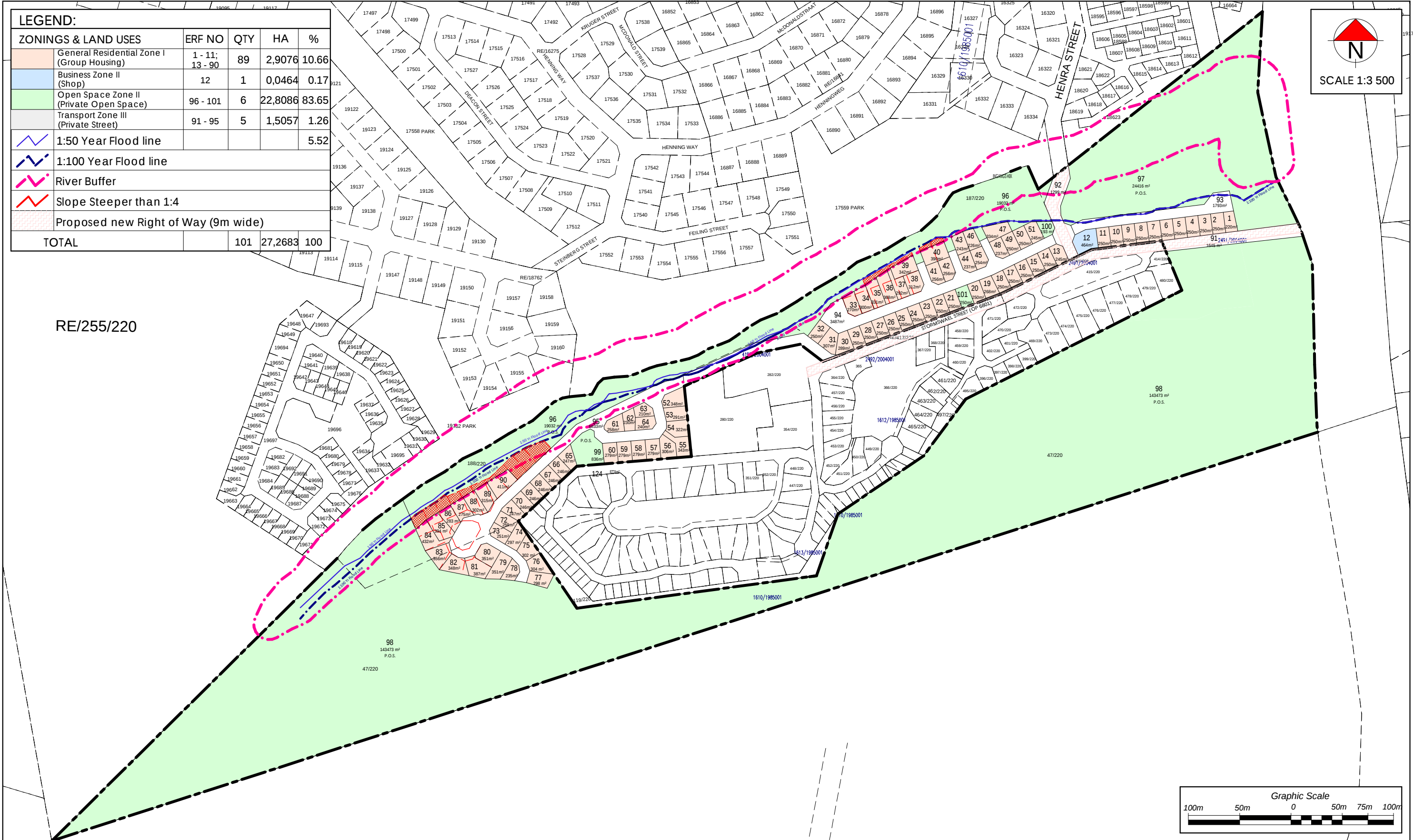


LEGEND:				
ZONINGS & LAND USES		ERF NO	QTY	HA
General Residential Zone I (Group Housing)		1 - 11; 13 - 90	89	2,9076
Business Zone II (Shop)		12	1	0,0464
Open Space Zone II (Private Open Space)		96 - 101	6	22,8086
Transport Zone III (Private Street)		91 - 95	5	1,5057
1:50 Year Flood line				5.52
1:100 Year Flood line				
River Buffer				
Slope Steeper than 1:4				
Proposed new Right of Way (9m wide)				
TOTAL			101	27,2683



PLAN 1

LAYOUT PLAN

PORTIONS 47; 187 & 188 OF THE
FARM VYF BRAKKE FONTEINEN
NO 220, DIVISION &
MUNICIPALITY MOSSEL BAY
(EAGLE's CREEK)

It is hereby certified that this subdivision plan (Plan No. Pr1752L03)
has been approved in terms of Sections 60 and 15(2)(d) of the Mossel Bay
Municipal By-law on Municipal Land Use Planning. File reference
[15/4/19/5; 15/4/19/2; 15/4/19/4]. as published in
P.N.8520/2021, on 18 November 2021

MUNICIPAL MANAGER
DATE: _____

NOTES			
1. This Plan may not be copied or amended without the written consent of HM Vreken			
2. Sizes and dimensions are approximate and subject to final survey			
3. 1:50yr and 1:100 yr floodlines determined by Gorra Water			
4. 1m contour intervals based on aerial photography			
5. New right of way servitudes to be registered over deproclaimed OP6801 (Stormswael Street)			
DRAWN:	MV	CHECKED:	MV
PLAN NO:	Pr1752L07	PLAN DATE:	29 May 2024
STORED:	z:\drawings\1App\Pr1752L07.dwg		

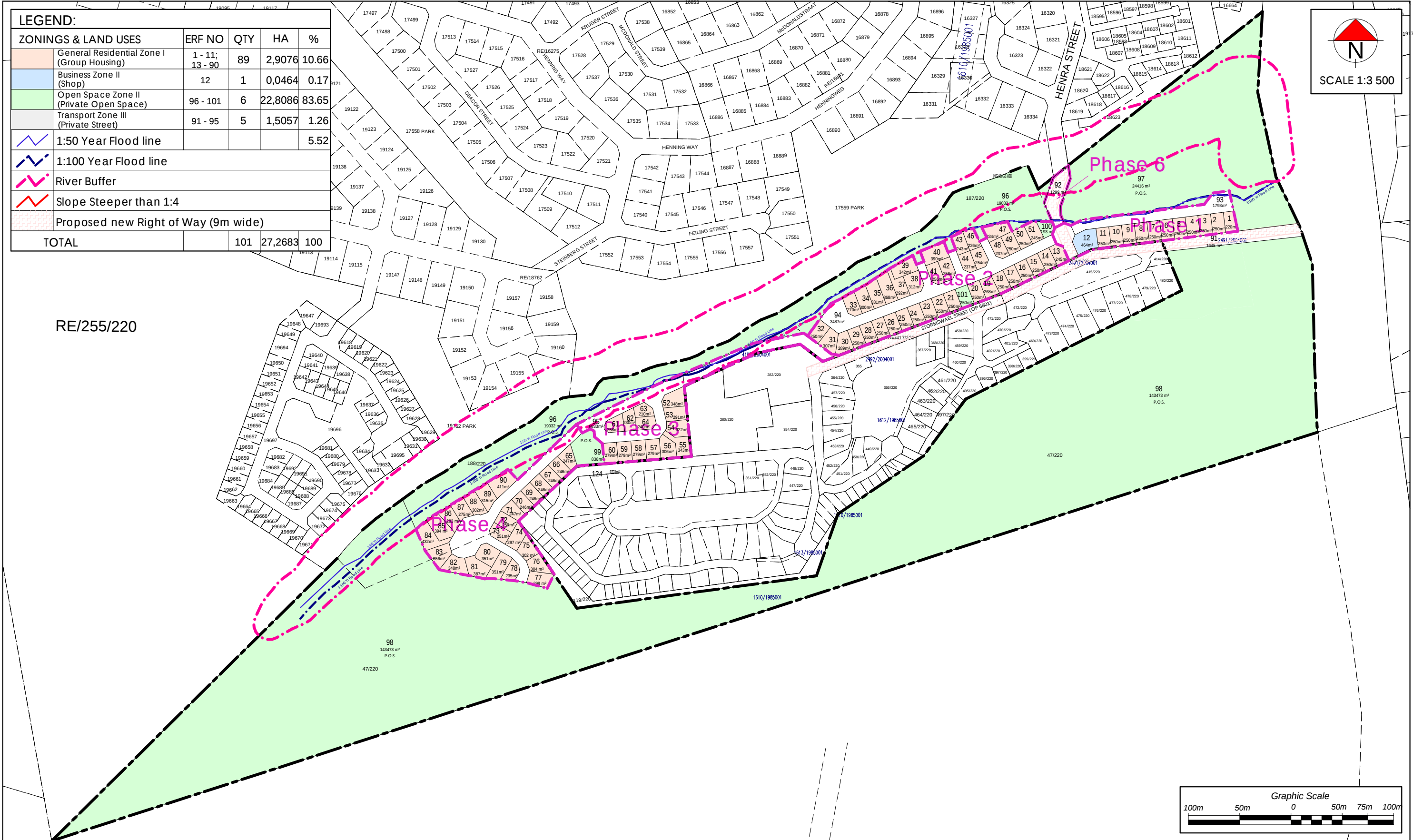


STATUS & ONGEWINGSBEPLANNERS

21 Trotter Street, PO Box 2180
KNYSNA 6570

(044) 382 0420
086 459 2987
e-mail: marika@vreken.co.za
www.vreken.co.za

LEGEND:				
ZONINGS & LAND USES	ERF NO	QTY	HA	%
General Residential Zone I (Group Housing)	1 - 11; 13 - 90	89	2,9076	10.66
Business Zone II (Shop)	12	1	0,0464	0.17
Open Space Zone II (Private Open Space)	96 - 101	6	22,8086	83.65
Transport Zone III (Private Street)	91 - 95	5	1,5057	1.26
1:50 Year Flood line				5.52
1:100 Year Flood line				
River Buffer				
Slope Steeper than 1:4				
Proposed new Right of Way (9m wide)				
TOTAL		101	27,2683	100



PLAN 1

LAYOUT PLAN

PORTIONS 47; 187 & 188 OF THE
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NO 220, DIVISION &
MUNICIPALITY MOSSEL BAY
(EAGLE's CREEK)

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[15/4/19/5; 15/4/19/2; 15/4/19/4]. as published in
P.N.8520/2021, on 18 November 2021

MUNICIPAL MANAGER
DATE: _____

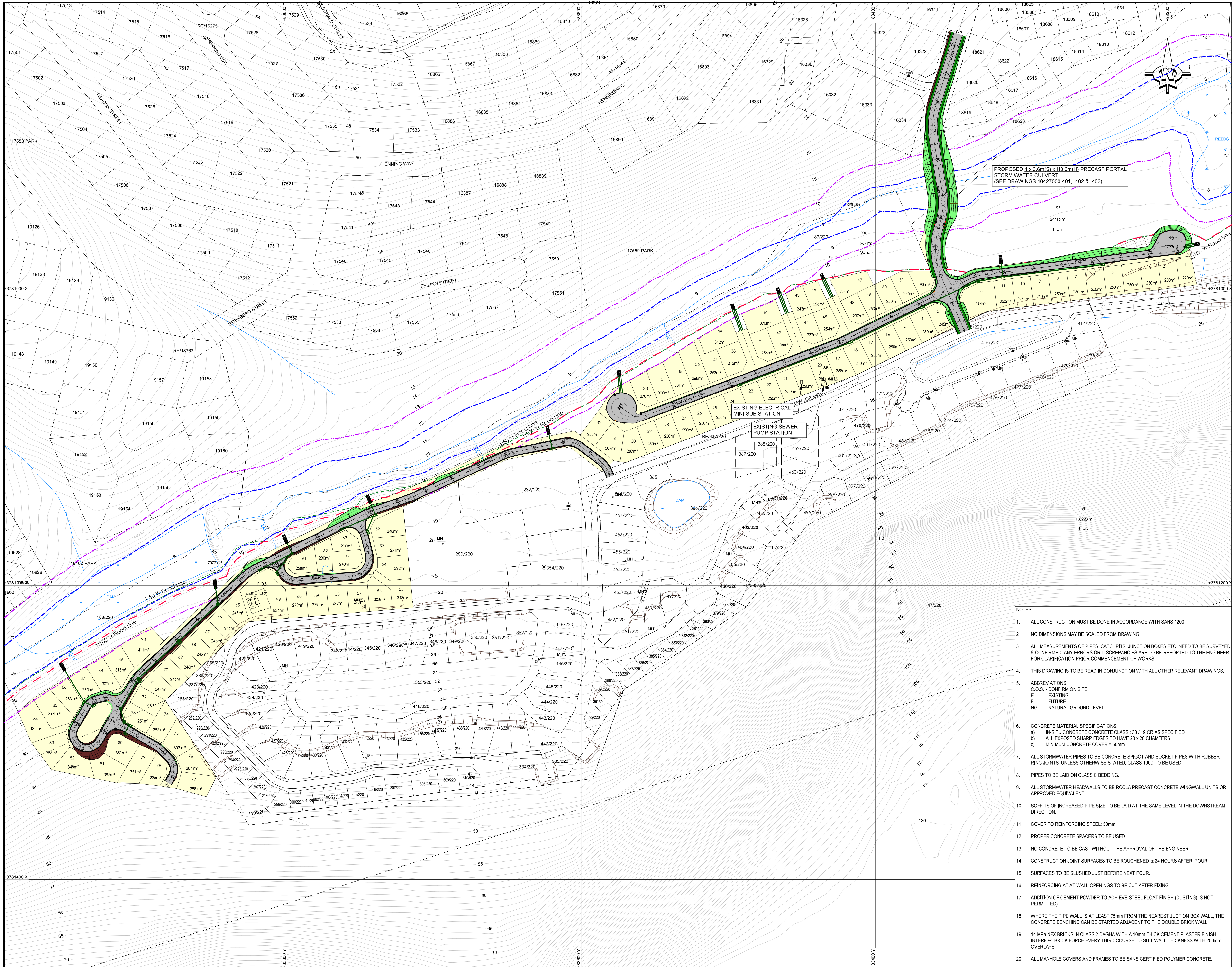
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4. 1m contour intervals based on aerial photography			
5. New right of way servitudes to be registered over deproclaimed OP6801 (Stormswael Street)			
DRAWN:	MV	CHECKED:	MV
PLAN NO:	Pr1752L07	PLAN DATE:	29 May 2024
STORED:	z:\drawings\1App\Pr1752L07.dwg		



Marika Vreken
URBAN & ENVIRONMENTAL PLANNERS

21 Trotter Street, PO Box 2180
KNYSNA 6570

(044) 382 0420
086 459 2987
e-mail: marika@vreken.co.za
www.vreken.co.za



LEGEND:

- PROPOSED STORM WATER LINE
- PROPOSED STORM WATER CATCHPI/ JUNCTION BOX
- PROPOSED STORM WATER PIPE OUTLET WITH GABION OUTLET STRUCTURE
- PROPOSED STORM WATER CHANNEL OUTLET WITH GABION MATTRESS AND STONE PITCHING
- BUFFER ZONE
- WETLAND
- 1 : 50 YEAR FLOOD LINE
- 1 : 100 YEAR FLOOD LINE
- PROPOSED DEVELOPMENT AREA
- 1m CONTOUR INTERVALS

NOTES:

- PROPOSED NEW INTERNAL ROAD WIDTHS:
ALL ROADS 4.5m UNLESS OTHERWISE INDICATED.
ROAD 1 = 5.5m
ROAD 4 = 6.0m
- EMBANKMENTS TO BE SLOPED AT 1:1.5 FOR CUT & FILL.
- ALL EMBANKMENTS TO BE STABILISED WITH VEGETATION AFTER CONSTRUCTION FOR EROSION PROTECTION.
- SEE DRAWINGS 10427000-310 & -311 FOR ROAD 1 CROSS SECTIONS

PRELIMINARY (FOR DISCUSSION PURPOSES ONLY)

0 100
100 MILLIMETRES ON ORIGINAL DRAWING

- BEFORE CONTRACT COMMENCES
- AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS
01	04/06/2025	ROAD 1 ALIGNMENT AMENDED. 14 ERVEN REMOVED. LAYOUT AMENDED IN ACCORD TO URBAN PLAN- P1752Layout07 (M.V.)

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**V3 CONSULTING
ENGINEERS**
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4 Mascador Street, Mossel Bay, 6506
PO Box 730, Mossel Bay, 6500, South Africa

**PROJECT
MOSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220**

DRAWING DESCRIPTION

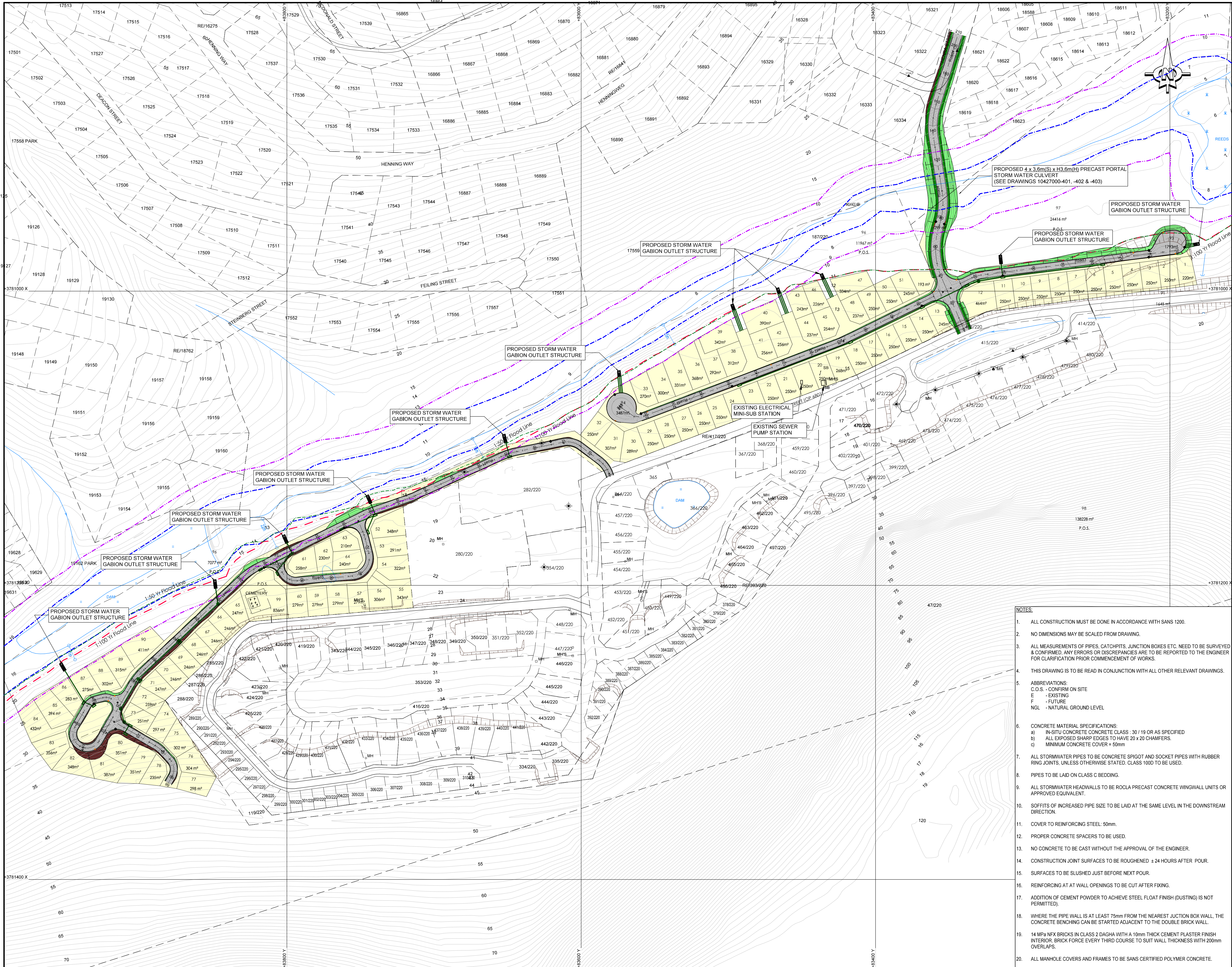
PROPOSED ROADS LAYOUT

DRAWING NO.	REV.
10427000-300	1

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED: [Signature]	DATE: 2024-12-20
FILE PATH: Mossel Bay - 10427001 Eagles Creek02 Concept04 Draw1 10427000-300-01 (ROAD).dxf	

NOTES:

- ALL CONSTRUCTION MUST BE DONE IN ACCORDANCE WITH SANS 1200.
- NO DIMENSIONS MAY BE SCALED FROM DRAWING.
- ALL MEASUREMENTS OF PIPES, CATCHPITS, JUNCTION BOXES ETC. NEED TO BE SURVEYED & CONFIRMED, ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION PRIOR COMMENCEMENT OF WORKS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
- ABBREVIATIONS:
C.O.S. - CONFIRM ON SITE
E - EXISTING
F - FUTURE
NGL - NATURAL GROUND LEVEL
- CONCRETE MATERIAL SPECIFICATIONS:
a) IN-SITU CONCRETE CONCRETE CLASS : 30 / 19 OR AS SPECIFIED
b) ALL EXPOSED SHARP EDGES TO HAVE 20 x 20 CHAMFERS.
c) MINIMUM CONCRETE COVER = 50mm
- ALL STORMWATER PIPES TO BE CONCRETE SPIGOT AND SOCKET PIPES WITH RUBBER RING JOINTS, UNLESS OTHERWISE STATED. CLASS 1000 TO BE USED.
- PIPES TO BE LAID ON CLASS C BEDDING.
- ALL STORMWATER HEADWALLS TO BE ROCLA PRECAST CONCRETE WINGWALL UNITS OR APPROVED EQUIVALENT.
- SOFFITS OF INCREASED PIPE SIZE TO BE LAID AT THE SAME LEVEL IN THE DOWNSTREAM DIRECTION.
- COVER TO REINFORCING STEEL: 50mm.
- PROPER CONCRETE SPACERS TO BE USED.
- NO CONCRETE TO BE CAST WITHOUT THE APPROVAL OF THE ENGINEER.
- CONSTRUCTION JOINT SURFACES TO BE ROUGHENED ± 24 HOURS AFTER POUR.
- SURFACES TO BE SLUSHED JUST BEFORE NEXT POUR.
- REINFORCING AT AT WALL OPENINGS TO BE CUT AFTER FIXING.
- ADDITION OF CEMENT POWDER TO ACHIEVE STEEL FLOAT FINISH (DUSTING) IS NOT PERMITTED.
- WHERE THE PIPE WALL IS AT LEAST 75mm FROM THE NEAREST JUNCTION BOX WALL, THE CONCRETE BENCHING CAN BE STARTED ADJACENT TO THE DOUBLE BRICK WALL.
- 14 MPa NF3 BRICKS IN CLASS 2 DAGHA WITH A 10mm THICK CEMENT PLASTER FINISH INTERIOR. BRICK FORCE EVERY THIRD COURSE TO SUIT WALL THICKNESS WITH 200mm OVERLAPS.
- ALL MANHOLE COVERS AND FRAMES TO BE SANS CERTIFIED POLYMER CONCRETE.



LEGEND:

- PROPOSED STORM WATER LINE
- PROPOSED STORM WATER CATCHPIT/ JUNCTION BOX
- PROPOSED STORM WATER PIPE OUTLET WITH GABION OUTLET STRUCTURE
- PROPOSED STORM WATER CHANNEL OUTLET WITH GABION MATTRESS AND STONE PITCHING
- BUFFER ZONE
- WETLAND
- 1 : 50 YEAR FLOOD LINE
- 1 : 100 YEAR FLOOD LINE
- PROPOSED DEVELOPMENT AREA
- 1m CONTOUR INTERVALS

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)

0 100
100 MILLIMETRES ON ORIGINAL DRAWING

(A) BEFORE CONTRACT COMMENCES
(A) AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS
01	2024-10-03	LAYOUT AMENDED IN ACCORD TO URBAN PLAN - Pr1752Layout06 (M.V.)
02	2024-12-20	ROADS LAYOUT AMENDED
03	2025-08-04	LAYOUT AMENDED IN ACCORD TO URBAN PLAN - Pr1752Layout07 (M.V.)

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PO Box 730, Mossel Bay, 6500, South Africa

CESA
Consulting Engineers South Africa

PROJECT

**MOSSSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220**

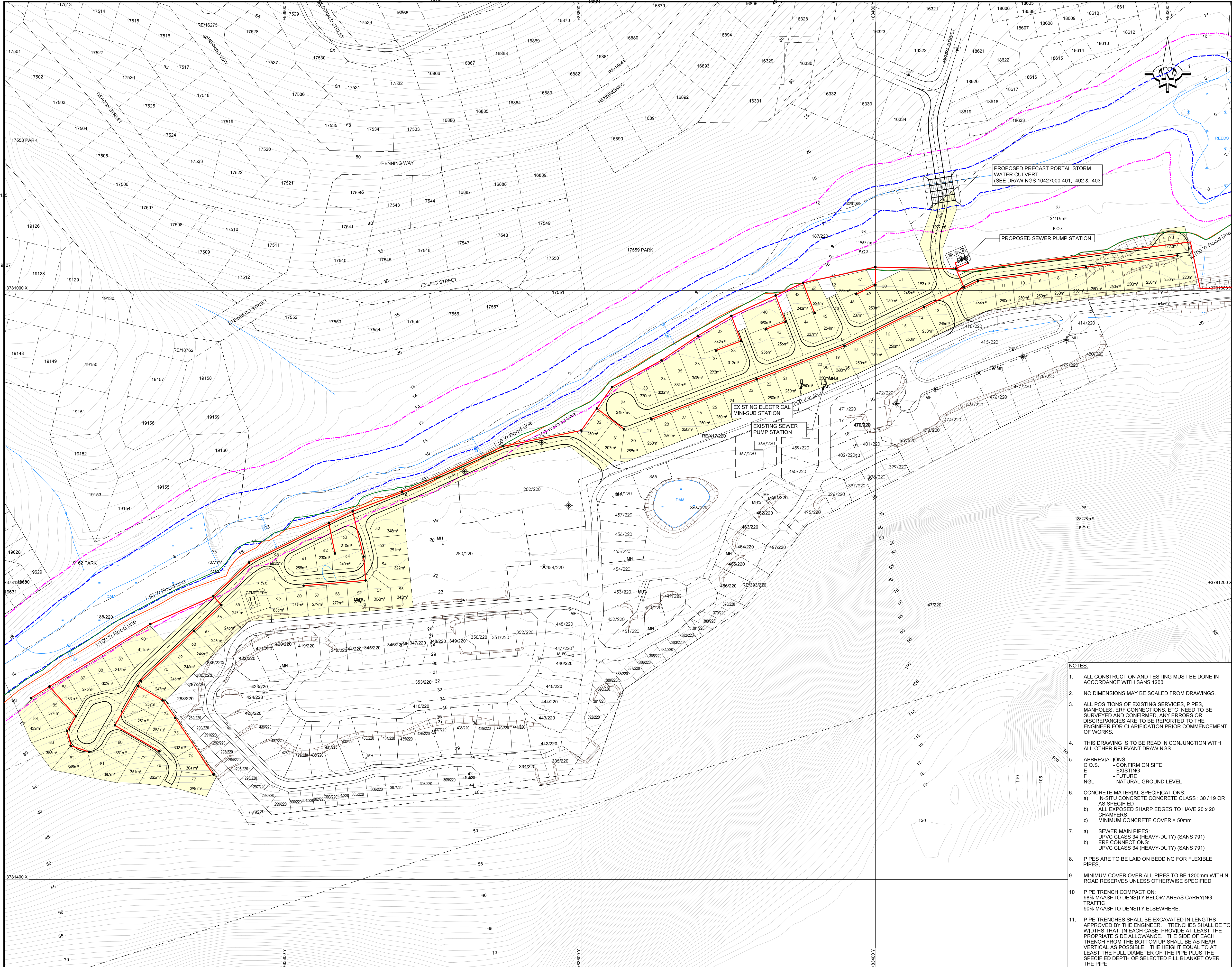
DRAWING DESCRIPTION

PROPOSED STORM WATER LAYOUT

DRAWING NO.	REV.
10427000-400	3

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED: [Signature]	DATE: 2023-08-31
FILE PATH: Mossel Bay - 10427001 Eagle's Creek02 Concept04 Draw1 10427000-400-03 (STORM).d4	

- NOTES:**
- ALL CONSTRUCTION MUST BE DONE IN ACCORDANCE WITH SANS 1200.
 - NO DIMENSIONS MAY BE SCALED FROM DRAWING.
 - ALL MEASUREMENTS OF PIPES, CATCHPITS, JUNCTION BOXES ETC. NEED TO BE SURVEYED & CONFIRMED, ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION PRIOR COMMENCEMENT OF WORKS.
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a) IN-SITU CONCRETE CONCRETE CLASS : 30 / 19 OR AS SPECIFIED
b) ALL EXPOSED SHARP EDGES TO HAVE 20 x 20 CHAMFERS.
c) MINIMUM CONCRETE COVER = 50mm
 - ALL STORMWATER PIPES TO BE CONCRETE SPIGOT AND SOCKET PIPES WITH RUBBER RING JOINTS, UNLESS OTHERWISE STATED. CLASS 1000 TO BE USED.
 - PIPES TO BE LAID ON CLASS C BEDDING.
 - ALL STORMWATER HEADWALLS TO BE ROCLA PRECAST CONCRETE WINGWALL UNITS OR APPROVED EQUIVALENT.
 - SOFFITS OF INCREASED PIPE SIZE TO BE LAID AT THE SAME LEVEL IN THE DOWNSTREAM DIRECTION.
 - COVER TO REINFORCING STEEL: 50mm.
 - PROPER CONCRETE SPACERS TO BE USED.
 - NO CONCRETE TO BE CAST WITHOUT THE APPROVAL OF THE ENGINEER.
 - CONSTRUCTION JOINT SURFACES TO BE ROUGHENED ± 24 HOURS AFTER POUR.
 - SURFACES TO BE SLUSHED JUST BEFORE NEXT POUR.
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 - ADDITION OF CEMENT POWDER TO ACHIEVE STEEL FLOAT FINISH (DUSTING) IS NOT PERMITTED.
 - WHERE THE PIPE WALL IS AT LEAST 75mm FROM THE NEAREST JUNCTION BOX WALL, THE CONCRETE BENCHING CAN BE STARTED ADJACENT TO THE DOUBLE BRICK WALL.
 - 14 MPa NF3 BRICKS IN CLASS 2 DAGHA WITH A 10mm THICK CEMENT PLASTER FINISH INTERIOR, BRICK FORCE EVERY THIRD COURSE TO SUIT WALL THICKNESS WITH 200mm OVERLAPS.
 - ALL MANHOLE COVERS AND FRAMES TO BE SANS CERTIFIED POLYMER CONCRETE.



LEGEND:

- PROPOSED SEWER LINE
- PROPOSED SEWER MANHOLE
- BUFFER ZONE
- WETLAND
- 1 : 50 YEAR FLOOD LINE
- 1 : 100 YEAR FLOOD LINE
- PROPOSED DEVELOPMENT AREA
- 200
- 195
- 1m CONTOUR INTERVALS

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)

0 100
100 MILLIMETRES ON ORIGINAL DRAWING

(A) BEFORE CONTRACT COMMENCES
(A) AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS
01	2024-10-03	LAYOUT AMENDED IN ACCORD TO URBAN PLAN - Pr1752Layout06 (M.V.)
02	2025-06-04	LAYOUT AMENDED IN ACCORD TO URBAN PLAN - Pr1752Layout07 (M.V.)

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Consulting Engineers South Africa

PROJECT

**MOSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220**

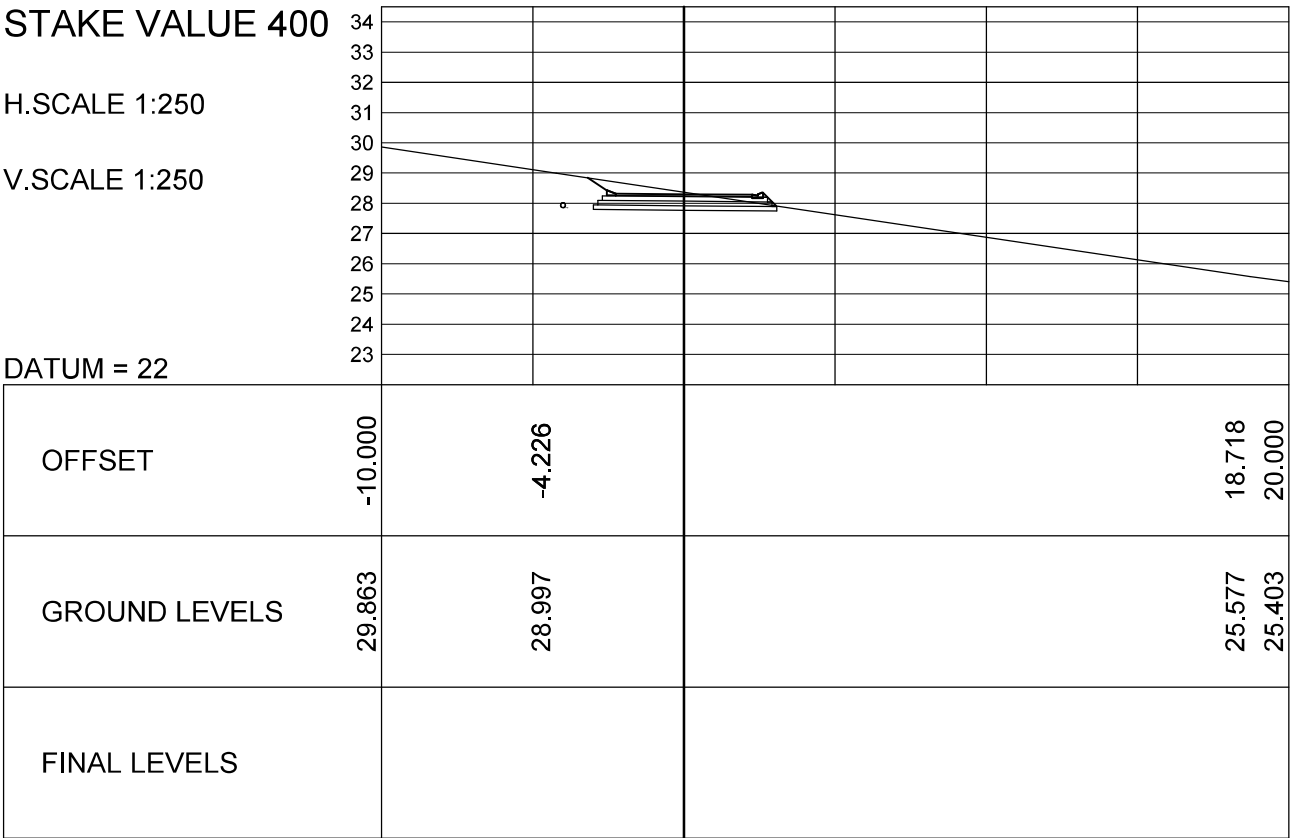
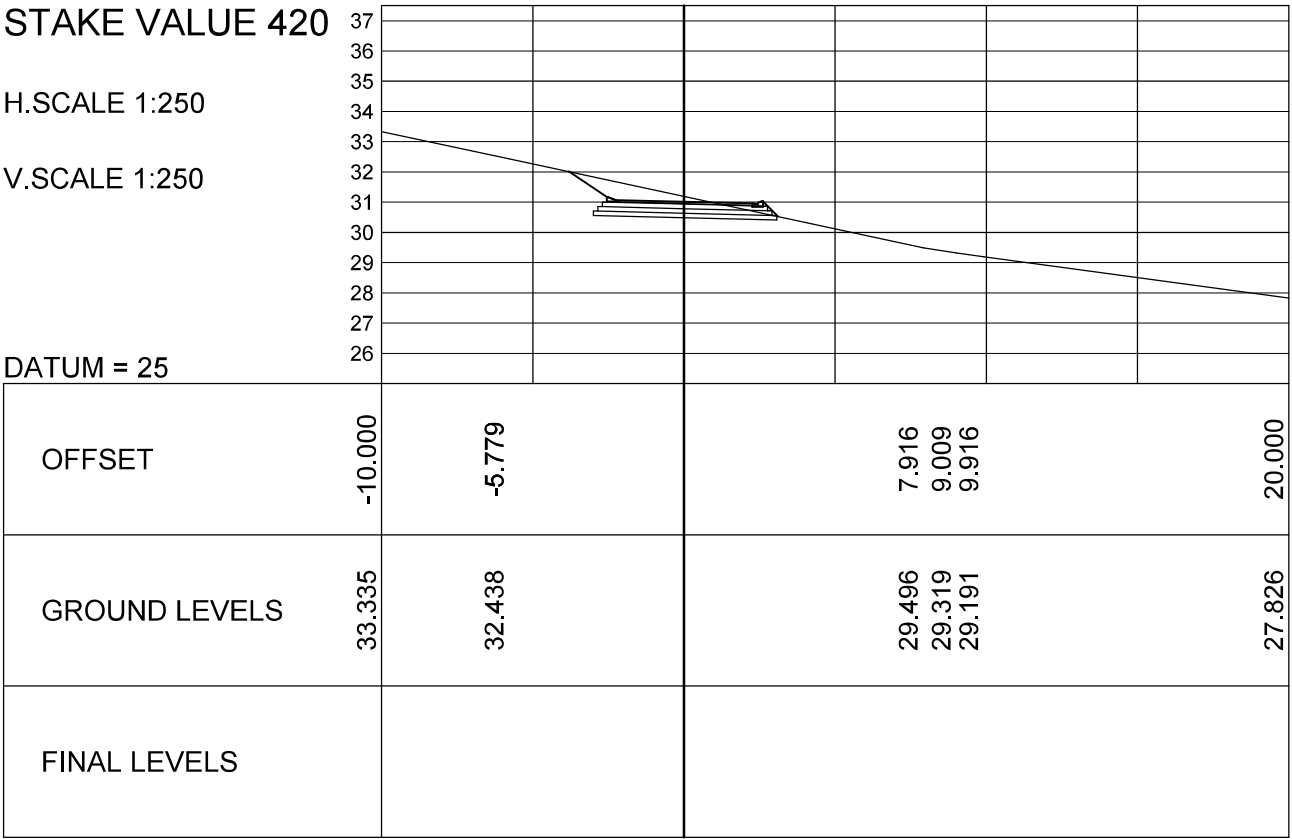
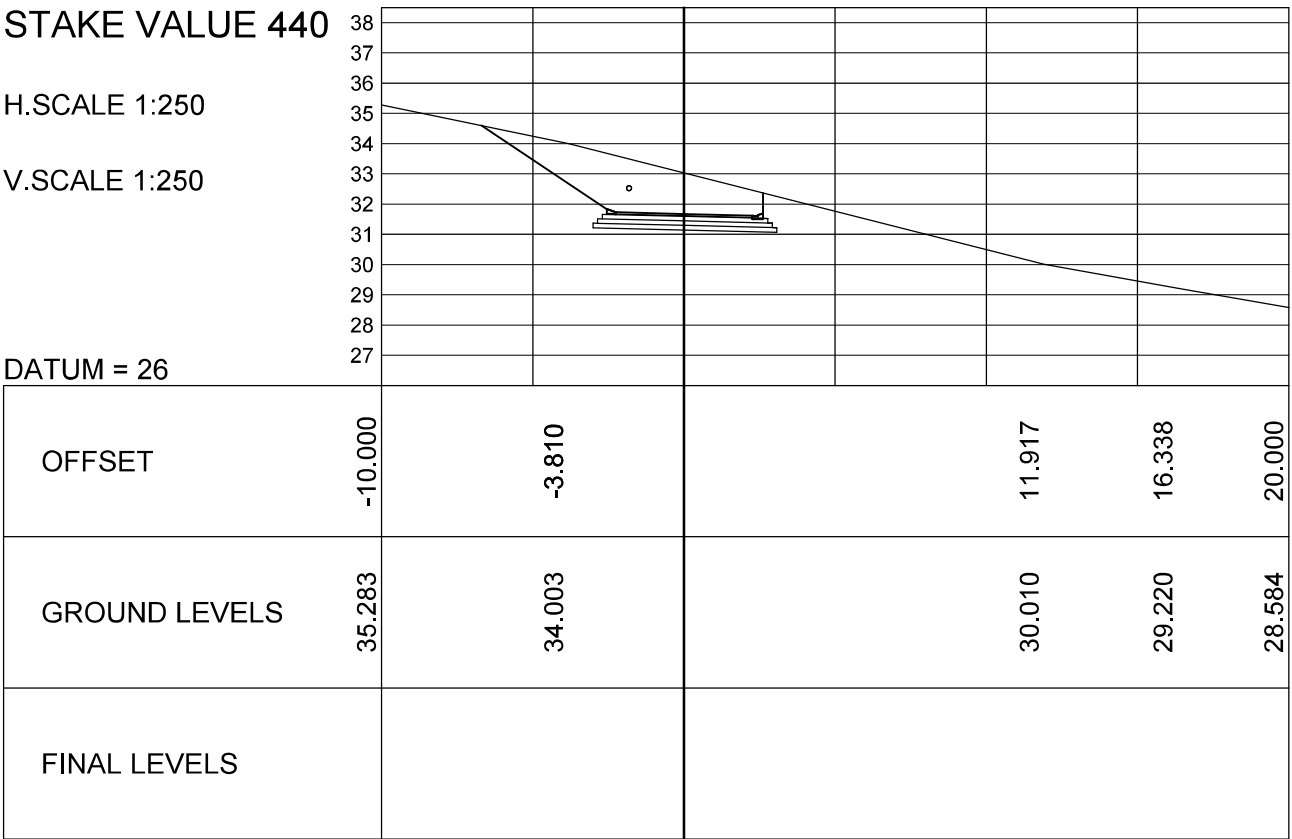
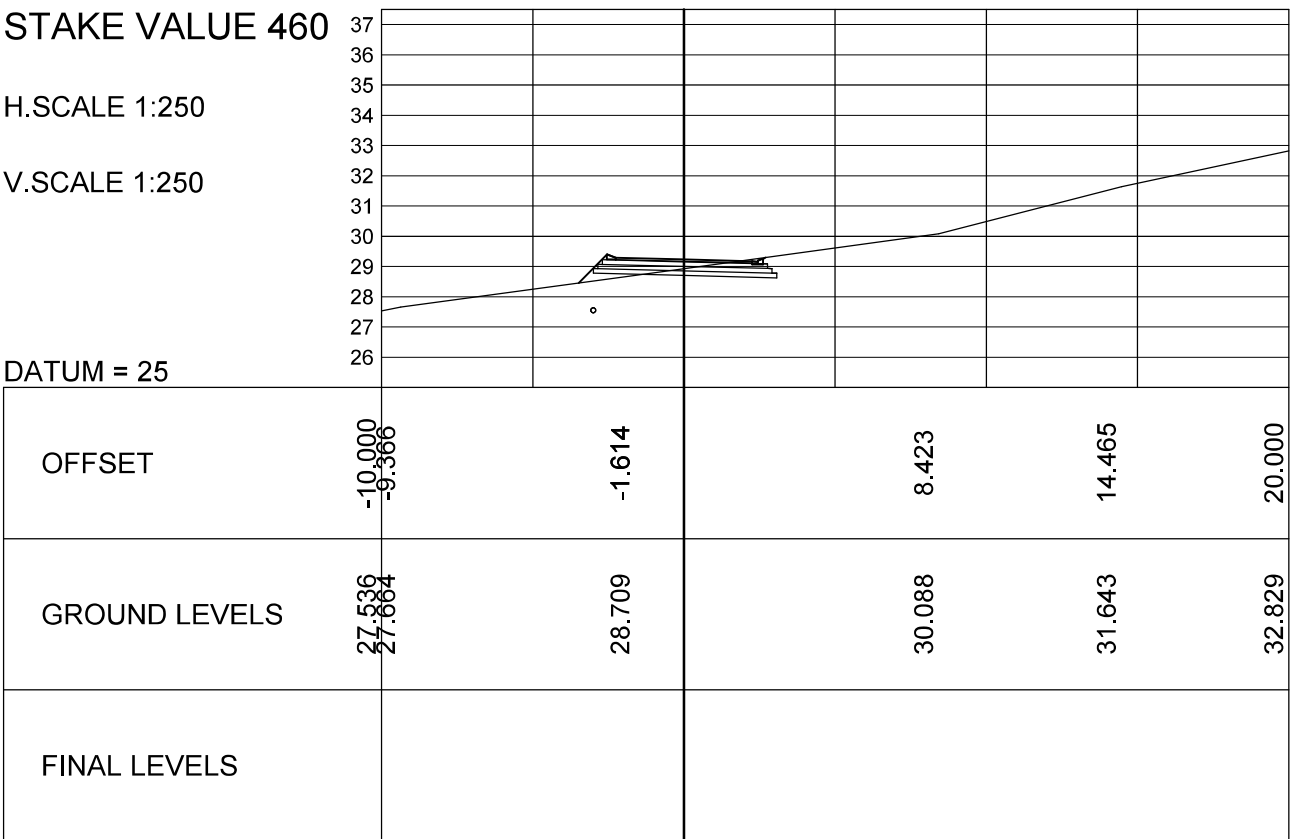
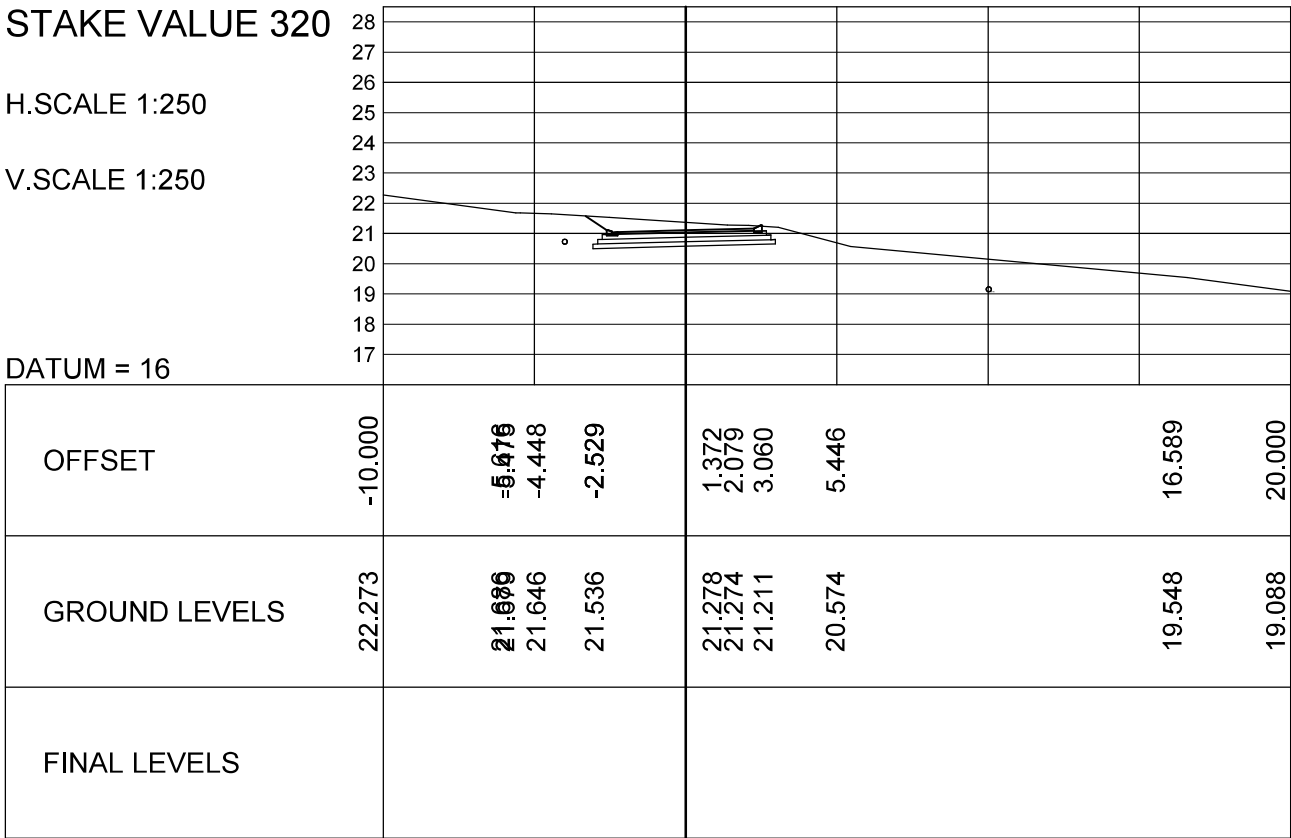
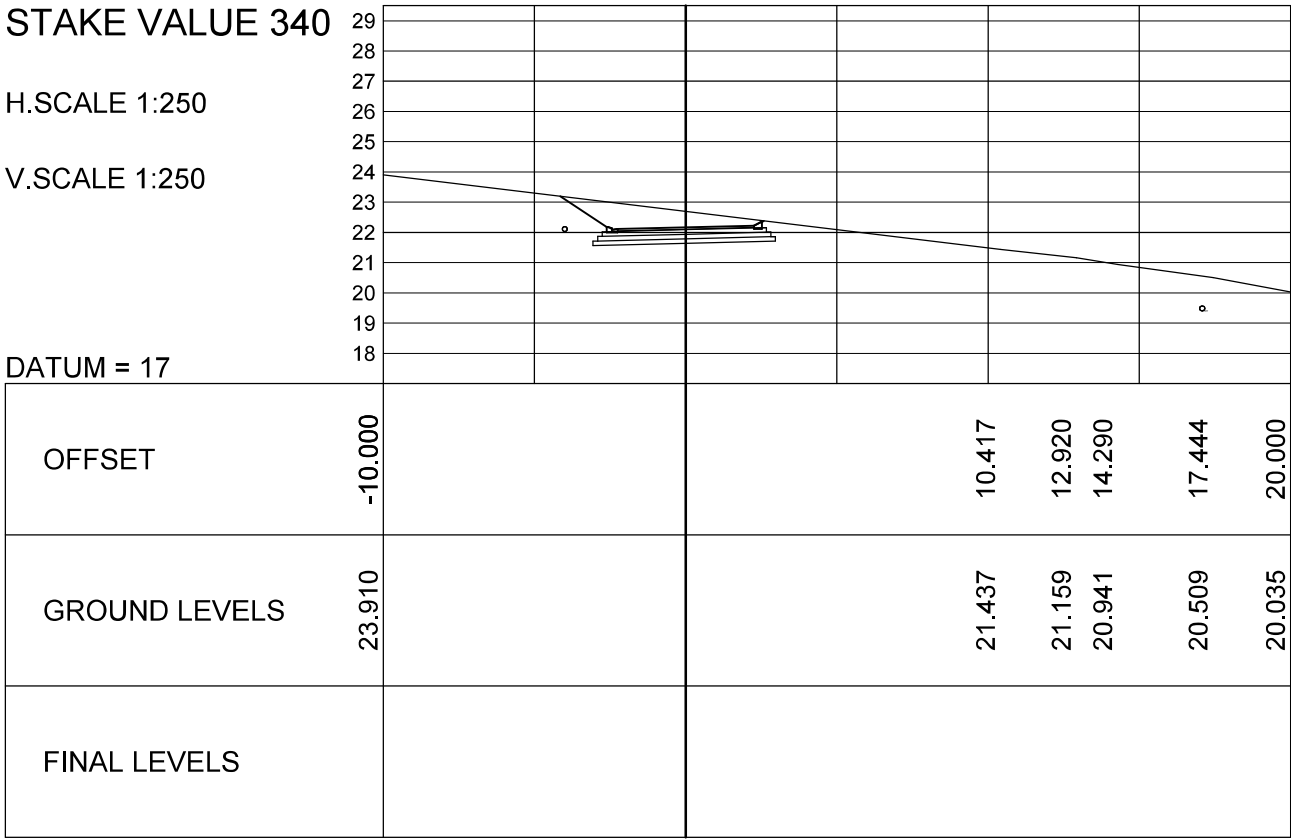
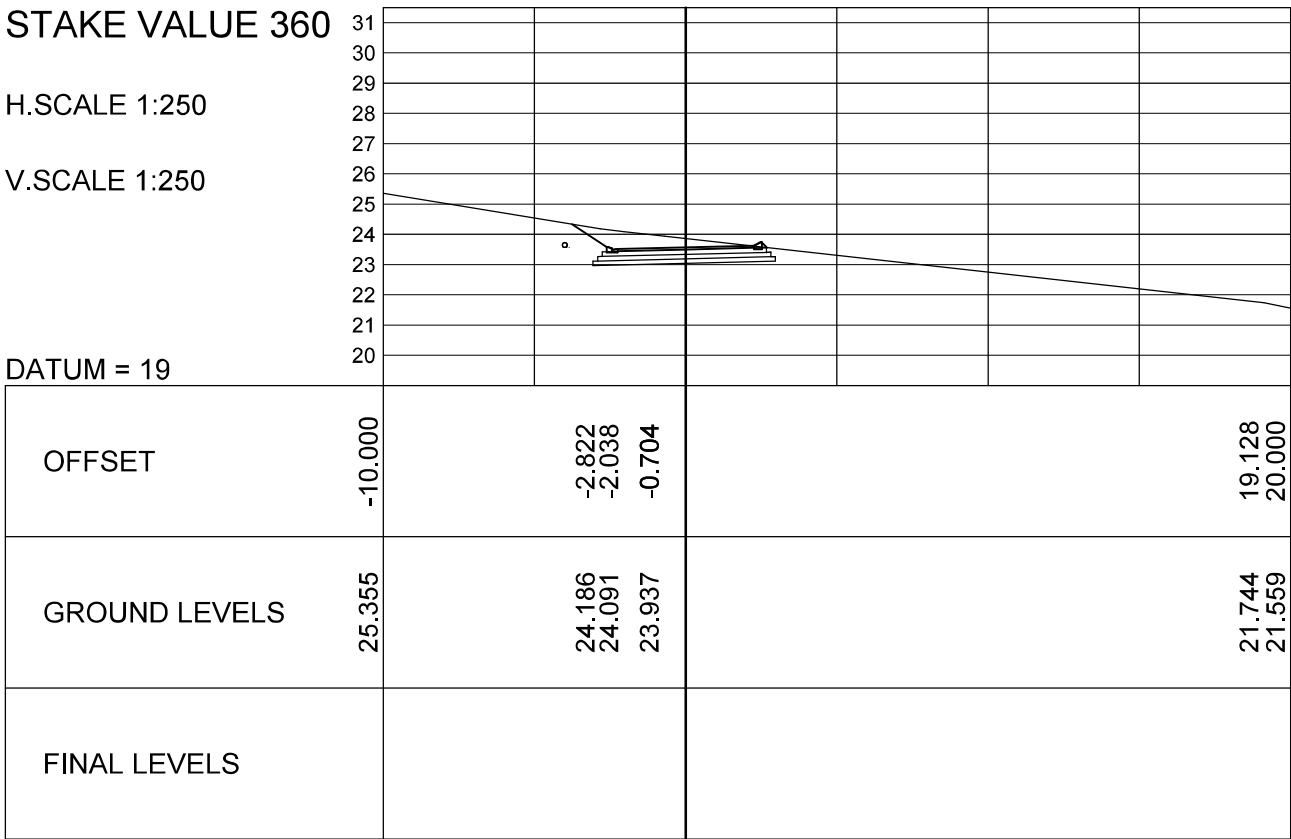
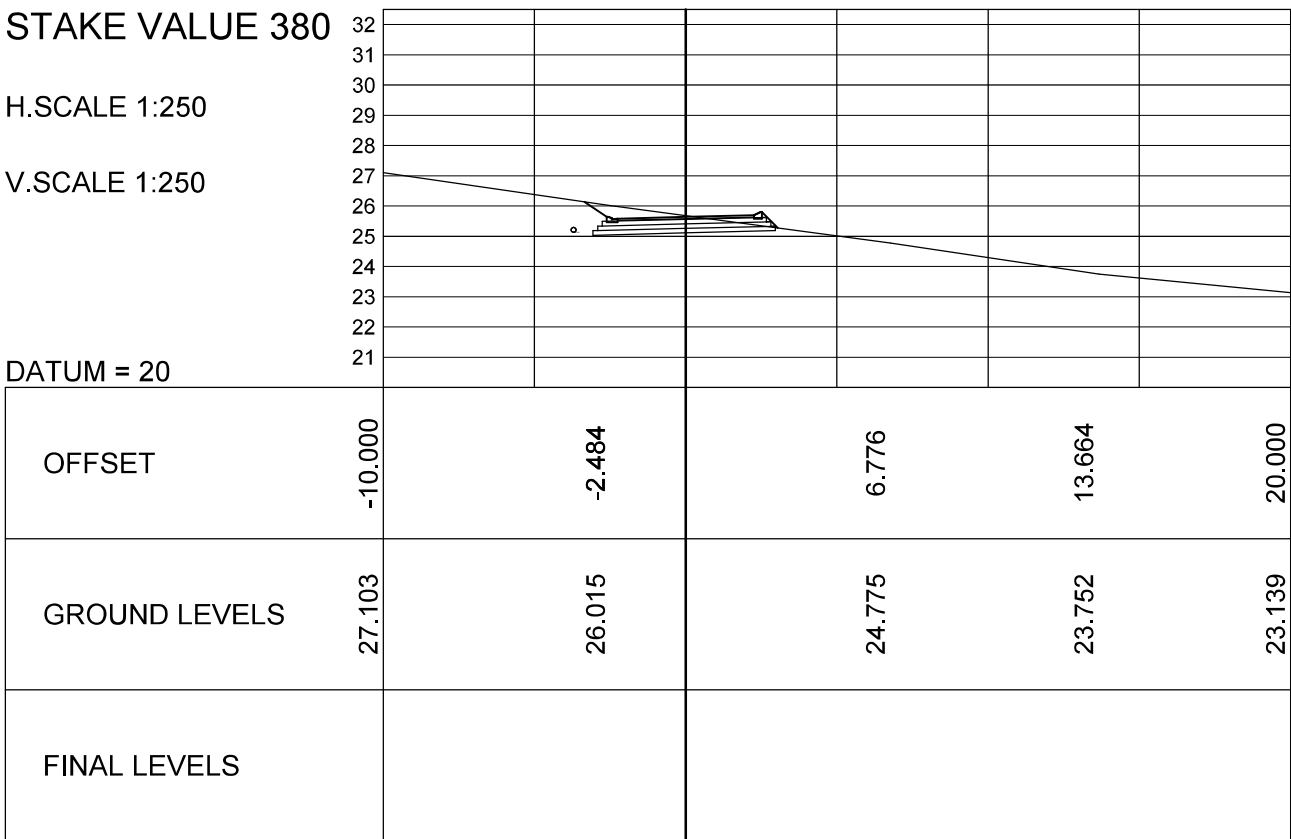
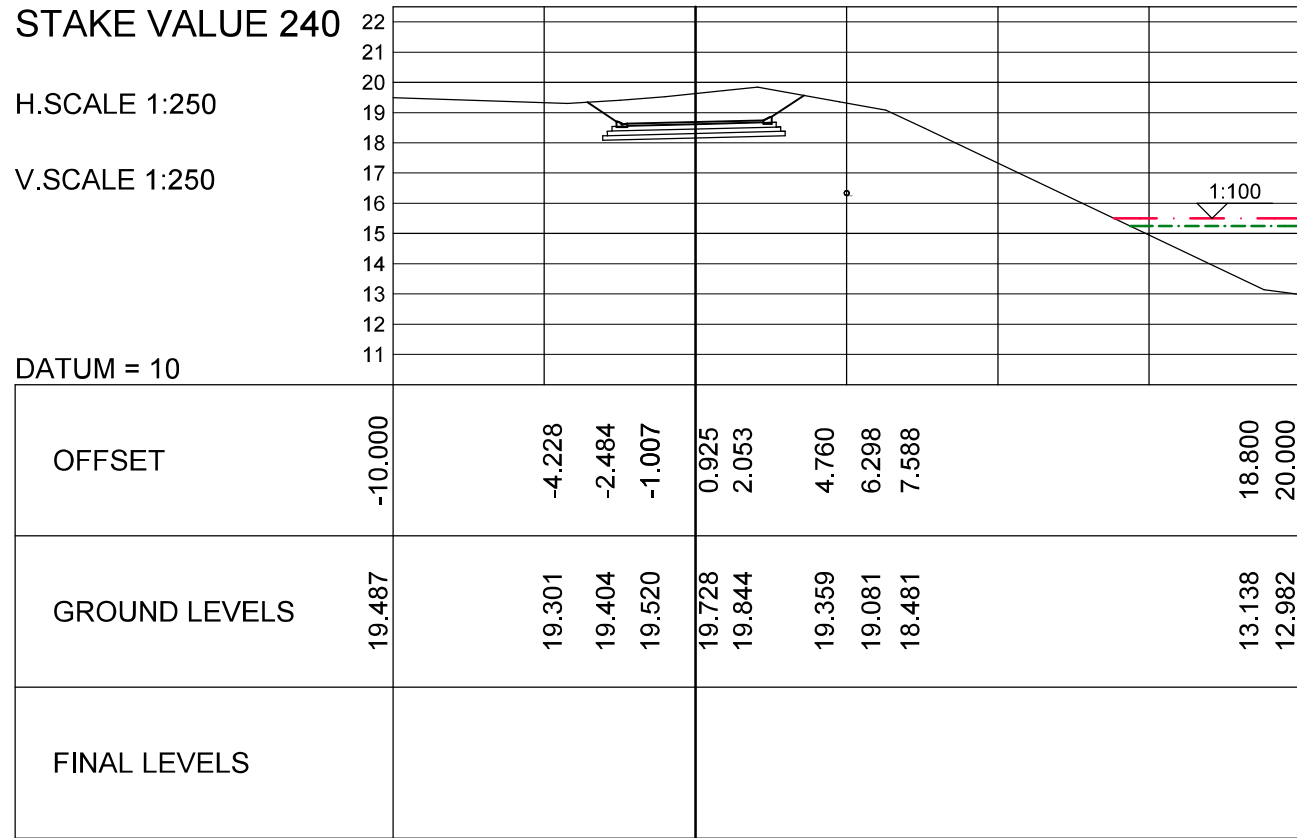
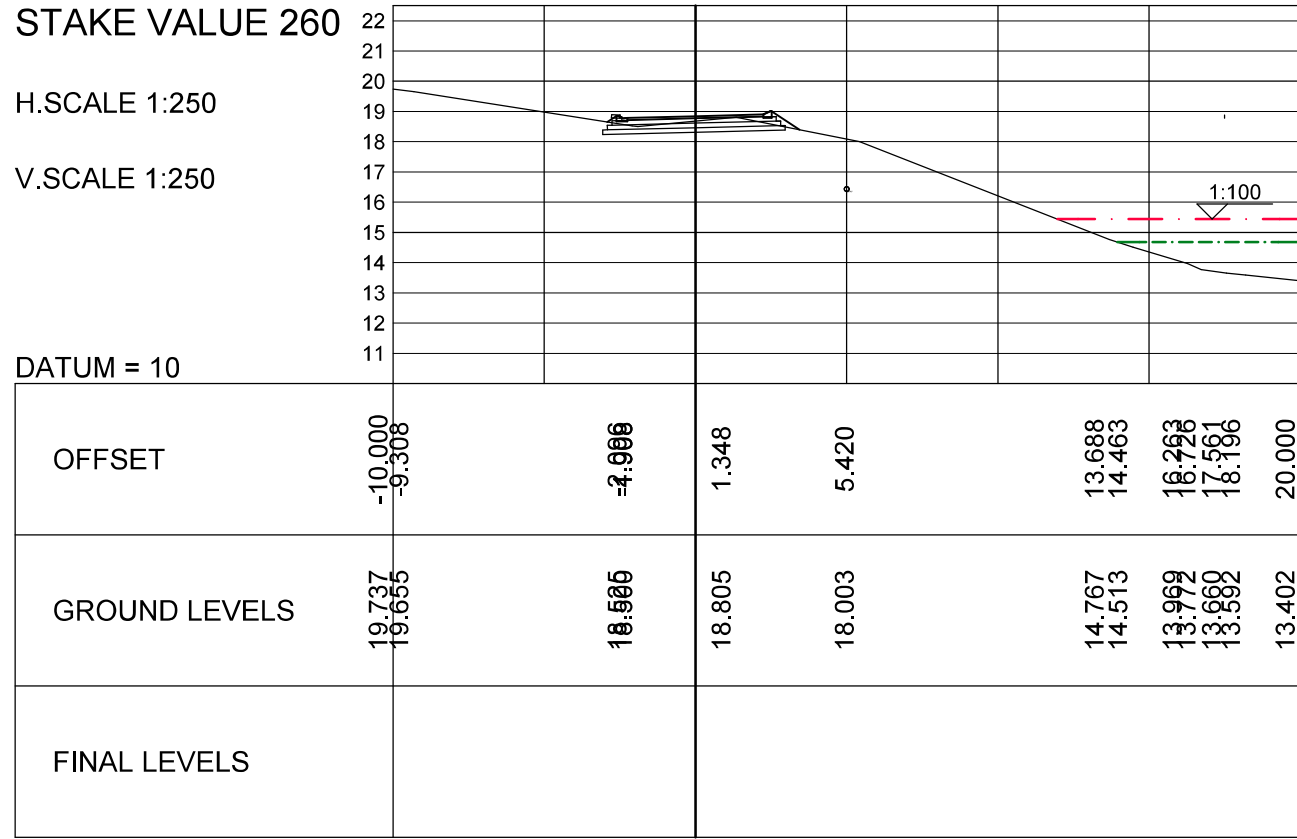
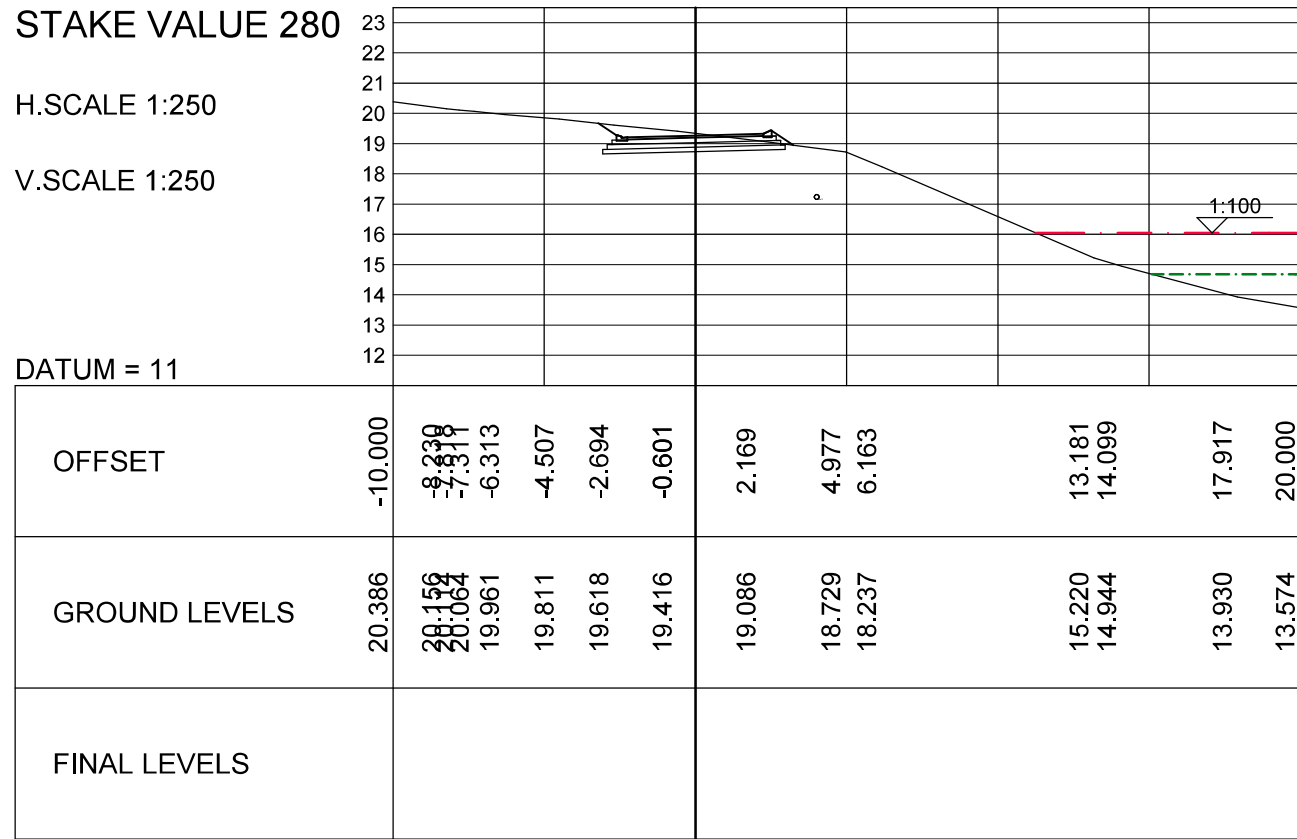
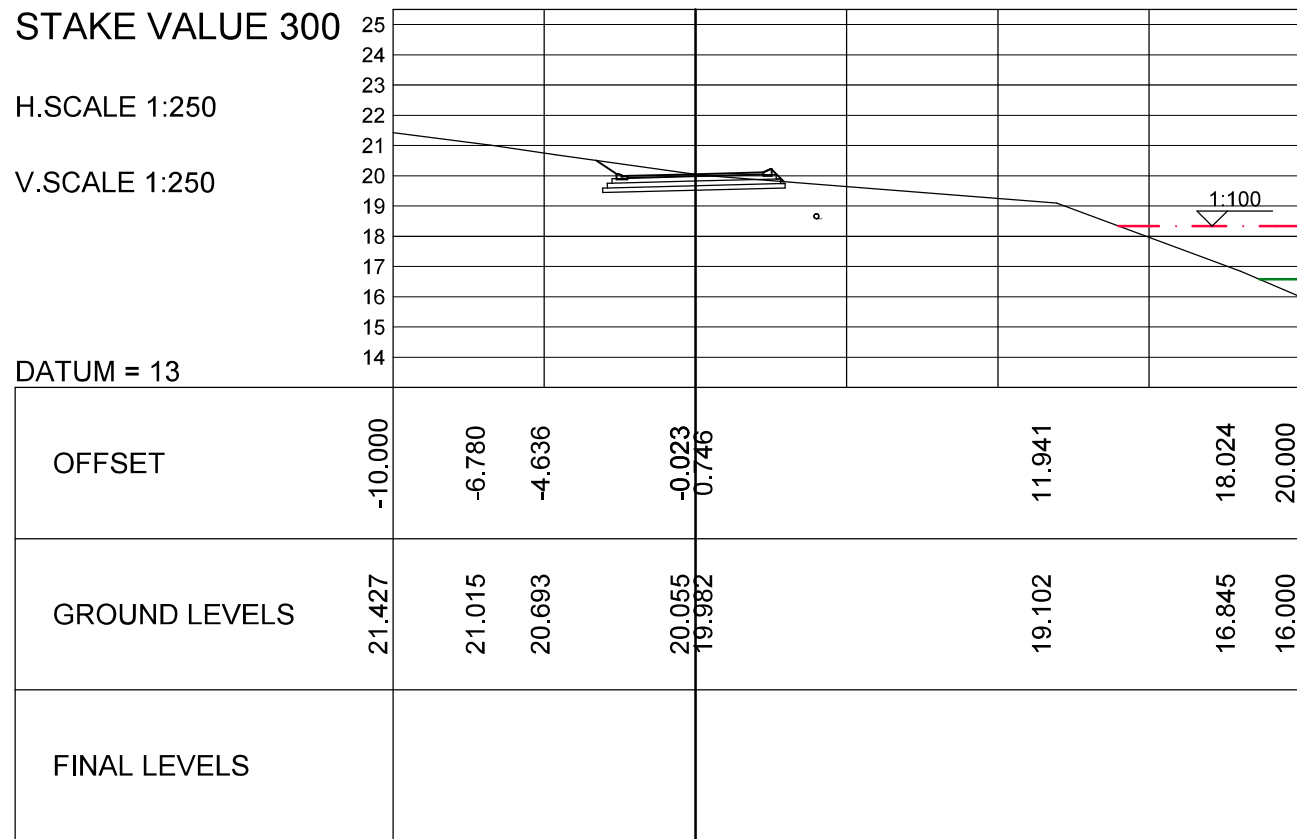
DRAWING DESCRIPTION

PROPOSED SEWER LAYOUT

DRAWING NO.	REV.
10427000-100	2

DESIGNED:	CHKD:	CHECKED:	CHKD:
LA	LA	DKJ	DKJ
APPROVED:	SCALE:	AS SHOWN	A1
Mossel Bay - 10427001 Eagle's Creek02 Concept04 Draw1 FILE PATH: 10427000-100-02 (SEWER).d4			

- NOTES:**
- ALL CONSTRUCTION AND TESTING MUST BE DONE IN ACCORDANCE WITH SANS 1200.
 - NO DIMENSIONS MAY BE SCALED FROM DRAWINGS.
 - ALL POSITIONS OF EXISTING SERVICES, PIPES, MANHOLES, ERF CONNECTIONS, ETC. NEED TO BE SURVEYED AND CONFIRMED. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION PRIOR COMMENCEMENT OF WORKS.
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 - a) IN-SITU CONCRETE CONCRETE CLASS: 30 / 19 OR AS SPECIFIED
 - b) ALL EXPOSED SHARP EDGES TO HAVE 20 x 20 CHAMFERS
 - c) MINIMUM CONCRETE COVER = 50mm
 - SEWER MAIN PIPES:
 - UPVC CLASS 34 (HEAVY-DUTY) (SANS 791)
 - ERF CONNECTIONS:
 - UPVC CLASS 34 (HEAVY-DUTY) (SANS 791)
 - PIPES ARE TO BE LAID ON BEDDING FOR FLEXIBLE PIPES.
 - MINIMUM COVER OVER ALL PIPES TO BE 1200mm WITHIN ROAD RESERVES UNLESS OTHERWISE SPECIFIED.
 - PIPE TRENCH COMPACTION:
 - 98% MAASHTO DENSITY BELOW AREAS CARRYING TRAFFIC
 - 90% MAASHTO DENSITY ELSEWHERE.
 - PIPE TRENCHES SHALL BE EXCAVATED IN LENGTHS APPROVED BY THE ENGINEER. TRENCHES SHALL BE TO WIDTHS THAT, IN EACH CASE, PROVIDE AT LEAST THE PROPER SIDE ALLOWANCE. THE SIDE OF EACH TRENCH FROM THE BOTTOM UP SHALL BE AS NEAR VERTICAL AS POSSIBLE. THE HEIGHT EQUAL TO AT LEAST THE FULL DIAMETER OF THE PIPE PLUS THE SPECIFIED DEPTH OF SELECTED FILL BLANKET OVER THE PIPE.



LEGEND:

----- 1 : 50 YEAR FLOOD LINE

----- 1 : 100 YEAR FLOOD LINE

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)

0 100
100 MILLIMETRES ON ORIGINAL DRAWING

(A) BEFORE CONTRACT COMMENCES
(A) AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS

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V3 CONSULTING
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PO Box 730, Mossel Bay, 6500, South Africa

CESA
Consulting Engineers South Africa

PROJECT
MOSSSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220

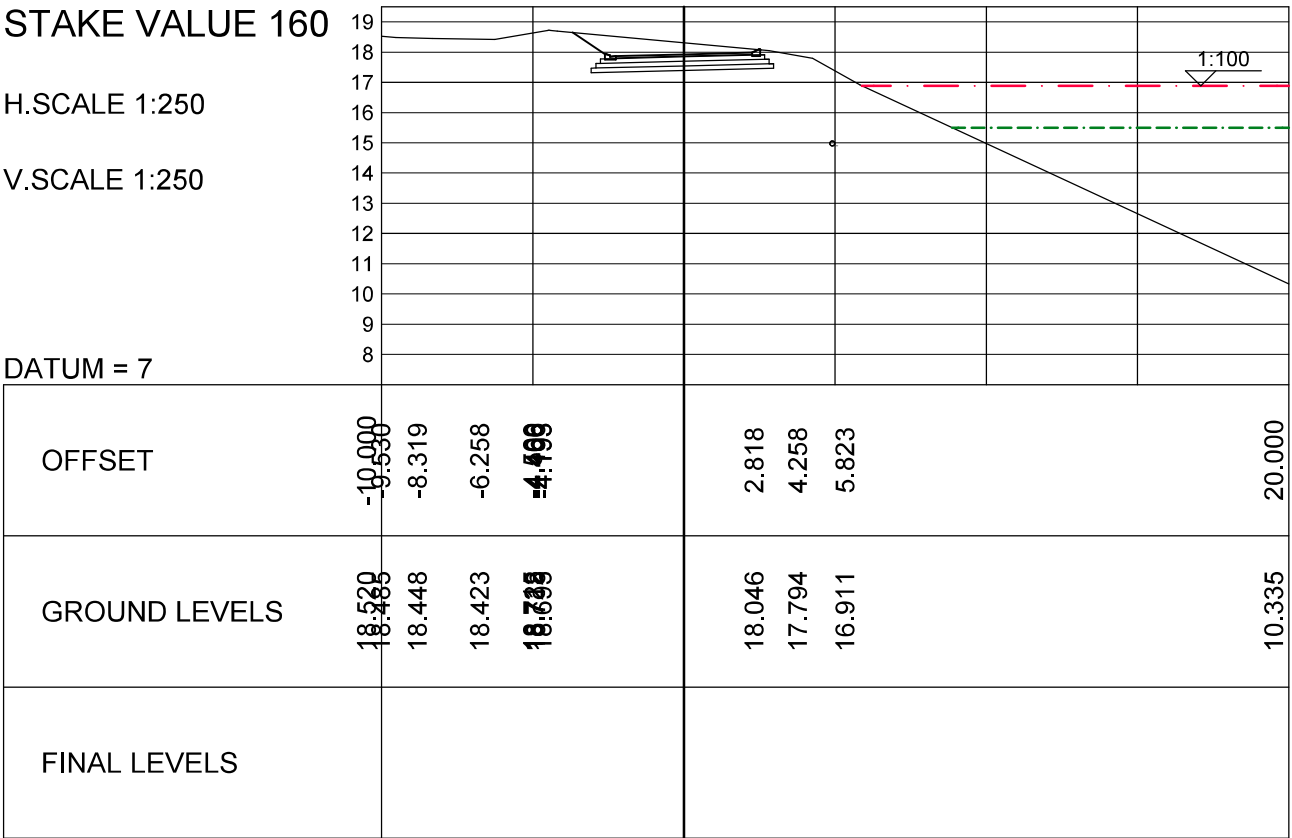
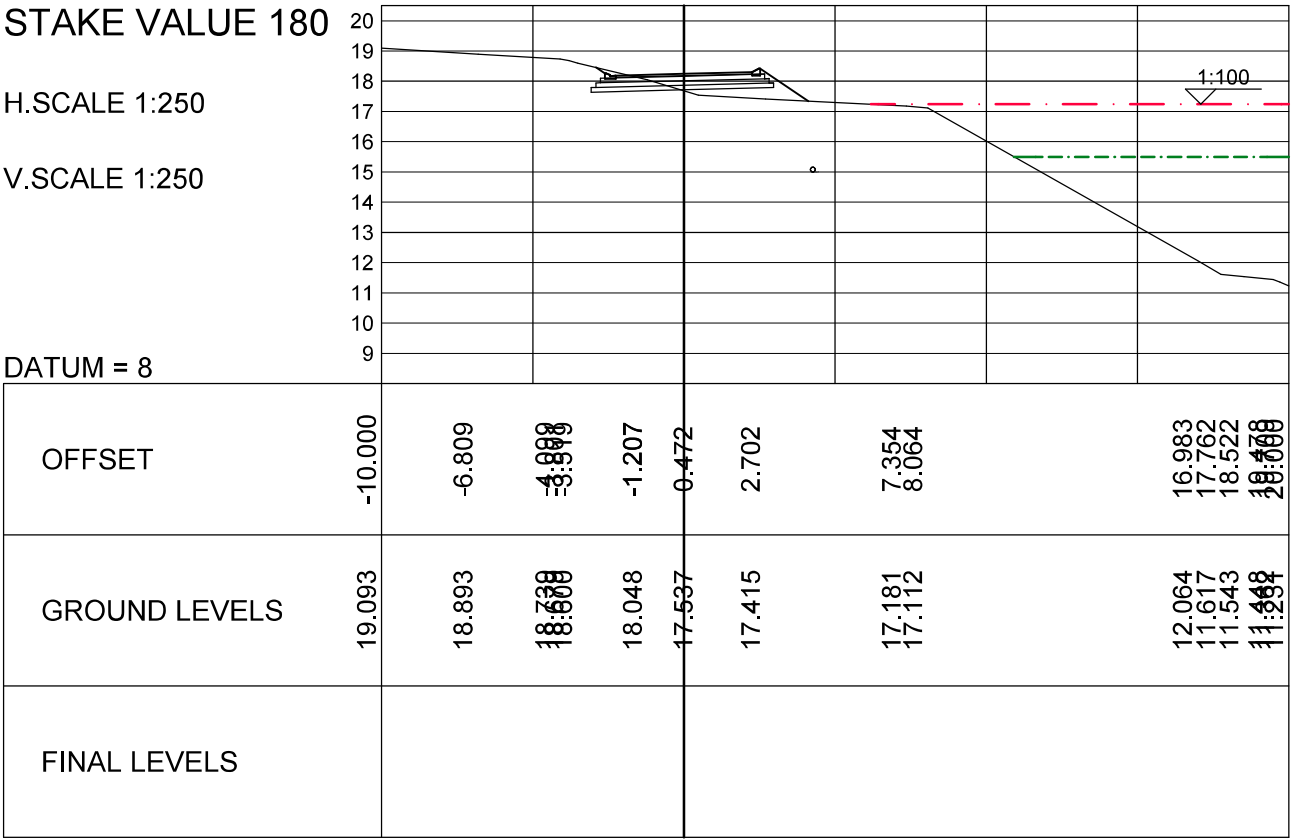
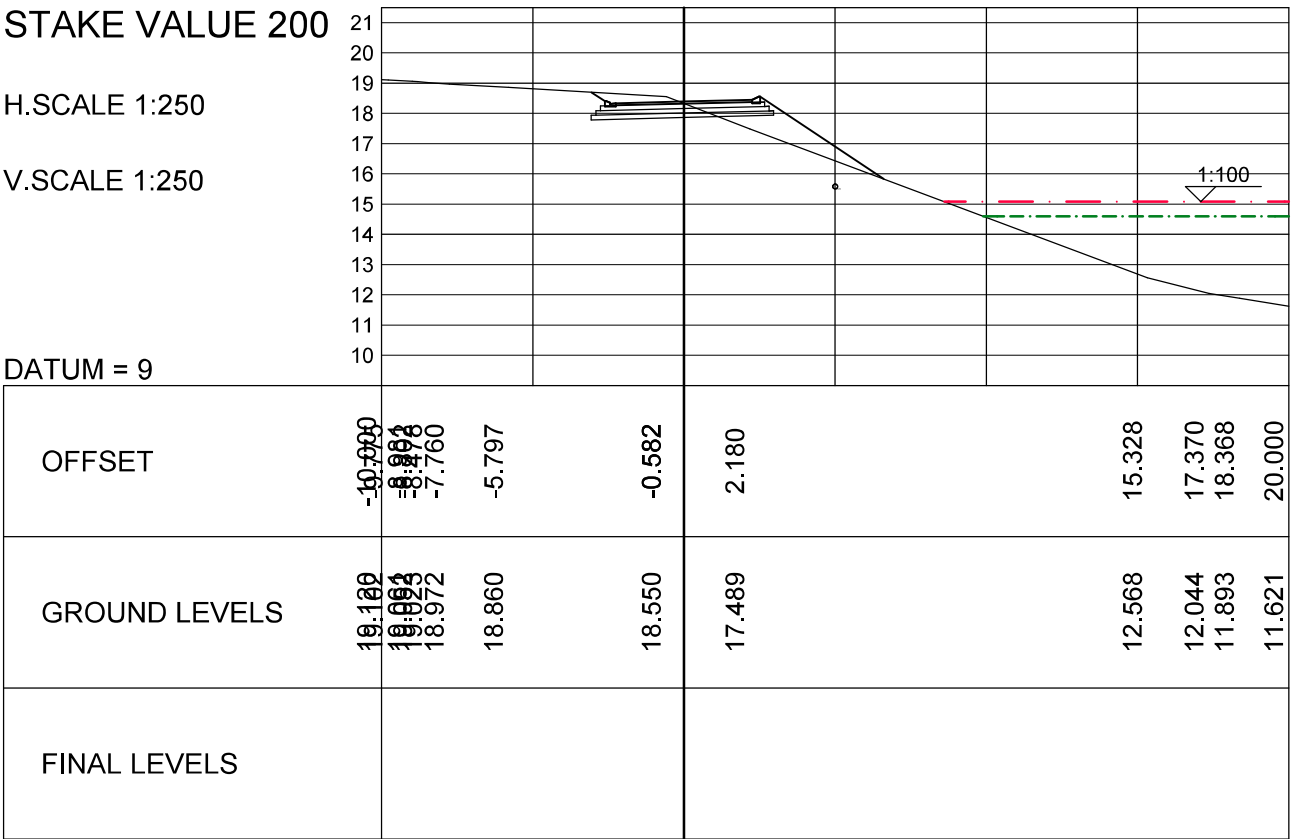
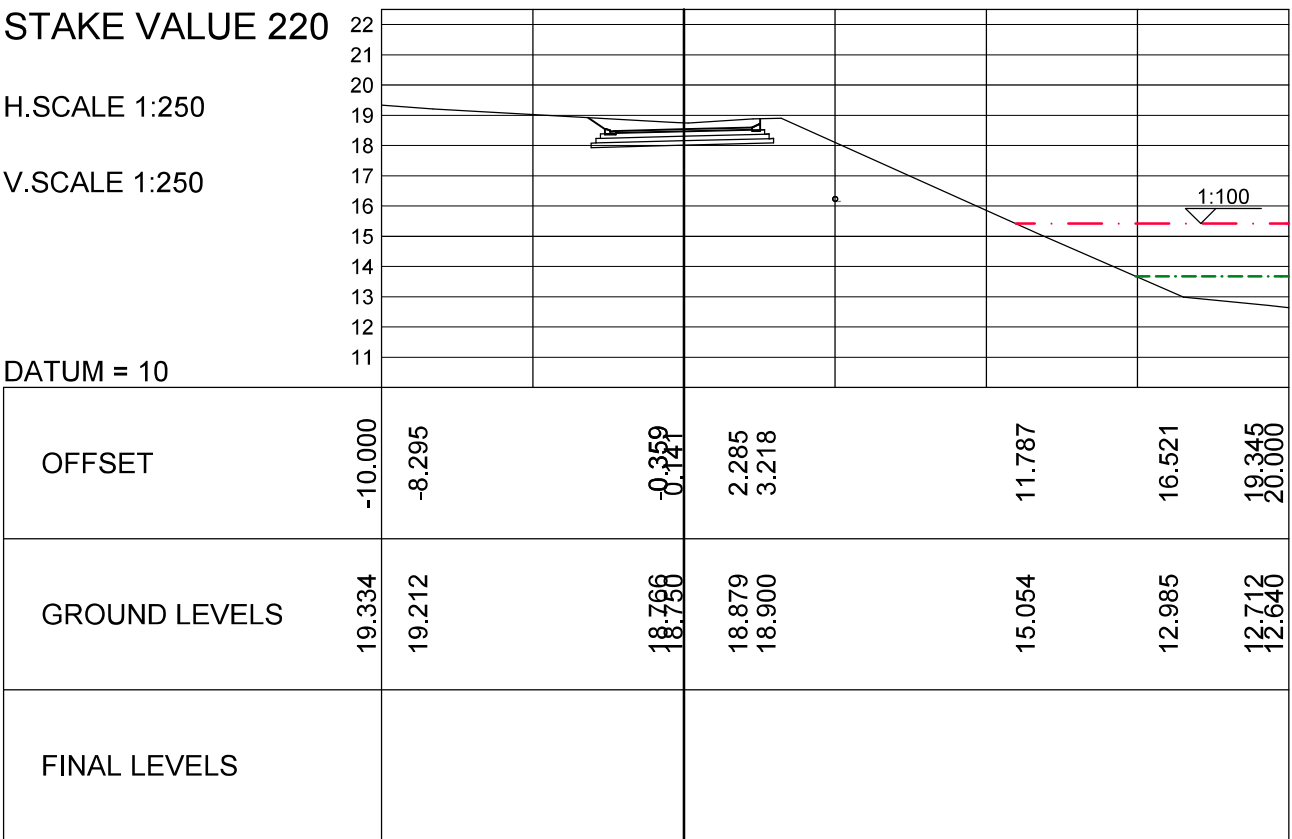
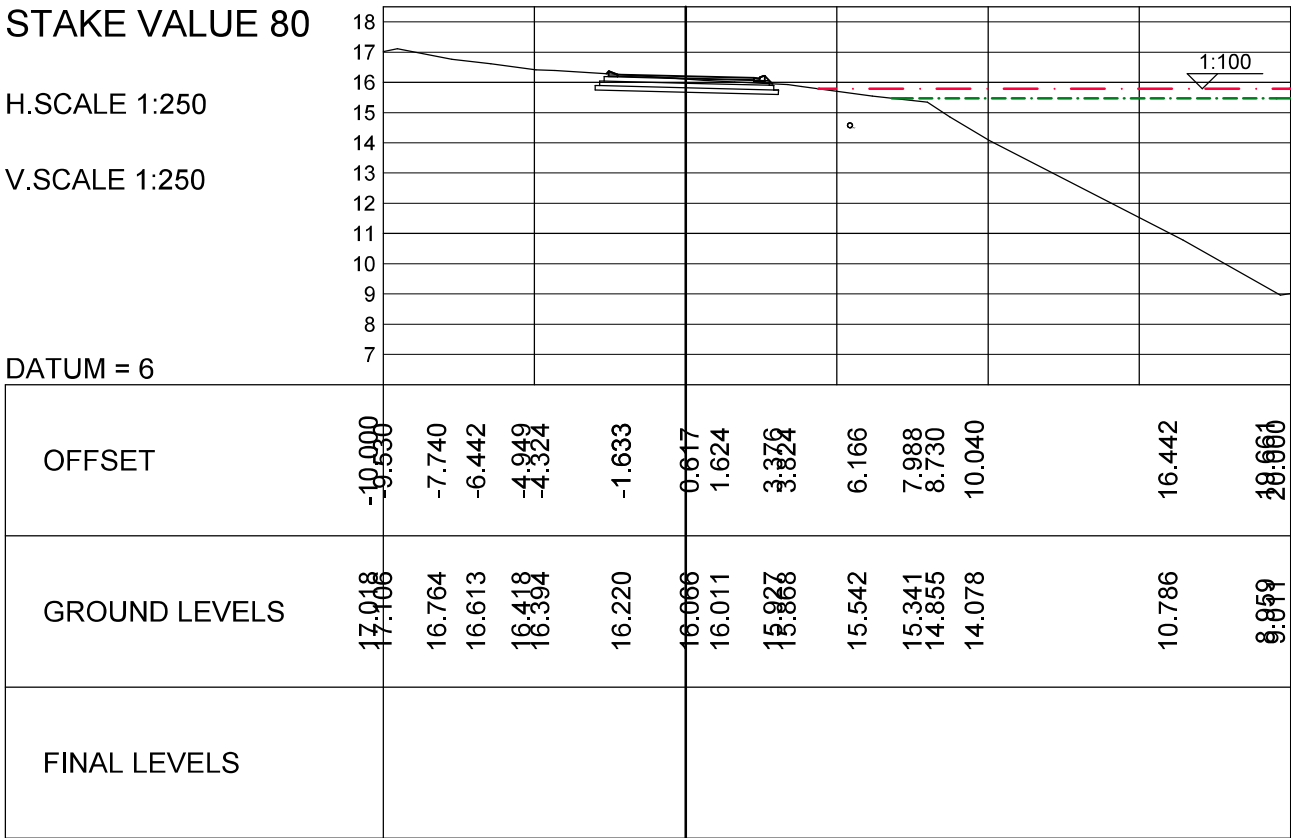
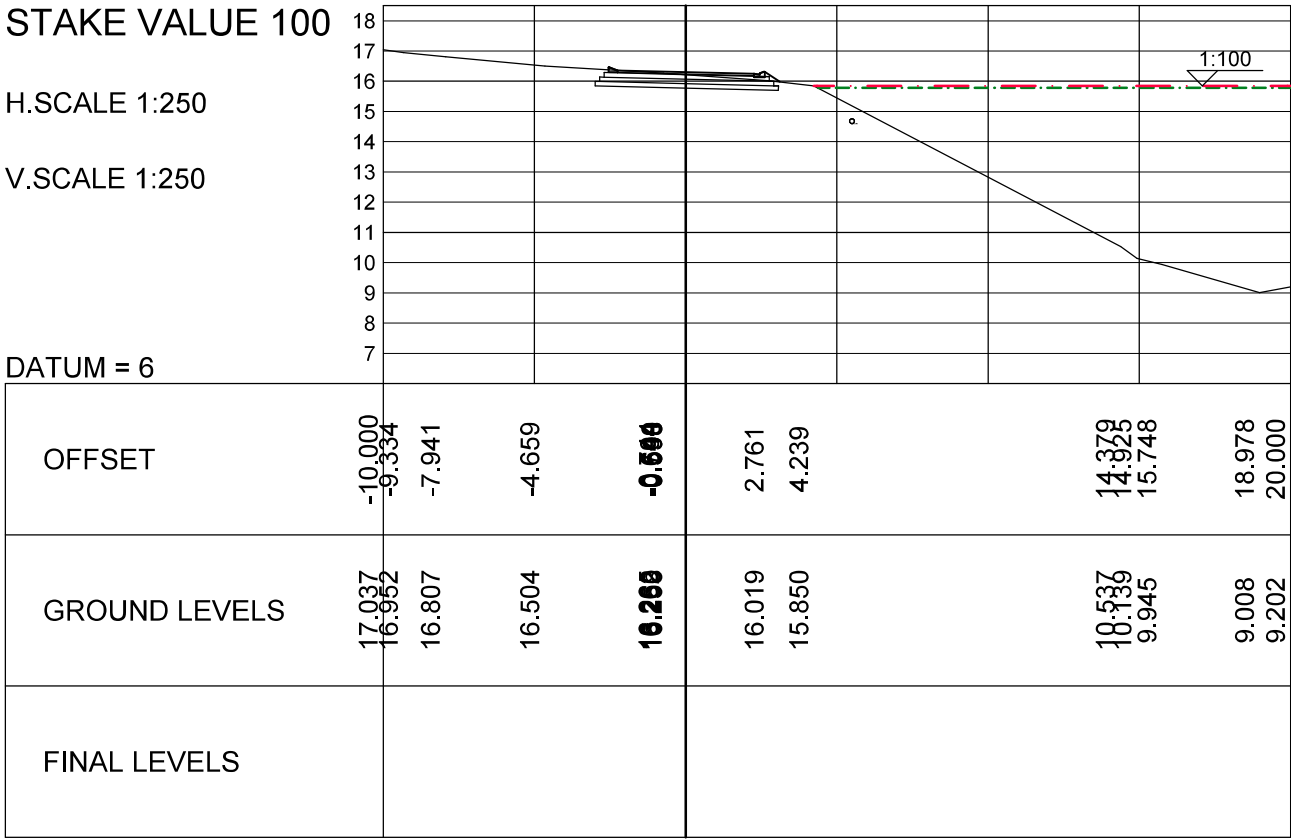
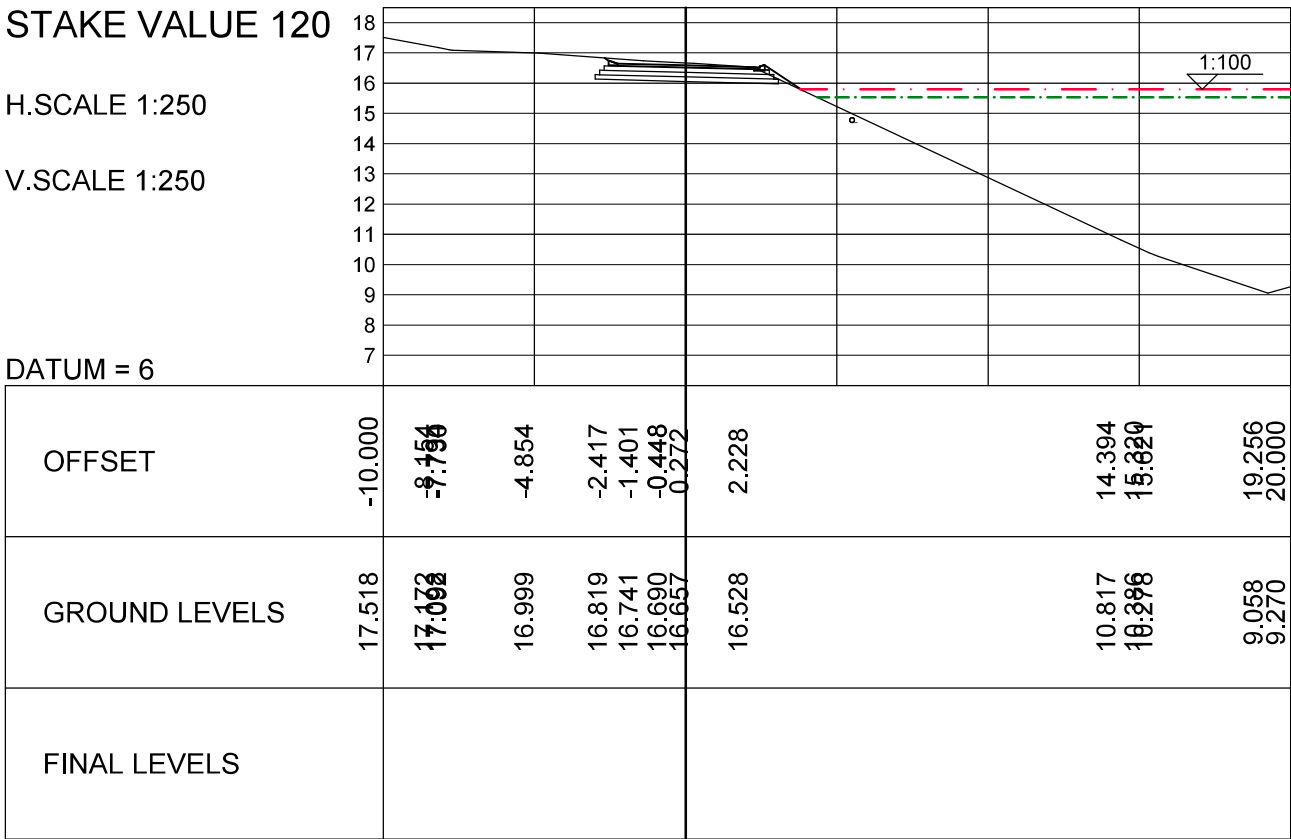
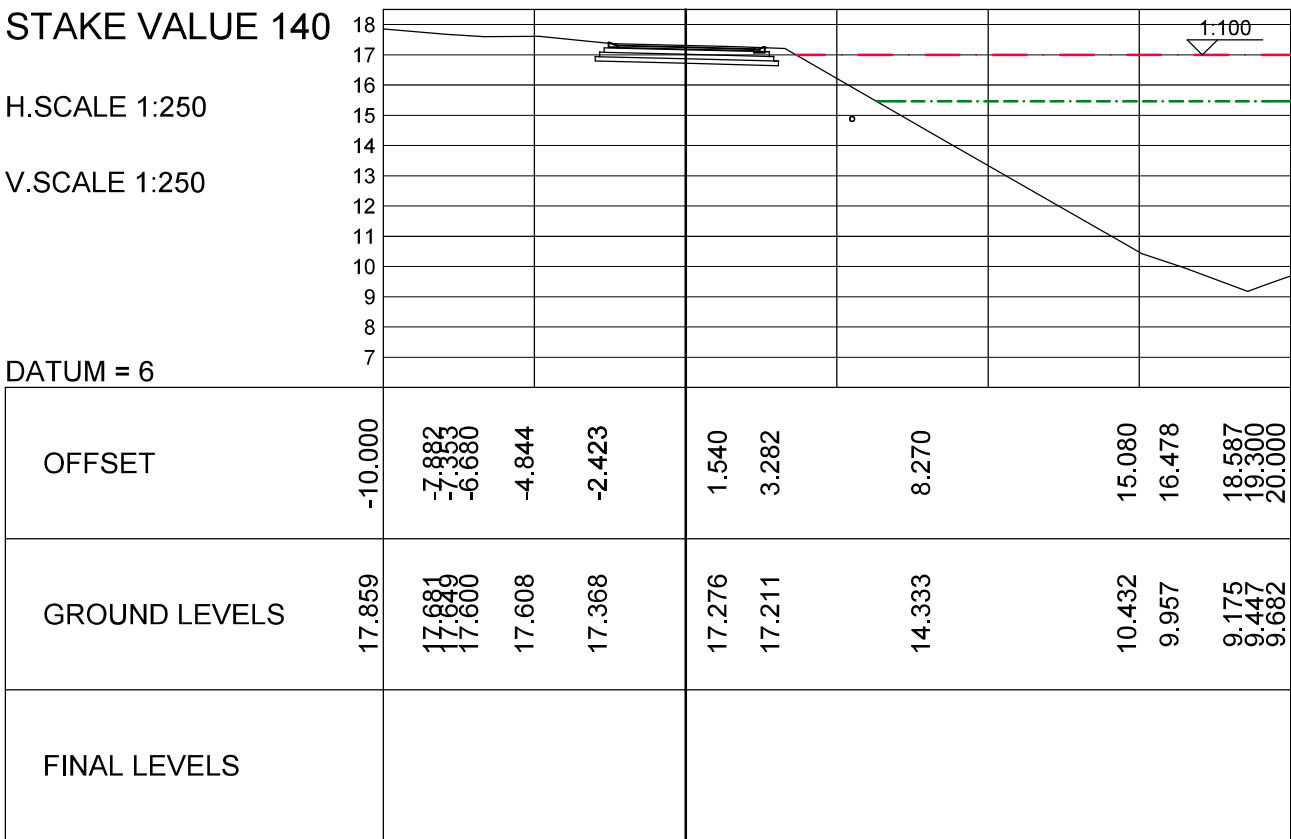
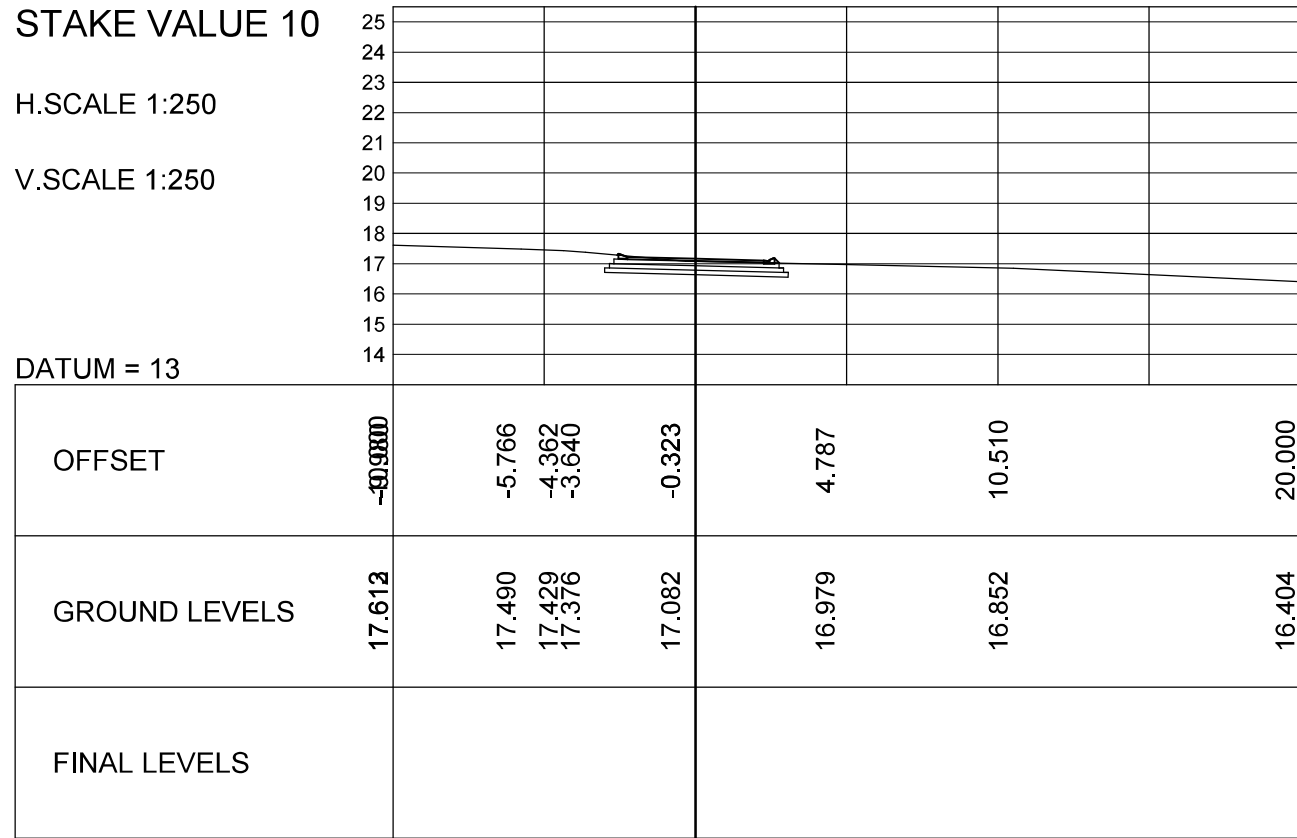
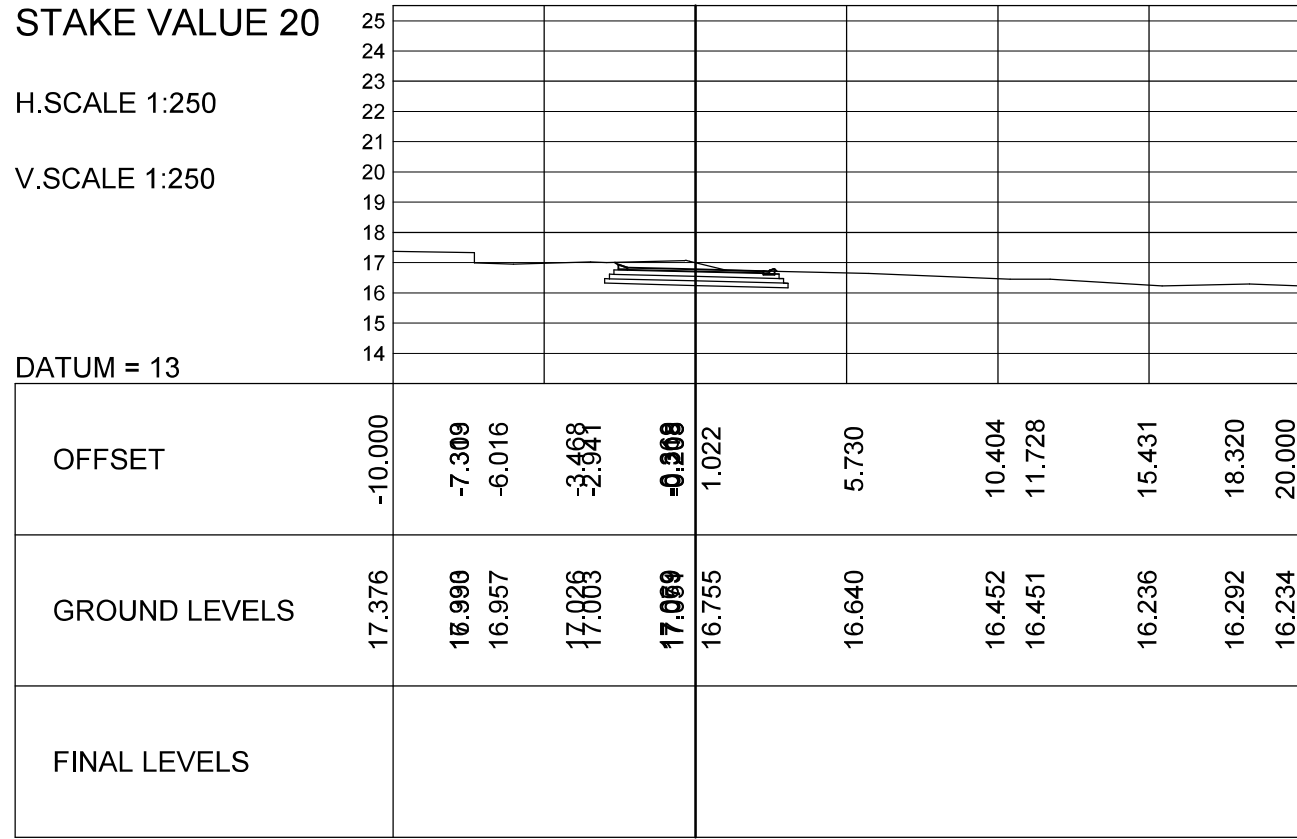
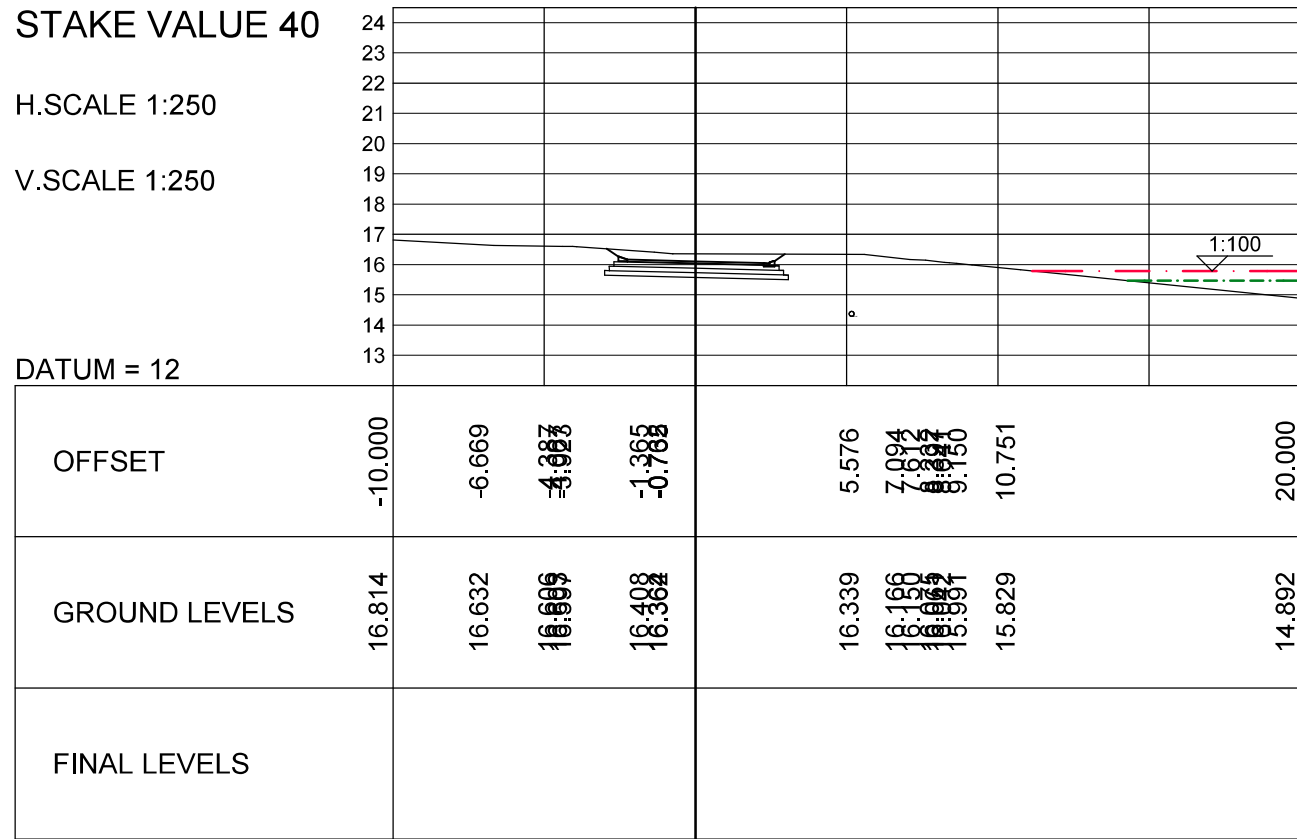
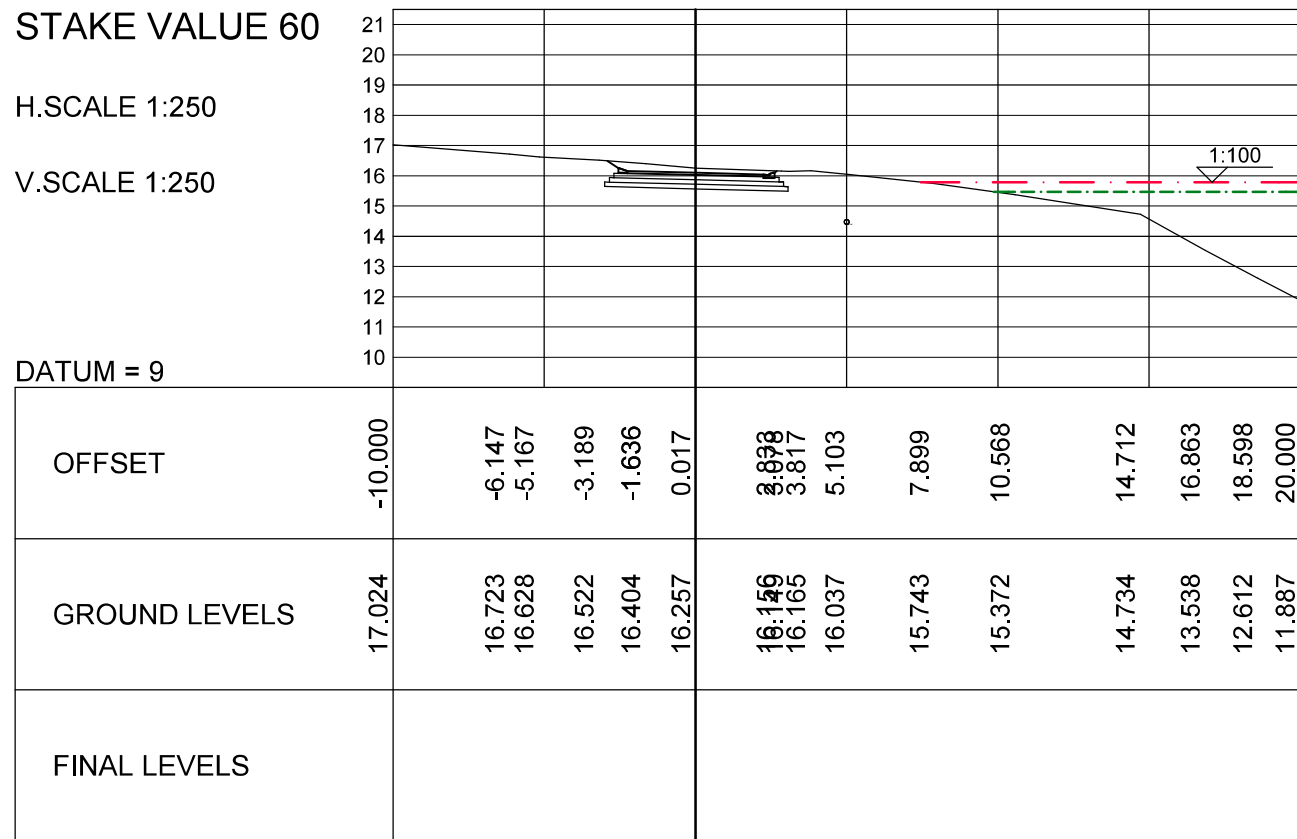
DRAWING DESCRIPTION
ROADS: ROAD 1: CROSS SECTIONS
CH 240 TO CH 460

DRAWING NO.
10427000-311

01

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED:	DATE: 2023-09-14

Mossel Bay - 10427001 Eagle's Creek02 Concept04 Draw1
FILE PATH: 10427000-311 (RD1XS).d4



LEGEND:

1 : 50 YEAR FLOOD LINE

1 : 100 YEAR FLOOD LINE

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)

0 100
100 MILLIMETRES ON ORIGINAL DRAWING

A BEFORE CONTRACT COMMENCES
A AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS

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CESA

PROJECT
MOSSSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220

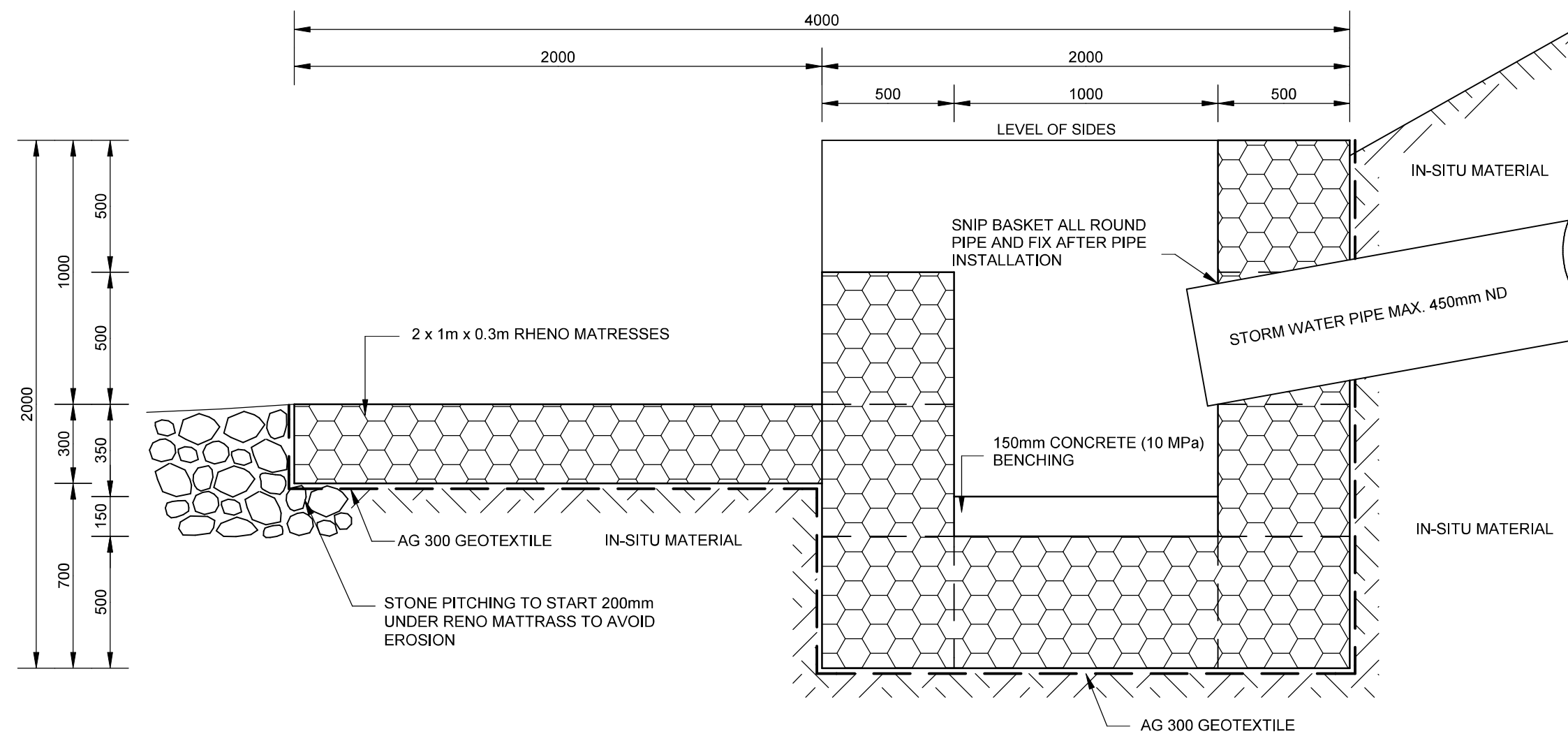
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ROADS: ROAD 1: CROSS SECTIONS
CH 10 TO CH 220

DRAWING NO.
10427000-310

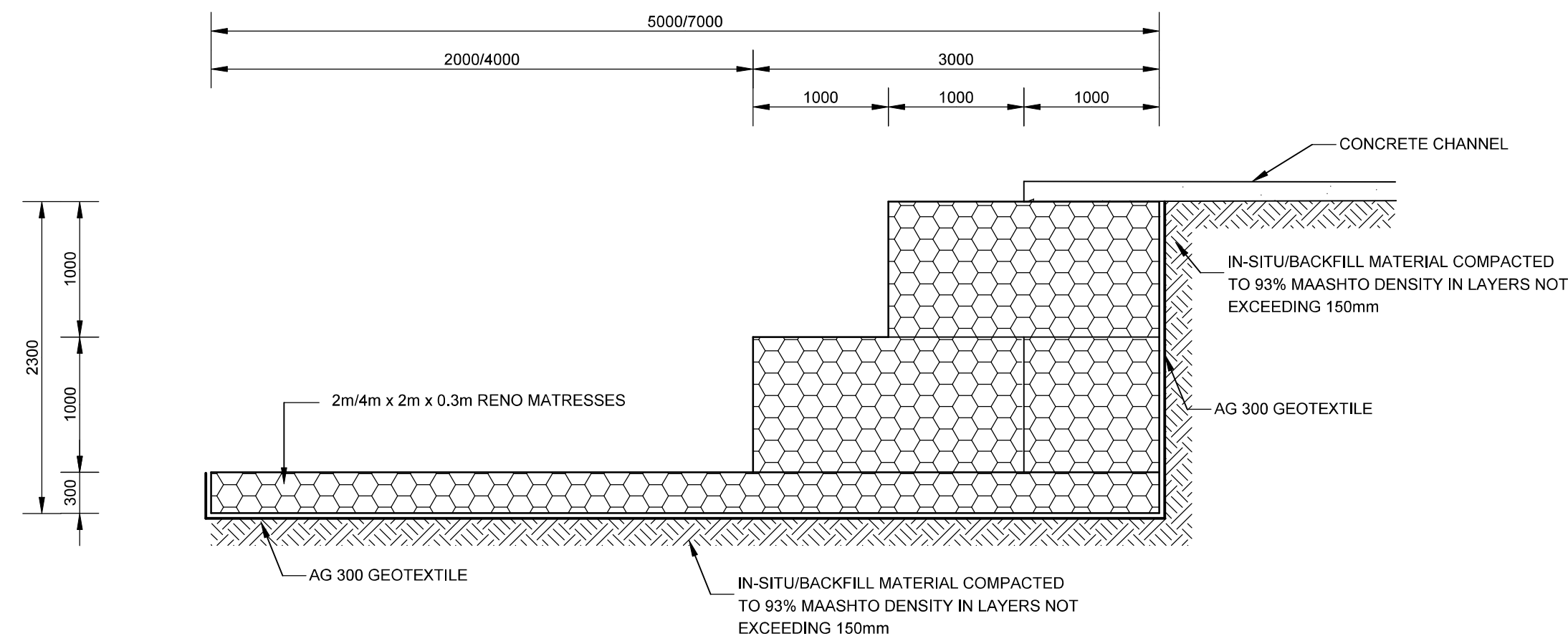
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DESIGNED:	CHKJ	CHECKED:	CHKJ
DRAWN:	LA	SCALE:	AS SHOWN
APPROVED:		DATE:	2023-09-14

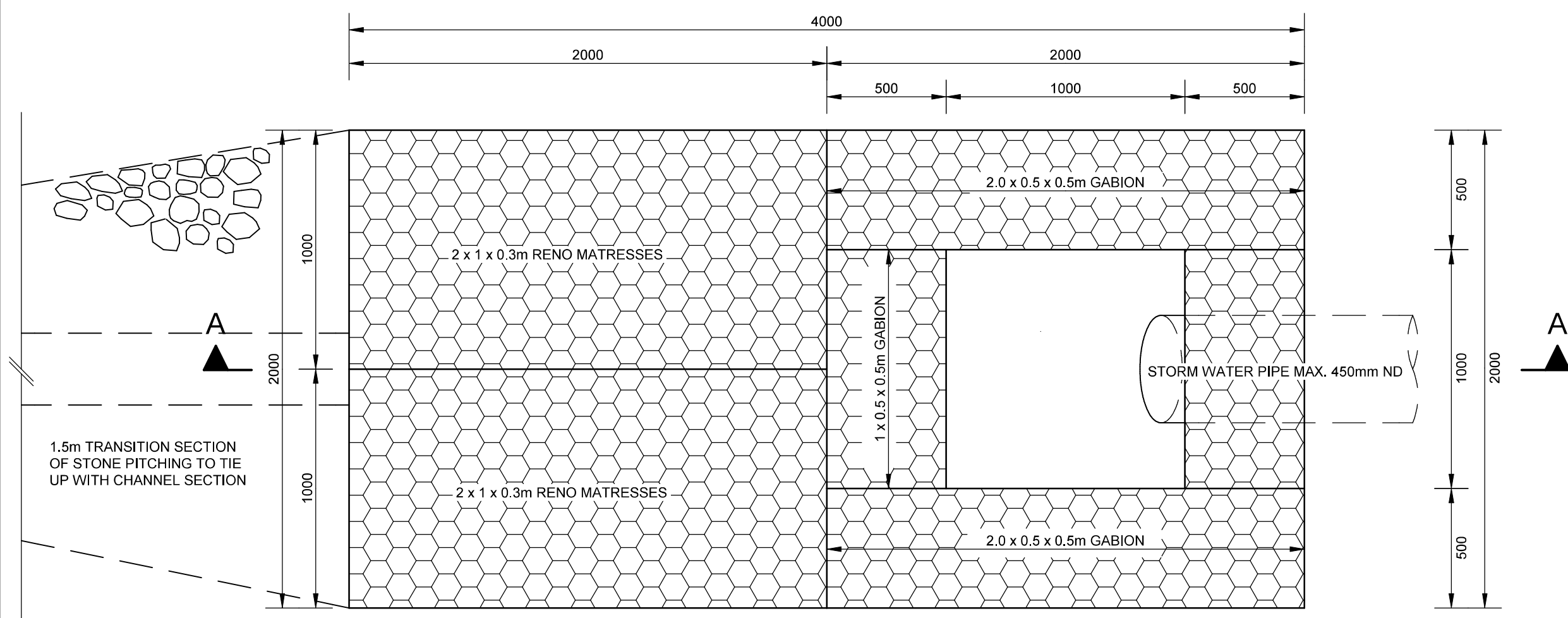
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FILE PATH: 10427000-310 (RD1)XS.dwg



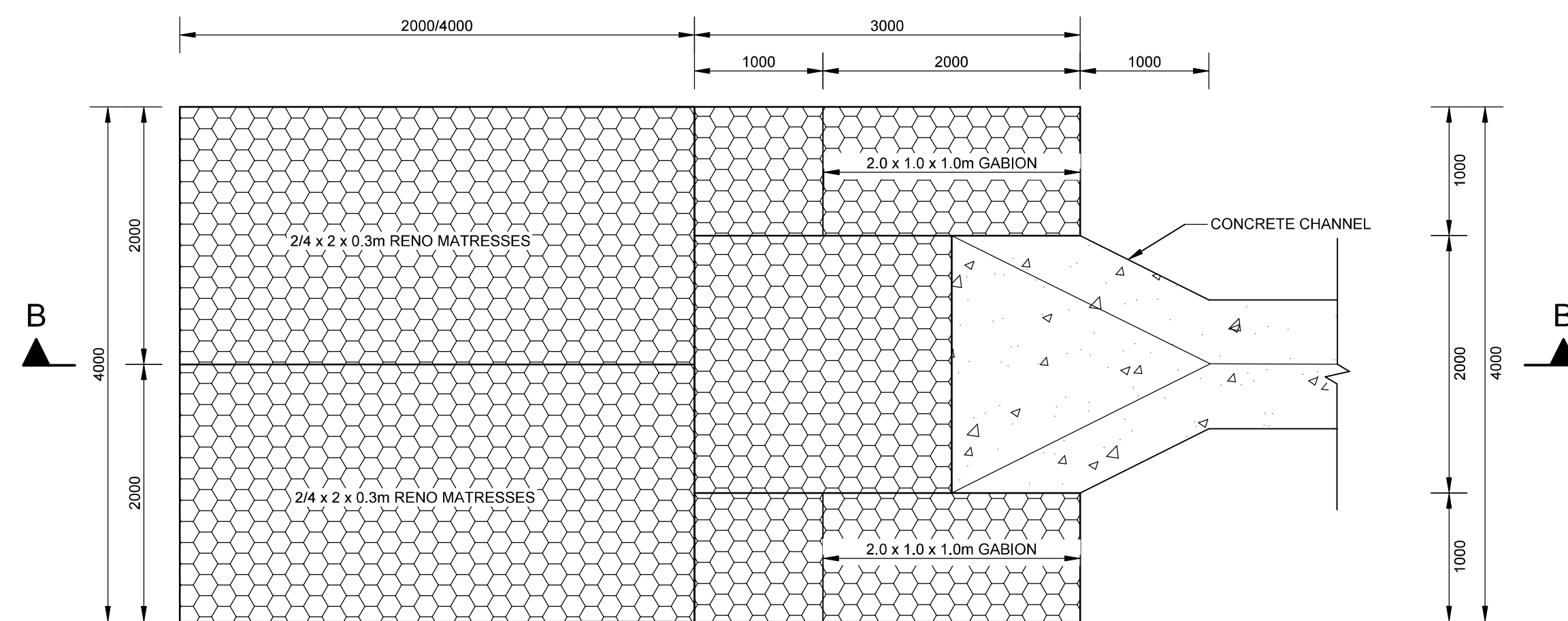
DETAIL SW1 - SECTION A-A: TYPICAL GABION STORM WATER OUTLET
SCALE 1:20



DETAIL SW2 - SECTION B-B: TYPICAL GABION STORM WATER OUTLET
SCALE 1:40



DETAIL SW1 - TYPICAL GABION STORM WATER OUTLET
SCALE 1:20



DETAIL SW2 - TYPICAL GABION STORM WATER OUTLET
SCALE 1:40

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)

0 100

100 MILLIMETRES ON ORIGINAL DRAWING

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Nr.	DATE	AMENDMENTS

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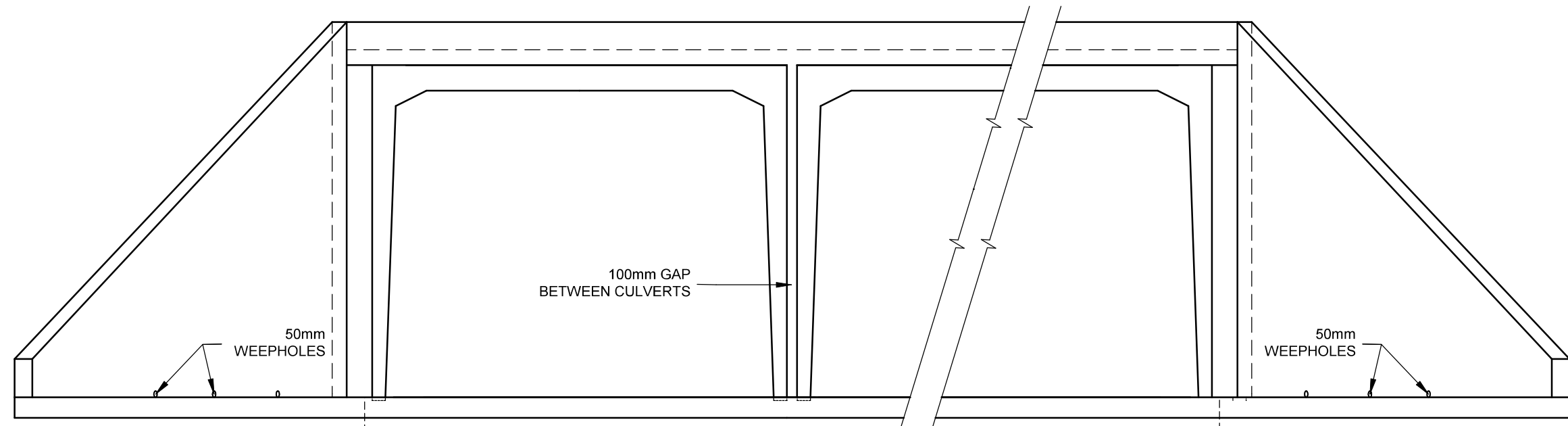
PROJECT
MOSSSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220

DRAWING DESCRIPTION
PROPOSED STORM WATER:
GABION OUTLET STRUCTURES

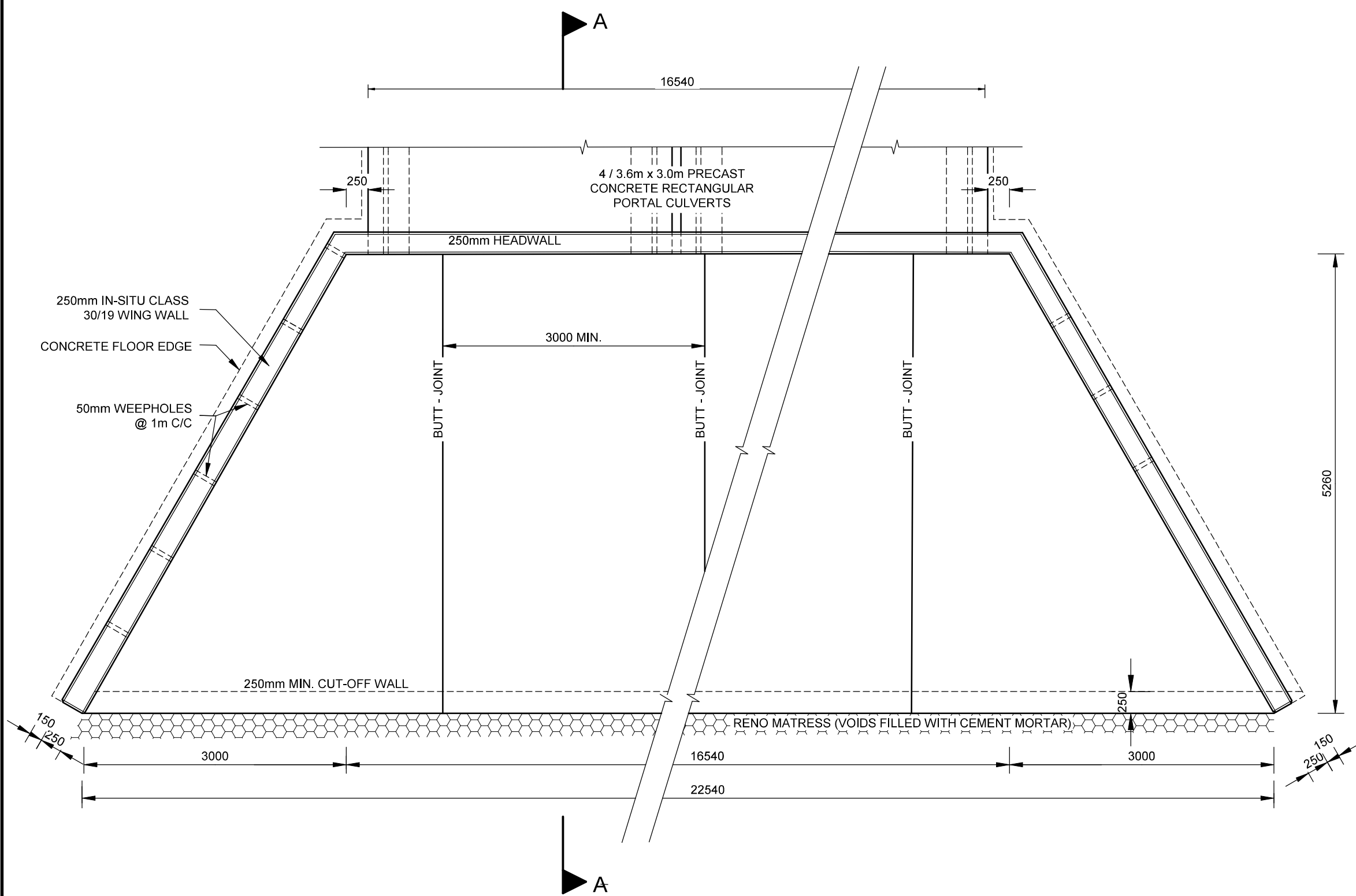
DRAWING NO.
10427000-404

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED:	DATE: 2023-08-31

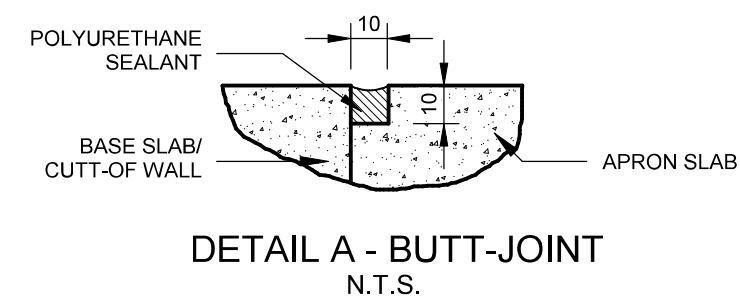
Mossel Bay - 10427001 Eagle's Creek02 Concept04 Drawl
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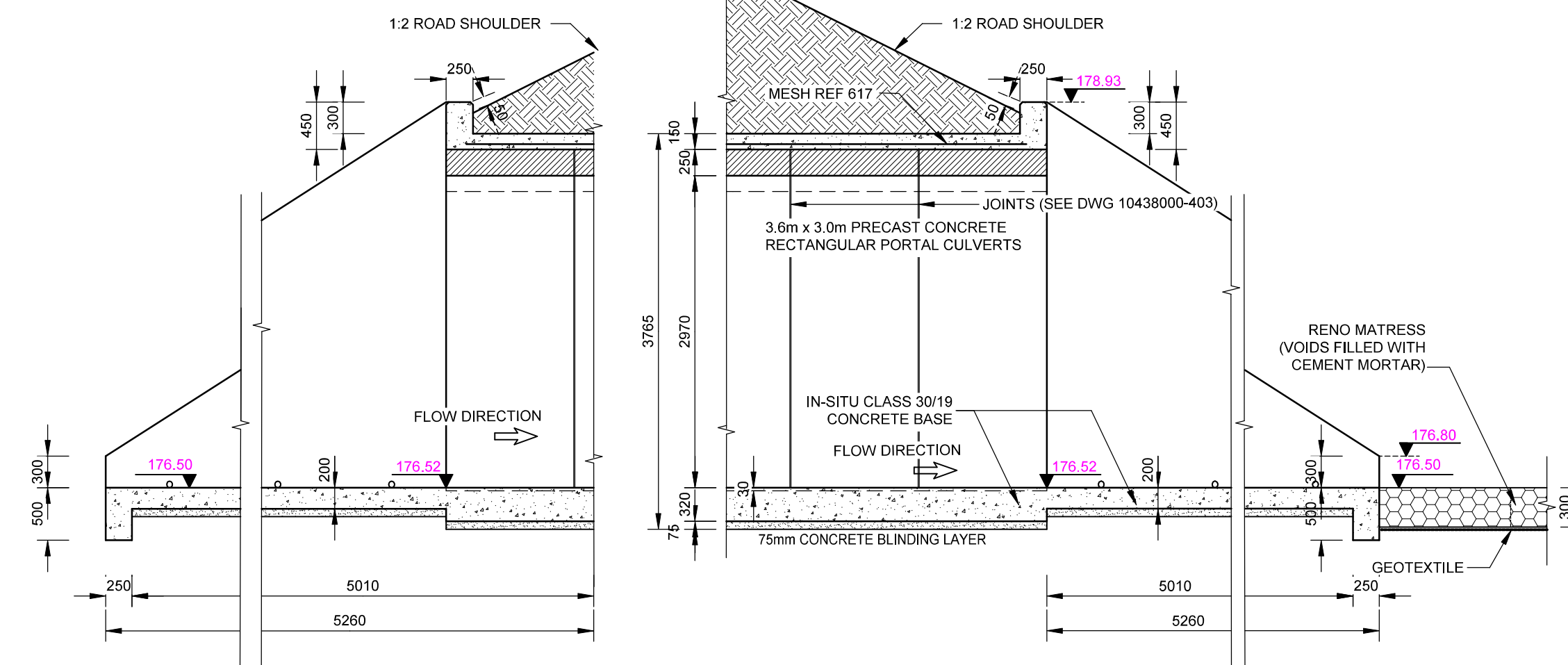
TYPICAL ELEVATION OF INLET / OUTLET WING WALLS
SCALE 1:50



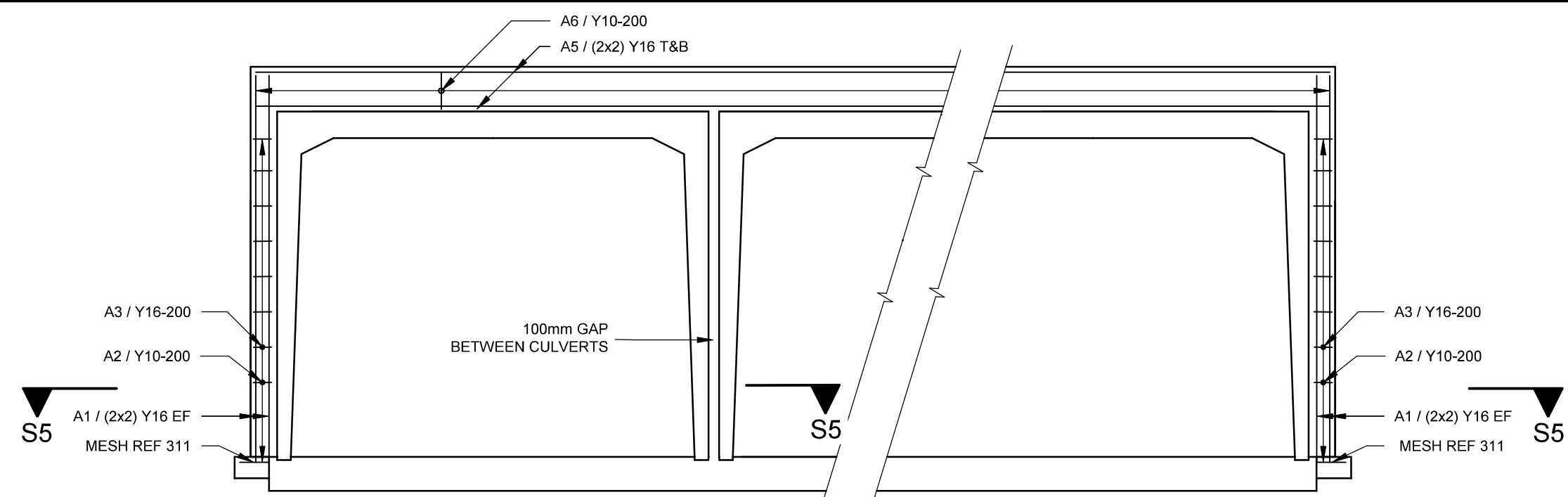
TYPICAL PLAN OF INLET / OUTLET WING WALLS
SCALE 1:50



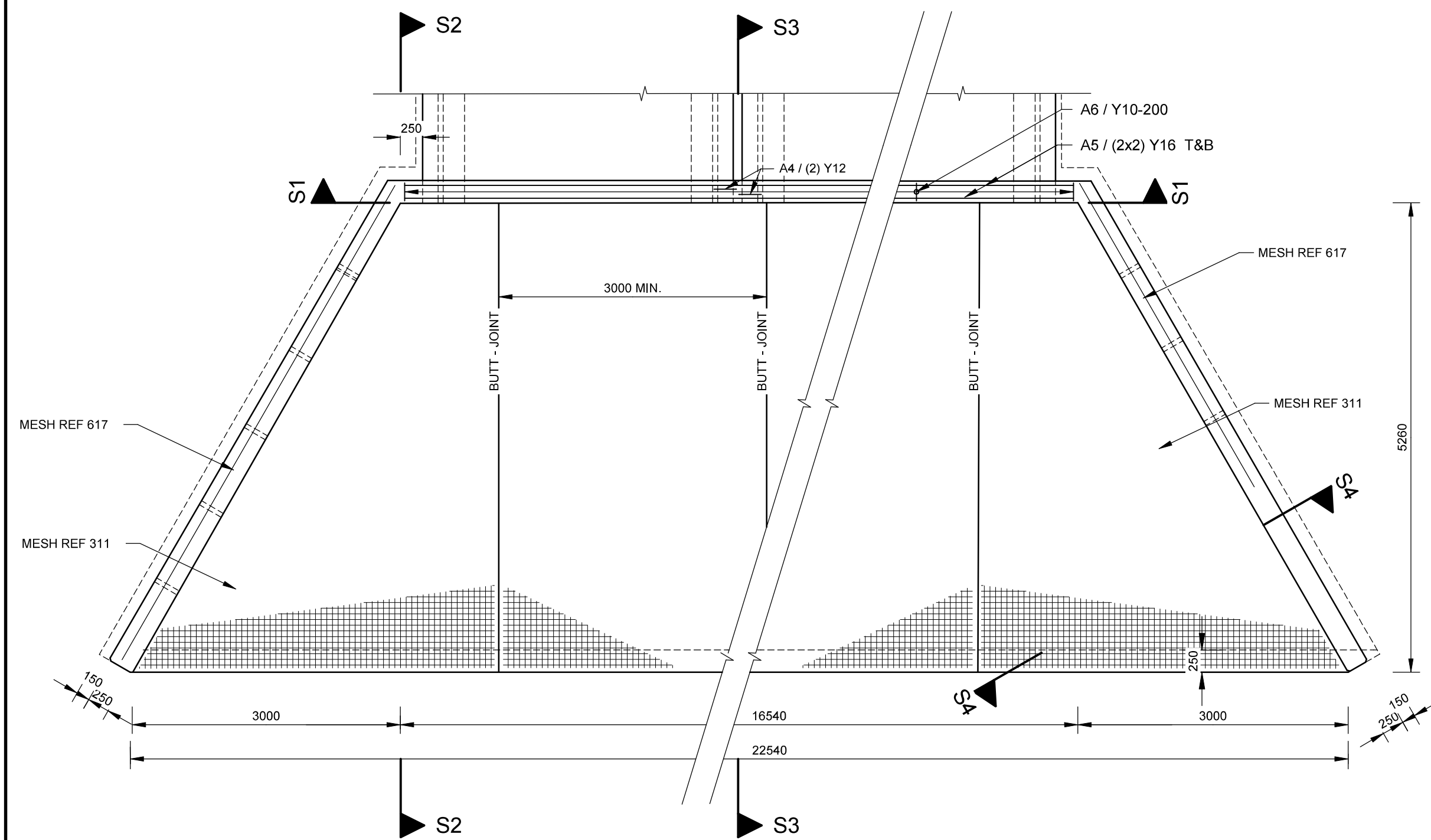
DETAIL A - BUTT-JOINT
N.T.S.



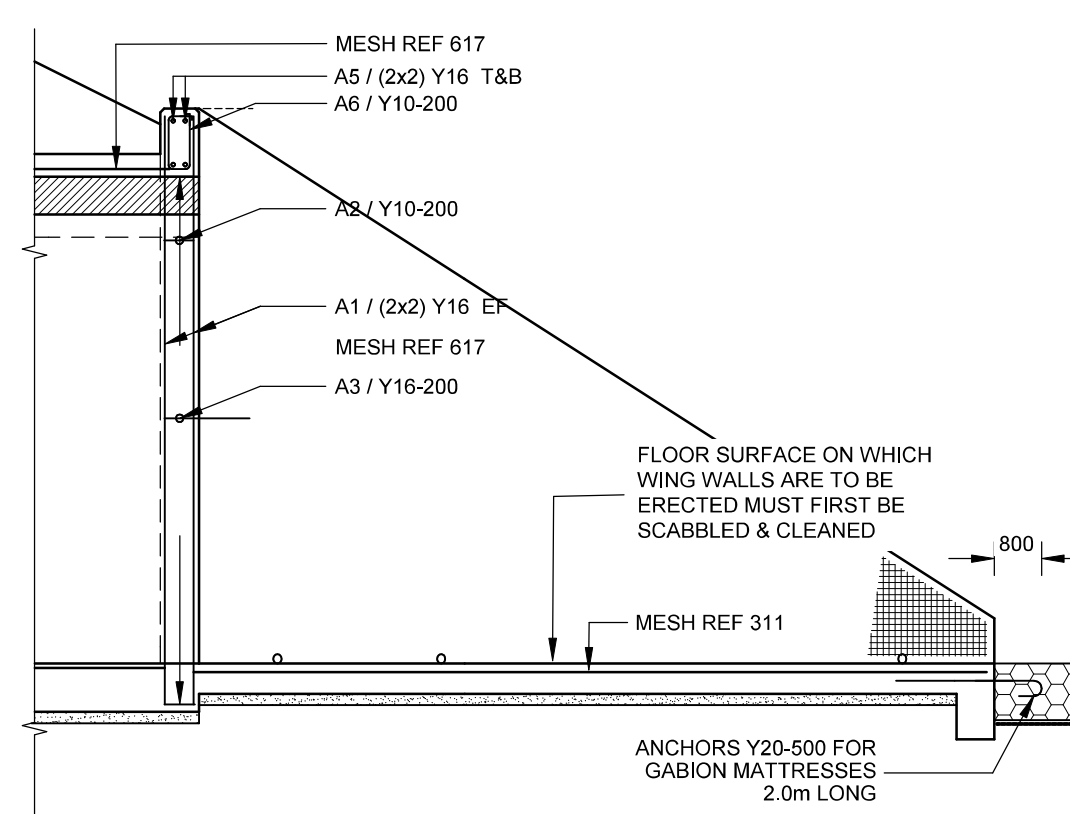
SECTION A-A - INLET / OUTLET WING WALLS
SCALE 1: 50



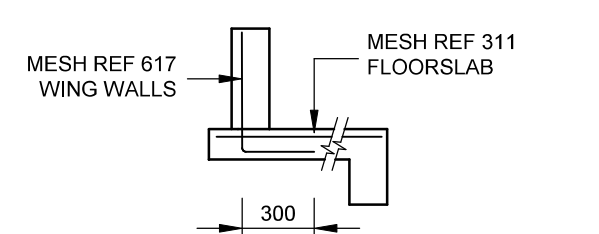
SECTION S1-S1 - REINFORCEMENT
SCALE 1:50



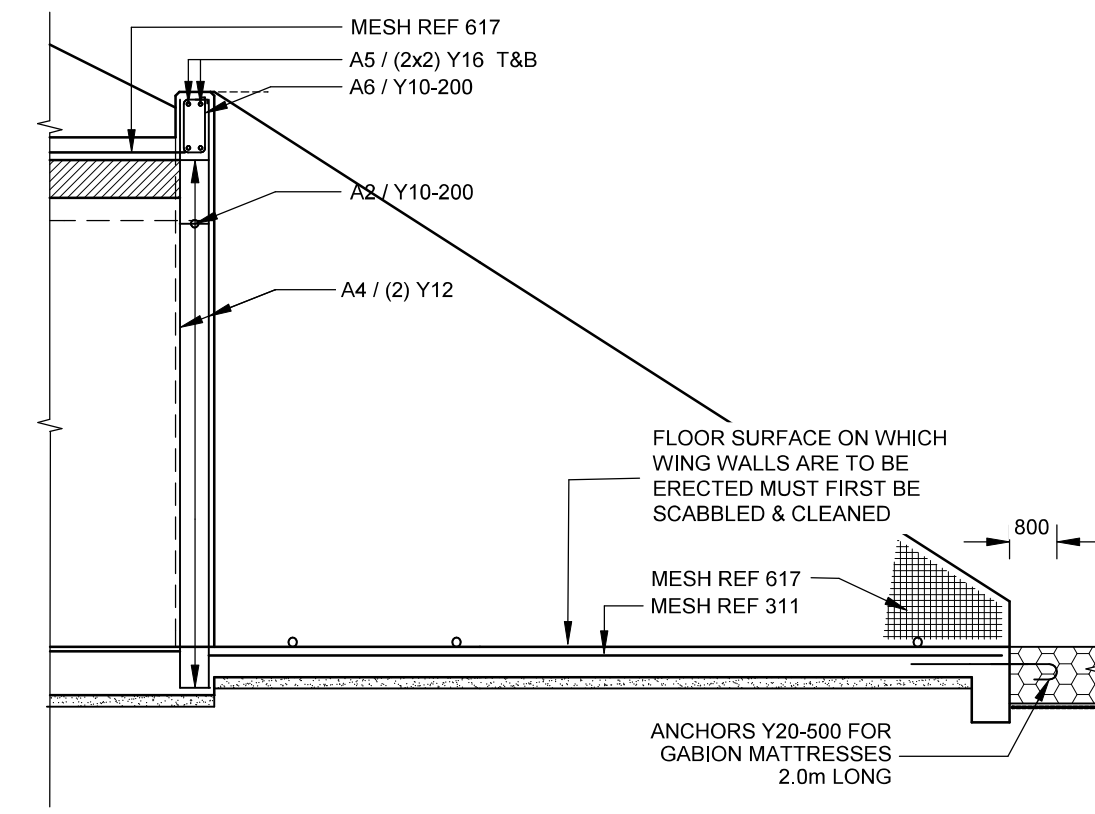
PLAN - REINFORCEMENT
SCALE 1:50



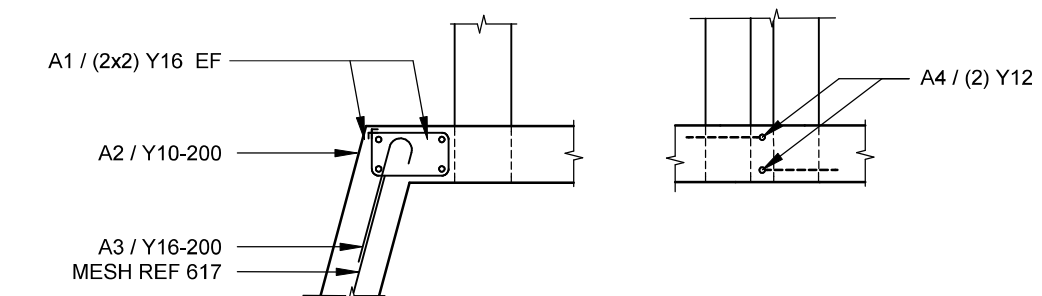
SECTION S3-S3 - REINFORCEMENT
SCALE 1: 50



SECTION S4-S4 - WING WALLS &
FLOORSLAB - REINFORCEMENT
SCALE 1:50



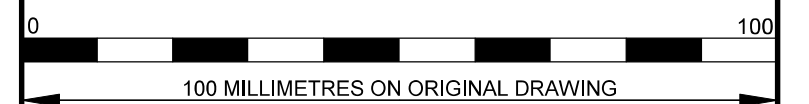
SECTION S2-S2 - REINFORCEMENT
SCALE 1: 50



SECTION S5-S5 -
HEADWALL COLUMNS - REINFORCEMENT
SCALE 1: 33.3

SEE DRAWING 10427000-401 & 402 FOR NOTES.

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)



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Nr.	DATE	AMENDMENTS

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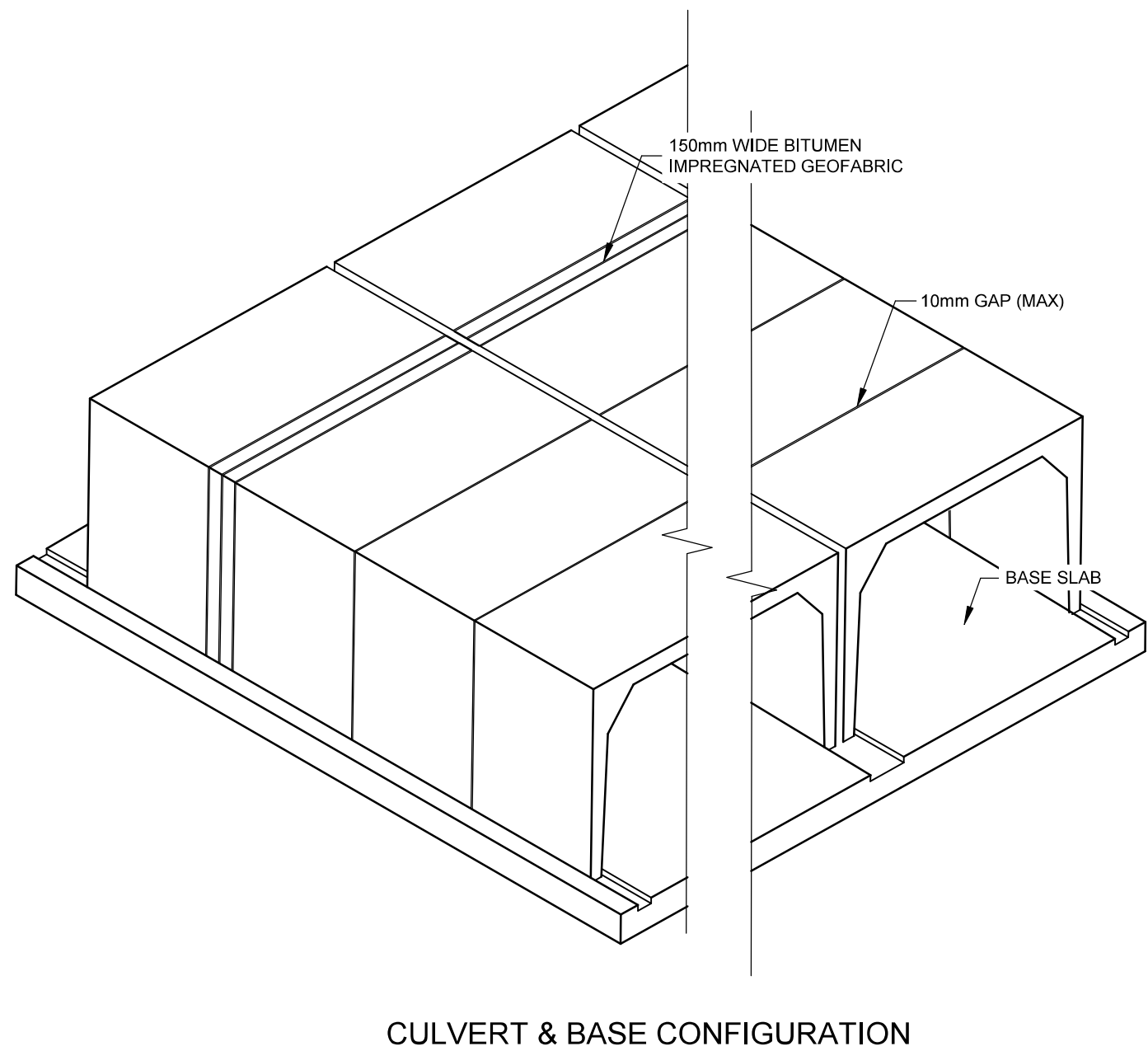
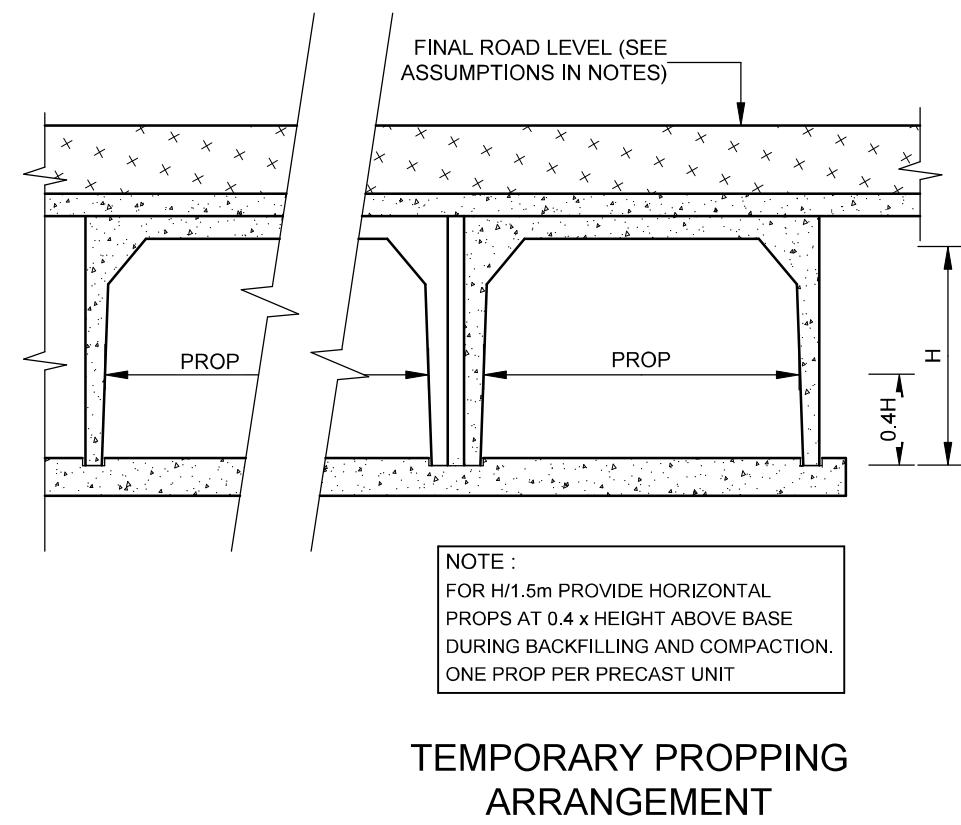
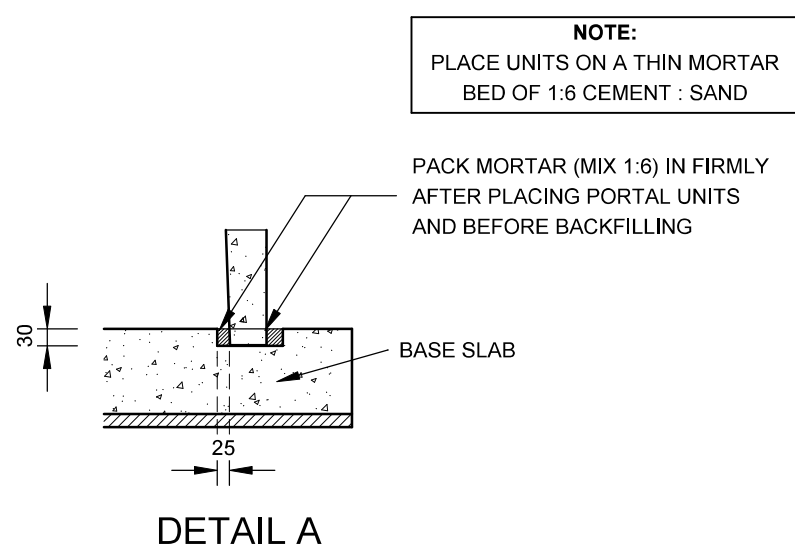
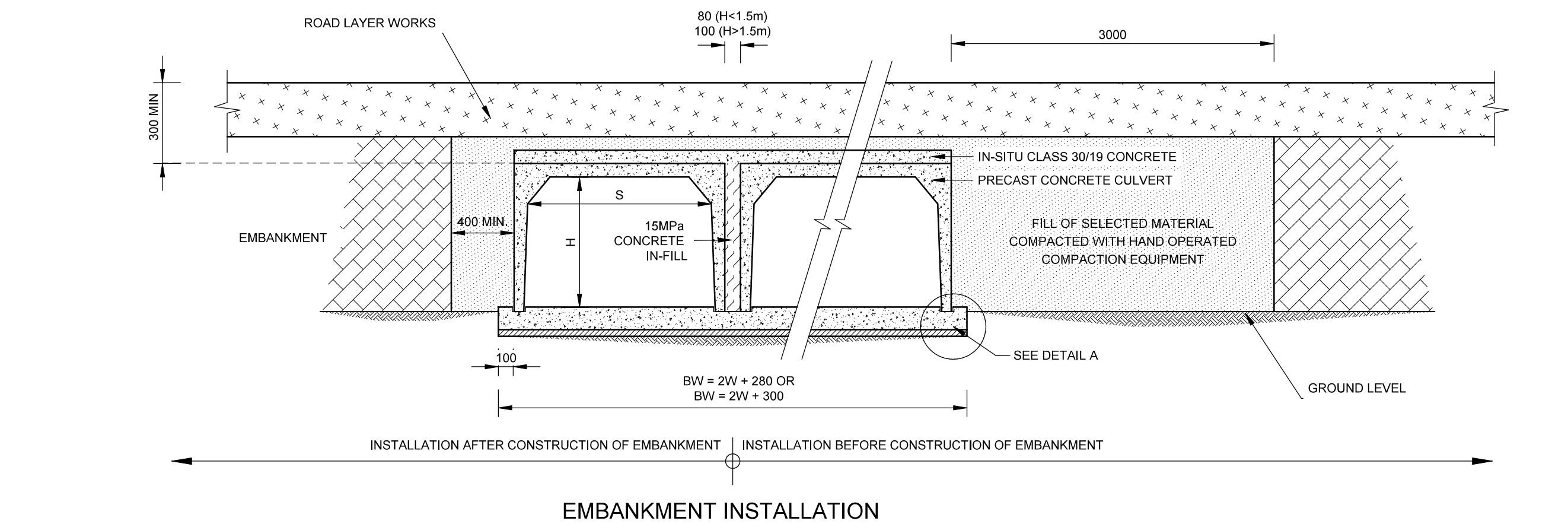
V3 CONSULTING ENGINEERS
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 Unit 1B, 4 Mascador Street, Mossel Bay, 6500, South Africa

PROJECT
 MOSSEL BAY: EAGLE'S CREEK:
 PORTIONS 47, 187 & 188 OF THE FARM
 VYF BRAKKE FONTEINEN No 220

DRAWING DESCRIPTION
 PRECAST PORTAL CULVERT -
 IN-SITU HEAD & WING WALLS

DRAWING NO.
10427000-403

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED: [Signature]	DATE: 2023-08-31
FILE PATH: 10427000-403 (CULV WYV).dwg	



CULVERT SIZE			FOUNDATION CONDITIONS			
			1 & 2		3 & 4	
SPAN		HEIGHT	CLASS	FILL	CLASS	FILL
(m)	x	(m)		(m)		(m)
600	x	300	200 S	10.2	200 S	5.6
600	x	450		11.0		6.0
600	x	600		12.0		6.4
750	x	300		8.7		4.9
750	x	450	175 S	9.2	175 S	5.2
750	x	600		10.0		5.5
750	x	750		10.5		5.8
900	x	300		8.6		4.8
900	x	450	175 S	9.0	175 S	5.1
900	x	600		9.5		5.3
900	x	750		10.0		5.6
900	x	900		10.2		5.8
1200	x	300	150 S	7.1	150 S	4.1
1200	x	450		7.4		4.3
1200	x	600		7.7		4.4
1200	x	900		8.2		4.7
1200	x	1200	100 S	8.8	100 S	5.0
1500	x	300		4.5		2.9
1500	x	450		4.7		3.0
1500	x	600		4.9		3.1
1500	x	900	75 S	5.3	75 S 2.7	3.3
1500	x	1200		5.8		3.5
1500	x	1500		6.0		3.7
1800	x	600		3.3		2.4
1800	x	900	75 S	3.6	75 S	2.5
1800	x	1200		3.8		2.7
1800	x	1500		4.0		2.8
1800	x	1800		4.3		2.9
2100	x	600	75 S	3.3	75 S	2.4
2100	x	900		3.5		2.6
2100	x	1200		3.7		2.7
2100	x	1500		3.9		2.8
2100	x	1800	75 S	4.1	75 S	2.9
2100	x	2100		4.3		3.0
2400	x	600		3.2		2.4
2400	x	900	75 S	3.4	75 S	2.5
2400	x	1200		3.5		2.6
2400	x	1500		3.7		2.7
2400	x	1800		3.8		2.8
2400	x	2400	75 S	4.0	75 S	3.0
3000	x	600		3.1		2.4
3000	x	900		3.2		2.5
3000	x	1200		3.3		2.6
3000	x	1500	75 S	3.4	75 S	2.7
3000	x	1800		3.5		2.7
3000	x	2400		3.7		2.9
3000	x	3000		3.1		2.7
3600	x	600	75 S	3.1	75 S	2.4
3600	x	900		3.1		2.5
3600	x	1200		3.2		2.6
3600	x	1500		3.3		2.6
3600	x	1800	75 S	3.3	75 S	2.7
3600	x	2400		3.5		2.8
3600	x	3000		3.5		2.7

TABLE 1. Maximum fill height on S-load culverts under SNABC traffic loading

- NOTES**
- PERMISSIBLE FILL HEIGHTS
THE RELATIONSHIP BETWEEN THE S-LOAD CULVERT CLASSES DEFINED IN SANS 986 AND THE CORRESPONDING MAXIMUM PERMISSIBLE FILL HEIGHTS TO MEET THE TMH7 REQUIREMENT WAS CALCULATED AND IS GIVEN IN TABLE 1. IF CULVERTS ARE TO BE PLACED UNDER HIGHER FILLS THAN THOSE GIVEN IN THIS TABLE THEN A HIGHER S-LOAD CLASS MUST BE SPECIFIED.
 - DEFINITIONS
YIELDING FOUNDATION CONDITIONS OCCUR WHEN THE FOUNDING MATERIAL AND THE FILL MATERIAL ARE EXPECTED TO SETTLE AT EQUAL RATES (COMPRESSIBLE MATERIAL). THE LOADING IS CALCULATED IN ACCORDANCE WITH TMH7 PART 2 CLAUSE 2.3.3.2(2).
UNYIELDING FOUNDATION CONDITIONS OCCUR WHEN THE FOUNDATION MATERIAL IS INCOMPRESSIBLE (SOFT ROCK OR OTHER HARDER MATERIAL). THE LOADING IS CALCULATED IN ACCORDANCE WITH TMH7 PART 2 CLAUSE 2.3.3.2(3) AND (4).
TRENCH CONDITION OCCURS WHEN CULVERTS ARE LAID IN A NARROW EXCAVATION AND BACKFILLED TO GROUND LEVEL.
EMBANKMENT (UNTRENCHED) CONDITION OCCURS WHEN CULVERTS ARE LAID AT GROUND LEVEL AND BACKFILLED TO FINAL FORMATION LEVEL.
THE COMBINATIONS OF FOUNDATION AND INSTALLATION CONDITIONS USED IN TMH7 ARE DEFINED AS:
CONDITION 1: CULVERTS IN TRENCH IN UNYIELDING FOUNDATION WITH NO PROJECTION.
CONDITION 2: CULVERTS UNTRENCHED ON YIELDING FOUNDATION.
CONDITION 3: CULVERTS UNTRENCHED ON UNYIELDING FOUNDATION FOR $h > 1.7b$.
CONDITION 4: CULVERTS UNTRENCHED ON UNYIELDING FOUNDATION FOR $h \leq 1.7b$.
WHERE h = FILL HEIGHT IN METRES (ABOVE UNIT)
 b = OVERALL TRENCH WIDTH OR, IF UNTRENCHED, OVERALL CULVERT WIDTH, IN METRES.
 - ASSUMPTIONS
THE FOLLOWING ASSUMPTIONS AND CLAUSES OF TMH7 PART 1 AND 2 WERE USED TO COMPILE TABLE 1.
• A MINIMUM FILL HEIGHT OF 300mm OVER THE CULVERT UNITS. WHERE THIS CANNOT BE ACHIEVED A 100mm REINFORCED CONCRETE SLAB MUST BE USED.
• STANDARD TRAFFIC LOADING (SNABC) AS DESCRIBED IN CLAUSE 2.6.1.2.
• FILL MATERIAL UNIT WEIGHT 20 kN/m^3 [CLAUSE 2.3.1]
• CONCRETE UNIT WEIGHT 24 kN/m^3 [CLAUSE 2.2.1]
• HORIZONTAL EARTH PRESSURE 7.8 kN/m^2 PER METRE DEPTH [CLAUSE 2.4.2]
• ULTIMATE LIMIT STATE LOAD FACTORS TABLE 7.
 - BOND CONCRETE TO PRECAST PORTAL SECTION WITH WET TO DRY EPOXY (ABE EPIDERMIX 344 OR APPROVED EQUIVALENT).
 - BACKFILLING SHALL BE CARRIED OUT SIMULTANEOUSLY AND EQUALLY ON BOTH SIDES OF A CULVERT TO PREVENT UNEQUAL LATERAL FORCES FROM OCCURRING.
 - SEE DRAWING 10438000-404 FOR ADDITIONAL NOTES.

PRELIMINARY
(FOR DISCUSSION PURPOSES ONLY)

0 100
100 MILLIMETRES ON ORIGINAL DRAWING

(A) BEFORE CONTRACT COMMENCES
(A) AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS

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CESA
Consulting Engineers South Africa

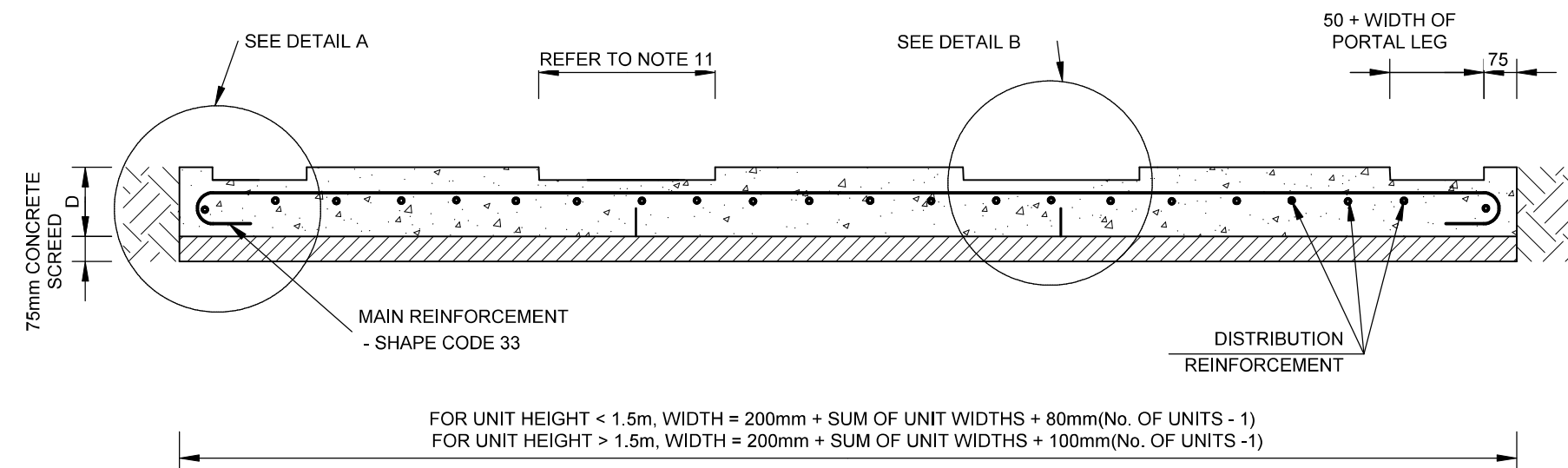
PROJECT
**MOSSSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220**

DRAWING DESCRIPTION
**PRECAST PORTAL CULVERT -
INSTALLATION DETAILS**

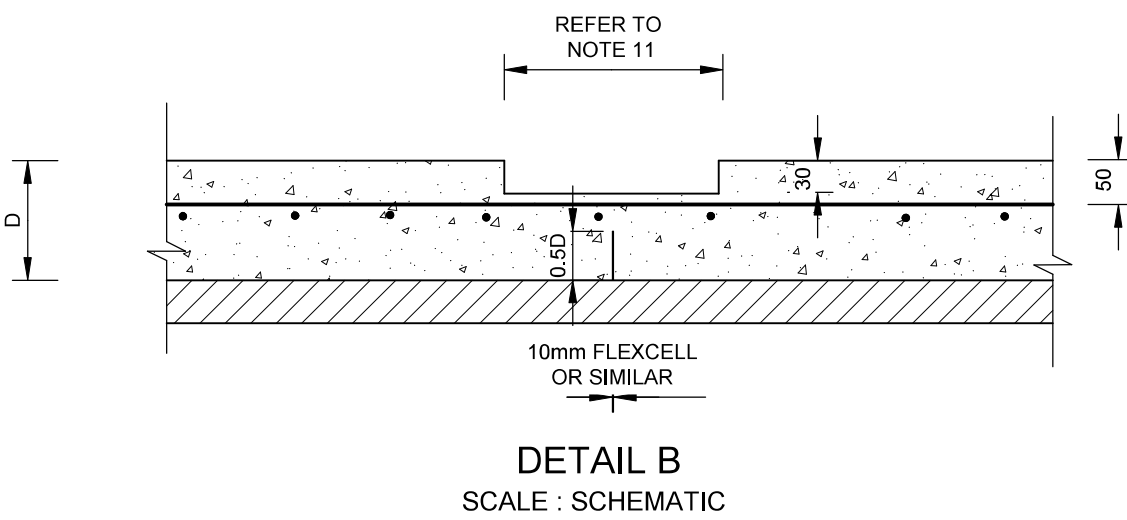
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10427000-402

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED:	DATE: 2023-08-31

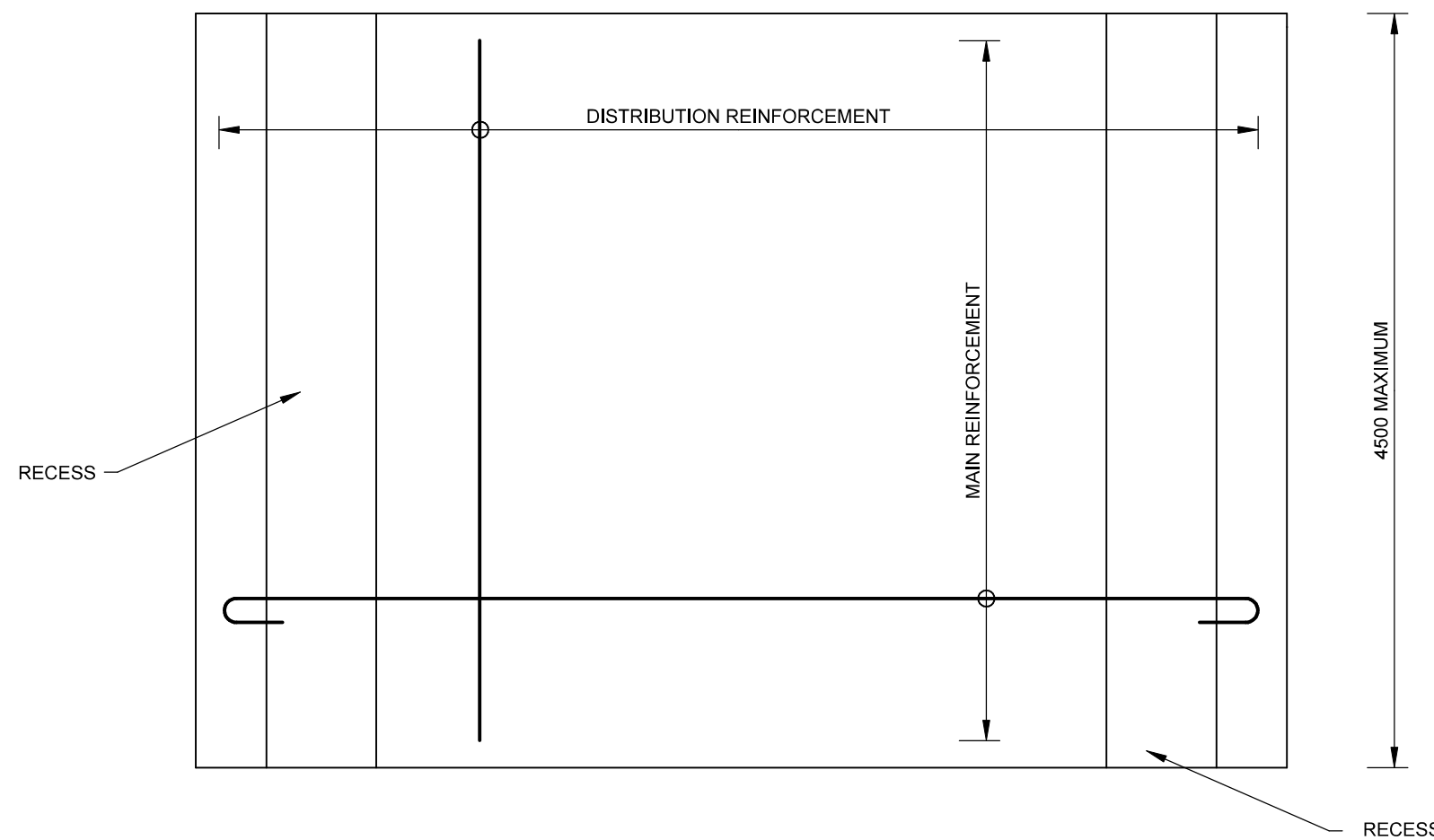
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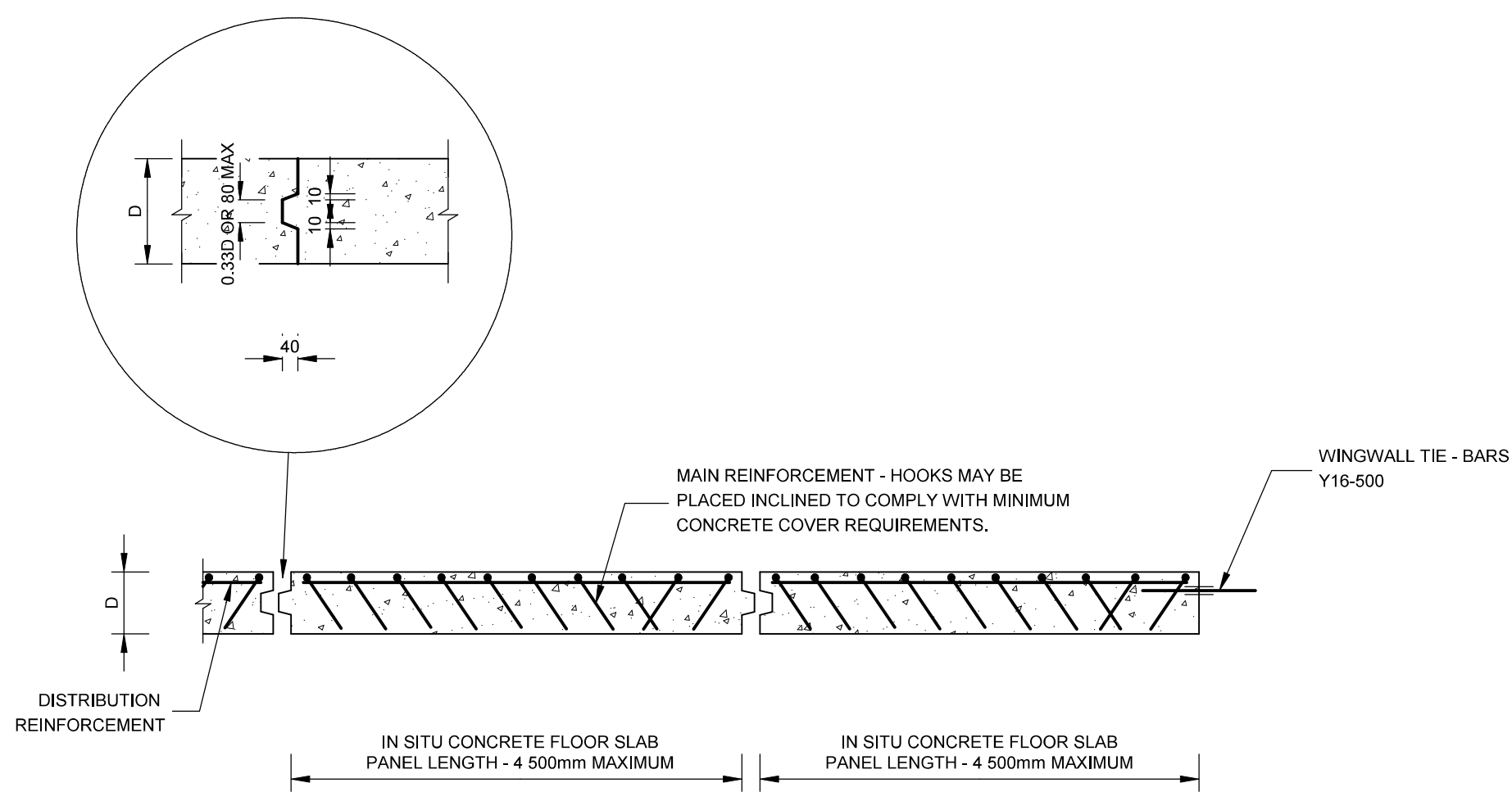
TYPICAL SECTION THROUGH CULVERT
SHOWING FLOOR SLAB REINFORCEMENT
SCALE : SCHEMATIC



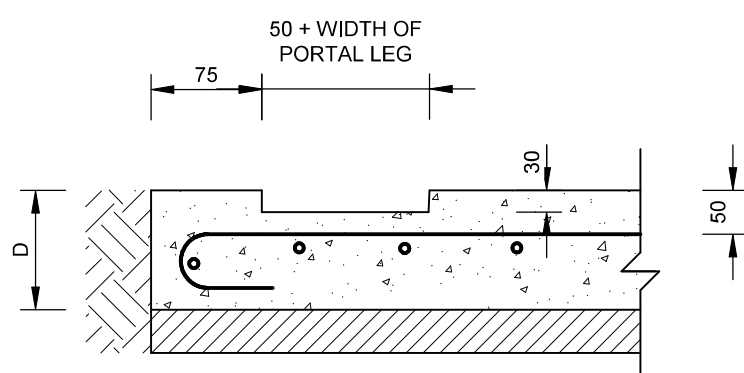
DETAIL B
SCALE : SCHEMATIC



PLAN VIEW FOR SLAB REINFORCEMENT
SCALE : SCHEMATIC



JOINT DETAILS BETWEEN FLOOR SLAB SECTIONS
SCALE : SCHEMATIC



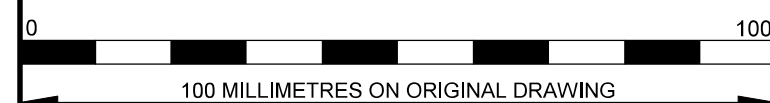
DETAIL A
SCALE : SCHEMATIC

- NOTES:
- ALL CONSTRUCTION AND TESTING MUST BE DONE IN ACCORDANCE WITH SANS 1200.
 - NO DIMENSIONS MAY BE SCALED FROM DRAWINGS.
 - ALL POSITIONS OF EXISTING SERVICES, PIPES, FIRE HYDRANTS, VALVES, BENDS, SPECIALS ETC. NEED TO BE SURVEYED AND CONFIRMED PRIOR TO, AND AT THE CULMINATION OF THE WORKS. ANY ERRORS AND OR DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
 - ABBREVIATIONS:
C.O.S. - CONFIRM ON SITE
(E) - EXISTING
(F) - FUTURE
NGL - NATURAL GROUND LEVEL
 - CONCRETE CLASS 30/19.
 - MINIMUM COVER TO REINFORCEMENT IS 50mm.
 - ALL MAIN REINFORCEMENT TO BE FULLY ANCHORED BOTH SIDES.
 - STOOLS SHALL BE PROVIDED TO SUPPORT THE REINFORCEMENT WHERE THE SPAN OF THE PORTAL IS GREATER THAN 1 200mm.
 - THE COMBINATIONS OF FOUNDATION AND INSTALLATION CONDITIONS USED ARE DEFINED AS FOLLOWS:

CONDITION 1: CULVERTS IN TRENCH ON UNYIELDING FOUNDATION WITH NO PROJECTION
CONDITION 2: CULVERTS UNTRENCHED ON YIELDING FOUNDATION
CONDITION 3: CULVERTS UNTRENCHED ON UNYIELDING FOUNDATION FOR $h > 1.7 \times b$
CONDITION 4: CULVERTS UNTRENCHED ON UNYIELDING FOUNDATION FOR $h \leq 1.7 \times b$

WHERE h = FILL HEIGHT IN METRES
 b = OVERALL TRENCH WIDTH OR, IF UNTRENCHED, OVERALL CULVERT WIDTH, IN METRES.
 - FOR $H \leq 1.5m$, THE WIDTH = $130mm + 2 \times$ WIDTH OF PORTAL LEG. FOR $H > 1.5m$, THE WIDTH = $150mm + 2 \times$ WIDTH OF PORTAL LEG.
 - PROPER CONCRETE SPACERS TO BE USED.
 - NO CONCRETE TO BE CAST WITHOUT THE APPROVAL OF THE ENGINEER.
 - CONSTRUCTION JOINT SURFACES TO BE ROUGHENED ± 24 HOURS AFTER POUR.
 - SURFACES TO BE SLUSHED JUST BEFORE NEXT POUR.
 - ADDITION OF CEMENT POWDER TO ACHIEVE STEEL FLOAT FINISH (DUSTING IS NOT PERMITTED).

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Nr.	DATE	AMENDMENTS

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6500, South Africa



PROJECT
MOSSSEL BAY: EAGLE'S CREEK:
PORTIONS 47, 187 & 188 OF THE FARM
VYF BRAKKE FONTEINEN No 220

DRAWING DESCRIPTION
PRECAST PORTAL CULVERT -
IN-SITU CONCRETE BASE SLAB

DRAWING NO.
10427000-401

DESIGNED: DKJ	CHECKED: DKJ
DRAWN: LA	SCALE: AS SHOWN A1
APPROVED:	DATE: 2023-08-31
Mossel Bay - 10427001 Eagles Creek 1:02 Concept 1:04 Draw 1	
FILE PATH: 10427000-401 (CULV BASE).d4	

FOUNDATION CONDITIONS 1 & 2					FOUNDATION CONDITIONS 3 & 4			
TRENCHED ON UNYIELDING AND UNTRENCHED ON YIELDING					UNTRENCHED ON UNYIELDING			
SPAN (mm)	CLASS	FLOOR THICKNESS D - (mm)	MAIN REINFORCEMENT	DISTRIBUTION REINFORCEMENT	CLASS	FLOOR THICKNESS D - (mm)	MAIN REINFORCEMENT	DISTRIBUTION REINFORCEMENT
600	200 S	150	Y12-150	Y10-250	200 S	150	Y10-200	Y10-250
750	175 S	150	Y12-150	Y10-250	175 S	150	Y10-200	Y10-250
900	175 S	150	Y12-120	Y10-250	175 S	150	Y10-200	Y10-250
1200	150 S	160	Y12-100	Y10-200	150 S	160	Y12-200	Y10-200
1500	100 S	175	Y12-100	Y10-200	100 S	175	Y12-200	Y10-200
1800	75 S	190	Y12-100	Y10-200	75 S	190	Y12-200	Y10-200
2100	75 S	220	Y12-100	Y10-200	75 S	220	Y12-200	Y10-200
2400	75 S	260	Y12-100	Y10-200	75 S	260	Y12-100	Y10-200
3000	75 S	320	Y16-120	Y10-200	75 S	320	Y16-200	Y10-200
3600	75 S	330	Y16-100	Y10-200	75 S	330	Y16-200	Y10-200