

Road P141-1  
Curve 4 - Left, Radius 350m  
Deflection 05°55'16"

Road MIA Access  
Curve 2 - Left, Radius 25m  
Deflection 88°55'37"

Road MIA Access  
Curve 1 - Right, Radius 23.7m  
Deflection 90°01'48"

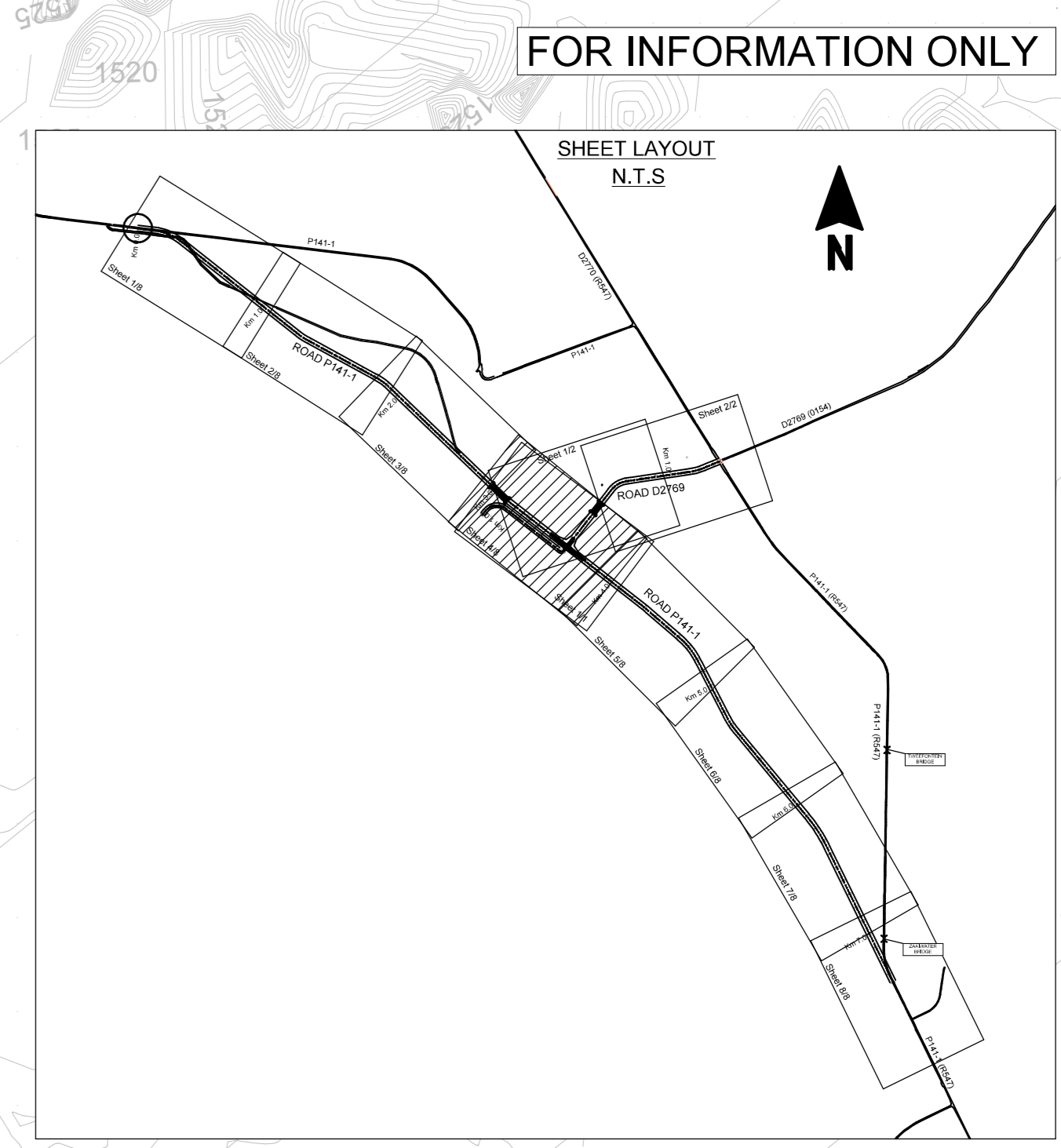
INTERSECTION LAYOUT  
P141/1 km 3.642 460  
MIA ACCESS km 0.000 000

HORIZONTAL CURVE DATA MIA ACCESS (Lo 29°)							
Curve	Description	Curve Length	Curve Radius	Point	Distance km	Y-Coord 0.000	X-Coord 0.000
No 1 Deflection < 90°01'45"	Right Hand Circular	31.426	20.000	BC 1	30.142	-17678.206	2880966.618
				PI 1		-17665.895	2880982.393
				EC 1	61.568	-17650.127	2880970.073
No 2 Deflection < 88°55'37"	Left Hand Circular	148.686	95.799	BC 2	527.686	-17282.821	2880683.102
				PI 2		-17208.731	2880625.217
				EC 2	676.372	-17149.468	2880698.210

CENTRE LINE CO-ORDINATES		
MIA ACCESS (Lo 29°)		
Chainage km	Y-Coord +0.000	X-Coord +0.000
0.000	-17696.752	2880942.857
30.142	-17678.206	2880966.618 BC 1
61.568	-17650.127	2880970.073 EC 1
500.000	-17304.638	2880700.148
527.686	-17282.821	2880683.102 BC 2
676.372	-17149.468	2880698.210 EC 2
710.358	-17128.046	2880724.595

**LEGEND**

- FENCE & GATE
- POWER LINES
- TELEPHONE LINES
- DIRECTION OF TRAFFIC MOVEMENT
- BUILDINGS
- WATER PIPE LINES
- CULVERT NOTATION
- CADASTRAL INTERSECTION BOUNDARY
- EXISTING ROAD
- EXISTING RAILWAY
- FUTURE RAILWAY

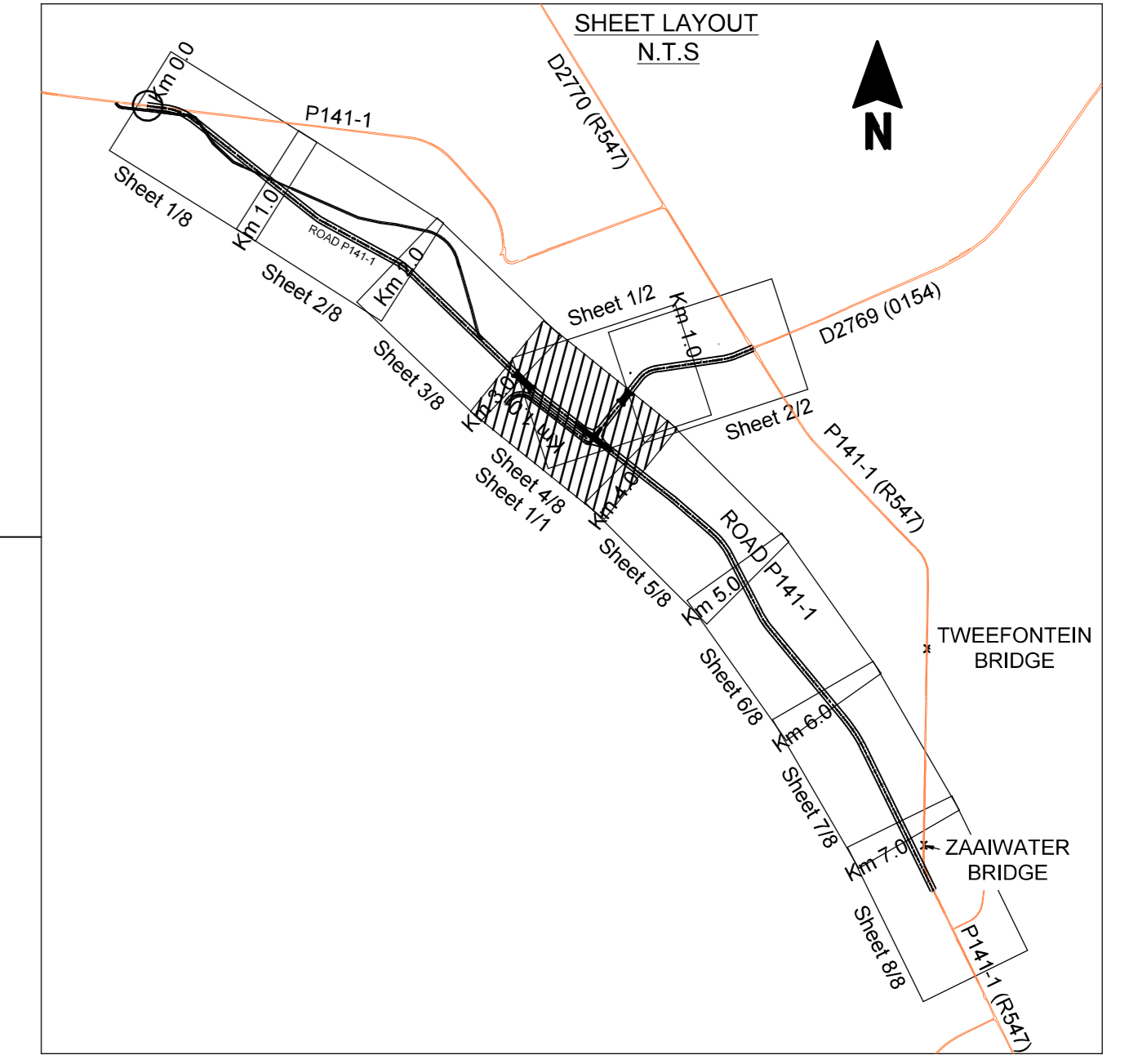


No		DATUM DATE	WYSIGINGS / AMENDMENTS	rms Hoof v. Dept. for Head of Dept.	DATUM DATE	SURVEYED BY: LIDAR SURVEY NOVEMBER 2011 PROVIDED BY XSTRATA	TWEEFONTEIN PROJECT XSTRATA COAL SA	ONTWERP DEUR / DESIGNED BY JEFFARES & GREEN PTY (Lid) ENGINEERING AND ENVIRONMENTAL CONSULTING	ONTWERP GOEDGEKEUR DESIGN APPROVED	GOEDGEKEUR DEUR APPROVED BY	ONTWERP DEUR DESIGNED BY NAGESIEN DEUR CHECKED BY GETIEN DEUR DRAWN BY NAGESIEN DEUR CHECKED BY	MPUMALANGA REGERING OPENBARE WERKE PUBLIEK EN VERVOER	MPUMALANGA REALIGNMENT OF PROVINCIAL ROADS	MPUMALANGA GOVERNMENT PUBLIC WORKS, ROADS AND TRANSPORT	SKAAL / SCALE 1:1000	LEER Nr / FILE No -	DISTRIK / DISTRICT NKANGALA	PROVINSIE PLAN Nr / PROVINCE PLAN No MRS 06/-/11Lyn
No		DATUM DATE	WYSIGINGS / AMENDMENTS	rms Hoof v. Dept. for Head of Dept.	DATUM DATE	HANDTEK / SIGNTR.							MIA ACCESS/1 LAYOUT KM 0.000 TO 0.710			TIPE ONTWERP / TYPE OF PLANNING PRELIMINARY DESIGN	PAD Nr / ROAD No P141/1 & D2769	XSTRATA COAL PLAN Nr / PLAN No TOP-J&G-5003-CV-01-1300

PROVINCE PLAN No  
MRS 06/-/11Lyn  
XSTRATA COAL PLAN No  
TOP-J&G-5003-CV-01-1300

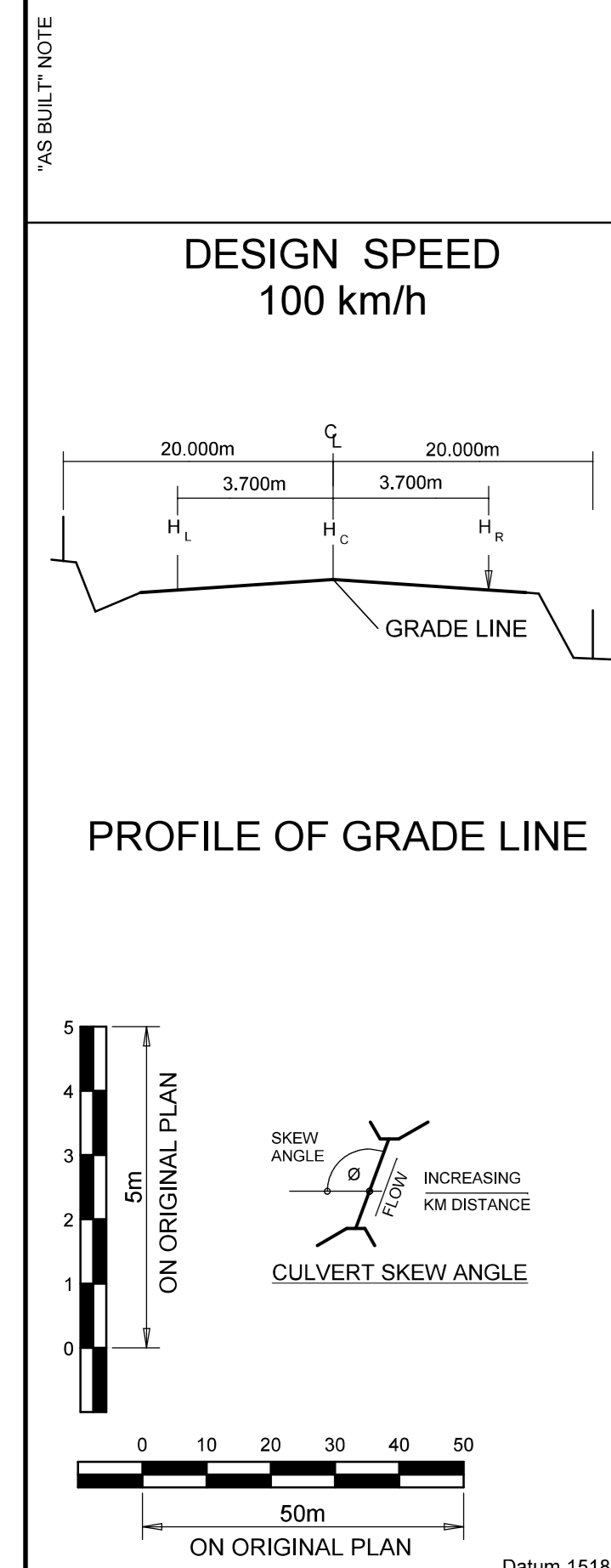
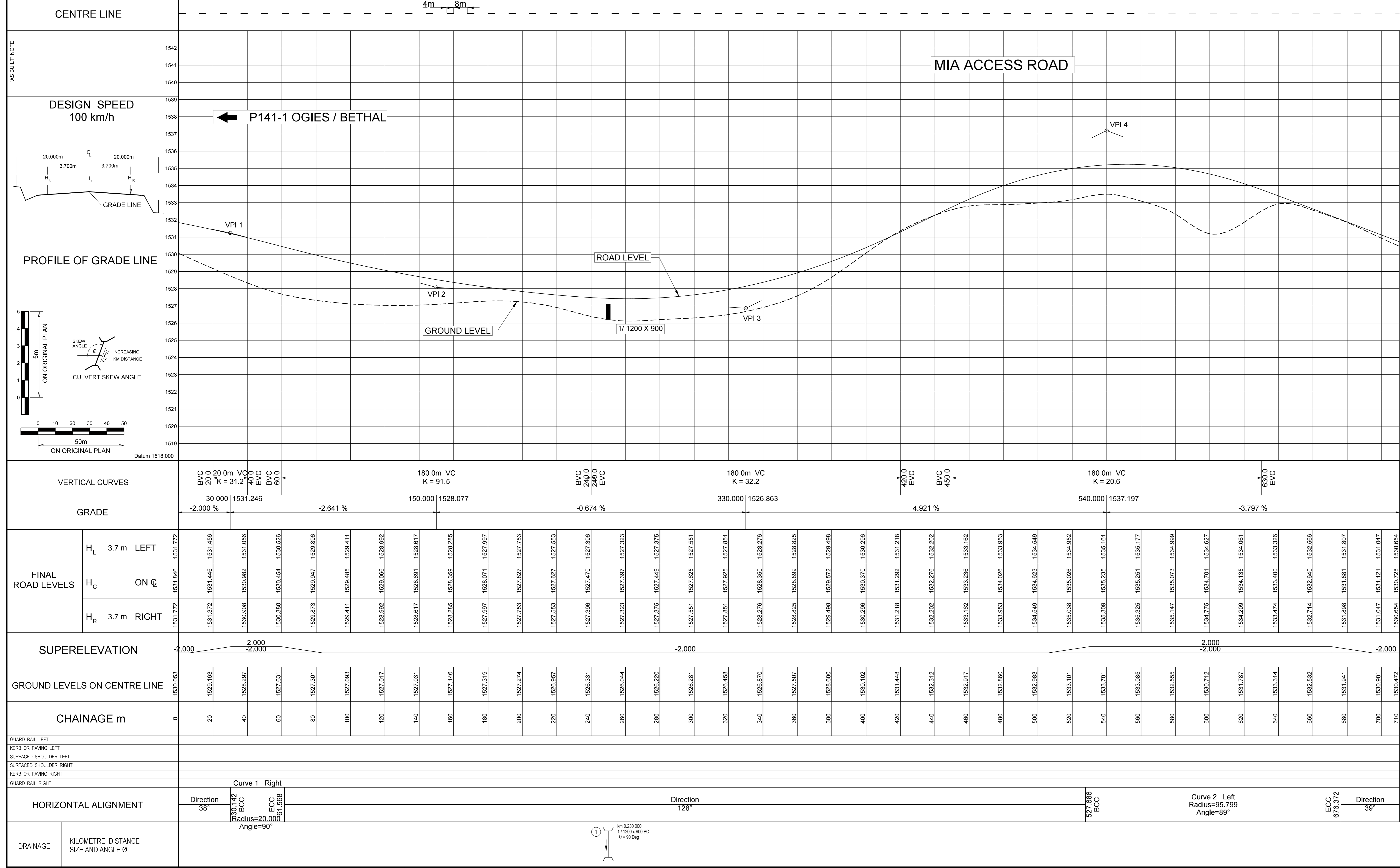
W102258 - Tweefontein Re-alignment (EC & Road) D2 Drawing/Working Drawings/Alternative 2012/Preliminary Design/Rev A3

DRG No.	DESCRIPTION	TITLE	SIGNATURE	TITLE	SIGNATURE
		MECHANICAL		DRAWN BY	
		PROCESS		CHECK BY	
		PIPING		MANAGER ENGINEERING	
		CIVIL		TECHNICAL PROJECT MANAGER	
		STRUCTURAL		AREA MANAGER	
		ELECTRICAL/INSTRUMENTATION		CLIENT	



SETTING OUT DATA AND REFERENCE PEGS

DESIGN SPEED = 80 Km/h



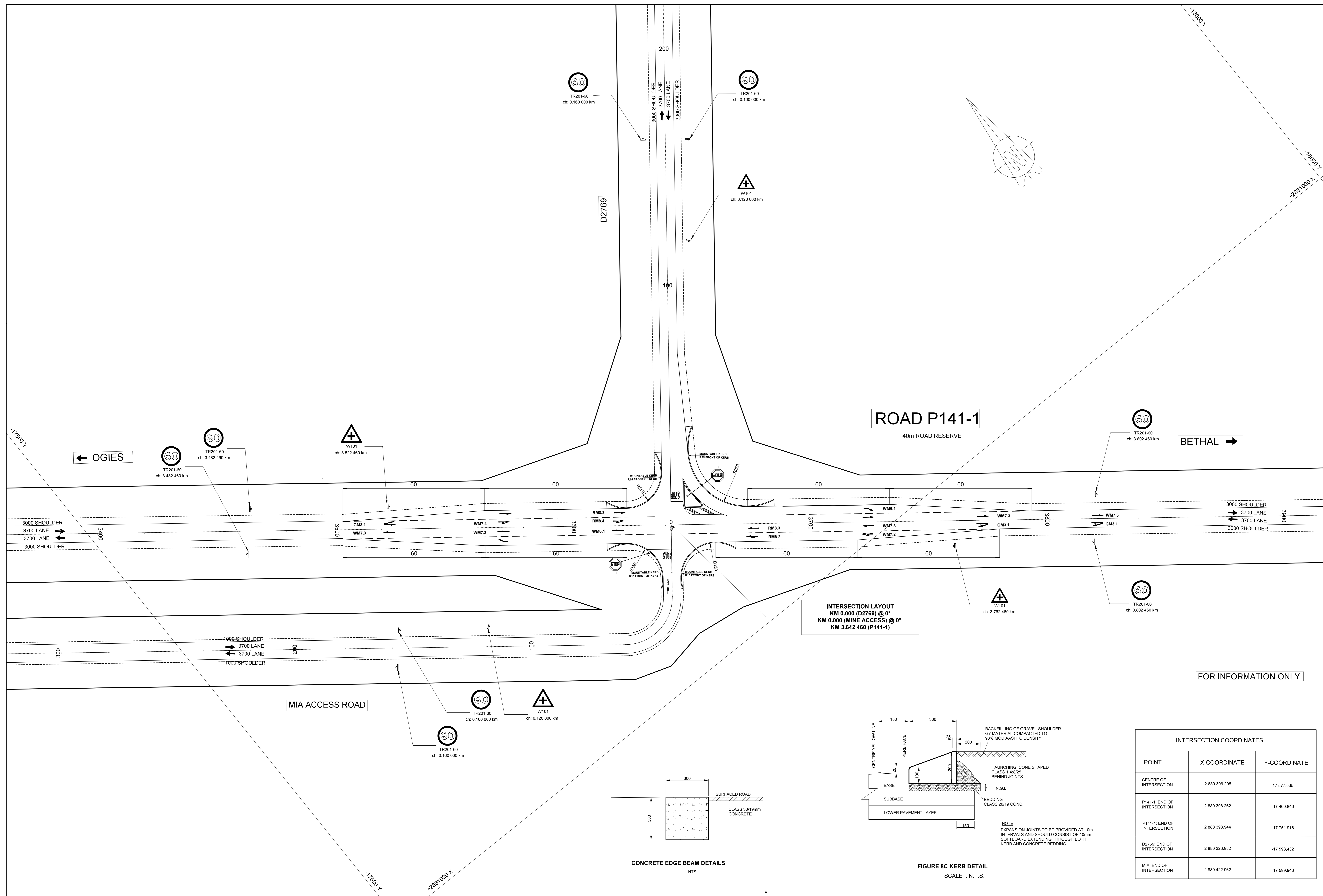
MIA →

FOR INFORMATION ONLY

AA	18/12/2012	For Approval	WYSIGINGS / AMENDMENTS	DATUM DATE	DATUM DATE	HANDTEK / SKONTR.	DATUM / DATE
SURVEYED BY:		TWEEFONTEIN PROJECT		DESIGNED BY:		JEFFARES & GREEN PTY (Ltd)	
Lidar Survey		XSTRATA COAL SA		ENGINEERING AND ENVIRONMENTAL CONSULTING		ONTWERP GOEDGEKEUR	
Received 29/10/2011		Xstrata		P.O. BOX 2973		ONTWERP GOEDGEKEUR	
From Nelspruit		PRETORIA		0001		DESIGN APPROVED	
				TEL: (012) 346-7900		GOEDGEKEUR DEUR	
				FAX: (012) 346-7979		APPROVED BY	
				E-MAIL: jg@jg.co.za		DATE: _____	
				P.O. BOX 2973		ONTWERP DEUR	
				PRETORIA		DESIGNED BY	
				0001		CHECKED BY	
				PR: 980444		DATE: _____	
				rns Raadgevende Ingenieur		ONTWERP DEUR	
				for Consulting Engineers		DRAWN BY	
				rns Hoof v. Dept.		CHECKED BY	
				for Head of Dept.		DATE: _____	
				DATE: _____		MPUMALANGA REGERING	
				DATE: _____		OPENBARE WERKE,	
				DATE: _____		PAABE EN VERVOER	
				DATE: _____		MPUMALANGA	
				DATE: _____		PUBLIC WORKS, ROADS	
				DATE: _____		AND TRANSPORT	
				DATE: _____		REALIGNMENT OF PROVINCIAL ROADS	
				DATE: _____		LONGITUDINAL SECTION km 1.000 TO km 0.710 (SHEET 1 of 1)	

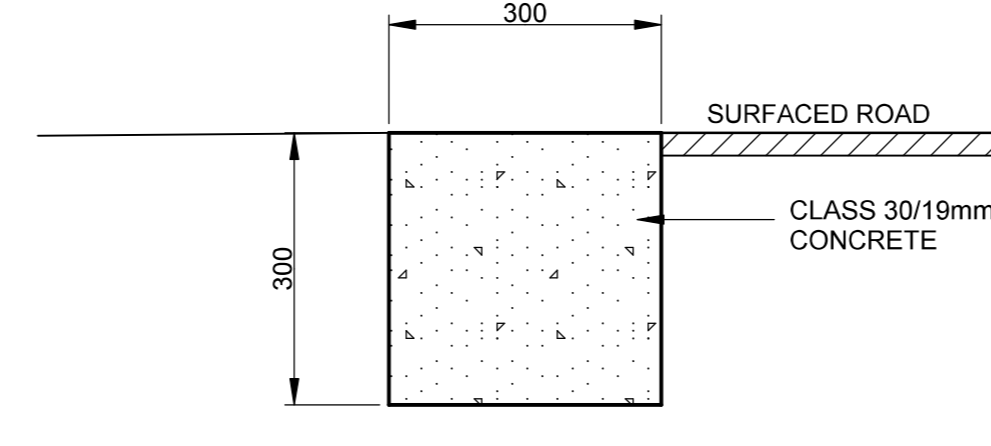
PROVINCE PLAN No  
MRS 06/-/1115  
XSTRATA COAL PLAN No  
TOP-J&G-5003-CV-01-1301

W:\002398 - Tweefontein Realignement - GC in Road\03 Drawing\Working Drawing\Alternative 2012\ Preliminary Design\Rev A\02398\A\_TOP-5003-CV-01-1301.dwg



**INTERSECTION LAYOUT**  
 KM 0.000 (D2769) @ 0°  
 KM 3.642 460 (P141-1)

FOR INFORMATION ONLY



CONCRETE EDGE BEAM DETAILS  
 NTS

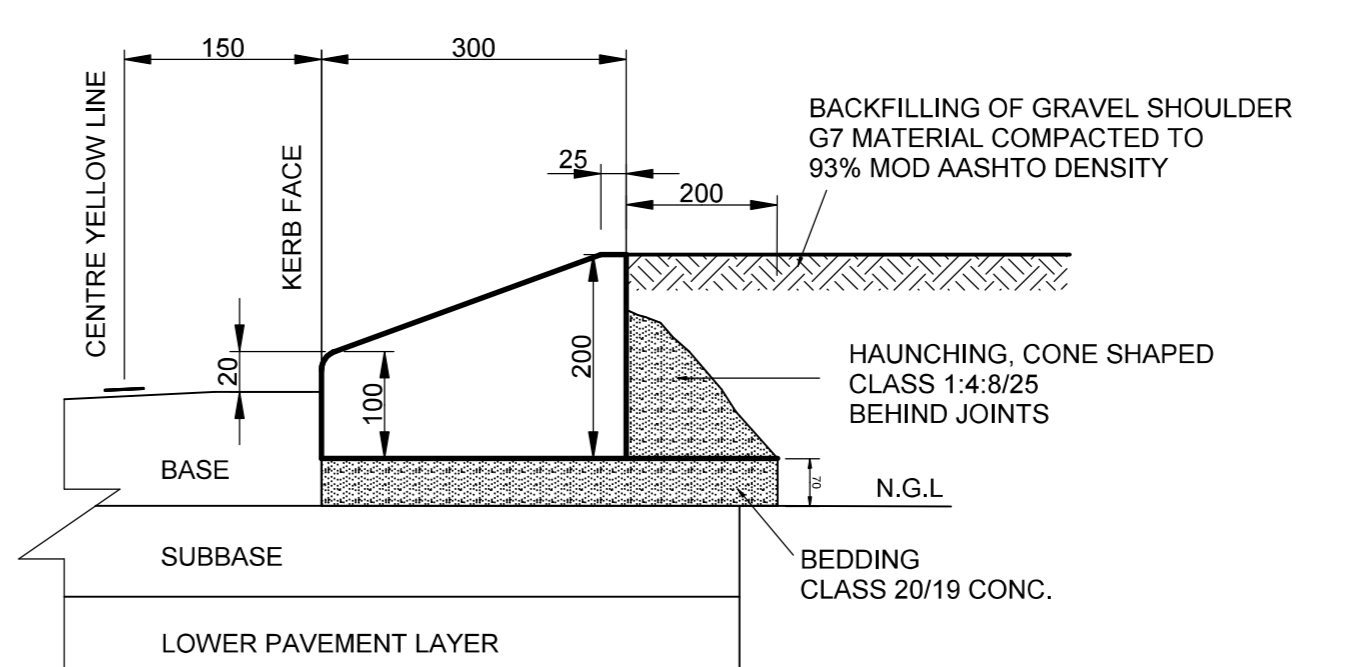


FIGURE 8C KERB DETAIL  
 SCALE : N.T.S.

INTERSECTION COORDINATES		
POINT	X-COORDINATE	Y-COORDINATE
CENTRE OF INTERSECTION	2 880 396.205	-17 577.535
P141-1: END OF INTERSECTION	2 880 398.262	-17 460.846
P141-1: END OF INTERSECTION	2 880 393.944	-17 751.916
D2769: END OF INTERSECTION	2 880 323.982	-17 598.432
MIA: END OF INTERSECTION	2 880 422.962	-17 599.943

SURVEYED BY: LIDAR SURVEY NOVEMBER 2011 PROVIDED BY XSTRATA		DESIGNED FOR <b>TWEEFONTEIN PROJECT</b> XSTRATA COAL SA		DESIGNED BY <b>JEFFARES &amp; GREEN PTY (LTD)</b> ENGINEERING AND ENVIRONMENTAL CONSULTING		ONTWERP GOEDGEKEUR DESIGN APPROVED		GOEDGEKEUR DEUR APPROVED BY		ONTWERP DEUR DESIGNED BY NAESEN DEUR CHECKED BY GETIEN DEUR DRAWN BY NAESEN DEUR CHECKED BY		MPUMALANGA RESENG OPENBARE WERKE PAAR EN VERVEER <b>MPUMALANGA</b> REALIGNMENT OF PROVINCIAL ROADS		MPUMALANGA GOVERNMENT PUBLIC WORKS, ROADS AND TRANSPORT		SKAAL / SCALE 1:500		LÉER N° / FILE N° --		DISTRIK / DISTRICT NKANGALA		PROVINSIE PLAN N° / PROVINCE PLAN N° MRS 06/-/06	
WYSIGINGS / AMENDMENTS		rms Hoof v. Dept for Head of Dept.		DATUM DATE		HANDTEK / SIGNTR. DATUM / DATE		TEL: (012) 485-2028 P.O. BOX 2073 PRETORIA 0001		rms Raadgewerde Ingenieur for Consulting Engineers		rms Hoof van Departement for Head of Department		MPUMALANGA GOVERNMENT PUBLIC WORKS, ROADS AND TRANSPORT		TIPPE ONTWERP / TYPE OF PLANNING PRELIMINARY DESIGN		PAD N° / ROAD N° P141/1 & D2769		XSTRATA COAL PLAN N° / PLAN N° TOP-J&G-5003-CV-01-1401			

W102208 - Tweefontein Re-alignment (CC to Road) Drawing/Working Drawings/Alternative 2012 Preliminary Design/Rev A/B

PROVINCE PLAN N°  
XSTRATA COAL PLAN N°  
MRS 06/-/06  
TOP-J&G-5003-CV-01-1401