

LEGEND - SERVICES

PROPOSED	EXISTING	DESCRIPTION
		STORMWATER MANHOLE PIPE
		SEWER MANHOLE PIPE
		EFFLUENT MANHOLE PIPE
		RAIL LINE
		COMMUNICATION MANHOLES
		WATER MAIN
		FORCE MAIN
		CATCHMENT BOUNDARY
		EXISTING CULVERT
		NEW STORMWATER CULVERT
		RELOCATED SERVICE
		DEMOLISHED SERVICE
		ASPHALT ROAD
		GRASS
		B2 MANHOLE
		PROPOSED STORMWATER CULVERT
		PIPE JACKING
		PROPOSED TRAPEZOIDAL CHANNEL
		PROPOSED MANHOLE
		PROPOSED SEWER COLLECTOR MAIN
		PROPOSED POND
		NEW ROAD EMBANKMENT

GENERAL NOTES:

- THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE AND IN AN 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 CONSTRUCT 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 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 PREFERENCE 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.

STORMWATER NOTES:

- TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1200 DB - PIPE TRENCHES.
- ALL RIGID CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
- FOR STORMWATER PIPES SHALL BE SPOGOT & SOCKET CLASS 1000 (SANS 671).
- ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH 40 BDM INCOMBUSTIBLE CONTINUOUS FIBREGLASS REINFORCED POLYESTER (GEOTEXTILE) MIN. WIDTH TO BE 750mm FOR PIPES 300 TO 600.
- NR. 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 RESTORED 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 AREA CANNOT BE ACHIEVED, CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.

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 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 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.

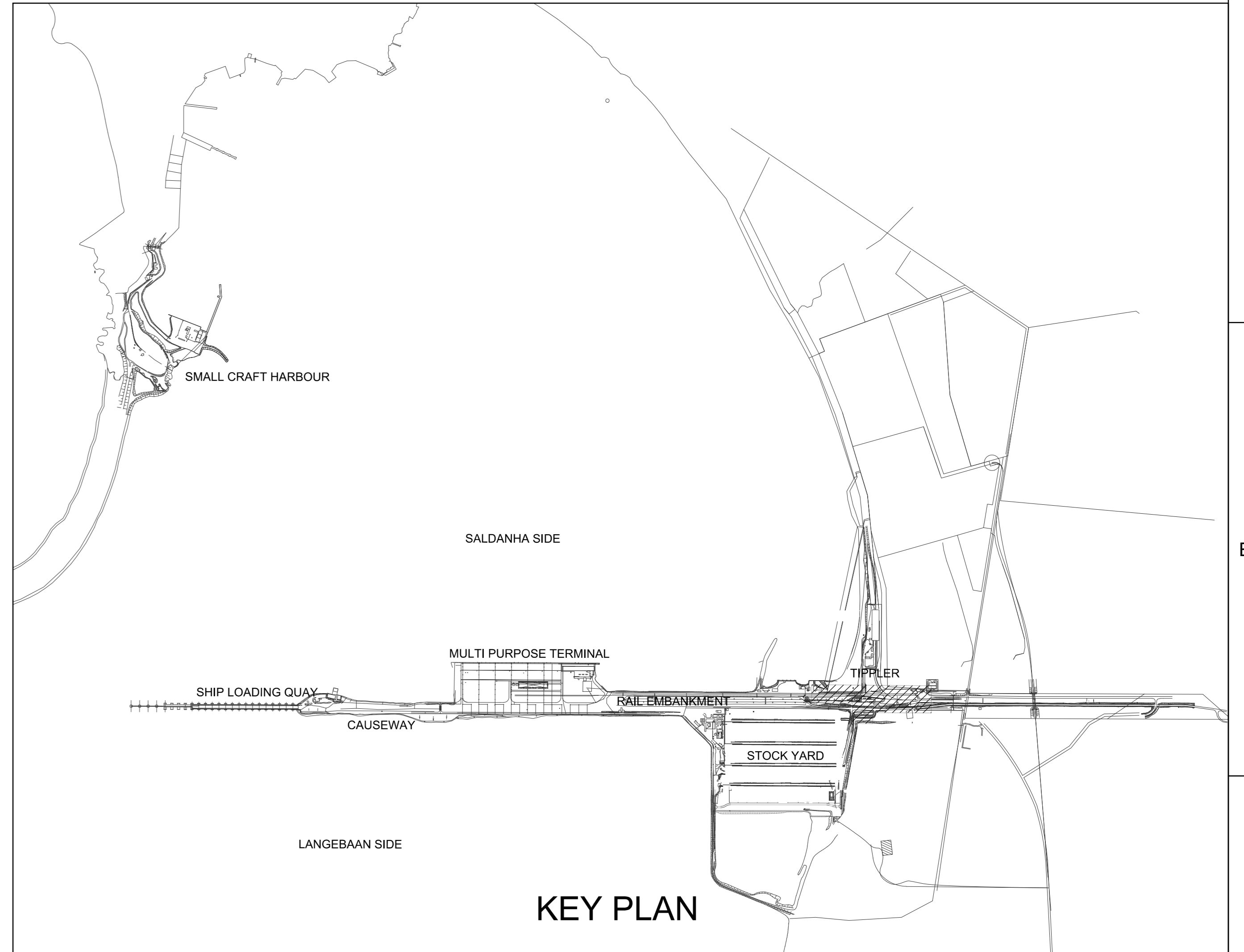
CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:

- REMOVE ALL DUST & CAKED 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 LIP.
- 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 150mm 9% LAYER COMPACTED TO 9% MOD ASHTO.

CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 1, POND 2 AND POND 4:

- FOR RESPECTIVE POND DETAIL, REFER TO DRAWING 5200157-2-001-C-DE-0002-01.
- CLEAR ALL GRUB & VEGETATION.
- COMPACT TO 9% MOD ASHTO.
- REPAIR & REINSTATE ALL DOWN CHUTES IF APPLICABLE.
- PLACE STONE PITCHING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
- DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERSWORKS.
- PLEASE SEE 5200157-2-001-C-DE-0002-01 FOR POND 1, POND 2 AND POND 4 LAYERSWORKS.

TIPPLER AREA LAYOUT
SCALE 1:1000



KEY PLAN

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
5200157-2-001-C-LA-0002-01	TIPPLER - STORMWATER TIPPLER GENERAL LAYOUT AND KEY PLAN
5200157-2-001-C-LA-0002-02	TIPPLER - LAYOUT DETAIL SHEET 1 OF 3
5200157-2-001-C-LA-0002-03	TIPPLER - LAYOUT DETAIL SHEET 2 OF 3
5200157-2-001-C-LA-0002-04	TIPPLER - LAYOUT DETAIL SHEET 3 OF 3
5200157-2-001-C-DE-0002-01	TIPPLER - STORMWATER CONSTRUCTION SHEET 1 OF 3
5200157-2-001-C-DE-0002-02	TIPPLER - STORMWATER CONSTRUCTION SHEET 2 OF 3
5200157-2-001-C-DE-0002-03	TIPPLER - STORMWATER CONSTRUCTION SHEET 3 OF 3
5200157-2-001-C-DE-0002-04	TIPPLER - POND 1, POND 2 AND POND 4 CROSS SECTION DETAIL
5200157-2-001-C-DE-0002-02	TYPICAL GRD CHANNEL MOUNTABLE KERB, SUBSOIL COLLECTOR DRAIN (SCD) AND TRAPEZOIDAL CHANNEL DETAIL
5200157-2-002-C-DE-0002-03	TIPPLER - TYPICAL STORMWATER MANHOLE DETAILS SDA AND SDS

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.

REVISIONS

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

CONTRACTOR / CONSULTANT

TITLE	NAME	SIGN	DATE
DRAWN	RM	[Signature]	03/08/23
CHECKED	HJW	[Signature]	03/08/23
DESIGNED	RM	[Signature]	03/08/23
CHECKED	HJW	[Signature]	03/08/23

OPERATING DIVISIONS

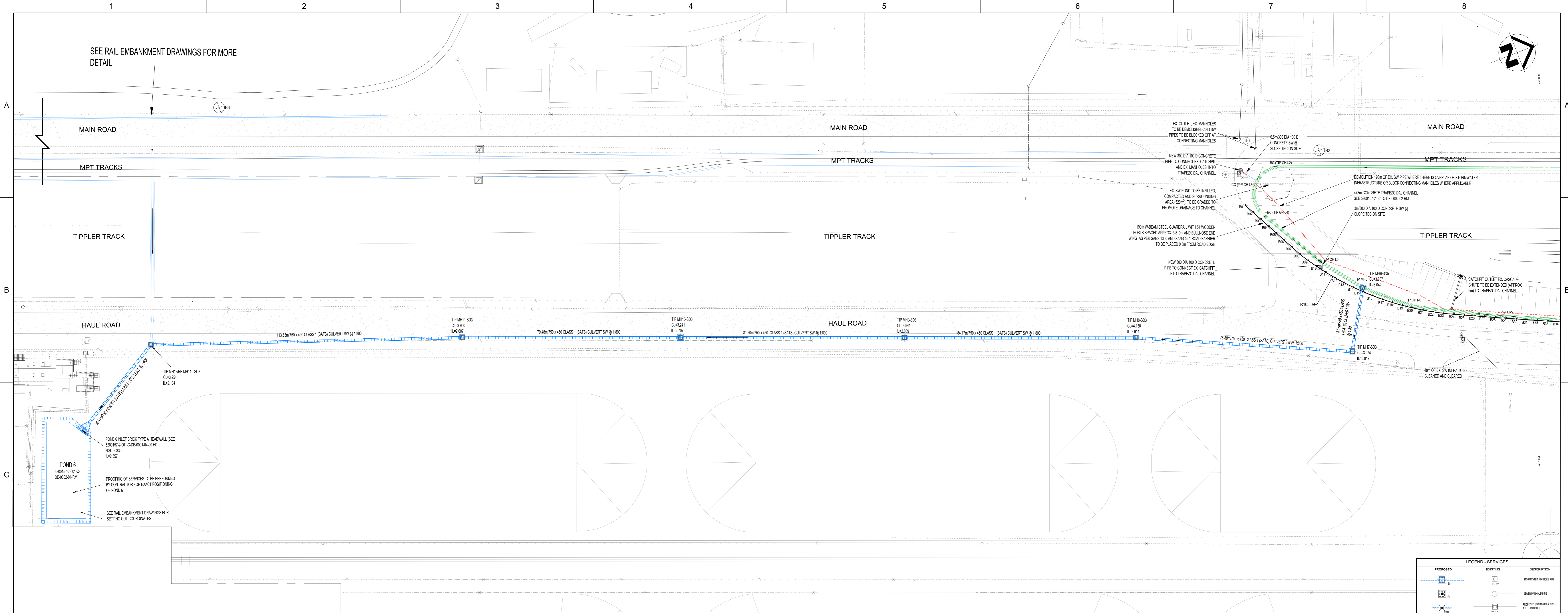
TITLE	NAME	SIGN	DATE
PR. ENG. / PR. TECH. / PR. ARCH	R. NADOO	[Signature]	03/08/23

Transnet Port Terminals

PORT OF SALDANHA

SALDANHA PORT - DRAINAGE TIPPLER AREA LAYOUT

PROJECT NUMBER: 20107216
 GD: 5 2 0 0 1 5 7 2 0 0 1 C L A 0 0 0 2 0 1 0 0 RM
 DIS: TYPE: DRAWING NO. SHEET: REV: ID



TIPPLER LAYOUT DETAIL
SCALE 1:500

Position X	Position Y	COORDINATE ID	Position X	Position Y	COORDINATE ID
-63734.58	-3653422.36	B01	-63630.33	-3653270.99	B01
-63731.22	-3653420.57	B02	-63743.21	-3653405.24	BC (TIP CH L2)
-63727.85	-3653418.78	B03	-63740.05	-3653418.56	CC (TIP CH L3)
-63724.49	-3653416.99	B04	-63728.31	-3653417.04	EC (TIP CH L4)
-63721.13	-3653415.21	B05	-63625.08	-3653078.60	ER1
-63717.76	-3653413.42	B06	-63512.17	-3653085.80	ER2
-63714.40	-3653411.63	B07	-63528.18	-3653124.51	ER3
-63711.03	-3653409.84	B08	-63546.30	-3653120.57	ER4
-63707.67	-3653407.81	B09	-63567.05	-3653175.68	P01
-63704.49	-3653405.62	B10	-63565.83	-3653170.54	P02
-63701.13	-3653403.33	B11	-63561.12	-3653171.07	P03
-63698.70	-3653401.02	B12	-63565.94	-3653174.49	P04
-63695.43	-3653398.41	B13	-63554.76	-3653179.43	P05
-63692.06	-3653395.80	B14	-63550.70	-3653181.71	P06
-63688.70	-3653393.29	B15	-63553.69	-3653182.59	P07
-63685.43	-3653390.28	B16	-63558.28	-3653174.48	P08
-63682.06	-3653387.38	B17	-63553.56	-3653128.17	P09
-63678.70	-3653384.40	B18	-63552.51	-3653131.45	P10
-63675.43	-3653381.33	B19	-63558.96	-3653084.48	P11
-63672.06	-3653378.18	B20	-63552.38	-3653081.80	P12
-63668.70	-3653374.95	B21	-63535.47	-3653085.76	P13
-63665.43	-3653371.65	B22	-63532.19	-3653083.76	P14
-63662.06	-3653368.40	B23	-63544.35	-3653103.62	P15
-63658.70	-3653364.66	B24	-63542.07	-3653103.66	P16
-63655.43	-3653361.40	B25	-63522.96	-3653112.15	P17
-63652.06	-3653357.54	B26	-63525.01	-3653109.87	P18
-63648.70	-3653354.48	B27	-63511.29	-3653088.22	P19
-63645.43	-3653351.01	B28	-63515.11	-3653088.17	P20
-63642.06	-3653347.54	B29	-63293.34	-3653403.34	P21
-63638.70	-3653344.06	B30	-63295.38	-3653403.73	P22
-63635.43	-3653340.59	B31	-63291.54	-3653408.66	P23
-63632.06	-3653337.11	B32	-63295.31	-3653405.65	P24
-63628.70	-3653333.63	B33	-63308.46	-3653441.00	P25
-63625.43	-3653329.15	B34	-63306.19	-3653447.25	P26
-63622.06	-3653325.68	B35	-63291.54	-3653408.66	P27
-63618.70	-3653322.17	B36	-63292.62	-3653403.20	P28
-63615.43	-3653318.68	B37	-63284.32	-3653411.95	P29
-63612.06	-3653315.19	B38	-63286.60	-3653422.00	P30
-63608.70	-3653311.69	B39	-63261.08	-3653412.56	TIP CH L1 (START)
-63605.43	-3653308.19	B40	-63272.68	-3653403.68	TIP CH L5
-63602.06	-3653304.69	B41	-63261.23	-3653210.60	TIP CH R3 (START)
-63598.70	-3653301.19	B42	-63264.01	-3653201.19	TIP CH R4
-63595.43	-3653297.68	B43	-63265.90	-3653244.23	TIP CH R5
-63592.06	-3653294.17	B44	-63275.99	-3653337.17	TIP CH R6
-63588.70	-3653290.66	B45	-63281.69	-3653332.78	TIP MH6
-63585.43	-3653287.15	B46	-63289.76	-3653402.32	TIP P4 CH1
-63582.06	-3653283.63	B47	-63289.52	-3653406.96	TIP P4 CH2
-63578.70	-3653279.11	B48			

DRAWING NO.	REFERENCE
5200157-2-001-C-LA-0002-01	TIPPLER - STORMWATER TIPPLER GENERAL LAYOUT AND KEY PLAN
5200157-2-001-C-LA-0002-02	TIPPLER - LAYOUT DETAIL SHEET 1 OF 3
5200157-2-001-C-LA-0002-03	TIPPLER - LAYOUT DETAIL SHEET 2 OF 3
5200157-2-001-C-LA-0002-04	TIPPLER - LAYOUT DETAIL SHEET 3 OF 3
5200157-2-001-C-SE-0002-01	TIPPLER - STORMWATER LONGSECTION SHEET 1 OF 3
5200157-2-001-C-SE-0002-02	TIPPLER - STORMWATER LONGSECTION SHEET 2 OF 3
5200157-2-001-C-SE-0002-03	TIPPLER - STORMWATER LONGSECTION SHEET 3 OF 3
5200157-2-001-C-SE-0002-04	TIPPLER - POND 1, POND 2 AND POND 4 CROSS SECTION DETAIL
5200157-2-001-C-DE-0002-01	TYPICAL GRID CHANNEL, MOUNTABLE KERB, SUBSOIL COLLECTOR OR DRAIN (SCD) AND TRAPEZOIDAL CHANNEL DETAIL
5200157-2-002-C-DE-0002-02	TIPPLER - TYPICAL STORMWATER MANHOLE DETAILS SD4 AND SD5

- 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 CONSTRUCT 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 KNOWN OR SOURCED FROM EXISTING DRAWINGS. THE CONTRACTOR MUST ENSURE THAT ALL SERVICES THAT INTERFERE 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 DEEM THE CONTRACTOR LIABLE FOR CHECKING 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 QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
 - ALL RIGID CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
 - FOR STORMWATER PIPES SHALL BE SPIGOT & SOCKET CLASS 1000 (SANS 67).
 - ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH 1/2 BDM (NONWOVEN CONTINUOUS FILAMENT NEEDLE PUNCHED 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 CLEANED AND CLEARED OF ALL DEBRIS BEFORE ANY WORK COMMENCES. ALL DAMAGED EXISTING STORMWATER INFRASTRUCTURE SHALL BE REINSTATED 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 AREAS CANNOT BE ACHIEVED, CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.
- STORMWATER NOTES:**
- TRENCHES FOR PIPES TO BE DIGGATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1003-08 - PIPE TRENCHES.
 - 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 FILTED 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 PREPARED WITH A MINIMUM OF 150 mm G2 LAYER COMPACTED TO 95% MOD-AASHTO.
- CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM:**
- REMOVE ALL DUST & CAKED 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 FILTED 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 PREPARED WITH A MINIMUM OF 150 mm G2 LAYER COMPACTED TO 95% MOD-AASHTO.
- CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 1, POND 2 AND POND 4:**
- FOR RESPECTIVE POND DETAIL REFER TO DRAWING 5200157-2-001-C-DE-0002-01.
 - CLEAR ALL GRUB & VEGETATION.
 - CONTRACT TO 90% MOD AASHTO.
 - REPAIR & REINSTATE ALL DOWN CUTS IF APPLICABLE.
 - PLACE STONE PITCHING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
 - DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERSWORKS.
 - PLEASE SEE 5200157-2-001-C-DE-0002-01 FOR POND 1, POND 2 AND POND 4 LAYERSWORKS.

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.

TIPPLER STORMWATER SCHEDULE

Name	Y-Coord	X-Coord
TIP MH1	-63631.57	-3653103.45
TIP MH2	-63630.60	-3653156.23
TIP MH3	-63628.71	-3653174.51
TIP MH4	-63626.27	-3653174.63
TIP MH5	-63643.81	-3653061.29
TIP MH6	-63611.72	-3653303.40
TIP MH7	-63617.29	-3653404.66
TIP MH8	-63723.32	-3653556.06
TIP MH9	-63720.41	-3653632.66
TIP MH10	-63727.77	-3653702.28
TIP MH12	-63626.42	-3653141.13
TIP CH1 START MH6	-63651.30	-3653158.39
TIP CH1 MID	-63717.58	-3653336.63
TIP CH1	-63723.22	-3653405.62
TIP CH1 BC	-63743.63	-3653409.39
TIP CH1 C2	-63742.69	-3653414.17
TIP CH1 L3	-63739.21	-3653417.80
TIP CH1 C3	-63724.71	-3653419.13
TIP CH1 EC	-63728.40	-3653417.75
TIP CH1 L5	-63708.26	-3653403.07
TIP CH1 EX	-63627.07	-3653239.86
TIP CH2	-63627.63	-3653254.29
TIP CH3	-63631.39	-3653271.15
TIP CH R4	-63644.14	-3653302.25
TIP CH RS	-63633.88	-3653346.52
TIP CH RE	-63629.20	-3653378.74
TIP P1 OVERFLOW	-63634.54	-3653366.30
TIP P1 INLET TO P2	-63631.05	-3653392.83
TIP P2 OVERFLOW	-63631.05	-3653392.83
TIP CH P4	-63637.40	-3653185.31
TIP P4 CH1	-63638.01	-3653198.13
TIP P4 CH2	-63638.01	-3653408.27

BENCHMARK NAME

NAME	Y	X	Z	TYPE
BM20_01	63475.257	3654891.162	5.582	Pillar Station
BM20_02	63475.548	3652738.820	11.637	Pillar Station
BM20_03	63450.504	3655384.365	4.526	Pillar Station
BM20_04	63421.238	3654597.788	11.276	Pillar Station
BM20_05	63791.795	3653141.320	1.448	Triangulation Station
BM20_06	63666.668	3653004.208	0.915	Chk Hole in Concrete
BM20_07	63748.380	3653003.098	0.373	12mm Round Iron Peg
BM20_08	63699.362	3653744.514	0.900	12mm Round Iron Peg
BM20_09	63620.972	3654037.881	2.839	12mm Round Iron Peg
BM20_10	63446.168	3654628.915	1.050	12mm Round Iron Peg
BM20_11	63490.974	3654714.555	0.990	12mm Round Iron Peg
BM20_12	63424.637	3655014.835	1.389	12mm Round Iron Peg
BM20_13	63629.540	3654606.152	1.811	12mm Round Iron Peg
BM20_14	63155.452	3653381.885	0.573	12mm Round Iron Peg
BM20_15	63431.637	3653261.261	0.484	12mm Round Iron Peg

CONTRACTOR / CONSULTANT

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

TRANSPNET PORT TERMINALS

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

OPERATING DIVISIONS

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

REVISIONS

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

LEGEND - SERVICES

PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	STORMWATER MANHOLE PIPE
[Symbol]	[Symbol]	STORMWATER PIPE
[Symbol]	[Symbol]	PROPOSED STORMWATER PIPE
[Symbol]	[Symbol]	EXISTING STORMWATER PIPE
[Symbol]	[Symbol]	RAIL LINE
[Symbol]	[Symbol]	COMMUNICATION MANHOLES
[Symbol]	[Symbol]	ELECTRIC MANHOLES
[Symbol]	[Symbol]	INFRA
[Symbol]	[Symbol]	EXISTING ROADWAY
[Symbol]	[Symbol]	EXISTING DRAIN
[Symbol]	[Symbol]	NEW STORMWATER IN CLEARANCE
[Symbol]	[Symbol]	PROPOSED SERVICE
[Symbol]	[Symbol]	DEVELOPED SERVICE
[Symbol]	[Symbol]	RAILWAY EXISTING SERVICE

CONTRACTOR / CONSULTANT

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

TRANSPNET PORT TERMINALS

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OPERATING DIVISIONS

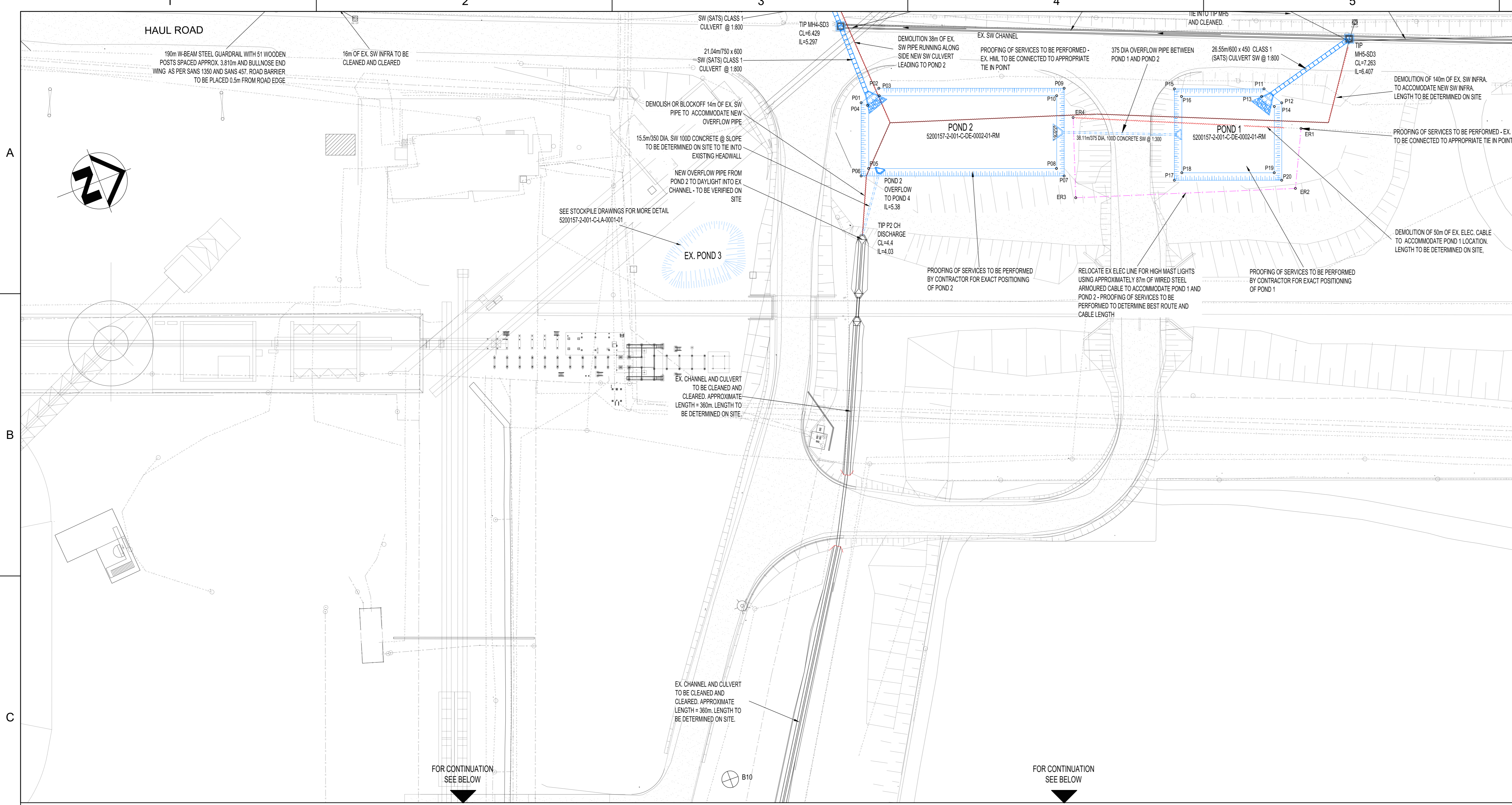
TITLE	NAME	SIGN	DATE
ISSUED FOR CONSTRUCTION	RM	HvdW	03/08/2023
ISSUED FOR CLIENT APPROVAL	RM	HvdW	24/04/2023
ISSUED FOR CLIENT APPROVAL	RM	HvdW	01/07/2022

REVISIONS

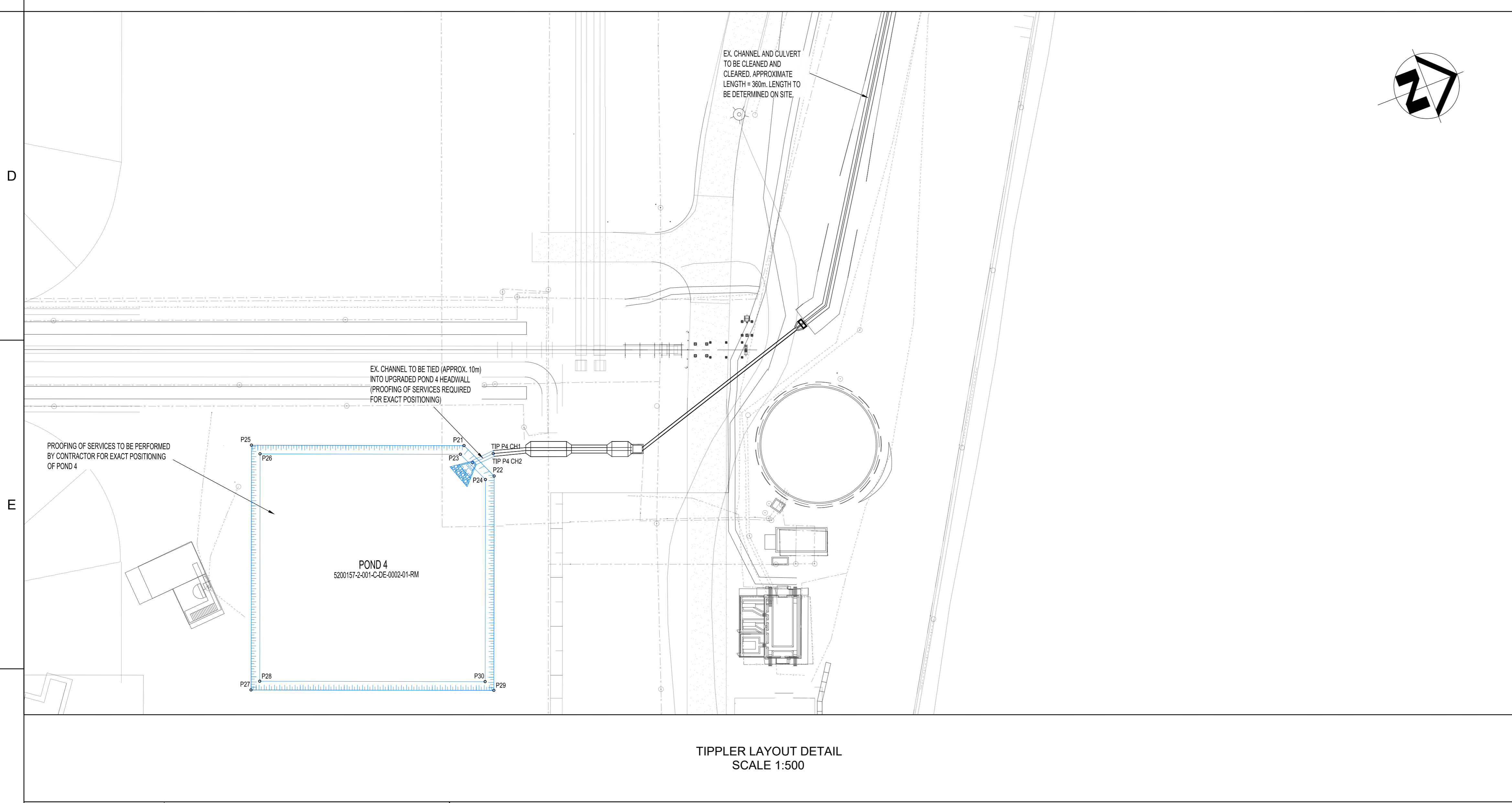
NO.	DESCRIPTION	BY	CHKD	APPD	DATE
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01	ISSUED FOR CLIENT APPROVAL	RM	HvdW	RM	24/04/2023
02	ISSUED FOR CLIENT APPROVAL	RM	HvdW	RM	01/07/2022

REFERENCE DRAWINGS

DRAWING NO.	REFERENCE
5200157-2-001-C-LA-0002-01	TIPPLER - STORMWATER TIPPLER GENERAL LAYOUT AND KEY PLAN
5200157-2-001-C-LA-0002-02	TIPPLER - LAYOUT DETAIL SHEET 1 OF 3
5200157-2-001-C-LA-0002-03	TIPPLER - LAYOUT DETAIL SHEET 2 OF 3
5200157-2-001-C-LA-0002-04	TIPPLER - LAYOUT DETAIL SHEET 3 OF 3
5200157-2-001-C-SE-0002-01	TIPPLER - STORMWATER LONGSECTION SHEET 1 OF 3
5200157-2-001-C-SE-0002-02	TIPPLER - STORMWATER LONGSECTION SHEET 2 OF 3
5200157-2-001-C-SE-0002-03	TIPPLER - STORMWATER LONGSECTION SHEET 3 OF 3
5200157-2-001-C-SE-0002-04	TIPPLER - POND 1, POND 2 AND POND 4 CROSS SECTION DETAIL
52	



TIPPLER LAYOUT DETAIL (CONTINUED BELOW)
SCALE 1:500



TIPPLER LAYOUT DETAIL
SCALE 1:500

DRAWING NO.	REFERENCE
5200157-2-001-C-LA-0002-01	TIPPLER - STORMWATER TIPPLER GENERAL LAYOUT AND KEY PLAN
5200157-2-001-C-LA-0002-02	TIPPLER - LAYOUT DETAIL SHEET 1 OF 3
5200157-2-001-C-LA-0002-03	TIPPLER - LAYOUT DETAIL SHEET 2 OF 3
5200157-2-001-C-LA-0002-04	TIPPLER - LAYOUT DETAIL SHEET 3 OF 3
5200157-2-001-C-SE-0002-01	TIPPLER - STORMWATER LONGSECTION SHEET 1 OF 3
5200157-2-001-C-SE-0002-02	TIPPLER - STORMWATER LONGSECTION SHEET 2 OF 3
5200157-2-001-C-SE-0002-03	TIPPLER - STORMWATER LONGSECTION SHEET 3 OF 3
5200157-2-001-C-DE-0002-01	TIPPLER - POND 1, POND 2 AND POND 4 CROSS SECTION DETAIL
5200157-2-001-C-DE-0002-02	TYPICAL GRID CHANNEL, MOUNTABLE KERB, SUBSIDIARY COLLECTOR DRAIN (SCD) AND TRAPEZOIDAL CHANNEL DETAIL
5200157-2-002-C-DE-0002-03	TIPPLER - TYPICAL STORMWATER MANHOLE DETAILS SD4 AND SD5

- NOTES
- MEASUREMENTS ARE BASED ON METRIC SYSTEM
 - ALL LEVELS ARE IN METERS TO MEAN SEA LEVEL (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.

TIPPLER SETTING OUT COORDINATES			
Position X	Position Y	COORDINATE ID	
-93734.58	-3653422.36	B01	-93630.33
-93731.22	-3653420.57	B02	-93743.21
-93737.85	-3653418.78	B03	-93740.05
-93724.49	-3653416.89	B04	-93728.31
-93721.13	-3653415.21	B05	-93526.08
-93717.76	-3653413.42	B06	-93512.17
-93714.40	-3653411.63	B07	-93508.19
-93711.03	-3653409.84	B08	-93546.30
-93707.67	-3653407.81	B09	-93567.05
-93704.49	-3653406.62	B10	-93568.83
-93701.65	-3653405.33	B11	-93561.12
-93698.70	-3653400.92	B12	-93565.94
-93695.83	-3653398.41	B13	-93551.76
-93693.06	-3653396.80	B14	-93550.70
-93690.39	-3653395.09	B15	-93533.99
-93687.81	-3653390.28	B16	-93536.28
-93685.33	-3653387.38	B17	-93553.56
-93682.97	-3653384.40	B18	-93552.51
-93680.11	-3653381.33	B19	-93538.96
-93678.57	-3653378.18	B20	-93532.38
-93676.54	-3653374.95	B21	-93536.47
-93674.83	-3653371.65	B22	-93532.19
-93672.86	-3653368.29	B23	-93544.35
-93671.18	-3653359.89	B24	-93542.07
-93669.59	-3653351.40	B25	-93523.96
-93668.00	-3653347.94	B26	-93525.01
-93666.41	-3653344.48	B27	-93511.29
-93664.83	-3653335.01	B28	-93515.11
-93663.26	-3653327.11	B29	-93293.34
-93661.69	-3653314.05	B30	-93285.38
-93660.13	-3653305.89	B31	-93291.04
-93658.58	-3653297.11	B32	-93285.31
-93657.03	-3653283.63	B33	-93308.46
-93655.48	-3653270.15	B34	-93306.19
-93653.94	-3653256.68	B35	-93291.59
-93652.41	-3653243.17	B36	-93262.82
-93650.89	-3653229.68	B37	-93244.32
-93649.37	-3653216.19	B38	-93246.80
-93647.85	-3653202.69	B39	-93257.08
-93646.34	-3653189.20	B40	-93255.65
-93644.84	-3653175.69	B41	-93631.23
-93643.34	-3653162.19	B42	-93644.01
-93641.85	-3653148.68	B43	-93653.80
-93640.37	-3653135.17	B44	-93679.99
-93638.89	-3653121.66	B45	-93490.914
-93637.42	-3653108.15	B46	-93697.87
-93635.95	-3653094.63	B47	-93629.64
-93634.49	-3653081.11	B48	-93298.52

BENCHMARK NAME	Y	X	Z	TYPE
PND 01	92475.257	3654091.162	5.592	Pillar Beacon
PND 02	92413.588	3652759.825	11.537	Pillar Beacon
PND 03	92450.904	3653384.365	6.585	Pillar Beacon
PND 04	92417.328	3654597.788	11.218	Pillar Beacon
PND 05	92791.795	3653141.303	1.448	Trim Survey Mark
B1	92666.668	3653004.258	5.915	Chk Hole in Concrete
B2	93748.390	3653003.098	5.313	12mm Round Iron Peg
B3	93699.392	3653744.514	1.897	12mm Round Iron Peg
B4	93609.572	3654037.881	2.839	12mm Round Iron Peg
B5	94146.158	3654628.918	1.055	12mm Round Iron Peg
B6	94390.914	3654714.558	1.995	Round Nail in Concrete
B7	94294.697	3655014.836	3.389	12mm Round Iron Peg
B8	93629.840	3654606.192	1.811	12mm Round Iron Peg
B9	93195.692	3653381.885	5.973	12mm Round Iron Peg
B10	92431.837	3653281.281	11.484	12mm Round Iron Peg

TIPPLER STORMWATER SCHEDULE		
Name	Y coord	X coord
TIP MH1	-93631.57	-3653103.45
TIP MH2	-93650.60	-3653156.23
TIP MH3	-93599.32	-3653174.31
TIP MH4	-93588.27	-3653174.63
TIP MH5	-93543.81	-3653061.29
TIP MH6	-93611.72	-3653393.60
TIP MH7	-93717.22	-3653424.98
TIP MH8	-93703.08	-3653477.12
TIP MH9	-93732.32	-3653556.05
TIP MH10	-93760.41	-3653632.88
TIP MH11	-93787.27	-3653707.28
TIP MH12	-93826.42	-3653814.13
TIP CH1 START MH6	-93631.30	-3653158.39
TIP CH1 END	-93717.68	-3653336.93
TIP CH2	-93743.21	-3653405.82
TIP CH C1 BCD	-93743.83	-3653409.39
TIP CH C2	-93742.59	-3653414.17
TIP CH C3	-93739.21	-3653417.80
TIP CH C4	-93731.41	-3653416.33
TIP CH C5	-93728.40	-3653417.79
TIP CH L6	-93706.26	-3653403.07
TIP CH R1 EX	-93627.67	-3653239.86
TIP CH R2	-93672.83	-3653254.09
TIP CH R3	-93631.30	-3653271.15
TIP CH R4	-93644.14	-3653302.25
TIP CH R5	-93653.88	-3653348.52
TIP CH R6	-93670.03	-3653378.78
POND 2 INLET	-93665.23	-3653174.34
TIP MH5A	-93600.95	-3653181.81
TIP CH MH4	-93545.04	-3653096.30
TIP CH M5	-93527.33	-3653096.70
POND 1 INLET	-93534.84	-3653098.90
TIP P1 OVERFLOW	-93538.05	-3653104.44
TIP P1 INLET TO P2	-93551.95	-3653139.63
TIP P2 OVERFLOW	-93551.03	-3653177.17
TIP CH R4	-93537.40	-3653185.31
TIP P4 CH1	-93528.01	-3653198.13
POND 4 INLET	-93587.03	-3653408.27

CONTRACTOR / CONSULTANT

TRANSPORT PORT TERMINALS

Transnet Port Terminals

TRANSNET

PORT OF SALDANHA

TIPPLER AREA

LAYOUT DETAIL 1:500

SHEET 3 OF 3

PROJECT NUMBER: 201702016

DATE: 03/08/2023

SCALE: AS SHOWN

- 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 CONSTRUCT 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 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 PREFERENCE OVER DIMENSIONS SCALED.
 - ALL LEVELS AND DIMENSIONS SHALL BE CHECKED BEFORE ANY WORK COMMENCES. FAILURE TO DO SO SHALL BE 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 10018 - PIPE TRENCHES.
 - ALL RIGID CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
 - FOR STORMWATER PIPES SHALL BE SPIGOT & SOCKET CLASS 1000 (SANS 677).
 - ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH 40 BDM NONWOVEN CONTINUOUS FILAMENT NEEDLE PUNCHED POLYESTER GEOTEXTILE MIN. WIDTH TO BE 750mm 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 RENAIATED 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 1020 PART 2: EARTHWORKS AND THE RELEVANT PROJECT SPECIFICATIONS AS INCLUDED IN THE CONTRACT.
 - BEFORE PLACING ANY ALL MATERIAL, THE EXISTING GROUND SURFACE MUST BE CLEARED AND GRIBBED OF ALL VEGETATION AND ORGANIC MATTER.
 - UNLESS OTHERWISE INDICATED, ALL BANK BATTERS TO BE 1:1.5 CUT 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 DRAINAGE 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 SYSTEM IS 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 150mm G2 LAYER COMPACTED TO 95% MOD-AASHTO.
- CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 1, POND 2 AND POND 4:
- FOR RESPECTIVE POND DETAIL REFER TO DRAWING 5200157-2-001-C-DE-0002-01.
 - CLEAR ALL GRUB & VEGETATION.
 - COMPACT TO 9% MOD-AASHTO.
 - REPAIR & RENAIATE 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 5200157-2-001-C-DE-0002-01 FOR POND 1, POND 2 AND POND 4 LAYERWORKS.