

MULDERSVLEI 300ML RESERVOIR, PIPELINES AND ASSOCIATED INFRASTRUCTURE

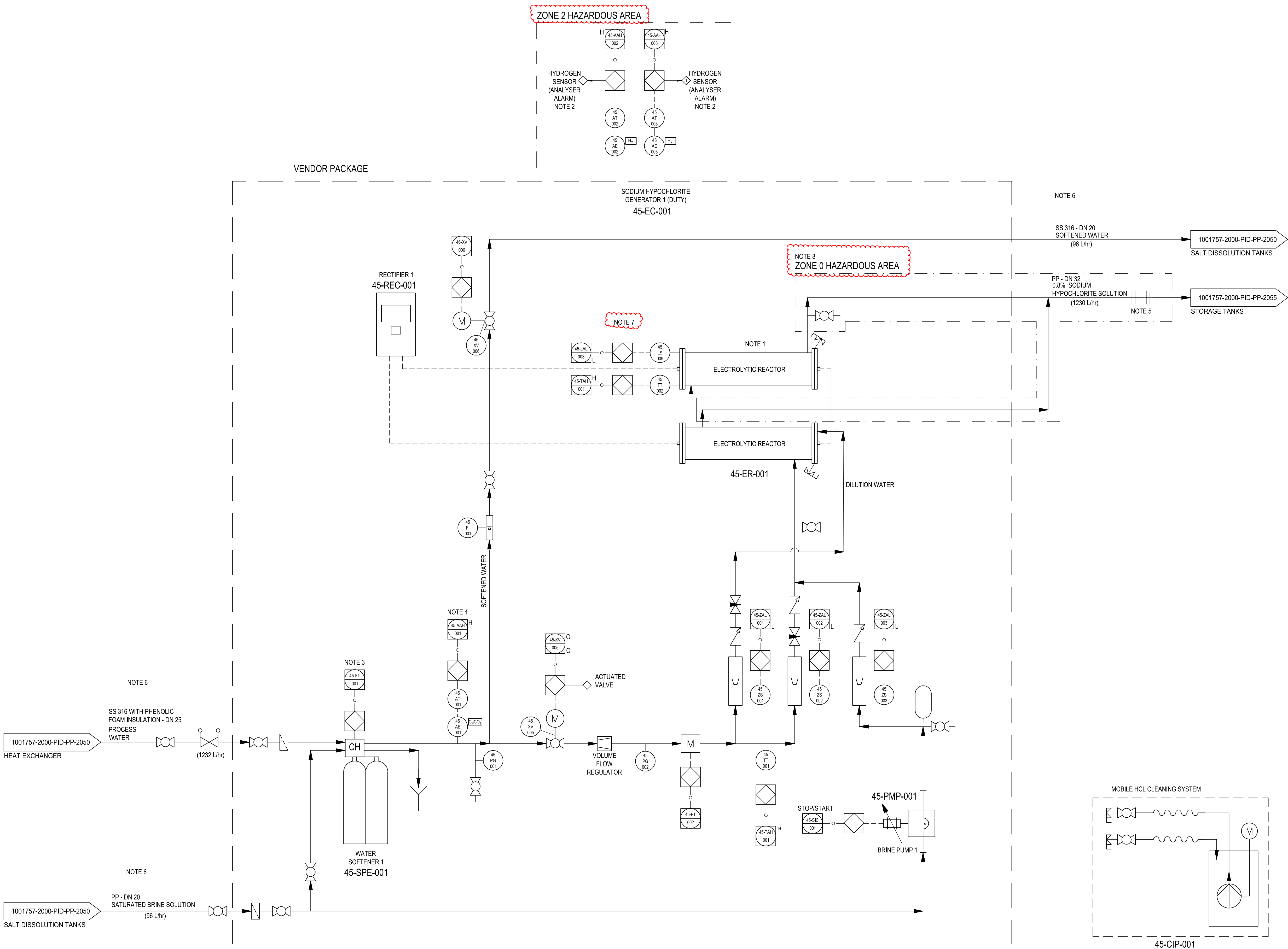
277Q/2024/25 (Notice 14)



DRAWING No	DESCRIPTION	SIZE	Current Revision	Revision Dates															
				15/08/2025															
				Revision Number															
[2000 - 2999] RESERVOIR COMPLEX																			
[2000-2099]	PFDs & P&IDs																		
1001757-2000-PID-PP-2051	PROCESS AND INSTRUMENTATION DIAGRAM: SODIUM HYPO GENERATOR 1	A1	T1	T1															
1001757-2000-PID-PP-2052	PROCESS AND INSTRUMENTATION DIAGRAM: SODIUM HYPO GENERATOR 2	A1	T1	T1															
1001757-2000-PID-PP-2053	PROCESS AND INSTRUMENTATION DIAGRAM: SODIUM HYPO GENERATOR 3	A1	T1	T1															
1001757-2000-PID-PP-2054	PROCESS AND INSTRUMENTATION DIAGRAM: SODIUM HYPO GENERATOR 4	A1	T1	T1															
1001757-2000-PID-PP-2055	PROCESS AND INSTRUMENTATION DIAGRAM: SODIUM HYPO STORAGE TANKS	A1	T1	T1															
[2100-2399]	GENERAL AND SITE SERVICES (LAND DEVELOPMENT)																		
1001757-2000-DRG-CC-2115	BULK EARTHWORKS: STAGE 3 LAYOUT	A1	T0	T1															
1001757-2000-DRG-CC-2116	BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 1 OF 3)	A1	T0	T1															
1001757-2000-DRG-CC-2117	BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 2 OF 3)	A1	T0	T1															
1001757-2000-DRG-CC-2118	BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 3 OF 3)	A1	T0	T1															
1001757-2000-DRG-CC-2119	BULK EARTHWORKS: STAGE 4 LAYOUT	A1	T0	T1															
1001757-2000-DRG-CC-2120	BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 1 OF 3)	A1	T0	T1															
1001757-2000-DRG-CC-2121	BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 2 OF 3)	A1	T0	T1															
1001757-2000-DRG-CC-2122	BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 3 OF 3)	A1	T0	T1															

DESCRIPTION	ON-SITE SODIUM HYPO GENERATOR
TAG No	45-EC-001
EQUIVALENT CHLORINE CAPACITY (kg/h)	10
SALT REQUIREMENT (kg/h)	30
POWER CONSUMPTION (kWh/kg Cl2)	4.4
DUTY (kW)	44

DESCRIPTION	Mobile Cleaning System
TAG No	45-CIP-001
CANISTER CAPACITY (l)	60
HCl SOLUTION CONCENTRATION (%)	5
DUTY (kW)	3.5 (ESTIMATE)



DISCLAIMER

IF CONSTRUCTION DRAWINGS ARE ISSUED UNSIGNED, THE MASTER WITH THE ORIGINAL SIGNATURE OF APPROVAL WILL BE HELD AT THE ZUTARI OFFICE OF THE APPROVER

NOTES

- RECTIFIER FOR SODIUM HYPOCHLORITE GENERATOR WILL NOT BE ON SKID, BUT STILL PART OF THE GENERATOR VENDOR PACKAGE.
- HYDROGEN SENSOR ALARM WILL PROVIDE BOTH AN AUDIBLE AND VISUAL ALARM IN THE BUILDING WHEN TRIGGERED.
- ELECTRONIC VALVE CONTROL HEAD SHALL FORM PART OF VENDOR PACKAGE.
- TO BE ADDED TO GENERATOR SYSTEM, ALTHOUGH NOT PART OF VENDOR PACKAGE.
- SPOOL PIECE THAT CAN BE REMOVED TO ALLOW BLANKING OFF OF THE GENERATORS BY INSTALLING A BLIND FLANGE IN THE EVENT OF MAINTENANCE REQUIREMENTS.
- NOMINAL PIPE SIZES SHOWN ON THE DRAWING ARE INDICATIVE ONLY. THE FINAL SIZING OF ALL PIPES SHALL BE THE CONTRACTOR'S DESIGN RESPONSIBILITY.
- ALL INSTRUMENTATION INSTALLED ON ELECTROLYTIC REACTORS TO COMPLY WITH ATEX ZONE 0 HAZARDOUS AREA REQUIREMENTS.
- THE SODIUM HYPOCHLORITE SUPPLY PIPEWORK CONNECTING EACH ELECTROLYTIC REACTOR TO THE STORAGE TANK INLET SHALL BE CLASSIFIED AS AN ATEX ZONE 0 HAZARDOUS AREA.

MATERIALS OF CONSTRUCTION:

PP - POLYPROPYLENE
SS 316 - STAINLESS STEEL 316

ZUTARI
IMPACT. ENGINEERED.

CLIENT



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

REV	DATE	REVISION DETAILS	APPROVED
T0	28/02/2025	FOR TENDER	L KOEN
T1	12/08/2025	FOR TENDER	L KOEN

SCALE	SIZE	TENDER
NTS	A1	NOT FOR CONSTRUCTION
DRAWN	B MWAMBA	APPROVED
DESIGNED	T RAWHANI	DATE
REVIEWED	L KOEN	L KOEN

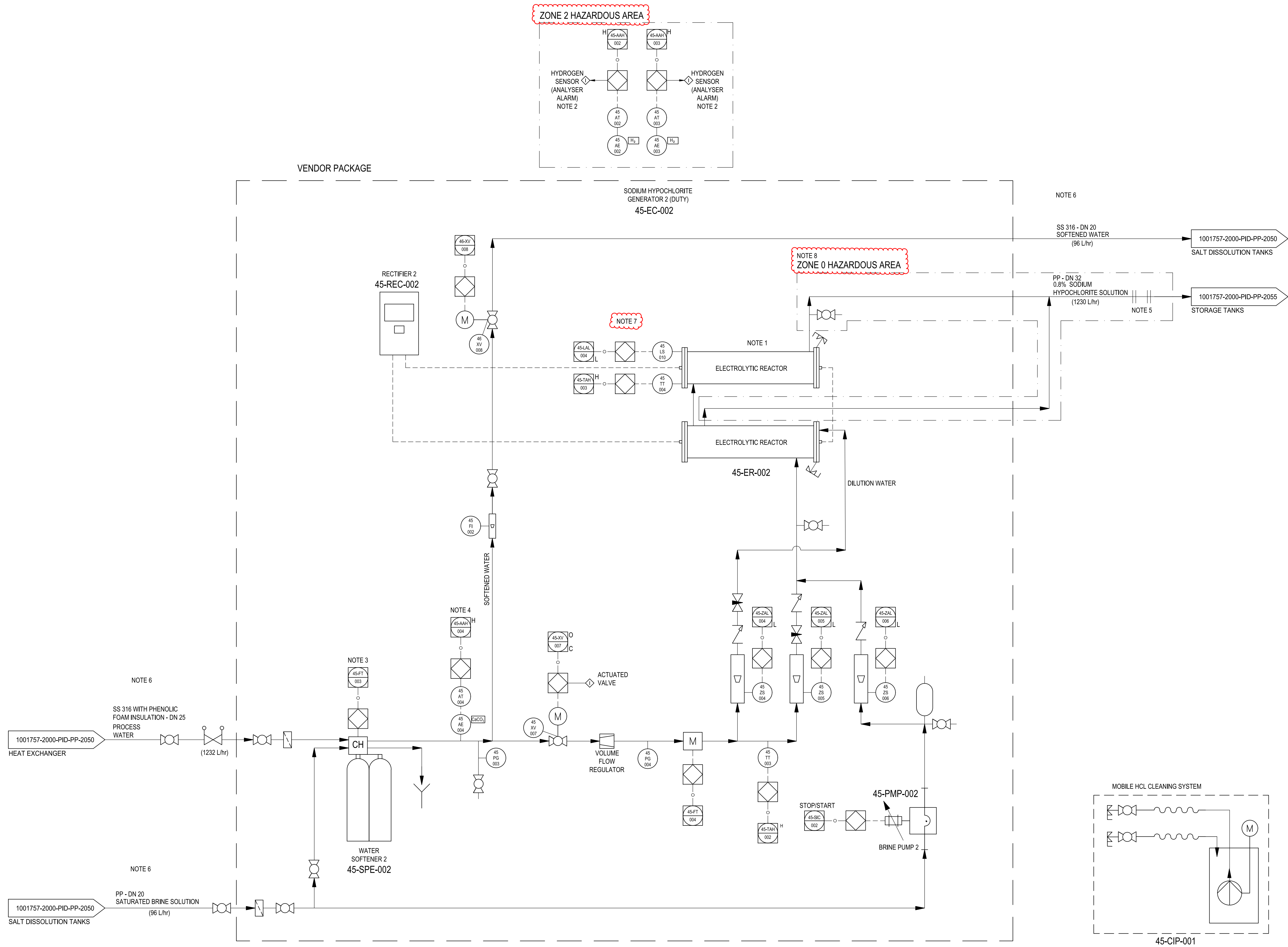
PROJECT
MULDERSVLEI 300 ML RESERVOIR
AND ASSOCIATED INFRASTRUCTURE

TITLE
PROCESS AND INSTRUMENTATION DIAGRAM:
SODIUM HYPO GENERATOR 1

DRAWING NUMBER	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
1001757 - 2000 - PID - PP - 2051 - T1	1001757 -	2000	PID	PP	2051	T1

DESCRIPTION	ON-SITE SODIUM HYPO GENERATOR 2
TAG No	45-EC-002
EQUIVALENT CHLORINE CAPACITY (kg/h)	10
SALT REQUIREMENT (kg/h)	30
POWER CONSUMPTION (kWh/kg Cl2)	4.4
DUTY (kW)	44

DESCRIPTION	Mobile Cleaning System
TAG No	45-CIP-001
CANISTER CAPACITY (l)	60
HCl SOLUTION CONCENTRATION (%)	5
DUTY (kW)	3.5 (ESTIMATE)



DISCLAIMER

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NOTES

- RECTIFIER FOR SODIUM HYPOCHLORITE GENERATOR WILL NOT BE ON SKID, BUT STILL PART OF THE GENERATOR VENDOR PACKAGE.
- HYDROGEN SENSOR ALARM WILL PROVIDE BOTH AN AUDIBLE AND VISUAL ALARM IN THE BUILDING WHEN TRIGGERED.
- ELECTRONIC VALVE CONTROL HEAD SHALL FORM PART OF VENDOR PACKAGE.
- TO BE ADDED TO GENERATOR SYSTEM, ALTHOUGH NOT PART OF VENDOR PACKAGE.
- SPOOL PIECE THAT CAN BE REMOVED TO ALLOW BLANKING OFF OF THE GENERATORS BY INSTALLING A BLIND FLANGE IN THE EVENT OF MAINTENANCE REQUIREMENTS.
- NOMINAL PIPE SIZES SHOWN ON THE DRAWING ARE INDICATIVE ONLY. THE FINAL SIZING OF ALL PIPES SHALL BE THE CONTRACTOR'S DESIGN RESPONSIBILITY.
- ALL INSTRUMENTATION INSTALLED ON ELECTROLYTIC REACTORS TO COMPLY WITH ATEX ZONE 0 HAZARDOUS AREA REQUIREMENTS.
- THE SODIUM HYPOCHLORITE SUPPLY PIPEWORK CONNECTING EACH ELECTROLYTIC REACTOR TO THE STORAGE TANK INLET SHALL BE CLASSIFIED AS AN ATEX ZONE 0 HAZARDOUS AREA.

MATERIALS OF CONSTRUCTION:

PP - POLYPROPYLENE
SS 316 - STAINLESS STEEL 316

ZUTARI
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CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

REV	DATE	REVISION DETAILS	APPROVED
T0	26/01/2024	FOR TENDER	L KOEN
T1	12/08/2025	FOR TENDER	L KOEN

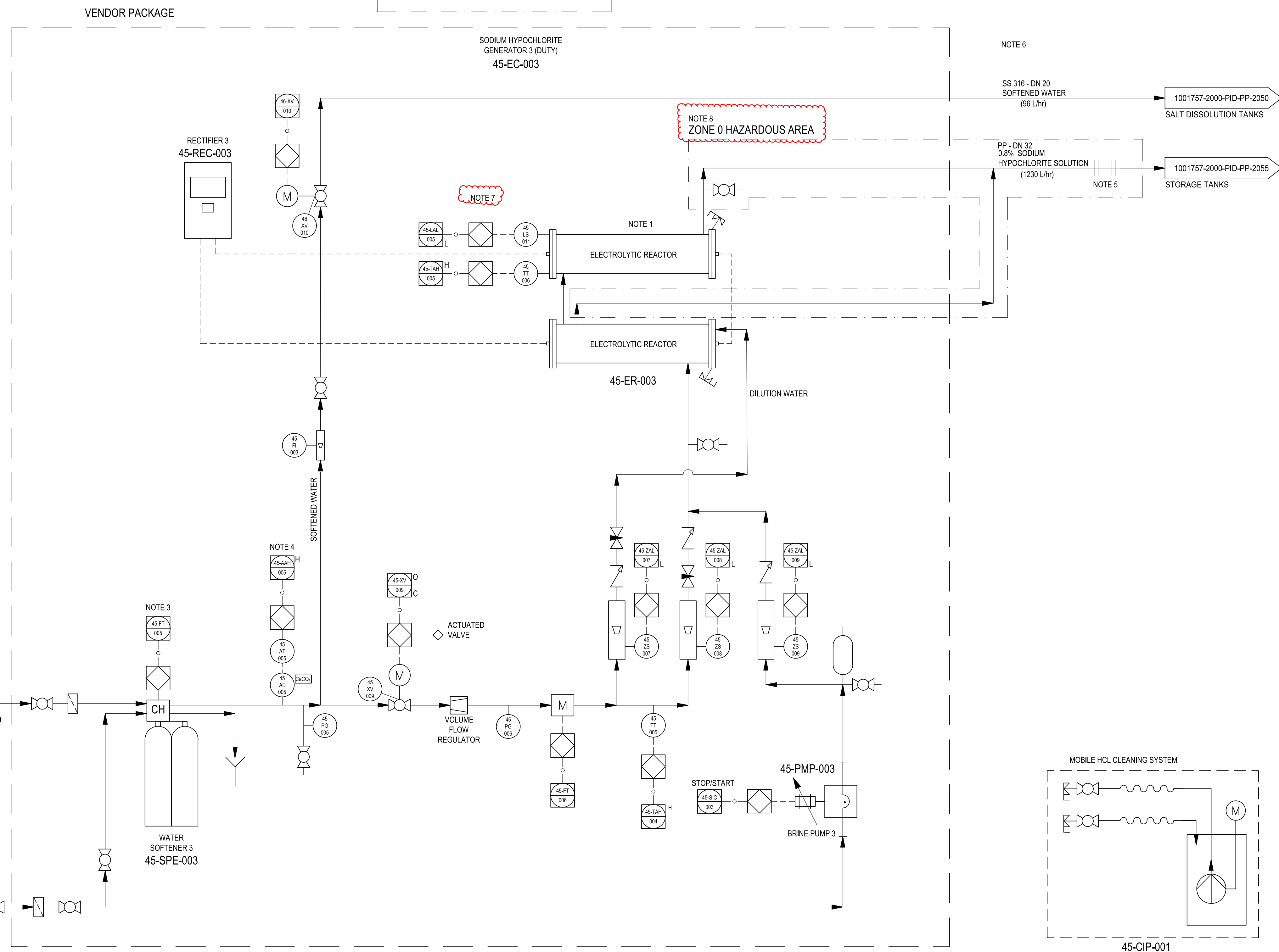
SCALE	SIZE	FOR TENDER	APPROVED
NTS	A1	NOT FOR CONSTRUCTION	DATE
DRAWN	B MWAMBA		
DESIGNED	T RAWHANI		
REVIEWED	L KOEN		

PROJECT
MULDERSVLEI 300 ML RESERVOIR
AND ASSOCIATED INFRASTRUCTURE

TITLE
PROCESS AND INSTRUMENTATION DIAGRAM:
SODIUM HYPO GENERATOR 2

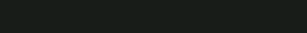
PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
1001757	2000	PID	PP	2052	T1

DESCRIPTION	Mobile Cleaning System
TAG No	45-CIP-001
CANISTER CAPACITY (l)	60
HCl SOLUTION CONCENTRATION (%)	5
DUTY (kW)	3.5 (ESTIMATE)



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ZUTARI OFFICE OF THE APPROVER

1. RECTIFIER FOR SODIUM HYPOCHLORITE GENERATOR WILL NOT BE ON SKID, BUT STILL PART OF THE GENERATOR VENDOR PACKAGE.
2. HYDROGEN SENSOR ALARM WILL PROVIDE BOTH AN AUDIBLE AND VISUAL ALARM IN THE BUILDING WHEN TRIGGERED.
3. ELECTRONIC VALVE CONTROL HEAD SHALL FORM PART OF VENDOR PACKAGE.
4. TO BE ADDED TO GENERATOR SYSTEM, ALTHOUGH NOT PART OF VENDOR PACKAGE.
5. SPOOL PIECE THAT CAN BE REMOVED TO ALLOW BLANKING OFF OF THE GENERATORS BY INSTALLING A BLIND FLANGE IN THE EVENT OF MAINTENANCE REQUIREMENTS.
6. NOMINAL PIPE SIZES SHOWN ON THE DRAWING ARE INDICATIVE ONLY. THE FINAL SIZING OF ALL PIPES SHALL BE THE CONTRACTOR'S DESIGN RESPONSIBILITY.
7. ALL INSTRUMENTATION INSTALLED ON ELECTROLYTIC REACTORS TO COMPLY WITH ATEX ZONE 0 HAZARDOUS AREA REQUIREMENTS.
8. 8.THE SODIUM HYPOCHLORITE SUPPLY PIPEWORK CONNECTING EACH ELECTROLYTIC REACTOR TO THE STORAGE TANK INLET SHALL BE CLASSIFIED AS AN ATEX ZONE 0 HAZARDOUS AREA.



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SCALE	NTS	SIZE	A1
DRAWN	B MWAMBA	APPROVED	DATE
DESIGNED	T RAWHANI		
REVIEWED	L KOEN		PtEng 20060029

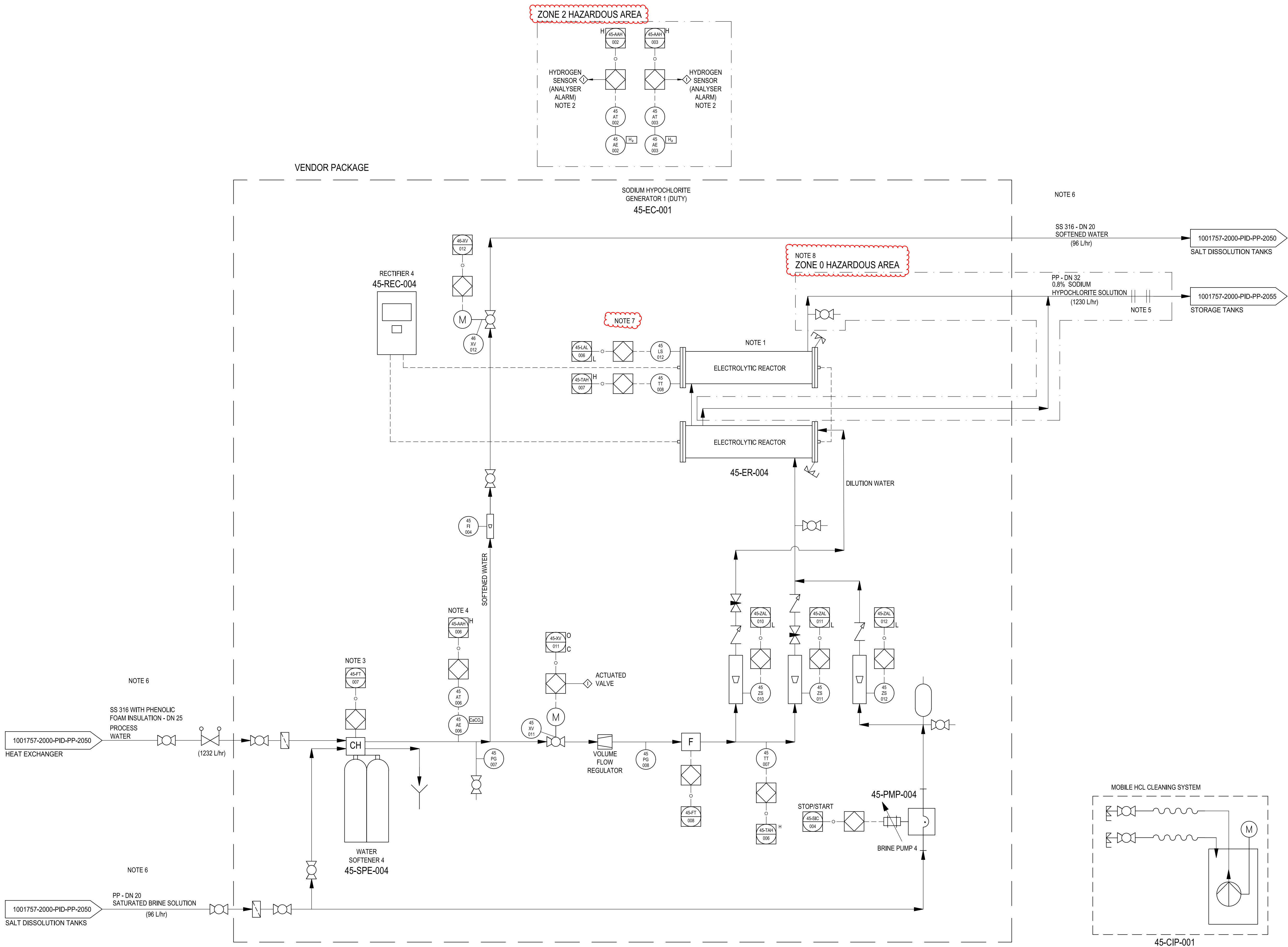
MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE

PROCESS AND INSTRUMENTATION DIAGRAM: SODIUM HYPO GENERATOR 3

Plot Date: 11/8/2025 4:05:33 pm Office: ZADC1 Filename: C:\USERS\AMI_JVR\DOWNLOADS\1001757-0000-PID-PP-2050-2057_OSEC AND SODIUM HYPO SYSTEM.DWG

DESCRIPTION	ON-SITE SODIUM HYPO GENERATOR 4
TAG No	45-EC-004
EQUIVALENT CHLORINE CAPACITY (kg/h)	10
SALT REQUIREMENT (kg/h)	30
POWER CONSUMPTION (kWh/kg Cl2)	4.4
DUTY (kW)	44

DESCRIPTION	Mobile Cleaning System
TAG No	45-CIP-001
CANISTER CAPACITY (l)	60
HCl SOLUTION CONCENTRATION (%)	5
DUTY (kW)	3.5 (ESTIMATE)



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NOTES

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- NOMINAL PIPE SIZES SHOWN ON THE DRAWING ARE INDICATIVE ONLY. THE FINAL SIZING OF ALL PIPES SHALL BE THE CONTRACTOR'S DESIGN RESPONSIBILITY.
- ALL INSTRUMENTATION INSTALLED ON ELECTROLYTIC REACTORS TO COMPLY WITH ATEX ZONE 0 HAZARDOUS AREA REQUIREMENTS.
- 8.THE SODIUM HYPOCHLORITE SUPPLY PIPEWORK CONNECTING EACH ELECTROLYTIC REACTOR TO THE STORAGE TANK INLET SHALL BE CLASSIFIED AS AN ATEX ZONE 0 HAZARDOUS AREA.

MATERIALS OF CONSTRUCTION:

PP - POLYPROPYLENE

SS 316 - STAINLESS STEEL 316

ZUTARI
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REV	DATE	REVISION DETAILS	APPROVED
T0	28/02/2025	FOR TENDER	L KOEN
T1	12/08/2025	FOR TENDER	L KOEN

SCALE	SIZE	TENDER
NTS	A1	NOT FOR CONSTRUCTION
DRAWN	B MWAMBA	APPROVED
DESIGNED	T RAWHANI	DATE
REVIEWED	L KOEN	L KOEN

PROJECT
MULDERSVLEI 300 ML RESERVOIR
AND ASSOCIATED INFRASTRUCTURE

TITLE
PROCESS AND INSTRUMENTATION DIAGRAM:
SODIUM HYPO GENERATOR 4

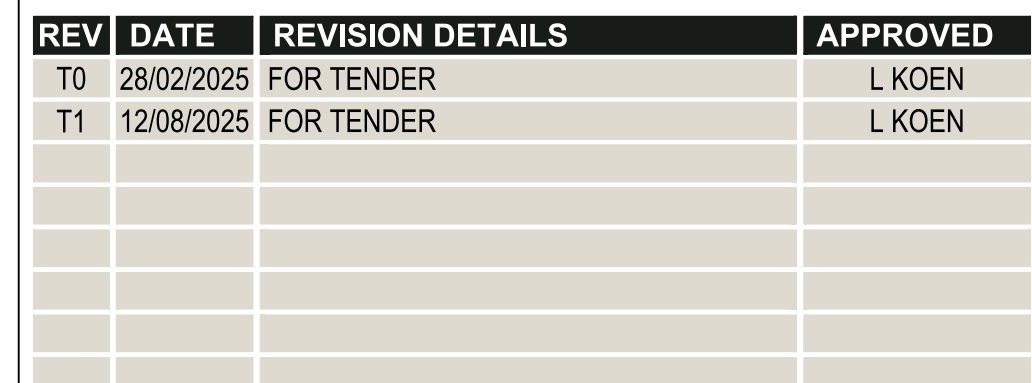
PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
1001757	2000	PID	PP	2054	T1

DESCRIPTION	STORAGE TANK BLOWERS
TAG No	46-BL-001 TO -004
FLOW (Nm³/h)	1040
DUTY (kW)	0.74 (ESTIMATE)
REQUIRED PRESSURE (kPa)	0.325



NOTES

- HOLDS:
1. CONTINUATION DRAWING NUMBERS

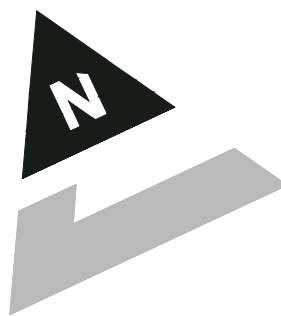


PROJECT

MULDERSVLEI 300 ML RESERVOIR
AND ASSOCIATED INFRASTRUCTURE

DRAWING NUMBER

PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
1001757	- 2000	- PID	- PP	- 2055	- T1

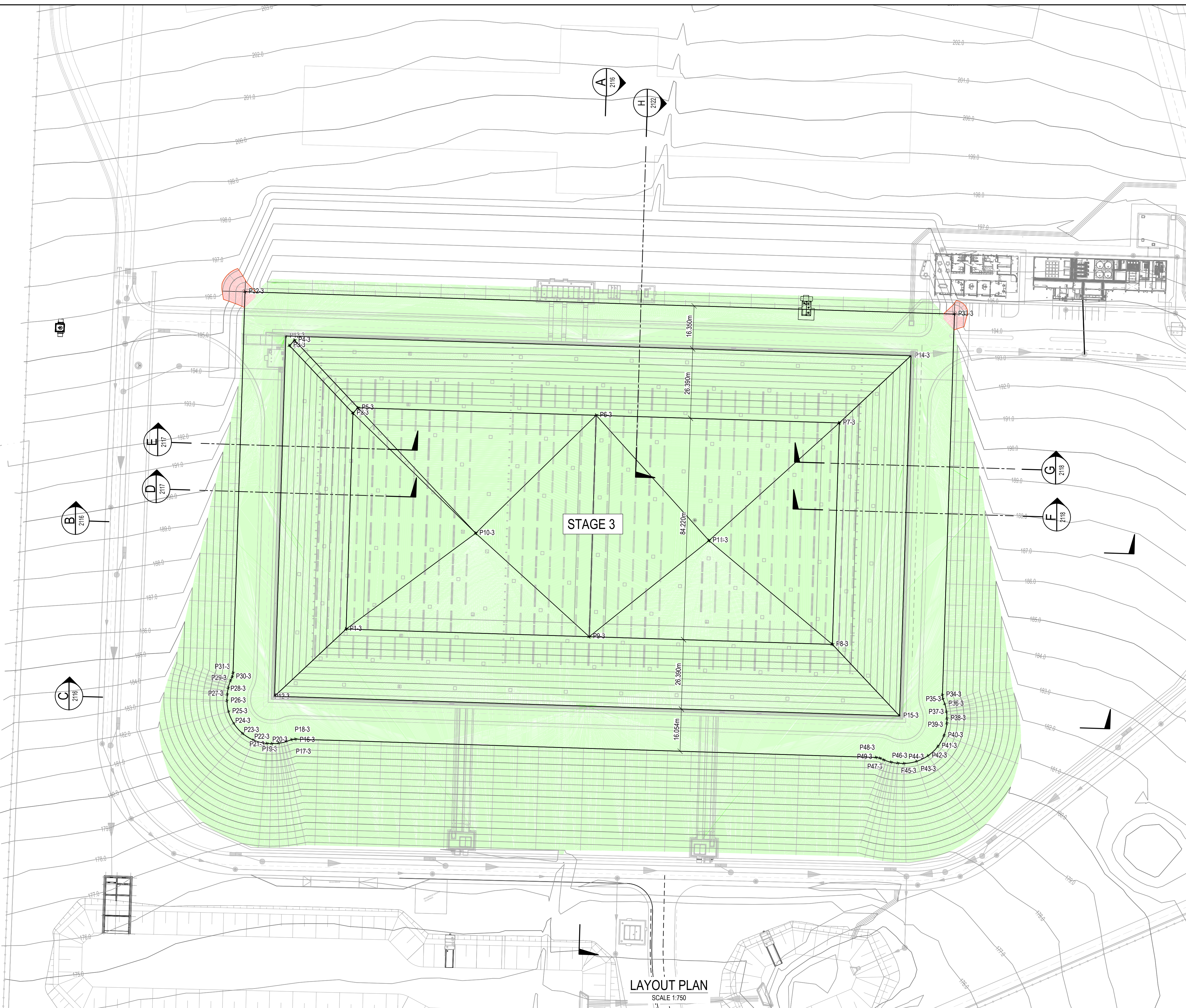


LEGEND

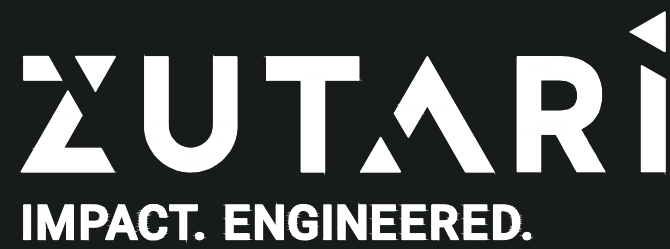
+ P20-3	BULK EARTHWORKS SETTING OUT COORDINATE POINT (STAGE 3)
	CUT
	FILL

- GENERAL NOTES:
- ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SANS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.
 - ALL MODIFICATIONS TO EXISTING SERVICES AND DEVIATIONS FROM THE DESIGN TO BE AS PER INSTRUCTION FROM THE EMPLOYER'S AGENT ONLY.
 - THE CONTRACTOR HAS TO CHECK ALL SETTING OUT INFORMATION ON SITE AND NOTIFY THE EMPLOYER'S AGENT OF ANY IRREGULARITIES PRIOR TO CONSTRUCTION.
 - THE EMPLOYER'S AGENT'S DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, CONSULTANTS AND SPECIALIST'S DRAWINGS - ANY DISCREPANCIES SHALL BE REFERRED TO THE EMPLOYER'S AGENT PRIOR TO CONSTRUCTION.
 - THE POSITION OF EXISTING SERVICES/BOUNDARIES SHOWN ON THIS DRAWING IS GIVEN IN GOOD FAITH AND NO GUARANTEE CAN BE GIVEN THAT THEY ARE CORRECT.
 - THE CONTRACTOR SHALL LIAISE WITH THE RELEVANT LOCAL AUTHORITIES FOR POINTING OUT UNKNOWN EXISTING SERVICES AND OBTAIN NECESSARY APPROVALS IN WRITING.
 - THE CONTRACTOR IS TO LOCATE AND IDENTIFY EXISTING SERVICES ON THE SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE CONTRACT.
 - THE CONTRACTOR WILL BE RESPONSIBLE TO PROTECT AND MAINTAIN THE G6" WORKING LAYER AND MANAGE THE SITE ACCESS DURING CONSTRUCTION.
 - ABBREVIATIONS:
NGL = NATURAL GROUND LEVEL
MOD = MODIFIED

- REFERENCE:
- 1001757-2000-DRG-CC-2116 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 1 OF 3)
 - 1001757-2000-DRG-CC-2117 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 2 OF 3)
 - 1001757-2000-DRG-CC-2118 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 3 OF 3)
 - 1001757-2000-DRG-CC-2125 - BULK EARTHWORKS: SETTING OUT INFORMATION
 - 1001757-2000-DRG-CC-2121 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 2 OF 3)



LAYOUT PLAN
SCALE 1:750



CLIENT



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STAD KAAPSTAD

Making progress possible. Together.

DISCLAIMER	REV	DATE	REVISION DETAILS
IF CONSTRUCTION DRAWINGS ARE ISSUED UNSIGNED, THE MASTER WITH THE ORIGINAL SIGNATURE OF APPROVAL WILL BE HELD AT THE ZUTARI OFFICE OF THE APPROVER	T0	11/04/2025	ISSUED FOR TENDER
	T1	14/08/2025	ISSUED FOR TENDER

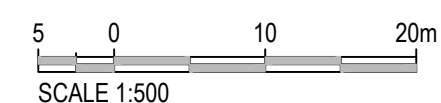
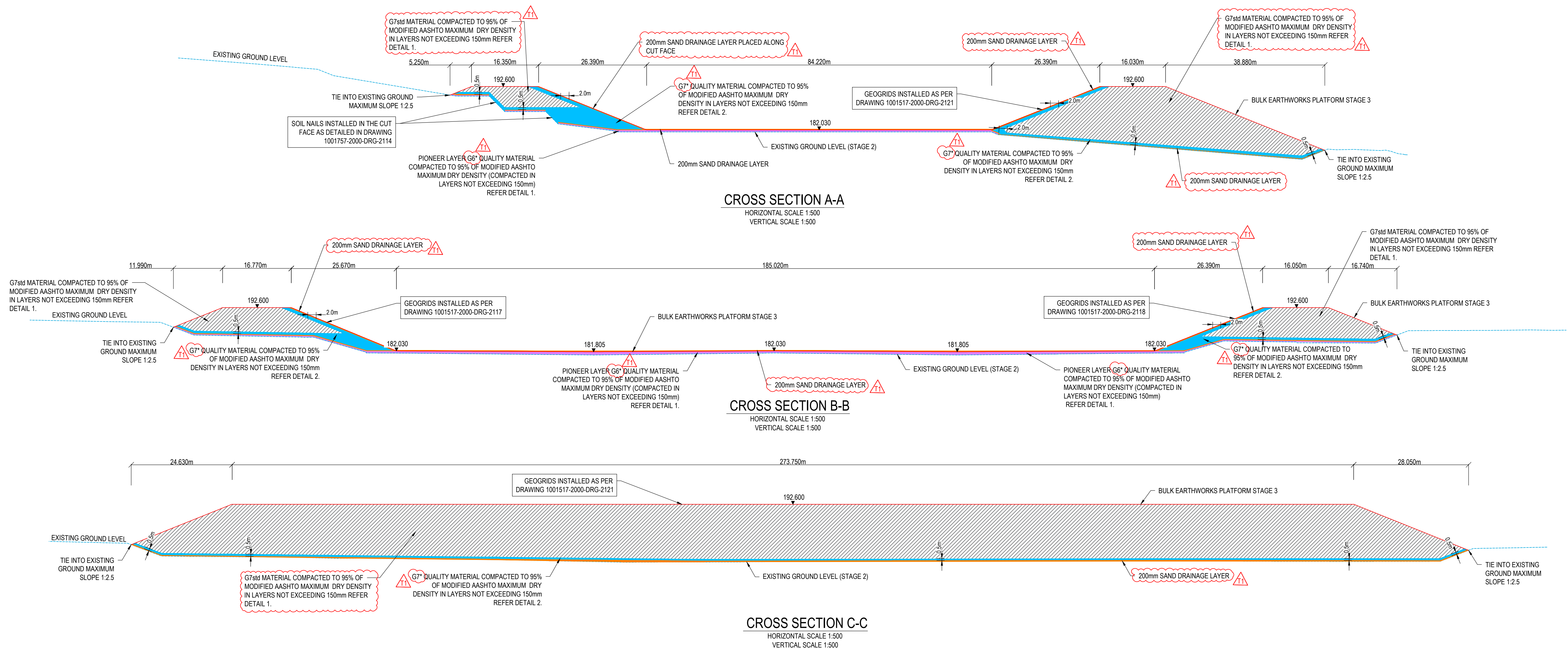
APPROVED	SCALE	SIZE
F. DENYS	AS SHOWN	A1
F. DENYS		
	DRAWN	
	A.MBOLOMPO	
	DESIGNED	
	S.CANTO	
	REVIEWED	
	G.WOJTOWITZ	

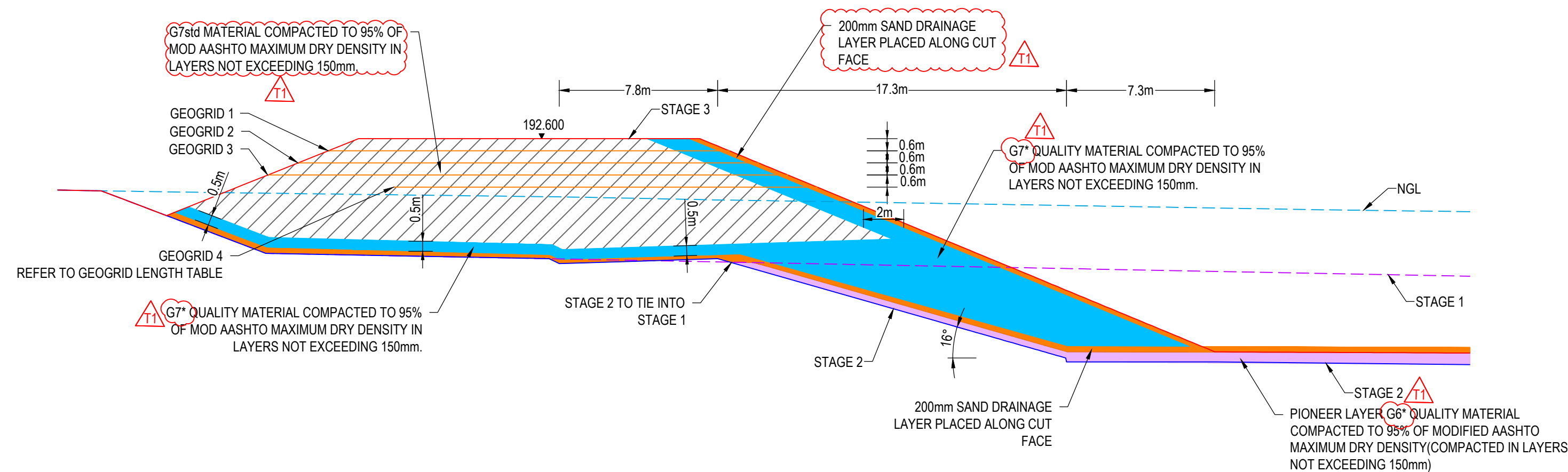
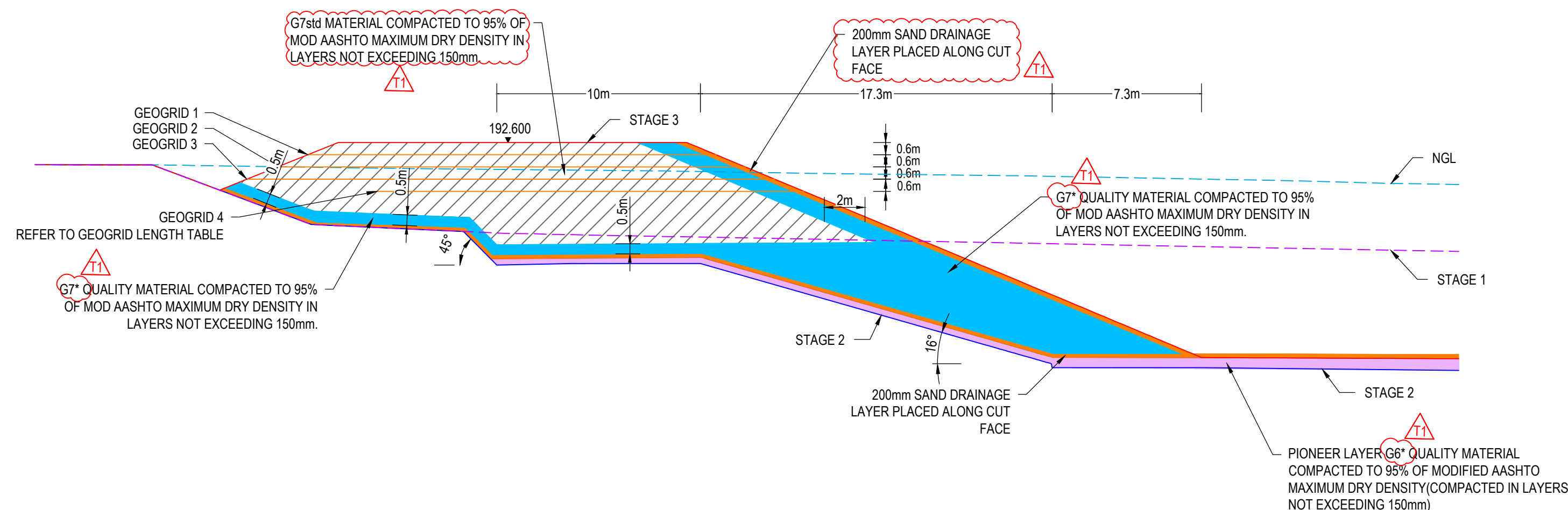
TENDER	APPROVED
NOT FOR CONSTRUCTION	
	DATE
F. DENYS	PR ENG 20110127

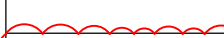
PROJECT	MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE
TITLE	BULK EARTHWORKS: STAGE 3 LAYOUT
DRAWING No.	PROJECT No. 1001757 - WBS 2000 - TYPE DRG - DISC CC - NUMBER 2115 - REV T1



LEGEND	
	200mm SAND DRAINAGE LAYER PLACED ALONG CUT FACE
	PIONEER LAYER G6* QUALITY MATERIAL COMPACTED TO 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY (COMPACTED IN LAYERS NOT EXCEEDING 150mm)
	G7* QUALITY MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
	G7std MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
	BULK EARTHWORKS PLATFORM LEVEL STAGE 3
	EXISTING GROUND LEVEL (STAGE 2)





LEGEND	
	200mm SAND DRAINAGE LAYER PLACED ALONG CUT FACE
	PIONEER LAYER G6* QUALITY MATERIAL COMPACTED TO 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY (COMPACTED IN LAYERS NOT EXCEEDING 150mm)
	G7* QUALITY MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm
	G7std MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
	NATURAL GROUND LEVEL (NGL)
	STAGE 1 BULK EARTHWORKS PLATFORM
	STAGE 2 BULK EARTHWORKS PLATFORM

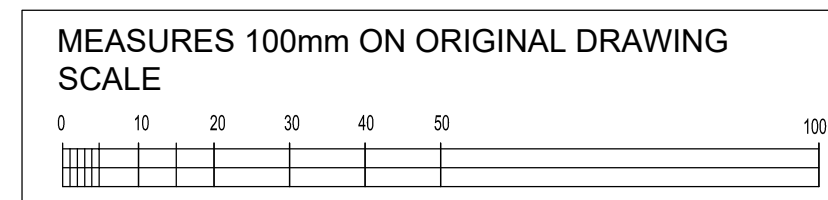
CRANE LOAD DETAILING:

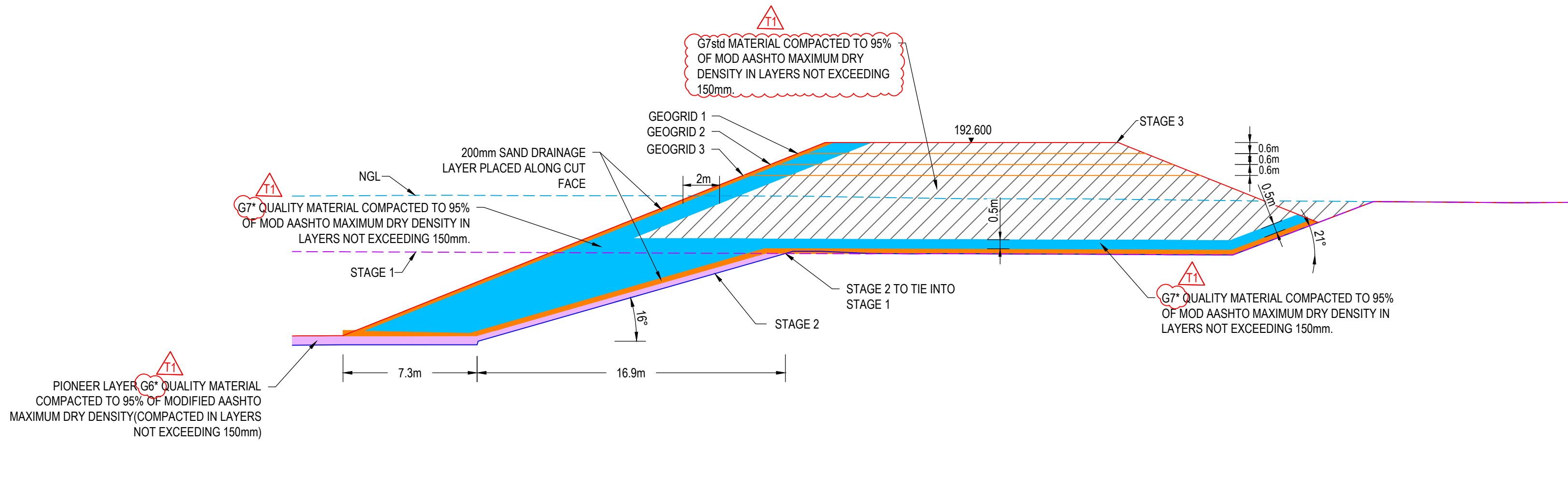
1. THIS DESIGN MAKES PROVISION FOR LOADING OF THE LIEBHERR LTM 1500-8.1 AND LIEBHERR LTM 1130-5.1 CRANES APPLIED SEPARATELY WITH CRANE OUTRIGGERS EACH RESTING ON AZOBE MATS EACH COVERING AN AREA OF 4m X 5m.
2. THE AZOBE MAT ON WHICH THE CRANE OUTRIGGER DISTRIBUTES ITS LOAD IS NOT ALLOWED LESS THAN 2.5m FROM THE EDGE OF EMBANKMENT
3. THE DESIGN MAKES PROVISION FOR THE CRANE LOADING BEING APPLIED WHEN THE EMBANKMENT IS BUILT UP TO 192.6 masl. THIS IS THE MAXIMUM LEVEL FOR INSTALLATION OF THE ROOF STRUCTURE. PLACEMENT OF CRANE LOADING ON A HIGHER EMBANKMENT LEVEL COULD RESULT IN FACTORS OF SAFETY LESS THAN 1.25 FOR TEMPORARY WORKS. STABILITY OF THE EMBANKMENTS SHALL BE ASSESSED IF CRANE LOADING OR THE EMBANKMENT HEIGHT CHANGES TO THE DESIGN ASSUMPTIONS.
4. THE MAXIMUM PERMISSIBLE CRANE SIZE IS 500 ton.
5. CRANES SHALL NOT BE ALLOWED ON THE EMBANKMENT ONCE THE TOP OF THE EMBANKMENT HAS BEEN CONSTRUCTED TO A LEVEL ABOVE THE FOUNDING LEVEL OF THE RESERVOIR EMBANKMENT WALL FOUNDATIONS.
6. AZOBE MAT AND OUTRIGGER PADS SHALL NOT BE PLACED CLOSER THAN 2.5m TO THE EDGE OF THE SLOPES.
7. AZOBE MATS AND OUTRIGGER PADS SHALL BE USED TO ENSURE THE POINT LOADING FROM THE CRANE OUTRIGGERS DOES NOT EXCEED 67kPa UNDER ALL LOADING CONDITIONS.
8. THE MINIMUM SPACING BETWEEN OUTRIGGER PADS PERPENDICULAR TO THE SLOPE EDGE IS 9.6m CENTRE TO CENTRE OF LOAD.

NOTES:

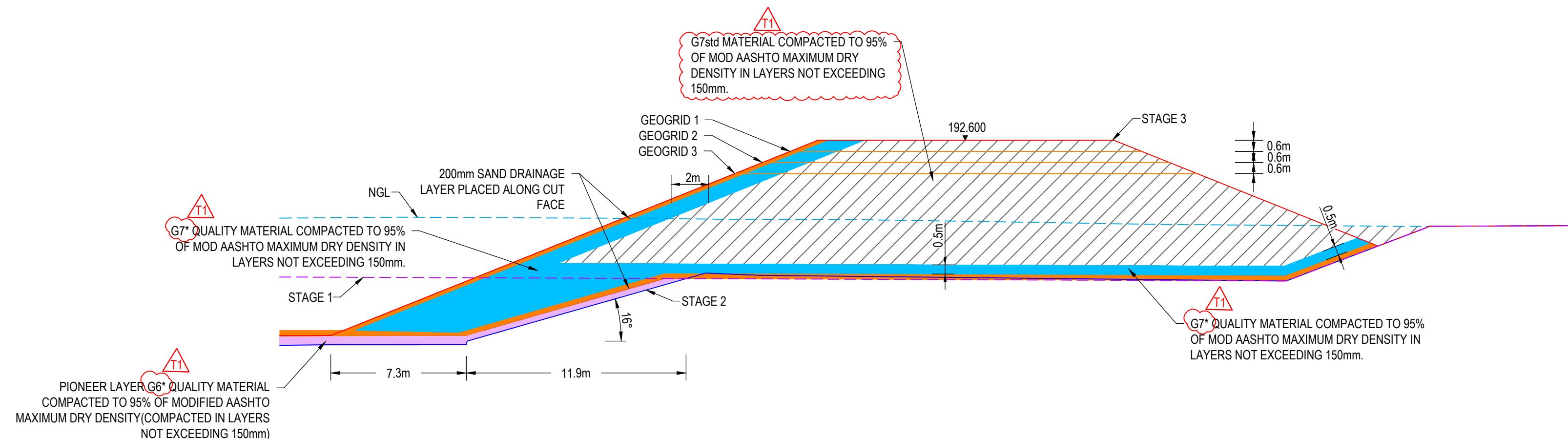
1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. ALL FIGURES AND LEVELS TO BE CHECKED AND VERIFIED BEFORE ANY WORK COMMENCES. ANY DISCREPANCY MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. GEORIDS ARE HUESKER FORTRAC T R400/50-30T OR EQUIVALENT APPROVED
3. GEORIDS SHALL BE LAID HORIZONTALLY AND ORIENTATED WITH THE MAIN DIRECTION OF TENSION (MACHINE DIRECTION) PERPENDICULAR TO THE EMBANKMENT FRONT
4. OVERLAP OF THE GEORIDS MUST BE AS PER THE SUPPLIER'S RECOMMENDATION.
5. GEORIDS ARE SPACED 0.6m VERTICALLY.
6. INSTALLATION REQUIREMENTS SPECIFIED BY THE SUPPLIER ARE TO BE ADHERED TO.
7. ALL WORK TO BE UNDERTAKEN IN ACCORDANCE WITH STANDARD SABS 1200 SPECIFICATIONS AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION AND THE PARTICULAR SPECIFICATION SPE-GG-001.

GEOGRID LENGTHS:		
GEOGRID	GEOGRID LENGTH(m)	ELEVATION(masl)
1	FULL LENGTH OF EMBANKMENT	192
2	FULL LENGTH OF EMBANKMENT	191.4
3	FULL LENGTH OF EMBANKMENT	190.8
4	MINIMUM LENGTH 21m	190.2





TYPICAL CROSS SECTION G-G
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



TYPICAL CROSS SECTION F-F
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

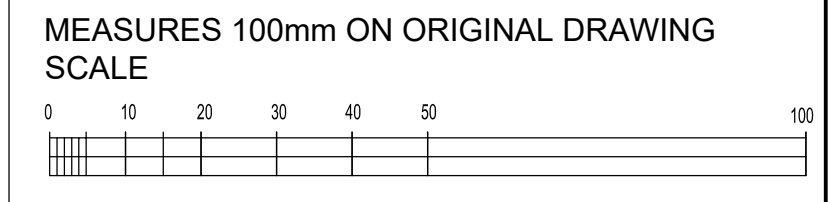
LEGEND	
	200mm SAND DRAINAGE LAYER PLACED ALONG CUT FACE
	PIONEER LAYER G6* QUALITY MATERIAL COMPACTED TO 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY (COMPACTED IN LAYERS NOT EXCEEDING 150mm)
	G7* QUALITY MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm
	G7stb MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
	NATURAL GROUND LEVEL (NGL)
	STAGE 1 BULK EARTHWORKS PLATFORM
	STAGE 2 BULK EARTHWORKS PLATFORM

- CRANE LOAD DETAILING:
- FOR OPERATION OF CRANES ON THE EMBANKMENT FOR INSTALLATION OF THE RESERVOIR ROOF ETC:
- THIS DESIGN MAKES PROVISION FOR LOADING OF THE LIEBHERR LTM 1500-8.1 AND LIEBHERR LTM 1130-5.1 CRANES APPLIED SEPARATELY WITH CRANE OUTRIGGERS EACH RESTING ON AZOBE MATS EACH COVERING AN AREA OF 4m X 5m.
 - THE AZOBE MAT ON WHICH THE CRANE OUTIGGER DISTRIBUTES ITS LOAD IS NOT ALLOWED LESS THAN 2.5m FROM THE EDGE OF OF EMBANKMENT
 - THE DESIGN MAKES PROVISION FOR THE CRANE LOADING BEING APPLIED WHEN THE EMBANKMENT IS BUILT UP TO 192.6 masl. THIS IS THE MAXIMUM LEVEL FOR INSTALLATION OF THE ROOF STRUCTURE. PLACEMENT OF CRANE LOADING ON A HIGHER EMBANKMENT LEVEL COULD RESULT IN FACTORS OF SAFETY LESS THAN 1.25 FOR TEMPORARY WORKS. STABILITY OF THE EMBANKMENTS SHALL BE ASSESSED IF CRANE LOADING OR THE EMBANKMENT HEIGHT CHANGES TO THE DESIGN ASSUMPTIONS.
 - THE MAXIMUM PERMISSIBLE CRANE SIZE IS 500 ton.
 - CRANES SHALL NOT BE ALLOWED ON THE EMBANKMENT ONCE THE TOP OF THE EMBANKMENT HAS BEEN CONSTRUCTED TO A LEVEL ABOVE THE FOUNDING LEVEL OF THE RESERVOIR EMBANKMENT WALL FOUNDATIONS.
 - AZOBE MAT AND OUTRIGGER PADS SHALL NOT BE PLACED CLOSER THAN 2.5m TO THE EDGE OF THE SLOPES.
 - AZOBE MATS AND OUTRIGGER PADS SHALL BE USED TO ENSURE THE POINT LOADING FROM THE CRANE OUTRIGGERS DOES NOT EXCEED 67kPa UNDER ALL LOADING CONDITIONS.
 - THE MINIMUM SPACING BETWEEN OUTRIGGER PADS PERPENDICULAR TO THE SLOPE EDGE IS 9.6m CENTRE TO CENTRE OF LOAD.

- NOTES:
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. ALL FIGURES AND LEVELS TO BE CHECKED AND VERIFIED BEFORE ANY WORK COMMENCES. ANY DISCREPANCY MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - GEOGRIDS ARE HUESKER FORTRAC T R400/50-30T OR EQUIVALENT APPROVED.
 - GEOGRIDS SHALL BE LAID HORIZONTALLY AND ORIENTATED WITH THE MAIN DIRECTION OF TENSION (MACHINE DIRECTION) PERPENDICULAR TO THE EMBANKMENT FRONT
 - OVERLAP OF THE GEOGRIDS MUST BE AS PER THE SUPPLIER'S RECOMMENDATION.
 - GEOGRIDS ARE SPACED 0.6m VERTICALLY.
 - INSTALLATION REQUIREMENTS SPECIFIED BY THE SUPPLIER ARE TO BE ADHERED TO.
 - ALL WORK TO BE UNDERTAKEN IN ACCORDANCE WITH STANDARD SABS 1200 SPECIFICATIONS AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION AND THE PARTICULAR SPECIFICATION SPE-GG-001.

- REFERENCE:
- 1001757-2000-DRG-CC-2112 - BULK EARTHWORKS: STAGE 2 LAYOUT
 - 1001757-2000-DRG-CC-2115 - BULK EARTHWORKS: STAGE 3 LAYOUT
 - 1001757-2000-DRG-CC-2116 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 1 OF 3)
 - 1001757-2000-DRG-CC-2530 - RESERVOIR SUBSOIL DRAINAGE NETWORK LEAK DETECTION AND GROUNDWATER DRAINAGE LAYOUT
 - 1001757-2000-DRG-CC-2117 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 2 OF 3)
 - 1001757-2000-DRG-CC-2121 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 2 OF 3)
 - 1001757-2000-DRG-CC-2122 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 3 OF 3)

GEOGRID LENGTHS:		
GEOGRID	GEOGRID LENGTH(m)	ELEVATION(masl)
1	FULL LENGTH OF EMBANKMENT	192
2	FULL LENGTH OF EMBANKMENT	191.4
3	FULL LENGTH OF EMBANKMENT	190.8



IMPACT. ENGINEERED.

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REV	DATE	REVISION DETAILS
T0	11/04/2025	FOR TENDER
T1	14/08/2025	FOR TENDER

APPROVED	SCALE	SIZE
F. DENYS	AS SHOWN	A1
F. DENYS		

DRAWN	DESIGNED	REVIEWED
A.MBOLOMPO	S.CANTO	G.WOJTOWITZ

TENDER NOT FOR CONSTRUCTION

APPROVED

DATE

PR ENG 20110127

F. DENYS

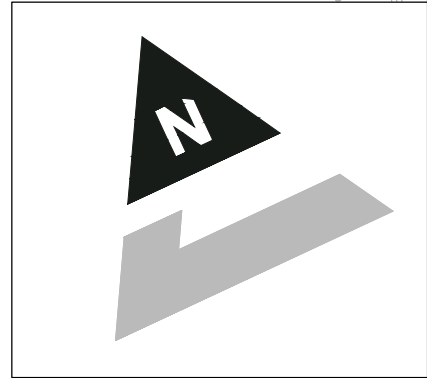
PROJECT

MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE

TITLE

BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 3 OF 3)

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
1001757	2000	DRG	CC	2118	T1	



LEGEND

+ P20-4 BULK EARTHWORKS SETTING OUT COORDINATE POINT (STAGE 4)

CUT TO SPOIL

FILL

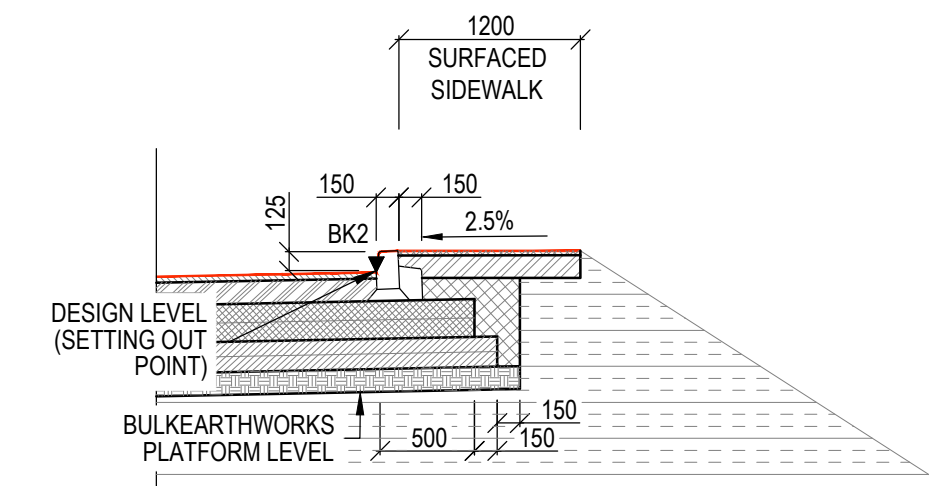
GENERAL NOTES:

- ALL WORK MUST BE DONE IN ACCORDANCE WITH THE STANDARD SABS 1200 SPECIFICATION AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION.
- ALL MODIFICATIONS TO EXISTING SERVICES AND DEVIATIONS FROM THE DESIGN TO BE AS PER INSTRUCTION FROM THE EMPLOYER'S AGENT ONLY.
- THE CONTRACTOR HAS TO CHECK ALL SETTING OUT INFORMATION ON SITE AND NOTIFY THE EMPLOYER'S AGENT OF ANY IRREGULARITIES PRIOR TO CONSTRUCTION.
- THE EMPLOYER'S AGENT'S DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, CONSULTANT'S AND SPECIALIST'S DRAWINGS - ANY DISCREPANCIES SHALL BE REFERRED TO THE EMPLOYER'S AGENT PRIOR TO CONSTRUCTION.
- THE POSITION OF EXISTING SERVICES/BOUNDARIES SHOWN ON THIS DRAWING IS GIVEN IN GOOD FAITH AND NO GUARANTEE CAN BE GIVEN THAT THEY ARE CORRECT.
- THE CONTRACTOR SHALL LIAISE WITH THE RELEVANT LOCAL AUTHORITIES FOR POINTING OUT UNKNOWN EXISTING SERVICES AND OBTAIN NECESSARY APPROVALS IN WRITING.
- THE CONTRACTOR IS TO LOCATE AND IDENTIFY EXISTING SERVICES ON THE SITE AND TO PROTECT THESE FROM DAMAGE THROUGHOUT THE DURATION OF THE CONTRACT.
- THE CONTRACTOR WILL BE RESPONSIBLE TO PROTECT AND MAINTAIN THE GROUNDWORKING LAYER AND MANAGE THE SITE ACCESS DURING CONSTRUCTION.
- ABBREVIATIONS:
NSL = NATURAL GROUND LEVEL
MOD = MODIFIED

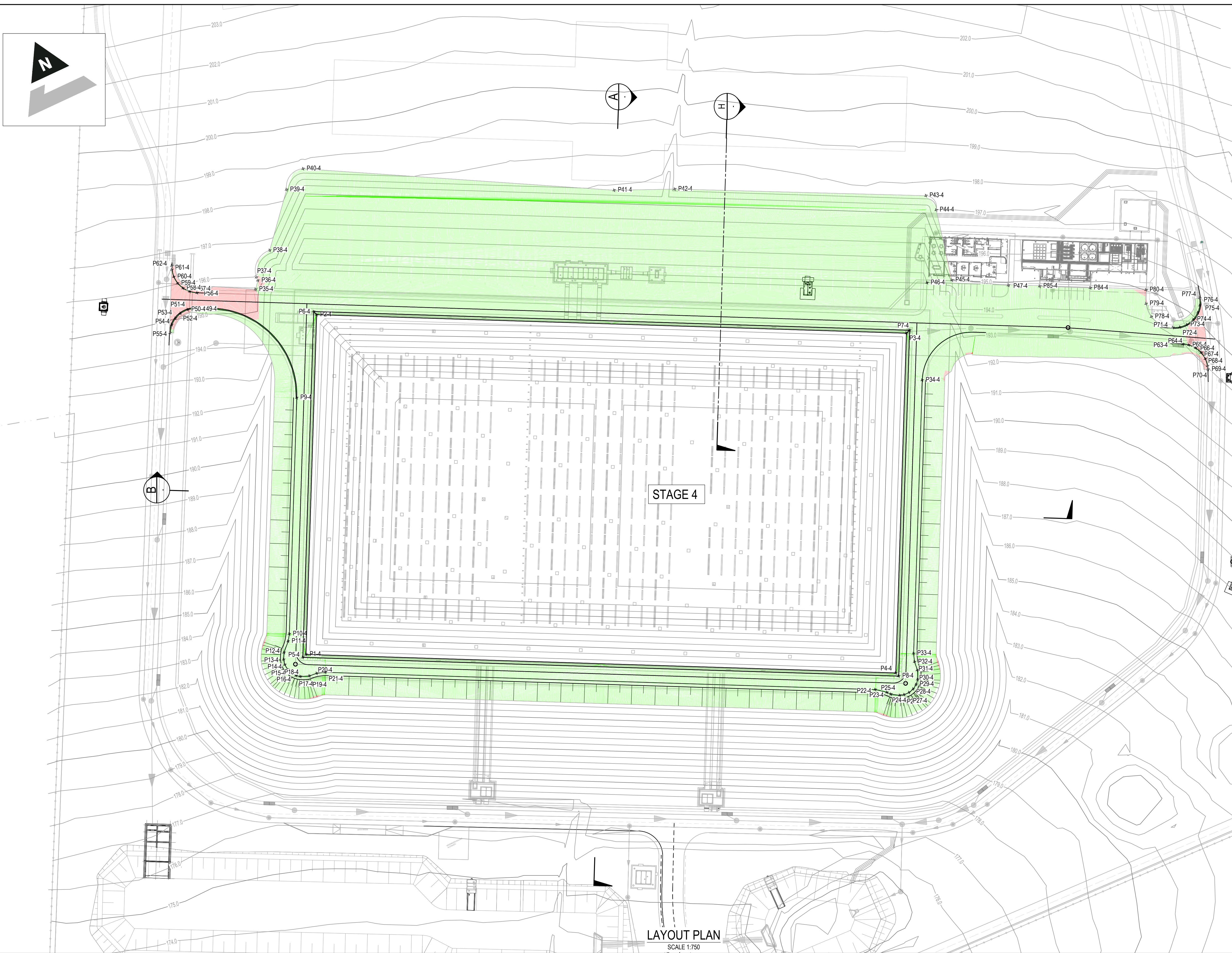
REFERENCE:

1001757-2000-DRG-CC-2120 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 1 OF 3)
1001757-2000-DRG-CC-2121 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 2 OF 3)
1001757-2000-DRG-CC-2122 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 3 OF 3)
1001757-2000-DRG-CC-2125 - BULK EARTHWORKS: SETTING OUT INFORMATION
1001757-2000-DRG-CC-2157 - TYPICAL CROSS SECTIONS

NOTE:
FOR ROAD LAYERWORKS DETAILS REFER TO
DRG 1001757-2000-DRG-CC-2155



SETTING OUT POINTS OF ROAD BOX CUT
SCALE 1:50



LAYOUT PLAN
SCALE 1:750

7.5 0 15 30m
SCALE 1:750

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REV DATE REVISION DETAILS

REV	DATE	REVISION DETAILS
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T1	14/08/2025	ISSUED FOR TENDER

APPROVED

F. DENYS
F. DENYS

SCALE

AS SHOWN
A1

SIZE

A1

TENDER

NOT FOR CONSTRUCTION

PROJECT

MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE

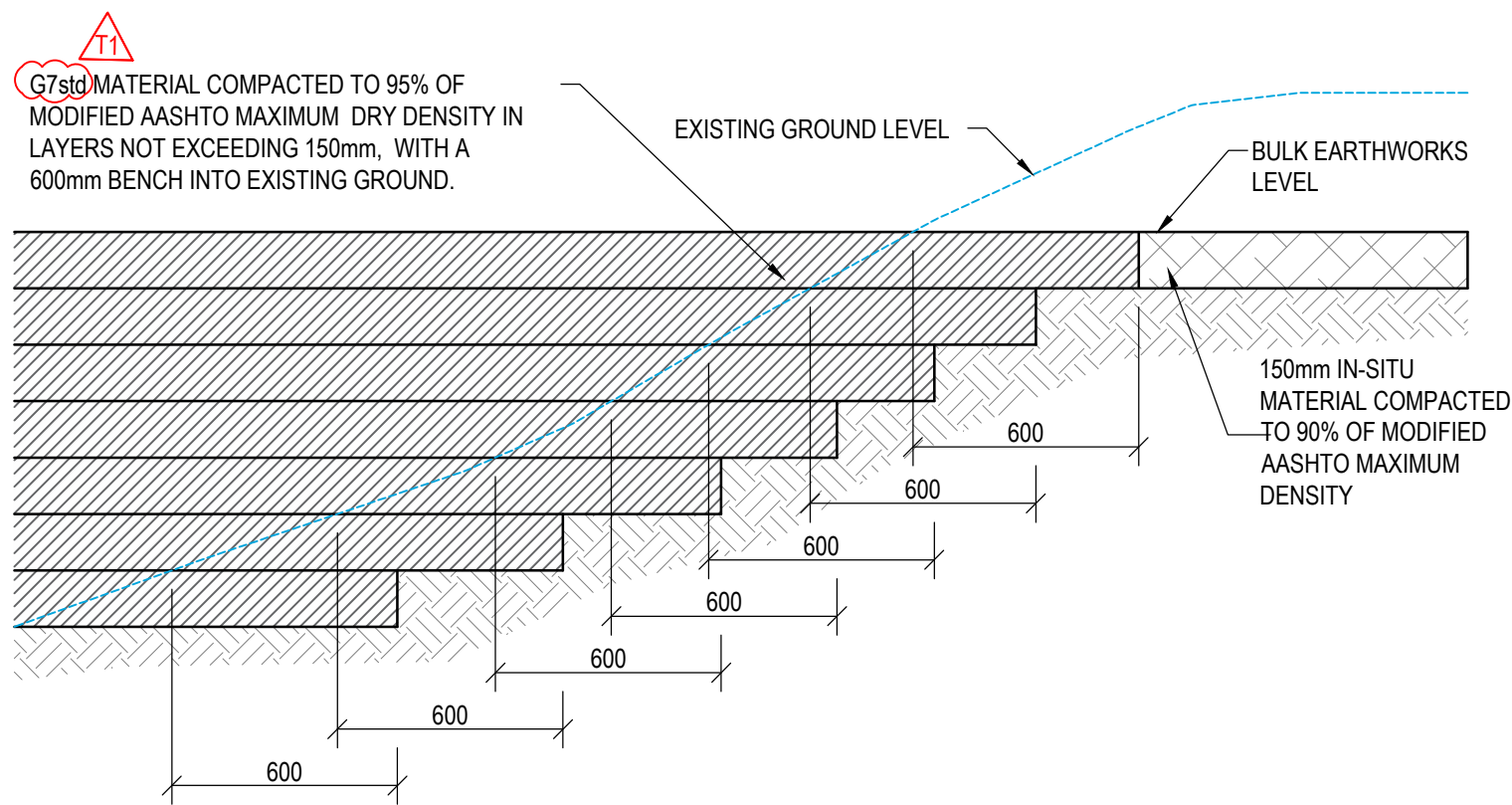
TITLE

BULK EARTHWORKS: STAGE 4 LAYOUT

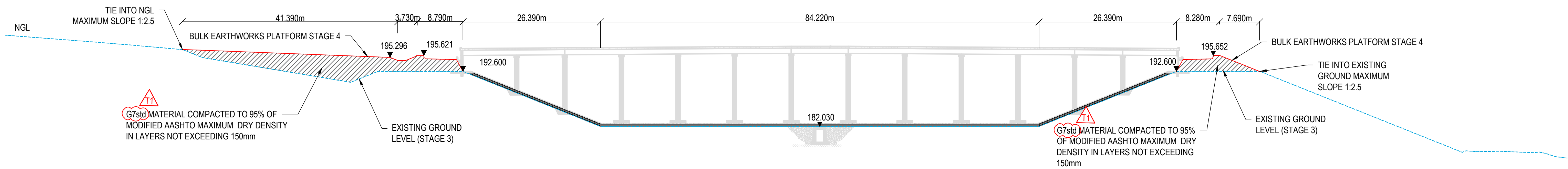
DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
1001757	2000	DRG	CC	2119	T1	

LEGEND

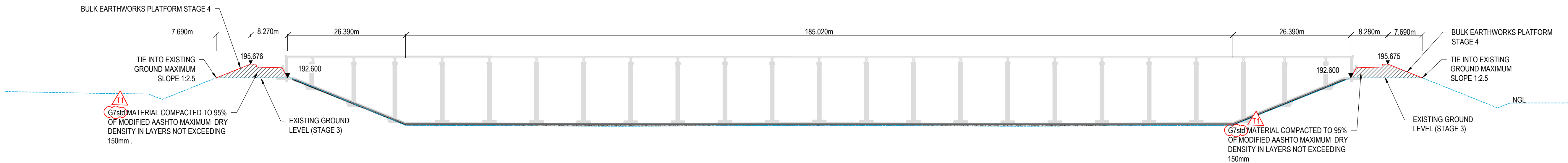
	BULK EARTHWORKS PLATFORM LEVEL STAGE 4
	EXISTING GROUND LEVEL (STAGE 3)
	G7std MATERIAL COMPACTED TO 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY (COMPACTED IN LAYERS NOT EXCEEDING 150mm)
REFERENCE: 1001757-2000-DRG-CC-2119BULK EARTHWORKS: STAGE 4 LAYOUT	



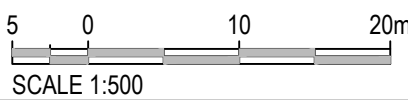
DETAIL 1: TYPICAL FILL LAYERWORKS BENCH DETAIL
SCALE 1:20



CROSS SECTION A-A
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500



CROSS SECTION B-B
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500



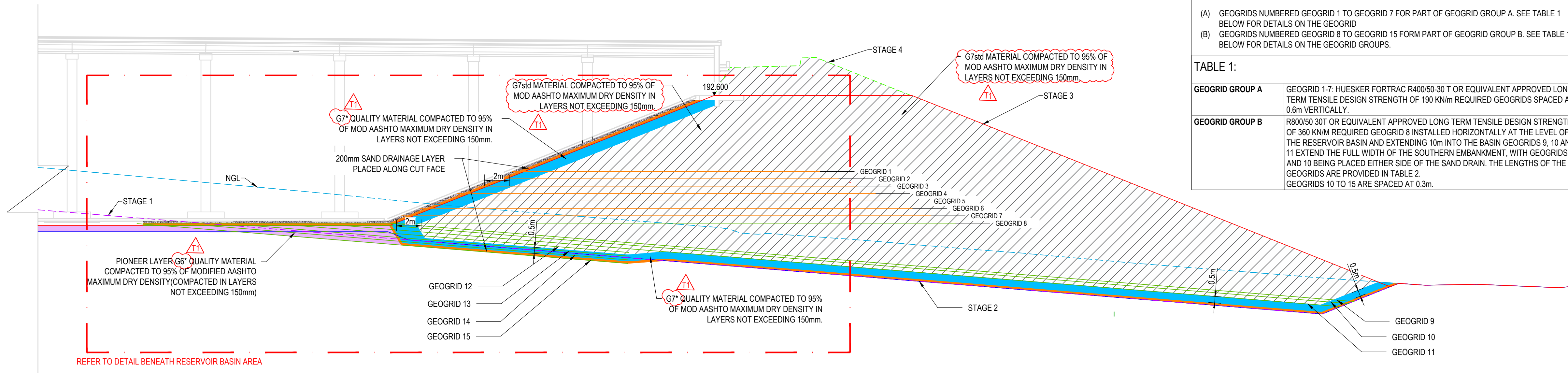
REV	DATE	REVISION DETAILS
T0	11/04/2025	ISSUED FOR TENDER
T1	14/08/2025	ISSUED FOR TENDER

APPROVED
F. DENYS
F. DENYS

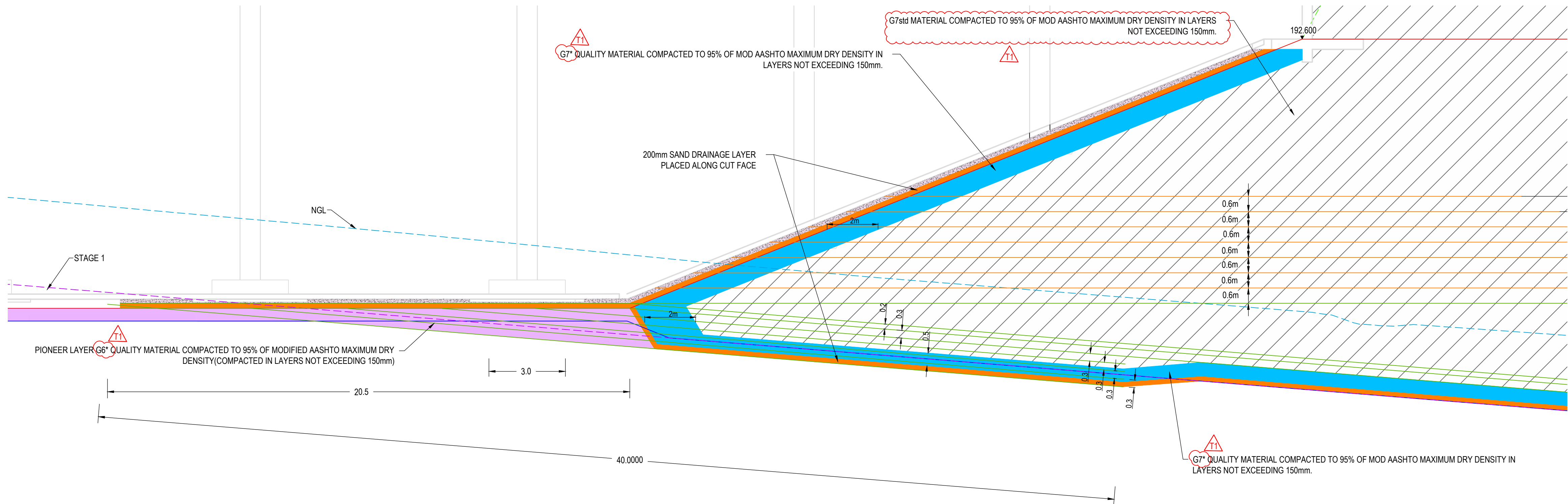
SCALE	SIZE
AS SHOWN	A1
DRAWN	A.MBOLOMPO
DESIGNED	S. CANTO
REVIEWED	G. WOJTOWITZ

TENDER	APPROVED
NOT FOR CONSTRUCTION	DATE
F. DENYS	PR ENG 20110127

PROJECT	MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE
TITLE	BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 1 OF 3)
DRAWING No.	PROJECT No. 1001757 - WBS 2000 - TYPE DRG - DISC CC - NUMBER 2120 - REV T1



CROSS SECTION A-A
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



DETAIL BENEATH RESERVOIR BASIN AREA:
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

REFERENCE:

1001757-2000-DRG-CC-2115 - BULK EARTHWORKS: STAGE 3 LAYOUT
1001757-2000-DRG-CC-2116 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 1 OF 3)
1001757-2000-DRG-CC-2530 - RESERVOIR SUBSOIL DRAINAGE NETWORK LEAK DETECTION AND GROUNDWATER DRAINAGE LAYOUT
1001757-2000-DRG-CC-2117 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 2 OF 3)
1001757-2000-DRG-CC-2118 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 3 OF 3)
1001757-2000-DRG-CC-2122 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 3 OF 3)

GEOGRID NOTES:

- (A) GEOGRIDS NUMBERED GEOGRID 1 TO GEOGRID 7 FOR PART OF GEOGRID GROUP A. SEE TABLE 1 BELOW FOR DETAILS ON THE GEOGRID
(B) GEOGRIDS NUMBERED GEOGRID 8 TO GEOGRID 15 FORM PART OF GEOGRID GROUP B. SEE TABLE 1 BELOW FOR DETAILS ON THE GEOGRID GROUPS.

TABLE 1:

GEOGRID GROUP A	GEOGRID 1-7: HUESKER FORTRAC R400/50-30 T OR EQUIVALENT APPROVED LONG TERM TENSILE DESIGN STRENGTH OF 190 KN/m REQUIRED GEOGRIDS SPACED AT 0.6m VERTICALLY.
GEOGRID GROUP B	R800/50 30T OR EQUIVALENT APPROVED LONG TERM TENSILE DESIGN STRENGTH OF 360 KN/M REQUIRED GEOGRID 8 INSTALLED HORIZONTALLY AT THE LEVEL OF THE RESERVOIR BASIN AND EXTENDING 10m INTO THE BASIN GEOGRIDS 9, 10 AND 11 EXTEND THE FULL WIDTH OF THE SOUTHERN EMBANKMENT, WITH GEOGRIDS 9 AND 10 BEING PLACED EITHER SIDE OF THE SAND DRAIN. THE LENGTHS OF THE GEOGRIDS ARE PROVIDED IN TABLE 2. GEOGRIDS 10 TO 15 ARE SPACED AT 0.3m.

LEGEND

	200mm SAND DRAINAGE LAYER PLACED ALONG CUT FACE
	PIONEER LAYER G6 QUALITY MATERIAL COMPACTED TO 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY (COMPACTED IN LAYERS NOT EXCEEDING 150mm)
	G7 QUALITY MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm
	G7sd MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
	NATURAL GROUND LEVEL (NGL)
	STAGE 1 BULK EARTHWORKS PLATFORM
	STAGE 2 BULK EARTHWORKS PLATFORM
	STAGE 3 BULK EARTHWORKS PLATFORM
	STAGE 4 BULK EARTHWORKS PLATFORM
	GEOGRID GROUP A
	GEOGRID GROUP B

CRANE LOAD DETAILING:

- FOR OPERATION OF CRANES ON THE EMBANKMENT FOR INSTALLATION OF THE RESERVOIR ROOF ETC:
- THIS DESIGN MAKES PROVISION FOR LOADING OF THE LIEBHERR LTM 1500-8.1 AND LIEBHERR LTM 1130-5.1 CRANES APPLIED SEPARATELY WITH CRANE OUTRIGGERS EACH RESTING ON AZOBE MATS EACH COVERING AN AREA OF 4m X 5m.
 - THE AZOBE MAT ON WHICH THE CRANE OUTRIGGER DISTRIBUTES ITS LOAD IS NOT ALLOWED LESS THAN 2.5m FROM THE EDGE OF OF EMBANKMENT
 - THE DESIGN MAKES PROVISION FOR THE CRANE LOADING BEING APPLIED WHEN THE EMBANKMENT IS BUILT UP TO 192.6 masl. THIS IS THE MAXIMUM LEVEL FOR INSTALLATION OF THE ROOF STRUCTURE. PLACEMENT OF CRANE LOADING ON A HIGHER EMBANKMENT LEVEL COULD RESULT IN FACTORS OF SAFETY LESS THAN 1.25 FOR TEMPORARY WORKS. STABILITY OF THE EMBANKMENTS SHALL BE ASSESSED IF CRANE LOADING OR THE EMBANKMENT HEIGHT CHANGES TO THE DESIGN ASSUMPTIONS.
 - THE MAXIMUM PERMISSIBLE CRANE SIZE IS 500 ton.
 - CRANES SHALL NOT BE ALLOWED ON THE EMBANKMENT ONCE THE TOP OF THE EMBANKMENT HAS BEEN CONSTRUCTED TO A LEVEL ABOVE THE FOUNDING LEVEL OF THE RESERVOIR EMBANKMENT WALL FOUNDATIONS.
 - AZOBE MAT AND OUTRIGGER PADS SHALL NOT BE PLACED CLOSER THAN 2.5m TO THE EDGE OF THE SLOPES.
 - AZOBE MATS AND OUTRIGGER PADS SHALL BE USED TO ENSURE THE POINT LOADING FROM THE CRANE OUTRIGGERS DOES NOT EXCEED 67kPa UNDER ALL LOADING CONDITIONS.
 - THE MINIMUM SPACING BETWEEN OUTRIGGER PADS PERPENDICULAR TO THE SLOPE EDGE IS 9.6m CENTRE TO CENTRE OF LOAD.

NOTES:

- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. ALL FIGURES AND LEVELS TO BE CHECKED AND VERIFIED BEFORE ANY WORK COMMENCES. ANY DISCREPANCY MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
- GEOGRIDS SHALL BE LAID HORIZONTALLY AND ORIENTATED WITH THE MAIN DIRECTION OF TENSION (MACHINE DIRECTION) PERPENDICULAR TO THE EMBANKMENT FRONT
- OVERLAP OF THE GEOGRIDS MUST BE AS PER THE SUPPLIER'S RECOMMENDATION.
- GEOGRIDS ARE SPACED 0.6m VERTICALLY.
- INSTALLATION REQUIREMENTS SPECIFIED BY THE SUPPLIER ARE TO BE ADHERED TO.
- ALL WORK TO BE UNDERTAKEN IN ACCORDANCE WITH STANDARD SABS 1200 SPECIFICATIONS AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION AND THE PARTICULAR SPECIFICATION SPE-GG-001.

TABLE 2: GEOGRID LENGTHS:

GEOGRID	GEOGRID LENGTH(m)	ELEVATION(masl)
1	25	186.43
2	28	185.83
3	31	185.23
4	34	184.63
5	37	184.03
6	40	183.43
7	43	182.83
8	46	182.23
9	FULL WIDTH OF EMBANKMENT	VARIES
10	FULL WIDTH OF EMBANKMENT	VARIES
11	FULL WIDTH OF EMBANKMENT	VARIES
12	25	VARIES
13	30	VARIES
14	35	VARIES
15	40	VARIES

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REV	DATE	REVISION DETAILS
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T1	14/08/2025	FOR TENDER

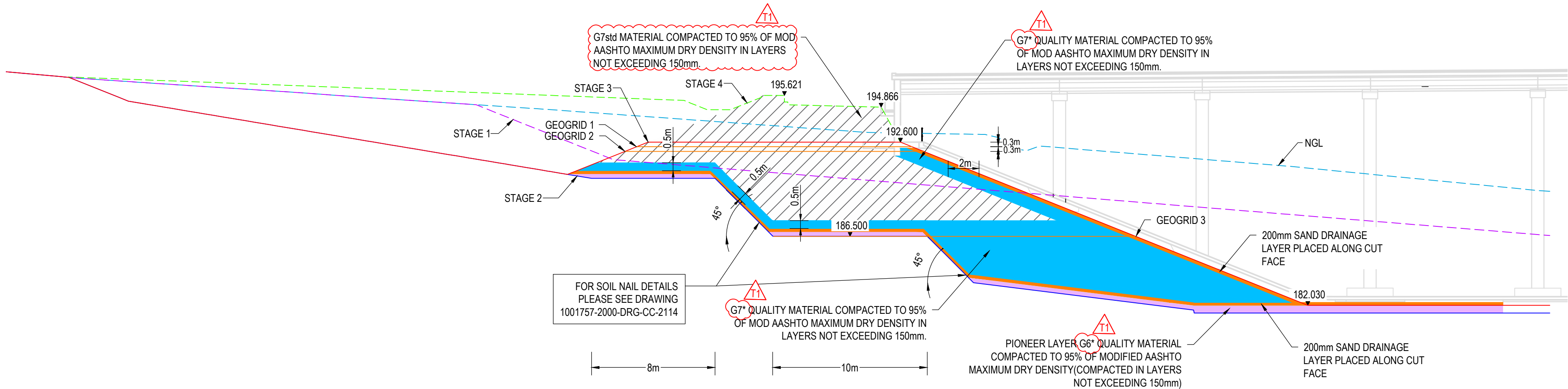
APPROVED
F. DENYS
F. DENYS

SCALE	SIZE
AS SHOWN	A1
DRAWN	A.MBOLOMPO
DESIGNED	S. CANTO
REVIEWED	G.WOJTOWITZ

TENDER	NOT FOR CONSTRUCTION
APPROVED	DATE
F. DENYS	PR ENG 20110127

PROJECT	MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE
TITLE	BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 2 OF 3)
DRAWING No.	PROJECT No. 1001757 - WBS 2000 - TYPE DRG - DISC CC - NUMBER 2121 - REV T1

GEOGRID LENGTHS:			LEGEND	
GEOGRID	GEOGRID LENGTH(m)	ELEVATION(masl)		
1	FULL LENGTH OF EMBANKMENT	191.3		200mm SAND DRAINAGE LAYER PLACED ALONG CUT FACE
2	FULL LENGTH OF EMBANKMENT	192		PIONEER LAYER G6* QUALITY MATERIAL COMPACTED TO 95% OF MODIFIED AASHTO MAXIMUM DRY DENSITY (COMPACTED IN LAYERS NOT EXCEEDING 150mm)
3	FULL LENGTH OF EMBANKMENT	186.5		G7* QUALITY MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
				G7std MATERIAL COMPACTED TO 95% OF MOD AASHTO MAXIMUM DRY DENSITY IN LAYERS NOT EXCEEDING 150mm.
				NATURAL GROUND LEVEL (NGL)
				STAGE 1 BULK EARTHWORKS PLATFORM
				STAGE 2 BULK EARTHWORKS PLATFORM
				STAGE 3 BULK EARTHWORKS PLATFORM
				STAGE 4 BULK EARTHWORKS PLATFORM
				GEOGRID GROUP A
				GEOGRID GROUP B



CROSS SECTION H-H
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

- CRANE LOAD DETAILING:
- FOR OPERATION OF CRANES ON THE EMBANKMENT FOR INSTALLATION OF THE RESERVOIR ROOF ETC:
- THIS DESIGN MAKES PROVISION FOR LOADING OF THE LIEBHERR LTM 1500-8.1 AND LIEBHERR LTM 1130-5.1 CRANES APPLIED SEPARATELY WITH CRANE OUTRIGGERS EACH RESTING ON AZOBE MATS EACH COVERING AN AREA OF 4m X 5m.
 - THE AZOBE MAT ON WHICH THE CRANE OUTIGGER DISTRIBUTES ITS LOAD IS NOT ALLOWED LESS THAN 2.5m FROM THE EDGE OF OF EMBANKMENT
 - THE DESIGN MAKES PROVISION FOR THE CRANE LOADING BEING APPLIED WHEN THE EMBANKMENT IS BUILT UP TO 192.6 masl. THIS IS THE MAXIMUM LEVEL FOR INSTALLATION OF THE ROOF STRUCTURE. PLACEMENT OF CRANE LOADING ON A HIGHER EMBANKMENT LEVEL COULD RESULT IN FACTORS OF SAFETY LESS THAN 1.25 FOR TEMPORARY WORKS. STABILITY OF THE EMBANKMENTS SHALL BE ASSESSED IF CRANE LOADING OR THE EMBANKMENT HEIGHT CHANGES TO THE DESIGN ASSUMPTIONS.
 - THE MAXIMUM PERMISSIBLE CRANE SIZE IS 500 ton.
 - CRANES SHALL NOT BE ALLOWED ON THE EMBANKMENT ONCE THE TOP OF THE EMBANKMENT HAS BEEN CONSTRUCTED TO A LEVEL ABOVE THE FOUNDING LEVEL OF THE RESERVOIR EMBANKMENT WALL FOUNDATIONS.
 - AZOBE MAT AND OUTRIGGER PADS SHALL NOT BE PLACED CLOSER THAN 2.5m TO THE EDGE OF THE SLOPES.
 - AZOBE MATS AND OUTRIGGER PADS SHALL BE USED TO ENSURE THE POINT LOADING FROM THE CRANE OUTRIGGERS DOES NOT EXCEED 67kPa UNDER ALL LOADING CONDITIONS.
 - THE MINIMUM SPACING BETWEEN OUTRIGGER PADS PERPENDICULAR TO THE SLOPE EDGE IS 9.6m CENTRE TO CENTRE OF LOAD.
- NOTES:
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. ALL FIGURES AND LEVELS TO BE CHECKED AND VERIFIED BEFORE ANY WORK COMMENCES. ANY DISCREPANCY MUST BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - GEOGRIDS 1 IS HUESKER FORTRAC T R800/50-30 OR EQUIVALENT APPROVED. GEOGRIDS 2 AND 3 ARE HUESKER FORTRAC T R400/50-30 T OR EQUIVALENT APPROVED.
 - GEOGRIDS SHALL BE LAID HORIZONTALLY AND ORIENTATED WITH THE MAIN DIRECTION OF TENSION (MACHINE DIRECTION) PERPENDICULAR TO THE EMBANKMENT FRONT
 - OVERLAP OF THE GEOGRIDS MUST BE AS PER THE SUPPLIER'S RECOMMENDATION.
 - GEOGRIDS 1 AND 2 ARE SPACED 0.8m VERTICALLY.
 - INSTALLATION REQUIREMENTS SPECIFIED BY THE SUPPLIER ARE TO BE ADHERED TO.
 - ALL WORK TO BE UNDERTAKEN IN ACCORDANCE WITH STANDARD SABS 1200 SPECIFICATIONS AND THIS PROJECT'S APPLICABLE CONTRACT DOCUMENTATION AND THE PARTICULAR SPECIFICATION SPE-GG-001.

REFERENCE:

1001757-2000-DRG-CC-2114BULK EARTHWORKS: SOIL NAIL DETAILS
1001757-2000-DRG-CC-2115 - BULK EARTHWORKS: STAGE 3 LAYOUT
1001757-2000-DRG-CC-2116 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 1 OF 3)
1001757-2000-DRG-CC-2530 - RESERVOIR SUBSOIL DRAINAGE NETWORK LEAK DETECTION AND GROUNDWATER DRAINAGE LAYOUT
1001757-2000-DRG-CC-2117 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 2 OF 3)
1001757-2000-DRG-CC-2118 - BULK EARTHWORKS: STAGE 3 CROSS SECTIONS (SHEET 3 OF 3)
1001757-2000-DRG-CC-2121 - BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 2 OF 3)

DISCLAIMER	REV	DATE	REVISION DETAILS	APPROVED
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	T1	14/08/2025	FOR TENDER	F. DENYS

SCALE	SIZE
AS SHOWN	A1
DRAWN	
DESIGNED	
REVIEWED	
A.MBOLOMPO	
S. CANTO	
G.WOJTOWITZ	

TENDER	APPROVED
NOT FOR CONSTRUCTION	DATE
F. DENYS	PR ENG 20110127

PROJECT	MULDERSVLEI 300 ML RESERVOIR AND ASSOCIATED INFRASTRUCTURE
TITLE	BULK EARTHWORKS: STAGE 4 CROSS SECTIONS (SHEET 3 OF 3)
DRAWING No.	PROJECT No. 1001757 - WBS 2000 - TYPE DRG - DISC CC - NUMBER 2122 - REV T1