NOTES:

1. ALL LEVELS, DIMENSIONS AND SETTING OUT DETAILS TO BE VERIFIED BY CONSULTANT AND CONTRACTORS ON SITE PRIOR TO CONSTRUCTION.
2. PIPE CULVERTS ARE TO BE LAID IN ACCORDANCE WITH SD 0401 WITH HEADWALLS AS PER SD 0402, SD 0403 OR SD 0406. MIN DIA = 450MM FOR MINOR ACCESS ROADS AND ACCESS BELL-MOUTHS, AND MIN DIA = 600MM FOR MAJOR ROAD CROSS DRAINAGE.
3. FOR EROSION CONTROL GABION MATTRESSES ARE RECOMMENDED AT CULVERT INLETS AND OUTLETS.
4. EARTH BERMS ARE TO BE CONSTRUCTED AT CULVERT INLETS TO DIRECT STORM-WATER INTO CULVERTS WHERE NECESSARY.
5. ROCK BOLSTERS ARE TO BE PLACED ACROSS THE INVERT OF DRAINS SUSCEPTIBLE TO EROSION FOR EVERY 2M VERTICAL DROP.
6. GRASSED/CONCRETE LINED V-DRAINS AS PER SD 0601/3 & 4 ARE RECOMMENDED FOR SHALLOW CUTTINGS OF DEPTH LESS THAN 5MM MEASURED AT A POINT 6M FROM EDGE OF CARRIAGEWAY. CONCRETE LINED 1000V - DRAINS AS PER SD 0601/2 ARE RECOMMENDED FOR DEEP CUTTINGS OF DEPTH GREATER THAN 5M MEASURED AT A POINT 6M FROM EDGE OF CARRIAGEWAY.
7. SUBSOIL DRAINS AS PER SD 0501 ARE TO BE INSTALLED WITH 1000 V - DRAINS OR WHERE HIGH WATER TABLES ARE ENCOUNTERED.
8. KERB AND CHANNEL DRAINS AS PER SD 0701 ARE TO BE PROVIDED WHERE FILL EMBANKMENTS EXCEED 3M IN HEIGHT
9. WHERE SURFACE RUNOFF IS TOWARD THE ROAD, CATCH-WATER BANKS ARE TO BE PROVIDED TO DIVERT STORM-WATER TO MAJOR CROSS DRAINAGE STRUCTURES.
10. THE POSITIONS OF ACCESSES ARE TO BE DETERMINED IN CONSULTATION WITH THE LOCAL COMMUNITY. DAYLIGHTING REQUIREMENTS ARE TO BE DECIDED BY THE ENGINEER ON SITE. CONCRETE WEDGES AS PER SD 0303 MAY BE USED IN PLACE OF SURFACED BELL-MOUTHS FOR ACCESSES SERVING SINGLE RESIDENTIAL PROPERTIES.
11. GUARDRAILS ARE TO BE INSTALLED IN ACCORDANCE WITH SD 1101 AND SD 1102 WHERE FILL EMBANKMENTS EXCEED 3M IN HEIGHT OR WHERE HAZARDOUS OBSTRUCTIONS CANNOT BE REMOVED.
12. EXISTING ROAD SIGNS, SERVICES AND FENCING AFFECTED BY CONSTRUCTION ARE TO BE REMOVED/ RELOCATED WHERE NECESSARY.
13. UNDERGROUND SERVICE CROSSINGS AND MARKERS ARE TO BE IN ACCORDANCE WITH SD 1001 - 3.
14. ALL NEW ROAD SIGNS AN ROAD MARKING REQUIREMENTS ARE TO CONFORM TO THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY ROAD TRAFFIC SIGNS MANUAL (SADC - RTSM).
15. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH "COTO SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR STATE ROAD AUTHORITIES."
16. ALL SURVEY AND SETTING OUT DATA PROVIDED IS BASED ON (WGS 84/31)
17. NEW FILLS AND EXPOSED CUTTINGS ARE TO BE TOP-SOILED AND VEGETATED IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.
18. INTERSECTIONS DESIGNED SET OUT FROM EDGE OF EXISTING ROAD
19. ALL EXISTING CULVERTS ARE TO BE DEMOLISHED
20. ACCESS SCOOPS TO BE POSITIONED ON SITE
21. ALL PROPOSED DRIVEWAYS TYING INTO D1001 TO BE CONCRETE SURFACED
22. ALL PROPOSED CONCRETE SURFACING TO FOLLOW DWG. NO. C47122

HORIZONTAL ALIGNMENT

D1001

Position	Chainage	Y-Coord	X-Coord	Radius	Tan	Deflection
BCC9	4+090.10	39841.69	3275509.75			
PI9	4+141.27	39831.52	3275560.54	270.00	51.80	21°43'12"
ECC9	4+192.45	39840.85	3275611.49			
BCC10	4+347.81	39868.87	3275764.31			
PI10	4+379.94	39874.80	3275796.68	120.00	32.91	30°40'37"
ECC10	4+412.06	39896.42	3275821.50			
BCC11	4+467.55	39932.87	3275863.34			
PI11	4+547.53	39988.40	3275927.08	200.00	84.54	45°49'31"
ECC11	4+627.51	39981.39	3276011.32			
BCC12	4+669.10	39977.93	3276052.76			
PI12	4+701.74	39974.97	3276088.33	65.00	35.68	57°31'56"
ECC12	4+734.37	40003.38	3276109.91			
End	4+780.00	40039.91	3276137.62			

INTERSECTION SCHEDULE

CHAINAGE	ROAD NAME	DIRECTION	TYPE
CH4000	ACCESS ROAD	RHS	B3
CH4140	L1683	LHS	B3
CH4285	ACCESS ROAD	LHS	B3

FOR B1/B3 INTERSECTION DETAILS REFER TO DWG No. SD 0303

CATCH WATER SCHEDULE

START (CH)	END (CH)	DIRECTION
17.864(L1684)	71.93	LHS
3970	4087	LHS
555.029(L1683)	656.915	LHS
4147	4280	LHS

FOR CATCHWATER DETAILS REFER TO DWG No. SD 0605

DRAINAGE SCHEDULE-D1001

NO.	CH	DIAMETER(mm)	CLASS	BEDDING	LENGTH(m)	SKEW (°)	INLET (m)	OUTLET (m)	GRADE (%)	AREA (ha)	FLOW	CAPACITY(m^3/s)	VELOCITY (m/s)	INLET TYPE
13	3996.00	600,00	75D	CLASS C	20.810	45,00	757,864	757,457	1,96	0,210	0,01%	0,67	3,29	GI
14	4353.00	600,00	75D	CLASS C	11,776	4,991	769,295	768,800	4,20	3,227	0,20%	0,39	3,48	HW
15	4575.00	600,00	75D	CLASS C	13,843	3,505	750,889	749,616	9,20	2,693	0,15%	0,39	4,71	HW
16	4780.00	600,00	75D	CLASS C	9,272	2,600	736.000	735.857	1.54	0,575	0,03%	0,72	3,37	GI

FOR PIPE DETAILS REFER TO DWG NO. SD 0406

INCREASING CHAINAGE — LHS — RHS — CL — SKEW REFERENCE ANGLE

SIDE DRAINAGE SCHEDULE

LHS				RHS			
START (CH)	END (CH)	LENGTH (m)	DRAIN TYPE	START (CH)	END (CH)	LENGTH (m)	DRAIN TYPE
3900	4330	430	1000V DRAIN	4006	4160	154	1000V DRAIN
4330	4570	240	TOE DRAIN	4280	4340	60	TOE DRAIN
4580	4730	150	1000V DRAIN	4620	4780	160	1000V DRAIN

FOR 1000 'V' DRAIN DETAILS REFER TO DWG NO. SD 0601 | FOR TOE DRAIN REFER TO TOE DRAIN TYPICAL DETAIL

MITRE CHUTE SCHEDULE

LHS	RHS
CHAINAGE	CHAINAGE
4330	4005
4575	4340
4735	

FOR DETAILS REFER TO DWG NO. SD 0603/1 - SD 0603/2

SIGN POSTING SCHEDULE

LEFT HAND SIDE			RIGHT HAND SIDE		
CH	SIGN	SIZE	CH	SIGN	SIZE
3860	GD4 (L1684)	900mm	3900	GD4 (L1684)	900mm
4010	W121	900mm	4010	R121	900mm
4080	W107	900mm	4080	W308	900mm
4105	R201-40	900mm	4110	R201-60	900mm
4120	GD4 (L1683)	900mm	4140	W409	900mm
4142	R1	900mm	4160	GD4 (L1683)	900mm
4145	W308	900mm	4275	W308	900mm
4240	W107	900mm	4285	W409	900mm
4305	W208	900mm	4347	W108	900mm
4660	W207	900mm	4760	W207	900mm
END	W409	900mm			

BUS BAY SCHEDULE

CHAINAGE	DIRECTION
CH 3940.00	RHS
CH 4080.00	LHS

FOR DETAILS REFER TO DWG NO. SD 0305

ROAD MARKING SCHEDULE

TYPE	START CH	END CH
WM3 + RM1 (LHS)	4000	4200
RM2	4200	4720
WM3 + RM1 (RHS)	4720	4780

SIDEWALK SCHEDULE

LHS			RHS		
START	END	LENGTH	START	END	LENGTH
			4000	4780	780

AS PER TYPICAL CROSS SECTION BELOW

SPEED SCHEDULE

START	END	POSTED SPEED	DESIGN SPEED
4000	4160	60Km/hr	60Km/hr
4160	4803	40Km/hr	40Km/hr

DRAINAGE SCHEDULE- ACCESS ROADS/DRIVEWAYS

NO.	ROAD NAME	POSITION	CH	DIAMETER(mm)	BEDDING	BEDDING	LENGTH(m)
47	AR@CH4000	PC	12.00	450.00	75D	CLASS C	10.00
48	L1683	PC	559,00	600,00	75D	CLASS C	5,00
49	AR@CH4285	PC	5,00	600,00	75D	CLASS C	8,30
50	D1001	LHS	4366,00	450,00	75D	CLASS C	5,00
51	D1001	LHS	4410,00	450,00	75D	CLASS C	5,00
52	D1001	LHS	4440,00	450,00	75D	CLASS C	5,00
53	D1001	LHS	4440,00	600,00	75D	CLASS C	5,00

FOR PIPE DETAILS REFER TO DWG NO. SD 0406 AND SD 0401
FOR HEADWALL DETAILS REFER TO DWG NO. SD 0402

* AR -ACCESS ROAD
DW -DRIVEWAY

STORMWATER RETICULATION (MH17 - HW)

MH NAME	Y - Coord	X - Coord	Invert(m)	Grade(%)	Length(m)	Dia(mm)
MH17	39823.367	3275558.820	770.368			
MH18	39826.016	3275547.361	768.787	11.029	14.353	600.00
MH19	39833.987	3275526.590	766.928	8.327	22.326	600.00
MH20	39834.315	3275510.496	766.563	2.249	16.227	600.00
HW	39852.489	3275505.296	766.148	2.178	19.056	600.00

STORMWATER RETICULATION (MH22 - HW)

MH NAME	Y - Coord	X - Coord	Invert(m)	Grade(%)	Length(m)	Dia(mm)
MH22	39847.179	3275703.645	774.823			
MH23	39851.121	3275710.906	774.181	7.014	9.176	600.00
MH24	39856.650	3275729.299	773.217	5.015	19.230	600.00
HW	39860.859	3275750.404	772.022	4.142	21.539	600.00

BEACON PEG CO-ORDINATES (Lo31)

POINT	Y	X	LEVEL (m)
AA18	39875,713	3275375,664	756,426
AA19	39824,627	3275570,527	776,879
AA20	39870,299	3275702,455	776,675
AA21	39960,276	3275779,495	769,517
AA22	39981,361	3275940,640	750,917
AA23	39965,717	3276054,886	754,645
AA24	40055,597	3276181,202	735,329

BUS BAY SETTING OUT

Point	Y - Coord	X - Coord	Level (m)
B8A	39847,552	3275462,722	763,501
B8B	39838,088	3275483,433	765,414
B8C	39835,140	3275498,142	766,937
B8D	39835,961	3275523,015	769,207

BUS BAY SETTING OUT

Point	Y - Coord	X - Coord	Level (m)
B7A	39882,381	3275334,230	753,974
B7B	39881,196	3275354,391	754,800
B7C	39878,346	3275368,609	755,578
B7D	39871,906	3275387,207	756,867

SIGHT DISTANCE SCHEDULE

INTERSECTION AT CH 4140

	LHS	RHS
DSSD REQ	190	190
DSSD ACH	380	207
ISSD REQ	150	150
ISSD ACH	300	207

SIGHT DISTANCE SCHEDULE

INTERSECTION AT CH 4285

	LHS	RHS
DSSD REQ	130	130
DSSD ACH	130	182
ISSD REQ	120	120
ISSD ACH	120	182

SIGHT DISTANCE SCHEDULE

INTERSECTION AT CH 4000

	LHS	RHS
DSSD REQ	190	190
DSSD ACH	380	207
ISSD REQ	150	150
ISSD ACH	150	207

CURVE No. 9 (RIGHT)

R = 270.000m	Δ = 21°43'12"
Lc = 102.353m	T = 51.798m

CURVE No. 10 (RIGHT)

R = 120.000m	Δ = 30°40'37"
Lc = 64.250m	T = 32.915m

CURVE No. 11 (LEFT)

R = 200.000m	Δ = 45°49'31"
Lc = 159.960m	T = 84.535m

CURVE No. 12 (RIGHT)

R = 65.000m	Δ = 57°31'56"
Lc = 65.268m	T = 35.684m

EXPROPRIATION OFFSET LIMITS

APPROXIMATE CO-ORDINATES (Lo31)

POINT	X	Y	POINT	X	Y
R81	39898.417	3275282.509	L65	39877.281	3275262.299
R82	39903.897	3275296.842	L66	39876.025	3275280.077
R83	39935.059	3275354.995	L67	39869.393	3275314.234
R84	39907.708	3275353.081	L68	39856.809	3275376.609
R85	39892.511	3275326.009	L69	39849.967	3275389.197
R86	39889.646	3275360.335	L70	39837.191	3275456.214
R87	39867.904	3275436.794	L71	39825.314	3275479.565
R88	39848.316	3275548.308	L72	39822.07	3275505.426
R89	39865.56	3275667.37	L73	39825.476	3275540.107
R90	39874.033	3275720.938	L74	39817.117	3275522.238
R91	39879.856	3275757.439	L75	39785.496	3275462.714
R92	39880.565	3275769.192	L76	39766.163	3275472.109
R93	39899.577	3275808.91	L77	39785.768	3275523.174
R94	39949.253	3275861.389	L78	39793.824	3275549.939
R95	39954.751	3275873.225	L79	39808.113	3275569.903
R96	39968.837	3275892.208	L80	39822.513	3275573.68
R97	39988.853	3275929.56	L81	39822.374	3275586.538
R98	39993.278	3275948.803	L82	39842.145	3275697.503
R99	39995.074	3275981.067	L83	39849.41	3275719.464
R100	39995.295	3276001.917	L84	39852.769	3275758.267
R101	39989.64	3276041.164	L85	39865.253	3275798.759
R102	39996.176	3276085.25	L86	39886.82	3275834.122
R103	40006.491	3276095.346	L87	39934.291	3275883.077
R104	40021.276	3276106.261	L88	39956.441	3275918.868
R105	40022.096	3276111.274	L89	39970.573	3275977.564
R106	40052.11	3276133.79	L90	39964.876	3276033.881
			L91	39962.604	3276056.34
			L92	39967.609	3276079.079
			L93	39977.562	3276095.653
			L94	39989.621	3276113.357
			L95	40045.038	3276156.11

LAYERWORKS SCHEDULE

NO	LAYER
1	175mm JOINTED UNREINFORCED DOWELED (35MPa) CONCRETE PAVEMENT (JCP)
2	150mm C4 SUBBASE LAYER COMPACTED TO 97% OF MDD
3	150mm G7 UPPER SELECTED LAYER COMPACTED TO 95% OF MDD
4	150mm G8 INSITU LAYER COMPACTED TO 93% OF MDD
5	100mm CONCRETE WALKWAY (20MPa)
6	125mm BASE LAYER G7 COMPACTED TO 95% OF MDD
7	200mm G8 INSITU LAYER COMPACTED TO 93% OF MDD
8	200mm G8 INSITU LAYER COMPACTED TO 93% OF MDD

(NOTE: MDD - REFERS TO MAXIMUM DRY DENSITY)

LEGEND

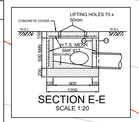
SYMBOL	DESCRIPTION
	CADASTRAL BOUNDARIES
	KERB AND TRANSITION/ FILLET (DETAIL B)
	1000mm WIDE CONCRETE "V" DRAIN (SD 0601/2)
	1500mm WIDE BOLSTER DRAIN (SD 0211)
	TOE DRAIN (AS PER DETAIL)
	CATCH WATER DRAIN (SD 0605)
	EXISTING ROAD RESERVE
	FLOW DIRECTION
	MITRE CHUTE (SD 0603/1 - SD 0603/2)
	GRID INLET (SD 0702)
	JUNCTION BOX (DETAIL F)
	CONCRETE PIPE CULVERT WITH HEADWALLS (SD 0406)
	SPEED HUMP + RUMBLE STRIP (SD 0314A)
	EXISTING EMBANKMENTS
	NEW EMBANKMENTS
	WALKWAYS
	GUARDRAIL (SD 1101)
	EXISTING FENCE LINE
	PROPOSED ROAD RESERVE
	PROPOSED ROAD
	LIMIT OF CONSTRUCTION
	ACCESSES TO BE CLOSED
W	PROPOSED REALIGNED WATER LINE AND MARKER POST

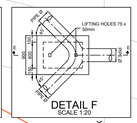
EXISTING SERVICES LEGEND

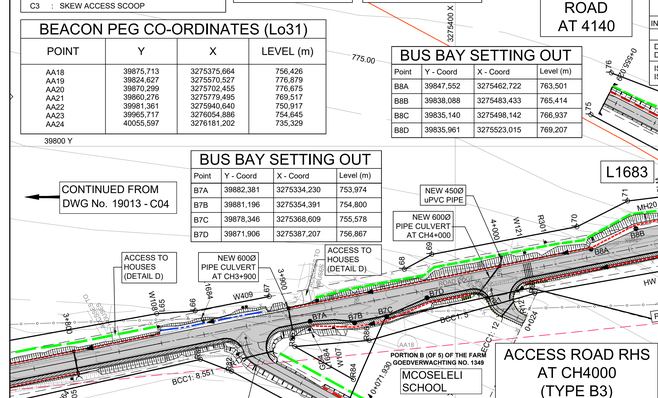
SYMBOL	DESCRIPTION
EP	ELECTRICITY POLE
TP	TELEPHONE POLE
W	WATER LINE AND MARKER POST
	ELECTRICAL SERVICES

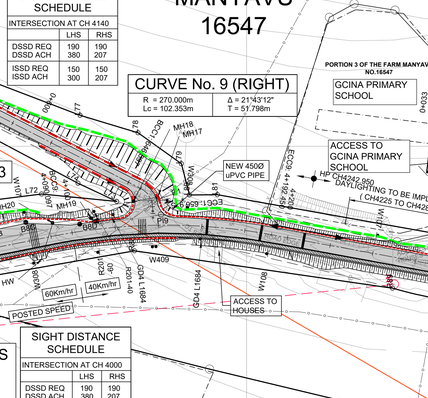
NOTATION

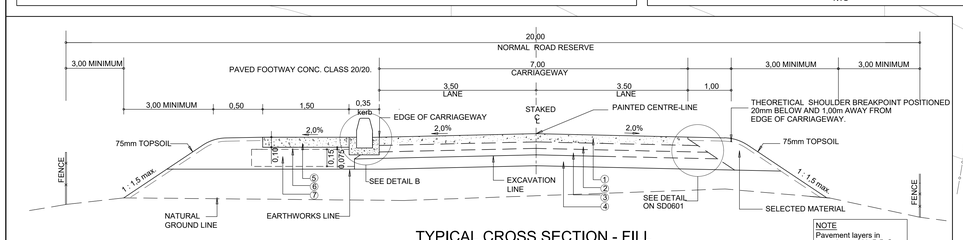
BCC	:	BEGINNING OF CIRCULAR CURVE
ECC	:	END OF CIRCULAR CURVE
PI	:	POINT OF INTERSECTION
R	:	RADIUS OF CIRCULAR CURVE
Δ	:	DEFLECTION ANGLE CIRCULAR CURVE
Lc	:	LENGTH OF CIRCULAR CURVE
T	:	LENGTH OF CURVE TANGENT
BT	:	BEGINNING OF TAPER
ET.	:	END OF TAPER
C2	:	STRAIGHT ACCESS SCOOP
C3	:	SKEW ACCESS SCOOP



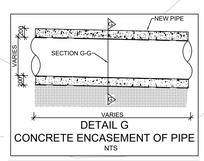


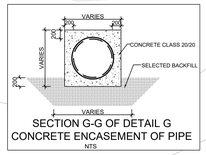


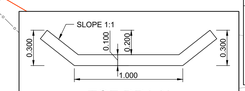


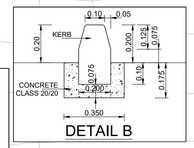


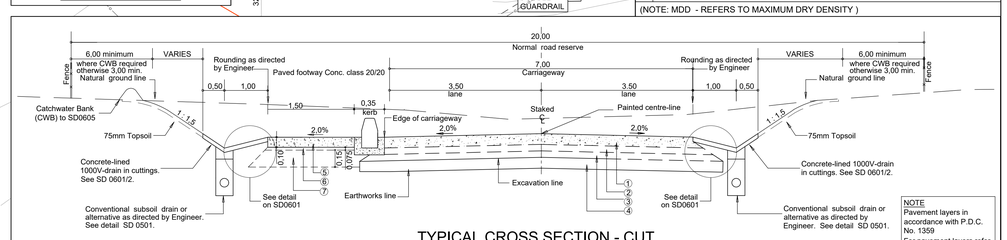
NOTE
Pavement layers in accordance with P.D.C. No. 1359



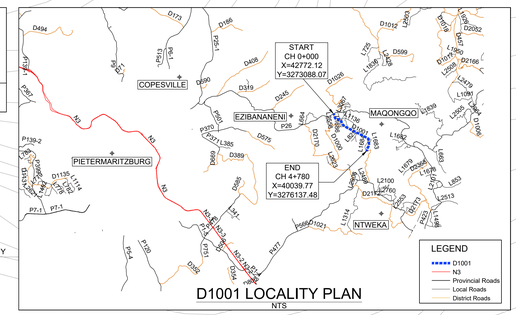


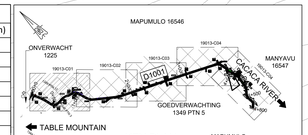






NOTE
Pavement layers in accordance with P.D.C. No. 1359
For pavement layers refer to Layerworks schedule





0	25/07/2022	FOR CONSTRUCTION	R.SMITH	
Symbol	Date	Description	Checked	Signed

AMENDMENTS

AS BUILT

Supervising Engineer — Date

Supervising Authority

Continued from :	
Continued on :	
Longitudinal Section No :	
Cross Section No :	
Survey Plan No :	
Designed by :	Mr M NAICKER
Checked by :	Mr R SMITH
Drawn by :	Mr J FRANK
Checked by :	Mr M NAICKER
Date of approval :	25/07/2022

PROVINCE OF KWAZULU - NATAL - ISIFUNDAZWE SAKWAZULU - NATALI
DEPARTMENT OF TRANSPORT
UMNYANGO WEZOKTHTHA

Designed by :
NATHOO MBENYANE ENGINEERS
ENGINEERS & PROJECT MANAGERS
46 WOODFORD GROVE
DURBAN
4001
Signed — Date

Transportation Engineer: Chief Engineer

Head : Transport

DISTRICT ROAD 1001 : TABLE MOUNTAIN TO CACACA RIVER

Staked Km distance: 4+000 - 4+780

Sheet No:- 5 of:- 5

UPGRADE FROM KM 0+000 - KM 4+780

DESIGN AND SERVICES PLAN

Scale: 1:1000

Plan No.: C47127

C47127 / 19013