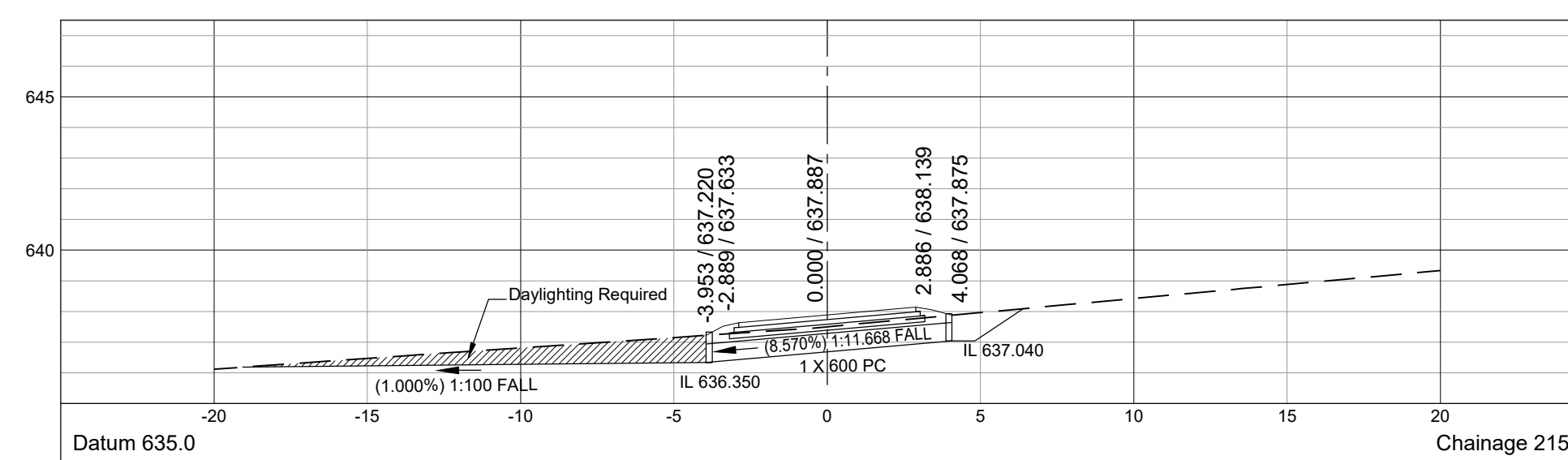
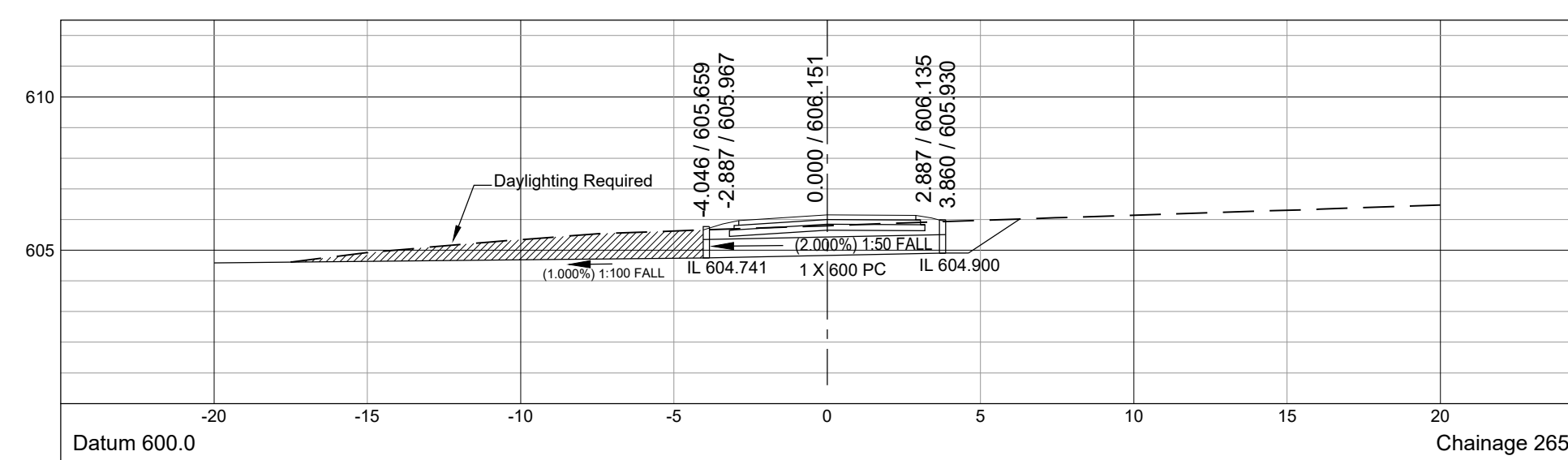
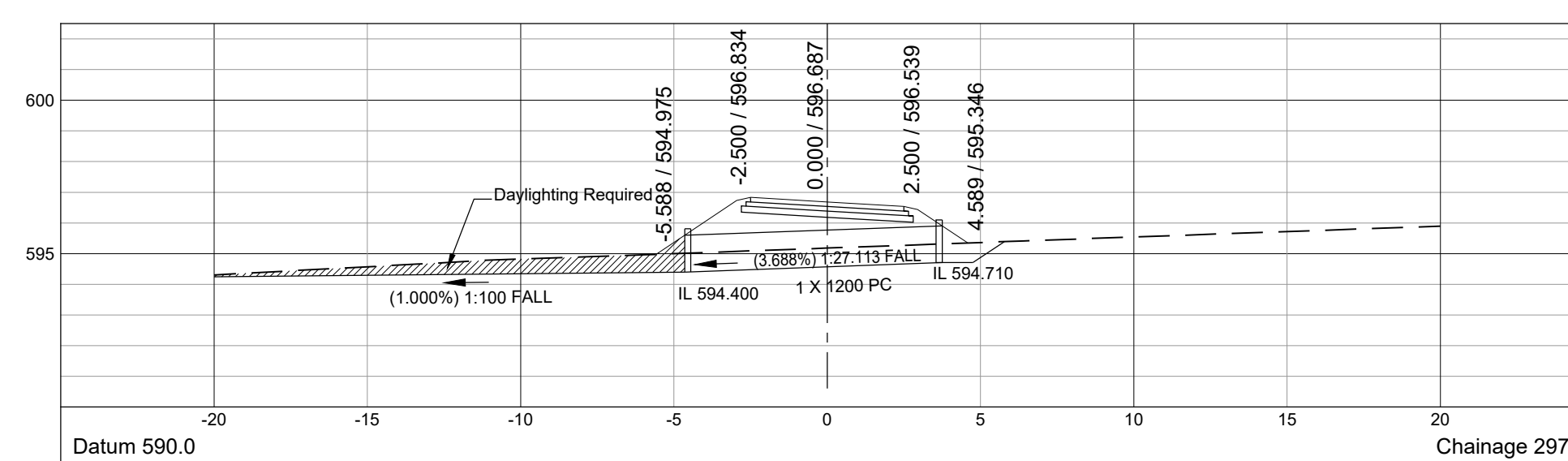
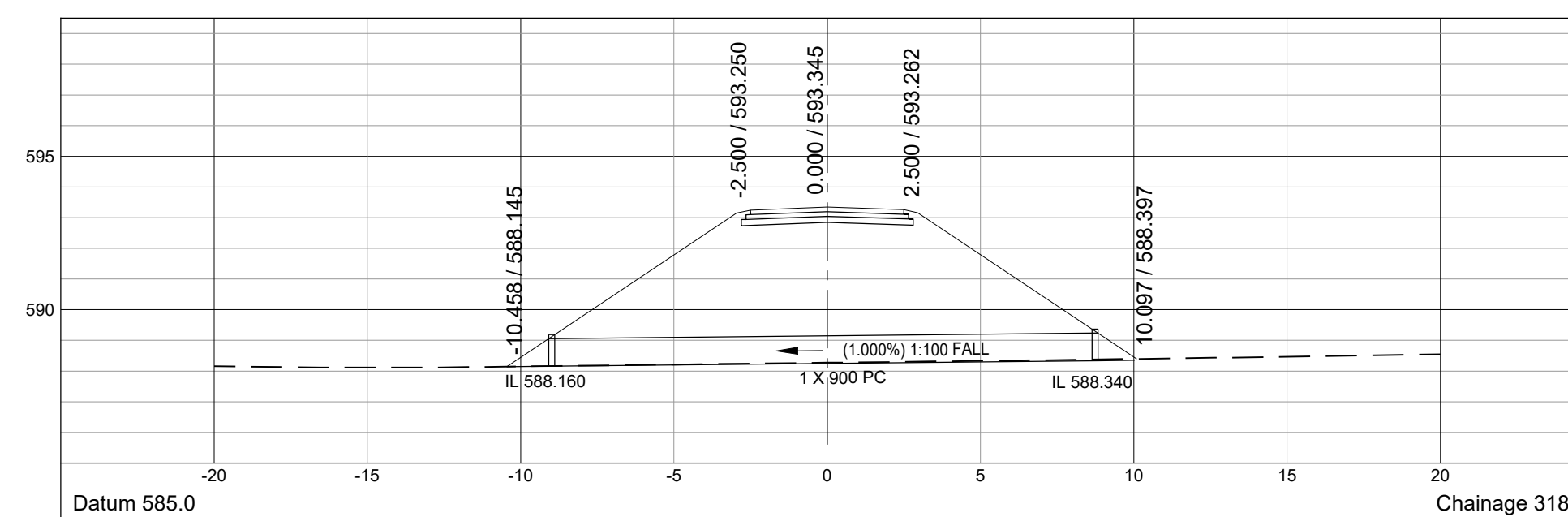
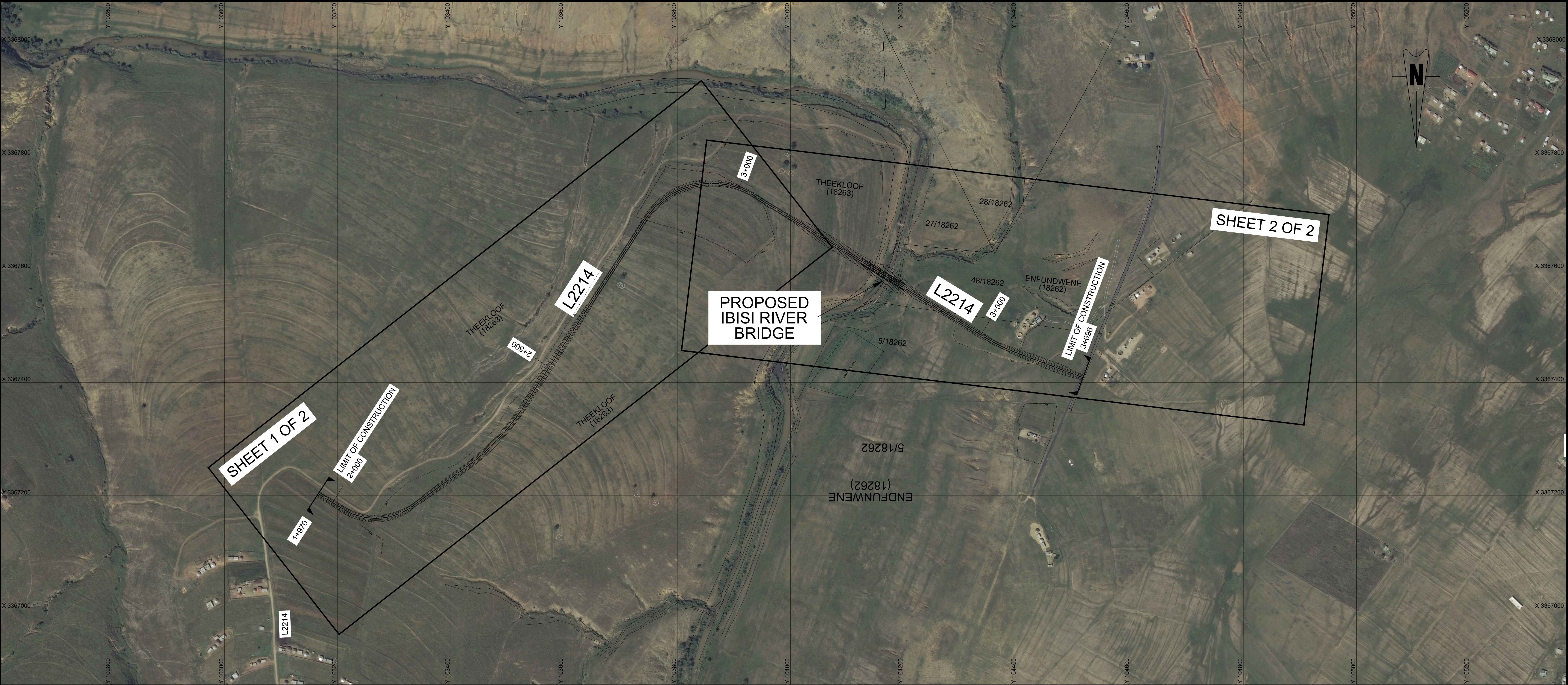




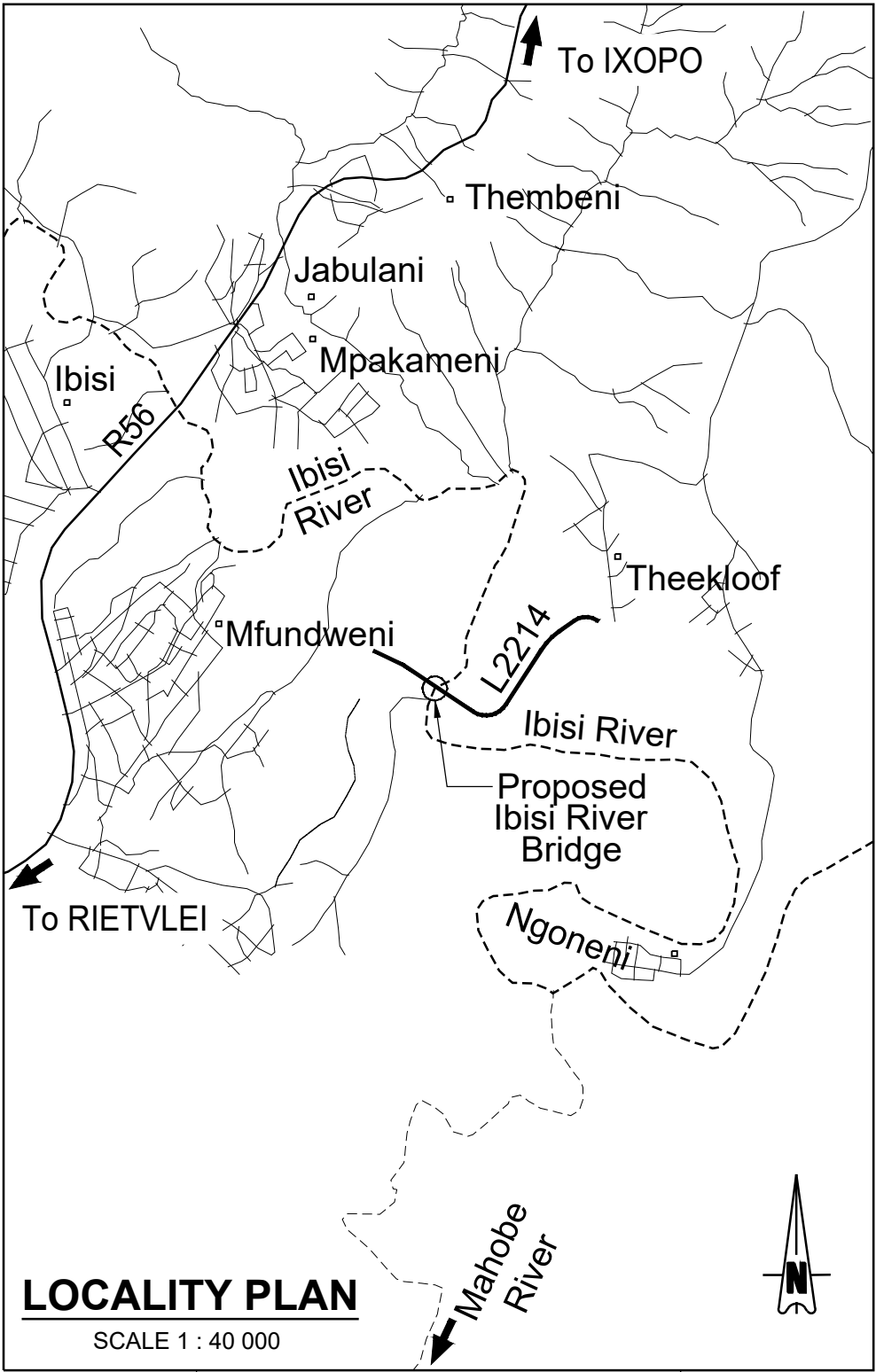
					AS BUILT		Continued from: -		Designed by:- N. NGUBANE				Designed by:-		Transportation Engineer: Chief Engineer		LOCAL ROAD L2214 (APPROACHES TO IBISI RIVER BRIDGE)		Staked km distance km1+970 - km3+696		Sheet :- 1 of :- 1		REVISION: F	
F	30-09-2022	ISSUED FOR TENDER	NN		Supervising Engineer _____ Date _____	Continued on:-	Checked by:- K. MACHIDO	Drawn by:- K. NAIDOO	Checked by:- K. MACHIDO	Date of approval:-		Signature: _____ Date: _____	Head: Transport	UPGRADING OF L2214 FROM KM1+970 TO KM3+696 PIPE CROSS SECTIONS				Scale 1 : 200		C46534				
E	30-06-2021	ISSUED FOR APPROVAL	KM																					
D	26-05-2021	ISSUED FOR APPROVAL	KM																					
C	21-02-2020	ISSUED FOR APPROVAL	FK																					
B	14-11-2019	ISSUED FOR APPROVAL	FK																					
A	19-10-2018	ISSUED FOR APPROVAL	NSZ																					
Symbol	Date	Description	Checked	Signed	Supervising Authority _____																			
AMENDMENTS																								

C46534



INDEX TO BOOK OF DRAWINGS

ROADWORKS		ROADWORKS		DoT STANDARD DETAILS	
DESCRIPTION	DRAWING No.	DESCRIPTION	DRAWING No.	DESCRIPTION	DRAWING No.
KEY PLAN AND DRAWING INDEX DESIGN PLAN - SHEET 1 OF 2 DESIGN PLAN - SHEET 2 OF 2 LONGITUDINAL SECTION - SHEET 1 OF 1 CROSS SECTIONS - SHEET 1 OF 2 CROSS SECTIONS - SHEET 2 OF 2 PIPE CROSS SECTIONS - SHEET 1 OF 1 SIGNAGE PLAN - SHEET 1 OF 2 SIGNAGE PLAN - SHEET 2 OF 2 TYPICAL DETAILS	C46528 C46529 C46530 C46531 C46532 C46533 C46534 C46535 C46536 C46537			TYPICAL CROSS SECTIONS - TYPE 7A LOCAL GRAVEL ROAD CONCRETE PIPE CULVERT BEDDING PIPE CULVERT HEADWALL (MASONRY) SUBSOIL DRAINAGE - ROAD EDGE SUBSOIL DRAINS DRAINAGE IN CUTTINGS SIDE DRAINS DRAINAGE IN CUTTINGS SIDE DRAIN OUTLETS PIPE CHUTE, OPEN CHUTE AND CATCHWATER BANKS DETAILS KERB AND CHANNEL DRAINS SIDE INLET DETAILS PIPE TO OPEN CHUTE GABION RETAINING WALL UNDERGROUND SERVICE CROSSING SERVICE LEGENDS & SERVICE MARKERS GUARDRAIL ERECTION GUARDRAIL END TREATMENT ERECTION OF METAL SIGNS ON CREOSOTED POLES SIGNPOSTING FOR DETOURS & LANE CLOSURES SIGNPOSTING AT ROADWORKS	SD02011 SD0401/B SD0406 SD0501/B SD0601/C SD0603/A SD0605/A SD0701/A SD0703/A SD0704/B SD0901/A SD1001/A SD1002/C SD1101/A SD1102/A SD1301/A SD1303/B SD1304/A



LEGEND:	
—	L2214
- - - -	IBISI RIVER

						AS BUILT Continued from:- Continued on:- Cross Section No:- Longitudinal Section No:- Design Plan No:-	Designed by:- N. NGUBANE Checked by:- K. MACHIDO Drawn by:- K. NAIDOO Checked by:- K. MACHIDO Date of approval:-		 KWAZULU-NATAL PROVINCE TRANSPORT REPUBLIC OF SOUTH AFRICA	Designed by:-  emzansi ENGINEERS (PTY) LTD C/A NO. 12204/068310/07 Signature: _____ Date: _____		Transportation Engineer: Chief Engineer Head: Transport		LOCAL ROAD L2214 (APPROACHES TO IBISI RIVER BRIDGE) Staked km distance km1+970 - km3+696 Scale 1 : 2500				Sheet :- 1 of :- 1 Plan No :- C46528		REVISION: F	
F	30-09-2022	ISSUED FOR TENDER	NN	Supervising Engineer _____ Date _____																	
E	30-06-2021	ISSUED FOR APPROVAL	KM	Supervising Authority _____																	
D	26-05-2021	ISSUED FOR APPROVAL	KM																		
C	21-02-2020	ISSUED FOR APPROVAL	FK																		
B	14-11-2019	ISSUED FOR APPROVAL	FK																		
A	19-10-2018	ISSUED FOR APPROVAL	NSZ																		
Symbol	Date	Description	Checked	Signed																	
AMENDMENTS																					

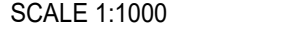
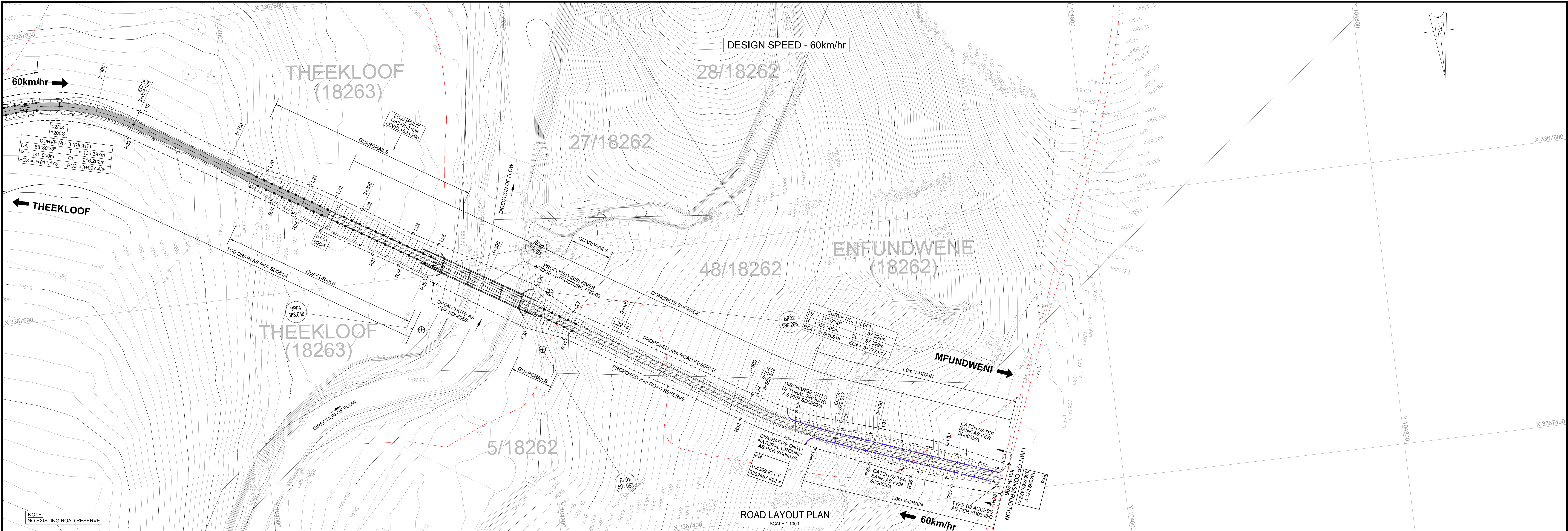


Diagram showing skew angle convention. The diagram features a central circle with two intersecting lines: a horizontal line labeled 'CO-ORDINATED CENTRE LINE' and a vertical line labeled 'NORMAL (PERPENDICULAR) LINE TO ROAD CENTRE LINE'. The circle is divided into four quadrants. Clockwise from the top-right, the angles are 330°, 300°, 270°, and 210°. Counter-clockwise from the top-right, the angles are 0°, 30°, 60°, and 90°. Arrows indicate 'FLOW DIRECTION' for each quadrant.

C46529



L2214: HORIZONTAL ALIGNMENT					
POINT	CHAINAGE	CO - ORDINATES WGS 84 Lo 31°		CURVE DATA	
		Y	X		
BCC 3	2+811.770	103 743.530	3 367 687.945	R = 140.000m Δ = 88°30'14" T = 136.397m Lc = 216.256m	
PI 3	3+028.026	103 817.897	3 367 802.278		
ECC 3		103 934.133	3 367 730.921		
BCC 4	3+505.518	104 341.062	3 367 481.108	R = 350.000m Δ = 11°02'00" T = 33.804m Lc = 67.399m	
PI 4	3+572.917	104 369.871	3 367 463.422		
ECC 4		104 401.532	3 367 451.577		
END	3+695.945	104 516.760	3 367 408.467		

CATCHWATER BERM / DRAINS													
LEFT HAND SIDE							RIGHT HAND SIDE						
From km	From km	To km	To km	Length (m)	Slope (%)	Drain type	Drain lining	Flow direction	From km	From km	To km	To km	Length (m)
	3.540		3.625	85		Berm	Grassed	→		3.600		3.660	60
	3.625		3.690	65		Berm	Grassed	→					

GUARDRAIL POSITIONS									
LEFT HAND SIDE					RIGHT HAND SIDE				
km from	km to	Length (m)	Notes		km from	km to	Length (m)	Notes	
3.115	3.260	145.00	FLARED ENDS		3.125	3.265	140.00	FLARED ENDS	
3.340	3.375	35.00	FLARED ENDS		3.340	3.375	35.00	FLARED ENDS	

TOE DRAINS													
LEFT HAND SIDE							RIGHT HAND SIDE						
From km	From km	To km	Length (m)	Slope (%)	Drain type	Drain lining	From km	To km	Length (m)	Slope (%)	Drain type	Drain lining	Flow direction
							2.974	3.184	210	-1.72	SD 0601/4	Grassed	→
							3.184	3.189	5	-1.72	SD 0601/4	Grassed	→
							3.189	3.265	76	1.00	SD 0601/4	Grassed	→

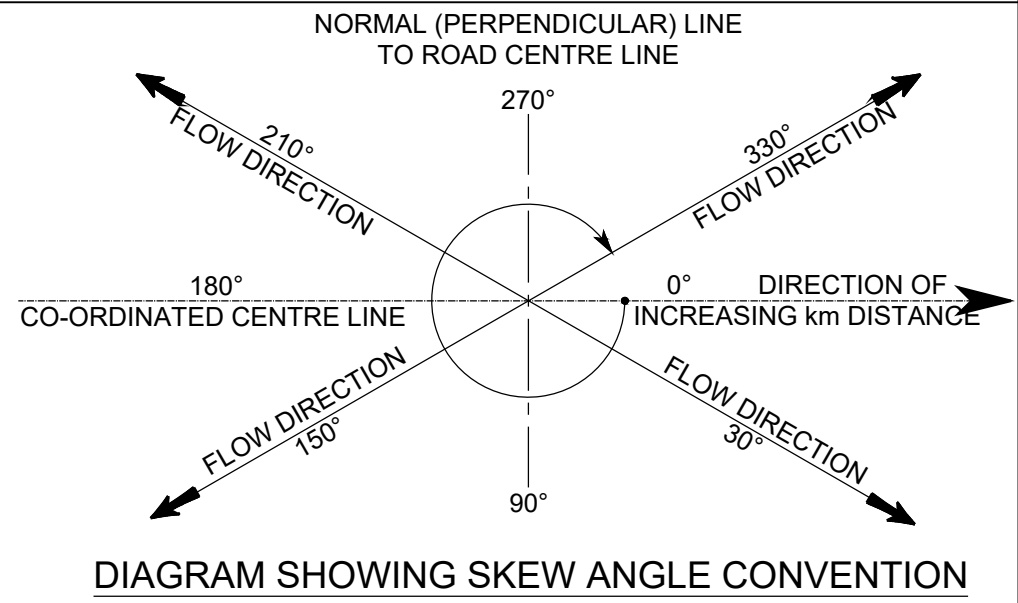
L2214 - ROAD SURFACE SCHEDULE									
GRAVEL					CONCRETE				
km from	km to	Length (km)	Notes		km from	km to	Length (km)	Notes	
1.970	3.180	1.210							
					3.180	3.268	0.088		
					3.268	3.330	0.062	Bridge Section	
					3.330	3.696	0.366		

ROAD SIDE DRAINS													
LEFT HAND SIDE							RIGHT HAND SIDE						
From km	To km	Length (m)	Grade (%)	Drain Type	Drain Lining	Subsoil Drain	Flow Direction	Discharge Type	From km	To km	Length (m)	Grade (%)	Drain Type
3.540	3.625	85	13.18	SD0601/2	Concrete lined		←	Chute SD0603/1	3.560	3.625	65	13.18	SD0601/2
3.625	3.677	52	13.18	SD0601/2	Concrete lined		←		3.625	3.677	52	13.18	SD0601/2
3.677	3.690	13	2.00	SD0601/2	Concrete lined		←		3.677	3.690	13	2.00	SD0601/2

L2214 - CULVERT SCHEDULE																
No.	Chainage (km)	Culvert Size (m)	Pipe Class	Bedding Type	Culvert Length (m)	Skew	Invert Levels		Culvert Slope (%)	Catchment Area (ha)	Design Q (m³/s)	Fr No.	Velocity (m/s)	Hw/D = 1.2	Headwater (mm)	Remarks
							Inlet	Outlet								
02/03	2+974	1.2	100D	C	8.405	90°	594.710	594.400	3.688	10.800	1.200	1.4	3.4	0.633	0.759	IMPOSE GABION MATTRESS AT OUTLET
03/01	3+184	0.9	100D	C	17.924	90°	588.340	588.160	1.004	3.900	0.433	0.7	1.5	0.573	0.516	

L2214 ROAD RESERVE BOUNDARY : CO-ORDINATES WGS 84 Lo 31°					
Code	LHS			RHS	
	Y	X		Y	X
L19	103 999.381	3 367 739.436		R23	103 928.901
L20	104 024.457	3 367 687.205		R24	104 024.247
L21	104 053.425	3 367 673.076		R25	104 040.030
L22	104 070.662	3 367 662.880		R26	104 056.799
L23	104 087.539	3 367 652.007		R27	104 091.194
L24	104 121.183	3 367 630.533		R28	104 108.259
L25	104 138.517	3 367 620.639		R29	104 124.946
L26	104 203.913	3 367 583.822		R30	104 191.443
L27	104 227.590	3 367 562.502		R31	104 218.478
L28	104 346.295	3 367 489.630		R32	104 335.831
L29	104 375.657	3 367 473.538		R33	104 366.921
L30	104 405.835	3 367 463.010		R34	104 385.762
L31	104 431.879	3 367 455.195		R35	104 422.647
L32	104 478.783	3 367 438.080		R36	104 450.078
L33	104 520.470	3 367 418.383		R37	104 478.307
				R38	104 513.024

L2214 BENCHMARK DATA (WGS 84 Lo 31°)			
Point	Y	X	Z
BP01	104 209.206	3 367 550.296	591.053
BP02	104 219.207	3 367 589.751	590.286
BP03	104 142.241	3 367 618.284	588.701
BP04	104 125.953	3 367 574.118	588.658



LEGEND	DESCRIPTION
	NEW GRAVEL ROAD
	CONCRETE SECTION
	EXISTING ROAD
	1.0 V-DRAIN
	TOE DRAIN
	CATCHWATER BANK
	KERB & CHANNEL
	RETAINING WALL
	GUARDRAILS
	EXISTING ROAD RESERVE
	NEW ROAD RESERVE
	DIRECTION ARROW
	HEADWALL
	STONE PITCH
	RENO MATTRESS
	CHUTE - SD0605A
	GABION

- GENERAL NOTES:**
- ALL LEVELS, DIMENSIONS AND SETTING OUT DETAILS TO BE VERIFIED BY CONTRACTORS ON SITE PRIOR TO CONSTRUCTION.
 - ALL EXISTING DRAINAGE CULVERTS ARE TO BE INSPECTED, AND ANY FOUND IN UNSERVICEABLE CONDITION ARE TO BE REPORTED TO THE ENGINEER REPLACED UNLESS SHOWN OTHERWISE.
 - CULVERT INVERTS ARE TO BE DECIDED BY ENGINEER ON SITE UNLESS SHOWN MIN. COVER = 600mm.
 - PIPE CULVERTS ARE TO BE LAID IN ACCORDANCE WITH SD 0401 WITH HEADWALLS AS ACCESS BELL-MOUTHS, AND MIN DIA = 600mm FOR MAJOR ROAD CROSS DRAINAGE AS PER SD 0401, SD 0403, SD 0406.
 - MIN DIA = 450mm FOR MINOR ACCESS ROADS.
 - BOX CULVERTS < 1.8m HIGH ARE TO BE CONSTRUCTED IN ACCORDANCE WITH SD 0404 OR SD 0407. BOX CULVERTS > 1.8m HIGH ARE TO BE CONSTRUCTED AS PER THE STRUCTURAL ENGINEER'S DESIGN IN ACCORDANCE WITH KNOTT STANDARDS.
 - FOR EROSION CONTROL GABION MATTRESSES ARE RECOMMENDED AT CULVERT INLETS AND OUTLETS.
 - EARTH BERMES ARE TO BE CONSTRUCTED AT CULVERT INLETS TO DIRECT STORM-WATER INTO CULVERTS WHERE NECESSARY.
 - ROCK BOLSTERS ARE TO BE PLACED ACROSS THE INVERT OF DRAINS SUSCEPTIBLE TO EROSION FOR EVERY 2m VERTICAL DROP.
 - GRASSSED CONCRETE LINED V-DRAINS AS PER SD 0601/3 & 4 ARE RECOMMENDED FOR SHALLOW CUTTINGS OF DEPTH LESS THAN 5m MEASURED AT A POINT 6m FROM EDGE OF CARRIAGEWAY. CONCRETE LINE 1500 V - 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.
 - SUBSOIL DRAINS AS PER SD 0501 ARE TO BE INSTALLED WITH 1500 V - DRAINS OR WHERE HIGH WATER TABLES ARE ENCOUNTERED.
 - KERB AND CHANNEL DRAINS AS PER 0701 ARE TO BE PROVIDED WHERE FILL EMBANKMENTS EXCEED 3m IN HEIGHT.
 - WHERE SURFACE RUNOFF IS TOWARD THE ROAD, CATCH-WATER BANKS ARE TO BE PROVIDED TO DIVERT STORM-WATER TO MAJOR CROSS DRAINAGE STRUCTURES.
 - 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 SURFACE BELL-MOUTHS FOR ACCESSES SERVING SINGLE RESIDENTIAL PROPERTIES.
 - GUARDRAILS ARE TO BE INSTALLED IN ACCORDANCE WITH SD 1101 AND SD 1102 WHERE FILL EMBANKMENTS EXCEED 3m IN HEIGHT OR WHERE HAZARDOUS OBSTRUCTION CANNOT BE REMOVED.
 - EXISTING ROAD SIGNS, SERVICES AND FENCING AFFECTED BY CONSTRUCTION ARE TO BE REMOVED/RELOCATED WHERE NECESSARY.
 - UNDERGROUND SERVICE CROSSINGS AND MARKERS ARE TO BE IN ACCORDANCE WITH SD 1001 - 3.
 - ALL NEW ROAD SIGNS AND ROAD MARKING REQUIREMENTS ARE TO CONFORM TO THE SOUTHERN AFRICAN ROAD TRAFFIC SIGNS MANUAL (GARTSM).
 - ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH "COLTO SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR STATE ROAD AUTHORITIES".
 - ALL SURVEY AND SETTING OUT DATA PROVIDED ON (WGS 84).
 - NEW FILLS AND EXPOSED CUTTINGS ARE TO BE TOP-SOILED AND VEGETATED IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.

NOTATION	
BCC	BEGINNING OF CIRCULAR CURVE
ECC	END OF CIRCULAR CURVE
PI	POINT OF INTERSECTION
R	RADIUS OF CIRCULAR CURVE
Δ	ANGLE OF DEFLECTION
Lc	LENGTH OF CIRCULAR CURVE
T	LENGTH OF CURVE TANGENT
BT	BEGINNING OF TAPER

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Continued from:- C46529
Continued on:-
Cross Section No:- C46533
Longitudinal Section No:- C46531
Design Plan No:- C46530

Designed by:- N. NGUBANE
Checked by:- K. MACHIDO
Drawn by:- K. NAIIDO
Checked by:- K. MACHIDO
Date of approval:-

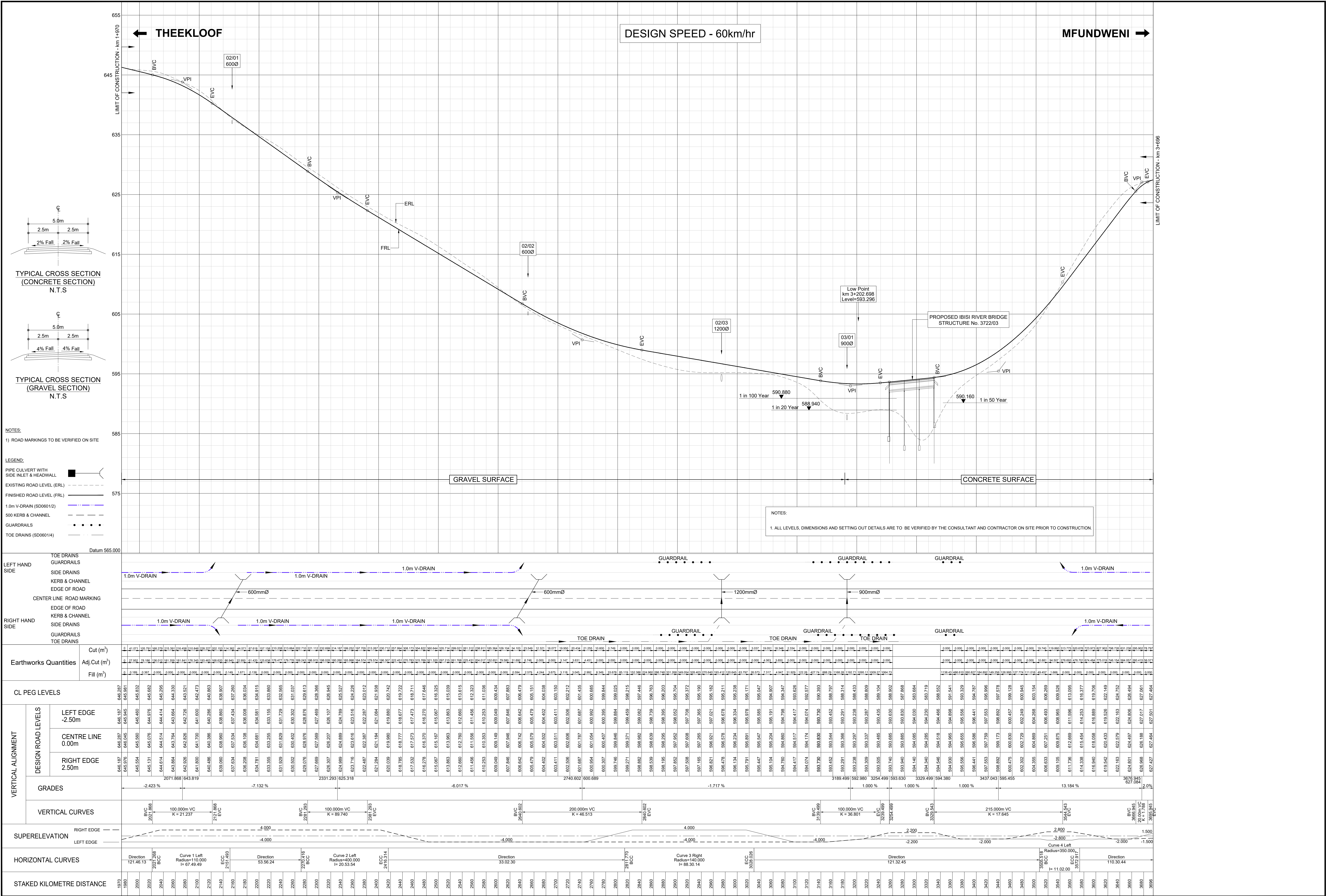


Designed by:- emzansi ENGINEERS (PTY) LTD
Signature: _____
Date: _____

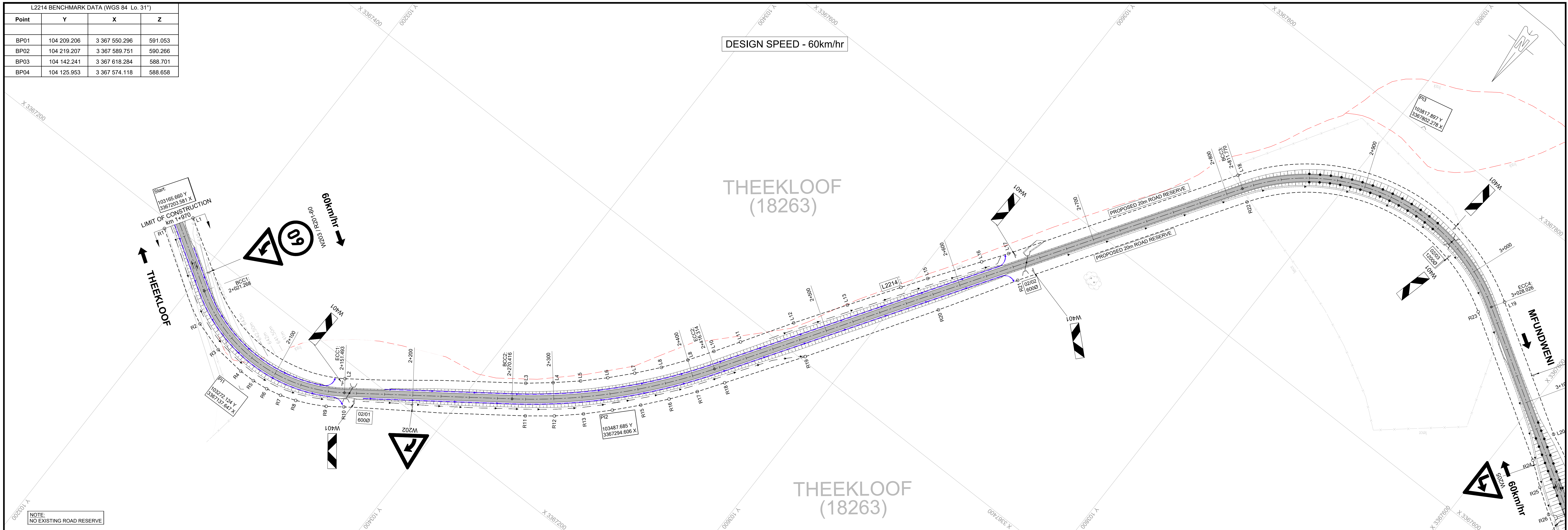
Transportation Engineer: Chief Engineer
Head: Transport

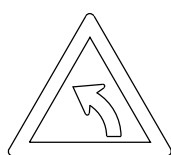
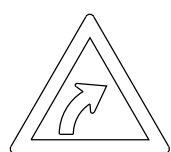
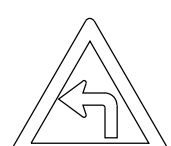
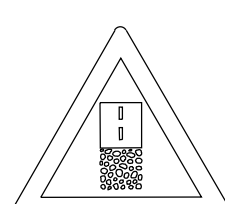
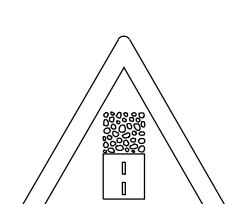
PORTION				UPGRADING OF L2214 FROM KM1+970 TO KM3+696				DESIGN PLAN			

C46530



L2214 BENCHMARK DATA (WGS 84 Lo. 31°)			
Point	Y	X	Z
BP01	104 209.206	3 367 550.296	591.053
BP02	104 219.207	3 367 589.751	590.266
BP03	104 142.241	3 367 618.284	588.701
BP04	104 125.953	3 367 574.118	588.658

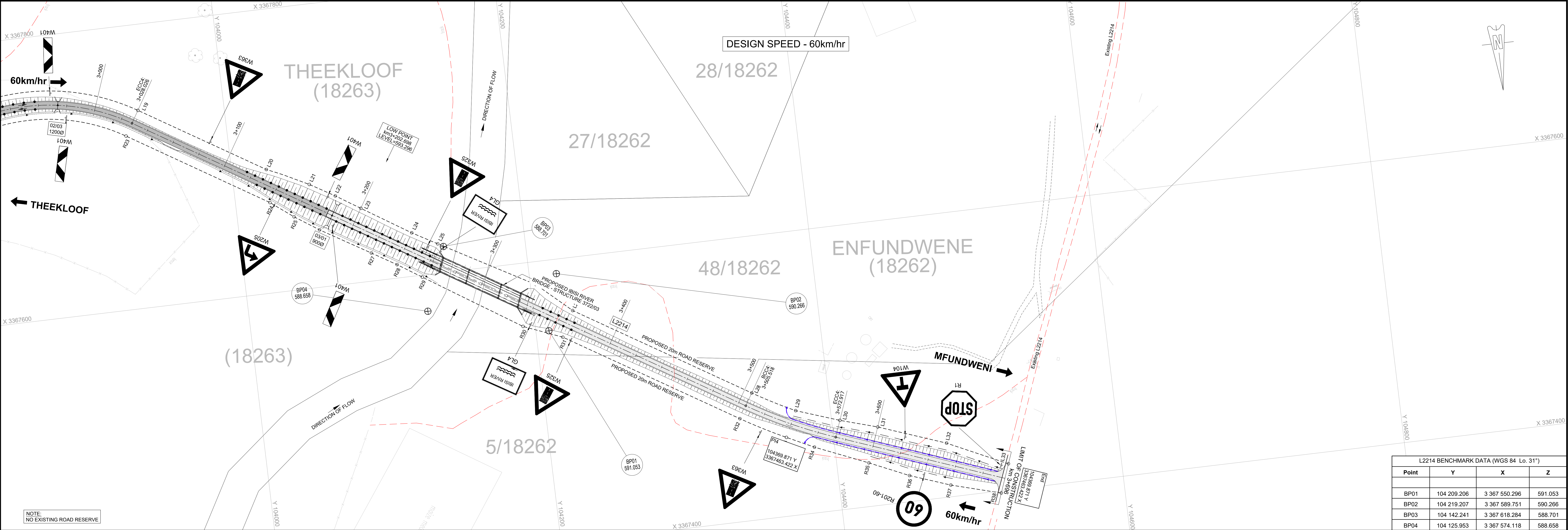


SV	ROAD	SIGN TYPE	LETTER SIZE & TYPE		SIGN FACE MATERIAL	NUMBER OF SIGNS	SKETCH OF ROAD SIGNS	DETAIL OF SUPPORT					REMARKS
			CAPITAL	SMALL				NUMBER		FOUNDATION	POLE LENGTH		
								POSTS	STAYS		WIDTH	DEPTH	
2+010 - LHS	L2214	W202 R201-60	N/A	N/A	FOR W203 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1 FOR R201-60 BORDER: BLACK SEMI-MATT SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1	 	150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED
LEFT HAND SIDE: 2+150 2+645 2+970 3+180	L2214	W401	N/A	N/A	ARROWS: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	4		150mmØ	-	150mm	1.2m	TBC	NEW GROUND MOUNTED
RIGHT HAND SIDE: 2+180 2+650 2+980 3+190	L2214	W401	N/A	N/A	ARROWS: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	4		150mmØ	-	150mm	1.2m	TBC	NEW GROUND MOUNTED
2+200 - RHS	L2214	W202	N/A	N/A	FOR W202 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED
3+140 - RHS	L2214	W205	N/A	N/A	FOR W205 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED
3+080 - LHS 3+520 - RHS	L2214	W363	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	2		150mmØ	-	1200mm	2.1m	TBC	NEW GROUND MOUNTED
3+250 - LHS 3+375 - RHS	L2214	W325	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	2		150mmØ	-	1200mm	2.1m	TBC	NEW GROUND MOUNTED

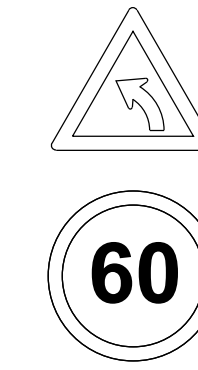
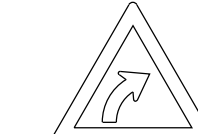
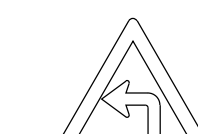
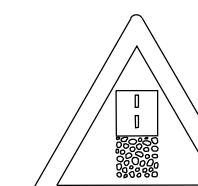
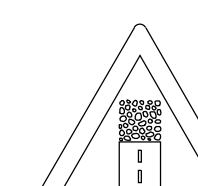
ROAD SIGN SCHEDULE - L2214													
SV	ROAD	SIGN TYPE	LETTER SIZE & TYPE		SIGN FACE MATERIAL	NUMBER OF SIGNS	SKETCH OF ROAD SIGNS	DETAIL OF SUPPORT					REMARKS
			CAPITAL	SMALL				NUMBER		FOUNDATION	POLE LENGTH		
								POSTS	STAYS	WIDTH	DEPTH	L (MIN)	
3+260 - LHS 3+345 - RHS	L2214	GL4	N/A	N/A	BLACK SEMI-MATT - CLASS 1 LEGEND: BLACK SEMI-MATT - CLASS 1 SYMBOL BLUE RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE / SEMI-MATT - CLASS 1	2		150mmØ	-	960mm	2.1m	TBC	NEW GROUND MOUNTED
3+620 - RHS	L2214	W104	N/A	N/A	FOR W104 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900mm	2.1m	TBC	NEW GROUND MOUNTED
3+640 - RHS	L2214	R201-60	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1 LEGEND: BLACK SEMI-MATT ("BMOD") - CLASS 1	1		150mmØ	-	900mm	2.1m	TBC	NEW GROUND MOUNTED
3+690 - LHS	L2214	R1	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1 LEGEND: BLACK SEMI-MATT ("BMOD") - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED

					AS BUILT		Continued from:-		Designed by:- N. NGUBANE				Transportation Engineer, Chief Engineer	LOCAL ROAD L2214 (APPROACHES TO IBISI RIVER BRIDGE)		Staked km distance	Sheet :- 1	REVISION:
F	30-09-2022	ISSUED FOR TENDER	NN			Continued on:- C46536	Checked by:- K. MACHIDO			km1+970 - km2+970				of :- 2	F			
E	30-06-2021	ISSUED FOR APPROVAL	KM			Cross Section No:- C46532 - C46533	Drawn by:- K. NAIIDO			Scale				Plan No :-				
D	20-05-2021	ISSUED FOR APPROVAL	KM			Longitudinal Section No:- C46531	Checked by:- K. MACHIDO											
C	21-02-2020	ISSUED FOR APPROVAL	FK			Design Plan No:- C46535	Date of approval:-											
B	14-11-2019	ISSUED FOR APPROVAL	FK															
A	19-10-2018	ISSUED FOR APPROVAL	NSZ															
Symbol	Date	Description	Checked	Signed	Supervising Authority													
AMENDMENTS																		

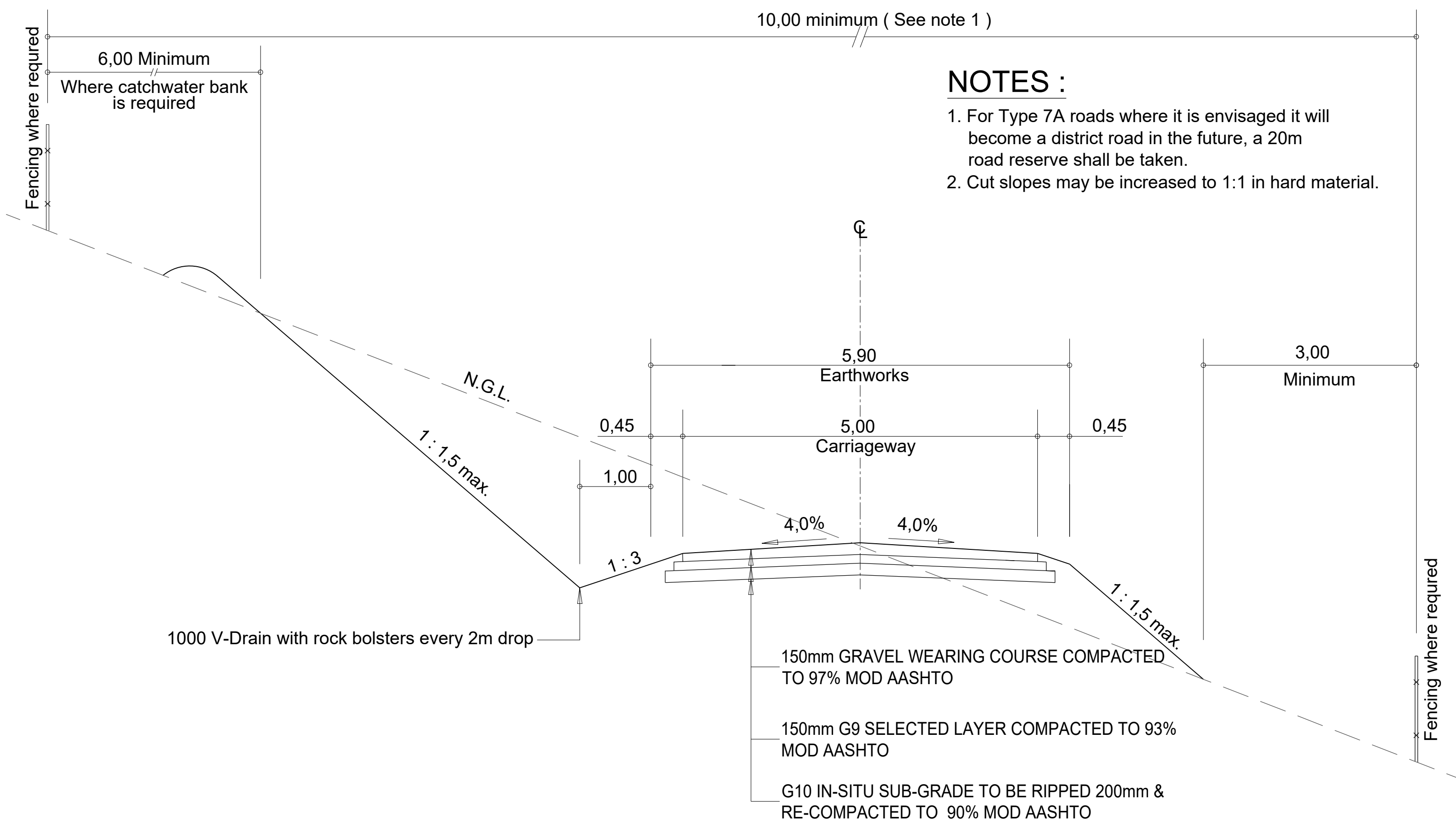
C46535



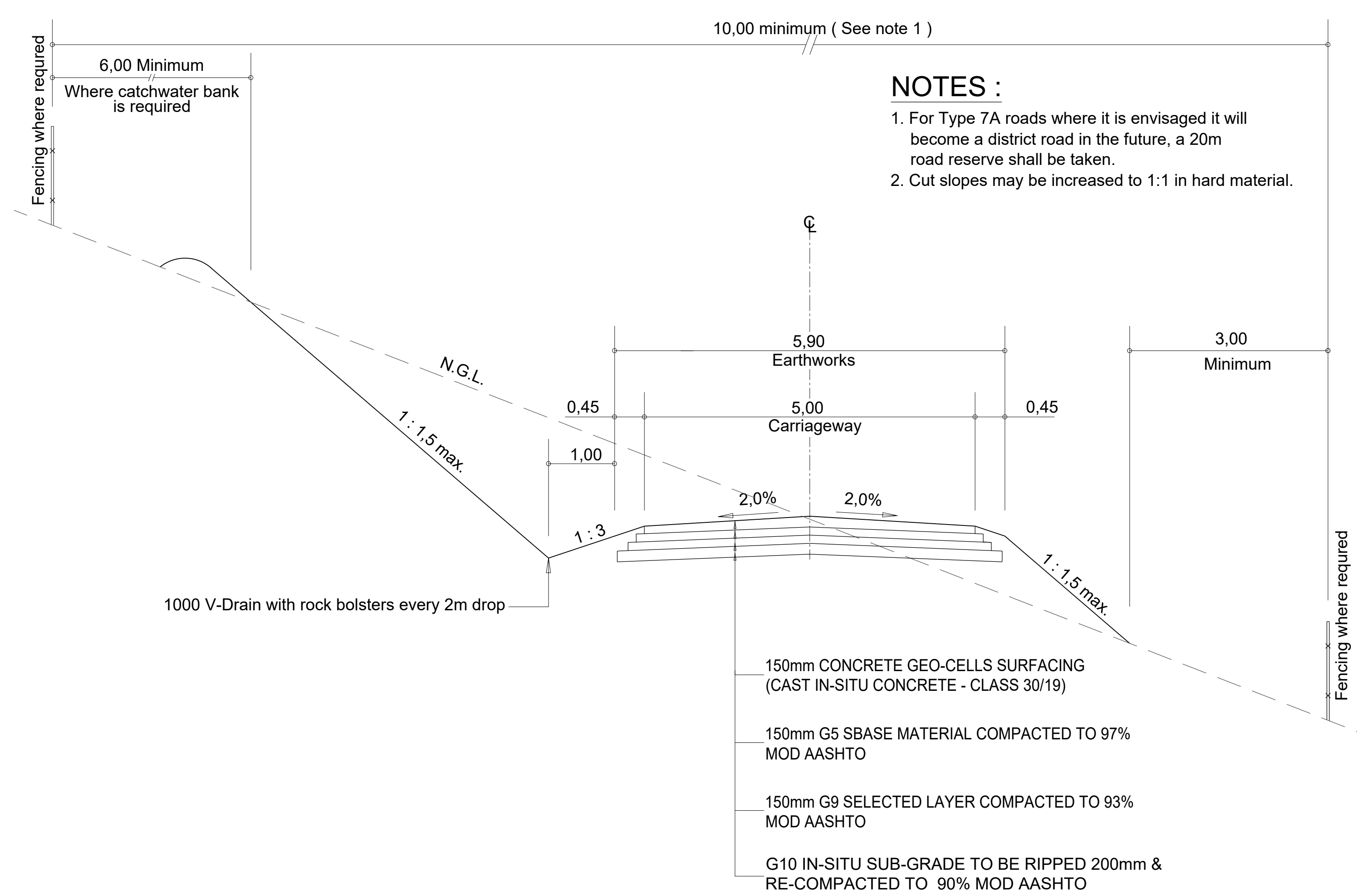
L2214 BENCHMARK DATA (WGS 84 Lo. 31'')			
Point	Y	X	Z
BP01	104 209.206	3 367 550.296	591.053
BP02	104 219.207	3 367 589.751	590.266
BP03	104 142.241	3 367 618.284	588.701
BP04	104 125.953	3 367 574.118	588.658

ROAD SIGN SCHEDULE - L2214													
SV	ROAD	SIGN TYPE	LETTER SIZE & TYPE		SIGN FACE MATERIAL	NUMBER OF SIGNS	SKETCH OF ROAD SIGNS	DETAIL OF SUPPORT					REMARKS
			CAPITAL	SMALL				NUMBER		FOUNDATION	POLE LENGTH		
								POSTS	STAYS	WIDTH	DEPTH	L (MIN)	
2+010 - LHS	L2214	W202 R201-60	N/A	N/A	FOR W203 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1 FOR R201-60 BORDER: BLACK SEMI-MATT SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED
LEFT HAND SIDE: 2+150 2+645 2+970 3+180	L2214	W401	N/A	N/A	ARROWS: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	4		150mmØ	-	150mm	1.2m	TBC	NEW GROUND MOUNTED
RIGHT HAND SIDE: 2+160 2+650 2+980 3+190	L2214	W401	N/A	N/A	ARROWS: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	4		150mmØ	-	150mm	1.2m	TBC	NEW GROUND MOUNTED
2+200 - RHS	L2214	W202	N/A	N/A	FOR W202 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED
3+140 - RHS	L2214	W205	N/A	N/A	FOR W205 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED
3+080 - LHS 3+520 - RHS	L2214	W363	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	2		150mmØ	-	1200mm	2.1m	TBC	NEW GROUND MOUNTED
3+250 - LHS 3+375 - RHS	L2214	W325	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	2		150mmØ	-	1200mm	2.1m	TBC	NEW GROUND MOUNTED

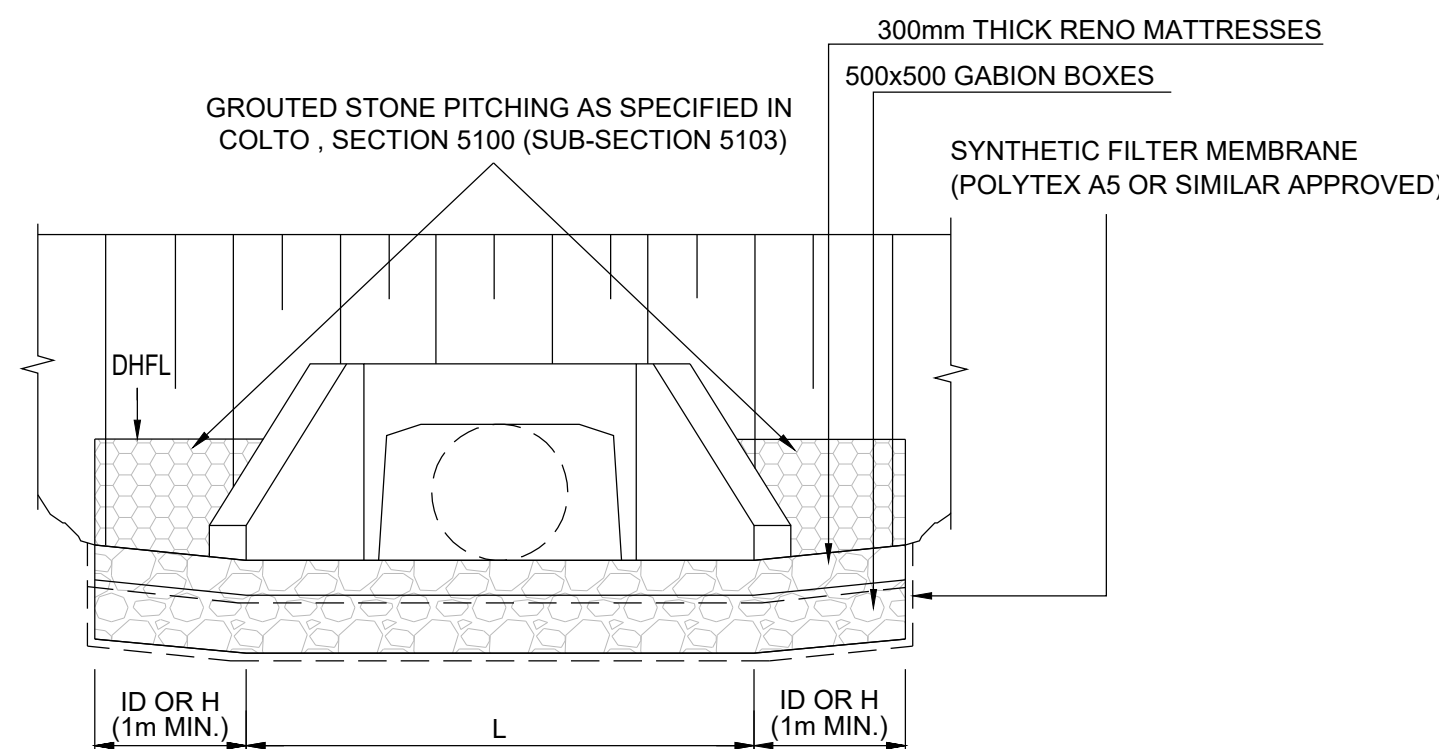
ROAD SIGN SCHEDULE - L2214													
SV	ROAD	SIGN TYPE	LETTER SIZE & TYPE		SIGN FACE MATERIAL	NUMBER OF SIGNS	SKETCH OF ROAD SIGNS	DETAIL OF SUPPORT					REMARKS
			CAPITAL	SMALL				NUMBER		FOUNDATION	POLE LENGTH		
								POSTS	STAYS	WIDTH	DEPTH	L (MIN)	
3+260 - LHS 3+345 - RHS	L2214	GL4	N/A	N/A	BLACK SEMI-MATT - CLASS 1 LEGEND: BLACK SEMI-MATT- CLASS 1 SYMBOL: BLUE RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE / SEMI-MATT - CLASS 1	2		150mmØ	-	960mm	2.1m	TBC	NEW GROUND MOUNTED
3+620 - RHS	L2214	W104	N/A	N/A	FOR W104 BORDER: RED RETRO-REFLECTIVE - CLASS 1 SYMBOL: BLACK SEMI-MATT BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1	1		150mmØ	-	900mm	2.1m	TBC	NEW GROUND MOUNTED
3+640 - RHS	L2214	R201-60	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1 LEGEND: BLACK SEMI-MATT ("BMOD") - CLASS 1	1		150mmØ	-	900mm	2.1m	TBC	NEW GROUND MOUNTED
3+690 - LHS	L2214	R1	N/A	N/A	BORDER: RED RETRO-REFLECTIVE - CLASS 1 BACKGROUND: WHITE RETRO-REFLECTIVE - CLASS 1 LEGEND: BLACK SEMI-MATT ("BMOD") - CLASS 1	1		150mmØ	-	900	1.2	TBC	NEW GROUND MOUNTED



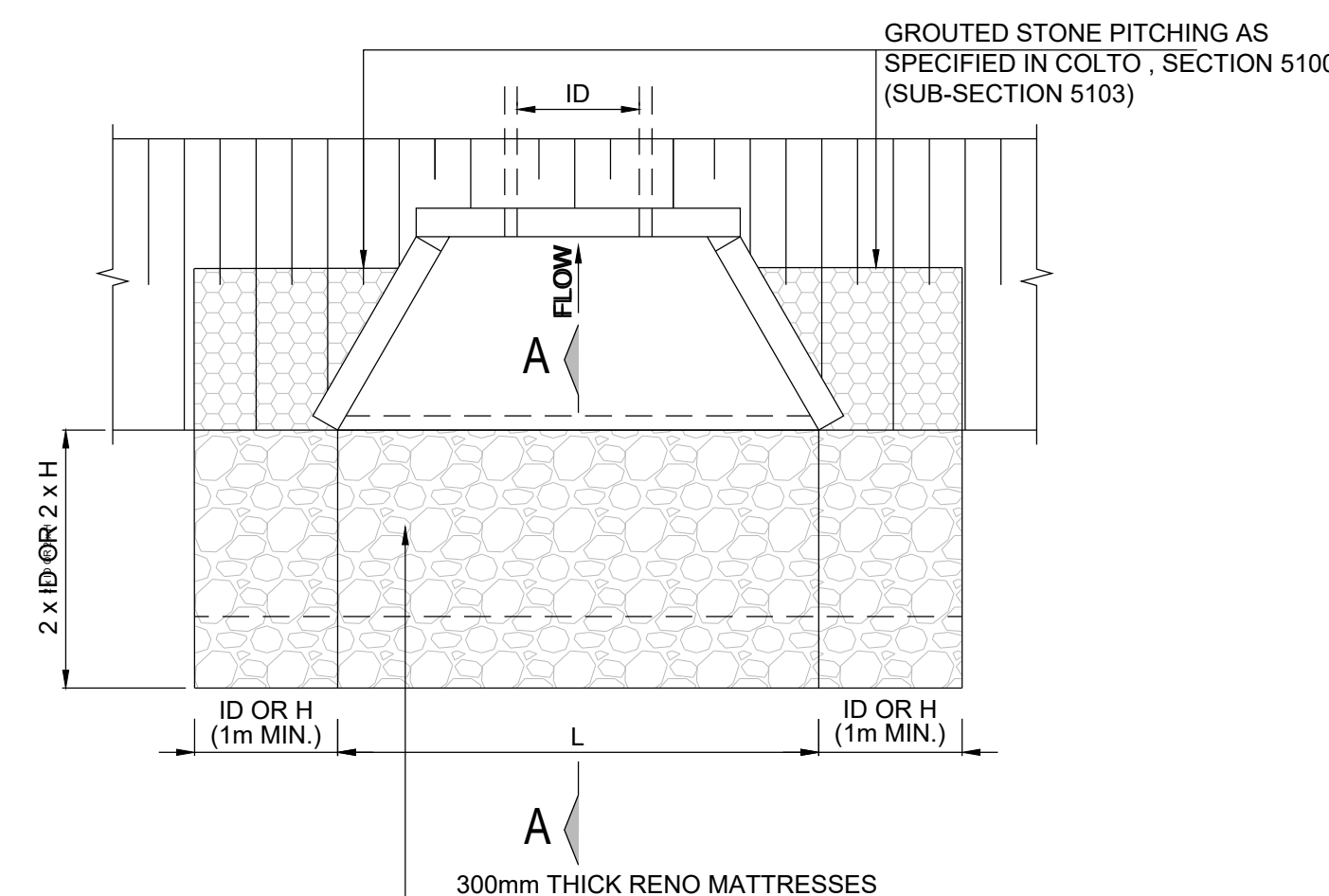
TYPE 7A LOCAL ROAD OR BY-ROAD (GRAVEL)
(MOUNTAINOUS TERRAIN)



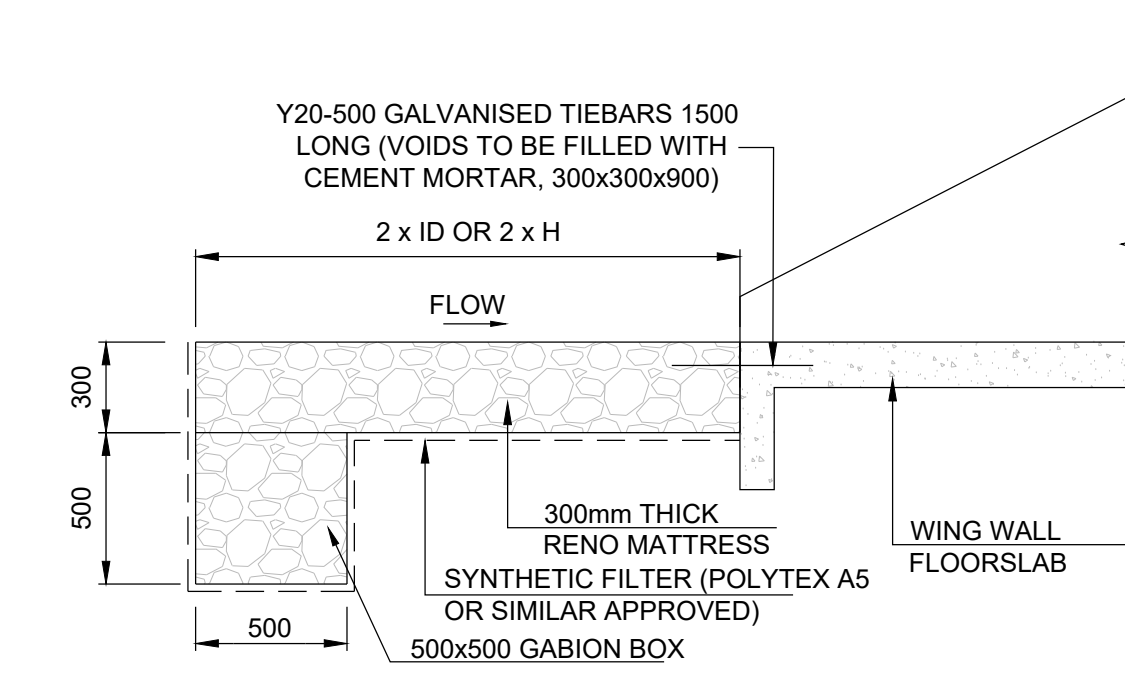
TYPE 7A LOCAL ROAD OR BY-ROAD (CONCRETE)
(MOUNTAINOUS TERRAIN)



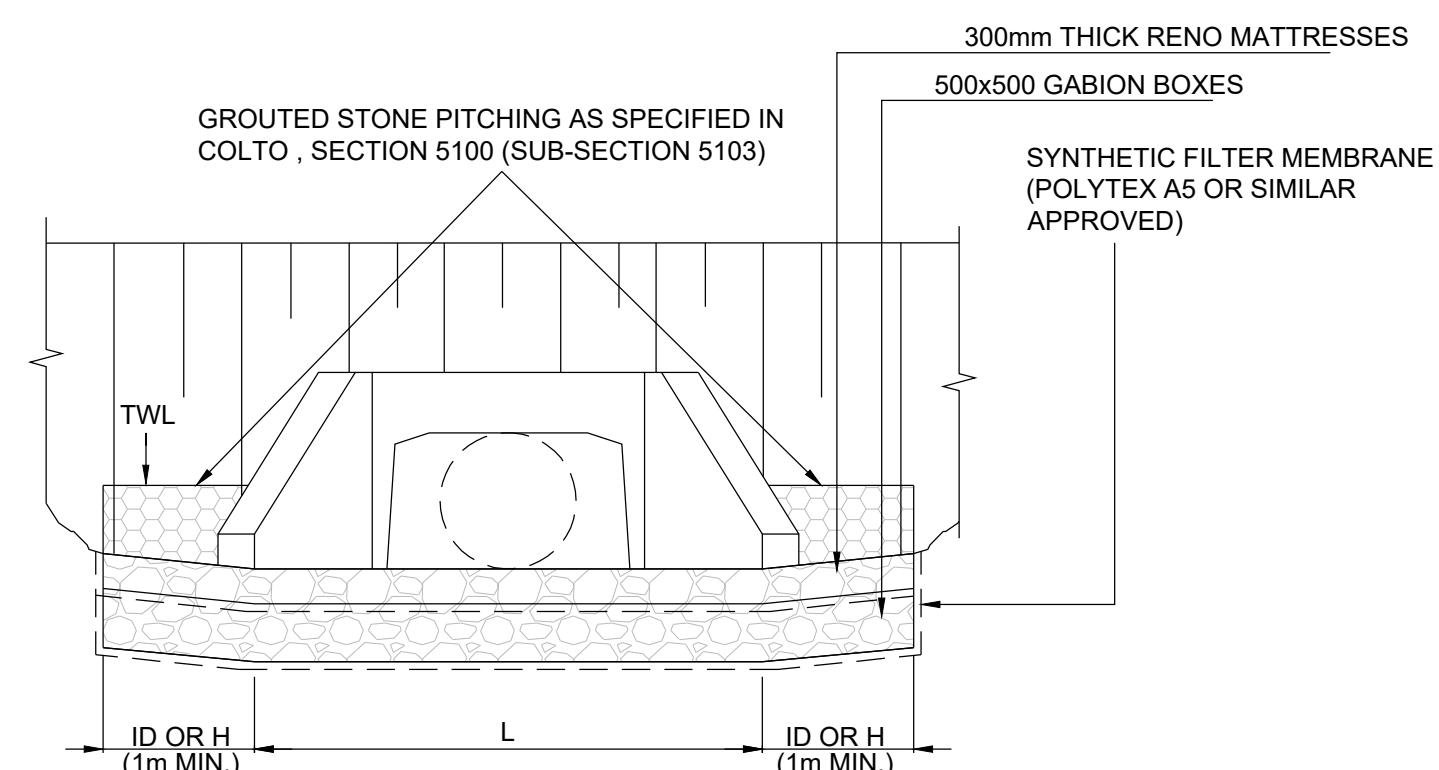
ELEVATION OF CULVERT
(INLET)
SCALE 1:50



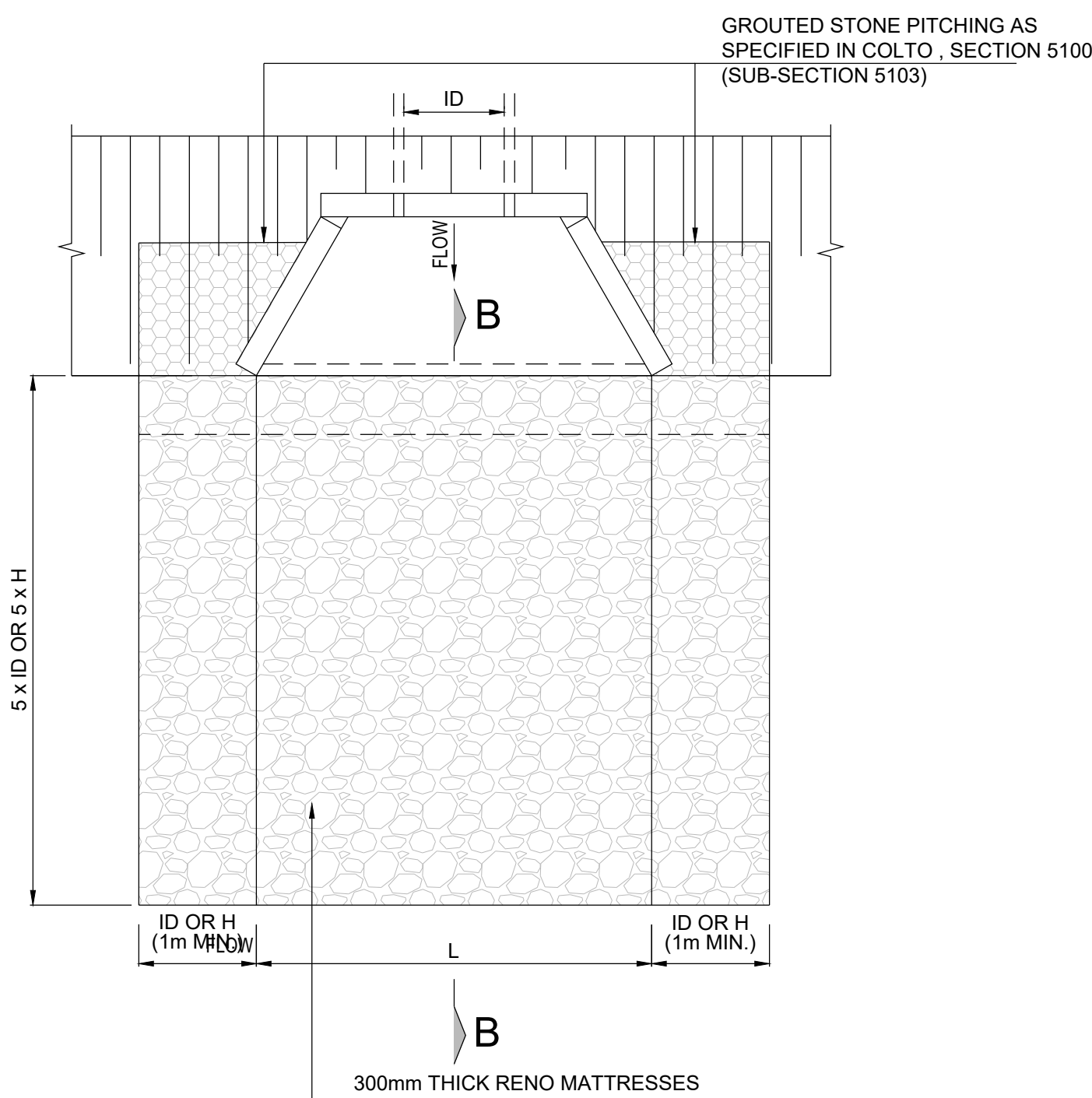
PLAN OF CULVERT - INLET (SD0406)
SCALE 1:50



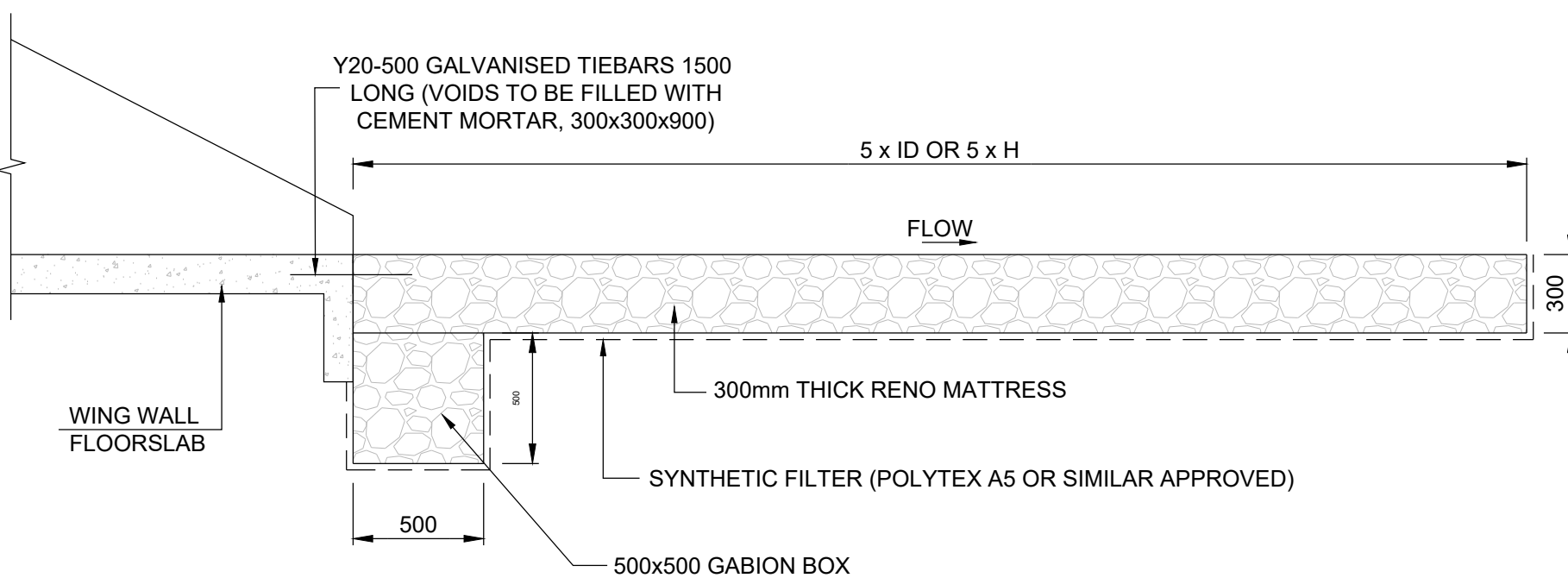
SECTION A-A (INLET)
SCALE 1:25



ELEVATION OF CULVERT
(OUTLET)
SCALE 1:50



PLAN OF CULVERT - OUTLET (SD0406)
SCALE 1:50



SECTION B-B (OUTLET)
SCALE 1:25

LEGEND

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

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

NOTE

1. GABION BOXES AND RENO MATTRESSES
(MACCAFERRI SA OR SIMILAR APPROVED) DIMENSIONS,
SPECIFICATIONS AND ASSEMBLY DETAILS AS PER
MANUFACTURERS REQUIREMENTS.

EROSION PROTECTION AT STORMWATER OUTLET STRUCTURE

					AS BUILT	Continued from:-		Designed by:- N. NGUBANE		 KWAZULU-NATAL PROVINCE TRANSPORT REPUBLIC OF SOUTH AFRICA	Designed by:-		 emzansi ENGINEERS (PTY) LTD CK NO: 2026/006518/07	Transportation Engineer: Chief Engineer	LOCAL ROAD L2214 (APPROACHES TO IBISI RIVER BRIDGE)	Staked km distance km1+970 - km3+696	Sheet :- 1 of :- 1	REVISION: F			
F	30-09-2022	ISSUED FOR TENDER	NN	Continued on:-		Checked by:- K. MACHIDO	Drawn by:- K. NAIDOO	Checked by:-	POSITION												
E	30-06-2021	ISSUED FOR APPROVAL	KM	Cross Section No:- C46532 - C46533		Checked by:- K. MACHIDO	Checked by:- K. MACHIDO	Head: Transport													
D	26-05-2021	ISSUED FOR APPROVAL	KM	Longitudinal Section No:- C46531		Date of approval:-					TYPICAL DETAILS										
C	21-02-2020	ISSUED FOR APPROVAL	FK	Design Plan No:- C46537								As Shown							C46537		
B	14-11-2019	ISSUED FOR APPROVAL	FK																		
A	19-10-2018	ISSUED FOR APPROVAL	NSZ																		
Symbol	Date	Description	Checked	Signed	Supervising Authority																
AMENDMENTS																					