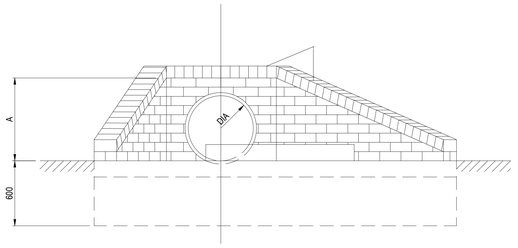
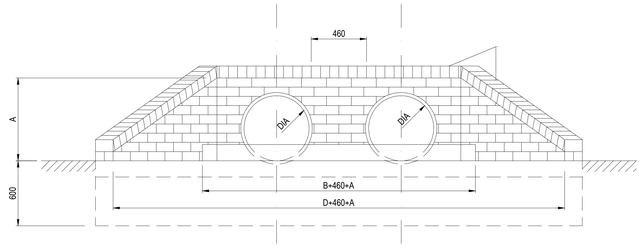


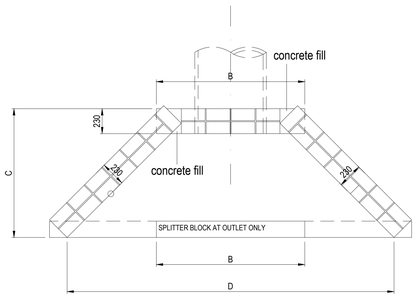
FRONT ELEVATION
SINGLE PIPE
SCALE 1:20



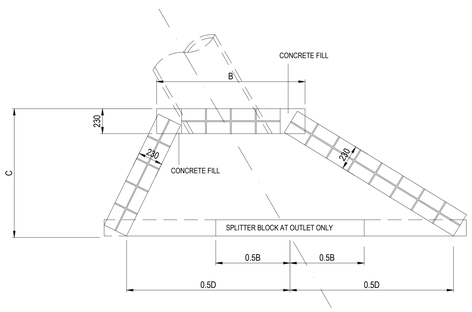
FRONT ELEVATION
SKEW PIPE
SCALE 1:20



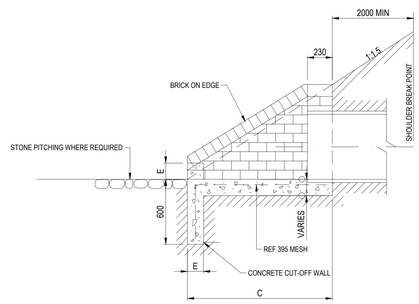
FRONT ELEVATION
DOUBLE BARREL
SCALE 1:20



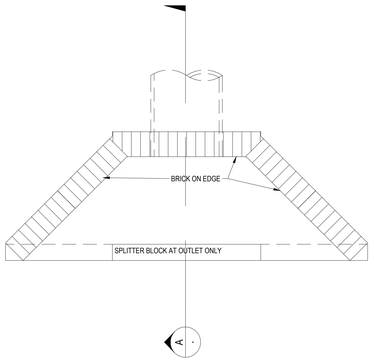
LAYOUT OF BRICK WORK
SCALE 1:20



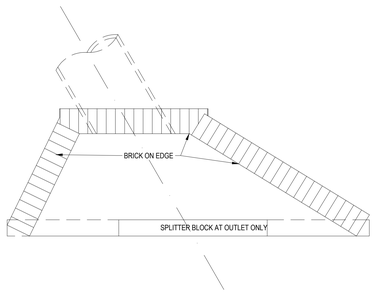
LAYOUT OF BRICK WORK
SCALE 1:20



SECTION A-A
SCALE 1:20



PLAN
SCALE 1:20



PLAN OF SKEW CULVERT
SCALE 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	STANDARD DETAILS		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	201270205	
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 AFRICA

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

PAPER SIZE	TRANSNET DRW. NO.	REV.
A0	TBC	E2
	PROJECT DRG. NO.	REV.
	1006614-DRG-14-NW-CC-D007	T2