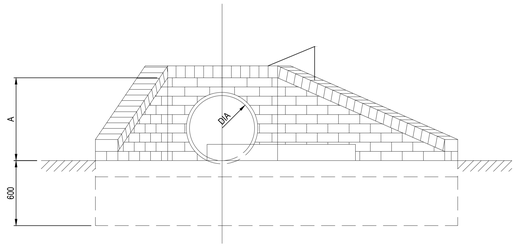
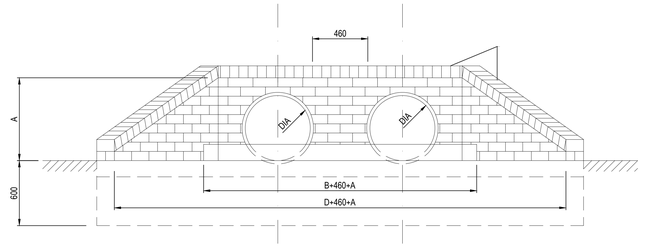


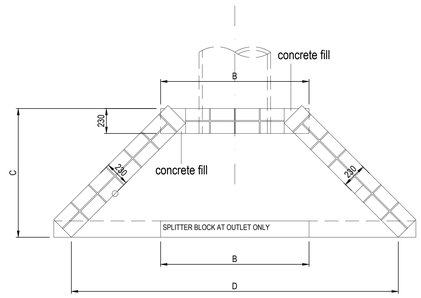
Pr. TechENG
SINGLE PIPE
1:20



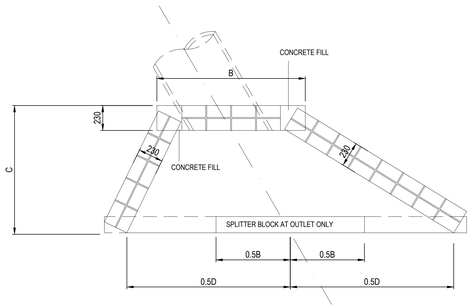
Pr. TechENG
SKEW PIPE
1:20



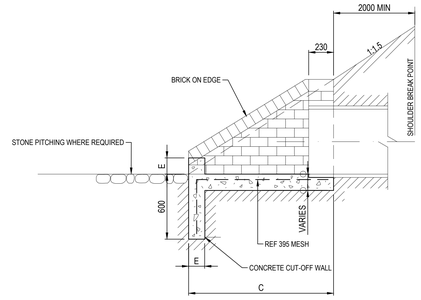
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DOUBLE BARREL
1:20



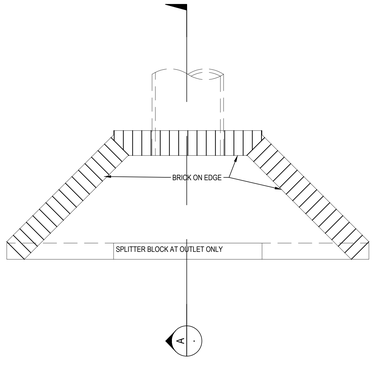
Pr. TechENG
LAYOUT OF BRICKWORK
1:20



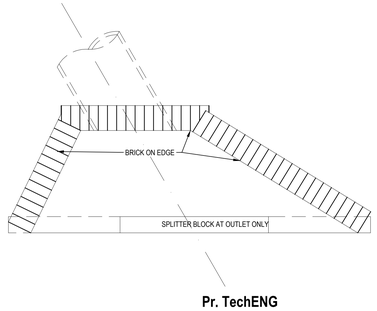
Pr. TechENG
LAYOUT OF BRICKWORK
1:20



Pr. TechENG
SECTION A-A
1:20



Pr. TechENG
PLAN
1:20



Pr. TechENG
PLAN OF SKEW CULVERT
1:20

NOTES :

1. SPLITTER BLOCK AND PITCHING TO BE PROVIDED AT ALL OUTLETS WHERE EROSION IS LIKELY TO OCCUR.
2. SPLITTER BLOCK MAY BE OMITTED IF DISCHARGE VELOCITY IS LESS THAN 0.9 m/s.
3. CUT-OFF WALLS MAY BE OMITTED IF STRUCTURE IS FOUNDED ON ROCK.
4. FOR MULTIPLE PIPE CULVERTS INCREASE DIMENSIONS 'E' AND 'F' BY (N-1)(A+460)mm:
   WHERE N = NUMBER OF PIPES AND
   A = NOMINAL DIAMETER OF PIPES
5. PIPES TO BE CUT FLUSH WITH HEADWALL.
6. FOR SKEW PIPE CULVERTS THE HEADWALL SHALL BE PARALLEL TO THE CENTRE LINE OF THE ROAD.
7. IF CORRUGATED METAL PIPES ARE USED 4X20MMX150MM LONG GALVANIZED ANCHOR BOLTS IN THE HOLLOWS OF THE CORRUGATION ARE TO BE USED.
8. ALL CONCRETE IS TO BE 20Mpa.
9. SQUARE MESH FABRIC (REFERENCE S.M.F.395) IS TO BE PLACED 50mm FROM TOP IN ALL APRON SLABS AND CENTRALLY IN CUT-OFF WALLS.
10. BRICKWORK IS TO CONSIST OF GOOD QUALITY BURNT CLAY COMMON BRICKS IN ACCORDANCE WITH SABS 227 SPECIFICATION, OR CEMENT BRICKS IN ACCORDANCE WITH SABS 987 SPECIFICATION, UNIFORM IN SIZE AND SHAPE LAYED IN STRETCHER BOND STYLE WITH THE SKINS TIED TOGETHER WITH GALVANISED CRIMPED WIRE WALL TIES.
11. BRICKFORCE IS TO BE PLACED EVERY 4TH COURSE.
12. JOINTING ON ALL VISIBLE FACES TO BE POINTED.
13. NO IN-FILL SHALL BE LARGER THAN A HALF STANDARD BRICK SIZE UNLESS 14Mpa CONCRETE IS USED.

Dimensions (mm)					
Nominal Dia.	A	B	C	D	E
300	595	1 150	1 050	2 700	150
375	595	1 150	1 050	2 700	150
450	595	1 150	1 050	2 700	150
600	765	1 380	1 200	3 000	150
750	935	1 610	1 350	3 300	150
900	1 105	1 840	1 500	3 600	230
1 050	1 275	2 070	1 750	3 900	230
1 200	1 445	2 300	1 900	4 200	230

NOTES

1. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ON THE SITE AND NOTIFY THE NEC SUPERVISOR OF ANY VARIATIONS BEFORE CONSTRUCTION.
3. ALL LEVELS ARE IN METERS TO MEAN SEA LEVEL.
4. DRAWINGS MUST BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND GENERAL NOTES DRAWINGS.
5. IF APPLICABLE, DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECT'S DRAWINGS AND ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.

LOCALITY



LEGEND

SYMBOL	DESCRIPTION

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
E2	FOR TENDER	RR	HVDM	HVDM	18 07 25
E1	FOR TENDER	RR	HVDM	HVDM	26 06 25

REVISIONS

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ZUTARI
IMPACT. ENGINEERED.

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	W. BOTES		18 07 25
CHECKED	H. VAN DER MERWE		18 07 25
DESIGNED	R. RANGE		18 07 25
CHECKED	H. VAN DER MERWE		18 07 25

PR.ENG. / PR.TECH./PR. ARCH

NAME	H. VAN DER MERWE	DATE
SIGNATURE		18 07 25
REG. NUMBER	201270225	
TITLE	Pr. TechENG	

TRANSNET NATIONAL PORTS AUTHORITY

TITLE	NAME	SIGN	DATE
DRAWN			
CHECKED			
DESIGNED			
CHECKED			

PR.ENG. / PR.TECH./PR. ARCH

NAME	DATE
SIGNATURE	
REG. NUMBER	
SCALE	AS SHOWN

TRANSNET

Transnet National Ports Authority
TRANSNET SOC Ltd : REG No. 1990/000900/30
NEWARK ROAD
RICHARDS BAY
TEL: 035 788 0067
PO BOX 181, RICHARDS BAY 3900, SOUTH AFRCA

PROJECT / AREA / ASSET / SUBJECT/DRAWING TITLE

PORT OF RICHARDS BAY
PORT ROADS REHABILITATION & UPGRADE (REPAIRS TO PORT ROADS)
ROAD DRAINAGE
PIPE CULVERT INLET / OUTLET DETAILS 1

PAPER SIZE	TRANSNET DRW. NO.	REV.
A0	TBC	E2
PROJECT DRG. NO.		REV.
1006614-DRG-14-UR-CC-D002		T2