

- GENERAL NOTES:**
1. THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE AND IN AGREEMENT WITH THE WORKS REQUIRED AS SET FORTH IN THE SUBMITTED DOCUMENTS, UNLESS AN ALTERNATIVE WITHIN THE SAME PERIOD OF TIME IS PROPOSED AND APPROVED THROUGH THE DESIGN DOCUMENTS. ANY ALTERNATIVE PROPOSAL MUST INCLUDE DURING CONSTRUCTION SHALL BE ON A DESIGN AND CONSTRUCTION BASIS, WITH THE DESIGN AT CONTRACTOR'S EXPENSE.
  2. VARIATIONS DEEMED NECESSARY BY THE CONTRACTOR SHALL BE FORWARDED TO THE PROJECT MANAGER IN WRITING FOR APPROVAL BEFORE THE CONTRACTOR PROCEEDS ON THE VARIATION.
  3. SERVICES SHOWN ON DRAWING ARE KNOWN OR SOURCED FROM EXISTING DRAWINGS. THE CONTRACTOR MUST ENSURE THAT ALL SERVICES THAT INTERSECT OR RUN ALONGSIDE THE PROPOSED WORKS ARE LOCATED BEFORE CONSTRUCTION COMMENCES. ANY CLASHES SHALL BE REPORTED TO THE PROJECT MANAGER IN WRITING. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES TO EXISTING SERVICES DUE TO NEGLIGENCE.
  4. ALL EXISTING PIPES AND MANHOLES INCORPORATED INTO THE NEW SYSTEM SHALL HAVE DEFECTS RECTIFIED TO COMPLY TO STANDARDS FOR NEW WORKS.
  5. DIMENSIONS SHOWN ON DRAWINGS SHALL HAVE PREFERENCE OVER DIMENSIONS SCALED.
  6. ALL LEVELS AND DIMENSIONS SHALL BE CHECKED BEFORE ANY WORK COMMENCES. FAILURE TO DO SO SHALL DEEM THE CONTRACTOR LIABLE FOR ANY WORK REQUIRED TO RECTIFY ERRORS AS A RESULT OF THE FAILURE TO CHECK THE LEVELS AND DIMENSIONS.
  7. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE INDICATED.
  8. THE LATEST VERSION OF SANIS SPECIFICATIONS SHALL APPLY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH RELEVANT SANIS SPECIFICATIONS, UNLESS OTHERWISE INDICATED.
  9. ALL LENGTHS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE BY CONTRACTOR.

- EARTHWORKS:**
1. ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
  2. ALL WORKMANSHIP TO BE IN ACCORDANCE WITH SANS 1200 PART D : EARTHWORKS AND THE RELEVANT PROJECT SPECIFICATIONS AS INCLUDED IN THE CONTRACT.
  3. BEFORE PLACING ANY FILL MATERIAL, THE EXISTING GROUND SURFACE MUST BE CLEARED AND GRUBBED OF ALL VEGETATION AND ORGANIC MATTER.
  4. UNLESS OTHERWISE INDICATED, ALL BANK BATTERS TO BE: 1:1.5 CUT AND 1:2 FILL.
  5. THE UNCOMPACTED THICKNESS OF FILL LAYERS SHALL NOT EXCEED 300mm.
  6. LOCATE ALL EXISTING SERVICES IN AREA PRIOR TO ANY CONSTRUCTION TAKING PLACE.
- THE CONTRACTOR IS TO TAKE Dewatering AND ENVIRONMENTAL BEDROCK INTO ACCOUNT IN ACCORDANCE TO TRUE NATURE AND EXTENT OF THE WORKS. SEE WORKS INFORMATION FOR MORE DETAIL.

- STORMWATER NOTES:**
1. TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1200 DB - PIPES TRENCHES.
  2. ALL RIGID CONCRETE PIPES SHALL HAVE CLASS 8 BEDDING UNLESS STATED OTHERWISE.
  3. FOR STORMWATER PIPES TO BE SPACED TO SUPPORT A SOCKET CLASS 1000N (SANS 677).
  4. ALL CONCRETE PIPE JOINTS TO BE IMPREGATED WITH A 2% BROMINE IODINE CONTAINING FLUORENCE BASED PUNCHED POLYESTER GEOFIBRE/MESH. WIDTH TO BE 75mm FOR PIPES 3000 TO 6000.
  5. NB. ALL MANHOLE COVERS TO SURT CUT/SLOTTED IF FINISHED PAVING.
  6. ON COMPLETION, THE INSTALLATION SHALL BE TESTED TO THE ENGINEER'S SPECIFICATION.
  7. THE CONTRACTOR SHALL SUBMIT A FULL SET OF AS-BUILT DRAININGS UPON COMPLETION OF THE INSTALLATION.
  8. ALL EXISTING STORMWATER PIPES, MANHOLES, CHASES AND ALL OTHER STORMWATER INFRASTRUCTURE TO BE CLEANED AND CLEANED OF ALL DEBRIS BEFORE ANY WORK COMMENCES. ALL DAMAGED EXISTING STORMWATER INFRASTRUCTURE SHALL BE REINFORCED TO ORIGINAL CONDITION.
  9. ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
  10. ALL EXISTING STORMWATER PIPES ARE CONCRETE UNLESS STATED OTHERWISE.
  11. THESE MINIMUM COVER OF 1000mm FOR OPERATIONAL AREAS & 600mm FOR NON OPERATIONAL AREA CANNOT BE ACHIEVED. CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.

- ### CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:-
1. REMOVE ALL DUST & CAKED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS.
  2. REPAIR EROSION RUNNELS & RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE TOWARDS THE DETENTION POND.
  3. PIPES, CULVERTS, MANHOLES & CHANNELS NEED TO BE CLEANED REGULARLY AS SYSTEM IS BLOCKED & MANHOLES ARE SILETED UP.
  4. LENGTHS OF PIPES, NUMBER OF CULVERTS & MANHOLES CLEARLY SHOWN IN LONGITUDINAL SECTION FOR QUANTIFYING.
  5. CLEAN OUT ALL SLABS & DRYING BEDS.
  6. RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE AWAY FROM THE ROADS TOWARDS THE STORMWATER POND.
  7. LOW POINTS TO BE REPAIRED WITH A MINIMUM OF 150 mm G2 LAYER COMPACTED TO 95 % MOD.ASHTO.
- ### CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND-6 AND POND 12:-
1. FOR RESPECTIVE POND DETAIL REFER TO DRAWING 200157-2-001-COE-0002-01.
  2. CLEAR ALL GRUBS & VEGETATION.
  3. COMPACT TO 90 % MOD.ASHTO.
  4. REPAIR & REINSTATE ALL DOWN CHUTES IF APPLICABLE.
  5. PLACE STONE PITCHING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
  6. DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERS/KIOS.
  7. PLEASE SEE 200157-2-001-COE-0003-01 FOR POND 6 AND POND 12 LAYERWORKS.
  8. STONE BOLLARDS (QUANTITY 40) TO BE PLACED AROUND POND 12:
    - a. 150mm THICK DIEL STEEL
    - b. 150mm IN DIAMETER
    - c. AT LEAST 1000mm ABOVE TO BE PLACED
    - d. PROVIDE TO ALLOW ACCESS FOR MAINTENANCE (PERMANENT METAL GROUND SOCKET ANCHORED IN A CONCRETE FOUNDATION)
    - e. 400mm PLAIN CONCRETE FOUNDATION OF 400mm x 400mm x 400mm DEEP- MIN COVER OF 50mm
  9. PAINTED IN REFLECTIVE YELLOW PAINT

2001-C-1A-0003.01	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1
2001-C-1A-0003.02	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1 500
2001-C-1A-0003.03	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1 500
2001-C-1A-0003.04	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1 500
2001-C-3E-0003.01	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 1 OF 6
2001-C-3E-0003.02	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 2 OF 6
2001-C-3E-0003.03	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 3 OF 6
2001-C-3E-0003.04	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 4 OF 6
2001-C-3E-0003.05	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 5 OF 6
2001-C-3E-0003.06	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 6 OF 6
2001-C-DE-0003.01	RAIL EMBANKMENT - POND 1E2 AND POND 6 CROSS SECTION DETAIL
2001-C-DE-0002.02	TYPICAL GRID CHANNEL, MOUNT LITE KERB, SUBSIDIARY COLLECTION

- NOTES:
- MEASUREMENTS ARE BASED ON METRIC SYSTEM.
  - ALL LEVELS ARE IN METERS TO MEAN SEA LEVELS (MSL).
  - DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
  - THE CONTRACTOR SHALL VERIFY ALL SERVICES OR CONDITIONS ON THE SITE AND NOTIFY THE ENGINEERING OF ANY VARIATIONS FROM DIMENSIONS BEFORE CONSTRUCTION.

DRAWING NO.	REFERENCE
REFERENCE DRAWINGS	

RAIL EMBANKMENT LAYOUT DETAIL  
SCALE 1:500

RAIL EMBANKMENT STORMWATER SCHEDULE		
Name	Y-Coord	X-Coord
RE MH1	-44152.12	-365449.29
RE MH2	-44139.38	-3654463.84
RE MH3	-44133.90	-3654466.90
RE MH4	-44148.50	-3654506.93
RE MH5	-44124.14	-3654528.52
RE MH6	-44102.26	-3654537.29
RE MH7	-44119.69	-3654585.23
RE MH8	-39030.53	-3653784.95
RE MH9	-38889.80	-3653790.08
RE MH10	-38883.33	-3653792.55
RE MH11	-38836.67	-3653809.51
RE MH12	-38826.30	-3653814.28
POND B INLET	-39026.30	-3653947.28
GRID CH 8A BP	-44029.84	-3654201.00
GRID CH 8B BP	-44036.38	-3654121.00
GRID CH 8C BP	-44036.38	-3654463.84
GRID CH 8D BP	-44036.38	-3654463.84
POND 3A BP	-44012.78	-3654131.04
POND 12 INLET	-44127.78	-3654012.00
GRID CH 1A BP	-44026.50	-3654123.44
GRID CH 8B BP	-39874.25	-3653704.22
GRID 7A BP	-44013.37	-3654126.38
GRID 8A BP	-44006.54	-3654126.38
GRID 7B BP	-37675.82	-3653453.43
GRID 8D BP	-37670.78	-3653454.13
GRID 8C	-38313.49	-3653566.97
GRID 8B	-38317.73	-3653616.60

RAIL EMBAKKMENT SETTING OUT COORDINATES				
Position X	Position Y	Coordinate ID		
941407.303	-35654675.634	CMH1		
94107.112	-35654686.046	CMH2		
94027.973	-35654122.573	GRND CH 1A HP		
94027.627	-35654123.627	GRND CH 1A HP		
9387.8305	-35653704.305	GRND CH 6B HP		
94193.491	-35654515.989	R01		
94198.086	-35654514.034	K02 (BC)		
94171.323	-35654001.694	K03 (CC)		
94111.646	-35654016.596	K04 (CC)		
94125.299	-35654611.164	P05		
94106.747	-35654627.578	P06		
94141.774	-35654670.303	P02		
94150.765	-3564668.863	P03		
94168.483	-3564667.816	P04		
94128.137	-3564663.011	P05		
94129.174	-3564670.733	P06		
94119.156	-3564641.448	P07		
94119.156	-3564641.448	P08		
9381.1367	-3563980.823	P09		
93809.928	-3563581.367	P10		
93803.561	-3563945.643	P11		
93803.332	-3563947.343	P12		
93772.544	-3563586.888	P13		
93774.611	-3563587.940	P14		
93773.622	-3563783.666	P15		
93776.991	-3563781.465	P16		
93776.991	-3563781.465	P17		
93712.667	-3563939.444	R01		
94147.538	-3564686.953	RSM1		
94139.537	-3564678.137	RSM2		
94117.379	-3564618.142	RSM3		
94041.386	-3564126.037	SCD 2A HP		
94057.556	-3565131.564	SCD 3A HP		
94068.874	-3564268.556	SCD 3A IMD		
94041.066	-3564125.508	SCD 7A HP		
93780.800	-3565129.024	SCD 8A HP		
94066.265	-3565129.024	SCD 9A HP		
9371.828	-3565167.192	SCD 00B		
93813.713	-3565396.127	SCD 8C		
93761.022	-3565345.274	SCD 8D HP		


STEEL BOLLARD SETTING OUT COORDINATES		
Position X	Position Y	COORDINATE ID
-04151.00	-3654668.78	S801
-04149.86	-3654665.72	S802
-04148.73	-3654662.66	S803
-04147.59	-3654659.60	S804
-04146.45	-3654656.54	S805
-04145.32	-3654653.48	S806
-04144.18	-3654650.42	S807
-04143.05	-3654647.36	S808
-04141.91	-3654644.30	S809
-04140.77	-3654641.24	S810
-04139.63	-3654638.18	S811
-04138.50	-3654628.12	S812
-04137.36	-3654630.06	S813
-04136.23	-3654629.00	S814
-04135.09	-3654625.94	S815
-04133.95	-3654622.88	S816
-04132.82	-3654619.82	S817
-04131.68	-3654616.77	S818
-04130.54	-3654613.71	S819
-04129.41	-3654610.65	S820
-04140.46	-3654672.51	S821
-04139.33	-3654669.53	S822
-04138.19	-3654666.47	S823
-04137.05	-3654663.41	S824
-04135.92	-3654660.35	S825
-04134.78	-3654657.29	S826
-04133.64	-3654654.24	S827
-04132.51	-3654651.18	S828
-04131.37	-3654648.12	S829
-04130.24	-3654645.06	S830
-04129.10	-3654642.00	S831
-04127.96	-3654638.94	S832
-04126.83	-3654635.88	S833
-04125.69	-3654632.82	S834
-04124.55	-3654629.76	S835
-04123.42	-3654626.70	S836
-04122.28	-3654623.64	S837
-04121.14	-3654620.58	S838
-04120.01	-3654617.52	S839
-04118.87	-3654614.46	S840

LEGEND - SERVICES		
PROPOSED	EXISTING	DESCRIPTION
		STORMWATER MAIN/PIPE
		SEWER MAIN/PIPE
		PROPOSED/EXISTING PIPE - 150mm PIPES
		EXISTING MAIN/PIPE
		COMBINATION MAIN/PIPE (OUT)
		ELECTRIC MAIN/PIPE
		VEHICLEWAY
		FINISH
		CATCHMENT BOUNDARY
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
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		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE
		EXISTING/NEW SERVICE
		OPINION/NOTE
		EXISTING MAIN/PIPE
		NEW/PROPOSED 150mm GULLY/POCKET AREAS
		RELOCATED SURFACE

00	ISSUED FOR CONSTRUCTION	RM	Hw/H	RN	03/08/2023		
0B	ISSUED FOR CLIENT APPROVAL	RM	Hw/H	RN	24/04/2023		
0A	ISSUED FOR CLIENT APPROVAL	RM	Hw/H	RN	01/07/2022		
NO.	DESCRIPTION	BY	CHKD	APPD	DATE		
<b>REVISIONS</b>							
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CONTRACTOR / CONSULTANT				TRANSPORT PORT TERMINALS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
				DRAWN	RM	<i>[Signature]</i>	03 08 23
				CHECKED	HuW	<i>[Signature]</i>	03 08 23
				DESIGNED	RM	<i>[Signature]</i>	03 08 23
				CHECKED	HuW	<i>[Signature]</i>	03 08 23
OPERATING DIVISIONS							
TITLE	NAME	SIGN	DATE	PRE.ENG. / PR. TECH./PR. ARCH			
				NAME	R. NADDOO		DATE
				SIGNATURE	<i>[Signature]</i>		03 08 23
				REG. NUMBER	201070216		
				SCALE:	AS SHOWN		

Transnet Port Terminals



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# PORT OF SALDANHA

## SALDANHA PORT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500

### SHEET 1 OF 3

PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
2000157	2	001	5	C-LA	00003	02	00	RM