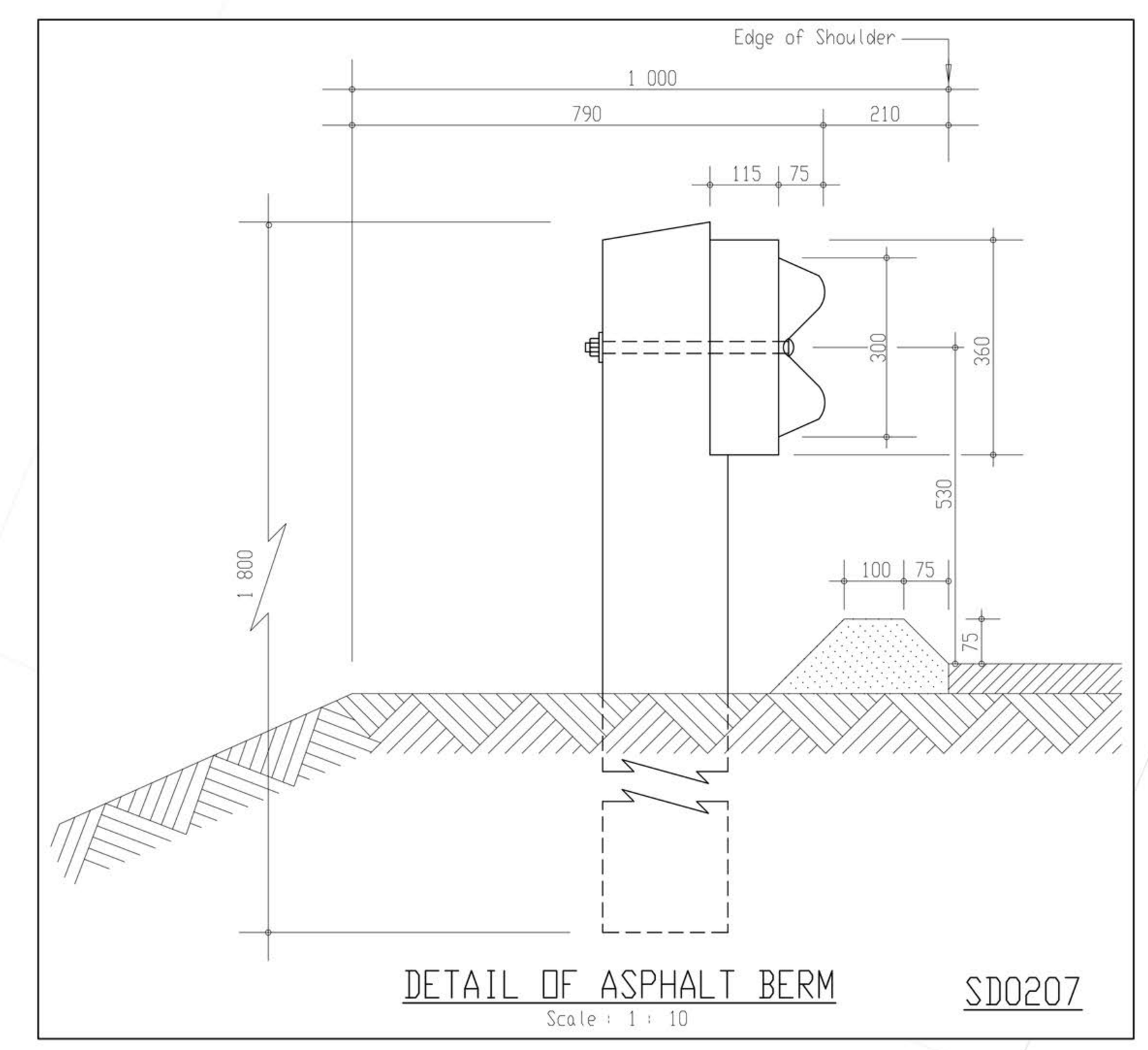
LEGEND	DESCRIPTIONS	KZN DOT'S STANDARD DETAIL
PC/01	CONCRETE PIPE CULVERT	SD 0401/B & SD 0406
	CONCRETE WALKWAY	SD 0203/A
	SIDE INLETS - KERB AND CHANNEL DROP INLETS - V-DRAINS	SD 0703/A SD 0602/B
	FIELD INLET	
	CONCRETE LINED 1000 V - DRAIN	SD 0601/2
	KERB AND CHANNEL CUT / FILL	SD 0601/5 (CUT) / SD 0701/A (FILL)
	CUT SIDE DRAIN OUTLET	SD 0603/3
RR	NEW ROAD RESERVE	
	SIGN POST	
	CADASTRAL BOUNDARY	
	EXISTING GRAVEL ROAD	
	GUARDRAILS	SD 1101/B

HORIZONTAL ALIGNMENT CO-ORDINATE LIST

Position	Chainages	Y-Coord (CO-ORDINATE - LO 31)	X-Coord (CO-ORDINATE - LO 31)	Details
PI0	2192.00	51047.35	3395390.03	0.00
BCC1	2215.00	51066.08	3395378.45	R = 250.00
PI1	2245.00	51091.83	3395362.52	Tc = 60.56 Δc = 13.48.43
ECC1	2275.00	51120.64	3395353.20	Lc = 60.26
BCC2	2277.00	51123.17	3395352.38	R = 110.00
PI2	2333.00	51181.17	3395333.61	Tc = 121.92 Δc = 57.59.08
ECC2	2389.00	51196.00	3395274.49	Lc = 111.33
BCC3	2392.00	51196.75	3395271.49	R = 380.00
PI3	2458.00	51213.17	3395206.05	Tc = 134.94 Δc = 20.08.14
ECC3	2525.00	51251.12	3395150.26	Lc = 133.55
BCC4	2653.00	51322.85	3395044.81	R = 500.00
PI4	2734.39	51369.35	3394976.44	Tc = 165.38 Δc = 18.46.52
ECC4	2817.00	51391.37	3394896.73	Lc = 163.90
BCC5	2977.00	51434.01	3394742.36	R = 800.00
PI5	3039.39	51450.80	3394681.61	Tc = 126.06 Δc = 9.00.36
ECC5	3103.00	51476.89	3394624.23	Lc = 125.80
BCC6	3158.00	51499.73	3394573.99	R = 125.00
PI6	3227.62	51532.25	3394502.47	Tc = 157.14 Δc = 64.18.03
ECC6	3300.00	51610.80	3394500.76	Lc = 140.28
BCC7	3320.00	51632.14	3394500.30	R = 500.00
PI7	3402.99	51716.80	3394498.45	Tc = 169.36 Δc = 19.13.25
ECC7	3487.00	51796.13	3394468.84	Lc = 167.76



NOTATION

BCC :	Beginning of circular curve
ECC :	End of circular curve
PI	Point of intersection
R	Radius of circular curve
Δc	Deflection angle of circular curve
Lc	Length of circular curve
Tc	Length of curve tangent
PC	Pipe Culvert
RR	Road Reserve

NOTES :

1. All levels, dimensions and setting out details to be verified on site prior to construction.
2. All existing drainage culverts are to be inspected , and any found in unservicable condition are to be replaced unless shown otherwise.
3. Culvert inverts are to be decided by the Engineer on site unless shown otherwise. Min. cover = 600mm, min: slope=2%.
4. Pipe culverts are to be laid in accordance with SD 0401 with headwalls as per SD 0402, SD 0403 or SD0406.
   Min dia = 450mm for minor access roads and access bellmouths , and min dia = 600mm for major road cross drainage.
5. Box culverts < 1,8m high are to constructed in accordance with SD 0404 or SD 0407. Box culverts >1,8m high are to be appropriately designed by a Structural Engineer in accordance with KZNDOT standards.
6. For erosion control cement grouted stone pitching or gabion mattresses are recommended at culvert inlets and outlets.
7. Earth berms are to be constructed at culvert inlets to direct stormwater into culverts where necessary.
8. Rock bolsters are to be placed across the invert of drains susceptible to erosion for every 2m vertical drop.
9. Grassed/Concrete lined V-drains as per SD 0601/3 & 4 are recommended for shallow cuttings of depth less than 5 mm measured at a point 6m from edge of carriageway. Concrete lined 1000 V - drains as per SD 0601/2 are recommened for deep cuttings of depth greater than 5 m measured at a point 6m from edge of carriageway.
10. Subsoil drains as per SD 0501 are to be installed with 1000 V-drains or where high water tables are encountered.
11. Kerb and channel drains as per SD 0701 are to be provided where fill embankments exceed 3m in height.
12. Where surface runoff is towards the road, catcthwater banks are to be provided to divert stormwater to major cross drainage structures.
13. 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 bellmouths for accesses serving single residential properties.
14. 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.
15 . Existing road signs, services and fencing affected by construction are to be removed/relocated where necessary.
16. Underground service crossings and markers are to be in accordance with SD1001 - 3.
17. All new road signs and road marking requirements are to conform to the South African Road Traffic Signs Manual (SARTSM).
18. All work isto be carried out in accordance with "COLTO Specifications for Road and Bridge Works for State Road Authorities."
19. All survey and setting out data provided is based on (WGS 84)

BENCHMARKS
CO-ORDINATED LIST
SYSTEM: WG 31

POINT	Y (CO-ORDINATES)	X (CO-ORDINATES)	Z (CO-ORDINATES)
T360	52964,020	3395870,590	184,900
GW01	52557,350	3392796,087	181,921
GW03	51953,118	3394477,226	136,992
GW04	51940,432	3394430,937	137,711
GW05	51026,122	3395386,650	71,023
GW06	51084,382	3395417,534	69,839

D365 - ROAD RESERVE OFFSET POINTS

LEFT OF CENTRE LINE			RIGHT OF CENTRE LINE		
POINT	X	Y	POINT	X	Y
RR01	3395392.125	51091.578	RR135	3395362.126	51051.579
RR02	3395362.647	51149.941	RR134	3395326.841	51150.274
RR03	3395354.074	51160.631	RR133	3395304.147	51171.846
RR04	3395346.471	51157.544	RR132	3395299.869	51168.054
RR05	3395227.282	51221.529	RR131	3395291.301	51175.082
RR06	3395212.545	51230.764	RR130	3395292.681	51178.504
RR07	3395185.770	51242.445	RR129	3394983.570	51347.260
RR08	3395163.457	51260.672	RR128	3394983.025	51346.028
RR09	3395129.838	51282.761	RR127	3394972.929	51350.500
RR10	3395073.320	51315.549	RR126	3394973.656	51352.112
RR11	3394912.513	51397.173			
RR12	3394877.620	51409.501			
RR13	3394859.021	51412.162			

SIGN POSTING SCHEDULE

LEFT HAND SIDE				RIGHT HAND SIDE			
KM	CODE	SIZE	SIGN	KM	CODE	SIZE	SIGN
2+260	W208	600		3+200	W405	600	
2+320	W405	600		3+220	W405	600	
2+340	W405	600		3+240	W405	600	
2+360	W405	600		3+260	W405	600	
3+120	W209	600		3+180	TR201-60	600	60
2+380	TR201-60	600	60				

PIPE AND CULVERT SCHEDULE

ITEM NO.	S.K.D.	SIZE Ø (mm)	PIPE CLASS	BEDDING TYPE	TYPE	LENGTH (m)	SKEW	INLET	OUTLET	HEADWALLS	SIDE/ DROP INLET
PC/01	2+335	900	75D	CLASS C	PIPE	11.330	90º	70.95	69.9	2	0
PC/02	2+395	900	75D	CLASS C	PIPE	12.785	225º	71.480	70.856	2	0
PC/03	2+715	600	75D	CLASS C	PIPE	11.400	270º	95.872	95.062	1	1
PC/04	3+220	600	75D	CLASS C	PIPE	11.091	270º	126.173	125.656	2	0

CONCRETE LINED 1000 V-DRAIN SCHEDULE

LEFT OF CENTRE LINE			RIGHT OF CENTRE LINE		
FROM CHAINAGE	TO CHAINAGE	LENGTH (m)	FROM CHAINAGE	TO CHAINAGE	LENGTH (m)
2 520	2 629	119	2 454	2 591	137
2 791	3 220	429	2 786	3 020	234
3 400	3 530	130			

GUARDRAIL SCHEDULE

LEFT OF CENTRE LINE			RIGHT OF CENTRE LINE		
FROM CHAINAGE	TO CHAINAGE	LENGTH (m)	FROM CHAINAGE	TO CHAINAGE	LENGTH (m)
2 380	2 425	46.224	3 330	3 469	139.000
3 205	3 272	58.234			

FOR TENDER PURPOSE

Symbol	Date	Description	Checked	Signed
AMENDMENTS				

APPROVED

Supervising Engineer .... Date

Supervising Authority

Continued from:-	-	Designed by:-	S. NKOSI
Continued on:-	C46935	Checked by:-	S. NKOSI
Cross Section No:-	C46941 to C46947	Drawn by:-	L. SIKHAKHANE
Longitudinal Section No:-	C46937 & C46938	Checked by:-	S. NKOSI
Survey Plan No:-		Date of approval:-	

transport
Department: Transport
Province of KwaZulu-Natal
'prosperity through mobility'

PROVINCE OF KWAZULU-NATAL
DEPARTMENT OF TRANSPORT

Designed by:-
KaMawewe Development Consultants (PTY) Ltd
12 Coronation Rd
Scottsville
Pietermaritzburg, 3201.

Tel No.: 033 342 9507
Fax No: 033 342 9249
E-mail : siya@kamawewe.co.za

Signed Date ....

KAMAWEWE DEVELOPMENT CONSULTANTS Pty(Ltd)

KaMawewe Development Consultants is ISO 9001:2015; ISO 14001:2015 & ISO45001:2018 certified for its full range of services

Transportation Engineering: Chief Engineer

Head: Transport

ROAD D365
(SEA PARK TO LOCATION NO. 5)

PORTION
(KM 2+291 - KM 5+853)

UPGRADE OF ROAD D365
LAYOUT PLAN

Staked KM Distance	KM 2+291 to KM 3+420
Sheet :-	1
of :-	3
Scale	1 : 1000
Contract No.:-	ZNB00583/00000/00/HOD/INF/21/T
REV. 00	
Plan No.:-	C46934

C46934