

PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	STORMWATER MANHOLE PIPE
[Symbol]	[Symbol]	EXISTING MANHOLE PIPE
[Symbol]	[Symbol]	PROPOSED STORMWATER PIPE TO PIPE 101
[Symbol]	[Symbol]	EXISTING MANHOLE PIPE
[Symbol]	[Symbol]	RAIL LINE
[Symbol]	[Symbol]	COMMUNICATIONS INFRASTRUCTURE
[Symbol]	[Symbol]	ELECTRICAL MANHOLE/DUCT
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	FORCE
[Symbol]	[Symbol]	CATCHMENT BOUNDARY
[Symbol]	[Symbol]	EXISTING CURVE
[Symbol]	[Symbol]	NEW STORMWATER CULVERT PROPOSED AREA
[Symbol]	[Symbol]	RELOCATED SERVICE
[Symbol]	[Symbol]	DEMOLISH EXISTING SERVICE
[Symbol]	[Symbol]	APPROX ROAD
[Symbol]	[Symbol]	DEPTH MARKS
[Symbol]	[Symbol]	HEIGHT AND SETTING OF COORDINATE B
[Symbol]	[Symbol]	1. BENCH MARK
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GENERAL NOTES:

- THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE AND BE IN AGREEMENT WITH THE WORKS REQUIRED AS PER THE TENDER DOCUMENTS. UNLESS ALTERNATIVE PROPOSALS WITH COST IMPLICATIONS ARE SUBMITTED TOGETHER WITH THE TENDER DOCUMENTS, ALTERNATIVE PROPOSALS SUBMITTED DURING CONSTRUCTION SHALL BE ON A DESIGN AND CONTRACT BASIS, WITH THE DESIGN AT CONTRACTOR'S EXPENSE.
- VARIATIONS DEEMED NECESSARY BY THE CONTRACTOR SHALL BE FORWARDED TO THE PROJECT MANAGER IN WRITING FOR APPROVAL BEFORE ANY CONSTRUCTION BASED ON THE VARIATION COMMENCES.
- SERVICES SHOWN ON DRAWING ARE IN AND/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 LIABLE FOR ANY DAMAGES TO EXISTING SERVICES DUE TO NEGLIGENCE.
- ALL EXISTING PIPES AND MANHOLES INCORPORATED INTO THE NEW SYSTEM SHALL HAVE DEFECTS RECTIFIED TO COMPLY TO STANDARDS FOR NEW WORKS.
- DIMENSIONS SHOWN ON DRAWINGS SHALL TAKE PREFERENCE OVER DIMENSIONS SCALED.
- ALL LEVELS AND DIMENSIONS SHALL BE CHECKED BEFORE ANY WORK COMMENCES. FAILURE TO DO SO SHALL BEEN THE CONTRACTOR'S LIABILITY FOR ANY WORK REQUIRED TO RECTIFY ERRORS AS A RESULT OF THE FAILURE TO CHECK THE LEVELS AND DIMENSIONS.
- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE INDICATED.
- THE LATEST REVISION OF SANS SPECIFICATIONS SHALL APPLY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH RELEVANT SANS SPECIFICATIONS, UNLESS OTHERWISE INDICATED.
- ALL LENGTHS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE BY CONTRACTOR.

STORMWATER NOTES:

- TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1003-28 - PIPE TRENCHES.
- ALL RIGID CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
- FOR STORMWATER PIPES SHALL BE SPOUT & SOCKET CLASS 1000 (SANS 677).
- ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH 14 BIRM (NONWOVEN CONTINUOUS FLAMMENT NEEDLE PUNCHED POLYESTER/GEOTEXTILE) MIN. WIDTH TO BE 75mm FOR PIPES 300 TO 600.
- NB. ALL MANHOLE COVERS TO SUIT CROSSFALL OF FINISHED PAVING.
- ON COMPLETION, THE INSTALLATION SHALL BE TESTED TO THE ENGINEER'S SPECIFICATION.
- THE CONTRACTOR SHALL SUBMIT A FULL SET OF AS-BUILT DRAWINGS UPON COMPLETION OF THE INSTALLATION.
- ALL EXISTING STORMWATER PIPES, 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 RENOVATED TO ORIGINAL CONDITION.
- ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
- ALL EXISTING STORMWATER PIPES ARE CONCRETE UNLESS STATED OTHERWISE.
- WHERE MINIMUM COVER OF 100mm FOR OPERATIONAL AREAS & 600mm FOR NON OPERATIONAL AREA CANNOT BE ACHIEVED, CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.

EARTHWORKS:

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

CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:

- REMOVE ALL DUST & CAVED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS.
- REPAIR EROSION RUNNELS & RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE TOWARDS THE DETENTION POND.
- PIPES, CULVERTS, MANHOLES & CHANNELS NEED TO BE CLEANED REGULARLY AS SYSTEMS BLOCKED & MANHOLES ARE Silted UP.
- LENGTHS OF PIPES, NUMBER OF CULVERTS & MANHOLES CLEARLY SHOWN IN LONGITUDINAL SECTION FOR QUANTIFYING.
- CLEAN OUT ALL SLABS & DRYING BEDS.
- RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE AWAY FROM THE ROADS TOWARDS THE STORMWATER POND.
- LOW POINTS TO BE REPAIRED WITH A MINIMUM OF 100mm G2 LAYER COMPACTED TO 95% MOD-AASHFD.

CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 8 AND POND 12:

- FOR RESPECTIVE POND DETAIL REFER TO DRAWING S00157-2-001-C-02-000-01.
- CLEAR ALL GRUB & VEGETATION.
- COMPACT TO 95% MOD AASHFD.
- REPAIR & RENOVATE ALL DOWN CHUTES IF APPLICABLE.
- PLACE STONE PITCHING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
- DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERWORKS.
- PLEASE SEE S00157-2-001-C-02-000-01 FOR POND 8 AND POND 12 LAYERWORKS.
- STEEL BOLLARDS (QUANTITY 40) TO BE PLACED AROUND POND 12.
- AT LEAST 90mm ABOVE GROUND
- REMOVABLE TO ALLOW ACCESS FOR MAINTENANCE (PERMANENT METAL GROUND SOCKET ANCHORED IN CONCRETE FOUNDATION)
- 40MPa PLAN CONCRETE FOUNDATION OF 400mm X 400mm X 450mm DEEP - MIN COVER OF 50mm
- PAINTED IN REFLECTIVE YELLOW PAINT

BENCHMARK NAME	Y	X	Z	TYPE
PN02_S1	63475.257	3654991.162	0.662	Pillar Beacon
PN04_S1	64375.598	3652788.000	11.637	Pillar Beacon
PN05_S1	64350.044	3655384.365	16.526	Pillar Beacon
PN06_S1	64121.520	3654507.788	11.276	Pillar Beacon
SD005_S1	61767.185	3653141.307	16.447	Trim Corner Mark
01	63966.668	365394.296	0.915	D14 Hole in Concrete
02	63748.360	365393.098	0.313	12mm Round Iron Peg
03	63989.362	3653794.514	0.967	12mm Round Iron Peg
04	64000.972	3654037.881	2.839	12mm Round Iron Peg
05	64146.158	3654228.075	0.005	12mm Round Iron Peg
06	64300.074	365474.600	0.666	Round Nail in Concrete
07	64294.437	3655014.636	0.389	12mm Round Iron Peg
08	63923.649	3654096.702	2.247	12mm Round Iron Peg
09	63195.052	3653381.885	0.073	12mm Round Iron Peg
10	63431.837	3653281.361	1.484	12mm Round Iron Peg

RAIL EMBANKMENT GENERAL LAYOUT SCALE 1:1500

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STORMWATER NOTES:

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EARTHWORKS:

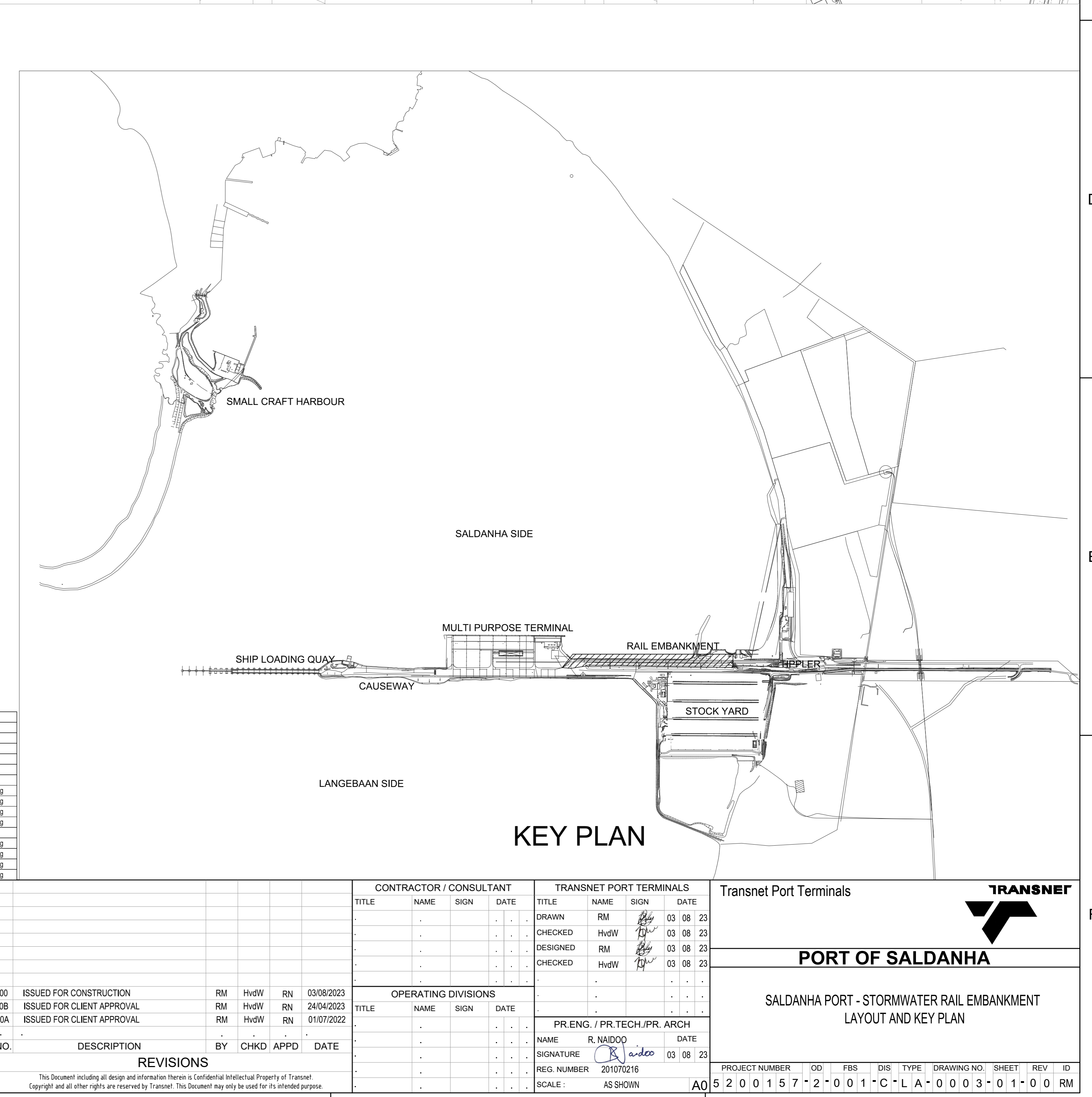
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CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:

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- CLEAN OUT ALL SLABS & DRYING BEDS.
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CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 8 AND POND 12:

- FOR RESPECTIVE POND DETAIL REFER TO DRAWING S00157-2-001-C-02-000-01.
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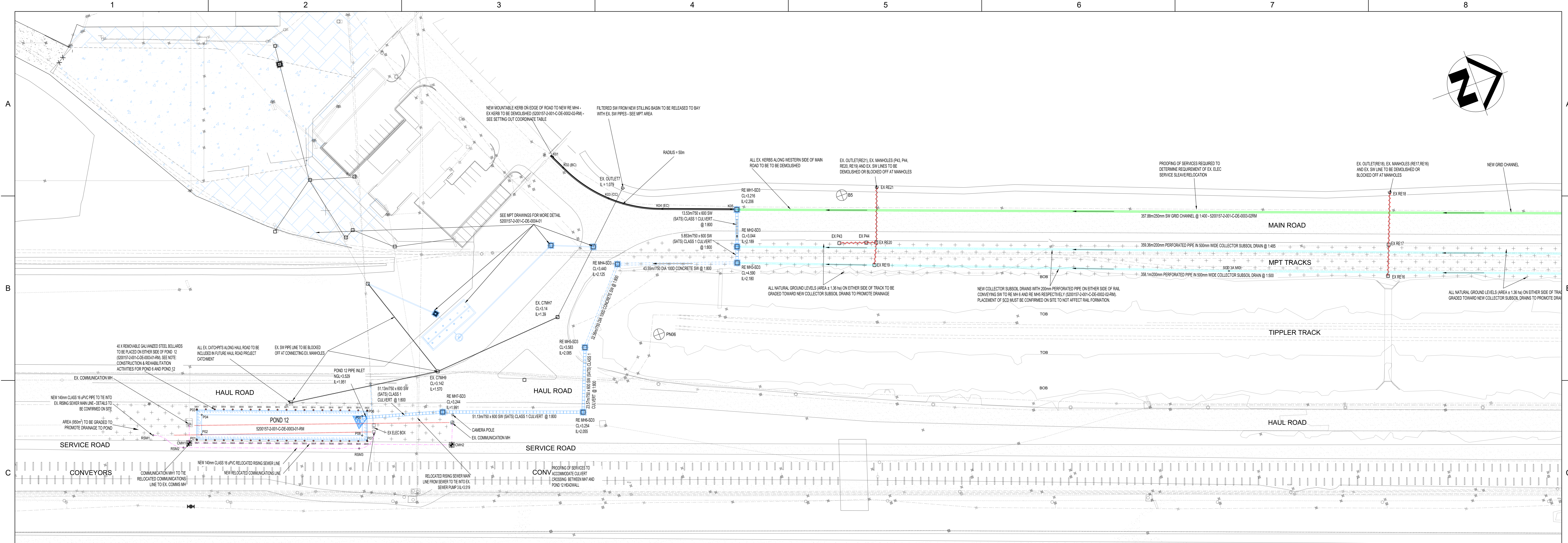


NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	RM	HGW	RN	03/08/2023
01	ISSUED FOR CLIENT APPROVAL	RM	HGW	RN	24/04/2023
02	ISSUED FOR CLIENT APPROVAL	RM	HGW	RN	01/07/2022

CONTRACTOR / CONSULTANT				TRANSNET PORT TERMINALS			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
				DRAWN	RM	HGW	03/08/23
				CHECKED	HGW	RN	03/08/23
				DESIGNED	RM	HGW	03/08/23
				CHECKED	HGW	RN	03/08/23

OPERATING DIVISIONS				SALDANHA PORT - STORMWATER RAIL EMBANKMENT LAYOUT AND KEY PLAN			
TITLE	NAME	SIGN	DATE	TITLE	NAME	SIGN	DATE
				PR. ENG. / PR. TECH. / PR. ARCH			
				NAME	R. NADOO		
				SIGNATURE	[Signature]		03/08/23
				DATE			
				REG. NUMBER	201070216		
				SCALE	AS SHOWN		

PROJECT NUMBER	GD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
5 2 0 1 5 7 - 2 - 0 0 1 - C - L A - 0 0 3 - 0 1 - 0 0					RM	03	01	00



RAIL EMBANKMENT LAYOUT DETAIL
SCALE 1:500

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

- CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:**
- REMOVE ALL OUST & CAVED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS.
 - REPAIR EROSION RUNNELS & RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE TOWARDS THE DETENTION POND.
 - PIPES, CULVERTS, MANHOLES & CHANNELS NEED TO BE CLEANED REGULARLY AS SYSTEM IS BLOCKED & MANHOLES ARE SILENT UP.
 - CLEAN OUT ALL SLABS & DRAINAGE BEDS.
 - RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE AWAY FROM THE ROADS TOWARDS THE STORMWATER POND.
 - LOW POINTS TO BE REPAIRED WITH A MINIMUM OF 100mm GY LAYER COMPACTED TO 95% MDD @ 400mm.

- CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 6 AND POND 12:**
- FOR RESPECTIVE POND DETAIL REFER TO DRAWING S201157-2-001-C-DE-0002-01.
 - CLEAR ALL GRASS & VEGETATION.
 - COMPACT TO 95% MDD ASHTO.
 - REPAIR & RENSTATE ALL DOWN CHUTES IF APPLICABLE.
 - PLACE STONE FITTING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
 - DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERWORKS.
 - PLEASE SEE S201157-2-001-C-DE-0003-01 FOR POND 6 AND POND 12 LAYERWORKS.

- STORMWATER NOTES:**
- TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1200-28- PIPE TRENCHES.
 - ALL RIGID CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
 - FOR STORMWATER PIPES SHALL BE SPROUT & SOCKET CLASS 1000 (SANS 977).
 - ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH 100mm NONWOVEN CONTINUOUS FLAME RETARDANT POLYESTER GEOTEXTILE MIN. WIDTH TO BE 150mm FOR PIPES 3000 TO 6000.
 - NB: ALL MANHOLE COVERS TO SUIT CROSSFALL OF FINISHED PAVING.
 - ON COMPLETION, THE INSTALLATION SHALL BE TESTED TO THE ENGINEER'S SPECIFICATION.
 - THE CONTRACTOR SHALL SUBMIT A FULL SET OF AS-BUILT DRAWINGS UPON COMPLETION OF THE INSTALLATION.
 - ALL EXISTING STORMWATER PIPES, MANHOLES, CHANNELS AND ANY OTHER STORMWATER INFRASTRUCTURE TO BE CLEARED BEFORE ANY CONSTRUCTION COMMENCES. ALL DAMAGED EXISTING STORMWATER INFRASTRUCTURE SHALL BE RENSTATED TO ORIGINAL CONDITION.
 - ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
 - ALL EXISTING STORMWATER PIPES ARE CONCRETE UNLESS STATED OTHERWISE.
 - WHERE MINIMUM COVER OF 100mm FOR OPERATIONAL AREAS & 200mm FOR NON OPERATIONAL AREA CANNOT BE ACHIEVED, CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.

- STEEL BOLLARDS (QUANTITY 40) TO BE PLACED AROUND POND 12:**
- 6mm THICK WILD STEEL
 - 100mm IN DIAMETER
 - AT LEAST 900mm ABOVE GROUND
 - REMOVABLE TO ALLOW ACCESS FOR MAINTENANCE PERMANENT METAL GROUND SOCKET ANCHORED IN A CONCRETE FOUNDATION
 - 40MPa PLAIN CONCRETE FOUNDATION OF 400mm X 400mm X 450mm DEEP - MIN COVER OF 50mm
 - PAINTED IN REFLECTIVE YELLOW PAINT

RAIL EMBANKMENT STORMWATER SCHEDULE

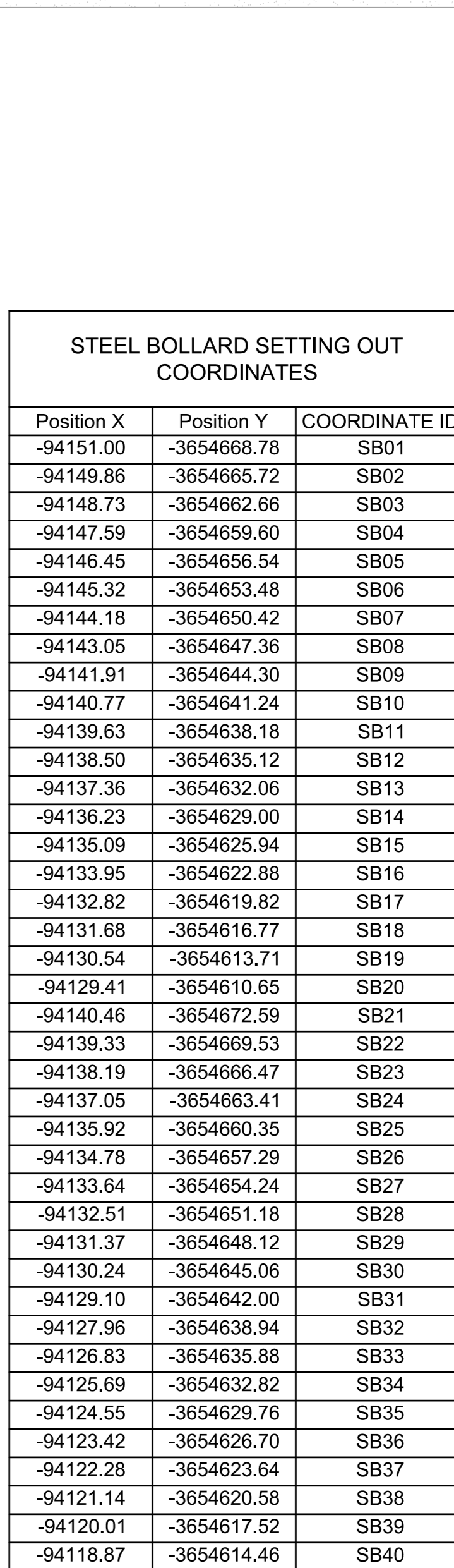
Name	Y-Coord	X-Coord
RE MH1	-94152.12	-3654459.29
RE MH2	-94139.38	-3654463.84
RE MH3	-94133.90	-3654465.90
RE MH4	-94148.50	-3654506.93
RE MH5	-94124.14	-3654528.52
RE MH6	-94119.29	-3654537.28
RE MH7	-94119.99	-3654585.25
RE MH8	-93993.53	-3653784.05
RE MH9	-93869.80	-3653790.00
RE MH10	-93883.33	-3653792.55
RE MH11	-93836.87	-3653809.51
RE MH12	-93826.30	-3653814.26
POND 6 INLET	-93806.68	-3653847.26
GRID CH 6A HP	-94026.94	-3654120.09
SCD 2A HP	-94013.58	-3654127.22
RE MH2	-94139.38	-3654463.84
SCD 3A HP	-94007.33	-3654131.04
SCD 1A HP	-94127.78	-3654612.09
GRID CH 1A HP	-94028.50	-3654123.44
GRID CH 6B HP	-93874.24	-3653704.22
SCD 7A HP	-94013.17	-3654126.36
SCD 8A HP	-94009.54	-3654129.75
SCD 7B HP	-93765.82	-3653454.13
SCD 8D HP	-93760.75	-3653454.13
SCD 8C	-93813.48	-3653595.97
SCD 8B	-93817.75	-3653616.69

RAIL EMBANKMENT SETTING OUT COORDINATES

Position X	Position Y	Coordinate ID
-94140.375	-3654675.634	CMH1
-94107.112	-3654598.046	CMH2
-94027.073	-3654122.573	GRID CH 1A HP
-94027.027	-3654121.635	GRID CH 6A HP
-93873.805	-3653704.506	GRID CH 6B HP
-94193.491	-3654515.989	K01
-94188.086	-3654513.404	K02 (RC)
-94171.833	-3654501.894	K03 (CC)
-94161.640	-3654484.596	K04 (EC)
-94152.999	-3654461.164	K05
-94140.747	-3654672.579	P01
-94141.774	-3654670.305	P02
-94150.765	-3654668.663	P03
-94148.483	-3654667.816	P04
-94128.137	-3654613.011	P05
-94129.174	-3654610.733	P06
-94119.156	-3654614.449	P07
-94121.438	-3654615.496	P08
-94131.367	-3653850.623	P09
-93809.928	-3653845.789	P10
-93803.591	-3653845.845	P11
-93789.332	-3653847.033	P12
-93772.542	-3653856.889	P13
-93774.811	-3653857.940	P14
-93778.422	-3653873.666	P15
-93779.691	-3653871.405	P16
-93814.935	-3653860.500	P17
-93812.667	-3653859.448	P18
-94147.538	-3654696.953	RSM1
-94139.637	-3654678.137	RSM2
-94117.379	-3654618.142	RSM3
-94014.385	-3654129.037	SCD 2A HP
-94007.595	-3654131.564	SCD 3A HP
-94069.874	-3654298.556	SCD 3A MMD
-94013.066	-3654125.508	SCD 7A HP
-93765.060	-3653843.529	SCD 7B HP
-94006.265	-3654128.004	SCD 8A HP
-93817.828	-3653871.042	SCD 8B
-93813.723	-3653966.127	SCD 8C
-93761.022	-3653854.274	SCD 8D HP

STEEL BOLLARD SETTING OUT COORDINATES

Position X	Position Y	COORDINATE ID
-94151.00	-3654668.78	SB01
-94149.86	-3654665.72	SB02
-94148.73	-3654662.66	SB03
-94147.59	-3654659.60	SB04
-94146.45	-3654656.54	SB05
-94145.32	-3654653.48	SB06
-94144.18	-3654650.42	SB07
-94143.05	-3654647.36	SB08
-94141.91	-3654644.30	SB09
-94140.77	-3654641.24	SB10
-94139.63	-3654638.18	SB11
-94138.50	-3654628.12	SB12
-94137.36	-3654632.06	SB13
-94136.23	-3654629.00	SB14
-94135.09	-3654625.94	SB15
-94133.95	-3654622.88	SB16
-94132.82	-3654619.82	SB17
-94131.68	-3654616.77	SB18
-94130.54	-3654613.71	SB19
-94129.41	-3654610.65	SB20
-94140.46	-3654572.59	SB21
-94139.33	-3654669.53	SB22
-94138.19	-3654666.47	SB23
-94137.05	-3654663.41	SB24
-94135.92	-3654660.35	SB25
-94134.78	-3654657.29	SB26
-94133.64	-3654654.24	SB27
-94132.51	-3654651.18	SB28
-94131.37	-3654648.12	SB29
-94130.24	-3654645.06	SB30
-94129.10	-3654642.00	SB31
-94127.96	-3654638.94	SB32
-94126.83	-3654635.88	SB33
-94125.69	-3654632.82	SB34
-94124.55	-3654629.76	SB35
-94123.42	-3654626.70	SB36
-94122.28	-3654623.64	SB37
-94121.14	-3654620.58	SB38
-94120.01	-3654617.52	SB39
-94118.87	-3654614.46	SB40



REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
S201157-2-001-C-DE-0003-01	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT GENERAL LAYOUT
S201157-2-001-C-DE-0003-02	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 1 OF 3
S201157-2-001-C-DE-0003-03	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 2 OF 3
S201157-2-001-C-DE-0003-04	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 3 OF 3
S201157-2-001-C-DE-0003-01	RAIL EMBANKMENT - RAIL EMBANKMENT CONNECTION SHEET 1 OF 6
S201157-2-001-C-DE-0003-02	RAIL EMBANKMENT - RAIL EMBANKMENT CONNECTION SHEET 2 OF 6
S201157-2-001-C-DE-0003-03	RAIL EMBANKMENT - RAIL EMBANKMENT CONNECTION SHEET 3 OF 6
S201157-2-001-C-DE-0003-04	RAIL EMBANKMENT - RAIL EMBANKMENT CONNECTION SHEET 4 OF 6
S201157-2-001-C-DE-0003-05	RAIL EMBANKMENT - RAIL EMBANKMENT CONNECTION SHEET 5 OF 6
S201157-2-001-C-DE-0003-06	RAIL EMBANKMENT - RAIL EMBANKMENT CONNECTION SHEET 6 OF 6
S201157-2-001-C-DE-0003-01	RAIL EMBANKMENT - POND 12 AND POND 6 CROSS SECTION DETAIL
S201157-2-001-C-DE-0003-02	TYPICAL GRID CHANNEL, MOUNTABLE KERB, SUBSOLLECTOR DRAIN (SCD) AND TRAPEZOIDAL CHANNEL DETAIL

- 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.

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	RM		03/08/23
CHECKED	HvW		03/08/23
DESIGNED	RM		03/08/23
CHECKED	HvW		03/08/23

OPERATING DIVISIONS

TITLE	NAME	SIGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH	R. NADDOO		03/08/23
SIGNATURE			03/08/23
REG. NUMBER	201070216		
SCALE:	AS SHOWN		

TRANSNET PORT TERMINALS

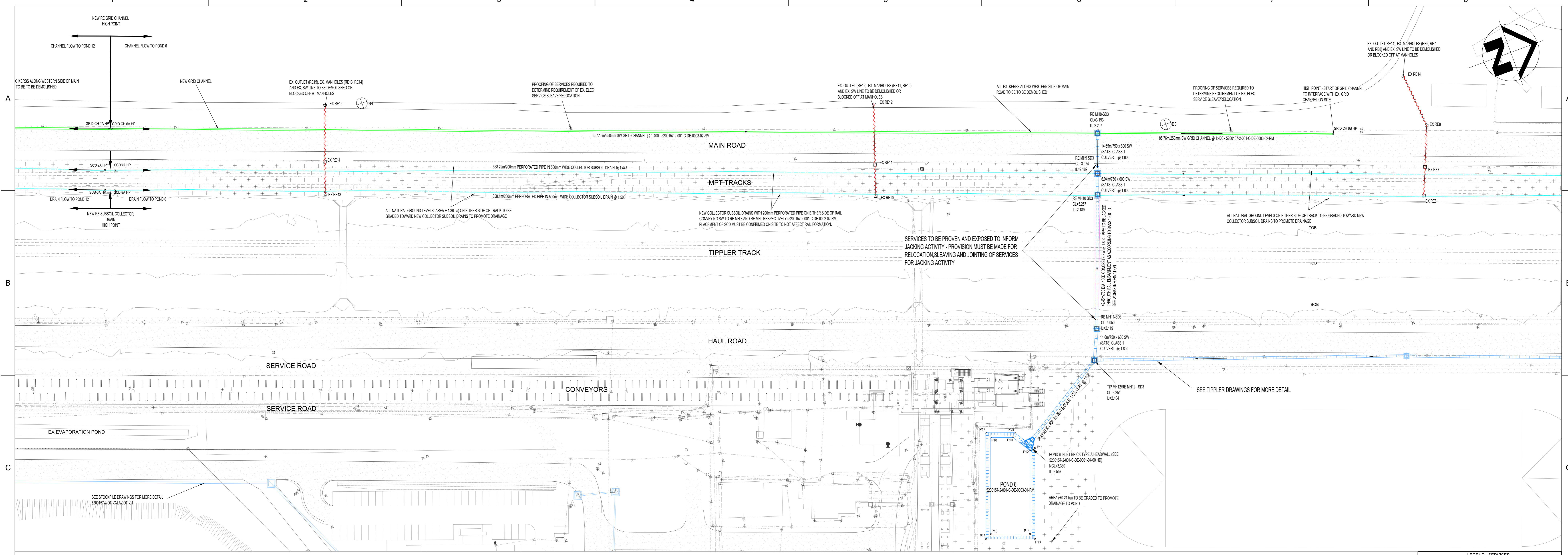
TITLE	NAME	SIGN	DATE
ISSUED FOR CONSTRUCTION	RM	HvW	03/08/2023
ISSUED FOR CLIENT APPROVAL	RM	HvW	24/04/2023
ISSUED FOR CLIENT APPROVAL	RM	HvW	01/07/2022

TRANSNET PORT TERMINALS

PORT OF SALDANHA

SALDANHA PORT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 1 OF 3

PROJECT NUMBER: 5200157-2-001-C-DE-0003-02-00 RM



RAIL EMBANKMENT LAYOUT DETAIL
SCALE 1:500

- GENERAL NOTES:**
- THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE AND BE IN AGREEMENT WITH THE WORKS REQUIRED AS PER THE TENDER DOCUMENTS, UNLESS ALTERNATIVE PROPOSALS WITH COST IMPLICATIONS ARE RECEIVED TOGETHER WITH THE TENDER DOCUMENTS. ALTERNATIVE PROPOSALS SUBMITTED DURING CONSTRUCTION SHALL BE ON A DESIGN AND CONSTRUCTION BASIS, WITH THE DESIGN AT CONTRACTOR'S EXPENSE.
 - VARIATIONS DEEMED NECESSARY BY THE CONTRACTOR SHALL BE FORWARDED TO THE PROJECT MANAGER IN WRITING FOR APPROVAL BEFORE ANY CONSTRUCTION, BASED ON THE VARIATION COMMENCES.
 - SERVICES SHOWN ON DRAWINGS 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 LIABLE FOR ANY DAMAGES TO EXISTING SERVICES DUE TO NEGLIGENCE.
 - ALL EXISTING PIPES AND MANHOLES INCORPORATED INTO THE NEW SYSTEM SHALL HAVE DEFECTS RECTIFIED TO COMPLY TO STANDARDS FOR NEW WORKS.
 - DIMENSIONS SHOWN ON DRAWINGS SHALL TAKE PRECEDENCE OVER DIMENSIONS SCALED.
 - 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.
 - ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 - THE LATEST REVISION OF SANS SPECIFICATIONS SHALL APPLY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH RELEVANT SANS SPECIFICATIONS, UNLESS OTHERWISE INDICATED.
 - ALL LENGTHS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE BY CONTRACTOR.

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

- CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:**
- REMOVE ALL DUST & CAVED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS.
 - REPAIR EROSION RUNNELS & RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE TOWARDS THE DETENTION POND.
 - PIPES, CULVERTS, MANHOLES & CHANNELS NEED TO BE CLEARED REGULARLY AS SYSTEM IS BLOCKED & MANHOLES ARE SITED UP.
 - LENGTHS OF PIPES, CULVERTS & MANHOLES CLEARLY SHOWN IN LONGITUDINAL SECTION FOR QUANTIFYING.
 - CLEAN OUT ALL SLUGS & DRYING BEDS.
 - RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE AWAY FROM THE ROADS TOWARDS THE STORMWATER POND.
 - LOW POINTS TO BE REPAIRED WITH A MINIMUM OF 150mm GZ LAYER COMPACTED TO 95% MOD-AASHTO.

- CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 6 AND POND 12:**
- FOR RESPECTIVE POND DETAIL REFER TO DRAWING 520157-2-001-C-DE-0002-01.
 - CLEAR ALL GRUB & VEGETATION.
 - COMPACT TO 90% MOD AASHTO.
 - REPAIR & REINSTATE ALL DOWN CHUTES IF APPLICABLE.
 - PLACE STONE FITTING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
 - DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERS/WORKS.
 - PLEASE SEE 520157-2-001-C-DE-0002-01 FOR POND 6 AND POND 12 LAYERS/WORKS.
 - STEEL BOLLARDS (QUANTITY 40) TO BE PLACED AROUND POND 12:
 - 6mm THICK MILD STEEL
 - 150mm DIAMETER
 - AT LEAST 900mm ABOVE GROUND
 - REMOVABLE TO ALLOW ACCESS FOR MAINTENANCE PERMANENT METAL GROUND SOCKET (ANCHORED IN A CONCRETE FOUNDATION)
 - 40MPa PLAN CONCRETE FOUNDATION OF 400mm X 400mm X 450mm DEEP - MIN COVER OF 50mm
 - PAINTED IN REFLECTIVE YELLOW PAINT

- STORMWATER NOTES:**
- TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1200 D8 - PIPE TRENCHES.
 - ALL ROAD CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
 - FOR STORMWATER PIPES SHALL BE SPIGOT & SOCKET CLASS 1000 (SANS 617).
 - ALL CONCRETE PIPE JOINTS TO BE RIVETED WITH 15 BOMM IN DIAMETER CONTINUOUS FLANGENT NEEDLE PUNCHED POLYESTER (GEOTEXTILE) MIN. WIDTH TO BE 750mm FOR PIPES 3000 TO 6000.
 - NE ALL MANHOLE COVERS TO SLIT CROSSFALL OF FINISHED PAVING.
 - ON COMPLETION, THE INSTALLATION SHALL BE TESTED TO THE ENGINEER'S SPECIFICATION.
 - THE CONTRACTOR SHALL SUBMIT A FULL SET OF AS-BUILT DRAWINGS UPON COMPLETION OF THE INSTALLATION.
 - ALL EXISTING STORMWATER PIPES, MANHOLES, CHANNELS AND ANY OTHER STORMWATER INFRASTRUCTURE TO BE CLEARED AND REINSTALLED TO ALL EXISTING OR NEW SPECIFICATIONS, ALL DAMAGED EXISTING STORMWATER INFRASTRUCTURE SHALL BE REINSTATED TO ORIGINAL CONDITION.
 - ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE CLEARED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
 - ALL EXISTING STORMWATER PIPES ARE CONCRETE UNLESS STATED OTHERWISE.
 - WHERE MINIMUM COVER OF 1000mm FOR OPERATIONAL AREAS & 600mm FOR NON OPERATIONAL AREAS CANNOT BE ACHIEVED, CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.

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 - REPAIR & REINSTATE ALL DOWN CHUTES IF APPLICABLE.
 - PLACE STONE FITTING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
 - DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERS/WORKS.
 - PLEASE SEE 520157-2-001-C-DE-0002-01 FOR POND 6 AND POND 12 LAYERS/WORKS.
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 - 6mm THICK MILD STEEL
 - 150mm DIAMETER
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RAIL EMBANKMENT STORMWATER SCHEDULE

Name	Y-Coord	X-Coord
RE MH1	-94152.12	-3654459.28
RE MH2	-94130.38	-3654463.84
RE MH3	-94133.90	-3654465.90
RE MH4	-94148.50	-3654506.93
RE MH5	-94124.14	-3654528.52
RE MH6	-94102.26	-3654537.28
RE MH7	-94119.98	-3654555.23
RE MH8	-93923.53	-3653784.86
RE MH9	-93889.82	-3653790.04
RE MH10	-93883.33	-3653792.55
RE MH11	-93836.87	-3653809.51
RE MH12	-93826.30	-3653814.28
POND 6 INLET	-93806.69	-3653847.28
GRID CH 8A HP	-94026.94	-3654120.09
SCD 2A HP	-94013.58	-3654127.22
RE MH2	-94130.38	-3654463.84
SCD 3A HP	-94007.33	-3654131.04
POND 12 INLET	-94127.78	-3654412.09
GRID CH 1A HP	-94028.50	-3654123.44
GRID CH 8B HP	-93874.25	-3653704.22
SCD 7A HP	-94013.17	-3654126.38
SCD 8A HP	-94008.54	-3654128.24
SCD 9A HP	-93795.82	-3653453.45
SCD 10 HP	-93790.72	-3653454.13
SCD 11 HP	-93813.49	-3653595.07
SCD 12 HP	-93817.74	-3653616.60

RAIL EMBANKMENT SETTING OUT COORDINATES

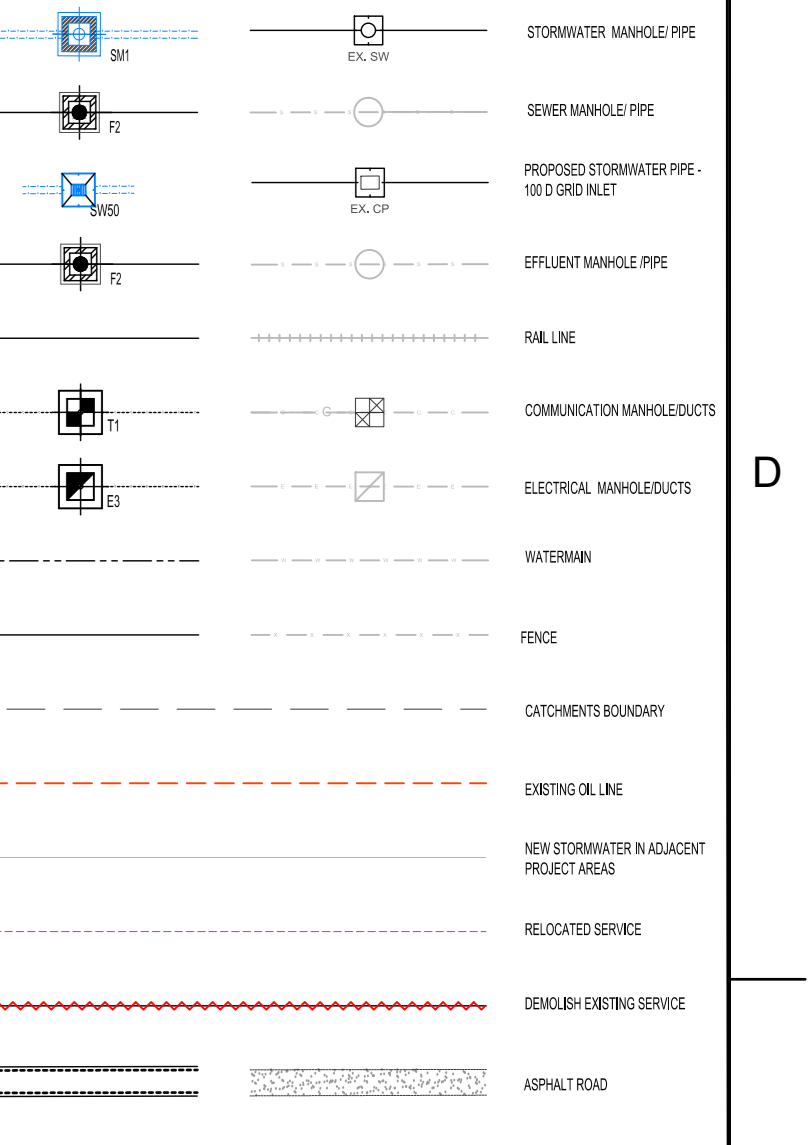
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-94177.993	-3654501.884	K03 (CC)
-94161.649	-3654454.596	K04 (EC)
-94152.999	-3654461.164	K05
-94140.747	-3654672.579	P01
-94141.774	-3654670.305	P02
-94150.765	-3654668.863	P03
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-93811.357	-3653850.623	P09
-93809.928	-3653851.789	P10
-93803.561	-3653845.645	P11
-93803.332	-3653847.803	P12
-93772.542	-3653856.889	P13
-93774.811	-3653857.940	P14
-93776.822	-3653873.696	P15
-93779.691	-3653871.405	P16
-93814.935	-3653860.500	P17
-93812.697	-3653859.448	P18
-94147.538	-3654686.953	RSM1
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-93786.090	-3654053.529	SCD 7B HP
-94006.265	-3654128.034	SCD 8A HP
-93817.828	-3653871.042	SCD 8B
-93813.713	-3653906.127	SCD 8C
-94118.87	-3654614.52	SCD 8D HP

STEEL BOLLARD SETTING OUT COORDINATES

Position X	Position Y	COORDINATE ID
-94151.00	-3654668.78	SB01
-94149.86	-3654665.72	SB02
-94148.73	-3654662.66	SB03
-94147.59	-3654659.60	SB04
-94146.45	-3654656.54	SB05
-94145.32	-3654653.48	SB06
-94144.18	-3654650.42	SB07
-94143.05	-3654647.36	SB08
-94141.91	-3654644.30	SB09
-94140.77	-3654641.24	SB10
-94139.63	-3654638.18	SB11
-94138.50	-3654635.12	SB12
-94137.36	-3654632.06	SB13
-94136.23	-3654629.00	SB14
-94135.09	-3654625.94	SB15
-94133.95	-3654622.88	SB16
-94132.82	-3654619.82	SB17
-94131.68	-3654616.77	SB18
-94130.54	-3654613.71	SB19
-94129.41	-3654610.65	SB20
-94140.46	-3654672.59	SB21
-94139.33	-3654669.53	SB22
-94138.19	-3654666.47	SB23
-94137.05	-3654663.41	SB24
-94135.92	-3654660.35	SB25
-94134.78	-3654657.29	SB26
-94133.64	-3654649.24	SB27
-94132.51	-3654646.18	SB28
-94131.37	-3654643.12	SB29
-94130.24	-3654640.06	SB30
-94129.10	-3654637.00	SB31
-94127.96	-3654633.94	SB32
-94126.83	-3654630.88	SB33
-94125.69	-3654633.82	SB34
-94124.55	-3654629.76	SB35
-94123.42	-3654626.70	SB36
-94122.28	-3654623.64	SB37
-94121.14	-3654620.58	SB38
-94120.01	-3654617.52	SB39
-94118.87	-3654614.46	SB40

RAIL EMBANKMENT SETTING OUT COORDINATES

Position X	Position Y	Coordinate ID
-94140.375	-3654675.634	CMH1
-94107.112	-3654586.046	CMH2
-94027.973	-3654122.573	GRID CH 1A HP
-94027.627	-3654121.635	GRID CH 8A HP
-93873.805	-3653704.506	GRID CH 8B HP
-94193.491	-3654515.989	K01
-94188.086	-3654513.454	K02 (BC)
-94177.993	-3654501.884	K03 (CC)
-94161.649	-3654454.596	K04 (EC)
-94152.999	-3654461.164	K05
-94140.747	-3654672.579	P01
-94141.774	-3654670.305	P02
-94150.765	-3654668.863	P03
-94148.483	-3654667.816	P04
-94128.137	-3654613.011	P05
-94129.174	-3654610.733	P06
-94119.156	-3654614.449	P07
-94121.438	-3654615.496	P08
-93811.357	-3653850.623	P09
-93809.928	-3653851.789	P10
-93803.561	-3653845.645	P11
-93803.332	-3653847.803	P12
-93772.542	-3653856.889	P13
-93774.811	-3653857.940	P14
-93776.822	-3653873.696	P15
-93779.691	-3653871.405	P16
-93814.935	-3653860.500	P17
-93812.697	-3653859.448	P18
-94147.538	-3654686.953	RSM1
-94136.537	-3654678.137	RSM2
-94117.379	-3654618.142	RSM3
-94014.385	-3654128.037	SCD 2A HP
-94007.595	-3654131.564	SCD 3A HP
-94069.874	-3654288.556	SCD 3A MID
-94013.066	-3654125.508	SCD 7A HP
-93786.090	-3654053.529	SCD 7B HP
-94006.265	-3654128.034	SCD 8A HP
-93817.828	-3653871.042	SCD 8B
-93813.713	-3653906.127	SCD 8C
-94118.87	-3654614.52	SCD 8D HP



GENERAL NOTES:

- THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE AND BE IN AGREEMENT WITH THE WORKS REQUIRED AS PER THE TENDER DOCUMENTS, UNLESS ALTERNATIVE PROPOSALS WITH COST IMPLICATIONS ARE RECEIVED TOGETHER WITH THE TENDER DOCUMENTS. ALTERNATIVE PROPOSALS SUBMITTED DURING CONSTRUCTION SHALL BE ON A DESIGN AND CONSTRUCTION BASIS, WITH THE DESIGN AT CONTRACTOR'S EXPENSE.
- VARIATIONS DEEMED NECESSARY BY THE CONTRACTOR SHALL BE FORWARDED TO THE PROJECT MANAGER IN WRITING FOR APPROVAL BEFORE ANY CONSTRUCTION, BASED ON THE VARIATION COMMENCES.
- SERVICES SHOWN ON DRAWINGS 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 LIABLE FOR ANY DAMAGES TO EXISTING SERVICES DUE TO NEGLIGENCE.
- ALL EXISTING PIPES AND MANHOLES INCORPORATED INTO THE NEW SYSTEM SHALL HAVE DEFECTS RECTIFIED TO COMPLY TO STANDARDS FOR NEW WORKS.
- DIMENSIONS SHOWN ON DRAWINGS SHALL TAKE PRECEDENCE OVER DIMENSIONS SCALED.
- 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.
- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE INDICATED.
- THE LATEST REVISION OF SANS SPECIFICATIONS SHALL APPLY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH RELEVANT SANS SPECIFICATIONS, UNLESS OTHERWISE INDICATED.
- ALL LENGTHS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE BY CONTRACTOR.

EARTHWORKS:

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

CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:

- REMOVE ALL DUST & CAVED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS.
- REPAIR EROSION RUNNELS & RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE TOWARDS THE DETENTION POND.
- PIPES, CULVERTS, MANHOLES & CHANNELS NEED TO BE CLEARED REGULARLY AS SYSTEM IS BLOCKED & MANHOLES ARE SITED UP.
- LENGTHS OF PIPES, CULVERTS & MANHOLES CLEARLY SHOWN IN LONGITUDINAL SECTION FOR QUANTIFYING.
- CLEAN OUT ALL SLUGS & DRYING BEDS.
- RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE AWAY FROM THE ROADS TOWARDS THE STORMWATER POND.
- LOW POINTS TO BE REPAIRED WITH A MINIMUM OF 150mm GZ LAYER COMPACTED TO 95% MOD-AASHTO.

CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 6 AND POND 12:

- FOR RESPECTIVE POND DETAIL REFER TO DRAWING 520157-2-001-C-DE-0002-01.
- CLEAR ALL GRUB & VEGETATION.
- COMPACT TO 90% MOD AASHTO.
- REPAIR & REINSTATE ALL DOWN CHUTES IF APPLICABLE.
- PLACE STONE FITTING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
- DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERS/WORKS.
- PLEASE SEE 520157-2-001-C-DE-0002-01 FOR POND 6 AND POND 12 LAYERS/WORKS.
- STEEL BOLLARDS (QUANTITY 40) TO BE PLACED AROUND POND 12:
 - 6mm THICK MILD STEEL
 - 150mm DIAMETER
 - AT LEAST 900mm ABOVE GROUND
 - REMOVABLE TO ALLOW ACCESS FOR MAINTENANCE PERMANENT METAL GROUND SOCKET (ANCHORED IN A CONCRETE FOUNDATION)
 - 40MPa PLAN CONCRETE FOUNDATION OF 400mm X 400mm X 450mm DEEP - MIN COVER OF 50mm
 - PAINTED IN REFLECTIVE YELLOW PAINT

RAIL EMBANKMENT SETTING OUT COORDINATES

Position X
