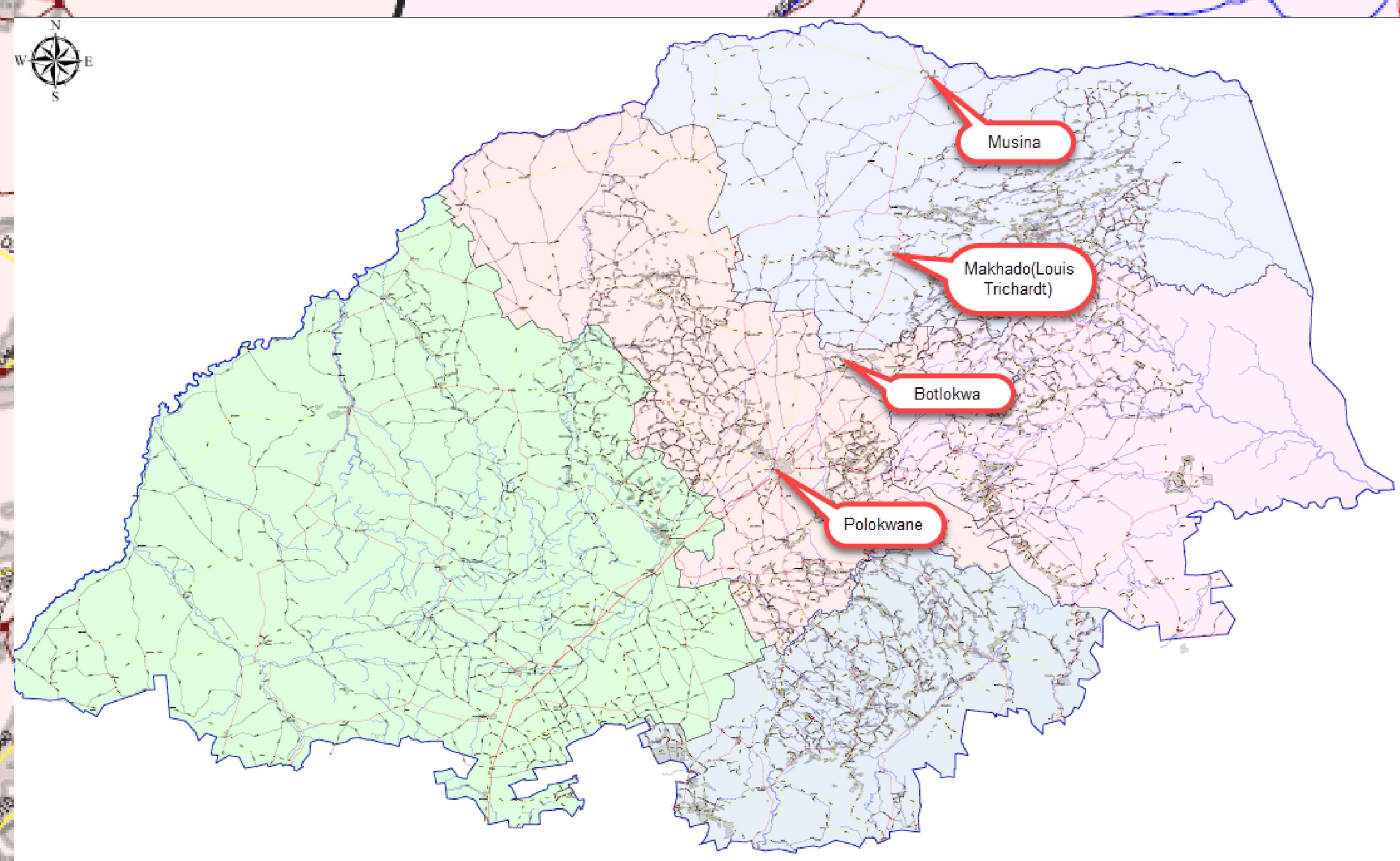
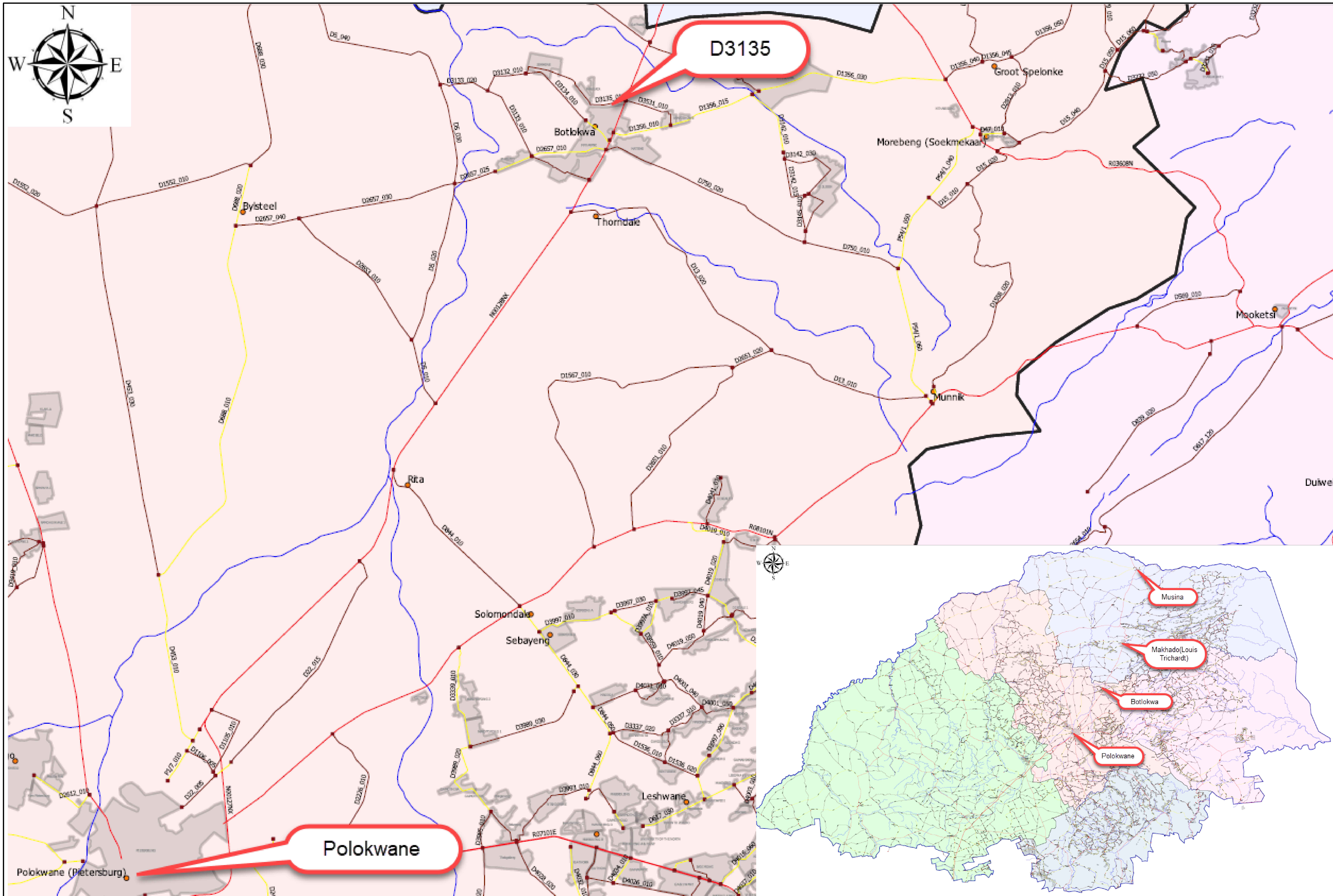


**CONTRACT NRA S.002-001-2018/1  
CONSULTING ENGINEERING SERVICES FOR THE UPGRADING OF  
BOTLOKWA (MATOKS) CLINIC ACCESS ROAD**

[illegible]

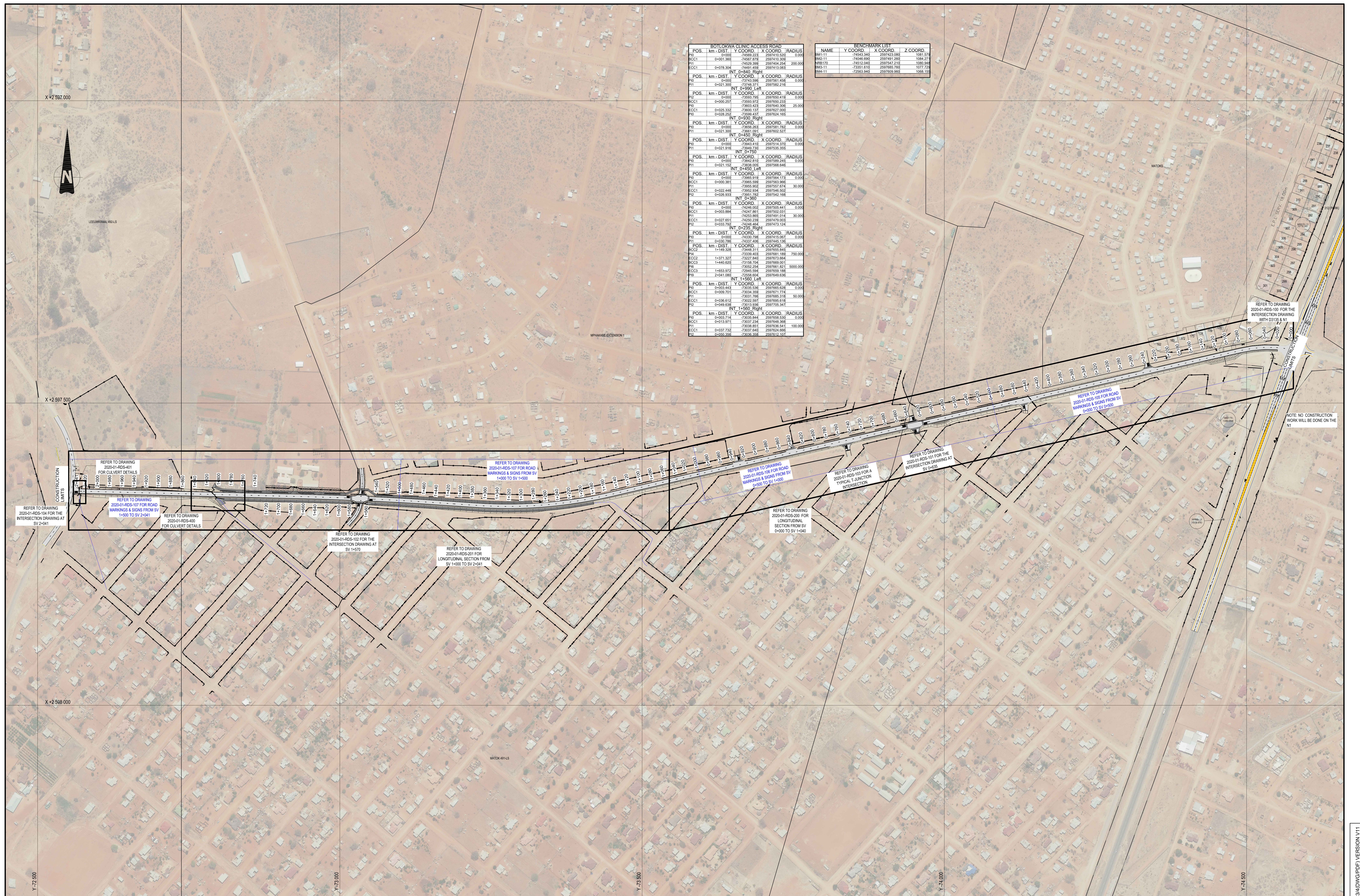
TYPICAL DRAWINGS - ROADWORKS & DRAINAGE		SANRAL DWG NO.	CONSULTANT DWG No.
<b><u>DESCRIPTION</u></b>			
<b><u>INTERSECTIONS &amp; ROAD MARKINGS &amp; ROAD SIGN PLACEMENT</u></b>			
D3158 & N1 INTERSECTION LAYOUT	---	2020-01-RDS-100-V2	
ROAD SIGNS & ROAD MARKINGS SV 0+000 TO SV 1+000	---	2020-01-RDS-101-V2	
ROAD SIGNS & ROAD MARKINGS SV1+000 TO SV 2+041	---	2020-01-RDS-102-V2	
<b><u>LAYOUT AND LONGITUDINAL SECTIONS DRAWINGS</u></b>			
LAYOUT AND LONGITUDINAL SECTION KM 0.000 TO KM 1.040	---	2020-01-RDS-200-V2	
LAYOUT AND LONGITUDINAL SECTION KM 1.000 TO KM 2.041	---	2020-01-RDS-201-V2	
<b><u>CROSS SECTION DRAWINGS</u></b>			
CROSS SECTIONS KM 0.000 TO KM 0.320	---	2020-01-RDS-300-V2	
CROSS SECTIONS KM 0.340 TO KM 0.640	---	2020-01-RDS-301-V2	
CROSS SECTIONS KM 0.660 TO KM 0.980	---	2020-01-RDS-302-V2	
CROSS SECTIONS KM 1.000 TO KM 1.320	---	2020-01-RDS-303-V2	
CROSS SECTIONS KM 1.340 TO KM 1.660	---	2020-01-RDS-304-V2	
CROSS SECTIONS KM 1.680 TO KM 1.980	---	2020-01-RDS-305-V2	
CROSS SECTIONS KM 2.000 TO KM 2.040	---	2020-01-RDS-306-V2	
<b><u>CULVERT DRAWINGS</u></b>			
CULVERT @ SV 2+030	---	2020-01-RDS-401-V2	
CULVERT @ SV 2+030	---	2020-01-RDS-402-V2	
<b><u>EXISTING SERVICES DRAWING</u></b>			
EXISTING SERVICES	---	2020-01-RDS-500-V2	





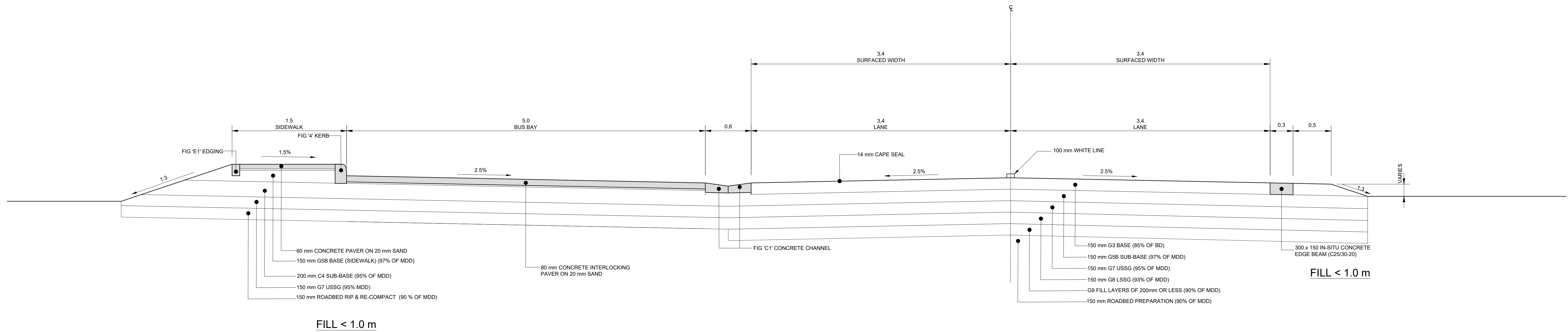
V2 24/01/2023 FOR TENDER PURPOSES		K BRINK		CONSTRUCTION RECORD (AS-BUILT)		WESTERN CAPE		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF BOTLOKWA (MATOKS)		PROJECT NUMBER		2020-01	
V1 10/08/2021 ORIGINAL VERSION		K BRINK		WORKS CONTRACT ENGINEER		LATHISO CONSULTING ENGINEERS		NAME		NAME		38 IDA STREET		PRIVATE BAG X17		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING		CLINIC ACCESS ROAD		DRAWING LOCATION DATA		START	
No. DATE REVISION		CONSULT. ENG.		Name		P.O. BOX 357		Prof. Reg. No.		Name		MENLO PARK		LYNWOOD RIDGE		ROUTE		SECTION		D3135		END	
				Date		CAPE TOWN		IE2015-02		Date		TSHWANE		TSHWANE		1		1		D3135		1	
				SANRAL PROJECT MANAGER		Tel: 066 274 8594		CHECKED BY		Date		040		040		0.000		2.1		DRAWING TYPE		LOCALITY PLAN	
				Name				NAME		NAME		PO Box 415		PRIVATE BAG X17		DRAWING km DISTANCE		BRIDGE/STRUCTURE No.		CONSULTANT DRAWING No.		N/A	
				Date				Prof. Reg. No.		Date		South Africa		TSHWANE		2020-01-RDS-002		2020-01-RDS-002		VER		V2	
								DRAWN BY		Date		Tel: (012) 426 8000		TSHWANE		SCALE : NONE		SHEET 1 OF 1		SANRAL DOCUMENT #			
								NAME															





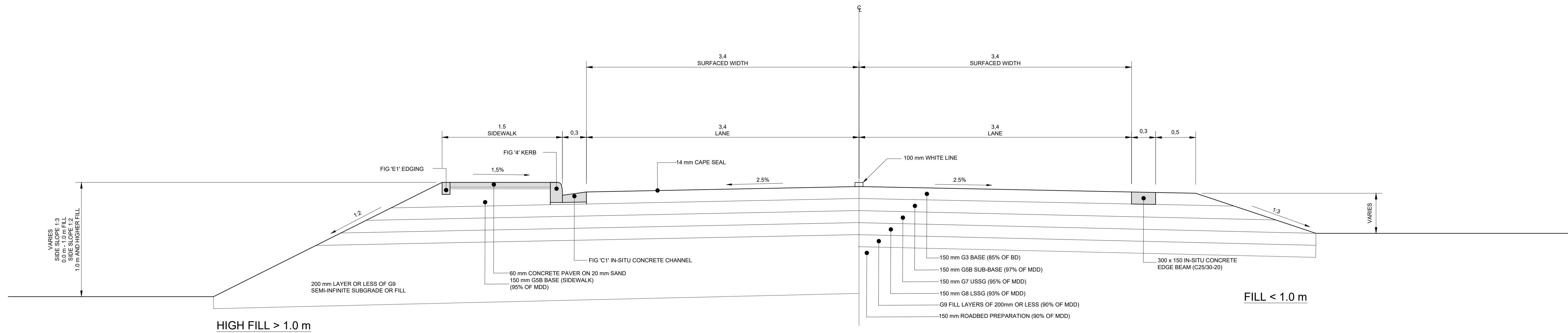
		CONSTRUCTION RECORD (AS-BUILT)		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD				PROJECT NUMBER		2020-01	
		WORKS CONTRACT ENGINEER		36 BOWATER CLOSE MELKOSSTRABD CAPE TOWN 7441		NAME : B CIRILLERS Prof. Reg. No. : 950340 Date : 01/11/2021		48 Tambotie Avenue Val de Grace Pretoria 0154		SANRAL SOUTH AFRICAN NATIONAL ROADS AGENCY		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING		DRAWING LOCATION DATA				START		END	
		Name : Prof. Reg. No. : Date :		CHECKED BY		NAME : B CIRILLERS Prof. Reg. No. : 950340 Date : 01/11/2021		PO Box 415 Pretoria 0001 South Africa Tel: (012) 484 8000		PRIVATE BAG X17 LEWYSDORP RIDGE TSHANEANE 0040		DRAWING TYPE		ROUTE				D1316		D1316	
		SANRAL PROJECT MANAGER		P.O. BOX 357 MELKOSSTRABD CAPE TOWN 7441 Tel: 066 274 8594		NAME : B CIRILLERS Prof. Reg. No. : 950340 Date : 01/11/2021		Tel: (012) 426 6200		BUILDING SOUTH AFRICA THROUGH BETTER ROADS		DRAWING km DISTANCE		SECTION				1		1	
		Name : Date :				NAME : G KUNGWANE Prof. Reg. No. : Date :						KEY PLAN		DRAWING PLAN & DRAINAGE				0.000		2.041	
		FOR TENDER PURPOSES		K BRINK								BRIDGE/STRUCTURE No.		N/A				2020-01-RDS-003		VER 1	
		ORIGINAL VERSION		K BRINK								CONSULTANT DRAWING No.		SANRAL DOCUMENT #							
		CONSULT. ENG		REVISION								SCALE : 1:2000		SHEET				1		OF 1	
		DATE																			





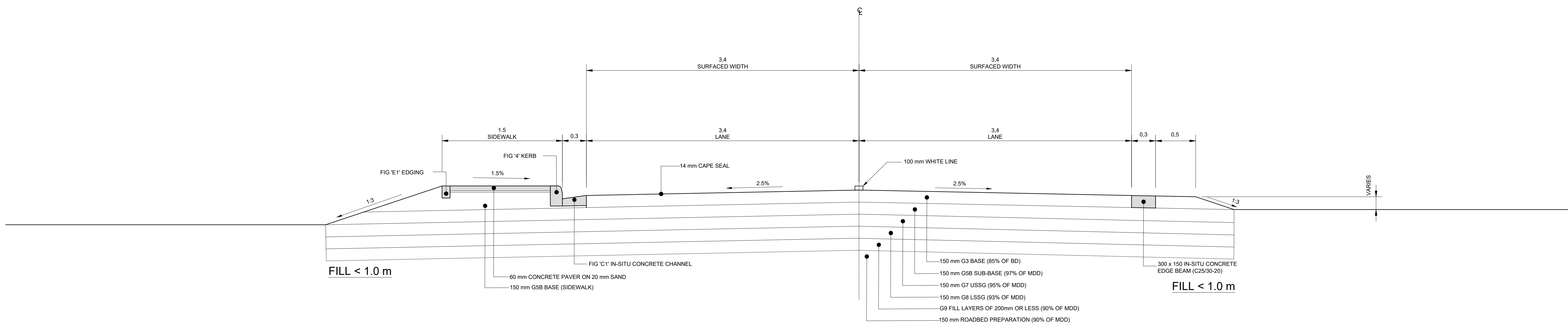
TYPICAL CROSS SECTION FOR A BUS BAY

SCALE 1:25



TYPICAL CROSS SECTION FROM SV 0+010 TO SV 1+180 & FROM SV 1+990 TO END

SCALE 1:25



TYPICAL CROSS SECTION FROM SV 0+010 TO SV 1+180 & FROM SV 1+990 TO END

SCALE 1:25

V2	24/01/2023	FOR TENDER PURPOSES	K BRINK
V1	10/08/2021	ORIGINAL VERSION	K BRINK
No.	DATE	REVISION	CONSULT. ENG.

CONSTRUCTION RECORD (AS-BUILT)	
WORKS CONTRACT ENGINEER	
Name :	
Prof. Reg. No. :	
Date :	
SANRAL PROJECT MANAGER	
Name :	
Date :	

**LATHISO**  
CONSULTING ENGINEERS

**WESTERN CAPE**  
6 BOWATER CLOSE  
MELKBOSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 357  
MELKBOSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DRAWN BY	
NAME	K BRINK

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	10/08/2021

**HEAD OFFICE**  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0154  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000



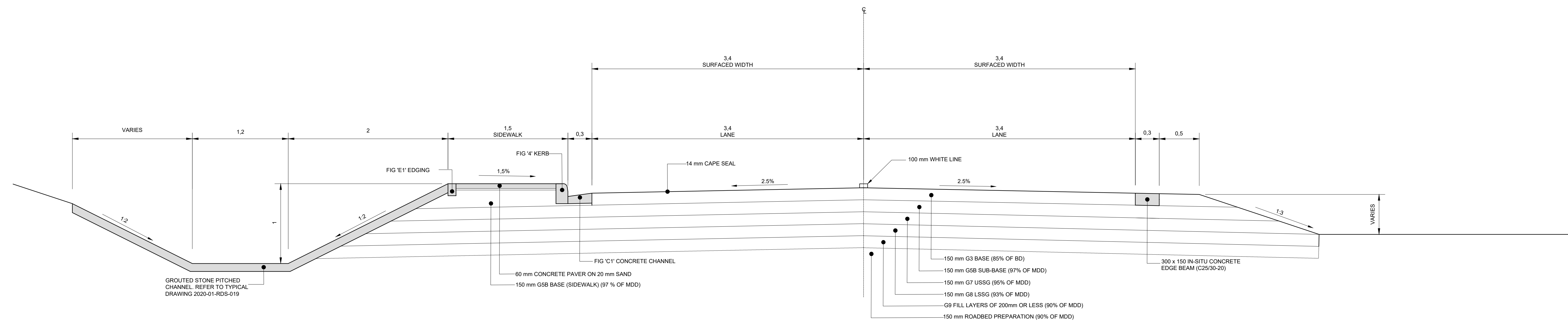
**NORTHERN REGION**  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

ACCEPTANCE	
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING	
for the SA NATIONAL ROADS AGENCY SOC LTD.	
Date:	

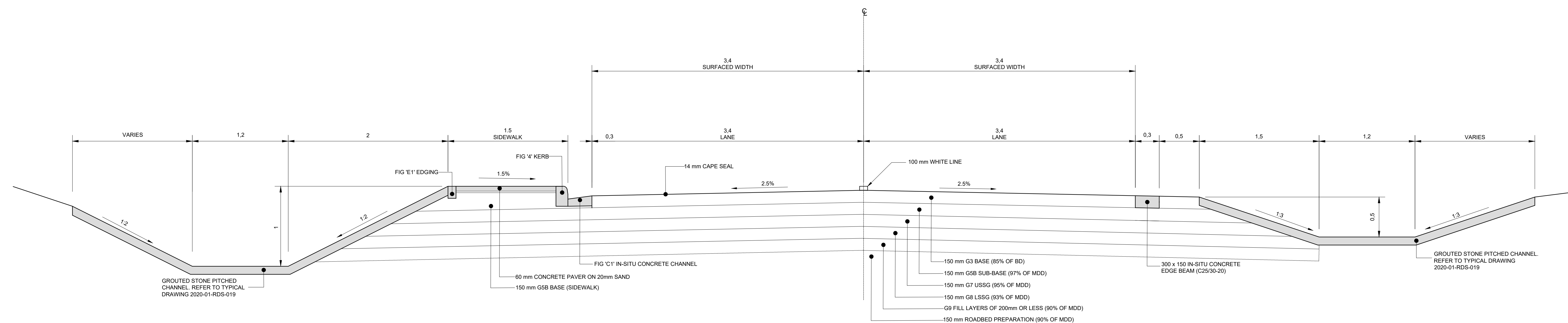
THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
CROSS SECTION & PAVEMENT DESIGN CROSS SECTION AND PAVEMENT DESIGN FOR MATOKS	
SCALE : 1:25	
SHEET 1 OF 3	

PROJECT NUMBER		2020-01	
DRAWING LOCATION DATA		START	END
ROUTE		D3135	D3135
SECTION		1	1
DRAWING km DISTANCE		0.000	2.1
DRAWING TYPE		CROSS-SECTION	
BRIDGE/STRUCTURE No.		N/A	
CONSULTANT DRAWING No.		2020-01-RDS-004	
SANRAL DOCUMENT #		----	
		VER	V2

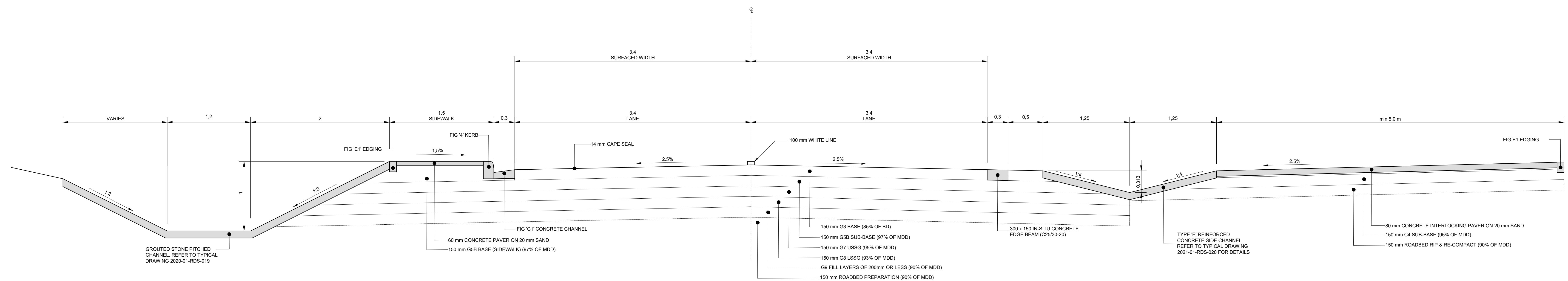




TYPICAL CROSS SECTION FROM SV 1+180 TO SV 1+280 & FROM SV 1+710 TO SV 1+800  
SCALE 1:20



TYPICAL CROSS SECTION FROM SV 1+280 TO SV 1+670  
SCALE 1:25



TYPICAL CROSS SECTION FROM SV 1+670 TO SV 1+710 (@ CLINIC)  
SCALE 1:20

				CONSTRUCTION RECORD (AS-BUILT)		WESTERN CAPE		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD				PROJECT NUMBER		2020-01					
				WORKS CONTRACT ENGINEER		6 BOWATER CLOSE MELKBOSSTRAND CAPE TOWN 7441		NAME K BRINK		Name : B CILLIERS		48 Tambotie Avenue Val de Grace Pretoria 0184		38 IDA STREET MENLO PARK TSHWANE 0081		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATEVER CAUSE OR HOWEVER ARISING						DRAWING LOCATION DATA		START		END			
				Name Prof. Reg. No. Date		P.O. BOX 357 MELKBOSSTRAND CAPE TOWN 7441		Prof. Reg. No. IE2015-02		Prof. Reg. No. 950340		Date 10/08/2021		PO Box 415 Pretoria 0001 South Africa		PRIVATE BAG X17 LYNWOOD RIDGE TSHWANE 0040								ROUTE		D3135		D3135	
				SANRAL PROJECT MANAGER		Tel: 066 274 8594		CHECKED BY						SANRAL		for the SA NATIONAL ROADS AGENCY SOC LTD.						SECTION		1		1			
				Name Date				NAME B CILLIERS		Prof. Reg. No. 950340				Tel: (012) 844 8000		Tel: (012) 426 6200								DRAWING km DISTANCE		0.000		2.1	
V2 24/01/2023 FOR TENDER PURPOSES K BRINK								NAME DRAWN BY																DRAWING TYPE		CROSS-SECTION			
V1 10/08/2021 ORIGINAL VERSION K BRINK								NAME K BRINK																BRIDGE/STRUCTURE No.		N/A			
No. DATE REVISION CONSULT. ENG.																								CONSULTANT DRAWING No.		2020-01-RDS-005		VER	
																								SANRAL DOCUMENT #		----		V2	
																								SCALE : 1:25		SHEET 2 OF 3			

**LATHISO**  
CONSULTING ENGINEERS

WESTERN CAPE  
6 BOWATER CLOSE  
MELKBOSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 357  
MELKBOSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY  
NAME : K BRINK  
Prof. Reg. No. : IE2015-02  
CHECKED BY  
NAME : B CILLIERS  
Prof. Reg. No. : 950340  
DRAWN BY  
NAME : K BRINK

CONSULTANT APPROVAL  
Name : B CILLIERS  
Prof. Reg. No. : 950340  
Date : 10/08/2021

HEAD OFFICE  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0154  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000

**SANRAL**  
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD  
BUILDING SOUTH AFRICA  
THROUGH BETTER ROADS

NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

ACCEPTANCE  
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for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date:

THE UPGRADING OF BOTLOKWA (MATOKS)  
CLINIC ACCESS ROAD  
CROSS SECTION & PAVEMENT DESIGN  
CROSS SECTION AND PAVEMENT DESIGN FOR  
MATOKS  
SCALE : 1:25  
SHEET 2 OF 3

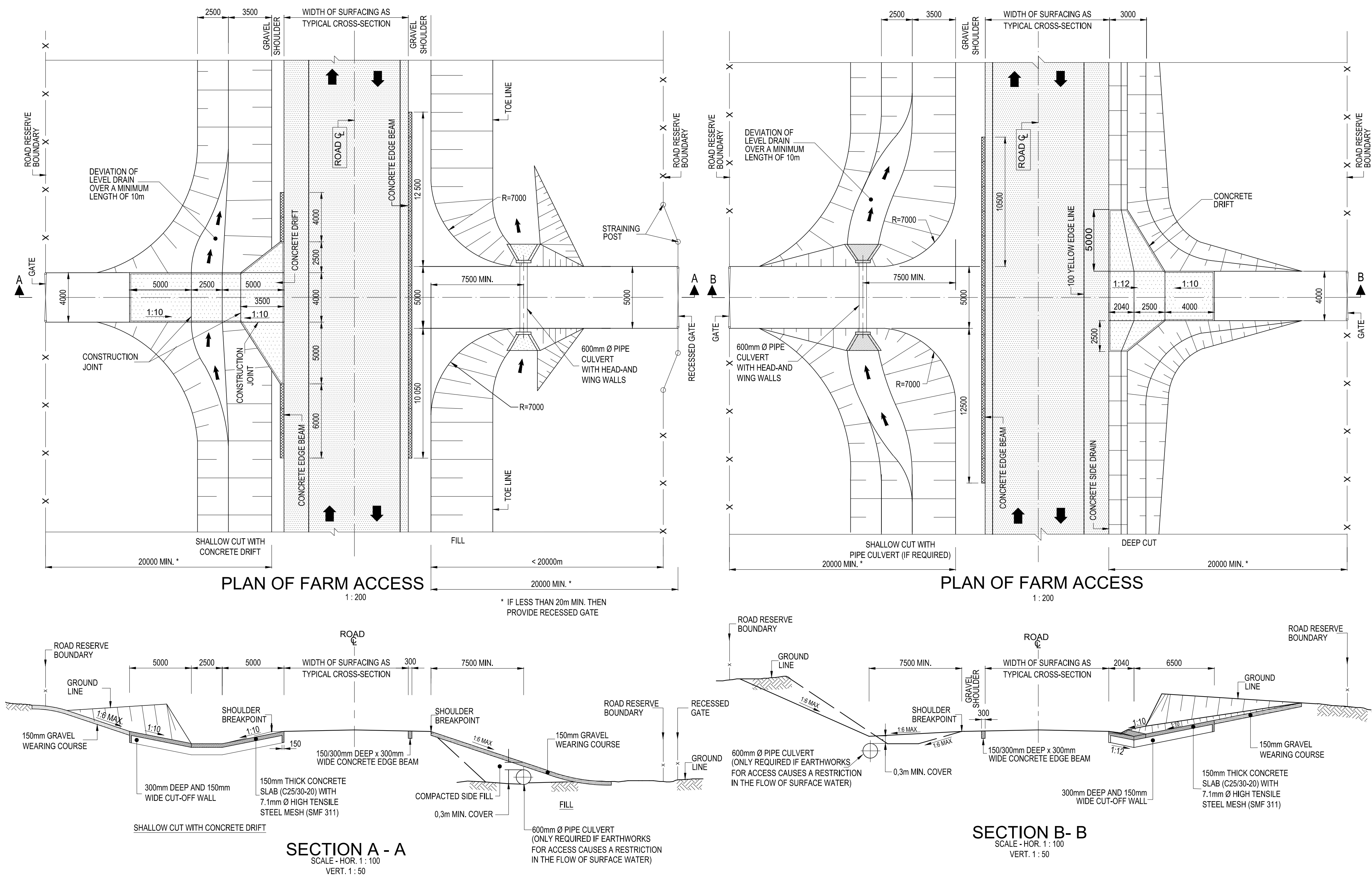
PROJECT NUMBER  
DRAWING LOCATION DATA  
ROUTE  
SECTION  
DRAWING TYPE  
BRIDGE/STRUCTURE No.  
CONSULTANT DRAWING No.  
SANRAL DOCUMENT #  
2020-01  
D3135  
1  
0.000  
N/A  
2020-01-RDS-005  
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SANRAL TITLE BLOCK #1648234(OWGPDF) VERSION V11



PROJECT NUMBER	2020-01	
DRAWING LOCATION DATA	START	END
ROUTE	D3135	D3135
SECTION	1	1
DRAWING km DISTANCE	0.000	2.1
DRAWING TYPE	CROSS-SECTION	
BRIDGE/STRUCTURE No.	N/A	
CONSULTANT DRAWING No.	2020-01-RDS-006	VER V2
SANRAL DOCUMENT #	----	





CONSTRUCTION RECORD (AS-BUILT)			
WORKS CONTRACT ENGINEER			
Name : _____			
Prof. Reg. No. : _____			
Date : _____			
SANRAL PROJECT MANAGER			
Name : _____			
Date : _____			
V2	24/01/2023	FOR TENDER PURPOSES	K BRINK
V1	10/08/2021	ORIGINAL VERSION	K BRINK
No.	DATE	REVISION	CONSULT. ENG.

**LATHISO**  
CONSULTING ENGINEERS

**WESTERN CAPE**  
6 BOWATER CLOSE  
MELKBOSSSTRAND  
CAPE TOWN  
7441  
  
P.O. BOX 357  
MELKBOSSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DRAWN BY	
NAME	K BRINK

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	10/08/2021

HEAD OFFICE  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0184  
  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000



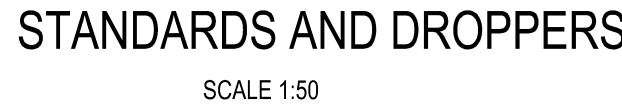
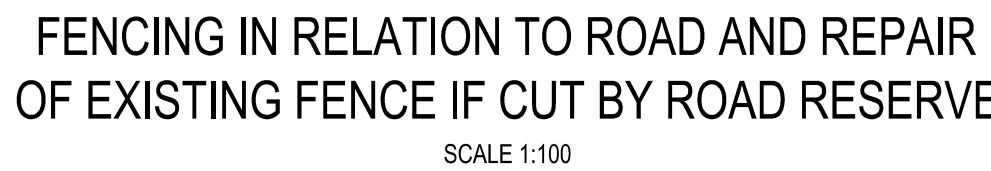
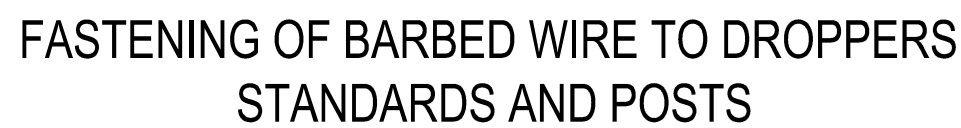
NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

ACCEPTANCE  
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for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date: \_\_\_\_\_

THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
T - JUNCTION WITH GRAVEL CLASS 2 ROADS & FARM ROAD ACCESSSES & DRIFT DETAIL	
SCALE : AS SHOWN	SHEET 1 OF 1

PROJECT NUMBER		2020-01	
DRAWING LOCATION DATA		START	END
ROUTE		D3135	D3135
SECTION		1	1
DRAWING km DISTANCE		0.000	2.1
DRAWING TYPE		INTERSECTION	
BRIDGE/STRUCTURE No.		N/A	
CONSULTANT DRAWING No.		2020-01-RDS-007	
SANRAL DOCUMENT #		-	
		VER	V2





- COMPLYING  
WITH  
CKS 82

- COMPLYING  
WITH  
CKS 82

**LATHISO**  
CONSULTING ENGINEERS

**P.O. BOX 357  
MELKBOSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594**

**CONSULTANT APPROVAL**

---

Name : B CILLIERS  
Prof. Reg. No. : 950340  
Date : 10/08/2021

**PO Box 415  
Pretoria 0001  
South Africa**

**Tel: (012) 844 8000**



**PRIVATE BAG X17  
LYNWOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200**

for the SA NATIONAL ROADS AGENCY SOC LTD.

**FENCING & RELATED ITEMS STOCK PROOF FENCING  
9 STRANDS ON TIMBER POSTS  
FENCING & RELATED ITEMS VERMIN PROOF FENCING ON STEEL POSTS**

DRAWING km DISTANCE	0.000	2.1
DRAWING TYPE	FENCING	
BRIDGE/STRUCTURE No.	N/A	
CONSULTANT DRAWING No.	2020-01-RDS-008	V



				CONSTRUCTION RECORD (AS-BUILT)
				WORKS CONTRACT ENGINEER
				Name : _____
				Prof. Reg. No. : _____
				Date : _____
				SANRAL PROJECT MANAGER
				Name : _____
				Date : _____
V2	24/01/2023	FOR TENDER PURPOSES	K BRINK	
V1	10/08/2021	ORIGINAL VERSION	K BRINK	
No.	DATE	REVISION	CONSULT. ENG.	

**LATHISO**  
CONSULTING ENGINEERS

**WESTERN CAPE**  
**6 BOWATER CLOSE**  
**MELKBOSSSTRAND**  
**CAPE TOWN 7441**  
**P.O. BOX 357**  
**MELKBOSSSTRAND**  
**CAPE TOWN 7441**  
**Tel: 066 274 8594**

DESIGNED BY	NAME	K BRINK
Prof. Reg. No.	IE2015-02	
CHECKED BY	NAME	B CILLIERS
Prof. Reg. No.	950340	
DRAWN BY	NAME	K BRINK

CONSULTANT APPROVAL	NAME	B CILLIERS
Prof. Reg. No.	950340	
Date	10/08/2021	

**HEAD OFFICE**  
**48 Tambotie Avenue**  
**Val de Grace**  
**Pretoria 0184**  
**PO Box 415**  
**Pretoria 0001**  
**South Africa**  
**Tel: (012) 424 8000**

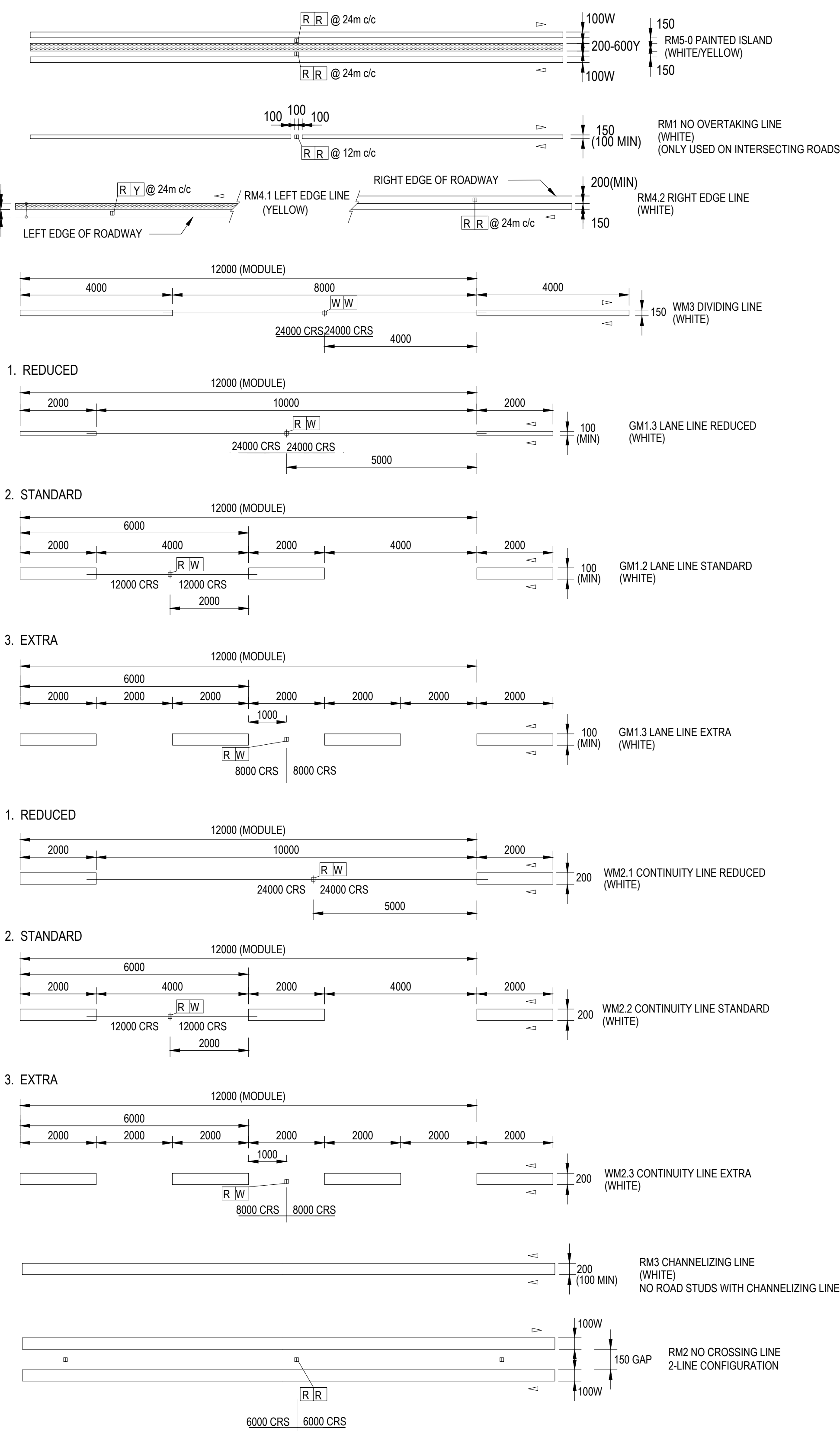
**SANRAL**  
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC. LTD.  
**BUILDING SOUTH AFRICA**  
**THROUGH BETTER ROADS**

**NORTHERN REGION**  
**38 IDA STREET**  
**MENLO PARK**  
**TSWANE 0081**  
**PRIVATE BAG X17**  
**LYNWOOD RIDGE**  
**TSWANE 0040**  
**Tel: (012) 426 6200**

**ACCEPTANCE**  
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for the SA NATIONAL ROADS AGENCY SOC. LTD.  
Date: \_\_\_\_\_

<b>THE UPGRADING OF BOTLOKWA (MATOKS)</b> <b>CLINIC ACCESS ROAD</b>	<b>PROJECT NUMBER</b> <b>2020-01</b>
<b>ROAD MARKINGS</b> <b>ROAD MARKINGS URBAN &amp; RURAL LONGITUDINAL LINE TYPES</b>	<b>DRAWING LOCATION DATA</b> <b>ROUTE</b> <b>D3135</b> <b>SECTION</b> <b>1</b> <b>DRAWING km DISTANCE</b> <b>0.000</b> <b>BRIDGE/STRUCTURE No.</b> <b>N/A</b> <b>CONSULTANT DRAWING No.</b> <b>2020-01-RDS-009</b> <b>SANRAL DOCUMENT #</b> <b>-</b>
<b>SCALE: AS SHOWN</b>	<b>START</b> <b>D3135</b> <b>END</b> <b>D3135</b> <b>ROAD MARKINGS</b> <b>VER</b> <b>2</b>

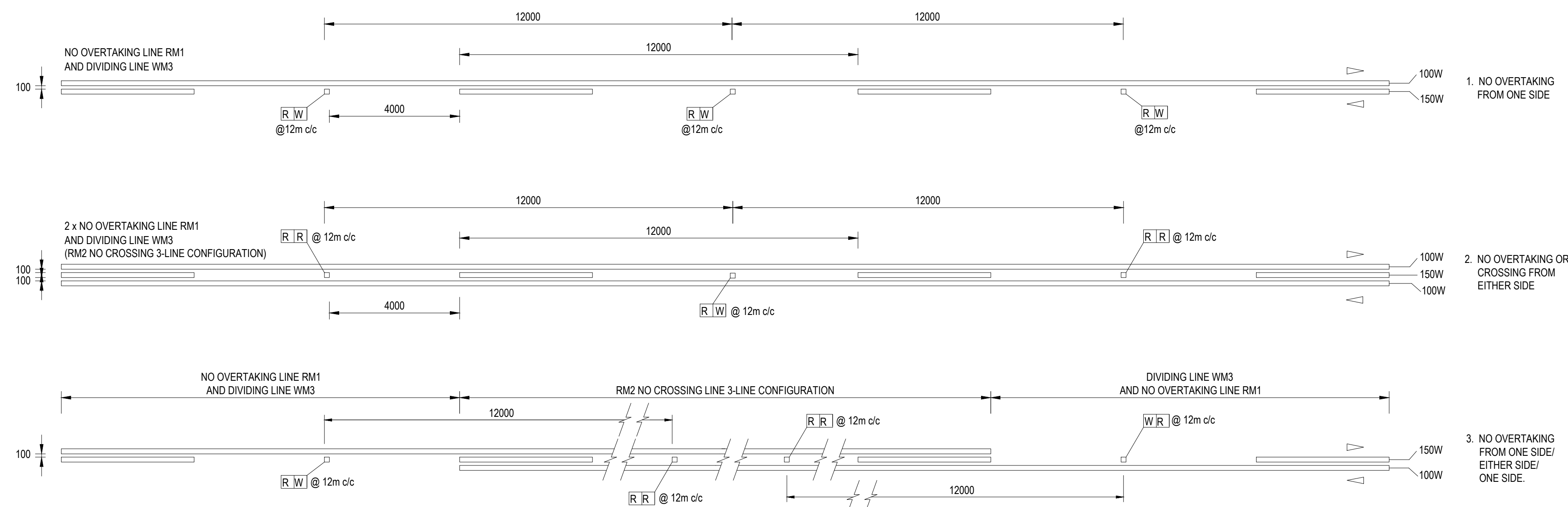
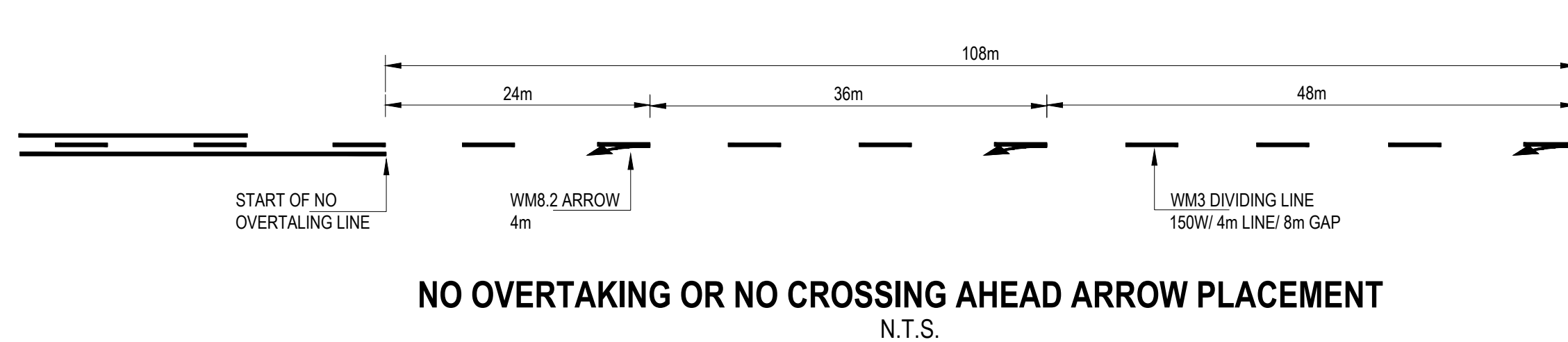
<b>ROAD MARKINGS</b> <b>ROAD MARKINGS URBAN &amp; RURAL LONGITUDINAL LINE TYPES</b>	<b>ROAD MARKINGS</b> <b>VER</b> <b>2</b>
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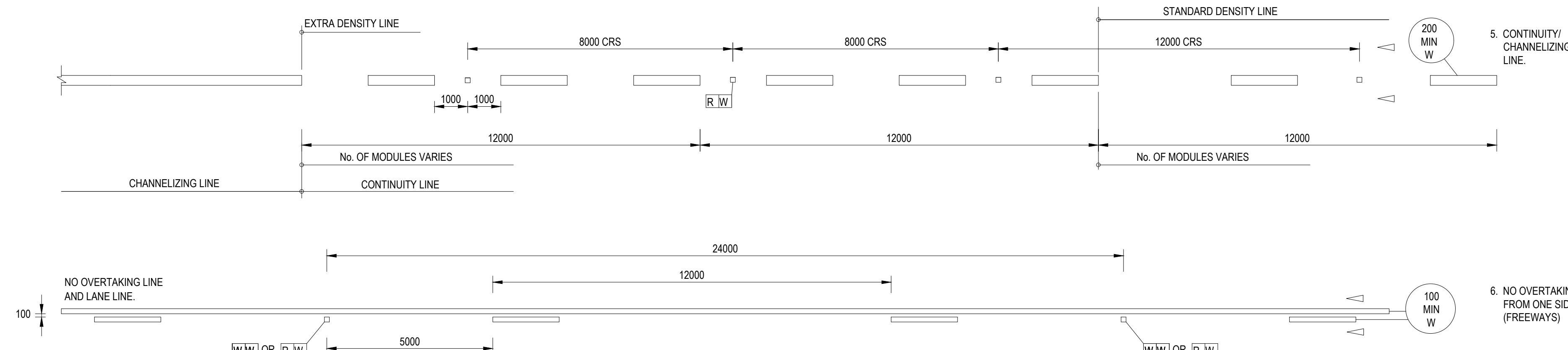
- NOTES (RURAL LONGITUDINAL LINE TYPES)**
- DIRECTION OF TRAFFIC MOVEMENT WITH RESPECT TO THE MARKING INDICATED THIS > OR <.
  - PAINTED ISLAND MARKINGS SHALL BE USED AS A STANDARD DIVIDING MARKING ON ALL 4-LANE 2-WAY ROADWAYS.
  - A NO OVERTAKING LINE MAY BE USED TO REPLACE A DIVIDING LINE MARKING ON MINOR ROADS OR TO MATCH PROVINCIAL ROAD MARKING POLICY ON AN INTERSECTING ROADWAY AS APPROPRIATE. A NO OVERTAKING LINE MAY BE USED IN COMBINATION WITH A LANE LINE. (NORMALLY ON A FREEWAY CARRIAGEWAY.)
  - A LEFT EDGE LINE MARKING SHALL NOT EXTEND ACROSS THE POINT OF DEPARTURE FROM A THROUGH PORTION OF ROADWAY.
  - THE DIVIDING LINE MARKING REPLACES THE PREVIOUS 'CENTRE LINE' MARKING AND SHALL ONLY BE USED BETWEEN LANES CARRYING OPPOSING TRAFFIC FLOWS WHERE OVERTAKING IS PERMITTED.
  - A CONTINUITY LINE MAY BE SPECIFIED IN ONE OF THREE DENSITIES - 1. REDUCED 2. STANDARD OR 3. EXTRA. A CONTINUITY LINE MAY BE USED TO DEFINE THE LIMIT OF THE THROUGH PORTION OF A ROADWAY, EITHER AT A HIGH SPEED EXIT (OFF-RAMP OR SLIP ROAD), A DEDICATED EXIT LANE ON FREEWAY, OR AT-GRADE ROAD. (RIGHT OR LEFT TURN.)
  - A LANE LINE, CONTINUITY LINE OR CHANNELIZING LINE SHALL NOT BE USED BETWEEN OPPOSING TRAFFIC MOVEMENTS.

**LEGEND:**  
R = RED  
W = WHITE  
Y = YELLOW

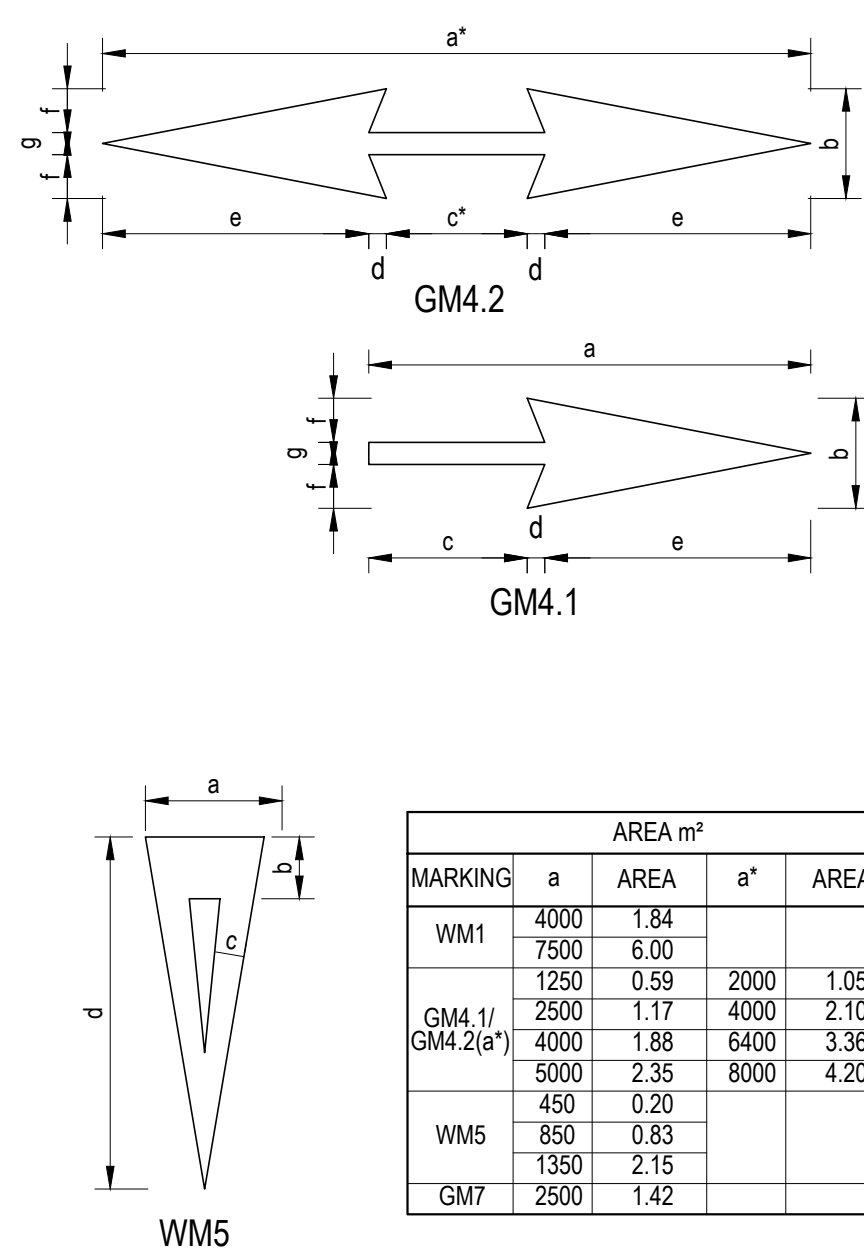
### URBAN LONGITUDINAL LINE TYPES



### RURAL CENTRE LINE COMBINATIONS : TWO-WAY OPPOSING TRAFFIC



### RURAL LONGITUDINAL LINE COMBINATIONS : TWO LANES IN THE SAME DIRECTION



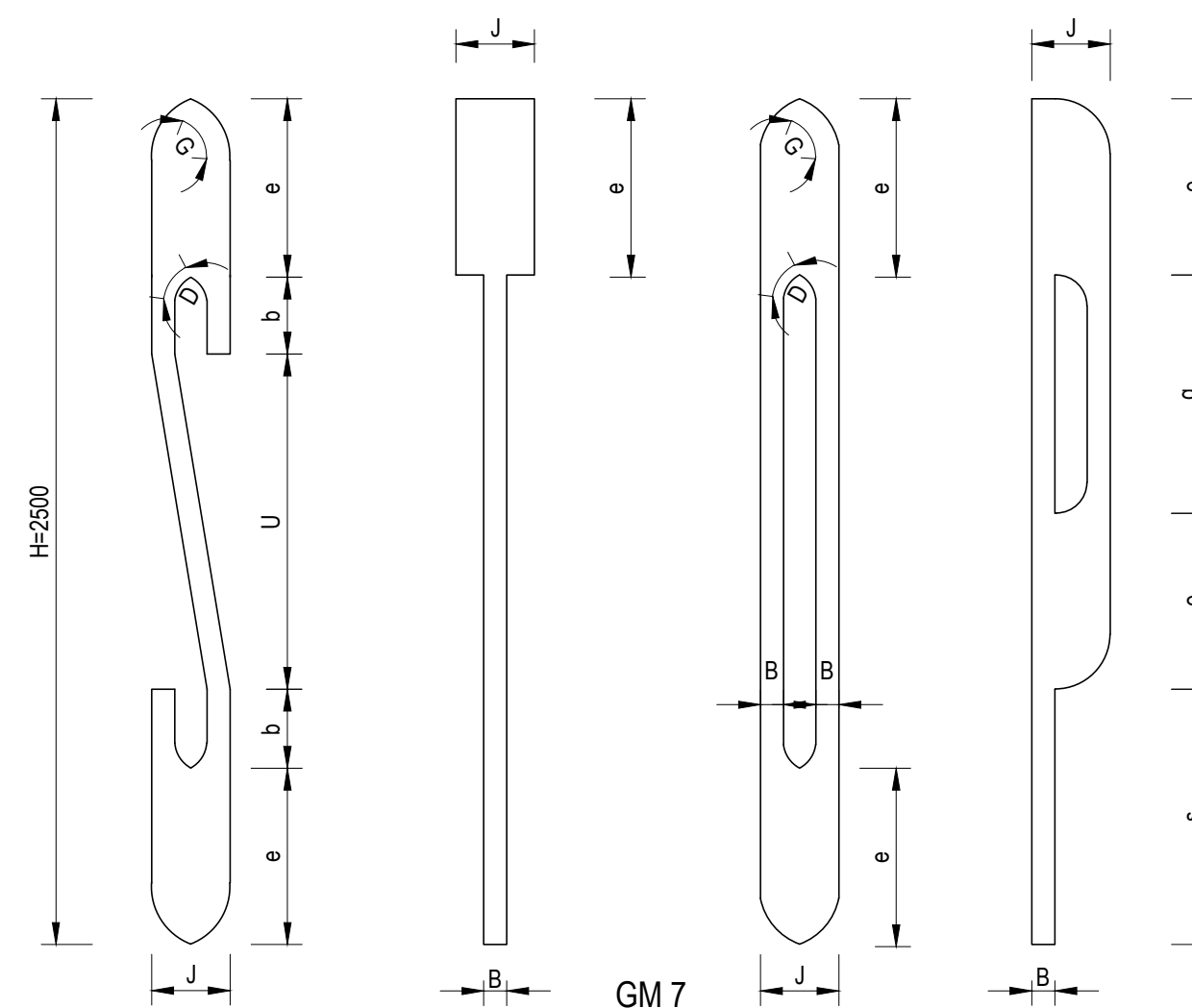
- NOTES:**
- THIS DRAWING DETAILS A RANGE OF GENERAL WARNING OR GUIDANCE SYMBOLS. APPLICATION SHALL BE IN ACCORDANCE WITH THE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL.
  - MARKING WM5 - YIELD CONTROL AHEAD MAY BE REPEATED 1m FROM THE YIELD LINE MARKING.

OPERATING SPEED km/h	TYPICAL APPLICATIONS	DISTANCE FROM YIELD LINE	a	b	c	d
30 - 40	CITY CENTRE	90m	450	250	100	1250
50 - 60	URBAN	120m	850	450	150	2500
70 - 120	RURAL	155m	1350	700	250	4000

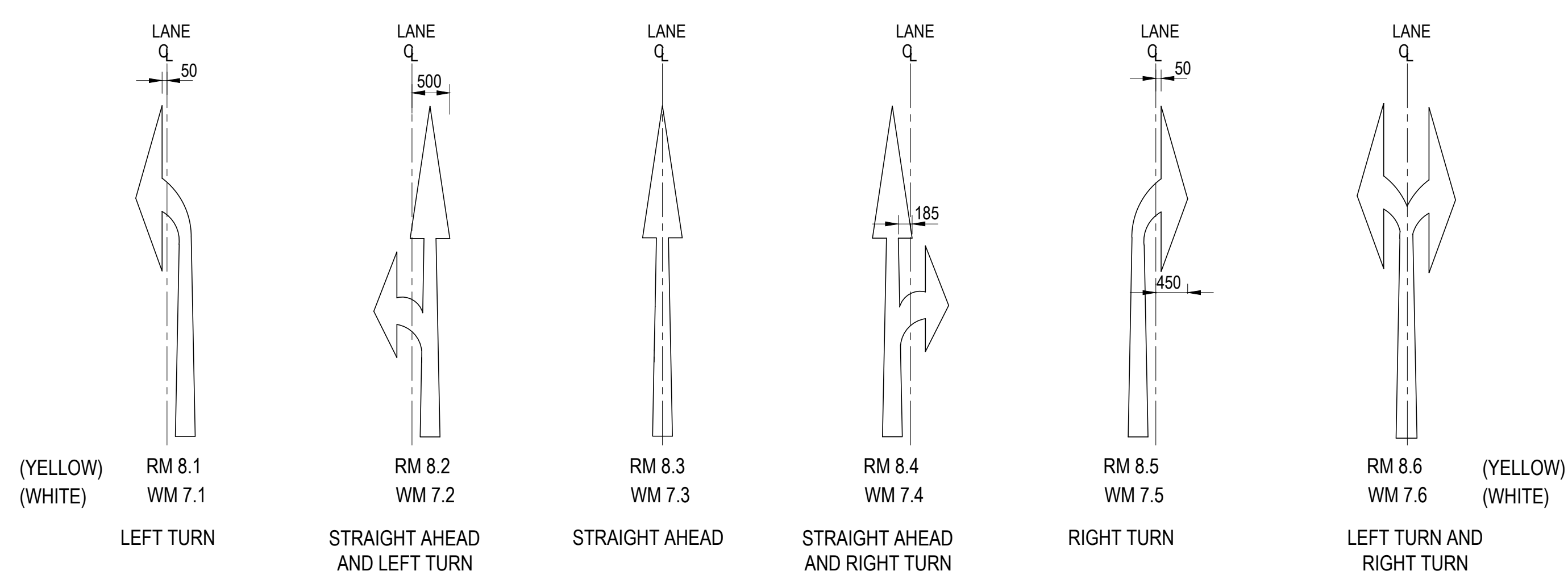
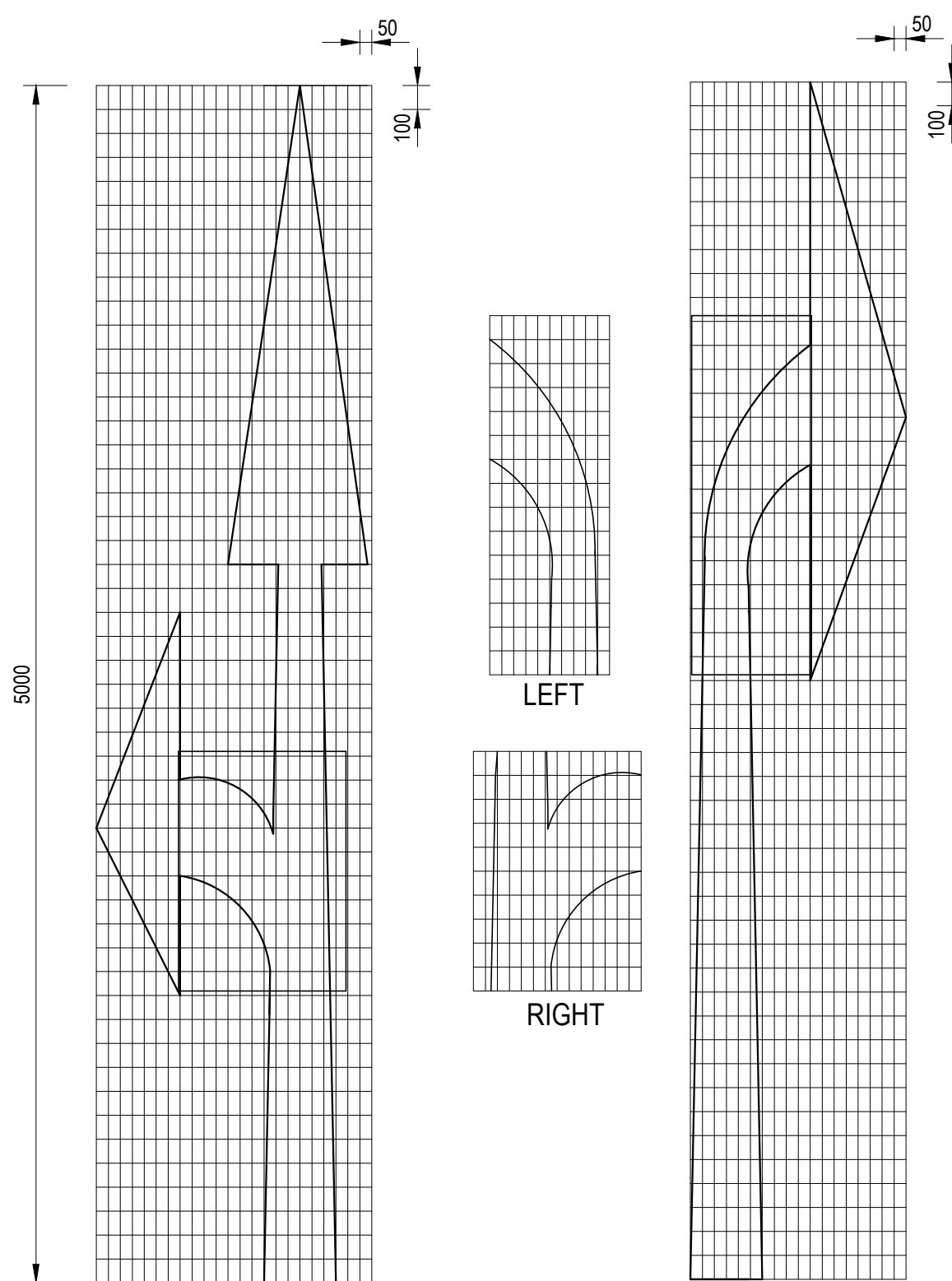
TYPICAL APPLICATIONS	a	b	c	d	e	f	g
URBAN	4000	2500	1797	203	1135	115	200
RURAL	7500	2500	3003	747	1042	208	400

GM7 STOP		DIMENSIONS (mm)										
TYPICAL APPLICATIONS	H	B	b	C	D	d	E	e	G	J	q	s
URBAN	2500	150	235	180	200	390	230	520	355	510	705	755

### GENERAL SYMBOLS







#### APPLICATIONS N.T.S.

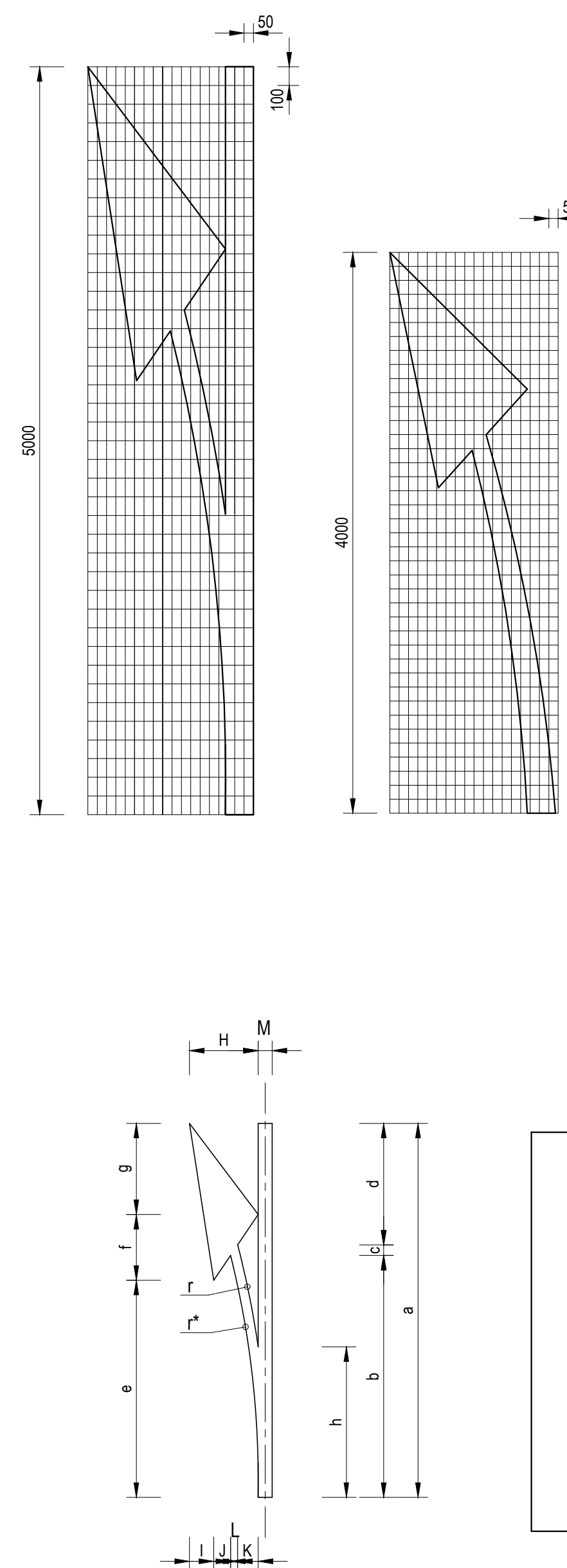
OPERATING SPEED km/h	TYPICAL APPLICATIONS	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
30 - 40	CITY CENTRE	2500	600	350	450	884	200	417	1000	1700	250	550	1250	700	380	1450	58	30	29
50 - 90	URBAN/RURAL EXPRESSWAY	4000	960	560	720	1406	320	666	1600	2720	400	880	2000	1120	608	2320	93	48	46
100 - 120	RURAL AND FREEWAYS	5000	1200	700	900	1767	400	833	2000	3400	500	1100	2500	1400	760	2900	116	60	58
ALL	SPECIAL APPLICATIONS	7500	1800	1050	1350	2651	600	1250	3000	5100	750	1650	3750	2100	1140	4350	174	90	87

- NOTES:**
- THESE ARROWS MAY BE USED IN LANES TO INDICATE THAT DRIVERS SHALL PROCEED ONLY IN THE DIRECTION OR DIRECTIONS SHOWN. THEY SHOULD ONLY BE USED IF THE JUNCTION CONCERNED REQUIRED TURNING MOVEMENT CONTROL, BY LANE.
  - THE FINAL ARROW NEAREST THE POINT OF TURN OR STRAIGHT ON MOVEMENT SHALL BE YELLOW. ANY ARROWS MARKED IN ADVANCE OF THIS POINT TO WARN DRIVERS OF THE MANDATORY MOVEMENT AHEAD SHALL BE WHITE.
  - MANDATORY OR WARNING DIRECTION ARROW SHALL NOT BE USED IN ADVANCE OF A WIDENING OF THE ROADWAY TO A GREATER NUMBER OF LANES. THIS SHALL BE INDICATED IF NECESSARY, BY USING FURCATION ARROWS.

All Operating Speeds And Applications	N	O	P	Q	R	S	T
	210	180	350	300	500	400	600

ARROW AREA / (m²)		RM 8.1/RM 8.5 WM 7.1/WM 7.5		RM 8.2/RM 8.4 WM 7.2/WM 7.4		RM 8.3 WM 7.3		RM 8.6 WM 7.6	
a									
2500	0.67	0.89	0.66	1.03					
4000	1.14	1.43	1.06	1.68					
5000	1.45	1.78	1.32	2.12					
7500	2.23	2.66	1.98	3.20					

#### MANDATORY DIRECTION ARROWS N.T.S.



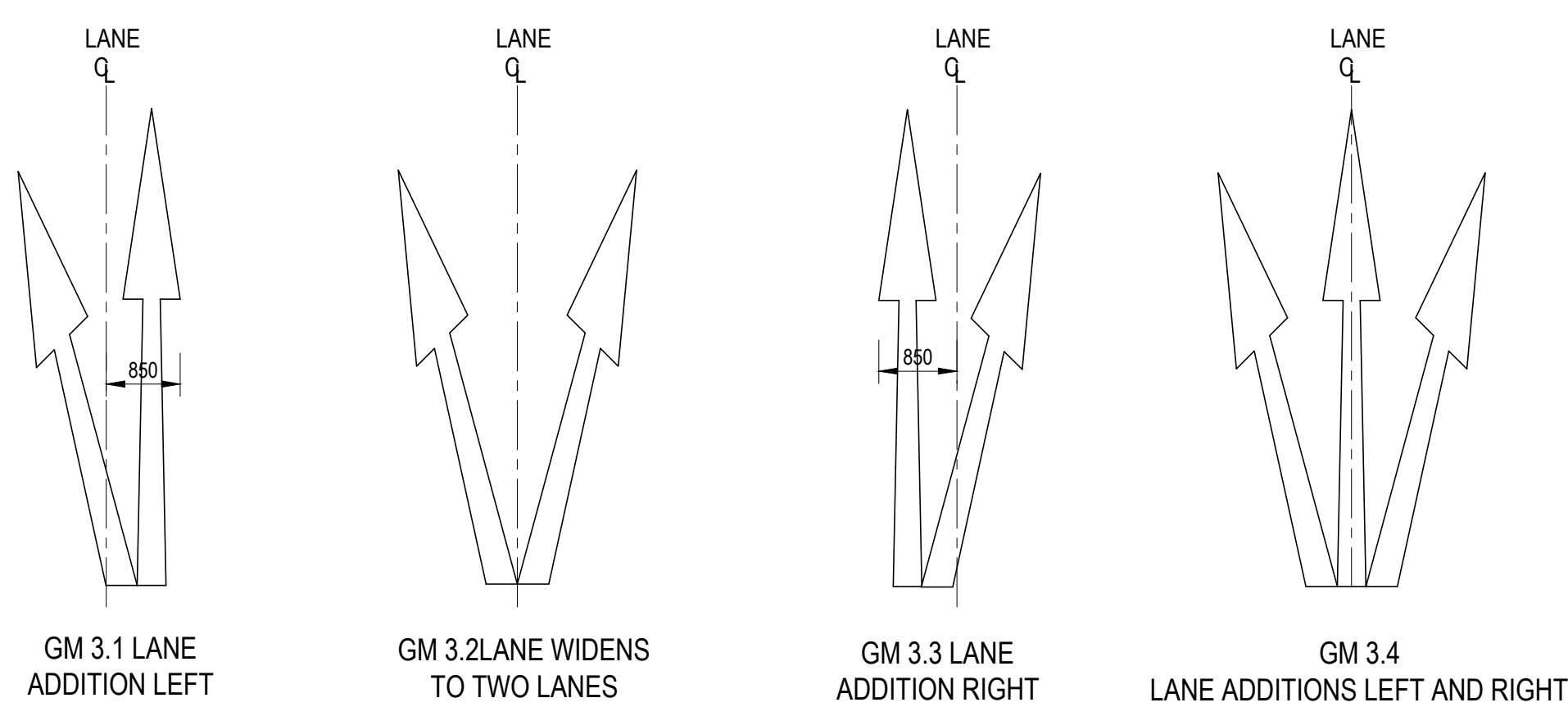
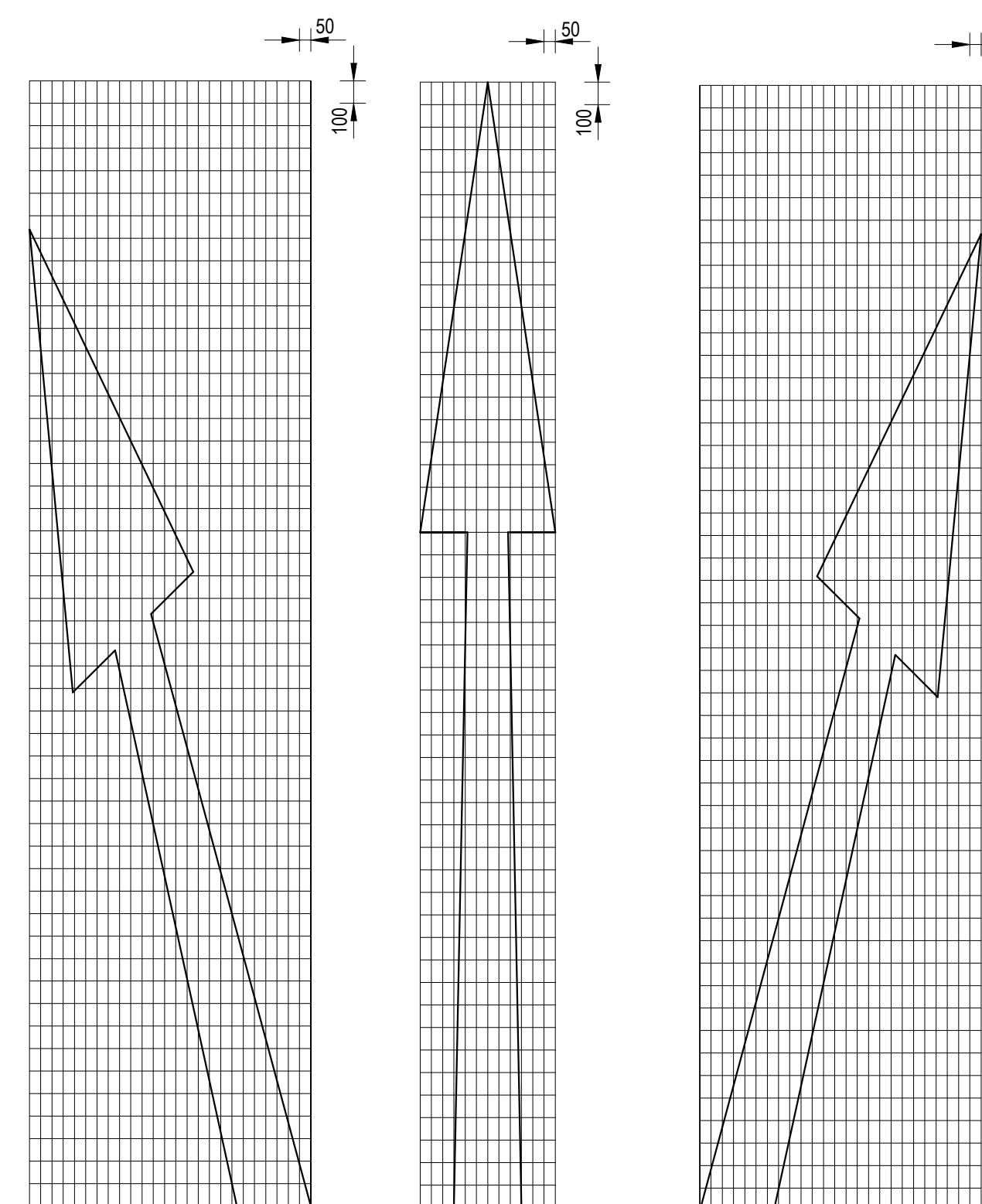
- NOTES:**
- THESE ARROWS SHOULD BE USED IN MULTIPLES OF THREE (AT LEAST) IN ADVANCE OF THE START OF A SECTION OF NO OVERTAKING LINE, NO CROSSING LINE OR PAINTED ISLAND WHEN SUCH BARRIER LINES REPLACE A DIVIDING LINE.
  - THE ARROWS MAY BE MARKED ON TOP OF EXISTING DIVIDING LINE MARKINGS (IF THE EXISTING LINE IS A CENTRE LINE TO A 12m OR 9m MODULE THE POINT OF THE ARROW SHOULD BE LINED UP WITH THE FORWARD END OF THE LINE).
  - WHEN OVERTAKING SECTIONS ARE REGULARLY INTERSPERSED WITH NO OVERTAKING SECTIONS AND ARE SHORT IN LENGTH MARKING WM 8.2 MAY BE USED AT THE CENTRE OF THE OVERTAKING SECTION.

TYPICAL APPLICATIONS	a	b	c	d	e	f	g	h	i	j	k	l	m
URBAN	3000	1941	83	976	1741	528	731	1206	5620	5820			
RURAL	4000	2588	111	1301	2321	704	975	1608	9600	10000			

ALL APPLICATIONS	H	I	J	K	L	M
	735	260	181	219	75	150

ARROW AREA / (m²)		a	PER ARROW
3000	0.62		
4000	0.82		

#### NO OVERTAKING OR NO CROSSING AHEAD ARROWS N.T.S.



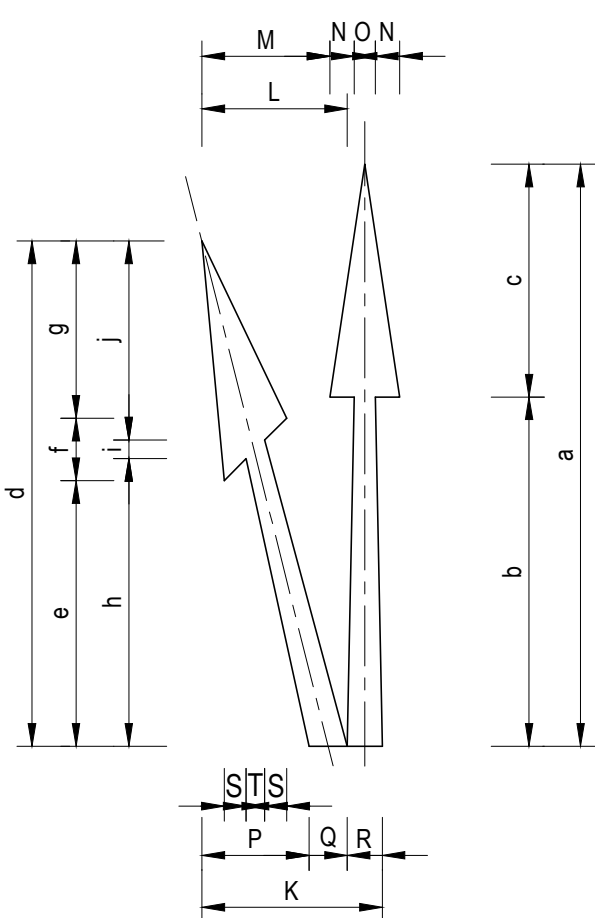
#### APPLICATIONS N.T.S.

OPERATING SPEED km/h	TYPICAL APPLICATIONS	a	b	c	d	e	f	g	h	i	j
30 - 40	CITY CENTRE	2500	1500	1000	2170	1141	268	761	1235	81	855
50 - 60	URBAN ROADS	4000	2400	1600	3472	1826	429	1218	1976	129	1367
70 - 90	URBAN ARTERIAL ROADS/ RURAL EXPRESSWAYS	5000	3000	2000	4340	2282	536	1522	2470	161	1709
100 - 120	RURAL ROADS & FREEWAYS	7500	4500	3000	6510	3423	804	2283	3705	242	2564

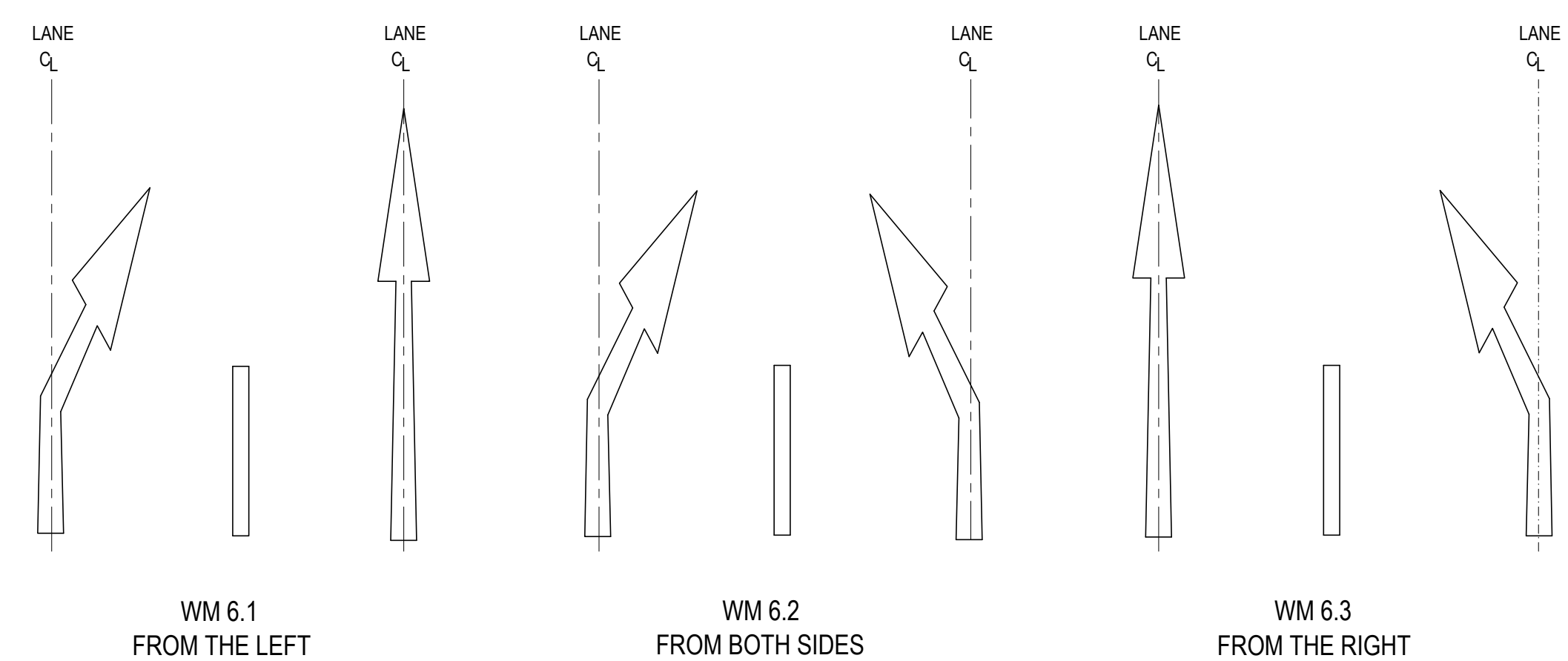
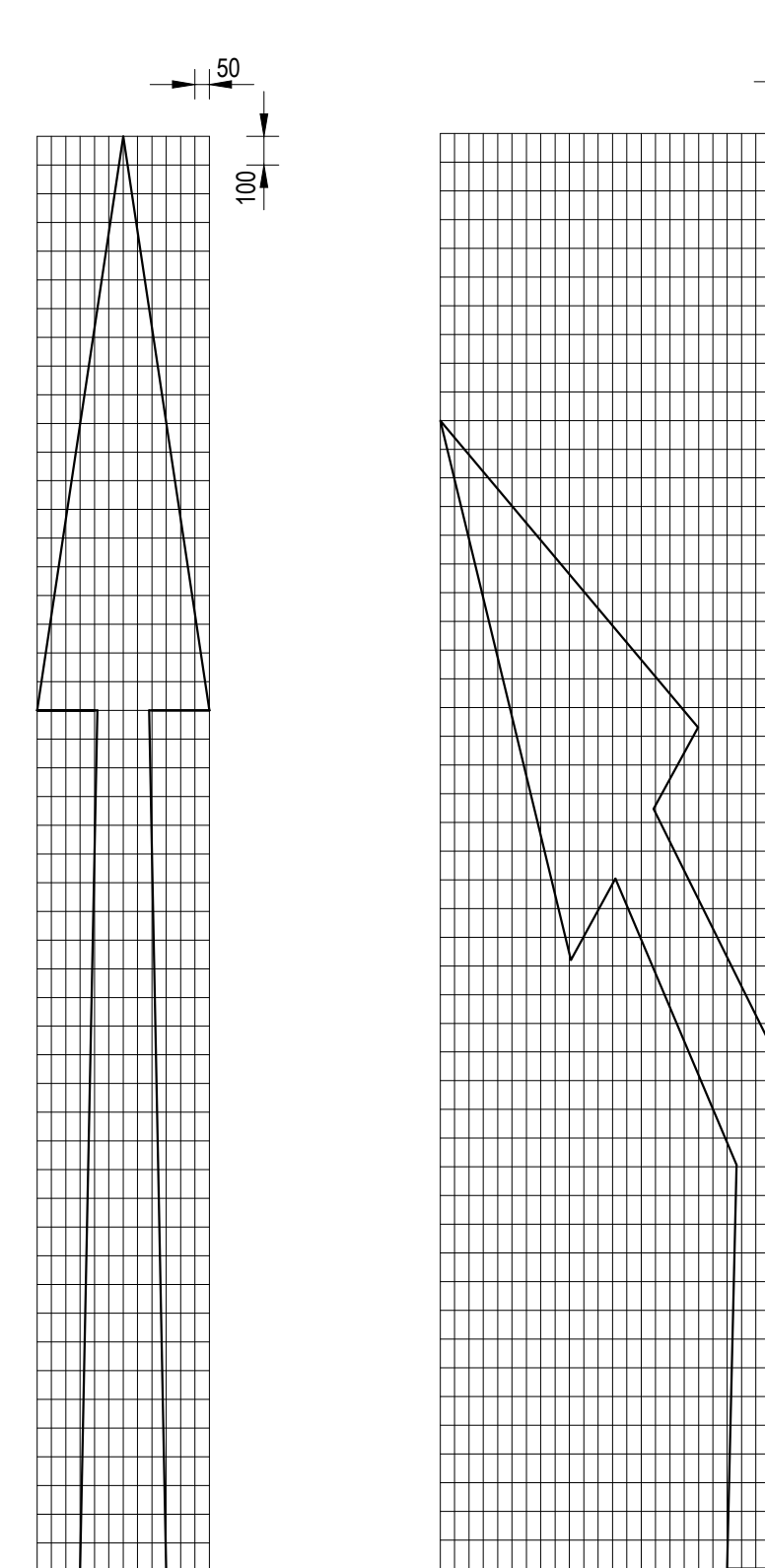
ALL OPERATING SPEEDS AND APPLICATIONS	K	L	M	N	O	P	Q	R	S	T
	1700	1250	1100	210	180	921	329	300	188	161

ARROW AREA / (m²)		a	GM 3.1/GM 3.3	GM 3.2	GM 3.4
2500	1.30	1.27	1.93		
4000	2.07	2.04	3.09		
5000	2.59	2.55	3.87		
7500	3.89	3.82	5.80		

#### FURCATION ARROWS N.T.S.



- NOTES:**
- THESE ARROWS MAY BE USED TO INDICATE THAT THE NUMBER OF LANES IS INCREASING AHEAD. ONLY ONE SET OF ARROWS SHOULD BE USED UNLESS A LEFT AND RIGHT TURN LANE ARE ADDED TO A MULTI-LANE ROADWAY AT THE SAME POINT WHERE TWO SETS MAY BE USED.
  - DIRECTION ARROWS AHEAD SHALL NOT BE USED TO INDICATE THE ADDITION OF LANES AHEAD.
  - AS A GENERAL RULE FURCATION ARROWS SHOULD BE LOCATED TWO TO THREE MARKING MODULES BEFORE THE START OF THE LANE GENERATING TAPER OR CURVE.



#### APPLICATIONS N.T.S.

OPERATING SPEED km/h	TYPICAL APPLICATIONS	a	b	c	d	e	f	g	h	i	j	k
30 - 40	CITY CENTRE	4000	2400	1600	3200	1271	947	227	855	1696	1277	1126
50 - 60	URBAN ROADS	5000	3000	2000	4000	1589	1058	284	1069	2120	1596	1407
70 - 90	URBAN ARTERIAL ROADS/ RURAL EXPRESSWAYS	7500	4500	3000	6000	2384	1587	426	1603	3180	2394	2111
100 - 120	RURAL ROADS & FREEWAYS	12000	7200	4800	9600	3814	2539	681	2566	5089	3830	3377

ALL OPERATING SPEEDS AND APPLICATIONS	M	N	O	P	Q	R	S	T	U	V
	300	210	180	1300	898	402	155	370	32	390

ARROW AREA / (m²)		a	WM 6.1 / WM 6.3	WM 6.2
4000	2.08	2.06		
5000	2.61	2.58		
7500	3.92	3.88		
12000	6.56	6.20		

#### LANE REDUCTION ARROWS N.T.S.

CONSTRUCTION RECORD (AS-BUILT)		WORKS CONTRACT ENGINEER	
Name	:		
Prof. Reg. No.	:		
Date	:		
SANRAL PROJECT MANAGER		SANRAL PROJECT MANAGER	
Name	:		
Date	:		

**LATHISO**  
CONSULTING ENGINEERS

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DESIGNED BY		CHECKED BY	
NAME	K BRINK	NAME	B CILLIERS
Prof. Reg. No.	IE2015-02	Prof. Reg. No.	950340
DRAWN BY		NAME	
		K BRINK	

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	10/08/2021

HEAD OFFICE  
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Pretoria  
0184  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000

**SANRAL**  
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC. LTD.  
BUILDING SOUTH AFRICA  
THROUGH BETTER ROADS

NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0046  
Tel: (012) 426 6200

ACCEPTANCE	
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING	
for the SA NATIONAL ROADS AGENCY SOC. LTD.	
Date:	

THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
ROAD MARKINGS	
MANDATORY DIRECTION ARROWS, LANE REDUCTION ARROWS, BARRIER LINE AHEAD ARROWS & BIFURCATION ARROWS	
SCALE: AS SHOWN	

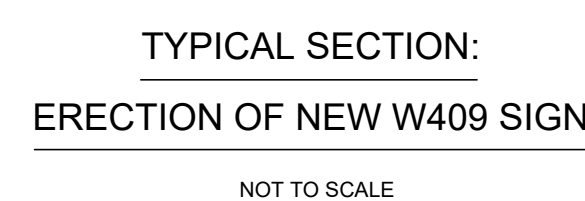
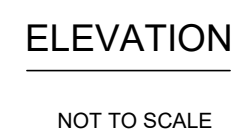
PROJECT NUMBER		2020-01	
DRAWING LOCATION DATA		START	END
ROUTE		D3135	D3135
SECTION		1	1
DRAWING KM DISTANCE		0.000	2.1
DRAWING TYPE		ROAD MARKINGS	
BRIDGE/STRUCTURE No.		N/A	
CONSULTANT DRAWING No.		2020-01-RDS-010	
SANRAL DOCUMENT #		-	
SHEET		1	OF 1
VER		V2	

SANRAL TITLE BLOCK-#(648234)(DWG/PDF) VERSION V1.1



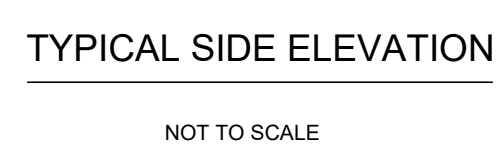






NOTES :

1. THE ROAD SIGN FACES SHALL BE MANUFACTURED AND ERRECTED IN ACCORDANCE WITH THE SPECIFICATIONS AND SHALL CONFORM TO THE NATIONAL ROAD TRAFFIC REGULATIONS, 2000.
2. SIGN FACES SHALL BE FOR TYPE 'A' OR 'B' EXPOSURE AS SPECIFIED:  
TYPE 'A' : ALL CASES OTHER THAN TYPE 'B'  
TYPE 'B' : SIGN FACES FOR USE IN MARINE OR CHEMICALLY POLLUTED CORROSIVE ENVIRONMENTS.
3. REFERENCE MUST BE MADE TO THE RELEVANT ROAD SIGN DETAIL DRAWINGS FOR DETAILS OF THE SYMBOLS AND LEGEND FOR EACH INDIVIDUAL SIGN.
4. ALL STEEL SECTIONS SHALL BE HOT DIP GALVANIZED.
5. FOUNDATIONS
  - 5.1. SIZE OF FOUNDATIONS IS SHOWN ON ROAD SIGN LAYOUT DRAWINGS.
  - 5.2. ALL FOUNDATIONS IN SAND OR SOFT CLAY TO BE APPROVED BY THE ENGINEER.



- NOTES :

1. DETAILS ON THIS DRAWING ARE APPLICABLE TO REGULATORY AND WARNING SIGNS REQUIRING A SINGLE SUPPORT.
2. ROAD SIGNS CONSTRUCTED FROM 1.4mm CHROMADEL.
3. ALUMINIUM RIVETS (4.8mm DIAMETER, 8mm LONG) AT 150mm MAXIMUM CENTRES MINIMUM 3 No. PER REINFORCING PROFILE.
4. RIVET HEADS ON THE SIGN FACE SHALL BE PAINTED TO SUIT SIGN FACE COLOUR.
5. ALL HORIZONTAL REINFORCING PROFILES SHALL BE SIZE 41.3 X 20.6 X 1.6mm.

**LATHISO**  
CONSULTING ENGINEERS

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MELKBOSSTRABD  
CAPE TOWN  
7441**

**P.O. BOX 357  
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7441**

**Tel: 066 274 8594**

**CONSULTANT APPROVAL**

---

Name : B CILLIERS  
Prof. Reg. No. : 950340  
Date : 10/08/2021

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for the SA NATIONAL ROADS AGENCY SOC LTD

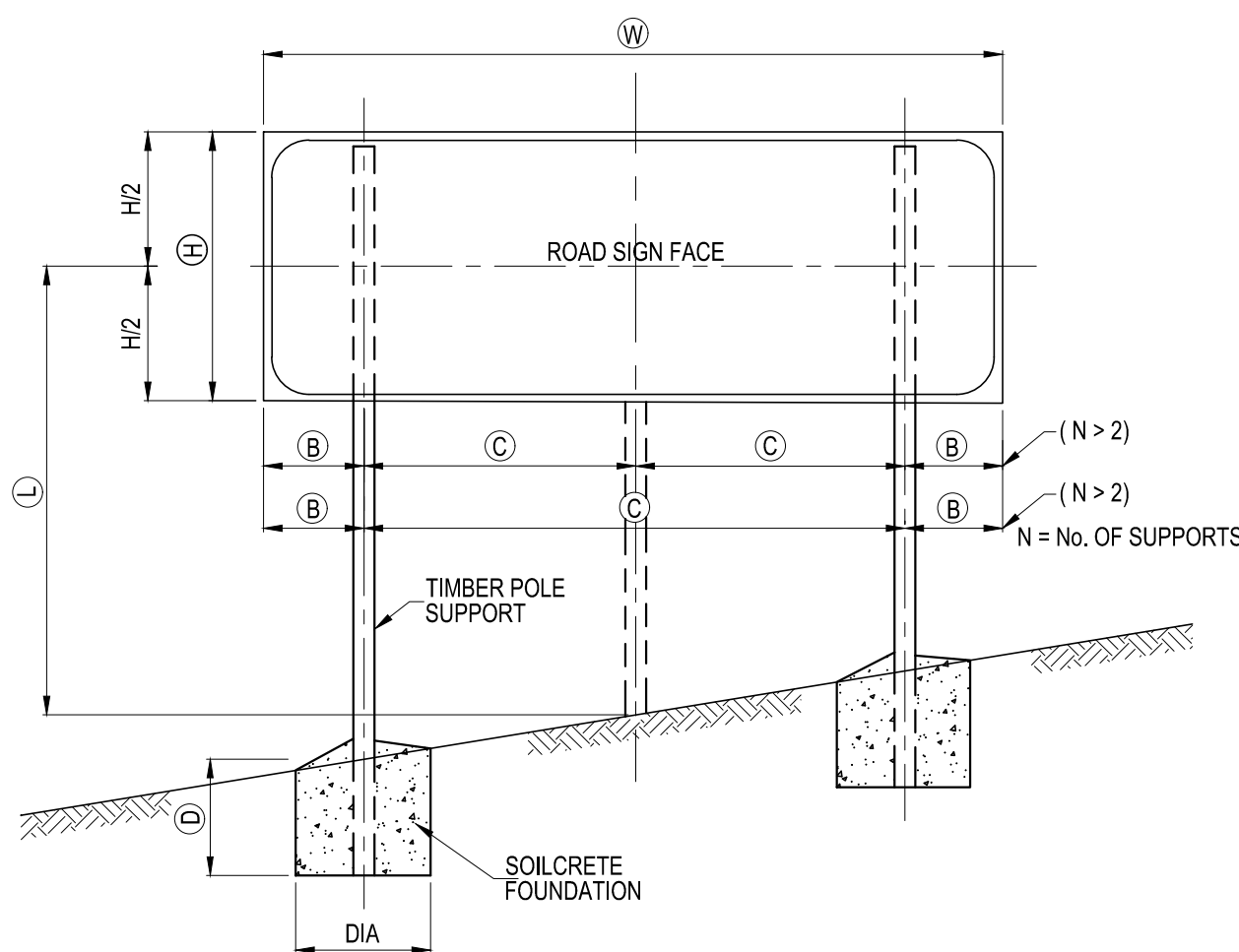
**THE UPGRADE OF BOTLOKWA (MATOKS)  
CLINIC ACCESS ROAD**

### ROAD SIGNS

OF ROAD SIGN SIGN FACE  
PROFILE AND JOINT

<b>PROJECT NUMBER</b>	<b>2020-01</b>		
<b>DRAWING LOCATION DATA</b>	<b>START</b>	<b>END</b>	
ROUTE	D3135	D3135	
SECTION	1	1	
DRAWING km DISTANCE	0.000	2.1	
<b>DRAWING TYPE</b>	<b>ROADSIGNS</b>		
BRIDGE/STRUCTURE No.	N/A		
CONSULTANT DRAWING No.	2020-01-RDS-012		VER
SANRAL DOCUMENT #	-		V2

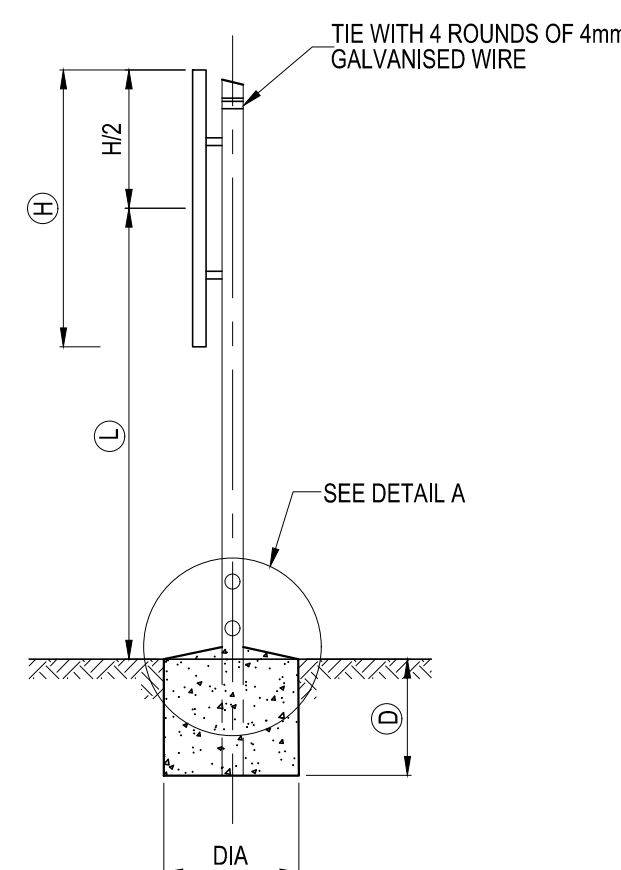




ELEVATION

FREE STANDING SUPPORT

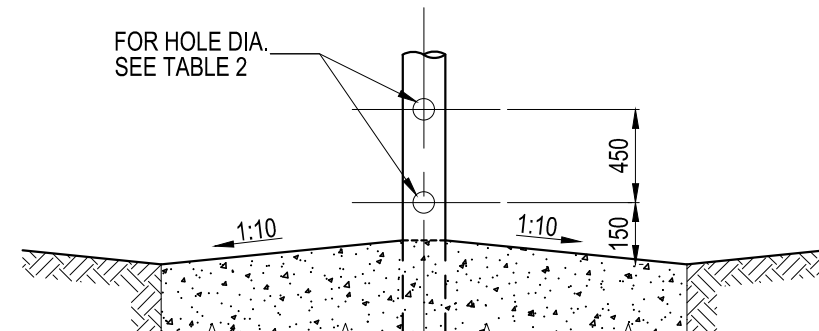
SCALE - N.T.S



TYPICAL SECTION

WIDTH OF SIGN (W)	No. OF SUPPORTS (N)	DIMENSIONS	
		(B)	(C)
1.2m OR LESS	1	W/2	-
1.2m - 4.0m	2	W/5	3W/5
4.0m - 7.2m	3	W/2N	W/N
7.2m - 9.6m	4		
9.6m - 12.0m	5		

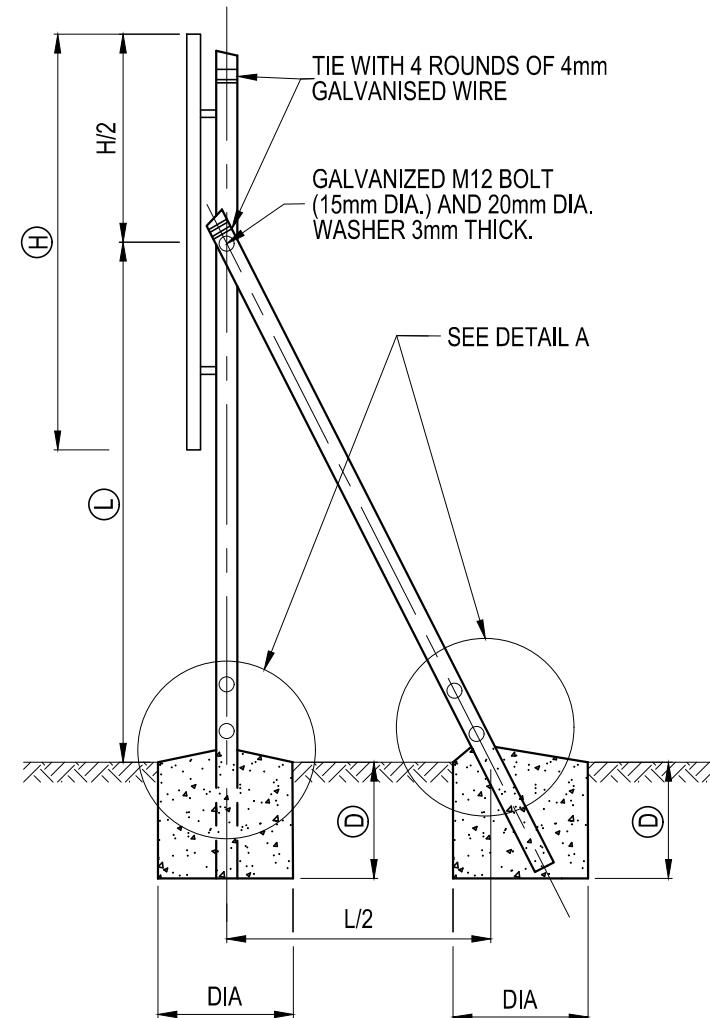
NOTE : MAXIMUM DISTANCE BETWEEN SUPPORTS = 2.4 m



DETAIL A

SCALE - N.T.S

TIMBER POLE DIA. AT GROUND LEVEL (mm)	HOLE DIA. (mm)
≤ 140	NONE
141 - 170	40
171 - 200	50
201 - 225	65



TYPICAL SECTION  
BRACED SUPPORT

SCALE - N.T.S

#### GENERAL NOTES

**SIZE AND SPACING OF ROAD SIGN SUPPORTS AND FOUNDATIONS**  
SIZE AND SPACING OF SUPPORTS AND FOUNDATIONS SHALL BE DETERMINED FROM INFORMATION SHOWN ON PLAN AND ON THE DESIGN CHARTS SHOWN ON DRAWING TD-RS-100. THE SIZES AND SPACING OBTAINED ARE FOR USE WITH THE SIGN FACE SHOWN ON DRAWING TD-RS-100. DETAILS OF SINGLE POLE SIGNS (LESS THAN 1.5m<sup>2</sup> IN AREA) ARE SHOWN ON DRAWING TD-RS-200.

**POSITION**  
ROAD SIGNS SHALL BE ERECTED IN THE POSITIONS SHOWN ON THE DRAWINGS OR INDICATED BY THE ENGINEER. STANDARD CLEARANCES ARE SHOWN IN THE SADC ROAD TRAFFIC SIGNS MANUAL.

**EXCAVATION**  
EXCAVATIONS FOR FOUNDATIONS MUST BE MADE TO THE NEAT DIMENSIONS SPECIFIED. WHERE THE FOUNDATION DEPTH IS 1.5m OR GREATER, EXCAVATIONS MUST BE SUITABLY SHORED FOR THE PROTECTION OF WORKMEN.

**TIMBER POLE SUPPORTS**  
TIMBER SUPPORTS SHALL BE STRAIGHT ROUND POLES COMPLYING WITH THE REQUIREMENTS OF SANS 457-3 AND SHALL NOT EXHIBIT EXCESSIVE CRACKING AT THE ENDS

● **LENGTH**  
WHEREVER POSSIBLE POLE LENGTHS CORRESPONDING TO AVAILABLE NOMINAL LENGTHS SHALL BE USED.

● **CUTTING**  
WHERE CUTTING TO LENGTH AFTER PRESERVATIVE TREATMENT IS UNAVOIDABLE, ONLY ONE CUT PER POLE SHALL BE ALLOWED. THE CUT SHALL BE NEAR THE TOP END OF THE POLE AND THE EXPOSED SURFACE SHALL BE TREATED WITH TWO COATS OF THE APPLICABLE PRESERVATIVE AND THE POLE Banded IN ACCORDANCE WITH SANS 457-3.

● **PRESERVATIVE TREATMENT**  
THE POLES SHALL BE TREATED WITH EITHER A MIXTURE OF COPPER-CHROMIUM-ARSENIC COMPOUNDS COMPLYING WITH THE REQUIREMENTS OF TYPE II OF SANS 673 (HICKSONS 'TANALITH C' OR EQUAL) OR WITH CREOSOTE THAT COMPLIES WITH SANS 538 OR SANS 539.

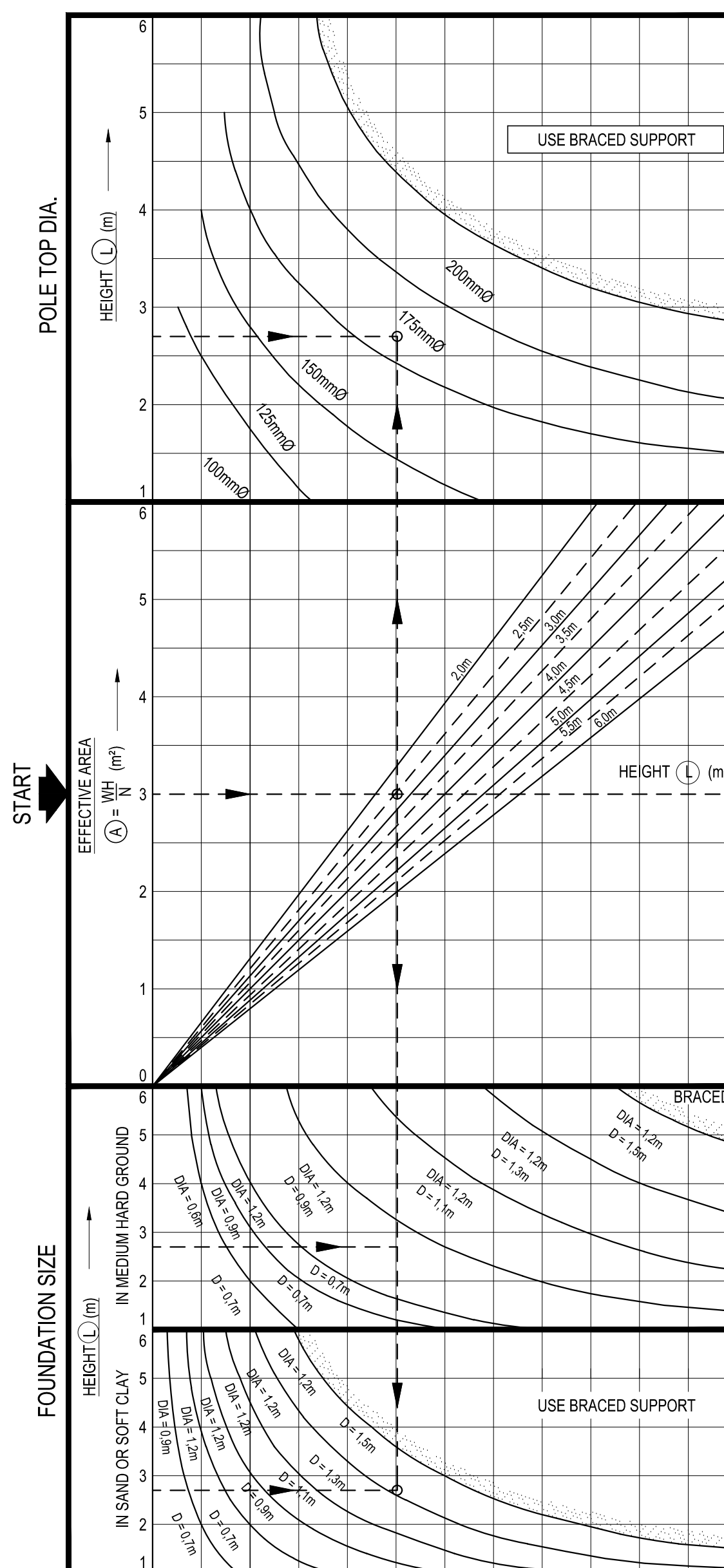
● **ERECTION**  
POLES SHALL BE SELECTED FOR STRAIGHTNESS AND ERECTED AT AN ORIENTATION WHICH WILL PERMIT THE SIGN FACE TO BE FASTENED IN A VERTICAL PLANE WITHOUT UNDUE DISTORTION.

● **BREAKAWAY HOLES**  
ALL TIMBER POLES HAVING A DIAMETER >140mm SHALL BE DRILLED WITH TWO HOLES PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS SHOWN IN DETAIL A. THE EXPOSED TIMBER SURFACES SHALL BE TREATED WITH TWO COATS OF THE APPLICABLE PRESERVATIVE.

**SOILCRETE FOUNDATIONS**  
SOILCRETE SHALL CONSIST OF 12 PARTS APPROVED GRANULAR SOIL OR GRAVEL MIXED WITH 1 PART PORTLAND CEMENT AND ONLY SUFFICIENT WATER TO GIVE IT A CONSISTENCY THAT WILL PERMIT THE SOILCRETE TO BE VIBRATED OR TAMPED TO EXCLUDE VOIDS. TIMBER SUPPORT POLES SHALL BE SET VERTICAL AND FIRMLY PROPPED IN POSITION PRIOR TO PLACING OF THE SOILCRETE. PROPS SHALL REMAIN IN POSITION FOR A MINIMUM OF 12 HOURS AFTER PLACING THE SOILCRETE. THE SURFACE OF THE SOILCRETE SHALL BE NEATLY FINISHED WITH SUFFICIENT FALL TO ENSURE PROPER DRAINAGE. CONCRETE SHALL NOT BE SUBSTITUTED FOR SOILCRETE. TOPPING OF SOILCRETE FOUNDATION TO BE STEEL FLOATED.

**BOLTS, NUTS AND WASHERS**  
EXCEPT WHERE OTHERWISE SPECIFIED STEEL BOLTS AND NUTS SHALL CONFORM TO SANS 135 OR SANS 1143 AND ALL COMPONENTS SHALL HAVE A HOT-DIP (GALVANIZED) ZINC COATING THAT COMPLIES WITH THE REQUIREMENTS OF SANS 121 : 2000 (ISO 1461 : 1999) FOR COATINGS ON TYPE C1 ARTICLES.

**ROAD SIGN FACES**  
ROAD SIGN FACES SHALL BE MANUFACTURED STRICTLY IN ACCORDANCE WITH THE DETAILS SHOWN ON DRAWING TD-RS-100. TRANSPORTATION AND DIRECTION OF SIGN FACES SHALL BE CARRIED OUT IN SUCH A WAY THAT DAMAGE TO THE SIGN IS PREVENTED. THE LOWER EDGE OF SIGN FACES SHALL BE HORIZONTAL AFTER COMPLETION OF ERECTION. THE MONTH AND YEAR OF ERECTION OF THE ROAD SIGN SHALL BE INDICATED BY MEANS OF WHITE PAINT ON THE BACK OF THE SIGN IN THE BOTTOM RIGHT HAND CORNER. THE LETTERS AND FIGURES SHALL BE 25mm HIGH.



DESIGN CHART 1  
FREE STANDING SUPPORT

SCALE - N.T.S

#### ROAD SIGNS DETERMINATION OF SUPPORTS AND FOUNDATIONS

##### NOTE:

1. REFERENCE PLANS  
THIS PLAN FORMS PART OF AND MUST BE READ IN CONJUNCTION WITH DRAWING TD-RS-001

2. DESIGN LOADINGS  
NOMINAL WIND LOAD ACTING ON THE SIGN FACE HAS BEEN ASSUMED AS FOLLOWS:-  
AVERAGE SIGN HEIGHT L < 2m : 0.75 kPa  
AVERAGE SIGN HEIGHT L > 2m : 1.25 kPa  
WIND LOADING IS ASSUMED TO VARY LINEARLY FOR AVERAGE SIGN HEIGHTS FALLING BETWEEN THE ABOVE LIMITS.

3. FOUNDATION MATERIAL  
FOUNDATIONS FOR FREE STANDING SUPPORTS DEPEND ON SOIL TYPE ENCOUNTERED. THE GRAPHS FOR "MEDIUM HARD GROUND" ARE APPLICABLE FOR ANY MATERIAL WHICH REQUIRES A PICK FOR EXCAVATION. FOR SOFTER FOUNDING MATERIAL THE GRAPH FOR "SAND OR SOFT CLAY" MUST BE USED. FOUNDATIONS FOR SIGNS USING BRACED SUPPORTS ARE INDEPENDENT OF FOUNDING MATERIAL TYPE. FOUNDATIONS FOR SIGNS LOCATED IN HARD ROCK MAY REQUIRE SPECIAL DESIGNS.

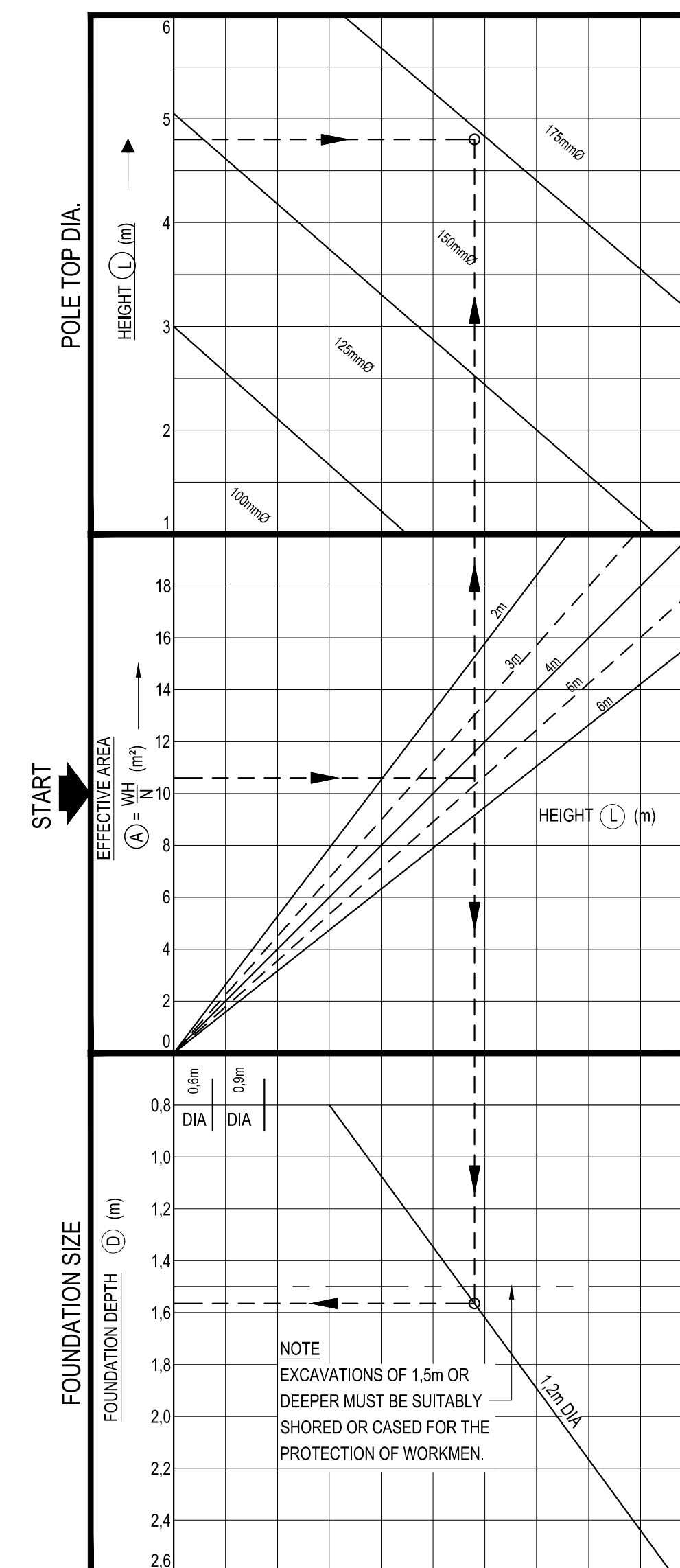
4. DESIGN PROCEDURE  
i) FROM TABLE 1 ON PLAN No. C-02-v1 DETERMINE FOR SIGN WIDTH W, THE NUMBER OF SUPPORTS N AND DIMENSIONS B AND C  
ii) CALCULATE THE EFFECTIVE SIGN AREA  $A = \frac{W \times L}{N}$  (m<sup>2</sup>) AND AVERAGE HEIGHT L (m)  
iii) FROM DESIGN CHART 1 (FREE STANDING SUPPORT), DETERMINE THE FOLLOWING:-  
a) THE TOP DIAMETER OF THE POLE  
b) THE FOUNDATION DIAMETER AND DEPTH FOR THE APPLICABLE FOUNDING MATERIAL. (SEE NOTE 3)  
iv) WHERE THE EFFECTIVE SIGN AREA EXCEEDS 6m<sup>2</sup> OR WHERE NECESSARY AS INDICATED ON DESIGN CHART 1, CHART 2 FOR BRACED SUPPORTS MUST BE USED. IN THIS CASE THE POLE TOP DIAMETER AND FOUNDATION SIZES OBTAINED ARE APPLICABLE TO BOTH THE UPRIGHT AND DIAGONAL BRACE MEMBERS.  
v) DETERMINE FROM TABLE 2 THE DIAMETER OF HOLES TO BE DRILLED IN THE POLES AS SHOWN IN DETAIL "A"

5. EXAMPLE (FREE STANDING SUPPORT)  
W = 5m H = 1.8m L = 2.7m

FROM TABLE 1  
N = 3m B = 0.830m C = 1.670m  
A = 5x1.8 = 9.0m<sup>2</sup>  
3

FROM DESIGN CHART 1  
FOR A = 9.0m<sup>2</sup> AND L = 2.7m  
POLE TOP DIA. = 175mm  
FOUNDATION SIZE = 1.2m DIA. 0.9m DEEP (MEDIUM HARD GROUND)  
OR 1.2m DIA. 1.5m DEEP (SAND OR SOFT CLAY)

FROM TABLE 2  
HOLES TO BE DRILLED (DETAIL A = 40mm DIA.)



DESIGN CHART 2  
BRACED SUPPORT

SCALE - N.T.S

CONSTRUCTION RECORD (AS-BUILT)			
WORKS CONTRACT ENGINEER			
Name : _____			
Prof. Reg. No. : _____			
Date : _____			
SANRAL PROJECT MANAGER			
Name : _____			
Date : _____			
V2	24/01/2023	FOR TENDER PURPOSES	K BRINK
V1	10/08/2021	ORIGINAL VERSION	K BRINK
No.	DATE	REVISION	CONSULT. ENG.

**LATHISO**  
CONSULTING ENGINEERS

**WESTERN CAPE**  
6 BOWATER CLOSE  
MELKBOSSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 357  
MELKBOSSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DRAWN BY	
NAME	K BRINK

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	10/08/2021

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**SANRAL**  
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD  
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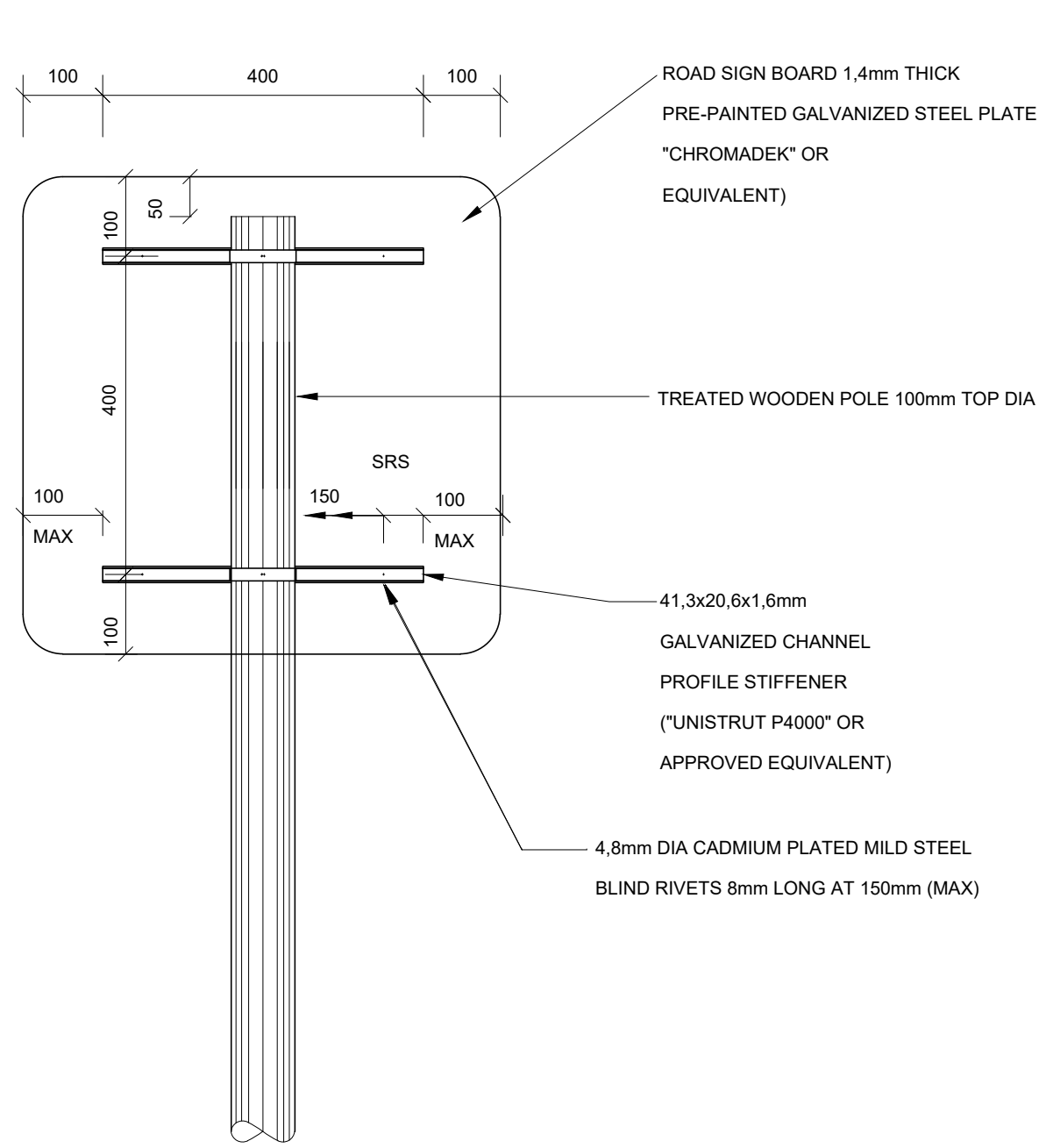
**NORTHERN REGION**  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

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for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date: \_\_\_\_\_

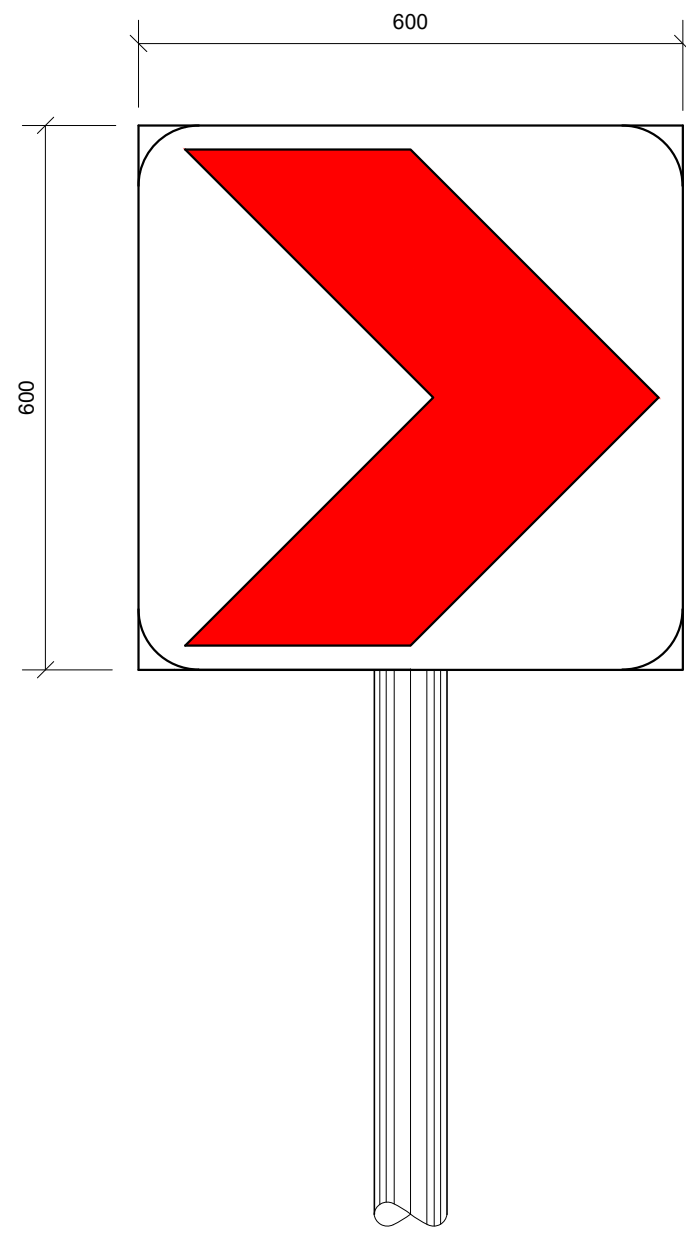
THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
ROAD SIGNS SUPPORTS AND FOUNDATIONS GENERAL DETAILS & SUPPORTS AND FOUNDATIONS DETERMINATION	
SCALE : AS SHOWN	SHEET 1 OF 1

PROJECT NUMBER		2020-01	
DRAWING LOCATION DATA	START	END	
ROUTE	D3135	D3135	
DRAWING km DISTANCE	0.000	2.1	
DRAWING TYPE	ROADSIGNS		
BRIDGE/STRUCTURE No.	N/A		
CONSULTANT DRAWING No.	2020-01-RDS-013		
SANRAL DOCUMENT #	-		
VER	V2		

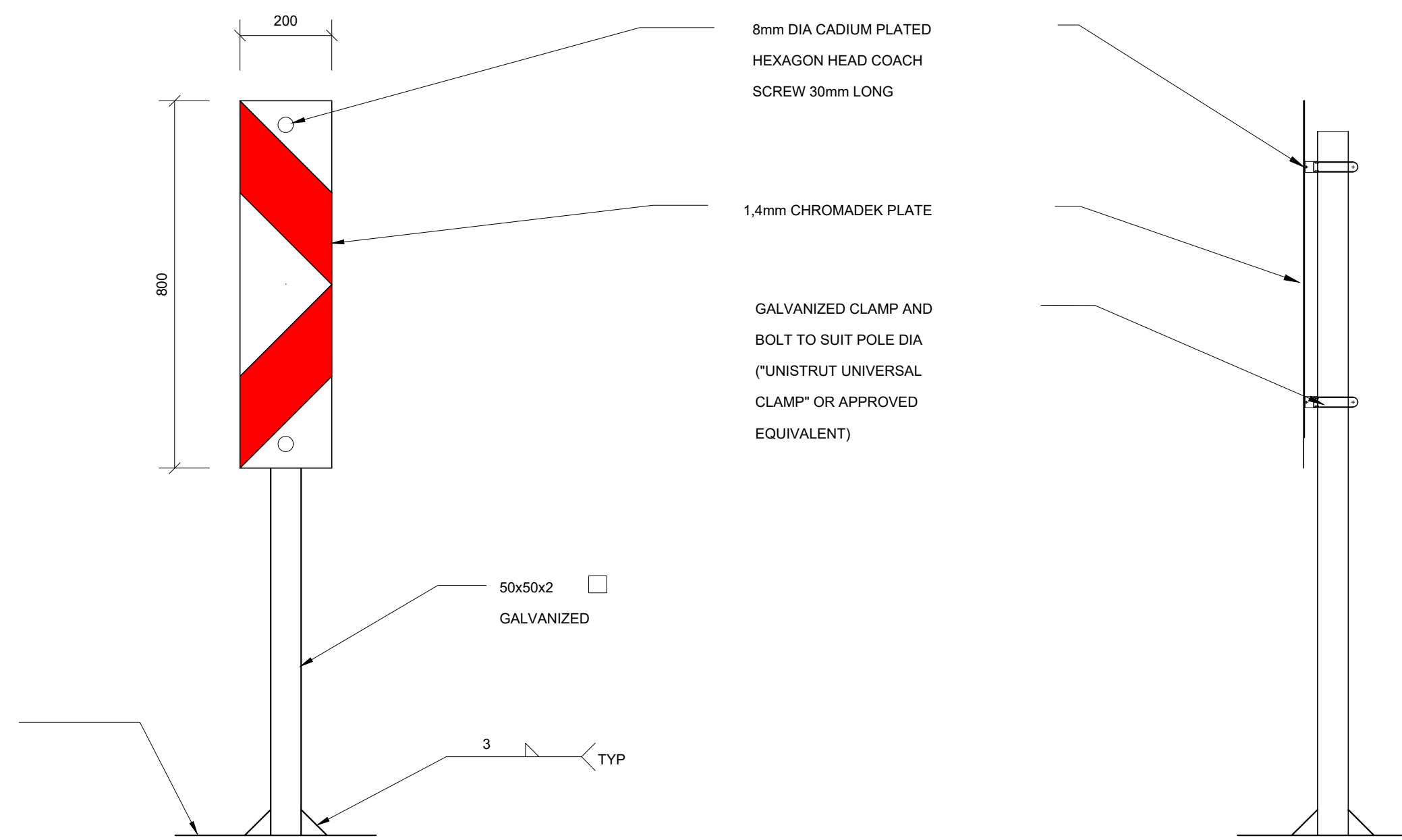




REAR ELEVATION  
N.T.S.

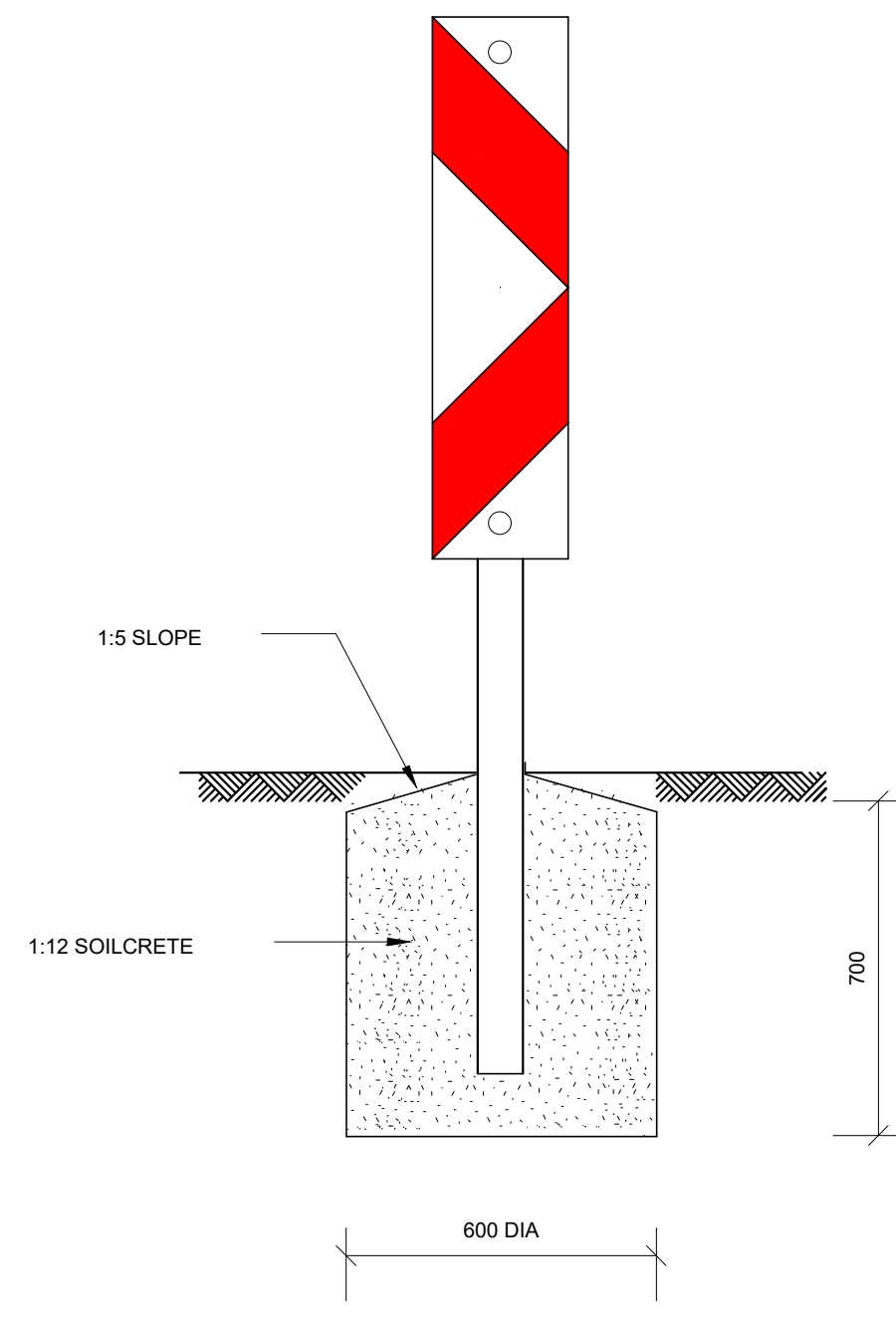


FRONT ELEVATION  
N.T.S.

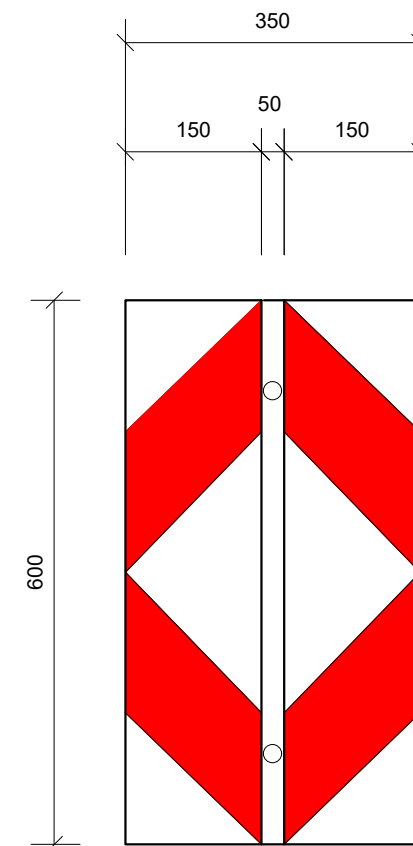


FRONT ELEVATION  
N.T.S.

TYPICAL SIDE ELEVATION  
N.T.S.



FOUNDATION DETAIL  
N.T.S.

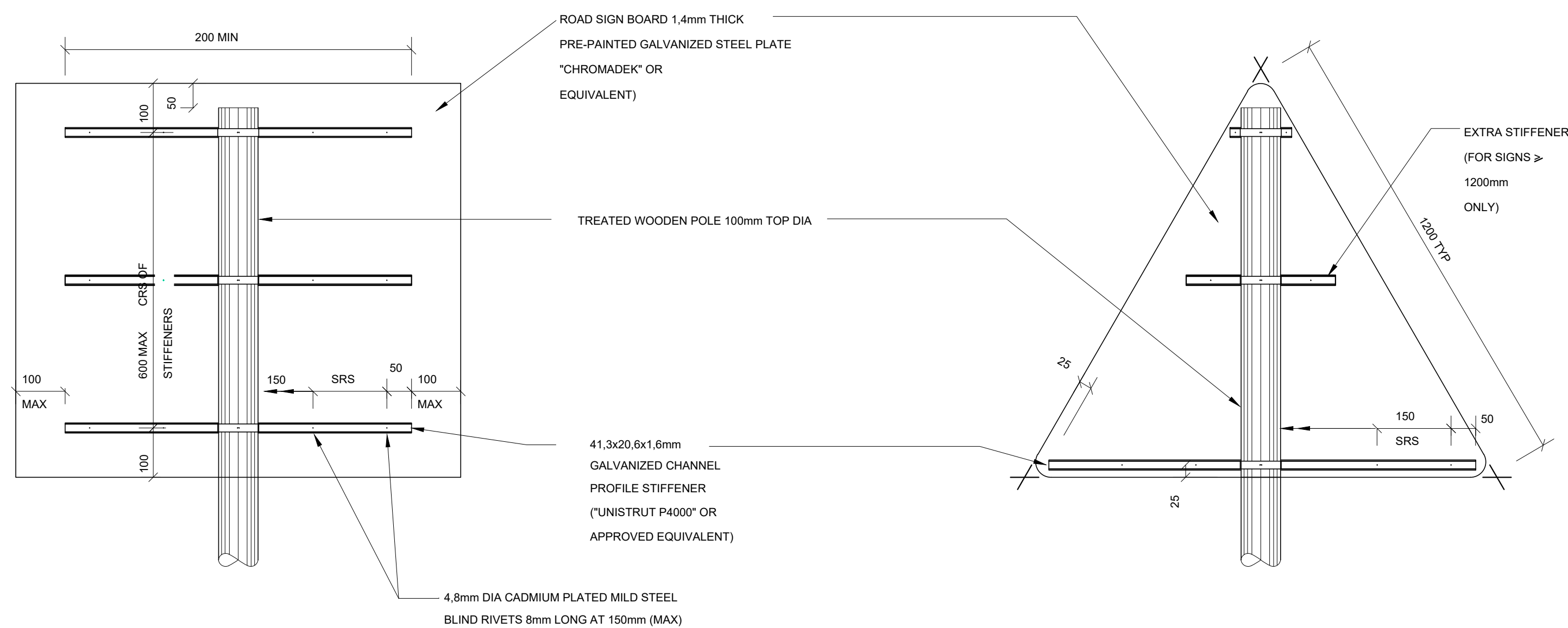


FRONT ELEVATION  
N.T.S.

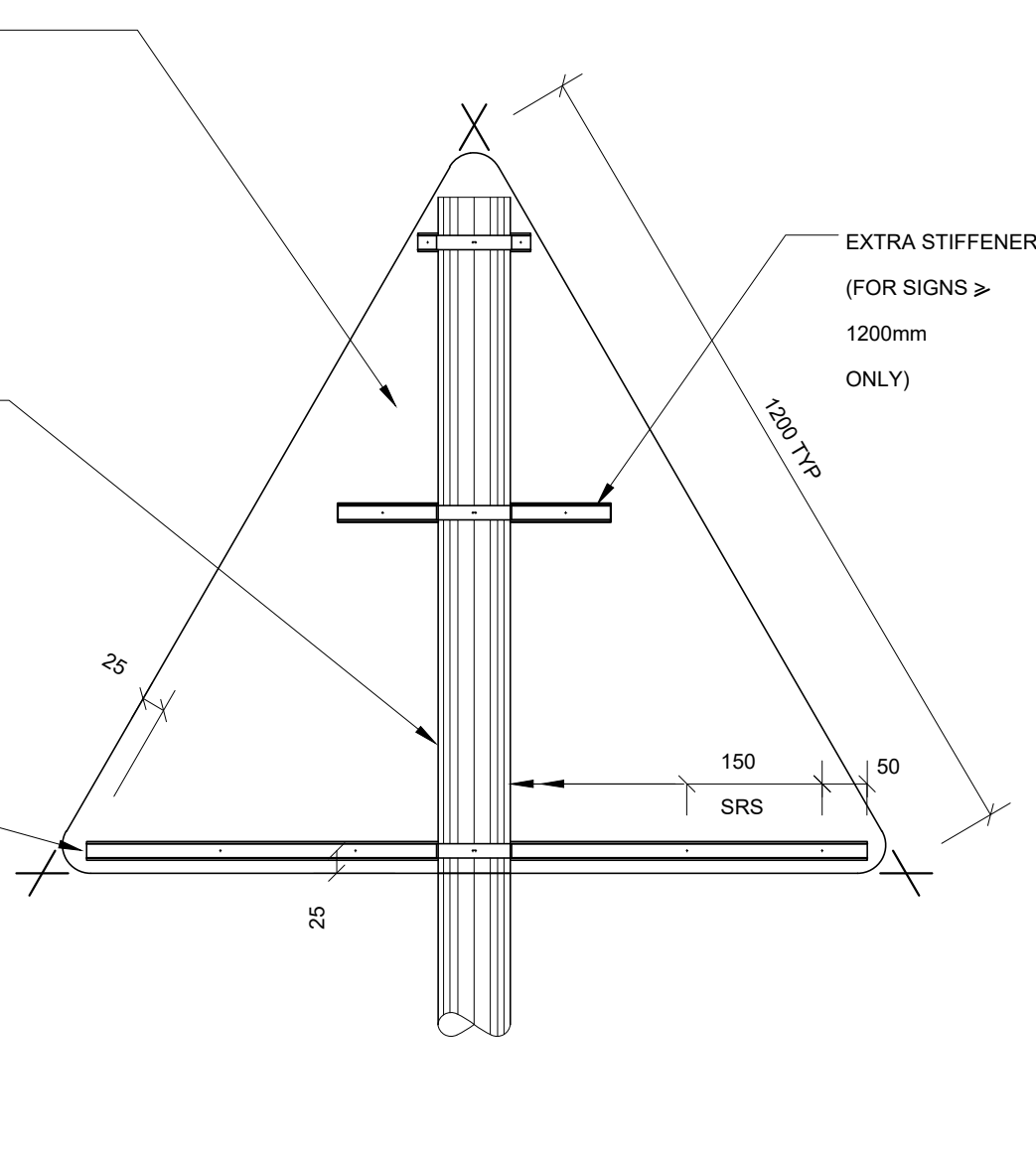
W405/W406 SHARP CURVE CHEVRON SIGN

W401 DANGER PLATE

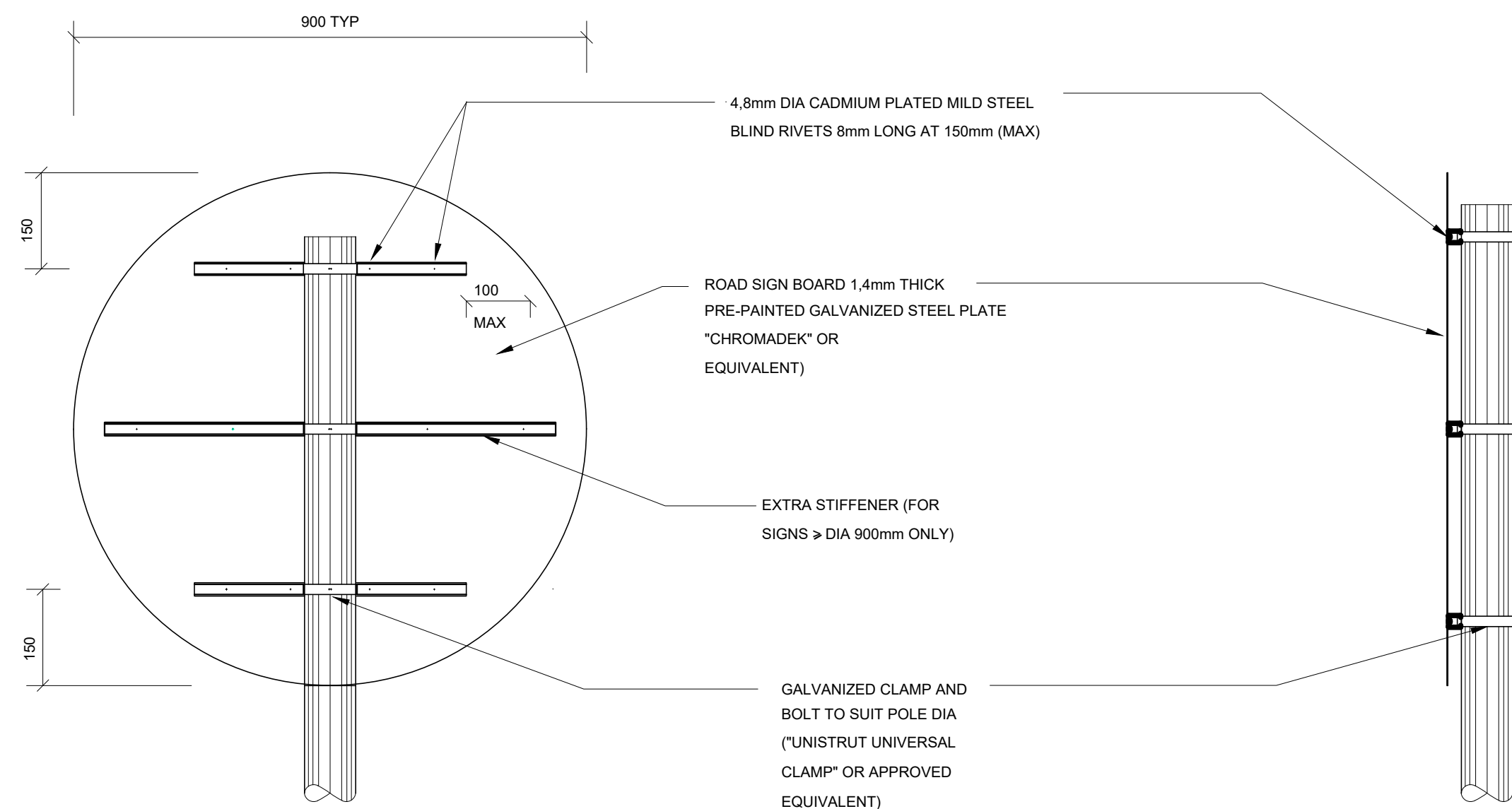
W413 GORE PLATE



REAR ELEVATION  
N.T.S.

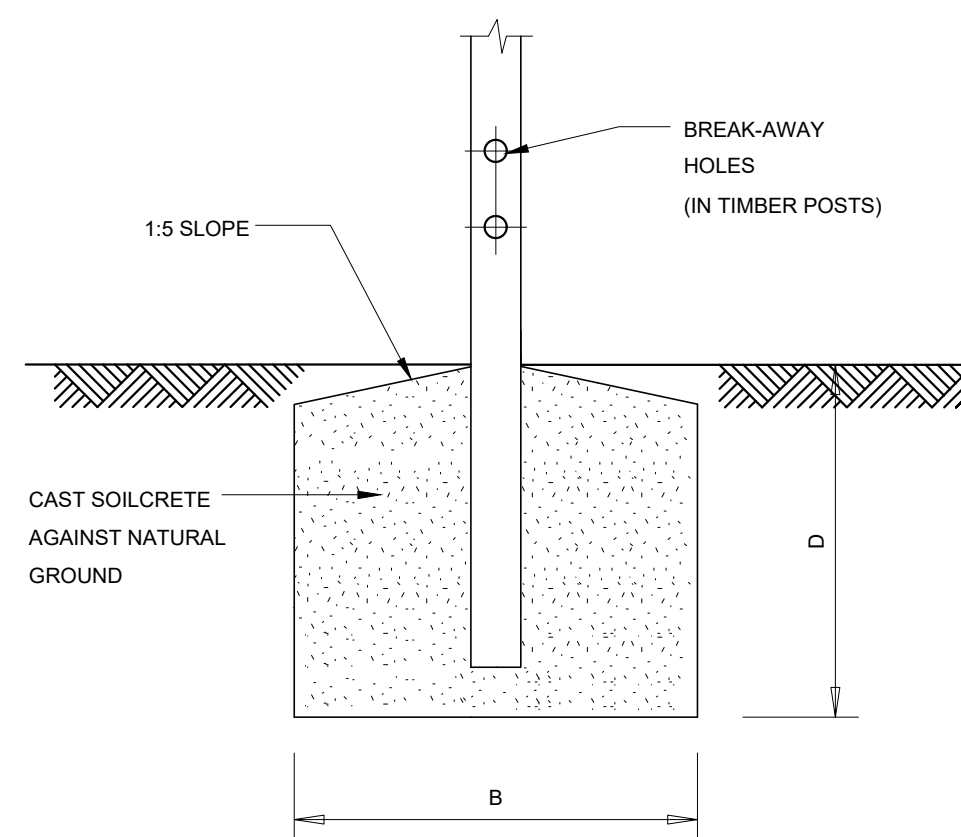


REAR ELEVATION  
N.T.S.



REAR ELEVATION  
N.T.S.

TYPICAL SIDE ELEVATION  
N.T.S.



FOUNDATION DETAIL  
N.T.S.

REGULATORY AND WARNING SIGNS

NOTES :

1 DETAILS ON THIS DRAWING ARE APPLICABLE TO ROAD SIGNS SMALLER THAN 1.5m<sup>2</sup> REQUIRING A SINGLE SUPPORT

			CONSTRUCTION RECORD (AS-BUILT)		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD		PROJECT NUMBER		2020-01	
			WORKS CONTRACT ENGINEER		NAME		Name		48 Tambotie Avenue		38 IDA STREET		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING				DRAWING LOCATION DATA		START	
			Name		K BRINK		B CILLIERS		Val de Grace		MENLO PARK						ROUTE		D3135	
			Prof. Reg. No. :		IE2015-02		Date		Pretoria 0184		TSHWANE						SECTION		1	
			Date								0081						DRAWING km DISTANCE		0.000	
			SANRAL PROJECT MANAGER		NAME		B CILLIERS		PO Box 415		LYNWOOD RIDGE						DRAWING TYPE		ROADSIGNS	
			Name		B CILLIERS		Date		Pretoria 0001		TSHWANE						BRIDGE/STRUCTURE No.		2020-01-RDS-014	
			Date		950340				South Africa		0040						CONSULTANT DRAWING No.		2020-01-RDS-014	
			SANRAL PROJECT MANAGER		DRAWN BY				Tel: (012) 844 8000		Tel: (012) 426 6200						SANRAL DOCUMENT #		-	
			Name		K BRINK														VER	
			Date																V2	
			V2		24/01/2023		FOR TENDER PURPOSES		K BRINK											
			V1		10/08/2021		ORIGINAL VERSION		K BRINK											
			No.		DATE		REVISION		CONSULT. ENG.											

LATHISO  
CONSULTING ENGINEERS

WESTERN CAPE  
6 BOWATER CLOSE  
MELKBOSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 357  
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Pretoria  
0184  
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SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD  
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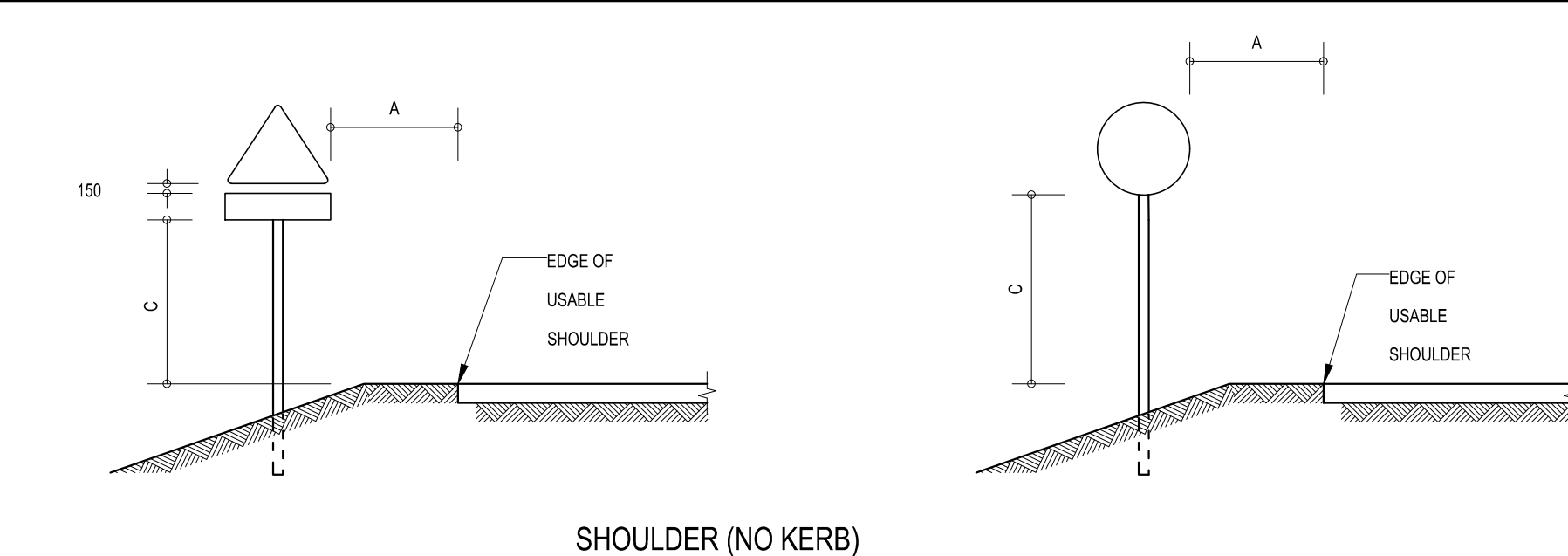
NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

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for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date:

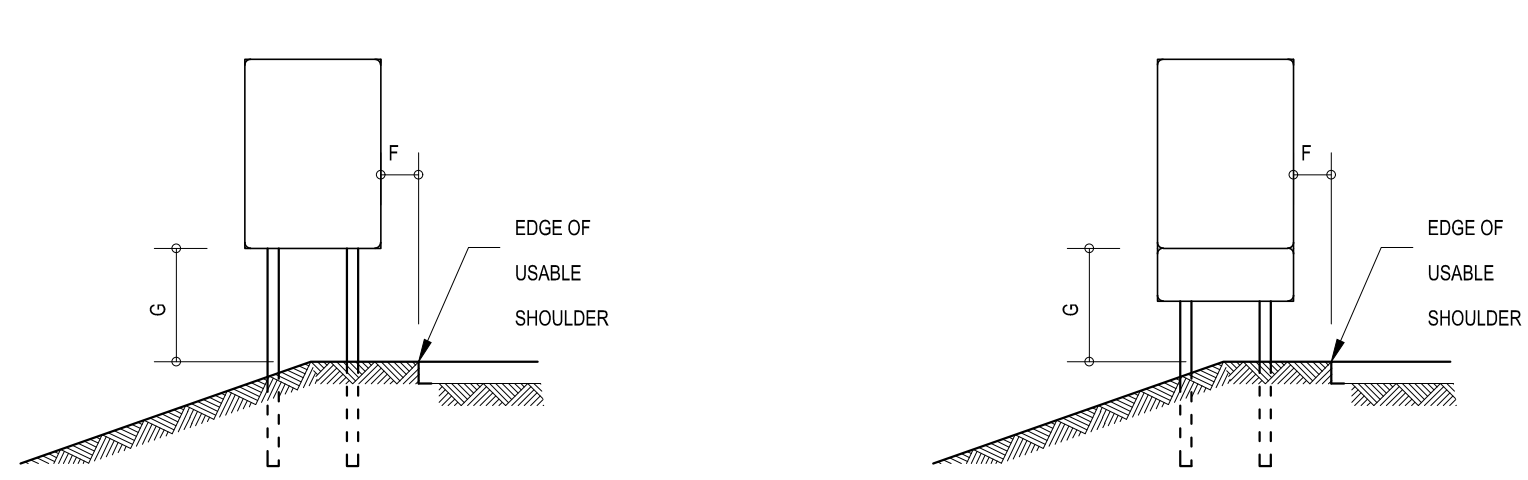
ROAD SIGNS  
TYPICAL MANUFACTURING AND ERECTION DETAILS OF  
REGULATORY AND WARNING ROAD SIGNS - TIMBER POSTS  
SCALE : AS SHOWN  
SHEET 1 OF 1

PROJECT NUMBER  
DRAWING LOCATION DATA  
ROUTE  
SECTION  
DRAWING km DISTANCE  
BRIDGE/STRUCTURE No.  
CONSULTANT DRAWING No.  
SANRAL DOCUMENT #  
START  
D3135  
1  
0.000  
N/A  
2020-01-RDS-014  
-  
END  
D3135  
1  
2.1  
ROADSIGNS  
2020-01-RDS-014  
-





REGULATORY AND WARNING SIGNS

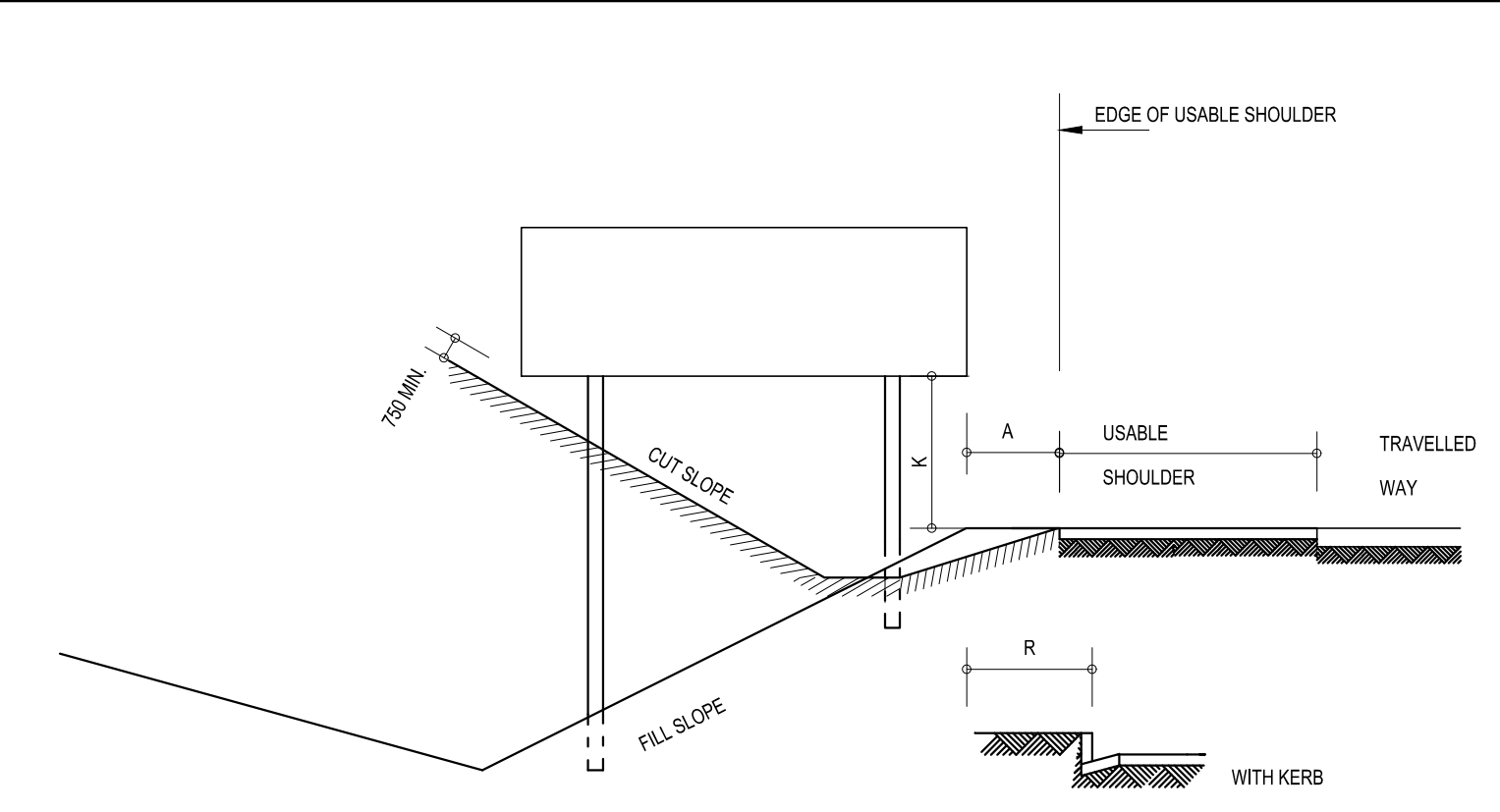


DIAGRAMMATIC SIGN

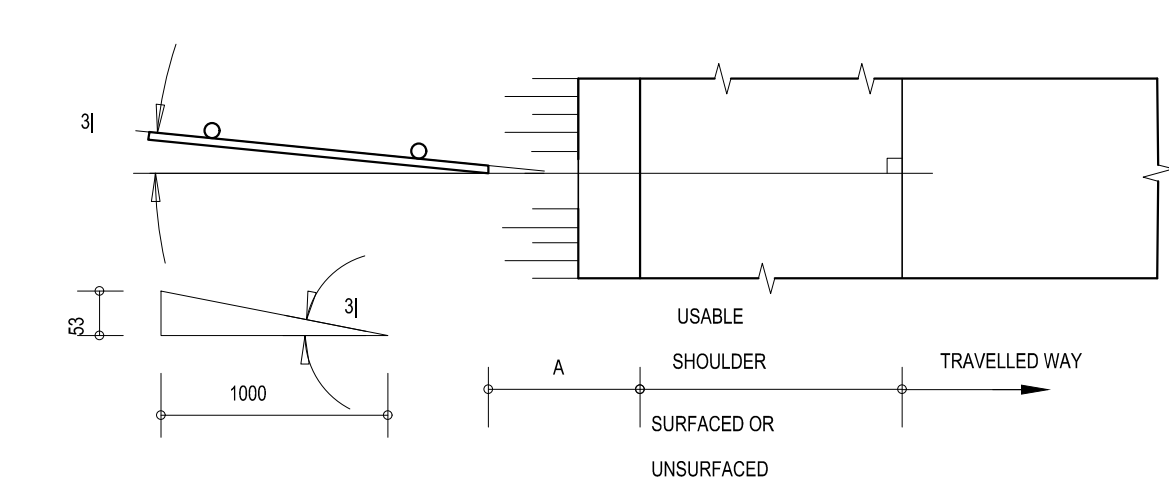


LOCATION AND ROUTE MARKER SIGNS

SMALL TO MEDIUM SIZED GUIDANCE AND INFORMATION SIGNS



LARGER GUIDANCE SIGNS



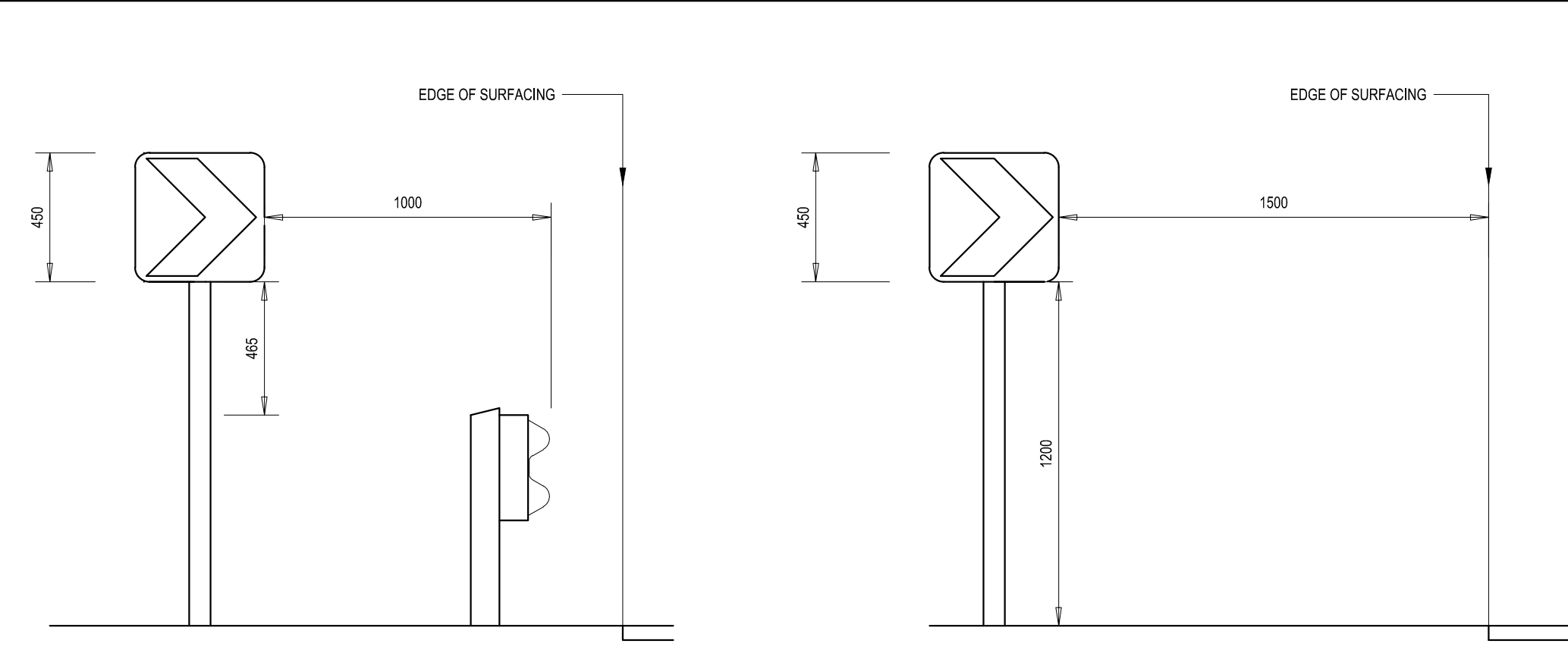
TYPICAL DIRECTION SIGN

TABLE 1 PERMANENT SIGN PLACEMENT DIMENSIONS			
POSITIONING	PREFERRED	RANGE	
VERTICAL	(mm)	(mm)	
A	1000	1200-2000	
B	750	500-	
C	2100	600-2500	
D	2500	2100-3000	
E	0	0-200	
F	1200	600-2000	
G	1200	800-1000	
K	2000	1600-2400	
R	1500	600-	

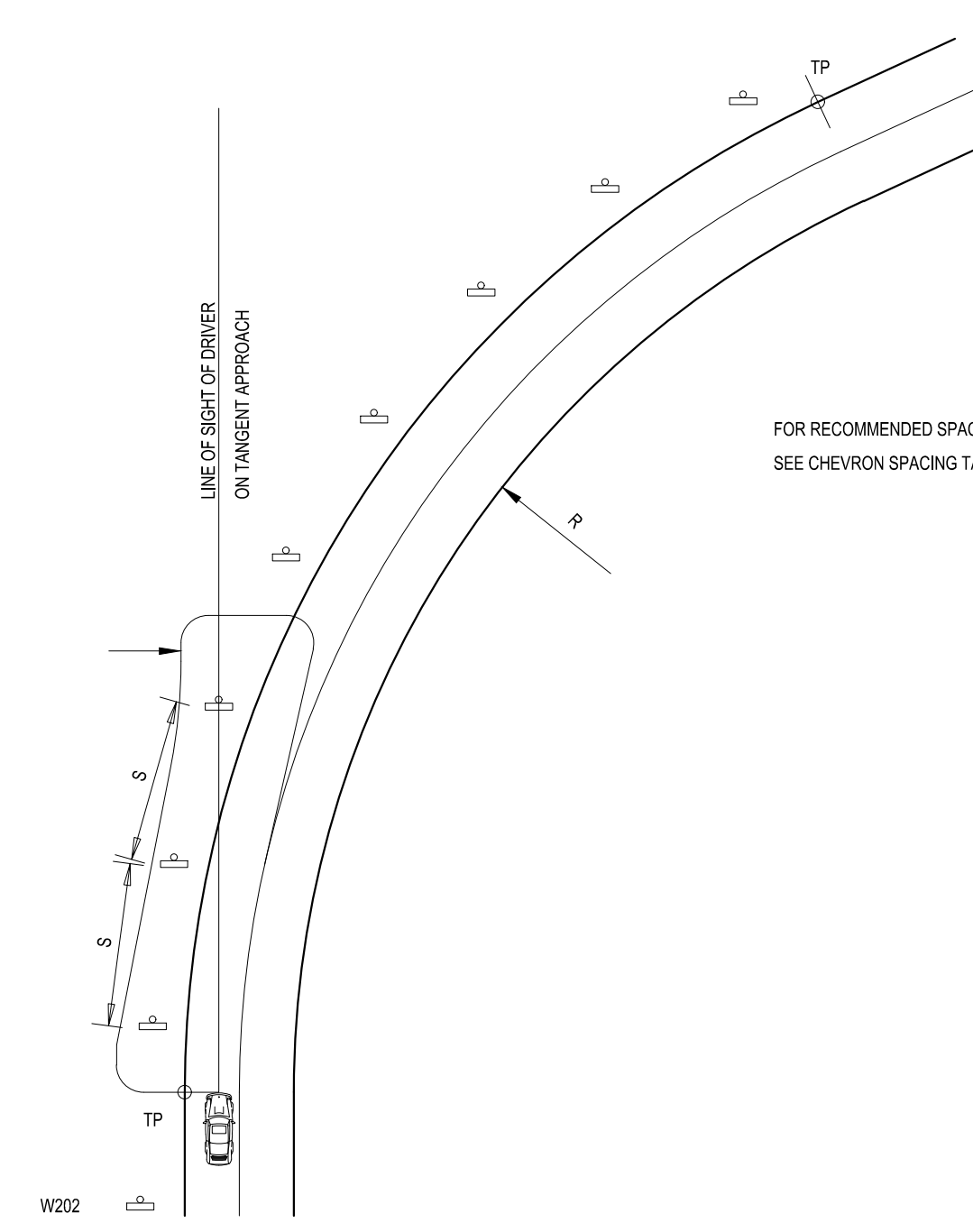
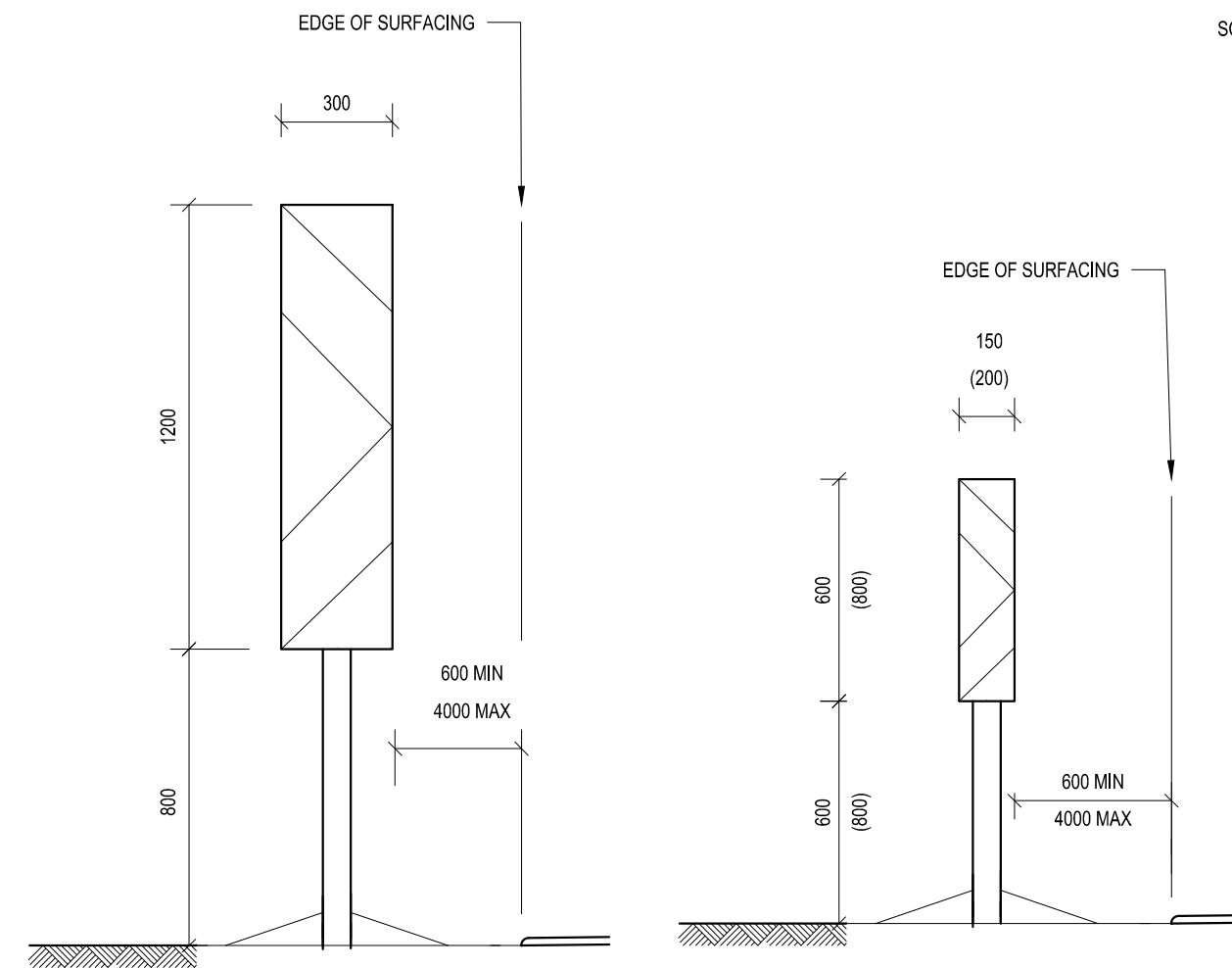
CHEVRON SPACING	
CURVE RADIUS (m)	SINGLE MODULE SPACING "S" (m)
60	8 - 15
100	15 - 25
300	25
600	25

NOTES:

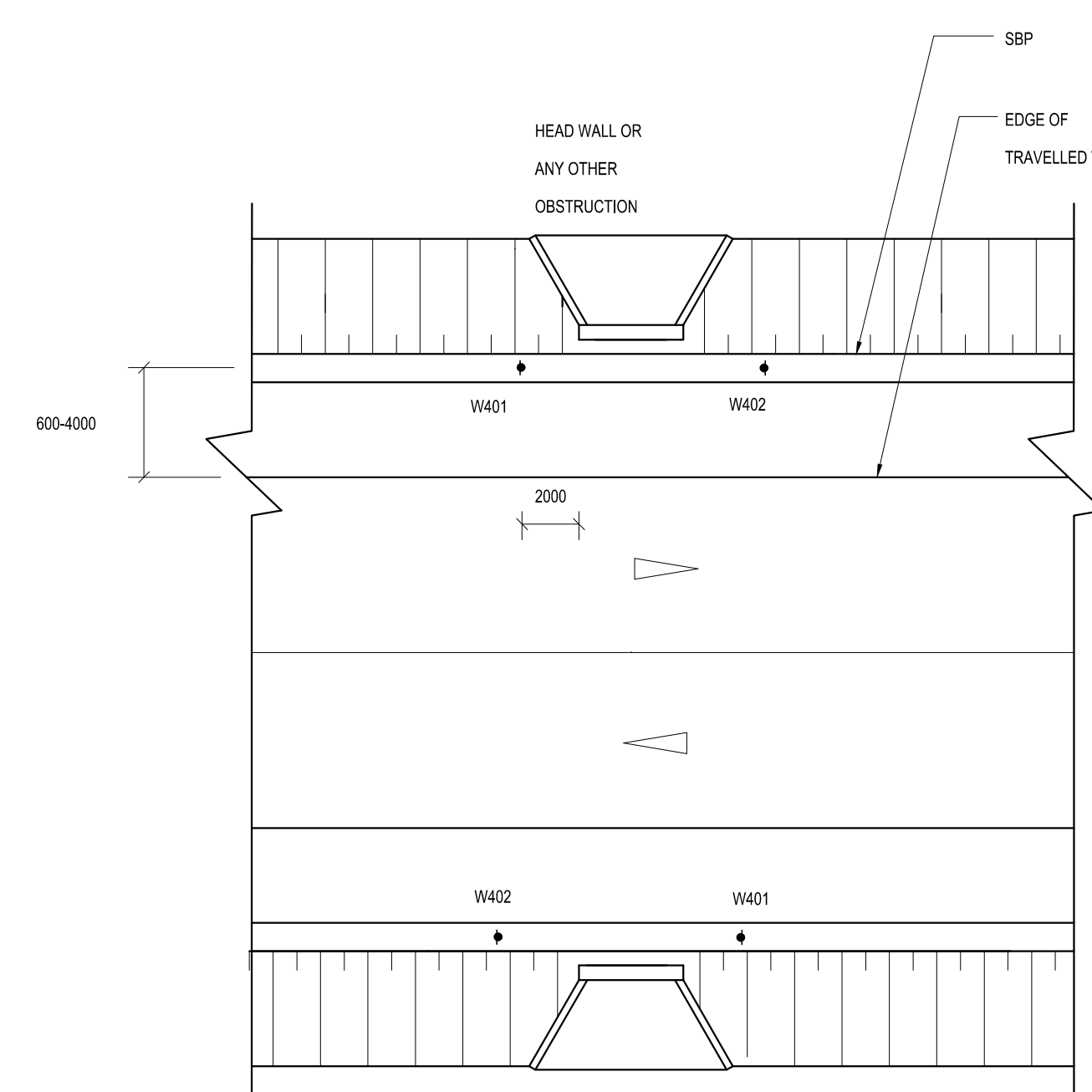
- A MINIMUM OF 5 CHEVRON ARROWS PER DIRECTION ARE NORMALLY REQUIRED
- AT LEAST 1 CHEVRON ARROWS SHOULD BE VISIBLE AT ANY ONE TIME
- WHERE RADIUS ARE LESS THAN ABOUT 30m A MULTIPLE CHEVRON SIGN CONSISTING OF AT LEAST 3 MODULES SHOULD BE USED
- WHERE CHEVRON ARROWS FOR RIGHT AND LEFT HAND CURVES OVERLAP:  
(a) SPACING SHOULD REMAIN AS SHOWN IN THE TABLE AS FAR AS POSSIBLE  
(b) WHERE THE DISTANCE BETWEEN LEFT AND RIGHT HAND CURVE CHEVRON ARROWS IS LESS THAN 2.0m PLACE BOTH CHEVRON ON A SINGLE POST BACK TO BACK



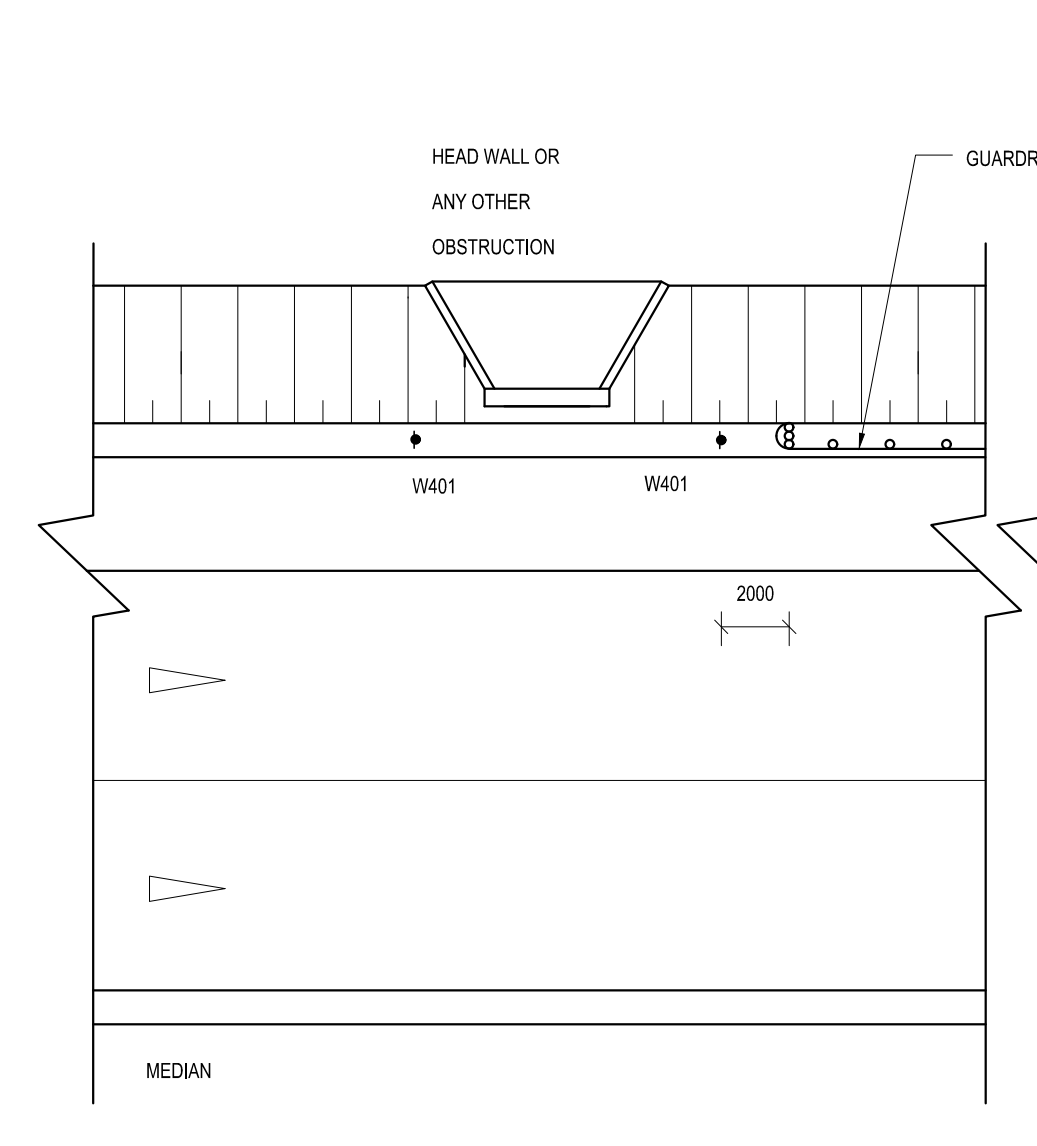
HAZARD PLATE SIGNS



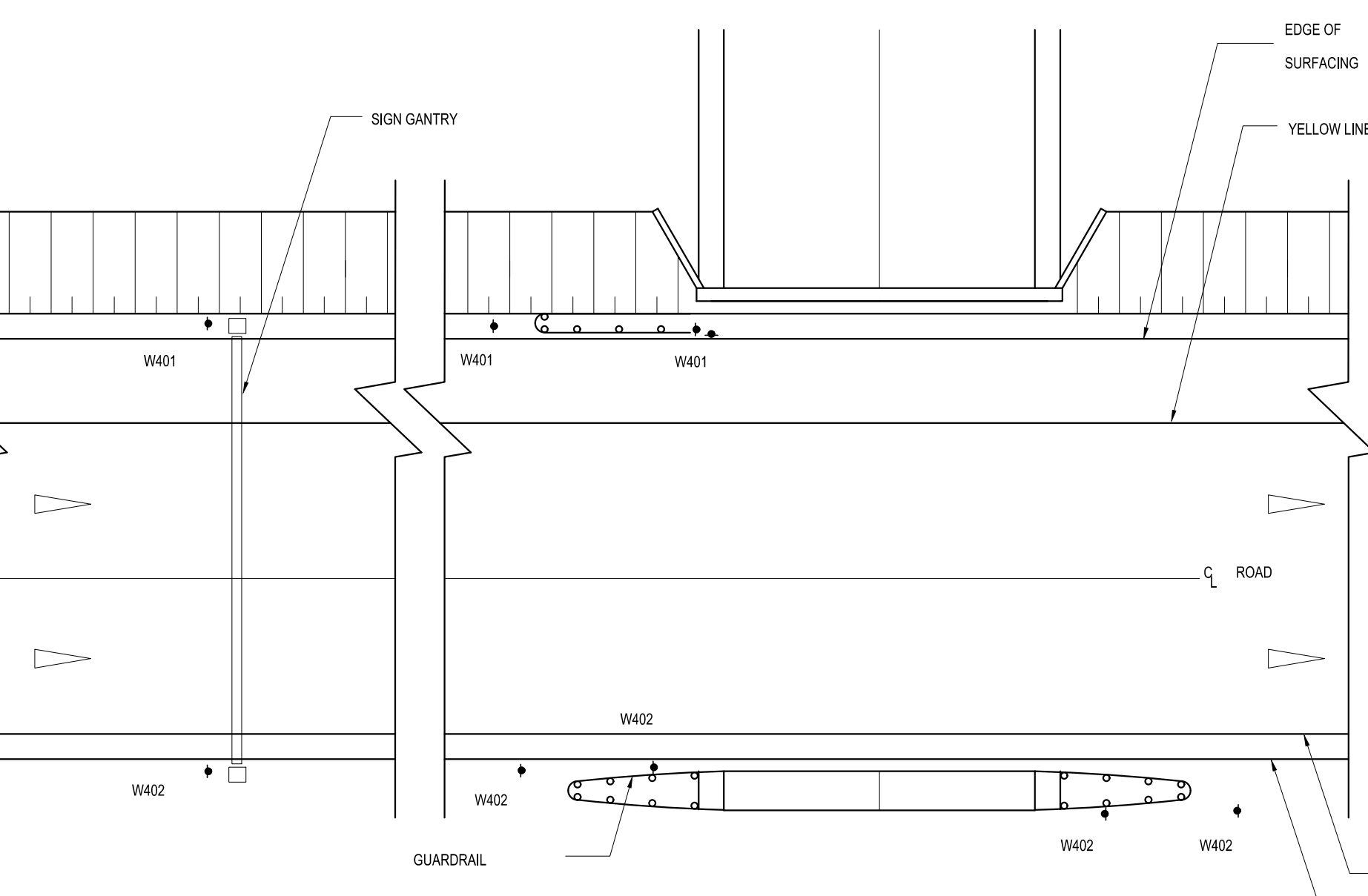
TYPICAL LONGITUDINAL PLACING OF CHEVRONS



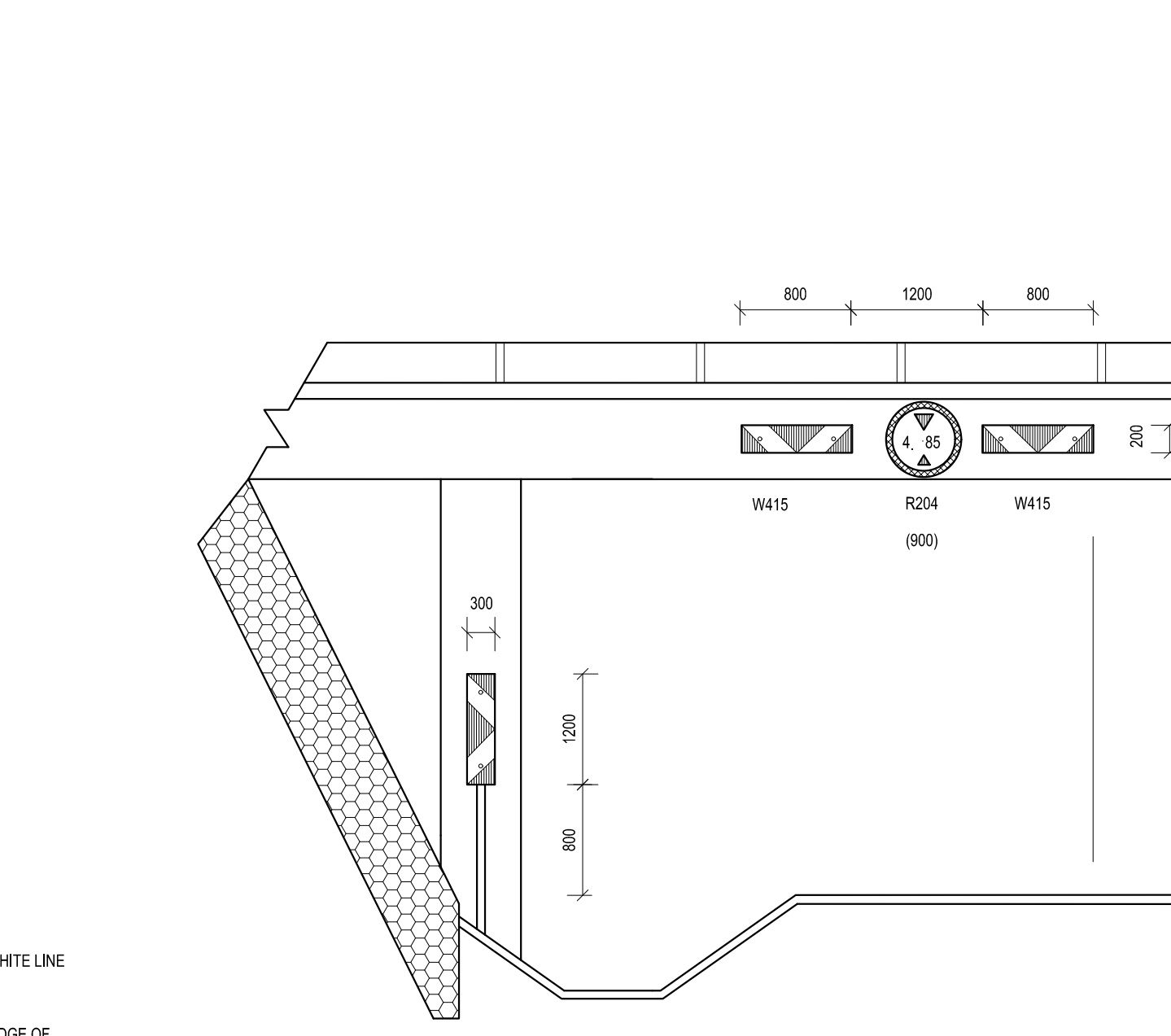
LOCATION DETAILS SINGLE CARRIAGEWAY



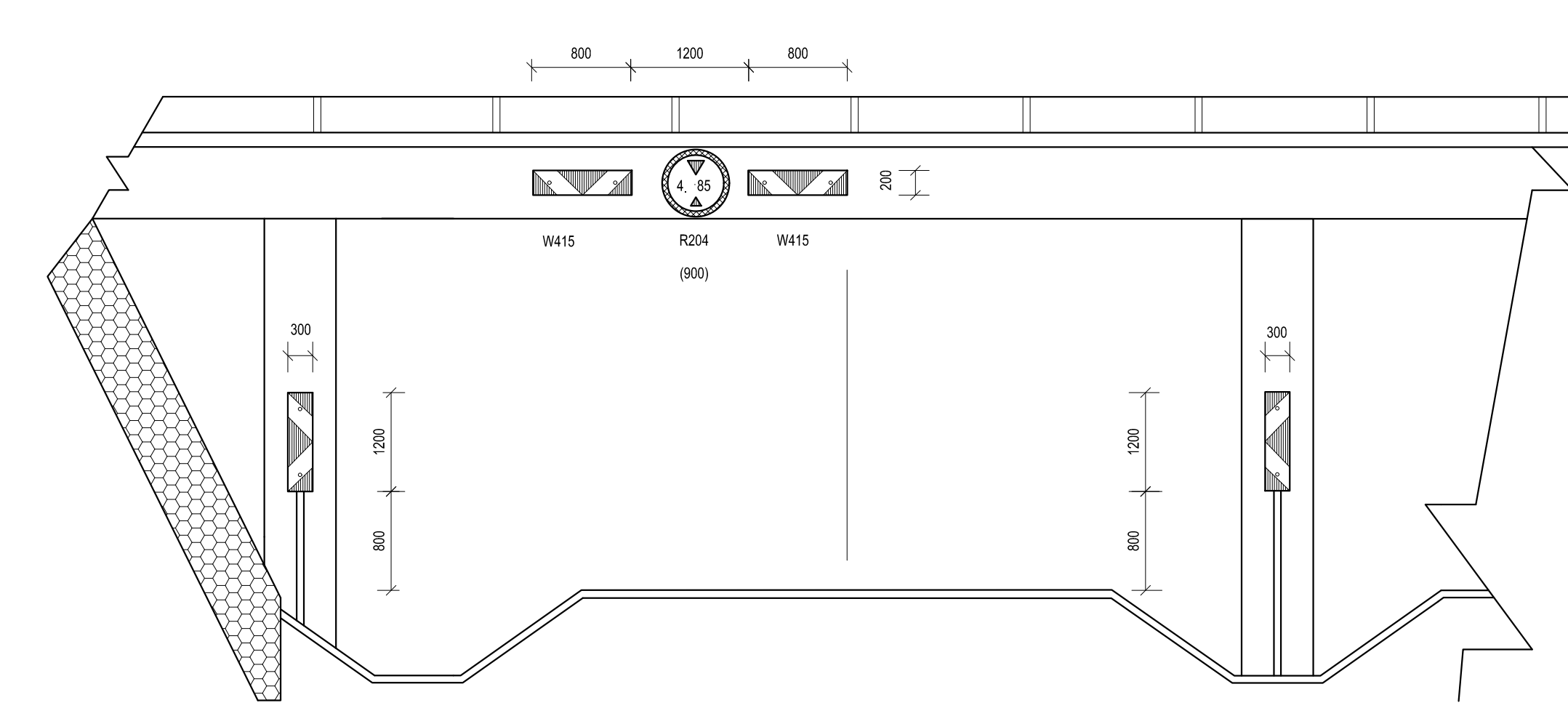
CULVERT (GUARDRAIL)



GANTRY



UNDERPASS



USE AT BRIDGES

			CONSTRUCTION RECORD (AS-BUILT) WORKS CONTRACT ENGINEER		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD		PROJECT NUMBER		2020-01			
			Name : Prof. Reg. No. : Date : SANRAL PROJECT MANAGER		NAME : K BRINK Prof. Reg. No. : IE2015-02 CHECKED BY		Name : B CILLIERS Prof. Reg. No. : 950340 Date : 10/08/2021		48 Tambotie Avenue Val de Grace Pretoria 0184		38 IDA STREET MENLO PARK TSHWANE 0081		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING				DRAWING LOCATION DATA		START		END	
					NAME : B CILLIERS Prof. Reg. No. : 950340 DRAWN BY				PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000		PRIVATE BAG X17 LYNWOOD RIDGE TSHWANE 0040 Tel: (012) 426 6200						ROUTE		D3135		D3135	
																	SECTION		1		1	
																	DRAWING km DISTANCE		0.000		ROADSIGNS	
																	BRIDGE/STRUCTURE No.		N/A			
																	CONSULTANT DRAWING No.		2020-01-RDS-015		VER	
																	SANRAL DOCUMENT #				V2	
															SCALE : AS SHOWN				SHEET 1 OF 1			

V2 24/01/2023 FOR TENDER PURPOSES K BRINK

V1 10/08/2021 ORIGINAL VERSION K BRINK

No. DATE REVISION CONSULT. ENG.

WESTERN CAPE

6 BOWATER CLOSE

MELKBOSSSTRAND

CAPE TOWN 7441

P.O. BOX 357

MELKBOSSSTRAND

CAPE TOWN 7441

Tel: 066 274 8594

LATHISO

CONSULTING ENGINEERS

DESIGNED BY

NAME : K BRINK

Prof. Reg. No. : IE2015-02

CHECKED BY

NAME : B CILLIERS

Prof. Reg. No. : 950340

DRAWN BY

NAME : K BRINK

CONSULTANT APPROVAL

NAME : B CILLIERS

Prof. Reg. No. : 950340

Date : 10/08/2021

HEAD OFFICE

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Pretoria 0184

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Pretoria 0001

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SANRAL

BUILDING SOUTH AFRICA THROUGH BETTER ROADS

NORTHERN REGION

38 IDA STREET

MENLO PARK

TSHWANE 0081

PRIVATE BAG X17

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TSHWANE 0040

Tel: (012) 426 6200

ACCEPTANCE

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for the SA NATIONAL ROADS AGENCY SOC LTD.

Date:

THE UPGRADING OF BOTLOKWA (MATOKS)

CLINIC ACCESS ROAD

ROAD SIGNS

TYPICAL DETAILS FOR THE POSITIONING

OF GROUND MOUNTED SIGNS

PROJECT NUMBER

2020-01

DRAWING LOCATION DATA

ROUTE

D3135

SECTION

1

DRAWING km DISTANCE

0.000

BRIDGE/STRUCTURE No.

N/A

CONSULTANT DRAWING No.

2020-01-RDS-015

SANRAL DOCUMENT #

-

START

D3135

END

D3135

ROADSIGNS

1

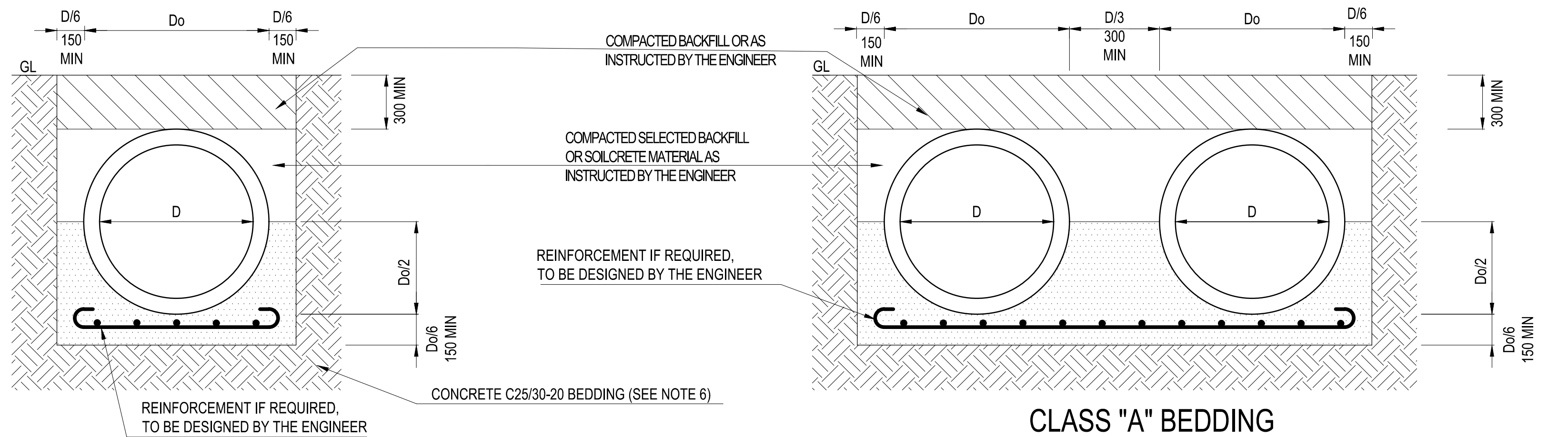
2.1

VER

V2

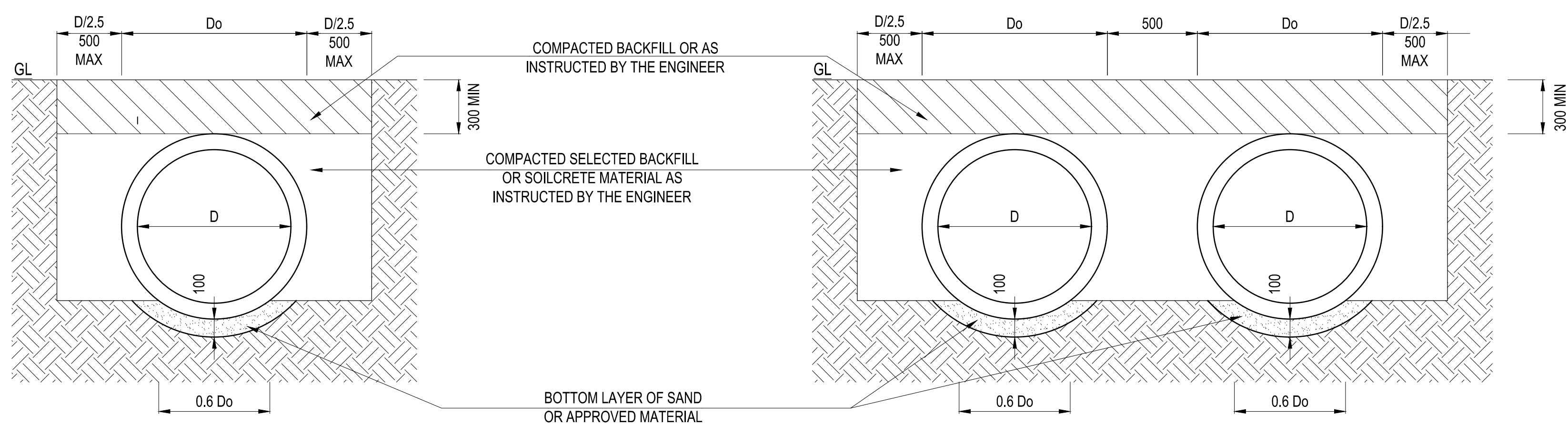
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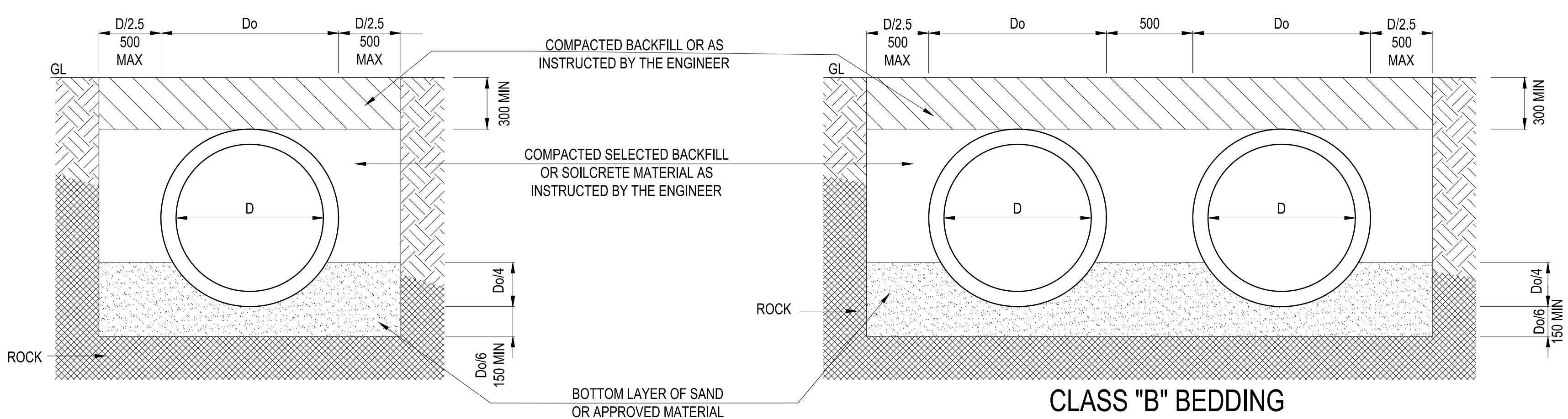
CLASS "A" BEDDING  
FOR SOFT EXCAVATIONS (SINGLE PIPE)  
N.T.S.

CLASS "A" BEDDING  
FOR SOFT EXCAVATIONS (DOUBLE PIPE)  
N.T.S.



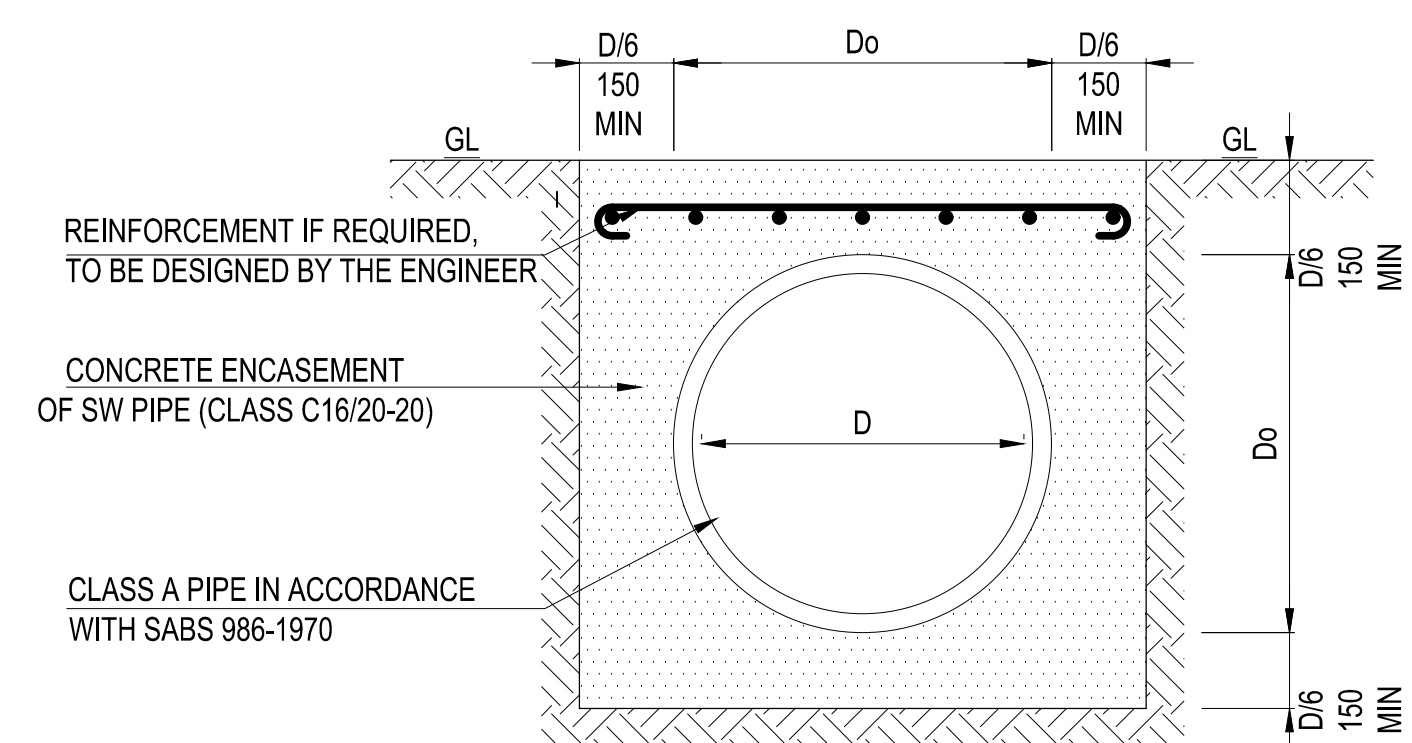
CLASS "B" BEDDING  
FOR SOFT EXCAVATIONS (SINGLE PIPE)  
N.T.S.

CLASS "B" BEDDING  
FOR SOFT EXCAVATIONS (DOUBLE PIPE)  
N.T.S.



CLASS "B" BEDDING  
FOR HARD EXCAVATIONS (SINGLE PIPE)  
N.T.S.

CLASS "B" BEDDING  
FOR HARD EXCAVATIONS (DOUBLE PIPE)  
N.T.S.



CONCRETE ENCASEMENT OF PIPES  
SCALE : N.T.S.

LEGEND:

- H = TOTAL COVER OVER THE PIPE BELOW THE FINAL ROAD LEVEL  
D = INTERNAL BARREL DIMENSION  
Do = OUTSIDE BARREL DIMENSION  
GL = GROUND LEVEL MEANING EITHER OF THE FOLLOWING:  
AN INTERMEDIATE FILL LEVEL IN ORDER TO PROVIDE THE MINIMUM COVER OVER THE PIPE FOR A TRENCH CONDITION OR THE UNDERSIDE OF THE SELECTED SUBGRADE OR SUBBASE.

NOTES:

- ALL CONCRETE PIPES SHALL COMPLY WITH THE REQUIREMENTS OF SANS 667 - 1986, STANDARD SPECIFICATIONS FOR NON-PRESSURE PIPES.
- THE BEDDING TYPE SHALL BE DESIGNED IN ACCORDANCE WITH SANS 0102 PART II - 1987 IN CONJUNCTION WITH THE CONCRETE PIPE AND PORTAL CULVERT HANDBOOK (2006 REVISION) OF THE CONCRETE MANUFACTURERS.
- THE PIPE CLASS MUST BE DETERMINED FROM THE WEIGHT OF THE PRISM OF FILL ABOVE THE CULVERT PLUS THE SNABC LOADINGS IN ACCORDANCE WITH TMH 7 (PARTS 1 & 2) "CODE OF PRACTICE FOR THE DESIGN OF HIGHWAY BRIDGES AND CULVERTS IN SOUTH AFRICA".
- THE MAXIMUM WHEEL LOAD ALLOWED ON THE PIPE IS 90 KN WITH A MINIMUM FILL OF 300MM ON TOP OF THE PIPE.
- CONCRETE IN CLASS A BEDDING AND IN CONCRETE ENCASEMENT SHALL BE CLASS C16/20-20.
- CONCRETE IN CLASS A BEDDING CAN EITHER BE REINFORCED OR UN-REINFORCED DEPENDING ON THE PREVAILING CONDITIONS.
- MINIMUM 300mm SELECTED BACKFILL OR SOILCRETE MATERIAL OVER PIPES.
- IN CASES WHERE H < 600MM THE PIPE SHALL BE ENCASED IN CLASS C16/20-20 CONCRETE AS SHOWN

NOMINAL PIPE DIA (D) Ø	DIA OUTSIDE (Do) (approx)	SIDE ALLOWANCE PER SIDE		
		ENCASE 150min	BEDDING	
			CLASS A Do/6 150min	CLASS B Do/2.5 150max
600	700	150	150	275
750	870	150	150	350
900	1030	175	175	400
1050	1195	200	200	500
1200	1360	225	225	500
1350	1525	250	250	500
1500	1680	300	300	500

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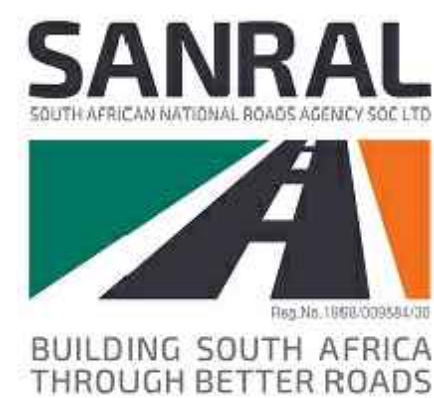
**LATHISO**  
CONSULTING ENGINEERS

**WESTERN CAPE**  
6 BOWATER CLOSE  
MELKBOSSTRAND  
CAPE TOWN 7441  
P.O. BOX 357  
MELKBOSSTRAND  
CAPE TOWN 7441  
Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DRAWN BY	
NAME	K BRINK

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	10/08/2021

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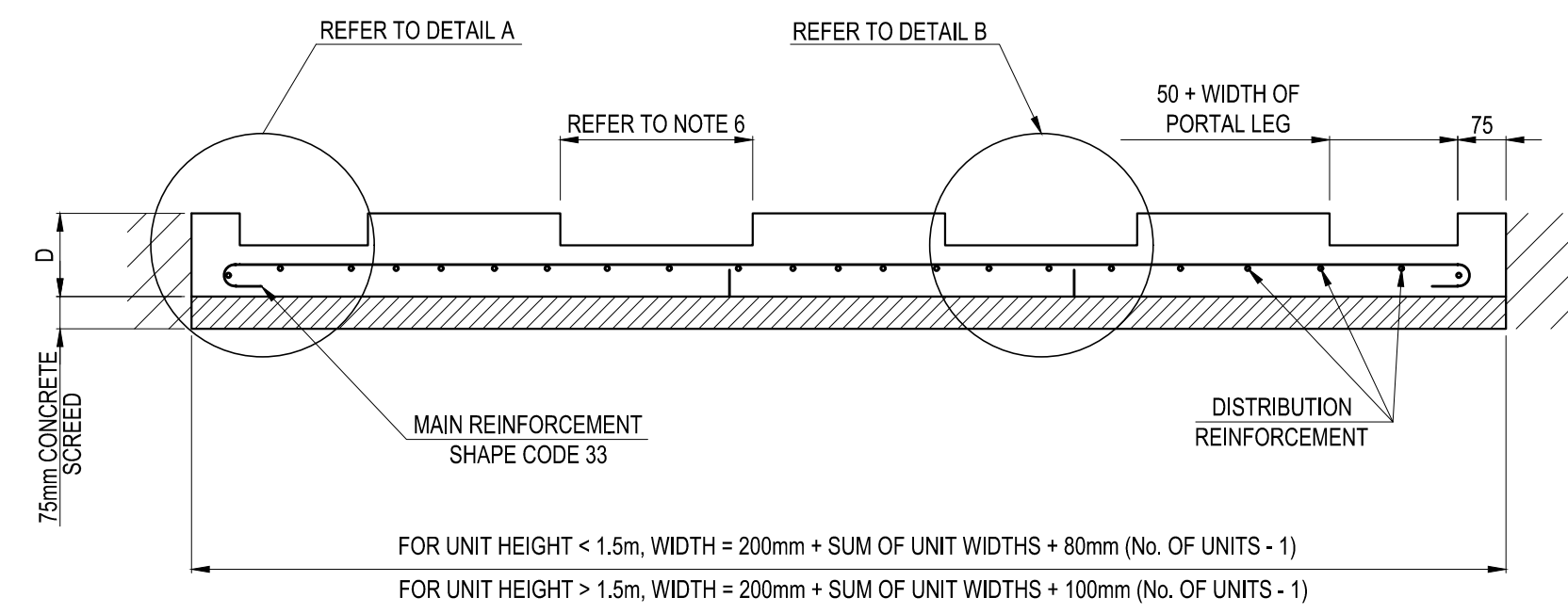
**NORTHERN REGION**  
38 IDA STREET  
MENLO PARK  
TSHWANE 0081  
PRIVATE BAG X17  
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TSHWANE 0040  
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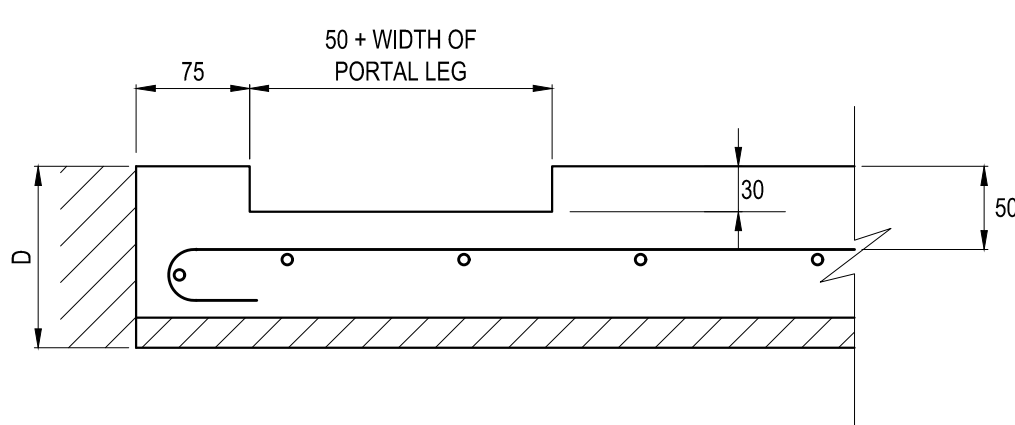
THE UPGRADING OF THE BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
PIPE CULVERT DETAILS	
SCALE : AS SHOWN	
SHEET 1 OF 1	

PROJECT NUMBER		2020-01-D3135	
DRAWING LOCATION DATA		START	END
ROUTE		D3135	D3135
SECTION		1	1
DRAWING km DISTANCE		0.000	2.140
DRAWING TYPE		PIPE CULVERTS	
BRIDGE/STRUCTURE No.		N/A	
CONSULTANT DRAWING No.		2020-01-RDS-016	
SANRAL DOCUMENT #		---	
		VER	V2

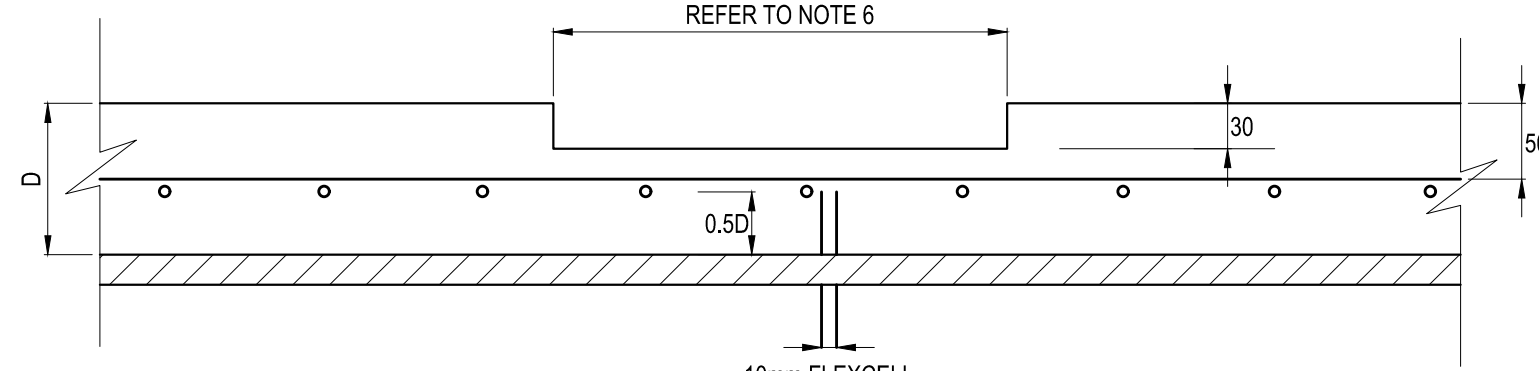




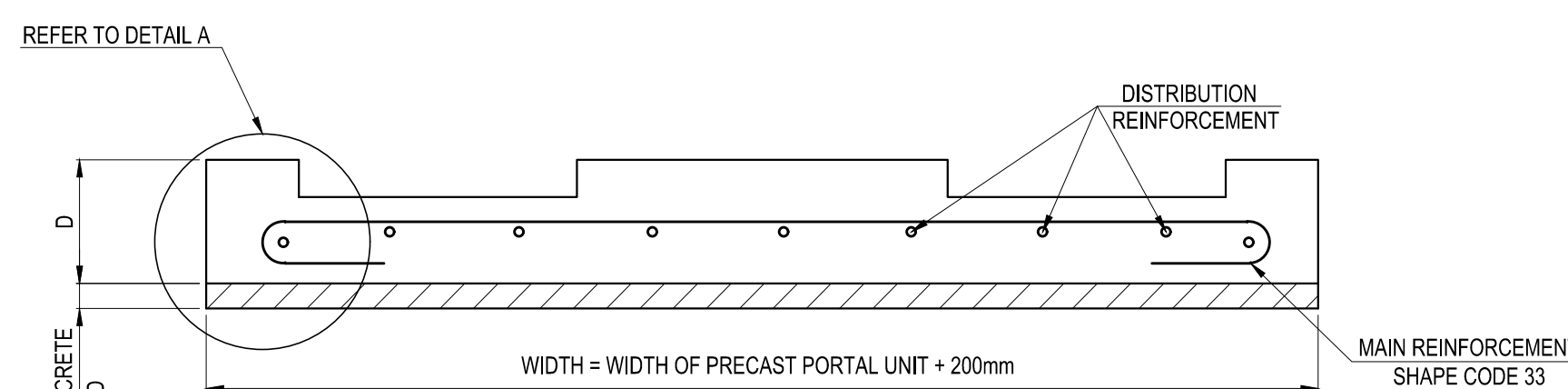
**TYPICAL SECTION THROUGH CULVERT  
SHOWING FLOOR SLAB REINFORCEMENT**  
SCALE: SCHEMATIC



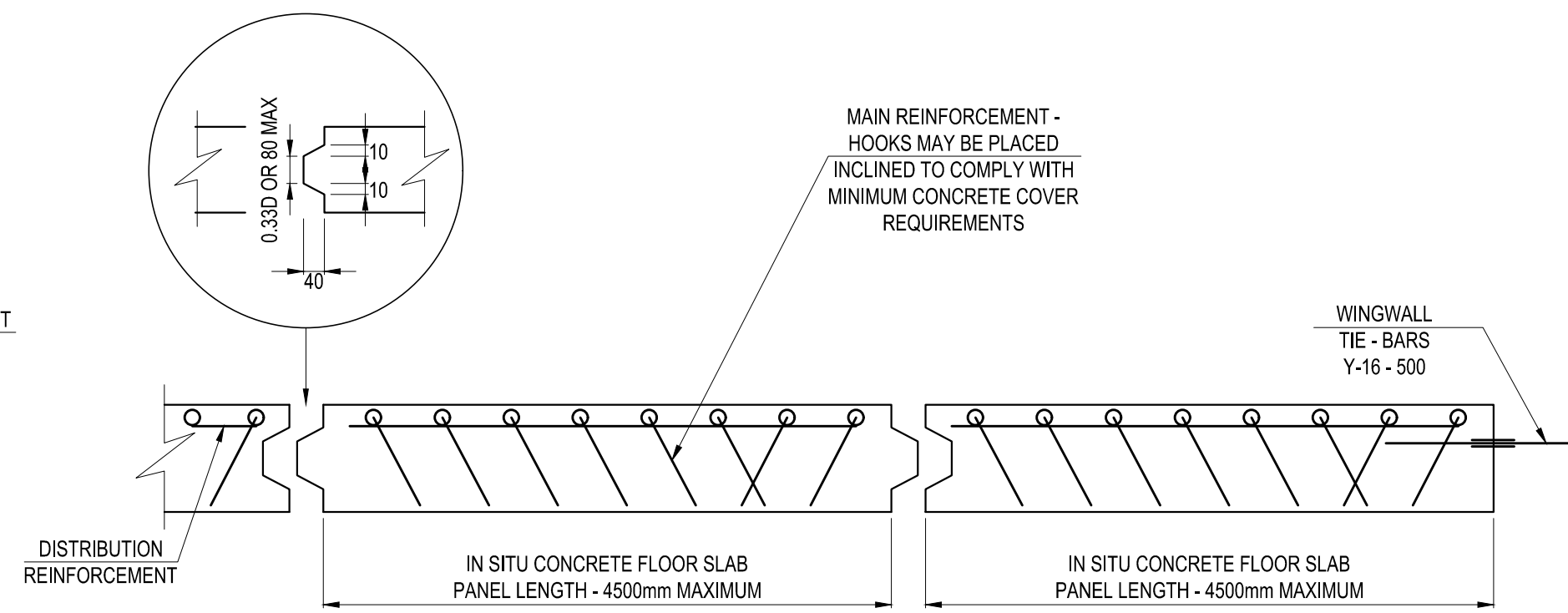
**DETAIL A**  
SCALE: SCHEMATIC



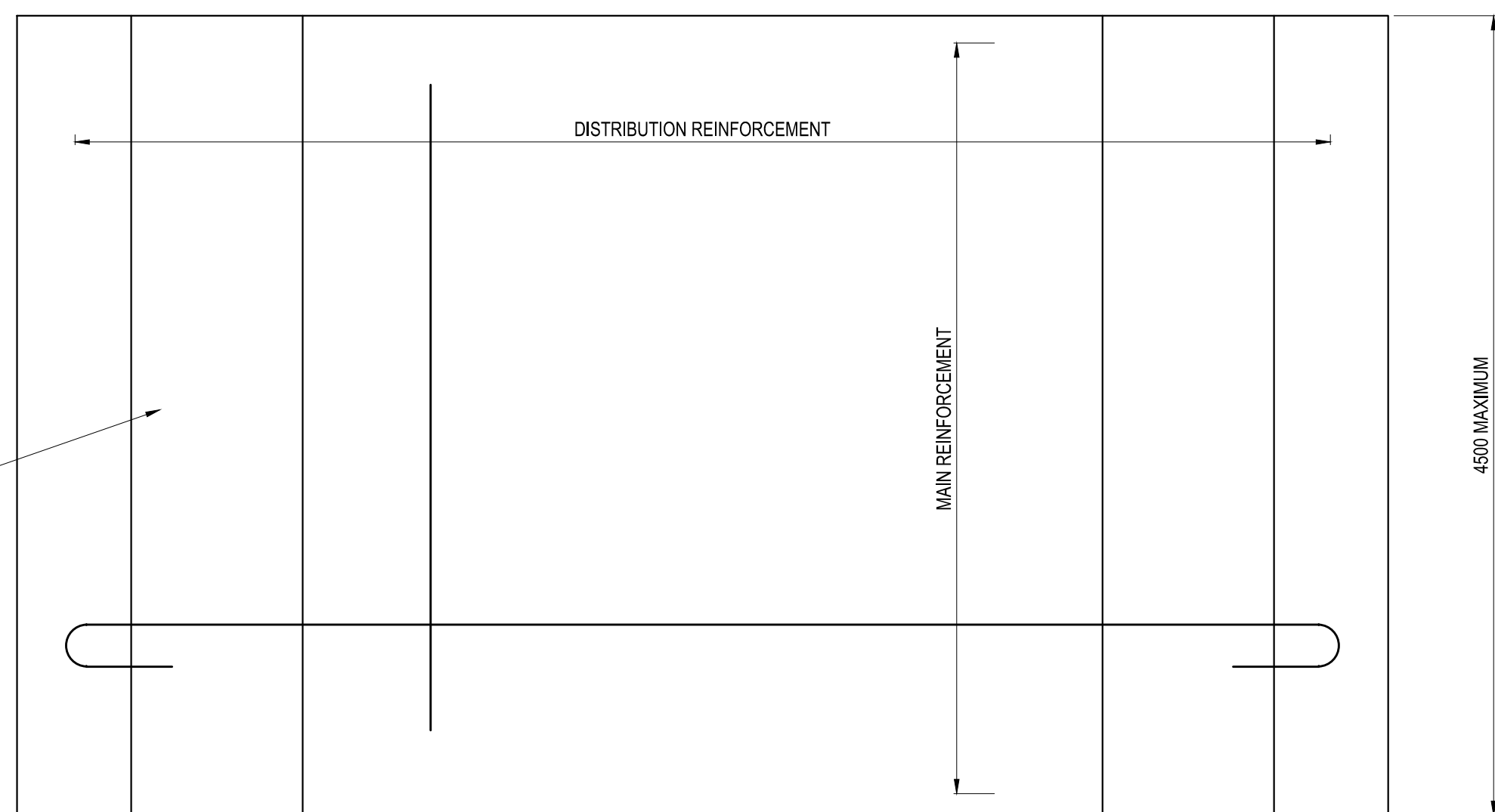
**DETAIL B**  
SCALE: SCHEMATIC



**TYPICAL SECTION THROUGH  
FLOOR SLAB REINFORCEMENT**  
SCALE: SCHEMATIC



**JOINT DETAILS BETWEEN FLOOR SLAB SECTIONS**  
SCALE: SCHEMATIC



**PLAN VIEW FOR SLAB REINFORCEMENT**  
SCALE: SCHEMATIC

FOUNDATION CONDITIONS 1 & 2					FOUNDATION CONDITIONS 3 & 4				
TRENCHED ON UNYIELDING AND UNTRENCHED ON UNYIELDING					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	200 S	160	Y12 - 100	Y10 - 200	200 S	160	Y12 - 200	Y10 - 200	
1500	200 S	175	Y12 - 100	Y10 - 200	200 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	

**WESTERN CAPE**  
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**7441**  
**Tel: 066 274 8594**

**LATHISO**  
**CONSULTING ENGINEERS**

**DESIGNED BY**  
**NAME** : K BRINK  
**Prof. Reg. No.** : IE2015-02  
**CHECKED BY**  
**NAME** : B CILLIERS  
**Prof. Reg. No.** : 950340  
**DRAWN BY**  
**NAME** : K BRINK

**CONSULTANT APPROVAL**  
**Name** : B CILLIERS  
**Prof. Reg. No.** : 950340  
**Date** : 10/08/2021

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**Val de Grace**  
**Pretoria**  
**0184**  
**PO Box 415**  
**Pretoria 0001**  
**South Africa**  
**Tel: (012) 844 8000**

**SANRAL**  
**SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD**  
**BUILDING SOUTH AFRICA**  
**THROUGH BETTER ROADS**

**NORTHERN REGION**  
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**for the SA NATIONAL ROADS AGENCY SOC LTD.**  
**Date**

**THE UPGRADING OF BOTLOKWA (MATOKS)**  
**CLINIC ACCESS ROAD**

**CULVERT WINGWALLS**  
**CULVERT WING WALLS DIMENSIONS**

**SCALE: AS SHOWN** **SHEET 1 OF 1**

#### NOTES FOR INLET / OUTLET WING WALLS:

- DESIGN CRITERIA
  - THE WING WALLS ARE DESIGNED AS CANTILEVERS FIXED TO THE BASE AND SUPPORTED BY THE HEADWALL.
  - THE WING WALLS ARE DESIGNED FOR A SURCHARGE OF 750mm AND A MAXIMUM SLOPE OF 1:1.5 FOR ANY FILL HEIGHT.
  - THE DENSITY OF SOIL = 20 kN/m<sup>3</sup>.
  - SOIL PRESSURES DETERMINED USING RANKINE'S THEORY.
  - CONCRETE:
    - WING WALL: INSITU BARREL
    - CLASS CONCRETE: C25/30-20
  - REINFORCEMENT ACCORDING TO SABS 200 - LATEST REVISION. CHARACTERISTIC STRENGTH OF HIGH TENSILE STEEL = 450 MPa.
  - A LINEAR SOIL PRESSURE DISTRIBUTION IS ASSUMED.
  - THE INSITU BARREL IS DESIGNED FOR SNAG TRAFFIC LOADING IN ACCORDANCE WITH TMH 7 PARTS 1,2&3 (AS AMENDED 1988) 'CODE OF PRACTICE FOR THE DESIGN OF HIGHWAY BRIDGES AND CULVERTS IN SOUTH AFRICA'.
- GENERAL
  - THE REQUIRED CLASS OF SURFACE FINISH IS F2 FOR ALL VISIBLE SURFACES.
  - ALL VISIBLE CORNERS MUST HAVE A 25 x 25 mm CHAMFER.
  - TWO 150 mm LAYERS OF APPROVED MATERIAL, COMPACTED TO 95% MODIFIED A.A.S.H.T.O. DENSITY, ARE REQUIRED UNDER THE INLETS AND OUTLETS.
  - MINIMUM CONCRETE COVER TO REINFORCEMENT IS 40mm.
  - FURTHER INFORMATION REGARDING SPECIFIC CULVERTS APPEAR ON THE DRAINAGE SCHEDULES OF THE ROAD.
  - THE INLET AND OUTLET UNITS ARE DESIGNED TO ACT AS INDEPENDENT UNITS WHEN USED TOGETHER WITH PIPES, PRECAST BARRELS, AS WELL AS INSITU BARREL UNITS.
  - REINFORCEMENT DETAILS OF THE FLOOR SLAB SUPPORTING THE CULVERT BARRELS APPEAR ON THE TYPICAL PLAN FOR PRECAST PORTAL CULVERTS BASE SLABS.
  - THE HEADWALLS MUST BE ALIGNED PARALLEL TO THE ROAD SHOULDER.

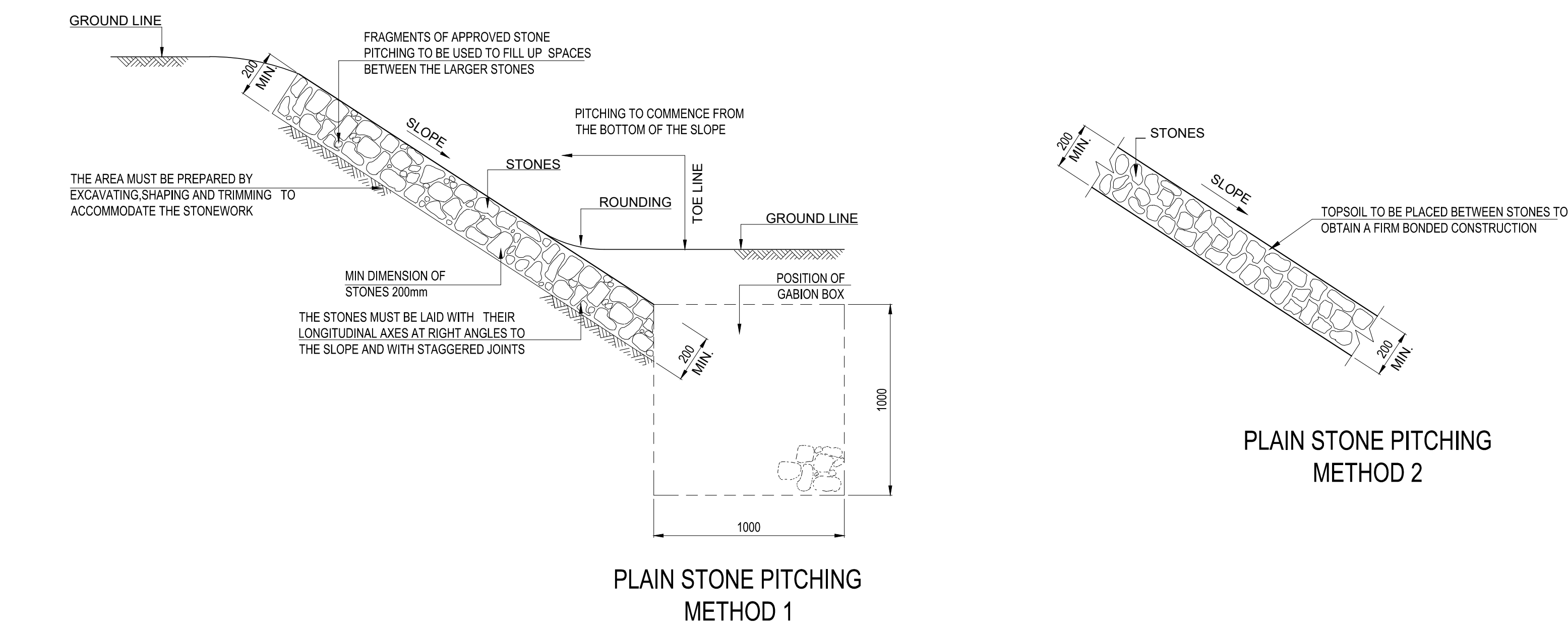
PROJECT NUMBER		2020-01	
DRAWING LOCATION DATA		START	END
ROUTE		D3135	D3135
SECTION		1	1
DRAWING km DISTANCE		0.000	13.250
DRAWING TYPE		CULVERT WINGWALLS	
BRIDGE/STRUCTURE No.		N/A	
CONSULTANT DRAWING No.		2020-01-RDS-016	
SANRAL DOCUMENT #		-	VER

No.	DATE	REVISION	CONSULT. ENG.
V2	24/01/2023	FOR TENDER PURPOSES	K BRINK
V1	10/08/2021	ORIGINAL VERSION	K BRINK

CONSTRUCTION RECORD (AS-BUILT)	
WORKS CONTRACT ENGINEER	
Name :	
Prof. Reg. No. :	
Date :	
SANRAL PROJECT MANAGER	
Name :	
Prof. Reg. No. :	
Date :	

SANRAL TITLE BLOCK #1648234(DWGPDF) VERSION Y11





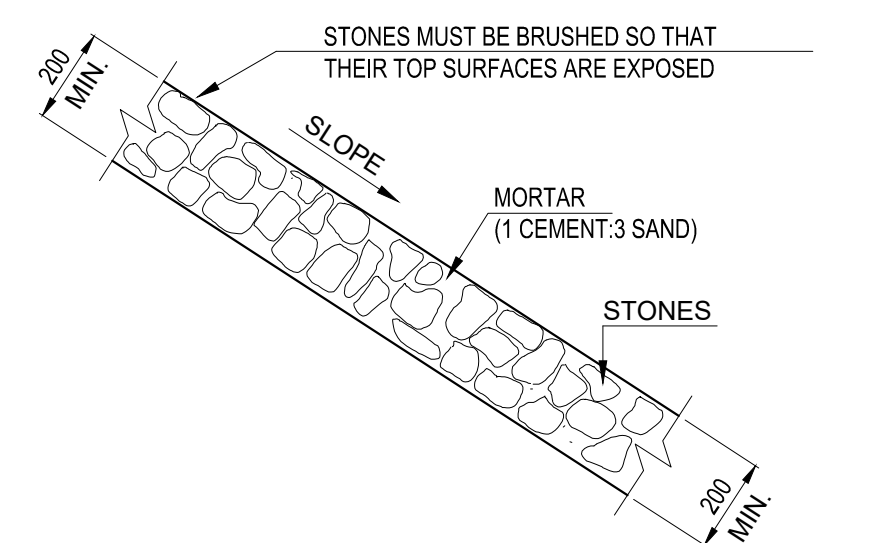
PLAIN STONE PITCHING METHOD 1

**NOTES FOR METHOD 2:**

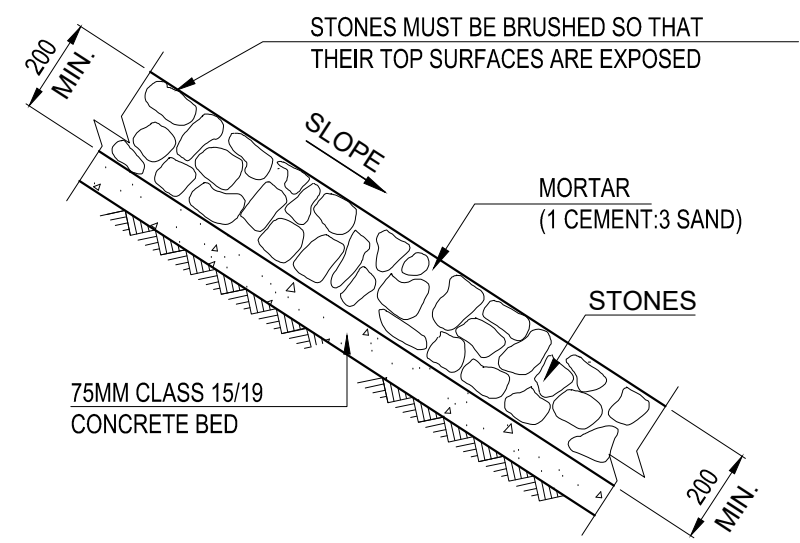
THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTIONS:

1. NO SMALL STONES SHALL BE USED TO FILL THE SPACES BETWEEN THE LARGER STONES.
2. TOPSOIL SHALL BE INTRODUCED BETWEEN INDIVIDUAL STONES SIMULTANEOUSLY WITH PLACING OF STONES.
3. ROOTED GRASS OR GRASS TUFTS SHALL THEN BE PLACED IN THE TOPSOIL.

PLAIN STONE PITCHING METHOD 2



GROUTED STONE PITCHING

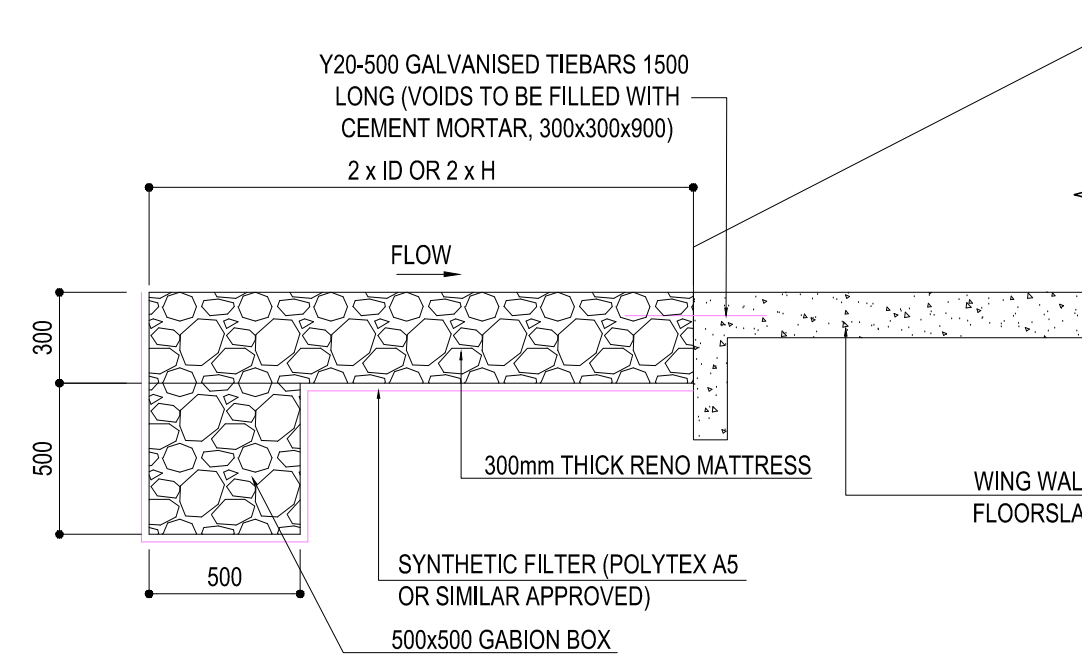


GROUTED STONE PITCHING

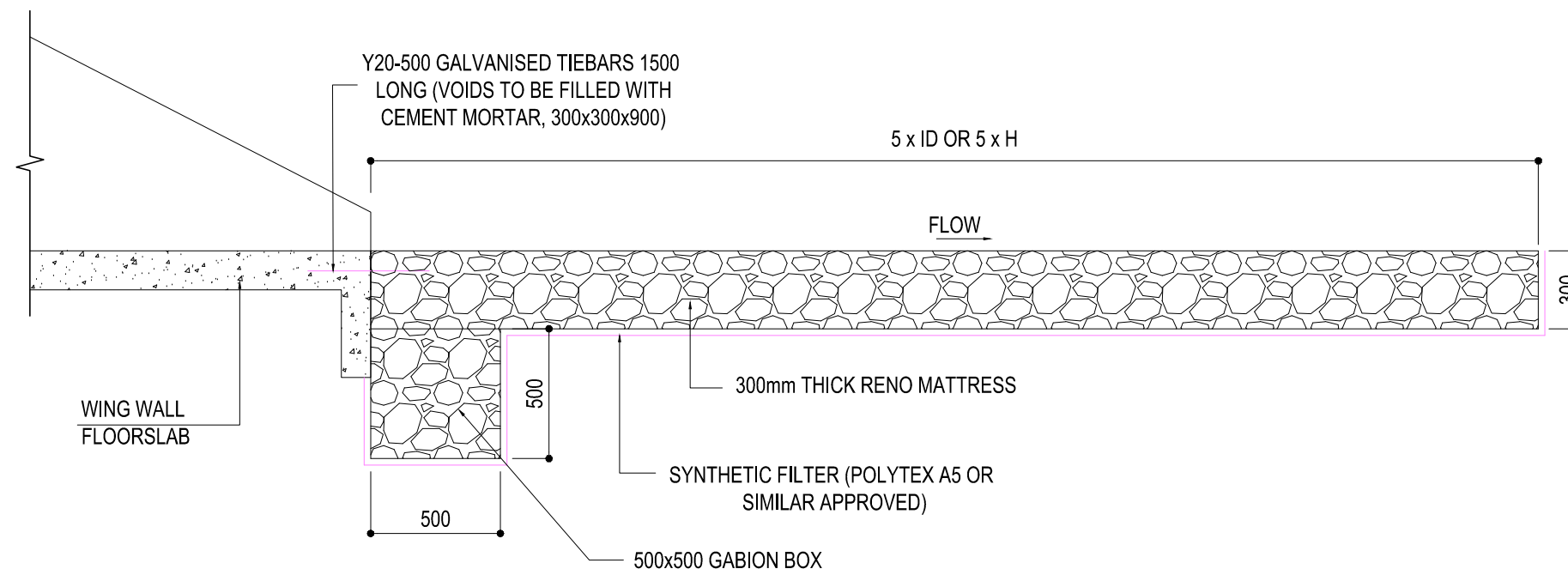
**NOTES FOR GROUTED STONE PITCHING:**

THE TECHNIQUE AND REQUIREMENTS LAID DOWN IN METHOD 1 SHALL APPLY WITH THE FOLLOWING EXCEPTION:

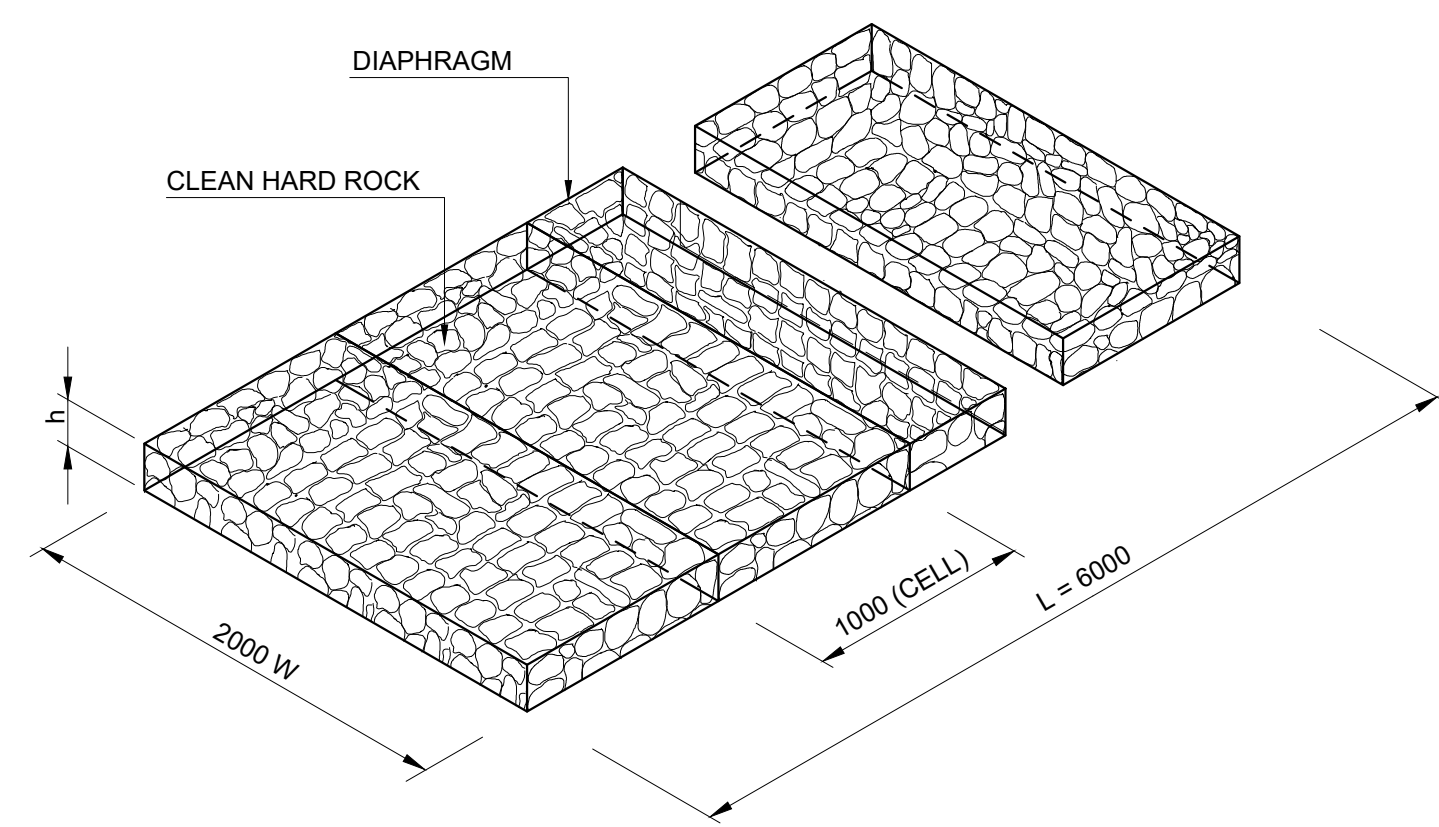
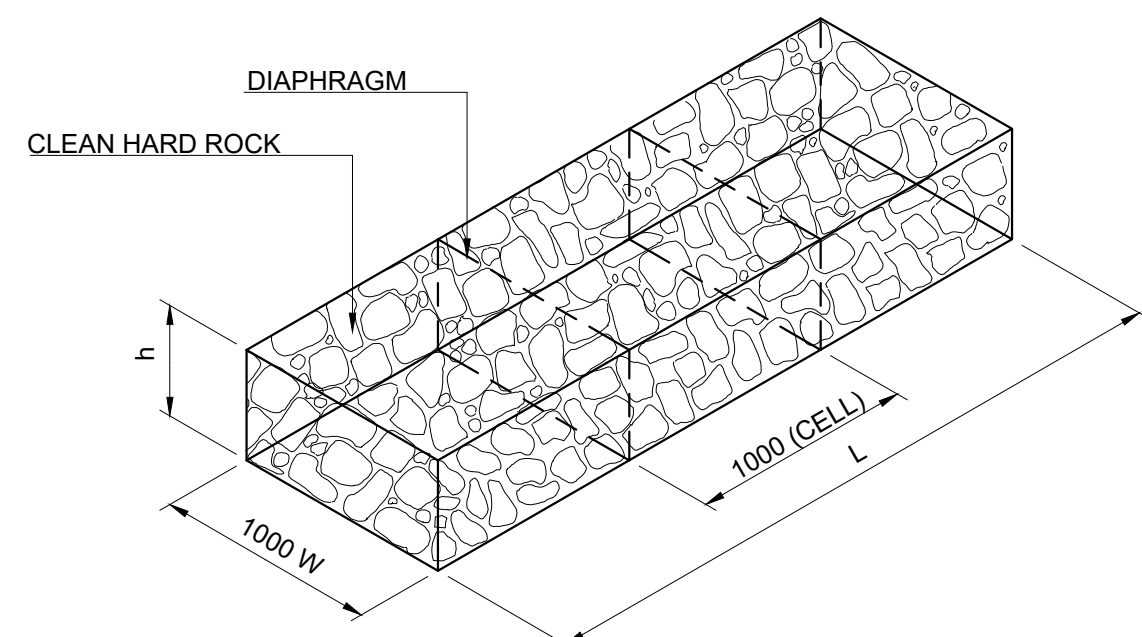
1. THE SPACES BETWEEN THE STONES SHALL BE FILLED WITH MORTAR.



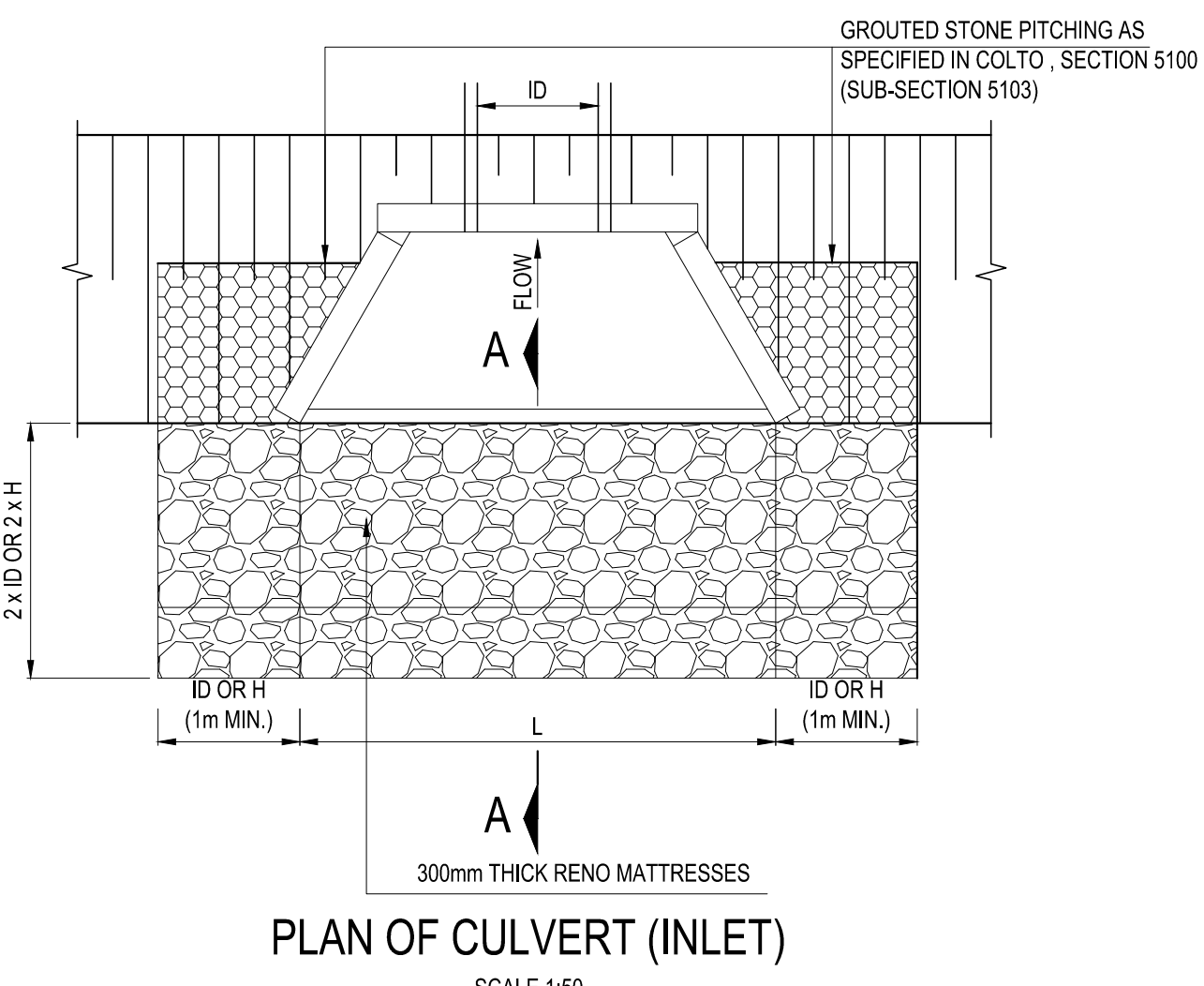
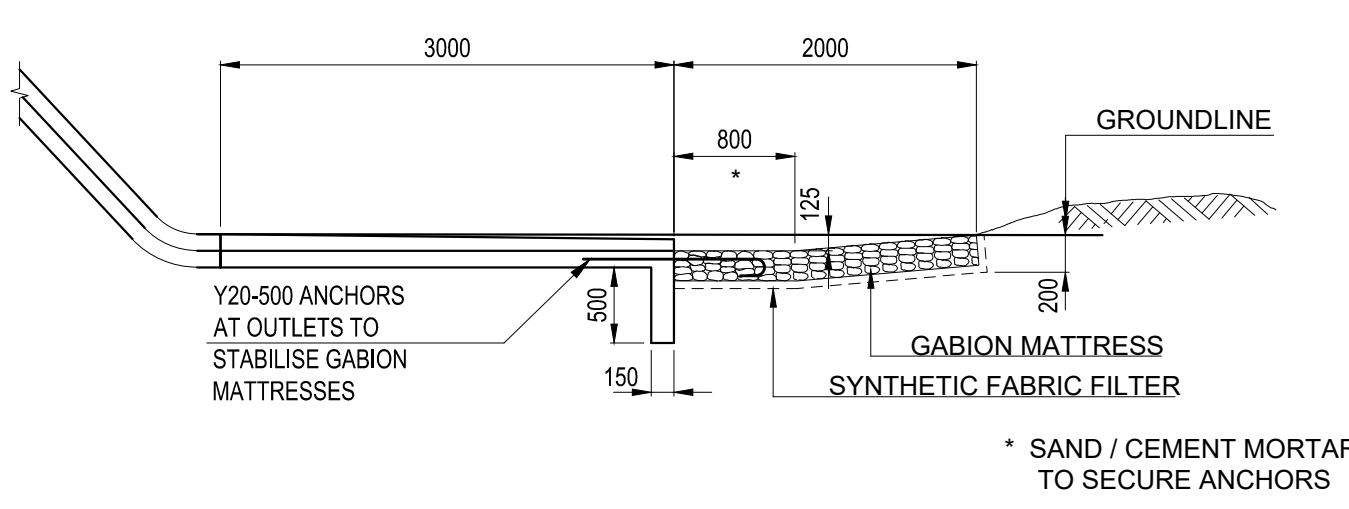
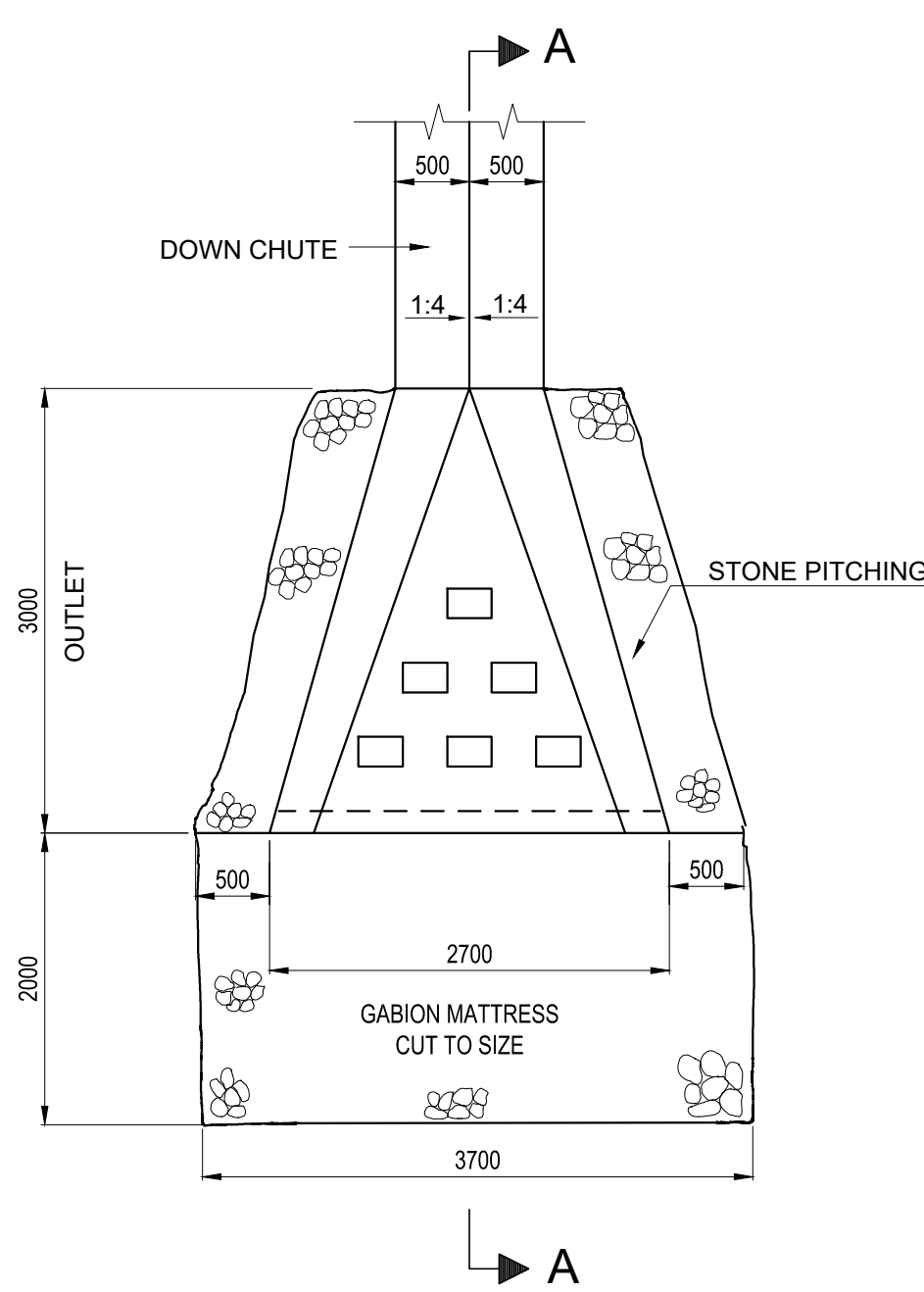
SECTION A-A (INLET) SCALE 1:25



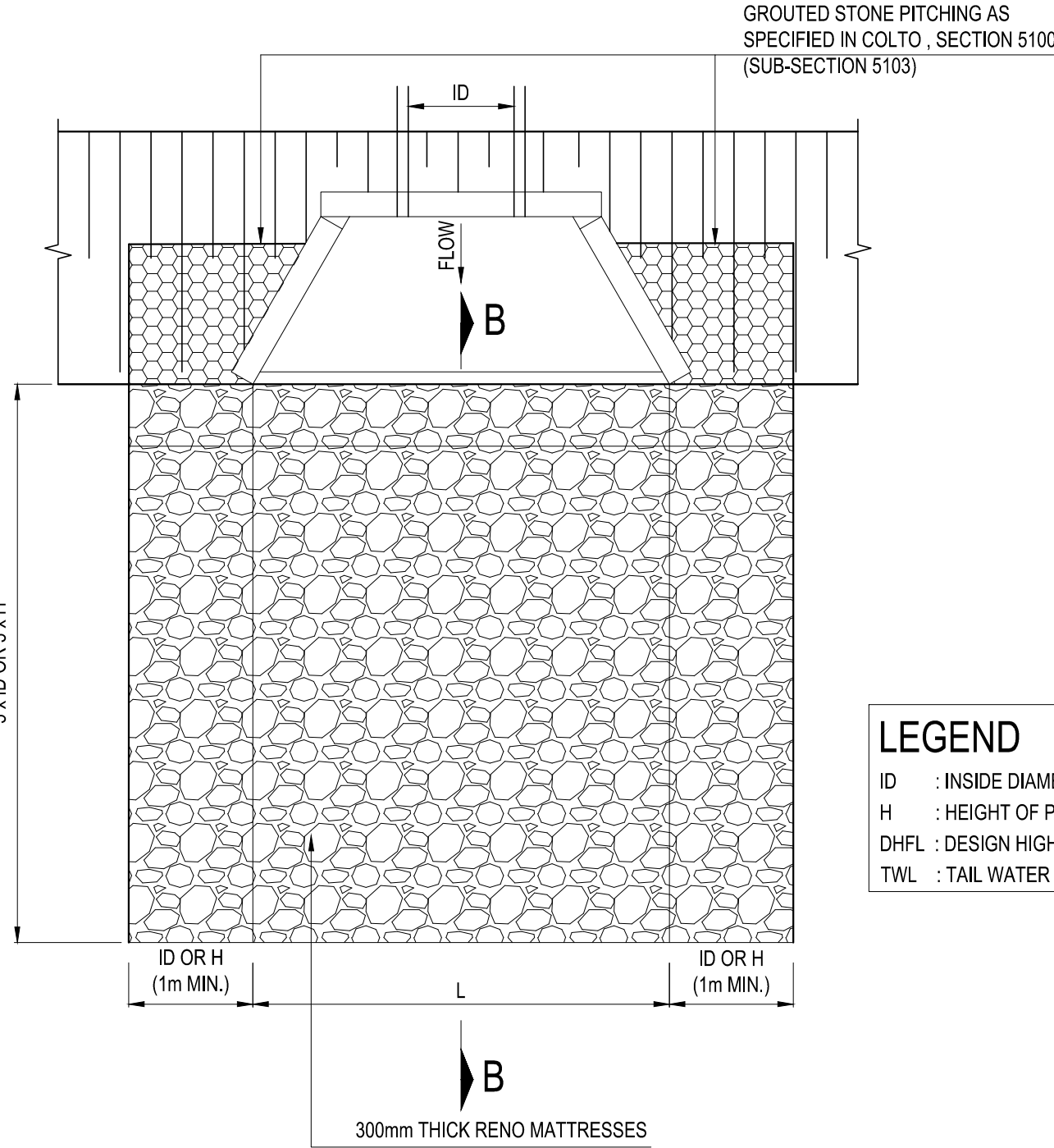
SECTION B-B (OUTLET) SCALE 1:25



DESIGN INFORMATION FOR GABIONS			
STANDARD SIZES FOR BOXES (mm)			
LENGTH (L)	1000	2000	3000
WIDTH (W)	1000		4000
DEPTH (H)	500	1000	
DIAPHRAGM SPACING	1000		
STANDARD SIZES FOR MATTRESSES (mm)			
LENGTH (L)	6000		
WIDTH (W)	2000		
DEPTH (H)	170	230	300
MESH SIZE AND WIRE DIAMETER FOR CAGES (mm)			
DEPTH OF GABION	MESH SIZE	WIRE DIA.	
500 mm AND OVER	80 x 100	2.7	
200 mm TO 300 mm	80 x 100	2.5	
ROCK SIZES FOR FILLING CAGES (mm)			
DEPTH OF CAGE	MIN	MAX	
230	100	125	
300	100	200	
500	100	250	
1000	100	300	
GALVANISED STEEL ANCHORS FOR MATTRESSES			
MATTRESSES	Y10 - 1500 x 1500mm		
INLETS AND OUTLETS	Y20 - 500mm		



PLAN OF CULVERT (INLET) SCALE 1:50



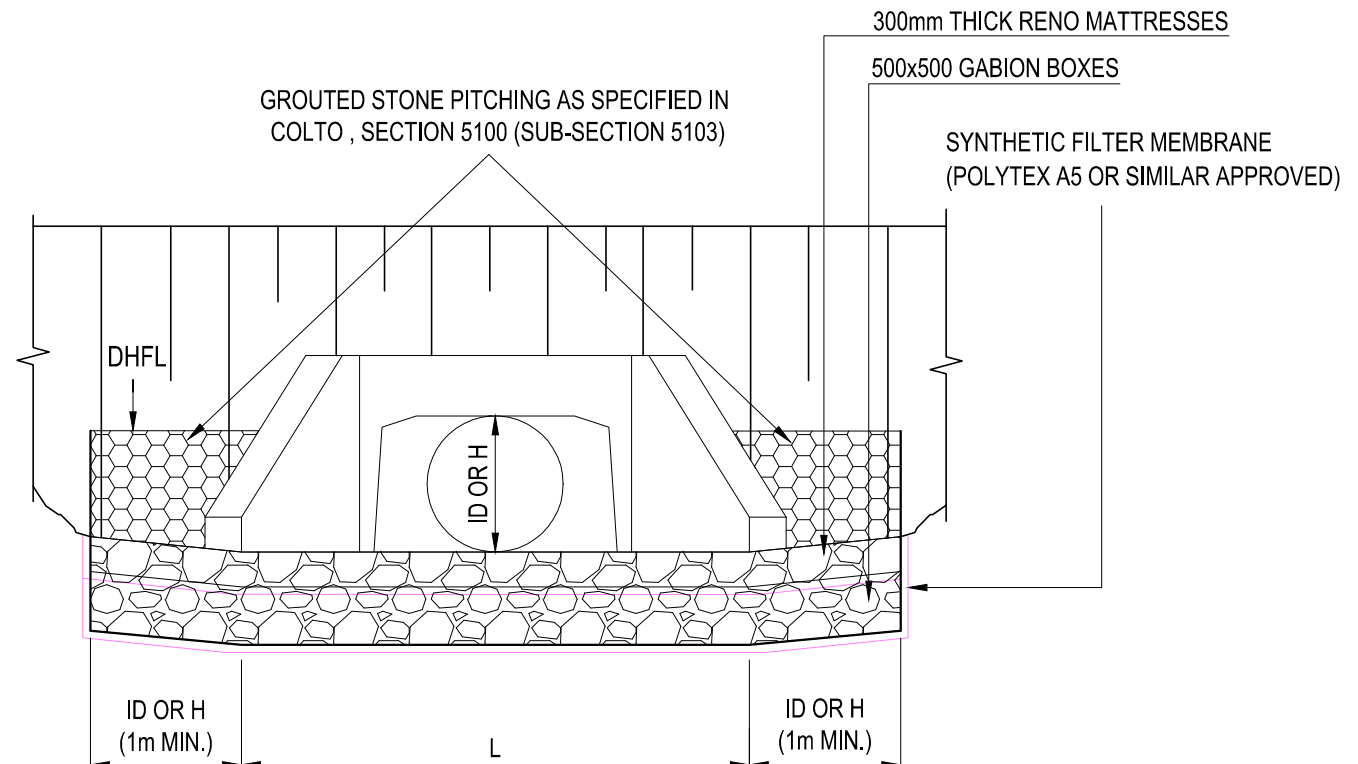
PLAN OF CULVERT (OUTLET) SCALE 1:50

**LEGEND**

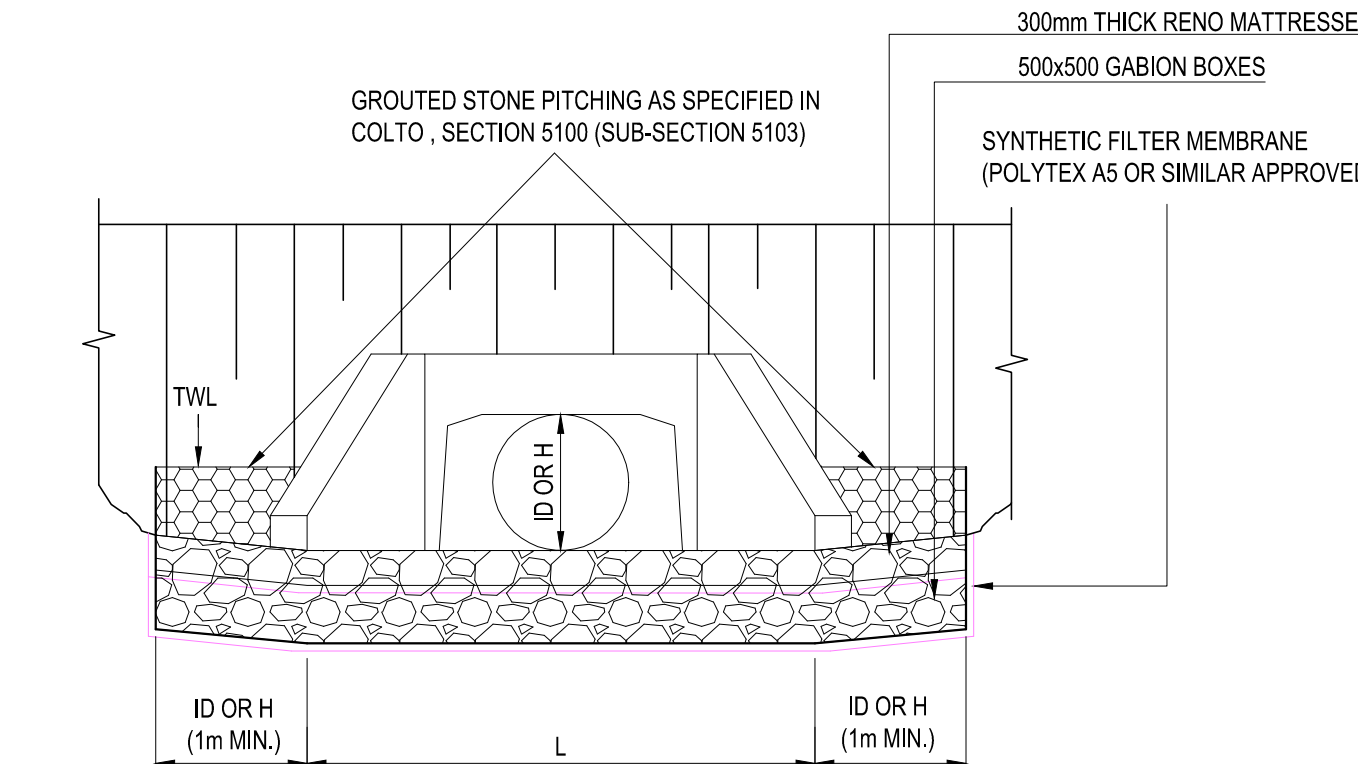
ID : INSIDE DIAMETER OF PIPE CULVERT.  
H : HEIGHT OF PORTAL CULVERT.  
DHFL : DESIGN HIGH FLOOD LEVEL.  
TWL : TAIL WATER LEVEL.

EROSION PROTECTION AT STORMWATER OUTLET STRUCTURE

GUIDELINE FLOW VELOCITY (m/s)	PROTECTION MEASURE*
$V < 1.5$	FIELD GRASS
$1.5 < V < 3.5$	GRASS SODS
$3.5 < V < 6.5$	GABION MATTRESS (300mm)
$6.58 < V < 8$	GABIONS (500mm MIN)



ELEVATION OF CULVERT (INLET) SCALE 1:50



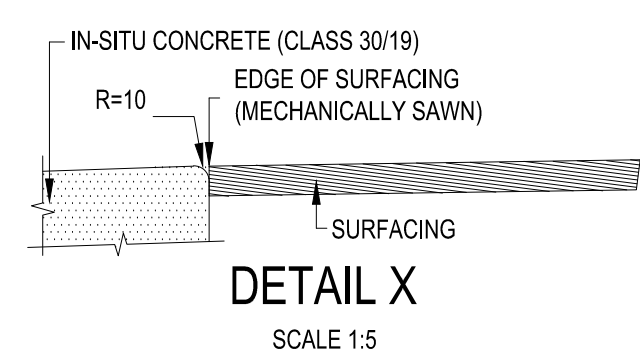
ELEVATION OF CULVERT (OUTLET) SCALE 1:50

**NOTE**

1. GABION BOXES AND RENO MATTRESSES (MACCAFERRI SA OR SIMILAR APPROVED) DIMENSIONS, SPECIFICATIONS AND ASSEMBLY DETAILS AS PER MANUFACTURERS REQUIREMENTS.
2. FOR GRASS, STONE PITCHING, CONCRETE AND STILLING BASIN EROSION PROTECTIVE MEASURES REFER TO CHAPTER 7 OF THE ROAD DRAINAGE MANUAL, 5th EDITION, 2006.

			CONSTRUCTION RECORD (AS-BUILT) WORKS CONTRACT ENGINEER		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD		PROJECT NUMBER		2021-01-D2919	
			Name : Prof. Reg. No. : Date :		NAME : K BRINK Prof. Reg. No. : IE2015-02 CHECKED BY :		Name : B CILLIERS Prof. Reg. No. : 950340 Date : 10/08/2021		48 Tambotie Avenue Val de Grace Pretoria 0184		38 IDA STREET MENLO PARK TSHWANE 0081		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING		DRAWING LOCATION DATA		START		END	
			SANRAL PROJECT MANAGER		NAME : B CILLIERS Prof. Reg. No. : 950340 DRAWN BY : K BRINK		PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000		PRIVATE BAG X17 LYNWOOD RIDGE TSHWANE 0040 Tel: (012) 426 6200		for the SA NATIONAL ROADS AGENCY SOC LTD.		EROSION CONTROL GABIONS & GABION MATTRESSES STONE PITCHING		ROUTE SECTION		D2919 1		D2919 1	
			Name : Date :												DRAWING km DISTANCE		0.000		13.250	
															DRAWING TYPE		EROSION CONTROL			
															BRIDGE/STRUCTURE No.		N/A			
															CONSULTANT DRAWING No.		2021-01-RDS-018		VER	
															SANRAL DOCUMENT #				V2	
															SCALE : AS SHOWN		SHEET 1 OF 1			

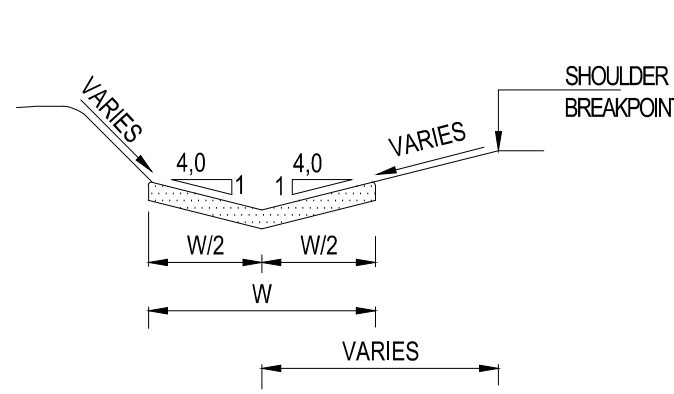
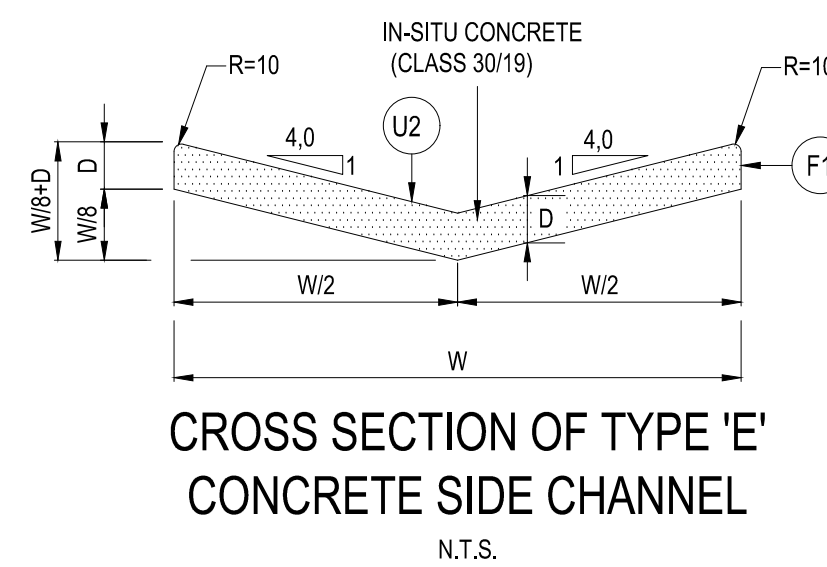




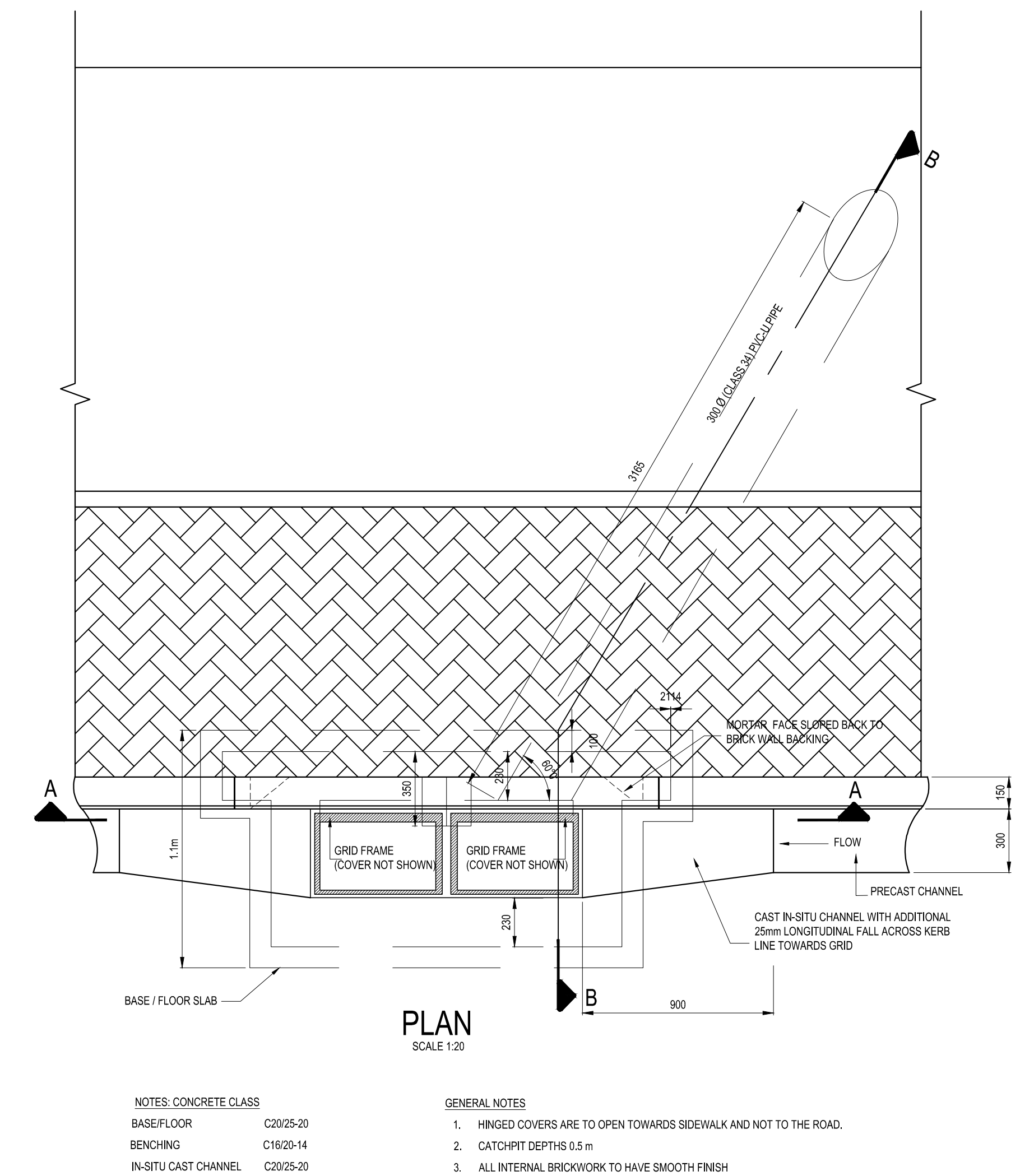
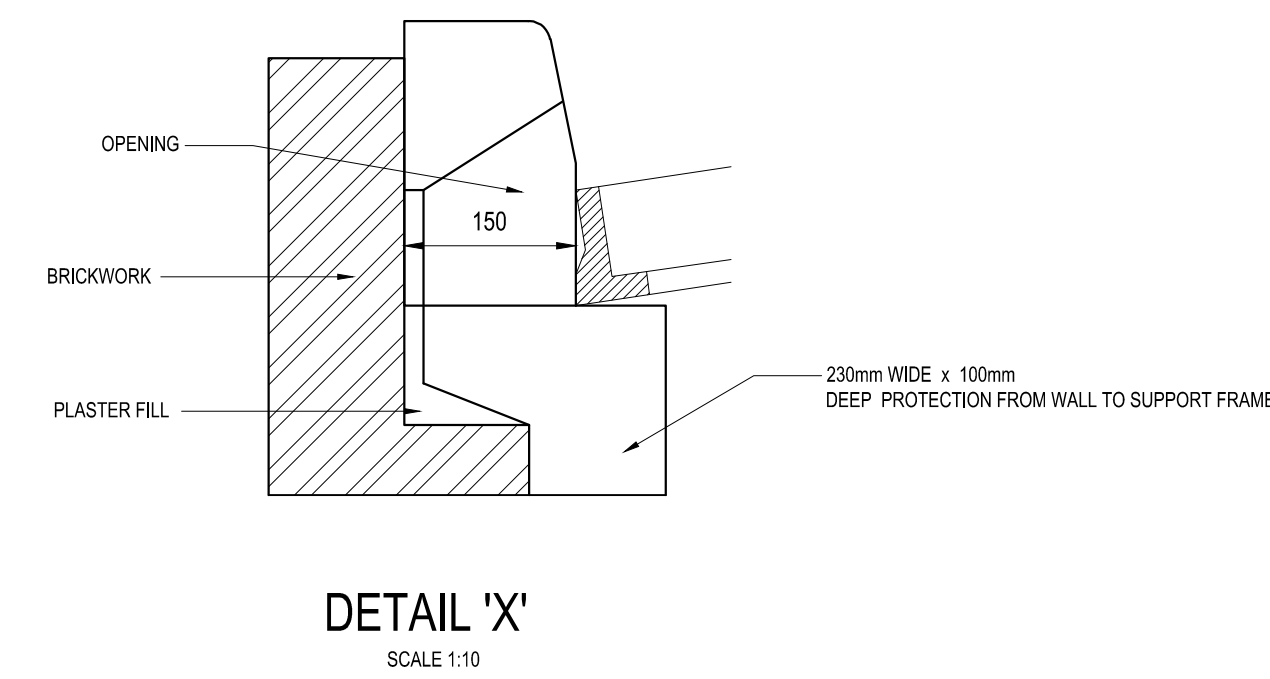
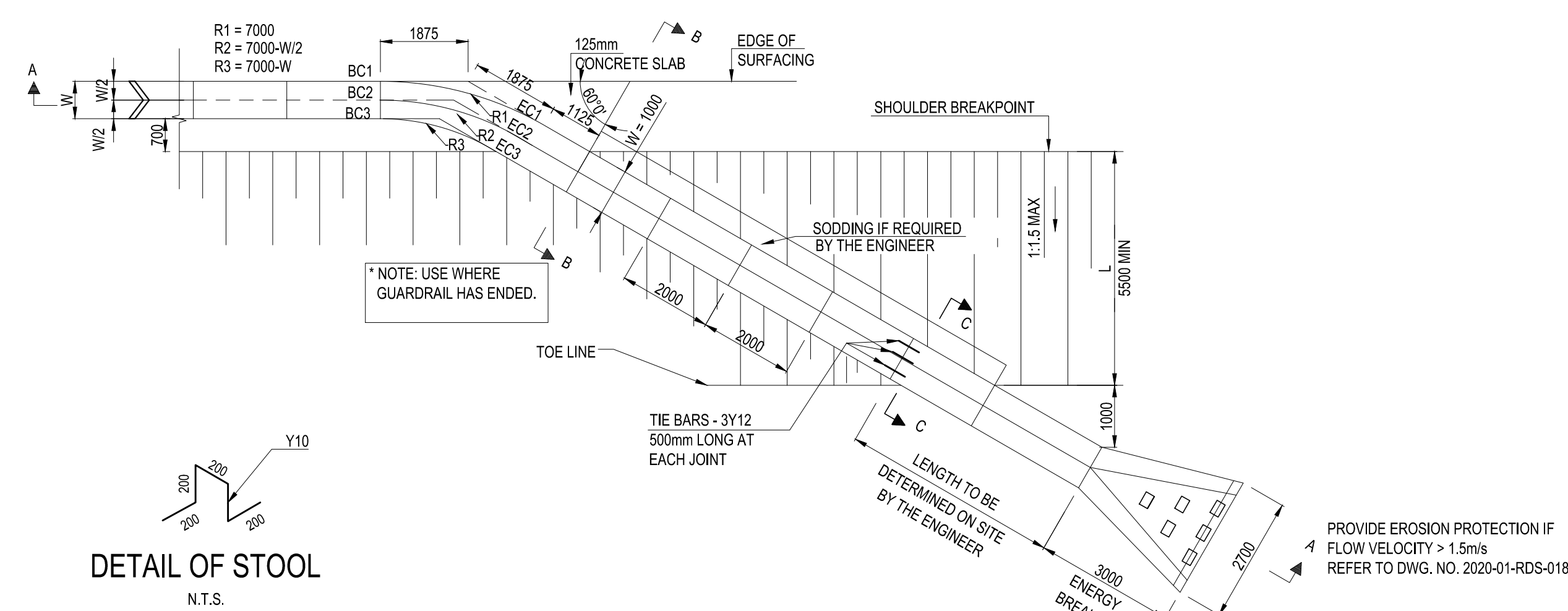
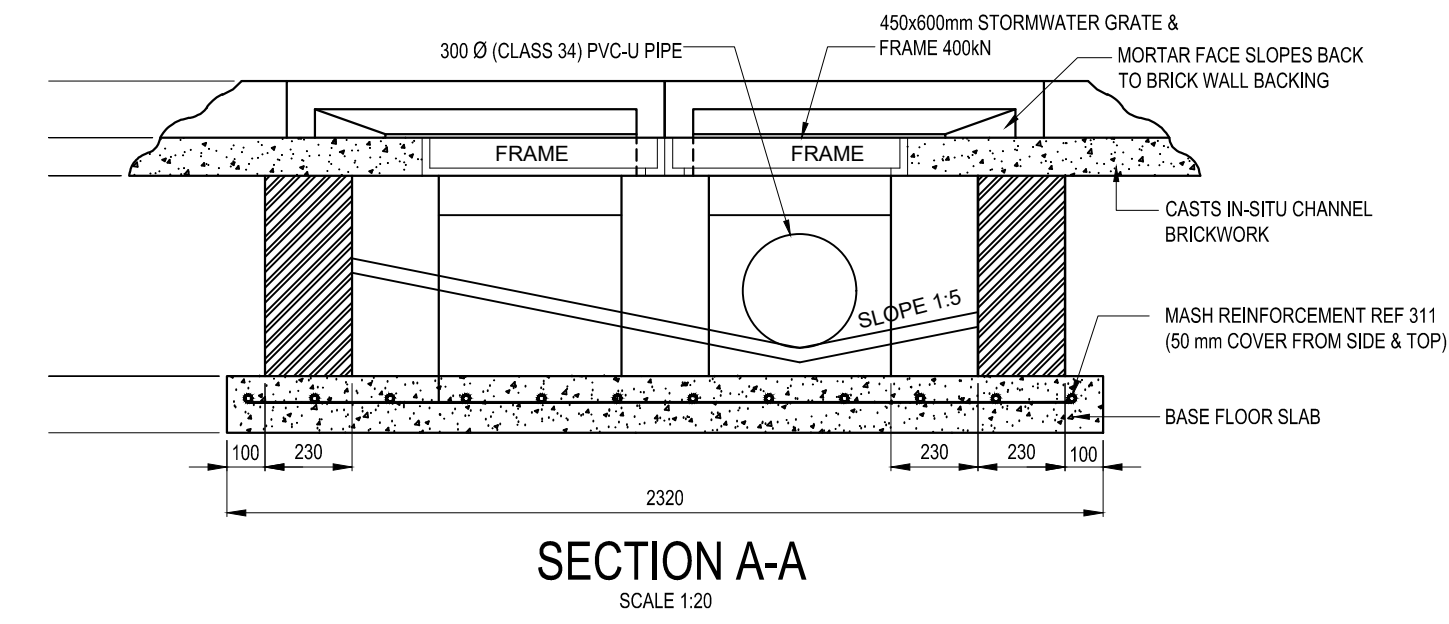
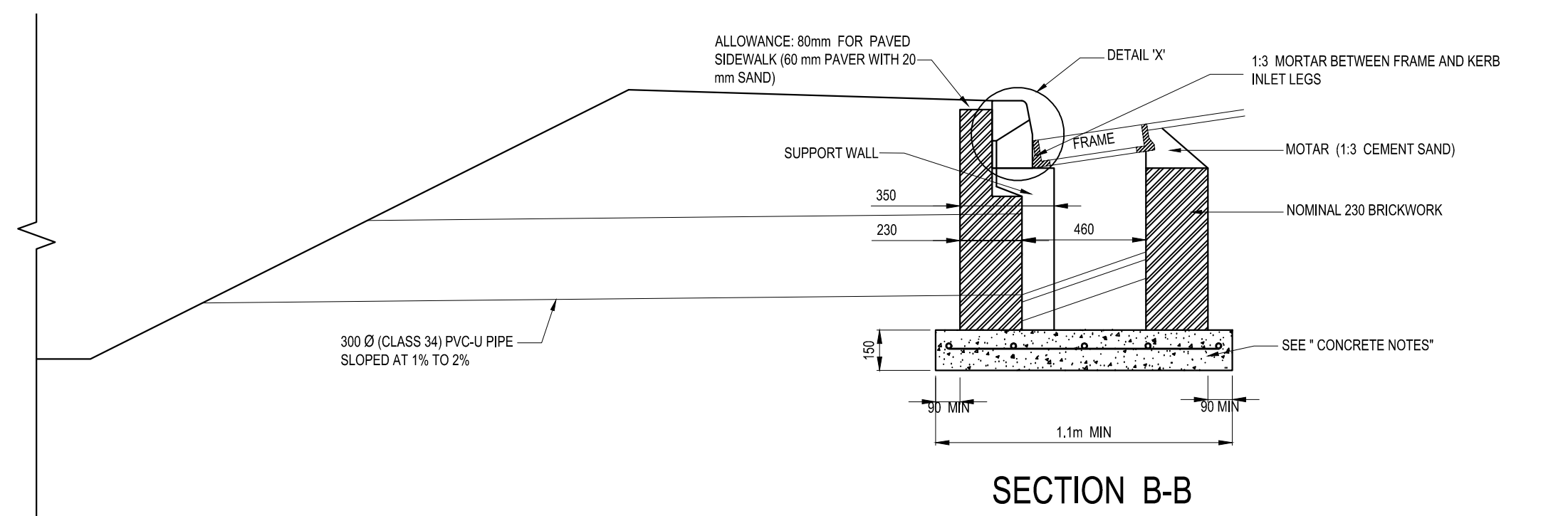
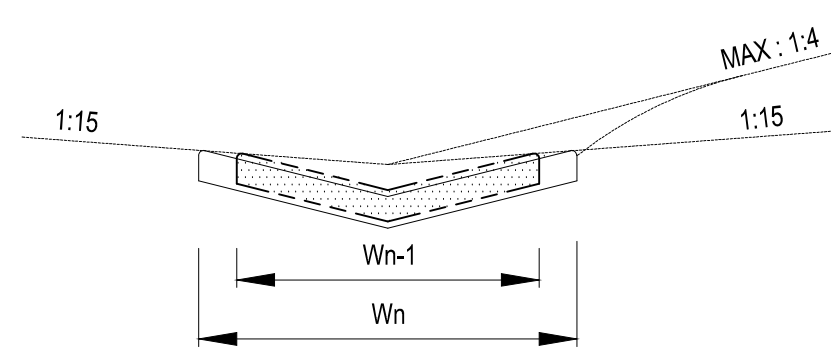
W	W/2	W/8	W/8+D	D UNREINFORCED	D REINFORCED
1000	500	125	250	125	100
1500	750	188	313	125	100
2000	1000	250	400	150	100
2500	1250	313	463	150	100

NOTES:

1. ALL CONCRETE CHANNELS AND OTHER DRAINAGE STRUCTURES ON THIS PLAN TO BE CAST USING CLASS 25/30-209 CONCRETE.
2. TYPES 'E' AND 'F' CONCRETE MATS BE CAST IN ALTERNATIVE LENGTHS OF 2.0m MAXIMUM WITH EXPANSION JOINTS EVERY 5th PANEL (10m)
3. ALL EXPOSED CORNERS MUST BE ROUNDED OF TO A MINIMUM RADIUS OF 10mm.
4. THE TYPE OF SURFACE FINISH IS INDICATED AS F1 & U2.  
F - FORMED SURFACES  
U - UNFORMED SURFACES

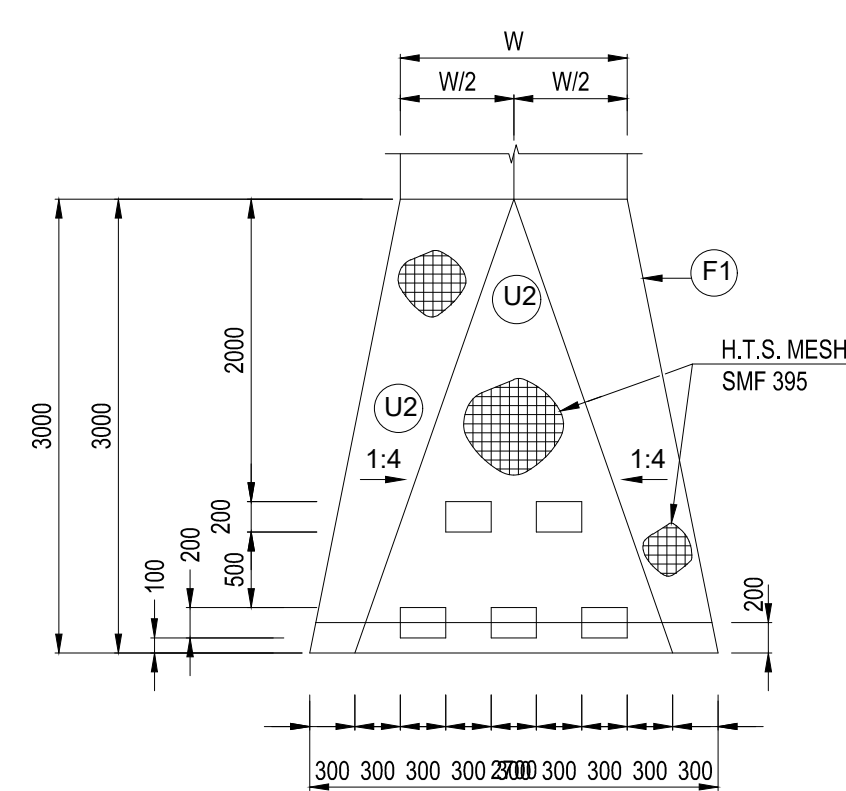
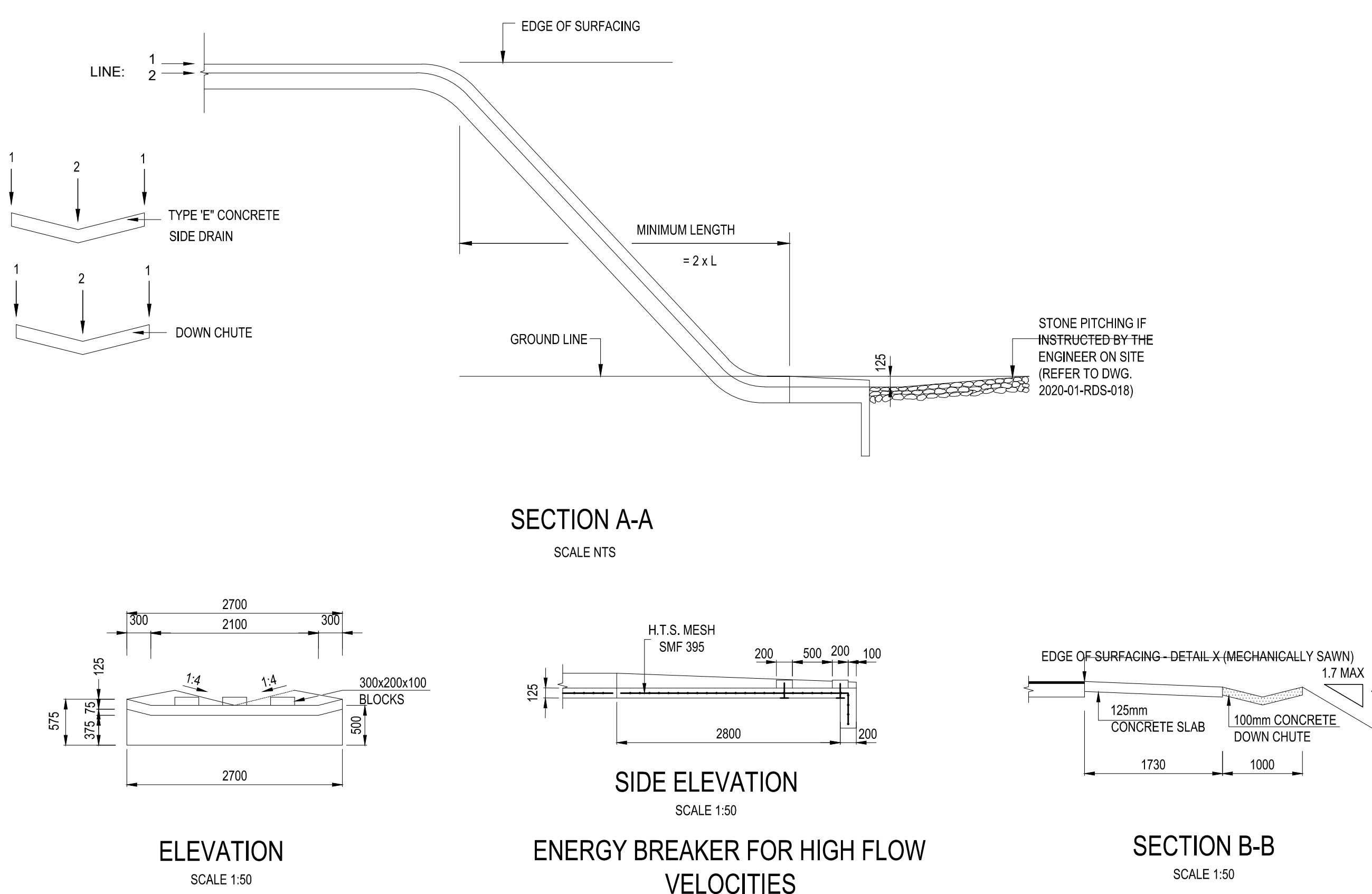


### POSITION OF TYPE 'E' CONCRETE CHANNEL



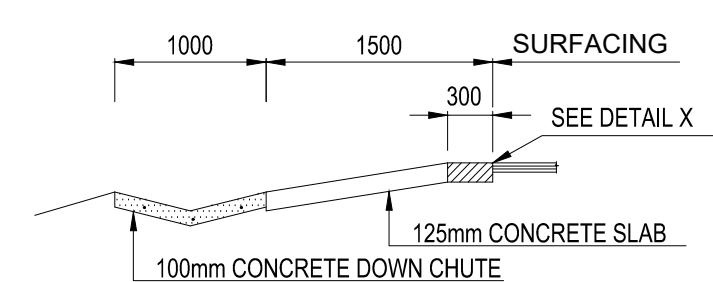
### DOUBLE KERB GRID INLET COMBINATION

TRANSITION AND DOWN CHUTE FOR  
TYPE 'E' CONCRETE SIDE DRAIN  
SCALE 1:100

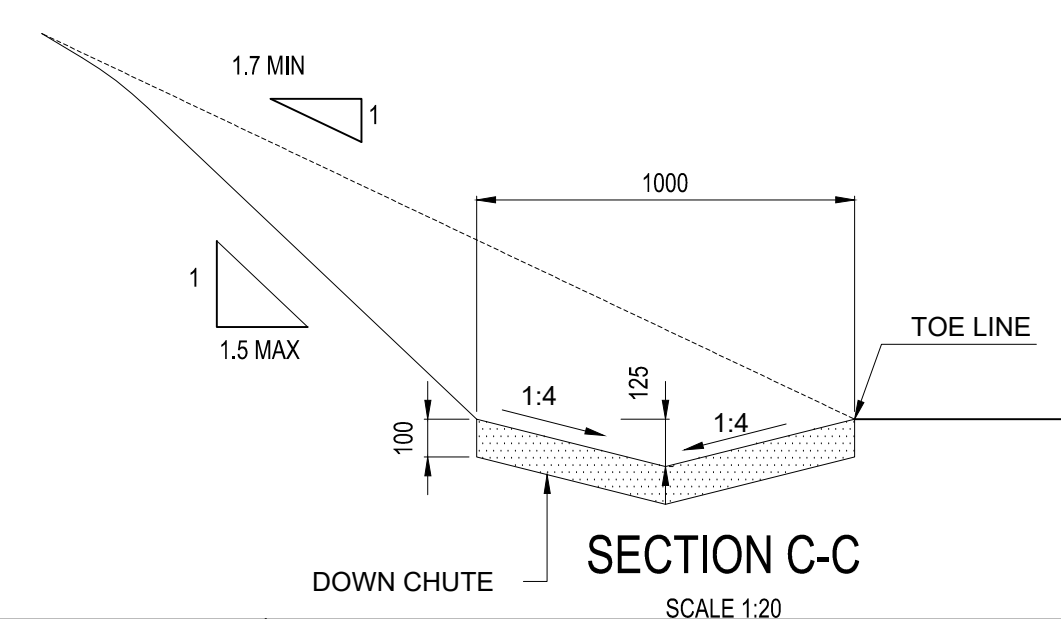
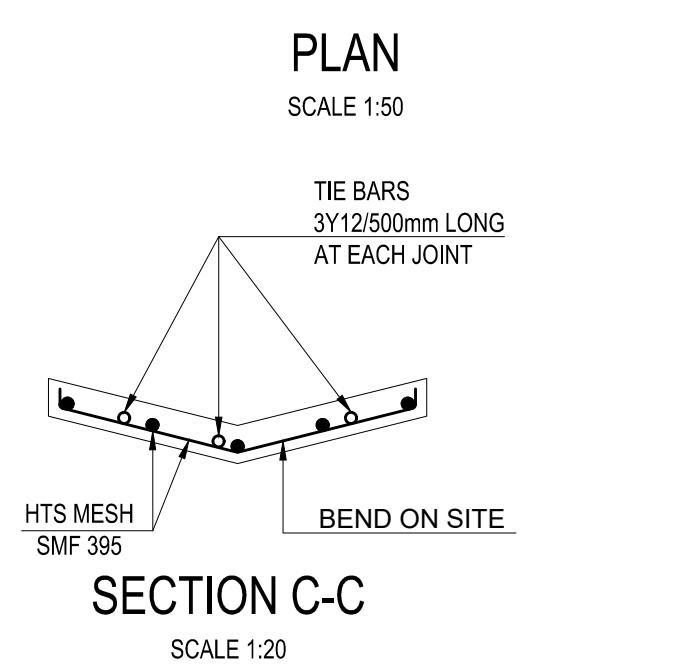


NOTES :

1. DETAILS OF EXPANSION JOINTS IN CONCRETE DRAINS AND FINISHING OF SURFACING EDGE NEXT TO CONCRETE DRAINS SHOWN AS "DETAIL X"



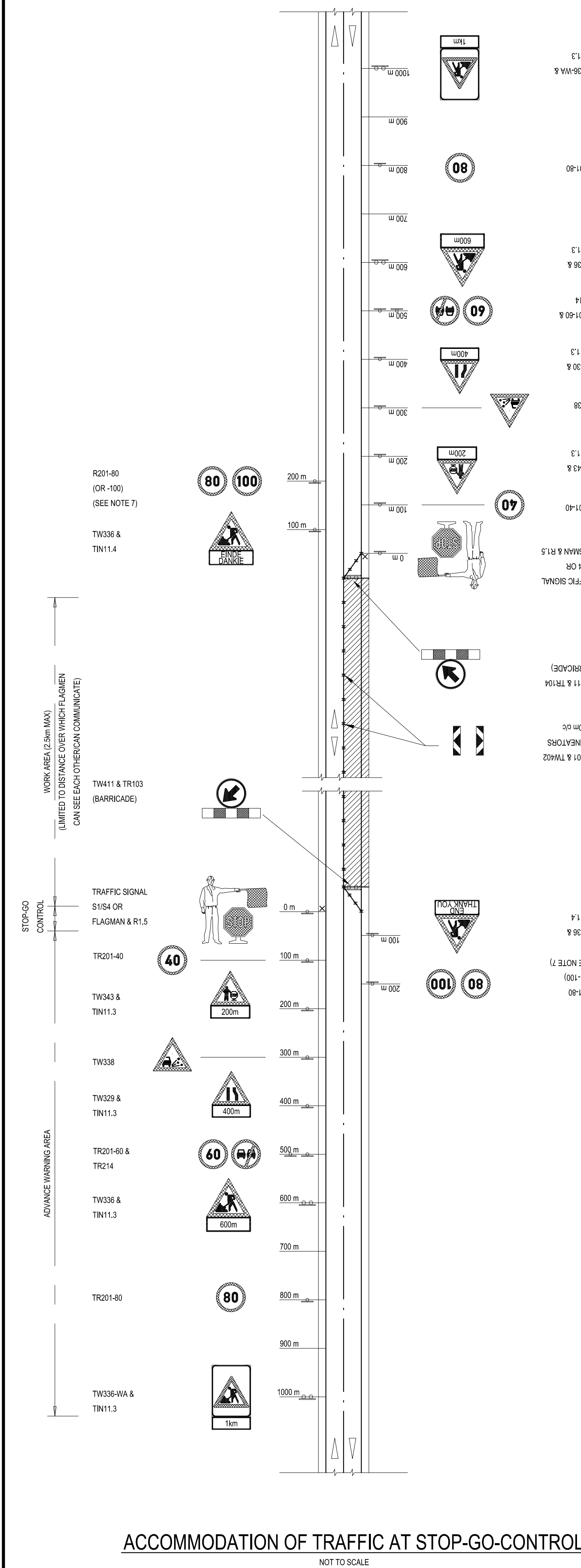
SECTION D-D  
SCALE 1:50



SECTION C-C  
SCALE 1:20

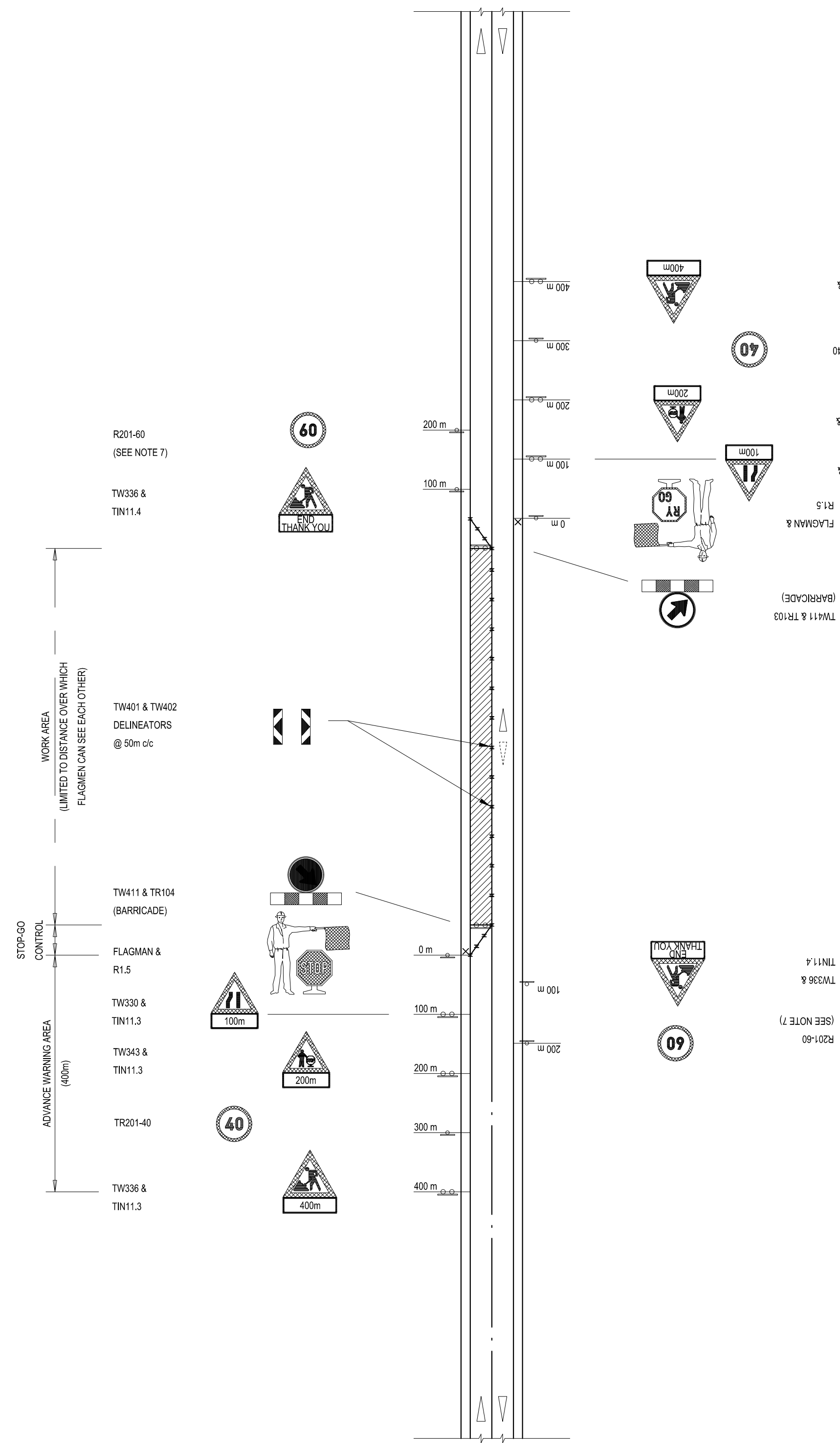
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ACCOMMODATION OF TRAFFIC AT STOP-GO-CONTROL

NOT TO SCALE



HALF WIDTH CONSTRUCTION (STOP-GO-CONTROL)

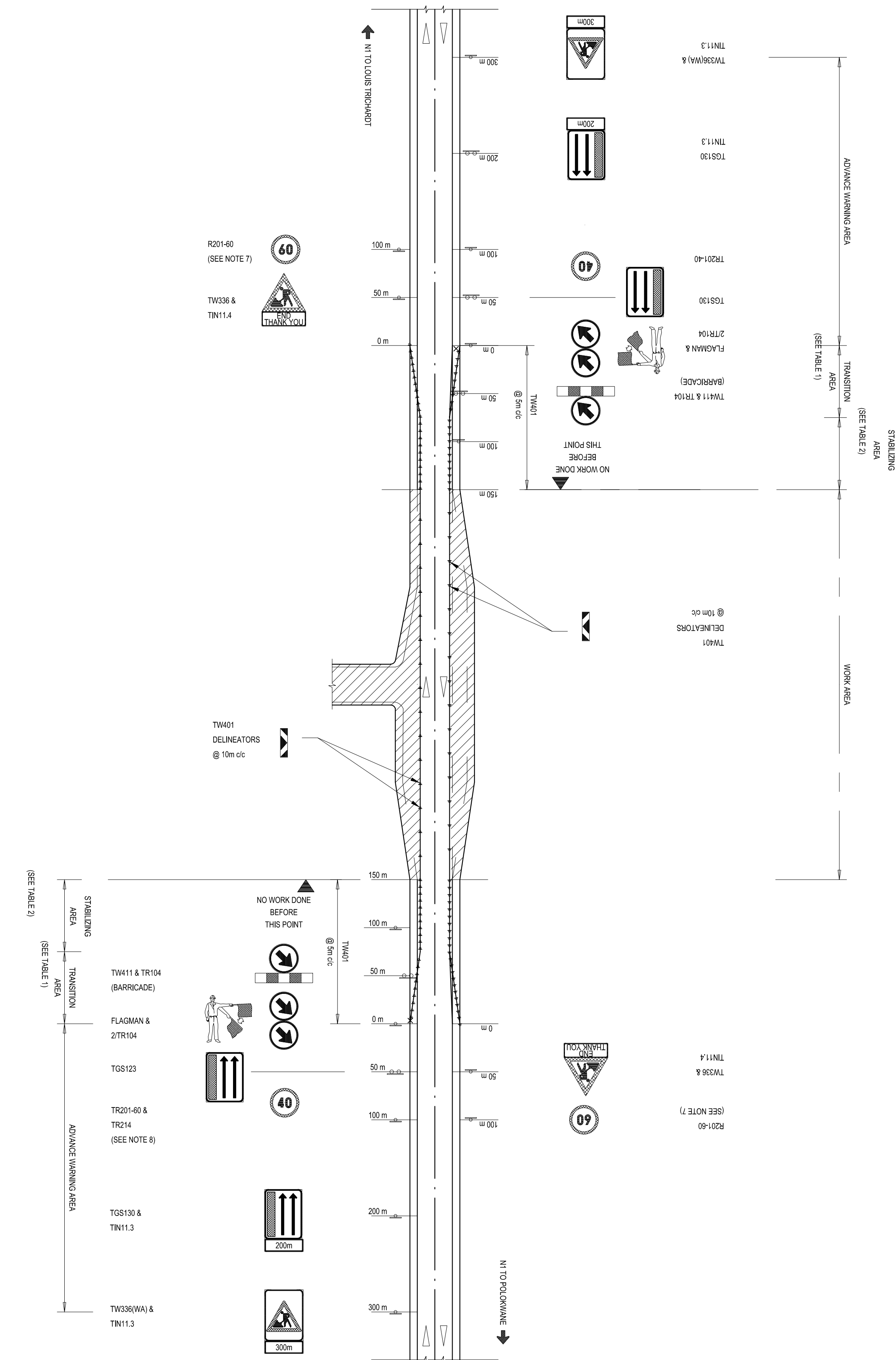
NOT TO SCALE

TABLE 1				
TRANSITION AREA				
APPROACH SPEED	TAPER RATE	TAPER LENGTH	DELINEATOR SPACING	
TRANSITION TAPERS				
120km/h	1 in 50	200m	15m	
80km/h	1 in 40	100m	15m	
60km/h	1 in 30	120m	10m	
40km/h	1 in 20	80m	5m	
< 40km/h	1 in 10	40m	5m	
TERMINATION TAPERS				
RURAL	1 in 10	40m/50m	15m	
URBAN	1 in 5	20m	5m	
NOTES:				
1. TAPER LENGTH DEPENDS ON THE AMOUNT OF SHIFT				
IN THE ALIGNMENT. LENGTHS SHOWN HERE APPLY				
TO A SHIFT OF 4m				

NOTES:  
1. TAPER LENGTH DEPENDS ON THE AMOUNT OF SHIFT  
IN THE ADJACENT LENGTHS SHOWN HERE APPLY  
TO A SHIFT OF 4m

TABLE 2	
LENGTH OF STABILISING AREA	
DESIRABLE	150m-200m
ABSOLUTE MIN	50m

- NOTES
1. TEMPORARY ROAD SIGN LAYOUTS SHOWN ON THIS DRAWING REFLECT TYPICAL TRAFFIC ACCOMMODATION PROPOSALS.
  2. ACTUAL TRAFFIC ACCOMMODATION PROPOSALS TO BE USED ON THE WORKS SHALL BE SUBMITTED SEPARATELY FOR THE ENGINEER'S APPROVAL. SUCH PROPOSALS SHALL TAKE DUE CONSIDERATION OF ACTUAL CONDITIONS ON THE ROAD. PARTICULAR ATTENTION MUST BE GIVEN TO ACCESS AND INTERFERENCE ON THE ROAD.
  3. ALL ROAD SIGNS SHALL COMPLY WITH THE SACS ROAD TRAFFIC SIGNS MANUAL (2014), COTS AND THE NATIONAL ROAD TRAFFIC ACT AND REGULATIONS.
  4. ROAD SIGN PROPOSALS SHALL BE PREPARED TO THE GUIDELINES OF SARTON VOLUME 13.
  5. ROAD SIGN FACE MATERIALS SHALL COMPLY WITH SANS 1559-1. THE ADVANCE WARNING SIGN TW306 WA OR TW306 WA SHALL BE CLASS II YELLOW FLUORESCENT. THE REMAINING ROAD SIGN MATERIALS SHALL BE CLASS II RETROREFLECTIVE.
  6. MINIMUM SIZE OF ROAD SIGNS (TRANSVERSE):  
1500mm SIZE LENGTH  
CIRCULAR: 1200mm DIAMETER  
DASGAMATIC (T20): 1200mm x 1800mm OR 800mm x 1800mm OR 1800mm x 2400mm OR 1000mm x 1800mm  
TIN: 800mm HIGH, WIDTH TO FIT PRIMARY SIGN
  7. DELINEATORS (TW401) AIDS SHOULD BE SO POSITIONED THAT ENDOCHORDS ON THE ADJACENT RUNNING LANE IS RATHER AS FAR AS POSSIBLE. WHENEVER DELINEATORS ARE POSITIONED NEXT TO AN OBSTACLE EXCEEDING 10m IN HEIGHT, A CONSPICUOUS MARKER (ONE EXCEEDING THE DEPTH OF THE OBSTACLE) SHOULD BE PROVIDED BETWEEN THE EDGE AND THE TRAVELLED ROADWAY. A MARKER MAY BE CONSIDERED BY THE ENGINEER SHOULD ADDITIONAL PRECAUTIONARY MEASURES SUCH AS CONCRETE BARRIERS, BE SUPPLEMENTED.
  8. ALL DELINEATOR FRAMES (400) SHALL BE MANUFACTURED FROM A FLEXIBLE MATERIAL AND MUST COMPLY WITH SANS 1559. THE MINIMUM NOMINAL SIZE OF DELINEATORS SHALL BE 200mm x 80mm BUT MAY BE INCREASED. CONSIDERATION SHOULD BE GIVEN TO THE SIZE OF DELINEATORS SETTING INTO THE PAVEMENT. THE SIGN FACE OF DELINEATORS SHALL BE CLASS II RETROREFLECTIVE FOR THE YELLOW MATERIAL, WHERE AVAILABLE, THE DELINEATOR PLATES ARE PLACED BACK TO BACK ON A SINGLE PLATE WITH REFLECTIVE MATERIAL ON BOTH SIDES OF THE PLATE.
  9. THE ROAD SPEED LIMIT SIGNS (TW201) SHALL AGREE WITH THE SPEED LIMIT SET ON THE SUBSEQUENT SECTION OF ROAD. THE SPEED LIMIT IN THE WORK AREA SHALL BE SET AT A REALISTIC LEVEL, IN AREA WHERE TRANSITION TAPERS ARE, THE SPEED LIMIT MAY BE REDUCED LOCALLY AND THEN RESTORED WHERE TRAFFIC FLOW HAS STABILISED.
  10. WHEN EXISTING ROAD MARKINGS ARE TO BE REMOVED, IT MUST BE DONE BY MEANS OF SAND BLASTING OR WATER JETTING. OVERPAINTING SHALL NOT BE ALLOWED.
  11. TEMPORARY ROAD MARKINGS SHALL COMPLY WITH SANS 121-2 AND MUST BE REFLECTORIZED BY ADDING GLASS BEADS. TEMPORARY ROAD STUDS SHALL ALSO BE INSTALLED ON ALL TEMPORARY LONGITUDINAL LINES.
  12. ROAD MARKINGS REMOVED DURING THE CONSTRUCTION, MUST BE REINSTATED AFTER COMPLETION OF THE WORKS AND SHALL COMPLY WITH SANS 121-2 STANDARDS. PERMANENT ROAD STUDS SHALL BE INSTALLED.



CONSTRUCTION OF A TYPICAL INTERSECTION

NOT TO SCALE

No.	DATE	REVISION	CONSULT. ENG.
V2	24/01/2023	FOR TENDER PURPOSES	K BRINK
V1	10/08/2021	ORIGINAL VERSION	K BRINK

CONSTRUCTION RECORD (AS-BUILT)	
WORKS CONTRACT ENGINEER	
Name :	
Prof. Reg. No. :	
Date :	
SANRAL PROJECT MANAGER	
Name :	
Prof. Reg. No. :	
Date :	

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DRAWN BY	
NAME	K BRINK

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	10/08/2021

HEAD OFFICE  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0184  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 424 8000



NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0060  
Tel: (012) 426 6200

ACCEPTANCE  
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR CAUSE OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING  
for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date:

THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
TRAFFIC ACCOMMODATION	
TYPICAL TRAFFIC ACCOMMODATION LAYOUTS	
SCALE :	AS SHOWN
SHEET	1 OF 2

PROJECT NUMBER		2020-01	
DRAWING LOCATION DATA		START	END
ROUTE	D3135	D3135	
SECTION	1	1	
DRAWING km DISTANCE	0.000	2.1	
DRAWING TYPE	TRAFFIC ACCOMMODATION		
BRIDGE/STRUCTURE No.	N/A		
CONSULTANT DRAWING No.	2020-01-RDS-020		
SANRAL DOCUMENT #	-		
VER	V2		

SANRAL TITLE BLOCK #1648234(DWGPDF) VERSION V11

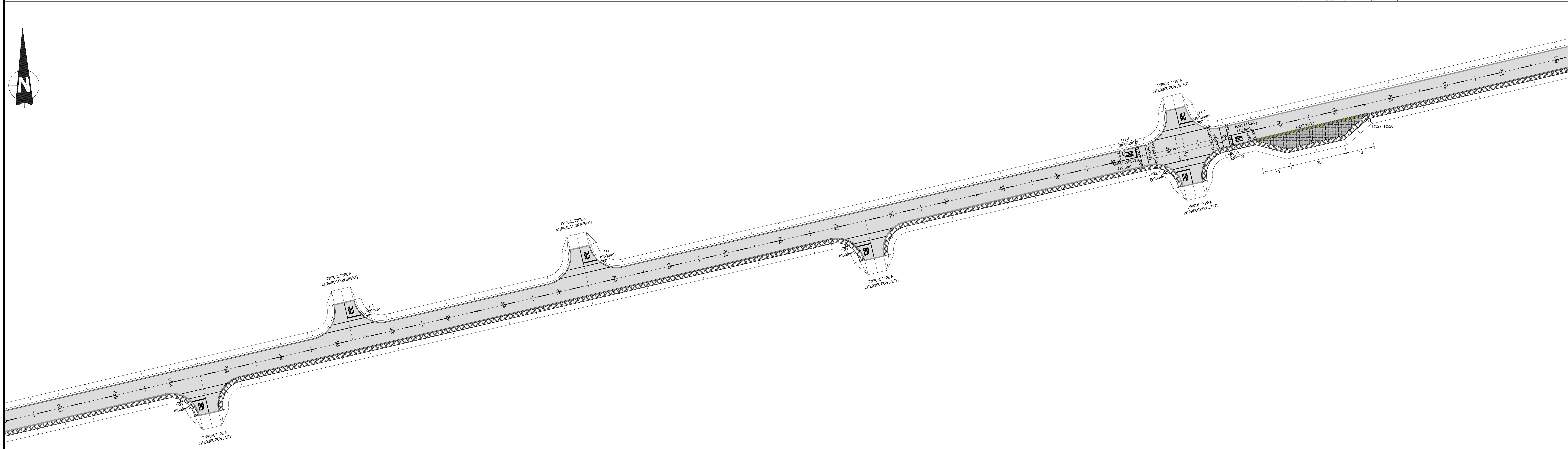
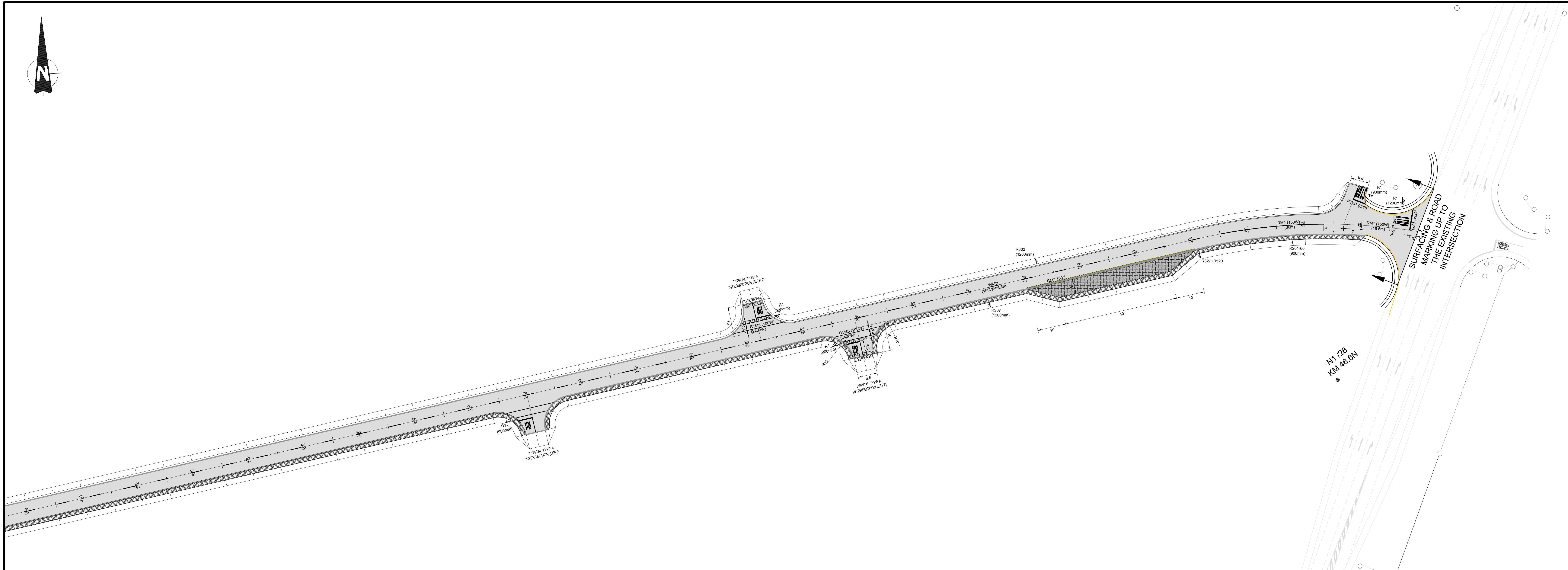


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		CONSTRUCTION RECORD (AS-BUILT)		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF THE BOTLOKWA (MATOKS) CLINIC ACCESS ROAD		PROJECT NUMBER		2020-01-D3135	
		WORKS CONTRACT ENGINEER		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :		48 Tambote Avenue Val de Grace PSHWAYNE 0081		18 IDA STREET MENLO PARK PSHWAYNE 0081		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING				DRAWING LOCATION DATA		START	
		6 BOWATER CLOSE MELKBOSSTRAND CAPE TOWN 7441		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :		P.O. BOX 357 MELKBOSSTRAND CAPE TOWN 7441		PRIVATE BAG X17 LYNNWOOD RIDGE TSHWANE 0040				ROUTE SECTION 1 0.000		D3135 D3135		END D3135	
		SANRAL PROJECT MANAGER		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :		Tel: 066 274 8594		Tel: (012) 426 8000				DRAWING km DISTANCE		INTERSECTION			
		FOR TENDER PURPOSES ORIGINAL VERSION		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :								INTERSECTION ON THE N1 SECTION 28 WITH D3135		DRAWING TYPE		BRIDGE/STRUCTURE No.	
		REVISION		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :										CONSULTANT DRAWING No.		2020-01-RDS-100	
		CONSULT. ENG.		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :										SANRAL DOCUMENT #		V2	
		DATE		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :										SCALE : 1:1000		SHEET 1 OF 4	
		DATE		NAME : Prof. Reg. No. : Date :		NAME : Prof. Reg. No. : Date :													

SANRAL TITLE BLOCK #164823/4(DWG/PDF) VERSION V11





No.	DATE	REVISION	CONSULT. ENG.
V2	30/01/2022	FOR TENDER PURPOSES	K BRINK
V1	10/08/2021	ORIGINAL VERSION	K BRINK

CONSTRUCTION RECORD (AS-BUILT)
WORKS CONTRACT ENGINEER
Name : _____
Prof. Reg. No. : _____
Date : _____
SANRAL PROJECT MANAGER
Name : _____
Date : _____

**LATHISO**  
CONSULTING ENGINEERS

**WESTERN CAPE**  
6 BOWATER CLOSE  
MELKBOSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 367  
MELKBOSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY
NAME : K BRINK
Prof. Reg. No. : IE2015-02
CHECKED BY
NAME : B CILLIERS
Prof. Reg. No. : 950340
DRAWN BY
NAME : K BRINK

CONSULTANT APPROVAL
Name : B CILLIERS
Prof. Reg. No. : 950340
Date : 19/08/2021

**HEAD OFFICE**  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0184  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000



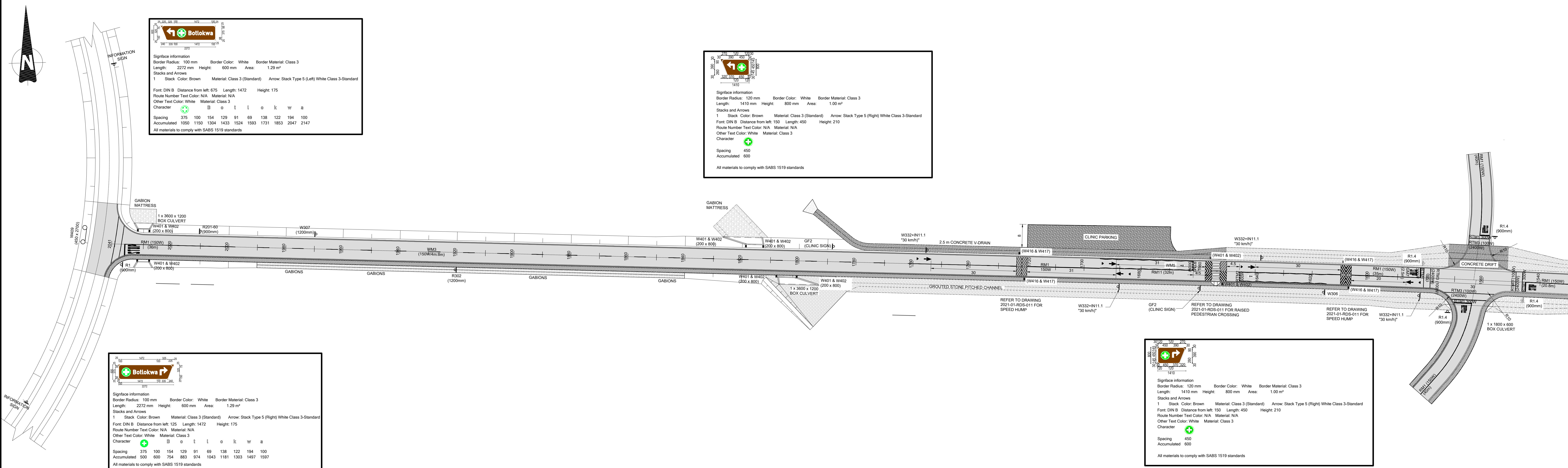
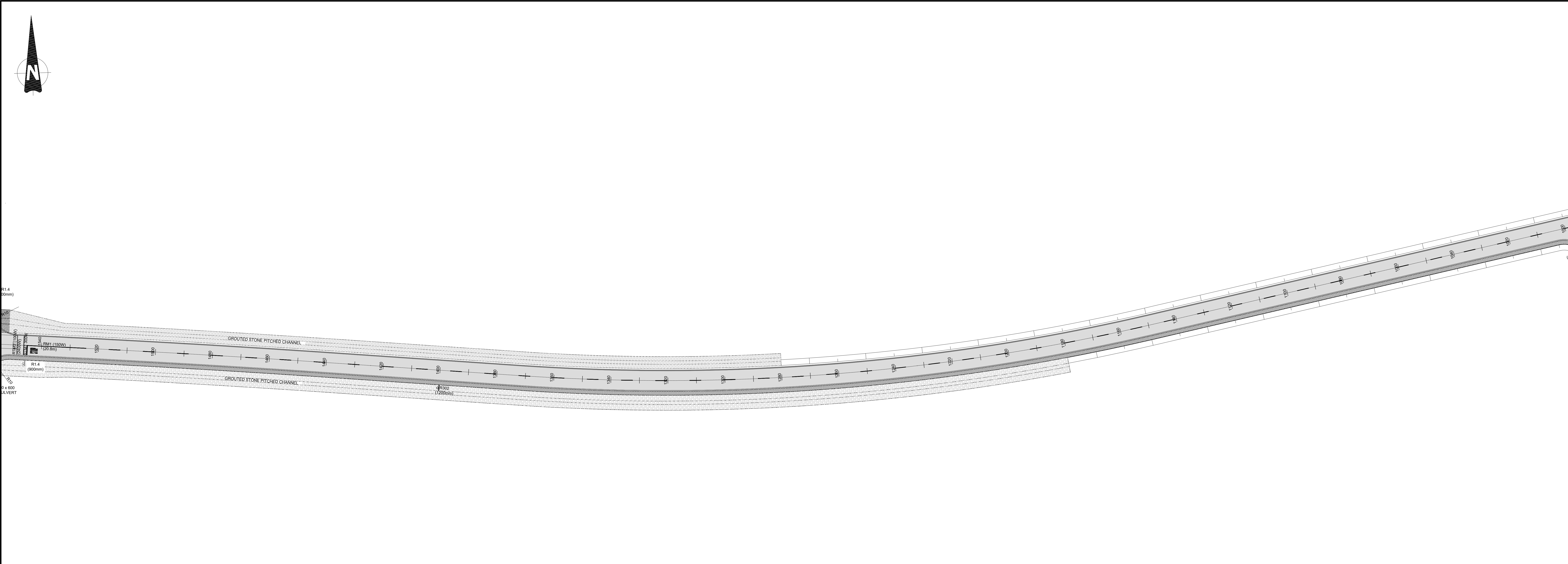
**NORTHERN REGION**  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

**ACCEPTANCE**  
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING  
for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date: \_\_\_\_\_

THE UPGRADING OF THE BOTLOKWA (MATOKS) CLINIC ACCESS ROAD
INTERSECTIONS, ROAD MARKINGS & ROAD SIGN LAYOUTR FOR D3135 FROM KM 0.00 TO KM 1.00
SCALE : 1:500

PROJECT NUMBER	2020-01-D3135
DRAWING LOCATION DATA	START END
ROUTE	D3135 D3135
SECTION	1 1
DRAWING km DISTANCE	0.000 1.000
DRAWING TYPE	INTERSECTIONS
BRIDGE/STRUCTURE No.	N/A
CONSULTANT DRAWING No.	2020-01-RDS-101
SANRAL DOCUMENT #	---
VER	V2



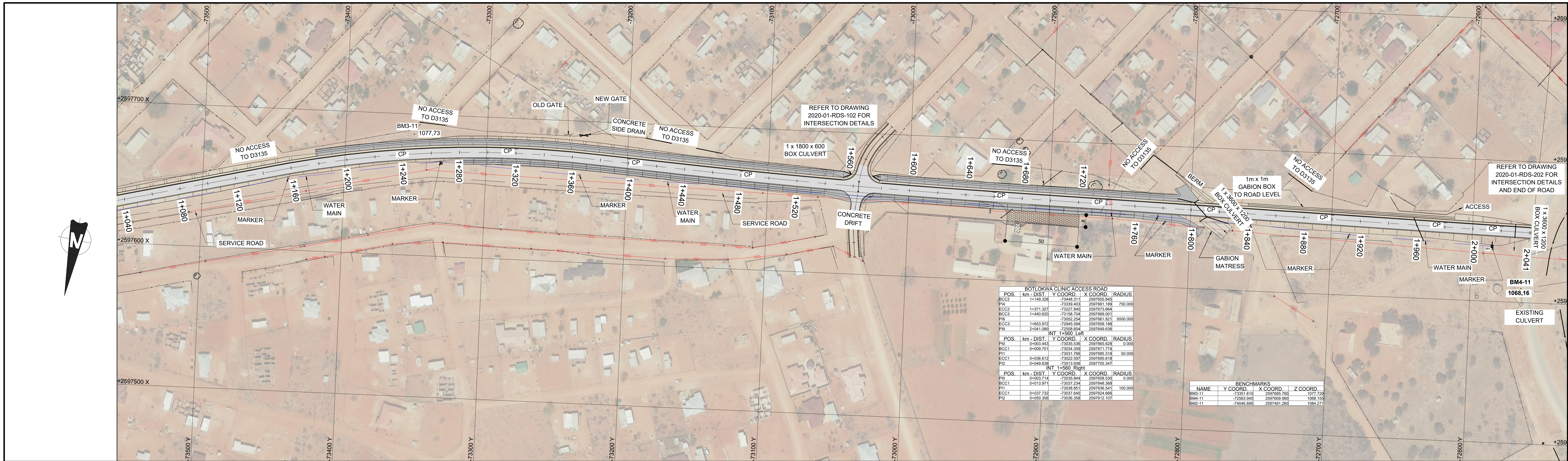


				CONSTRUCTION RECORD (AS-BUILT) WORKS CONTRACT ENGINEER		DESIGNED BY		CONSULTANT APPROVAL		HEAD OFFICE		NORTHERN REGION		ACCEPTANCE		THE UPGRADING OF THE BOTLOKWA (MATOKS) CLINIC ACCESS ROAD				PROJECT NUMBER		2020-01-D3135			
				6 BOWATER CLOSE MELKBOSSTRAND CAPE TOWN 7441		NAME K BRINK Prof. Reg. No. E2015-02		Name : B CILLIERS Prof. Reg. No. 950340 Date 19/08/2021		48 Tambotie Avenue Val de Grace Pretoria 0184		38 IDA STREET MENLO PARK TSHWANE 0081		THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER, CAUSE OR HOWEVER ARISING						DRAWING LOCATION DATA		START D3135 END D1315			
				Name Prof. Reg. No. Date		CHECKED BY				PO Box 415 MELKBOSSTRAND CAPE TOWN 7441 Tel: 066 274 8594		PO Box 415 Pretoria 0001 South Africa Tel: (012) 426 8000		PRIVATE BAG X17 LYNWOOD RIDGE TSHWANE 0040 Tel: (012) 426 6200				INTERSECTIONS, ROAD MARKINGS & ROAD SIGN LAYOUT FOR D3135 FROM KM 1.00 TO KM 2.04				DRAWING km DISTANCE 1.000 2.040		INTERSECTIONS	
				SANRAL PROJECT MANAGER		NAME B CILLIERS Prof. Reg. No. 950340 DRAWN BY K BRINK												DRAWING TYPE BRIDGE/STRUCTURE No. N/A				2020-01-RDS-102			
				Name Date														CONSULTANT DRAWING No. SANRAL DOCUMENT #				V2			
				FOR TENDER PURPOSES ORIGINAL VERSION REVISION CONSULT.														SCALE : 1:500				SHEET 2 OF 2			

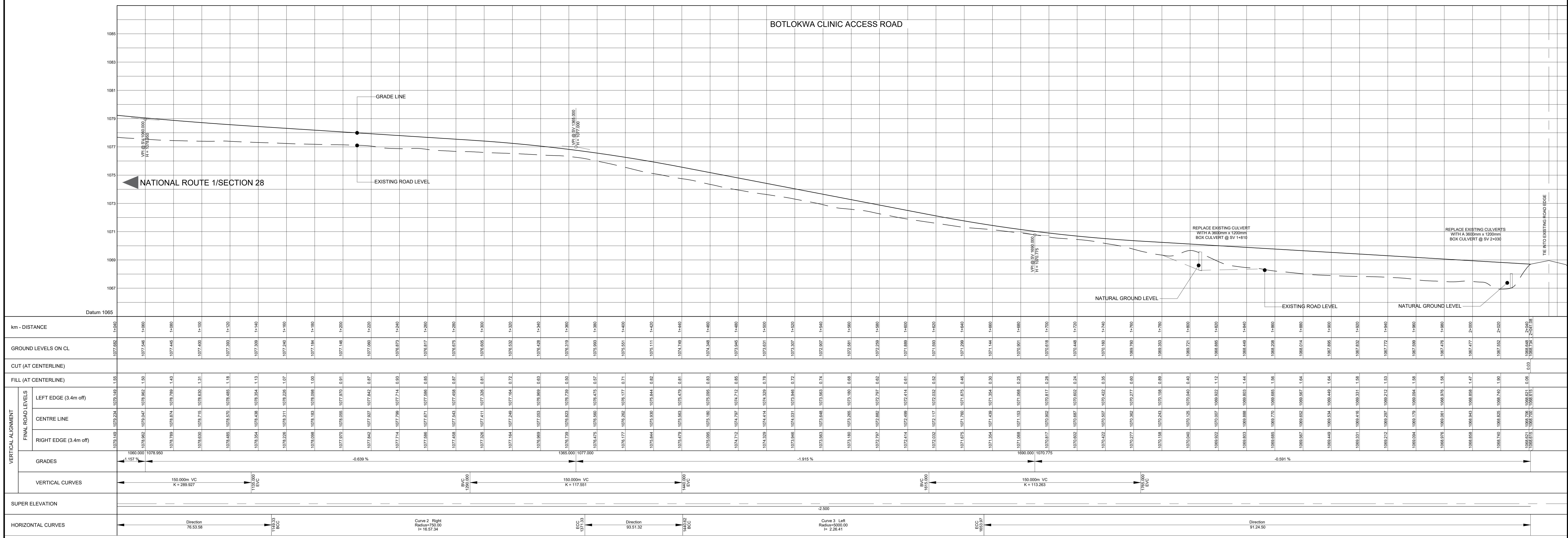






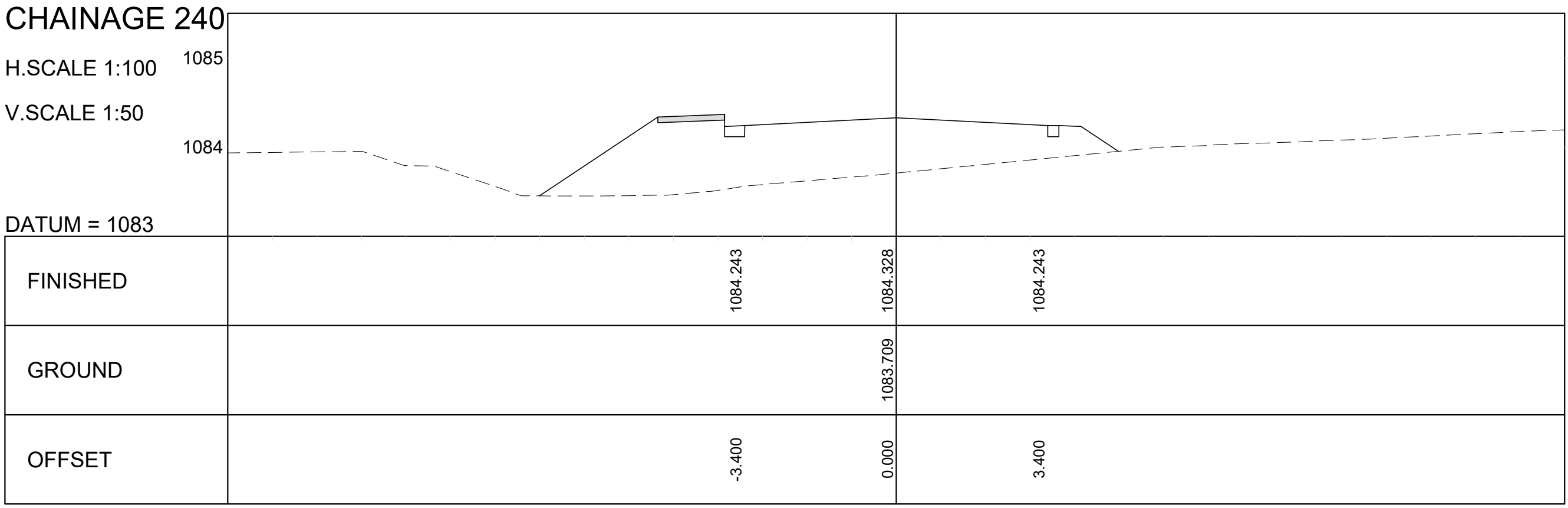
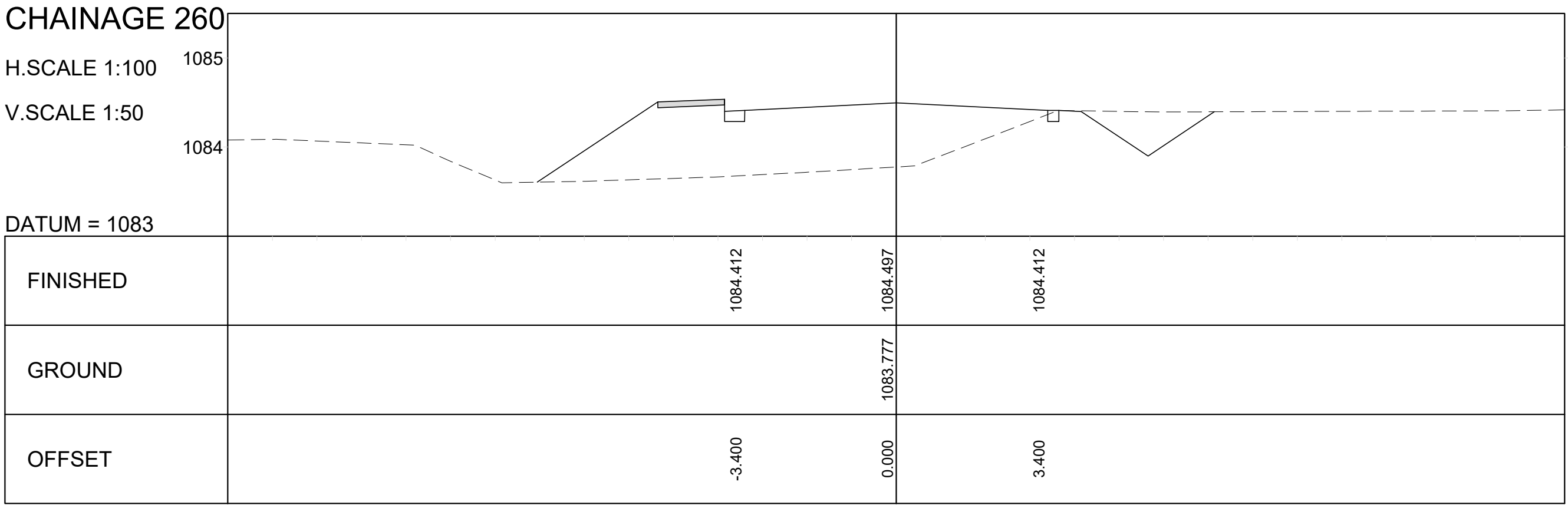
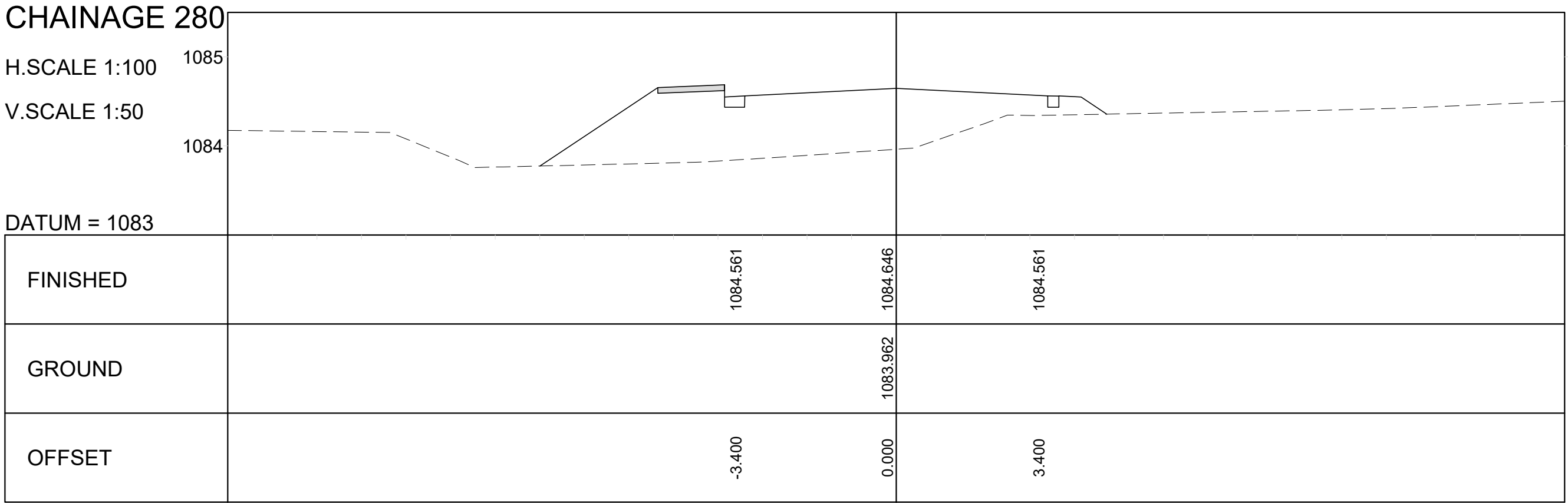
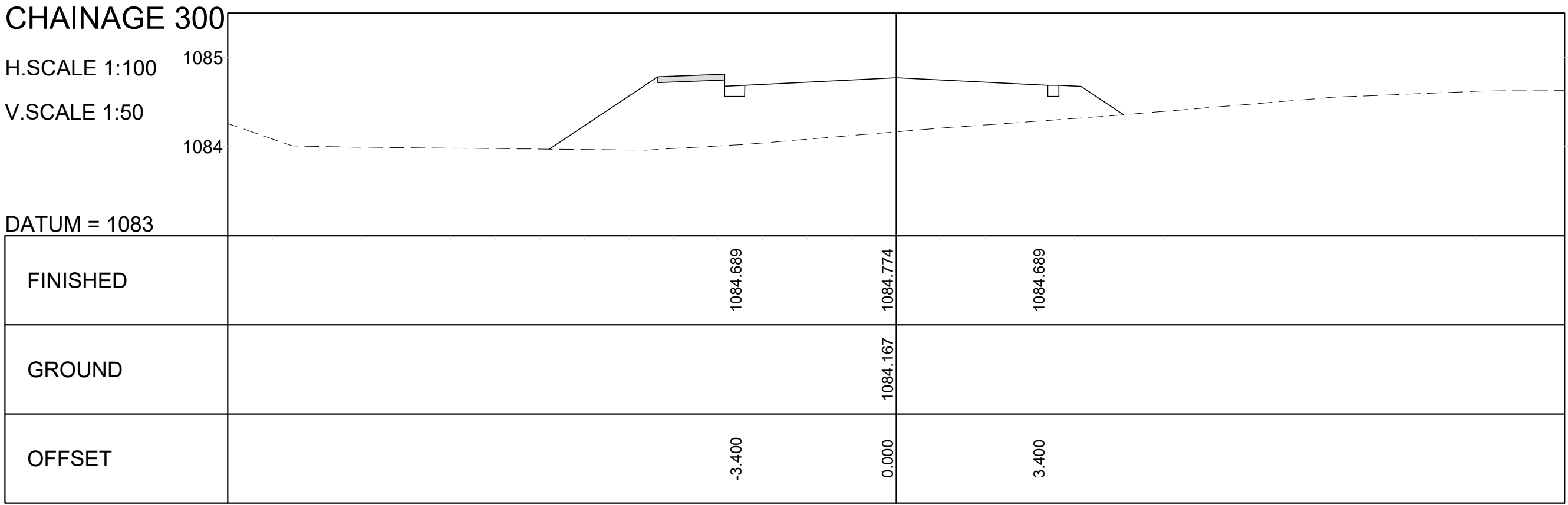
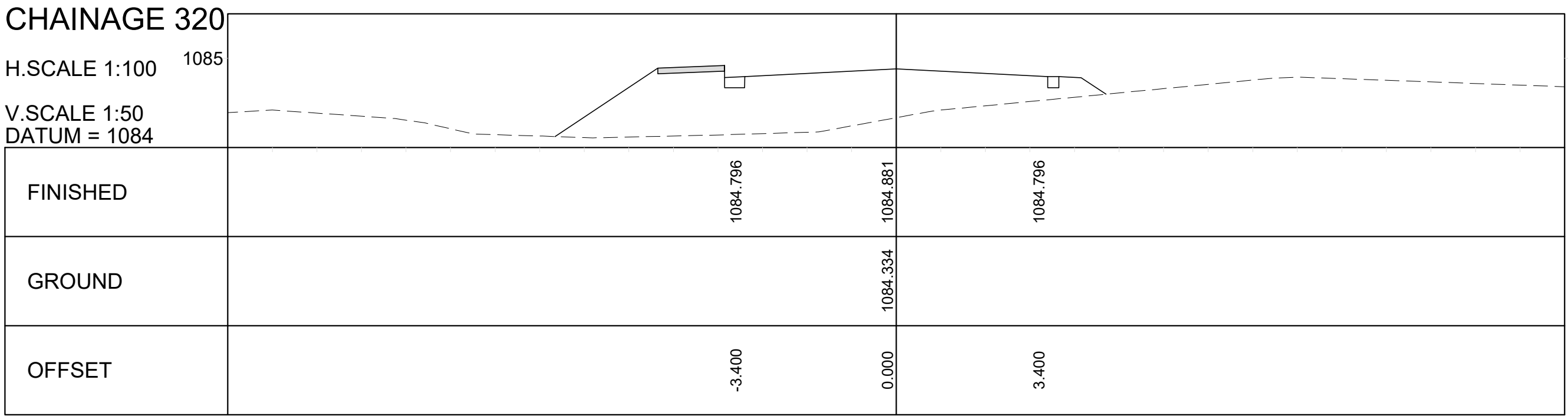
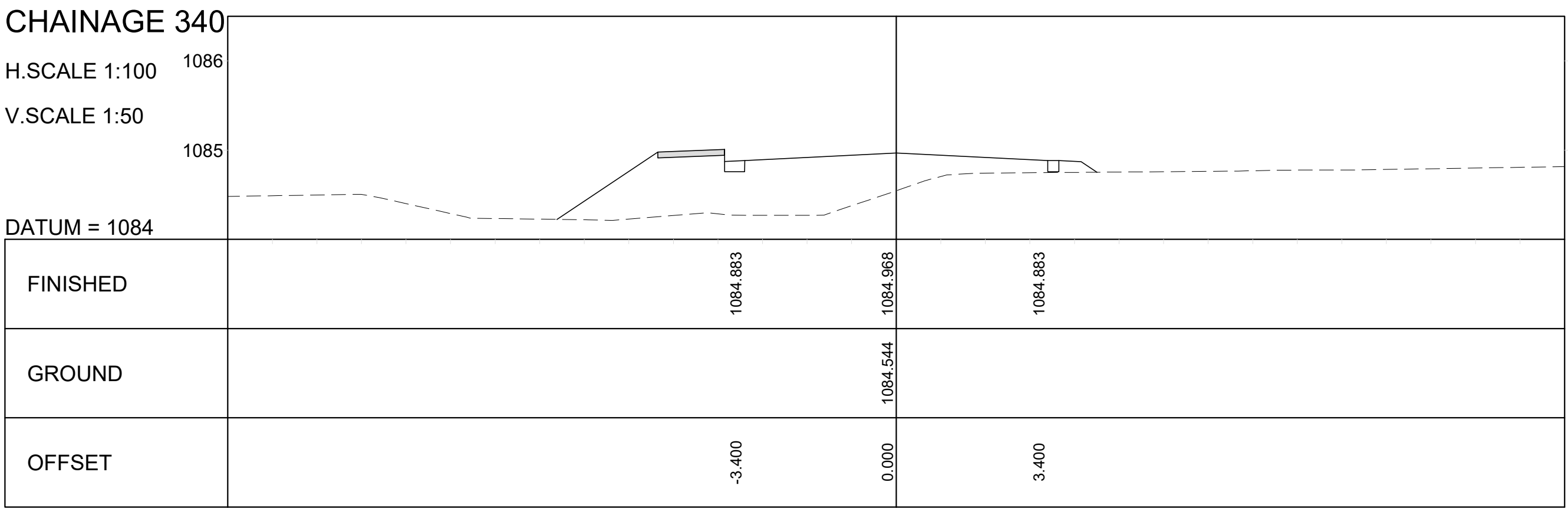
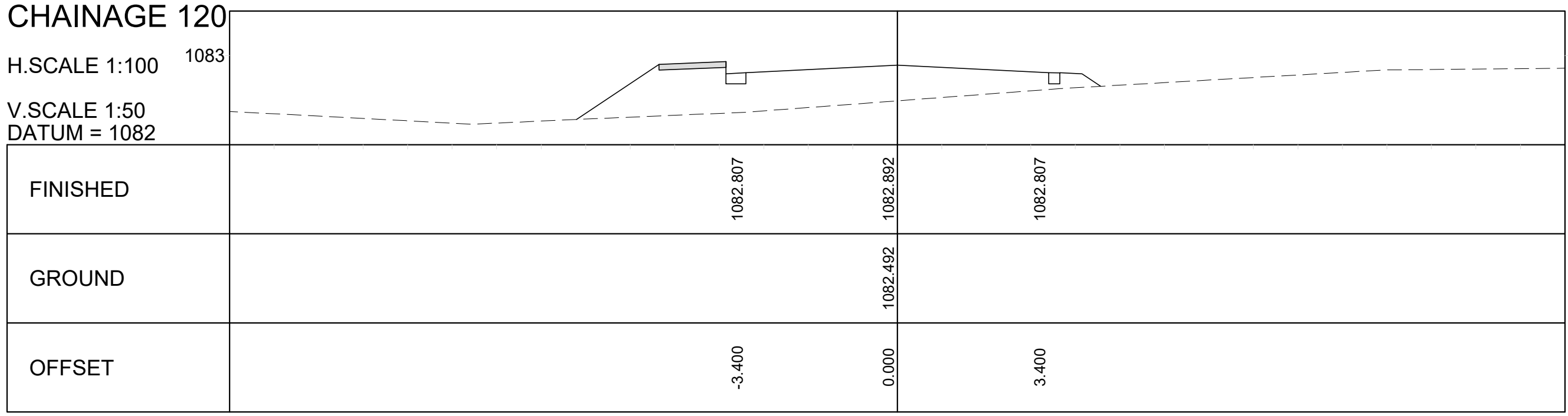
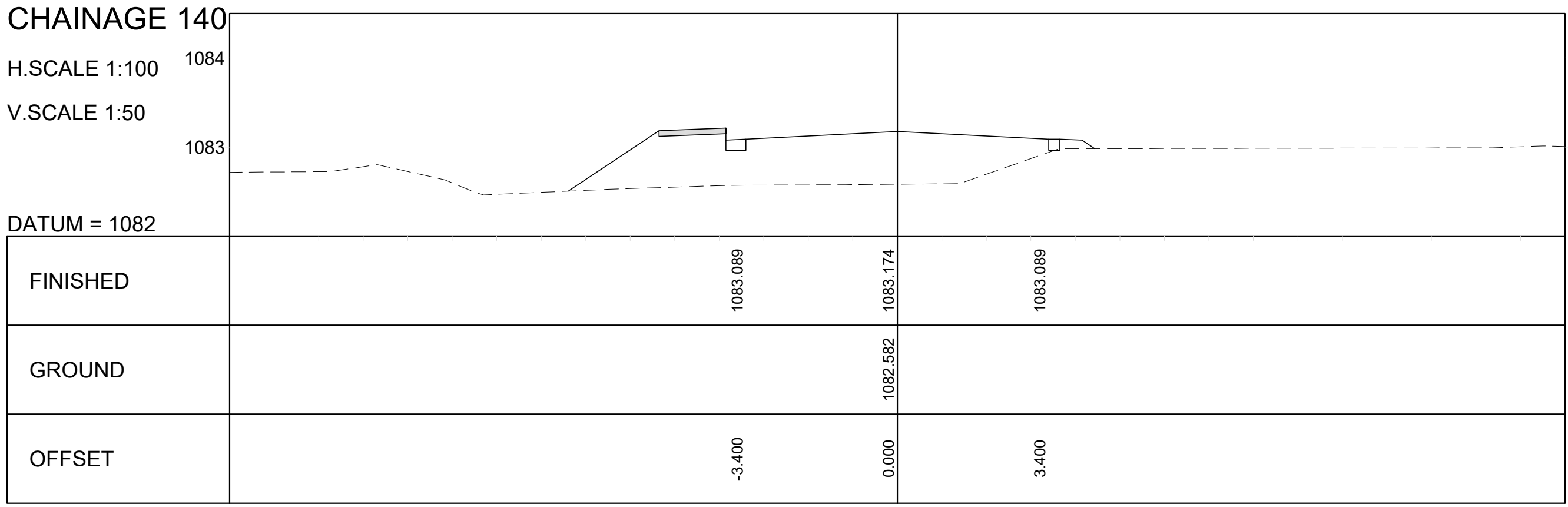
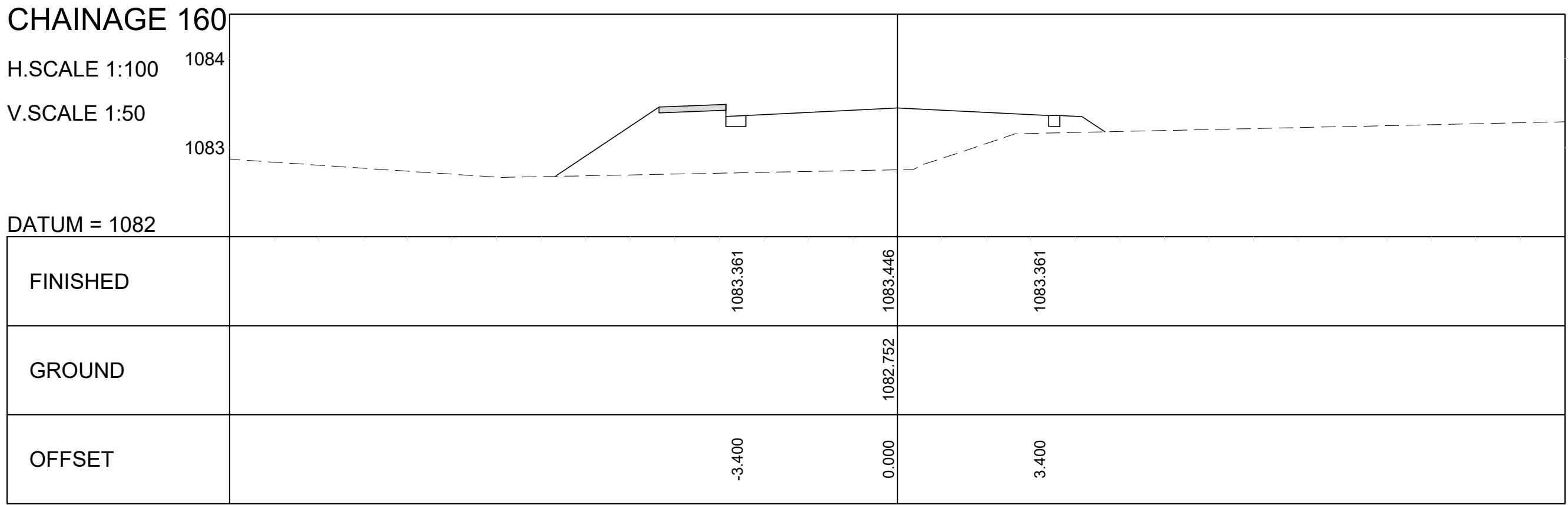
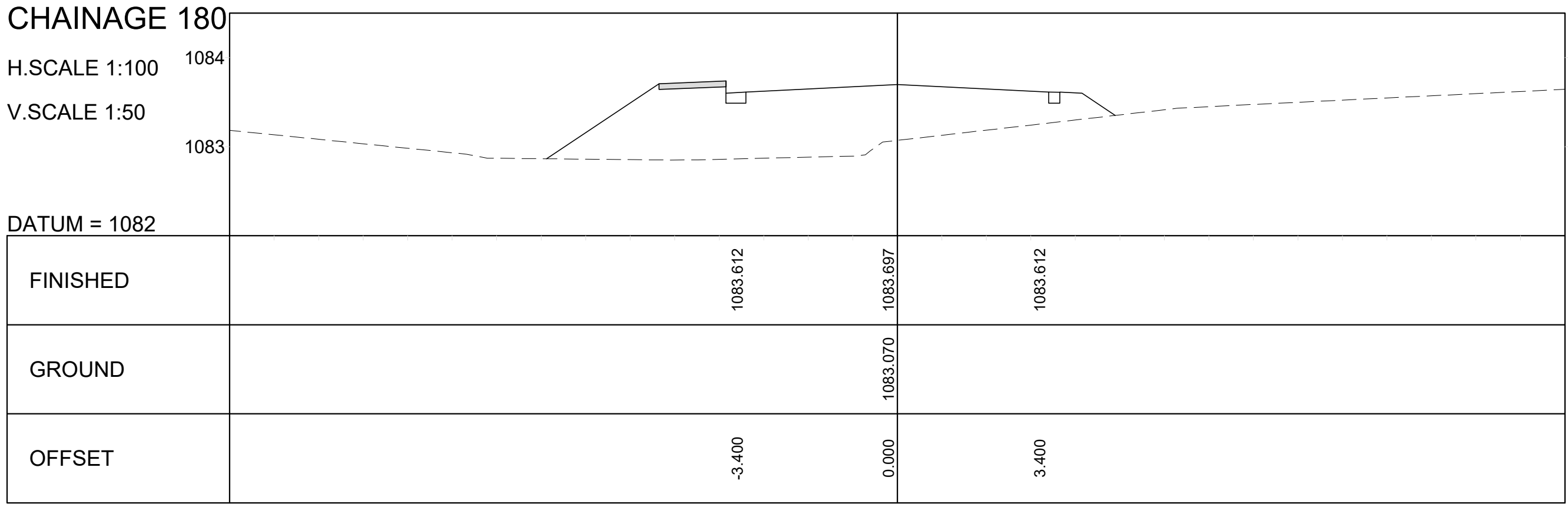
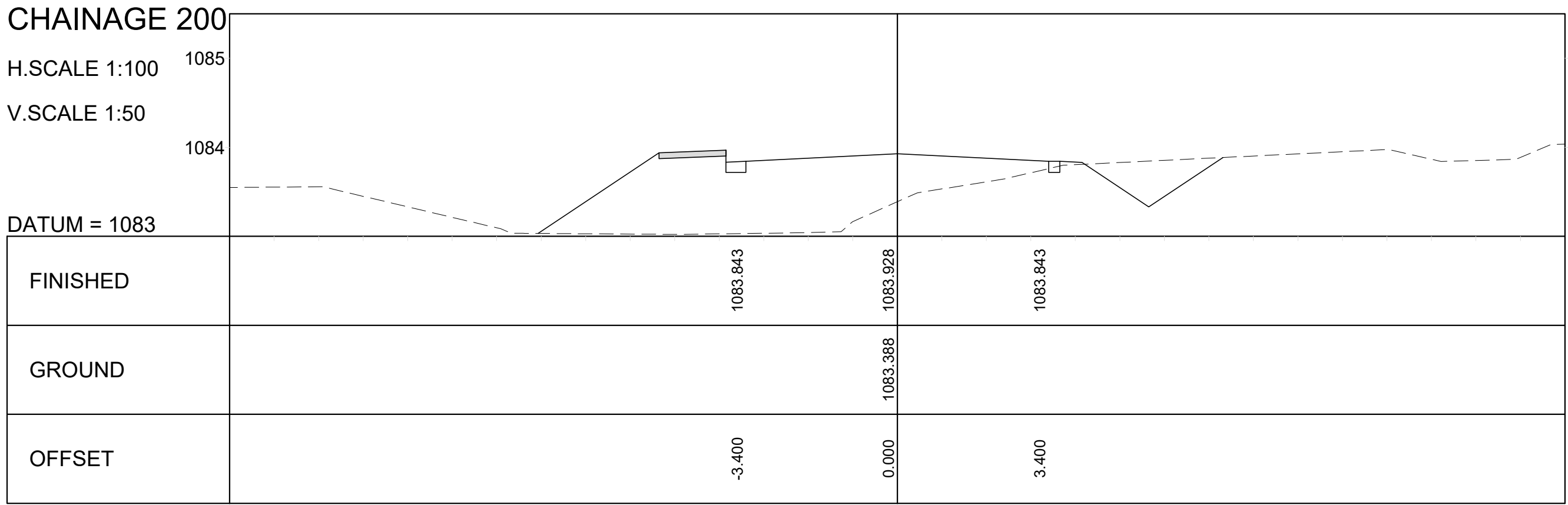
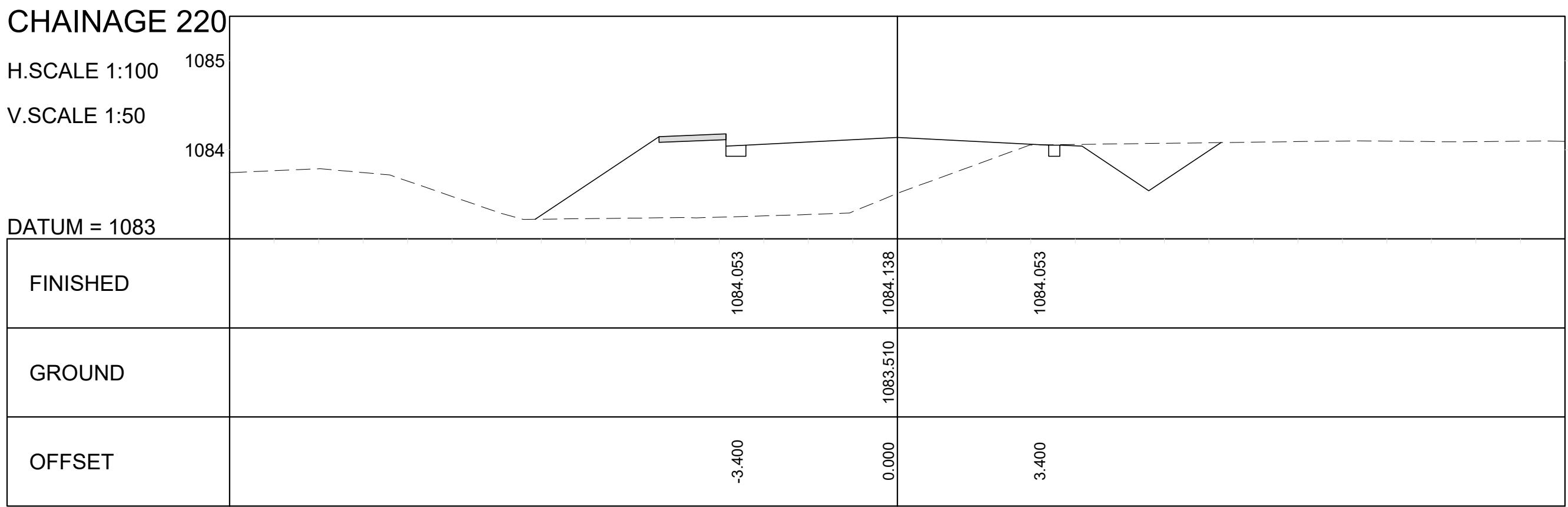
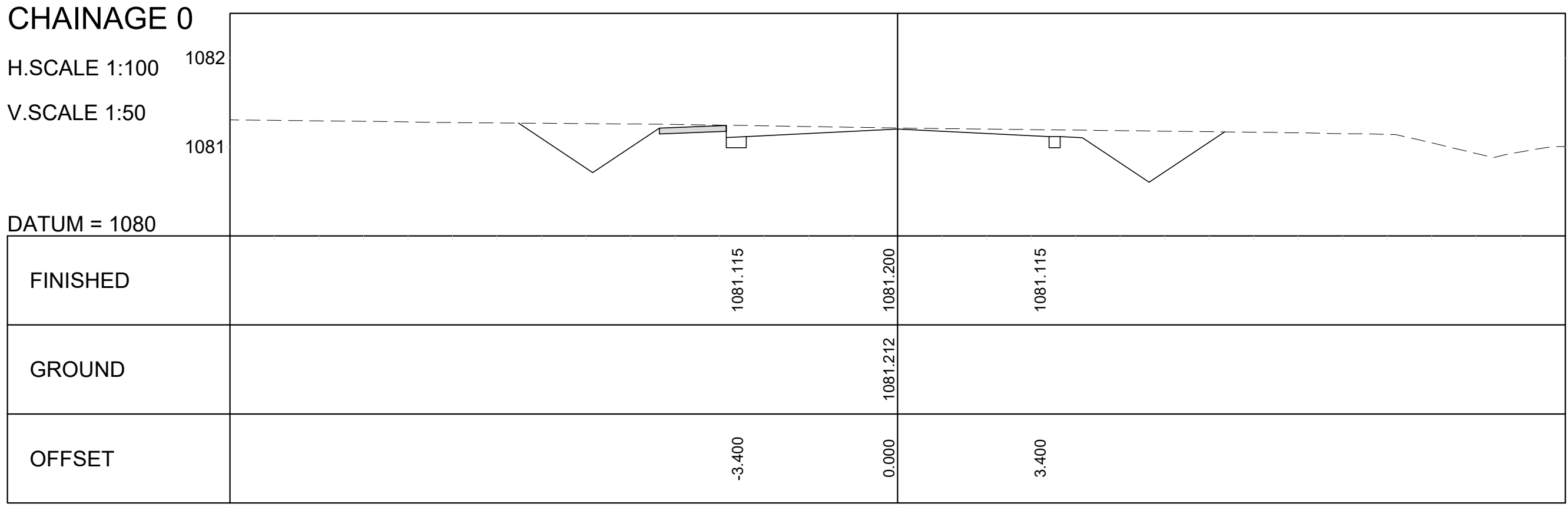
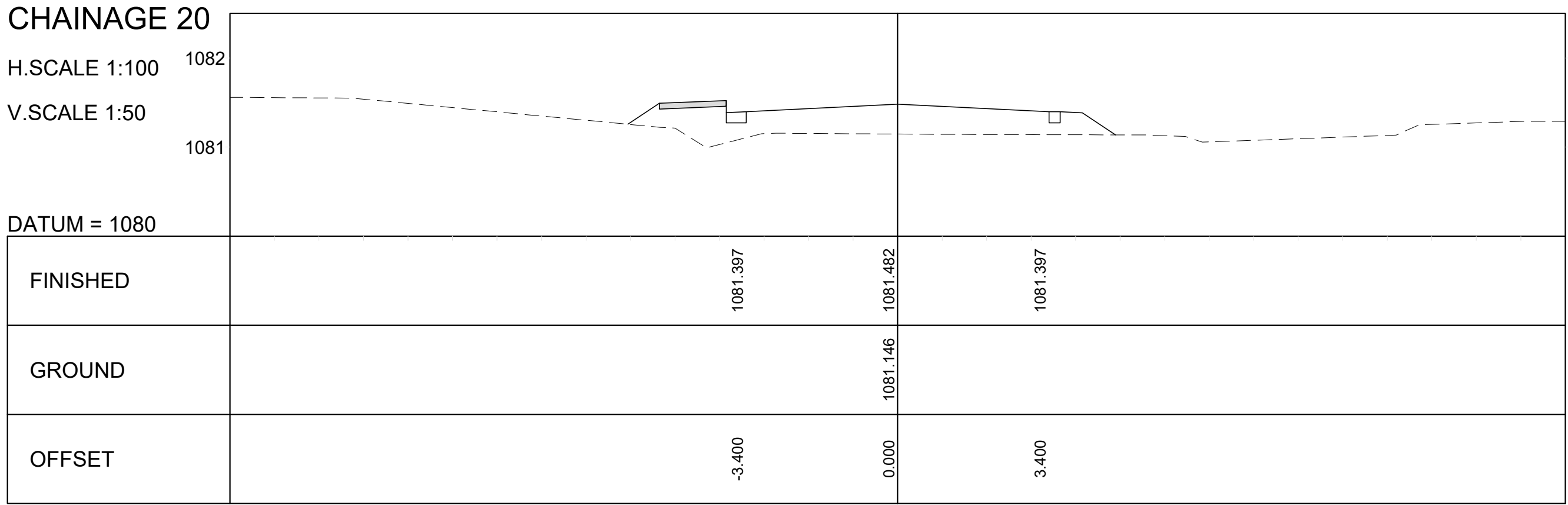
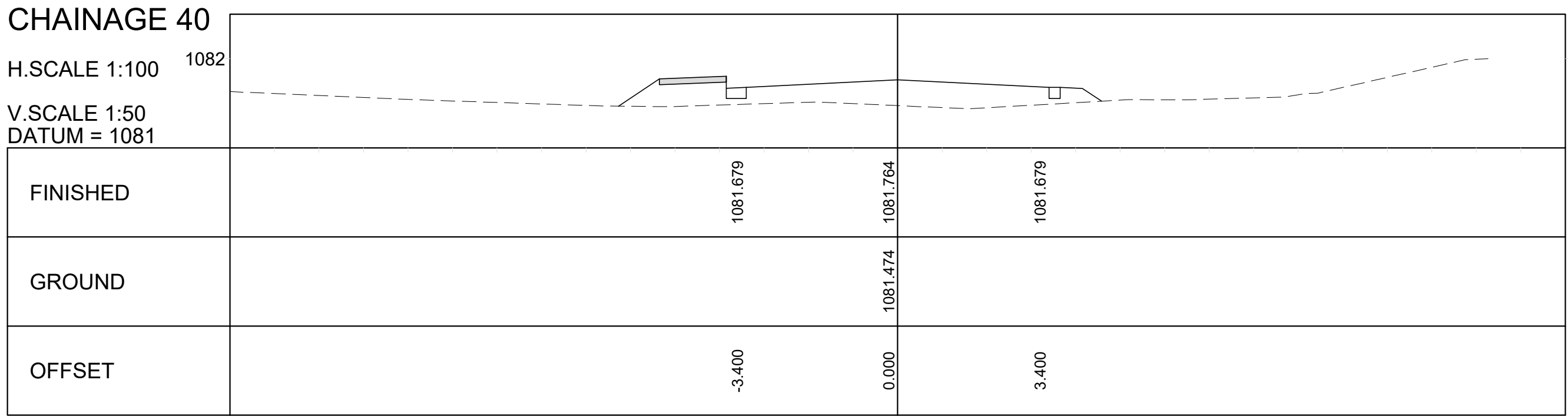
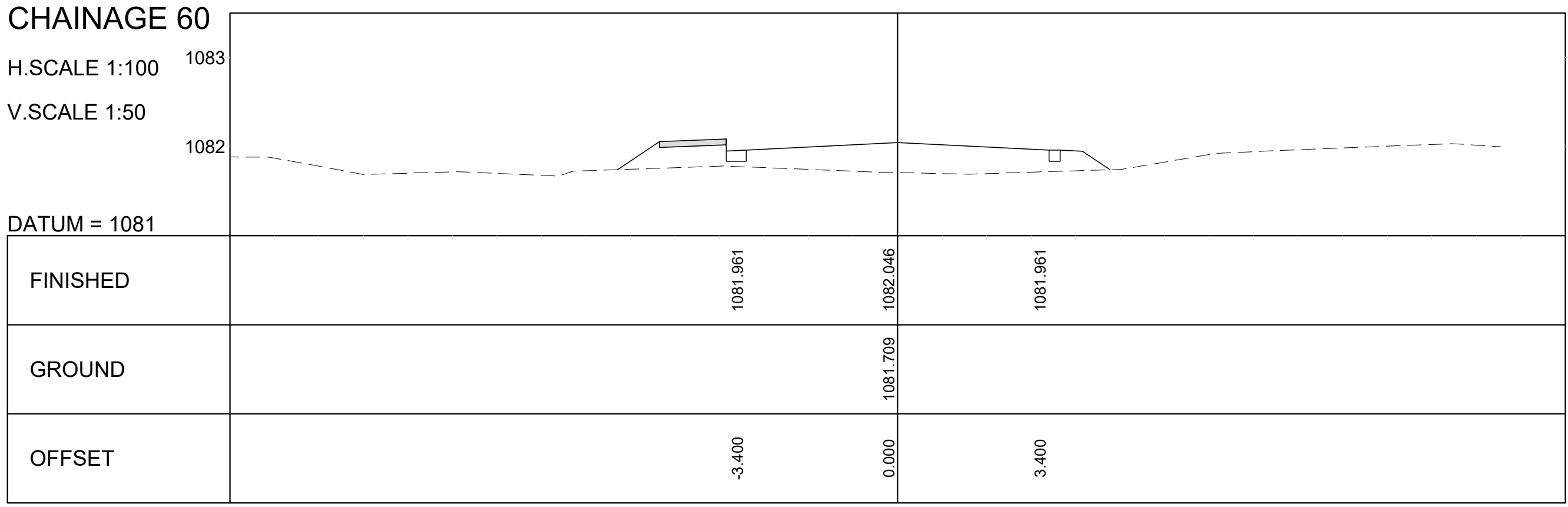
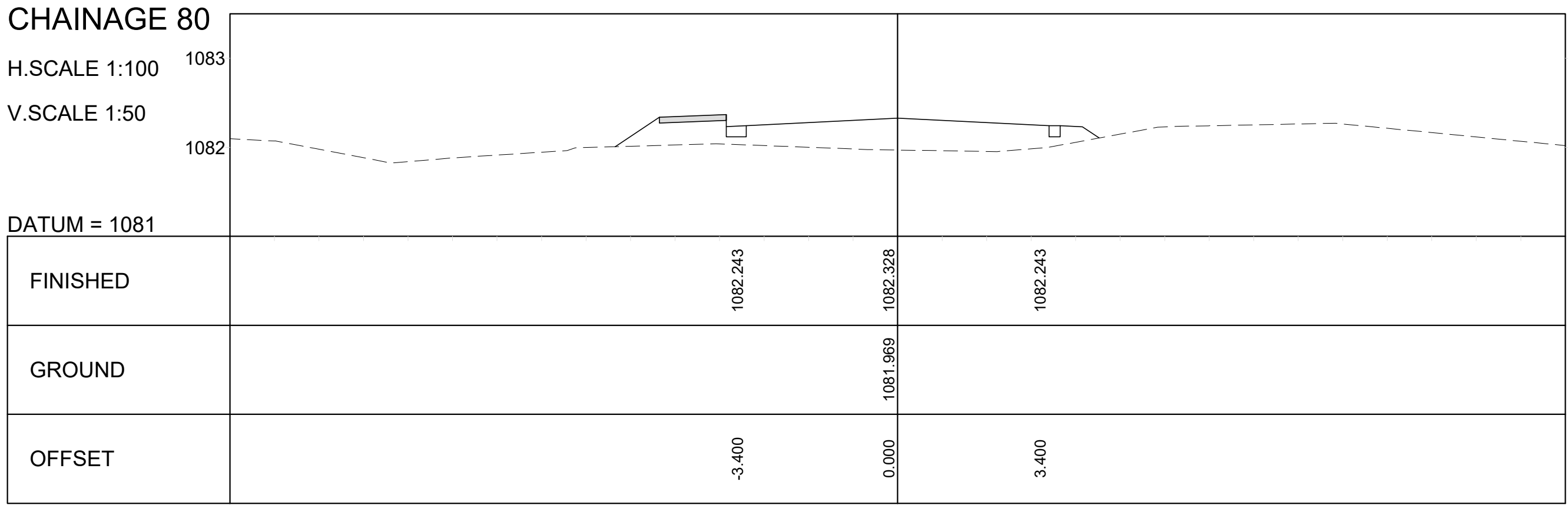
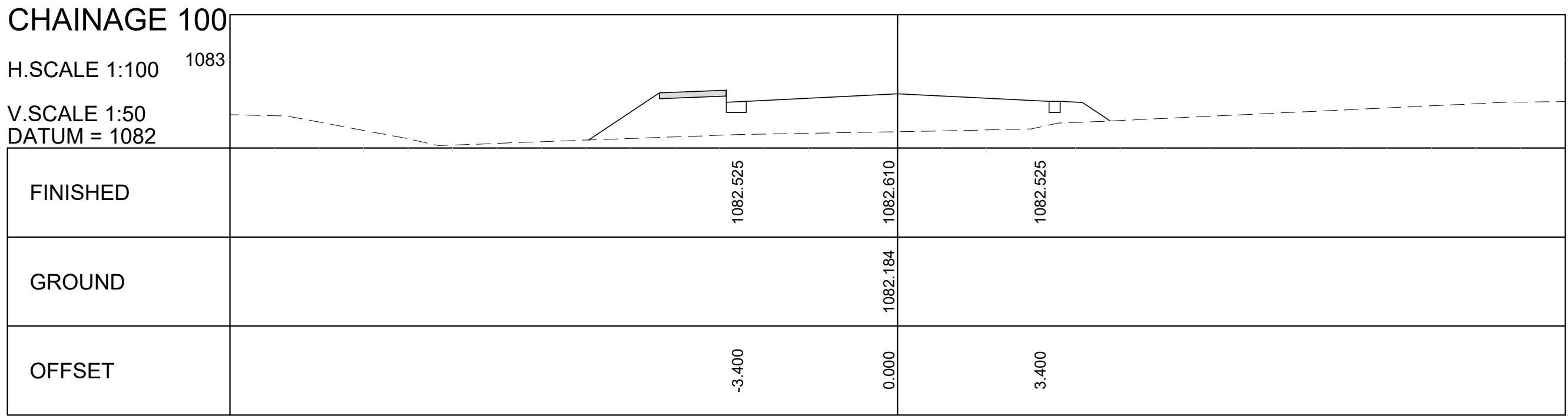


REFER TO DRAWING 2020-01-RDS-101 TO 102 FOR ROAD MARKINGS & ROAD SIGN DETAILS



V2 01/03/2023 V1 10/08/2021		FOR TENDER PURPOSES ORIGINAL VERSION		K BRINK K BRINK CONSULT. ENG.	
No.	DATE	REVISION			
		CONSTRUCTION RECORD (AS-BUILT)		WORKS CONTRACT ENGINEER	
		Name		Name	
		Prof. Reg. No.		Prof. Reg. No.	
		Date		Date	
		SANRAL PROJECT MANAGER			
		Name		Name	
		Prof. Reg. No.		Prof. Reg. No.	
		Date		Date	
		DESIGNED BY		CONSULTANT APPROVAL	
		NAME		NAME	
		Prof. Reg. No.		Prof. Reg. No.	
		CHECKED BY		Name	
		NAME		Prof. Reg. No.	
		Prof. Reg. No.		Date	
		DRAWN BY		Name	
		NAME		Prof. Reg. No.	
		Date		Date	
		WESTERN CAPE		HEAD OFFICE	
		6 BOWATER CLOSE		48 Tambotie Avenue	
		MELKBOSSSTRAND		Vai de Grace	
		CAPE TOWN		PRETORIA	
		7441		0184	
		P.O. BOX 357		PO Box 415	
		MELKBOSSSTRAND		Pretoria 0001	
		CAPE TOWN		South Africa	
		7441			
		Tel: 066 274 8594		Tel: (012) 844 8000	
		NORTHERN REGION		PRIVATE BAG X17	
		38 IDA STREET		LYNWOOD RIDGE	
		MENLO PARK		TSHWANE	
		TSHWANE		0081	
		Tel: (012) 426 6200		Tel: (012) 426 6200	
		ACCEPTANCE		ACCEPTANCE	
		THIS ACCEPTANCE IS FOR PROCEDURAL AND		THIS ACCEPTANCE IS FOR PROCEDURAL AND	
		ADMINISTRATIVE REVIEW PURPOSES ONLY		ADMINISTRATIVE REVIEW PURPOSES ONLY	
		AND DOES NOT ATTRACT LEGAL LIABILITY OR		AND DOES NOT ATTRACT LEGAL LIABILITY OR	
		LIABILITY OF ANY KIND FROM WHATSOEVER		LIABILITY OF ANY KIND FROM WHATSOEVER	
		CAUSE OR HOWEVER ARISING		CAUSE OR HOWEVER ARISING	
		for the SA NATIONAL ROADS AGENCY SOC. LTD.		for the SA NATIONAL ROADS AGENCY SOC. LTD.	
		Date		Date	
		THE UPGRADING OF BOTLOKWA (MATOKS)		THE UPGRADING OF BOTLOKWA (MATOKS)	
		CLINIC ACCESS ROAD		CLINIC ACCESS ROAD	
		LONGITUDINAL SECTION		LONGITUDINAL SECTION	
		FROM Km 1+040 TO Km 2+041		FROM Km 1+040 TO Km 2+041	
		SCALE : H 1:1000 & V 1:100		SCALE : H 1:1000 & V 1:100	
		SHEET 2 OF 2		SHEET 2 OF 2	
		PROJECT NUMBER		PROJECT NUMBER	
		2020-01		2020-01	
		DRAWING LOCATION DATA		DRAWING LOCATION DATA	
		ROUTE		ROUTE	
		SECTION		SECTION	
		DRAWING km DISTANCE		DRAWING km DISTANCE	
		1.040		1.040	
		BRIDGE/STRUCTURE No.		BRIDGE/STRUCTURE No.	
		N/A		N/A	
		CONSULTANT DRAWING No.		CONSULTANT DRAWING No.	
		2020-01-RDS-201		2020-01-RDS-201	
		SANRAL DOCUMENT #		SANRAL DOCUMENT #	
		VER		VER	
		V2		V2	





			CONSTRUCTION RECORD (AS-BUILT)
			WORKS CONTRACT ENGINEER
			Name : Prof. Reg. No. : Date :
			SANRAL PROJECT MANAGER
			Name : Date :
V2	25/01/2023	FOR TENDER PURPOSES	K BRINK
V1	04/02/2022	ORIGINAL VERSION	K BRINK
No.	DATE	REVISION	CONSULT. ENG.



**WESTERN CAPE**  
6 BOWATER CLOSE  
MELKBOSSTRAND  
CAPE TOWN 7441

P.O. BOX 357  
MELKBOSSTRAND  
CAPE TOWN 7441  
Tel: 066 274 8594

DESIGNED BY  
NAME : K BRINK  
Prof. Reg. No. : IE2015-02  
CHECKED BY

NAME : B CILLIERS  
Prof. Reg. No. : 950349  
DRAWN BY  
NAME : G KUNGWANE

CONSULTANT APPROVAL  
Name : B CILLIERS  
Prof. Reg. No. : 950349  
Date : 04/02/2022

**HEAD OFFICE**  
48 Tambote Avenue  
Val de Grace  
Pretoria 0184

PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000

**SANRAL**  
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD  
BUILDING SOUTH AFRICA  
THROUGH BETTER ROADS

**NORTHERN REGION**  
38 IDA STREET  
MENLO PARK  
TSHWANE 0081

PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE 0040  
Tel: (012) 426 6200

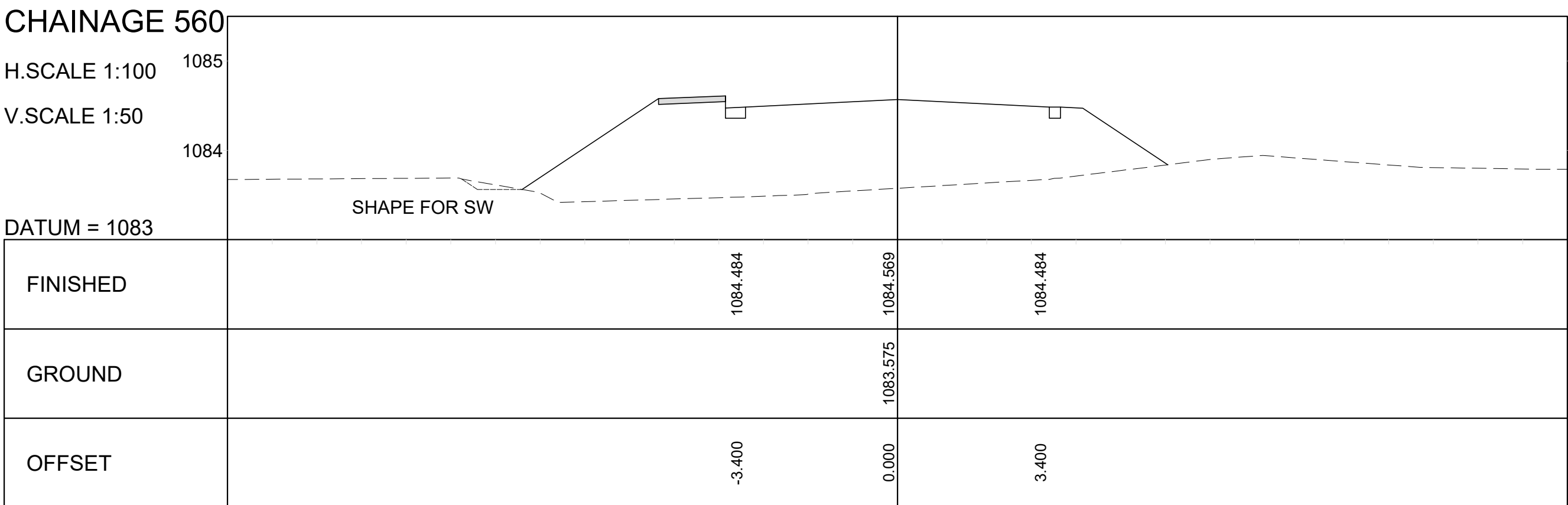
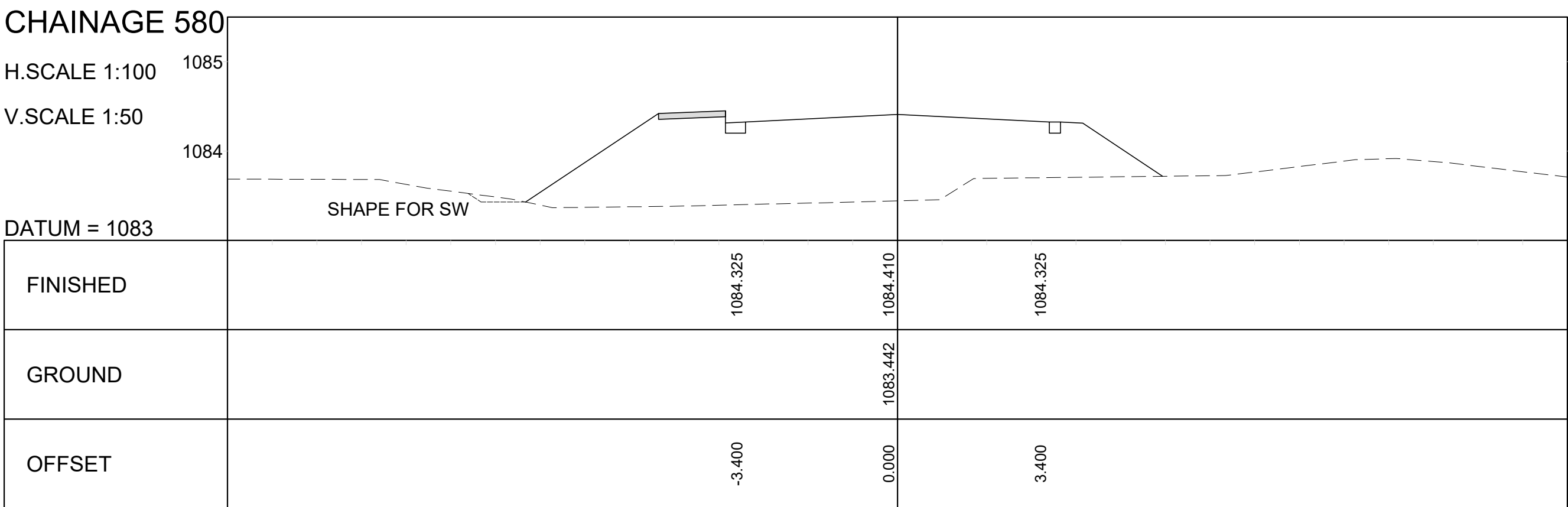
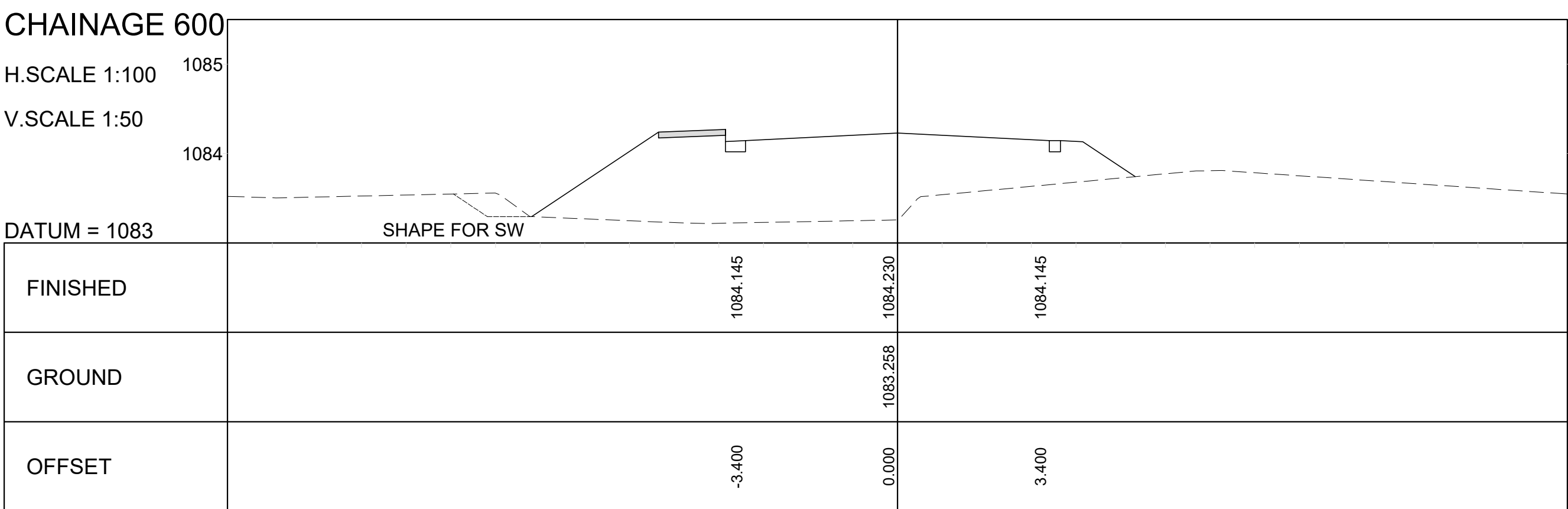
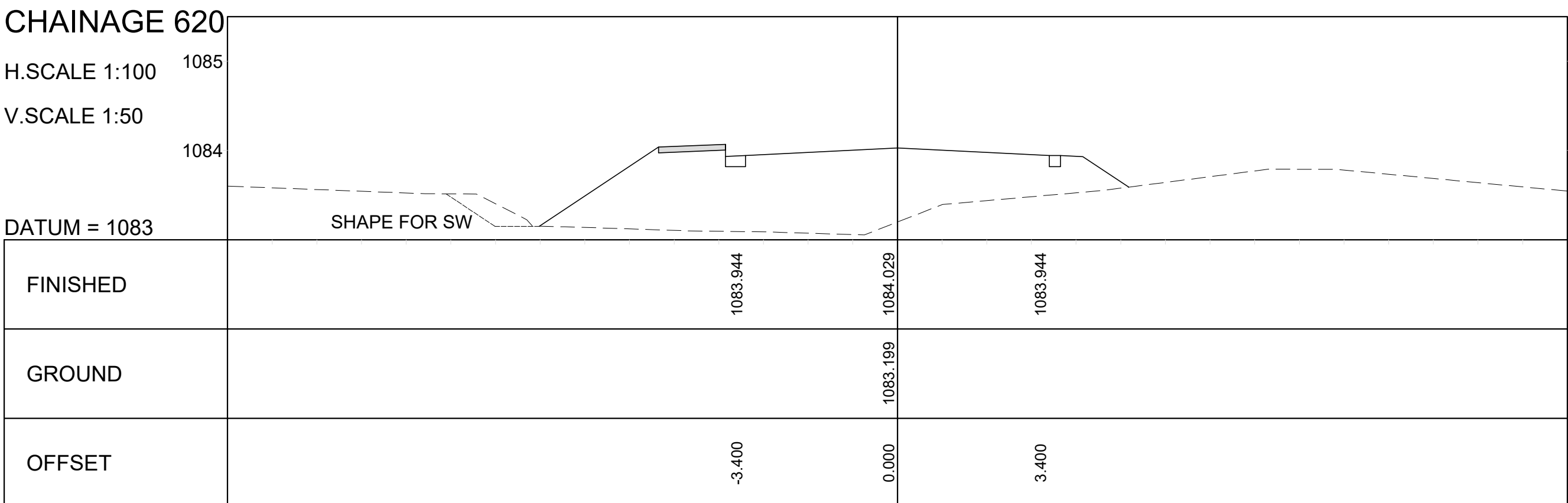
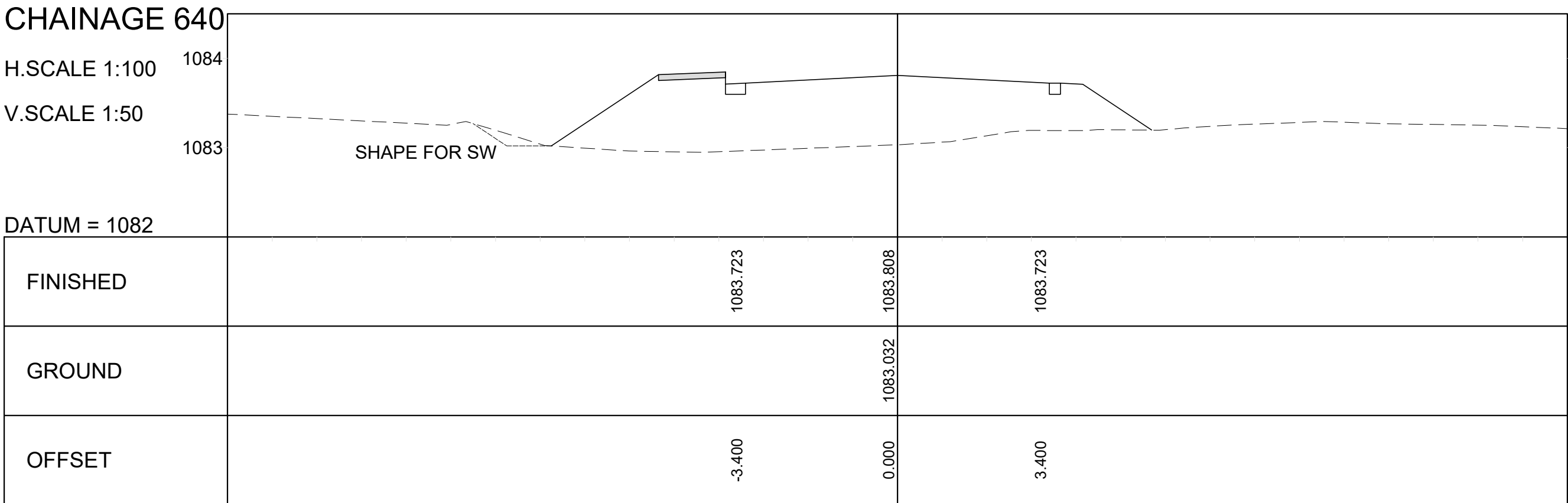
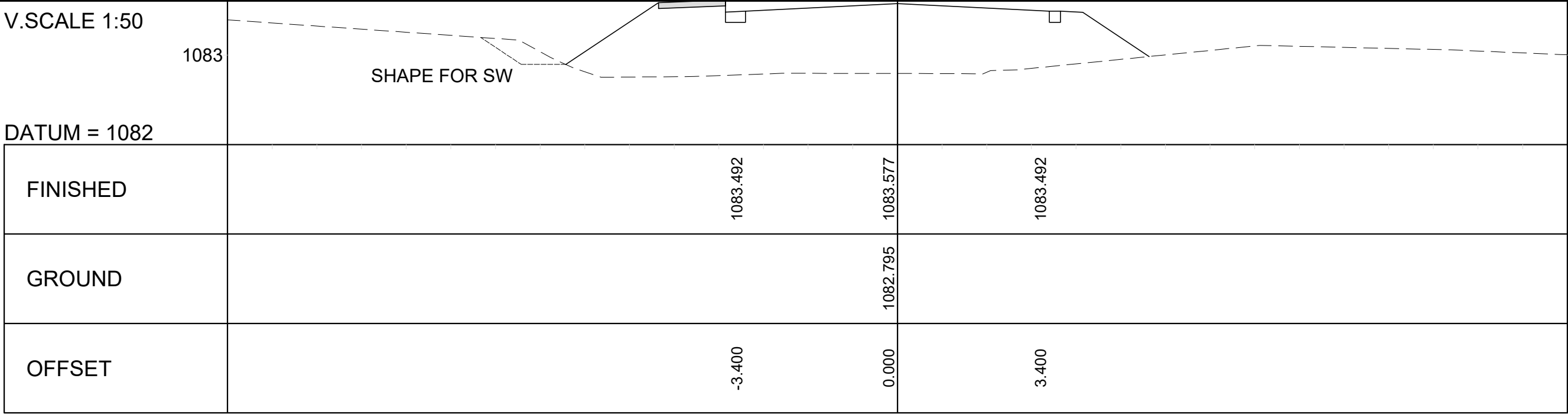
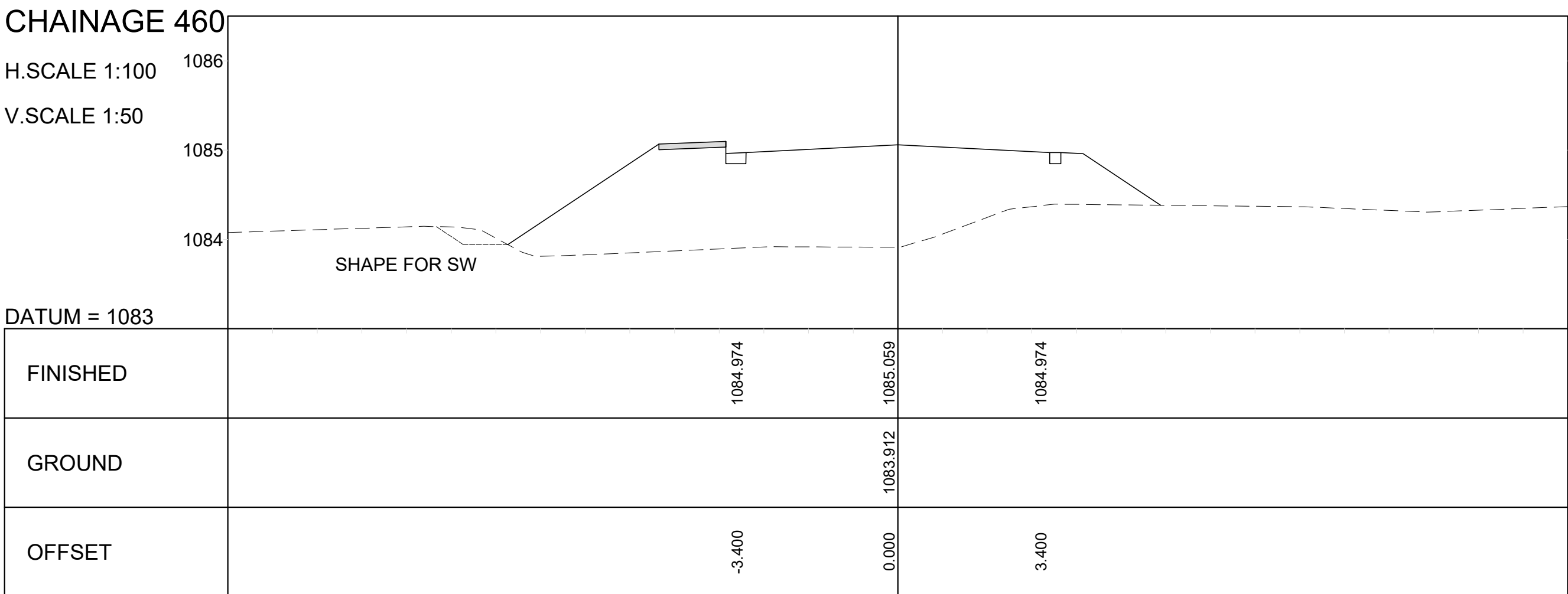
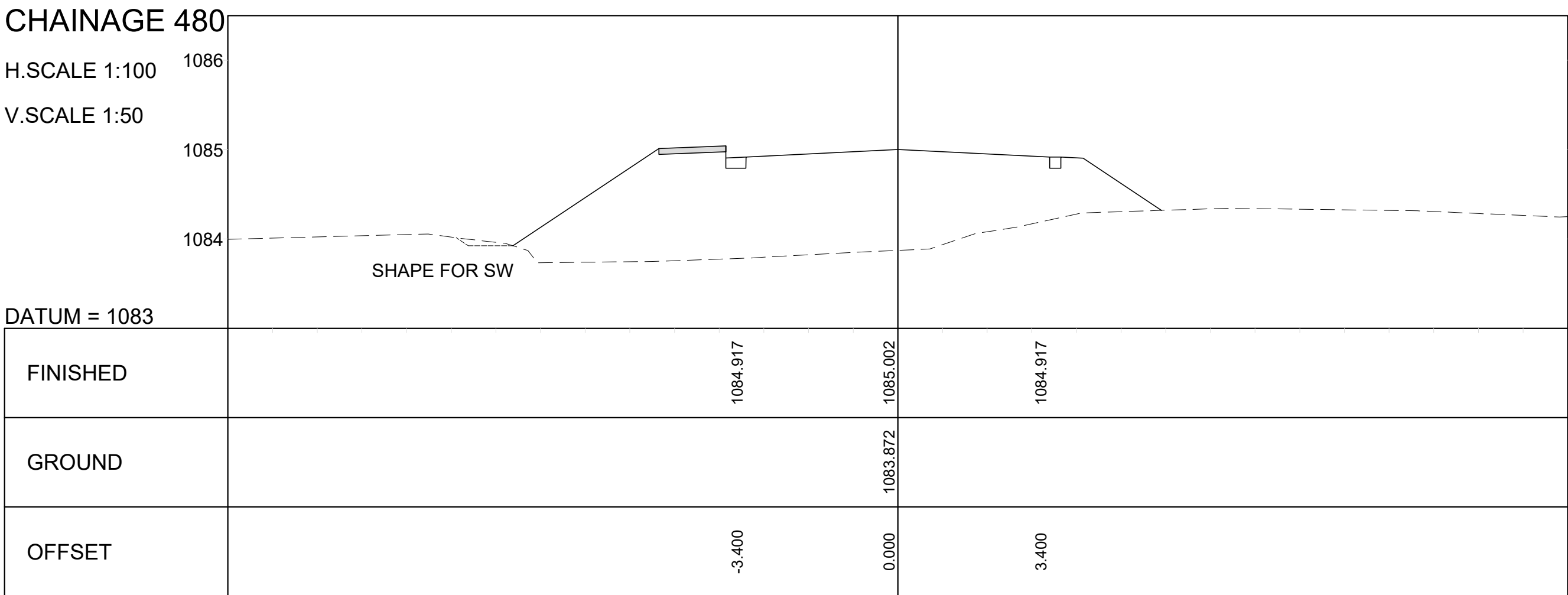
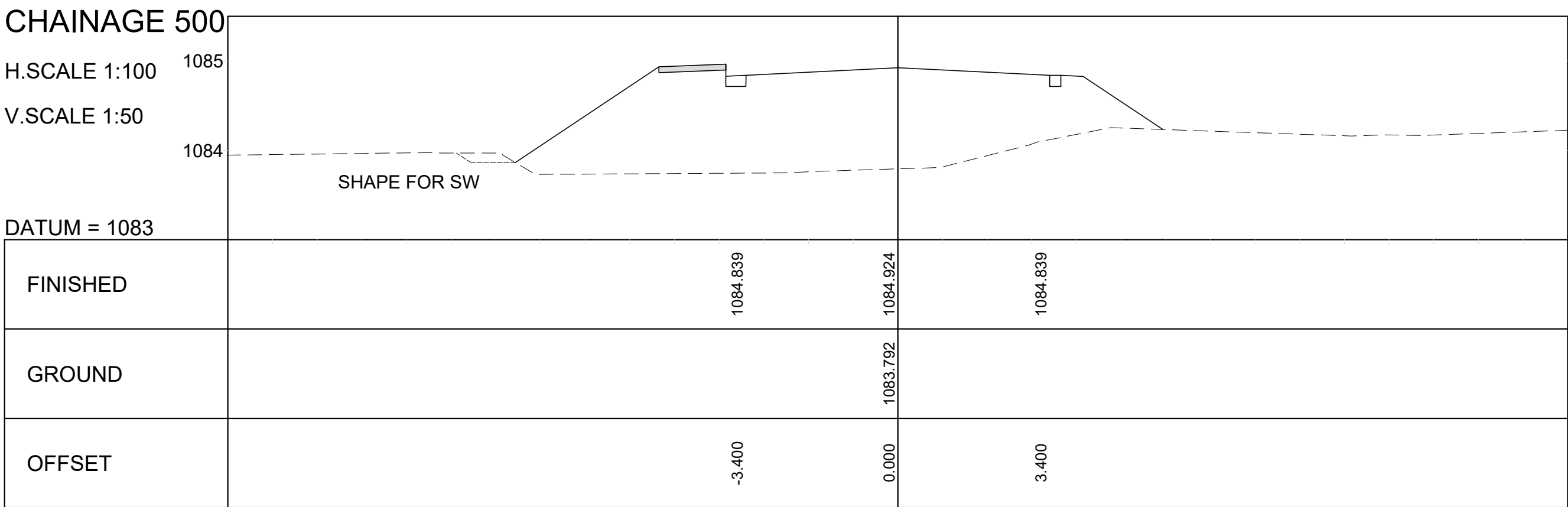
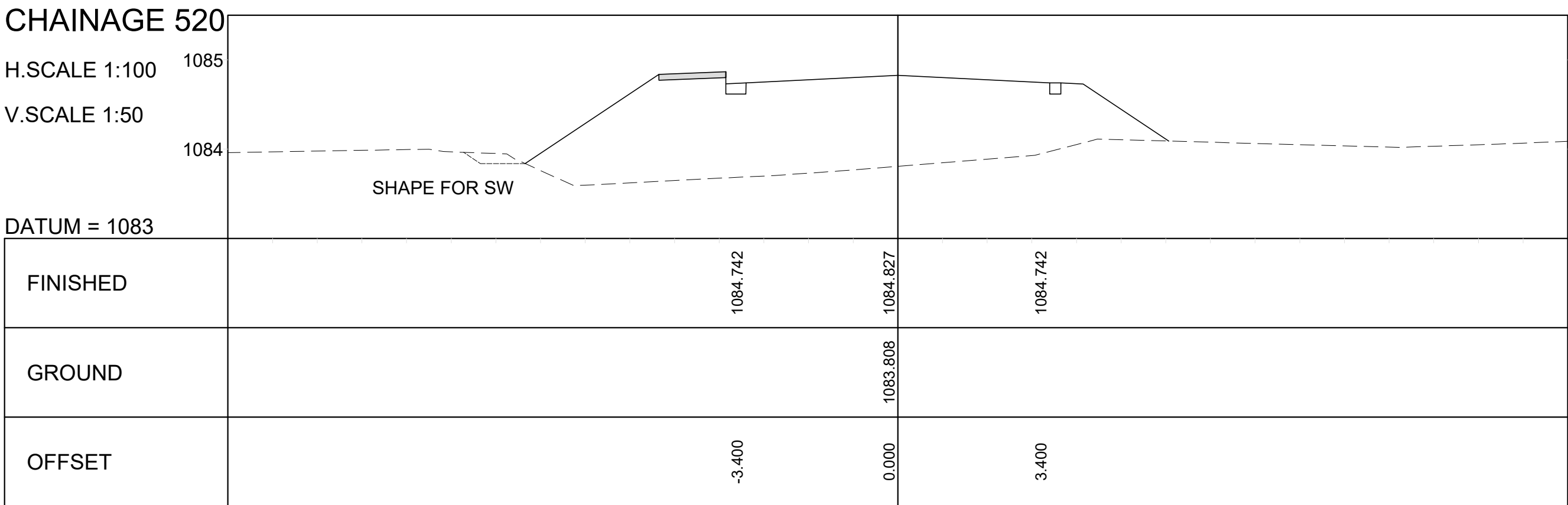
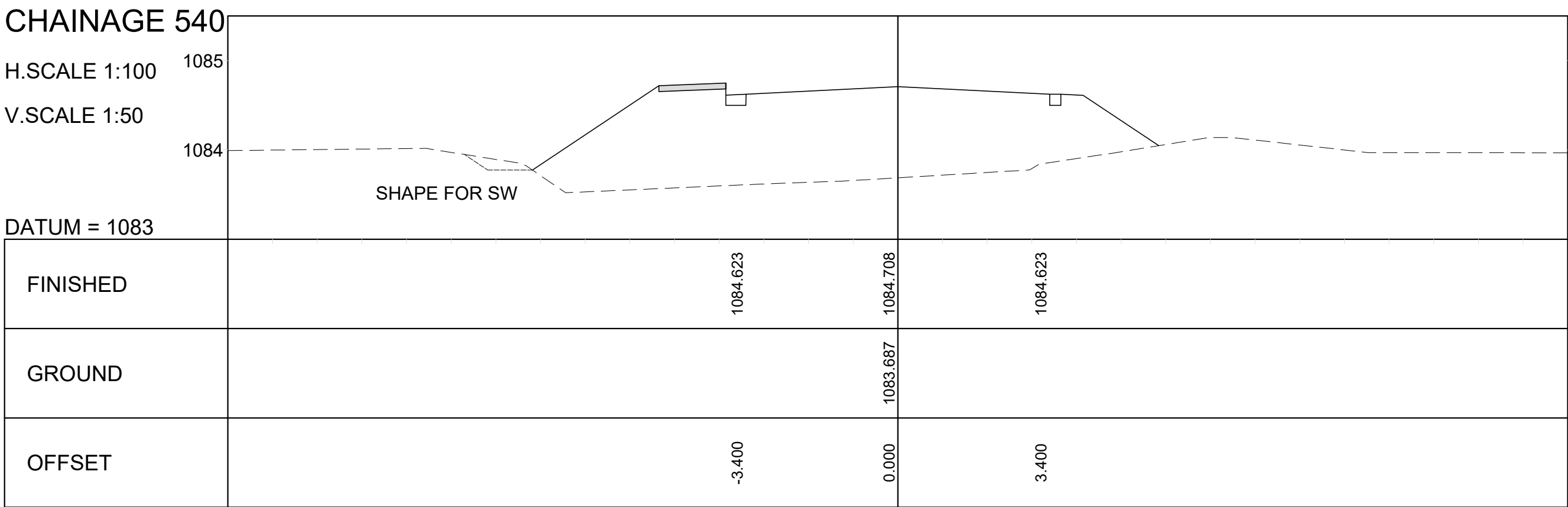
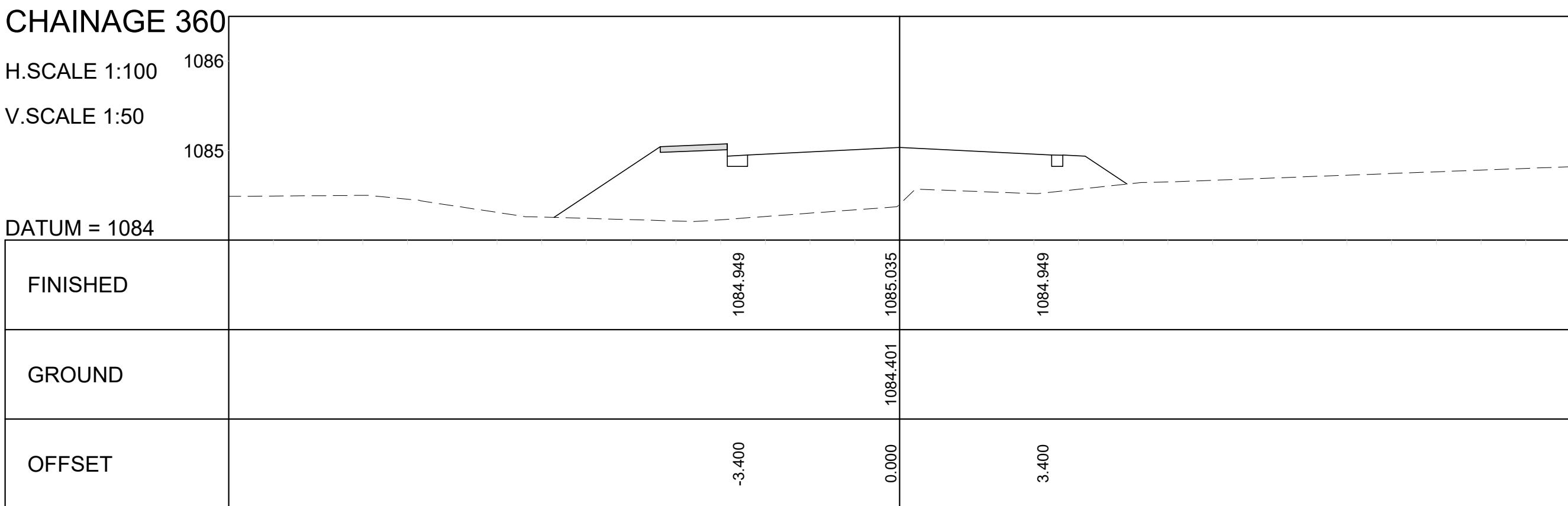
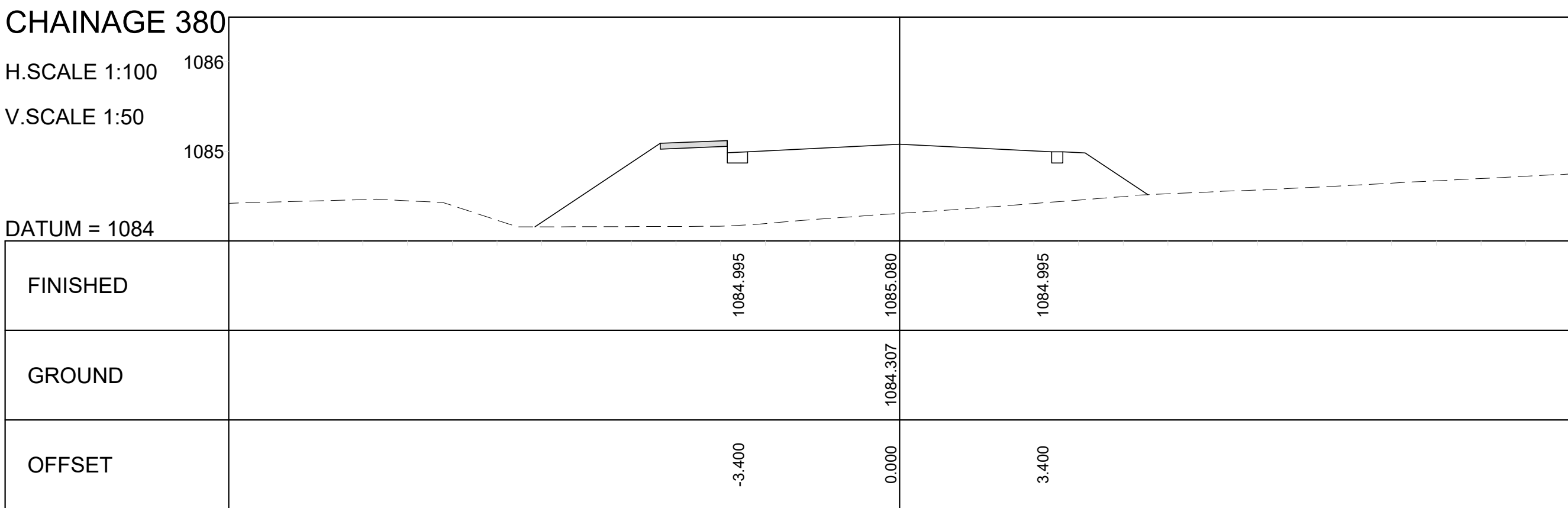
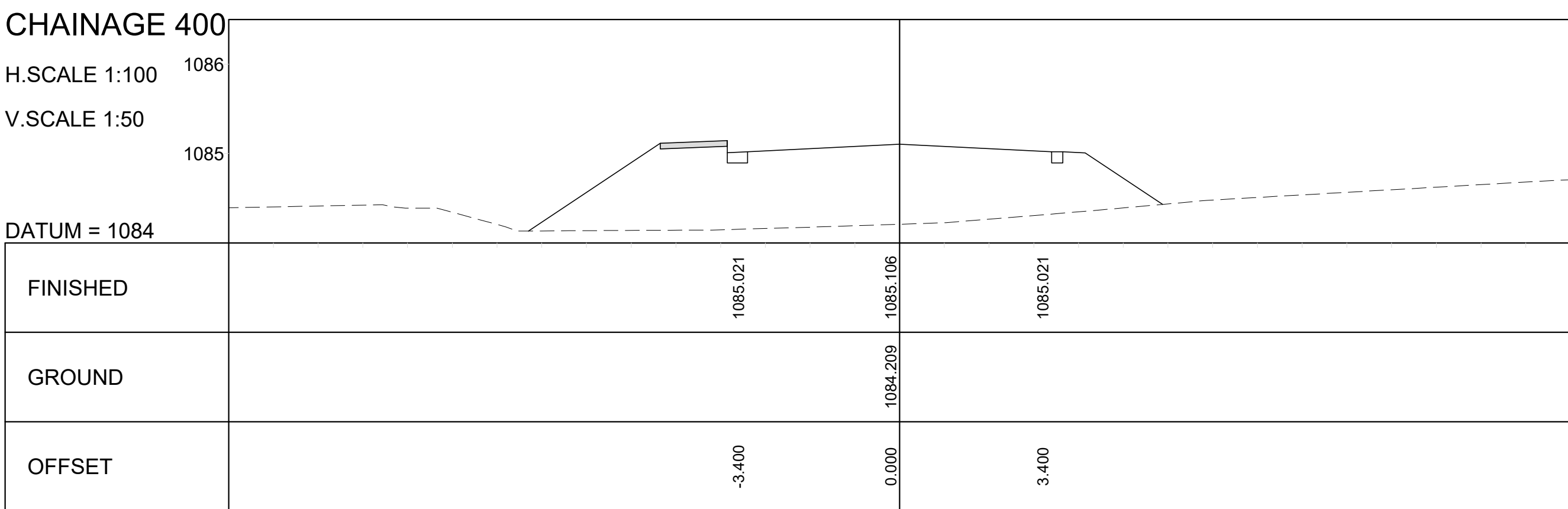
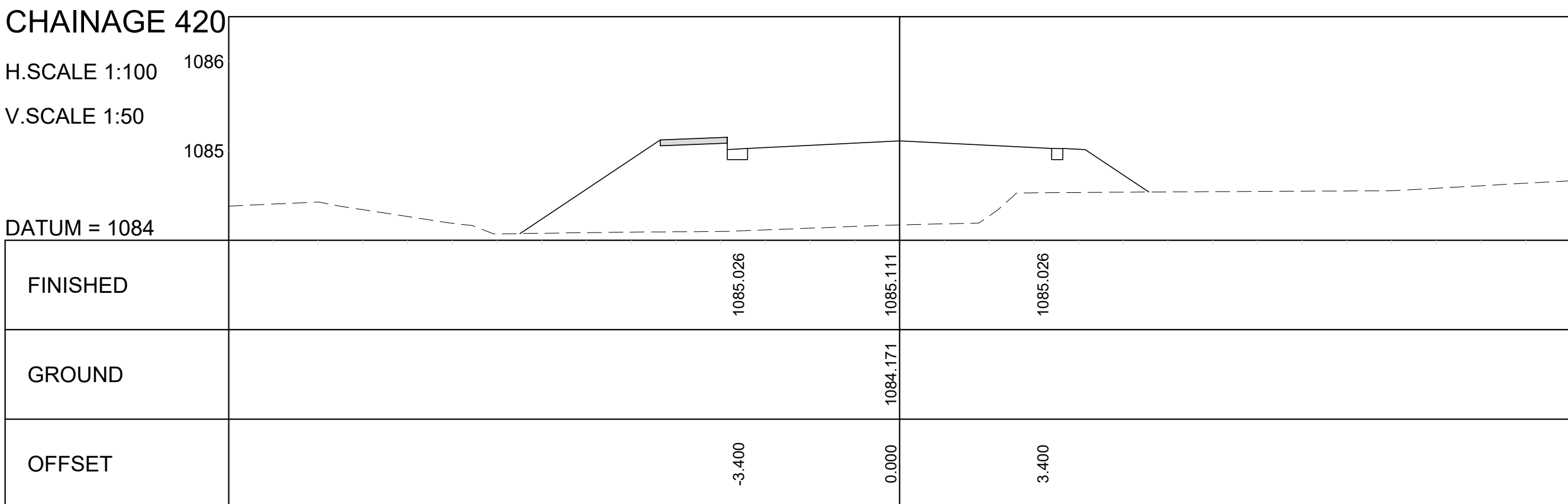
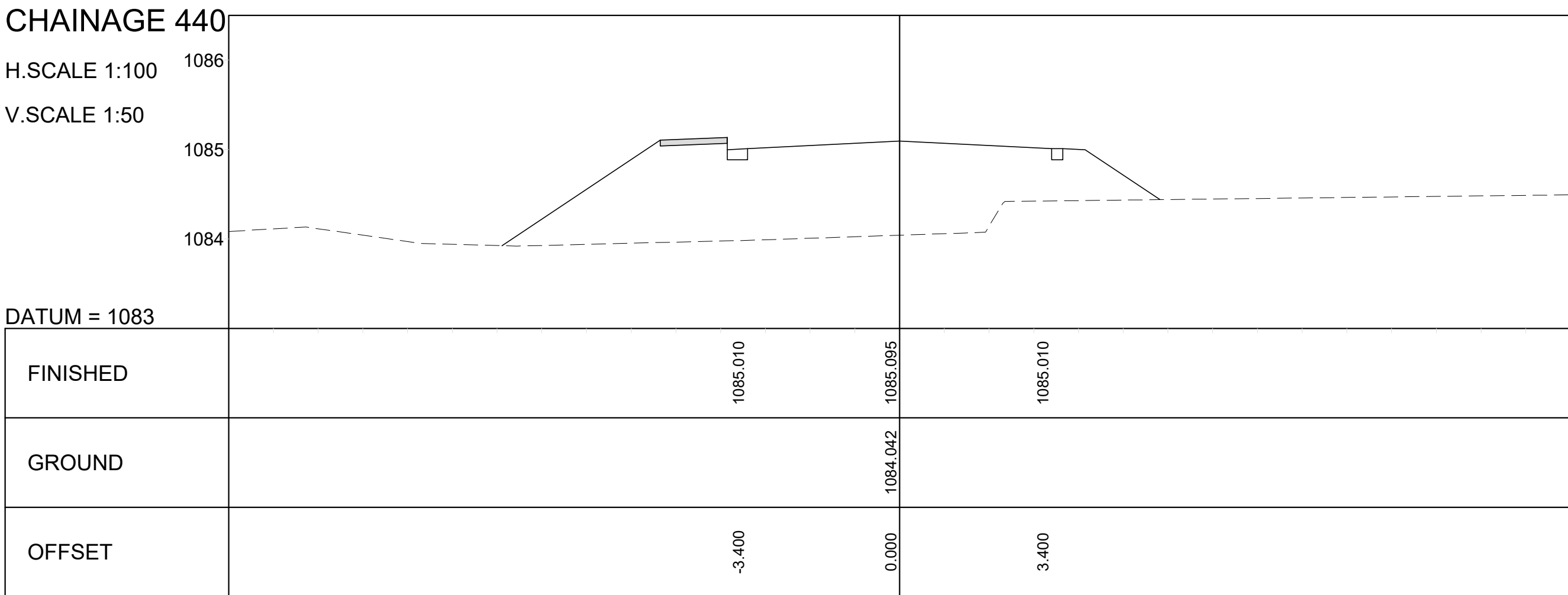
ACCEPTANCE  
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING

for the SA NATIONAL ROADS AGENCY SOC LTD.  
Date:

THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD		
CROSS-SECTIONS CHAINAGE 0+0.000 TO 0+320		
SCALES : H 1:100 V 1:50	SHEET 1 OF 7	

PROJECT NUMBER	S.002-001-2018/1F	
DRAWING LOCATION DATA	START	END
ROUTE	D3135	D3135
SECTION	1	1
DRAWING km DISTANCE	0+000	0+320
DRAWING TYPE	CROSS-SECTION	
BRIDGE/STRUCTURE No.	N/A	
CONSULTANT DRAWING No.	2020-01-RDS-300	VER
SANRAL DOCUMENT #	---	V2





				CONSTRUCTION RECORD (AS-BUILT)
				WORKS CONTRACT ENGINEER
				Name : Prof. Reg. No. : Date :
				SANRAL PROJECT MANAGER
				Name : Prof. Reg. No. : Date :
V2	25/01/2023	FOR TENDER PURPOSES	K BRINK	
V1	04/02/2022	ORIGINAL VERSION	K BRINK	
No.	DATE	REVISION	CONSULT. ENG.	



WESTERN CAPE  
6 BOWATER CLOSE  
MELKBOSSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 357  
MELKBOSSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
DATE	
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DATE	
DRAWN BY	
NAME	G KUNGWANE

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	04/02/2022

HEAD OFFICE  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0184  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000



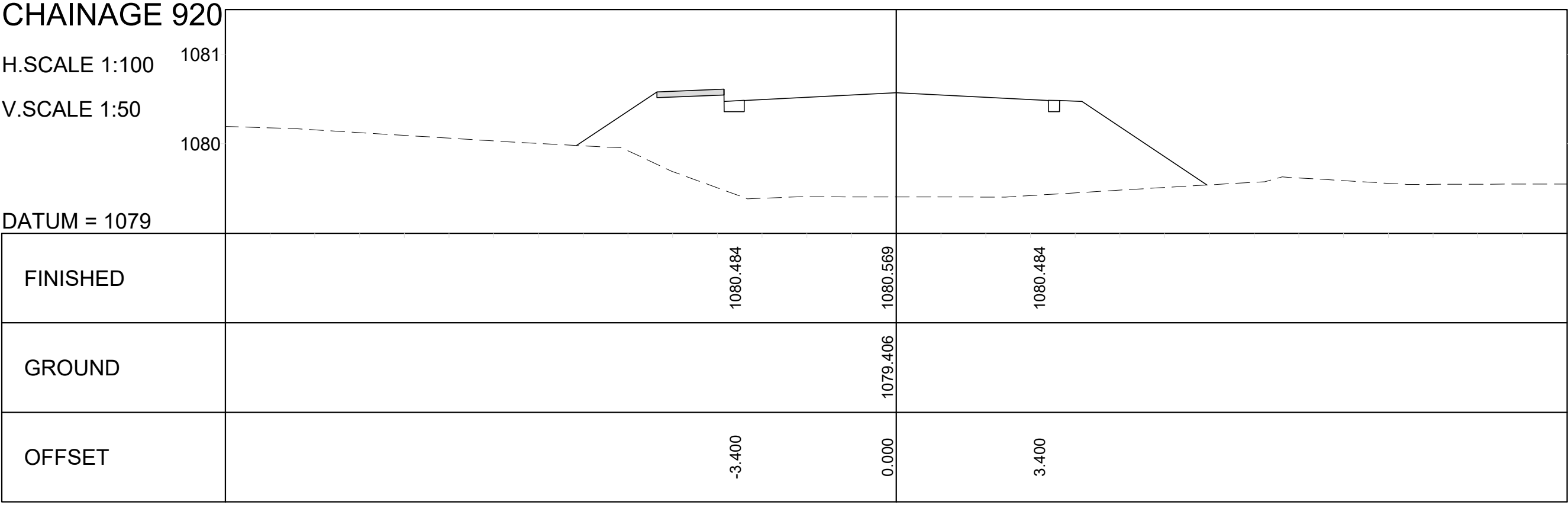
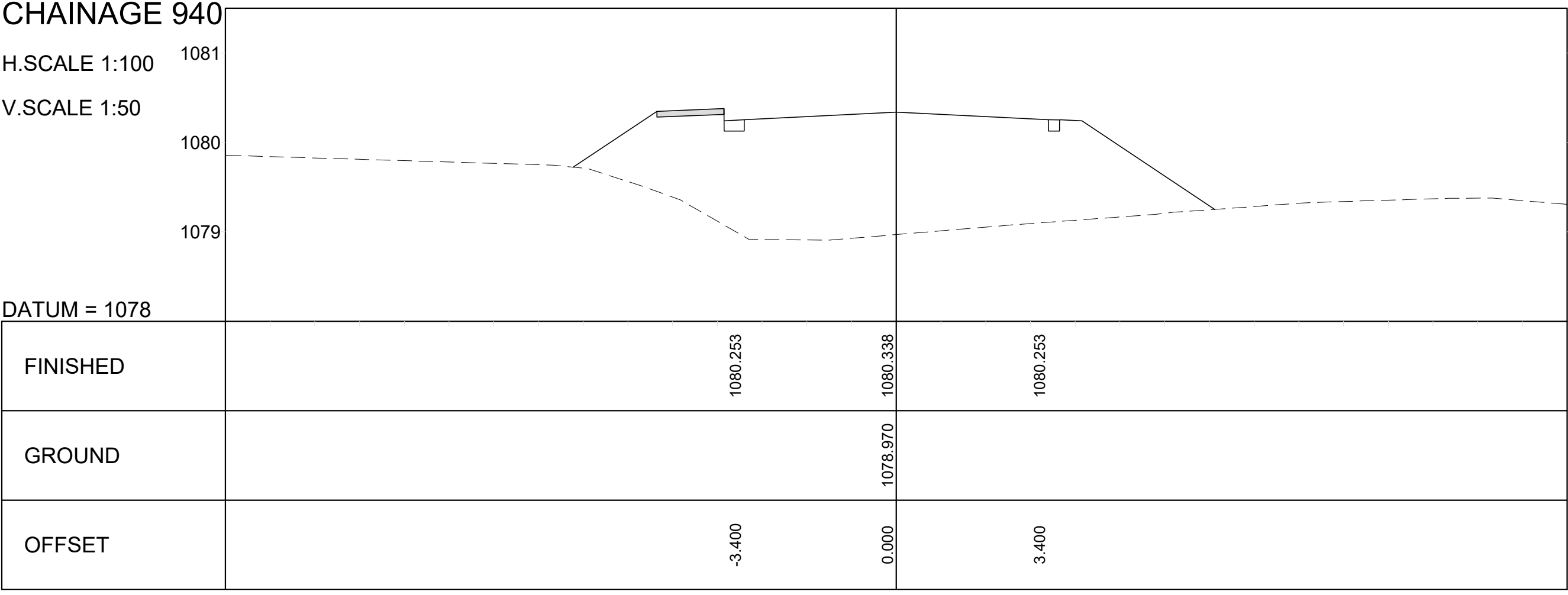
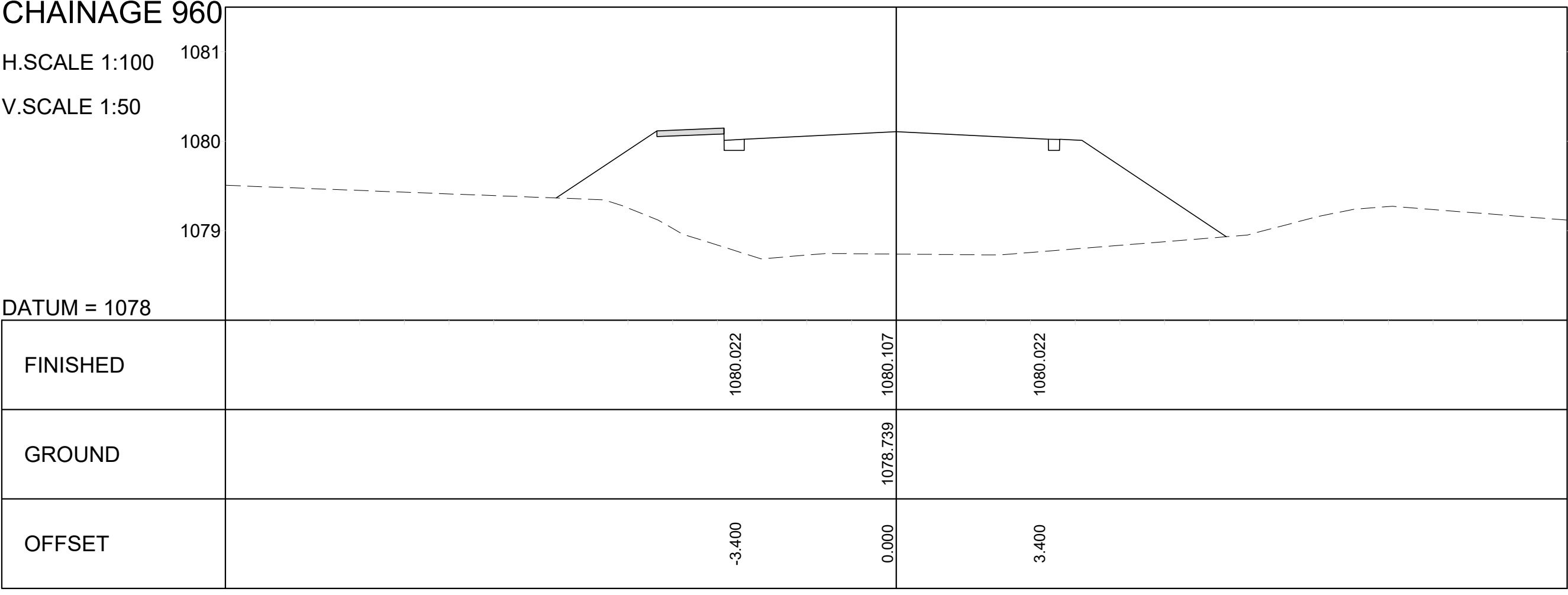
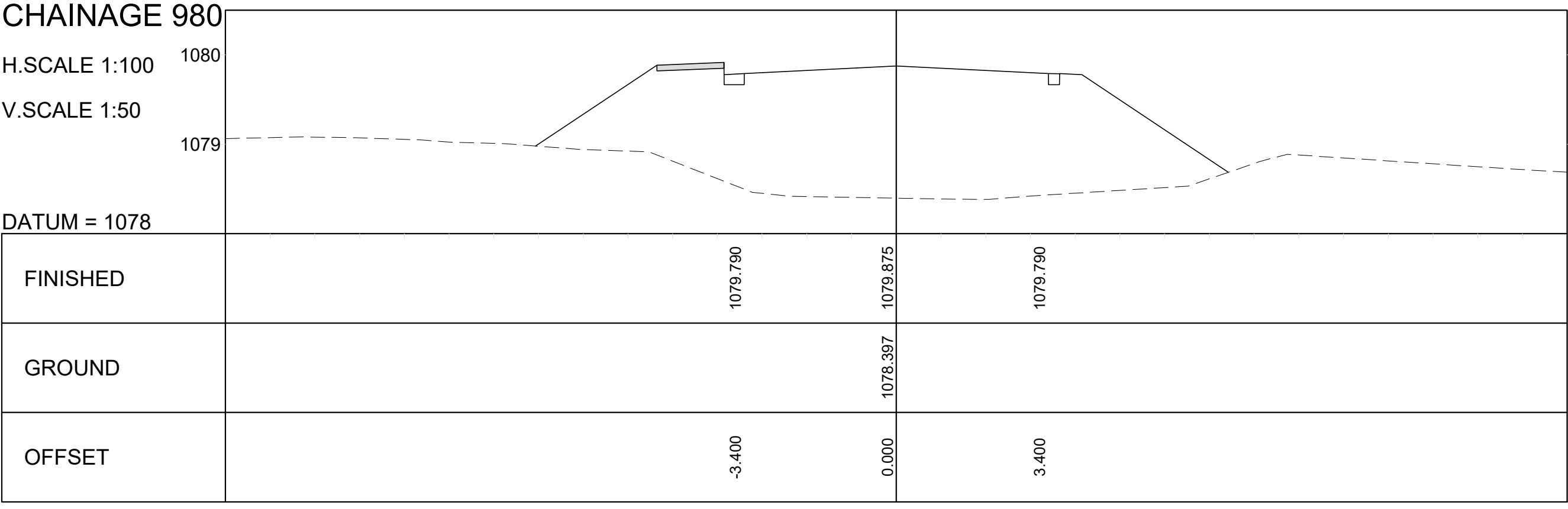
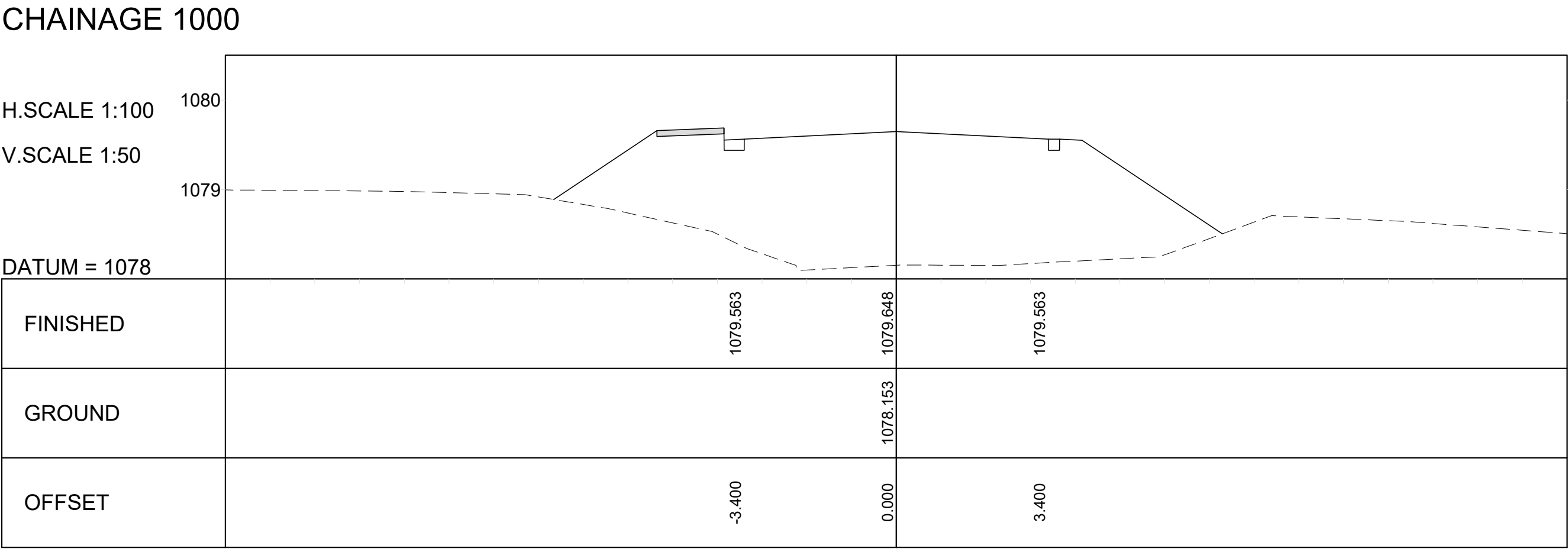
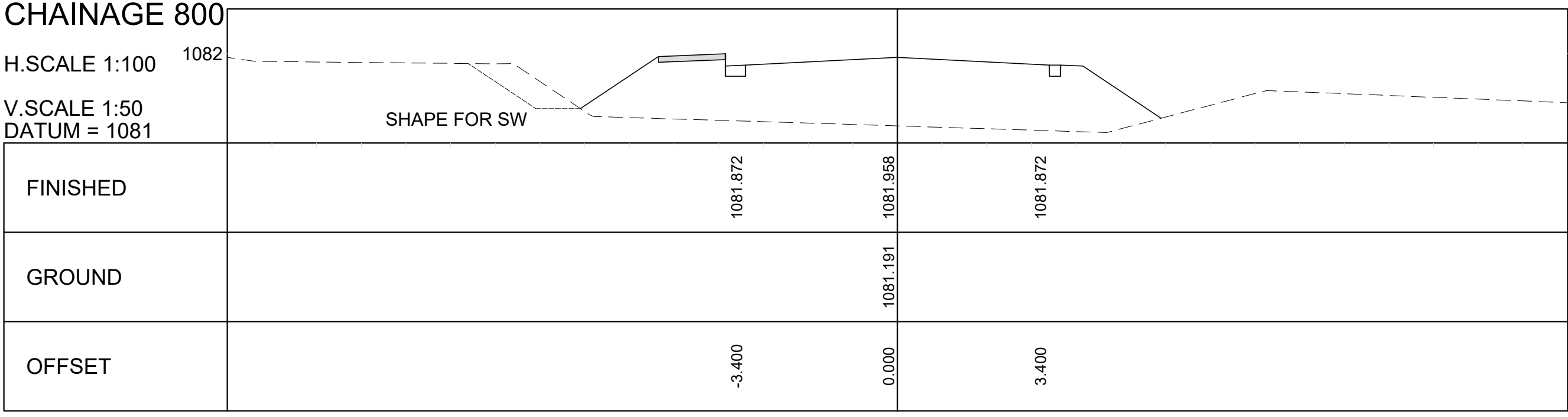
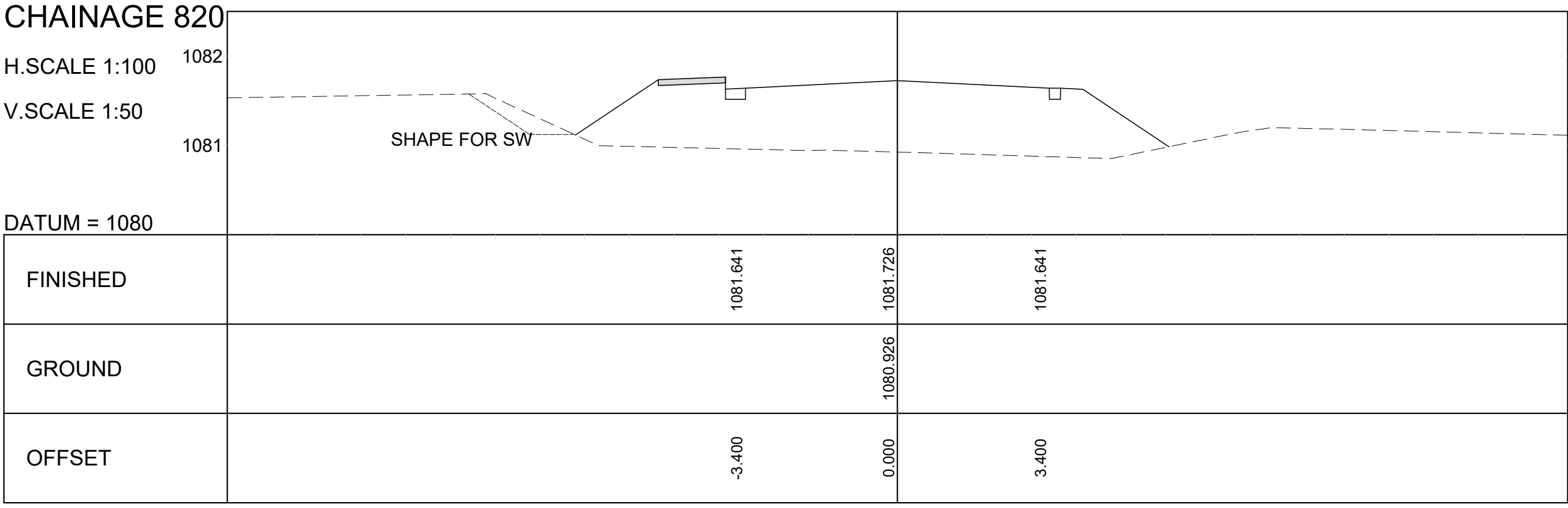
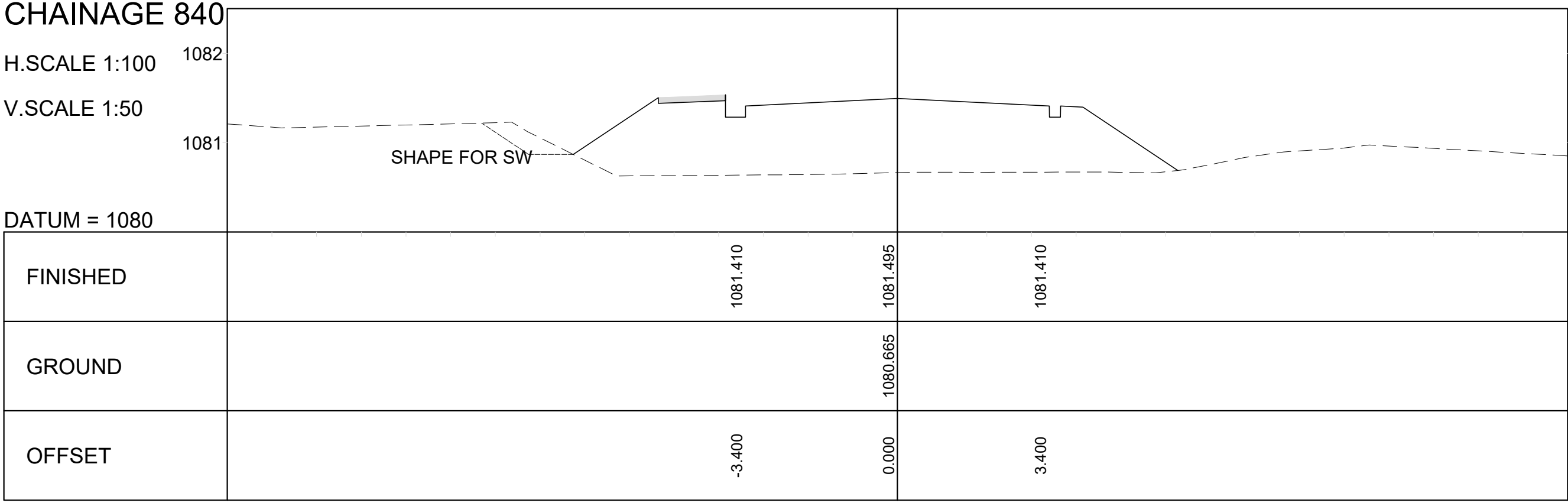
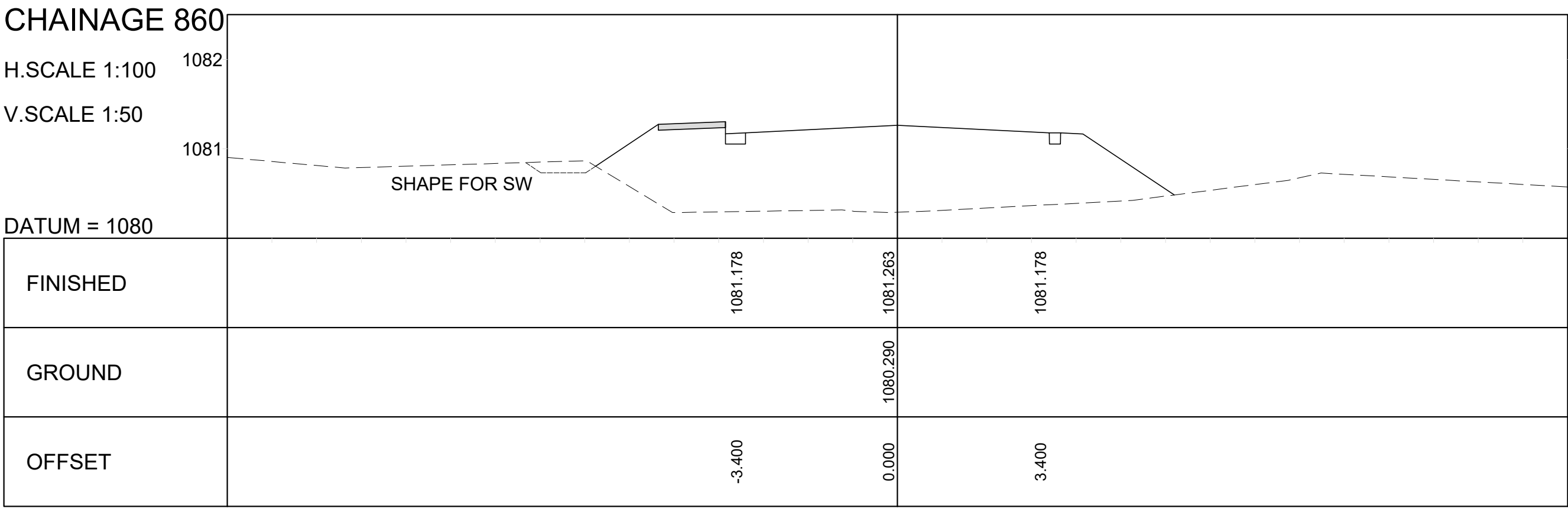
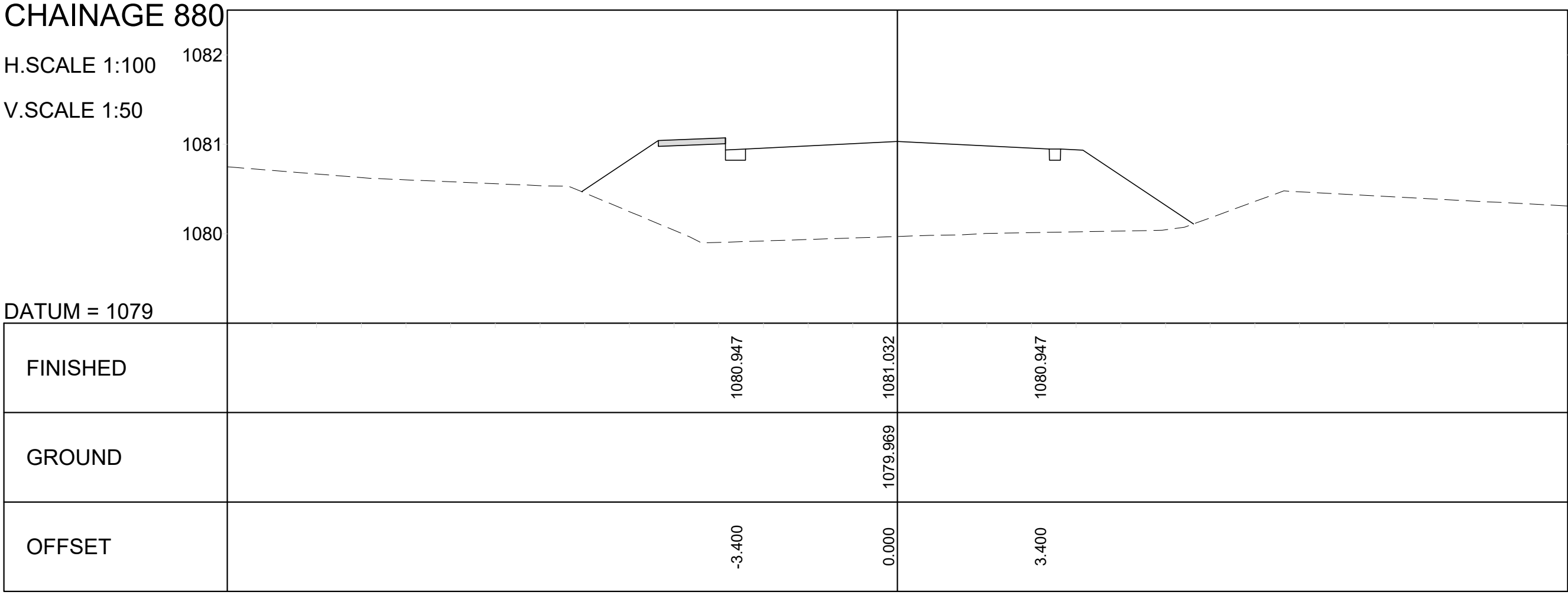
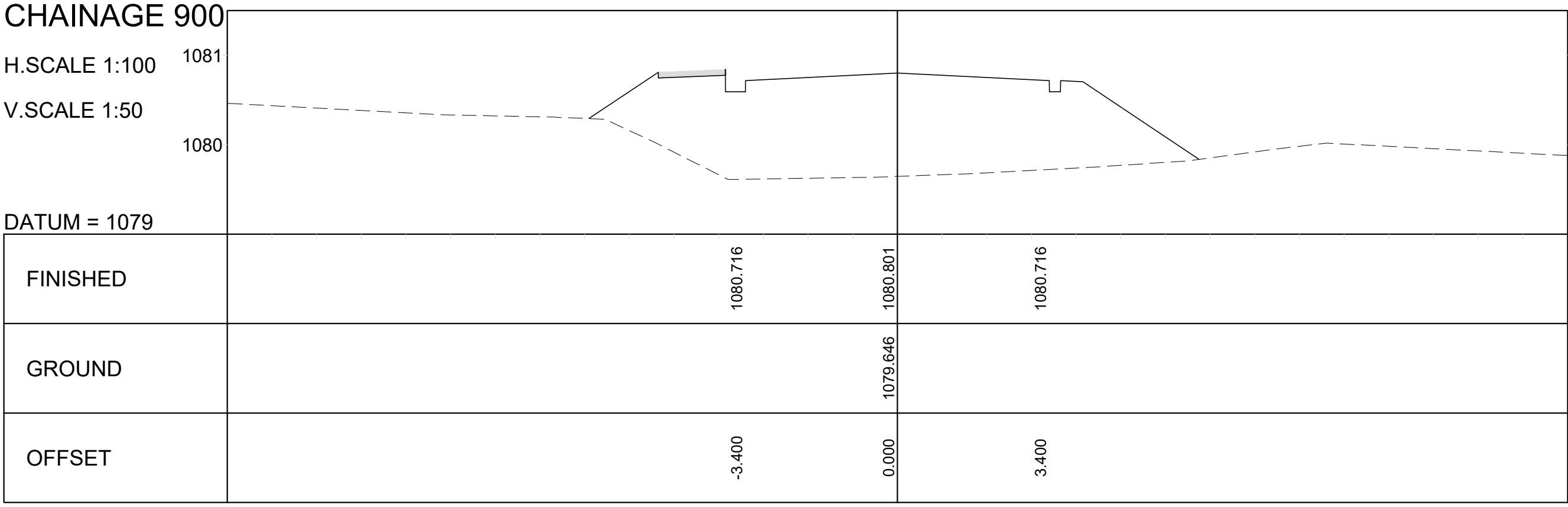
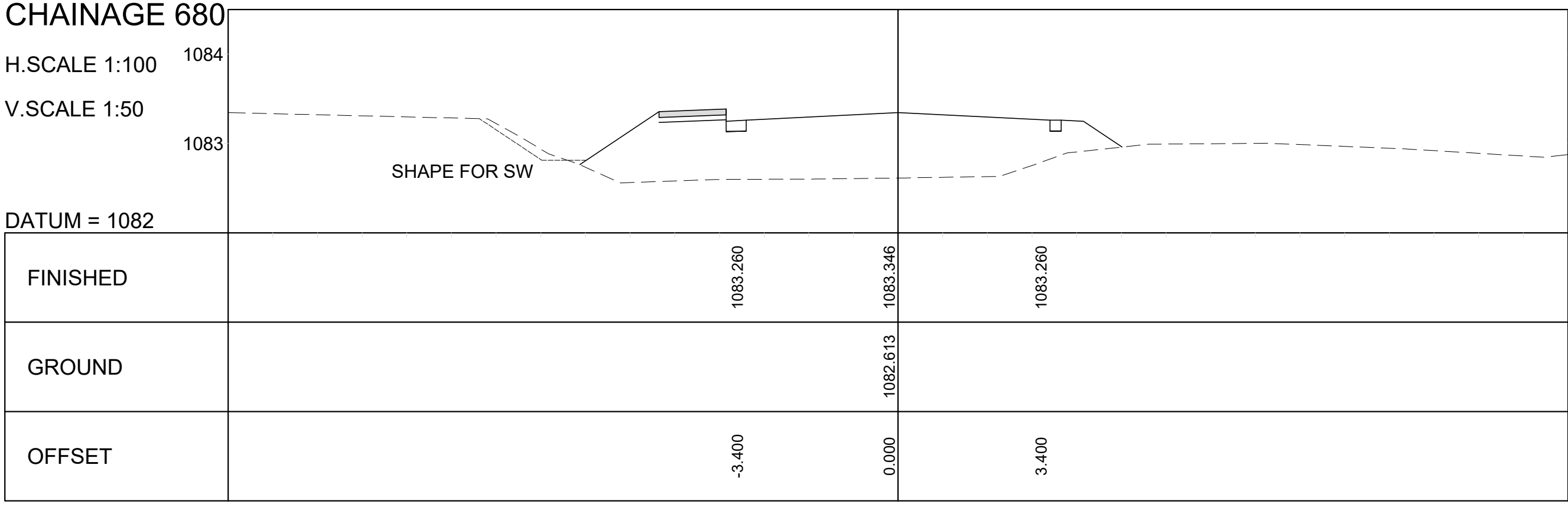
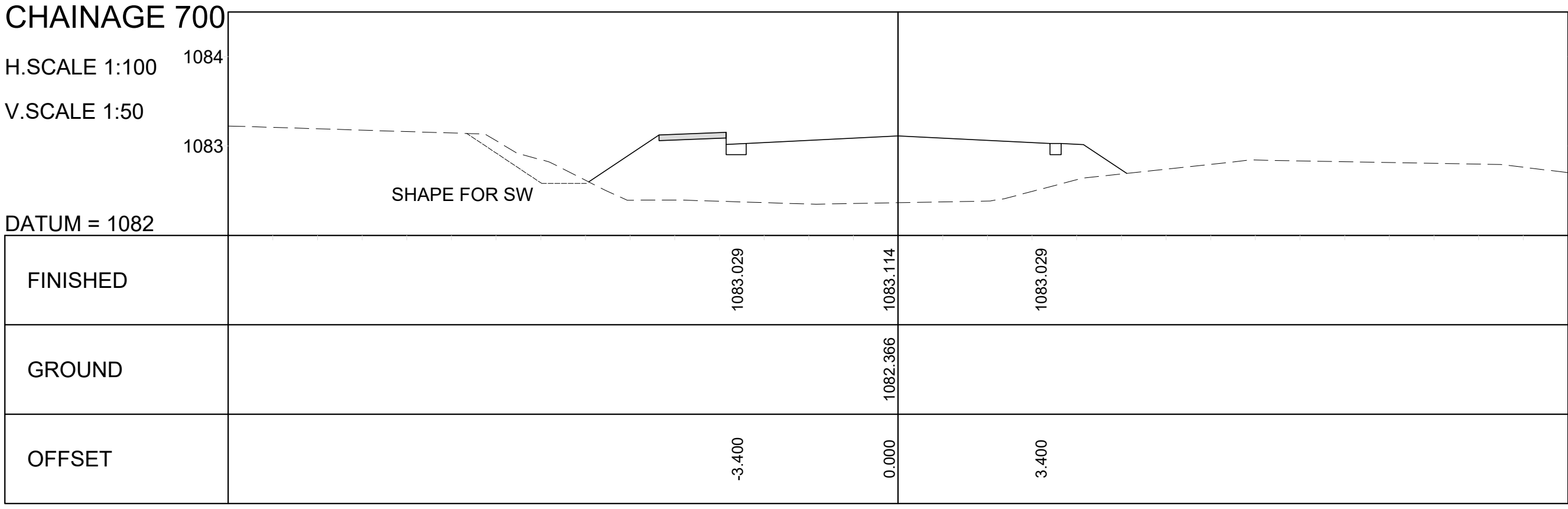
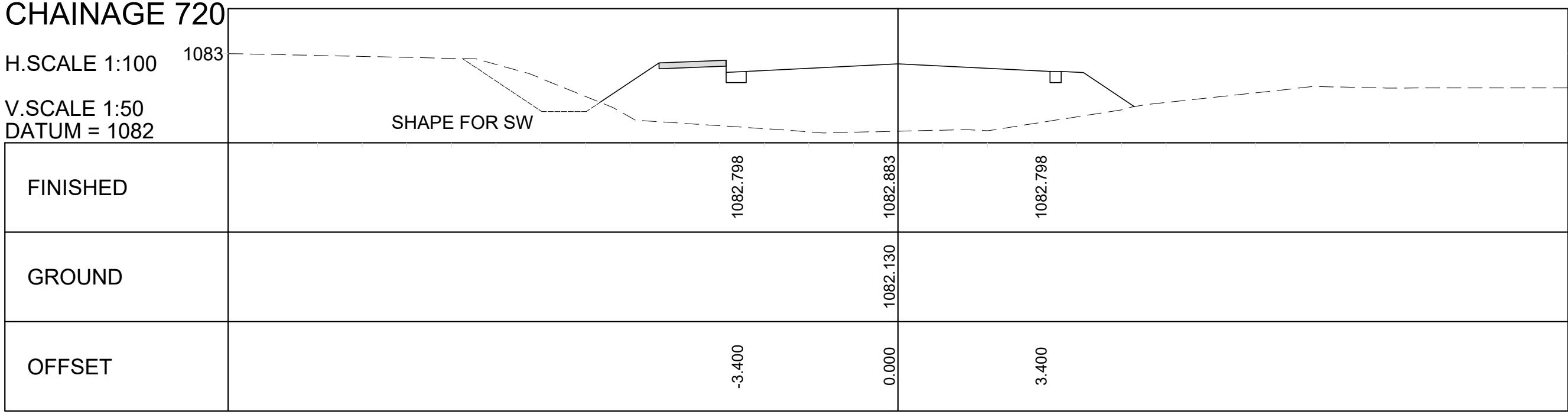
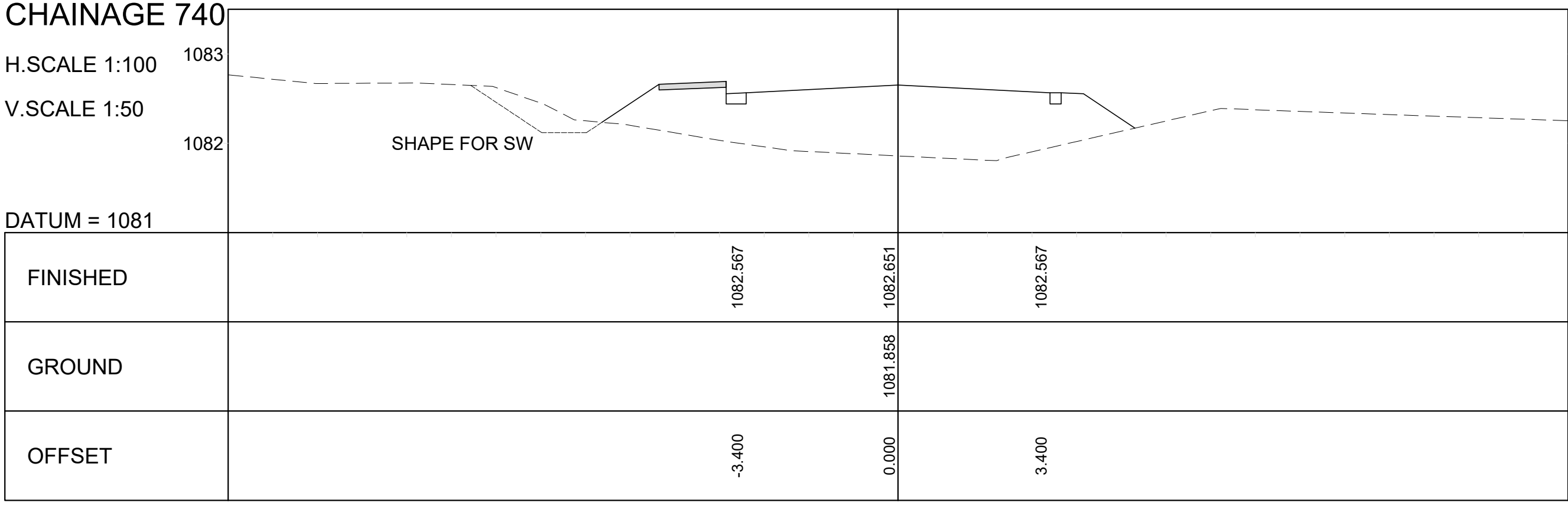
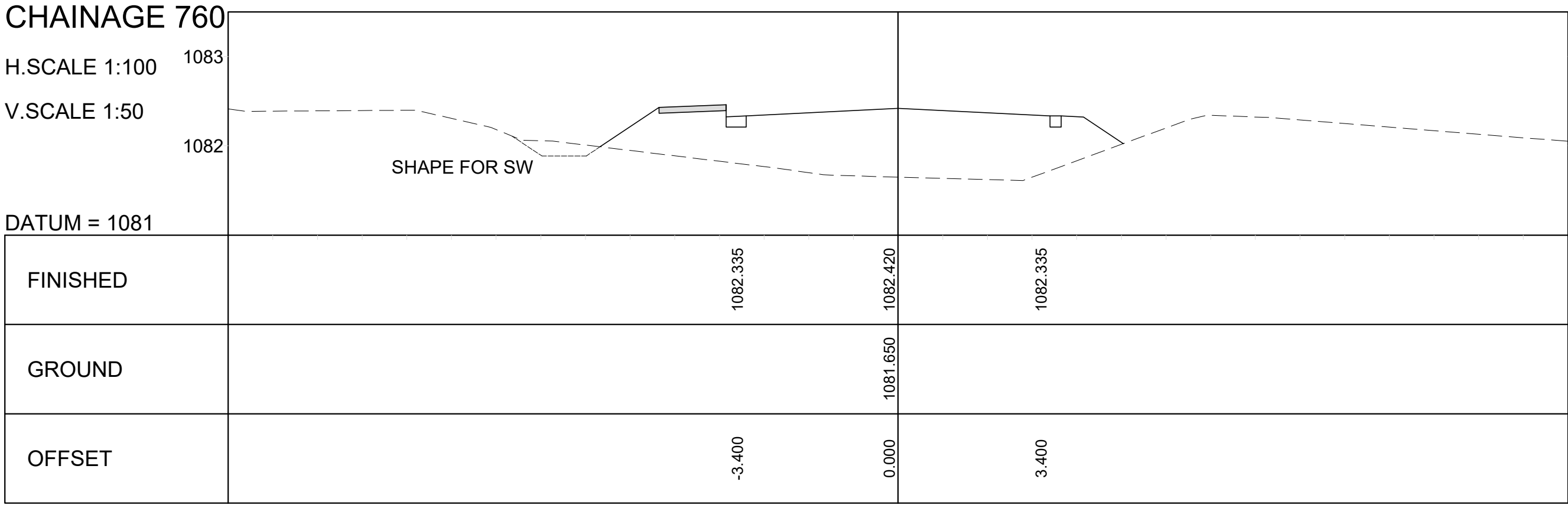
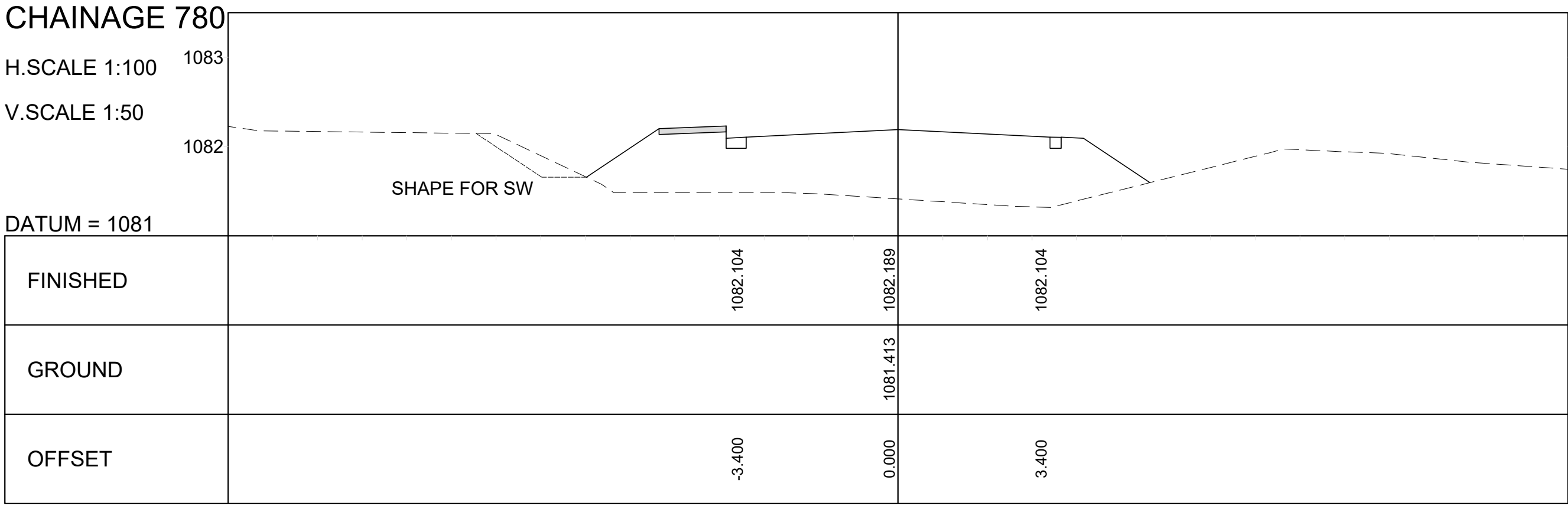
NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0045  
Tel: (012) 426 6200

ACCEPTANCE	
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING	
for the SA NATIONAL ROADS AGENCY SOC LTD.	
Date:	

THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
CROSS-SECTIONS CHAINAGE 0+340 TO 0+640	
SCALES : H 1:100 V 1:50	

PROJECT NUMBER	S.002-001-2018/1F		
DRAWING LOCATION DATA	START	END	
ROUTE	D3135	D3135	
SECTION	1	1	
DRAWING km DISTANCE	0+340	0+640	
DRAWING TYPE	CROSS-SECTION		
BRIDGE/STRUCTURE No.	N/A		
CONSULTANT DRAWING No.	2020-01-RDS-301		VER
SANRAL DOCUMENT #	---		V2





				CONSTRUCTION RECORD (AS-BUILT)
				WORKS CONTRACT ENGINEER
				Name : Prof. Reg. No. : Date :
				SANRAL PROJECT MANAGER
				Name : Date :
V2	25/01/2023	FOR TENDER PURPOSES	K BRINK	
V1	04/02/2022	ORIGINAL VERSION	K BRINK	
No.	DATE	REVISION	CONSULT. ENG.	



WESTERN CAPE  
6 BOWATER CLOSE  
MELKBOSSSTRAND  
CAPE TOWN  
7441

P.O. BOX 357  
MELKBOSSSTRAND  
CAPE TOWN  
7441

Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
Date	04/02/2022
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
Date	
DRAWN BY	
NAME	G KUNGWANE

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	04/02/2022

HEAD OFFICE  
48 Tanbotts Avenue  
Val de Grace  
Pretoria  
0184

PO Box 415  
Pretoria 0001  
South Africa

Tel: (012) 844 8000



NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081

PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040

Tel: (012) 426 6200

ACCEPTANCE	
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for the SA NATIONAL ROADS AGENCY SOC LTD.	
Date	

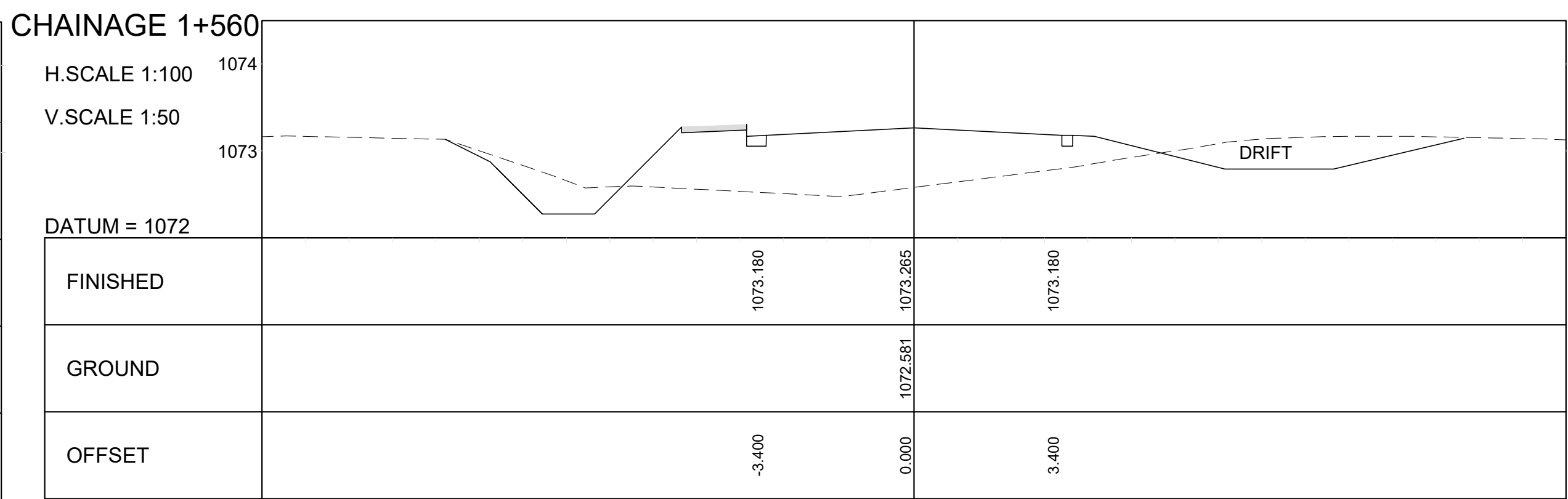
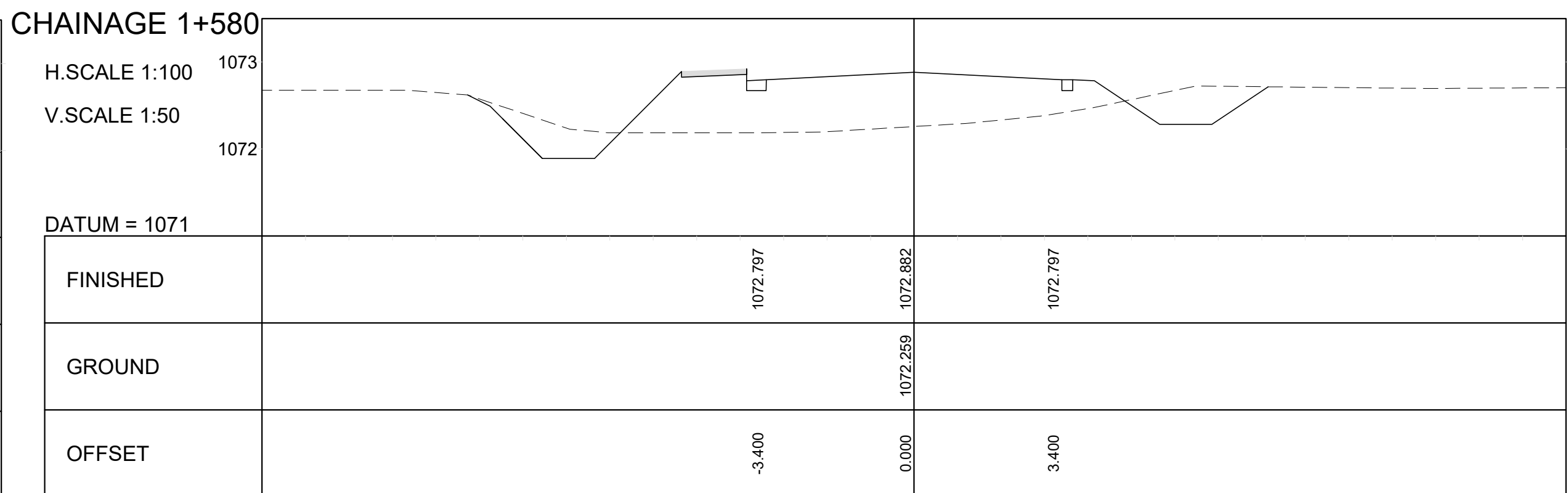
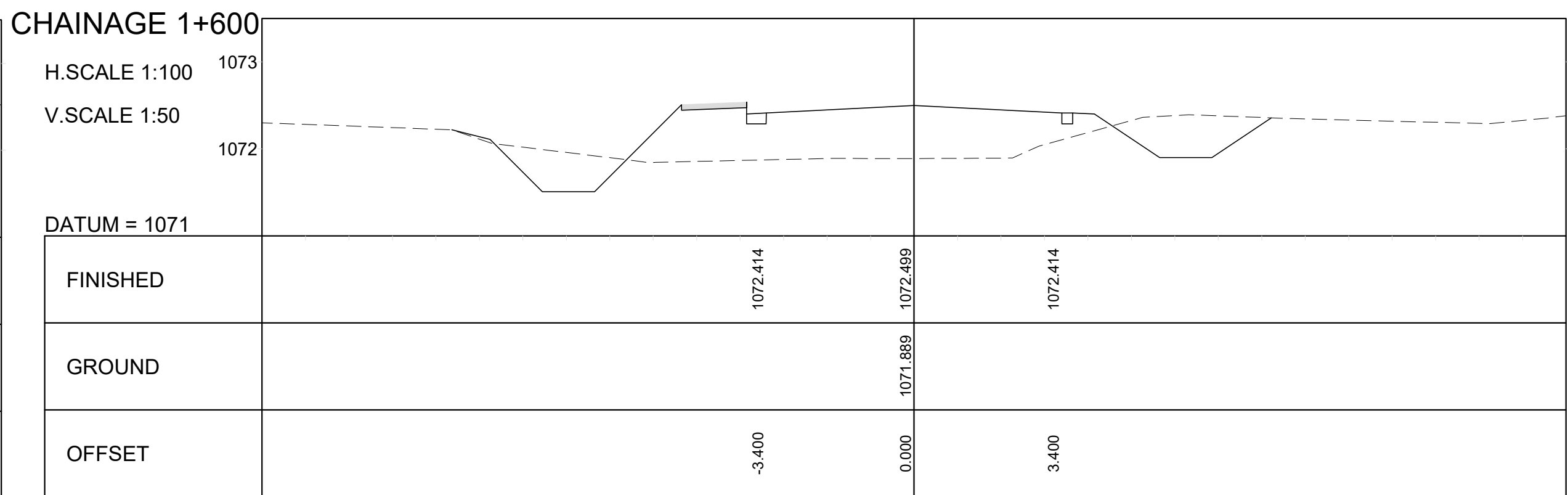
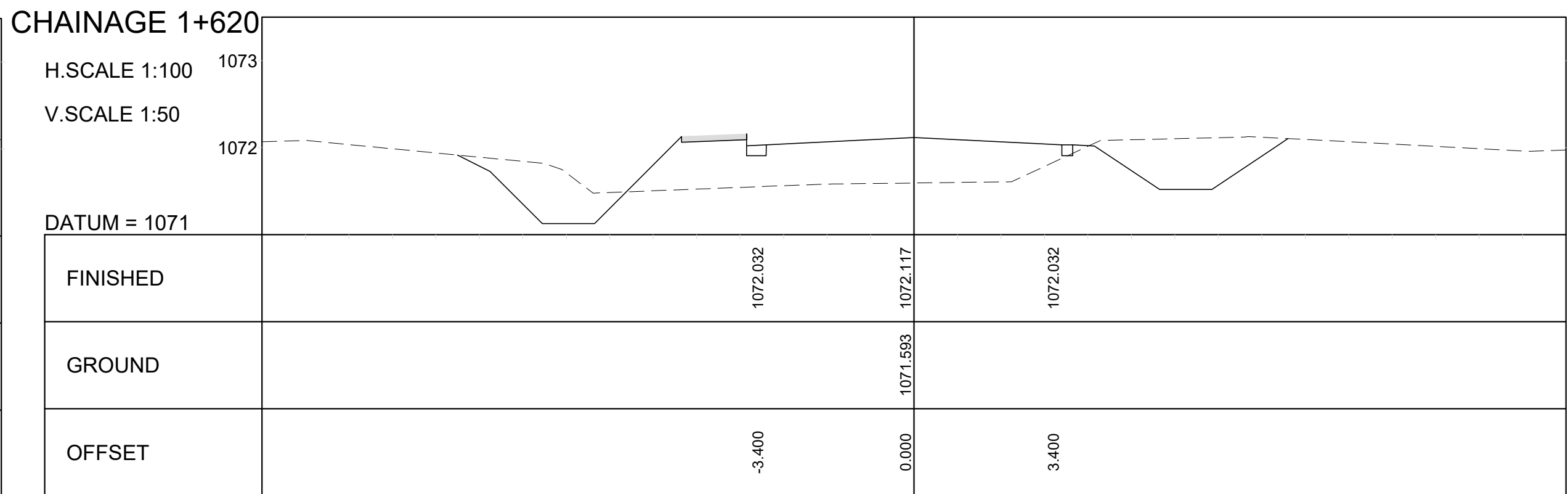
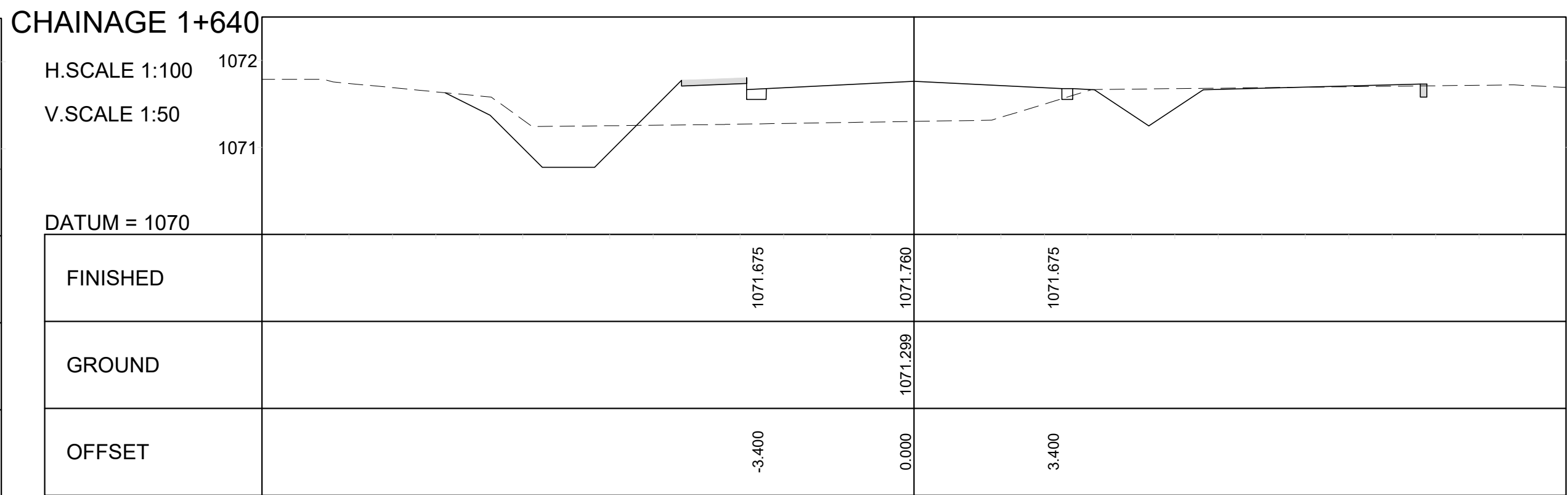
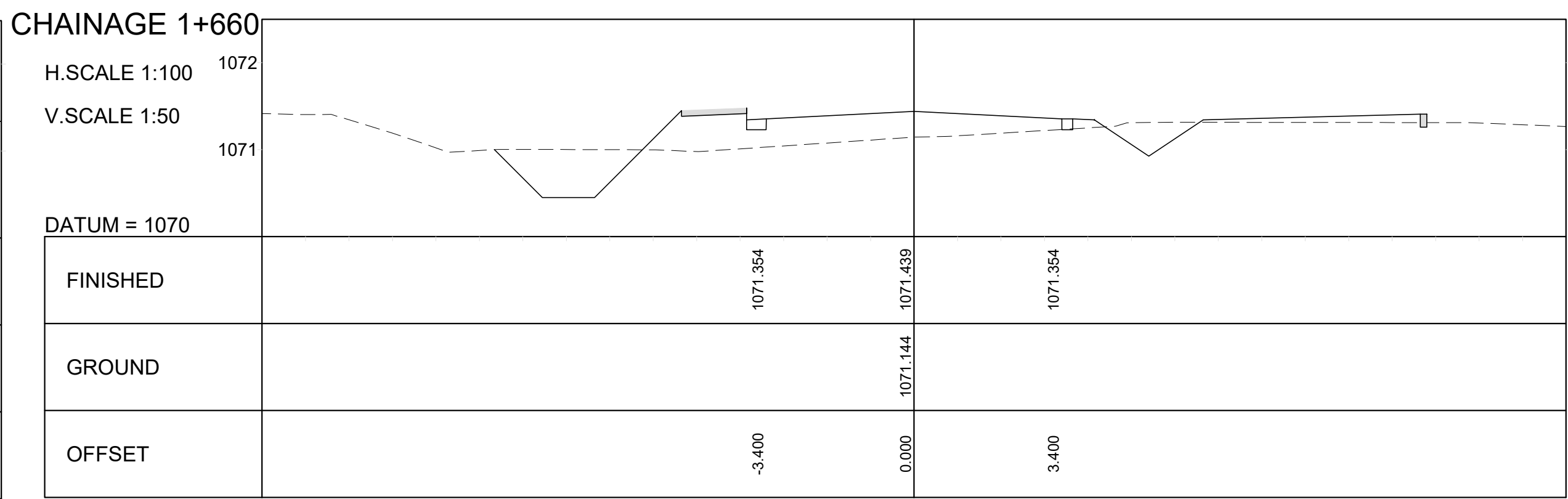
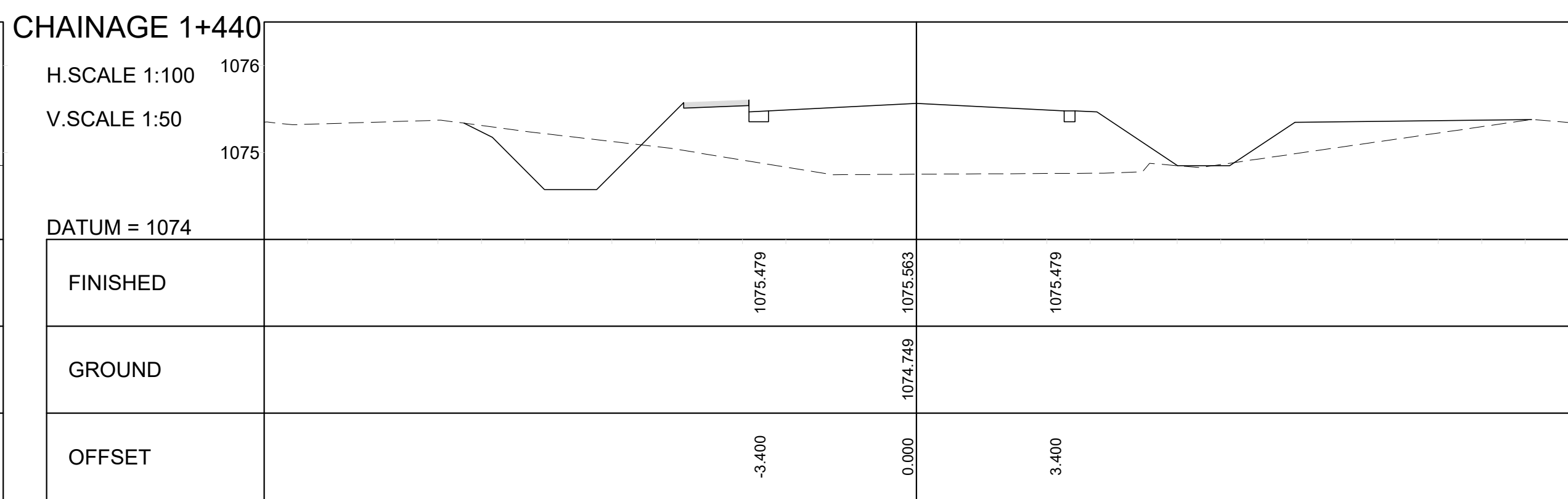
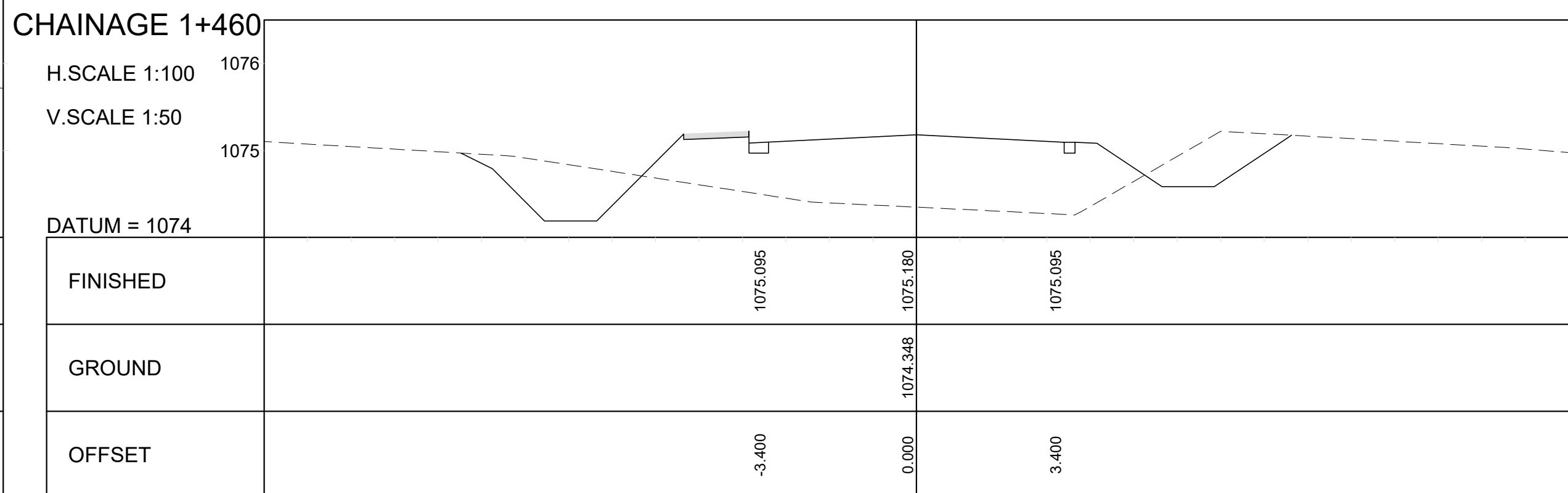
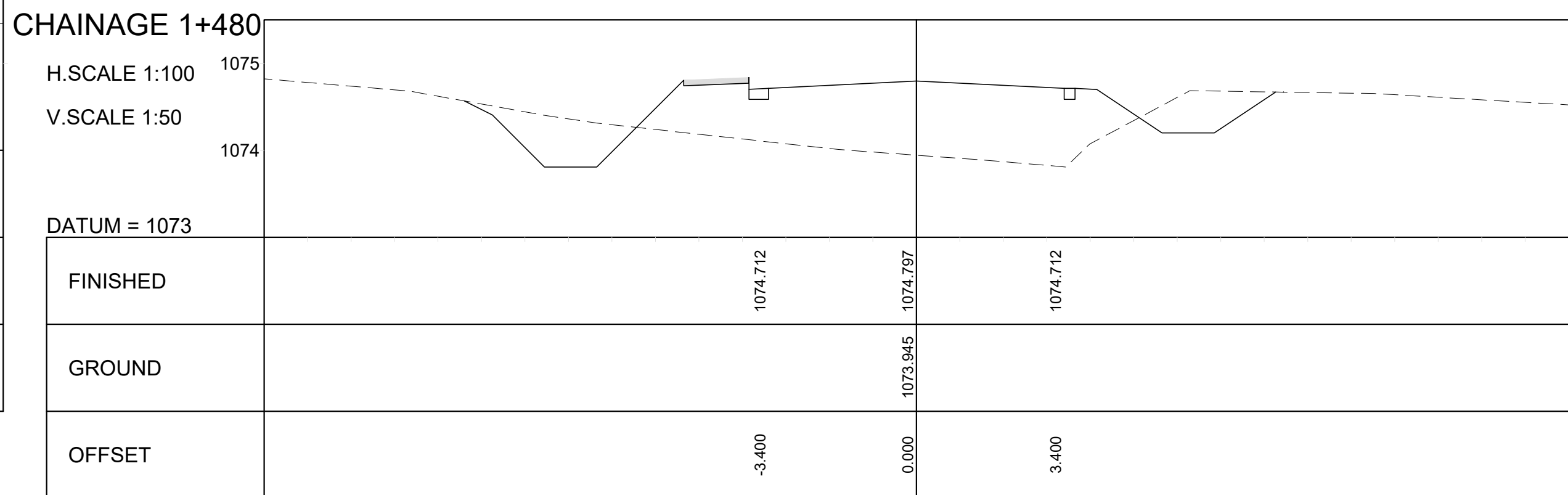
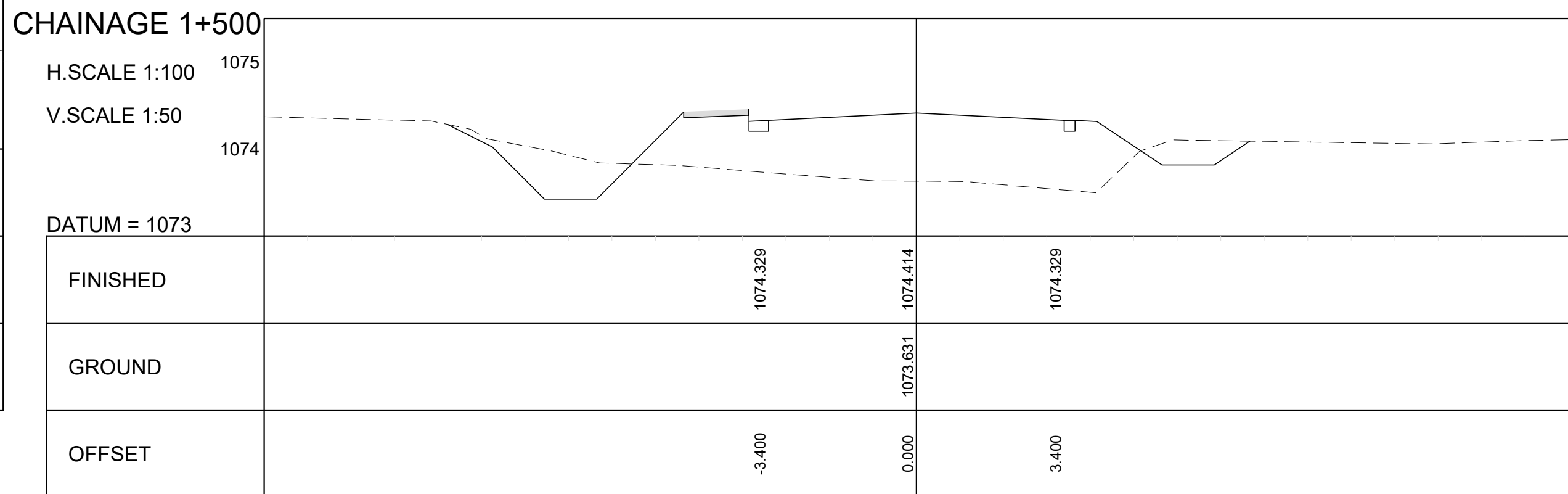
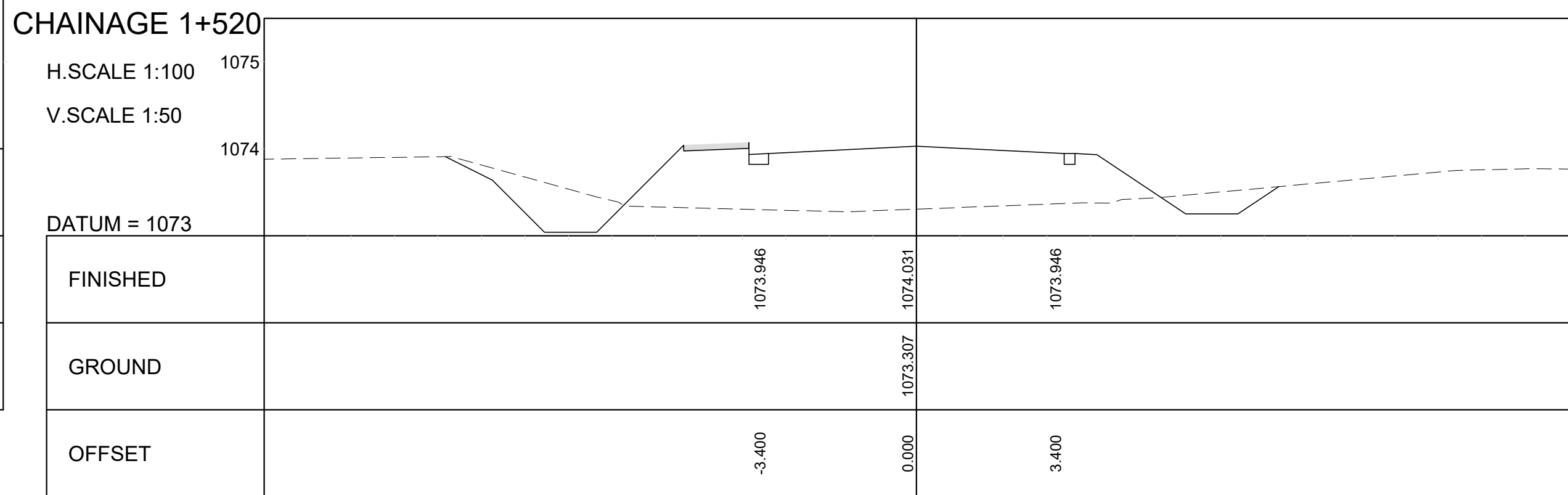
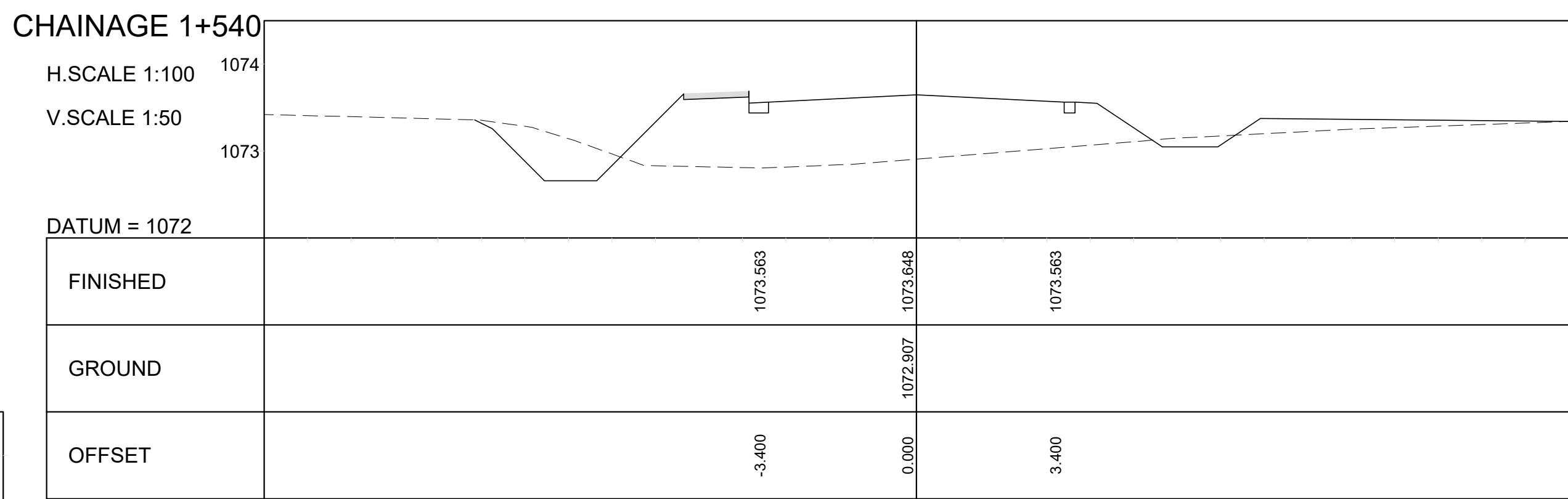
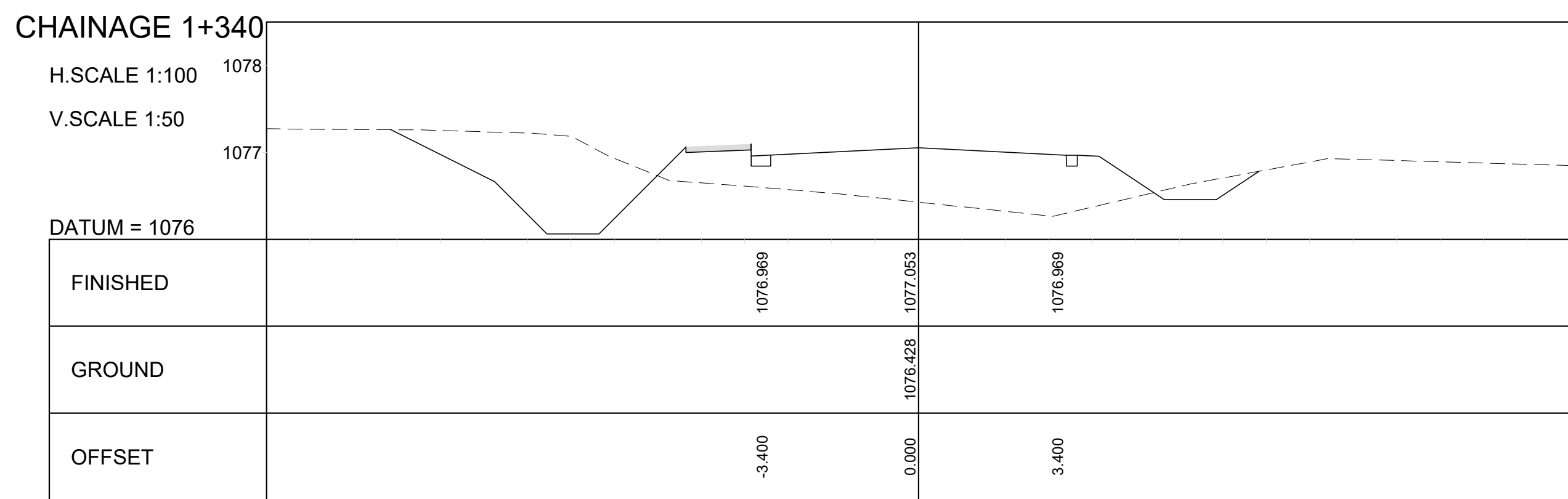
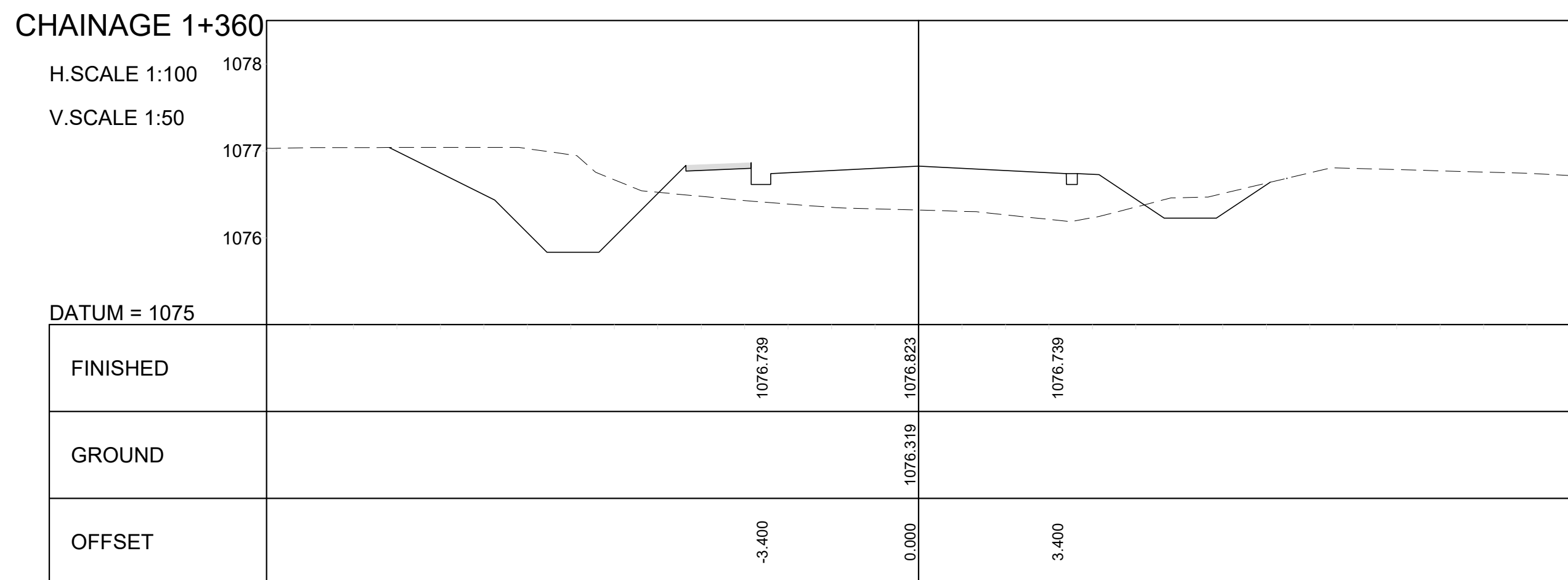
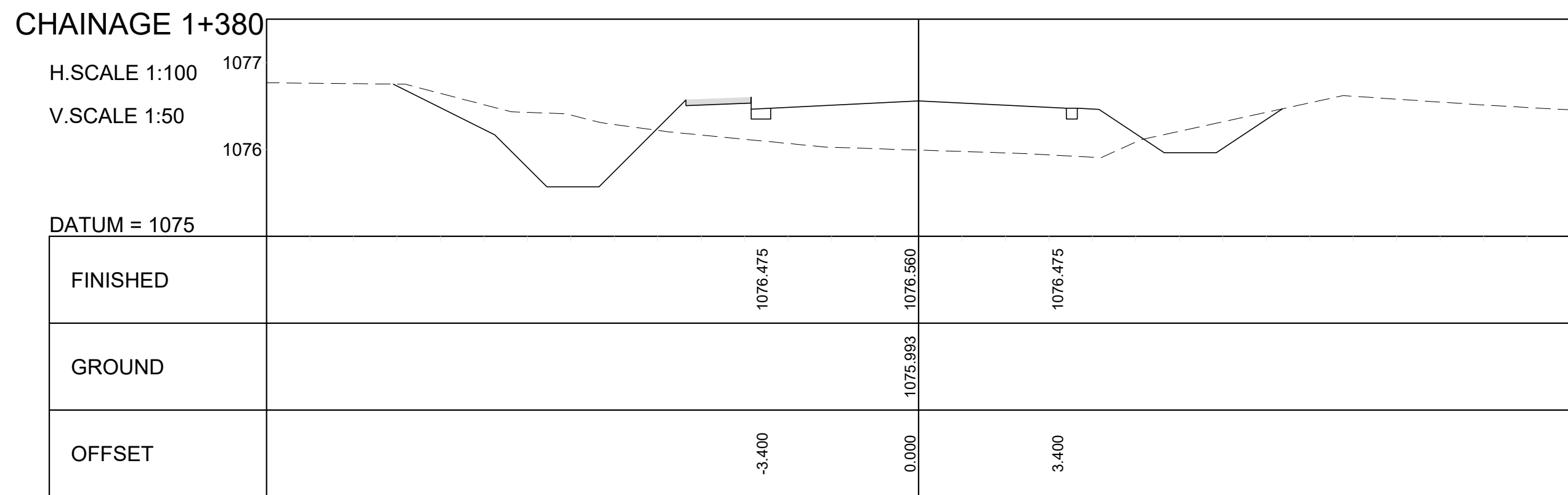
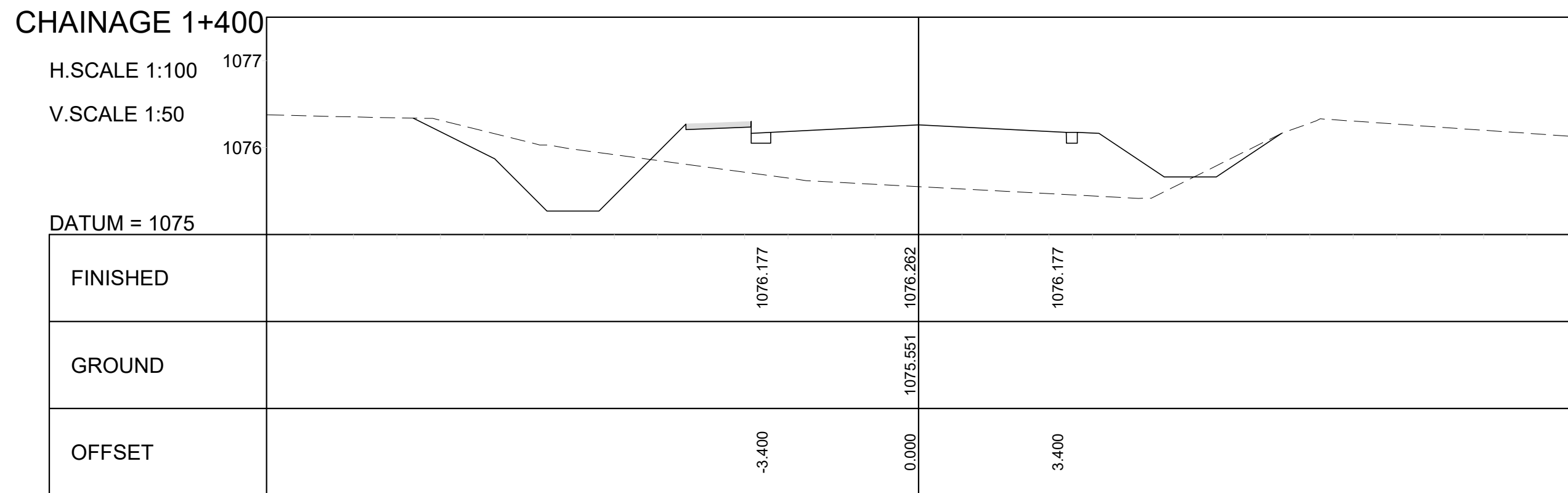
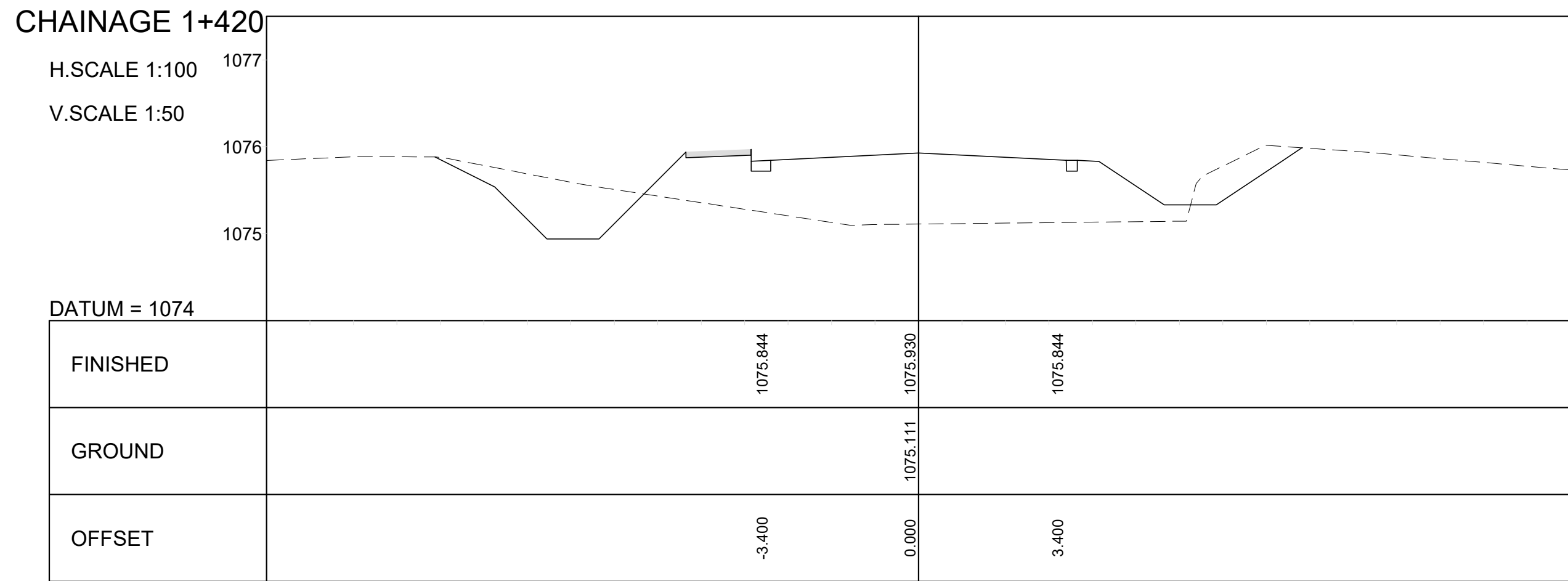
THE UPGRADING OF BOTLOKWA (MATOKS) CLINIC ACCESS ROAD	
CROSS-SECTIONS CHAINAGE 0+660 TO 0+980	
SCALES : H 1:100 V 1:50	SHEET 3 OF 7

PROJECT NUMBER	S.002-001-2018/1F		
DRAWING LOCATION DATA	START	END	
	ROUTE	D3135	D3135
	SECTION	1	1
	DRAWING km DISTANCE	0+660	0+980
	DRAWING TYPE	CROSS-SECTION	
BRIDGE/STRUCTURE No.	N/A		
CONSULTANT DRAWING No.	2020-01-RDS-302		VER
SANRAL DOCUMENT #	---		V2

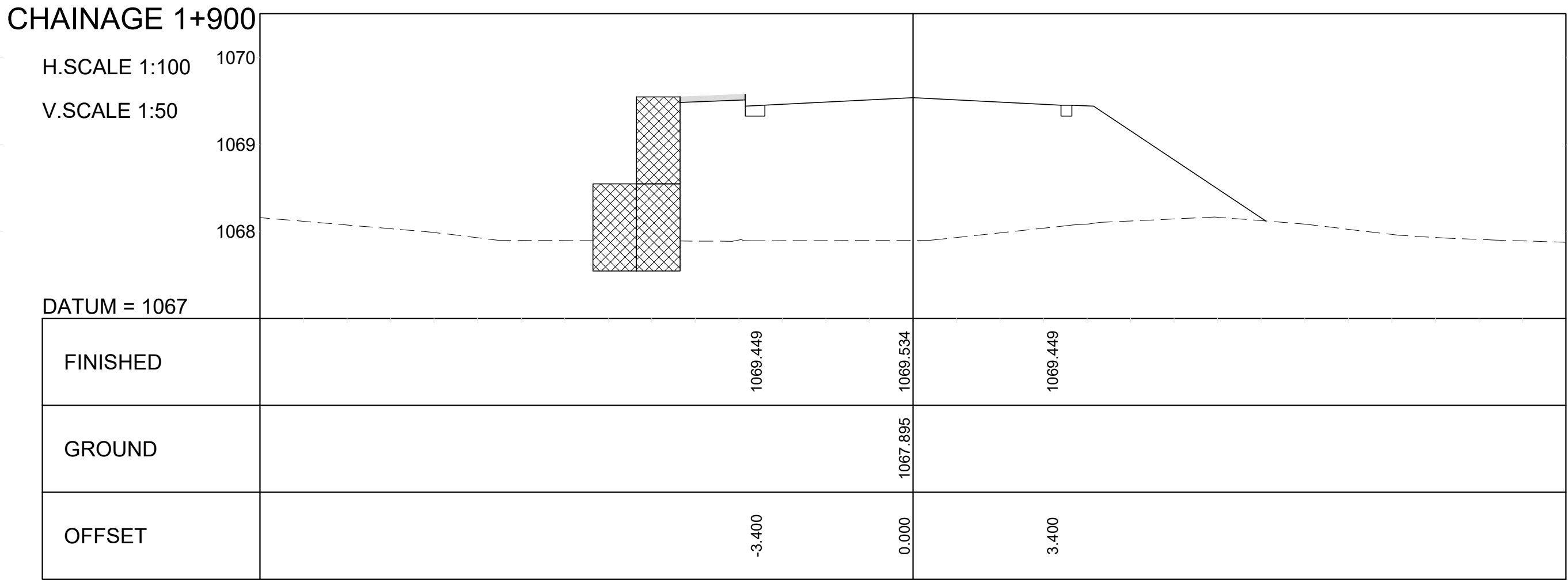
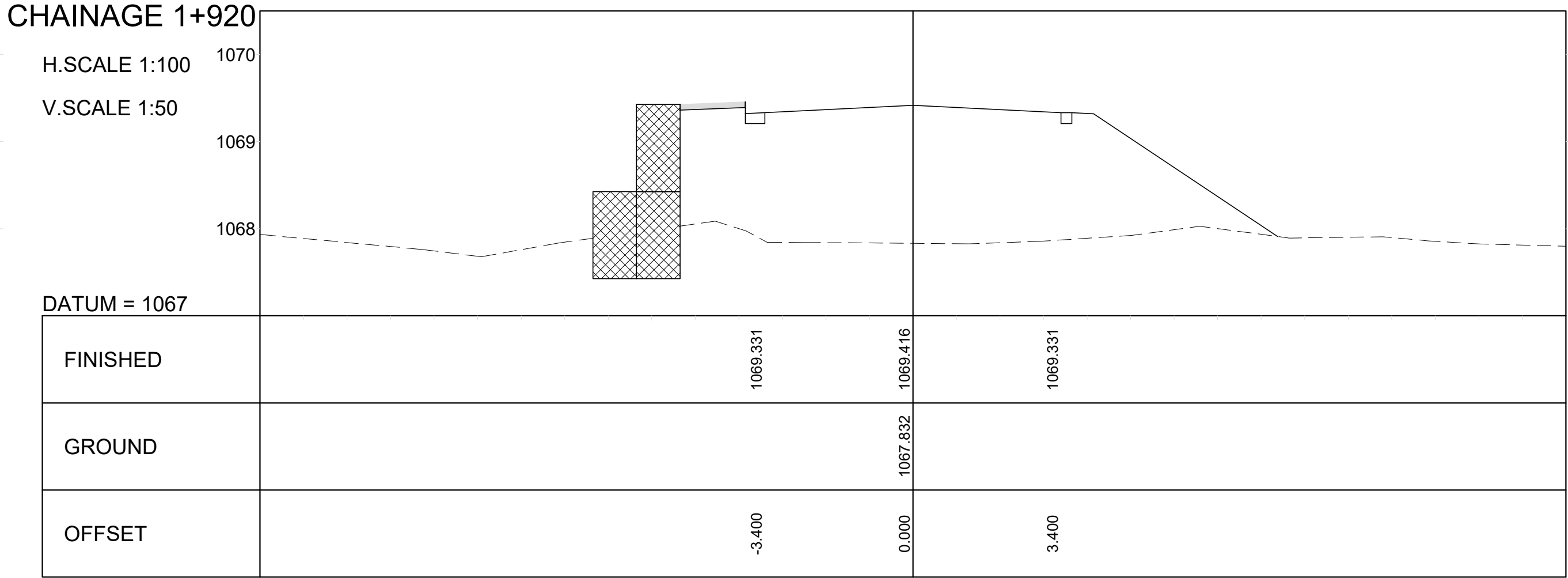
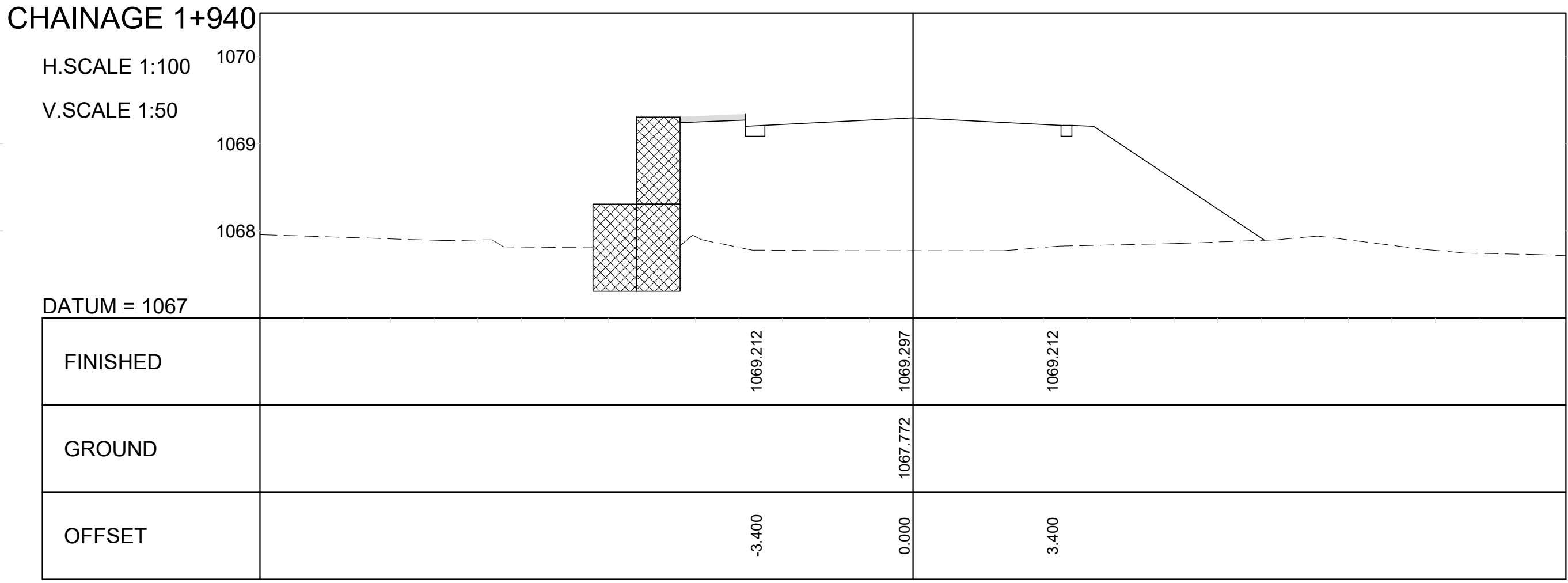
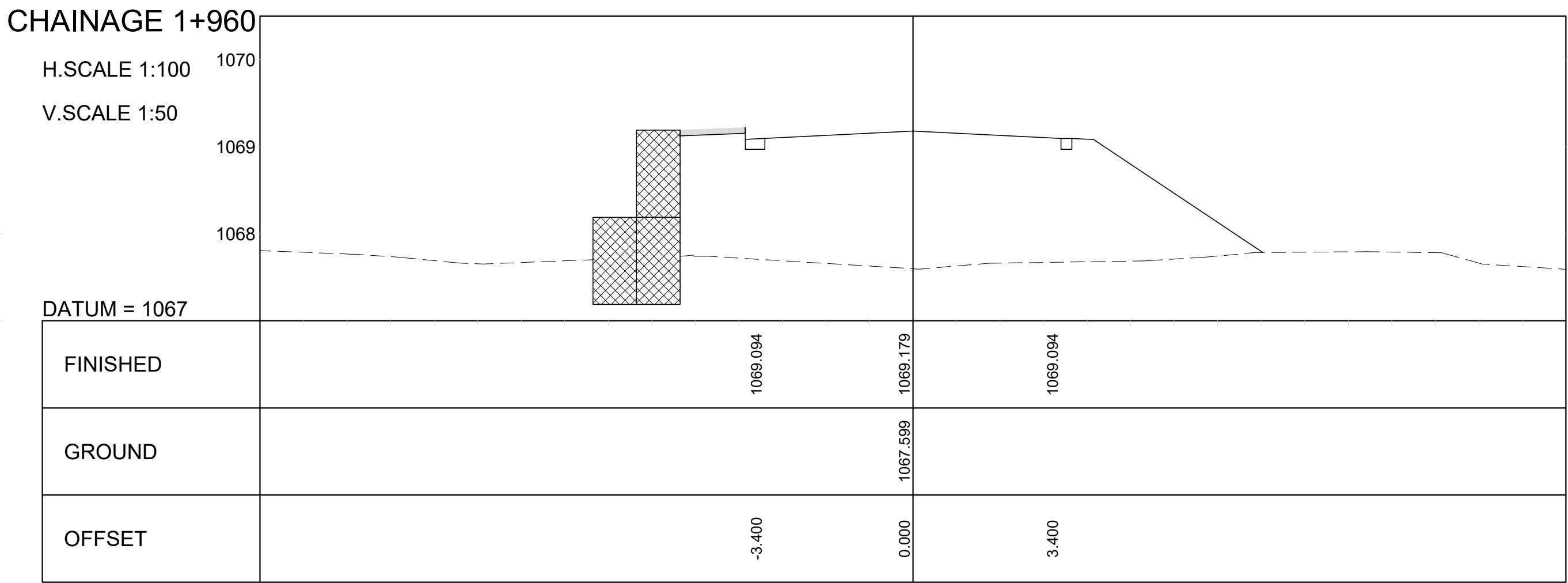
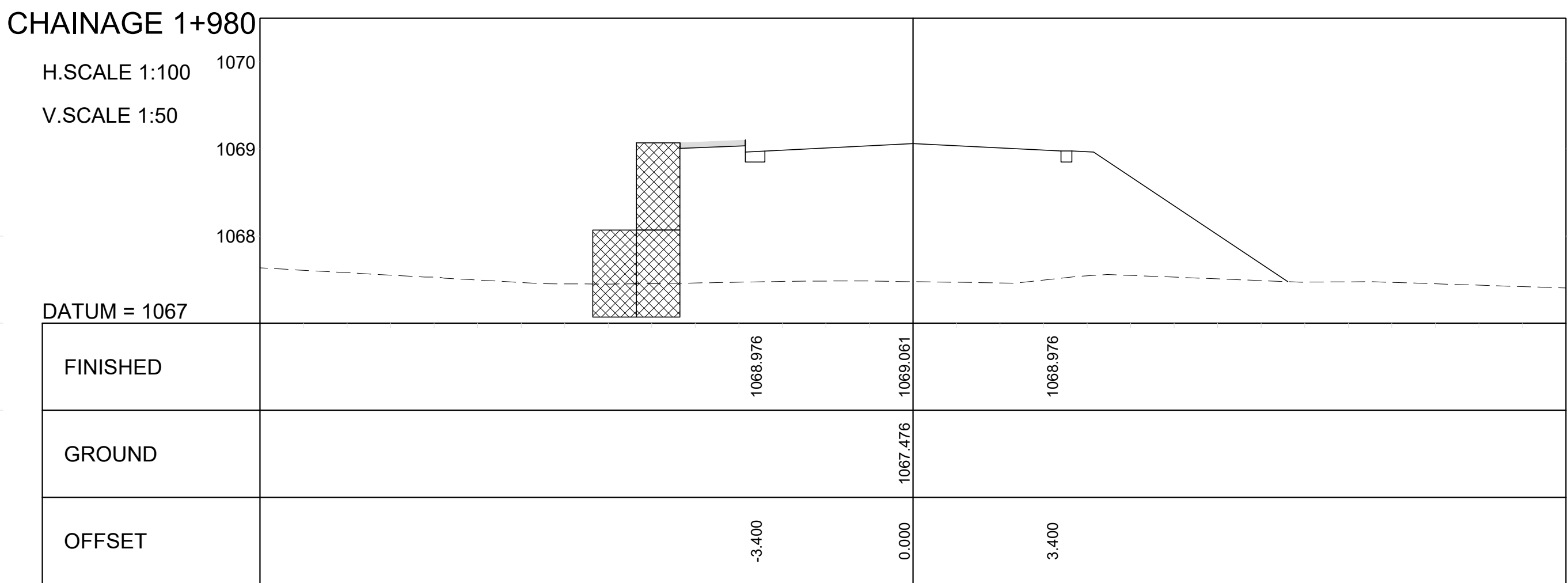
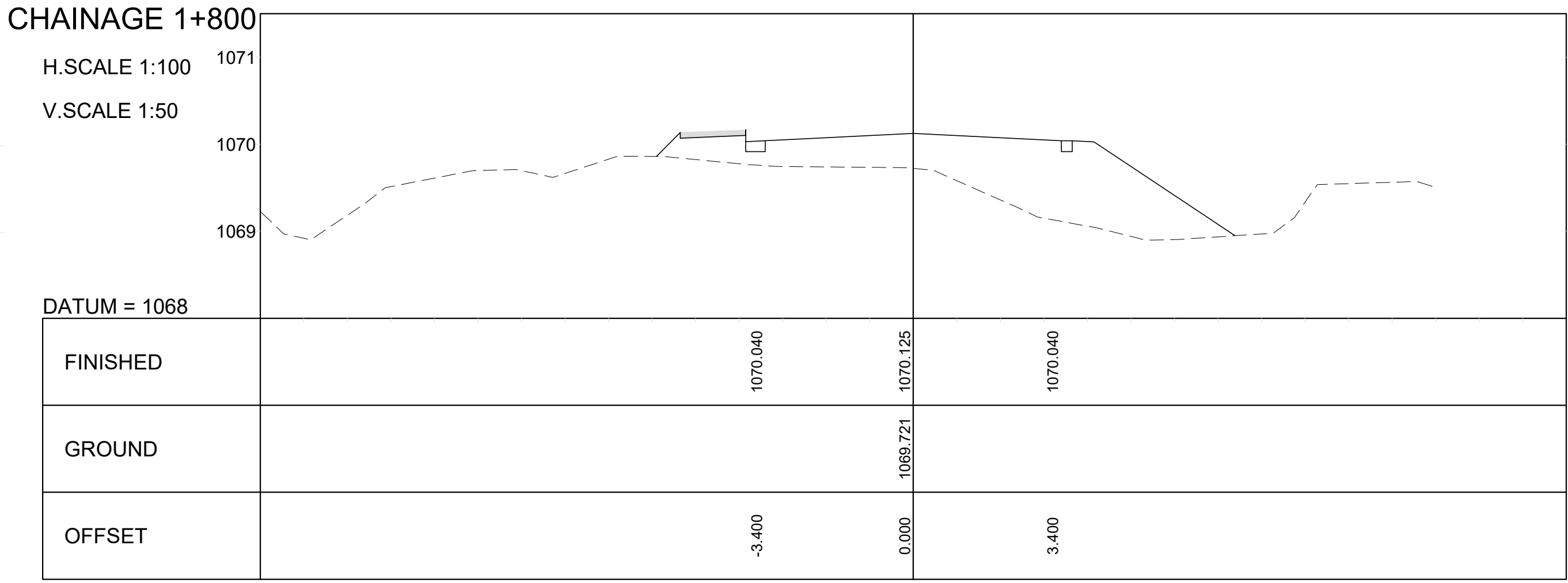
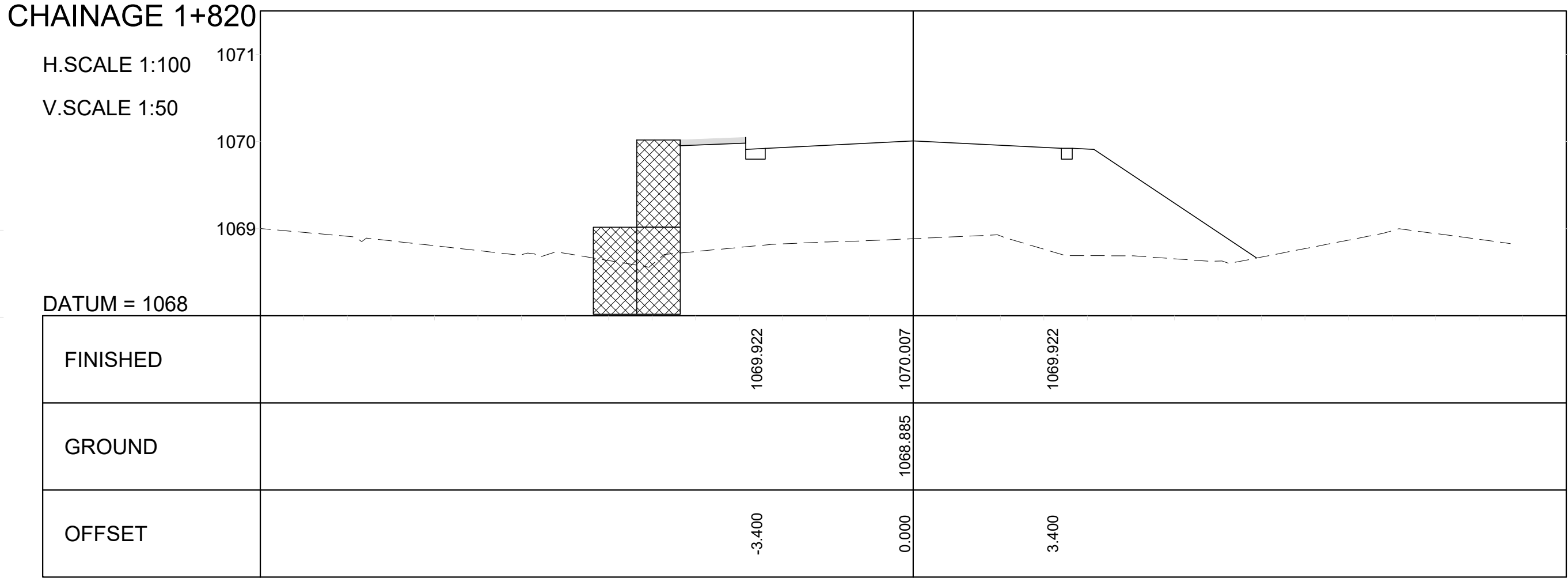
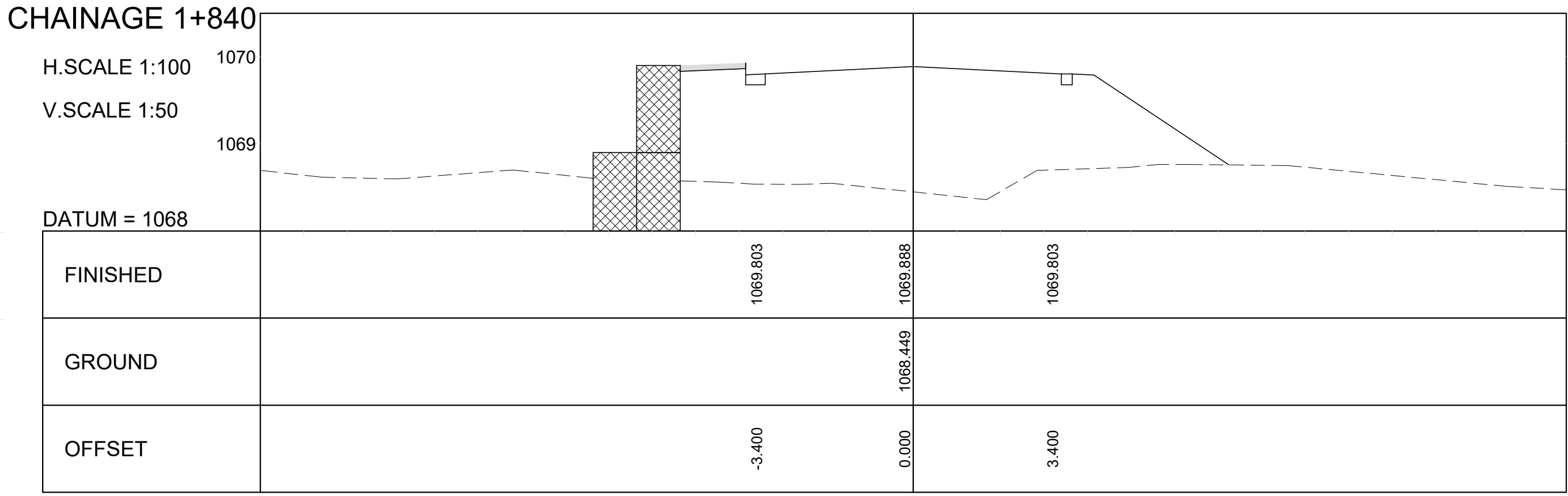
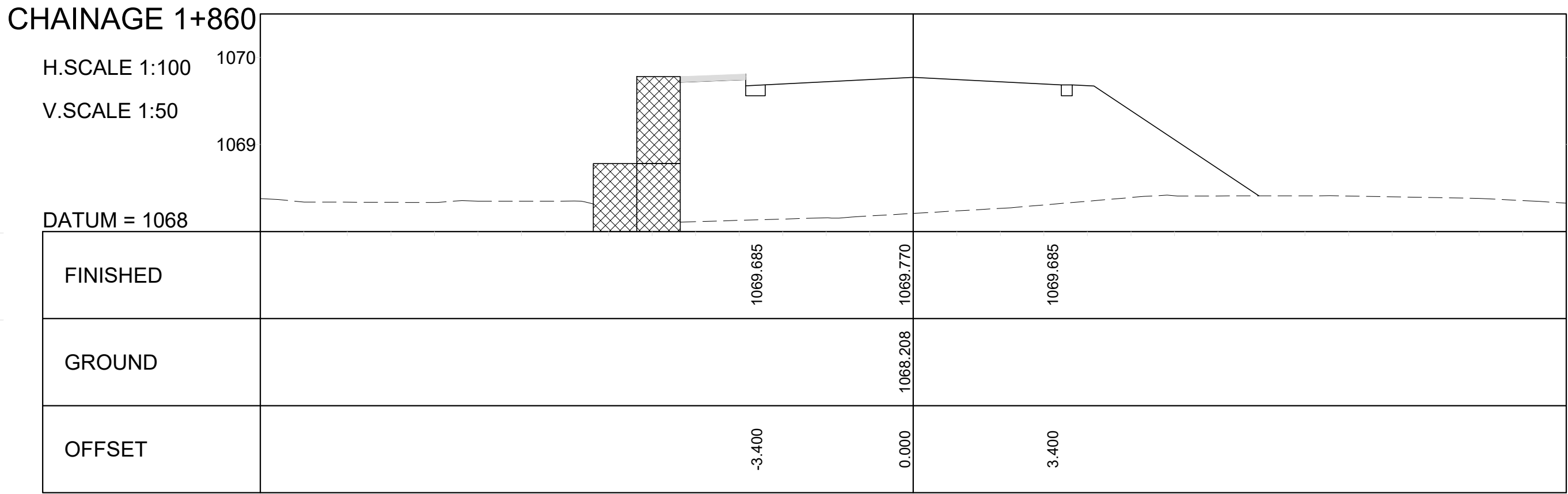
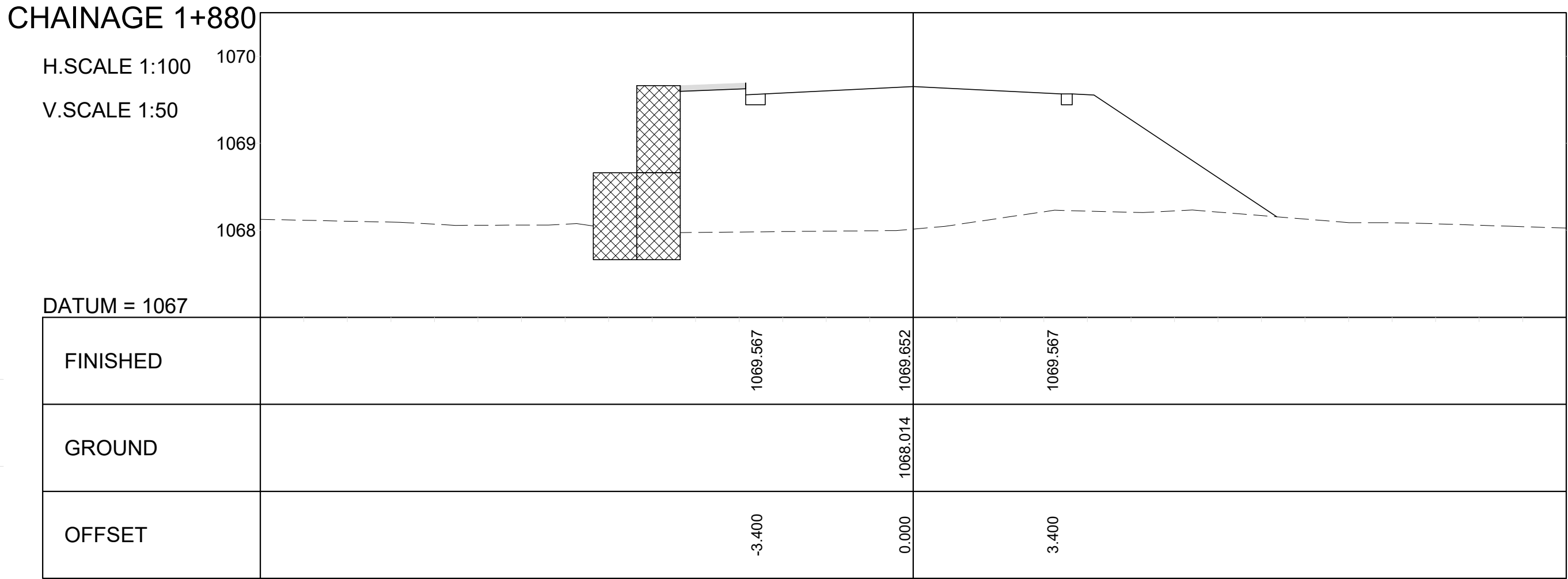
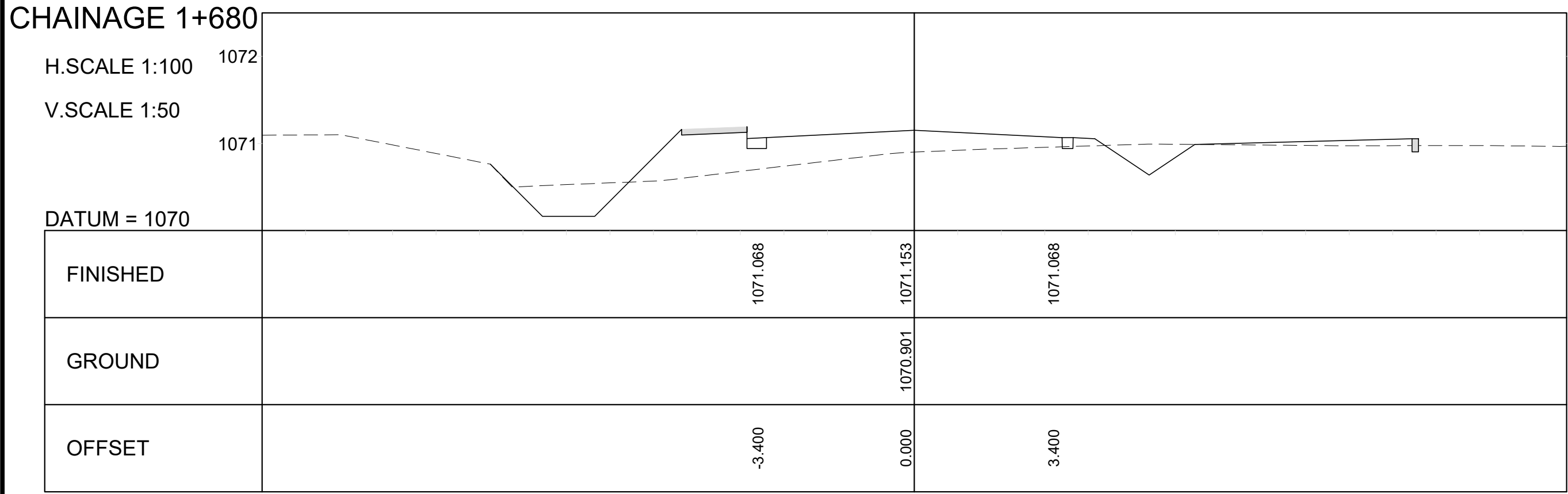
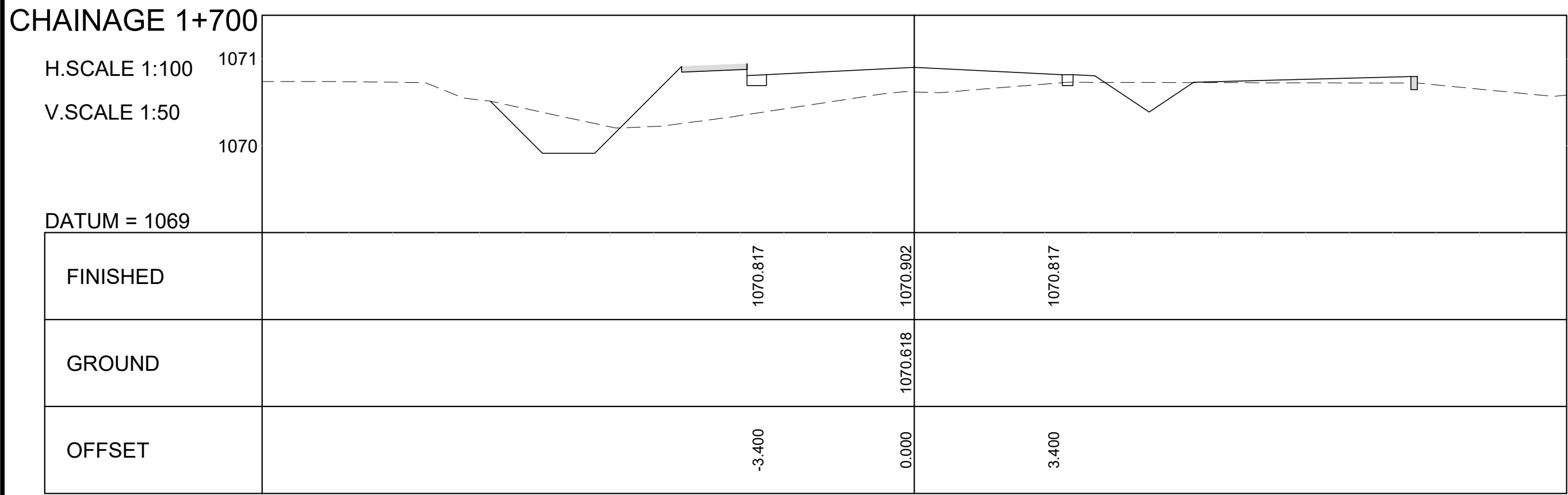
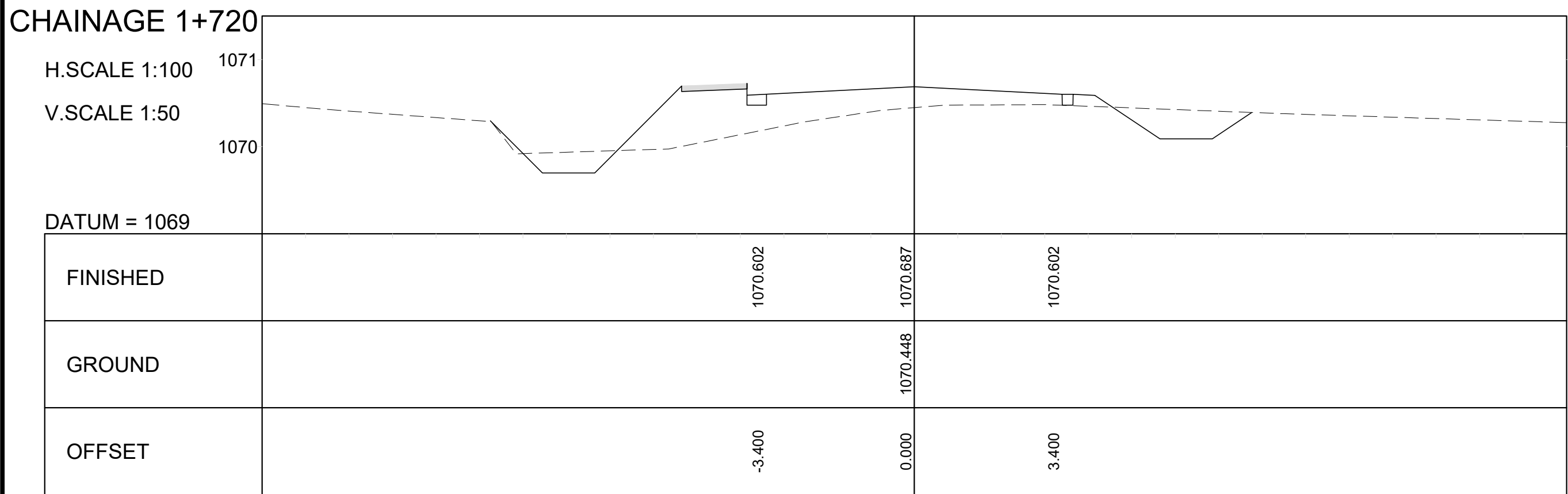
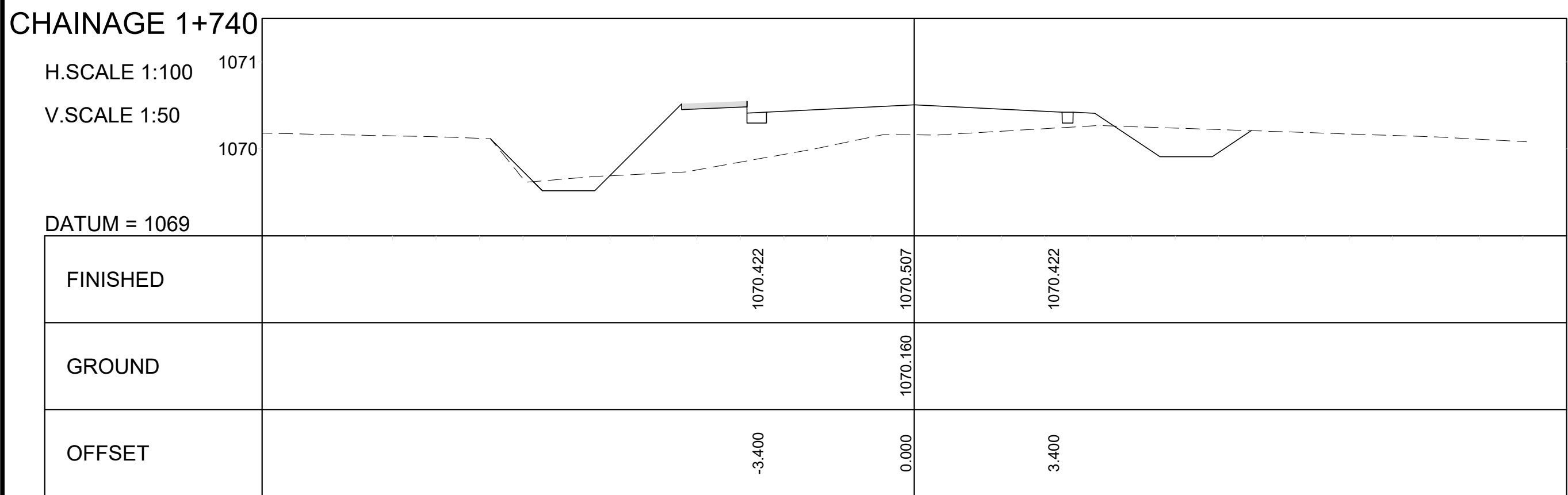
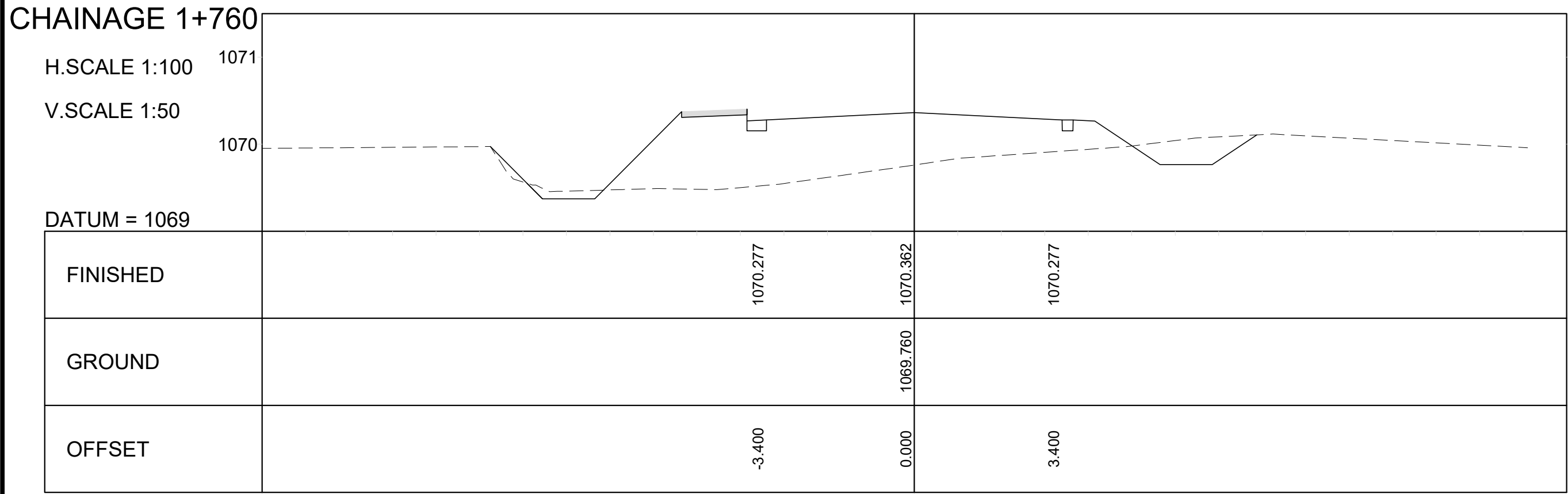
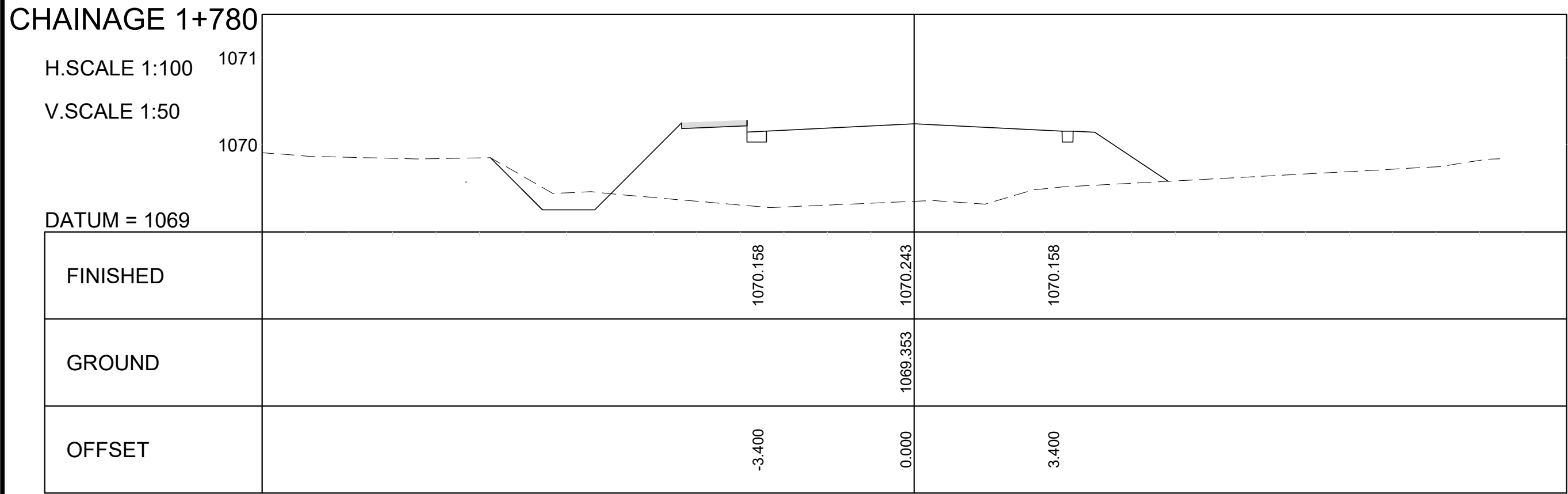












V2	25/01/2023	FOR TENDER PURPOSES	K BRINK		
V1	04/03/2022	ORIGINAL VERSION	K BRINK		
No.	DATE	REVISION	CONSULT. ENG.		

CONSTRUCTION RECORD (AS-BUILT)
WORKS CONTRACT ENGINEER
Name : Prof. Reg. No. : Date :
SANRAL PROJECT MANAGER
Name : Date :

LATHISO

CONSULTING ENGINEERS

WESTERN CAPE

6 BOWATER CLOSE

MELKBOSSSTRAND

CAPE TOWN

7441

P.O. BOX 357

MELKBOSSSTRAND

CAPE TOWN

7441

Tel: 066 274 8594

DESIGNED BY

NAME

K BRINK

Prof. Reg. No.

IE2015-02

CHECKED BY

NAME

B OILLIERS

Prof. Reg. No.

050340

DRAWN BY

G KUNGWANE

CONSULTANT APPROVAL

NAME

B OILLIERS

Prof. Reg. No.

050340

Date

04/02/2022

HEAD OFFICE

48 Tamborlie Avenue

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Pratoria

0184

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Pratoria 0001

South Africa

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SANRAL

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD

BUILDING SOUTH AFRICA

THROUGH BETTER ROADS

NORTHERN REGION

38 IDA STREET

MENLO PARK

TSHWANE

0081

PRIVATE BAG X17

LYNWOOD RIDGE

TSHWANE

0040

Tel: (012) 426 6200

ACCEPTANCE

THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER, CAUSE OR HOWEVER ARISING

for the SA NATIONAL ROADS AGENCY SOC LTD

Date:

THE UPGRADING OF BOTLOKWA (MATOKS)

CLINIC ACCESS ROAD

CROSS-SECTIONS

CHAINAGE 1+680 TO 1+980

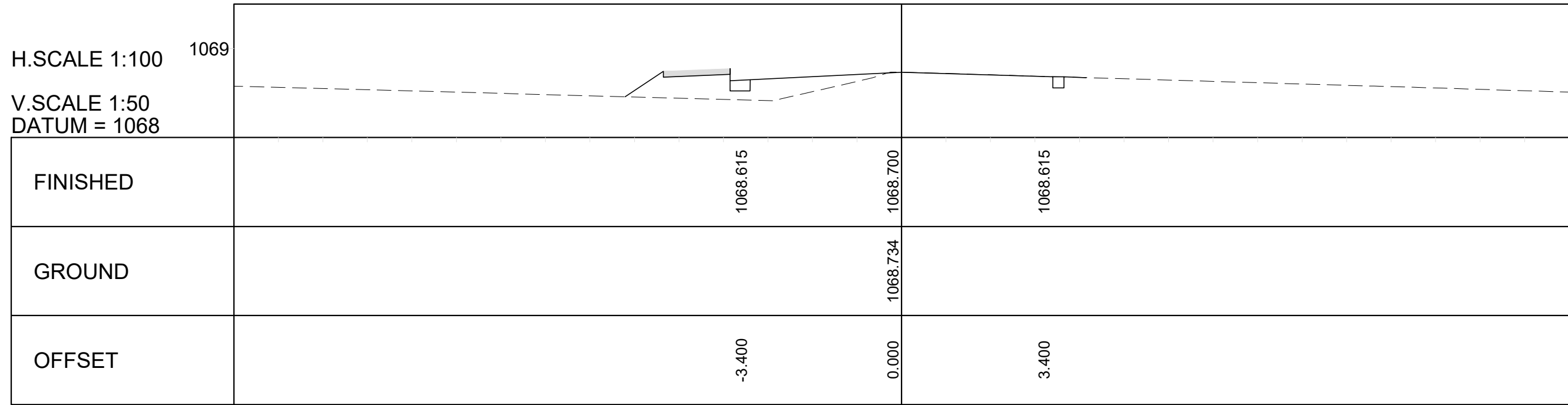
SCALES : H 1:100 V 1:50

SHEET 6 OF 7

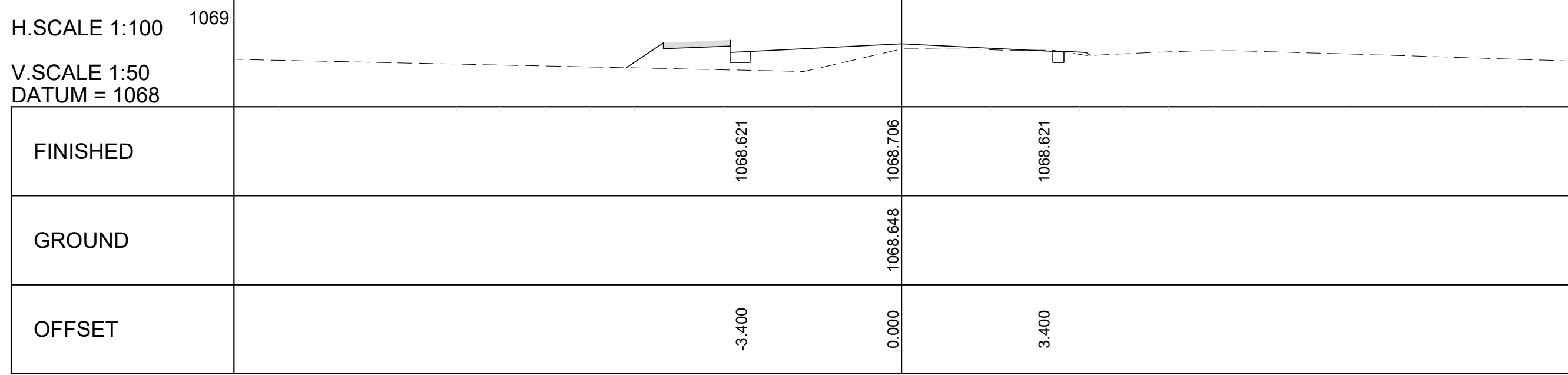
PROJECT NUMBER	S.002-001-2018/1F
DRAWING LOCATION DATA	START END
ROUTE	D3135 D3135
SECTION	1 1
DRAWING km DISTANCE	1+680 1+980
DRAWING TYPE	CROSS-SECTION
BRIDGE/STRUCTURE No.	N/A
CONSULTANT DRAWING No.	2020-01-RDS-305
SANRAL DOCUMENT #	---
VER	V2



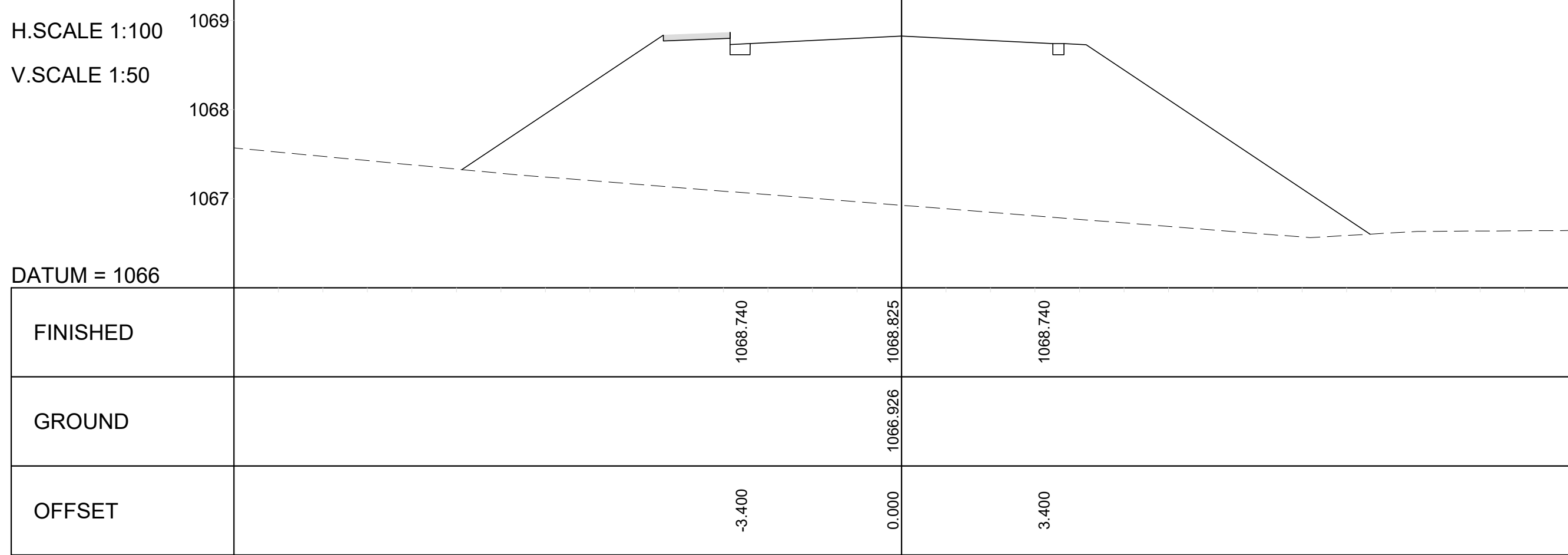
CHAINAGE 2+041: TIE INTO EXISTING ROAD



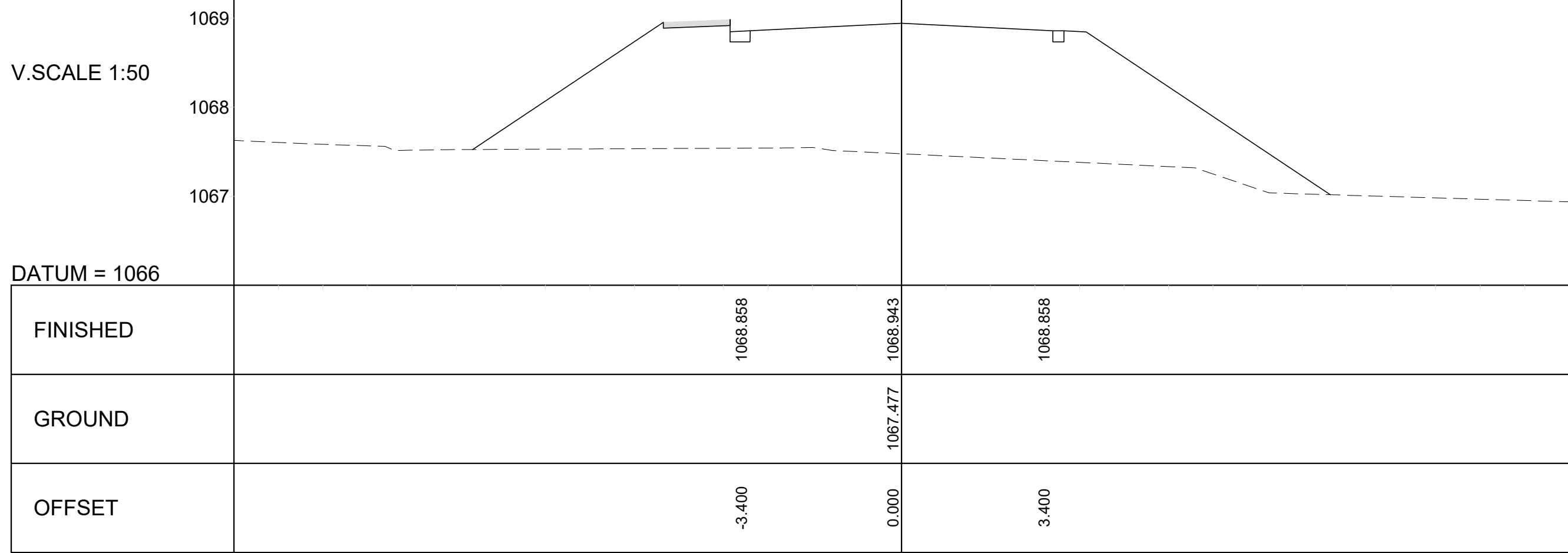
CHAINAGE 2+040



CHAINAGE 2+020

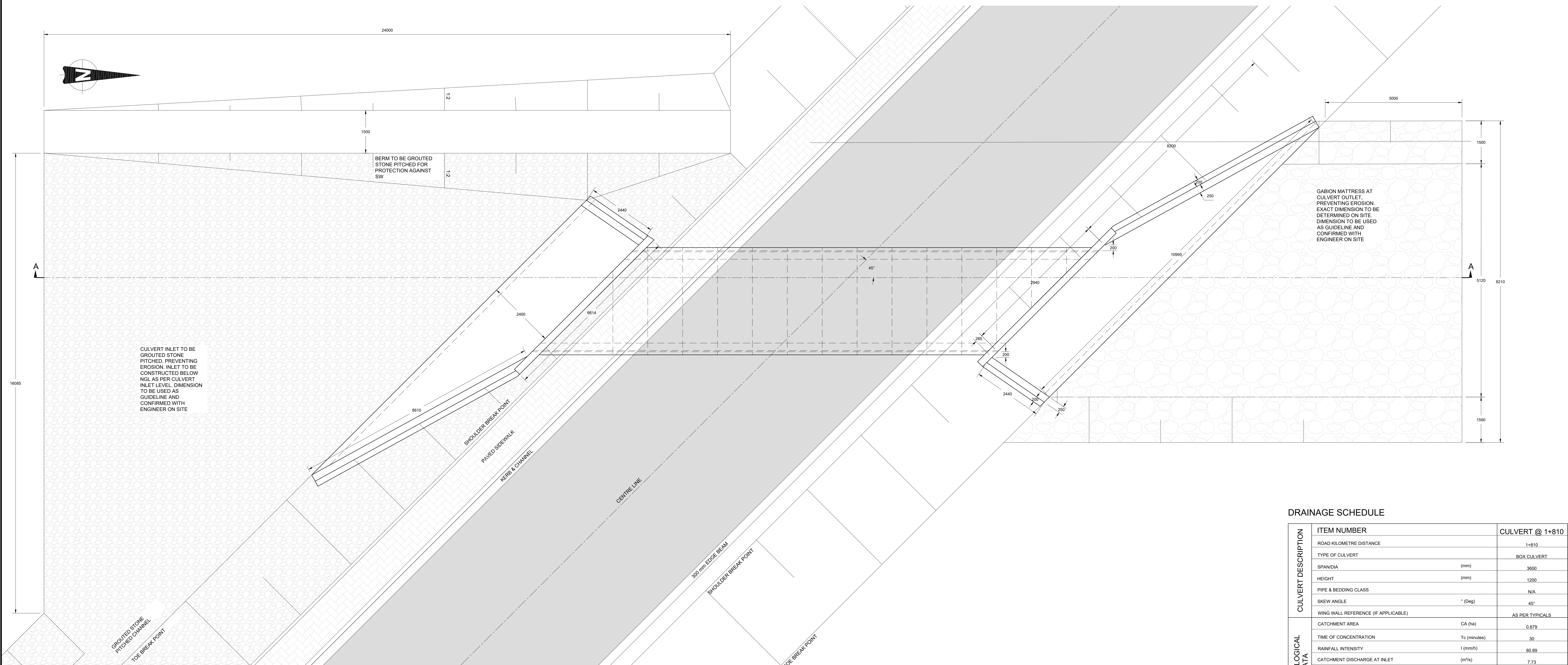
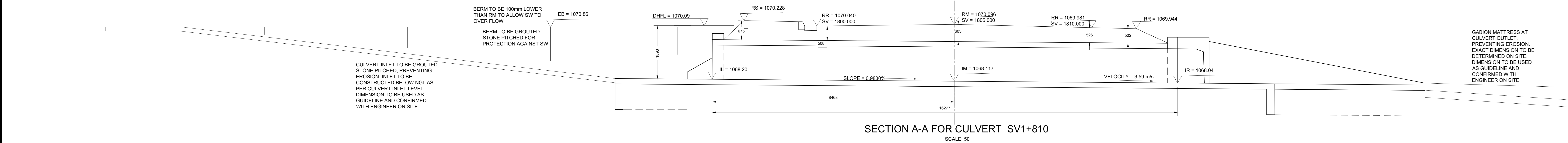


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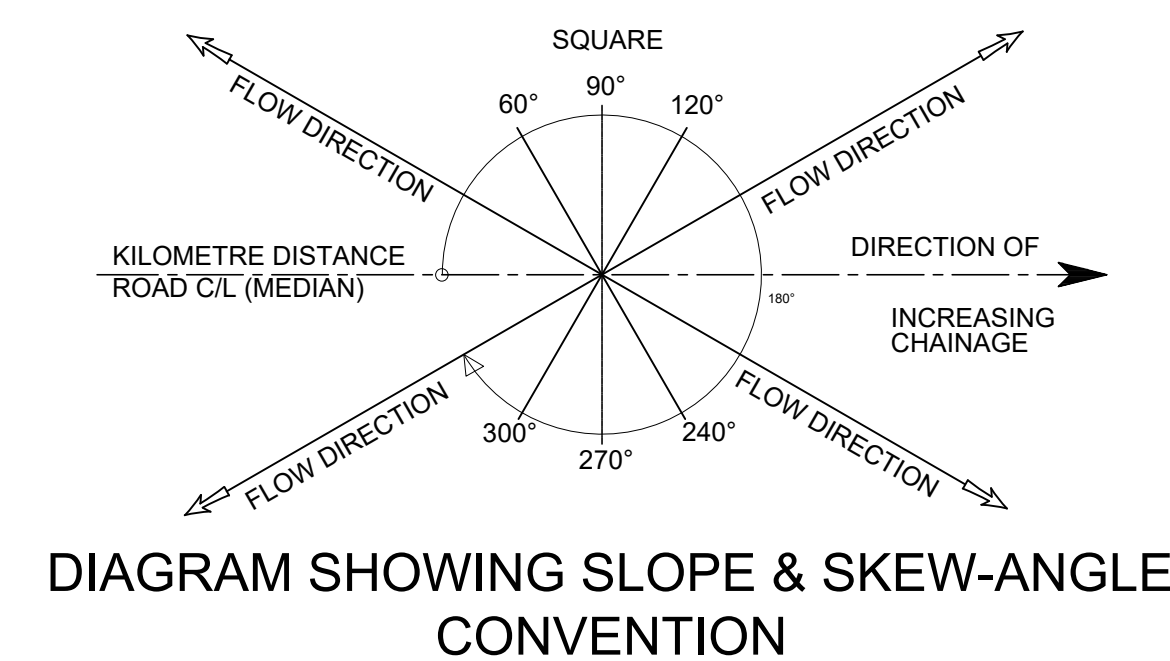
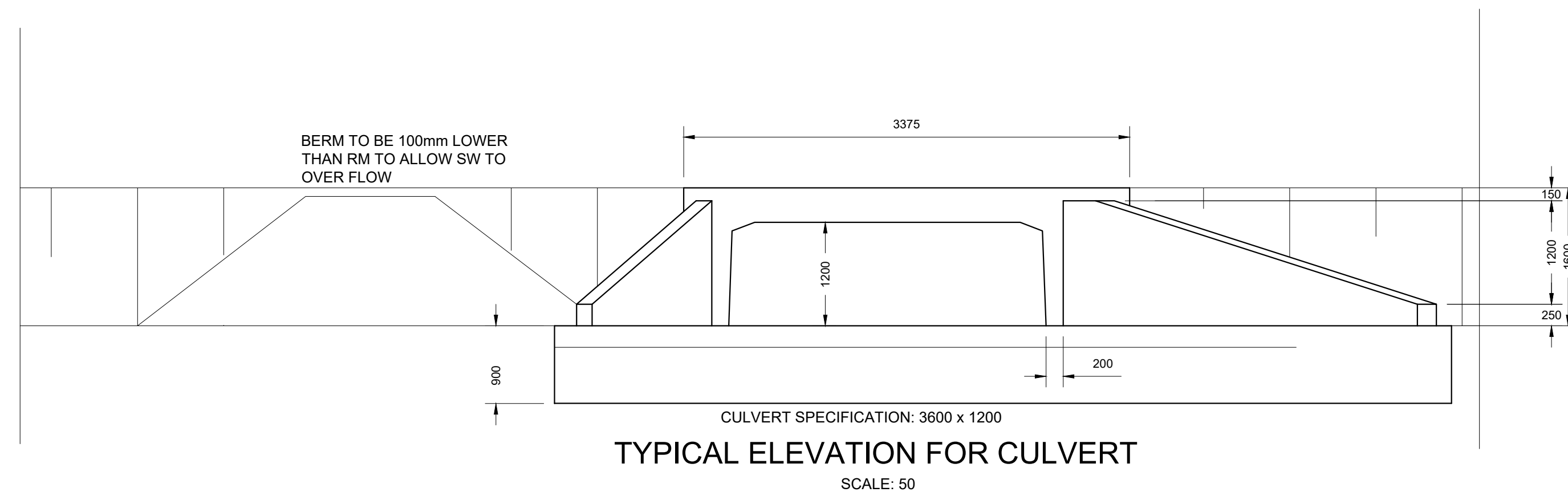




NOTE: REFER TO TYPICAL DRAWING 2021-RDS-021 FOR SETTING OUT DETAILS OF WINGWALLS AND FLOOR SLABS OF THE CULVERTS.



PLAN VIEW FOR CULVERT @ SV1+810  
SCALE: 50



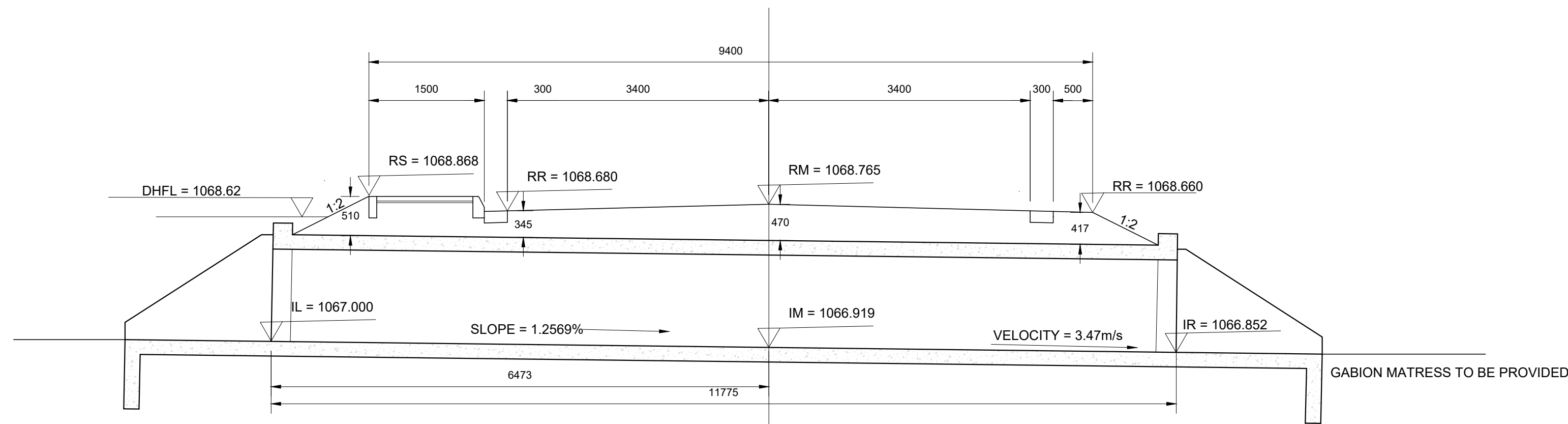
DRAINAGE SCHEDULE			
CULVERT DESCRIPTION	ITEM NUMBER	CULVERT @ 1+810	
	ROAD KILOMETRE DISTANCE	1+810	
	TYPE OF CULVERT	BOX CULVERT	
	SPANDIA (mm)	3600	
	HEIGHT (mm)	1200	
	PIPE & BEDDING CLASS	N/A	
	SKREW ANGLE ° (Deg)	45°	
WING WALL REFERENCE (IF APPLICABLE)	AS PER TYPICALS		
HYDROLOGICAL DATA	CATCHMENT AREA	CA (ha)	0.879
	TIME OF CONCENTRATION	Tc (minutes)	30
	RAINFALL INTENSITY	I (mm/h)	80.89
	CATCHMENT DISCHARGE AT INLET	(m³/s)	7.73
	WATER HEAD	WH (m)	1.32
	DESIGN HIGH FLOOD LEVEL	DHFL (m)	1070.09
	FREE BOARD	f (m)	0
ROAD DATA	FLOW VELOCITY	v (m/s)	3.59
	ROAD LEVEL - LEFT SHOULDER	RL (m)	1070.228
	ROAD LEVEL - ROAD C/L (MEDIAN)	RM (m)	1070.096
	ROAD LEVEL - RIGHT SHOULDER	RR (m)	1069.944
CULVERT DATA	ROAD FORMATION WIDTH	F (m)	9.400
	FLOOR SLOPE	S (%)	0.9830
	INVERT LEVEL - LEFT	IL (m)	1068.20
	INVERT LEVEL - ROAD C/L (MEDIAN)	IM (m)	1068.12
	INVERT LEVEL - RIGHT	IR (m)	1068.04
	FILL HEIGHT - LEFT	HL (m)	0.675
	FILL HEIGHT - ROAD C/L (MEDIAN)	HM (m)	0.603
	FILL HEIGHT - RIGHT	HR (m)	0.502
	LENGTH - LEFT TO ROAD C/L (MEDIAN)	LL (m)	8.468
	TOTAL LENGTH - INLET TO OUTLET	L (m)	16.227
NUMBER OF UNITS	NUMBER	1	

[illegible]

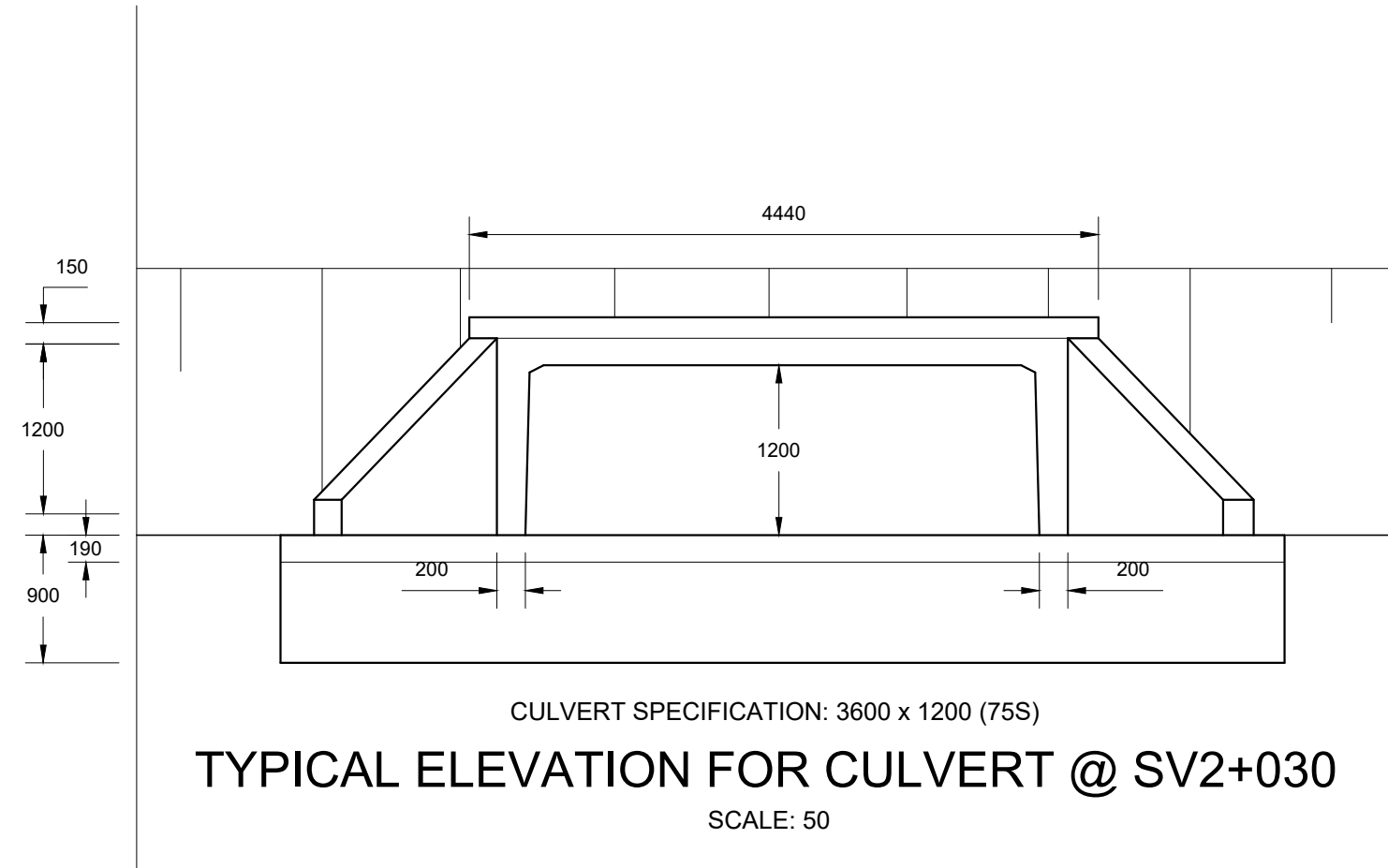
SANRAL TITLE BLOCK #164823/4(DWG/PDF) VERSION V11



NOTE: REFER TO TYPICAL DRAWING 2021-RDS-022 FOR SETTING OUT DETAILS OF WINGWALLS AND FLOOR SLABS OF THE CULVERTS.



SECTION A-A FOR CULVERT @ SV2+030  
SCALE: 50



TYPICAL ELEVATION FOR CULVERT @ SV2+030  
SCALE: 50

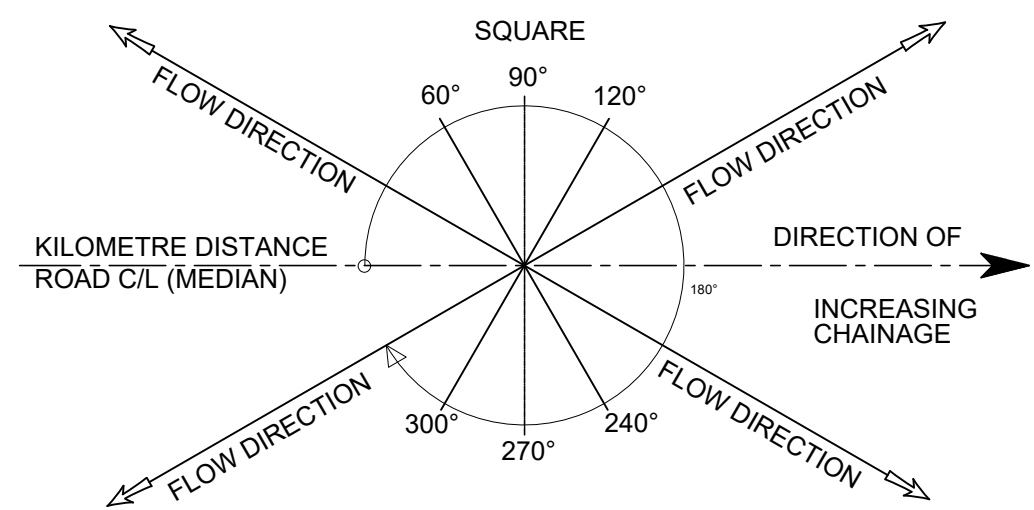
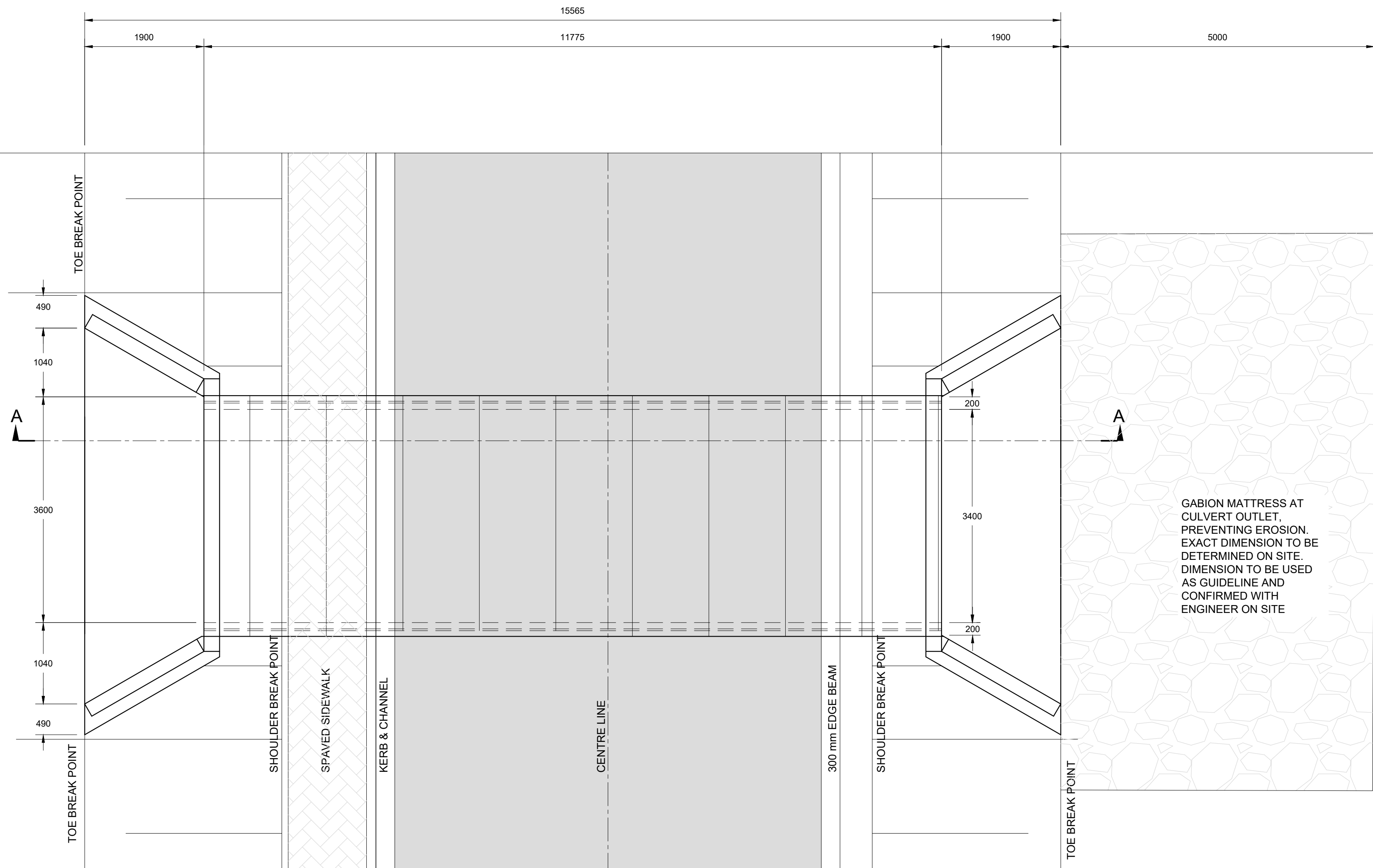
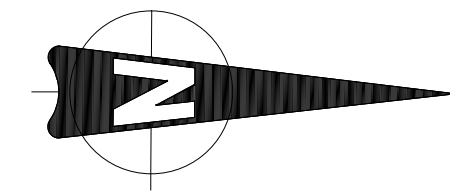


DIAGRAM SHOWING SLOPE & SKEW-ANGLE CONVENTION



PLAN VIEW FOR CULVERT @ SV2+030  
SCALE: 50

#### DRAINAGE SCHEDULE

CULVERT DESCRIPTION	ITEM NUMBER		CULVERT @ 2+030
	ROAD KILOMETRE DISTANCE		2+030
	TYPE OF CULVERT		BOX CULVERT
	SPAN/DIA	(mm)	3600
	HEIGHT	(mm)	1200
	PIPE & BEDDING CLASS		N/A
	SKEW ANGLE	" (Deg)	90°
HYDROLOGICAL DATA	WING WALL REFERENCE (IF APPLICABLE)		AS PER TYPICALS
	CATCHMENT AREA	CA (ha)	1.005
	TIME OF CONCENTRATION	Tc (minutes)	33
	RAINFALL INTENSITY	I (mm/h)	96.89
	CATCHMENT DISCHARGE AT INLET	(m³/s)	6.56
	WATER HEAD	WH (m)	1.17
	DESIGN HIGH FLOOD LEVEL	DHFL (m)	1068.62
ROAD DATA	FREE BOARD	f (m)	0.03
	FLOW VELOCITY	v (m/s)	3.47
	ROAD LEVEL - LEFT SHOULDER	RL (m)	1068.680
	ROAD LEVEL - ROAD C/L (MEDIAN)	RM (m)	1078.765
	ROAD LEVEL - RIGHT SHOULDER	RR (m)	1068.680
	ROAD FORMATION WIDTH	F (m)	9.40
CULVERT DATA	FLOOR SLOPE	S (%)	1.2569
	INVERT LEVEL - LEFT	IL (m)	1067.000
	INVERT LEVEL - ROAD C/L (MEDIAN)	IM (m)	1066.919
	INVERT LEVEL - RIGHT	IR (m)	1066.852
	FILL HEIGHT - LEFT	HL (m)	0.510
	FILL HEIGHT - ROAD C/L (MEDIAN)	HM (m)	0.470
	FILL HEIGHT - RIGHT	HR (m)	0.417
	LENGTH - LEFT TO ROAD C/L (MEDIAN)	LL (m)	6.475
	TOTAL LENGTH - INLET TO OUTLET	L (m)	11.775
	NUMBER OF UNITS	NUMBER	1

			CONSTRUCTION RECORD (AS-BUILT)			<div>WESTERN CAPE 6 BOWATER CLOSE MELKBOSSTRABD CAPE TOWN 7441  P.O. BOX 357 MELKBOSSTRAND CAPE TOWN 7441 Tel: 066 274 8594</div>	DESIGNED BY			CONSULTANT APPROVAL			<div>HEAD OFFICE 48 Tamboite Avenue Val de Grace Pretoria 0184  PO Box 415 Pretoria 0001 South Africa Tel: (012) 844 8000</div>	<div>SANRAL SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD  BUILDING SOUTH AFRICA THROUGH BETTER ROADS</div>	<div>NORTHERN REGION 38 IDA STREET MENLO PARK TSHWANE 0081  PRIVATE BAG X17 LYNWOOD RIDGE TSHWANE 0040 Tel: (012) 426 6200</div>	ACCEPTANCE		THE UPGRADING OF THE BOTLOKWA (MATOKS) CLINIC ACCESS ROAD				PROJECT NUMBER		2020-01-D3135	
			WORKS CONTRACT ENGINEER				CHECKED BY									DRAWING LOCATION DATA		START		END					
			Name :				Name :	B OLLIERS								ROUTE		D3135		D3135					
			Prof. Reg. No. :				Prof. Reg. No. :	150340								SECTION		1		1					
			Date :				Date :	10/08/2021								DRAWING km DISTANCE		0.000		2.140					
			SANRAL PROJECT MANAGER				DRAWN BY									DRAWING TYPE		CULVERT							
			Name :				Name :									BRIDGE/STRUCTURE No.		N/A							
			Date :				Date :									CONSULTANT DRAWING No.		2020-01-RDS-401		VER					
																SANRAL DOCUMENT #		---		V1					
V1	10/08/2021	ORIGINAL VERSION	K BRINK																						
No.	DATE	REVISION	CONSULT. ENG.																						





				CONSTRUCTION RECORD (AS-BUILT)
				WORKS CONTRACT ENGINEER
				Name : _____
				Prof. Reg. No. : _____
				Date : _____
				SANRAL PROJECT MANAGER
				Name : _____
				Date : _____
V2	01/02/2023	FOR TENDER PURPOSES	K BRINK	
V1	20/03/2021	ORIGINAL VERSION	K BRINK	
No.	DATE	REVISION	CONSULT. ENG.	

**LATHISO**  
CONSULTING ENGINEERS

WESTERN CAPE  
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MELKBOSSTRAND  
CAPE TOWN  
7441  
P.O. BOX 357  
MELKBOSSTRAND  
CAPE TOWN  
7441  
Tel: 066 274 8594

DESIGNED BY	
NAME	K BRINK
Prof. Reg. No.	IE2015-02
CHECKED BY	
NAME	B CILLIERS
Prof. Reg. No.	950340
DRAWN BY	
NAME	K BRINK

CONSULTANT APPROVAL	
Name	B CILLIERS
Prof. Reg. No.	950340
Date	20 MARCH 2021

HEAD OFFICE  
48 Tambotie Avenue  
Val de Grace  
Pretoria  
0184  
PO Box 415  
Pretoria 0001  
South Africa  
Tel: (012) 844 8000



NORTHERN REGION  
38 IDA STREET  
MENLO PARK  
TSHWANE  
0081  
PRIVATE BAG X17  
LYNWOOD RIDGE  
TSHWANE  
0040  
Tel: (012) 426 6200

ACCEPTANCE	
THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING	
for the SA NATIONAL ROADS AGENCY SOC LTD.	
Date: _____	

UPGRADING OF BOTLOKWA CLINIC ACCESS ROAD	
EXISTING SERVICES DRAWING Km 0.000 TO Km 2.040	
SCALE : H 1:1000	
SHEET 1 OF 1	

PROJECT NUMBER	2020/01	
DRAWING LOCATION DATA	START	END
ROUTE	BOTLOKWA	BOTLOKWA
SECTION	-	-
DRAWING km DISTANCE	0.000	2.040
DRAWING TYPE	EXISTING SERVICES DRAWING	
BRIDGE/STRUCTURE No.	N/A	
CONSULTANT DRAWING No.	2020-01-RDS-500	VER
SANRAL DOCUMENT #	XXXX	V2