



**SENQU LOCAL MUNICIPALITY
PROJECT MANAGEMENT OFFICE**

PROJECT NO.

P1027 - BARKLY EAST
.....

FOR

**SENQU MUNICIPALITY UPGRADING, REHABILITATION &
RECONSTRUCTION OF ROADS & STORMWATER**

VOLUME 1

TENDER DRAWINGS

MARCH 2024

DRAWINGS COMPILED FOR:

THE MUNICIPAL MANAGER

SENQU LOCAL MUNICIPALITY
19 Murray Street
Lady Grey
9755

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DRAWINGS COMPILED BY:

THEWO & SMMMS - JV



Sigodi Marah Martin
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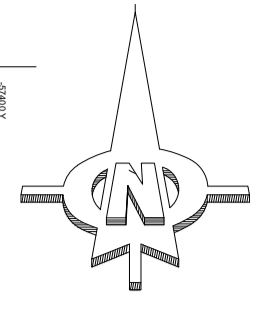
DRAWING LIST

<u>NO.</u>	<u>DESCRIPTION</u>	<u>DRAWING NO.</u>
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6.	ROAD 3 LAYOUT AND LONGITUDINAL SECTION (SHEET 1 OF 1)	P1027-BE-CIV-RD-LS03
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CLIENT:  19 Murray Street Lady Grey 9755 Tel: (051) 603 1449 Email: vanzyit@senqu.gov.za	CONSULTANT: THEWO & SMMS - JV  58 Brebner Road Westdene Bloemfontein 9301 Tel: +27 (051) 430 1321 Email: PMO@thewo.co.za	PROFESSIONAL ENGINEER: L. MARAH PROF. Reg.No: 920281 DATE: 2024-03-25 SIGNATURE:	DESIGN BY: T. TSHABALALA DRAWN BY: B. MVUKUZO CHECKED BY: L. MARAH APPROVED BY: L. MARAH	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2024-03-25</td> <td>ISSUED FOR TENDER</td> <td>L.M.</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS				REV	DATE	DESCRIPTION	BY	0	2024-03-25	ISSUED FOR TENDER	L.M.																	PROJECT NAME SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER TITLE <p style="text-align: center; font-size: 1.2em;">DRAWING LIST</p>	PROJECT STATUS: <p style="text-align: center; font-size: 1.2em;">TENDER</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>DATE</th> <th>SCALE</th> <th>SHEET</th> <th>REV</th> <th>A1</th> </tr> <tr> <td>2024-03-25</td> <td>N.T.S.</td> <td>1 OF 1</td> <td>0</td> <td>A1</td> </tr> </table> DWG NO <p style="text-align: center; font-size: 1.2em;">P1027-BE-CIV-RD-DL01</p>	DATE	SCALE	SHEET	REV	A1	2024-03-25	N.T.S.	1 OF 1	0	A1
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LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM



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Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za




PROFESSIONAL ENGINEER:
L. MARAH

PROF. Reg.No:
920281

DATE:
2024-03-25

SIGNATURE:

DESIGN BY:
T. TSHABALALA

DRAWN BY:
B. MVUKUZO

CHECKED BY:
L. MARAH

APPROVED BY:
L. MARAH

REVISIONS			
REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

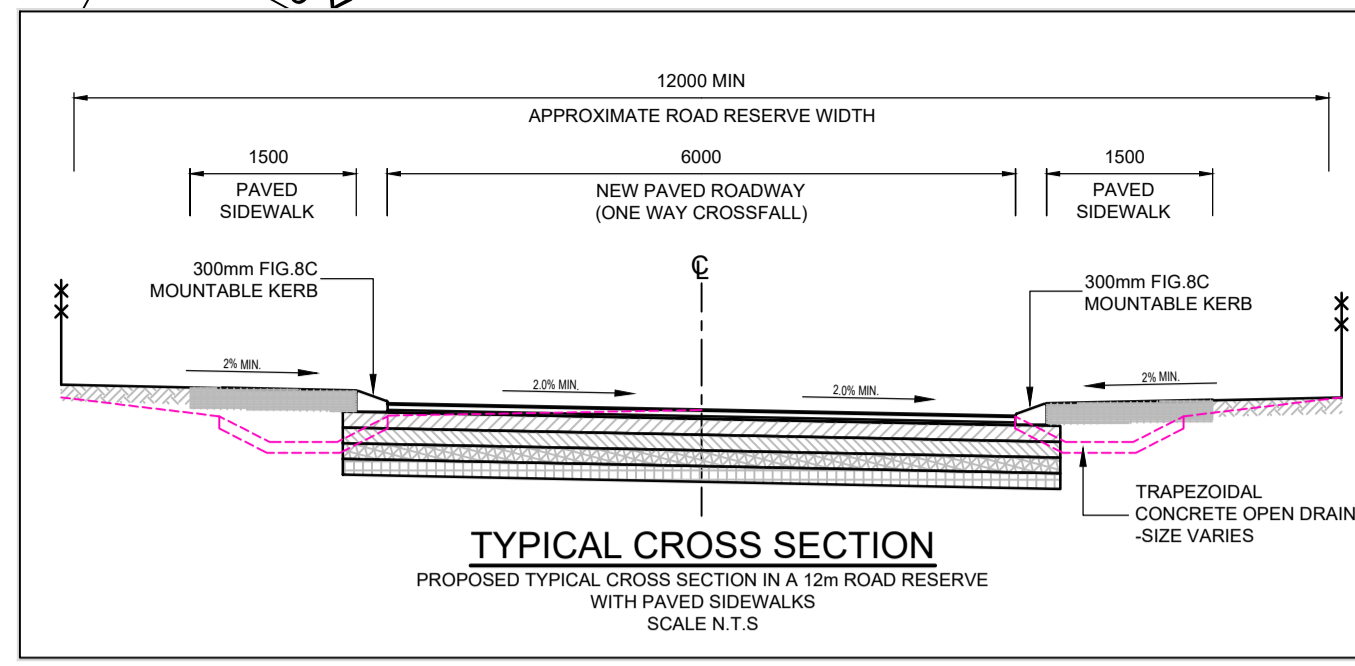
TITLE
GENERAL LAYOUT PLAN

PROJECT STATUS:
TENDER

DATE	SCALE	SHEET	REV	A1
2024-03-25	N.T.S.	1 OF 1	0	A1

DWG NO
P1027-BE-CIV-RD-GL01

BENCHMARKS (WGS 84 Lo 27°)				
Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
RM2	-56966.682	3427158.602	1786.072	12mm IRON PEG
RM3	-56950.705	3426872.382	1786.193	12mm IRON PEG
RM4	-57176.356	3426824.569	1788.492	12mm IRON PEG
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RM9	-56176.110	3426894.703	1783.140	12mm IRON PEG
RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
RM12	-55978.204	3427231.274	1791.565	12mm IRON PEG
RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG

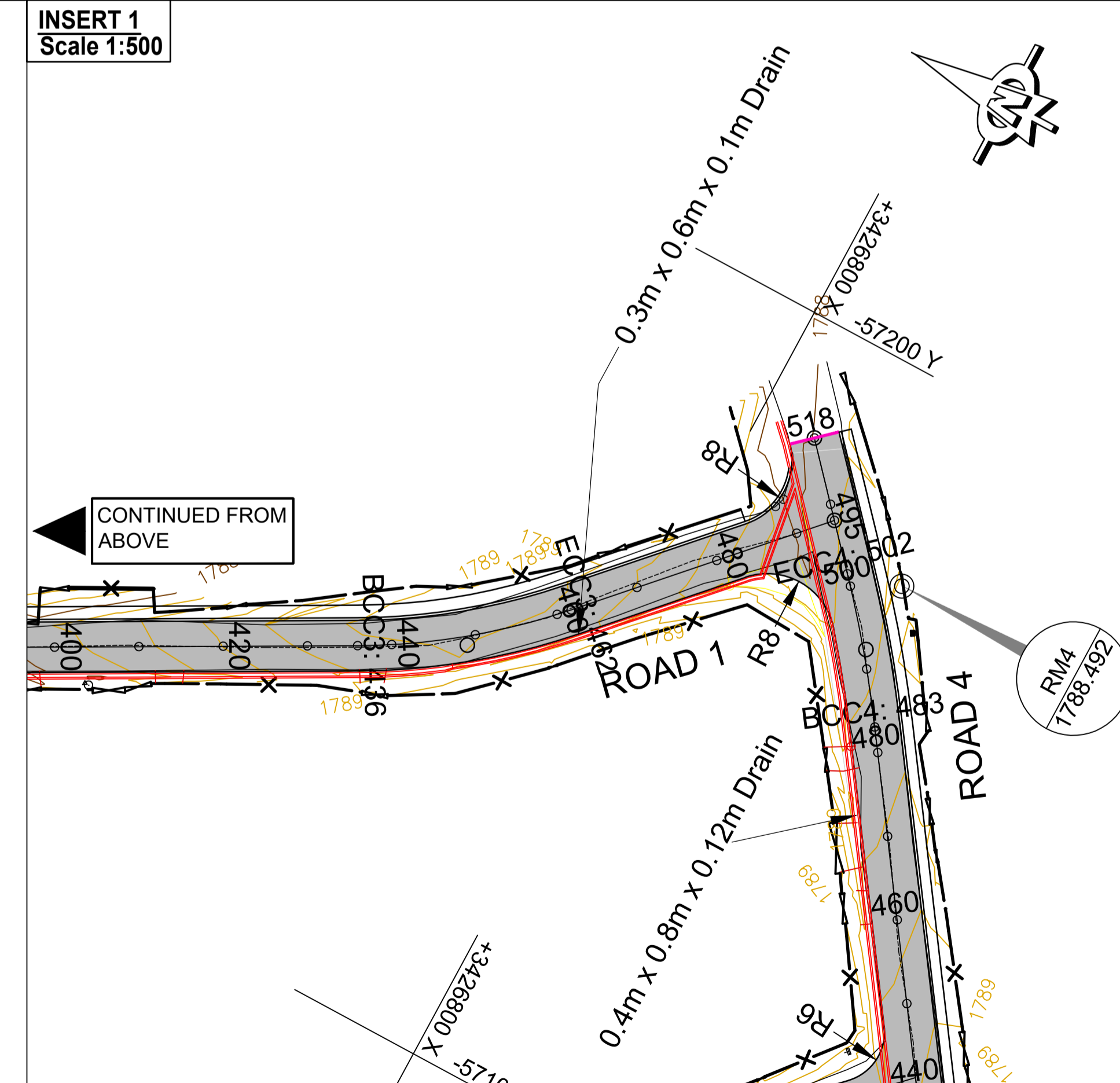
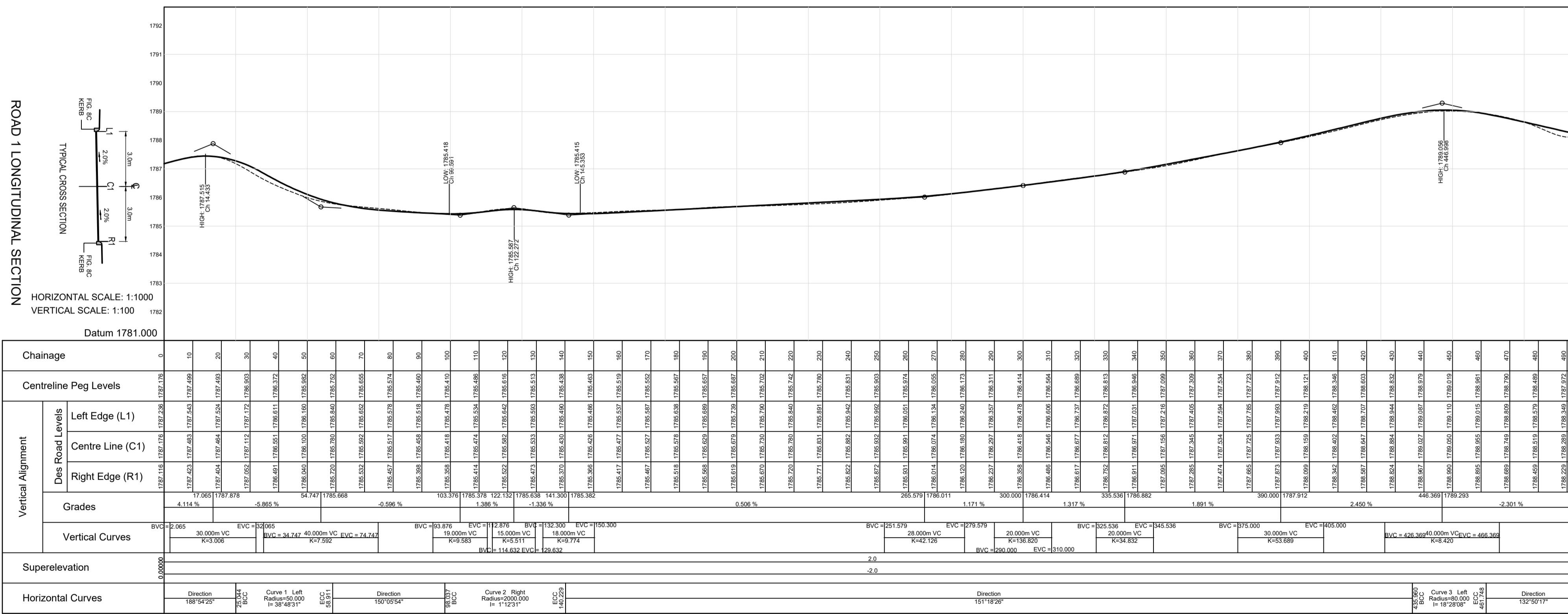
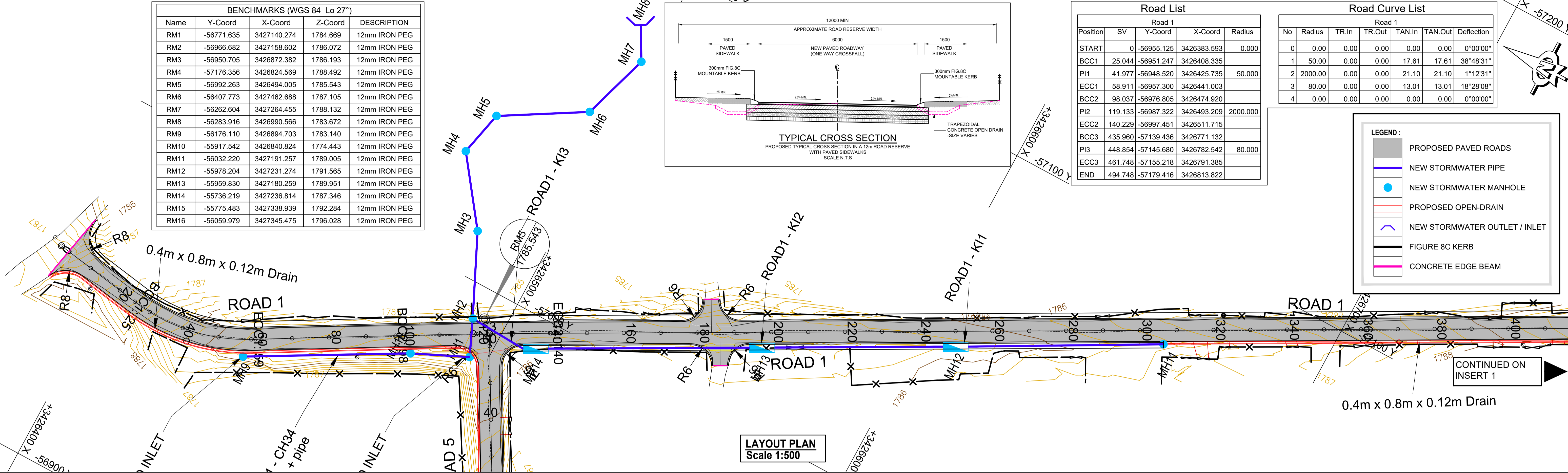


Road List				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56955.125	3426383.593	0.000
BCC1	25.044	-56951.247	3426408.335	
PI1	41.977	-56948.520	3426425.735	50.000
ECC1	58.911	-56957.300	3426441.003	
BCC2	98.037	-56976.805	3426474.920	
PI2	119.133	-56987.322	3426493.209	2000.000
ECC2	140.229	-56997.451	3426511.715	
BCC3	435.960	-57139.436	3426771.132	
PI3	448.854	-57145.680	3426782.542	80.000
ECC3	461.748	-57155.218	3426791.385	
END	494.748	-57179.416	3426813.822	

Road Curve List						
No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	50.00	0.00	0.00	17.61	17.61	38°48'31"
2	2000.00	0.00	0.00	21.10	21.10	1°12'31"
3	80.00	0.00	0.00	13.01	13.01	18°28'08"
4	0.00	0.00	0.00	0.00	0.00	0°00'00"

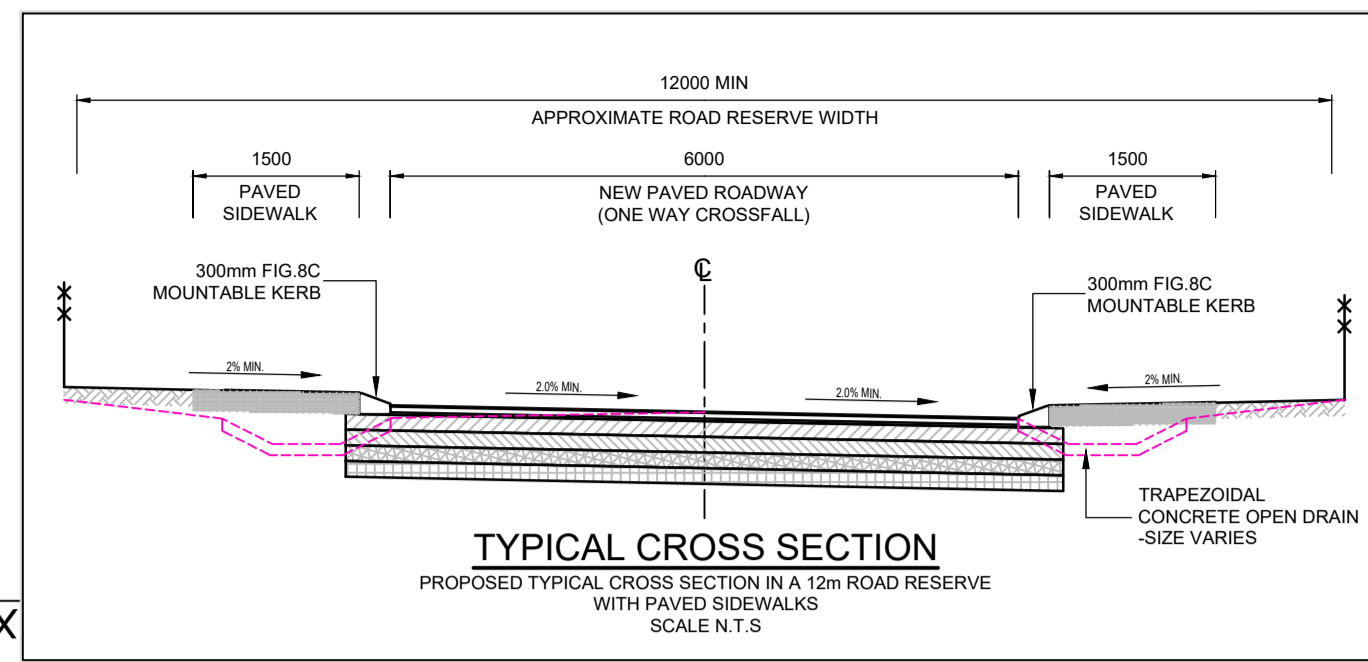
LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM



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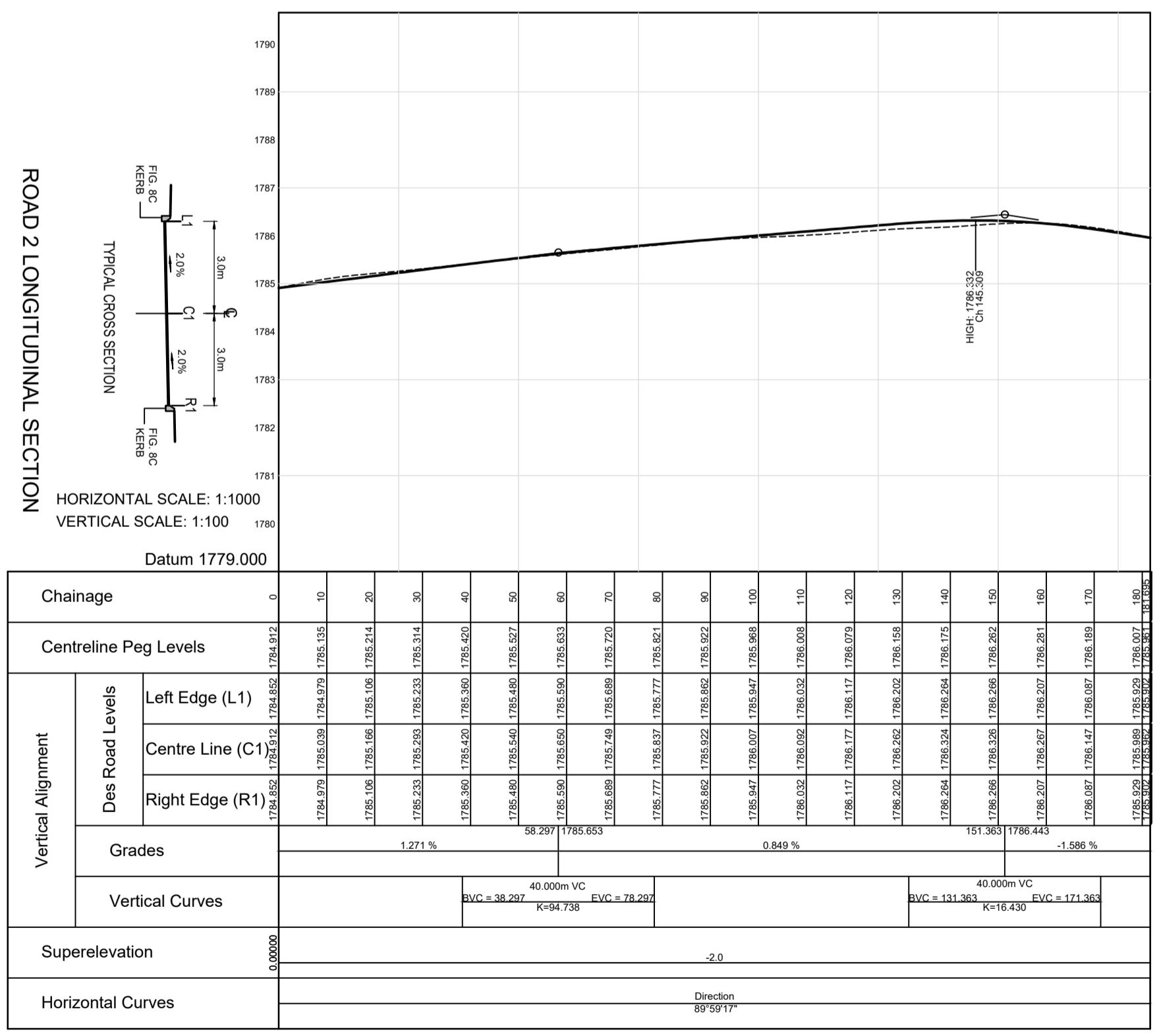
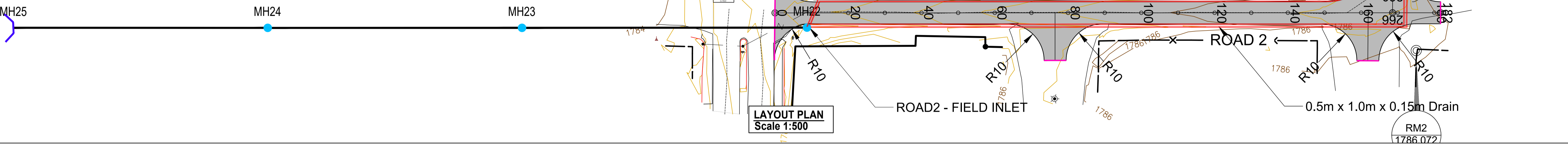
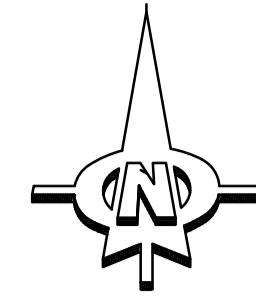
BENCHMARKS (WGS 84 Lo 27°)				
Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
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RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
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LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM

Road List				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56791.639	3427148.309	0.000
END	181.695	-56973.334	3427148.272	



Longsection for 0 to 181

CLIENT:

19 Murray Street
Lady Grey
9755

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CONSULTANT:

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DRAWN BY:
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REV	DATE	DESCRIPTION	BY	
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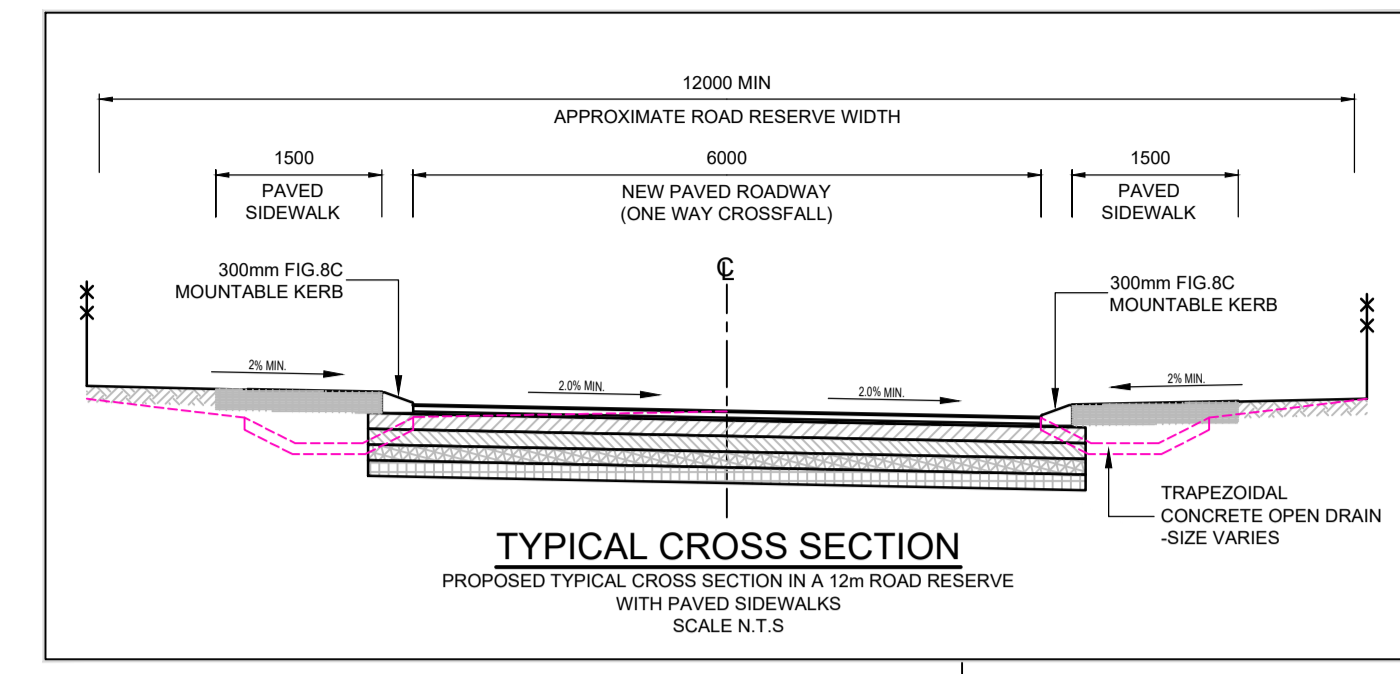
TITLE
ROAD 2 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:
TENDER

DATE	SCALE	SHEET	REV	
2024-03-25	AS SHOWN	1 OF 1	0	A1

DWG NO: P1027-BE-CIV-RD-LS02

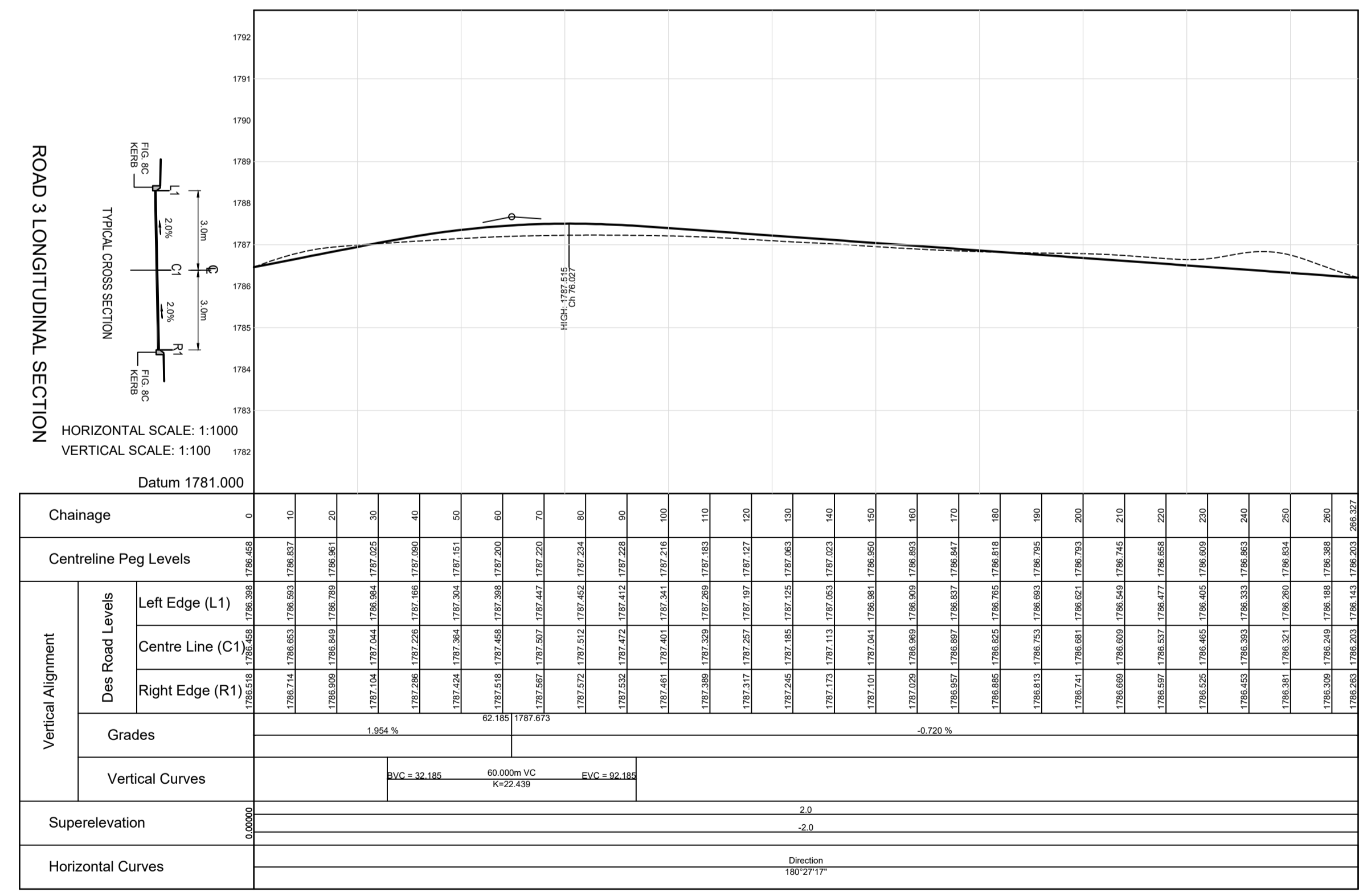
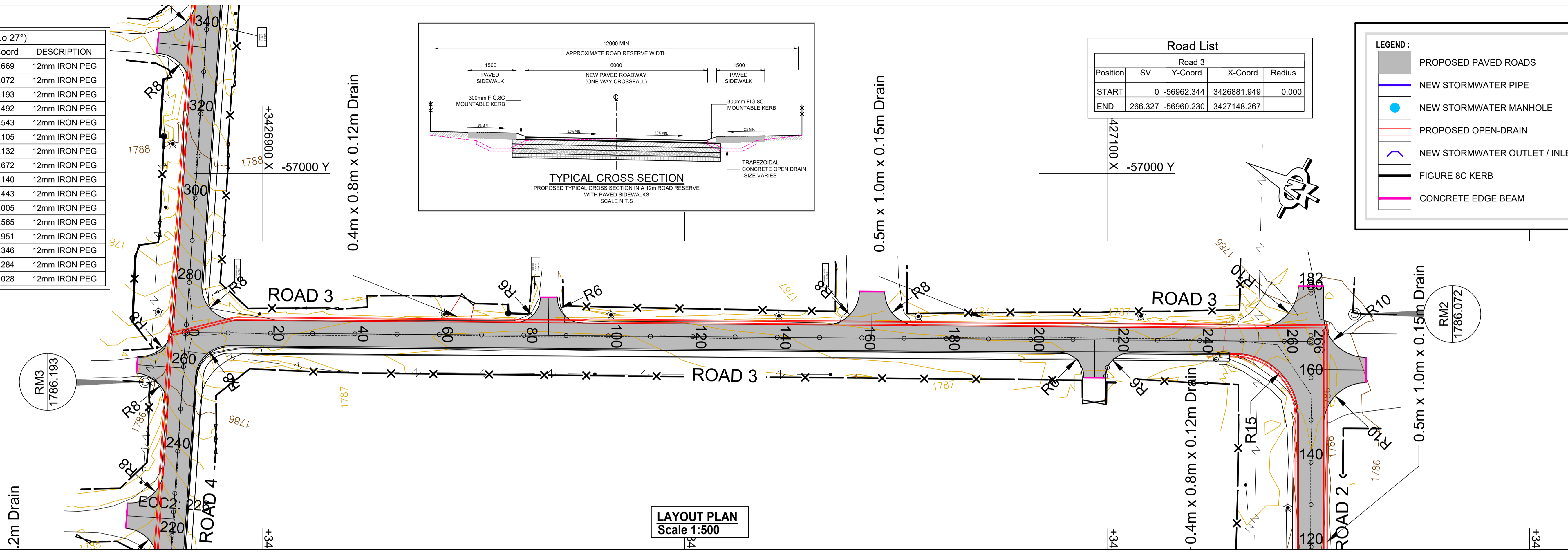
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RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG



Road List				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56962.344	3426881.949	0.000
END	266.327	-56960.230	3427148.267	

LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM



Longsection for 0 to 266

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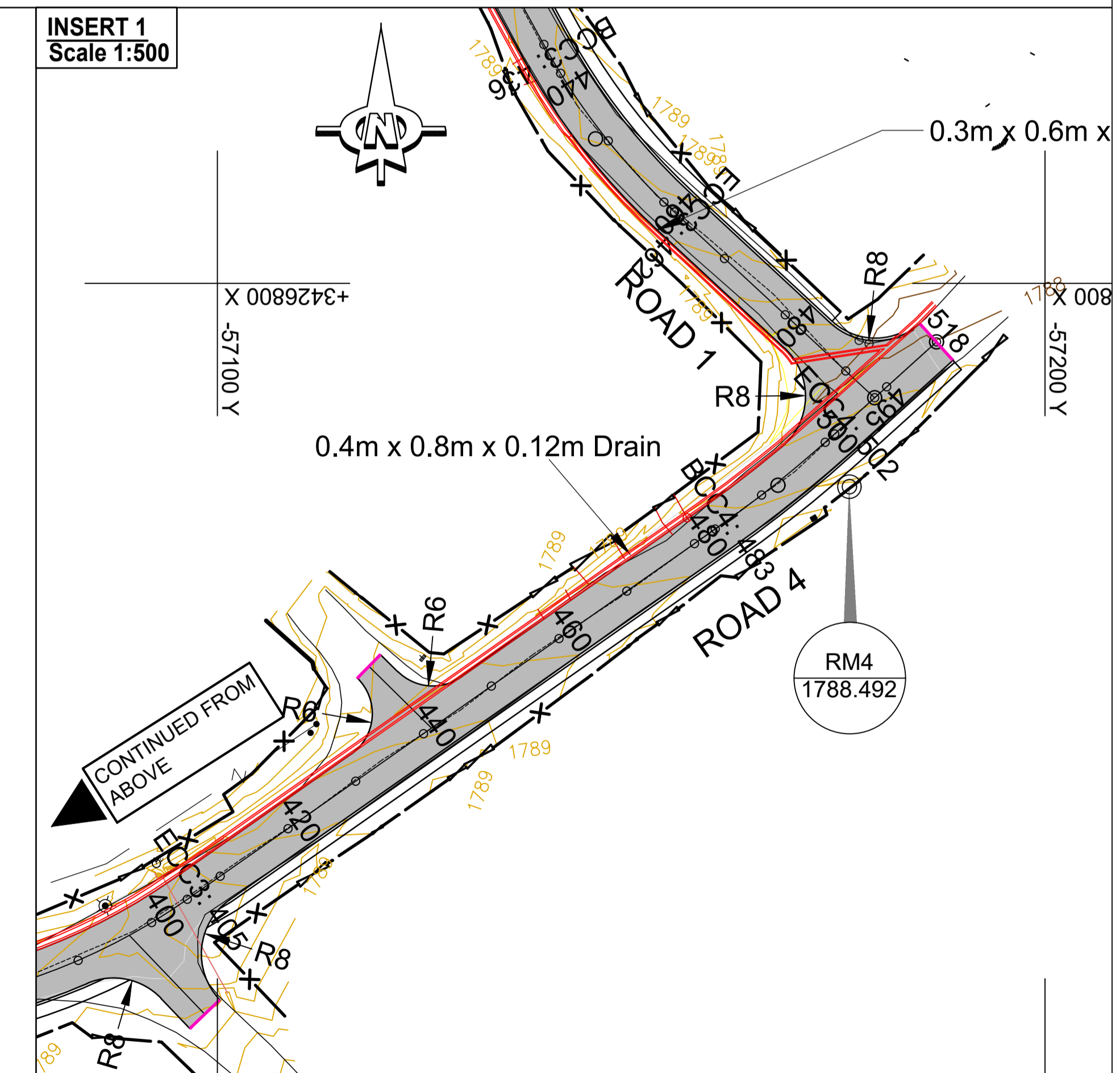
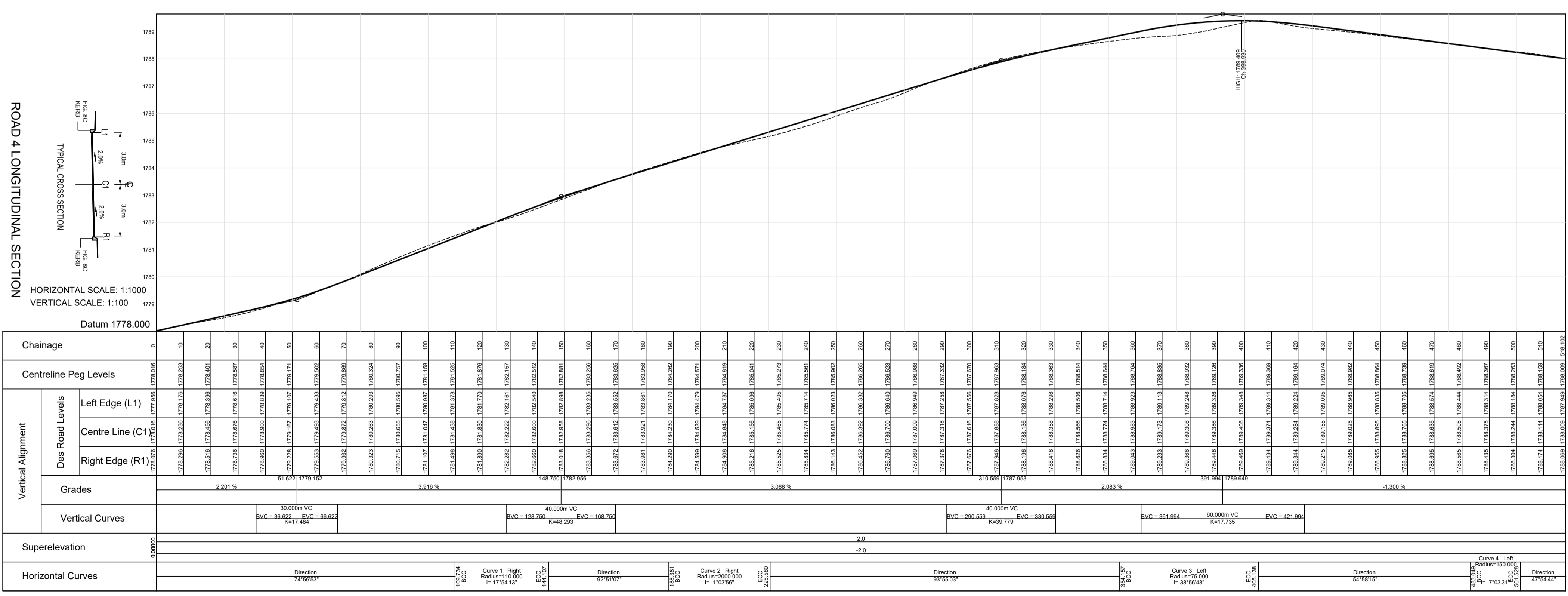
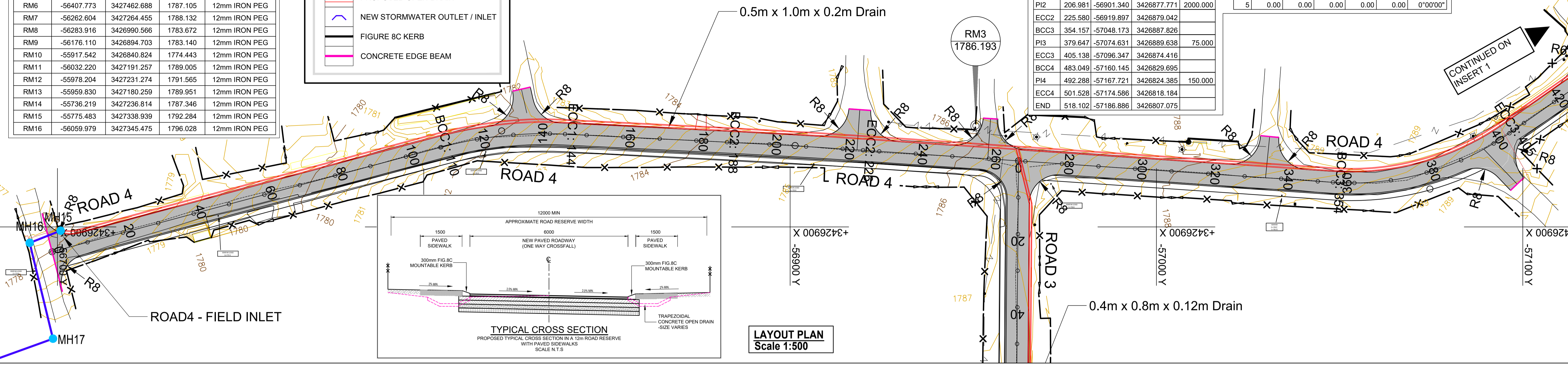
BENCHMARKS (WGS 84 Lo 27°)				
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RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG

LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM

Road 4				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56698.536	3426906.778	0.000
BCC1	109.734	-56804.505	3426878.281	
PI1	126.921	-56821.238	3426873.781	110.000
ECC1	144.107	-56838.544	3426874.643	
BCC2	188.381	-56882.764	3426876.846	
PI2	206.981	-56901.340	3426877.771	2000.000
ECC2	225.580	-56919.897	3426879.042	
BCC3	354.157	-57048.173	3426887.826	
PI3	379.647	-57074.631	3426889.638	75.000
ECC3	405.138	-57096.347	3426874.416	
BCC4	483.049	-57160.145	3426829.695	
PI4	492.288	-57167.721	3426824.385	150.000
ECC4	501.528	-57174.586	3426818.184	
END	518.102	-57186.886	3426807.075	

Road Curve List						
No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	110.00	0.00	0.00	17.33	17.33	17°54'13"
2	2000.00	0.00	0.00	18.60	18.60	1°03'56"
3	75.00	0.00	0.00	26.52	26.52	38°56'48"
4	150.00	0.00	0.00	9.25	9.25	7°03'31"
5	0.00	0.00	0.00	0.00	0.00	0°00'00"



CLIENT:

19 Murray Street
Lady Grey
9755

Tel: (051) 603 1449
Email: vanzyt@senqu.gov.za

CONSULTANT:

THEWO & SMMS - JV

58 Brebner Road
Westdene
Bloemfontein
9301

Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER:

L. MARAH

PROF. Reg.No:
920281

DATE:
2024-03-25

SIGNATURE:

DESIGN BY:

T. TSHABALALA

DRAWN BY:

B. MVUKUZO

CHECKED BY:

L. MARAH

APPROVED BY:

L. MARAH

REVISIONS				
REV	DATE	DESCRIPTION	BY	L.M.
0	2024-03-25	ISSUED FOR TENDER		

PROJECT NAME

SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

TITLE

ROAD 4 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:

TENDER

DATE	SCALE	SHEET	REV	A1
2024-03-25	AS SHOWN	1 OF 1	0	

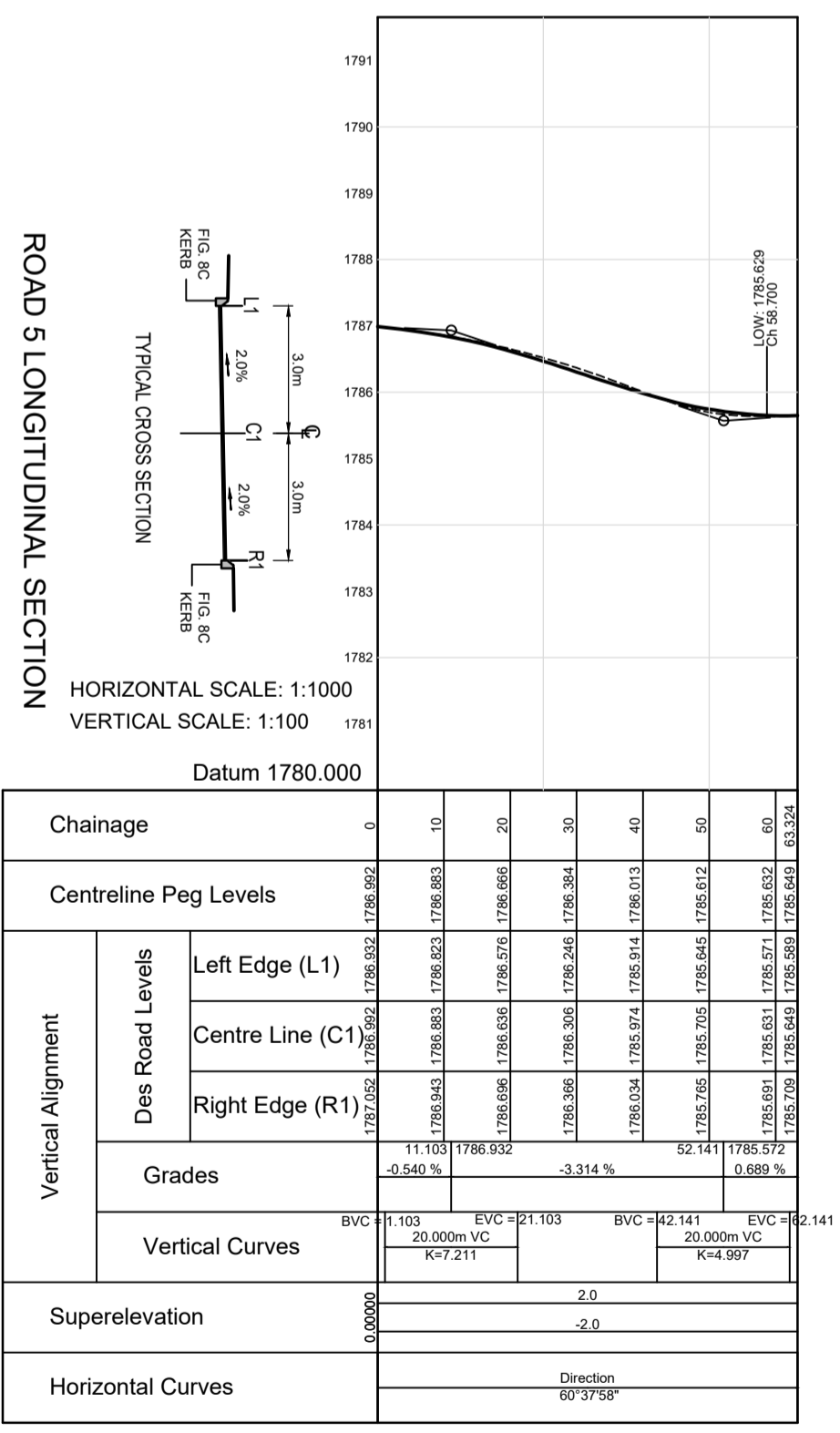
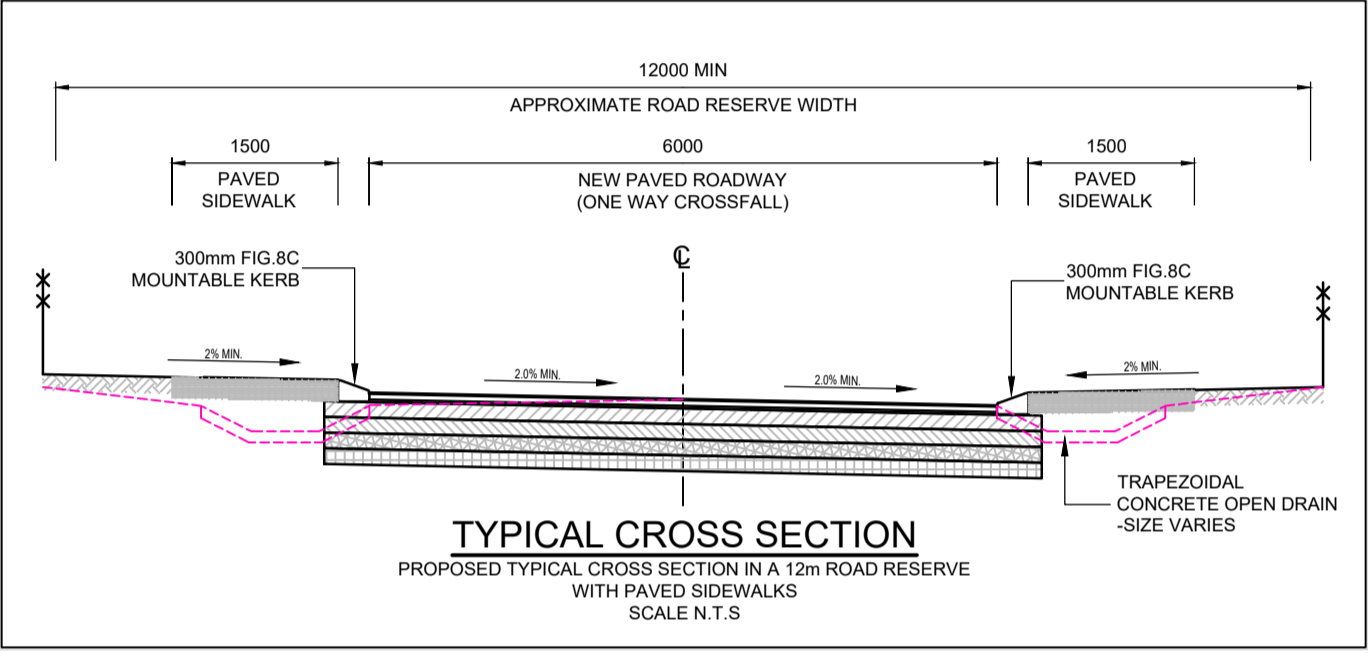
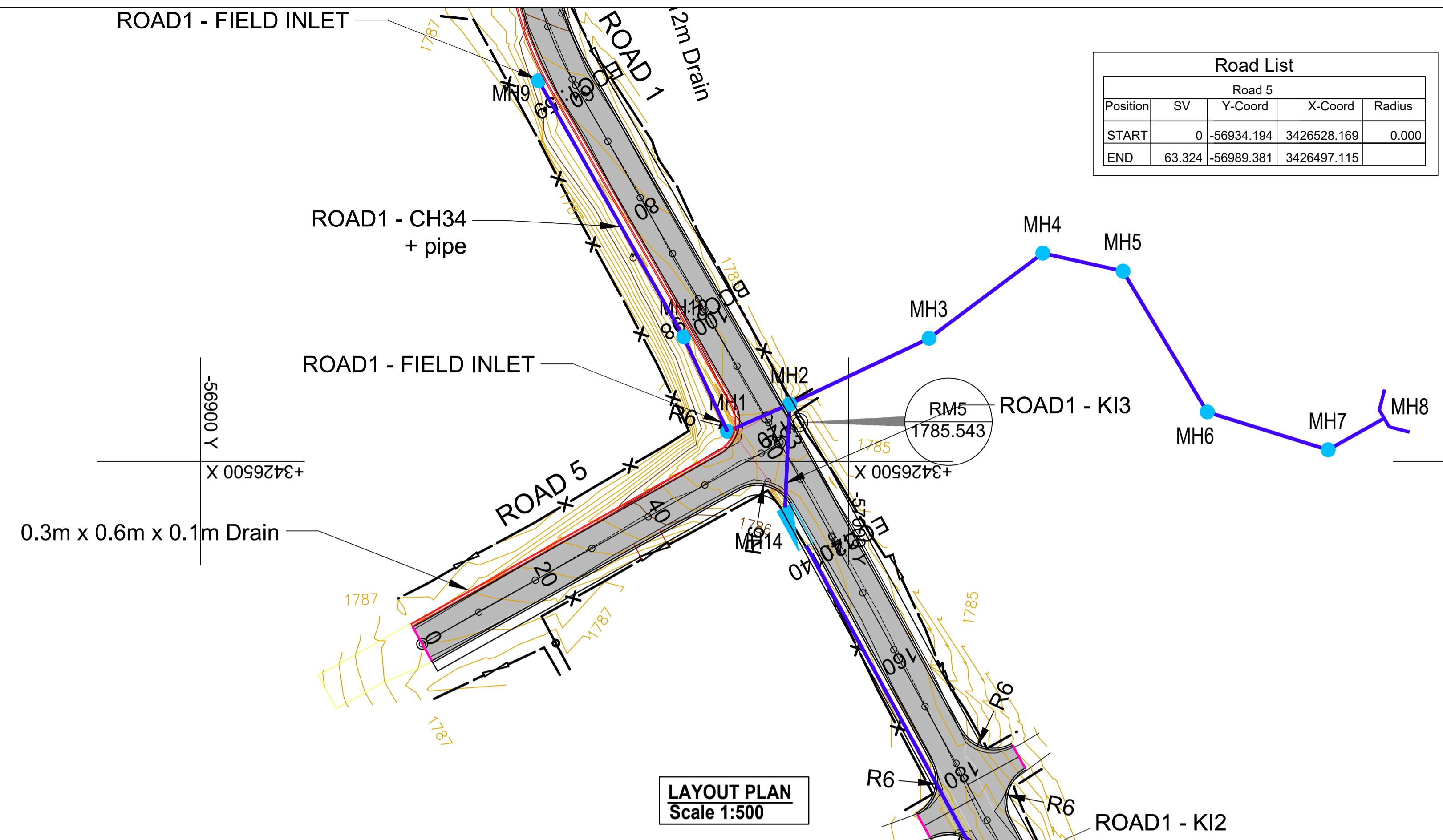
DWG NO: P1027-BE-CIV-RD-LS04

BENCHMARKS (WGS 84 Lo 27°)				
Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
RM2	-56966.682	3427158.602	1786.072	12mm IRON PEG
RM3	-56950.705	3426872.382	1786.193	12mm IRON PEG
RM4	-57176.356	3426824.569	1788.492	12mm IRON PEG
RM5	-56992.263	3426494.005	1785.543	12mm IRON PEG
RM6	-56407.773	3427462.688	1787.105	12mm IRON PEG
RM7	-56262.604	3427264.455	1788.132	12mm IRON PEG
RM8	-56283.916	3426990.566	1783.672	12mm IRON PEG
RM9	-56176.110	3426894.703	1783.140	12mm IRON PEG
RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
RM12	-55978.204	3427231.274	1791.565	12mm IRON PEG
RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG

Road 5				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56934.194	3426528.169	0.000
END	63.324	-56989.381	3426497.115	

LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM



Longsection for 0 to 63

CLIENT:

19 Murray Street
Lady Grey
9755

Tel: (051) 603 1449
Email: vanzyit@senqu.gov.za

CONSULTANT:

THEWO & SMMS - JV

58 Brebner Road
Westdene
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9301

Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER:
L. MARAH

PROF. Reg.No:
920281

DATE:
2024-03-25

SIGNATURE:

DESIGN BY:
T. TSHABALALA

DRAWN BY:
B. MVUKUZO

CHECKED BY:
L. MARAH

APPROVED BY:
L. MARAH

REVISIONS				
REV	DATE	DESCRIPTION	BY	
0	2024-03-25	ISSUED FOR TENDER	L.M.	

PROJECT NAME
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

TITLE
ROAD 5 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:
TENDER

DATE	SCALE	SHEET	REV	A1
2024-03-25	AS SHOWN	1 OF 1	0	A1

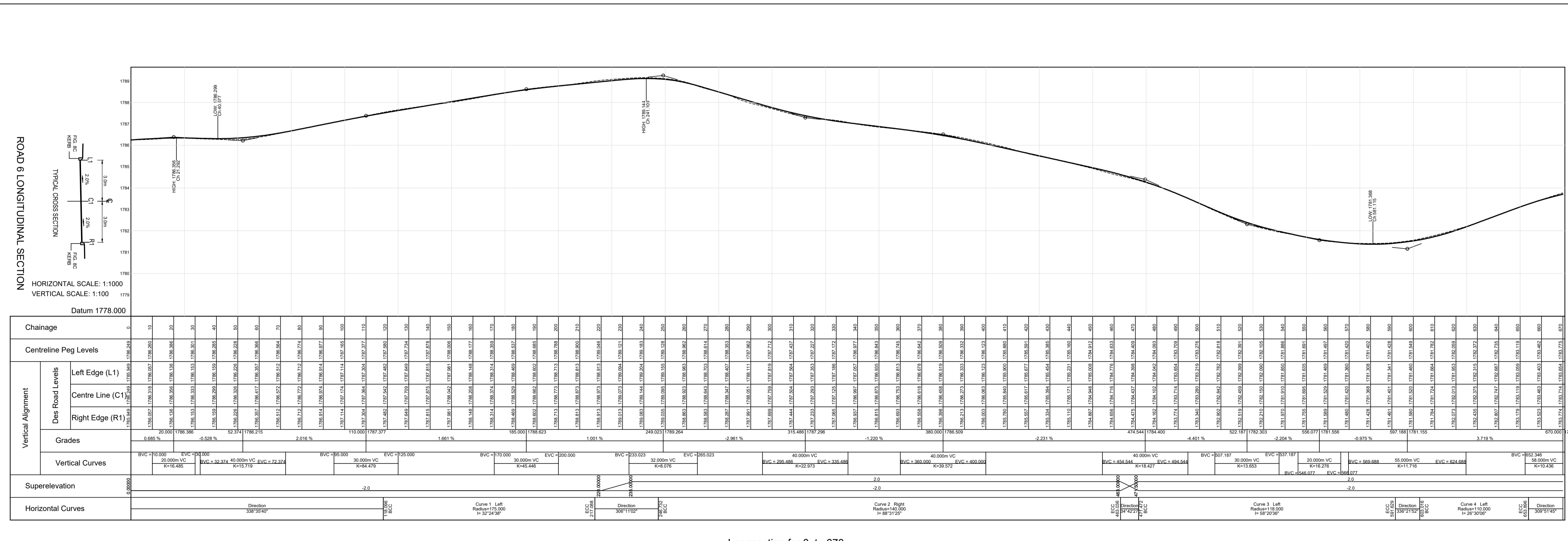
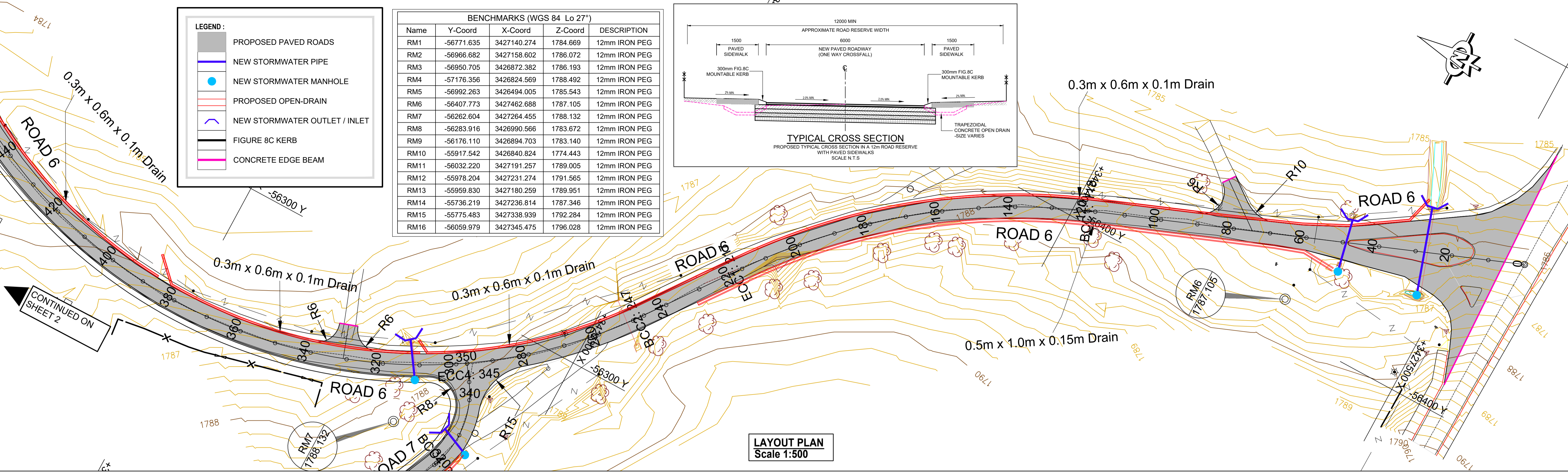
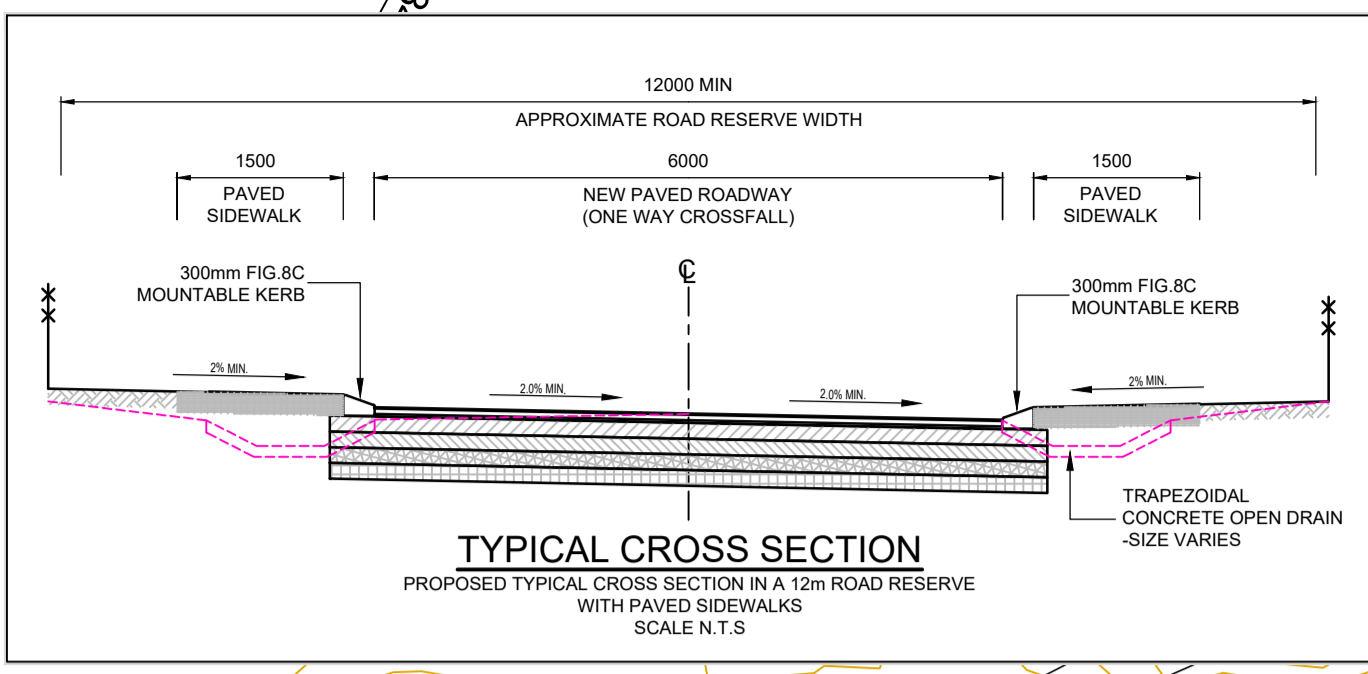
DWG NO
P1027-BE-CIV-RD-LS05

LEGEND:

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM

BENCHMARKS (WGS 84 Lo 27°)

Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
RM2	-56966.682	3427158.602	1786.072	12mm IRON PEG
RM3	-56950.705	3426872.382	1786.193	12mm IRON PEG
RM4	-57176.356	3426824.569	1788.492	12mm IRON PEG
RM5	-56992.263	3426494.005	1785.543	12mm IRON PEG
RM6	-56407.773	3427462.688	1787.105	12mm IRON PEG
RM7	-56262.604	3427264.455	1788.132	12mm IRON PEG
RM8	-56283.916	3426990.566	1783.672	12mm IRON PEG
RM9	-56176.110	3426894.703	1783.140	12mm IRON PEG
RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
RM12	-55978.204	3427231.274	1791.565	12mm IRON PEG
RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG



Road List

Position	SV	Y-Coord	X-Coord	Radius
START	0	-56447.194	3427515.664	0.000
BCC1	118.096	-56404.093	3427405.714	
PI1	167.592	-56385.531	3427358.363	175.000
ECC1	217.088	-56344.481	3427328.337	
BCC2	246.732	-56320.555	3427310.836	
PI2	354.884	-56210.432	3427230.286	140.000
ECC2	463.036	-56288.118	3427118.124	
BCC3	471.472	-56292.921	3427111.189	
PI3	531.551	-56330.427	3427057.038	118.000
ECC3	591.629	-56304.018	3426996.693	
BCC4	603.016	-56299.453	3426986.261	
PI4	628.456	-56289.068	3426962.530	110.000
ECC4	653.896	-56269.185	3426945.928	
BCC5	697.938	-56235.379	3426917.699	
PI5	707.598	-56227.816	3426911.384	40.000
ECC5	717.258	-56218.186	3426909.304	
BCC6	1007.093	-55934.885	3426848.110	
PI6	1022.281	-55919.714	3426844.833	60.000
ECC6	1037.468	-55904.858	3426849.323	
END	1075.929	-55868.042	3426860.451	

Road Curve List

No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	175.00	0.00	0.00	50.86	50.86	32°24'38"
2	140.00	0.00	0.00	136.44	136.44	88°31'25"
3	118.00	0.00	0.00	65.87	65.87	58°20'36"
4	110.00	0.00	0.00	25.90	25.90	26°30'06"
5	40.00	0.00	0.00	9.85	9.85	27°40'26"
6	60.00	0.00	0.00	15.52	15.52	29°00'23"
7	0.00	0.00	0.00	0.00	0.00	0°00'00"

CLIENT:

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9755

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Email: vanzyt@senqu.gov.za

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THEWO & SMMS - JV

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Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER:
L. MARAH

PROF. Reg.No:
920281

DATE:
2024-03-25

SIGNATURE:

DESIGN BY:
T. TSHABALALA

DRAWN BY:
B. MVUKUZO

CHECKED BY:
L. MARAH

APPROVED BY:
L. MARAH

REVISIONS

REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME:
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

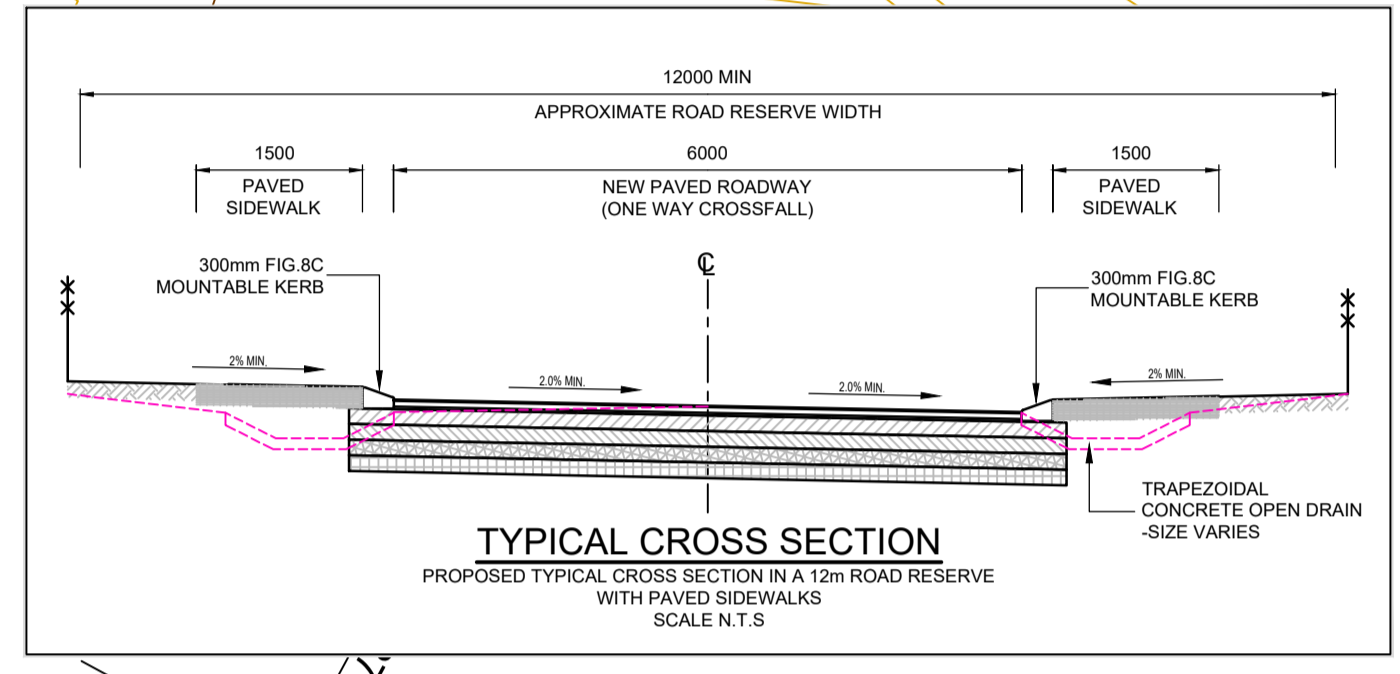
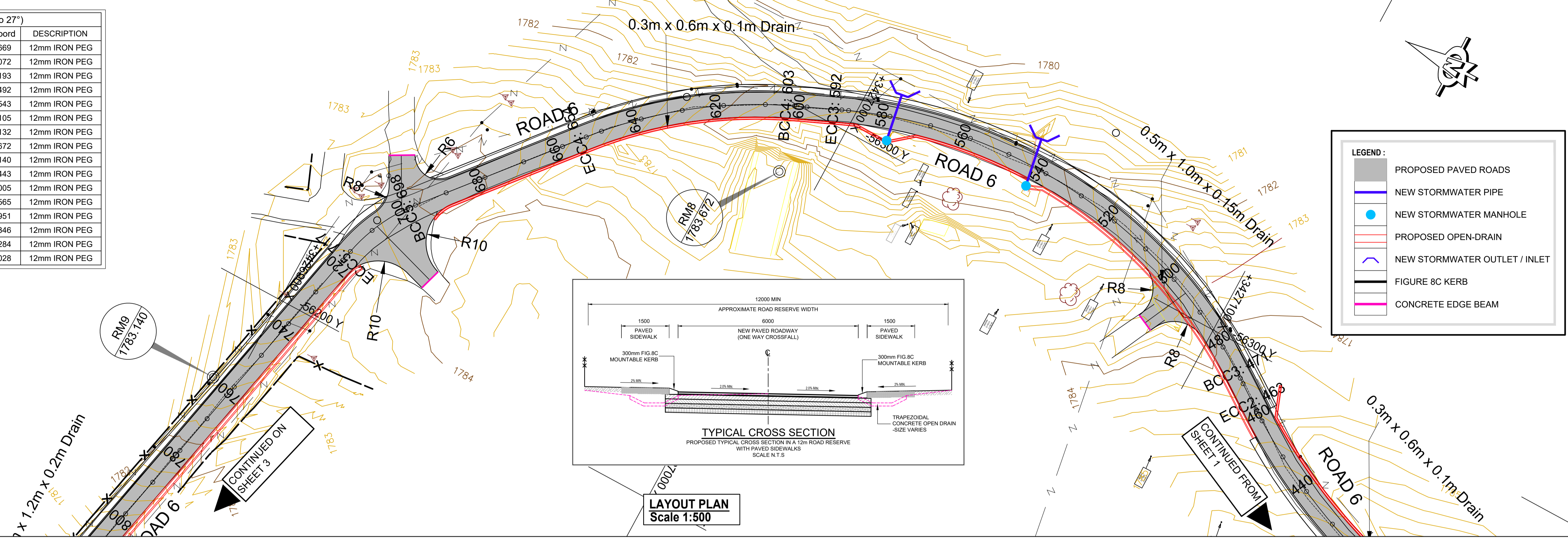
TITLE:
ROAD 6 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:
TENDER

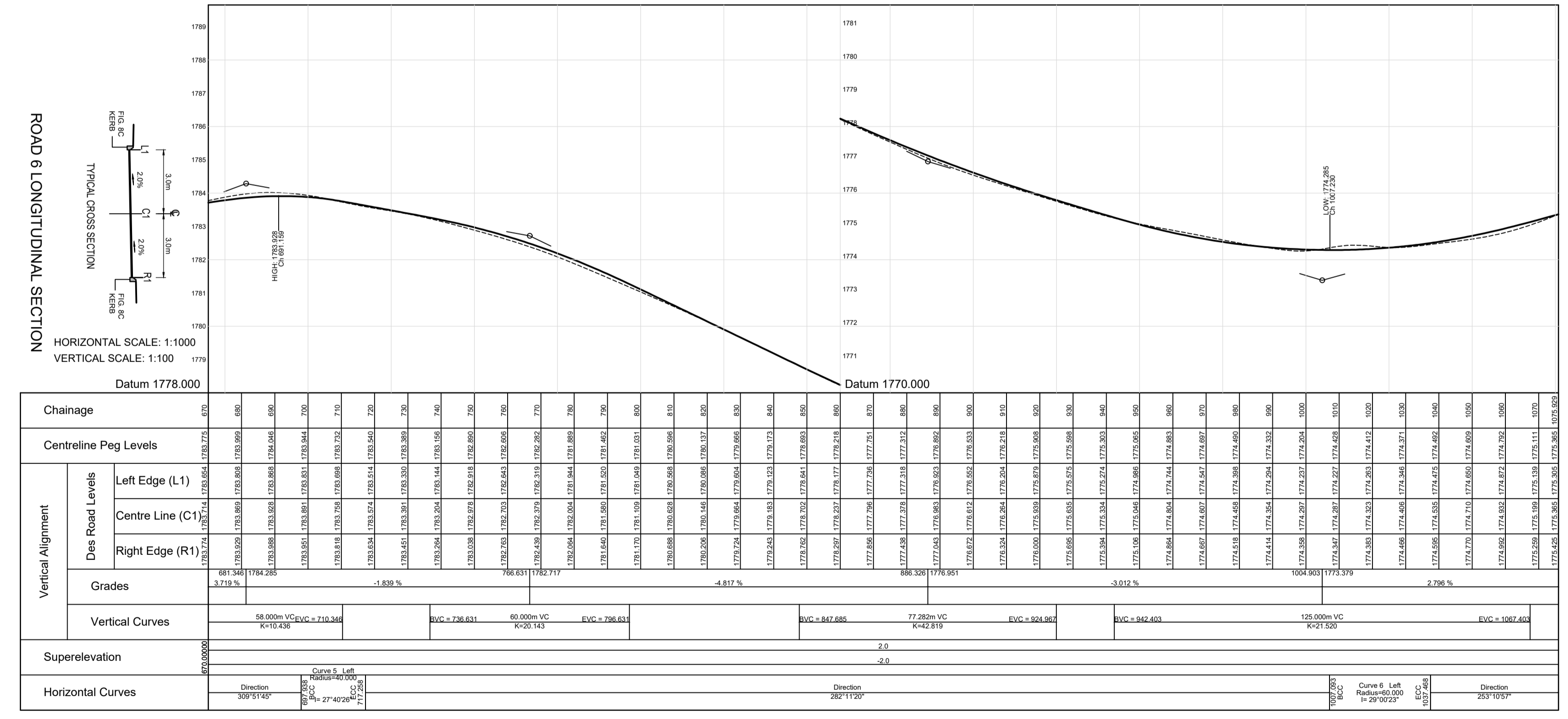
DATE	SCALE	SHEET	REV	A1
2024-03-25	AS SHOWN	1 OF 3	0	A1

DWG NO:
P1027-BE-CIV-RD-LS06

BENCHMARKS (WGS 84 Lo 27°)				
Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
RM2	-56966.682	3427158.602	1786.072	12mm IRON PEG
RM3	-56950.705	3426872.382	1786.193	12mm IRON PEG
RM4	-57176.356	3426824.569	1788.492	12mm IRON PEG
RM5	-56992.263	3426494.005	1785.543	12mm IRON PEG
RM6	-56407.773	3427462.688	1787.105	12mm IRON PEG
RM7	-56262.604	3427264.455	1788.132	12mm IRON PEG
RM8	-56283.916	3426990.566	1783.672	12mm IRON PEG
RM9	-56176.110	3426894.703	1783.140	12mm IRON PEG
RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
RM12	-55978.204	3427231.274	1791.565	12mm IRON PEG
RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG



LAYOUT PLAN
Scale 1:500



Longsection for 670 to 1075

Road List				
Road 6				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56447.194	3427515.664	0.000
BCC1	118.096	-56404.093	3427405.714	175.000
PI1	167.592	-56385.531	3427358.363	175.000
ECC1	217.088	-56344.481	3427328.337	
BCC2	246.732	-56320.555	3427310.836	
PI2	354.884	-56210.432	3427230.286	140.000
ECC2	463.036	-56288.118	3427118.124	
BCC3	471.472	-56292.921	3427111.189	
PI3	531.551	-56330.427	3427057.038	118.000
ECC3	591.629	-56304.018	3426996.693	
BCC4	603.016	-56299.453	3426986.261	
PI4	628.456	-56289.068	3426962.530	110.000
ECC4	653.896	-56269.185	3426945.928	
BCC5	697.938	-56235.379	3426917.699	
PI5	707.598	-56227.816	3426911.384	40.000
ECC5	717.258	-56218.186	3426909.304	
BCC6	1007.093	-55934.885	3426848.110	
PI6	1022.281	-55919.714	3426844.833	60.000
ECC6	1037.468	-55904.858	3426849.323	
END	1075.929	-55868.042	3426860.451	

Road Curve List						
Road 6						
No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	175.00	0.00	0.00	50.86	50.86	32°24'38"
2	140.00	0.00	0.00	136.44	136.44	88°31'25"
3	118.00	0.00	0.00	65.87	65.87	58°20'36"
4	110.00	0.00	0.00	25.90	25.90	26°30'06"
5	40.00	0.00	0.00	9.85	9.85	27°40'26"
6	60.00	0.00	0.00	15.52	15.52	29°00'23"
7	0.00	0.00	0.00	0.00	0.00	0°00'00"

CLIENT:
19 Murray Street
Lady Grey
9755
Tel: (051) 603 1449
Email: vanzyit@senqu.gov.za

CONSULTANT:
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58 Brebner Road
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9301
Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

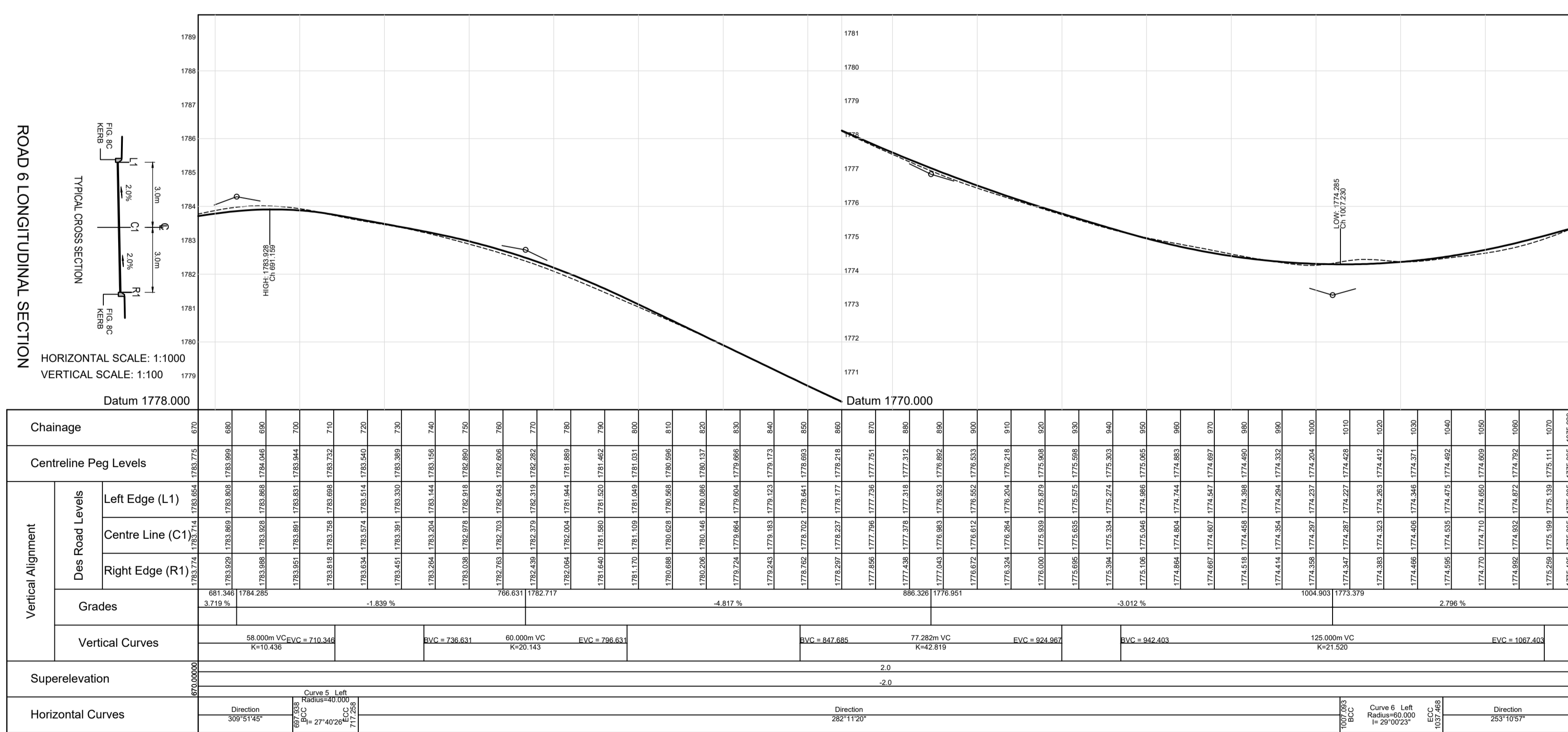
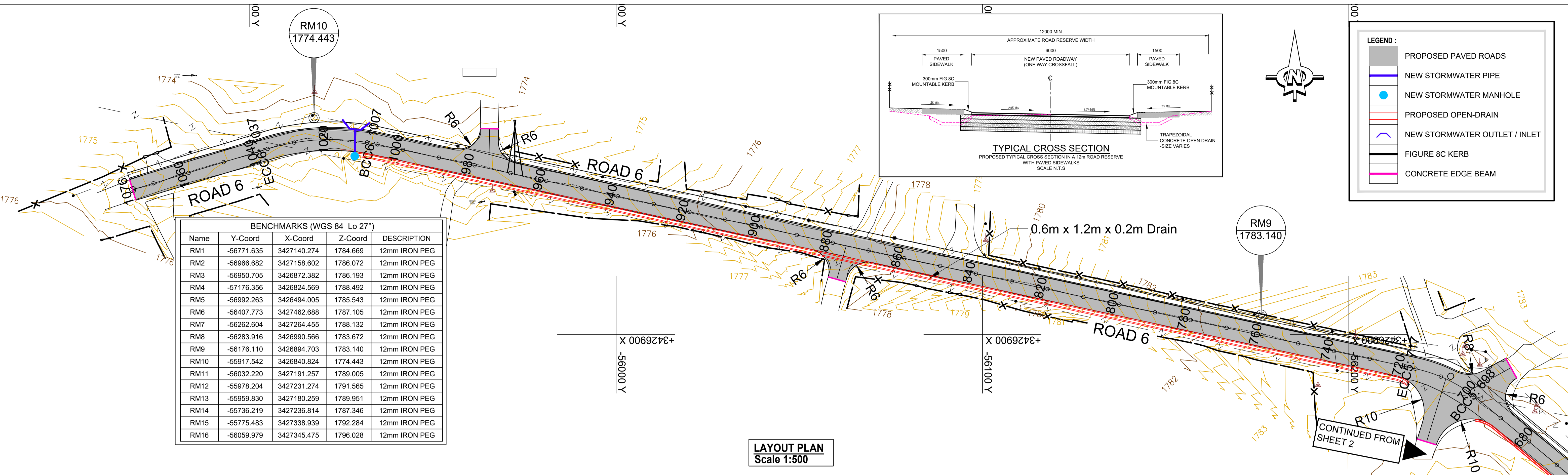
PROFESSIONAL ENGINEER:
L. MARAH
PROF. Reg.No:
920281
DATE:
2024-03-25
SIGNATURE:

DESIGN BY:
T. TSHABALALA
DRAWN BY:
B. MVUKUZO
CHECKED BY:
L. MARAH
APPROVED BY:
L. MARAH

REVISIONS				
REV	DATE	DESCRIPTION	BY	
0	2024-03-25	ISSUED FOR TENDER	L.M.	

PROJECT NAME
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER
TITLE
ROAD 6 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:
TENDER
DATE: 2024-03-25
SCALE: AS SHOWN
SHEET: 2 OF 3
REV: 0
A1
DWG NO: P1027-BE-CIV-RD-LS06



Longsection for 670 to 1075

Road List

Position	SV	Y-Coord	X-Coord	Radius
START	0	-56447.194	3427515.664	0.000
BCC1	118.096	-56404.093	3427405.714	175.000
PI1	167.592	-56385.531	3427358.363	175.000
ECC1	217.088	-56344.481	3427328.337	
BCC2	246.732	-56320.555	3427310.836	
PI2	354.884	-56210.432	3427230.286	140.000
ECC2	463.036	-56288.118	3427118.124	
BCC3	471.472	-56292.921	3427111.189	
PI3	531.551	-56330.427	3427057.038	118.000
ECC3	591.629	-56304.018	3426996.693	
BCC4	603.016	-56299.453	3426986.261	
PI4	628.456	-56289.068	3426962.530	110.000
ECC4	653.896	-56269.185	3426945.928	
BCC5	697.938	-56235.379	3426917.699	
PI5	707.598	-56227.816	3426911.384	40.000
ECC5	717.258	-56218.186	3426909.304	
BCC6	1007.093	-55934.885	3426848.110	
PI6	1022.281	-55919.714	3426844.833	60.000
ECC6	1037.468	-55904.858	3426849.323	
END	1075.929	-55868.042	3426860.451	

Road Curve List

No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	175.00	0.00	0.00	50.86	50.86	32°24'38"
2	140.00	0.00	0.00	136.44	136.44	88°31'25"
3	118.00	0.00	0.00	65.87	65.87	58°20'36"
4	110.00	0.00	0.00	25.90	25.90	26°30'06"
5	40.00	0.00	0.00	9.85	9.85	27°40'26"
6	60.00	0.00	0.00	15.52	15.52	29°00'23"
7	0.00	0.00	0.00	0.00	0.00	0°00'00"

CLIENT:
19 Murray Street
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9755
Tel: (051) 603 1449
Email: vanzyt@senqu.gov.za

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Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER:
L. MARAH
PROF. Reg.No: 920281
DATE: 2024-03-25
SIGNATURE:

DESIGN BY:
T. TSHABALALA
DRAWN BY:
B. MVUKUZO
CHECKED BY:
L. MARAH
APPROVED BY:
L. MARAH

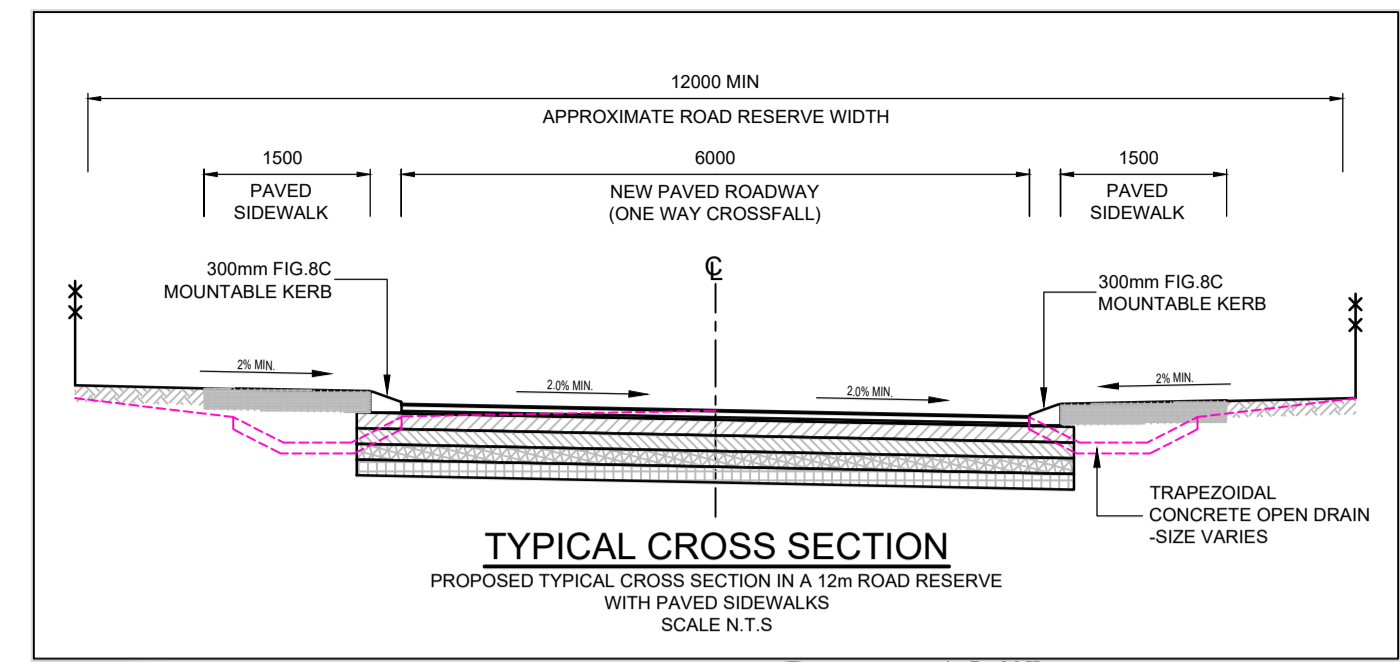
REVISIONS

REV	DATE	DESCRIPTION	BY
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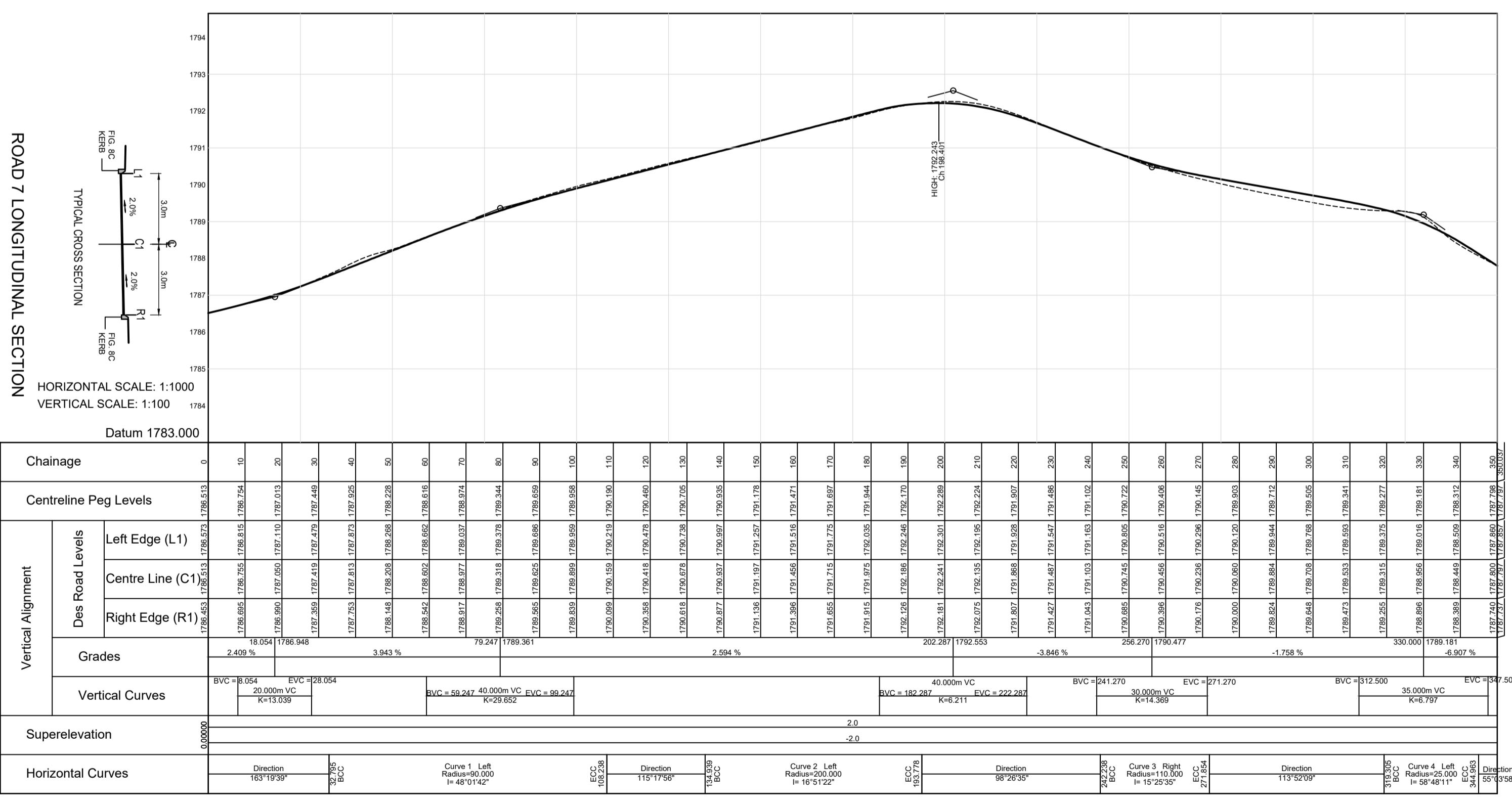
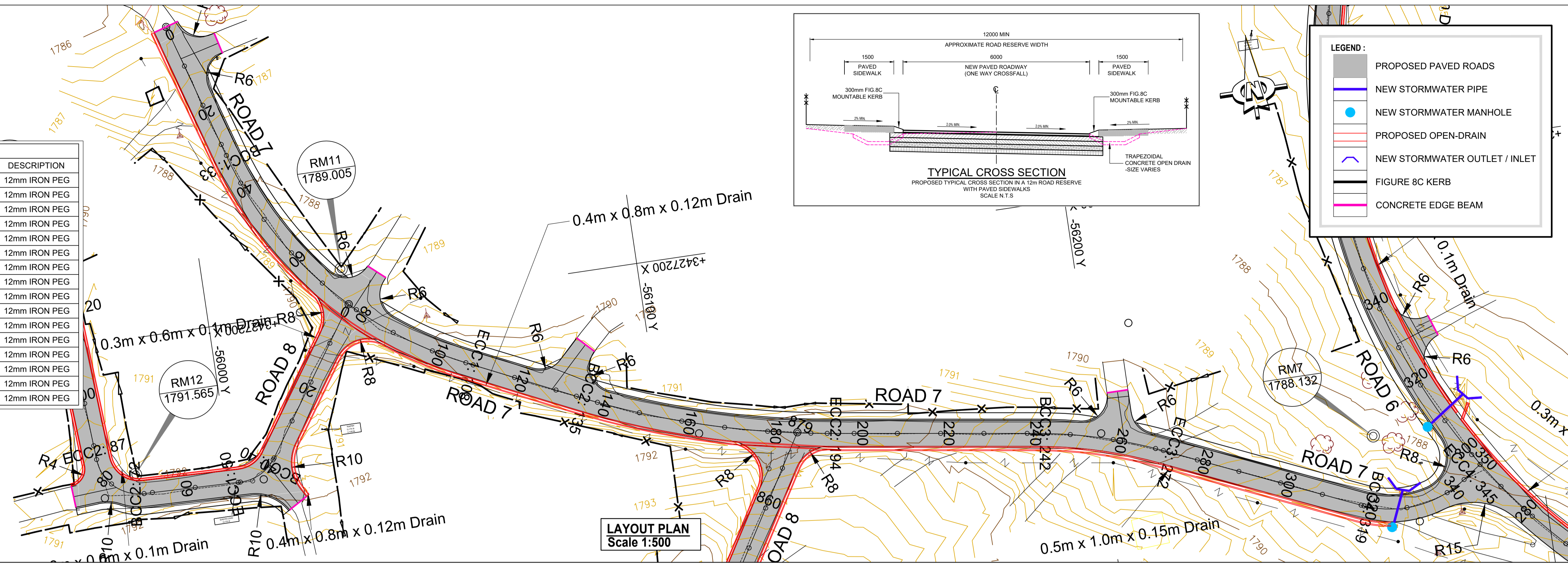
PROJECT NAME:
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER
TITLE:
ROAD 6 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:
TENDER
DATE: 2024-03-25
SCALE: AS SHOWN
SHEET: 3 OF 3
REV: 0
A1
DWG NO: P1027-BE-CIV-RD-LS06

BENCHMARKS (WGS 84 Lo 27°)				
Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
RM2	-56966.682	3427158.602	1786.072	12mm IRON PEG
RM3	-56950.705	3426872.382	1786.193	12mm IRON PEG
RM4	-57176.356	3426824.569	1788.492	12mm IRON PEG
RM5	-56992.263	3426494.005	1785.543	12mm IRON PEG
RM6	-56407.773	3427462.688	1787.105	12mm IRON PEG
RM7	-56262.604	3427264.455	1788.132	12mm IRON PEG
RM8	-56283.916	3426990.566	1783.672	12mm IRON PEG
RM9	-56176.110	3426894.703	1783.140	12mm IRON PEG
RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
RM12	-55978.204	3427231.274	1791.565	12mm IRON PEG
RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG



LEGEND :	
	PROPOSED PAVED ROADS
	NEW STORMWATER PIPE
	NEW STORMWATER MANHOLE
	PROPOSED OPEN-DRAIN
	NEW STORMWATER OUTLET / INLET
	FIGURE 8C KERB
	CONCRETE EDGE BEAM



Road List				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56000.390	3427129.943	0.000
BCC1	32.795	-56009.799	3427161.359	
PI1	70.517	-56021.303	3427199.771	90.000
ECC1	108.238	-56057.555	3427216.906	
BCC2	134.939	-56081.695	3427228.317	
PI2	164.358	-56108.486	3427240.980	200.000
ECC2	193.778	-56137.798	3427245.331	
BCC3	242.238	-56185.733	3427252.446	
PI3	257.046	-56200.470	3427254.634	110.000
ECC3	271.854	-56214.094	3427260.663	
BCC4	319.305	-56257.487	3427279.864	
PI4	332.134	-56270.370	3427285.564	25.000
ECC4	344.963	-56281.919	3427277.497	
END	350.037	-56286.079	3427274.592	

Road Curve List						
No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	90.00	0.00	0.00	40.10	40.10	48°01'42"
2	200.00	0.00	0.00	29.63	29.63	16°51'22"
3	110.00	0.00	0.00	14.90	14.90	15°25'35"
4	25.00	0.00	0.00	14.09	14.09	58°48'11"
5	0.00	0.00	0.00	0.00	0.00	0°00'00"

Longsection for 0 to 350

CLIENT:

 19 Murray Street
 Lady Grey
 9755
 Tel: (051) 603 1449
 Email: vanzyit@senqu.gov.za

CONSULTANT:

 THEWO & SMMS - JV
 58 Brebner Road
 Westdene
 Bloemfontein
 9301
 Tel: +27 (051) 430 1321
 Email: PMO@thewo.co.za

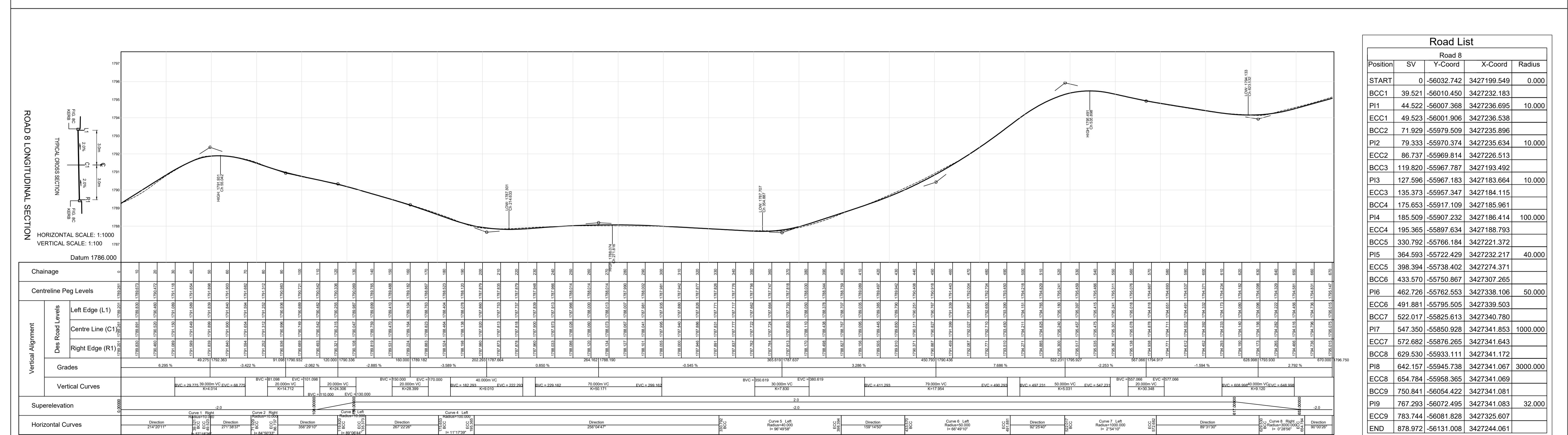
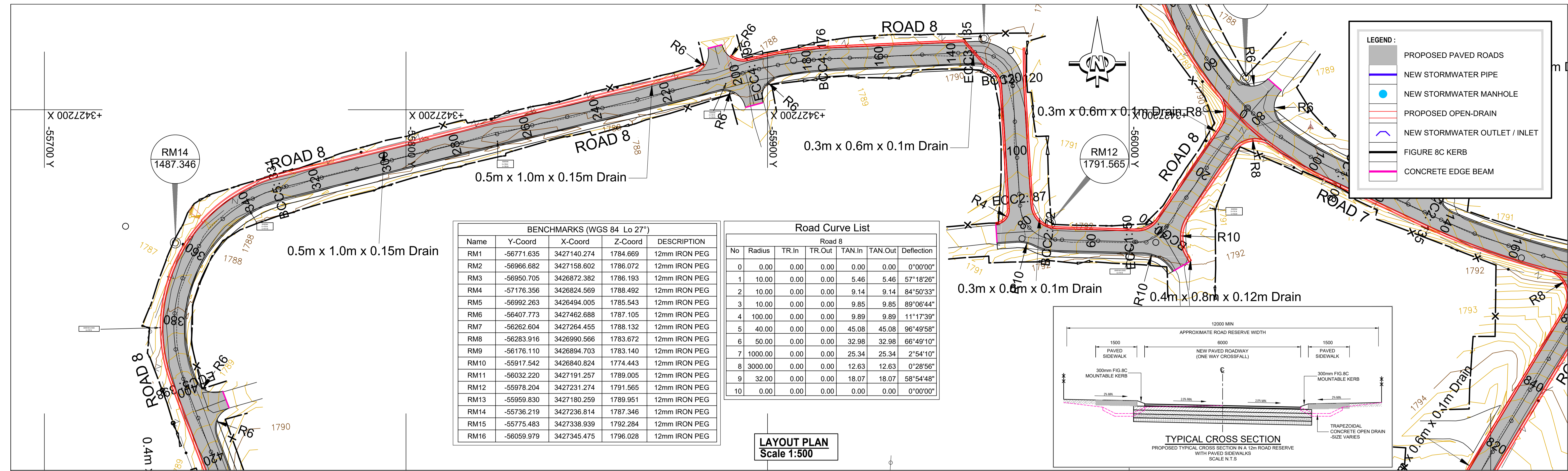
PROFESSIONAL ENGINEER:
 L. MARAH
 PROF. Reg.No:
 920281
 DATE:
 2024-03-25
 SIGNATURE:

DESIGN BY:
 T. TSHABALALA
 DRAWN BY:
 B. MVUKUZO
 CHECKED BY:
 L. MARAH
 APPROVED BY:
 L. MARAH

REVISIONS			
REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER
 TITLE
ROAD 7 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS:
TENDER
 DATE: 2024-03-25
 SCALE: AS SHOWN
 SHEET: 1 OF 1
 REV: 0
 DWG NO: P1027-BE-CIV-RD-LS07



CLIENT: 19 Murray Street, Lady Grey, 9755. Tel: (051) 603 1449. Email: vanzyit@senqu.gov.za

CONSULTANT: THEWO & SMMS - JV. 58 Brebner Road, Westdene, Bloemfontein, 9301. Tel: +27 (051) 430 1321. Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER: L. MARAH. PROF. Reg.No: 920281. DATE: 2024-03-25. SIGNATURE:

DESIGN BY: T. TSHABALALA. DRAWN BY: B. MVUKUZO. CHECKED BY: L. MARAH. APPROVED BY: L. MARAH.

REVISIONS:

REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME: SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

TITLE: ROAD 8 - LAYOUT AND LONGITUDINAL SECTION

PROJECT STATUS: TENDER

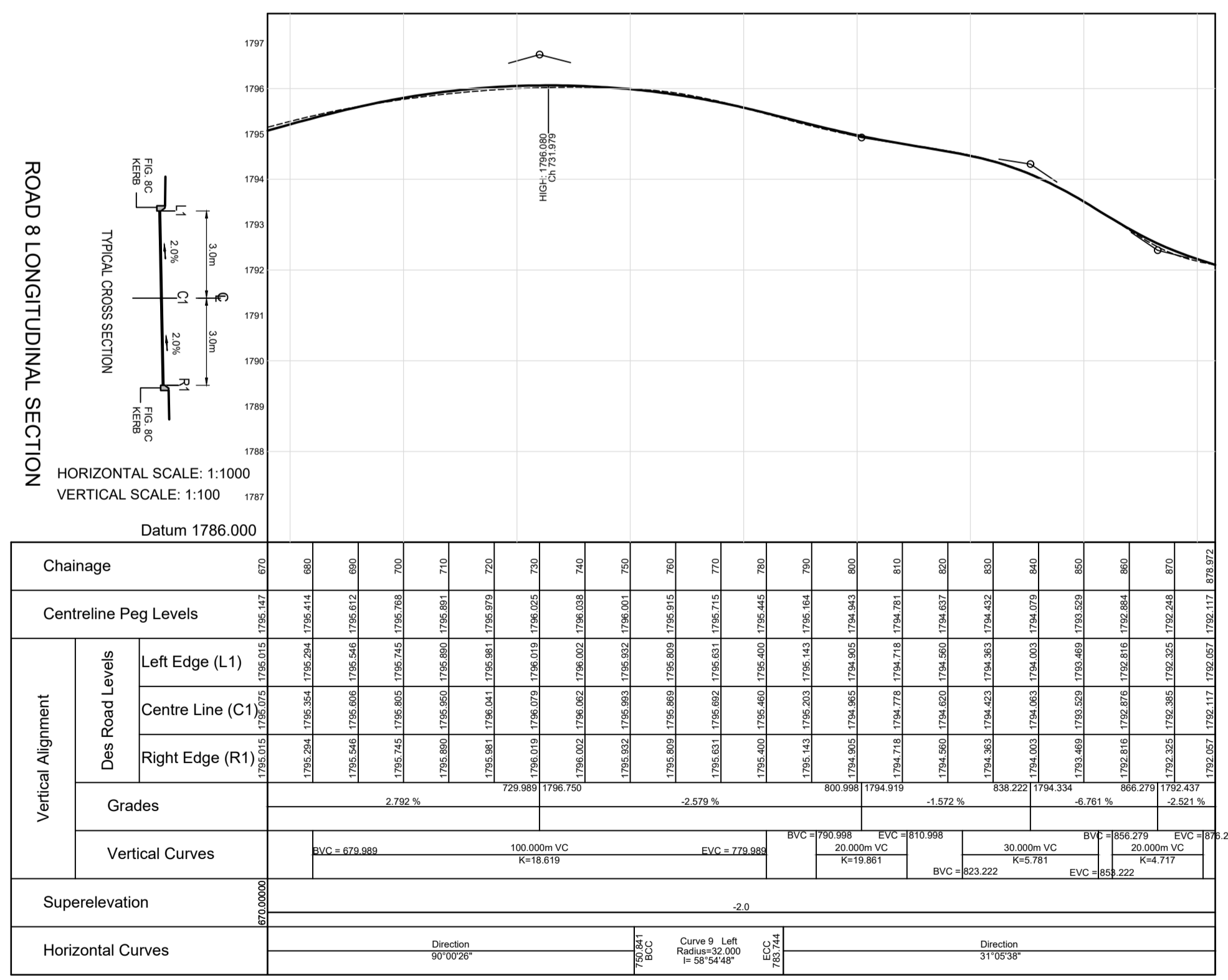
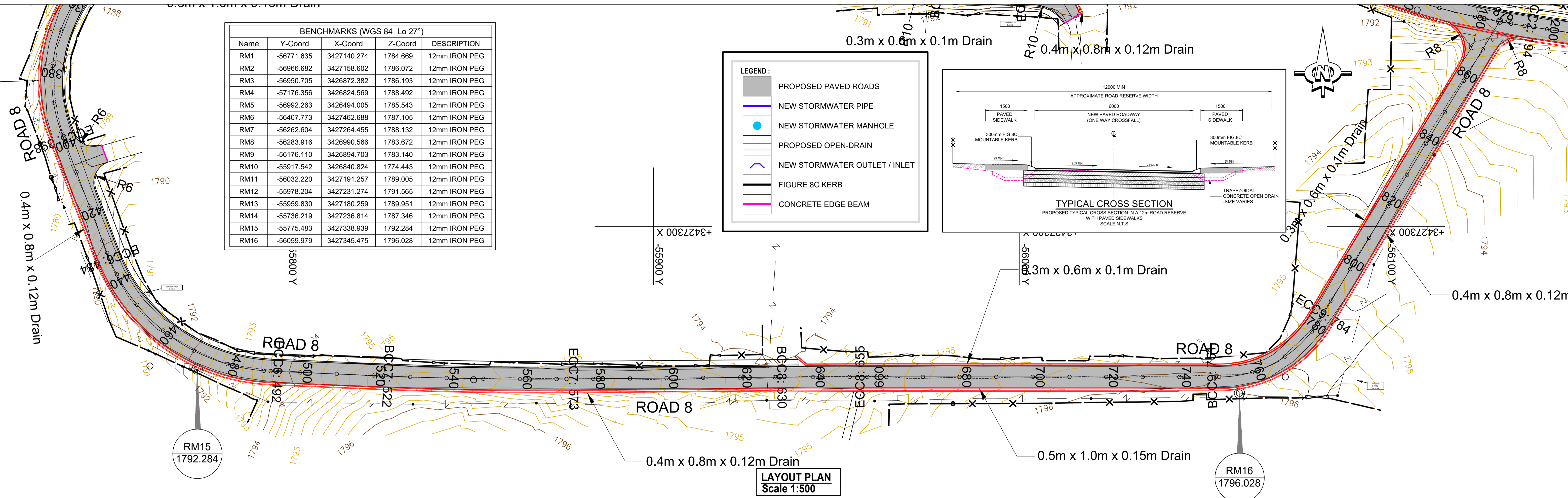
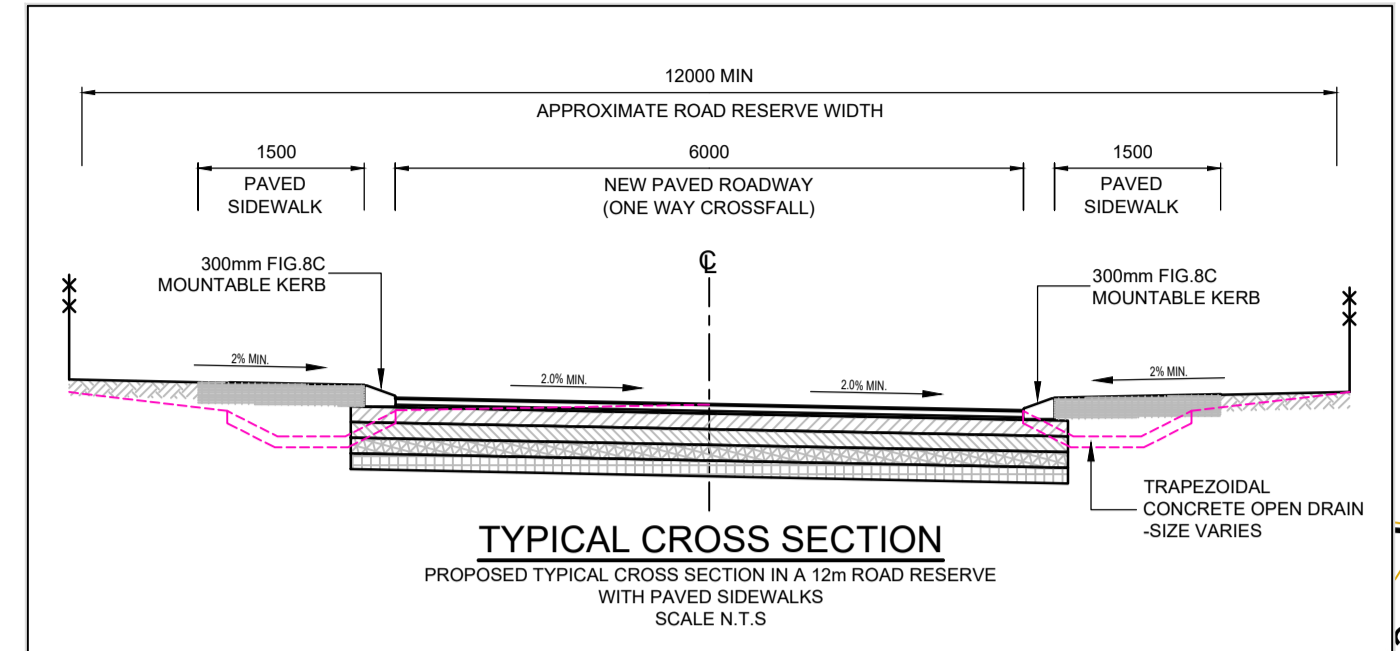
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2024-03-25	AS SHOWN	1 OF 2	0	A1

DWG NO: P1027-BE-CIV-RD-LS08

BENCHMARKS (WGS 84 Lo 27°)				
Name	Y-Coord	X-Coord	Z-Coord	DESCRIPTION
RM1	-56771.635	3427140.274	1784.669	12mm IRON PEG
RM2	-56966.682	3427158.602	1786.072	12mm IRON PEG
RM3	-56950.705	3426872.382	1786.193	12mm IRON PEG
RM4	-57176.356	3426824.569	1788.492	12mm IRON PEG
RM5	-56992.263	3426494.005	1785.543	12mm IRON PEG
RM6	-56407.773	3427462.688	1787.105	12mm IRON PEG
RM7	-56262.604	3427264.455	1788.132	12mm IRON PEG
RM8	-56283.916	3426990.566	1783.672	12mm IRON PEG
RM9	-56176.110	3426894.703	1783.140	12mm IRON PEG
RM10	-55917.542	3426840.824	1774.443	12mm IRON PEG
RM11	-56032.220	3427191.257	1789.005	12mm IRON PEG
RM12	-55978.204	3427231.274	1791.565	12mm IRON PEG
RM13	-55959.830	3427180.259	1789.951	12mm IRON PEG
RM14	-55736.219	3427236.814	1787.346	12mm IRON PEG
RM15	-55775.483	3427338.939	1792.284	12mm IRON PEG
RM16	-56059.979	3427345.475	1796.028	12mm IRON PEG

LEGEND :

- PROPOSED PAVED ROADS
- NEW STORMWATER PIPE
- NEW STORMWATER MANHOLE
- PROPOSED OPEN-DRAIN
- NEW STORMWATER OUTLET / INLET
- FIGURE 8C KERB
- CONCRETE EDGE BEAM



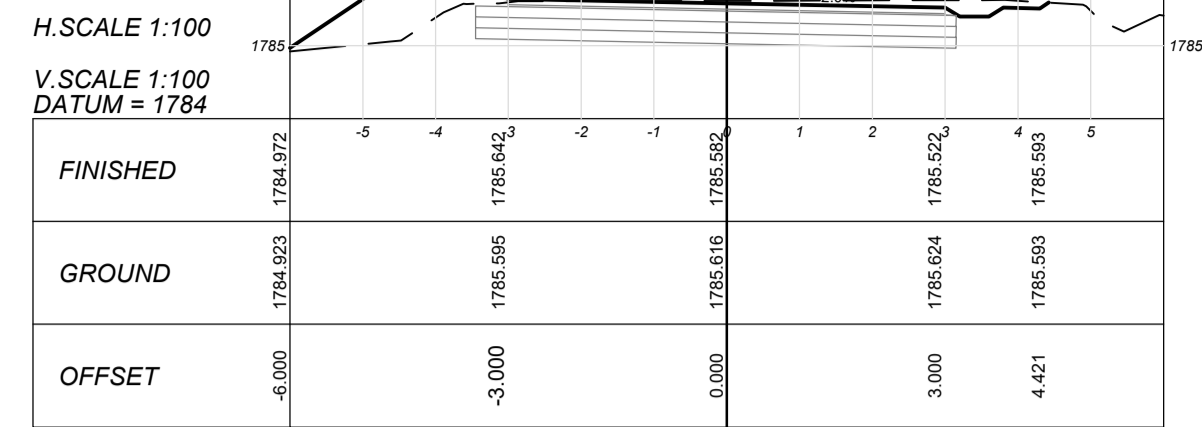
Road Curve List						
Road 8						
No	Radius	TR.In	TR.Out	TAN.In	TAN.Out	Deflection
0	0.00	0.00	0.00	0.00	0.00	0°00'00"
1	10.00	0.00	0.00	5.46	5.46	57°18'26"
2	10.00	0.00	0.00	9.14	9.14	84°50'33"
3	10.00	0.00	0.00	9.85	9.85	89°06'44"
4	100.00	0.00	0.00	9.89	9.89	11°17'39"
5	40.00	0.00	0.00	45.08	45.08	96°49'58"
6	50.00	0.00	0.00	32.98	32.98	66°49'10"
7	1000.00	0.00	0.00	25.34	25.34	2°54'10"
8	3000.00	0.00	0.00	12.63	12.63	0°28'56"
9	32.00	0.00	0.00	18.07	18.07	58°54'48"
10	0.00	0.00	0.00	0.00	0.00	0°00'00"

Road List				
Road 8				
Position	SV	Y-Coord	X-Coord	Radius
START	0	-56032.742	3427199.549	0.000
BCC1	39.521	-56010.450	3427232.183	
PI1	44.522	-56007.368	3427236.695	10.000
ECC1	49.523	-56001.906	3427236.538	
BCC2	71.929	-55979.509	3427235.896	
PI2	79.333	-55970.374	3427235.634	10.000
ECC2	86.737	-55969.814	3427226.513	
BCC3	119.820	-55967.787	3427193.492	
PI3	127.596	-55967.183	3427183.664	10.000
ECC3	135.373	-55957.347	3427184.115	
BCC4	175.653	-55917.109	3427185.961	
PI4	185.509	-55907.232	3427186.414	100.000
ECC4	195.365	-55897.634	3427188.793	
BCC5	330.792	-55766.184	3427221.372	
PI5	364.593	-55722.429	3427232.217	40.000
ECC5	398.394	-55738.402	3427274.371	
BCC6	433.570	-55750.867	3427307.265	
PI6	462.726	-55762.553	3427338.106	50.000
ECC6	491.881	-55795.505	3427339.503	
BCC7	522.017	-55825.613	3427340.780	
PI7	547.350	-55850.928	3427341.853	1000.000
ECC7	572.682	-55876.265	3427341.643	
BCC8	629.530	-55933.111	3427341.172	
PI8	642.157	-55945.738	3427341.067	3000.000
ECC8	654.784	-55958.365	3427341.069	
BCC9	750.841	-56054.422	3427341.081	
PI9	767.293	-56072.495	3427341.083	32.000
ECC9	783.744	-56081.828	3427325.607	
END	878.972	-56131.008	3427244.061	

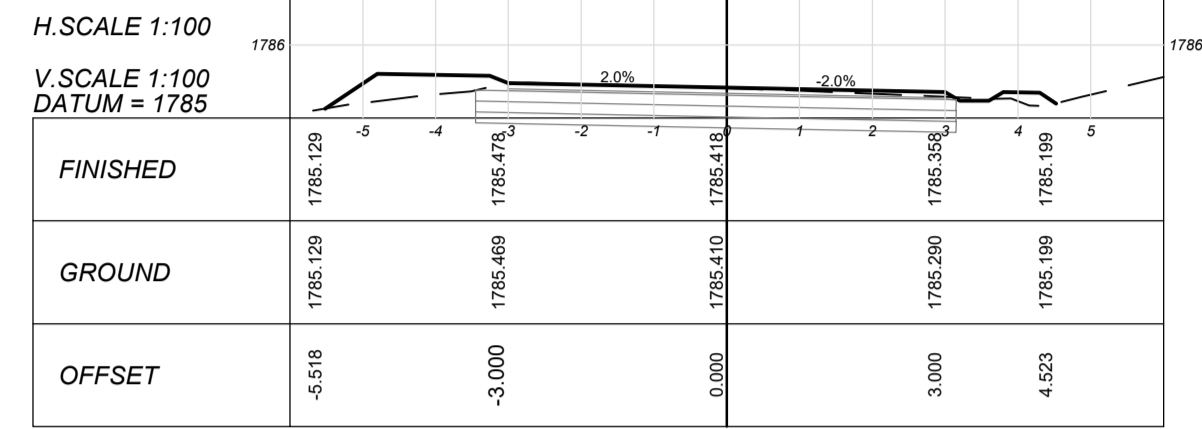
Longsection for 670 to 878

CLIENT: 19 Murray Street Lady Grey 9755 Tel: (051) 603 1449 Email: vanzyt@senqu.gov.za	CONSULTANT: THEWO & SMMS - JV 58 Brebner Road Westdene Bloemfontein 9301 Tel: +27 (051) 430 1321 Email: PMO@thewo.co.za	PROFESSIONAL ENGINEER: L. MARAH PROF. Reg.No: 920281 DATE: 2024-03-25 SIGNATURE:	DESIGN BY: T. TSHABALALA DRAWN BY: B. MVUKUZO CHECKED BY: L. MARAH APPROVED BY: L. MARAH	REVISIONS <table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2024-03-25</td> <td>ISSUED FOR TENDER</td> <td>L.M.</td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	BY	0	2024-03-25	ISSUED FOR TENDER	L.M.	PROJECT NAME SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER TITLE ROAD 8 - LAYOUT AND LONGITUDINAL SECTION	PROJECT STATUS: TENDER <table border="1"> <thead> <tr> <th>DATE</th> <th>SCALE</th> <th>SHEET</th> <th>REV</th> <th>A1</th> </tr> </thead> <tbody> <tr> <td>2024-03-25</td> <td>AS SHOWN</td> <td>2 OF 2</td> <td>0</td> <td>A1</td> </tr> </tbody> </table> DWG NO P1027-BE-CIV-RD-LS08	DATE	SCALE	SHEET	REV	A1	2024-03-25	AS SHOWN	2 OF 2	0	A1
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0	2024-03-25	ISSUED FOR TENDER	L.M.																					
DATE	SCALE	SHEET	REV	A1																				
2024-03-25	AS SHOWN	2 OF 2	0	A1																				

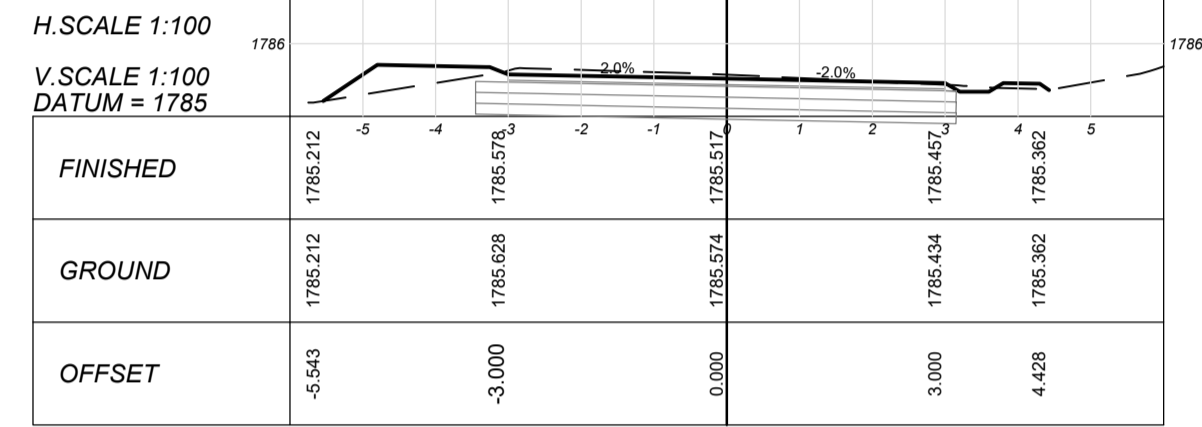
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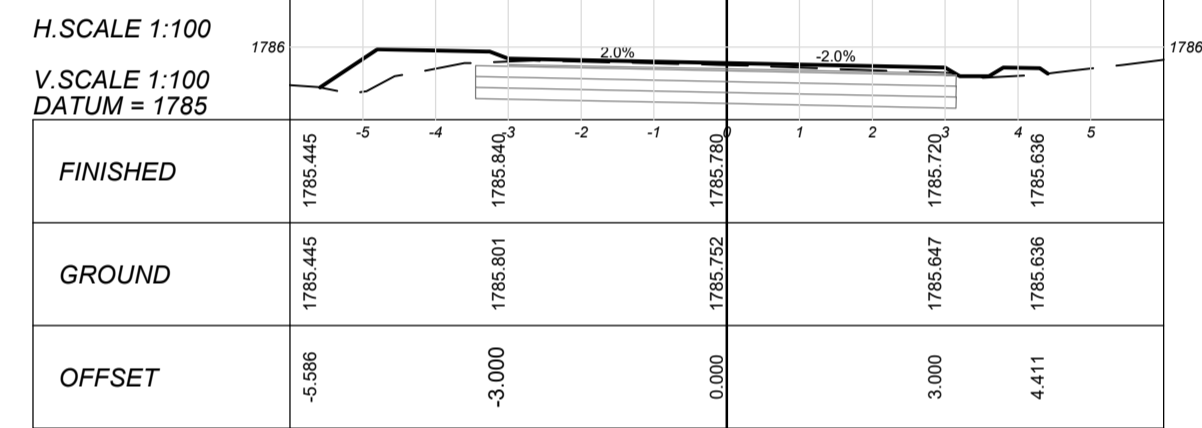
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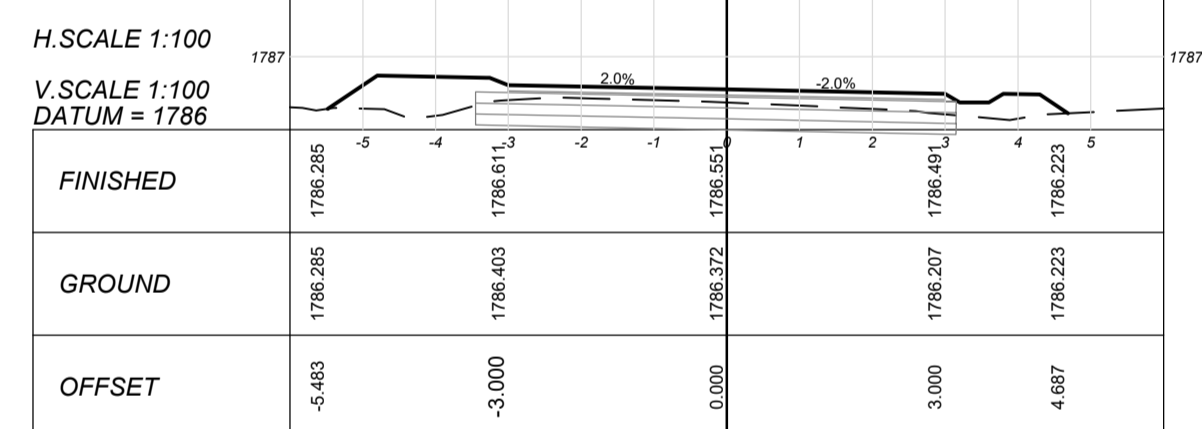
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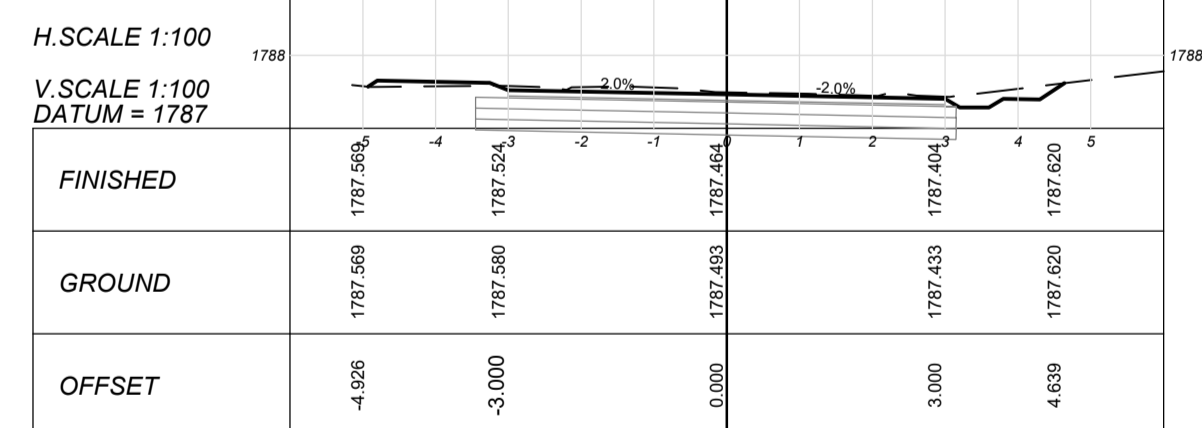
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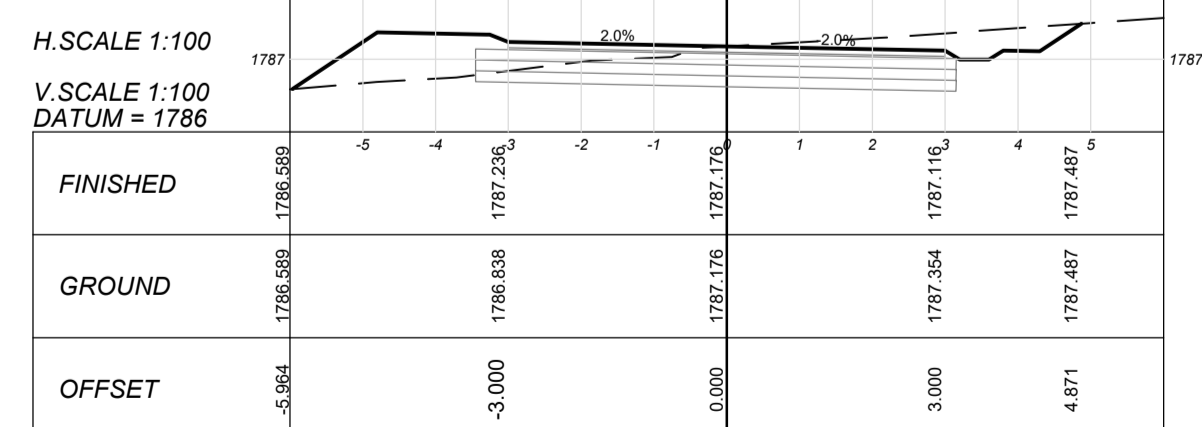
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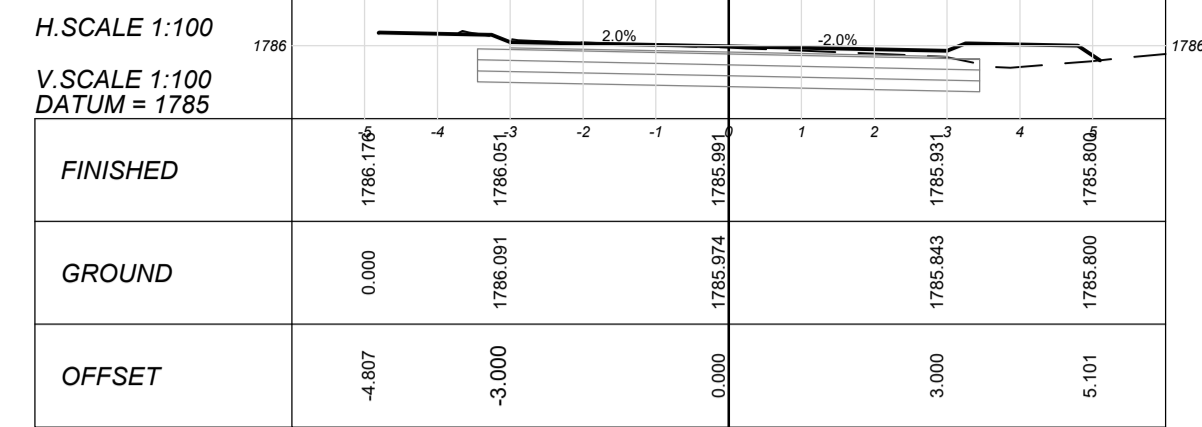
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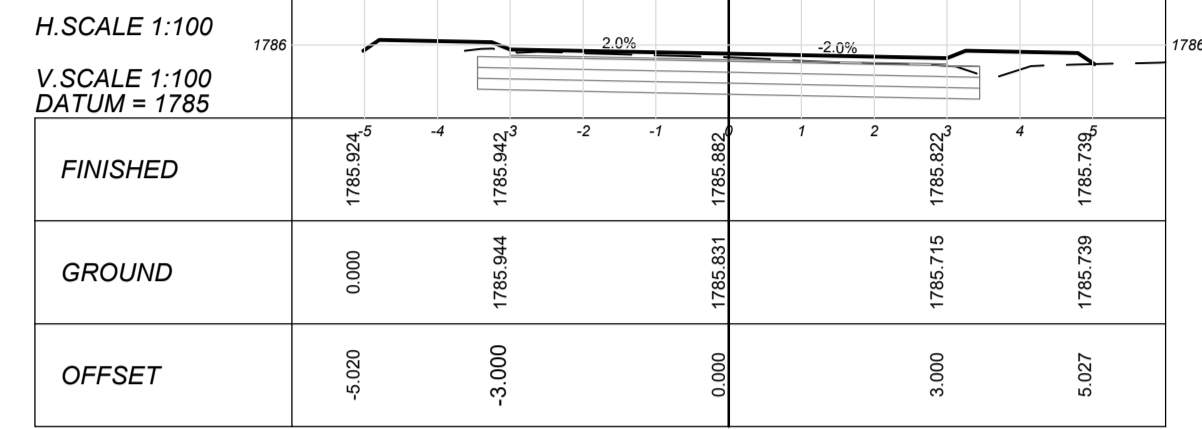
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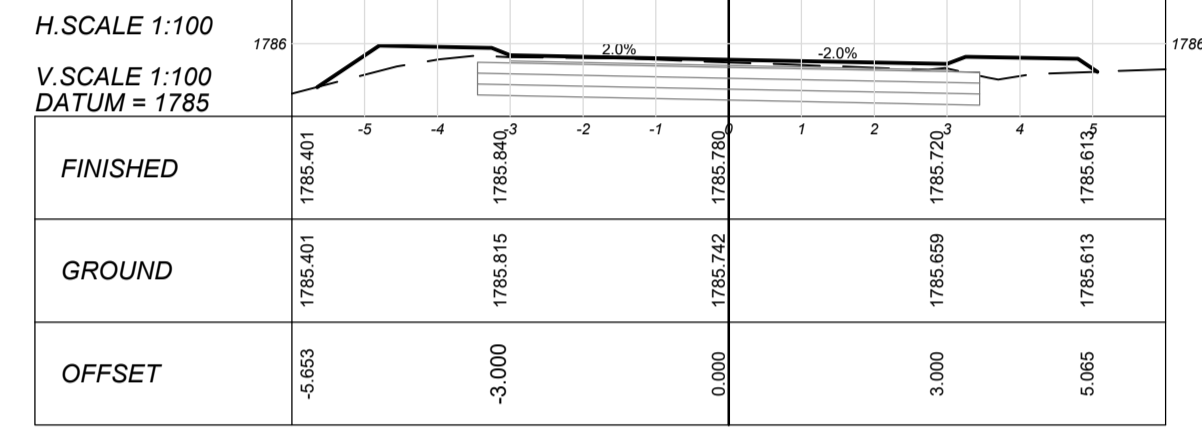
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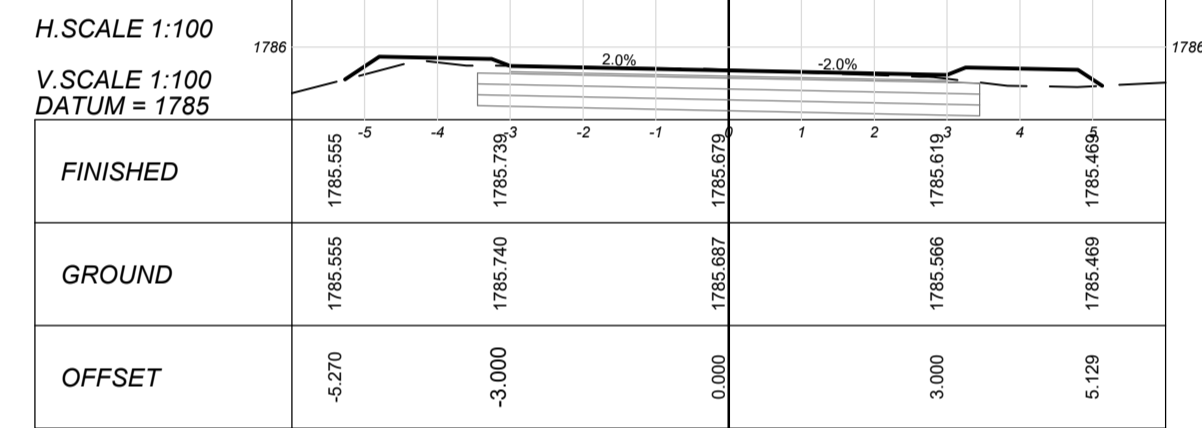
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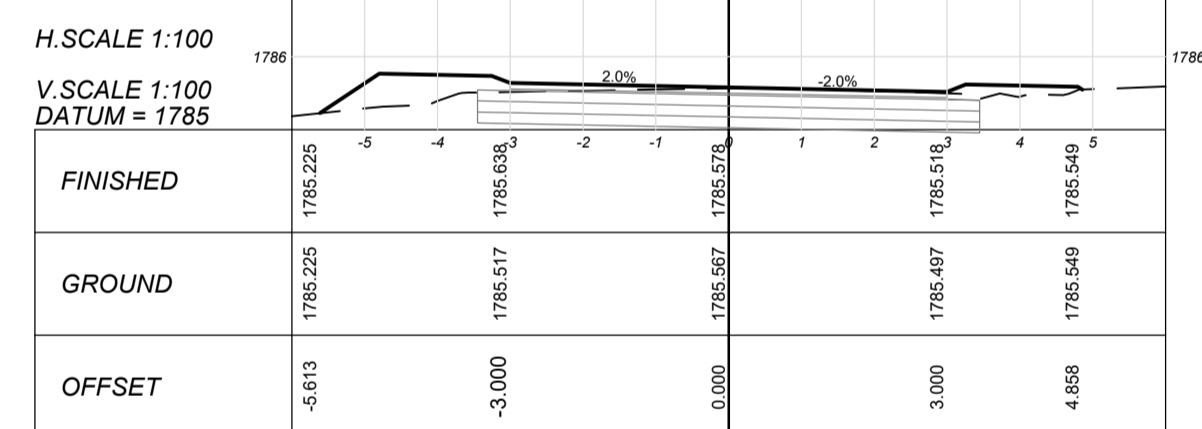
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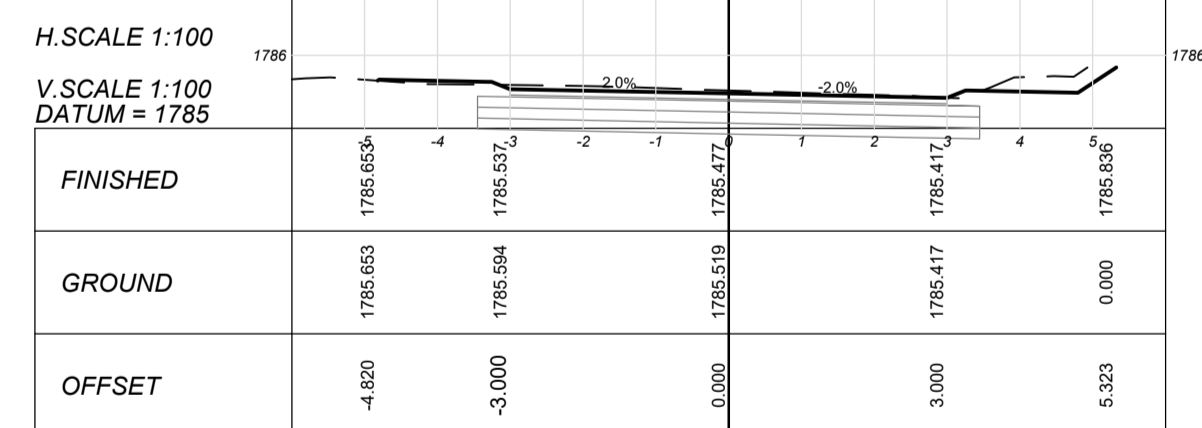
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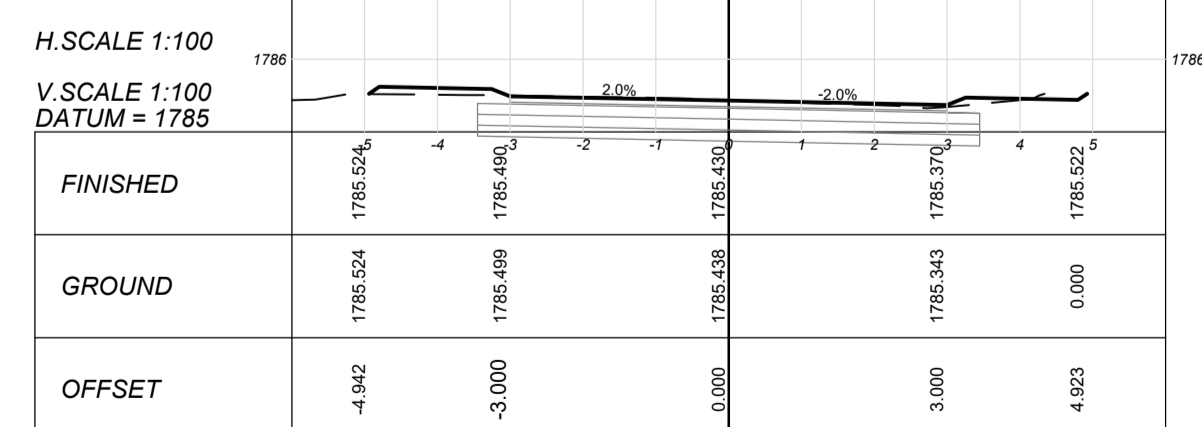
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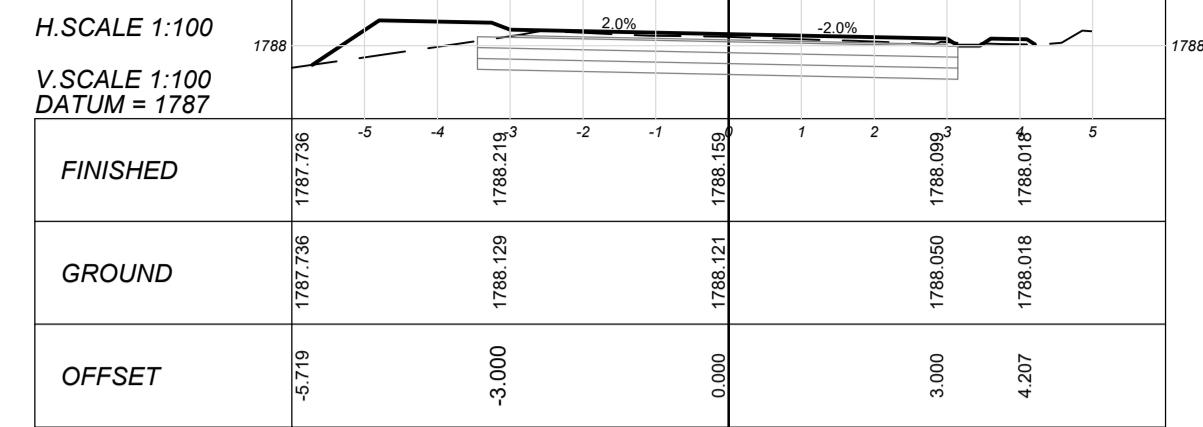
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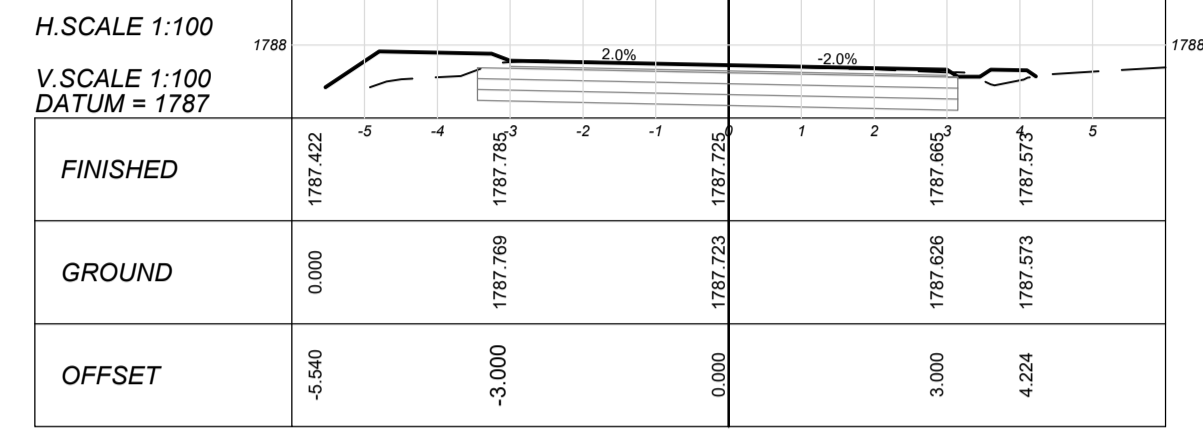
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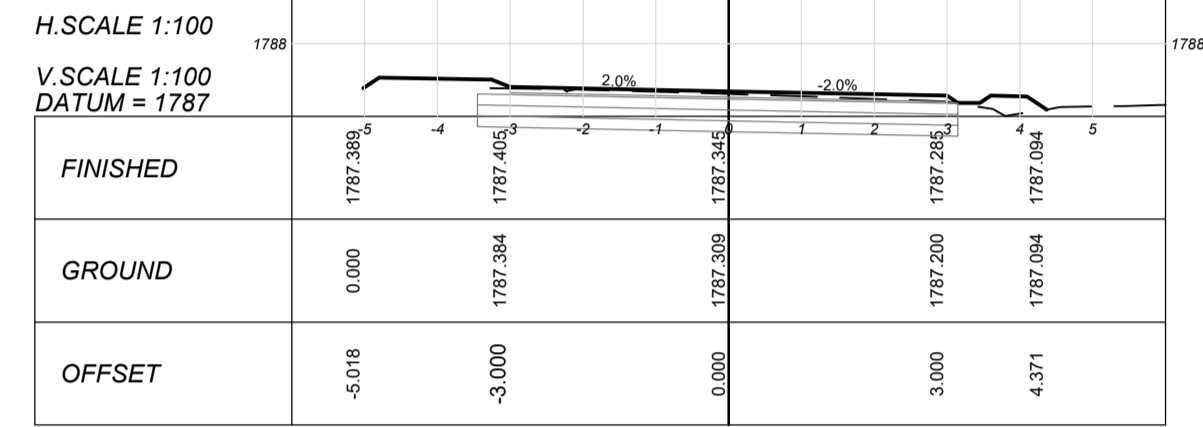
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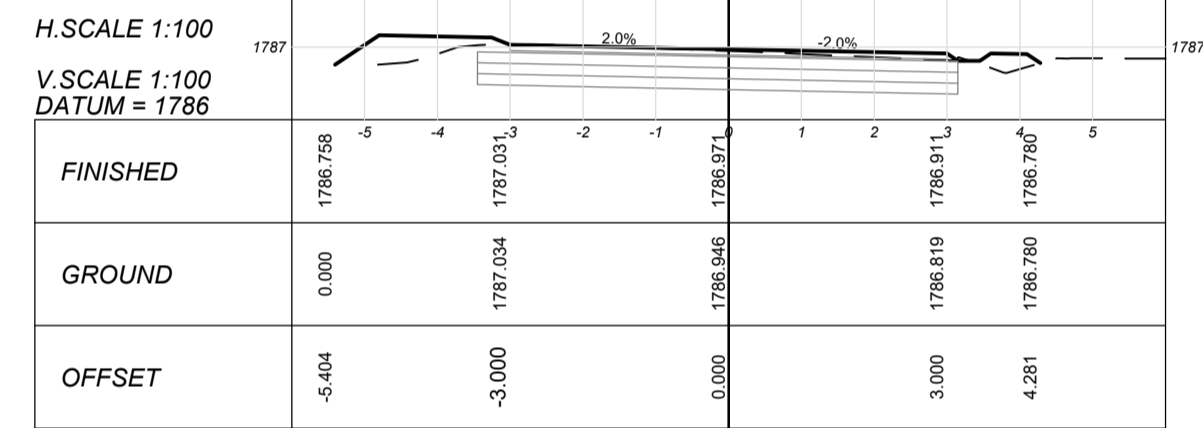
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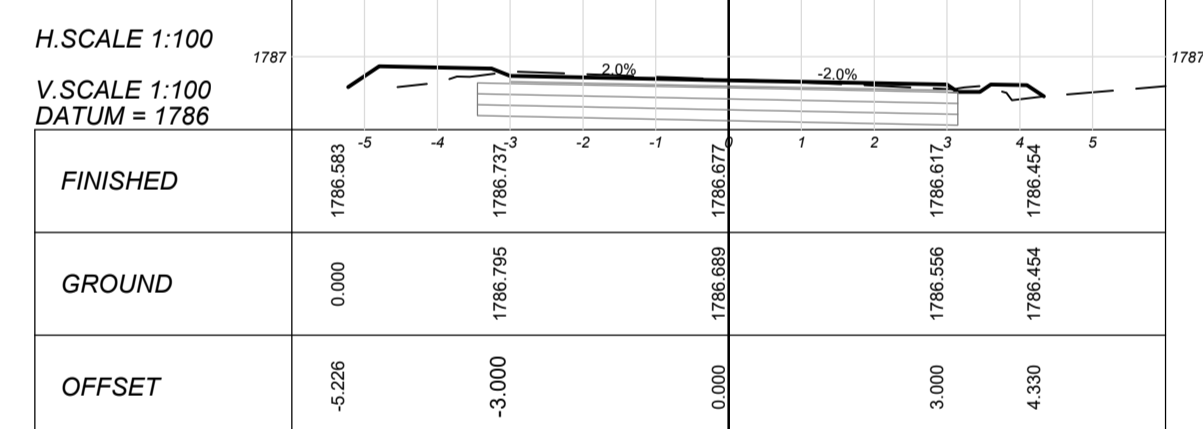
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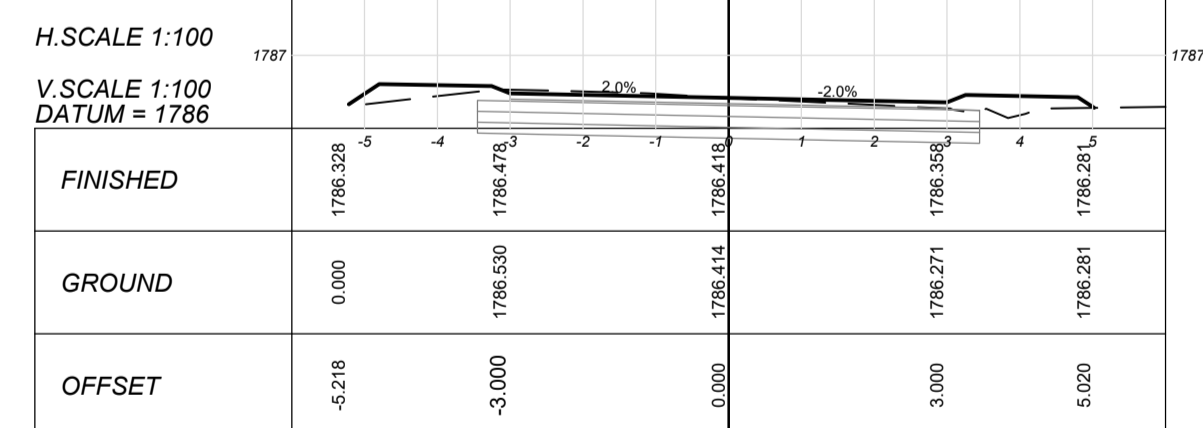
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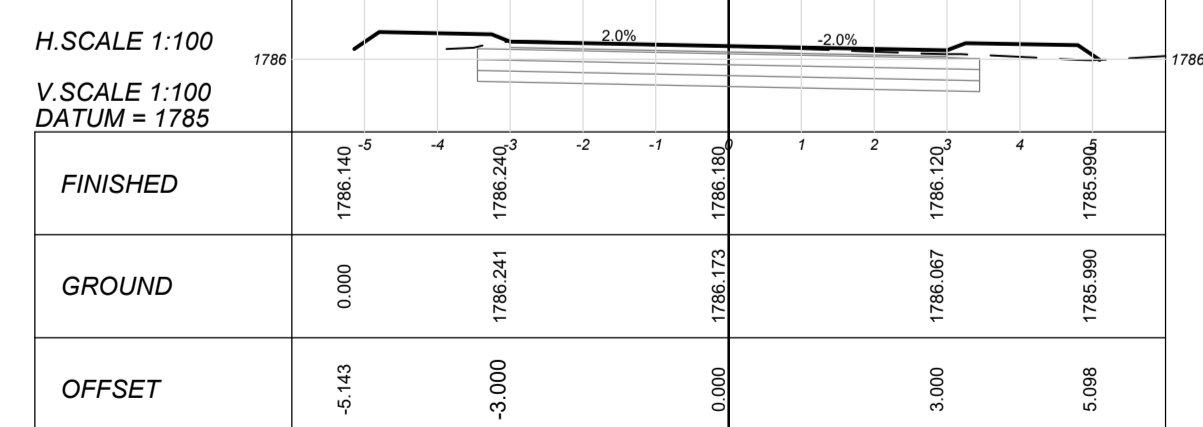
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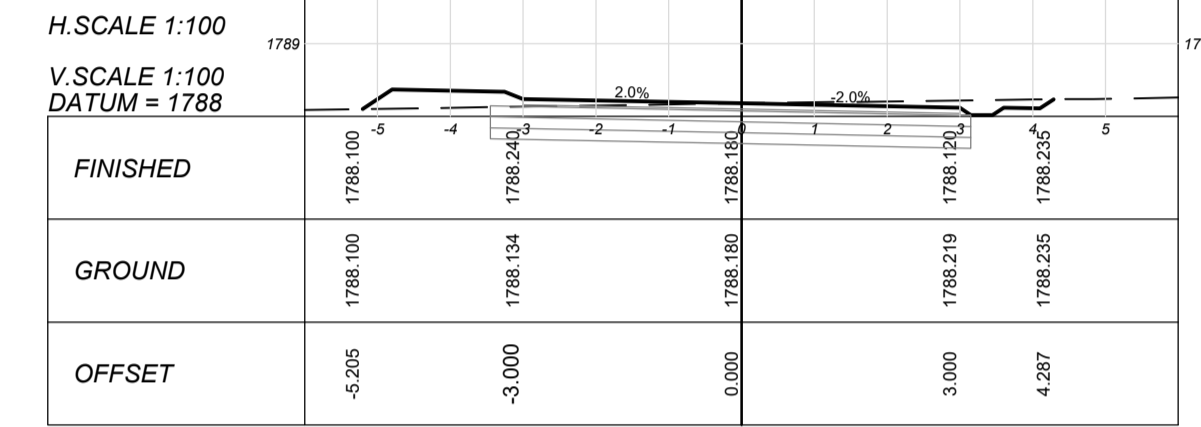
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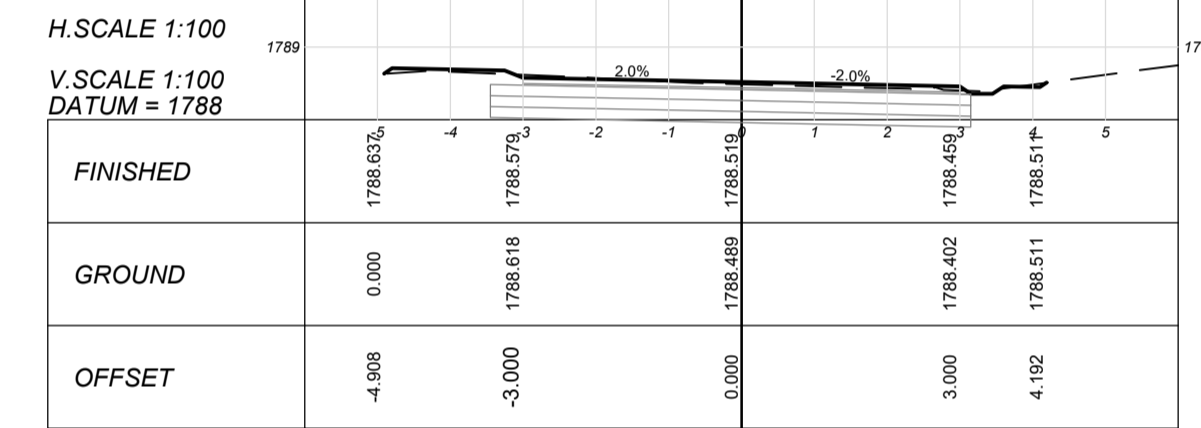
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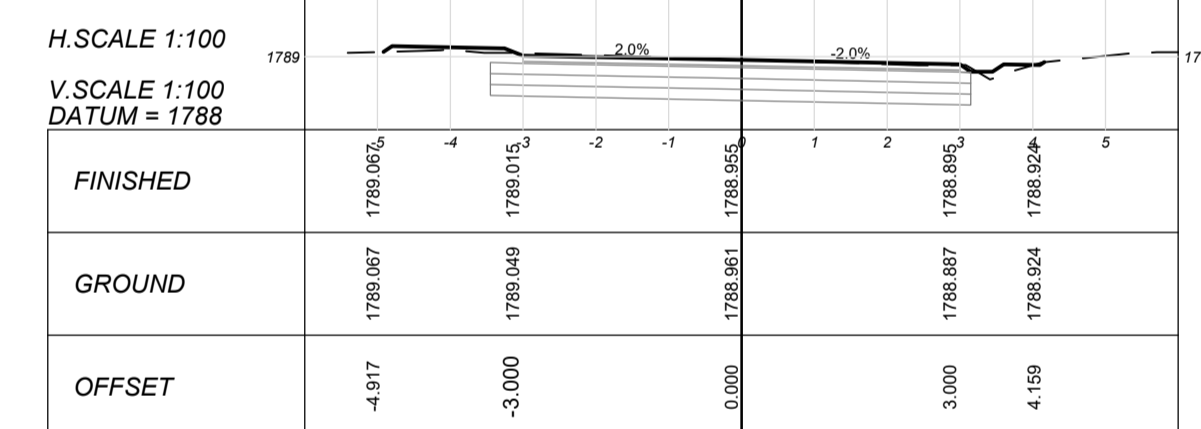
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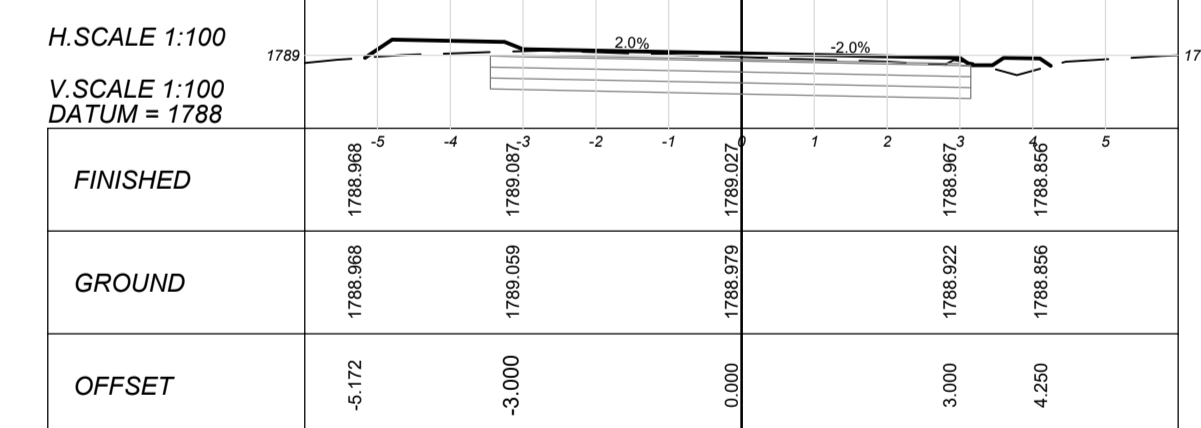
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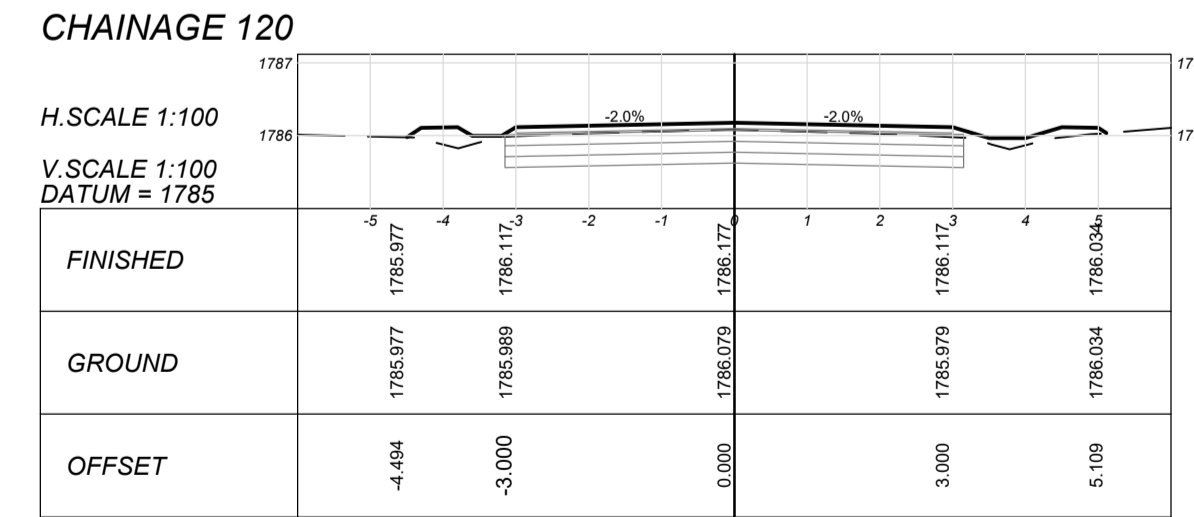
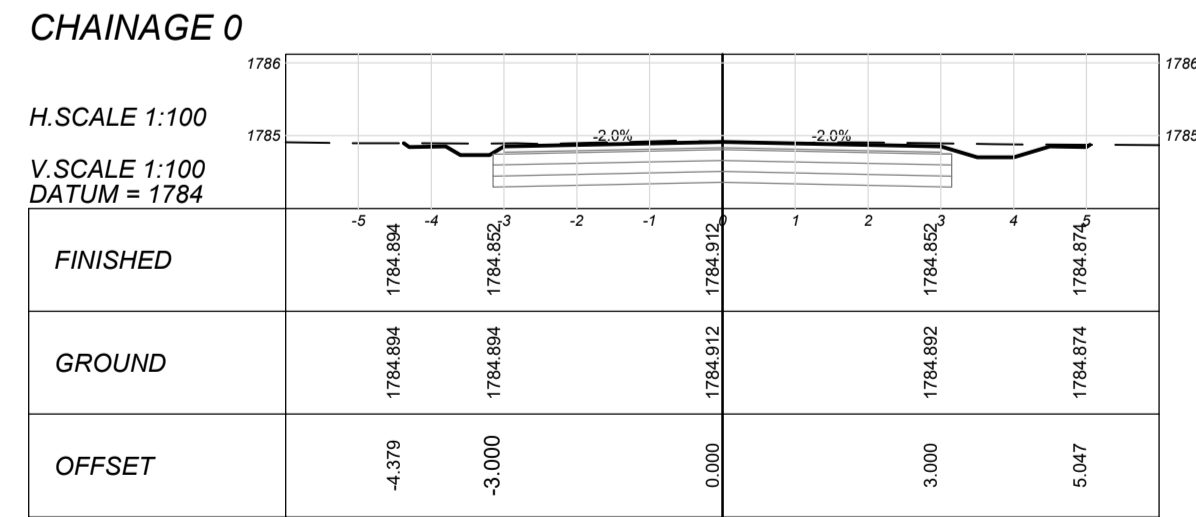
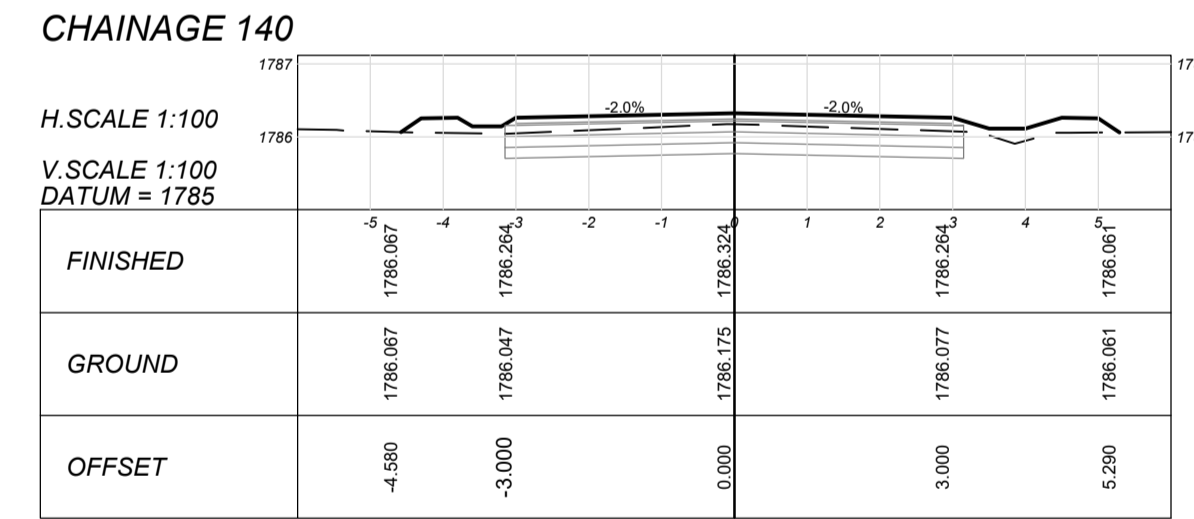
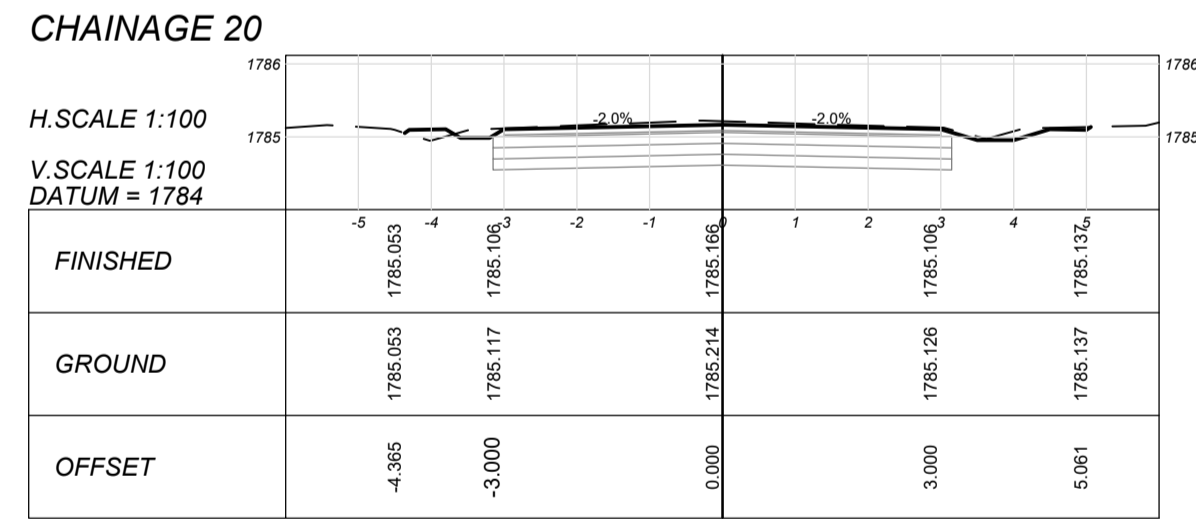
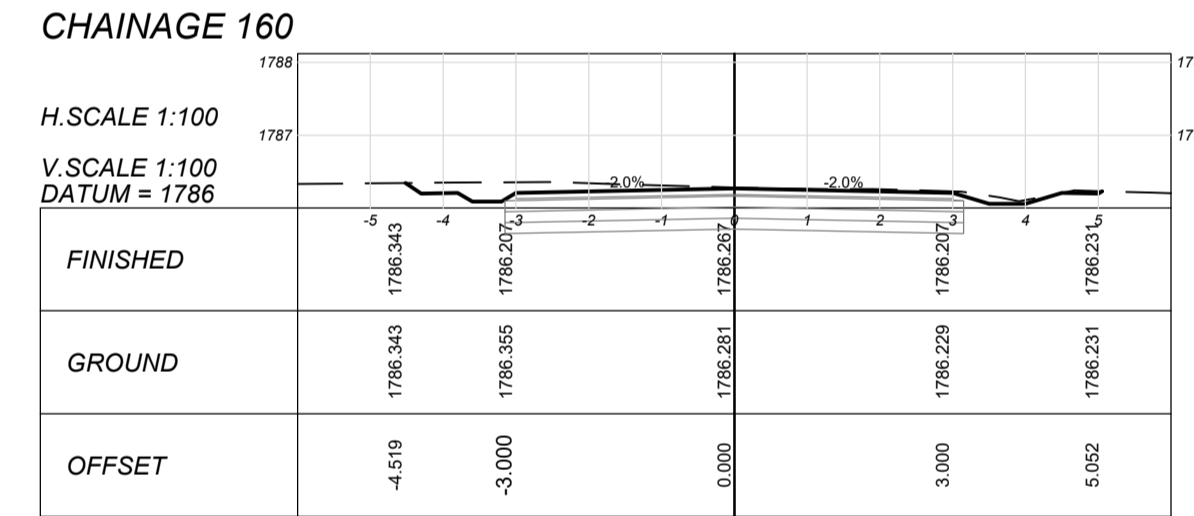
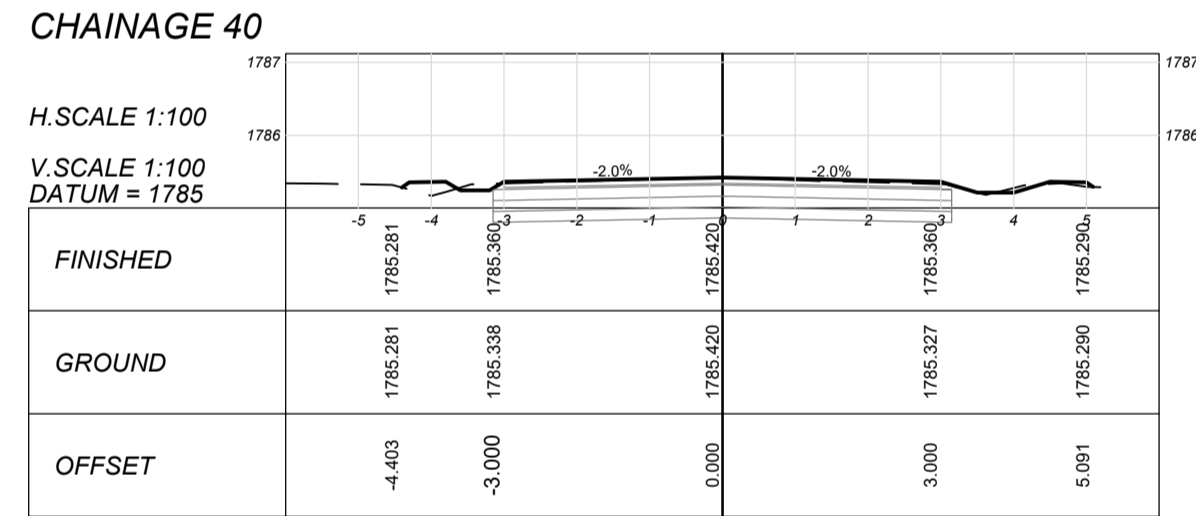
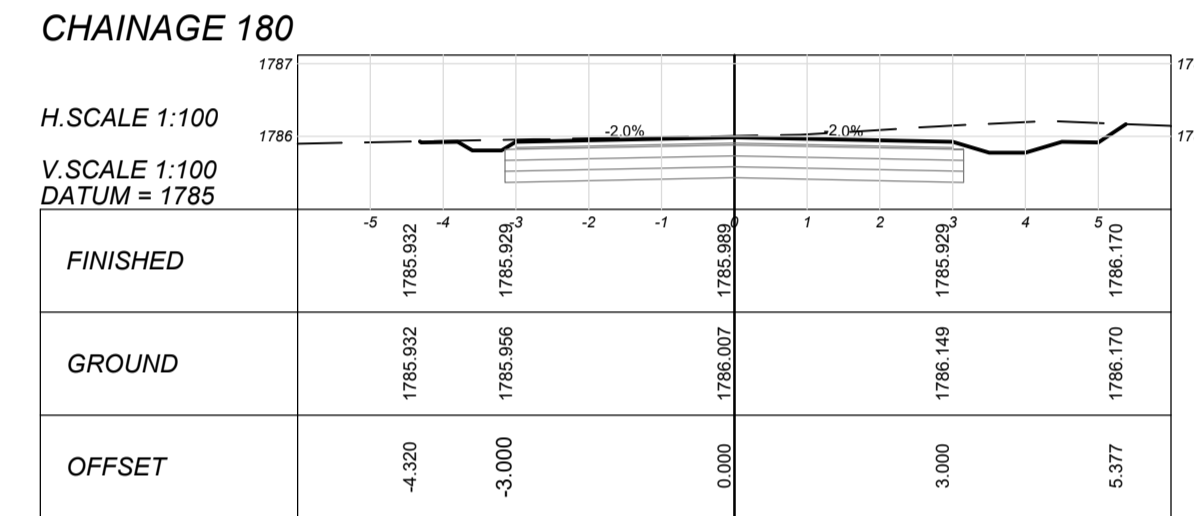
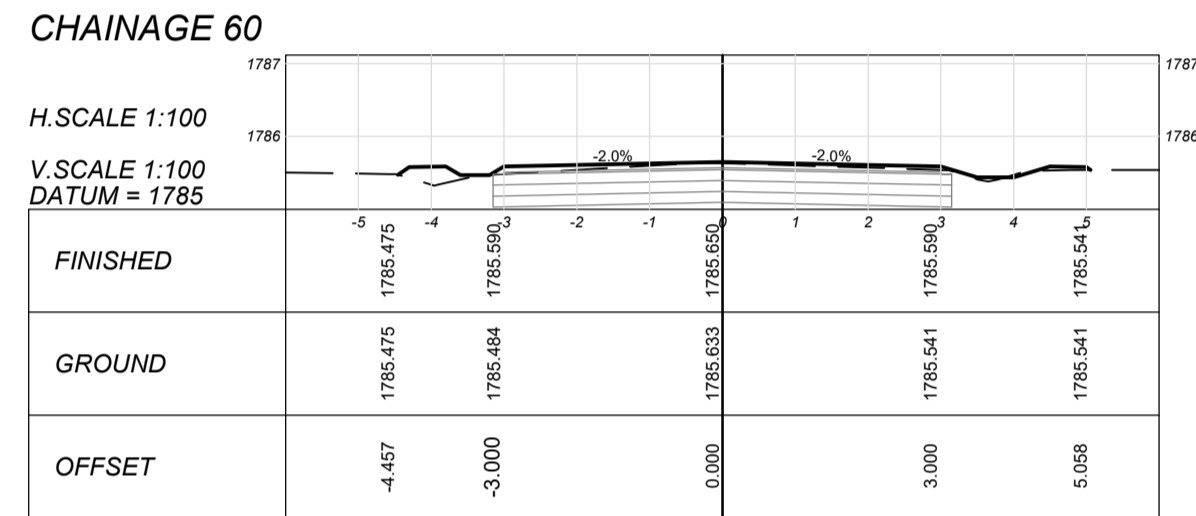
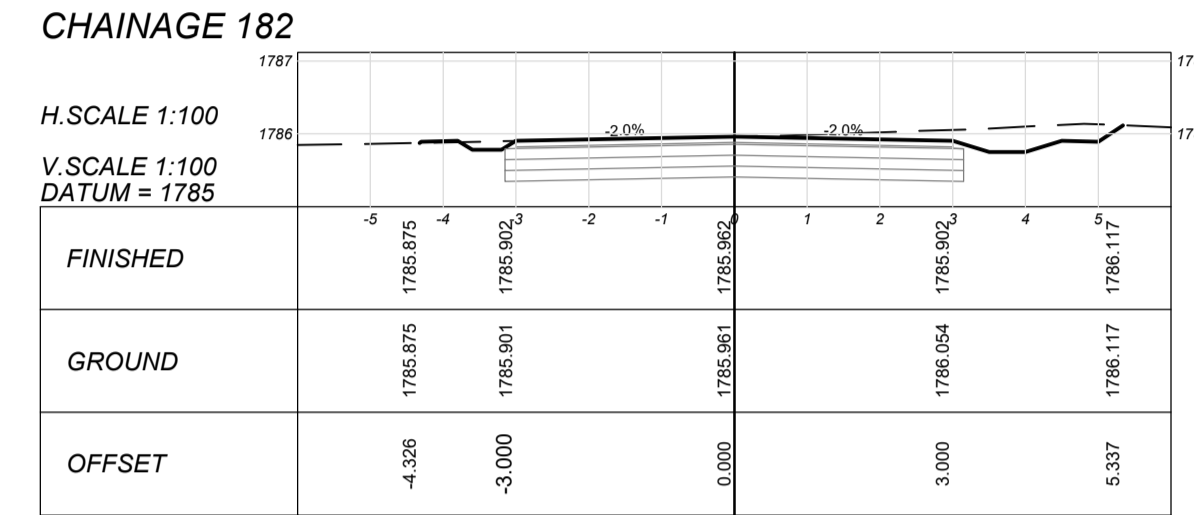
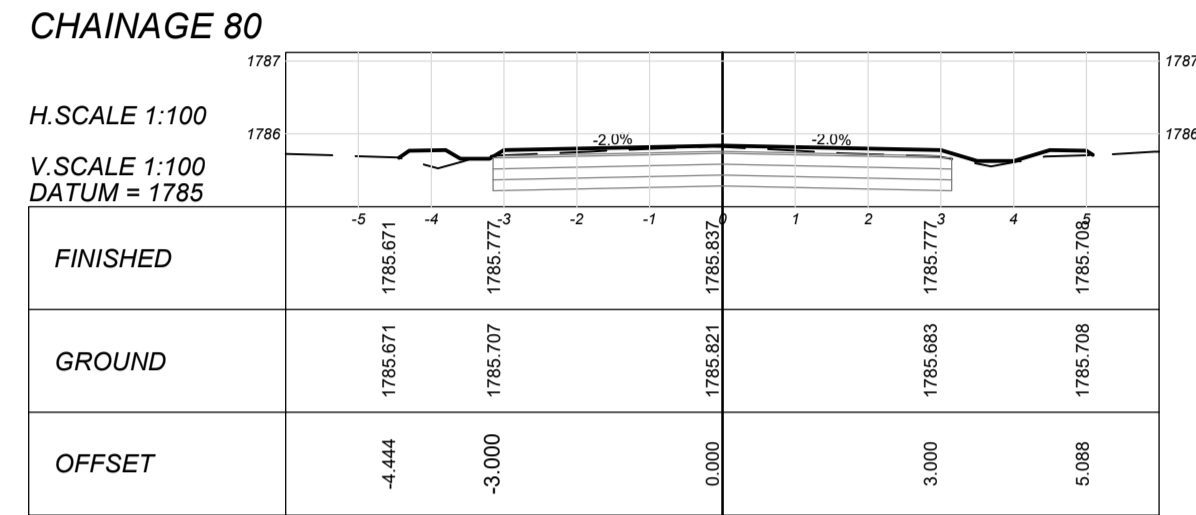
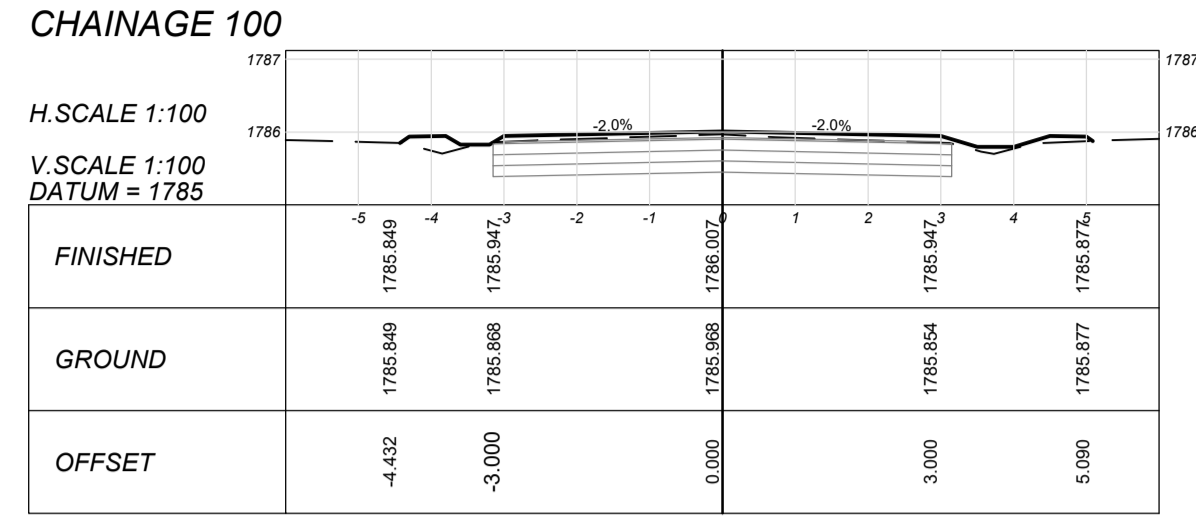


CHAINAGE 460




CHAINAGE 440





CLIENT:



19 Murray Street
Lady Grey
9755

Tel: (051) 603 1449
Email:
vanzylt@senqu.gov.za

CONSULTANT:

THEWO & SMMS - JV



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Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

Sigodi Marah Martin
Management Support
Development & Engineering Consultants

PROFESSIONAL ENGINEER:
L. MARAH

PROF. Reg.No:
920281

DATE:
2024-03-25

SIGNATURE:

DESIGN BY:
T. TSHABALALA

DRAWN BY:
B. MVUKUZO

CHECKED BY:
L. MARAH

APPROVED BY:
L. MARAH

REVISIONS			
REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

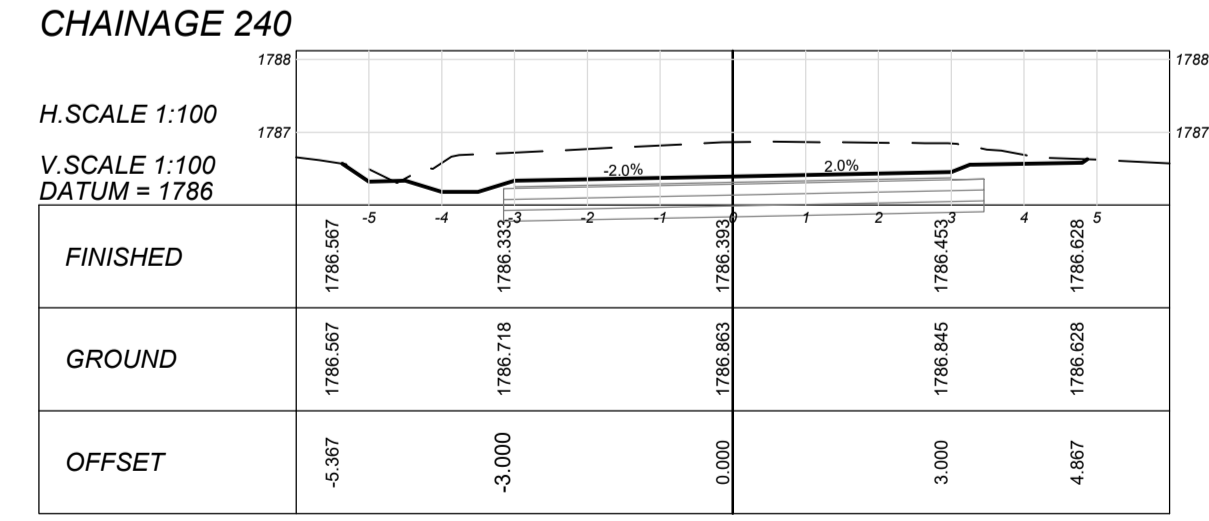
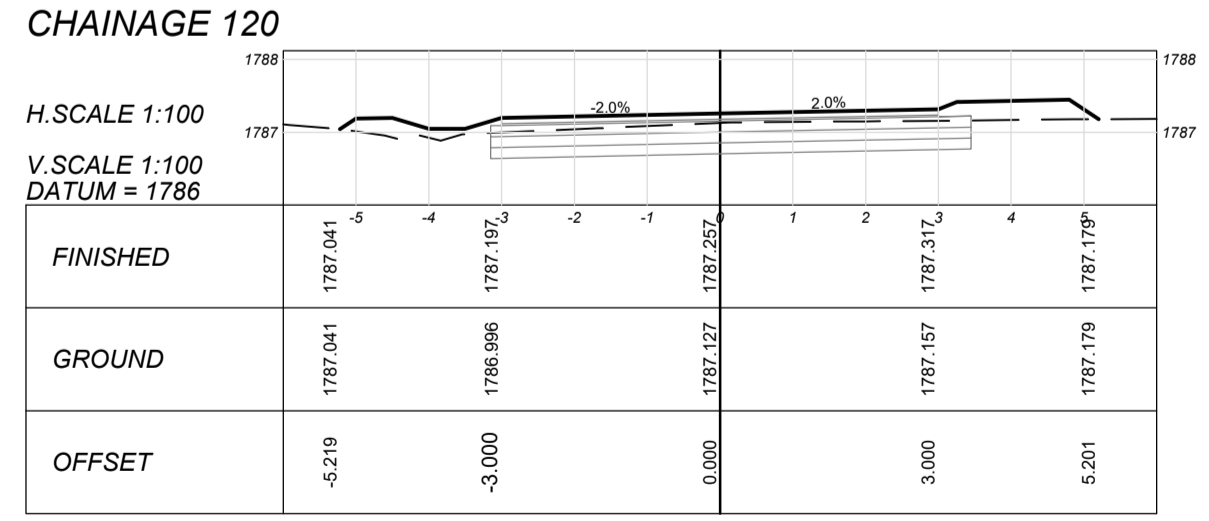
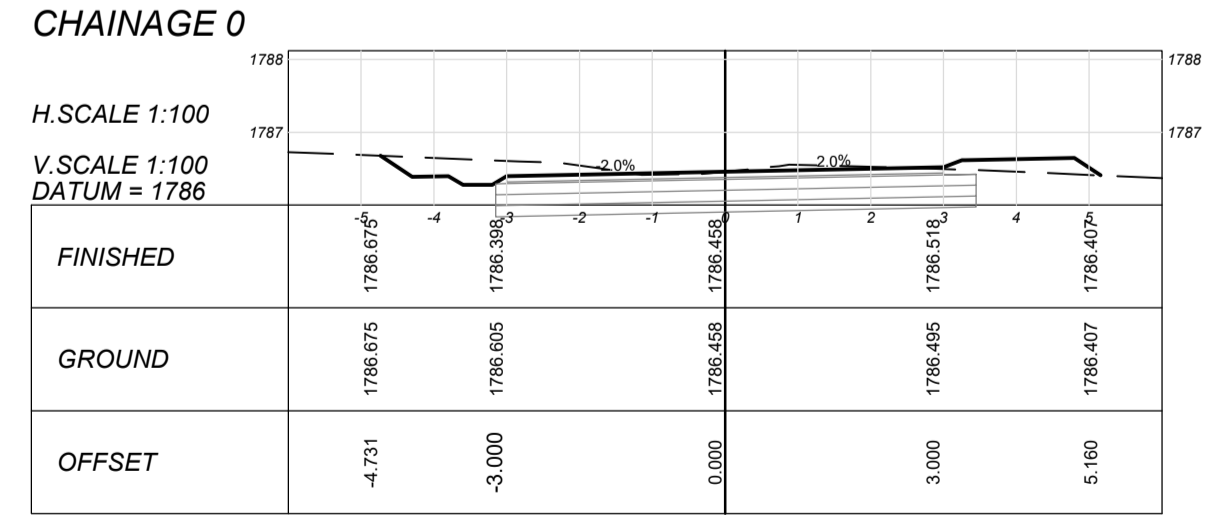
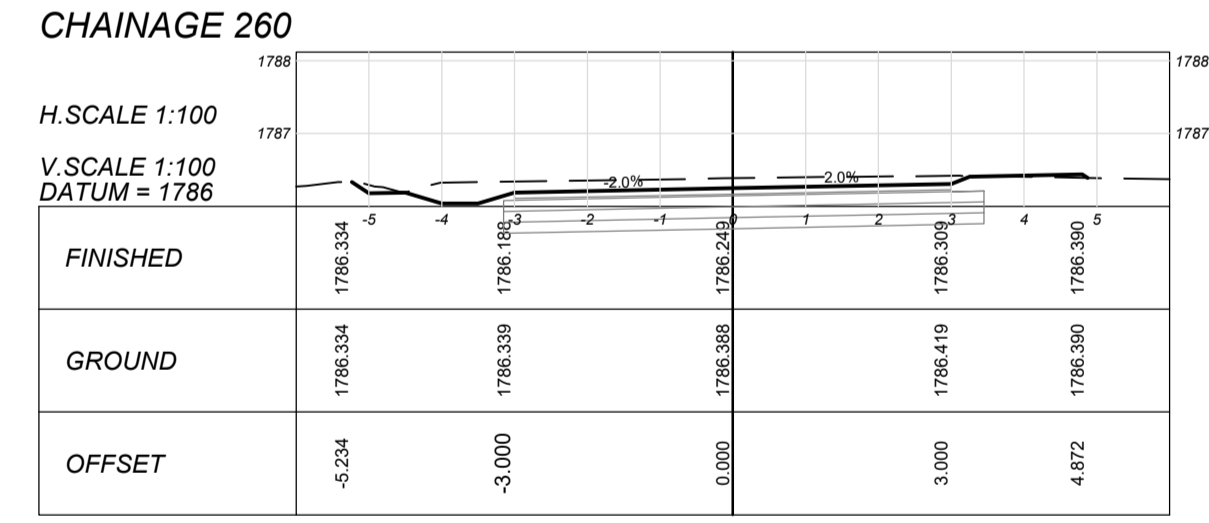
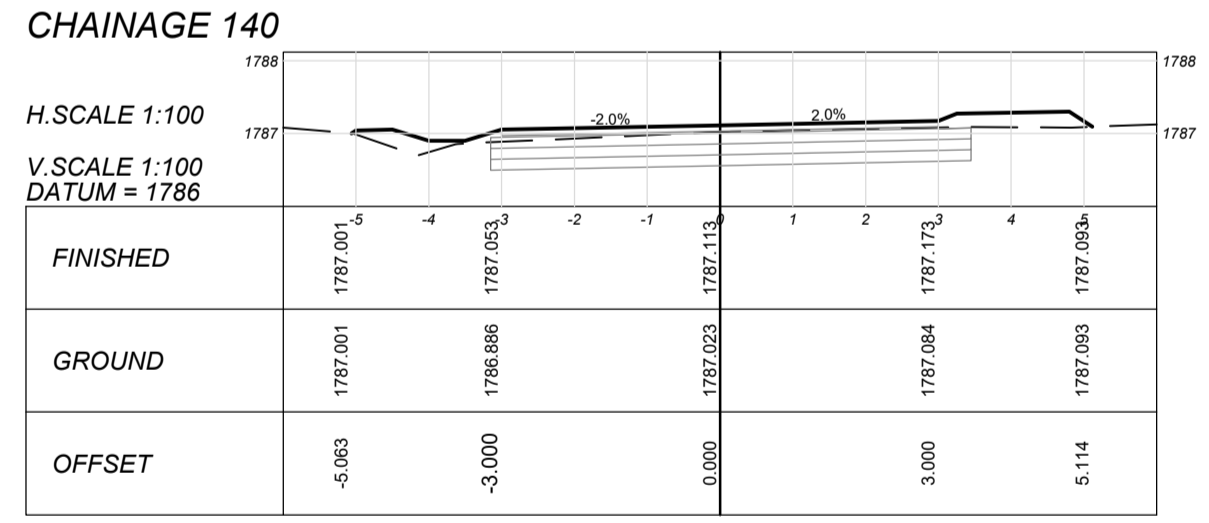
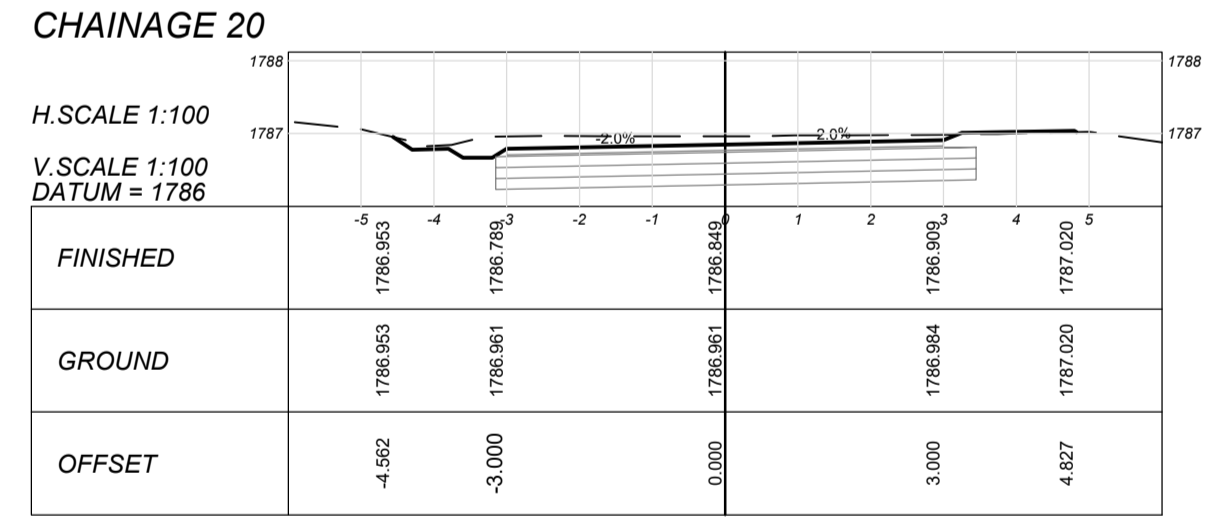
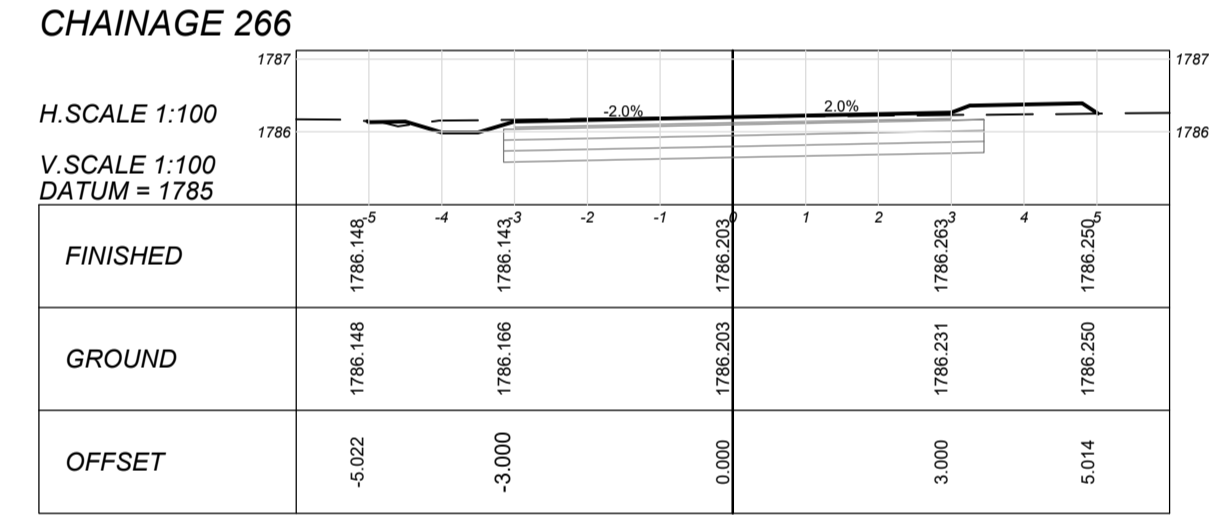
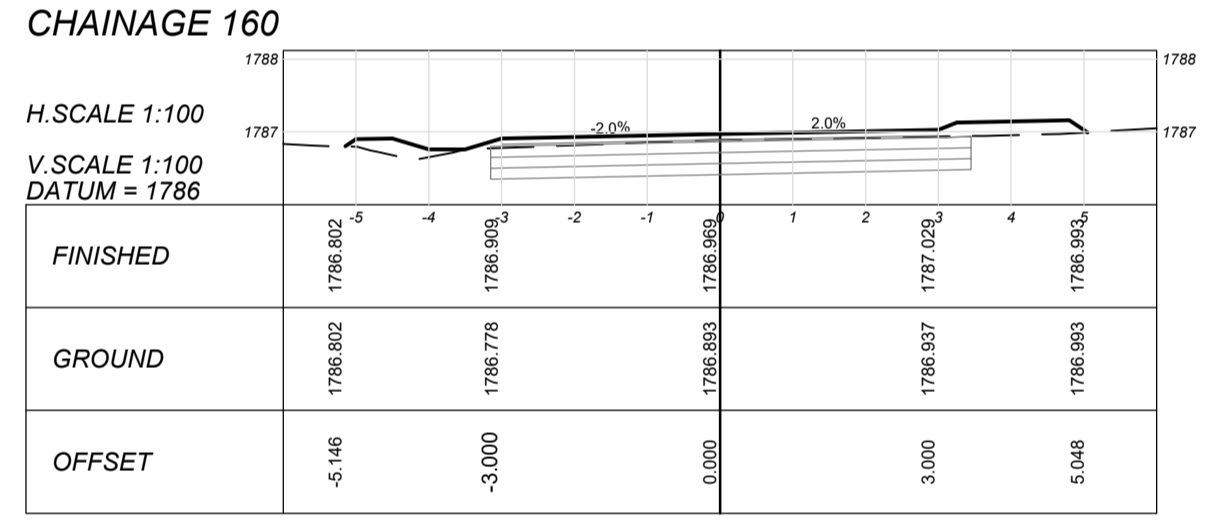
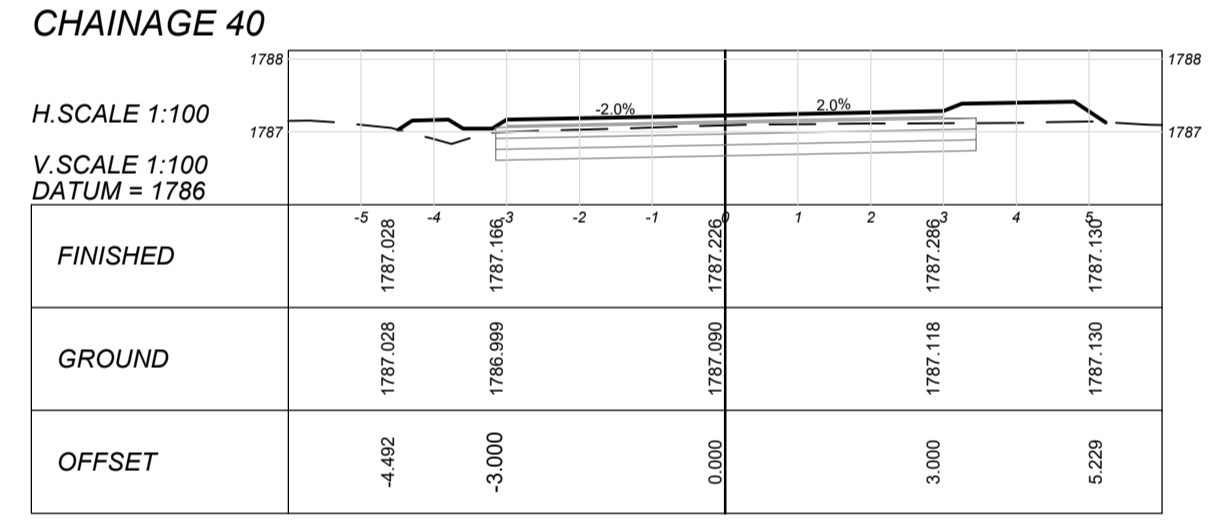
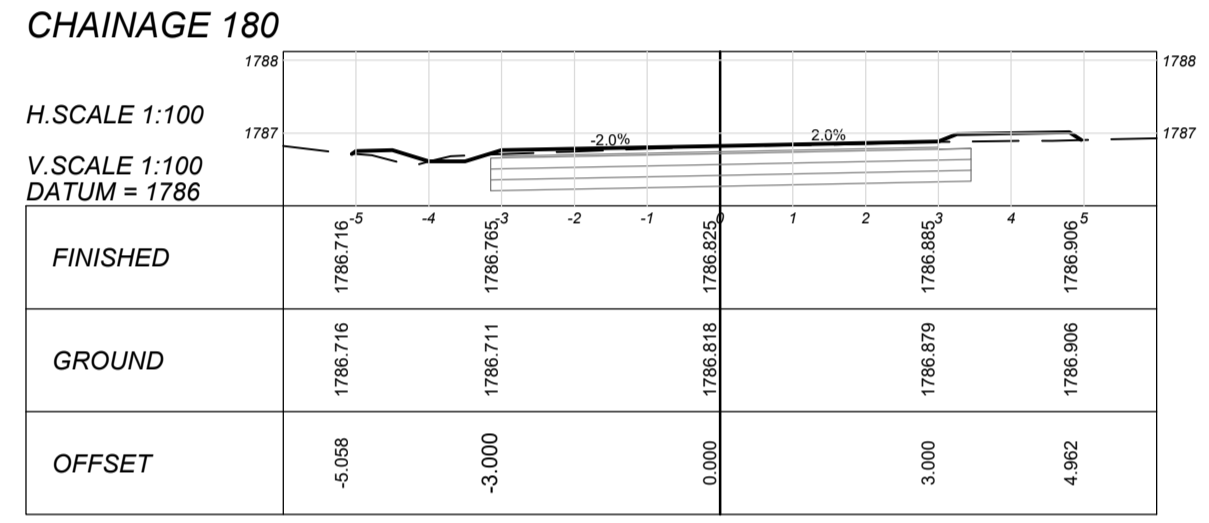
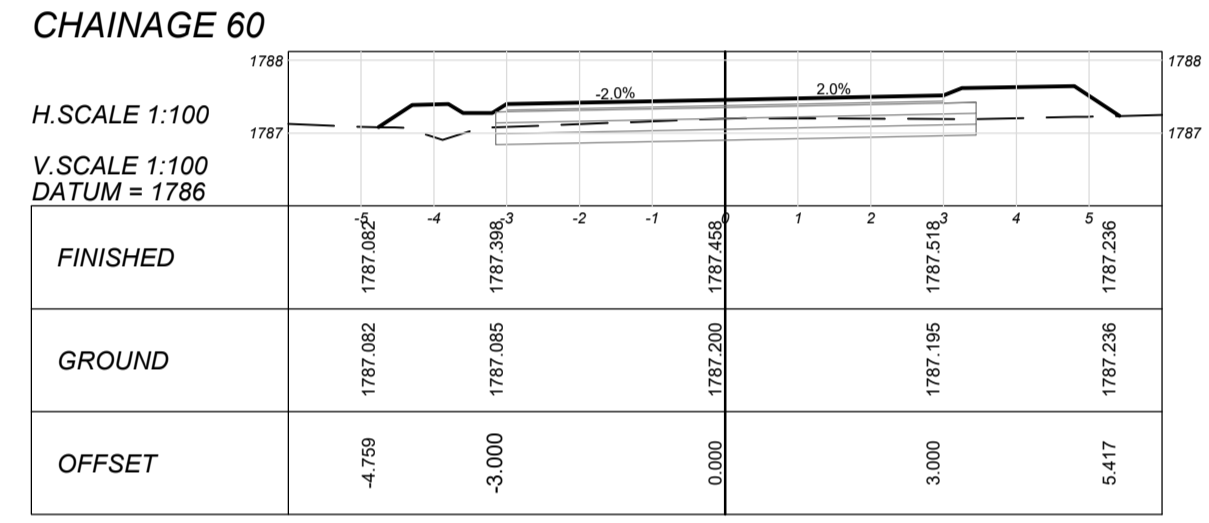
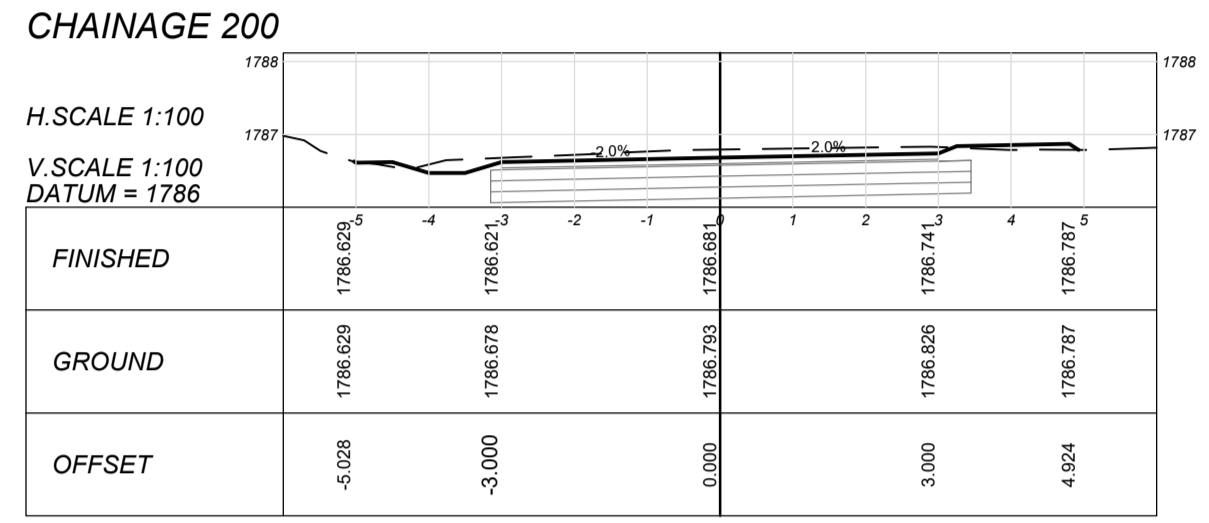
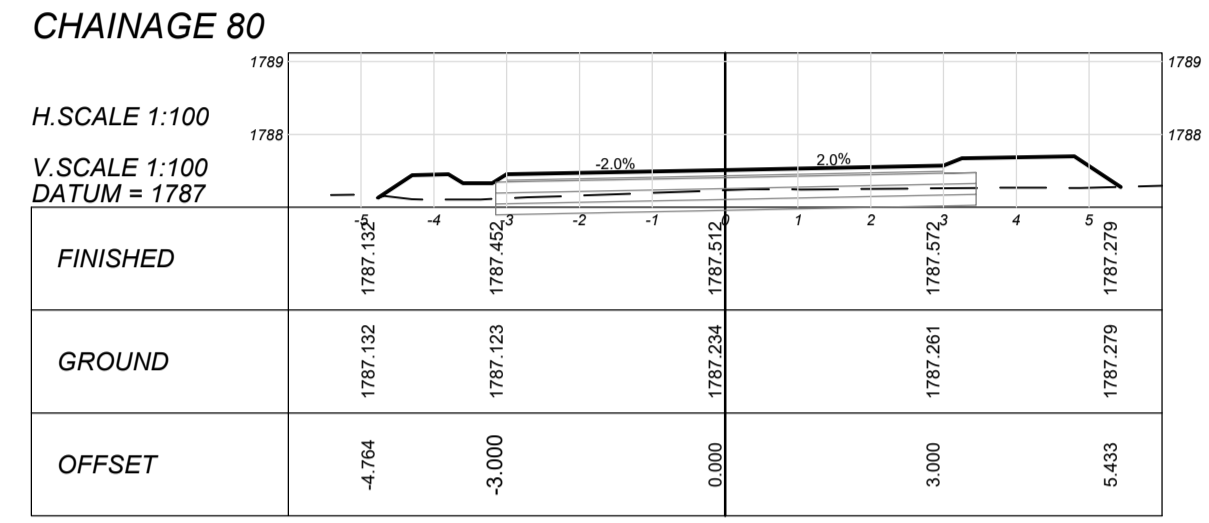
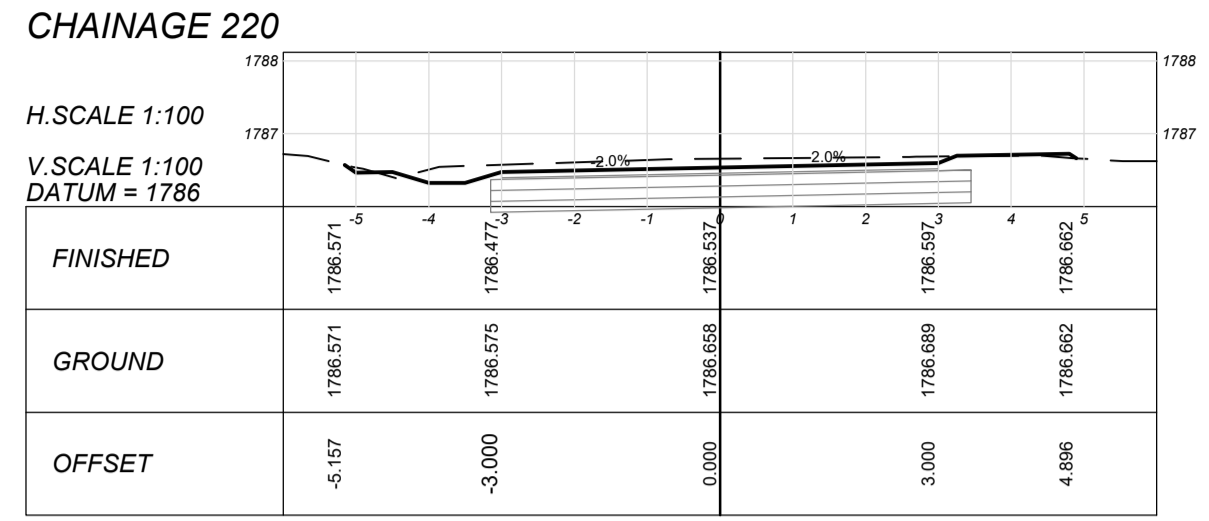
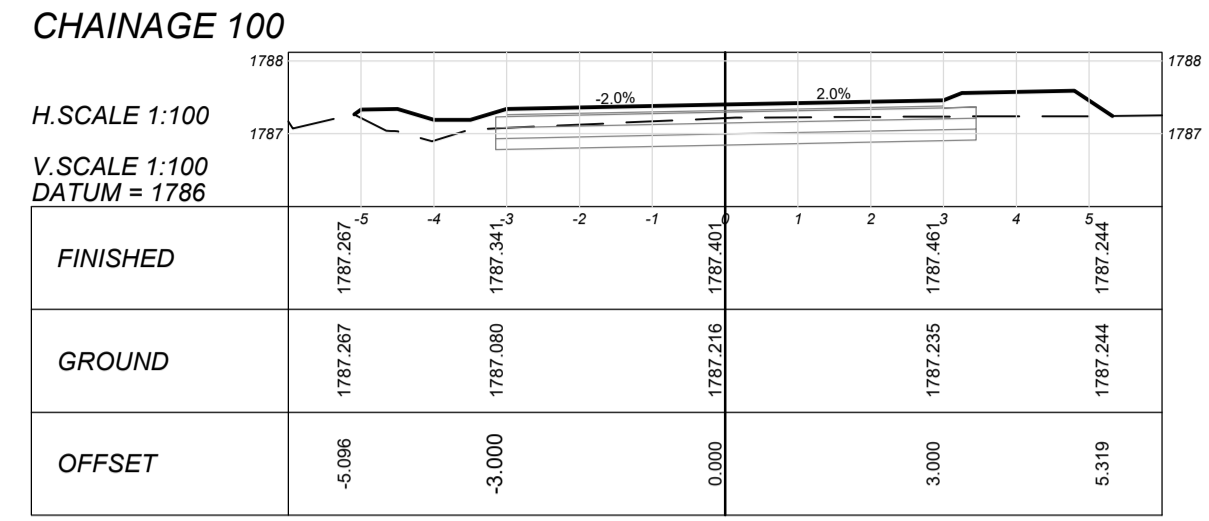
PROJECT NAME
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

TITLE
ROAD 2 - DETAILED CROSS SECTIONS

PROJECT STATUS:
TENDER

DATE	SCALE	SHEET	REV	A1
2024-03-25	AS SHOWN	1 OF 1	0	A1

DWG NO
P1027-BE-CIV-RD-CS02



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PROFESSIONAL ENGINEER:
L. MARAH

PROF. Reg.No:
920281

DATE:
2024-03-25

SIGNATURE:

DESIGN BY:
T. TSHABALALA

DRAWN BY:
B. MVUKUZO

CHECKED BY:
L. MARAH

APPROVED BY:
L. MARAH

REVISIONS				
REV	DATE	DESCRIPTION	BY	
0	2024-03-25	ISSUED FOR TENDER	L.M.	

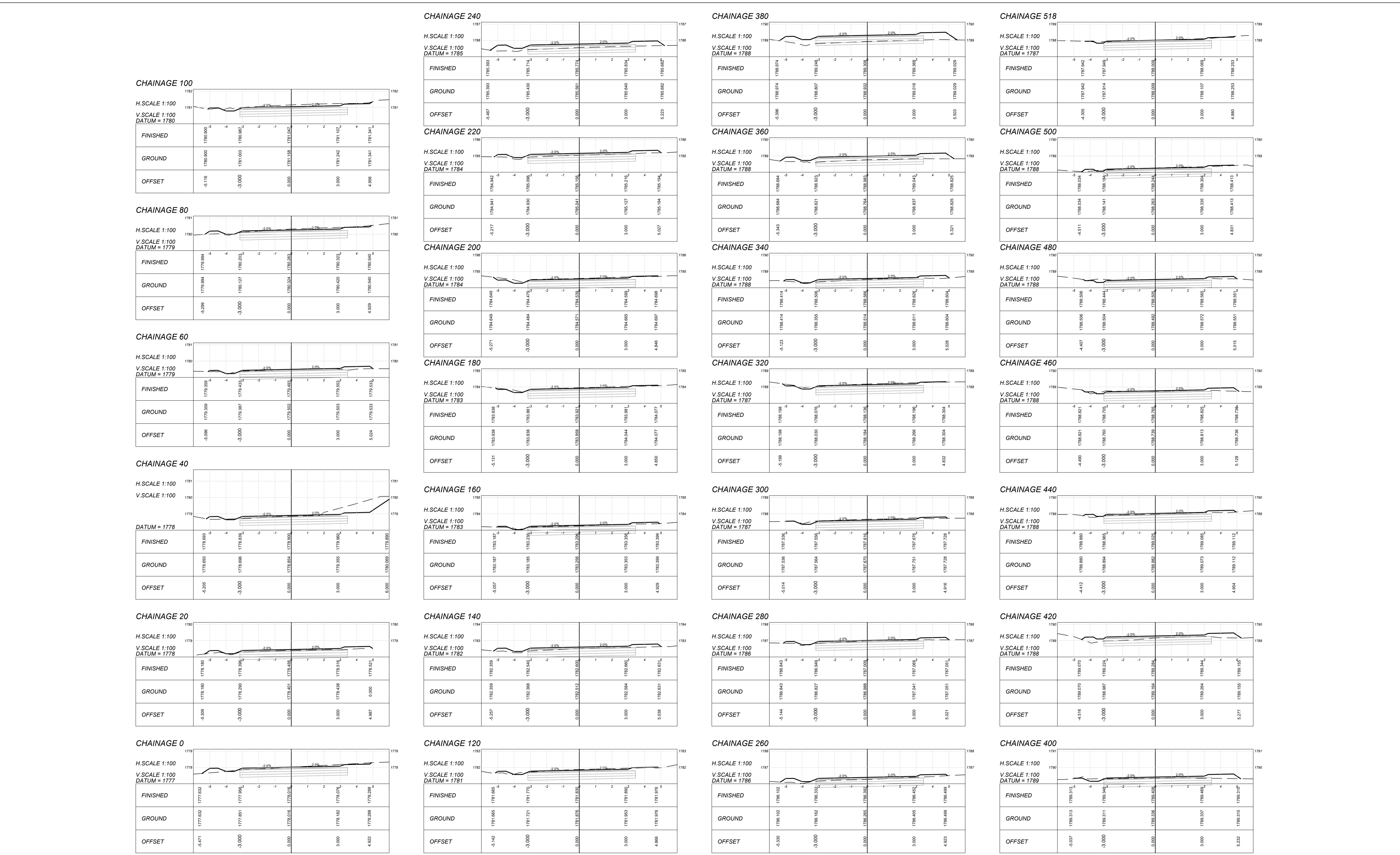
PROJECT NAME
SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER



TITLE
ROAD 3 - DETAILED CROSS SECTIONS

PROJECT STATUS:
TENDER

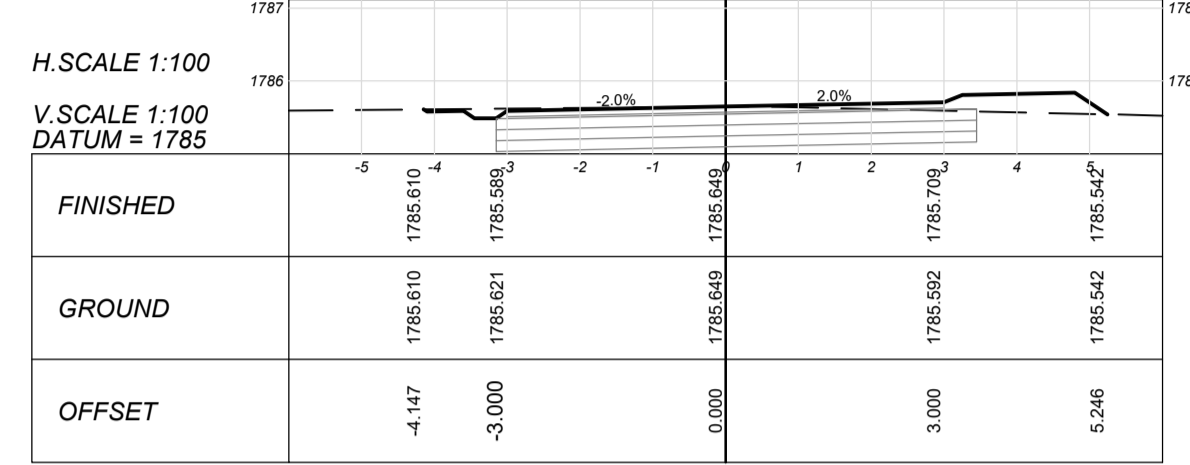
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2024-03-25	AS SHOWN	1 OF 1	0	

DWG NO
P1027-BE-CIV-RD-CS03

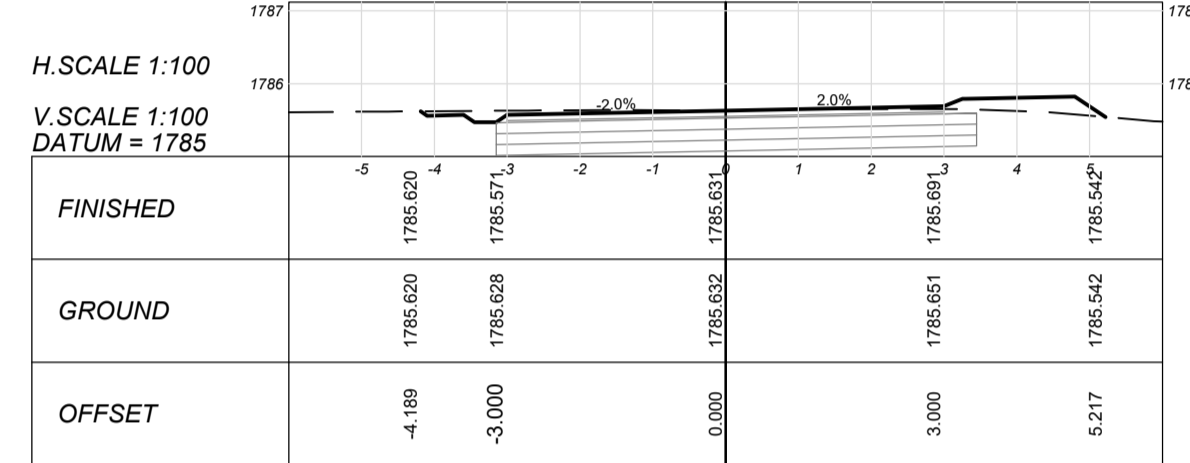


CLIENT:  19 Murray Street Lady Grey 9755 Tel: (051) 603 1449 Email: vanzyt@senqu.gov.za	CONSULTANT: THEWO & SMMS - JV  58 Brebner Road Westdene Bloemfontein 9301 Tel: +27 (051) 430 1321 Email: PMO@thewo.co.za	PROFESSIONAL ENGINEER: L. MARAH PROF. Reg. No.: 920281 DATE: 2024-03-25 SIGNATURE:	DESIGN BY: T. TSHABALALA DRAWN BY: B. MVUKUZO CHECKED BY: L. MARAH APPROVED BY: L. MARAH	REVISIONS <table border="1"> <tr><th>REV</th><th>DATE</th><th>DESCRIPTION</th><th>BY</th></tr> <tr><td>0</td><td>2024-03-25</td><td>ISSUED FOR TENDER</td><td>L.M.</td></tr> </table>	REV	DATE	DESCRIPTION	BY	0	2024-03-25	ISSUED FOR TENDER	L.M.	PROJECT NAME SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER TITLE ROAD 4 - DETAILED CROSS SECTIONS	PROJECT STATUS: TENDER <table border="1"> <tr><th>DATE</th><th>SCALE</th><th>SHEET</th><th>REV</th><th>A1</th></tr> <tr><td>2024-03-25</td><td>AS SHOWN</td><td>1 OF 1</td><td>0</td><td>A1</td></tr> </table>	DATE	SCALE	SHEET	REV	A1	2024-03-25	AS SHOWN	1 OF 1	0	A1
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				0	2024-03-25	ISSUED FOR TENDER	L.M.																	
DATE	SCALE	SHEET	REV	A1																				
2024-03-25	AS SHOWN	1 OF 1	0	A1																				
DWG NO P1027-BE-CIV-RD-CS04																								

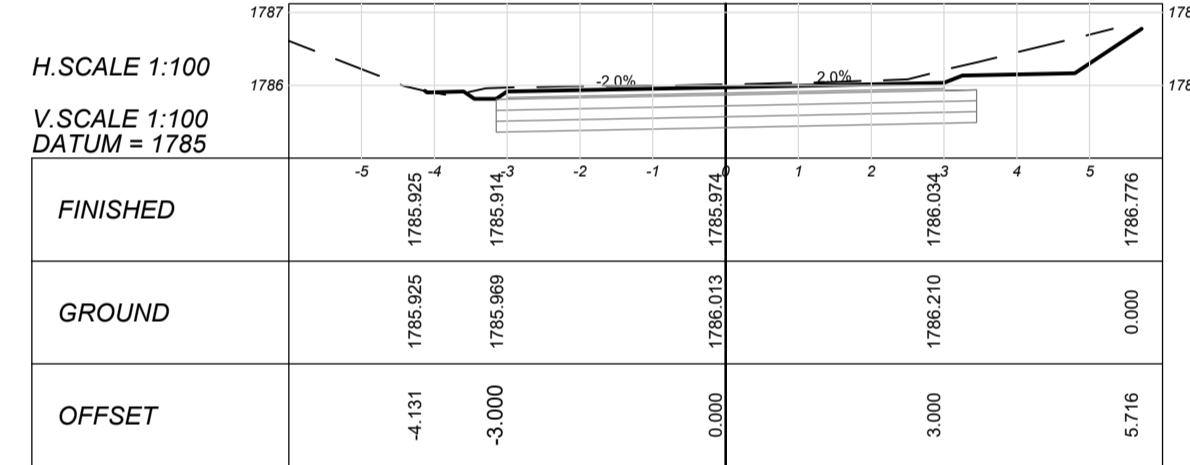
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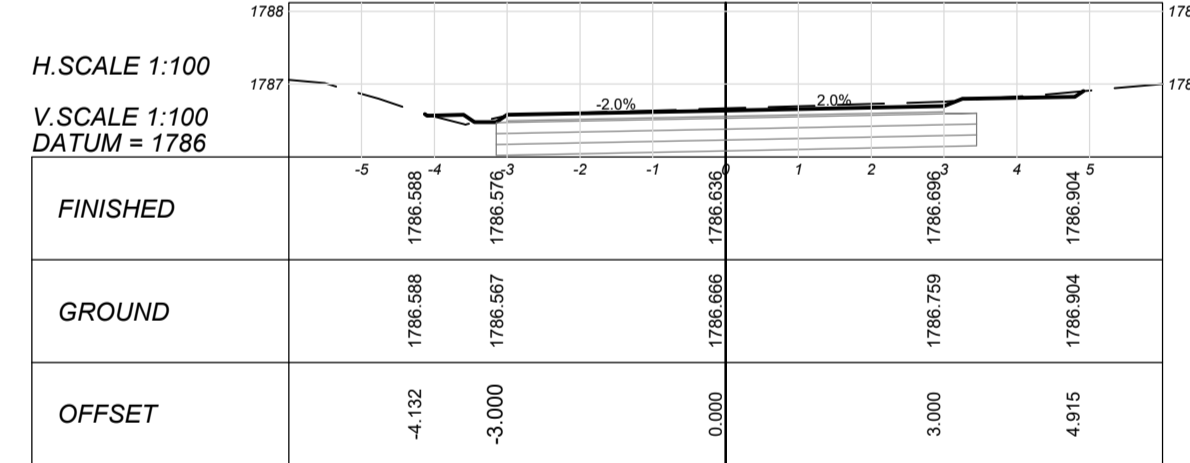
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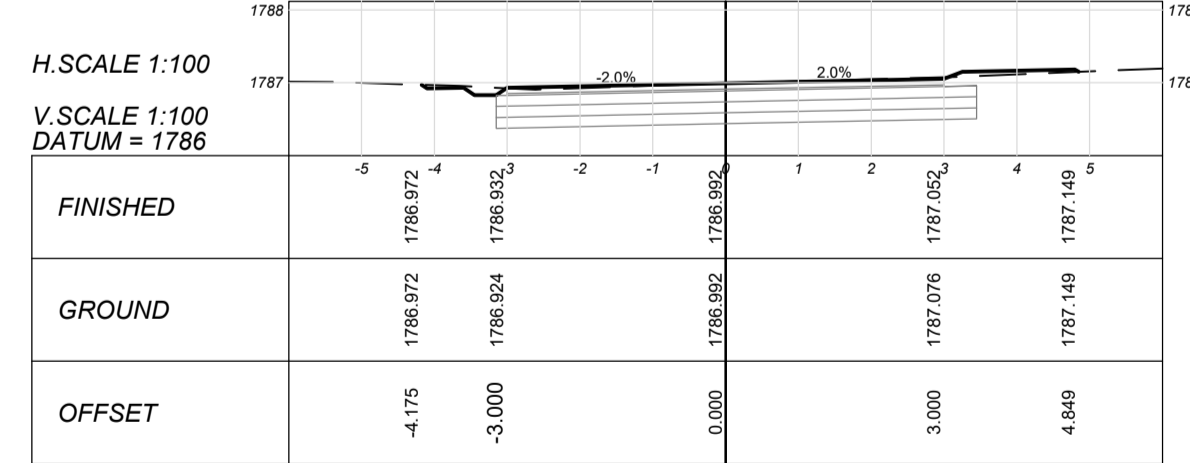
CHAINAGE 40



CHAINAGE 20



CHAINAGE 0



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PROFESSIONAL ENGINEER:

L. MARAH
PROF. Reg.No:
920281
DATE:
2024-03-25
SIGNATURE:

DESIGN BY:

T. TSHABALALA
DRAWN BY:
B. MVUKUZO
CHECKED BY:
L. MARAH
APPROVED BY:
L. MARAH

REVISIONS

REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME

SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

TITLE

ROAD 5 - DETAILED CROSS SECTIONS

PROJECT STATUS:

TENDER

DATE	SCALE	SHEET	REV	
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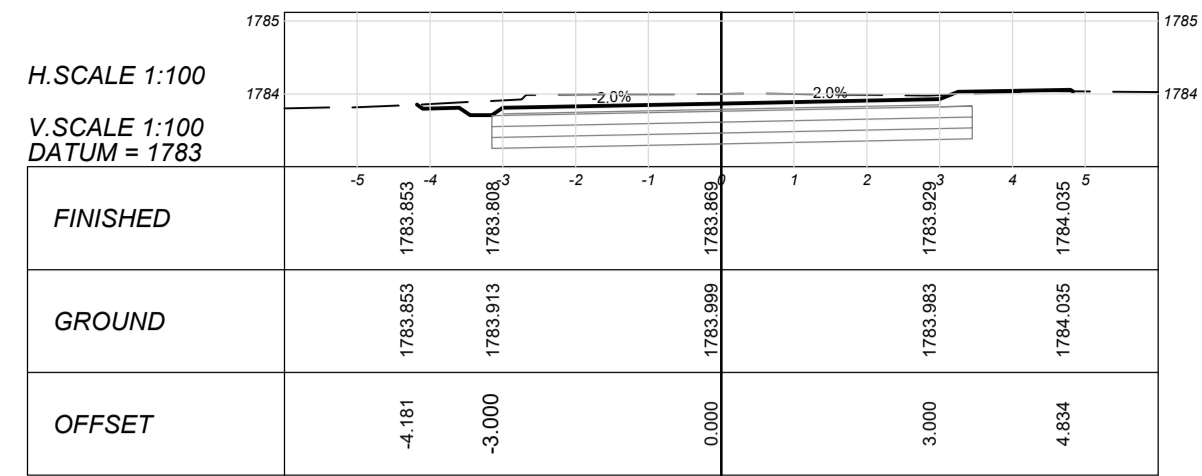
2024-03-25	AS SHOWN	1 OF 1	0	A1
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DWG NO

P1027-BE-CIV-RD-CS05

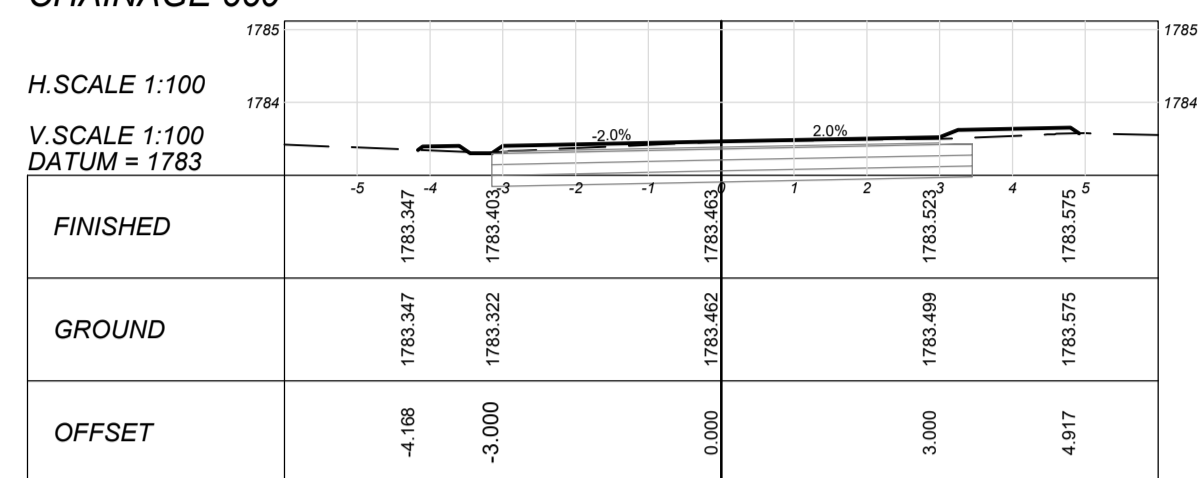
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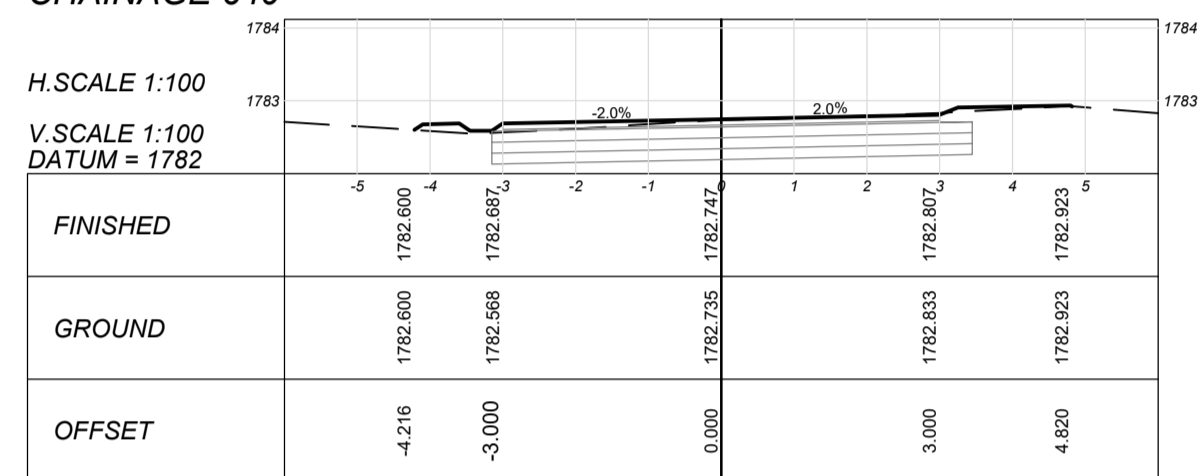
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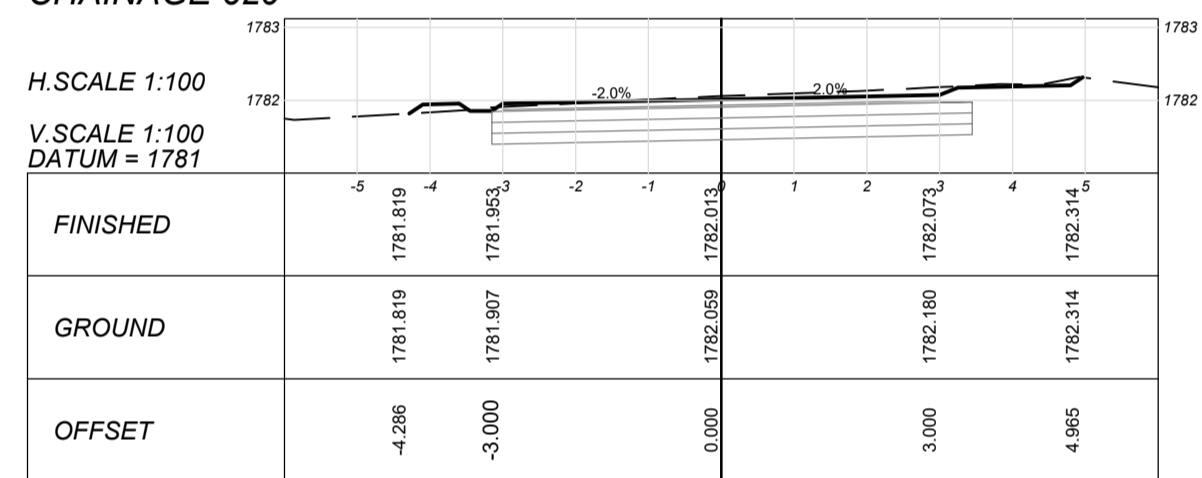
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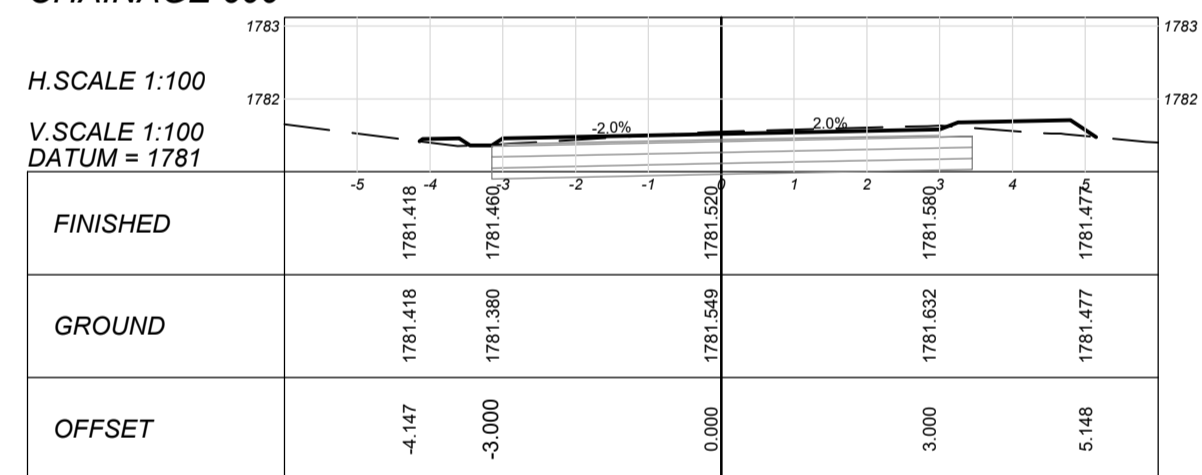
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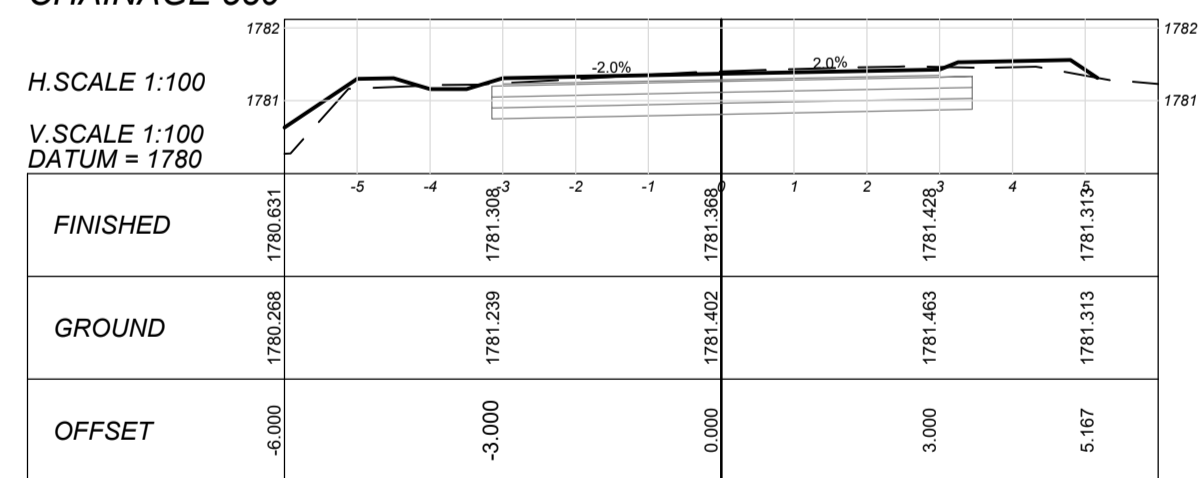
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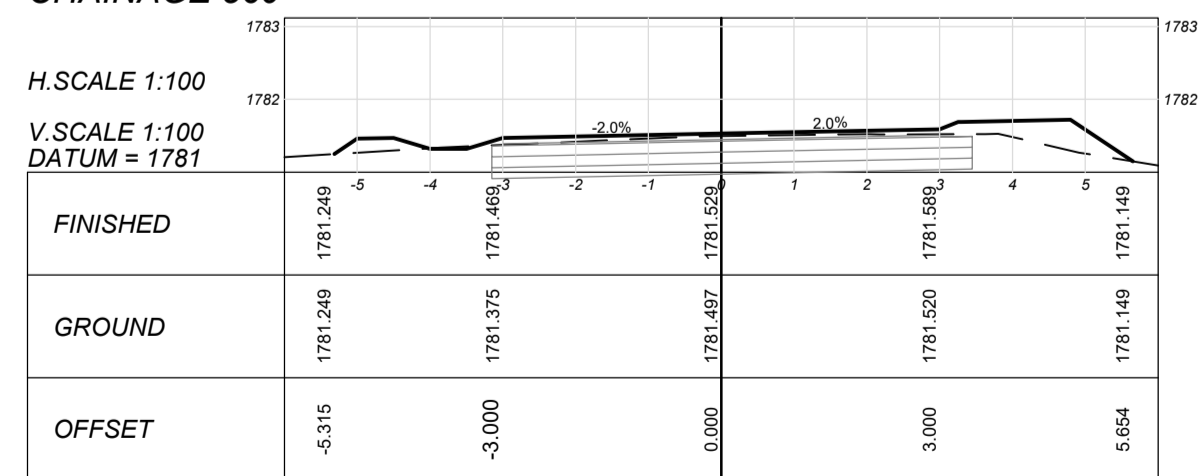
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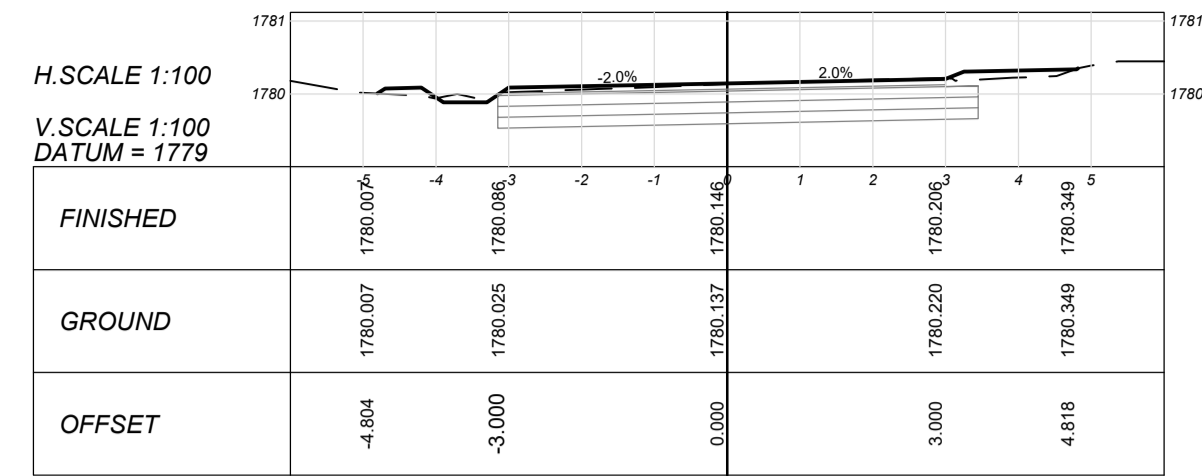
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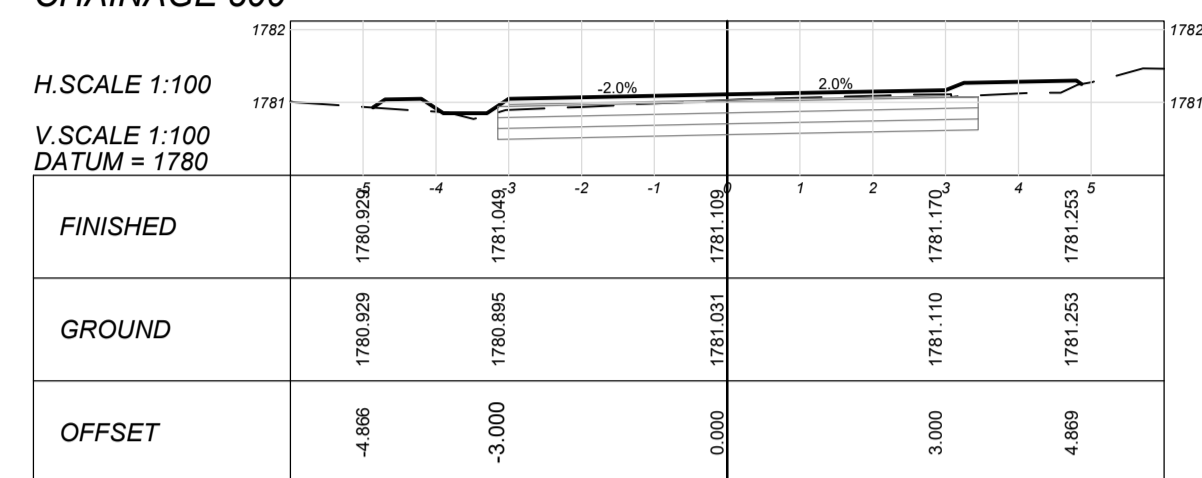
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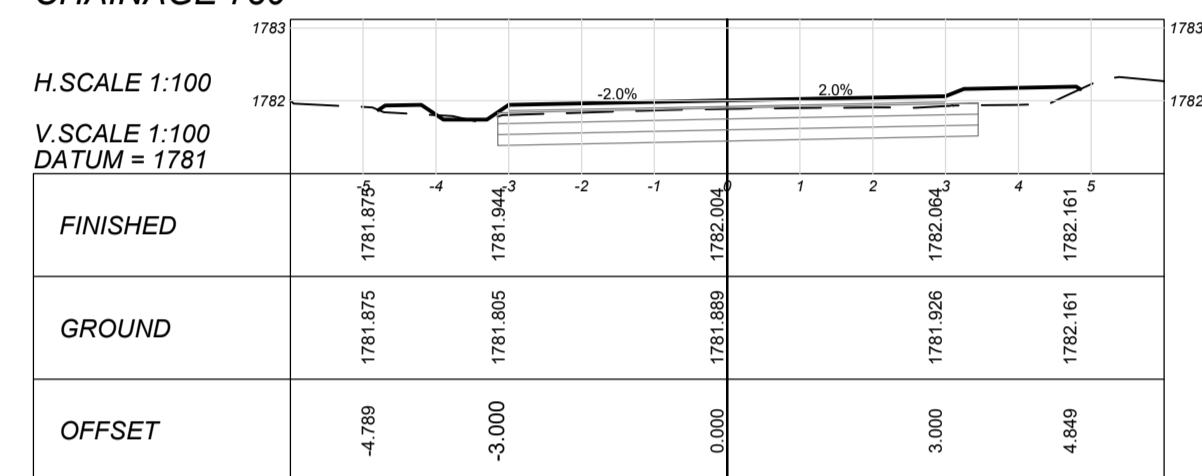
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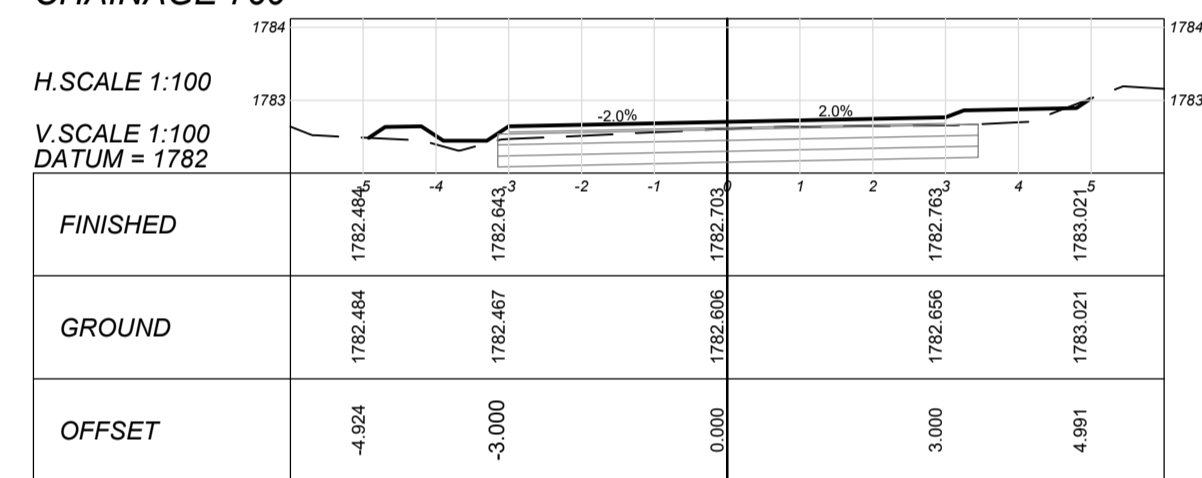
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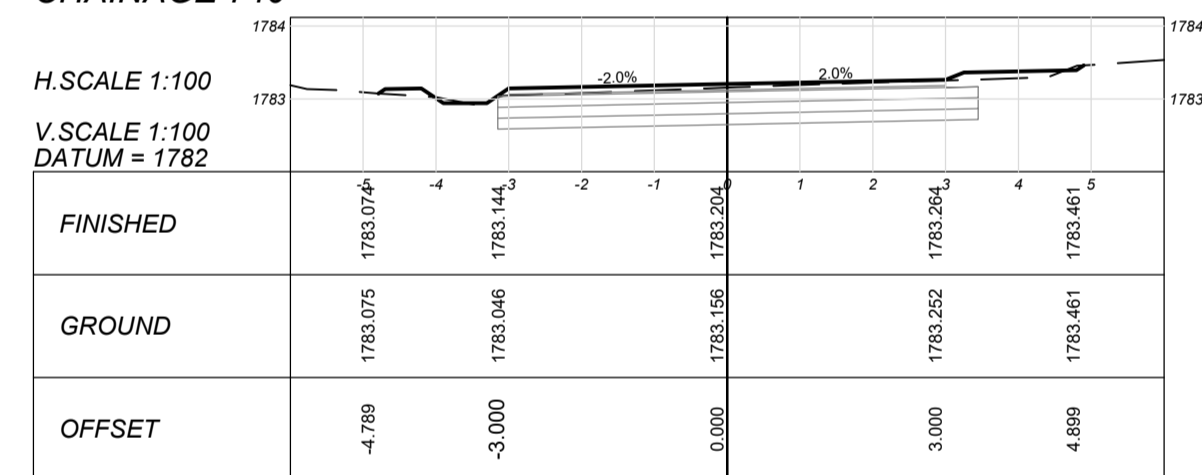
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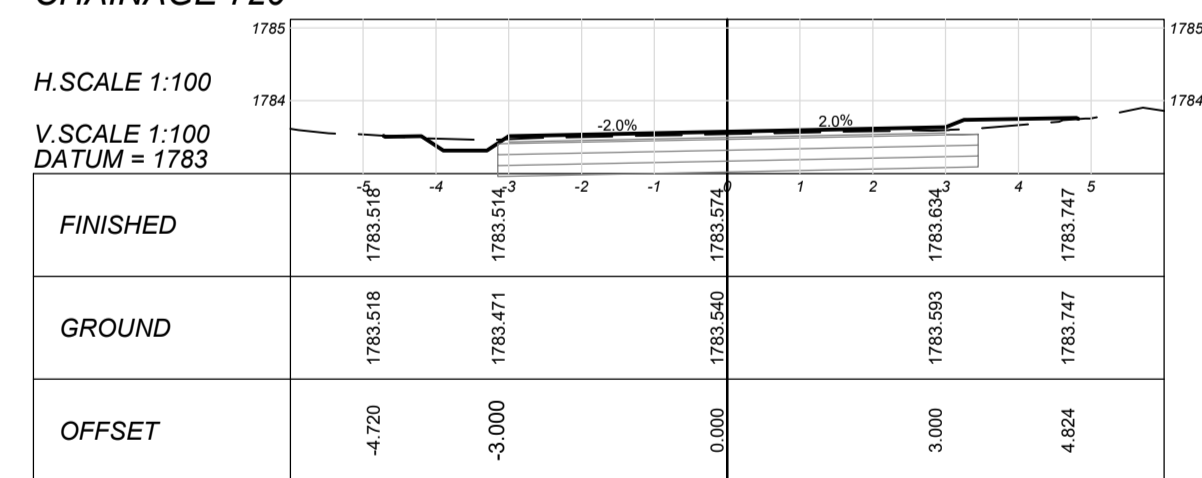
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DATUM = 1782



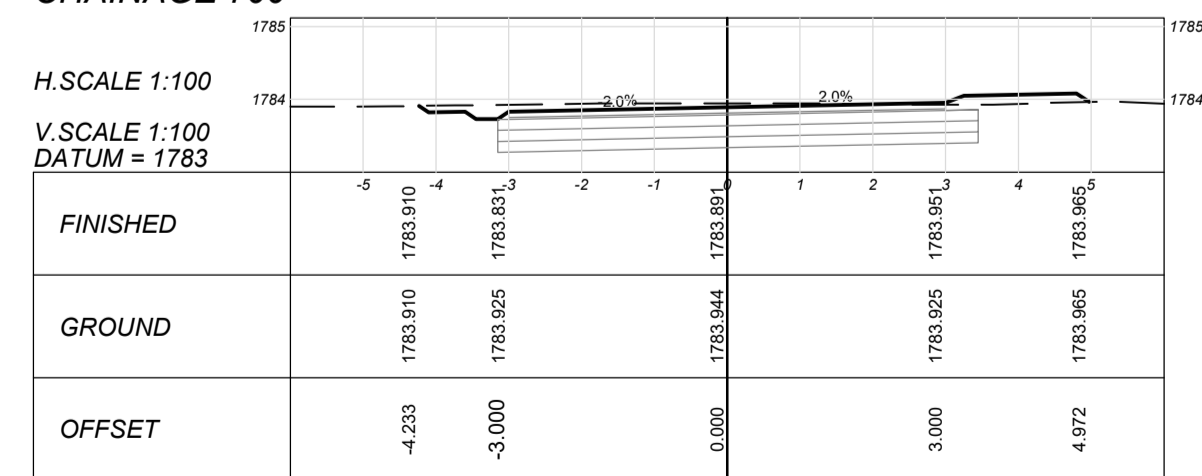
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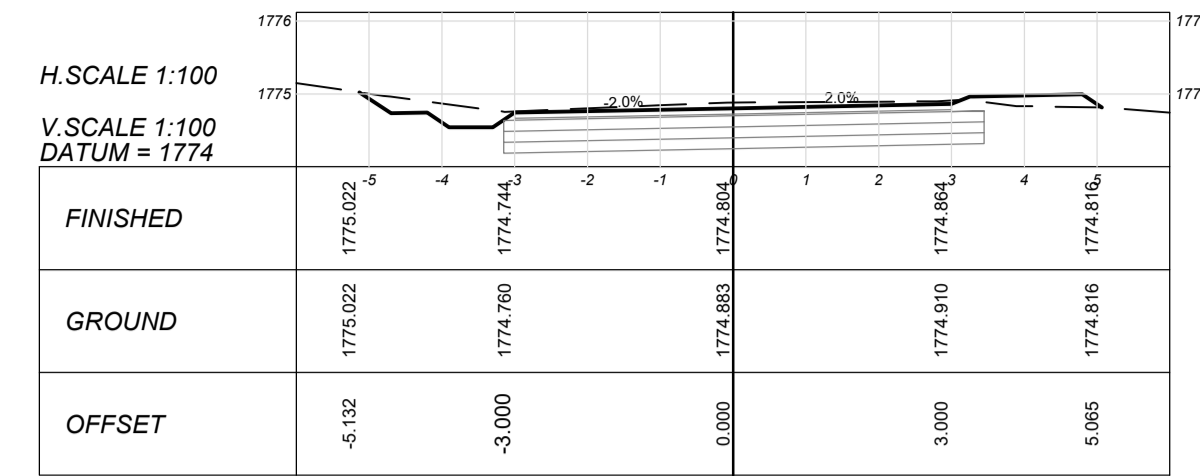
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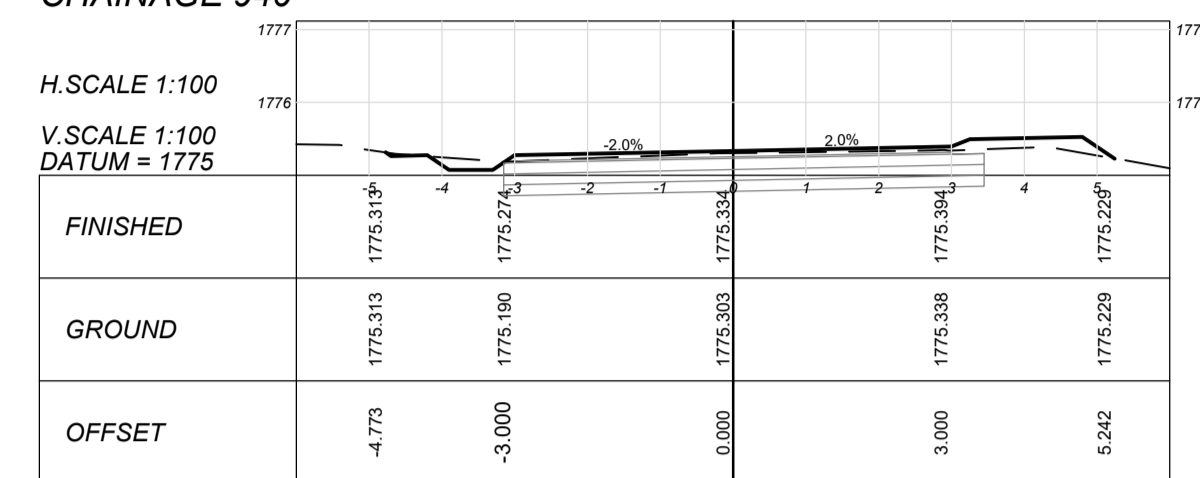
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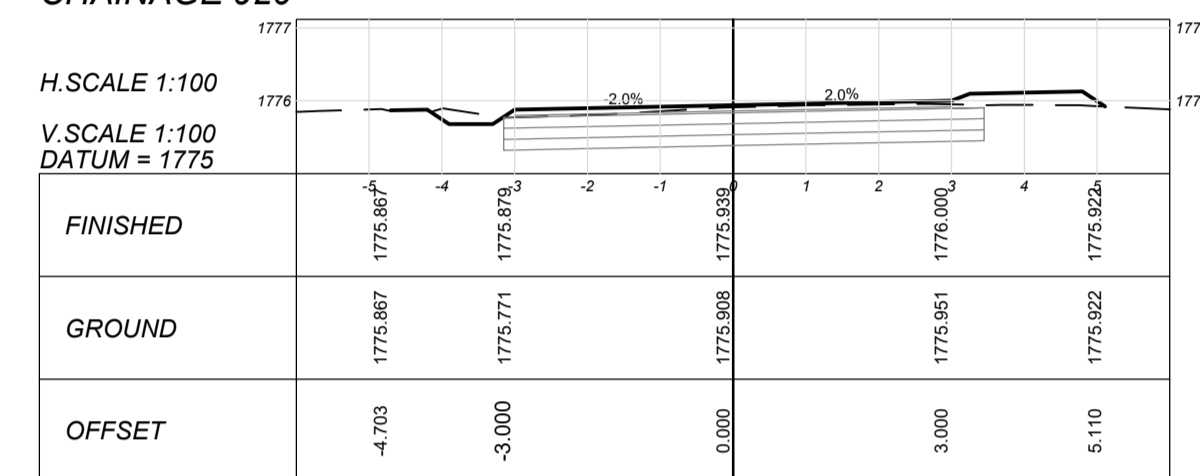
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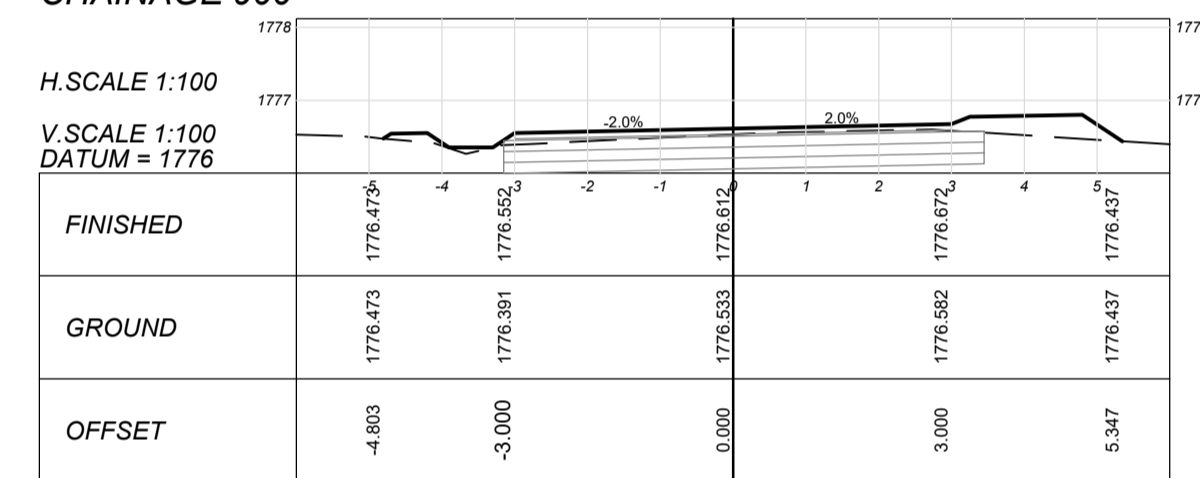
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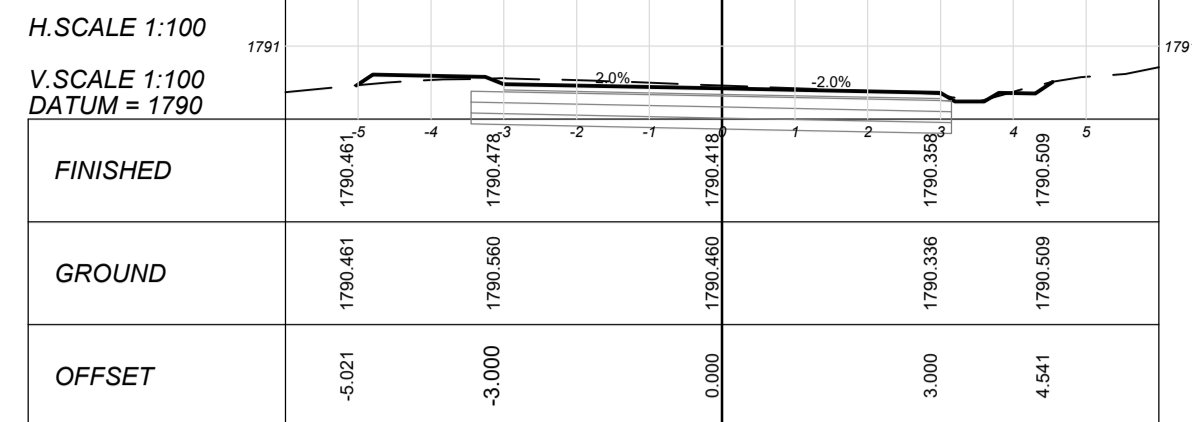


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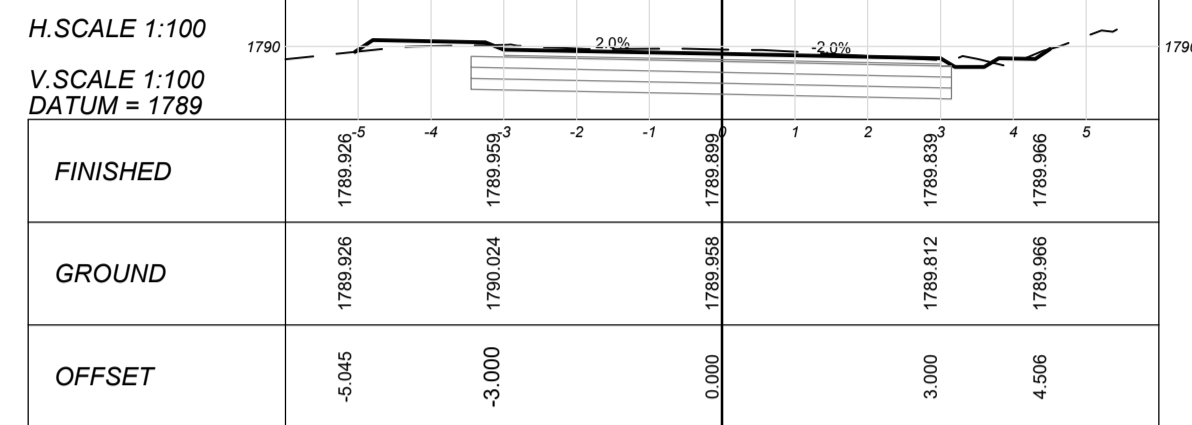
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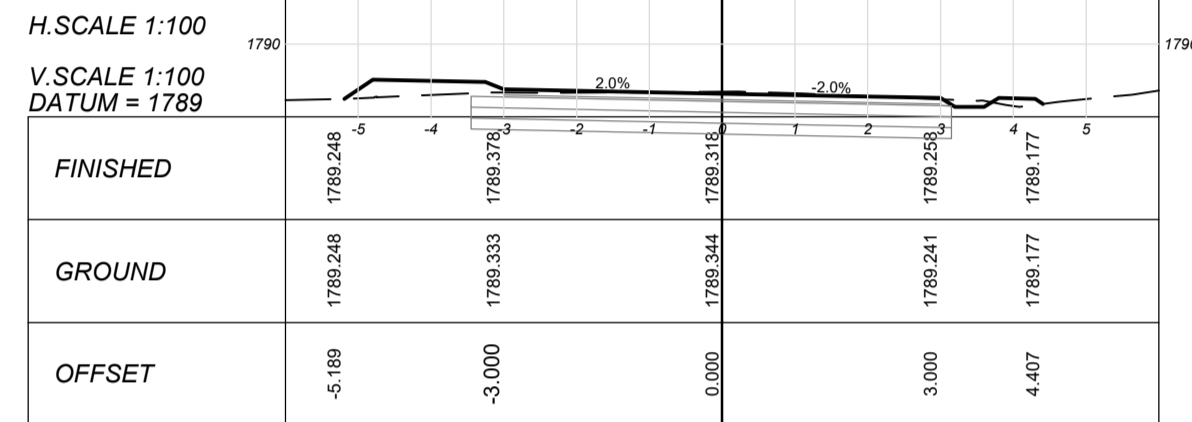
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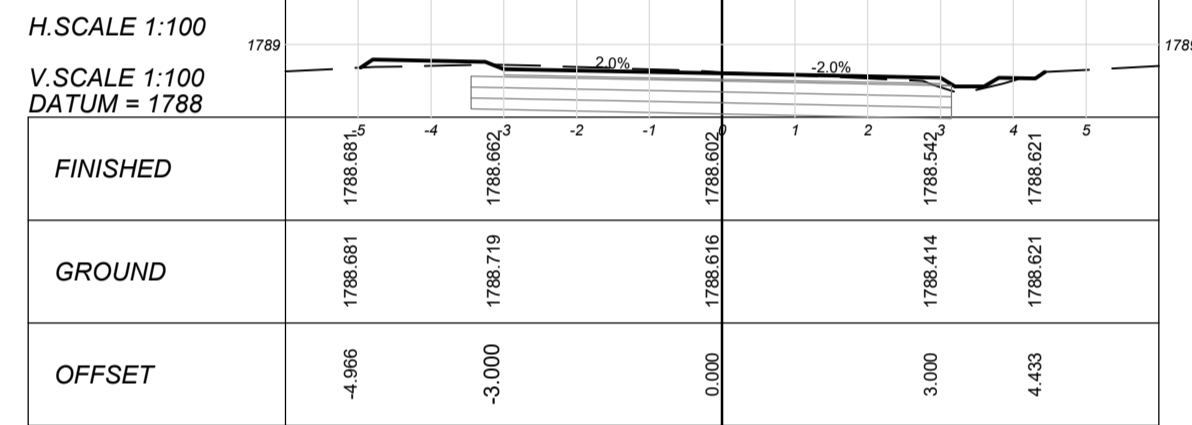
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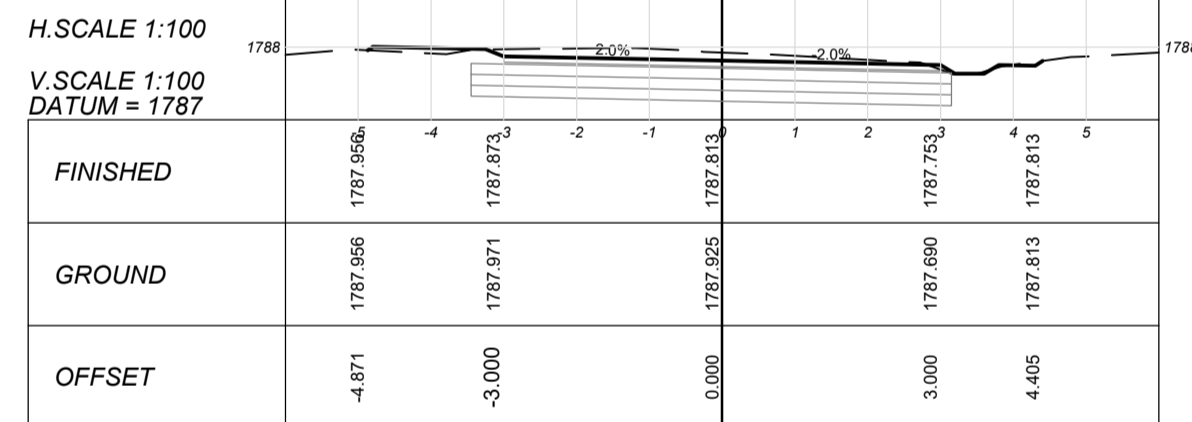
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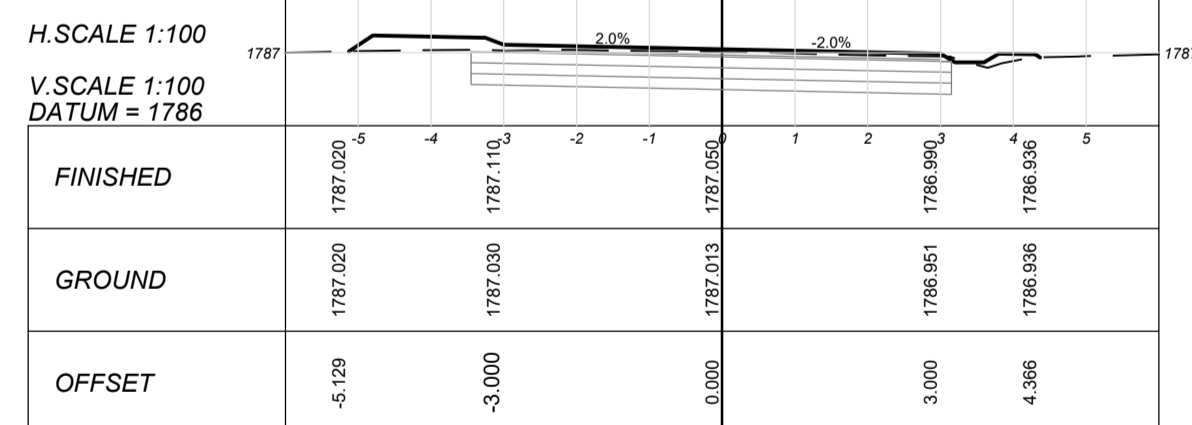
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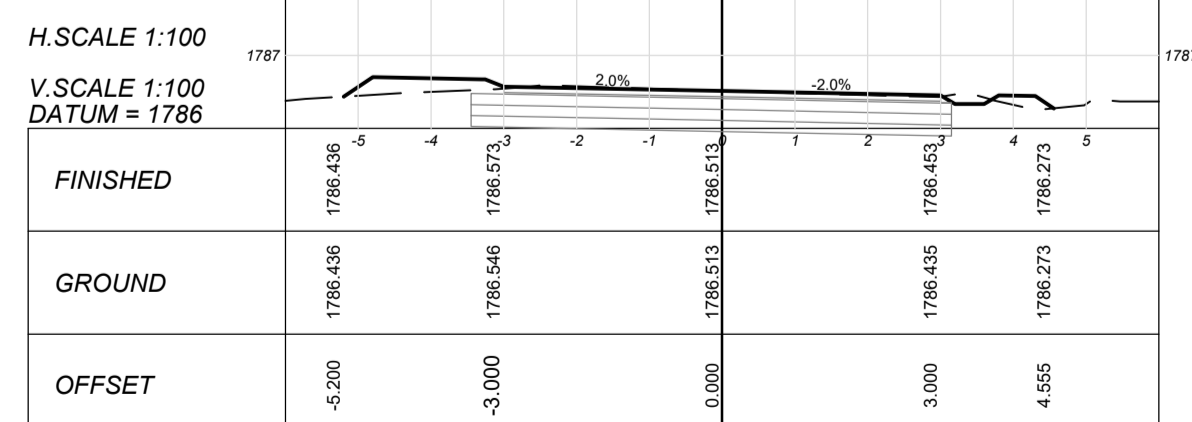
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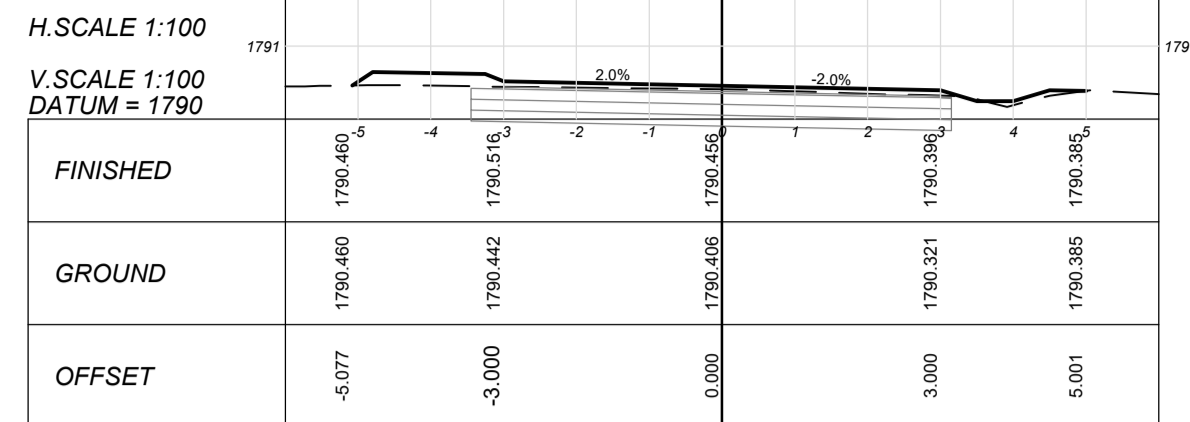
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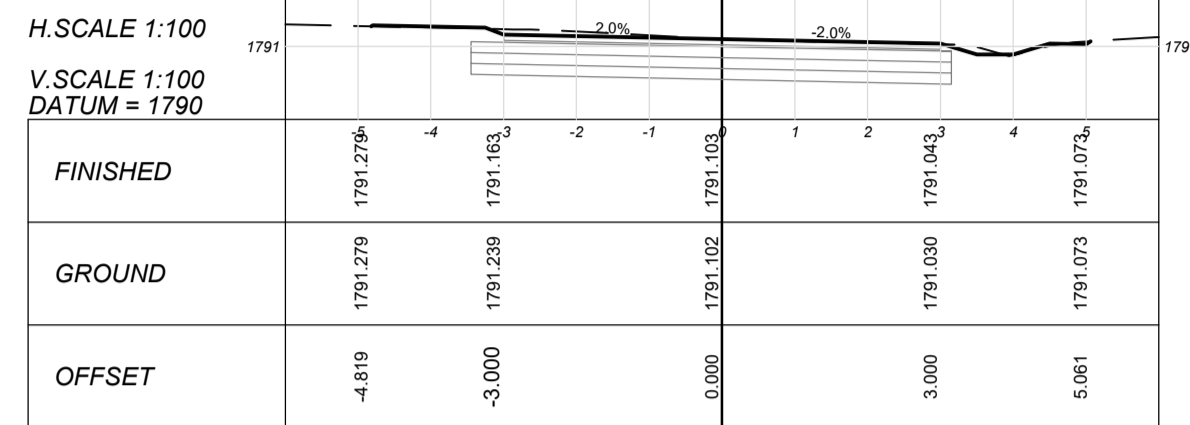
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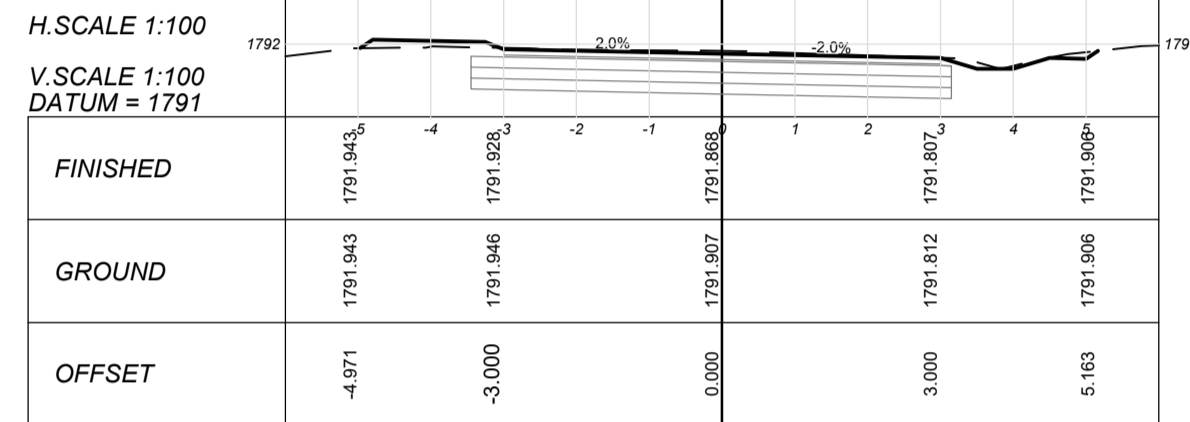
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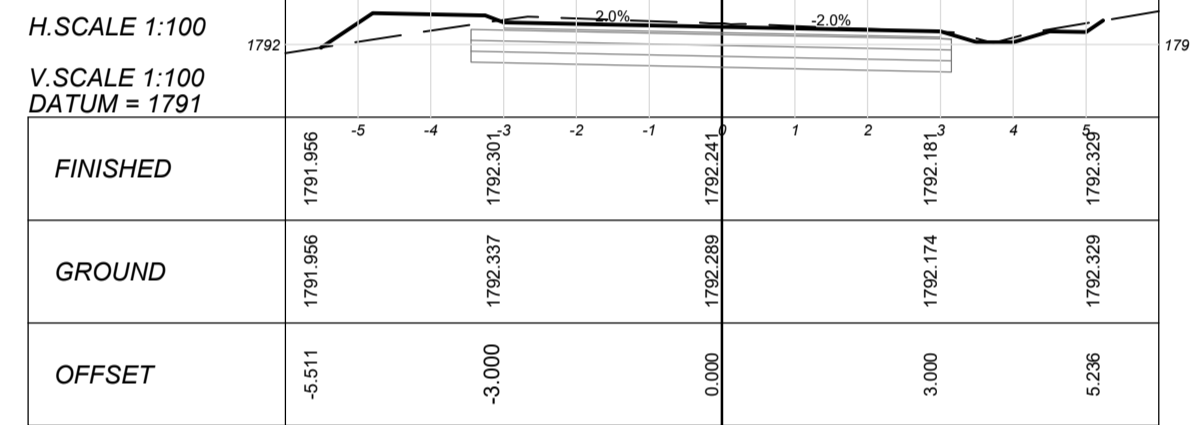
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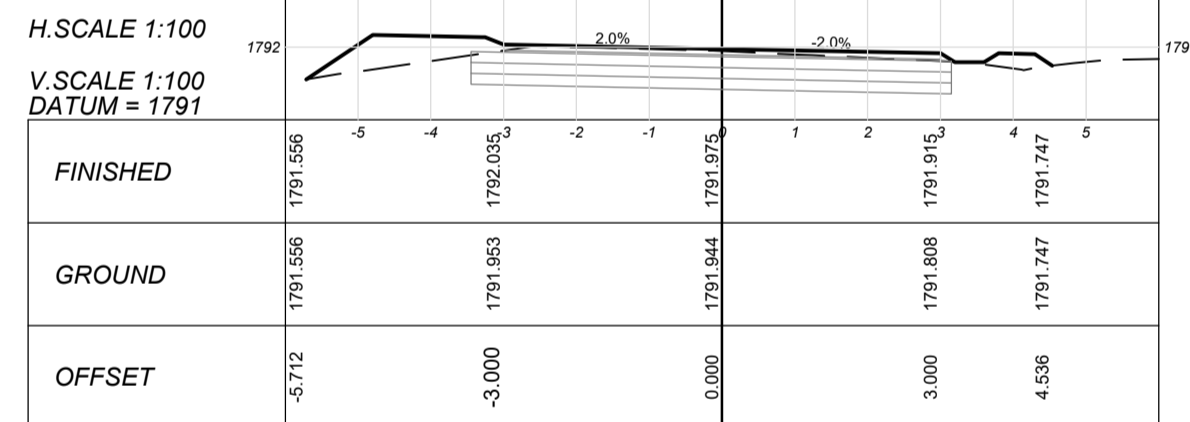
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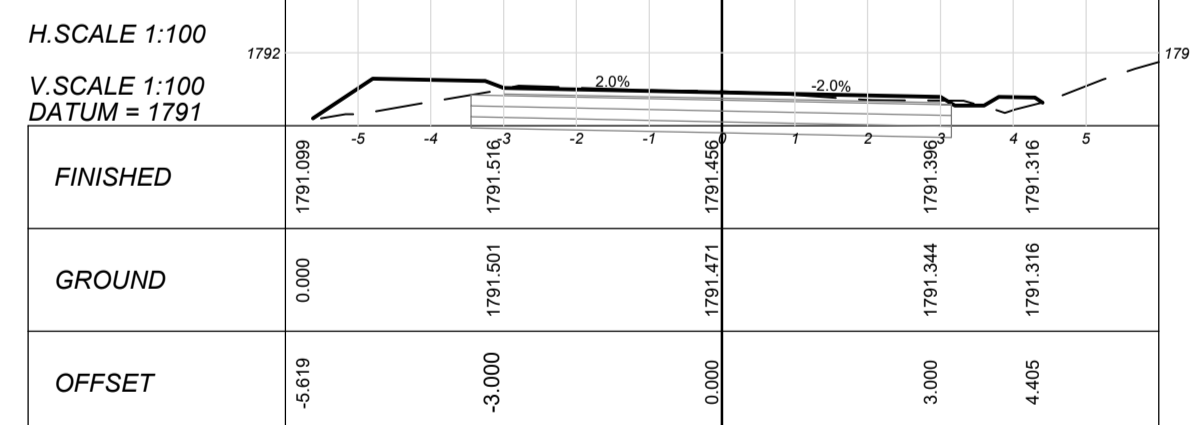
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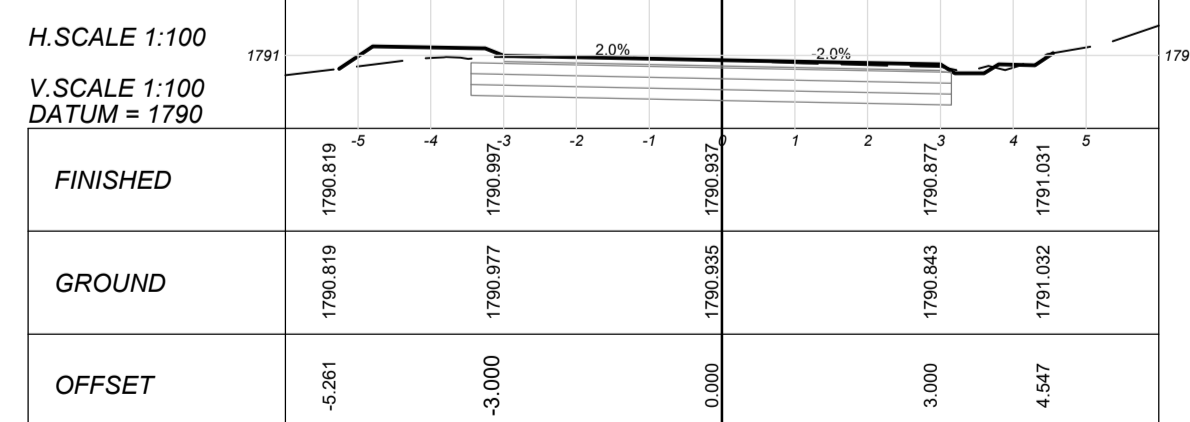
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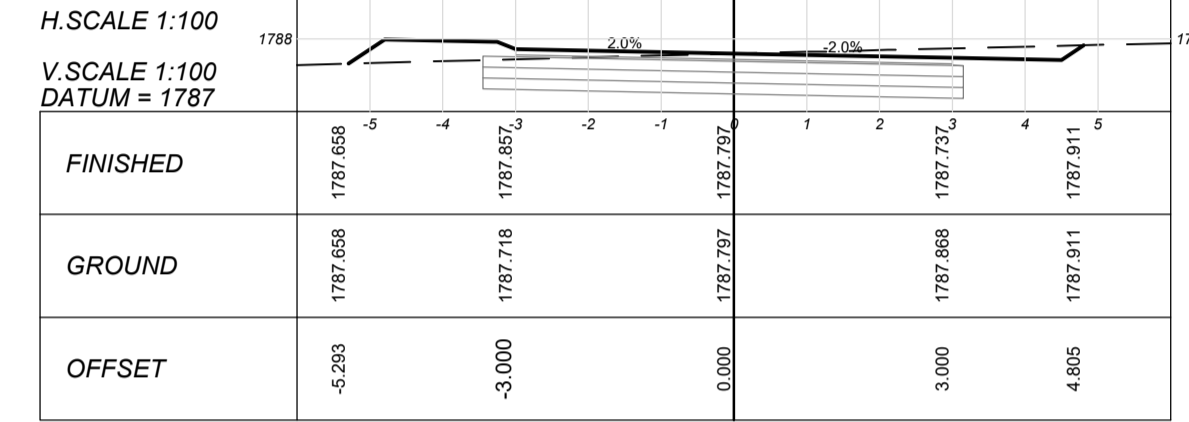
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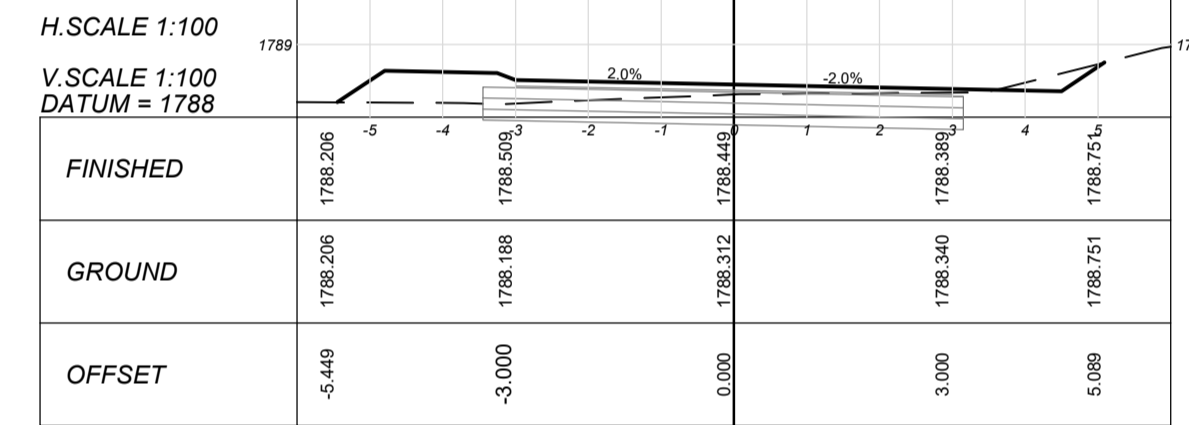
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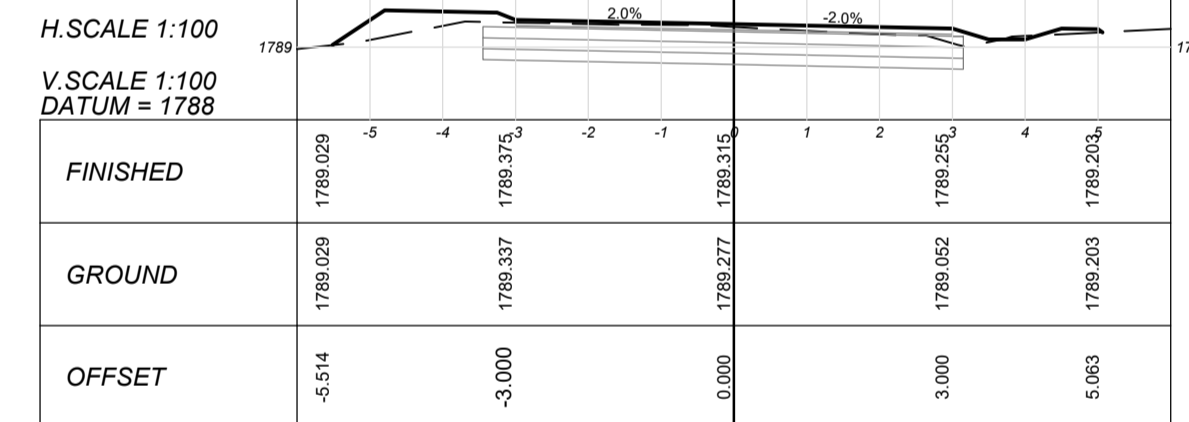
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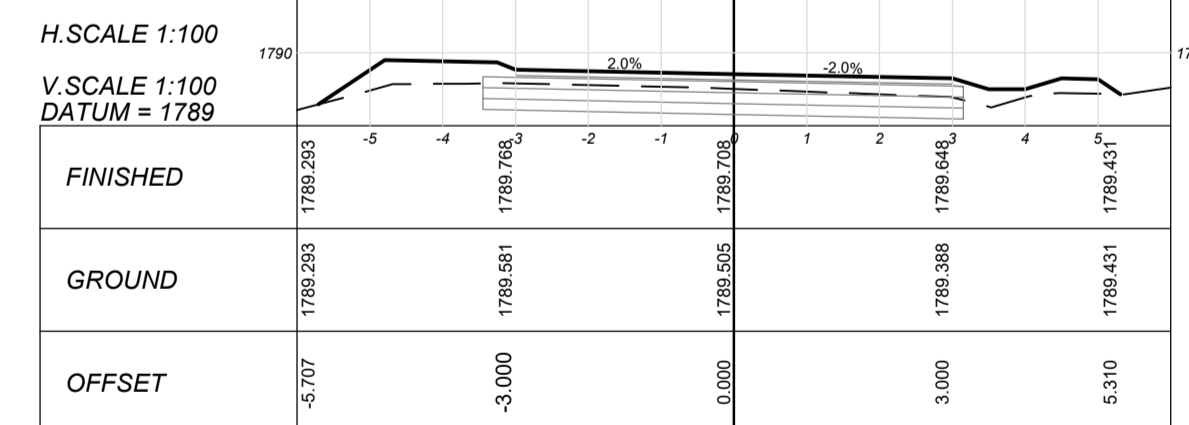
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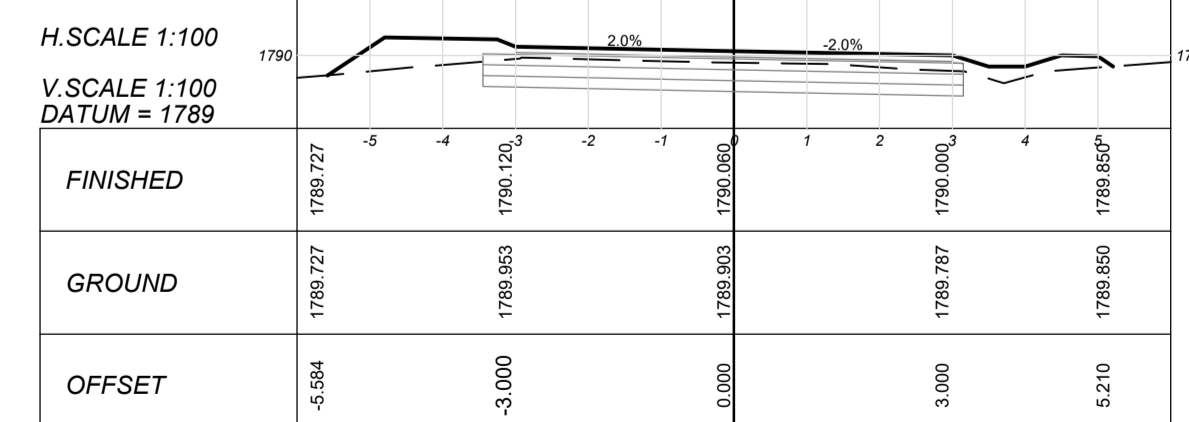
CHAINAGE 320



CHAINAGE 300



CHAINAGE 280



REVISIONS			
REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME	SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER		
TITLE	ROAD 7 - DETAILED CROSS SECTIONS		

PROJECT STATUS:	TENDER			
DATE	SCALE	SHEET	REV	A1
2024-03-25	AS SHOWN	1 OF 1	0	
DWG NO	P1027-BE-CIV-RD-CS07			

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PROFESSIONAL ENGINEER:
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PROF. Reg.No:
920281
DATE:
2024-03-25
SIGNATURE:

DESIGN BY:
T. TSHABALALA
DRAWN BY:
B. MVUKUZO
CHECKED BY:
L. MARAH
APPROVED BY:
L. MARAH



CHAINAGE 120

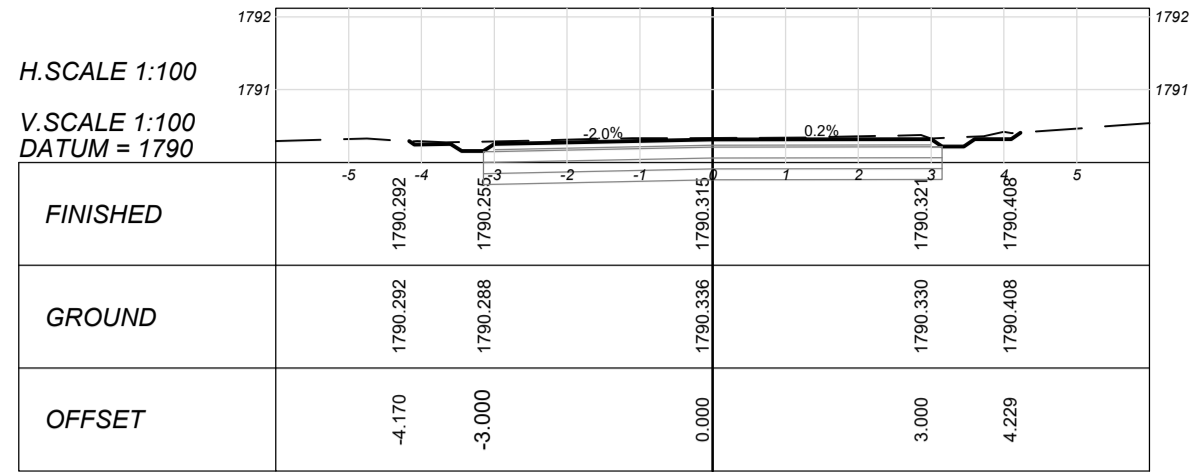


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CHAINAGE 100

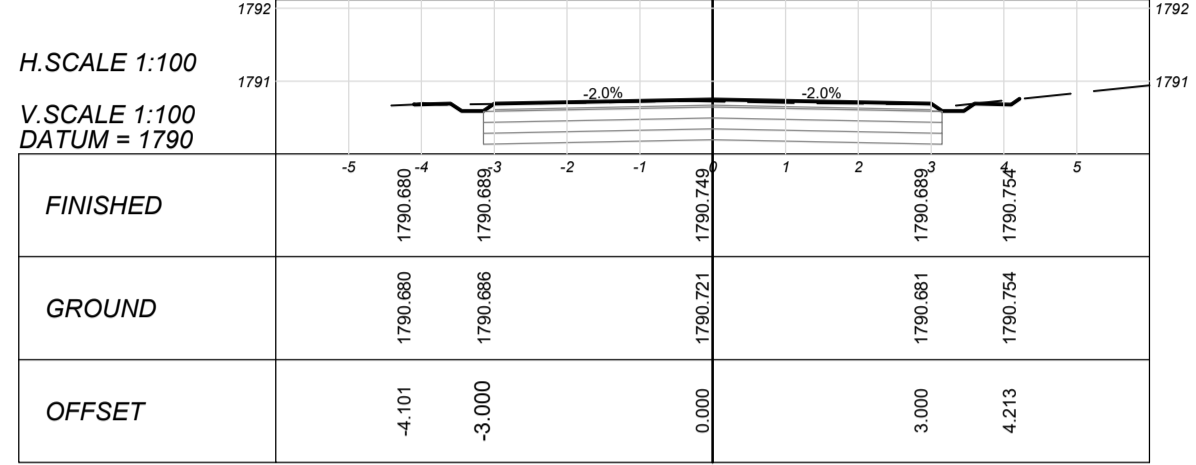


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CHAINAGE 80

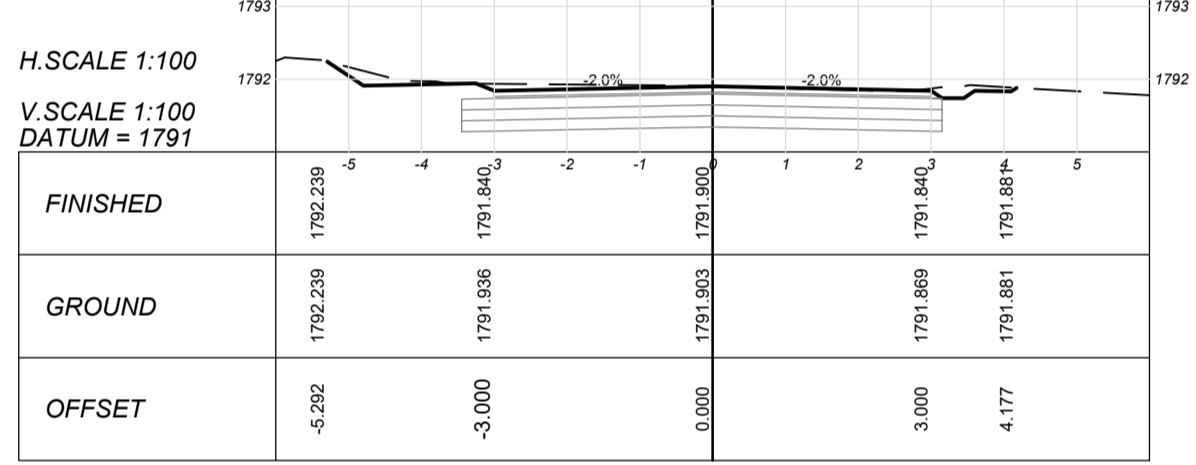


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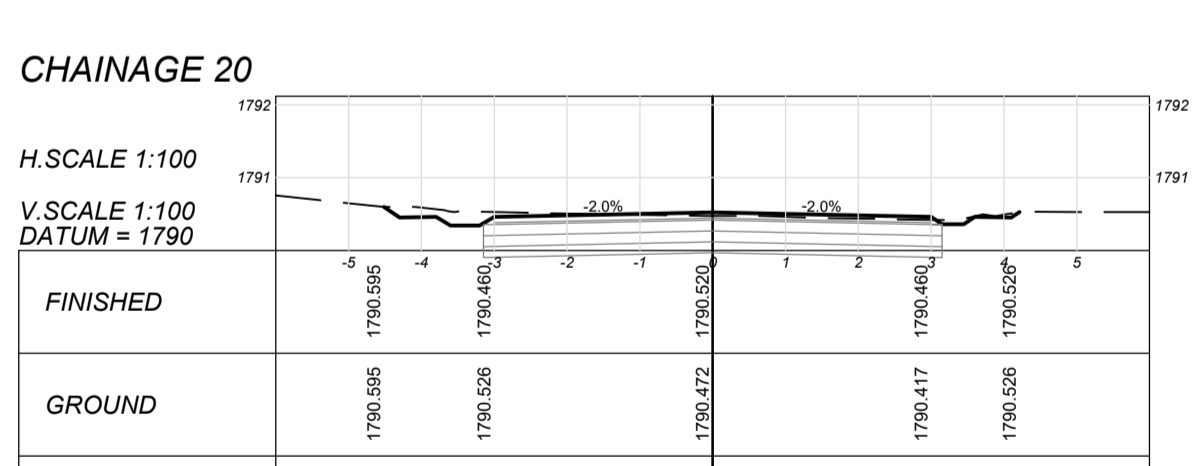


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CHAINAGE 40

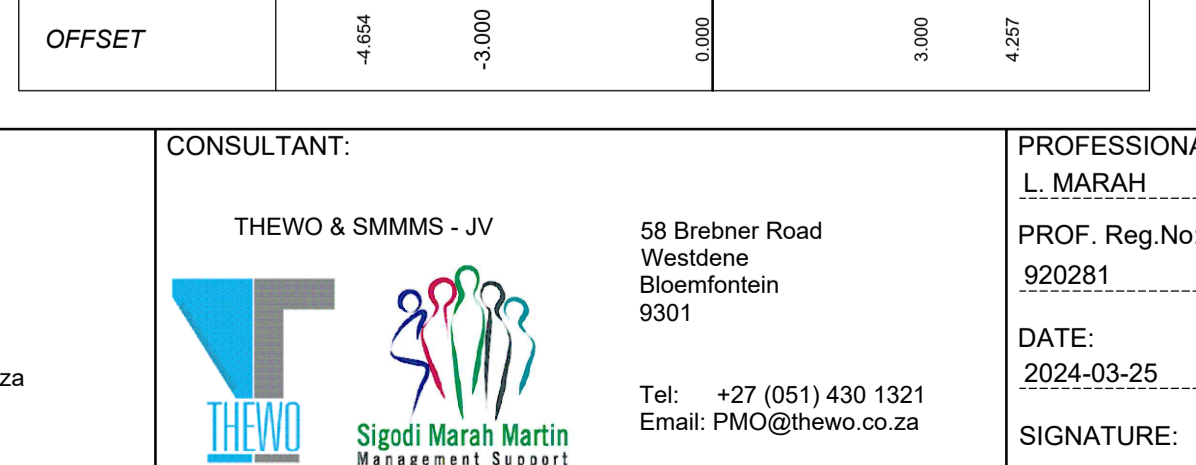


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CHAINAGE 20

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CHAINAGE 0

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CHAINAGE 260

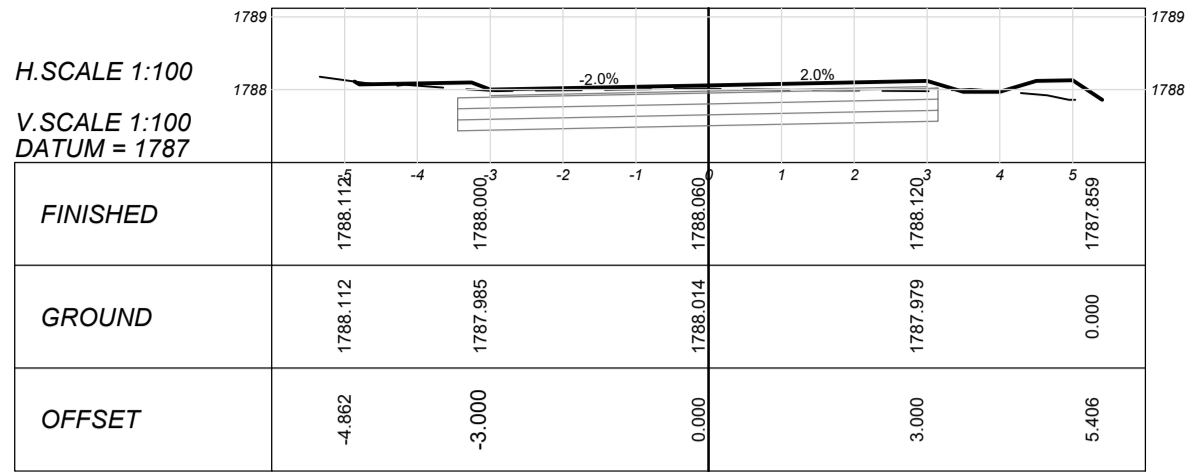


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CHAINAGE 240

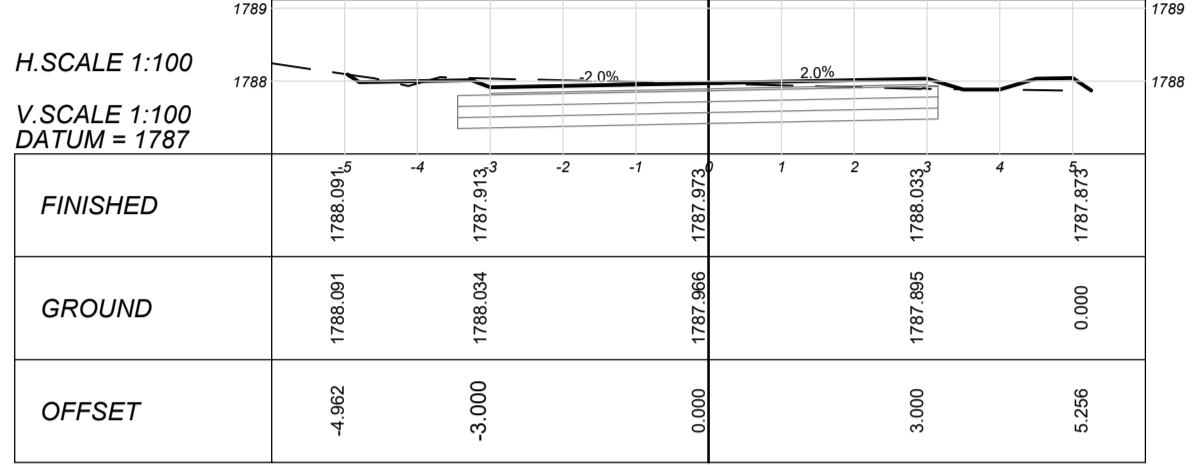


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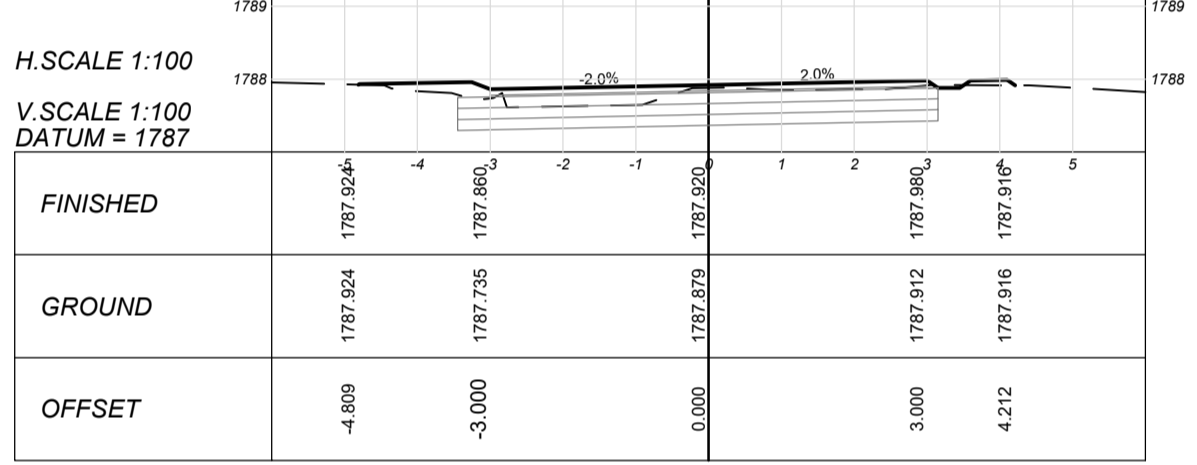


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CHAINAGE 200

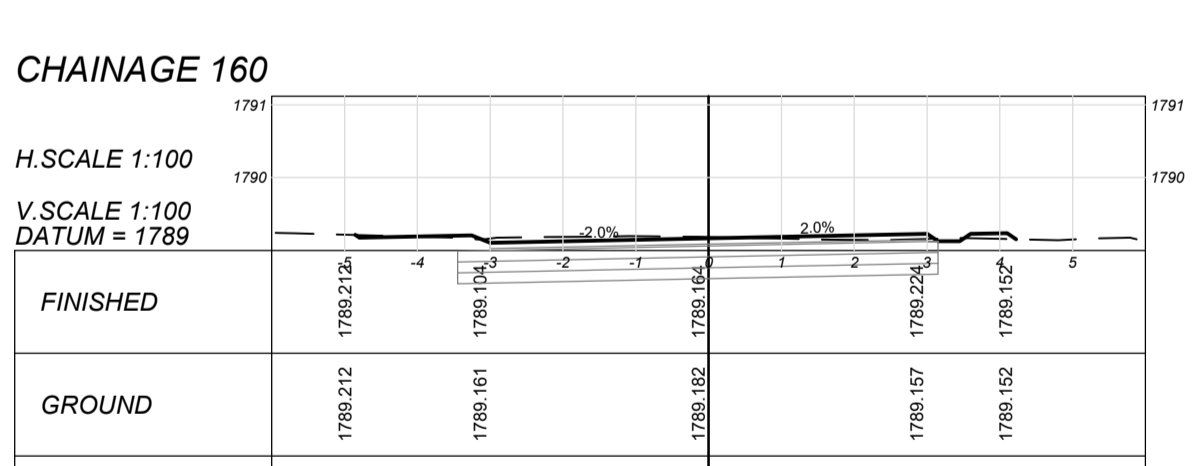


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CHAINAGE 180

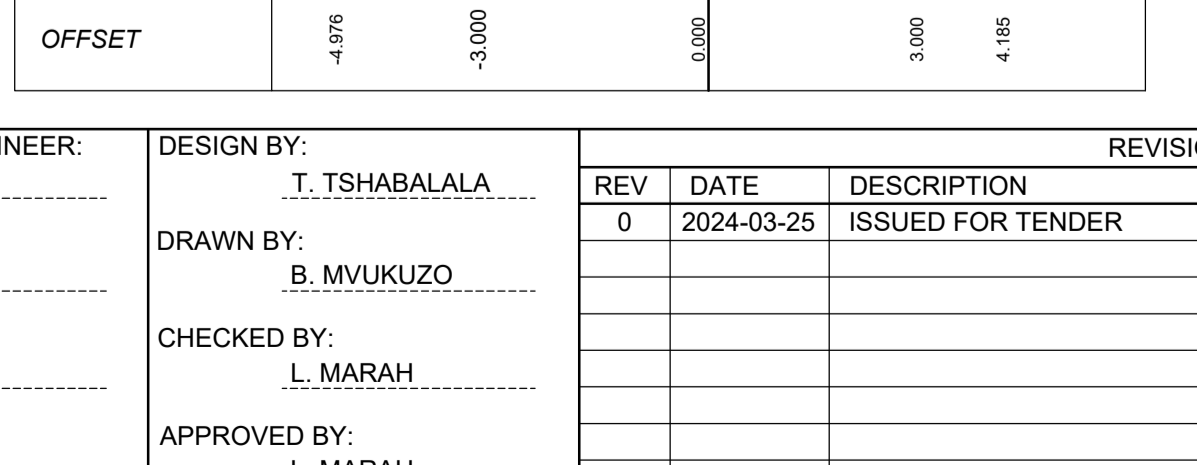


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CHAINAGE 160

Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -4.856 to 4.224.

CHAINAGE 140

Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -4.976 to 4.185.

CHAINAGE 400

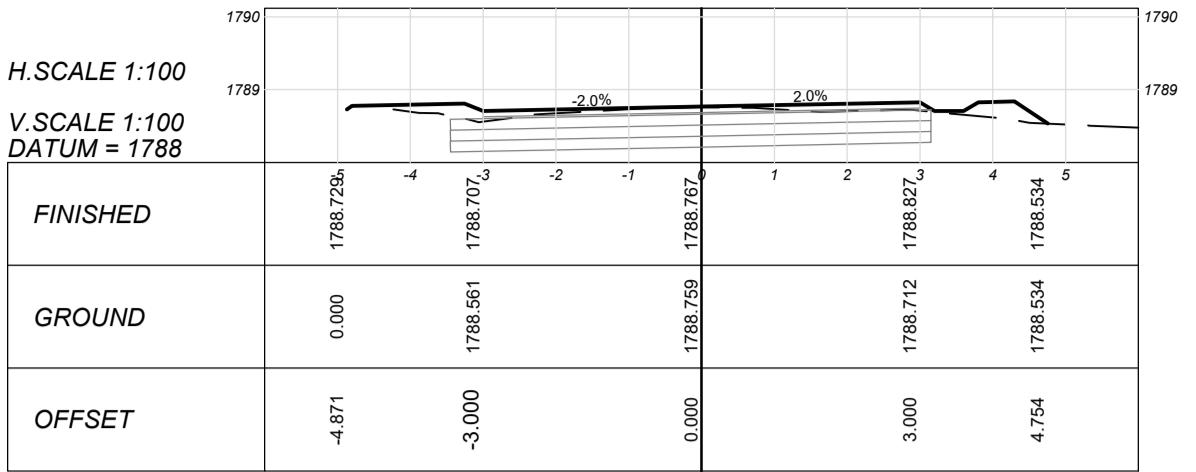


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CHAINAGE 380

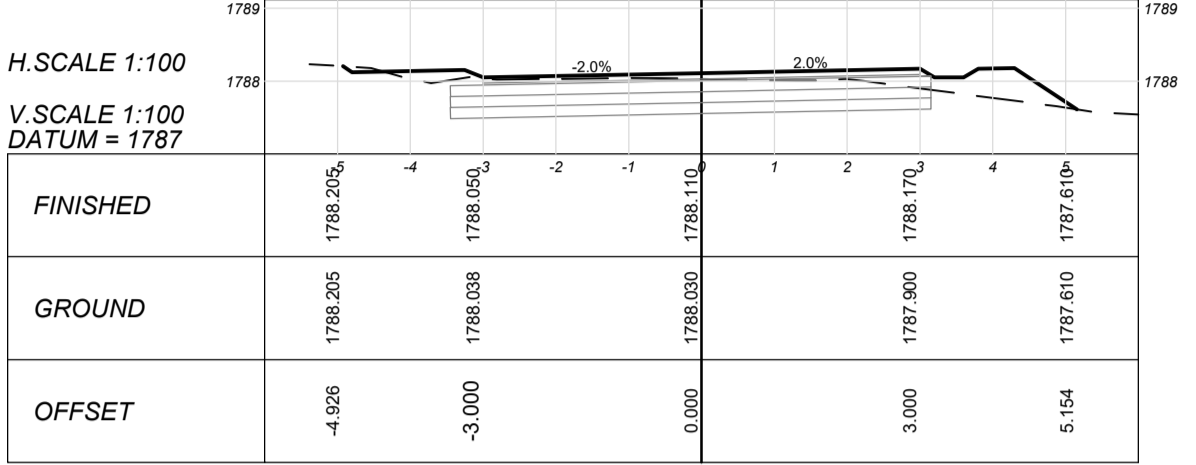


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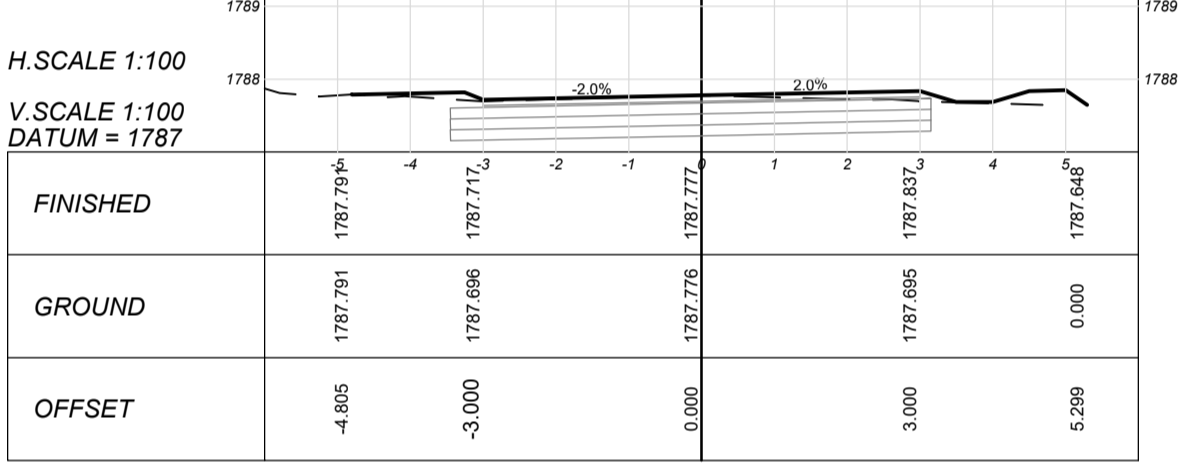


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CHAINAGE 340

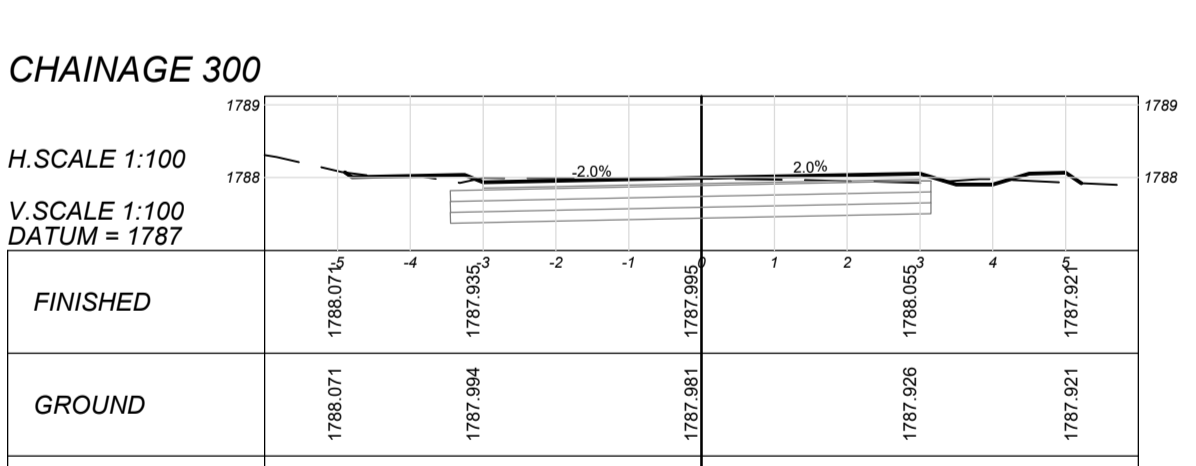


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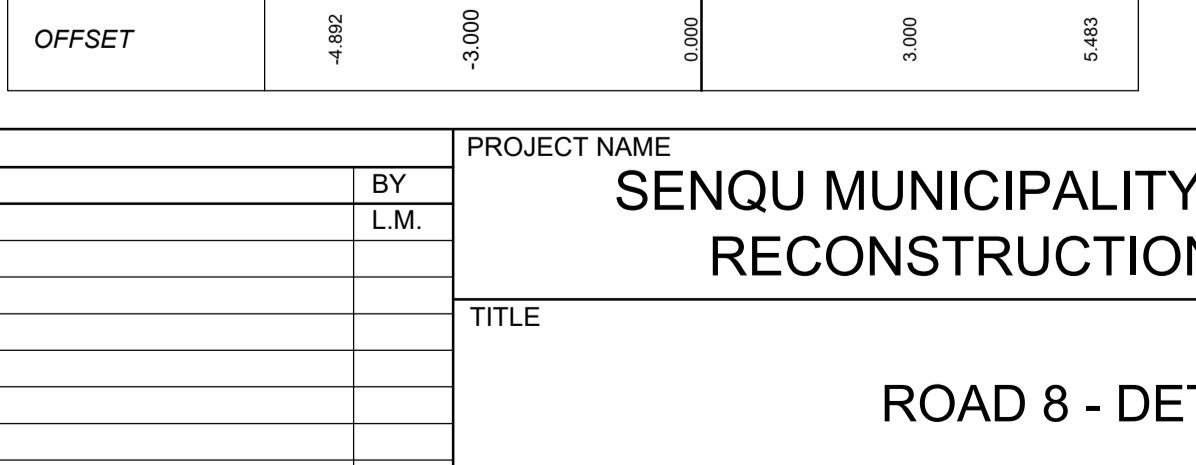


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CHAINAGE 300

Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -4.899 to 5.215.

CHAINAGE 280

Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -4.892 to 5.483.

CHAINAGE 540

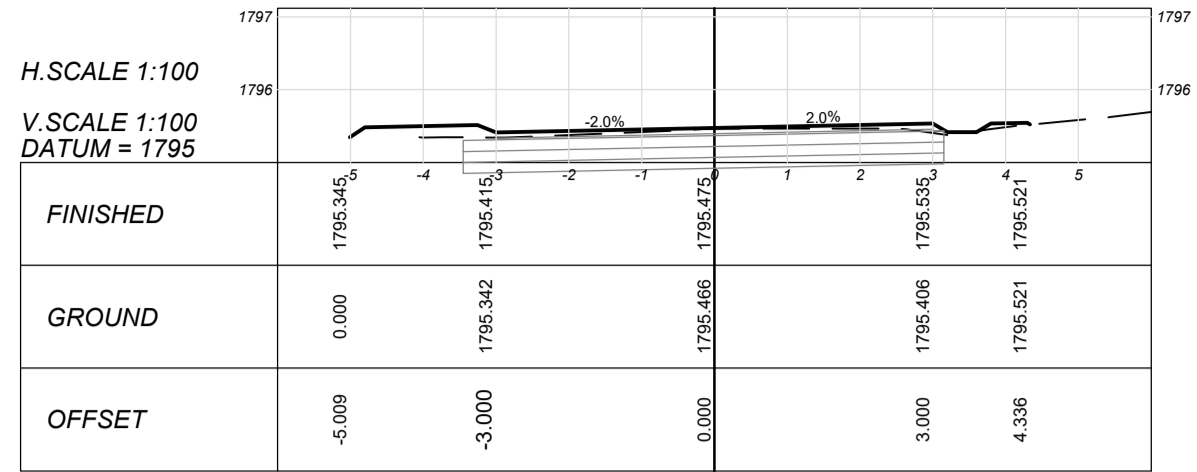


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CHAINAGE 520

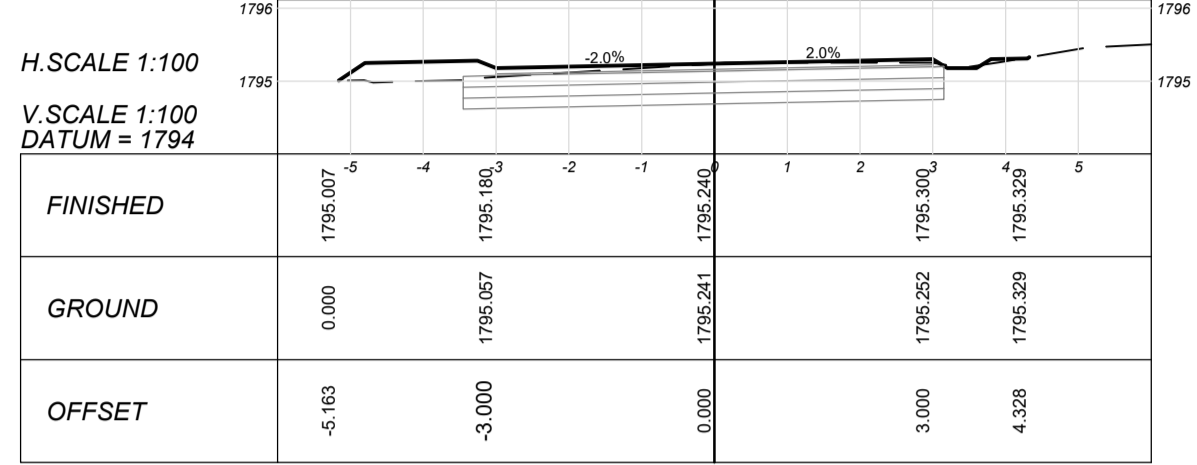


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CHAINAGE 500

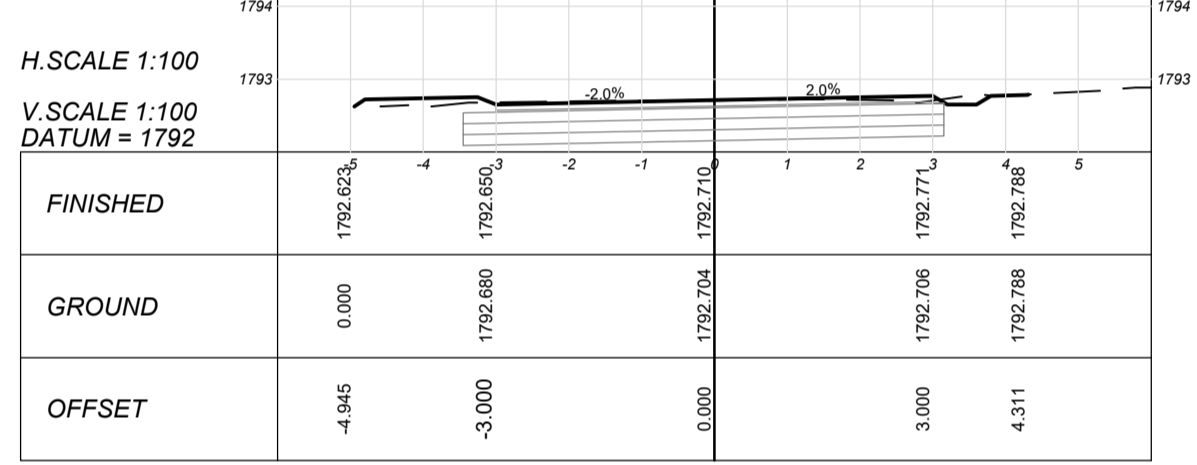


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CHAINAGE 480

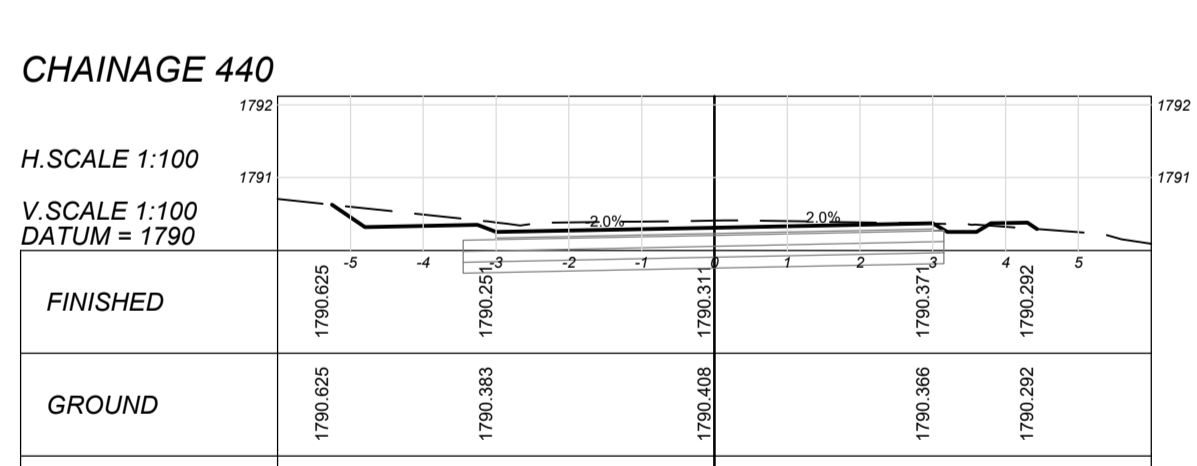


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CHAINAGE 460

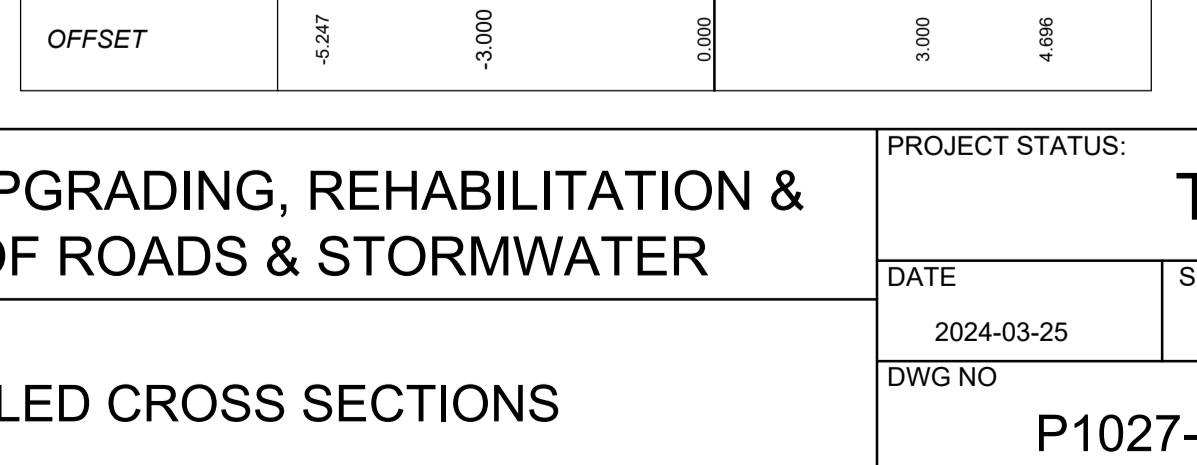


Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -4.916 to 4.597.

CHAINAGE 440

Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -5.256 to 4.433.

CHAINAGE 420

Table with 3 rows: FINISHED, GROUND, and OFFSET. Values range from -5.247 to 4.656.

CLIENT: 19 Murray Street Lady Grey 9755. Tel: (051) 603 1449. Email: vanzyt@senqu.gov.za

CONSULTANT: THEWO & SMMS - JV. 58 Brebner Road Westdene Bloemfontein 9301. Tel: +27 (051) 430 1321. Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER: L. MARAH. PROF. Reg.No: 920281. DATE: 2024-03-25. SIGNATURE:

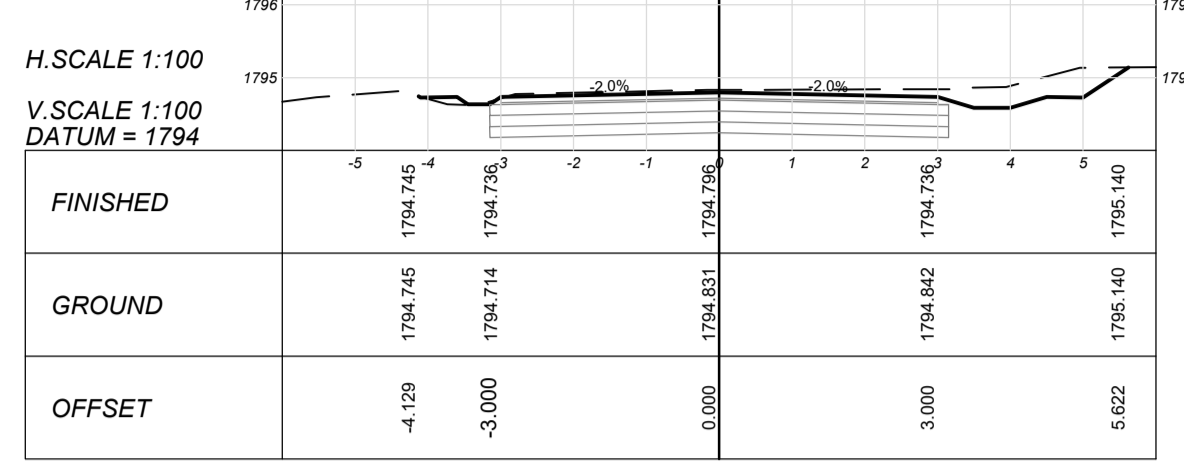
DESIGN BY: T. TSHABALALA. DRAWN BY: B. MVUKUZO. CHECKED BY: L. MARAH. APPROVED BY: L. MARAH

Table with 4 columns: REV, DATE, DESCRIPTION, BY. Row 1: 0, 2024-03-25, ISSUED FOR TENDER, L.M.

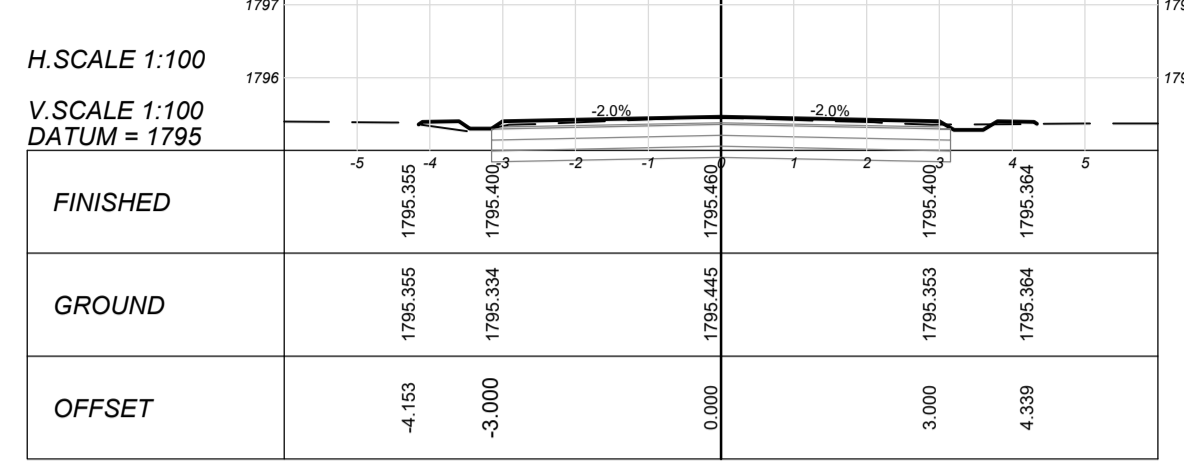
PROJECT NAME: SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER. TITLE: ROAD 8 - DETAILED CROSS SECTIONS

PROJECT STATUS: TENDER. DATE: 2024-03-25. SCALE: AS SHOWN. SHEET: 1 OF 2. REV: 0. DWG NO: P1027-BE-CIV-RD-CS08

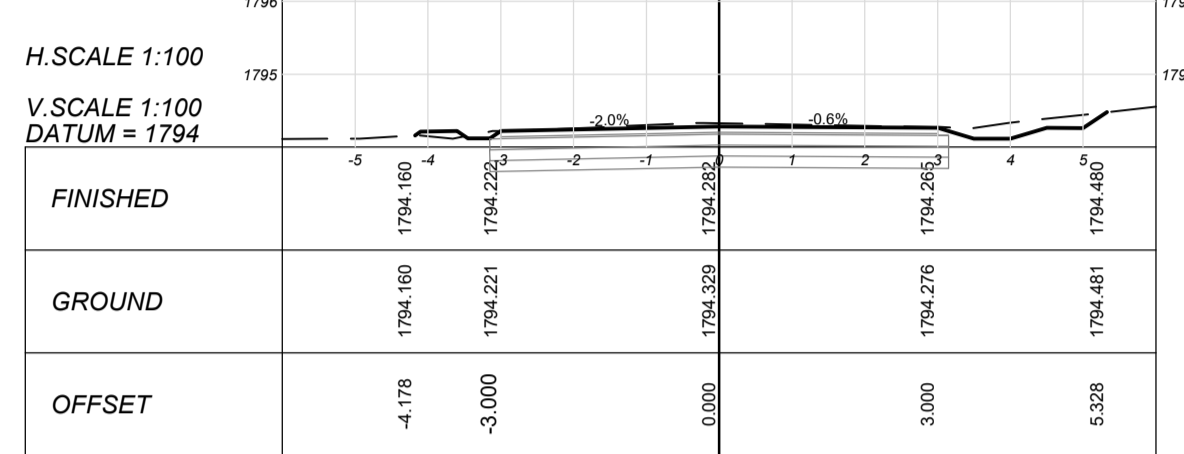
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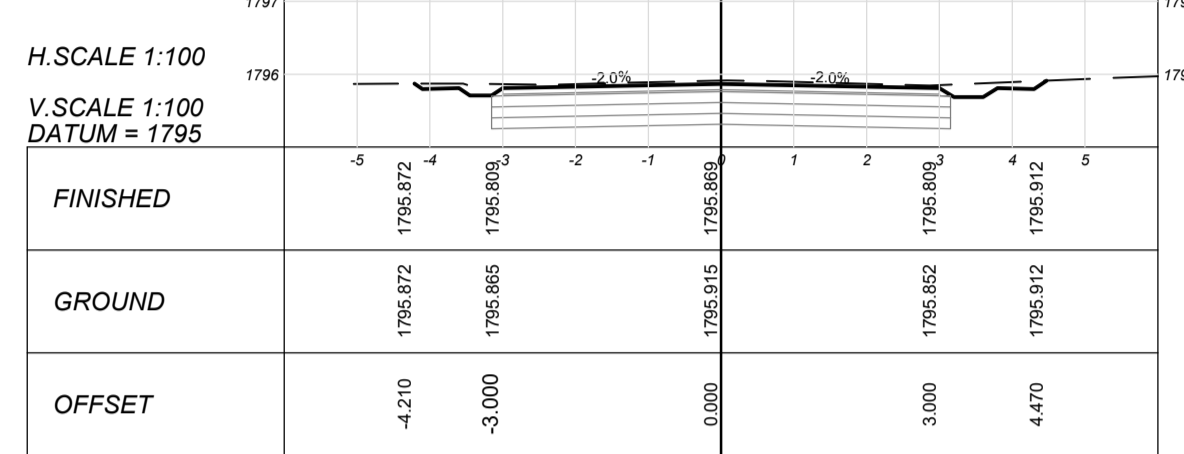
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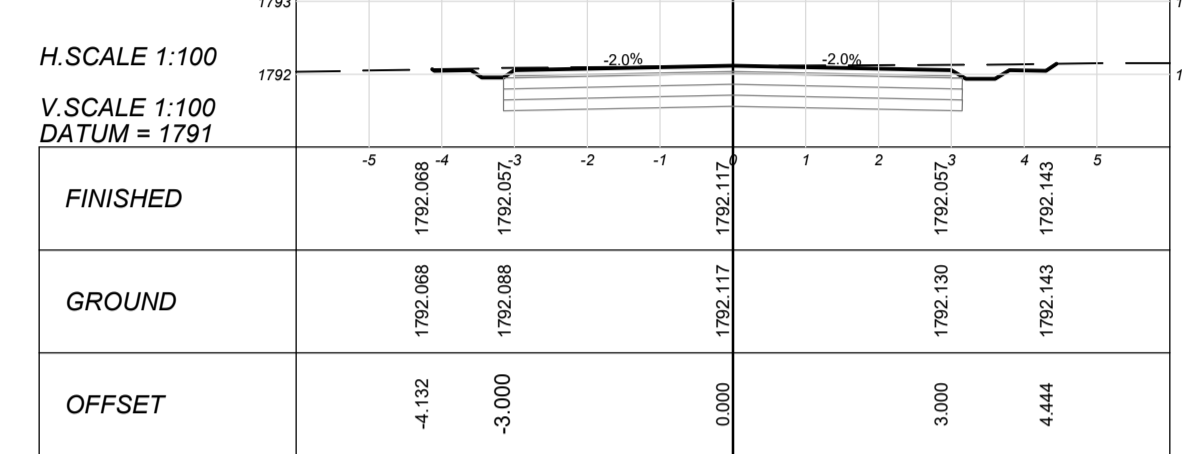
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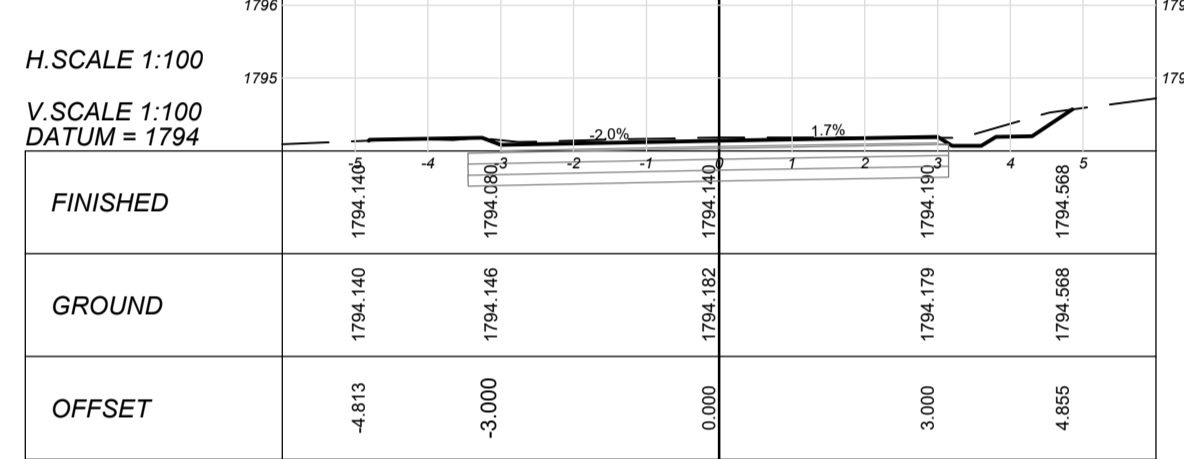
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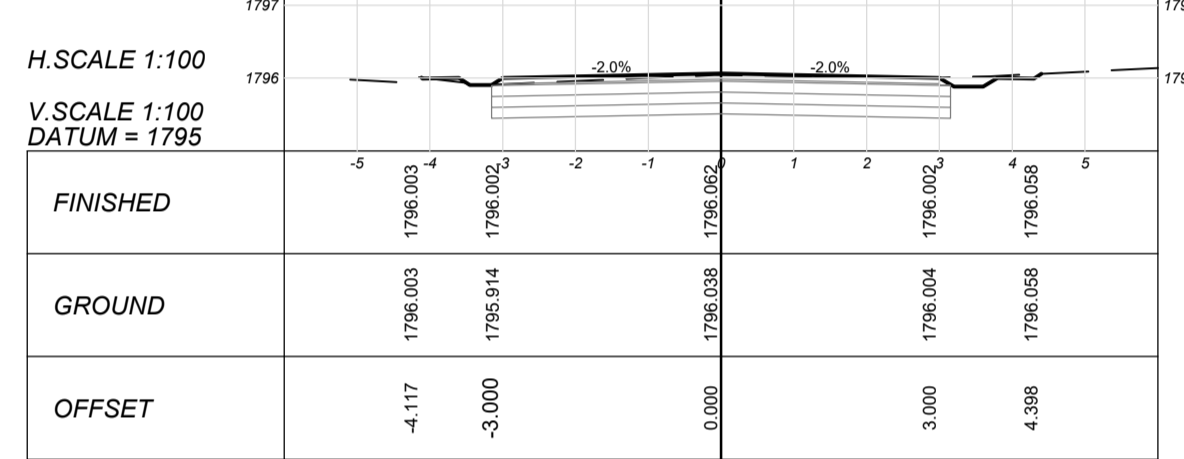
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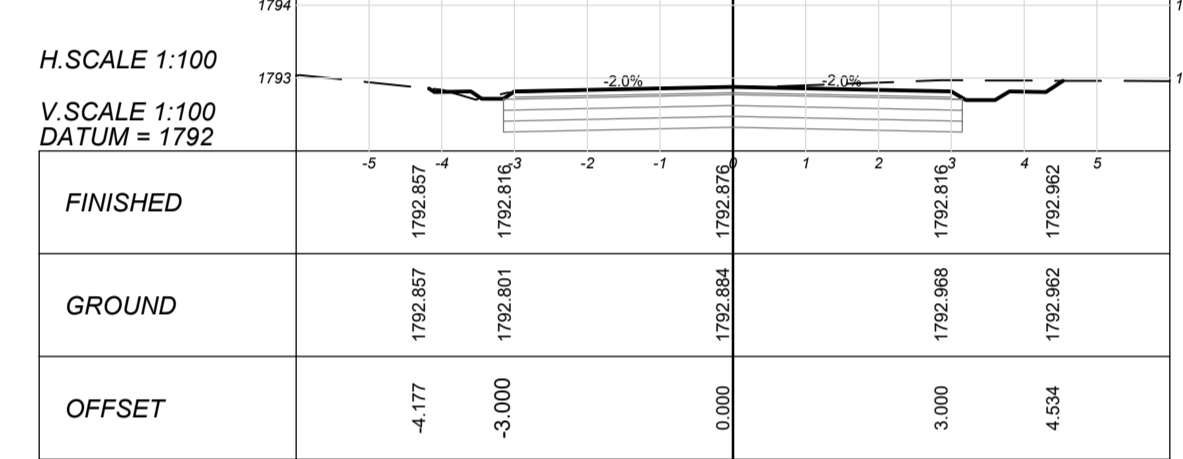
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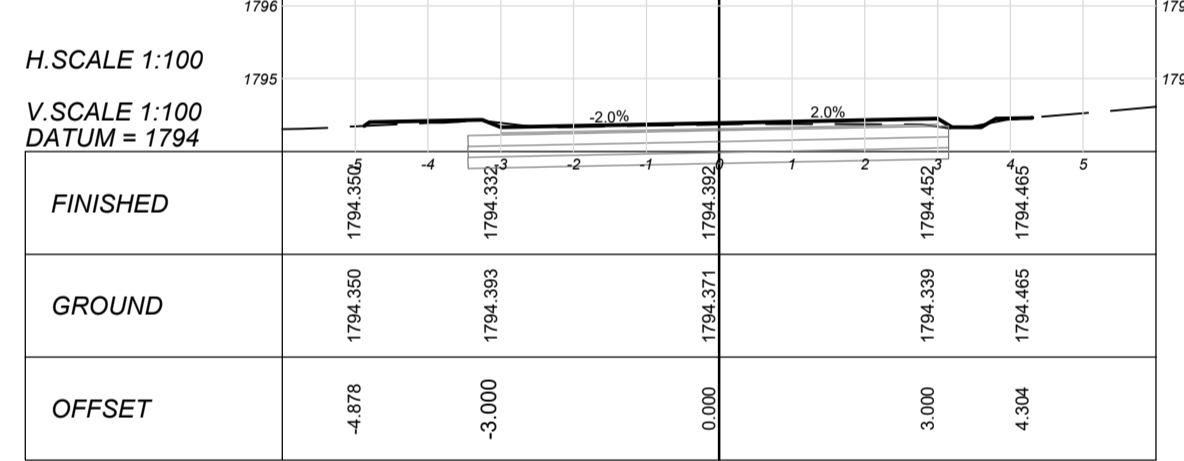
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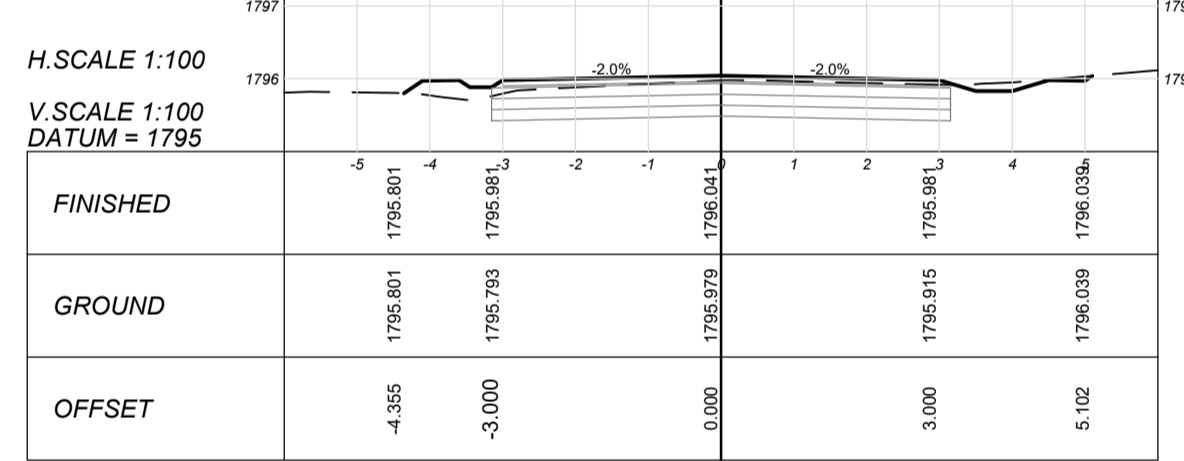
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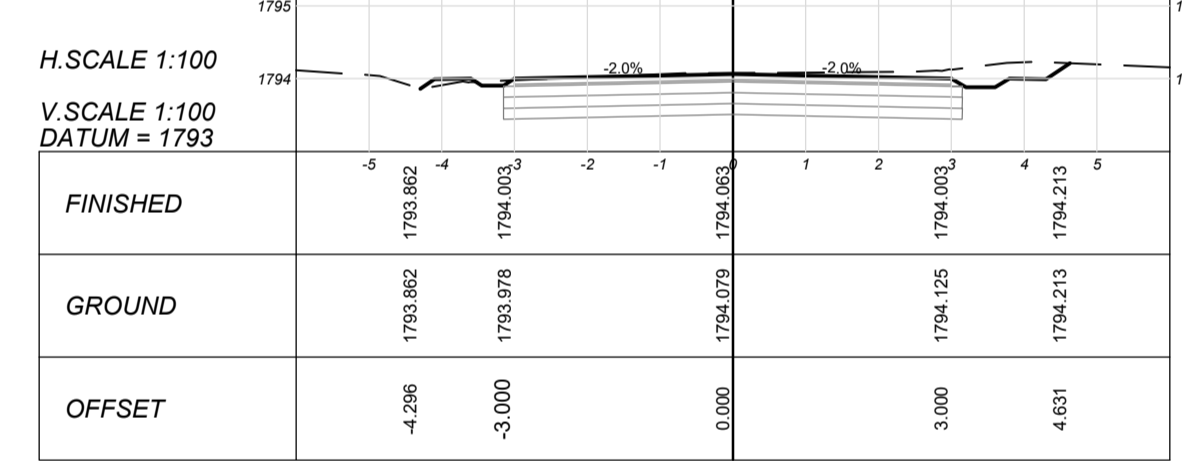
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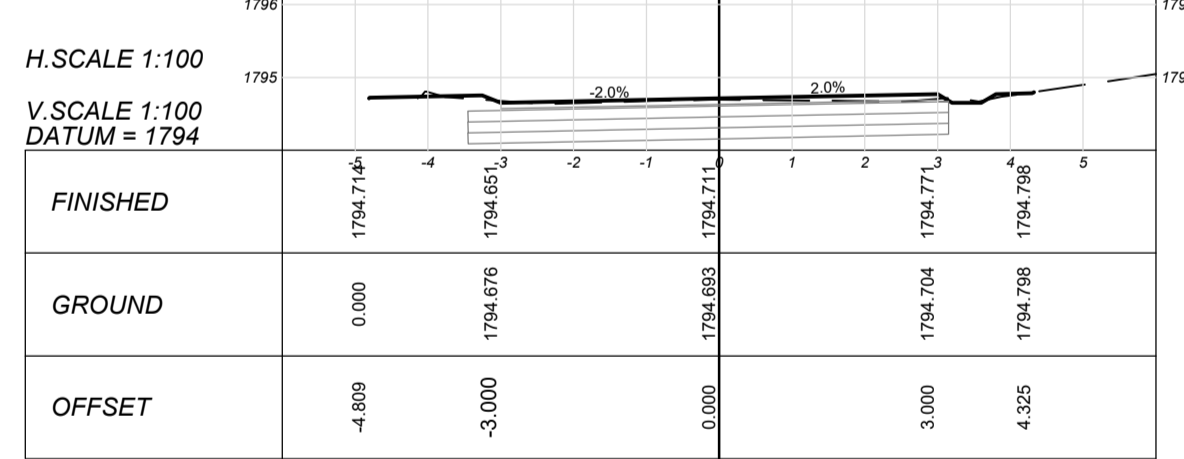
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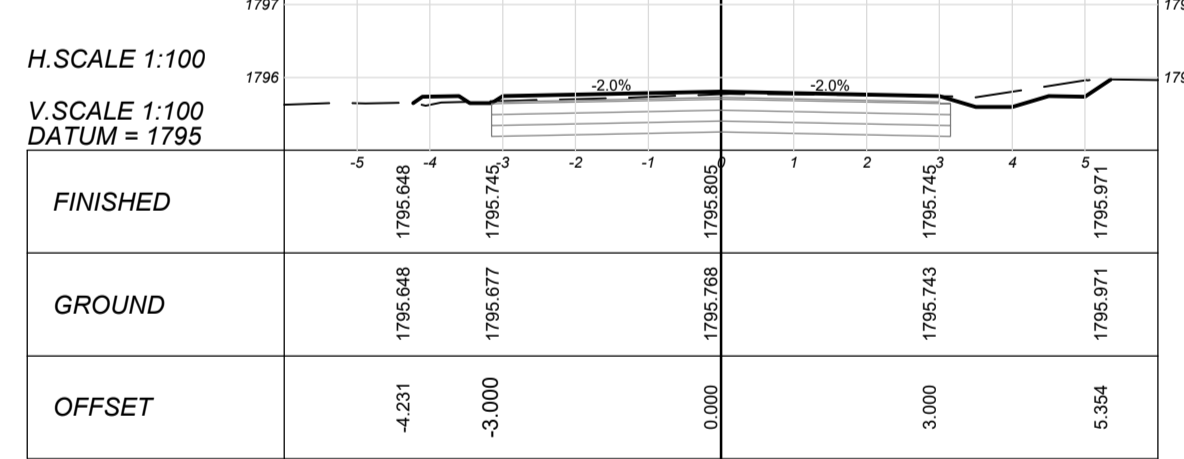
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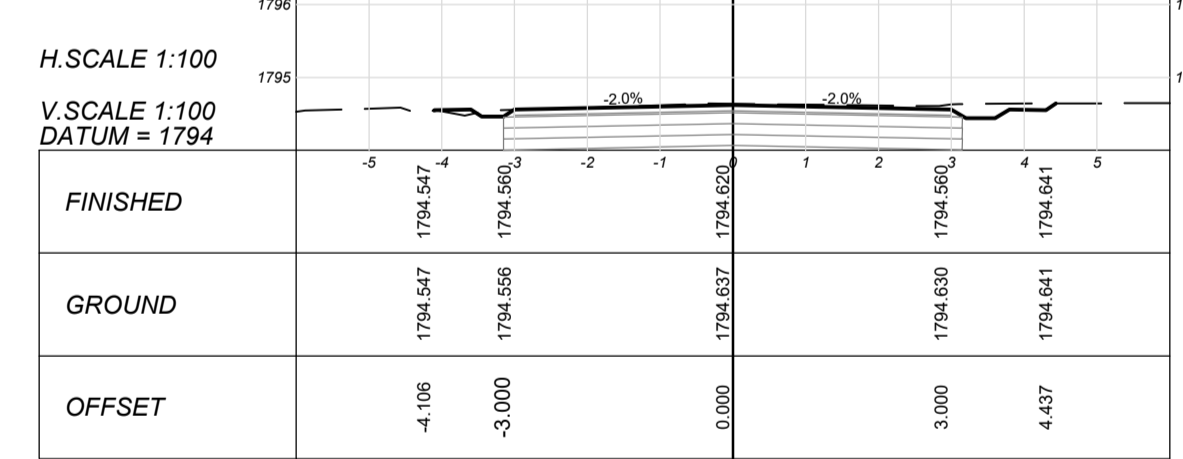
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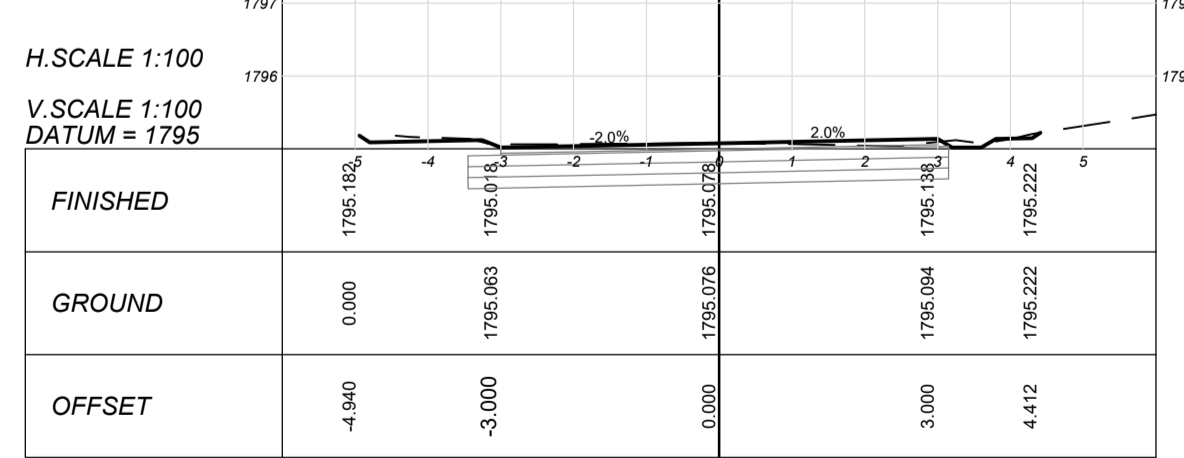
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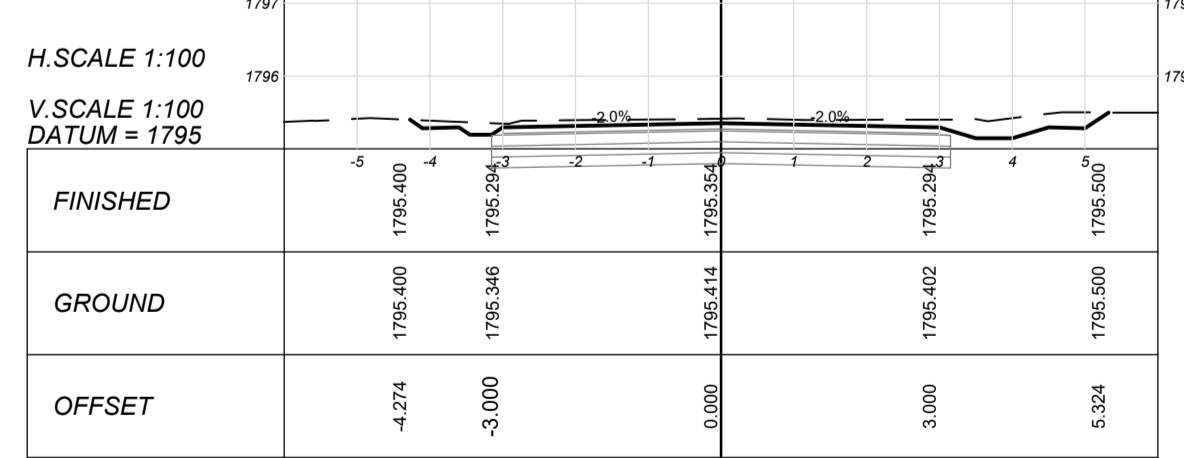
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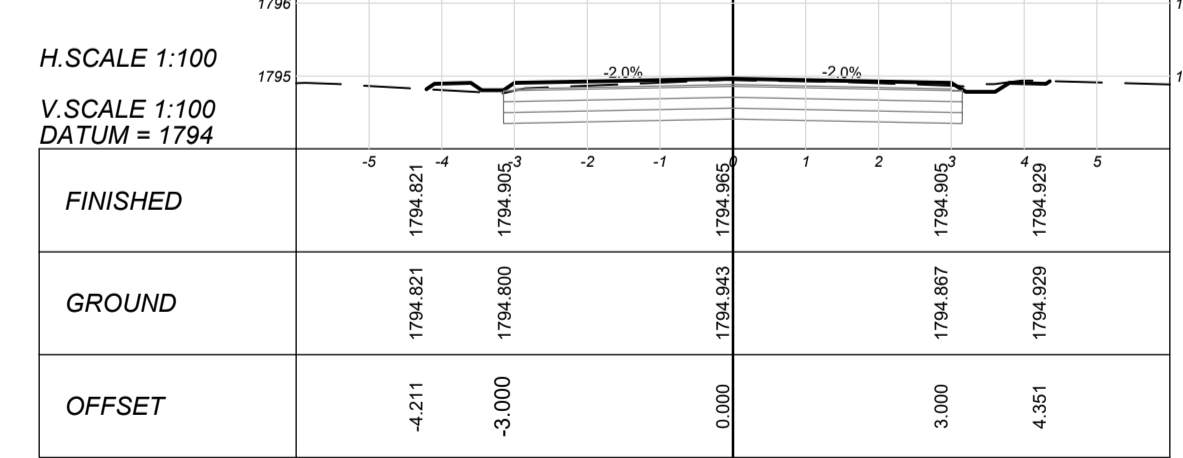
CHAINAGE 560



CHAINAGE 680



CHAINAGE 800



CLIENT:



19 Murray Street
Lady Grey
9755
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Email: vanzyt@senqu.gov.za

CONSULTANT:



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Tel: +27 (051) 430 1321
Email: PMO@thewo.co.za

PROFESSIONAL ENGINEER:

L. MARAH
PROF. Reg.No:
920281
DATE:
2024-03-25
SIGNATURE:

DESIGN BY:

T. TSHABALALA
DRAWN BY:
B. MVUKUZO
CHECKED BY:
L. MARAH
APPROVED BY:
L. MARAH

REVISIONS

REV	DATE	DESCRIPTION	BY
0	2024-03-25	ISSUED FOR TENDER	L.M.

PROJECT NAME

SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER

TITLE

ROAD 8 - DETAILED CROSS SECTIONS

PROJECT STATUS:

TENDER

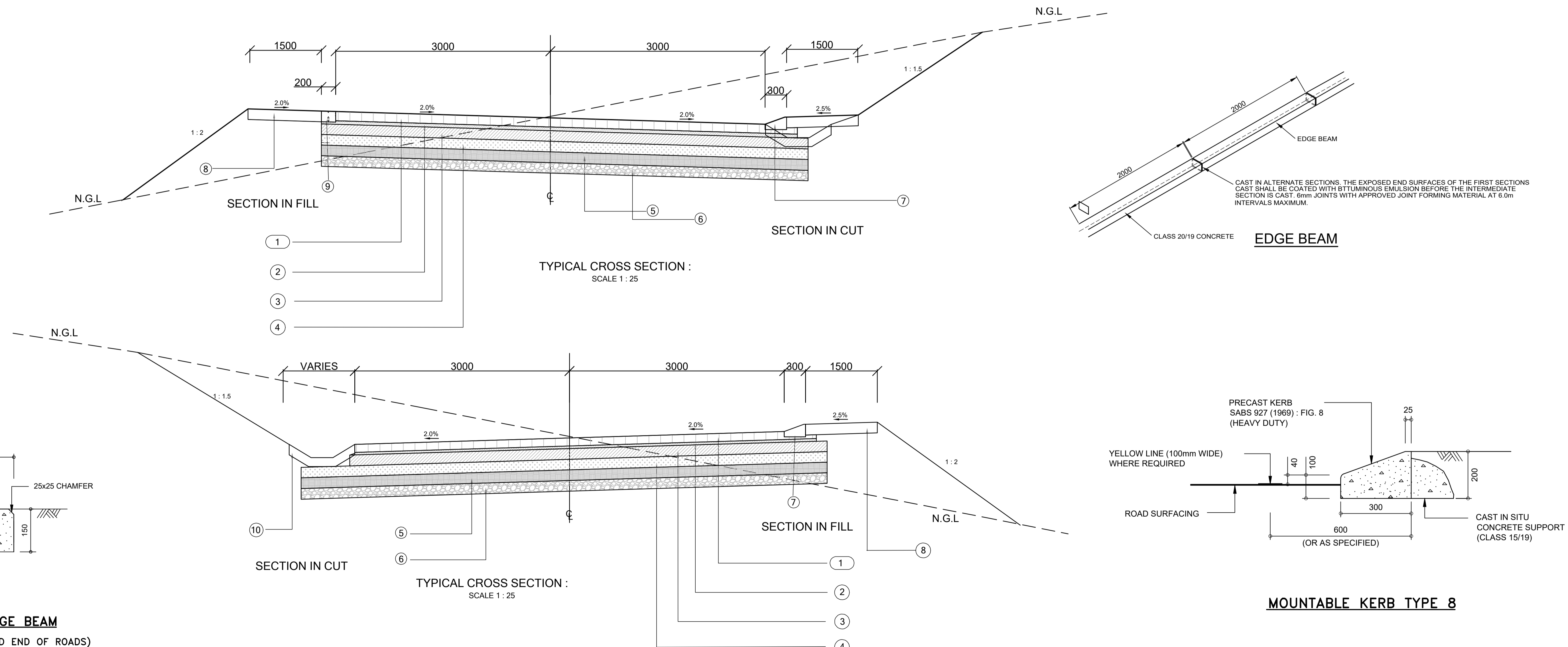
DATE	SCALE	SHEET	REV	REV
2024-03-25	AS SHOWN	2 OF 2	0	A1

DWG NO P1027-BE-CIV-RD-CS08

MATERIAL REQUIREMENTS

LAYER	LAYER No	THICKNESS (mm)	DESCRIPTION	TRH 14 MATERIAL AND/OR COLTO CLASSIFICATION	COLTO SPECIFICATION	Min COMPACTION REQUIREMENT	PLASTICITY INDEX	GRADING MODULUS (MIN)	CBR @ % OF Mod AASHTO Density	UCS @ 100% Mod AASHTO DENSITY (Mpa)	ITS @ 100% Mod AASHTO DENSITY (kPa)	MAX CBR SWELL @ 100 Mod AASHTO
SURFACING	①	80	INTERLOCKING CONCRETE BLOCKS	S-A	7300	--	--	--	--	--	--	--
BEDDING SAND	②	25	BEDDING SAND LAYER	SND	7300	--	--	--	--	--	--	--
BASE	③	150	CEMENTED NATURAL GRAVEL (G5)	C3	3400 & 3500	97%	6 MAX	1.2	25 @ 95%	1.5 MIN	250 MIN	0.5%
SUB BASE	④	150	NATURAL GRAVEL	G6	3400	96%	12 MAX	1.2	25 @ 93%	--	--	1.0%
SELECTED FILL	⑤	150	IMPORTED SELECTED LAYER	G7/G8/G9	3400	93%	--	--	15/10/7 @ 93%	--	--	1.5%
ROCKFILL	⑥	150	ROCKFILL LAYER	--	3200	--	--	--	--	--	--	--
KERB	⑦	1000 X 300 X 200	FIGURE 8C MOUNTABLE KERB	--	2300	--	--	--	--	--	--	--
PAVED SIDEWALK	⑧	150	PAVED SIDEWALK	G6	3400	90%	12 MAX	1.2	25 @ 93%	--	--	1.0%
EDGE BEAM	⑨	200 X 150	CONCRETE EDGE BEAM	--	2300	--	--	--	--	--	--	--
OPEN DRAIN	⑩	SIZE VARIES	CLASS 30/19 CONCRETE V-DRAIN	--	2300	--	--	--	--	--	--	--

NOTES: VIM - DESIGN VOIDS IN MIX
ARD - APPARENT RELATIVE DENSITY



CONCRETE EDGE BEAM
(AT ROAD JUNCTIONS AND END OF ROADS)

MOUNTABLE KERB TYPE 8

CLIENT: 19 Murray Street Lady Grey 9755 Tel: (051) 603 1449 Email: vanzyti@senqu.gov.za	CONSULTANT: THEWO & SMMS - JV 58 Brebner Road Westdene Bloemfontein 9301 Tel: +27 (051) 430 1321 Email: PMO@thewo.co.za	PROFESSIONAL ENGINEER: L. MARAH PROF. Reg.No: 920281 DATE: 2024-03-25 SIGNATURE:	DESIGN BY: T. TSHABALALA DRAWN BY: B. MVUKUZO CHECKED BY: L. MARAH APPROVED BY: L. MARAH	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">2024-03-25</td> <td>ISSUED FOR TENDER</td> <td style="text-align: center;">L.M.</td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	BY	0	2024-03-25	ISSUED FOR TENDER	L.M.	PROJECT NAME SENQU MUNICIPALITY UPGRADING, REHABILITATION & RECONSTRUCTION OF ROADS & STORMWATER TITLE TYPICAL CROSS SECTION AND PAVEMENT DESIGN	PROJECT STATUS: <h3 style="text-align: center;">TENDER</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>SCALE</th> <th>SHEET</th> <th>REV</th> <th>A1</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2024-03-25</td> <td style="text-align: center;">N.T.S.</td> <td style="text-align: center;">1 OF 1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">A1</td> </tr> </tbody> </table> DWG NO <h3 style="text-align: center;">P1027-BE-CIV-RD-TD01</h3>	DATE	SCALE	SHEET	REV	A1	2024-03-25	N.T.S.	1 OF 1	0	A1
REV	DATE	DESCRIPTION	BY																					
0	2024-03-25	ISSUED FOR TENDER	L.M.																					
DATE	SCALE	SHEET	REV	A1																				
2024-03-25	N.T.S.	1 OF 1	0	A1																				