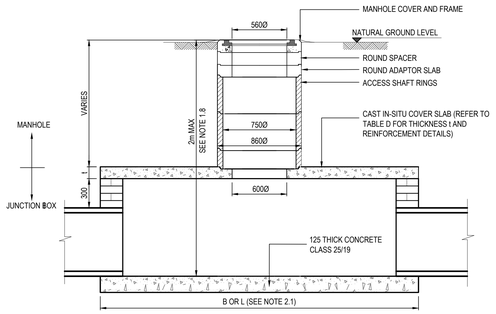
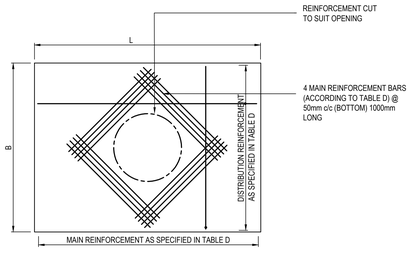


SECTION THROUGH MANHOLE
WITH PRECAST SHAFT



CAST INSITU COVER SLAB FOR
CIRCULAR SHAFT SECTION

1. MANHOLE NOTES

1.1 ALL PRECAST MANHOLE SECTIONS SHALL COMPLY WITH THE RELEVANT REQUIREMENTS OF SANS 1294.

1.2 NO STEP IRONS SHALL BE REQUIRED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

1.3 DIMENSIONS OF PRECAST MANHOLE SECTIONS ARE APPROXIMATE AND MAY VARY SLIGHTLY ACCORDING TO DIFFERENT MANUFACTURER'S SPECIFICATIONS.

1.4 POSITION OF MANHOLES SHALL BE DIRECTLY ABOVE THE PI OF ADJOINING STORMWATER PIPES.

1.5 THE FUNCTION OF THE COMBINATION PRECAST CONCRETE/CAST IRON MANHOLE COVER IS TO REPLACE LOST CAST IRON COVERS, UNLESS OTHERWISE SPECIFIED.

1.6 ALL CONCRETE MANHOLE COVERS SHALL HAVE THE LETTERS "SW" FORMED OR ENGRAVED ON TOP. EACH LETTER SHALL BE 50mm WIDE, 75mm HIGH AND 5mm THICK.

1.7 MANHOLE COVERS AND FRAMES MADE OF OTHER MATERIALS, LIKE POLYMER CONCRETE, MUST COMPLY WITH THE RELEVANT SANS-SPECIFICATIONS, BE APPROVED BY THE ENGINEER IN WRITING AND BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

1.8 WHERE THE TOTAL DEPTH OF THE JUNCTION BOX/MANHOLE COMBINATION (INVERT LEVEL TO FINISHED GROUND LEVEL) EXCEEDS 2.0m, A STRUCTURAL DESIGN MUST BE SUBMITTED BY A PROFESSIONAL ENGINEER.

1.9 ALL BRICKS SHALL COMPLY WITH SANS 227 AND SHALL BE ENGINEERING UNITS OF CLASS FBS (FACE BRICK STANDARD) WITH A NOMINAL COMPRESSIVE STRENGHT OF 14 MPA.

1.10 MAXIMUM ANGLE BETWEEN ADJOINING PIPES IS 60°.

2. CAST IN-SITU COVER SLABS NOTES

2.1 MEASUREMENT B IS ALWAYS SMALLER THAN L.

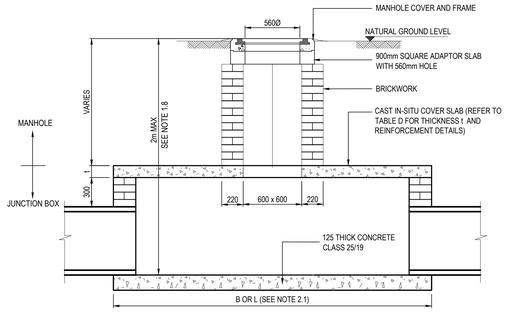
2.2 CONCRETE TO BE CLASS 25/19.

2.3 CONCRETE TO BE CURED FOR A MINIMUM PERIOD OF 7 DAYS.

2.4 MINIMUM COVER TO REINFORCEMENT IS 20mm.

2.5 TYPE, BAR AND SPACING OF REINFORCEMENT AS SPECIFIED IN TABLE D.

2.6 MAIN REINFORCEMENT TO BE SHAPE CODE 38, WITH HOOK LENGTH (A- DIMENSION) NOT LESS THAN T MINUS 60, EXCEPT FOR SLABS WITH A SPAN NOT EXCEEDING 1000, WHERE NO HOOKS ARE REQUIRED AND SHAPE CODE 20 IS USED.



SECTION THROUGH JUNCTION BOX
MANHOLE WITH MASONARY SHAFT

CAST INSITU COVER SLAB
FOR SQUARE SHAFT SECTION

SECTION A-A
(NOT INDICATING REINFORCEMENT AROUND HOLE)

PRECAST CONCRETE
FRAME AND COVER

COMBINATION PRECAST CONCRETE /
CAST IRON FRAME AND COVER
(SEE NOTE 1.5)

TABLE C: USE OF MANHOLES AT JUNCTION BOXES

APPLICATION	TYPE OF COVER AND FRAME
AT JUNCTION BOXES FALLING UNDERNEATH THE CARRIAGE WAY.	SABS TYPE 4 CAST IRON HEAVY DUTY
AT LEAST EVERY 100m ON LONG INACCESSIBLE STORMWATER LINES.	SABS TYPE 4 PRECAST CONCRETE MEDIUM DUTY
AT JUNCTION BOXES FALLING UNDERNEATH BLOCK OR CONCRETE PAVING ON THE SIDEWALK.	SABS TYPE 4 PRECAST CONCRETE MEDIUM DUTY
AT JUNCTION BOXES WHERE THE MAIN STORMWATER LINE CHANGES COURSE	SABS TYPE 4 PRECAST CONCRETE MEDIUM DUTY
AT JUNCTION BOXES INDICATED OTHERWISE ON THE DRAWINGS OR SPECIFIED BY THE ENGINEER.	SABS TYPE 4 AS SPECIFIED

TABLE D: REINFORCEMENT DETAILS FOR CAST IN-SITU COVER SLABS (Note: B < L)

SPAN (B) (mm)	THICKNESS (T) (mm)	MAIN REINFORCEMENT
~~UP TO 1500~~	~~175~~	~~Y12 - 120~~
UP TO 2500	200	Y16 - 150
~~UP TO 3000~~	~~225~~	~~Y16 - 150~~
> 3000	DESIGN TO BE SUBMITTED	
DISTRIBUTION REINFORCEMENT: Y16 BARS @ 200 C/C		
REFER TO NOTES FOR BENDING DETAILS.		

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

This Document including all design and information therein is Confidential Intellectual Property of Transnet. Copyright and all other rights are reserved by Transnet. This Document may only be used for its intended purpose.

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	201270202	
TITLE	Pr. Tech/ENG	

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 AFIRCA

PROJECT / AREA / ASSET / SUBJECT/DRAWING TITLE

PORT OF RICHARDS BAY

PORT ROADS REHABILITATION & UPGRADE
(REPAIRS TO PORT ROADS)
ROAD DRAINAGE
JUNCTION BOX DETAILS 2

PAPER SIZE	TRANSNET DRW. NO.	REV.
A0	TBC	E2
	PROJECT DRG. NO.	REV.
	1006614-DRG-14-NW-CC-D004	T2