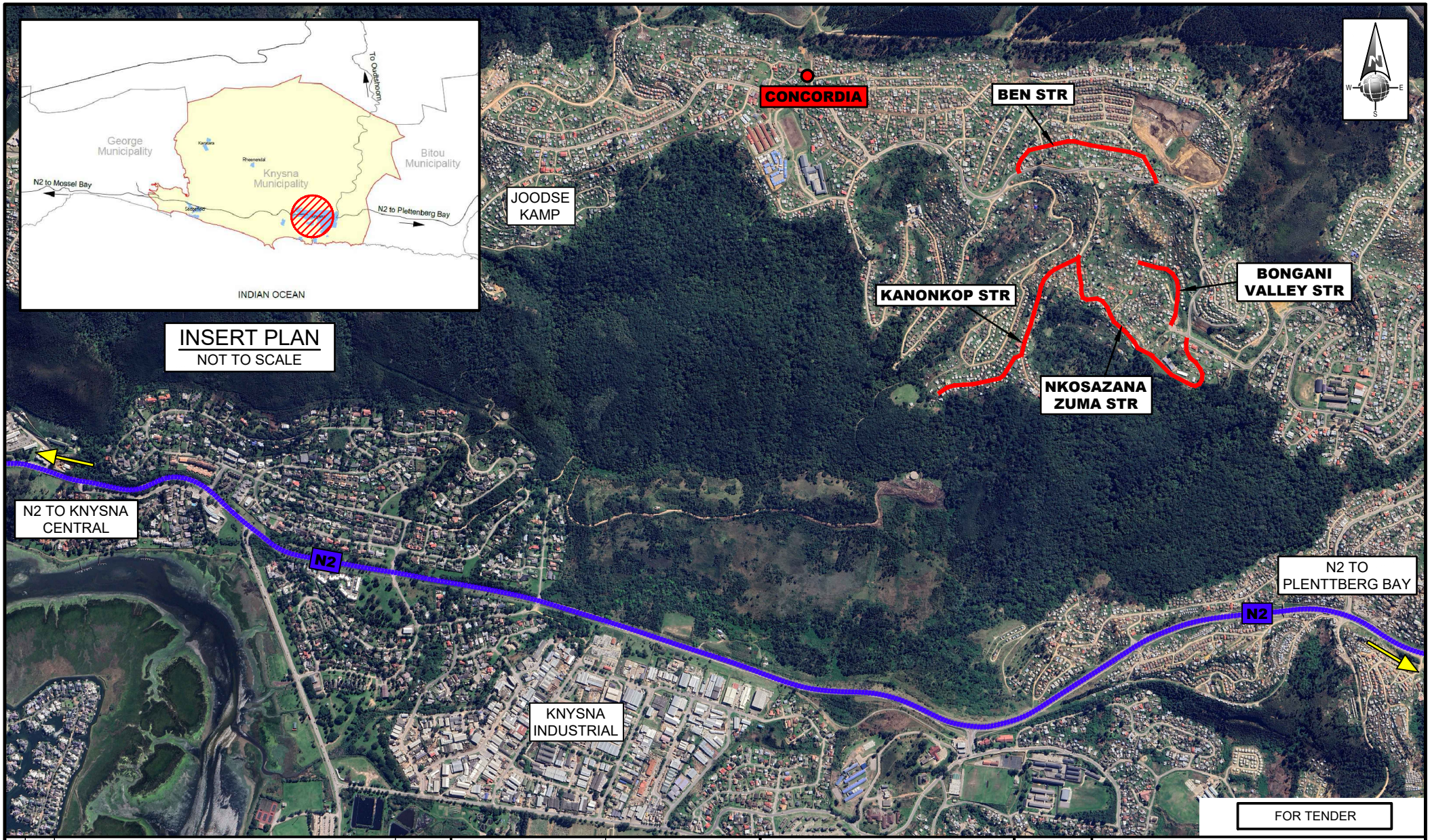

FOR TENDER

REV.	BY	DESCRIPTION	DATE
1	SM	ISSUED FOR TENDER PURPOSES ONLY	JAN 23

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DRAWN	SM		
CIVIL ENGINEER	ZT/AE	STRUCTURAL ENGINEER	N/A
INSTRUMENT ENGINEER	N/A	ELECTRICAL ENGINEER	N/A
MECHANICAL ENGINEER	N/A	PROCESS ENGINEER	N/A
PROJECT MANAGER	AE	DIVISIONAL MANAGER	GC

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P.O.BOX 27158, GREENACRES, P.E. 6057. BLOCK 1, FIRST FLOOR, GREENACRES OFFICE PARK 2nd AVENUE, NEWTON PARK PORT ELIZABETH, 6045, RSA
TELEPHONE: (041) 363 0598
TELEFAX: (041) 363 7646
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website: www.boschprojects.co.za

ISO 9001:2015 CERTIFIED

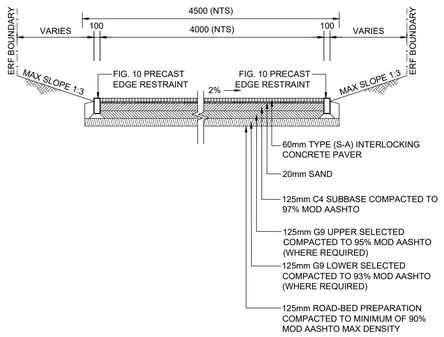
SCALE: N.T.S

DATE: JAN 2023

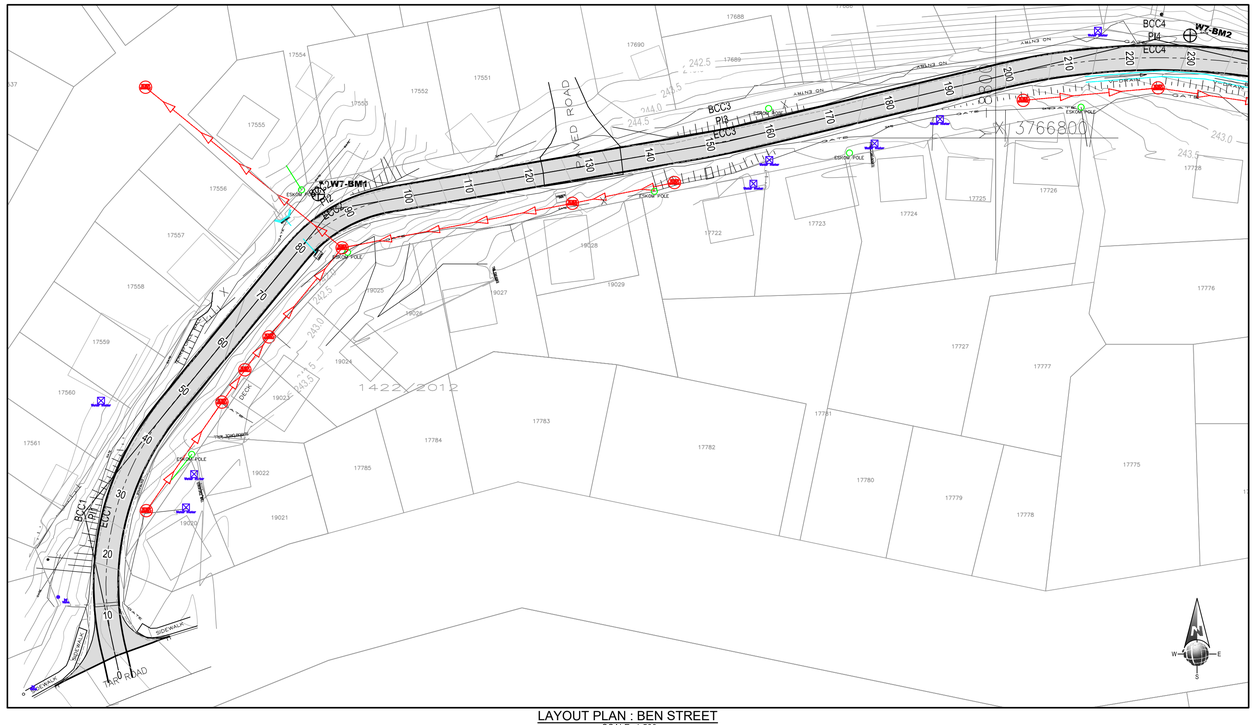
KNYSNA MUNICIPALITY
LOCALITY PLAN

SURFACING OF GRAVEL ROADS
IN CONCORDIA (WARD 7)

DRAWING NUMBER	SIZE	REVISION
8040/001/RLA/804	A4	1



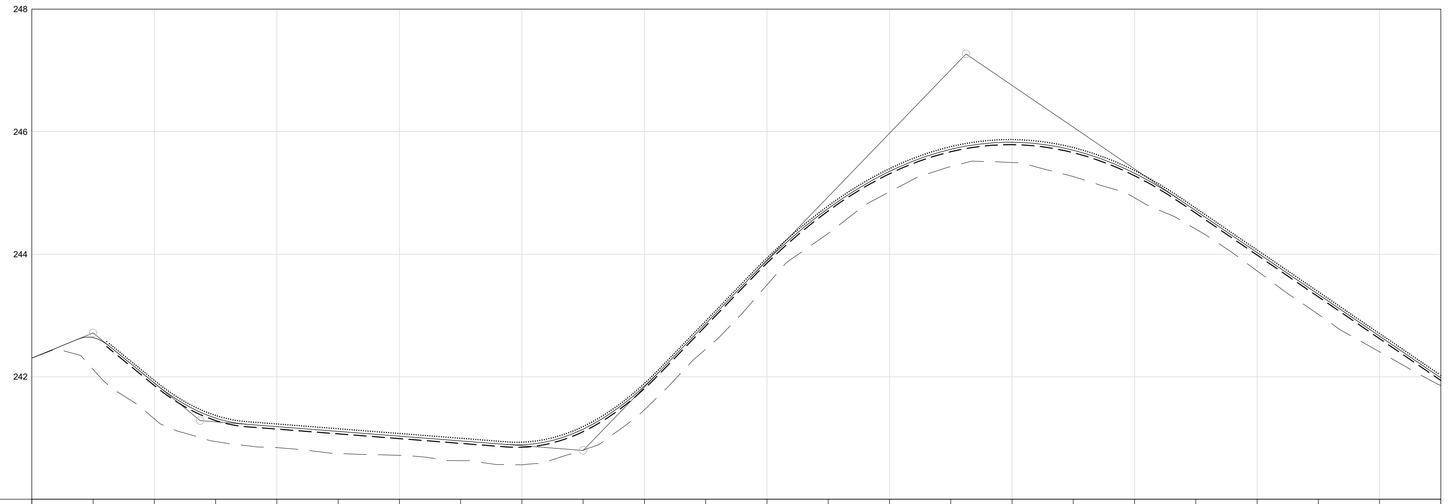
TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : BEN STREET
SCALE 1:500

SETTING OUT DATA - BEN STREET

NAME	CH	Y	X	DETAILS
START	0.000 6.328	-8 657.128 -8 655.792	3766888.407 3766882.222	L 6.328m
BCC1 PI1 ECC1	6.328 46.824	-8 655.792 -8 651.203 -8 664.990	3 766 882.222 3 766 860.977 3 766 844.174	R 45.000m DA 51°33'40" TL 21.735m AL 40.496m
BCC2 PI2 ECC2	79.555 97.394	-8 685.753 -8 691.664 -8 700.848	3 766 818.872 3 766 811.668 3 766 810.091	R 25.000m DA 40°53'00" TL 9.318m AL 17.839m
BCC3 PI3 ECC3	146.953 159.907	-8 749.692 -8 756.078 -8 762.379	3 766 801.703 3 766 800.606 3 766 799.099	R 200.000m DA 3°42'40" TL 6.479m AL 12.954m
BCC4 PI4 ECC4	199.392 250.233	-8 800.781 -8 825.953 -8 851.170	3 766 789.911 3 766 783.889 3 766 789.723	R 110.000m DA 26°28'50" TL 25.883m AL 50.841m
BCC5 PI5 ECC5	303.052 312.336	-8 902.629 -8 907.153 -8 911.719	3 766 801.628 3 766 802.674 3 766 803.510	R 200.000m DA 2°39'30" TL 4.643m AL 9.284m
BCC7 PI7 ECC7	411.381 443.415	-9 009.225 -9 025.060 -9 040.274	3 766 820.892 3 766 823.516 3 766 826.632	R 200.000m DA 9°10'40" TL 16.051m AL 32.034m
BCC8 PI8 ECC8	454.214 478.297	-9 050.510 -9 062.578 -9 068.043	3 766 832.074 3 766 836.132 3 766 847.633	R 30.000m DA 45°59'40" TL 12.733m AL 24.083m
BCC9 PI9 ECC9	490.099 513.636	-9 073.109 -9 078.166 -9 084.438	3 766 858.292 3 766 868.934 3 766 878.908	R 200.000m DA 6°44'40" TL 11.782m AL 23.538m
BCC10 PI10 ECC10	528.434 546.627	-9 092.315 -9 097.312 -9 096.888	3 766 891.436 3 766 899.381 3 766 908.758	R 30.000m DA 34°44'40" TL 9.386m AL 18.193m
END	546.627 556.088	-9 096.888 -9 096.462	3766908.758 3766918.209	L 9.461m



SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 240.000

CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
NATURAL GROUND LEVELS	242.305	242.120	241.311	240.942	240.844	240.746	240.717	240.631	240.562	240.801	241.461	242.451	243.499	244.340	245.017	245.430	245.486	245.268	244.920	244.410	243.727	243.019	242.407	241.667
VERTICAL ALIGNMENT – ROAD LEVELS – LEFT EDGE			241.937	241.365	241.226	241.148	241.070	240.993	240.929	241.185	241.886	242.907	243.935	244.786	245.392	245.752	245.867	245.737	245.361	244.748	244.066	243.384	242.701	242.019
VERTICAL ALIGNMENT – ROAD LEVELS – CENTRE LINE	242.305	242.638	241.897	241.325	241.186	241.108	241.030	240.953	240.889	241.145	241.846	242.867	243.885	244.746	245.352	245.712	245.827	245.697	245.322	244.708	244.026	243.344	242.661	241.979
VERTICAL ALIGNMENT – ROAD LEVELS – RIGHT EDGE			241.857	241.285	241.146	241.068	240.990	240.913	240.849	241.105	241.806	242.827	243.835	244.706	245.312	245.672	245.787	245.657	245.281	244.668	243.986	243.304	242.621	241.939

VERTICAL ALIGNMENT – GRADES: 4.105% (10.000); -8.183% (242.715); 27.500; 241.283; -0.778% (90.000); 240.797; 10.352% (152.500); 247.267; -6.823%

VERTICAL ALIGNMENT – VERTICAL CURVES:
- BVC 2.500; VCL=5.000m K=0; EVC 12.500
- BVC 20.000; VCL=15.000m K=2; EVC 35.000
- BVC 77.500; VCL=25.000m K=2; EVC 102.500
- BVC 117.500; VCL=70.000m K=4; EVC 187.500

CROSSFALL: LEFT ····· RIGHT ——

HORIZONTAL CURVES:
- DIRECTION 167°48'40"
- BCC1 2.500; ECC1 46.824
- CURVE 1: R=45.0m; I=193°35'30"
- DIRECTION 219°22'20"
- BCC2 79.555; ECC2 97.394
- CURVE 2: R=25.0m; I=239°48'50"
- DIRECTION 260°15'20"
- BCC3 146.953; ECC3 159.907
- CURVE 3: R=200.0m; I=258°24'00"
- DIRECTION 256°32'40"
- BCC4 199.392; ECC4 250.233
- CURVE 4: R=110.0m; I=269°47'10"

LONG SECTION: BEN STREET

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
W7-BM2	-8831,765	3766783,278	241,733
W7-BM3	-9055,929	3766829,278	245,289
W7-BM4	-9030,564	3767181,218	204,360
W7-BM5	-9158,067	3767363,733	198,183
W7-BM6	-9221,653	3767572,859	219,526
W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

RCS/501-504	TYPICAL DETAILS
RCS/351	ROAD CROSS SECTIONS
DRG. No.	REFERENCE DRAWING

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FAX: +27 (0)31 535 6010
e-mail: mail@boschprojects.co.za
website: www.boschholdings.co.za

ISO 9001:2015 CERTIFIED

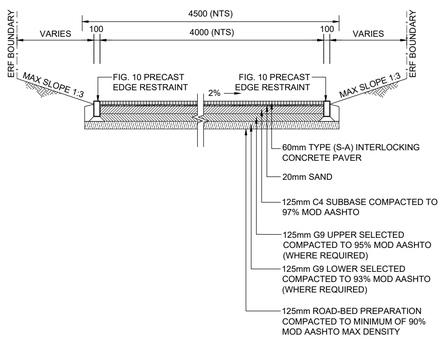
DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

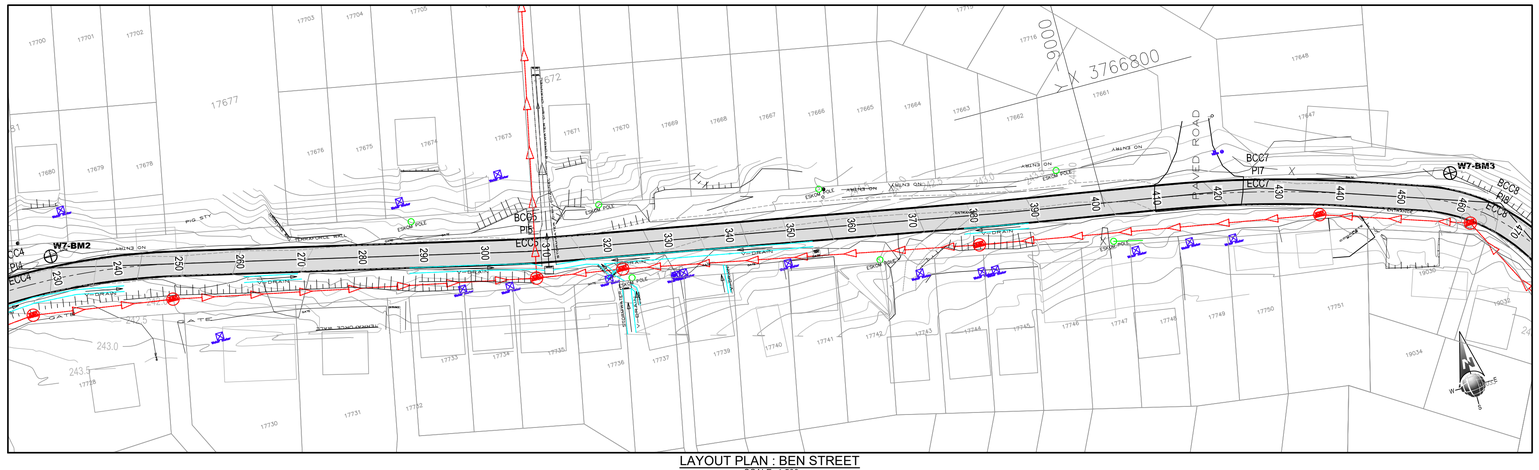
BEN STREET
CONCORDIA

ROAD PLAN & LONG SECTION (CH0.000 TO CH230.000)

SCALE AS SHOWN	DATE JULY 2025	
DRAWING NUMBER 8040/001/RLS/351	SIZE A1	REVISION 1



TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : BEN STREET
SCALE 1:500

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

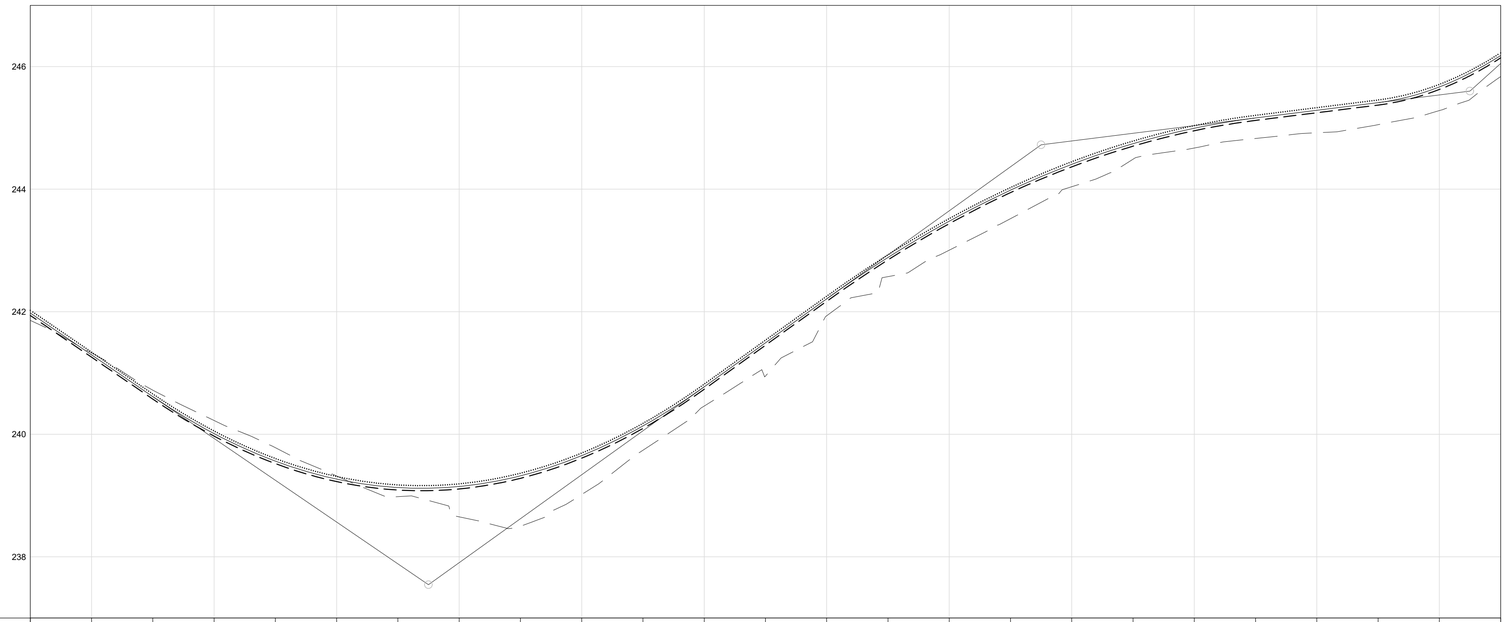
SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
W7-BM2	-8831,765	3766783,278	241,733
W7-BM3	-9055,929	3766829,278	245,289
W7-BM4	-9030,564	3767181,218	204,360
W7-BM5	-9158,067	3767363,733	198,183
W7-BM6	-9221,653	3767572,859	219,526
W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

SETTING OUT DATA - BEN STREET

NAME	CH	Y	X	DETAILS
START	0.000 6.328	-8 657.128 -8 655.792	3766888.407 3766882.222	L 6.328m
BCC1 PI1 ECC1	6.328 46.824	-8 655.792 -8 651.203 -8 664.990	3 766 882.222 3 766 860.977 3 766 844.174	R 45.000m DA 51°33'40" TL 21.735m AL 40.496m
BCC2 PI2 ECC2	79.555 97.394	-8 685.753 -8 691.664 -8 700.848	3 766 818.872 3 766 811.668 3 766 810.091	R 25.000m DA 40°53'00" TL 9.318m AL 17.839m
BCC3 PI3 ECC3	146.953 159.907	-8 749.692 -8 756.078 -8 762.379	3 766 801.703 3 766 800.606 3 766 799.099	R 200.000m DA 3°42'40" TL 6.479m AL 12.954m
BCC4 PI4 ECC4	199.392 250.233	-8 800.781 -8 825.953 -8 851.170	3 766 789.911 3 766 783.889 3 766 789.723	R 110.000m DA 26°28'50" TL 25.883m AL 50.841m
BCC5 PI5 ECC5	303.052 312.336	-8 902.629 -8 907.153 -8 911.719	3 766 801.628 3 766 802.674 3 766 803.510	R 200.000m DA 2°39'30" TL 4.643m AL 9.284m
BCC7 PI7 ECC7	411.381 443.415	-9 009.225 -9 025.060 -9 040.274	3 766 820.892 3 766 823.516 3 766 828.632	R 200.000m DA 9°10'40" TL 16.051m AL 32.034m
BCC8 PI8 ECC8	454.214 478.297	-9 050.510 -9 062.578 -9 068.043	3 766 832.074 3 766 836.132 3 766 847.633	R 30.000m DA 45°59'40" TL 12.733m AL 24.083m
BCC9 PI9 ECC9	490.099 513.636	-9 073.109 -9 078.166 -9 084.438	3 766 858.292 3 766 868.934 3 766 878.908	R 200.000m DA 6°44'40" TL 11.782m AL 23.538m
BCC10 PI10 ECC10	528.434 546.627	-9 092.315 -9 097.312 -9 096.888	3 766 891.436 3 766 899.381 3 766 908.758	R 30.000m DA 34°44'40" TL 9.386m AL 18.193m
END	546.627 556.088	-9 096.888 -9 096.462	3766908.758 3766918.209	L 9.461m



SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 237.000

CHAINAGE	NATURAL GROUND LEVELS	VERTICAL ALIGNMENT – ROAD LEVELS: LEFT EDGE	CENTRE LINE	RIGHT EDGE
230	241,857		241,979	241,939
240	241,327		241,297	241,257
250	240,719		240,614	240,574
260	240,225		240,010	239,970
270	239,760		239,561	239,521
280	239,320		239,068	239,028
290	238,862		239,130	239,090
300	238,652		239,148	239,108
310	238,497		239,321	239,281
320	239,018		239,650	239,610
330	239,738		240,134	240,095
340	240,460		240,775	240,735
350	240,951		241,492	241,452
360	241,934		242,210	242,170
370	242,572		242,886	242,845
380	243,004		243,477	243,436
390	243,519		243,983	243,944
400	244,040		244,405	244,364
410	244,488		244,742	244,701
420	244,672		244,894	244,854
430	244,828		245,162	245,122
440	244,920		245,287	245,247
450	245,053		245,412	245,372
460	245,281		245,667	245,627
470	245,838		246,181	246,141

GRADES: -6.823% (295.000) | 7.179% (237.544) (395.000) | 1.253% (244.723) (465.000 245.600)

VERTICAL CURVES:
- BVC 250.000 – VCL=90.000m K=6 – EVC 340.000
- BVC 360.000 – VCL=70.000m K=12 – EVC 430.000
- BVC 450.000 – VCL=30.000m K=4 – EVC 480.000

CROSSFALL: LEFT / RIGHT

HORIZONTAL CURVES:
- BCC4 199.392
- CURVE 4 R=110.0m I=269°47'10"
- 230.233 ECC4
- DIRECTION 283°01'30"
- BCC5 303.052
- CURVE 5 R=200.0m I=281°41'50"
- 312.336 ECC5
- DIRECTION 280°22'00"
- DIRECTION 279°24'40"
- BCC7 411.381
- CURVE 7 R=200.0m I=283°59'50"
- 443.415 ECC7
- DIRECTION 288°35'10"
- BCC8 454.214
- CURVE 8 R=30.0m I=311°35'00"
- 478.297 ECC8

LONG SECTION: BEN STREET

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS
RCS/352	ROAD CROSS SECTIONS

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e-mail: mail@boschprojects.co.za
website: www.boschholdings.co.za
ISO 9001:2015 CERTIFIED

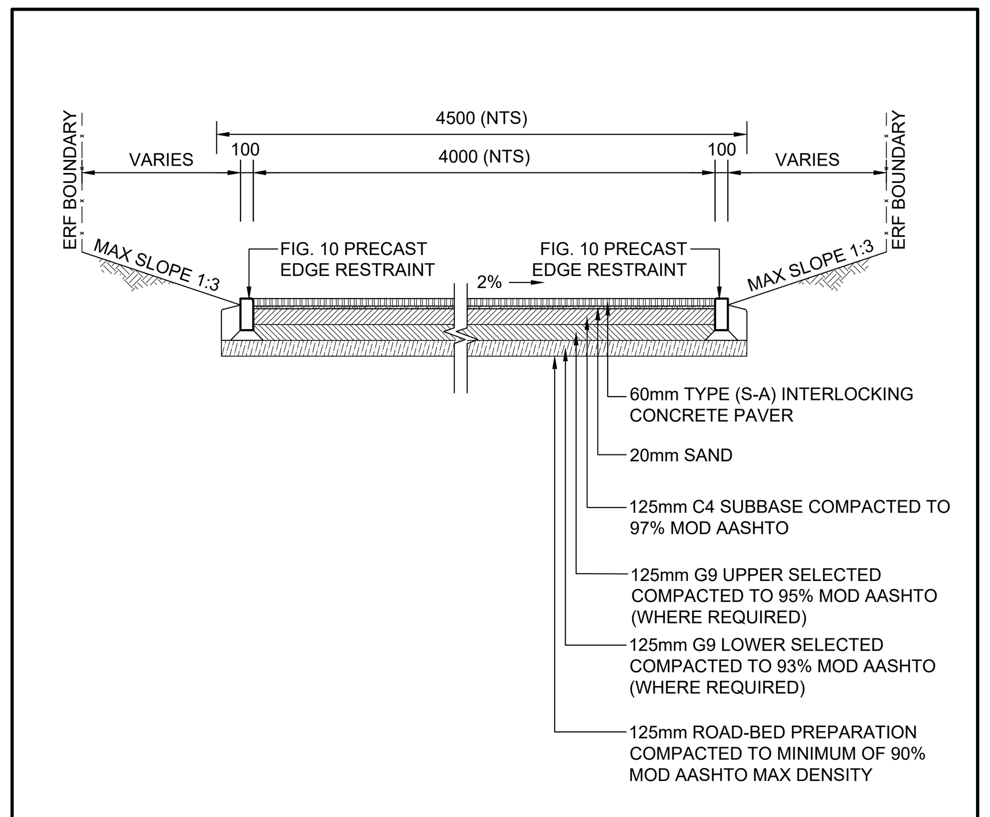
DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

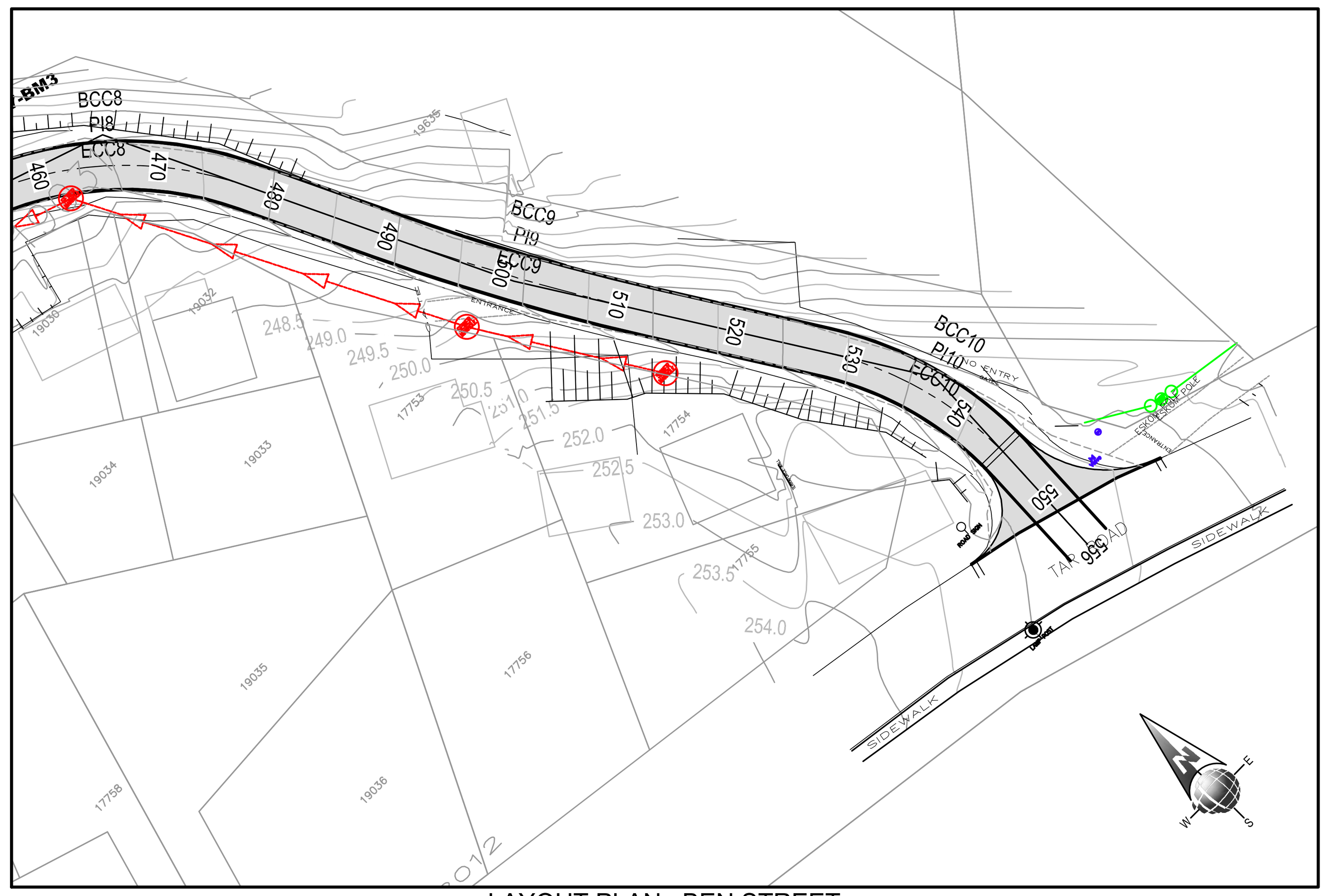
BEN STREET
CONCORDIA

ROAD PLAN & LONG SECTION (CH230.000 TO CH470.000)

SCALE	DATE	
AS SHOWN	JULY 2025	
DRAWING NUMBER	SIZE	REVISION
8040/001/RLS/352	A1	1



TYPICAL CROSS SECTIONS
SCALE 1:50



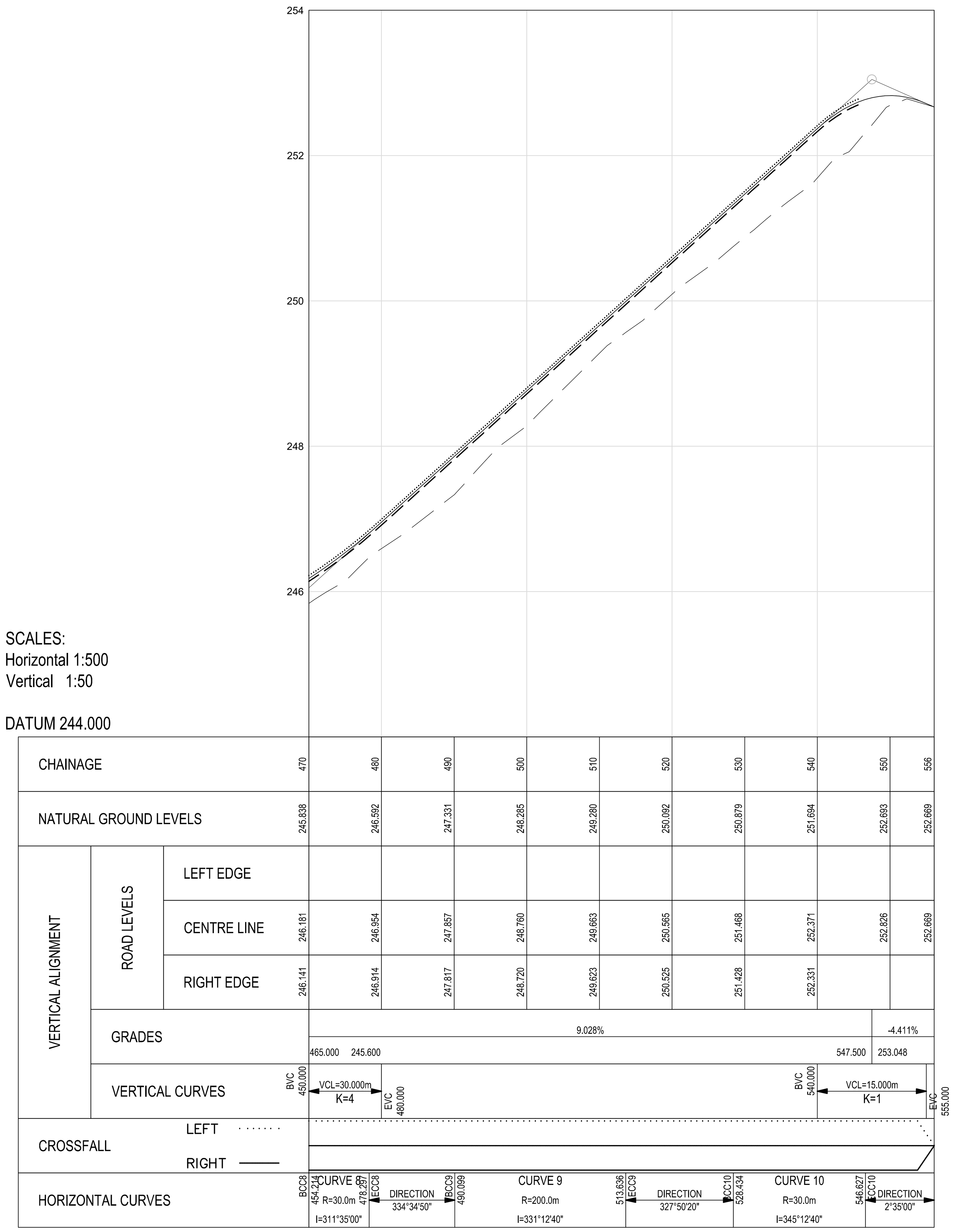
LAYOUT PLAN : BEN STREET
SCALE 1:500

SETTING OUT DATA - BEN STREET

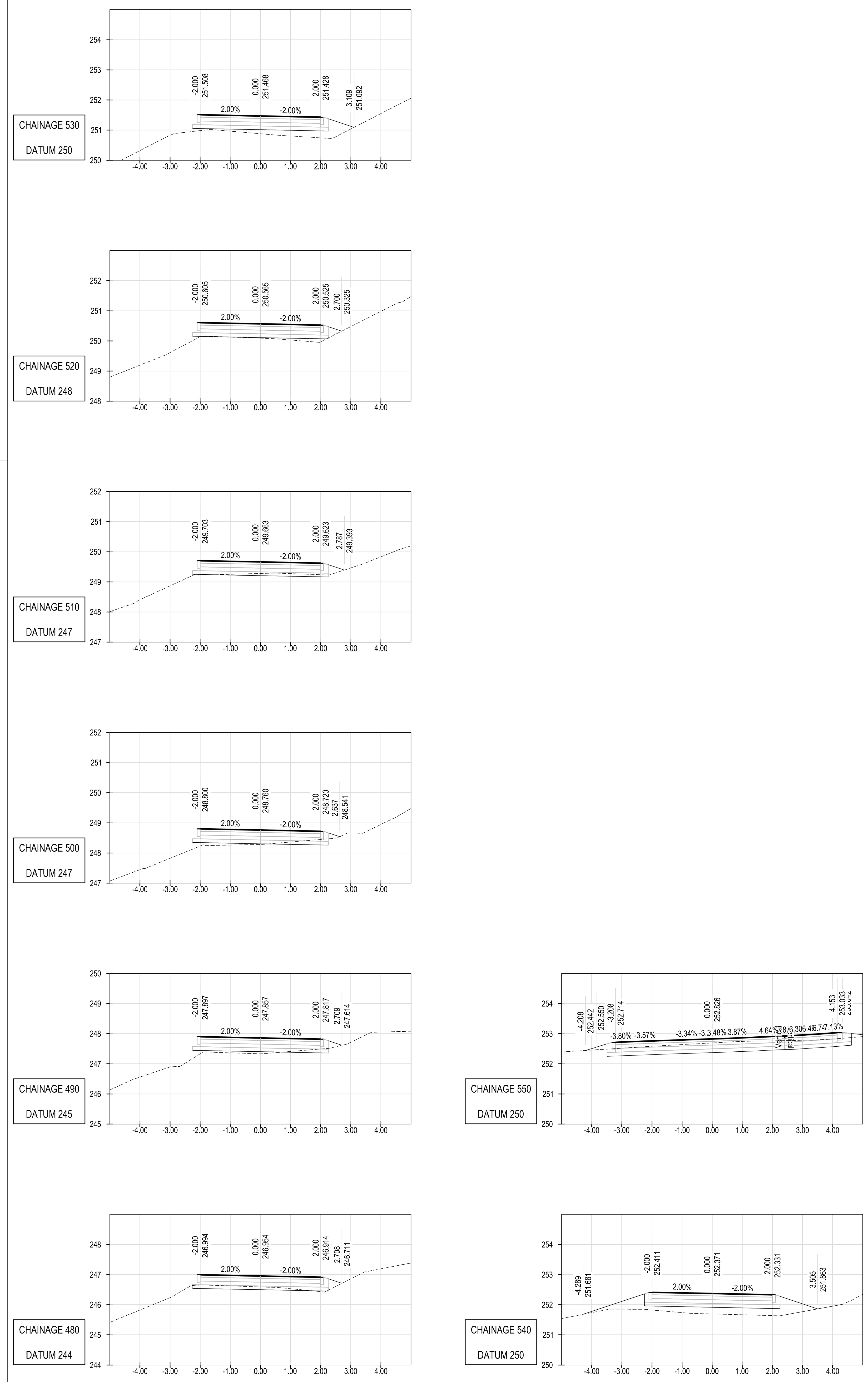
NAME	CH	Y	X	DETAILS
START	0.000 6.328	-8 657.128 -8 655.792	3766888.407 3766882.222	L 6.328m
BCC1 PI1 ECC1	6.328 46.824	-8 655.792 -8 651.203 -8 664.990	3 766 882.222 3 766 860.977 3 766 844.174	R 45.000m DA 51°33'40" TL 21.735m AL 40.496m
BCC2 PI2 ECC2	79.555 97.394	-8 685.753 -8 691.664 -8 700.848	3 766 818.872 3 766 811.668 3 766 810.091	R 25.000m DA 40°53'00" TL 9.318m AL 17.839m
BCC3 PI3 ECC3	146.953 159.907	-8 749.692 -8 756.078 -8 762.379	3 766 801.703 3 766 800.606 3 766 799.099	R 200.000m DA 3°42'40" TL 6.479m AL 12.954m
BCC4 PI4 ECC4	199.392 250.233	-8 800.781 -8 825.953 -8 851.170	3 766 789.911 3 766 783.889 3 766 789.723	R 110.000m DA 26°28'50" TL 25.883m AL 50.841m
BCC5 PI5 ECC5	303.052 312.336	-8 902.629 -8 907.153 -8 911.719	3 766 801.628 3 766 802.674 3 766 803.510	R 200.000m DA 2°39'30" TL 4.643m AL 9.284m
BCC7 PI7 ECC7	411.381 443.415	-9 009.225 -9 025.060 -9 040.274	3 766 820.892 3 766 823.516 3 766 828.632	R 200.000m DA 9°10'40" TL 16.051m AL 32.034m
BCC8 PI8 ECC8	454.214 478.297	-9 050.510 -9 062.578 -9 068.043	3 766 832.074 3 766 836.132 3 766 847.633	R 30.000m DA 45°59'40" TL 12.733m AL 24.083m
BCC9 PI9 ECC9	490.099 513.636	-9 073.109 -9 078.166 -9 084.438	3 766 858.292 3 766 868.934 3 766 878.908	R 200.000m DA 6°44'40" TL 11.782m AL 23.538m
BCC10 PI10 ECC10	528.434 546.627	-9 092.315 -9 097.312 -9 096.888	3 766 891.436 3 766 899.381 3 766 908.758	R 30.000m DA 34°44'40" TL 9.386m AL 18.193m
END	546.627 556.088	-9 096.888 -9 096.462	3766908.758 3766918.209	L 9.461m

SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 244.000



LONG SECTION: BEN STREET



CROSS-SECTION : BEN STREET
VERTICAL SCALE 1:100
HORIZONTAL SCALE 1:100

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 — BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
W7-BM2	-8831,765	3766783,278	241,733
W7-BM3	-9055,929	3766829,278	245,289
W7-BM4	-9030,564	3767181,218	204,360
W7-BM5	-9158,067	3767363,733	198,183
W7-BM6	-9221,653	3767572,859	219,526
W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS

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ISO 9001:2015 CERTIFIED

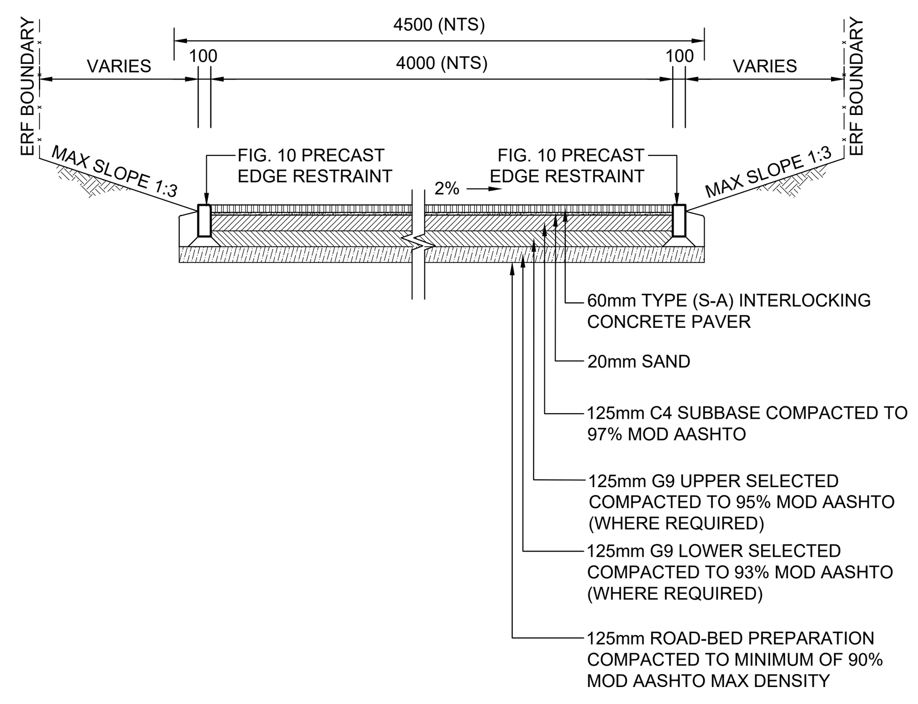
DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

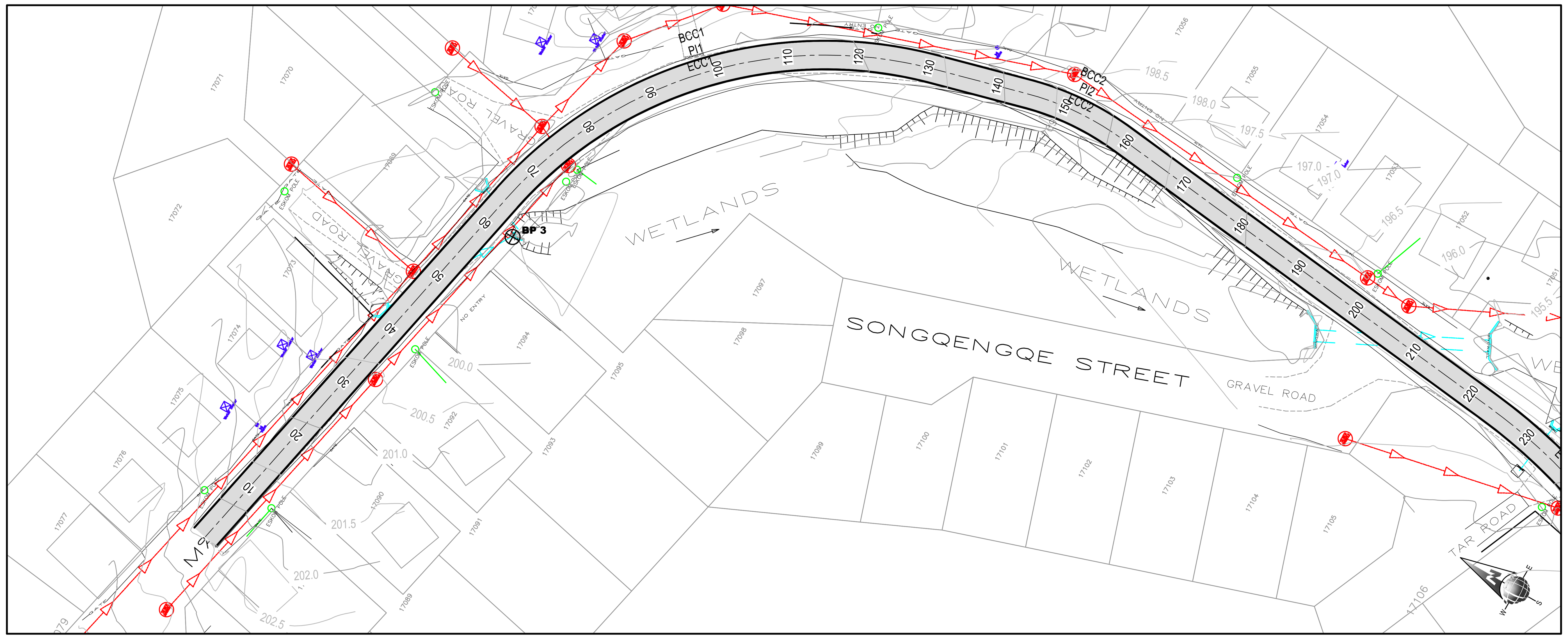
BEN STREET
CONCORDIA

ROAD PLAN & LONG SECTION (CH470.000 TO CH556.080)

SCALE	DATE	
AS SHOWN	JULY 2025	
DRAWING NUMBER	SIZE	REVISION
8040/001/RLS/353	A1	1



TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : BONGANI VALLEY STREET
SCALE 1:500

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
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W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

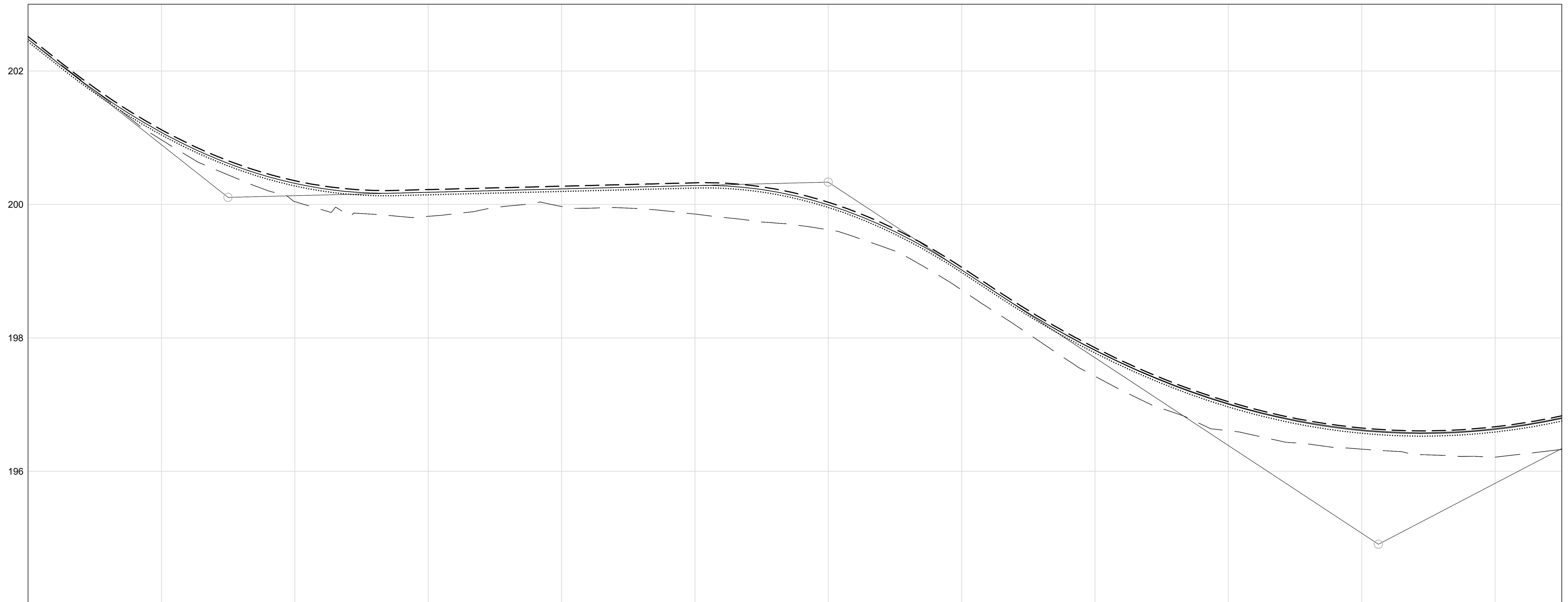
ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

SETTING OUT DATA - BONGANI VALLEY STREET

NAME	CH	Y	X	DETAILS
START	0.000 63.944	-9 056.729 -9 119.354	3767178.818 3767191.741	L 63.944m
BCC1 PI1 ECC1	63.944 130.064	-9 119.354 -9 155.462 -9 165.130	3 767 191.741 3 767 199.191 3 767 234.770	R 60.000m DA 63°08'20" TL 36.869m AL 66.119m
BCC2 PI2 ECC2	143.562 158.477	-9 168.669 -9 170.647 -9 169.837	3 767 247.796 3 767 255.077 3 767 262.579	R 40.000m DA 21°21'50" TL 7.545m AL 14.915m
BCC3 PI3 ECC3	222.540 248.637	-9 162.960 -9 161.547 -9 156.013	3 767 326.272 3 767 339.361 3 767 351.307	R 80.000m DA 18°41'30" TL 13.165m AL 26.097m
END	248.637 270.383	-9 156.013 -9 146.874	3767351.307 3767371.039	L 21.745m

SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 194.000



CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
NATURAL GROUND LEVELS	202.476	201.706	200.969	200.442	200.041	199.863	199.821	199.956	199.968	199.944	199.855	199.737	199.620	199.301	198.717	198.061	197.423	196.942	196.606	196.424	196.332	196.245	196.210	196.326
VERTICAL ALIGNMENT – ROAD LEVELS – LEFT EDGE	202.436	201.666	201.040	200.576	200.275	200.138	200.142	200.168	200.193	200.218	200.244	200.183	199.952	199.551	198.978	198.330	197.771	197.315	196.962	196.713	196.568	196.525	196.587	196.751
VERTICAL ALIGNMENT – ROAD LEVELS – CENTRE LINE	202.476	201.706	201.079	200.616	200.315	200.177	200.182	200.208	200.233	200.258	200.284	200.223	199.992	199.591	199.018	198.370	197.811	197.355	197.002	196.753	196.607	196.565	196.626	196.791
VERTICAL ALIGNMENT – ROAD LEVELS – RIGHT EDGE	202.516	201.746	201.120	200.656	200.355	200.218	200.222	200.248	200.273	200.298	200.324	200.263	200.032	199.631	199.058	198.410	197.851	197.395	197.042	196.793	196.648	196.605	196.667	196.831

VERTICAL ALIGNMENT – GRADES: -7.898% (30.000 / 200.106); 0.253% (120.000 / 200.334); -6.582% (202.500 / 194.904)

VERTICAL ALIGNMENT – VERTICAL CURVES: BVC 5.000 – VCL=50.000m, K=6 – EVC 55.000; BVC 100.000 – VCL=40.000m, K=6 – EVC 140.000; BVC 145.459 – VCL=114.082m, K=10 – EVC 259.541

CROSSFALL: LEFT ······· RIGHT ———

HORIZONTAL CURVES: DIRECTION 281°39'30" – BCC1 63.944 – CURVE 1 R=60.0m I=313°13'40" – 130.064 ECC1 – DIRECTION 344°48'00" – BCC2 143.562 – CURVE 2 R=40.0m I=355°28'50" – 158.477 ECC2 – DIRECTION 6°09'50" – BCC3 222.540 – CURVE 3 R=80.0m I=15°30'30" – 248.637 ECC3

LONG SECTION: BONGANI VALLEY STREET

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS
RCS/354	ROAD CROSS SECTIONS

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DRAWN	ZT		
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INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

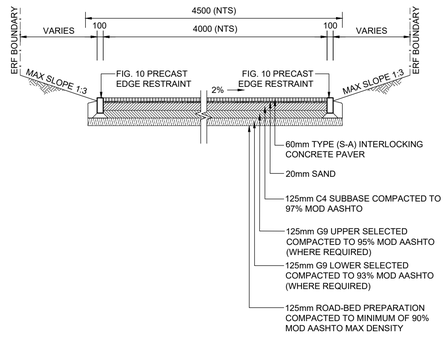
KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

BONGANI VALLEY STREET
CONCORDIA

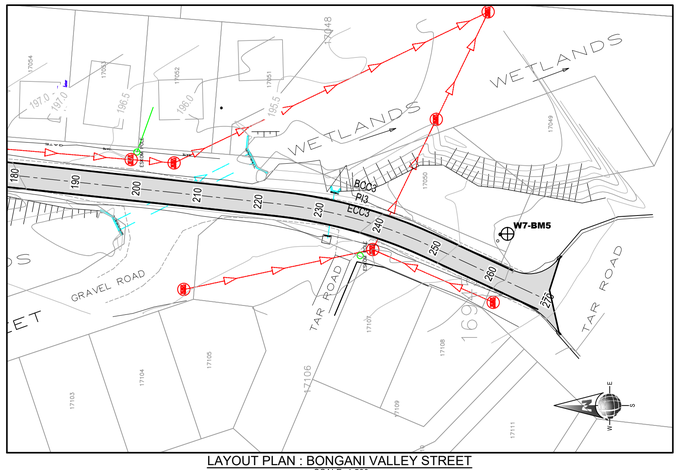
ROAD PLAN & LONG SECTION (CH0.000 TO CH230.000)

SCALE	DATE
AS SHOWN	JULY 2025

DRAWING NUMBER	SIZE	REVISION
8040/001/RLS/354	A1	1



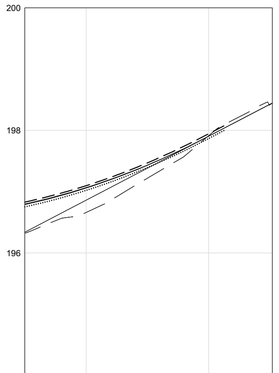
TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : BONGANI VALLEY STREET
SCALE 1:500

SETTING OUT DATA - BONGANI VALLEY STREET

NAME	CH	Y	X	DETAILS
START	0.000 63.944	-9 056.729 -9 119.354	3767178.818 3767191.741	L 63.944m
BCC1 PI1 ECC1	63.944 130.064	-9 119.354 -9 155.462 -9 165.130	3 767 191.741 3 767 199.191 3 767 234.770	R 60.000m DA 63°08'20" TL 36.669m AL 66.119m
BCC2 PI2 ECC2	143.562 158.477	-9 168.669 -9 170.647 -9 169.837	3 767 247.796 3 767 255.077 3 767 262.579	R 40.000m DA 21°21'50" TL 7.545m AL 14.915m
BCC3 PI3 ECC3	222.540 248.637	-9 162.960 -9 161.547 -9 156.013	3 767 326.272 3 767 339.361 3 767 351.307	R 80.000m DA 18°41'30" TL 13.165m AL 26.097m
END	248.637 270.383	-9 156.013 -9 146.874	3767351.307 3767371.039	L 21,745m

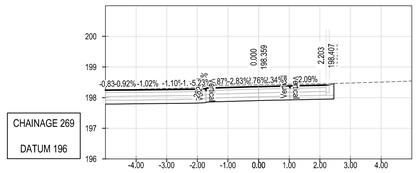


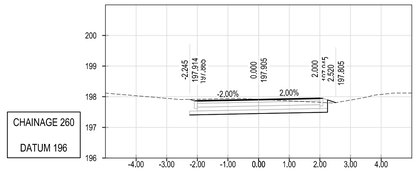
SCALES:
Horizontal 1:500
Vertical 1:50

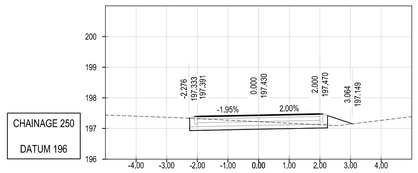
DATUM 194.000

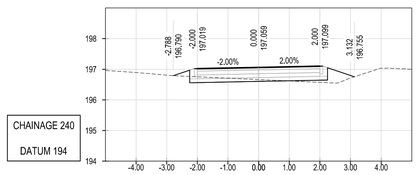
CHAINAGE			200	240	250	260	270
NATURAL GROUND LEVELS			196.326	196.662	197.220	197.915	198.419
VERTICAL ALIGNMENT	ROAD LEVELS	LEFT EDGE	196.751	197.019	197.391	197.865	
		CENTRE LINE	196.901	197.067	197.435	197.905	198.427
		RIGHT EDGE	196.931	197.099	197.471	197.945	
	GRADES		5.220% 202.500 194.904				
	VERTICAL CURVES		BVC 145.000	VCL=115.000m K=10			EVC 260.000
CROSSFALL	LEFT RIGHT						
HORIZONTAL CURVES			BCC3 222.540	CURVE 3 R=80.0m I=15°30'30"	248.637 ECC3	DIRECTION 24°51'10"	

LONG SECTION: BONGANI VALLEY STREET









CROSS-SECTION : BONGANI VALLEY STREET
VERTICAL SCALE 1:100
HORIZONTAL SCALE 1:100

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
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W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

RCS/501-504 TYPICAL DETAILS
DRG. No. REFERENCE DRAWING

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DRAWN	ZT		
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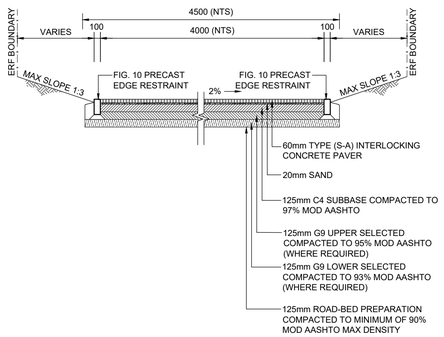
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

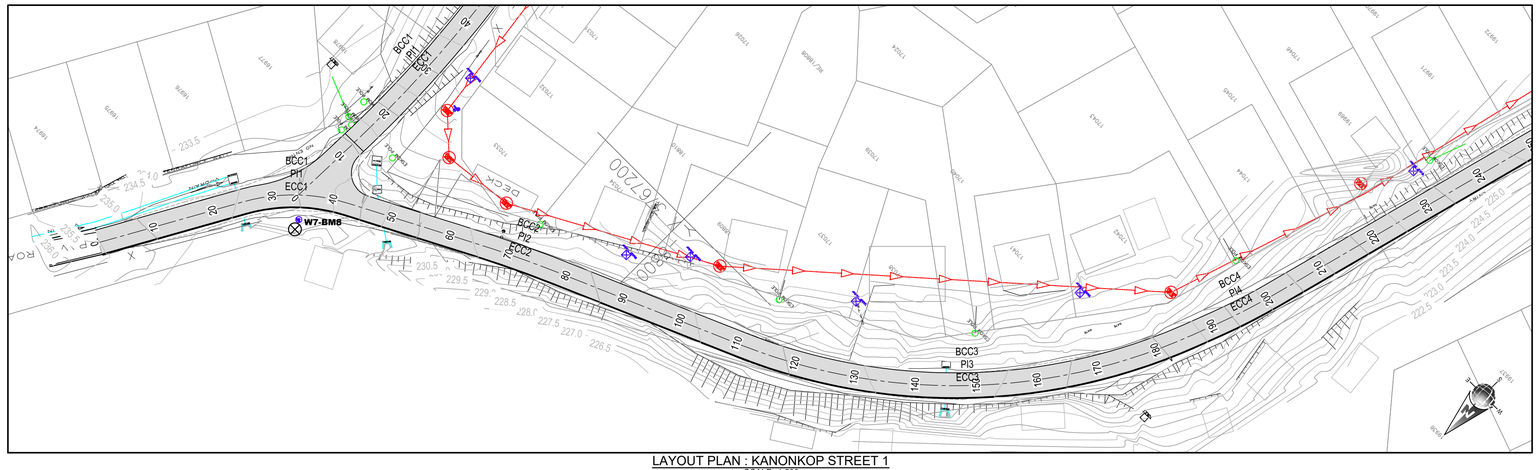
BONGANI VALLEY STREET
CONCORDIA

ROAD PLAN & LONG SECTION (CH470.000 TO CH556.080)

SCALE AS SHOWN	DATE JULY 2025	
DRAWING NUMBER 8040/001/RLS/355	SIZE A1	REVISION 1



TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : KANONKOP STREET 1
SCALE 1:500

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
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BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
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W7-BM10	-8386,335	3767595,968	203,114

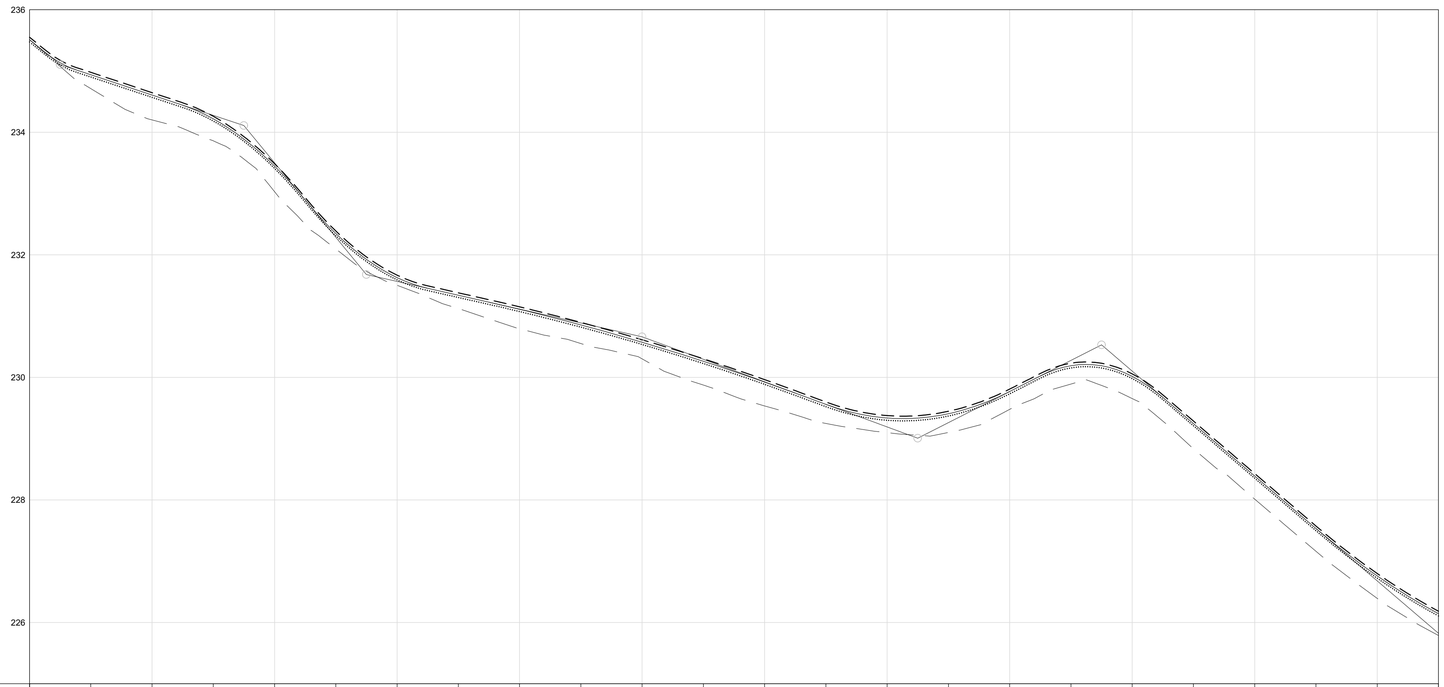
ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

SETTING OUT DATA - KANONKOP STREET 1

NAME	CH	Y	X	DETAILS
START	0.000 24.475	-8 864.839 -8 852.882	3767129.728 3767151.084	L 24.475m
BCC1 PI1 ECC1	24.475 41.856	-8 852.882 -8 848.514 -8 840.587	3 767 151.084 3 767 156.887 3 767 163.024	R 30.000m DA 33°11'40" TL 8.942m AL 17.381m
BCC2 PI2 ECC2	63.625 78.077	-8 821.288 -8 814.880 -8 808.246	3 767 173.097 3 767 176.442 3 767 179.315	R 200.000m DA 4°08'20" TL 7.229m AL 14.452m
BCC3 PI3 ECC3	110.000 185.755	-8 778.953 -8 742.230 -8 727.960	3 767 192.005 3 767 207.913 3 767 245.303	R 95.000m DA 45°41'20" TL 40.021m AL 75.755m
BCC4 PI4 ECC4	189.983 200.549	-8 726.452 -8 724.567 -8 723.213	3 767 249.253 3 767 254.194 3 767 259.306	R 100.000m DA 6°03'10" TL 5.288m AL 10.566m
BCC5 PI5 ECC5	262.720 336.628	-8 707.294 -8 697.828 -8 685.749	3 767 319.403 3 767 355.142 3 767 390.084	R 1000.000m DA 4°14'00" TL 36.971m AL 73.909m
BCC6 PI6 ECC6	391.322 431.818	-8 667.879 -8 661.118 -8 664.687	3 767 441.777 3 767 461.333 3 767 481.714	R 80.000m DA 29°00'10" TL 20.692m AL 40.496m
END	431.818 437.858	-8 664.687 -8 665.729	3767481.714 3767487.663	L 6.039m

SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 225.000



CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
NATURAL GROUND LEVELS	235.512	234.713	234.202	233.861	233.031	232.096	231.503	231.123	230.794	230.552	230.303	229.874	229.534	229.248	229.099	229.102	229.478	229.891	229.656	228.836	228.013	227.162	226.393	225.788
VERTICAL ALIGNMENT – ROAD LEVELS – LEFT EDGE	235.512	234.713	234.202	233.861	233.031	232.096	231.503	231.123	230.794	230.552	230.303	229.874	229.534	229.248	229.099	229.102	229.478	229.891	229.656	228.836	228.013	227.162	226.393	225.788
CENTRE LINE	235.512	234.839	234.807	234.221	233.447	232.349	231.628	231.341	231.112	230.857	230.575	230.283	229.924	229.559	229.337	229.407	229.769	230.192	230.018	229.247	228.391	227.555	226.759	226.144
RIGHT EDGE	235.512	234.713	234.202	233.861	233.031	232.096	231.503	231.123	230.794	230.552	230.303	229.874	229.534	229.248	229.099	229.102	229.478	229.891	229.656	228.836	228.013	227.162	226.393	225.788

GRADES: -8.140% (5.000); -3.315% (235.105); 0.000% (35.000); 234.110; -2.257% (55.000); 231.679; -3.681% (100.000); 230.664; 5.079% (145.000); 229.007; -8.559% (175.000); 230.531; 242.500; 224.754

VERTICAL CURVES: BVC 2.500, VCL=5.000m K=1, EVC 7.500; BVC 25.000, VCL=20.000m K=2, EVC 45.000; BVC 65.000, VCL=20.000m K=2, EVC 85.000; BVC 75.000, VCL=50.000m K=35, EVC 125.000; BVC 155.000, VCL=30.000m K=3, EVC 185.000; BVC 165.000, VCL=20.000m K=1, EVC 185.000; BVC 215.000, VCL=65.000m K=6, EVC 275.000

CROSSFALL: LEFT L-2.0%; 0.000; RIGHT R2.0%

HORIZONTAL CURVES: DIRECTION 29°14'30"; BCC1 24.475; CURVE 1 R=30.0m I=45°50'30"; 41.856 ECC1; DIRECTION 62°26'20"; BCC2 63.625; CURVE 2 R=200.0m I=64°30'30"; 78.077 ECC2; DIRECTION 66°34'40"; BCC3 110.000; CURVE 3 R=95.0m I=43°44'00"; 185.755 ECC3; BCC4 189.983; CURVE 4 R=100.0m I=17°51'50"; 200.549 ECC4; DIRECTION 14°50'10"

LONG SECTION: KANONKOP STREET 1

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS
RCS/356	ROAD CROSS SECTIONS

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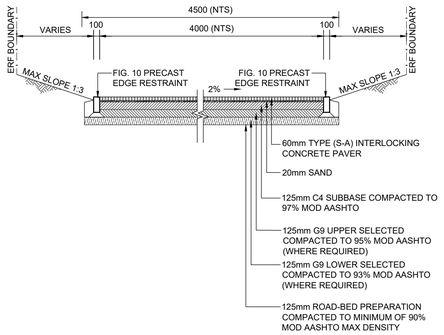
DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

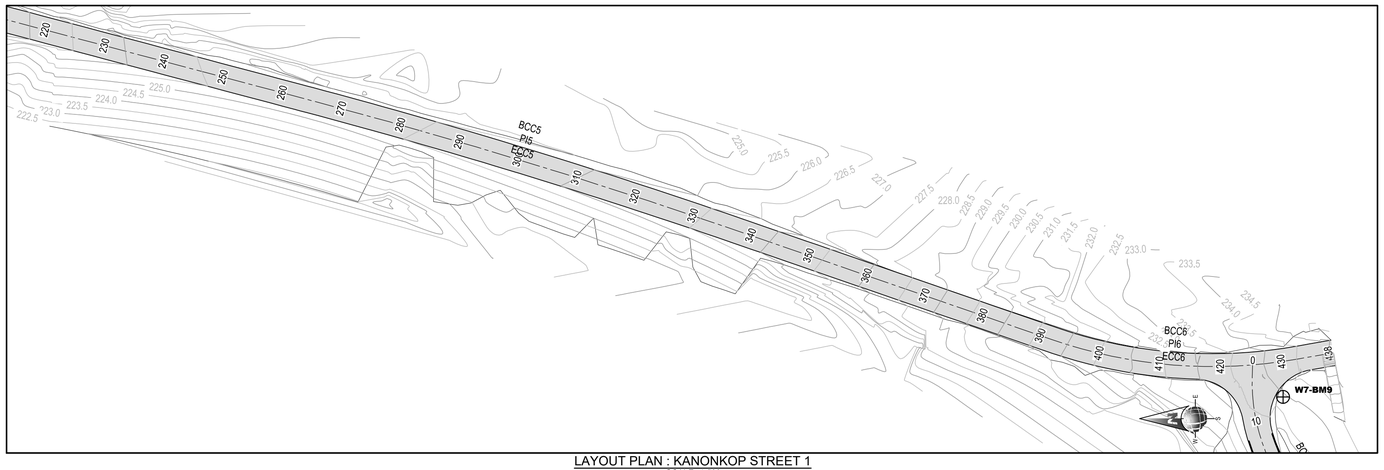
KANONKOP STREET 1
CONCORDIA

ROAD PLAN & LONG SECTION (CH0.000 TO CH230.000)

SCALE	DATE	
AS SHOWN	JULY 2025	
DRAWING NUMBER	SIZE	REVISION
8040/001/RLS/356	A1	1



TYPICAL CROSS SECTIONS
SCALE 1:50



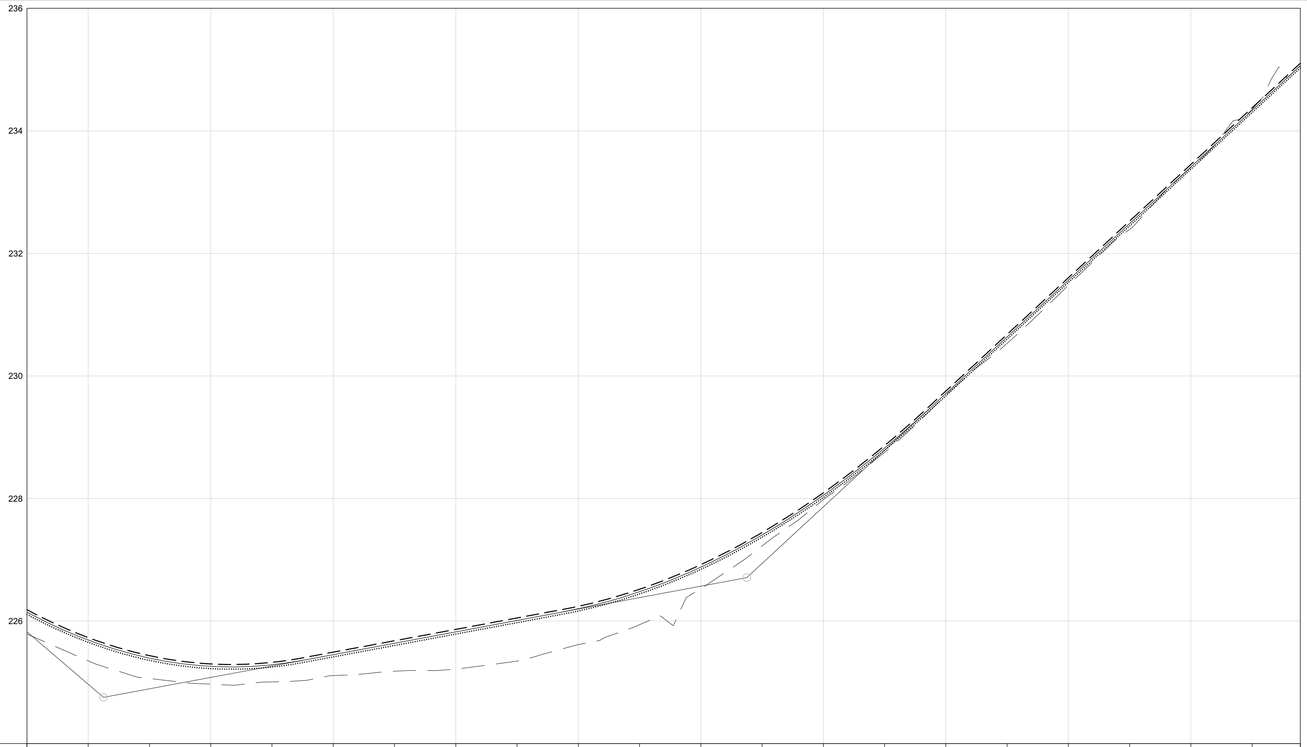
LAYOUT PLAN : KANONKOP STREET 1
SCALE 1:500

SETTING OUT DATA - KANONKOP STREET 1

NAME	CH	Y	X	DETAILS
START	0.000 24.475	-8 864.839 -8 852.882	3767129.728 3767151.084	L 24.475m
BCC1 PI1 ECC1	24.475 41.856	-8 852.882 -8 848.514 -8 840.587	3 767 151.084 3 767 158.887 3 767 163.024	R 30.000m DA 33°11'40" TL 8.942m AL 17.381m
BCC2 PI2 ECC2	63.625 78.077	-8 821.288 -8 814.880 -8 808.246	3 767 173.097 3 767 176.442 3 767 179.315	R 200.000m DA 4°08'20" TL 7.229m AL 14.452m
BCC3 PI3 ECC3	110.000 185.755	-8 778.953 -8 742.230 -8 727.960	3 767 192.005 3 767 207.913 3 767 245.303	R 95.000m DA 45°41'20" TL 40.021m AL 75.755m
BCC4 PI4 ECC4	189.983 200.549	-8 726.452 -8 724.567 -8 723.213	3 767 249.253 3 767 254.194 3 767 259.306	R 100.000m DA 6°03'10" TL 5.288m AL 10.566m
BCC5 PI5 ECC5	262.720 336.628	-8 707.294 -8 697.828 -8 685.749	3 767 319.403 3 767 355.142 3 767 390.084	R 1000.000m DA 4°14'00" TL 36.971m AL 73.909m
BCC6 PI6 ECC6	391.322 431.818	-8 667.879 -8 661.118 -8 664.687	3 767 441.777 3 767 461.333 3 767 481.714	R 80.000m DA 29°00'10" TL 20.692m AL 40.496m
END	431.818 437.858	-8 664.687 -8 665.729	3767481.714 3767487.663	L 6.039m

SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 224.000



CHAINAGE	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	438
NATURAL GROUND LEVELS	225.788	225.350	225.061	224.969	225.005	225.109	225.181	225.214	225.345	225.614	225.940	226.529	227.225	227.982	228.753	229.690	230.532	231.479	232.393	233.405	234.352	235.062
VERTICAL ALIGNMENT – ROAD LEVELS – LEFT EDGE	225.788	225.350	225.061	224.969	225.005	225.109	225.181	225.214	225.345	225.614	225.940	226.529	227.225	227.982	228.753	229.690	230.532	231.479	232.393	233.405	234.352	235.062
VERTICAL ALIGNMENT – ROAD LEVELS – CENTRE LINE	226.144	225.689	225.394	225.260	225.285	225.451	225.638	225.824	226.010	226.200	226.478	226.880	227.404	228.052	228.823	229.713	230.637	231.562	232.487	233.411	234.336	235.062
VERTICAL ALIGNMENT – ROAD LEVELS – RIGHT EDGE	225.788	225.350	225.061	224.969	225.005	225.109	225.181	225.214	225.345	225.614	225.940	226.529	227.225	227.982	228.753	229.690	230.532	231.479	232.393	233.405	234.352	235.062

VERTICAL ALIGNMENT – GRADES: 1,861% (242.500 224.754 – 347.500 226.708); 9,246%

VERTICAL ALIGNMENT – VERTICAL CURVES: BVC 210.000; VCL=65.000m K=6; EVC 275.000; BVC 317.500; VCL=60.000m K=8; EVC 377.500

CROSSFALL – LEFT ····· ; RIGHT ——

HORIZONTAL CURVES: DIRECTION 14°50'10"; BCC5 262.720; CURVE 5 R=1000.0m I=16°57'10"; 336.628 ECC5; DIRECTION 19°04'10"; BCC6 391.322; CURVE 6 R=80.0m I=4°34'10"; 431.818 ECC6; DIRECTION 350°04'00"

LONG SECTION: KANONKOP STREET 1

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
W7-BM2	-8831,765	3766783,278	241,733
W7-BM3	-9055,929	3766829,278	245,289
W7-BM4	-9030,564	3767181,218	204,360
W7-BM5	-9158,067	3767363,733	198,183
W7-BM6	-9221,653	3767572,859	219,526
W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS
RCS/357	ROAD CROSS SECTIONS

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DRAWN	ZT		
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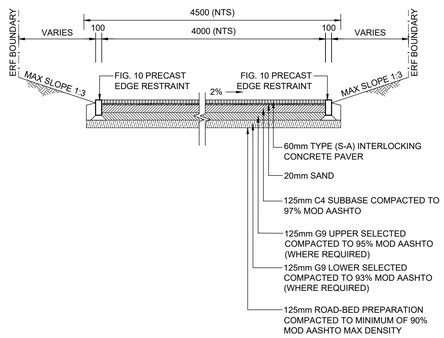
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

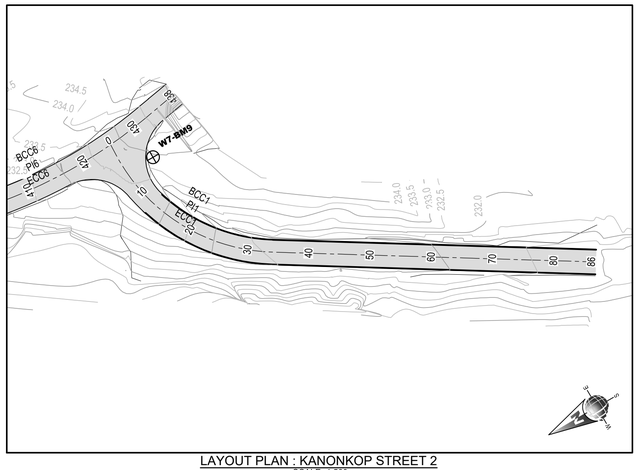
KANONKOP STREET 1
CONCORDIA

ROAD PLAN & LONG SECTION (CH230.000 TO CH437.858)

SCALE	DATE	
AS SHOWN	JULY 2025	
DRAWING NUMBER	SIZE	REVISION
8040/001/RLS/357	A1	1



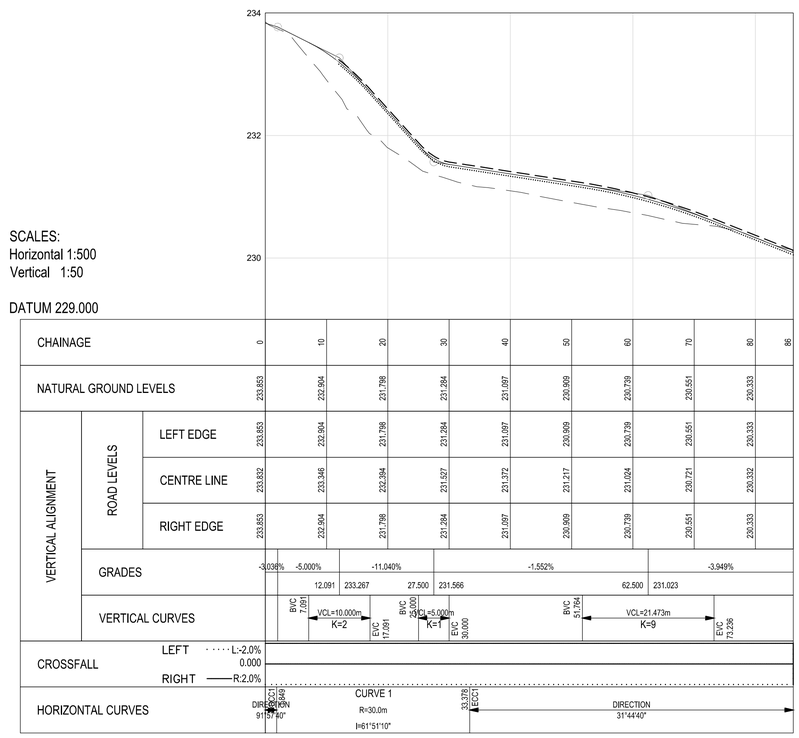
TYPICAL CROSS SECTIONS
SCALE 1:50



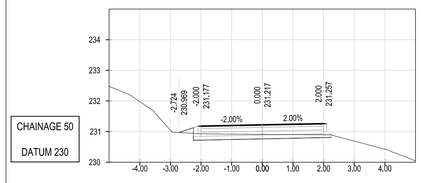
LAYOUT PLAN : KANONKOP STREET 2
SCALE 1:500

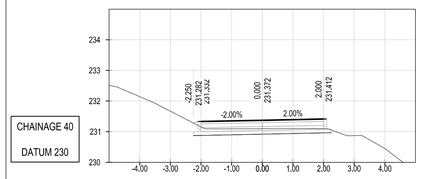
SETTING OUT DATA - KANONKOP STREET 2

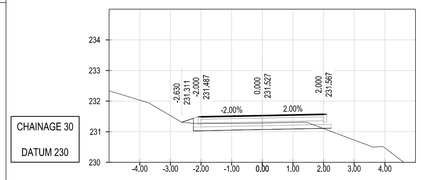
NAME	CH	Y	X	DETAILS
START	0.000 1,849	-8 663.760 -8 661.912	3767474.509 3767474.446	L 1,849m
BCC1 PI1 ECC1	1,849 33.378	-8 661.912 -8 644.527 -8 635.374	3 767 474.446 3 767 473.851 3 767 488.644	R 30.000m DA 60°12'50" TL 17.396m AL 31.529m
END	33.378 86.180	-8 635.374 -8 607.593	3767488.644 3767533.547	L 52.802m

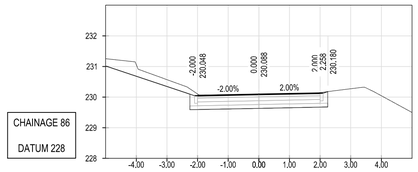


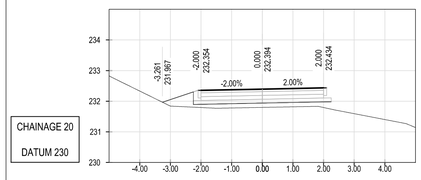
LONG SECTION: KANONKOP STREET 2

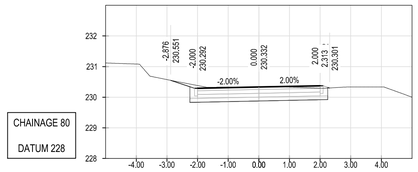


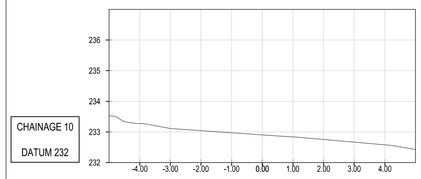


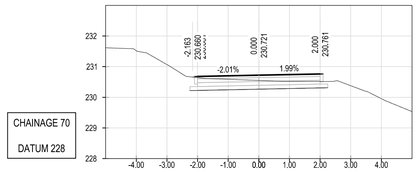


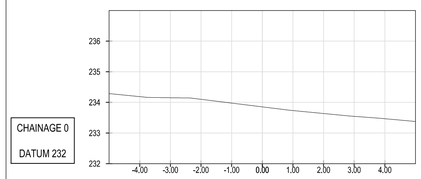


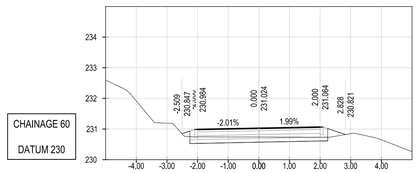












CROSS-SECTION : KANONKOP STREET 2
VERTICAL SCALE 1:100
HORIZONTAL SCALE 1:100

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
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W7-BM5	-9158,067	3767363,733	198,183
W7-BM6	-9221,653	3767572,859	219,526
W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

RCS/501-504 TYPICAL DETAILS
DRG. No. REFERENCE DRAWING

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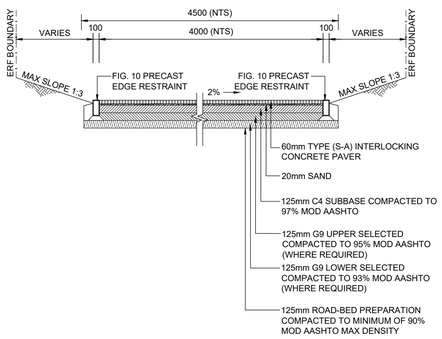
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

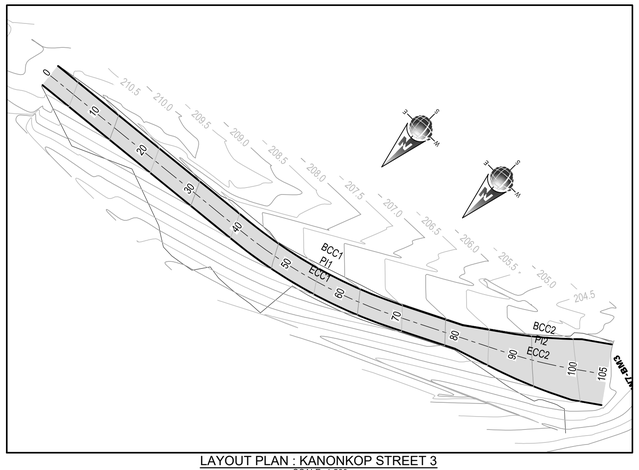
KANONKOP STREET 2
CONCORDIA

ROAD PLAN & LONG SECTION (CH0.000 TO CH86.180)

SCALE	AS SHOWN	DATE	JULY 2025
DRAWING NUMBER	8040/001/RLS/358	SIZE A1	REVISION 1



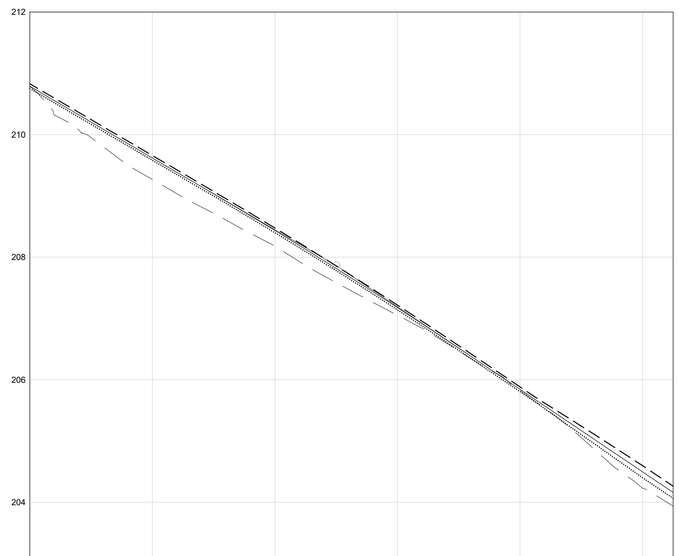
TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : KANONKOP STREET 3
SCALE 1:500

SETTING OUT DATA - KANONKOP STREET 3

NAME	CH	Y	X	DETAILS
START	0.000 40.296	-8 491.317 -8 451.232	3767563.832 3767567.951	L 40.296m
BCC1 PI1 ECC1	40.296 69.418	-8 451.232 -8 436.585 -8 423.434	3 767 567.951 3 767 569.457 3 767 576.078	R 80.000m DA 20°51'30" TL 14.724m AL 29.122m
START	69.418 87.398	-8 423.434 -8 407.375	3767576.078 3767584.164	L 17.980m
BCC2 PI2 ECC2	87.398 99.113	-8 407.375 -8 402.134 -8 397.334	3 767 584.164 3 767 586.803 3 767 590.178	R 80.000m DA 8°23'20" TL 5.868m AL 11.715m
END	99.113 105.000	-8 397.334 -8 392.518	3767590.178 3767593.565	L 5.887m

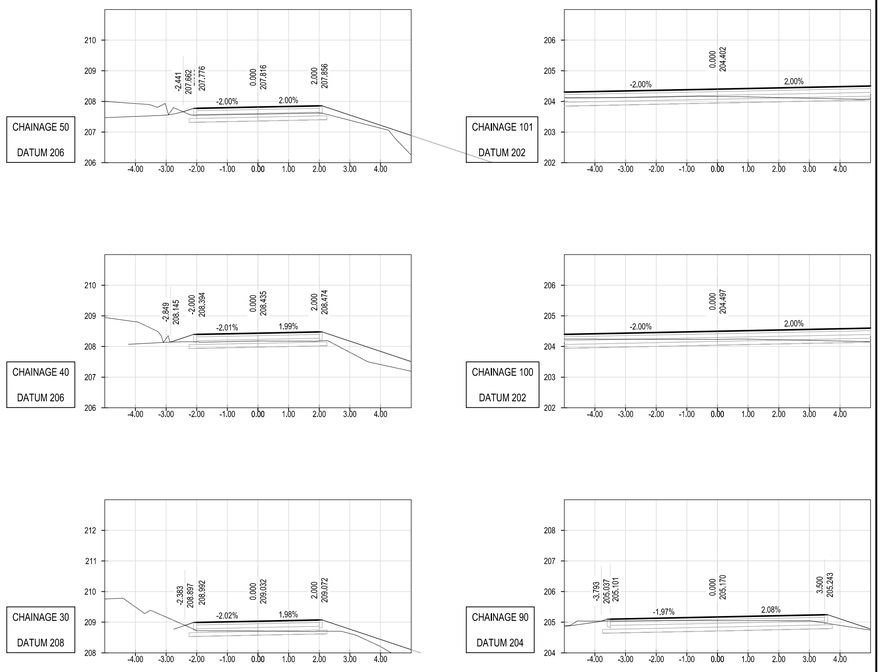


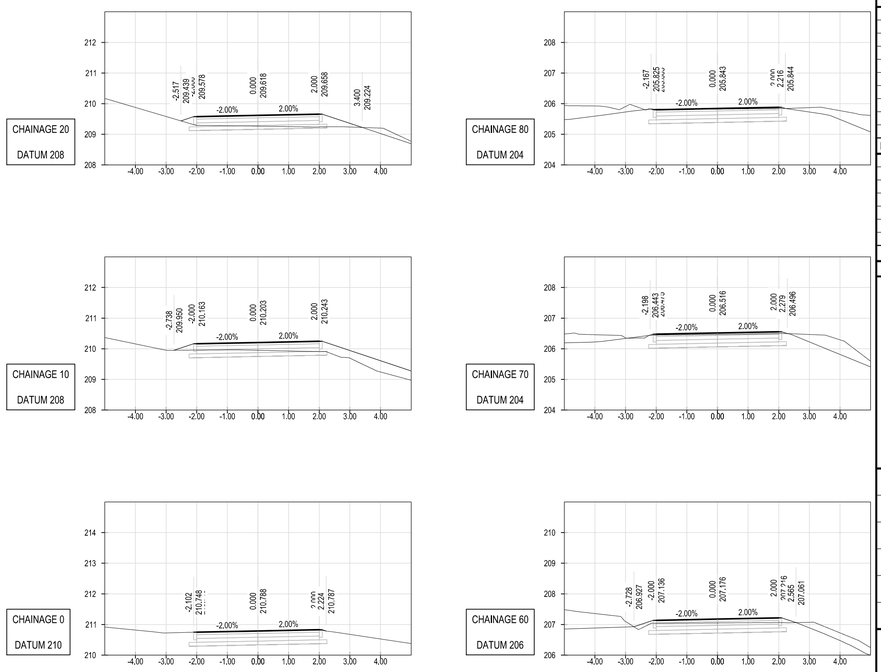
SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 203.000

CHAINAGE			0	10	20	30	40	50	60	70	80	90	100	105
NATURAL GROUND LEVELS			210.788	209.951	209.267	208.714	208.178	207.583	207.052	206.467	205.823	205.054	204.231	203.935
VERTICAL ALIGNMENT	ROAD LEVELS	LEFT EDGE	210.788	209.951	209.267	208.714	208.178	207.583	207.052	206.467	205.823	205.054	204.231	203.935
		CENTRE LINE	210.788	210.203	209.618	209.032	208.435	207.816	207.176	206.516	205.843	205.170	204.497	204.161
		RIGHT EDGE	210.788	209.951	209.267	208.714	208.178	207.583	207.052	206.467	205.823	205.054	204.231	203.935
	GRADES		-5.854%						-5.728%					
			50.000					207.861						
	VERTICAL CURVES		BVC 29.243			VCL=41.515m K=48				EVC 70.757				
CROSSFALL	LEFT	L:-2.0%												
		0.000												
	RIGHT	R:2.0%												
HORIZONTAL CURVES			DIRECTION 84°07'50"			BCC1 40.296	CURVE 1 R=80.0m I=73°42'10"		69.418 ECC1	DIRECTION 63°16'30"		BCC2 87.398	CURVE 2 R=80.0m I=59°04'50"	99.113 ECC2 DIRECTION 54°53'00"

LONG SECTION: KANONKOP STREET 3





CROSS-SECTION : KANONKOP STREET 3
VERTICAL SCALE 1:100
HORIZONTAL SCALE 1:100

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
W7-BM2	-8831,765	3766783,278	241,733
W7-BM3	-9055,929	3766829,278	245,289
W7-BM4	-9030,564	3767181,218	204,360
W7-BM5	-9158,067	3767363,733	198,183
W7-BM6	-9221,653	3767572,859	219,526
W7-BM7	-8937,542	3767303,009	237,014
W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

RCS/501-504 TYPICAL DETAILS

DRG. No. REFERENCE DRAWING

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23A FLANDERS DRIVE
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e-mail: mail@boschprojects.co.za
website: www.boschholdings.co.za

ISO 9001:2015 CERTIFIED

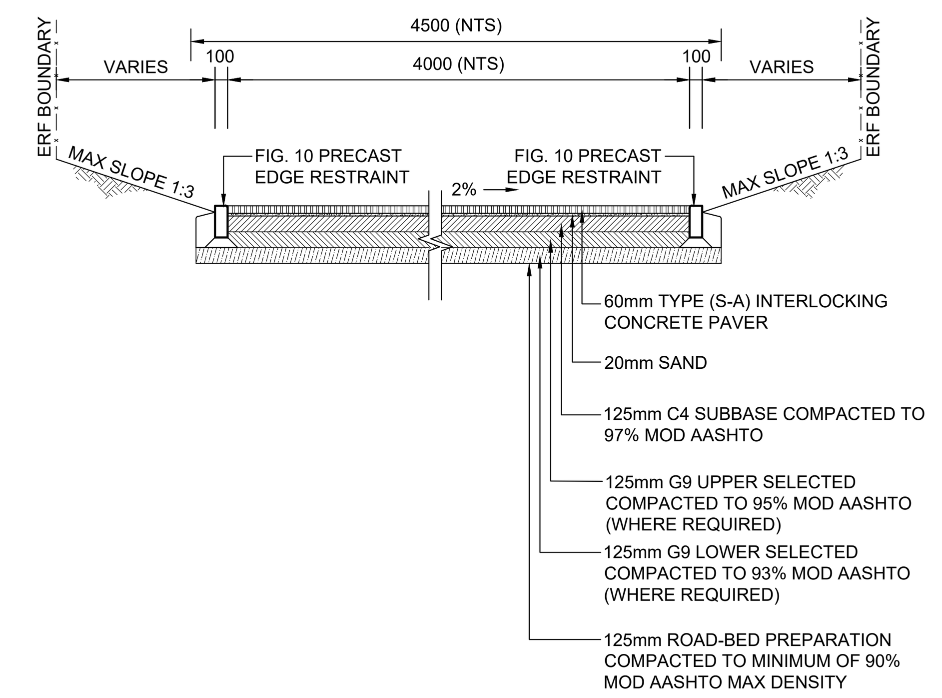
DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

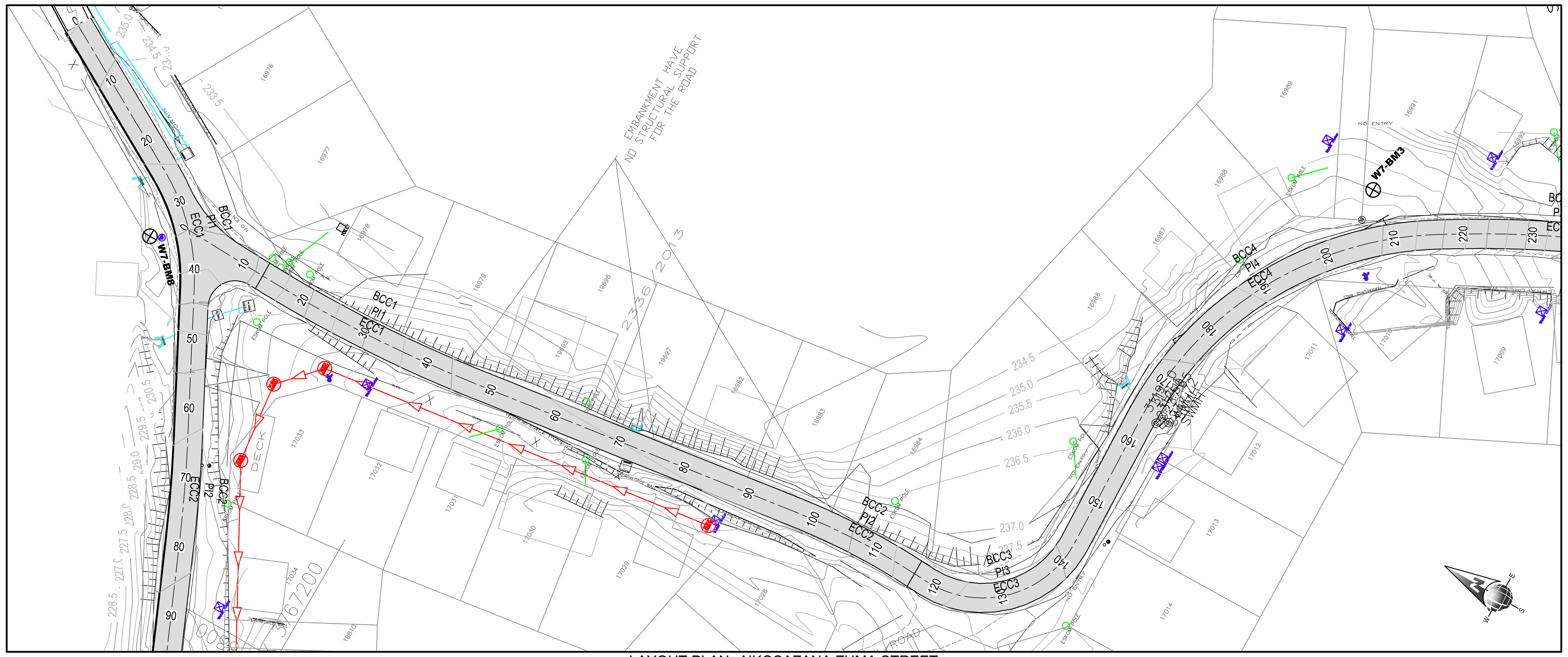
KANONKOP STREET 3
CONCORDIA

ROAD PLAN & LONG SECTION (CH0.000 TO CH101.418)

SCALE AS SHOWN	DATE JULY 2025	
DRAWING NUMBER 8040/001/RLS/359	SIZE A1	REVISION 1



TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : NKOSAZANA ZUMA STREET
SCALE 1:500

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
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W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

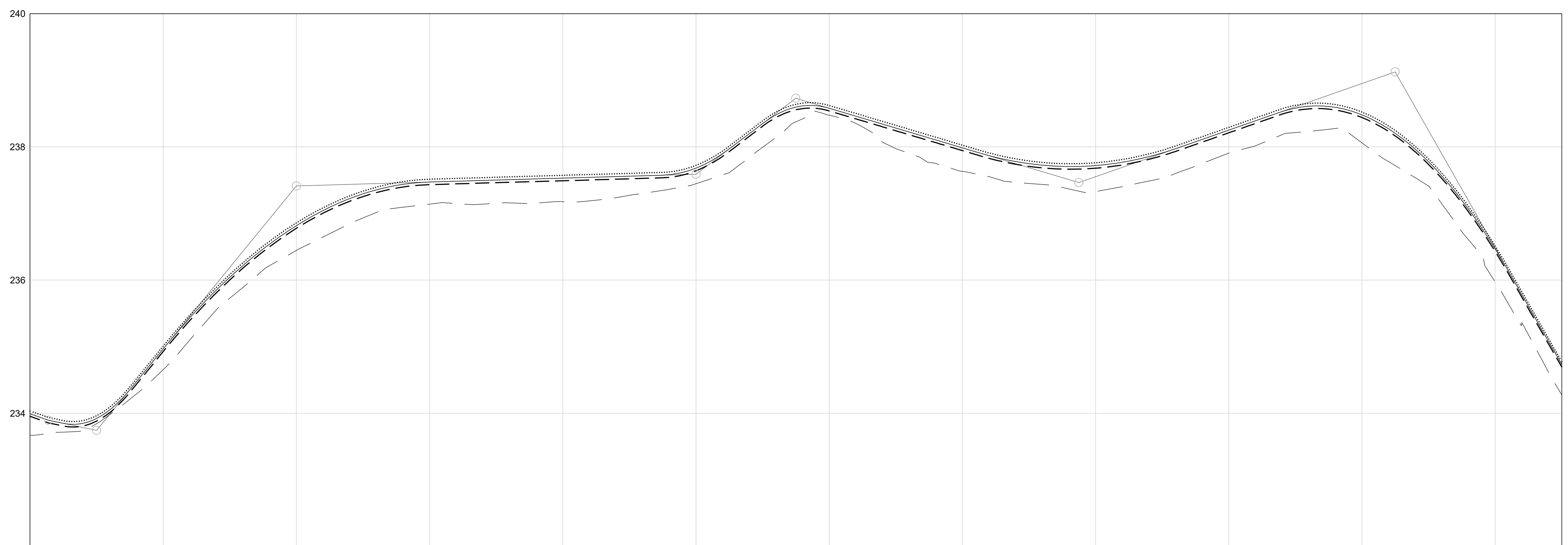
ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

SETTING OUT DATA - NKOSAZANA ZUMA STREET

NAME	CH	Y	X	DETAILS
BCC1 PI1 ECC1	12.419 47.159	-8 846.907 -8 846.362 -8 848.834	3 767 170.661 3 767 188.066 3 767 205.303	R 200.000m DA 9°57'10" TL 17.413m AL 34.739m
BCC2 PI2 ECC2	96.540 115.966	-8 855.843 -8 857.226 -8 856.721	3 767 254.184 3 767 263.830 3 767 273.561	R 100.000m DA 11°07'50" TL 9.744m AL 19.427m
BCC3 PI3 ECC3	117.822 142.685	-8 856.625 -8 855.777 -8 872.128	3 767 275.414 3 767 291.752 3 767 291.182	R 15.000m DA 94°58'00" TL 16.360m AL 24.863m
BCC4 PI4 ECC4	162.870 215.912	-8 892.301 -8 921.607 -8 936.805	3 767 290.479 3 767 289.456 3 767 314.535	R 50.000m DA 60°46'50" TL 29.324m AL 53.042m
BCC5 PI5 ECC5	218.679 247.395	-8 938.239 -8 945.703 -8 950.687	3 767 316.901 3 767 329.218 3 767 342.730	R 150.000m DA 10°58'10" TL 14.402m AL 28.716m
BCC6 PI6 ECC6	255.417 279.346	-8 953.463 -8 957.704 -8 967.189	3 767 350.256 3 767 361.754 3 767 369.513	R 45.000m DA 30°28'00" TL 12.254m AL 23.929m
BCC7 PI7 ECC7	307.239 325.891	-8 988.779 -8 996.018 -9 002.033	3 767 387.175 3 767 393.097 3 767 400.258	R 100.000m DA 10°41'10" TL 9.353m AL 18.651m
BCC8 PI8 ECC8	331.563 353.772	-9 005.682 -9 012.831 -9 020.880	3 767 404.602 3 767 413.114 3 767 420.781	R 200.000m DA 6°21'40" TL 11.116m AL 22.209m
END	353.772 365.782	-9 020.880 -9 029.575	3767420.781 3767429.065	L 12.010m

SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 232.000



CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110
NATURAL GROUND LEVELS	233.672	233.843	234.655	235.728	236.444	236.933	237.141	237.153	237.177	237.272	237.447	237.993
VERTICAL ALIGNMENT – ROAD LEVELS – LEFT EDGE	233.672	233.843	234.655	235.728	236.444	236.933	237.141	237.153	237.177	237.272	237.447	237.993
VERTICAL ALIGNMENT – ROAD LEVELS – CENTRE LINE	233.994	233.922	234.967	236.041	236.817	237.294	237.473	237.502	237.531	237.561	237.681	238.350
VERTICAL ALIGNMENT – ROAD LEVELS – RIGHT EDGE	233.672	233.843	234.655	235.728	236.444	236.933	237.141	237.153	237.177	237.272	237.447	237.993

CHAINAGE	120	130	140	150	160	170	180	190	200	210	220	230
NATURAL GROUND LEVELS	238.476	237.974	237.632	237.450	237.329	237.527	237.907	238.216	238.061	237.412	235.973	234.274
VERTICAL ALIGNMENT – ROAD LEVELS – LEFT EDGE	238.476	237.974	237.632	237.450	237.329	237.527	237.907	238.216	238.061	237.412	235.973	234.274
VERTICAL ALIGNMENT – ROAD LEVELS – CENTRE LINE	238.580	238.283	237.985	237.748	237.720	237.908	238.251	238.583	238.481	237.777	236.470	234.736
VERTICAL ALIGNMENT – ROAD LEVELS – RIGHT EDGE	238.476	237.974	237.632	237.450	237.329	237.527	237.907	238.216	238.061	237.412	235.973	234.274

GRADES: -3.544% | -2.118% | 12.240% | 0.292% | 7.597% | -2.979% | 3.502% | -17.589%
10.000 233.743 | 40.000 237.415 | 100.000 237.590 | 115.000 238.729 | 157.500 237.463 | 205.000 239.127 | 267.500 228.134

VERTICAL CURVES: BVC 5.000, VCL=10.000m, K=1, EVC 15.000 | BVC 20.000, VCL=40.000m, K=3, EVC 60.000 | BVC 95.000, VCL=10.000m, K=1, EVC 105.000 | BVC 110.000, VCL=10.000m, K=1, EVC 120.000 | BVC 142.500, VCL=30.000m, K=5, EVC 172.500 | BVC 187.500, VCL=35.000m, K=2, EVC 222.500 | BVC 227.500, VCL=80.000m, K=5, EVC 307.500

CROSSFALL: LEFT L:2.0% | 0.000 | RIGHT R:-2.0%

HORIZONTAL CURVES: DIRECTION 1°47'30" | BCC1 12.419 | CURVE 1 R=200.0m I=356°49'00" | ECC1 47.159 | DIRECTION 351°50'20" | BCC2 96.540 | CURVE 2 R=100.0m I=357°24'20" | CURVE 3 R=15.0m I=315°29'10" | ECC3 142.685 | DIRECTION 268°00'10" | BCC4 162.870 | CURVE 4 R=50.0m I=298°23'40" | CURVE 5 R=150.0m I=334°16'10" | 247.395 ECC5

LONG SECTION: NKOSAZANA ZUMA STREET

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS
RCS/360	ROAD CROSS SECTIONS

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e-mail: mail@boschprojects.co.za
website: www.boschholdings.co.za
ISO 9001:2015 CERTIFIED

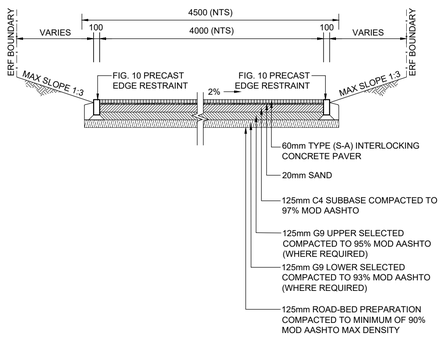
DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

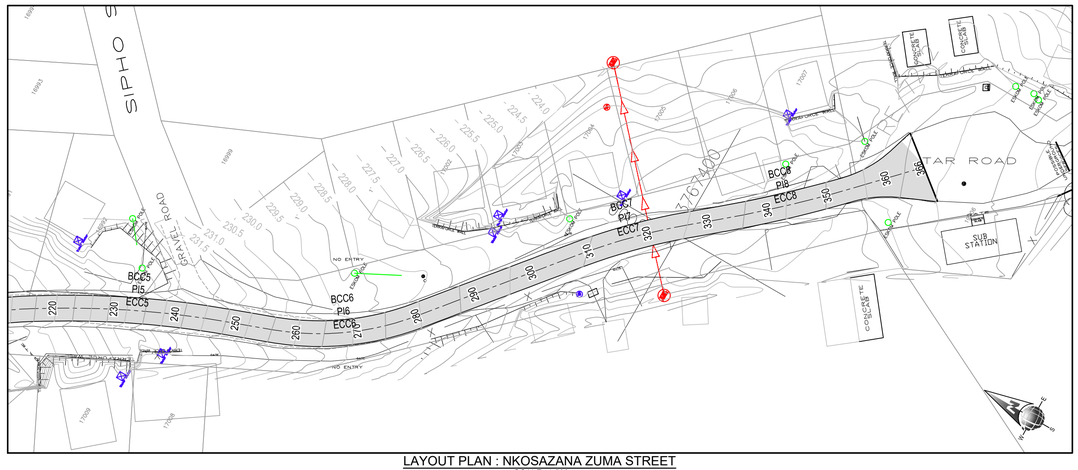
NKOSAZANA ZUMA STREET CONCORDIA

ROAD PLAN & LONG SECTION (CH0.000 TO CH230.000)

SCALE	DATE	
AS SHOWN	JULY 2025	
DRAWING NUMBER	SIZE	REVISION
8040/001/RLS/360	A1	1



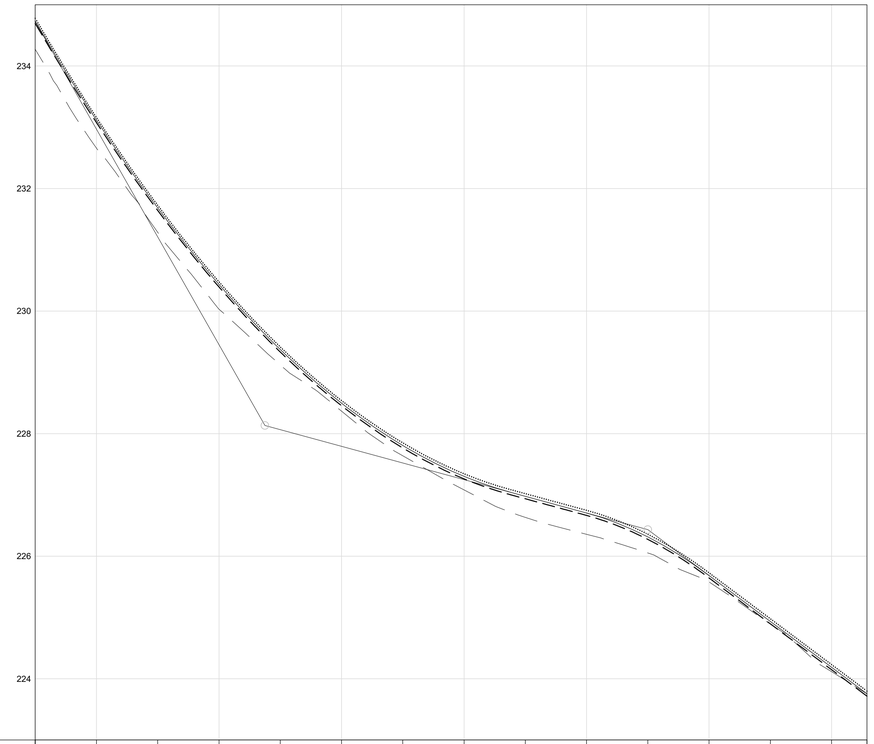
TYPICAL CROSS SECTIONS
SCALE 1:50



LAYOUT PLAN : NKOSAZANA ZUMA STREET
SCALE 1:500

SETTING OUT DATA - NKOSAZANA ZUMA STREET

NAME	CH	Y	X	DETAILS
BCC1 PI1 ECC1	12.419 47.159	-8 846.907 -8 846.362 -8 848.834	3 767 170.661 3 767 188.066 3 767 205.303	R 200.000m DA 9°57'10" TL 17.413m AL 34.739m
BCC2 PI2 ECC2	96.540 115.966	-8 855.843 -8 857.226 -8 856.721	3 767 254.184 3 767 263.830 3 767 273.561	R 100.000m DA 11°07'50" TL 9.744m AL 19.427m
BCC3 PI3 ECC3	117.822 142.685	-8 856.625 -8 855.777 -8 872.128	3 767 275.414 3 767 291.752 3 767 291.182	R 15.000m DA 94°58'00" TL 16.360m AL 24.863m
BCC4 PI4 ECC4	162.870 215.912	-8 892.301 -8 921.607 -8 936.805	3 767 290.479 3 767 289.456 3 767 314.535	R 50.000m DA 60°46'50" TL 29.324m AL 53.042m
BCC5 PI5 ECC5	218.679 247.395	-8 938.239 -8 945.703 -8 950.687	3 767 316.901 3 767 329.218 3 767 342.730	R 150.000m DA 10°58'10" TL 14.402m AL 28.716m
BCC6 PI6 ECC6	255.417 279.346	-8 953.463 -8 957.704 -8 967.189	3 767 350.256 3 767 361.754 3 767 369.513	R 45.000m DA 30°28'00" TL 12.254m AL 23.929m
BCC7 PI7 ECC7	307.239 325.891	-8 988.779 -8 996.018 -9 002.033	3 767 387.175 3 767 393.097 3 767 400.258	R 100.000m DA 10°41'10" TL 9.353m AL 18.651m
BCC8 PI8 ECC8	331.563 353.772	-9 005.682 -9 012.831 -9 020.880	3 767 404.602 3 767 413.114 3 767 420.781	R 200.000m DA 6°21'40" TL 11.116m AL 22.209m
END	353.772 365.782	-9 020.880 -9 029.575	3767420.781 3767429.065	L 12.010m



SCALES:
Horizontal 1:500
Vertical 1:50

DATUM 223.000

CHAINAGE			230	240	250	260	270	280	290	300	310	320	330	340	350	360	366
NATURAL GROUND LEVELS			234.274	232.659	231.285	230.030	229.123	228.368	227.638	227.081	226.634	226.357	226.052	225.578	224.894	224.115	223.755
VERTICAL ALIGNMENT	ROAD LEVELS	LEFT EDGE	234.274	232.659	231.285	230.030	229.123	228.368	227.638	227.081	226.634	226.357	226.052	225.578	224.894	224.115	223.755
		CENTRE LINE	234.758	233.116	231.882	230.435	229.373	228.497	227.806	227.302	226.978	226.705	226.314	225.655	224.935	224.188	223.755
		RIGHT EDGE	234.274	232.659	231.285	230.030	229.123	228.368	227.638	227.081	226.634	226.357	226.052	225.578	224.894	224.115	223.755
	GRADES						267.500	228.134	-2.721%				330.000	226.433	-7.485%		
	VERTICAL CURVES		BVC 227.500	VCL=80.000m K=5					EVC 307.500		BVC 320.000	VCL=20.000m K=4			EVC 340.000		
CROSSFALL	LEFT																
	RIGHT																
HORIZONTAL CURVES			BCC5 218.679	CURVE 5 R=150.0m I=334°16'10"	247.395 ECC5	DIRECTION 339°45'10"	BCC6 255.417	CURVE 6 R=45.0m I=324°31'10"	279.346 ECC6	DIRECTION 309°17'10"	BCC7 307.239	CURVE 7 R=100.0m I=314°37'40"	325.891 ECC7	DIRECTION 319°56'50"	BCC8 331.563	CURVE 8 R=200.0m I=316°47'30"	353.772 ECC8	DIRECTION 313°36'30"

LONG SECTION: NKOSAZANA ZUMA STREET

LEGEND

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING POWERLINE
- EXISTING ELECTRICITY POLE
- EXISTING TREE/BUSHES
- BM1 BENCHMARKS
- PROPOSED ROAD

BENCHMARKS/SURVEY CONTROL

SYSTEM WGS84/LO23

CODE	Y CO-ORD	X CO-ORD	ELEVATION
BP3	-9114,979	3767195,191	199,725
BP4	-9220,302	3767125,600	231,610
BP5	-9179,222	3766960,364	249,914
W7-BM1	-8689,420	3766809,202	240,582
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W7-BM8	-8843,731	3767153,857	233,532
W7-BM9	-8658,523	3767479,477	233,904
W7-BM10	-8386,335	3767595,968	203,114

ALL BENCHMARKS ARE 12mm PEG IN CONCRETE WITH A NAMEPLATE

REV.	BY	DESCRIPTION	DATE
1		FOR TENDER	JUL 2025

DRG. No.	REFERENCE DRAWING
RCS/501-504	TYPICAL DETAILS
RCS/361	ROAD CROSS SECTIONS

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DRAWN	ZT		
CIVIL ENGINEER	JB	STRUCTURAL ENGINEER	
INSTRUMENT ENGINEER		ELECTRICAL ENGINEER	
MECHANICAL ENGINEER		PROCESS ENGINEER	
PROJECT MANAGER	AE	DIVISIONAL MANAGER	AN

KNYSNA MUNICIPALITY
CONTRACT TXX OF 2024/25 - SURFACING OF GRAVEL IN CONCORDIA (WARD 7)

NKOSAZANA ZUMA STREET
CONCORDIA

ROAD PLAN & LONG SECTION (CH230.000 TO CH365.782)

SCALE	AS SHOWN	DATE	JULY 2025
DRAWING NUMBER	8040/001/RLS/361	SIZE A1	REVISION 1