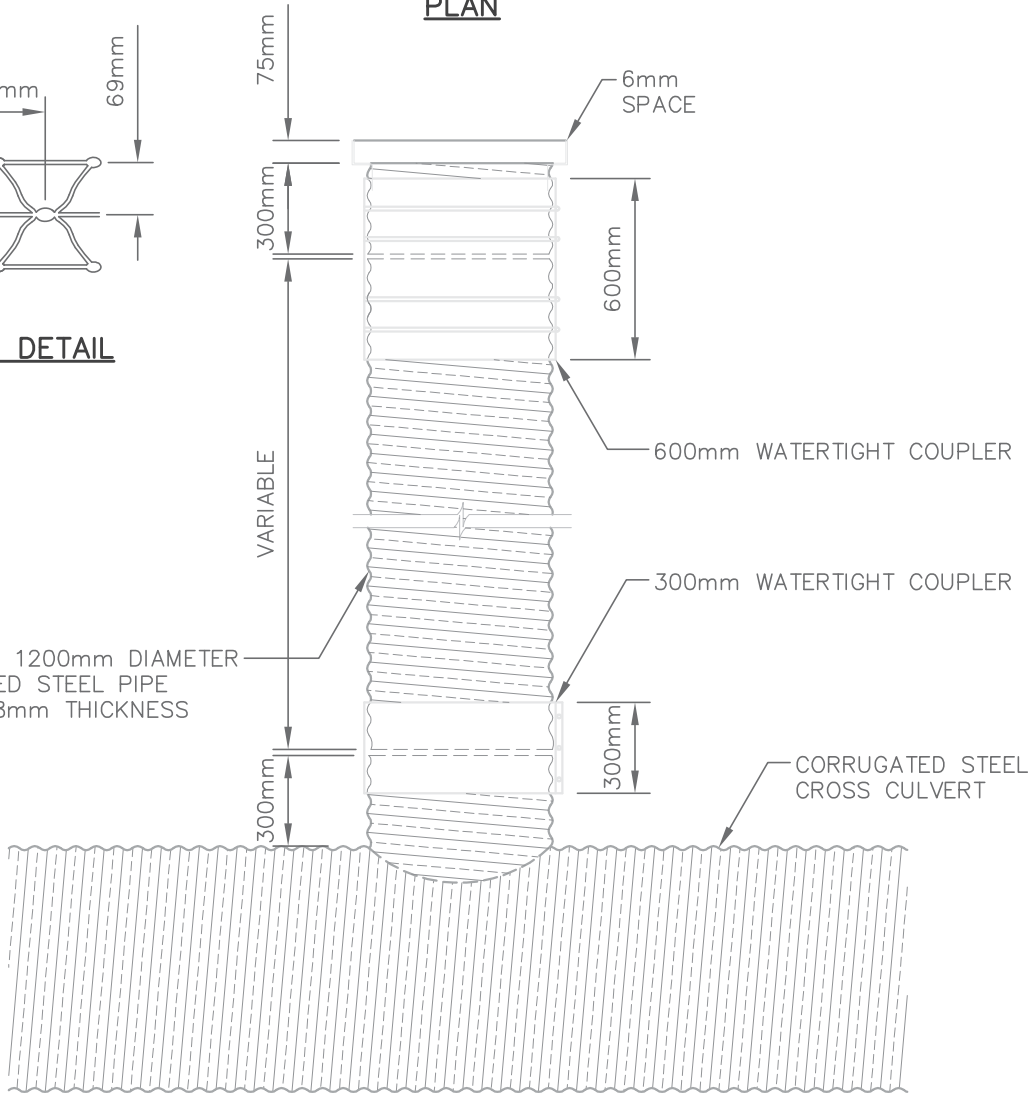


TOP ASSEMBLY COMPLETE WITH BANDED GRATING COVER, COVER SUPPORTS FASTENED TO CORRUGATED STEEL PIPE AND FASTENERS TO HOLD THE COVER

**PLAN**



**GRATING DETAIL**

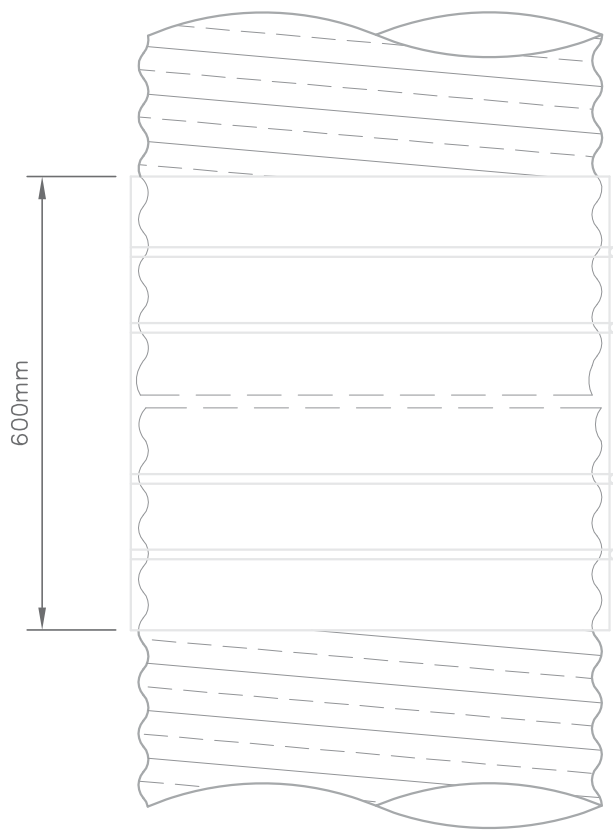


400mm TO 1200mm DIAMETER CORRUGATED STEEL PIPE 2.0mm-2.8mm THICKNESS

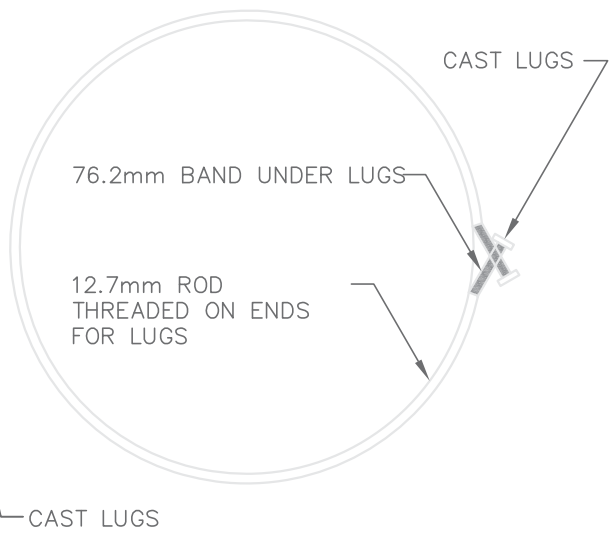
**ELEVATION**

**NOTE:**  
STANDARD DEPTH OF DROP INLET IS 1.5m AND WILL BE MEASURED FROM THE TOP OF THE CROSS PIPE.

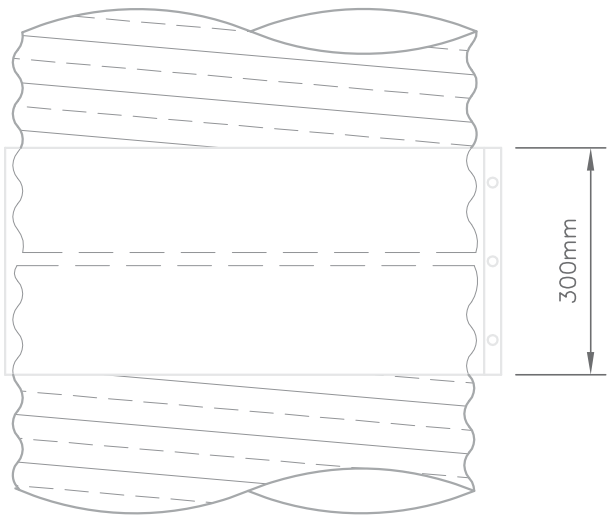
				<b>LACOMBE COUNTY</b>	
				<b>TYPICAL DROP INLET INSTALLATION TO CORRUGATED STEEL CROSS PIPE</b>	
1	0-12-TBD	FOR APPROVAL			
No.	DATE	REVISION			
SCALE: 1:25		DATE: DECEMBER 2010	APPROVED BY:	DWG No: E-1	



**600mm WATERTIGHT COUPLER**



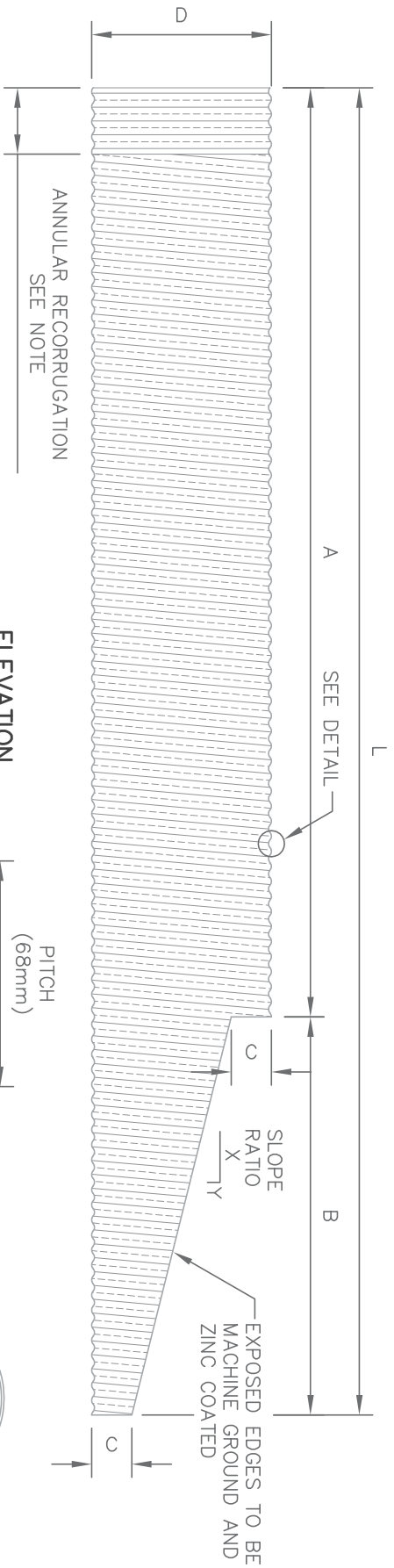
**600mm WATERTIGHT COUPLER SECTION**



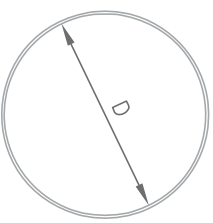
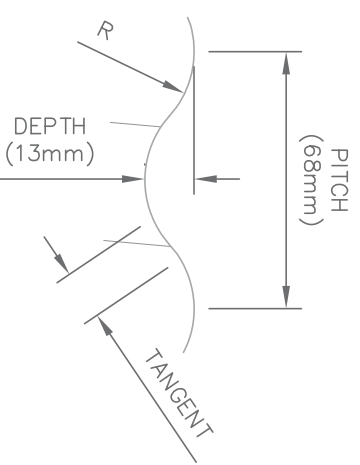
**300mm WATERTIGHT COUPLER**

**NOTE:**  
 COUPLER FASTENING SHALL BE PERFORMED BY DRAWING THE ENDS TOGETHER WITH BOLTS OR WEDGES TO OBTAIN A TIGHT SEAL

				<b>LACOMBE COUNTY</b>	
				<b>TYPICAL DROP INLET WATERTIGHT COUPLER DETAILS</b>	
1	0-12-TBD	FOR APPROVAL			
No.	DATE	REVISION			
SCALE: 1:25		DATE: DECEMBER 2010		APPROVED BY:	DWG No: E-2



INSIDE DIAMETER "D" mm	SLOPE RATIO X:Y	"C" mm	"A" m	"B" m	INVERT LENGTH OF SLOPED END SECTION "L" m
400	4:1	100	5.2	0.800	6.0
500	4:1	125	5.0	1.000	6.0
600	4:1	125	4.6	1.400	6.0
700	4:1	150	4.4	1.600	6.0
800	4:1	175	4.2	1.800	6.0
900	4:1	200	4.0	2.000	6.0
1000	4:1	225	3.8	2.200	6.0
1200	3:1	225	3.75	2.250	6.0
	4:1	275	3.4	2.600	6.0
	3:1	250	3.3	2.700	6.0
1400	4:1	300	2.8	3.200	6.0



**NOTE:**  
 THE HELICALLY CORRUGATED PIPE IS TO HAVE THE PIPE ENDS RECORRUGATED TO PROVIDE ANNULAR CORRUGATIONS FOR THE COUPLING PURPOSES (AS SHOWN). THE MINIMUM LENGTH WITH ANNULAR CORRUGATIONS SHALL BE 300mm FOR DIAMETERS OF 900mm OR LESS AND 600mm FOR A DIAMETER OF GREATER THAN 900mm. THE COUPLER SHALL BE AN ANNULAR CORRUGATED BAND TYPE. THERE SHALL BE A MINIMUM OF 3 BOLTS PER COUPLER FOR DIAMETERS OF 800mm OR GREATER.

No.	DATE	REVISION
1	0-12-TBI	FOR APPROVAL

SCALE: 1:30

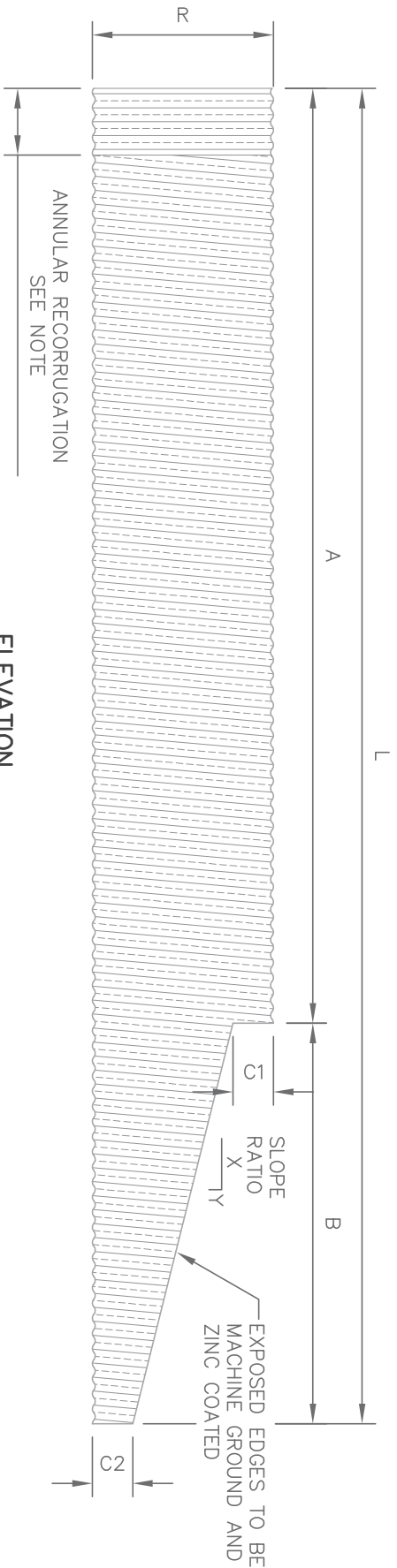
DATE: DECEMBER 2010

APPROVED BY:

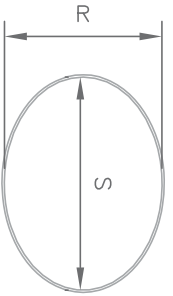
DWG No: E-3



**LACOMBE COUNTY**  
**STANDARD SLOPED END SECTIONS**  
**FOR CORRUGATED METAL PIPE**  
**ROUND CULVERTS**



EQUIVALENT INSIDE DIAMETER mm	SPAN "S" mm	RISE "R" mm	SLOPE RATIO X:Y	"C1" mm	"C2" mm	"A" m	"B" m	INVERT LENGTH OF SLOPED END SECTION "L" m
400	480	340	4:1	70	70	5.200	0.800	6.0
500	560	420	4:1	110	110	5.200	0.800	6.0
600	680	500	4:1	120	120	5.040	0.960	6.0
700	800	580	4:1	130	130	4.720	1.280	6.0
800	910	660	4:1	140	140	4.480	1.520	6.0
900	1030	740	4:1	140	140	4.160	1.840	6.0
1000	1150	820	4:1	190	190	4.240	1.760	6.0
1200	1390	970	4:1	160	160	3.400	2.600	6.0
1400	1630	1120	4:1	180	180	2.960	3.040	6.0



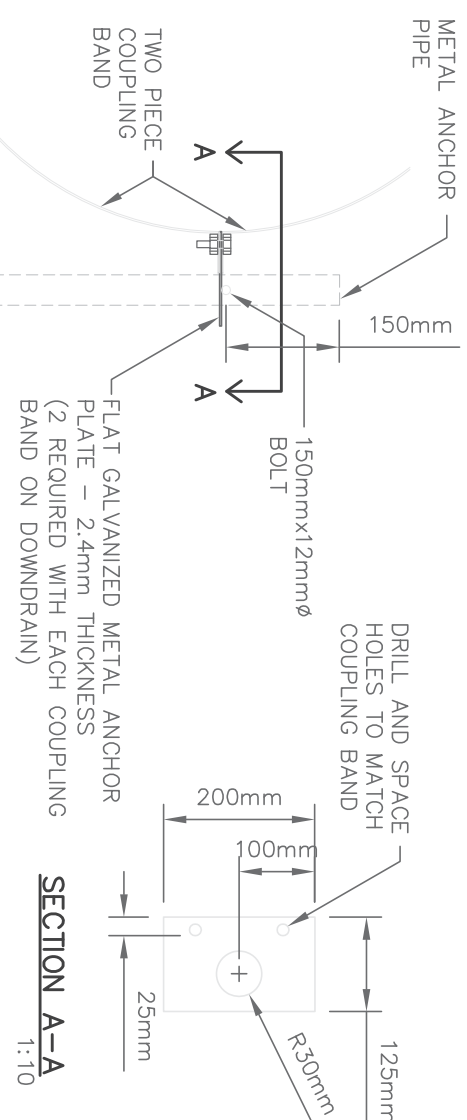
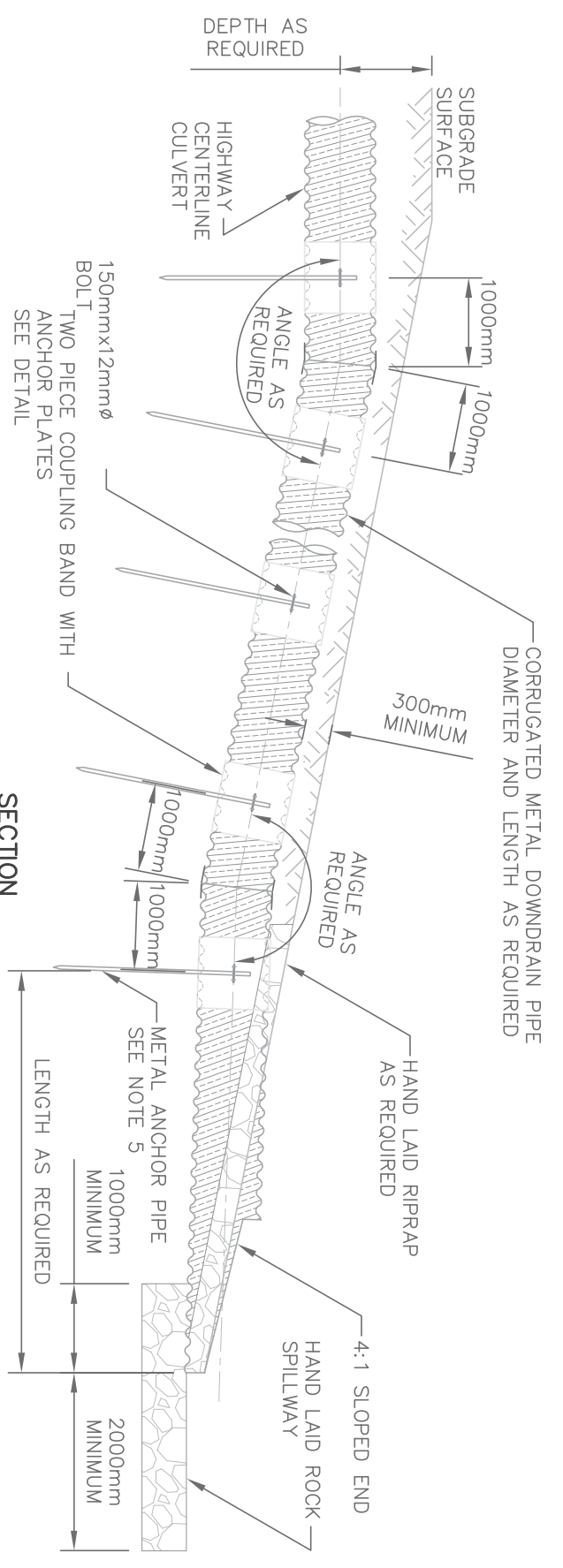
**SECTION**

**NOTE:**  
 THE HELICALLY CORRUGATED PIPE IS TO HAVE THE PIPE ENDS RECORRUGATED TO PROVIDE ANNULAR CORRUGATIONS FOR THE COUPLING PURPOSES (AS SHOWN). THE MINIMUM LENGTH WITH ANNULAR CORRUGATIONS SHALL BE 300mm FOR DIAMETERS OF 900mm OR LESS AND 600mm FOR A DIAMETER OF GREATER THAN 900mm. THERE SHALL BE A MINIMUM OF 3 BOLTS PER COUPLER FOR DIAMETERS OF 800mm OR GREATER.

1		0-12-TBI		FOR APPROVAL	
No.	DATE	REVISION			



**LACOMBE COUNTY**  
**STANDARD SLOPED END SECTIONS**  
**FOR CORRUGATED METAL PIPE**  
**ARCH CULVERTS**



- NOTES:**
1. ALL JOINTS TO BE ANCHORED.
  2. MAXIMUM SPACING OF ANCHORS NOT TO EXCEED 6m.
  3. ALL 40mm ANCHOR PIPE TO BE DRILLED 150mm FROM TOP END TO RECEIVE 12mm DIAMETER BOLT.
  4. 150x12mm DIAMETER BOLT TO BE SUPPLIED WITH EACH ANCHOR.
  5. METAL ANCHOR 40mm STEEL PIPE OR EQUIVALENT. MINIMUM LENGTH 2m. MINIMUM WEIGHT 5.4 kg/LIN m. (2 REQUIRED FOR EACH COUPLING BAND ON DOWNDRAIN PIPE)

**DETAIL**  
1:10

**SECTION**  
1:10

No.	DATE	REVISION
1	0-12-TBL	FOR APPROVAL



**CORRUGATED STEEL DOWNDRAIN PIPE**  
**DETAIL**

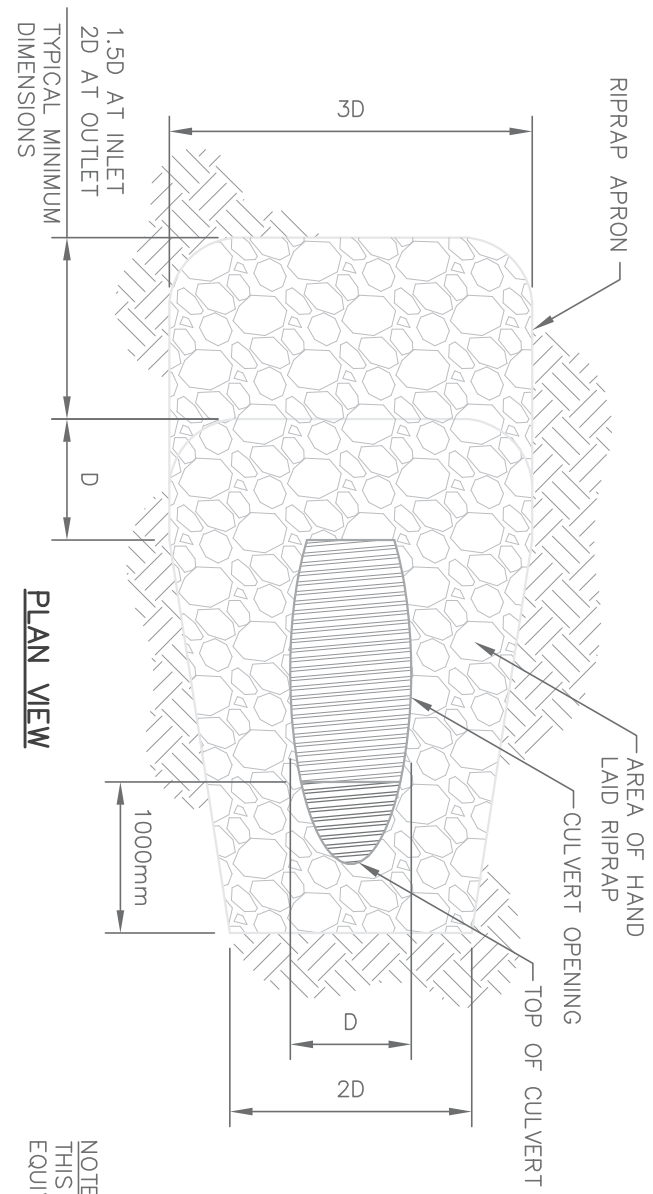
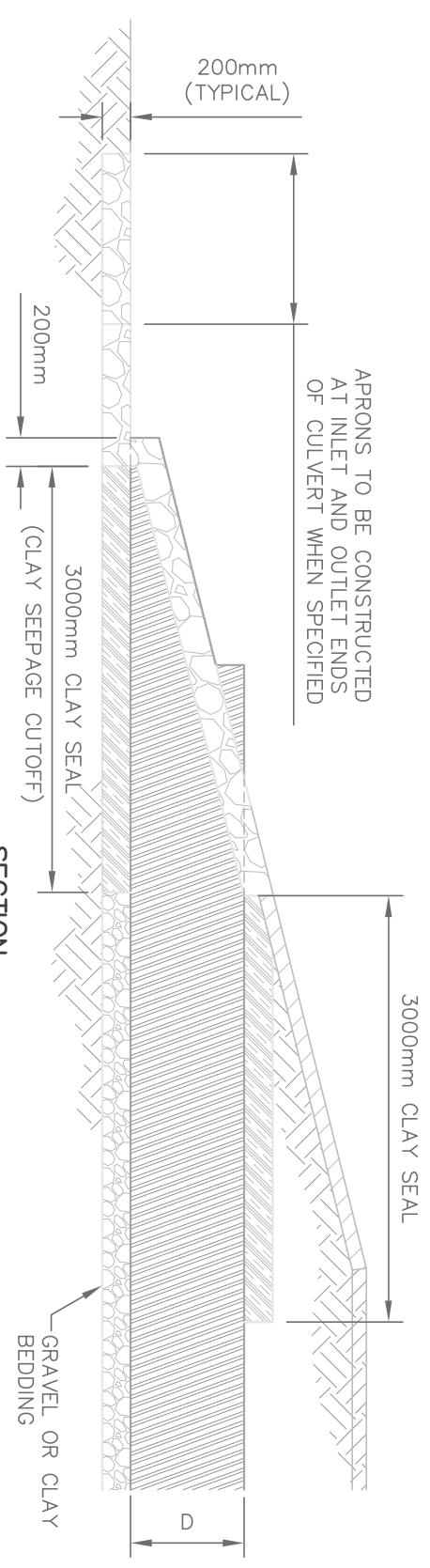
**LACOMBE COUNTY**

SCALE: 1:75

DATE: DECEMBER 2010

APPROVED BY:

DWG No: E-5



NOTE:  
THIS APPLIES TO CULVERTS LESS THAN 1500mm EQUIVALENT DIAMETER.

No.	DATE	FOR APPROVAL REVISION
1	0-12-10	

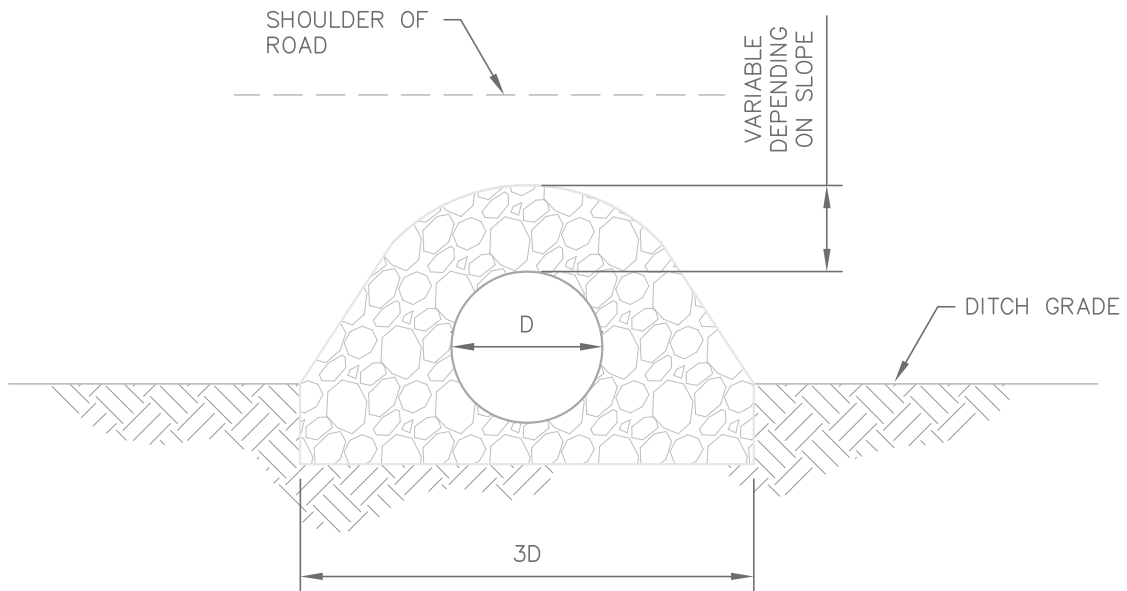


**LACOMBE COUNTY**

**STANDARD METAL PIPE END TREATMENTS**

**PLAN AND SECTION**

SCALE: 1:50      DATE: DECEMBER 2010      APPROVED BY:      DWG No: E-6



**ELEVATION**

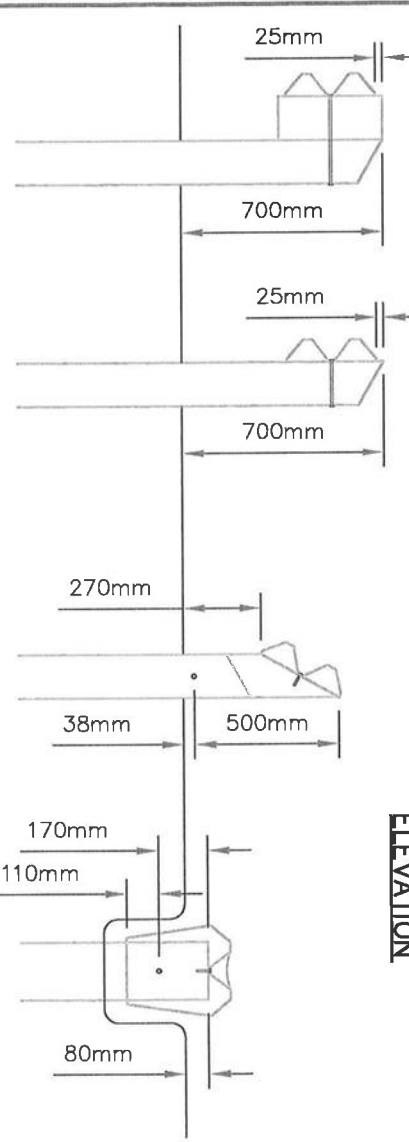
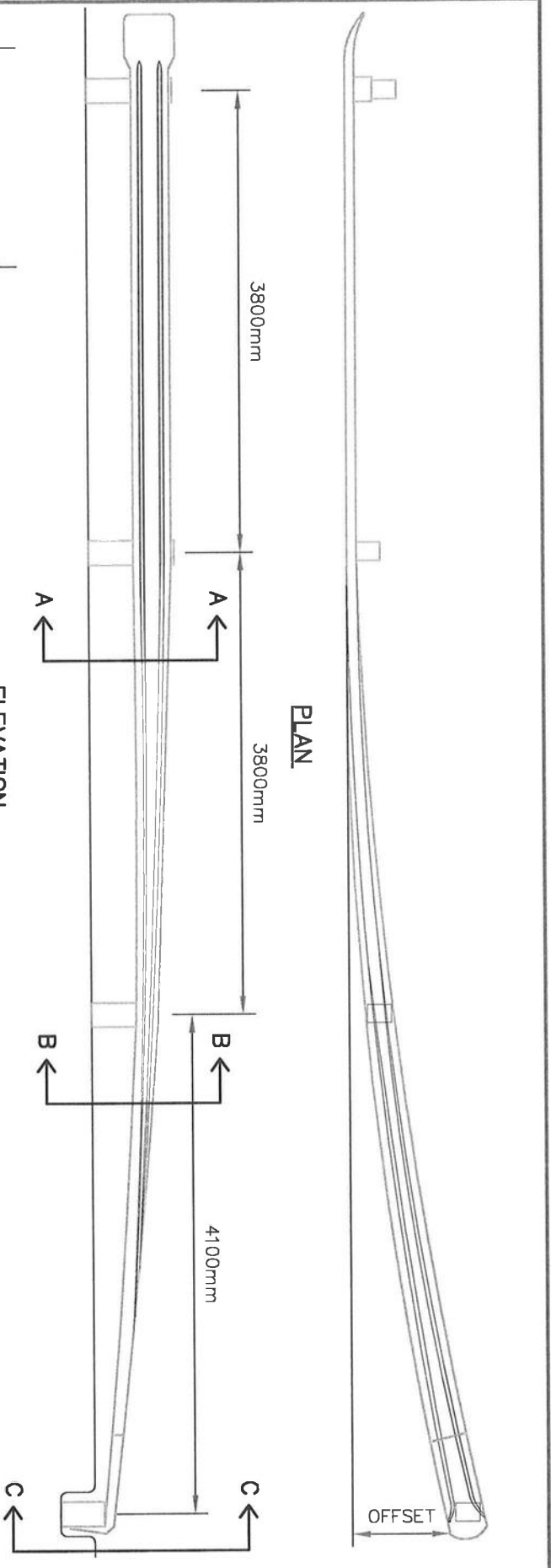
ESTIMATED RIPRAP SURFACE AREAS			
PIPE DIAMETER (mm)	AREA OF ONE END EXCLUDING APRON (m <sup>2</sup> )	AREA OF ONE END INCLUDING INLET APRON (m <sup>2</sup> )	AREA OF ONE END INCLUDING OUTLET APRON (m <sup>2</sup> )
500	2	3	4
600	3	5	6
700	4	6	7
800	5	8	9
900	6	10	11
1000	7	12	13
1100	9	14	16
1200	10	16	19
1400	13	22	25

THE ESTIMATED RIPRAP SURFACE AREAS SHOWN IN THIS TABLE ARE BASED ON A 4H:1V SIDESLOPE

**NOTE:**  
THIS APPLIES TO CULVERTS LESS THAN 1500mm EQUIVALENT DIAMETER.

				<b>LACOMBE COUNTY</b>		
				<b>STANDARD METAL PIPE END TREATMENT DETAILS</b>		
1	0-12-TBD			FOR APPROVAL		
No.	DATE			REVISION		
SCALE: 1:40		DATE: DECEMBER 2010		APPROVED BY:		
				DWG No: E-7		





- NOTES:**
1. GUARDRAIL MATERIAL TO BE ARMCO OR EQUAL.
  2. BOTH ENDS ARE TO BE TURNED DOWN FOR 2-WAY TRAFFIC.
  3. OFFSET IS TO BE AS PER T.A.C. MANUAL.
  4. ALL POSTS ARE TREATED TIMBER
  5. 150mmx200mmx1300mm.
  6. USE 1910mm POST SPACING WHERE RIGIDITY IS REQUIRED TO REDUCE DEFLECTION.
  7. ALL BLOCKS ARE TREATED TIMBER 150mmx200mmx360mm.
- REFER TO ALBERTA TRANSPORTATION GUARDRAIL SPECIFICATIONS FOR FURTHER INFORMATION.

**LACOMBE COUNTY**

**W-BEAM GUARDRAIL**

No.	DATE	REVISION
1	0--12--TBD	FOR APPROVAL

SCALE: 1:50      DATE: DECEMBER 2010      APPROVED BY:      DWG No: E-8