

RAIL EMBANKMENT LAYOUT DETAIL
SCALE 1:500

2. THE CONTRACTOR WILL BE REQUIRED TO HAVE INSPECTED THE SITE AND BE IN AGREEMENT WITH THE INFORMATION AS FURNISHED BY THE FENCER OWNERS. ASKS AS ANY DISCREPANCIES OR CONFLICTS WITH COST IMPLICATIONS TO BE IDENTIFIED AND REPORTED TO THE FENCER OWNERS. ALTERNATIVE PROPOSALS SUBMITTED DURING THE CONSTRUCTION SHALL BE ON DESIGN AND CONTRACTOR'S BASIS. WITH THE DESIGNER'S AND CONTRACTOR'S ENDORSE.
3. VARIATIONS DEEMED NECESSARY BY THE CONTRACTOR SHALL BE FORWARDED TO THE PROJECT MANAGER FOR REVIEW AND APPROVAL. BEFORE ANY CONSTRUCTION BASED ON THE VARIATION COMMENCES.
4. SERVICES SHOWN ON DRAWING ARE KNOWN OR SOURCED FROM EXISTING DRAWINGS. THE CONTRACTOR MUST ENSURE THAT ALL SERVICES THAT INTERFERE OR RUN ALONGSIDE THE EXISTING UTILITIES ARE PROTECTED AND PROTECTED BY THE FENCER OWNERS. ANY SERVICES TO BE REPORTED TO THE PROJECT MANAGER IN WRITING. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES TO EXISTING SERVICES DUE TO NEGLIGENCE.
5. ALL EXISTING PIPES AND MANHOLES INCORPORATED INTO THE NEW SYSTEM SHALL HAVE DECKETS RECEPTED TO COMPLY TO STANDARDS FOR NEW WORK.
6. DIMENSIONS SHOWN ON DRAWINGS SHALL TAKE PREFERENCE OVER DIMENSIONS SCALED.
7. ALL LEVELS AND DIMENSIONS SHALL BE CHECKED BEFORE ANY WORK COMMENCES. FAILURE TO DO SO SHALL BEIN THE CONTRACTOR'S LEVEL FOR ANY WORK REQUIRED TO RECTIFY BEFORE THE START OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIMENSIONS.
8. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE INDICATED
9. THE LATEST VERSION OF SANS SPECIFICATIONS SHALL APPLY. ALL WORK SHALL BE DONE ACCORDANCE WITH RELEVANT SANS SPECIFICATIONS, UNLESS OTHERWISE INDICATED.
10. ALL LENGTHS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE BY CONTRACT

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 1202 PART 4 - 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 MATERIAL.
4. UNLESS OTHERWISE INDICATED, ALL BANK BATTERS TO BE: 1:1.5 CUT AND 1:2 FILL.
5. THE UNCOMPLICATED THICKNESS OF FILL LAYERS SHALL NOT EXCEED 300mm
6. LOCATE ALL EXISTING SERVICES IN AREA PRIOR TO ANY CONSTRUCTION TAKING PLACE.
7. THE CONTRACTOR IS TO TAKE DOWNSHEDDING AND ENCOUNTERING BEDROCK INTO ACCOUNT IN ADVANCE OF THE TRUE NATURE AND EXTENT OF THE WORKS. SEE WORKS INFORMATION FOR MORE DETAIL.

1. REMOVE ALL DUST & CAVED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS
2. REPAIR EROSION TRENCHES & 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 SILT-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 G/L LAYER COMPACTED TO 95 %

1. FOR RESPECTIVE POND DETAIL, REFER TO DRAINING S001P157-2/01-C06-0026/01.
2. CLEAR ALL GRASS & VEGETATION.
3. COMPACT TO 8% MO AASHTO.
4. REPAIR & REINSTATE ALL DOWN CUTS AT APPLICABLE.
5. PLACE STONE EROSION EROSION DISSIPATORS AT OUTLET OF CULVERTS & DOWN CUTS.
6. DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERWORKS.
7. PLEASE SEE S001P157-2/01-C06-0030/01 FOR POND 6 AND POND 12. LAYERWORKS
8. STEEL BOLLARDS (1000MM DIA) TO BE PLACED AROUND POND 12.
 - 8.1. 1000MM DIA BOLLARD
 - 8.2. 150mm DIAMETER
 - 8.3. AT LEAST 600mm ABOVE GROUND
 - 8.4. ONE TRIPLE TO FOUR ACCESS FOR MAINTENANCE (PERMANENT METALIC COAT AND ANCHORED IN A CONCRETE FOUNDATION)
 - 8.5. 400MM PLAIN CONCRETE FOUNDATION OF 400mm X 400mm X 400mm DEEP.
 - 8.6. PAINTED IN REFLECTIVE YELLOW PAINT

1. TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENTS OF SANS 10018 - PIPE TRENCHES.
2. ALL RIGID CONCRETE PIPES SHALL HAVE CLASS 8 BEDDING UNLESS STATED OTHERWISE.
3. FOR FORMSTAMPED PIPES SHALL BE SPOILT & SECOND CLASS (YOD SANIS 87).
4. ALL CONCRETE PIPE JOINTS TO BE WRAPPED "WITH A330B NONWOVEN CONTINUOUS PLAINFIBRE NEEDLE PUNCTURE, POLYESTER (GEOTEKSTIL) MIN. WIDTH TO BE 75mm FOR PIPES 3000 TO 6000.
5. NB. ALL MANHOLE COVERS TO SUIT SCALLOTTED FINISHING PAVED.
6. ON COMPLETION, THE INSTALLATION SHALL BE TESTED TO THE ENGINEERS SPECIFICATION.
7. THE CONTRACTOR SHALL SUBMIT A FULL SET OF AS-BUILT DRAWINGS UPON COMPLETION OF INSTALLATION.
8. ALL EXISTING STORMWATER PIPE, MANHOLES, CHANNELS AND ANY OTHER STORMWATER INFRASTRUCTURE TO BE CLEANED AND CLEARED OF ALL DEBRIS BEFORE ANY WORK COMMENCES. ALL DAMAGED EXISTING STORMWATER INFRASTRUCTURE SHALL BE REINSTA TO ORIGINAL CONDITION.
9. ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINE PRIOR TO COMMENCEMENT OF ANY WORK.
10. ALL EXISTING STORMWATER PIPES ARE CONCRETE UNLESS STATED OTHERWISE.
11. WHERE MINIMUM COVER OF 100mm FOR OPERATIONAL AREAS & 600mm FOR NON OPERATIONAL AREAS CAN BE ACHIEVED. CONCRETE INFRASTRUCTURE IS REQUIRED AS PER DETAIL DRAWINGS.

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

20210517-2-001-C.A.0000.01	RAL EMBARKMENT - ST-CORNER/ETM RAL EMBARKMENT GENERAL/ LAVAL
20210517-2-001-C.B.0000.01	RAL EMBARKMENT - ST-CORNER/ETM RAL EMBARKMENT LAVAL 1500 SHEET 1 OF 3
20210517-2-001-C.B.0000.02	RAL EMBARKMENT - ST-CORNER/ETM RAL EMBARKMENT LAVAL 1500 SHEET 2 OF 3
20210517-2-001-C.B.0000.03	RAL EMBARKMENT - ST-CORNER/ETM RAL EMBARKMENT LAVAL 1500 SHEET 3 OF 3
20210517-2-001-C.B.0000.04	RAL EMBARKMENT - RAL EMBARKMENT LONGSECTION SHEET 1 00F SHEET 1
20210517-2-001-C.B.0000.05	RAL EMBARKMENT - RAL EMBARKMENT LONGSECTION SHEET 2 00F SHEET 1
20210517-2-001-C.B.0000.06	RAL EMBARKMENT - RAL EMBARKMENT LONGSECTION SHEET 3 00F SHEET 1
20210517-2-001-C.B.0000.07	RAL EMBARKMENT - RAL EMBARKMENT LONGSECTION SHEET 4 00F SHEET 1
20210517-2-001-C.B.0000.08	RAL EMBARKMENT - RAL EMBARKMENT LONGSECTION SHEET 5 00F SHEET 1
20210517-2-001-C.B.0000.09	RAL EMBARKMENT - RAL EMBARKMENT LONGSECTION SHEET 6 00F SHEET 1
20210517-2-001-C.B.0000.10	RAL EMBARKMENT - POND 1 D AND POND 6 CROSS SECTION DETAIL
20210517-2-001-C.B.0000.22	1" CIVIL, CROSS CHANNEL, MOUNT RALE, RUBB, SUBSOL, COLLECTOR OR DRAIN (CROSS) AND TRAPEZOIDAL CHANNEL DETAIL

DRAWING NO.

REFERENCE DRAWINGS

REFERENCE





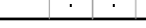
BENCHMARK NAME	Y	Z	X	Z	TYPE
P002 S1	94375.257	3054691.162	5.692	Pillar Beakon	
P004 S1	94375.598	3062758.628	11.637	Pillar Beakon	
P005 S1	94350.064	3065384.385	4.526	Pillar Beakon	
P006 S1	944121.329	3056507.768	11.246	Pillar Beakon	
202025 S1	94271.795	3063343.320	6.146	20mm Round Iron Peg	
	94369.668	3063354.298	6.146	20mm Round Iron Peg	
B0	93748.380	3063393.098	3.313	12mm Round Iron Peg	
B1	93689.362	3063364.714	2.997	12mm Round Iron Peg	
B4	94006.912	3064037.881	2.839	12mm Round Iron Peg	
B5	94466.158	3064428.016	3.055	12mm Round Iron Peg	
B6	94380.474	3064714.558	3.695	Roof Nail in Concrete	
B7	94394.047	3065074.635	3.385	12mm Round Iron Peg	
B8	94392.847	3064598.098	3.385	12mm Round Iron Peg	
B9	93119.052	3063381.885	3.673	12mm Round Iron Peg	
B10	93043.873	3063281.361	3.484	12mm Round Iron Peg	


STILL EMBANKMENT ROADWAY SCHEDULE		
Name	Y-Coord	X-Coord
RE MH1	-041512.12	-36544549.220
RE MH2	-0413139	-36544643.843
RE MH3	-0413139	-36544655.905
RE MH4	-0413139	-36544506.639
RE MH5	-0412102	-36544529.539
RE MH6	-0412102	-36544537.229
RE MH7	-0413139	-36544585.223
RE MH8	-0399155	-3653784.954
RE MH9	-03869.60	-3653790.000
RE MH10	-03863.33	-3653792.555
RE MH11	-03836.67	-3653809.511
RE MH12	-03826.30	-3653814.129
POND E BH	-03808.69	-3653847.287
GRID CH 9A 1H	-041027.58	-3654120.048
GRID CH 10A 1H	-041027.58	-3654122.133
RE MH2	-04139.30	-36544643.843
GRID 3A 1H	-04137.30	-36544131.043
GRID 20 IN 12ET	-041227.58	-365441662.092
GRID CH 1A 1H	-041027.58	-3654123.443
GRID CH 0B 1H	-03874.26	-3653704.224
GRID 7A 1H	-04131.17	-3654126.306
GRID 8A 1H	-041027.58	-36544132.778
GRID 9B 1H	-03768.62	-3653495.433
GRID 10B 1H	-03768.62	-3653495.433
GRID 8C 8B	-03814.70	-3653596.977
GRID 8B	-03917.75	-3653618.670

RAIL BALLMOUNT SETTING OUT COORDINATES			
Position X	Position Y	Coordinate ID	
-9410.375	-3554675.634	CMH1	
-9410.710	-3554685.046	CMH2	
-9402.673	-3554122.573	GRBD CH 1A HP	
-9402.677	-3554121.635	GRBD CH 1A BP	
-9387.830	-3553704.506	GRBD CH 6B HP	
-94103.491	-3553579.598	K01	
-94188.096	-3554513.430	K02 (BG)	
-94171.933	-3555051.694	K03 (CG)	
-94171.933	-3554668.256	K04 (CG)	
-94152.999	-3554464.165	P01	
-94160.747	-3554662.579	P02	
-94114.714	-3554670.305	P03	
-94150.765	-3554666.863	P04	
-94148.483	-3554667.816	P05	
-94128.137	-3554631.011	P06	
-94129.174	-3554610.733	P07	
-94115.156	-3554641.149	P08	
-94129.138	-3554646.496	P09	
-94129.138	-3554630.623	P10	
-93909.928	-3553985.798	P11	
-93903.561	-3553945.465	P12	
-93903.332	-3553947.803	P13	
-93772.545	-3553856.889	P14	
-93774.811	-3553857.940	P15	
-93778.622	-3553873.666	P16	
-93779.691	-3553871.405	P17	
-93814.405	-3553860.500	P18	
-93827.687	-3553860.623	P19	
-94167.537	-3554668.698	PSB1	
-94139.937	-3554678.137	PSM2	
-94117.379	-3554676.142	RSM3	
-94104.385	-3554129.037	SCD 2A HP	
-94047.595	-3554131.556	SCD 3A HP	
-94080.874	-3554296.556	SCD 3A MID	
-94013.068	-3554125.508	SCD 3A MB	
-93766.090	-3553453.529	SCD 7B HP	
-94026.265	-3554126.004	SCD 8A BP	
-94026.265	-3554127.042	SCD 8A HP	
-93819.713	-355396.127	SCD 8C	
-93711.027	-3553545.274	SCD 8D HP	

Position X	Position Y	COORDINATE ID
-94151.00	-3654668.78	S801
-94149.86	-3654668.72	S802
-94148.73	-3654666.86	S803
-94147.59	-3654659.60	S804
-94146.45	-3654656.54	S805
-94145.32	-3654653.48	S806
-94144.18	-3654650.42	S807
-94143.05	-3654647.36	S808
-94141.91	-3654644.30	S809
-94140.77	-3654641.24	S810
-94139.63	-3654638.18	S811
-94138.50	-3654635.12	S812
-94137.36	-3654632.06	S813
-94136.23	-3654629.00	S814
-94135.09	-3654625.94	S815
-94133.95	-3654626.88	S816
-94132.82	-3654619.82	S817
-94131.68	-3654616.77	S818
-94130.54	-3654613.71	S819
-94129.41	-3654610.65	S820
-94140.46	-3654672.59	S821
-94139.33	-3654669.53	S822
-94138.19	-3654666.47	S823
-94137.05	-3654663.41	S824
-94135.92	-3654660.35	S825
-94134.78	-3654657.29	S826
-94133.65	-3654654.23	S827
-94132.51	-3654651.18	S828
-94131.37	-3654648.12	S829
-94130.24	-3654645.06	S830
-94129.10	-3654642.00	S831
-94127.96	-3654638.94	S832
-94126.83	-3654635.88	S833
-94125.69	-3654632.82	S834
-94124.55	-3654629.76	S835
-94123.42	-3654626.70	S836
-94122.28	-3654623.64	S837
-94121.14	-3654620.58	S838
-94120.01	-3654617.52	S839
-94118.87	-3654614.46	S840

[illegible]

										CONTRACTOR / CONSULTANT				TRANSPORT PORT TERMINALS			
		TITLE	NAME	SIGN	DATE			TITLE	NAME	SIGN	DATE			TITLE	NAME	SIGN	DATE
														DRAWN	RM		08/08/23
														CHECKED	HwW		09/08/23
														DESIGNED	RN		09/08/23
														CHECKED	HwW		09/08/23
OPERATING DIVISIONS																	
		TITLE	NAME	SIGN	DATE												
								PR. ENG. / PR.TECH./PR. ARCH.									
								NAME	R. NADDO				DATE				
								SIGNATURE					(Date)				
								REG. NUMBER	A27010				08/08/23				
								SCALE:	AS SHOWN								
REVISIONS																	
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<div>Transnet Port Terminals</div>	<div>  </div>																		
<div>PORT OF SALDANHA</div>																			
<div> <div>SALDANHA PORT - STORMWATER RAIL</div> <div>EMBANKMENT LAYOUT 1:500</div> <div>SHEET 2 OF 3</div> </div>																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 20%;">PROJECT NUMBER</th> <th style="width: 5%;">OO</th> <th style="width: 10%;">FBS</th> <th style="width: 5%;">DIS</th> <th style="width: 10%;">TYPE</th> <th style="width: 15%;">DRAWING NO.</th> <th style="width: 5%;">SHEET</th> <th style="width: 5%;">REV</th> <th style="width: 5%;">ID</th> </tr> <tr> <td>52000157</td> <td>2</td> <td>00</td> <td>1</td> <td>C</td> <td>LA-0003</td> <td>03</td> <td>00</td> <td>RM</td> </tr> </table>		PROJECT NUMBER	OO	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID	52000157	2	00	1	C	LA-0003	03	00	RM
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