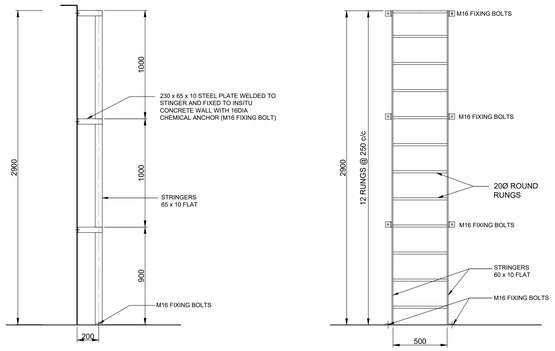
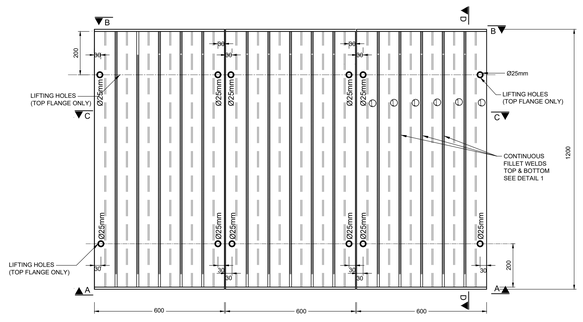


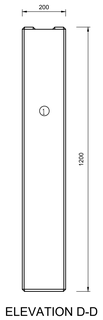
ELEVATION A - A

ELEVATION B - B

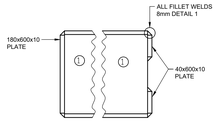
LADDER DETAIL
1:20



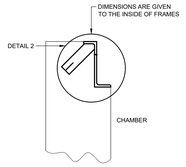
PLAN-COVER
1 : 10



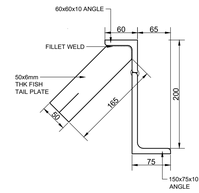
ELEVATION D-D
1 : 10



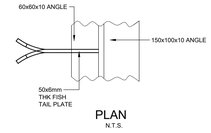
PART ELEVATION
1 : 10



SECTION E-E
1 : 10

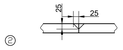


ELEVATION
N.T.S.

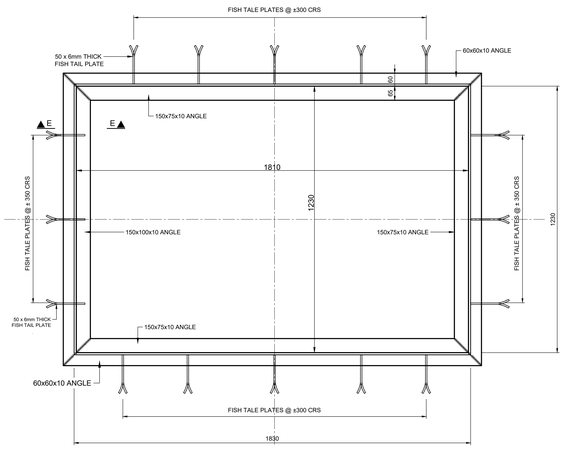


PLAN
N.T.S.

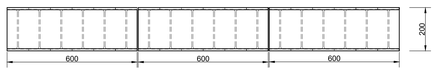
DETAIL 2



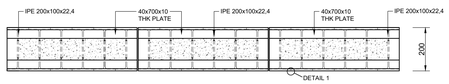
DETAIL 1
N.T.S.



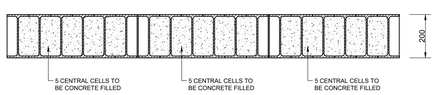
PLAN-FRAME
1 : 10



ELEVATION A-A
1 : 10



ELEVATION B-B
1 : 10



SECTION C-C
1 : 10

ULTRA HEAVY DUTY COVER AND FRAME DETAILS

NOTES.

1. ALL STEEL TO BE GRADE S355J GALVANISED TO SANS ISO 1461

2. WELDING TO BE IN ACCORDANCE WITH BS 5135

3. WELDING OF IPE FLANGES 3.1 CHAMFER FLANGE EDGES AS SHOWN IN DETAIL 1
3.2 FORM CONTINUOUS WELDS TO TOP AND BOTTOM FLANGES AS SHOWN
3.3 GRIND TOP WELDS FLUSH OVER FULL LENGTH
3.4 GRIND BOTTOM WELDS FLUSH OVER FIRST 70mm OF EACH END (SEATING AREA ONLY)

4. WELDING OF END PLATES
4.1 WELD 180mm END PLATE CONTINUOUSLY ACROSS SECTION FLANGES USING 8mm FILLET WELD
4.2 WELD 40mm END PLATE CONTINUOUSLY ACROSS SECTION FLANGES AND AT THE WEB INTERSECTIONS
4.3 DRILL 025mm LIFTING SLOTS TO TOP FLANGES AT ALL FOUR CORNERS (SEE PLAN)

5. WELDING PROCEDURE
5.1 THE WELDING PROCEDURE AND SEQUENCE ADOPTED SHALL BE SUCH THAT WELDING DISTORTION OF THE COVER IS AVOIDED

6. CONCRETE INFILL TO COVERS
6.1 WITH THE COVERS UPENDED AS SHOWN IN ELEVATION U-U, FILL THE 4 CENTRAL CELLS WITH GRADE 40MPa/19mm CONCRETE AND STRIKE OFF LEVEL WITH THE END PLATES
6.2 CONCRETE FINISH TO BE WOOD FLOAT

DRAWING NO.	REFERENCE
5200157-2-001-C-DE-0004-01	MULTIPURPOSE TERMINAL AREA MANHOLE DETAILS
5200157-2-001-C-SE-0004-03	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 3 OF 3
5200157-2-001-C-SE-0004-02	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 2 OF 3
5200157-2-001-C-SE-0004-01	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 1 OF 3
5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE DETAILED LAYOUT
5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE MULTIPURPOSE TERMINAL STORMWATER LAYOUT

REFERENCE DRAWINGS

GENERAL NOTES

1. THE CONTRACTOR SHALL ALLOW FOR ALL STANDARDS/SPECIFICATIONS WHICH ARE REFERRED TO IN THESE NOTES AND WHICH ARE APPLICABLE ON SITE.
2. DRAWINGS MUST NOTE BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE USED.
3. ALL DIMENSIONS AND LEVELS SHALL BE VERIFIED ON SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
5. CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   a) CONCRETE WORK TO TRANSNET'S SPECIFICATION SA20 AND SANS 1200G.
   b) CONCRETE PLACING TO BE DONE IN ACCORDANCE WITH SANS 10100 PART 2, CLAUSE 10.2;
   c) CONCRETE CUBE STRENGTHS ARE CHARACTERISTIC STRENGTHS TO SANS 10100 PARTS 1 AND 2
6. CONCRETE STRENGTHS AT 29 DAYS:
   SLABS :40MPa/19mm
   BEAMS :40MPa/19mm
   WALLS :40MPa/19mm
   BLINDING :15MPa/19mm
7. COVER TO REINFORCEMENT:
   WALLS :50mm
   SLABS :50mm
   BEAMS :50mm
8. ALL EXPOSED CONCRETE TO BE CHAMFERED 20mm x 20mm UNLESS OTHERWISE SHOWN.
9. REINFORCEMENT SHALL COMPLY WITH SANS 920 AND BENT TO SANS 282.
   SYMBOLS: R - MILD STEEL WITH CHARACTERISTIC STRENGTH OF 250MPa
   Y - HOT-ROLLED OR COLD WORKED HIGH STRENGTH BARS WITH CHARACTERISTIC STRENGTH OF 450MPa
   (ONLY REINFORCEMENT FABRICATED UNDER THE SABS MARK SCHEME SHALL BE DEEMED TO COMPLY WITH SABS REQUIREMENTS).
10. 50mm MAX. BLINDING SHALL BE PROVIDED
11. FORMWORK AND SURFACE FINISH FORMED SURFACES:
    a) VISIBLE SURFACE :SMOOTH
    b) UNEXPOSED SURFACE :ROUGH
12. GROUT TO BE FLOWABLE SELF-LEVELING EPOXY GROUT.
13. STEELWORK TO FABRICATED AND ERECTED IN ACCORDANCE WITH THE SPECIFICATIONS IN SANS 2001-CS1 AND SANS 1921-3.
14. ALL HOT-ROLLED STEEL SECTION AND PLATES TO GRADE S355JR TO EN10025.
15. CORROSION PROTECTION OF STEELWORK:
    ALL STEELWORK INCLUDING BOLTS,NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO SANS 121 (ISO 1461).
    TABLE 3 NUTS WITH OVERSIZED THREADS SHALL BE USED TO COMPENSATE FOR THE GALVANIZING ON THE BOLT THREADS.
16. PAINTING OF STEELWORK TO SANS 1200HC. APPLY SYSTEM 013-016 IN ACCORDANCE WITH SANS 0120HC.
    COLOUR TO BE DETERMINED BY CLIENT.
17. FABRICATORS TO SUBMIT TWO COPIES OF ALL SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF FABRICATION.

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR GATE REVIEW	TT	SS	PM	10-10-23

CONTRACTOR / CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	TT		10 10 23
CHECKED	SS		10 10 23
DESIGNED	TT		10 10 23
CHECKED	PM		10 10 23

PR.ENG. / PR.TECH./PR. ARCH		
NAME	P. MAHARAJ	DATE
SIGNATURE		10 10 23
REG. NUMBER	200970238	
SCALE :	NOTED	A0

Transnet Port Terminals

TRANSNET

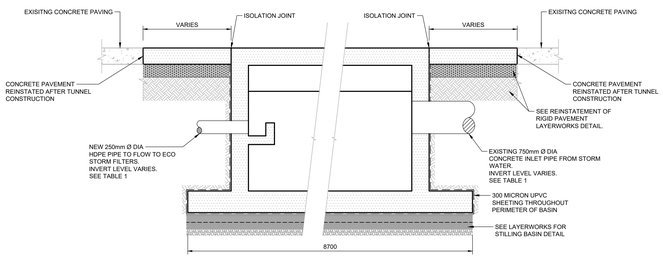
SALDANHA STORMWATER MANAGEMENT

MULTIPURPOSE TERMINAL AREA

STILLING BASIN

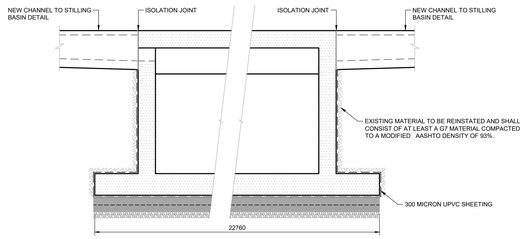
DETAILS

PROJECT NUMBER								OD	FBS	DIS	TYPE	DRAWING NO.				SHEET		REV	ID
S	2	0	0	1	5	7	2	0	0	1	S	D	E	0	0	0	1	0	0	TT



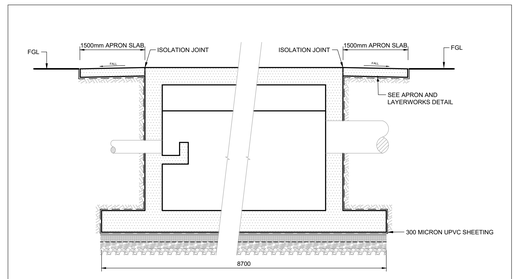
SECTION B-B: SB1 - SB7

1:50



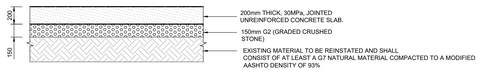
SECTION A-A: SB1 - SB7

1:50



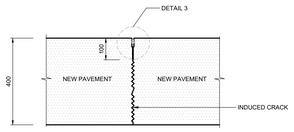
TYPICAL SECTION OF SB8

1:50



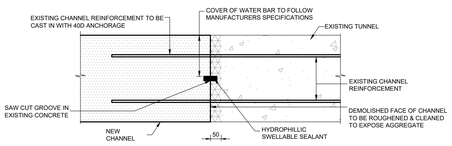
STILLING BASIN 8 APRON DETAIL AND LAYERWORKS (TBC AND SIGNED OFF BY GEOTECHNICAL ENGINEER ON SITE)

NTS



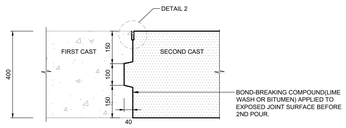
WEAKENED PLANE JOINT DETAIL (WPJ)

1:10



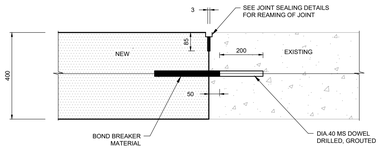
TIE IN CONSTRUCTION JOINT BETWEEN THE NEW AND EXISTING CHANNEL

1:10



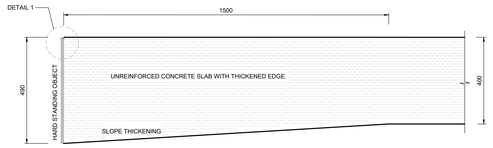
KEYED CONSTRUCTION JOINT DETAIL (KCJ)

1:10



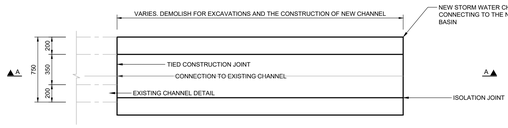
TIED CONSTRUCTION JOINT (TCJ)
(TIE INTO EXISTING CONCRETE PAVING)

1:10



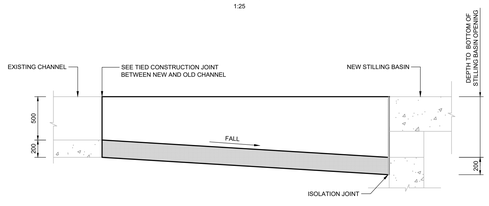
ISOLATION JOINT DETAIL

1:10



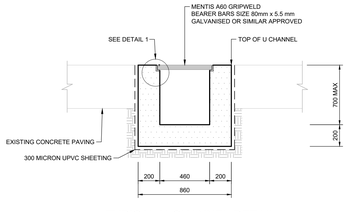
PLAN: NEW CHANNEL TO STILLING BASIN

1:25



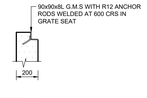
SECTION A-A

1:25



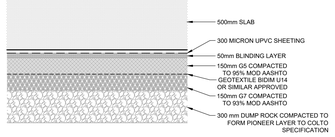
TYPICAL U-CHANNEL DETAIL

1:20



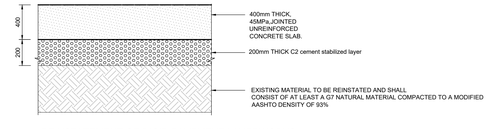
DETAIL 1

1:20



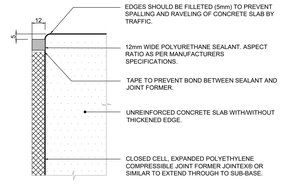
STILLING BASIN LAYERWORKS TBC BY GEOTECHNICAL ENGINEER ON SITE.

1:20



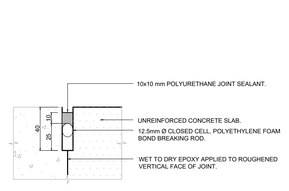
REINSTATEMENT OF RIGID PAVEMENT LAYERWORKS (TBC AND SIGNED OFF BY GEOTECHNICAL ENGINEER ON SITE)

NTS



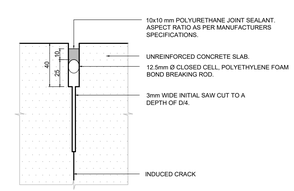
DETAIL 1

1:2



DETAIL 2

1:2



DETAIL 3

1:2

GENERAL NOTES

1. THE CONTRACTOR SHALL ALLOW FOR ALL STANDARDS/SPECIFICATIONS WHICH ARE REFERRED TO IN THESE NOTES AND WHICH ARE APPLICABLE ON SITE.
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3. ALL DIMENSIONS AND LEVELS SHALL BE VERIFIED ON SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
5. CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   a) CONCRETE WORK TO TRANSNET'S SPECIFICATION SA20 AND SANS 1200G;
   b) CONCRETE PLACING TO BE DONE IN ACCORDANCE WITH SANS 10100 PART 2, CLAUSE 10.2;
   c) CONCRETE CUBE STRENGTHS ARE CHARACTERISTIC STRENGTHS TO SANS 10100 PARTS 1 AND 2
6. CONCRETE STRENGTHS AT 29 DAYS:
   SLABS :40MPa/19mm
   BEAMS :40MPa/19mm
   WALLS :40MPa/19mm
   BLINDING :15MPa/19mm
7. COVER TO REINFORCEMENT:
   WALLS :60mm
   SLABS :60mm
   BEAMS :60mm
8. ALL EXPOSED CONCRETE TO BE CHAMFERED 20mm x 20mm UNLESS OTHERWISE SHOWN.
9. REINFORCEMENT SHALL COMPLY WITH SANS 920 AND BENT TO SANS 282.
   SYMBOLS: R - MILD STEEL WITH CHARACTERISTIC STRENGTH OF 250MPa
   Y - HOT-ROLLED OR COLD WORKED HIGH STRENGTH BARS WITH CHARACTERISTIC STRENGTH OF 450MPa.
   (ONLY REINFORCEMENT FABRICATED UNDER THE SABS MARK SCHEME SHALL BE DEEMED TO COMPLY WITH SABS REQUIREMENTS).
10. 50mm MAX. BLINDING SHALL BE PROVIDED
11. FORMWORK AND SURFACE FINISH FORMED SURFACES:
    a) VISIBLE SURFACE :SMOOTH
    b) UNEXPOSED SURFACE :ROUGH
12. GROUT TO BE FLOWABLE SELF-LEVELING EPOXY GROUT.
13. STEELWORK TO FABRICATED AND ERECTED IN ACCORDANCE WITH THE SPECIFICATIONS IN SANS 2001-CS1 AND SANS 1921-3.
14. ALL HOT-ROLLED STEEL SECTION AND PLATES TO GRADE S355JR TO EN10025.
15. CORROSION PROTECTION OF STEELWORK:
    ALL STEELWORK INCLUDING BOLTS,NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO SANS 121 (ISO 1461), TABLE 3. NUTS WITH OVERSIZED THREADS SHALL BE USED TO COMPENSATE FOR THE GALVANIZING ON THE BOLT THREADS.
16. PAINTING OF STEELWORK TO SANS 1200HC. APPLY SYSTEM 013-016 IN ACCORDANCE WITH SANS 0120HC. COLOUR TO BE DETERMINED BY CLIENT.
17. FABRICATORS TO SUBMIT TWO COPIES OF ALL SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF FABRICATION.

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
5200157-2-001-C-DE-0004-01	MULTIPURPOSE TERMINAL AREA MANHOLE DETAILS
5200157-2-001-C-SE-0004-03	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 3 OF 3
5200157-2-001-C-SE-0004-02	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 2 OF 3
5200157-2-001-C-SE-0004-01	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 1 OF 3
5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE DETAILED LAYOUT
5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE MULTIPURPOSE TERMINAL STORMWATER LAYOUT

REVISIONS

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR GATE REVIEW	TT	SS	PM	10-10-23

CONTRACTOR / CONSULTANT				
TITLE	NAME	SIGN	DATE	
				DRAWN
				CHECKED
				DESIGNED
				CHECKED

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	TT		10 10 23
CHECKED	SS		10 10 23
DESIGNED	TT		10 10 23
CHECKED	PM		10 10 23

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

NAME P. MAHARAJ — DATE

SIGNATURE — 10 10 23

REG. NUMBER 200970238

SCALE : NOTED — A0

Transnet Port Terminals

TRANSNET

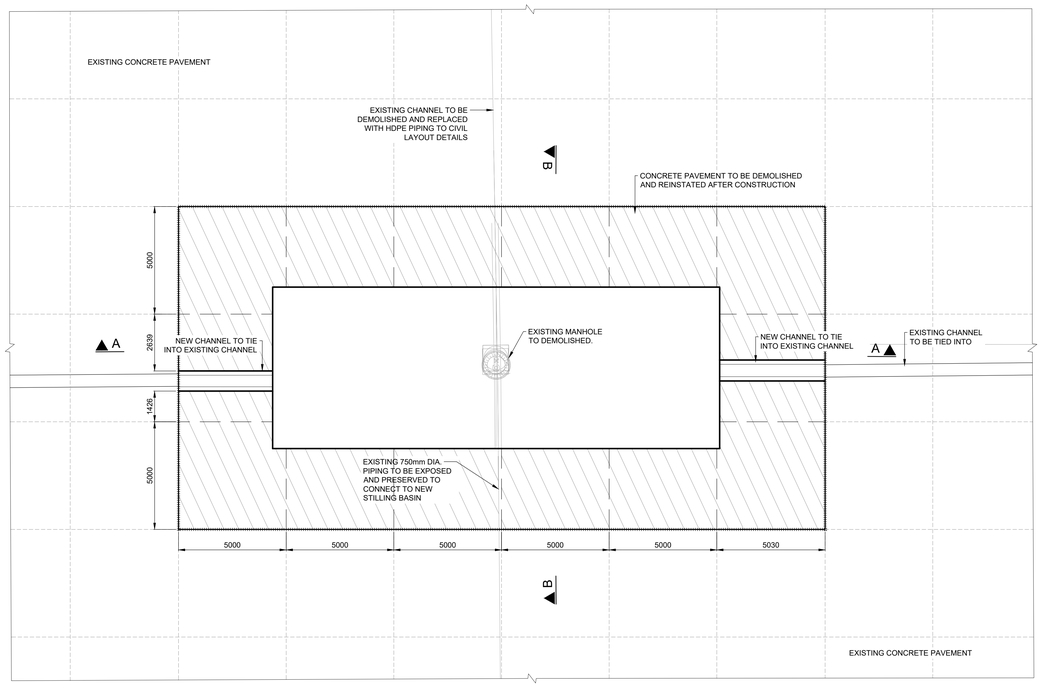
SALDANHA STORMWATER MANAGEMENT

MULTIPURPOSE TERMINAL AREA

STILLING BASIN

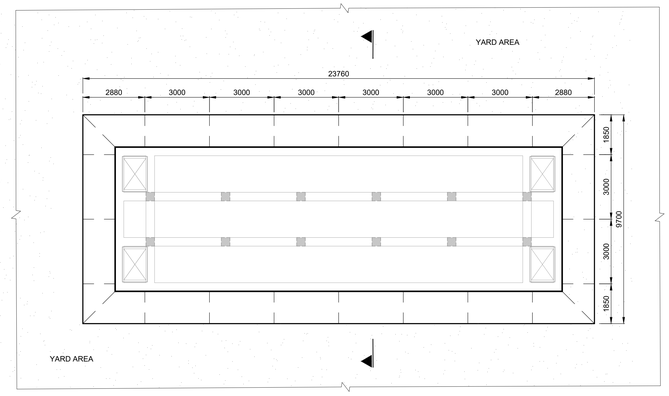
SECTIONS AND DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
5 2 0 0 1 5 7 - 2	0 0 1	S	D E	0 0 0 2	0 1	0 0	TT



GENERAL ARRANGEMENT FOR STILLING BASIN 1-7

1 : 100



GENERAL ARRANGEMENT FOR STILLING BASIN 8

1 : 100

ISOLATION JOINT
TIED CONSTRUCTION JOINT
WEAKENED PLANE JOINT (SCJ)
ASPHALT PAVEMENT DEMOLITION
CONCRETE PAVEMENT DEMOLITION

NEW JOINTS TO MATCH EXISTING. EXACT DETAILS TO BE CONFIRMED ON SITE.

NOTE:
- DRAWING IS NOT CO-ORDINATED DUE TO ABSENCE OF SURVEY. BASIN, PAVING AND CHANNEL POSITIONS, LEVELS, ALIGNMENT AND DETAILS ARE TO BE CONFIRMED ONCE SURVEY HAS BEEN COMPLETED
- POSITIONS OF ALL EXISTING MAN-HOLES, U-CHANNELS, PIPING, PAVEMENT JOINTS, ARE TO BE CONFIRMED ON SITE. SHOULD THE CONDITIONS ON SITE DIFFER FROM THAT SHOWN ON THE DRAWING THE SUPERVISOR IS TO BE NOTIFIED IMMEDIATELY
- FOR LEVELS REFER TO CIVIL LAYOUT

GENERAL

1. CHARACTERISTIC STRENGTHS :
   CONCRETE : 40 MPa
   BLINDING LAYER / CONCRETE INFILL : 15 MPa / 19mm
   HIGH TENSILE STEEL WITH STRENGTH : 450 MPa
2. THICKNESS OF BLINDING : 50mm
3. CONCRETE COVER : 60mm
4. TOP SURFACE OF TUNNELS ARE TO FOLLOW THE PAVEMENT PROFILE.
5. THE EXISTING PROFILE MUST BE FOLLOWED WHERE NEW TUNNELS CONNECT TO EXISTING.
6. ALL JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
7. INSTALLATION OF WATERBARS MUST BE IN ACCORDANCE WITH THE MANUFACTURERS METHODS AND SHALL ONLY BE UNDERTAKEN BY CERTIFIED CONTRACTORS.
8. WHERE NEW CONCRETE IS CAST ONTO EXISTING, THE EXISTING SURFACE MUST BE ROUGHENED TO EXPOSE THE AGGREGATE, CLEANED AND COATED WITH WET TO DRY EPOXY PRIOR TO CASTING.
9. WHERE THE NEW SERVICE TUNNELS ARE TO BE CAST TO THE EXISTING BLOCK WALL OR TUNNELS, THE REINFORCEMENT USED TO TIE INTO THE EXISTING STRUCTURE SHALL BE THAT OF THE EXISTING TUNNEL/CAPPING BEAM. THE REINFORCEMENT MUST ACHIEVE AND ANCHORAGE OF 40D INTO THE NEW CAST.
10. WHERE THE NEW CAPPING BEAM TIES INTO THE EXISTING CAPPING BEAM AT THE 202 / 203 CORNER, THE REINFORCEMENT USED TO TIE INTO THE EXISTING STRUCTURE SHALL BE THAT OF THE NEW CAPPING BEAM. THE REINFORCEMENT MUST ACHIEVE AN ANCHORAGE OF 40D INTO THE EXISTING CONCRETE.
11. BEFORE CONSTRUCTION COMMENCES THE CONTRACTOR MUST CHECK THAT ALL DIMENSIONS ARE CONSISTENT WITH EACH OTHER AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
12. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS.
13. DIMENSIONS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS WILL BE CORRECTED IN WRITING BY THE ENGINEER.
14. LEVELS SHOWN TO FOUNDATIONS ARE PROVISIONAL AND WILL BE FINALISED BY THE ENGINEER ON SITE.
15. REINFORCEMENT SHALL COMPLY WITH SANS 920 AND BE BENT TO SANS 282.
16. SYMBOLS :
    R = MILD STEEL BARS WITH CHARACTERISTIC STRENGTH OF 250 MPA.
    Y = HOT ROLLED OR COLD WORKED HIGH YIELD STEEL BARS WITH CHARACTERISTIC STRENGTH OF 450 MPA.
    (ONLY REINFORCEMENT FABRICATED UNDER THE SANS MARK SHALL BE DEEMED TO COMPLY WITH SANS REQUIREMENTS).

PAVING

1. CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE CUBE STRENGTH OF 30 MPA AND A MINIMUM MODULUS OF RUPTURE STRENGTH (FLEXURAL STRENGTH) OF 4 MPA.
2. EXPOSED EDGES OF ALL CONSTRUCTION JOINTS SHOULD BE ROUNDED TO 3mm RADIUS ON CASTING AND PRIOR TO SAWING. THIS IS TO CLEARLY IDENTIFY JOINT LOCATIONS.
3. ISOLATION JOINT FORMER TO BE CLOSED CELL, EXPANDED POLYETHYLENE WITH TEAR-OFF COVER STRIP, SUCH AS JOINTEX OR SIMILAR. THE JOINT FILLER IS TO EXTEND THE FULL DEPTH OF THE SLAB AND TERMINATE AT SUB-BASE LEVEL. THE JOINT FILLER SHALL COMPLY TO AASHTO M153 AS PER COLTO 7102 RECOMMENDATION.
4. CONCRETE PAVEMENT FINISHING: CONCRETE AREAS EXPOSED TO TRAFFIC SHOULD BE BROOM FINISHED.
5. THE SUB-BASE SHOULD BE KEPT CONTINUOUSLY WET FOR A PERIOD OF AT LEAST ONE HOUR BEFORE THE CONCRETE IS PLACED. NO EXCESSIVE POOLING OF WATER IS PERMITTED IN POUR LOCATIONS AND SHOULD BE BROOMED OFF AHEAD OF THE PAVER. ALL DELETERIOUS MATERIALS SHOULD BE REMOVED BEFORE CONCRETE PLACEMENT

TO ENSURE A UNIFORM SUPPORTING LAYER.

6. JOINT SAWING
6.1. TRANSVERSE CONTRACTION JOINTS SHALL BE SAWN AS PER COLTO 7118 AND SHALL NOT EXCEED 3mm WIDTH. NO INITIAL SAWING SHALL TAKE PLACE LATER THAN 24 HOURS AFTER THE CONCRETE HAS BEEN PLACED. IF A JOINT IS TO BE SEALED THE TOP PORTION MUST ONLY BE REAMED TO DEPTH NO SOONER THAN 7 DAYS AFTER INITIAL SAWING.
6.2. CONCTRACTOR SHALL DETERMINE THE EXACT TIME AND SEQUENCE OF SAWING WITH CONSIDERATION TO THE RISK OF EXCESSIVE SPALLING AND RAVELLING ASSOCIATED WITH EARLY SAWING.

CONCRETE

(WHERE APPLICABLE THE FOLLOWING SHALL APPLY)
1. ALL CONCRETE WORK SHALL CONFORM WITH THE LATEST AMENDED ISSUE OF :
   SANS 1200 : STANDARD SPECIFICATION FOR CONCRETE AND
   SANS 0100 : THE STRUCTURAL USE OF CONCRETE.
2. A SET OF SIX CUBES MUST BE MADE FOR EVERY FIFTY CUBIC METER (OR PORTION THEREOF) OF CONCRETE POURED ON A SPECIFIC DAY. 3 OF THE CUBES MUST BE TESTED AT SEVEN DAYS, AND THE BALANCE MUST BE AVAILABLE FOR TESTING AT 28 DAYS. THE TEST RESULTS ARE TO BE SUBMITTED TO THE ENGINEERS IMMEDIATELY AND SHOULD ANY PROBLEMS BE ANTICIPATED NO SHUTTERING IS TO BE STRIPPED UNTIL FURTHER NOTICE FROM THE ENGINEER.
3. ALL CONCRETE SHALL BE VIBRATED ACCORDING TO SPECIFICATION. ALL CONCRETE MUST BE CURED CONTINUOUSLY FOR SEVEN DAYS AFTER POURING AND EFFECTIVELY PROTECTED AGAINST DEHYDRATION.

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	
5200157-2-001-C-DE-0004-01	MULTIPURPOSE TERMINAL AREA MANHOLE DETAILS
5200157-2-001-C-SE-0004-03	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 3 OF 3
5200157-2-001-C-SE-0004-02	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 2 OF 3
5200157-2-001-C-SE-0004-01	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 1 OF 3
5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE DETAILED LAYOUT
5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE MULTIPURPOSE TERMINAL STORMWATER LAYOUT

GENERAL NOTES

1. THE CONTRACTOR SHALL ALLOW FOR ALL STANDARDS/SPECIFICATIONS WHICH ARE REFERRED TO IN THESE NOTES AND WHICH ARE APPLICABLE ON SITE.
2. DRAWINGS MUST NOTE BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE USED.
3. ALL DIMENSIONS AND LEVELS SHALL BE VERIFIED ON SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
5. CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   a) CONCRETE WORK TO TRANSNET'S SPECIFICATION 5420 AND SANS 10200;
   b) CONCRETE PLACING TO BE DONE IN ACCORDANCE WITH SANS 10100 PART 2, CLAUSE 10.2;
   c) CONCRETE CUBE STRENGTHS ARE CHARACTERISTIC STRENGTHS TO SANS 10100 PARTS 1 AND 2
6. CONCRETE STRENGTHS AT 29 DAYS:
   SLABS :40MPa/19mm
   BEAMS :40MPa/19mm
   WALLS :40MPa/19mm
   BLINDING :15MPa/19mm
7. COVER TO REINFORCEMENT:
   WALLS :60mm
   SLABS :60mm
   BEAMS :60mm
8. ALL EXPOSED CONCRETE TO BE CHAMFERED 20mm x 20mm UNLESS OTHERWISE SHOWN.
9. REINFORCEMENT SHALL COMPLY WITH SANS 920 AND BENT TO SANS 282.
   SYMBOLS: R - MILD STEEL WITH CHARACTERISTIC STRENGTH OF 250MPa.
   Y – HOT-ROLLED OR COLD WORKED HIGH STRENGTH BARS WITH CHARACTERISTIC STRENGTH OF 450MPa.
   (ONLY REINFORCEMENT FABRICATED UNDER THE SABS MARK SCHEME SHALL BE DEEMED TO COMPLY WITH SABS REQUIREMENTS).
10. 50mm MAX. BLINDING SHALL BE PROVIDED
11. FORMWORK AND SURFACE FINISH FORMED SURFACES:
    a) VISIBLE SURFACE :SMOOTH
    b) UNEXPOSED SURFACE :ROUGH
12. GROUT TO BE FLOWABLE SELF-LEVELING EPOXY GROUT.
13. STEELWORK TO FABRICATED AND ERECTED IN ACCORDANCE WITH THE SPECIFICATIONS IN SANS 2001-CS1 AND SANS 1921-3
14. ALL HOT-ROLLED STEEL SECTION AND PLATES TO GRADE S355JR TO EN10025.
15. CORROSION PROTECTION OF STEELWORK:
    ALL STEELWORK INCLUDING BOLTS,NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO SANS 121 (ISO 1461), TABLE 3. NUTS WITH OVERSIZED THREADS SHALL BE USED TO COMPENSATE FOR THE GALVANIZING ON THE BOLT THREADS.
16. PAINTING OF STEELWORK TO SANS 1200HC. APPLY SYSTEM 013-016 IN ACCORDANCE WITH SANS 0120HC. COLOUR TO BE DETERMINED BY CLIENT.
17. FABRICATORS TO SUBMIT TWO COPIES OF ALL SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF FABRICATION.

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR GATE REVIEW	TT	SS	PM	10-10-23

REVISIONS

CONTRACTOR / CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	TT		10 10 23
CHECKED	SS		10 10 23
DESIGNED	TT		10 10 23
CHECKED	PM		10 10 23

PR.ENG. / PR.TECH./PR. ARCH		
NAME	P. MAHARAJ	DATE
SIGNATURE		10 10 23
REG. NUMBER	200970238	
SCALE :	NOTED	A0

Transnet Port Terminals

TRANSNET

SALDANHA STORMWATER MANAGEMENT

MULTIPURPOSE TERMINAL AREA

STILLING BASIN 1-8

GENERAL ARRANGEMENTS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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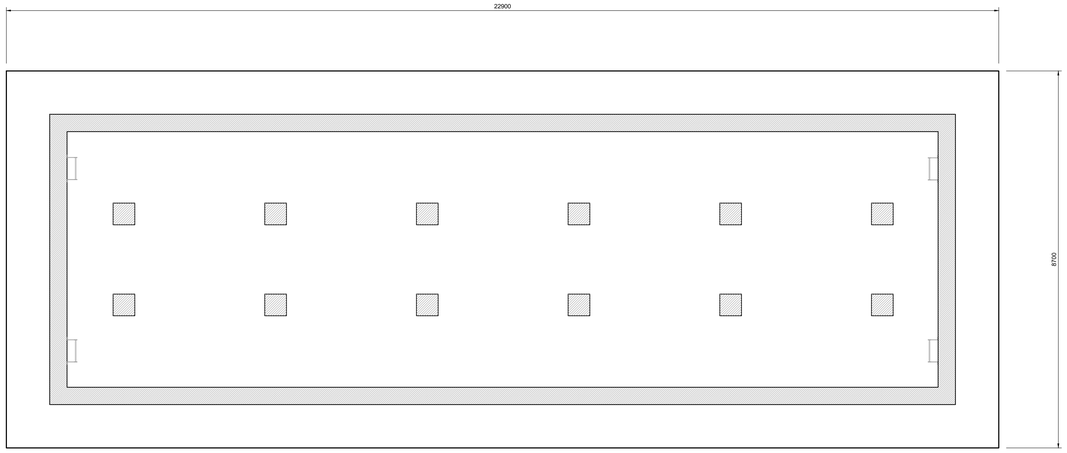


TYPICAL PLAN AT FOUNDATION LEVEL

1:50

GENERAL

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERING DRAWINGS.

DIMENSIONS MUST NOT BE SCALED OR ASSUMED. AFTER NOTIFICATION, DISCREPANCIES OR MISSING DIMENSIONS WILL BE CORRECTED IN WRITING BY THE ENGINEER.

LEVELS SHOWN TO FOUNDATIONS ARE PROVISIONAL AND WILL BE FINALIZED BY THE ENGINEER.

FOUNDATIONS HAVE BEEN DESIGNED FOR A PERMISSIBLE BEARING BEARING PRESSURE OF 100 N/m².

REINFORCEMENT SHALL COMPLY WITH SABS 920 AND BE BENT TO SABS 82.

SYMBOLS

R = MILD STEEL BARS WITH CHARACTERISTIC STRENGTH of 250 MPa
Y = HOT ROLLED OR COLD WORKED HIGH YIELD STEEL BARS WITH CHARACTERITIC STRENGTH OF 450 MPa.

ONLY REINFORCEMENT FABRICATED UNDER THE SABS MARK SHALL BE DEEMED TO COMPLY WITH SABS REQUIREMENTS.

CONCRETE

ALL CONCRETE WORK SHALL CONFORM WITH THE LATEST AMENDED ISSUE OF:

SANS 1200: STANDARD SPECIFICATION FOR CONCRETE AND
SANS 10100: THE STRUCTURAL USE OF CONCRETE.

A SET OF SIX CUBES MUST BE MADE FOR EVERY FIFTY CUBIC METER (OR PORTION THEREOF) OF CONCRETE POURED ON A SPECIFIC DAY, 3 OF THE CUBES MUST BE TESTED AT SEVEN DAYS, AND THE BALANCE MUST BE AVAILABLE FOR TESTING AT 28 DAYS.

THE TEST RESULTS ARE TO BE SUBMITTED TO THE ENGINEERS IMMEDIATELY AND SHOULD ANY PROBLEMS BE ANTICIPATED NO SHUTTERING IS TO BE STRIPPED UNTIL FURTHER NOTICE FROM THE ENGINEER>

ALL CONCRETE SHALL BE VIBRATED ACCORDING TO SPECIFICATION. ALL CONCRETE MUST BE CURED CONTINUOUSLY FOR SEVEN DAYS AFTER POURING AND EFFECTIVELY PROTECTED AGAINST DEHYDRATION.

SHUTTERING AND PROPPING MAY ONLY BE STRUCK AFTER THE LAPSE OF THE FOLLOWING TIMES: (ORDIANRY PORTLAND CEMENT IN NORMAL CONDITIONS)

POSITION OF SHUTTERING PROPS	Stirking Time Days
BEAM SIDE WALLS & UNLOADED COLUMNS	2
SLAB SOFFITS WITHOUT REMOVAL OF SLAB PROPS	4
BEAM SOFFITS WITHOUT REMOVAL OF PROPS	7
PROPS UNLOADED SLABS	10
POPS UNLOADED BEAMS	14

BEAMS AND SLABS MUST BE POURED WITH THE FOLLOWING CAMBERS

BEAM OR SLAB ELEMENT	CAMBER
CANTILEVER BEAMS AND SLABS	SPAN/150
OTHER BEAMS AND SLABS	SPAN/400

CONCRETE STRENGTHS ARE SPECIFIED IN TERMS OF CLAUSES IN SABS 1200. FOR THE VARIOUS ELEMENTS THEY ARE AS FOLLOWS

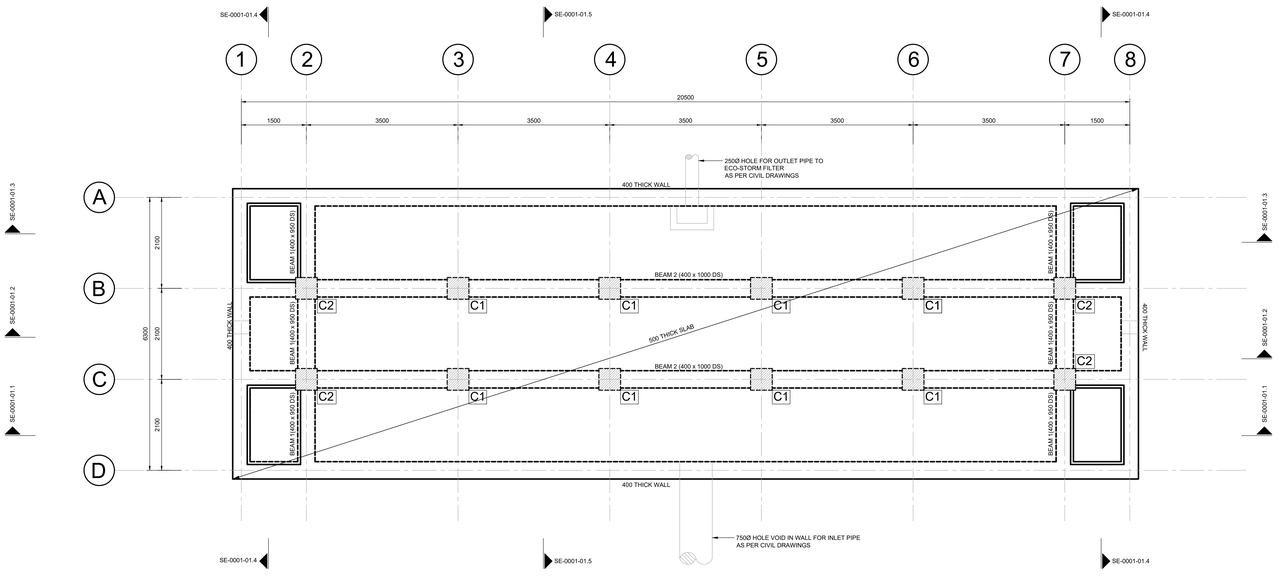
STRUCTURAL ELEMENT	CONCRETE GRADE
BLINDING	15
BASES/ FOOTINGS	40
BEAMS/ SLABS	40
WALLS	40
COLUMNS	40

THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING IMPOSED FLOOR LOADS:

STRUCTURE	LOADING (kN/m²)
LIVE LOAD	40

CONCRETE COVER TO REINFORCEMENT (in mm) - UNLESS OTHERWISE SPECIFIED

BASES/ FOOTINGS	-	60
STRAP BEAMS	-	60
PILECAP (TOP AND SLIDES)	-	60
COLUMNS	-	60
PILECAP (BOTTOM)	-	75
BEAMS	-	60
GROUND BEAMS	-	60
SLAB (TOP STEEL)	-	60
RETAINING WALLS (EARTH FACE)	-	60
SLAB (BOTTOM STEEL)	-	60



TYPICAL SLAB AND BEAM LAYOUT

1:50

CUT-OFF AND REMOVE 21.3m LENGTH OF THE EXISTING CONCRETE CHANNELS TO ALLOW FOR THE FITTING OF THE STILLING BASIN. ANY EXPOSED REBAR TO BE ADEQUATELY PROTECTED.

CONCRETE MIX TO HAVE PENETRON ADMIX TO 0.8% OF CEMENT CONTENT BY WEIGHT. MIX BY CERTIFIED PENETRON BATCHPLANT.

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5200157-2-001-C-DE-0004-01	MULTIPURPOSE TERMINAL AREA MANHOLE DETAILS
5200157-2-001-C-SE-0004-03	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 3 OF 3
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5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE MULTIPURPOSE TERMINAL STORMWATER LAYOUT

DRAWING NO. | REFERENCE

REFERENCE DRAWINGS

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5. CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   a) CONCRETE WORK TO TRANSNET'S SPECIFICATION S420 AND SANS 1200G;
   b) CONCRETE PLACING TO BE DONE IN ACCORDANCE WITH SANS 10100 PART 2, CLAUSE 10.2;
   c) CONCRETE CUBE STRENGTHS ARE CHARACTERISTIC STRENSTHS TO SANS 10100 PARTS 1 AND 2
6. CONCRETE STRENGTHS AT 29 DAYS:
   SLABS :40MPa/19mm
   BEAMS :40MPa/19mm
   WALLS :40MPa/19mm
   BLINDING :15MPa/19mm
7. COVER TO REINFORCEMENT:
   WALLS :60mm
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   BEAMS :60mm
8. ALL EXPOSED CONCRETE TO BE CHAMFERED 20mm x 20mm UNLESS OTHERWISE SHOWN.
9. REINFORCEMENT SHALL COMPLY WITH SANS 920 AND BENT TO SANS 282.
   SYMBOLS: R - MILD STEEL WITH CHARACTERISTIC STRENGTH OF 250MPa
   Y - HOT-ROLLED OR COLD WORKED HIGH STRENGTH BARS WITH CHARACTERISTIC STRENGTH OF 450MPa.
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10. 50mm MAX. BLINDING SHALL BE PROVIDED
11. FORMWORK AND SURFACE FINISH FORMED SURFACES:
    a) VISIBLE SURFACE :SMOOTH
    b) UNEXPOSED SURFACE :ROUGH
12. GROUT TO BE FLOWABLE SELF-LEVELING EPOXY GROUT.
13. STEELWORK TO FABRICATED AND ERECTED IN ACCORDANCE WITH THE SPECIFICATIONS IN SANS 2001-CS1 AND SANS 1921-3.
14. ALL HOT-ROLLED STEEL SECTION AND PLATES TO GRADE S355JR TO EN10025.
15. CORROSION PROTECTION OF STEELWORK:
    ALL STEELWORK INCLUDING BOLTS,NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO SANS 121 (ISO 1461), TABLE 3. NUTS WITH OVERSIZED THREADS SHALL BE USED TO COMPENSATE FOR THE GALVANIZING ON THE BOLT THREADS.
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REVISIONS

CONTRACTOR / CONSULTANT

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OPERATING DIVISIONS

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TRANSNET CAPITAL PROJECTS

TITLE	NAME	SIGN	DATE
DRAWN	TT		10 10 23
CHECKED	SS		10 10 23
DESIGNED	TT		10 10 23
CHECKED	PM		10 10 23

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

NAME	P. MAHARAJ
SIGNATURE	10 10 23
REG. NUMBER	200970238
SCALE :	NOTED

Transnet Port Terminals

SALDANHA STORMWATER MANAGEMENT

MULTIPURPOSE TERMINAL AREA

STILLING BASINS 1-8

LAYOUTS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
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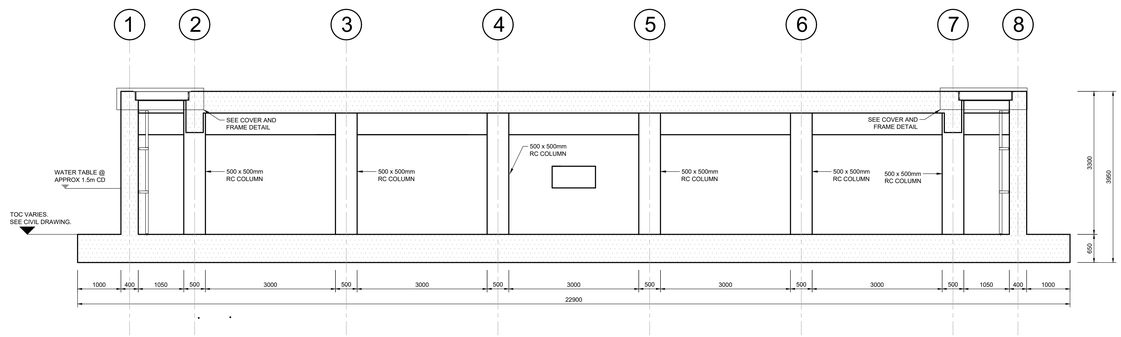
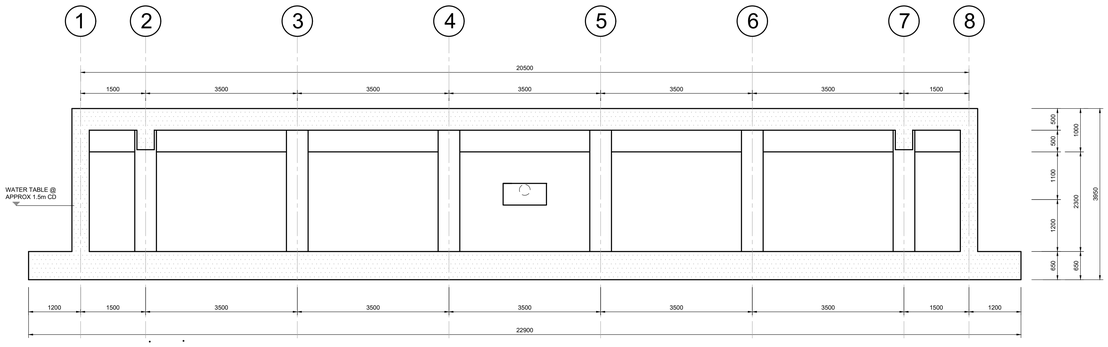


SECTION 1 - 1
1:50



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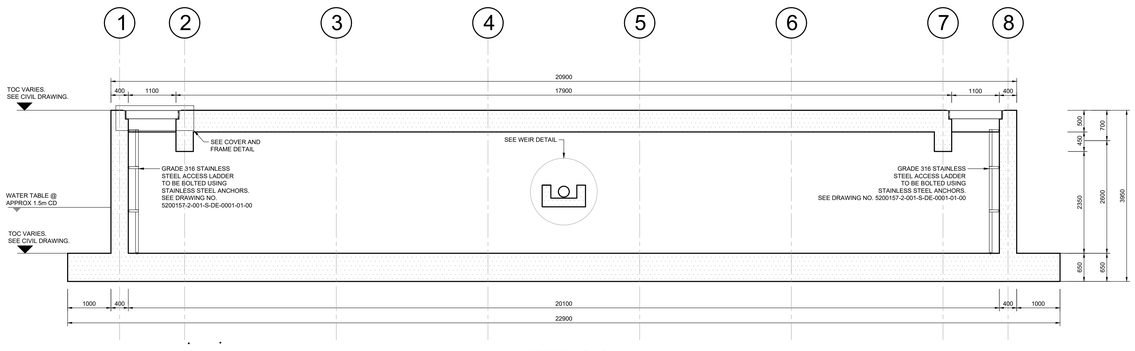

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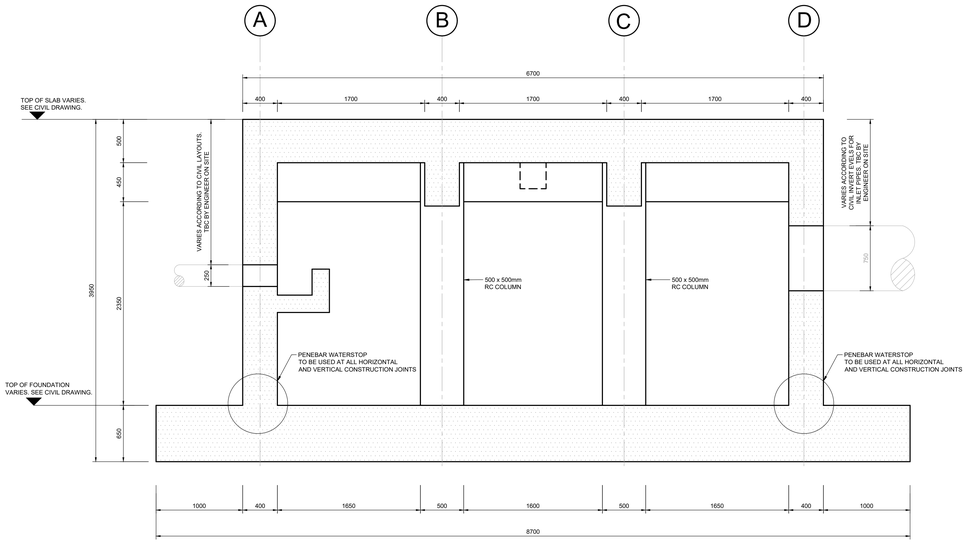

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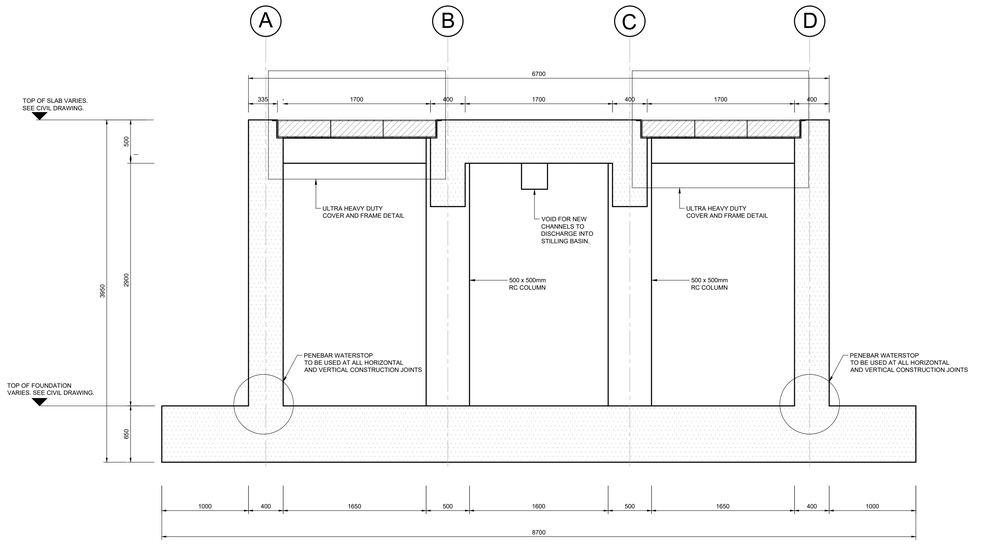

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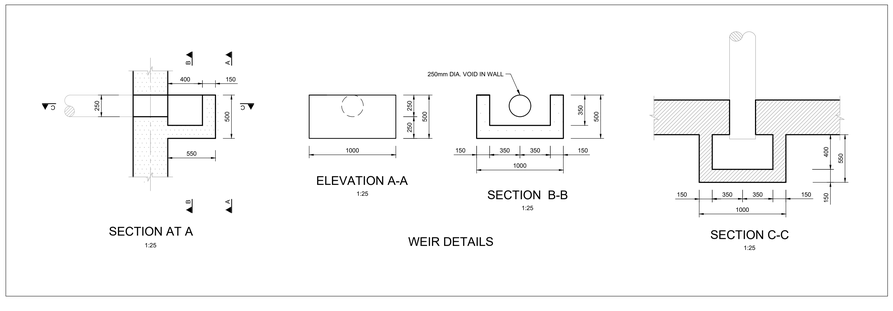

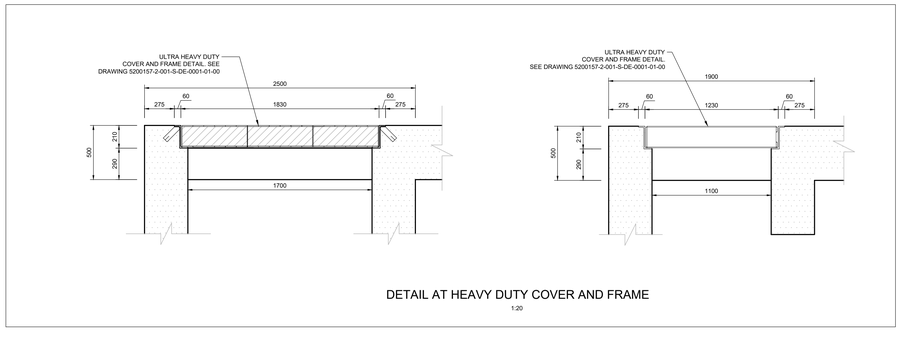

DETAIL AT HEAVY DUTY COVER AND FRAME
1:20

5200157-2-001-C-DE-0004-01	MULTIPURPOSE TERMINAL AREA MANHOLE DETAILS
5200157-2-001-C-SE-0004-03	MULTIPURPOSE TERMINAL AREA STORMWATER LONG SECTIONS SHEET 3 OF 3
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5200157-2-001-C-LA-0004-01	SALDANHA PORT - DRAINAGE MULTIPURPOSE TERMINAL STORMWATER LAYOUT
DRAWING NO.	REFERENCE

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GENERAL NOTES

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   c) CONCRETE CUBE STRENGTHS ARE CHARACTERISTIC STRENGTHS TO SANS 10100 PARTS 1 AND 2
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8. ALL EXPOSED CONCRETE TO BE CHAMFERED 20mm x 20mm UNLESS OTHERWISE SHOWN.
9. REINFORCEMENT SHALL COMPLY WITH SANS 920 AND BENT TO SANS 282.
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14. ALL HOT-ROLLED STEEL SECTION AND PLATES TO GRADE S355JR TO EN10025.
15. CORROSION PROTECTION OF STEELWORK:
    ALL STEELWORK INCLUDING BOLTS,NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED TO SANS 121 (ISO 1461), TABLE 3. NUTS WITH OVERSIZED THREADS SHALL BE USED TO COMPENSATE FOR THE GALVANIZING ON THE BOLT THREADS.
16. PAINTING OF STEELWORK TO SANS 1200HC. APPLY SYSTEM 013-016 IN ACCORDANCE WITH SANS 0120HC. COLOUR TO BE DETERMINED BY CLIENT.
17. FABRICATORS TO SUBMIT TWO COPIES OF ALL SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF FABRICATION.

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR GATE REVIEW	TT	SS	PM	10-10-23

REVISIONS

CONTRACTOR / CONSULTANT			
TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS			
TITLE	NAME	SIGN	DATE

TRANSNET CAPITAL PROJECTS			
TITLE	NAME	SIGN	DATE
DRAWN	TT		10 10 23
CHECKED	SS		10 10 23
DESIGNED	TT		10 10 23
CHECKED	PM		10 10 23

PR.ENG. / PR.TECH./PR. ARCH		
NAME	P. MAHARAJ	DATE
SIGNATURE		10 10 23
REG. NUMBER	200970238	
SCALE :	NOTED	A0

Transnet Port Terminals

TRANSNET

SALDANHA STORMWATER MANAGEMENT

MULTIPURPOSE TERMINAL AREA

STILLING BASIN

SECTIONS AND DETAILS

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
5 2 0 0 1 5 7 - 2	0 0 1	S	S E	0 0 0 1	0 1	0 0	TT