CRACOW ROAD, DOWNFALL CREEK RANGE AND FLOODWAY UPGRADE



Sheet List Table

Sheet Lis	st Tab	le	Sheet Lis	t Tabl	e
Sheet Number	Revision	Sheet Title	Sheet Number	Revision	Sheet Title
001	В	Project Cover Sheet	700	А	Typical Cross Sections
300	А	Survey Control and Services Plan	800	А	Annotated Cross Sections Sheet 1
301	В	Survey Control and Services Plan	801	А	Annotated Cross Sections Sheet 2
400	А	Roadworks and Setout Plan Sheet 1	802	А	Annotated Cross Sections Sheet 3
401	А	Roadworks and Setout Plan Sheet 2	803	А	Annotated Cross Sections Sheet 4
500	А	Pavement Plan Sheet 1	804	А	Annotated Cross Sections Sheet 5
501	А	Pavement Plan Sheet 2	805	А	Annotated Cross Sections Sheet 6
600	А	Longitudinal Section Sheet 1	806	А	Annotated Cross Sections Sheet 7
601	А	Longitudinal Section Sheet 2	807	А	Annotated Cross Sections Sheet 8
602	А	Longitudinal Section Sheet 3	808	А	Annotated Cross Sections Sheet 9

					Scales	
В	Updated Sheet List Table		TP	Nov 23		duali
A	Issued For Construction					
20	0.01 Revisions/Descriptions	Drawn	Approved	Date	Dimensions shown in metres except where shown otherwise	245 AE

LOCALITY PLAN (Not to scale)

Sheet List Table

Sneet Li	st lad	Ie	STANDARD DRA	WINGS:
Sheet Number	Revision	Sheet Title	ROADWORKS	
1000	А	Supplementary Signs and Linemarking Details	Dwg.	Rev. Descr
1200	А	Floodway Details	CMDG-R-081	E SIGN
1600	А	Limit of Clearing Plan Sheet 1	DEPARTMENT C	JF TRANSPOF
1601	А	Limit of Clearing Plan Sheet 2	ROAD FURNITU	RE
1700	А	Temporary Erosion and Sediment Control Sheet 1	1170	D Flood
1701	А	Temporary Erosion and Sediment Control Sheet 2	SIGNS AND GUI	DE POSTS
1702	А	Temporary Erosion and Sediment Control Sheet 3	1356 GENERAL FART	F Road HWORKS ANI
1703	А	Temporary Erosion and Sediment Control Sheet 4	1178	E Divers









ription N LOCATION AND INSTALLATION DETAILS ODWAY - BED LEVEL CROSSING ORT AND MAIN ROADS - STANDARD DRAWINGS:

d Depth Indicators - Installation

d Edge Guide Posts - Timber and Tubular Steel Post and Installation Details ND PROPERTY ACCESS ersion of Water from Roadway and Table Drains

	(Ch. 57877m - 5	Job No.	CRC00269			
COV	ER SHEET	Drawing No.	001			
NEERING	GERTIFICATION (RPEQ)				В	
	SIGNATURE	NO.	DATE	Revision		
	The					
		Series No.	01 of 28			





ENGINEERING SURVEY CONTROL

STATION	EASTING	NORTHING	LEVEL	REMARKS
STN 61	223602.619	7177307.886	287.911	Star Picket
STN 60	223617.355	7177362.576	285.609	Star Picket
BSC 51	223605.261	7177454.456	277.198	
BSC 4	223586.186	7177520.057	269.822	
BSC 5	223554.166	7177581.811	263.231	

		1	1			
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					0 5 10 15 20 25	
					Scale A 1:500	
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PLAN Scale A



⊢WARNING!

BEWARE OF UNDERGROUND SERVICES

	(Ch. 57877m - 5	Job No.	CRC00269			
AND	SERVICES SHE	Drawing No.	300			
IEERING	G CERTIFICATION (RPEQ)					
	SIGNATURE	NO.	DATE	Revision	A	
	These					
		Series No.	02 of 28			

CRACOW



SERVI(CES LOCA	ATION TABL	E			
POINT No.	APPROX. EXISTING DEPTH	RL @ TOP OF SERVICE	RL @ BOTTOM OF EXCAVATION	COVER FROM BOT. OF BOX	METHOD USED FOR LOCATION	TYPE OF SERVICE
S1	1.400	248.200	N/A	N/A	Transponder wand	Comms - Direct Buried Optic Fibre (under-bored at floodway)
S2	3.885	234.280	237.427	3.147	Trace wire/rodded Conduit	Comms - Direct Buried Optic Fibre (under-bored at floodway)
S3	4.245	234.979	239.424	4.445	Trace wire/rodded Conduit	Comms - Direct Buried Optic Fibre (under-bored at floodway)
S4	4.369	235.261	239.368	4.107	Trace wire/rodded Conduit	Comms - Direct Buried Optic Fibre (under-bored at floodway)
S5	0.490	Not recorded	N/A	N/A	Transponder wand	Comms - Direct Buried Optic Fibre (under-bored at floodway)

·						Scales	
╞							
						0 5 10 15 20 25 Scale A	
	В	Updated Service Location Table	BD	ТР	Nov 23		quality po
	А	Issued For Construction		ļ		Dimensione chaum in metroe	
	20	.01 Revisions/Descriptions	Drawn	Approved	Date	except where shown otherwise	ABN 73







STATION	EASTING	NORTHING	LEVEL	REMARKS
BSC 6	223631.396	7177652.325	254.273	
BSC 7	223681.283	7177628.049	249.654	
BSC 8	223721.772	7177582.901	247.015	
BSC 9	223757.870	7177612.614	240.239	
BSC 10	223777.535	7177672.481	244.311	
BSC 50	223868.225	7177666.654	246.764	



ROAD



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BEWARE OF UNDERGROUND SERVICES

	(Ch. 57877m - 5	Job No.	CRC00269		
AND	SERVICES SHE	Drawing No.	301		
IEERING	GCERTIFICATION (RPEQ)			Revision	6
	SIGNATURE	NO.	DATE		В
	The				
		Series No.	03 of 28		



CONTROL LINE SETOUT MC10

POINT	CHAINAGE	EASTING	NORTHING	LEVEL		RADIUS	A.LENGTH	DEFL.ANGL
IP 1	57866.235	223595.481	7177243.925	288.659	11°26'23.19"			
START	57877.000	223597.616	7177254.476	288.551				
TC	57912.465	223604.650	7177289.236	288.196	11°26'23.19"			
IP 2	57938.924	223609.912	7177315.237	287.931		R = -300.000	52.917	10°06'23.19
СТ	57965.382	223610.529	7177341.757	287.284	1°20'00.00"			
TC	58058.077	223612.686	7177434.426	279.684	1°20'00.00"			
IP 3	58090.111	223613.453	7177467.389	276.128		R = -110.000	64.068	33°22'16.8
СТ	58122.145	223595.962	7177495.339	272.642	327°57'43.13"			
TC	58183.833	223563.238	7177547.632	266.773	327°57'43.13"			
IP 4	58212.095	223544.922	7177576.901	263.911		R = 39.000	56.522	83°02'16.8
СТ	58240.356	223571.754	7177598.629	260.949	51°00'00.00"			

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Title CRACOW ROAD UPGR DOWNFALL CREEK FLOC **ROADWORKS AND** ENGIN Drawn ENG. AREA NAME B Doherty Civil T Penrose Designed B Doherty



-WARNING!

BEWARE OF UNDERGROUND SERVICES

	(Ch. 57877m - 5	Job No.	CRC00269				
SET	OUT PLAN SHE	Drawing No.	400				
IEERING	GCERTIFICATION (RPEQ)						
	SIGNATURE	NO.	DATE	Revision	A		
	There	June 2023					
		Series No.	04 of 28				



POINT	CHAINAGE	EASTING	NORTHING	LEVEL		RADIUS	A.LENGTH	DEFL.ANGLE
TC	58304.524	223621.622	7177639.012	255.631	51°00'00.00"			
IP 5	58334.578	223653.134	7177664.529	252.775		R = 35.000	60.109	98°24'00.00"
СТ	58364.633	223673.775	7177629.628	250.337	149°24'00.00"			
TC	58408.383	223696.045	7177591.970	248.506	149°24'00.00"			
IP 6	58427.394	223707.266	7177572.996	247.337		R = -30.000	38.022	72°37'00.00"
СТ	58446.405	223728.726	7177578.036	245.565	76°47'00.00"			
IP 7	58465.416	223750.187	7177583.076	243.390		R = -30.000	38.022	72°37'00.00"
СТ	58484.427	223751.788	7177605.062	241.179	4°09'60.00"			
TC	58533.404	223755.347	7177653.909	238.966	4°09'60.00"			
IP 8	58561.111	223758.231	7177693.495	243.086		R = 30.000	55.414	105°50'00.00"
СТ	58588.818	223795.528	7177679.920	244.741	110°00'00.00"			
TC	58607.415	223813.004	7177673.560	245.299	110°00'00.00"			
IP 9	58622.162	223826.886	7177668.507	245.742		R = -200.000	29.493	8°26'57.10"
СТ	58636.908	223841.360	7177665.549	246.184	101°33'02.90"			
END	58640.000	223844.389	7177664.929	246.277				
IP 10	58698.475	223901.680	7177653.221	248.031	101°33'02.90"			

	CRC00269										
ROADWORKS AND SETOUT PLAN SHEET 2											
rawn		ENGINEERING	CERTIFICATION (RPEQ))							
B Doherty	ENG. AREA	NAME	SIGNATURE	NO.	DATE	Revision	A				
	Civil	T Penrose	The	24807	June 2023						
esigned						Series No	05 of 28				
B Doherty			03 9 20								





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	20.)1 Revisions/Descriptions	Drawn	Approved	Date	except where shown otherwise	Z45 Mar ABN 73

All wo accor CMD0	orks to be carried out in dance with the relevant G Construction Specifications.	PAVEMENT DESIGN (Lower Order Roads Design Guide) Design Period: 20 Ye Design Traffic: 5.1 x Design Subgrade CBR: 15 (Se	ears 10 ⁴ DESA oaked)	** UNSEALE (Lower Ord Specification Grading C Shrinkage WPI: PI: Passing 0.	D PAVEMENT SPEC der Roads Design Go ow pit material to sat ons oefficient (Gc): Product (Sp): .075mm Sieve:
	Client BC	anana	Title CRA DOWN	ACOW R IFALL C	COAD UPGF REEK FLOC PAVEMEN
cople client focused solution driven	SHIRE	OF OPPORTUNITY	Drawn B Doherty	ENG. AREA	ENGIN NAME T Penrose
ry Street, GYMPIE, QLD, 4570 3 617 924 437 Ph: 0477 322 555	<u>COPYRIGHT</u> The contents and information contained in this documer copied or reproduced in whole or part for any purpose o	nt are the copyright of CRC. This drawing may not be used, ther than the consent by which it is supplied by CRC.	B Doherty		

	Ch. 57877m - 5	Job No.	CRC00269			
T PLAN	SHEET 1	Drawing No.	500			
NEERING C	ERTIFICATION (RPEQ)				٨	
	SIGNATURE	NO.	DATE	Revision	A	
	The	24807	June 2023			
				Series No.	06 of 28	



PAVEMENT TYPE 1 DETAILS

New pavement to be constructed

125mm Overlay, Full width,

Local borrow pit material**

Design Subgrade CBR 15 (soaked)

125mm Total thickness

PAVEMENT TYPE 2 DETAILS

New pavement to be constructed 150mm Cement Stabilised Base, Full Width, Local borrow pit material**

Insitu stabilised, GB cement, estimated 3.0% by mass

Design Subgrade CBR 15 (soaked)

150mm Total thickness

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Last N	20	0.01 Revisions/Descriptions	Drawn	Approved	Date	Dimensions shown in metres except where shown otherwise	245 Mary ABN 73 (



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		Job No.	CRC00269				
DOWN		PAVEMENT PLA	Drawing No.	501			
awn		ENGINEERING		Δ			
B Doherty	ENG. AREA	NAME	SIGNATURE	NO.	DATE	Revision	A
signed	Civil	T Penrose	Here	24807	June 2023		
B Doherty						Series No.	07 of 28



¬WARNING! ·

BEWARE OF UNDERGROUND SERVICES

						D	esign surfa	ace level-								
						E	Existing su	urface leve								
Horizontal Curve Data							<		R-	-3001	m			-		
Vertical Curve Length (m) Vertical Curve Radius (m) Vertical Geometry Grade (%) Vertical Grade Length (m)									-1 % 121.977							
DATUM R.L.256.000											}					
DESIGN LINE LEVELS	288.551	288.521	288.421	288.321	288.221	788 106	288.121	288.021	287.944	287.918	287.746	287.473	287.284	287.100		286.627
EXISTING SURFACE LEVELS	288.526	288.489	288.375	288.239	288.087		287.926	287.790	287.691	287.664	287.554	287.254	287.070	286.856		286.332
CUT / FILL		2	(0				0 10			+						
DEPTHS	0.025	0.032	0.046	0.08	0.132	0 1 1 2	0.19	0.23	0.252	0.25/	0.192	0.219	0.21	0.24		0.29
DESIGN CHAINAGE	57877.000	- 57880.000	57890.000	57900.000	57910 000	E7017 AGE	57920.000	57930.000	57937.712	57940.000	57950.000	57960.000	57965.382	57970.000		57980.000
SUPER ELEVATION	LHS ar	id RH	S -4%							RHS 4	ŀ%				IS -4%	
		57878:5						57923.5				57954.4				
											Scales					

					Scales	
					Scale A	
					0 1.0 2.0 3.0 4.0 5.0	
					Scale B 1:100	
						auglity por
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					Scales	
					0 5 10 15 20 25	
					Scale A 1:500	
					0 1.0 2.0 3.0 4.0 5.0	
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L SE	CTION SHEET 2			Drawing No.	601	
NEERING	GERTIFICATION (RPEQ)				•	
	SIGNATURE	NO.	DATE	Revision	A	
	The	24807	June 2023			
				Series No.	09 of 28	
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					Scales	
					0 5 10 15 20 25 Scale A	
						quality peop
Α	Issued For Construction				Dimensions shown in metres	245 Marv
2	0.01 Revisions/Descriptions	Drawn	Approved	Date	except where shown otherwise	ABN 73 6

				Scales	
				0 5 10 15 20 25	
				0 1.0 2.0 3.0 4.0 5.0	
				Scale B 1:100	
					quality
sued For Construction					
Revisions/Descriptions	Drawn	Approved	Date	Dimensions shown in metres except where shown otherwise	245 I ABN





	CRC00269							
DOWN	LON	IGITUDINAL SE		Drawing No.	602			
rawn		ENGINEERING	G CERTIFICATION (RPEQ)				
B Doherty	ENG. AREA NAME		SIGNATURE	NO.	DATE	Revision	A	
esigned	- Civil	T Penrose	Theo	24807	June 2023			
esigned						Series No	10 of 28	
B Doherty								

LONGITUDINAL SECTION
Horizontal Scale A Vertical Scale B

1		RHS -59	×			
	20577 0	U. / / COC	20203./			
				(SECTION	

	_									visting surfa				
Horizontal Curve Data			R301	n >					R	-200m				
Vertical Curve Length (m) Vertical Curve Radius (m)	20 R = 1	VC 66.6	67											
Vertical Geometry Grade (%) Vertical Grade Length (m)									3 % 130.792					
DATUM R.L.238.000									\mathbf{Y}					
DESIGN LINE	386	407	477	741	777	770	299	377	377	776	184	277	577	
LEVELS	244.3	244.4	244.4	244.7	244.7	245.(245.2	245.3	245.(245.9	246.	246.2	246.5	
EXISTING SURFACE	171	197	289	543	575	365	015)58	386	796	120	264	577	
LEVELS	244.	244.	244.2	244.5	244.9	244.8	245.(245.(245.	245.7	246.	246.2	246.9	
CUT / FILL	6	1	~	ŝ	2	2	4	6	1		4	~		
DEPTHS	0.21	0.21	0.18	0.198	0.202	0.212	0.284	0.319	0.29	0.18	0.064	0.013	Q	
DESIGN CHAINAGE	58577.000	58577.683	58580.000	58588.818	58590.000	58600.000	58607.415	58610.000	58620.000	58630.000	58636.908	58640.000	58650.000	
SUPER ELEVATION		RH	 S -5%							4%				

Design surface level \neg

BEWARE OF UNDERGROUND SERVICES







*	X-fall varies. Refer working plan for details.
**	Width varies at formation widening and transitions
	to existing. Refer 400 and 800 series plans for details
Δ	Refer 1600 series plans for Limit of Clearing details.

	(Ch. 57877m - 5	Job No.	CRC00269				
ROSS	SECTIONS	Drawing No.	700				
IEERING	CERTIFICATION (RPEQ)				٨		
	SIGNATURE	NO.	DATE	Revision	A		
	The	24807	June 2023				
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20	01 Revisions/Descriptions	Drawn	Approved	Date	except where shown otherwise	ABN 73



DATUM RL 285.000

DESIGN LEVEL

	0% 1 in 4	4%	4%	1 in	4
DATUM RL 283.700	<u> </u>				
DESIGN LEVEL	285.053 - 285.037 - 285.037 - 285.112 - 285.261 -	285.381 -	085 061	285.112 -	284.815 -
EXISTING LEVEL	285.053 285.053 285.067 285.067 285.011	285.137	285 000	284.938	284.815
OFFSET	-4.927 -4.896 -3.896 -3.596 -3.000	0.000		3.596	4.785

			05.382				
1 in p	% 1 in 4	4%	3%		1 in .	4	
287.400 + 287.129 +	287.129 + 287.204 + 287.353 +	CT1 TOC	C 14: 107	287.563	104.107	287.124 +	
287.400 287.317	287.174 287.149 287.098	007 JE1	+CZ: 107	287.219	1 17. 107	287.124	
-5.438 -4.896	.3.896 .3.596 .3.000		000.0	3.000	0.447	4.756	

	1 in 4	4%	1.8% 1 in 4	
DATUM RL 280.100				
DESIGN LEVEL	281.401 - 281.564 - 281.713 -	281.833 -	281.778 - 281.643 - 281.463 - 281.463 -	
EXISTING LEVEL	281.401 281.278 281.166	281.541	281.542 281.506 281.463	
OFFSET	-4.250 -3.596 -3.000	0.000	3.000 3.540 4.259	
		CH. 58038	.712	
	1 in 4	4%	4% 1 in 4	

283.314 283.466 283.615

283.314 283.250 283.268

-4.204 -3.596 -3.000

DATUM RL 282.100

DESIGN LEVEL

EXISTING LEVEL

OFFSET

CH. 57980.000

CH. 580	00.000
4%	0.6%

62<u>-</u>

286.

286.332

000.0

283.735

283.494

000.0

CH. 58020.000

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1 in 4

286.255 286.219 286.169

-4.009 -3.596 -3.000

10:104	EXISTING LEVEL
	OFFSET





1 in 4

286.610 286.482

286.260 286.224

3.000 3.511

283.615 283.466 283.315

283.408 283.350 283.315

3.000 3.596 4.200

	(Ch. 57877m - 5	Job No.	CRC00269		
SS S	ECTIONS SHEE	Drawing No.	800		
NEERING	GCERTIFICATION (RPEQ)				٨
	SIGNATURE NO. DATE			Revision	A
	These				
		Series No.	12 of 28		

	on tin A	6% 6	%1 in 4			
DATUM RL 275.500						
DESIGN LEVEL	276.815 + 276.831 + 276.831 + 276.906 + 277.070 +	277.250 -	277.430 277.329 - 277.027 -			
EXISTING LEVEL	276.815 276.797 276.869 276.898 276.940	277.050	277.000 276.975 277.027			
OFFSET	-5.022 -4.959 -3.659 -3.000	000.0	3.000 3.404 4.613			
		CH. 58080.00	0	-	Existing surface leve	اـــر
	1 in 4	4% 3.8	5% <u>1 in 4</u>			1 in
DATUM RL 277.800					DATUM RL 271.300	
DESIGN LEVEL	279.006 - 279.202 - 279.350 -	279.470 -	279.575 - 279.465 - 279.191 -		DESIGN LEVEL	272.420
EXISTING LEVEL	279.006 278.973 279.046	279.290	279.241 279.221 279.191		EXISTING LEVEL	272.420
OFFSET	-4.377 -3.596 -3.000	00000	3.000 3.439 4.534		OFFSET	-4.298 2.506
		CH. 58060.0	00			
	1 in 4	4% 3	% <u>1 in 4</u>			0% 1
DATUM RL 278.000					DATUM RL 273.000	
DESIGN LEVEL	279.248 - 279.415 - 279.564 -	279.684 -	279.774 - 279.662 - 279.397 -		DESIGN LEVEL	274.215 274.220 274.220
EXISTING LEVEL	279.248 279.198 279.242	279.494	279.456 279.427 279.397		EXISTING LEVEL	274.215 274.207 274.262
OFFSET	-4.264 -3.596 -3.000	0.000	3.000 3.447 4.509		OFFSET	-4.981 -4.959 -3.959
·		CH. 58058.0	77			
	1 in 4	4% 1.	5% <u>1 in 4</u>			1 in \$% 1
DATUM RL 280.000					DATUM RL 273.500	
DESIGN LEVEL	281.237 281.422 281.570	281.690	281.645 281.512 281.325		DESIGN LEVEL	274.881 274.611 274.611
EXISTING LEVEL	281.237 281.100 281.015	281.404	281.405 281.370 281.325		EXISTING LEVEL	274.881 274.681 274.631
OFFSET	-4.332 -3.596 -3.000	000.0	3.000 3.533 4.279		OFFSET	-5.500 -4.959 -3.959
		CH. 58040.00	00			
NING! RE OF UNDERGROUND S cation of underground servic	ERVICES tes has been compiled from	m				

the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

					Scales	
					_	
					0 1.0 2.0 3.0 4.0 5.0 Scale A	
					-	quality p
20.01	ONSTRUCTION	Drawn	Approved	Date	Dimensions shown in metres except where shown otherwise	245 Ma ABN 7



CH. 58120.000

274.640

274.462

0.000

6%

6%

1 in 4

274.272

274.272

5.191

274.820 274.719

274.339 274.311

3.000 3.404







CH. 58140.000

	1 in 4 4%	3
DATUM RL 270.200		
DESIGN LEVEL	272.229 - 272.373 - 272.522 -	272.042 -
EXISTING LEVEL	272.229 272.283 273.235	2/2.401
OFFSET	-4.170 -3.596 -3.000	0.000

CH. 58122.145

CH. 58103.519 6% 1 in 4 5.0% 1 in 4 6% 274.611 274.686 274.850 275.210 275.109 274.738 .030 274.779 274.756 274.636 274.666 274.714 274.738 .872 274. -3.959 -3.659 -3.000 3.000 3.404 0.000 4.891

CH. 58100.000

CROSS	SEC1	IONS
	Scale A	









	(Ch. 57877m - 5	Job No.	CRC00269		
SS S	ECTIONS SHEE	Drawing No.	801		
IEERING	GERTIFICATION (RPEQ)				٨
	SIGNATURE NO. DATE			Revision	A
	The				
		Series No.	13 of 28		

		6%			
DATUM RL 264.500			<u>~ 1 in 4 0%</u>	_	
DESIGN LEVEL	265.664	265.982	265.802 + 265.637 + 265.562 + 265.562 + 265.700 +		
EXISTING LEVEL	265.664 265.781 265.742	265.784	265.742 265.720 265.708 265.688 265.700		
OFFSET	-4.991 -3.404 -3.000	000.0	3.000 3.659 3.959 4.959 5.234		
		CH. 58192.35	53	_ Design surface level	
	1 in 4 3	8.1% 49	<u>% 1</u> in 4	Existing surface level $1 \text{ in } 4 \frac{6\%}{6\%} \frac{1 \text{ in } 4 - 6\%}{6\%}$	
DATUM RL 265.300				DATUM RL 261.900	
DESIGN LEVEL	266.569 - 266.754 - 266.865 -	266.773 -	266.653 - 266.504 - 266.411 -	263.233 - 263.233 - 263.492 - 263.492 - 263.233 - 263.492 - 263.492 - 263.492 - 263.233 - 263.233 - 262.993 - 263.293 - 263.293 - 263.293 - 263.293 - 263.293 - 263.293 - 263.293 - 263.293 - 263.293 - 262.993 - 263.292 - 263.292 - 263.292 - 263.292 - 263.292 - 263.292 - 263.20	
EXISTING LEVEL	266.569 266.405 266.448	266.600	266.469 266.433 266.411	Z63.295 Z63.258 Z63.228 Z63.228 Z63.302 Z63.299 Z63.298 Z63.298 Z63.660 Z63.296 Z63.298 Z63.298 Z63.660 Z63.296 Z63.298 Z63.298 Z63.660 Z63.296 Z63.298 Z63.298 Z63.660 Z63.798 Z63.298 Z63.298 Z63.798	
OFFSET	-4.183 -3.445 -3.000	000.0	3.000 3.596 3.965	OFFSET 0.000 0.000 -3.3.404 0.000 0.	
	C	CH. 58183.83	3	CH. 58216.465	
	1 in 4 1	.5% 4%	/61 in 4	$1 \text{ in } 4 = 6\%$ 6% $1 \text{ in } 4$ 10^2	
DATUM RL 265.400				DATUM RL 262.700	
DESIGN LEVEL	266.863 - 267.055 - 267.173 -	267.128 -	267.008 - 266.859 - 266.429 -	DESIGN LEVEL 264.076 TAVAL AND LONG AND	
EXISTING LEVEL	266.863 266.774 266.882	266.979	266.804 266.737 266.429	264.164 264.087 264.076 73A31 DUILSIX3 264.164 264.087 264.087 264.164 264 264 264 264 264 264 264 264 264 2	
OFFSET	-4.239 -3.472 -3.000	0.000	3.000 3.596 5.319	OLESEL -4.328 -4.328 -3.000 0.	
		CH. 58180.0	000	CH. 58209.313	
	0% 1 in 4	4% 4%	1 in 4	1 in 4 6% 6% 1 in 4 0%	
DATUM RL 267.200				DATUM RL 263.800	
DESIGN LEVEL	268.713 268.640 268.640 268.715 268.864	268.984	268.864 268.715 268.419	265.056 265.121 TAAT NDISAD TA	
EXISTING LEVEL	268.713 268.670 268.662 268.716 268.716 268.769	268.809	268.523 268.313 268.419	265.040 265.121 264.989 264.989 264.973 264.909 264.900 264.909 264.900 264.90	
OFFSET	-5.042 -4.896 -3.896 -3.596 -3.000	0.000	3.000 3.596 4.780	OLLSEL -4.179 -3.404 3.959 5.174 5.174 5.174	
	C	CH. 58160.000)	CH. 58200.000	
RNING! ARE OF UNDERGROUND SE ocation of underground service	ERVICES es has been compiled from]			
eering survey and interpolated ded by the Service Authorities. ccuracy of the interpolated info ces are accurately located prio	from Dial Before You Dig No responsibility is taken formation supplied. Ensure a r to commencement of wor	as for all k.		CROSS SE	C
				Scales	

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dified .

					Scales		
						a	
Issued For Construction				•		- -	
).01	Revisions/Descriptions	Drawn	Approved	Date	Dimensions shown in metres except where shown otherwise		

		1 in 4	0.3%	4%	1 ii
DATUM RL 258.500					
DESIGN LEVEL	- 788 656	260.105 - 260.231 -		- 607.007	260.119 - 259.970 -
EXISTING LEVEL	759 884	259.951 259.976		200.004	259.893 259.847
OFFSET	062 7-	-3.505 -3.000		0000	3.000 3.596

CH. 58248.365

	1 in 4	3.1%	4%	1 in 4
DATUM RL 259.400				
DESIGN LEVEL	260.730 - 260.930 -	261.041 -		260.680
EXISTING LEVEL	260.730 260.765	260.785 ว60 802		260.502 260.502
OFFSET	-4.246 -3.445	-3.000		3.596 1.220

CH. 58240.356

	1 in 4		3.2%	4%	1 in 4
DATUM RL 259.400					
DESIGN LEVEL	260.772 -	260.968 - 261.079 -	080 080	200.002	260.862 - 260.713 - 260.713 -
EXISTING LEVEL	260.772	260.804 260.824	<u> 260 825</u>	000.002	260.618 260.532
OFFSET	-4.228	-3.443 -3.000		000.0	3.000 3.596 4.312

CH. 58240.000

	1 in 4	6%	6% 1 in 4
DATUM RL 261.500			
DESIGN LEVEL	262.873 - 263.095 - 263.196 -	263.016 -	262.836 - 262.671 - 262.596 -
EXISTING LEVEL	262.873 262.952 262.950	262.892	262.662 262.928 263.050
OFFSET	-4.290 -3.404 -3.000	0.000	3.000 3.659 3.959

CH. 58220.000



TIONS



















	(Ch. 57877m - 5	Job No.	CRC00269		
SS S	ECTIONS SHEE	Drawing No.	802		
EERING	G CERTIFICATION (RPEQ)				•
	SIGNATURE	NO.	DATE	Revision	A
	There	24807	June 2023		
				Series No.	14 of 28
					11 20

	1 in 4 3.9	<u>% 4%</u>	1 in 4 0%				
DESIGN LEVEL	.55.425	55.631	155.511 + 155.362 + 155.287 + 155.295 +				
EXISTING LEVEL	255.425 2 255.518 2 255.512 2	255.484 2	255.215 2 255.325 2 255.653 2 255.653 2 256.295 2 256.295 2				
OFFSET	4.285 3.434 3.000	0000	3.912 2.912				
	T T T	CH. 5830	4.524				Design surface level
			9	Existing surface level	1 in 4 8	8 8	1 in a contract level
	1 in 4 29	<u>% 4%</u>	7 in 4 0%	DATUM RL 252.100			
DESIGN LEVEL	.752	016.		DESIGN LEVEL	253.640 - 253.823 - 253.918 -	253.678 -	253.438 - 253.254 - 253.179 - 253.179 -
	752 255 319 255 329 256	303 255	255 255 255 255 255 255 255 255 255 256	EXISTING LEVEL	3.640 23.645 23.647 23.647	3.462	3.442 23.606 23.606 23.695 23.3.912 24.375 24.375 23.912 22.3.912 22.3.912 23.9
	255.7 255.8 255.8	255.8	255.6 255.6 256.2 256.2 256.2 256.2	OFESET	14 25 80 25 00 255	0 25	22 22 22 52 52 52 52 52 52
OFFSET	-4.113 -3.463 -3.000	000.0	3.000 3.596 4.896 6.889		4. 6. 6. 6. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.	00.0	3.00 3.73 4.03 5.03 7.43
		CH. 5830	0.000			CH. 58	3326.024
	4 in 4	6 4%	1 in 4 0% 1 in 2		1 in 4 8	8 8	$1/100\%$ $1/10^2$
DATUM RL 255.800				DATUM RL 252.800			
DESIGN LEVEL	56.965 + 57.281 + 57.430 +	57.550 -	57.430 + 57.281 + 57.206 + 58.029 +	DESIGN LEVEL	254.265 254.449 254.544	254.304	254.064 253.880 253.805 253.805 254.979
EXISTING LEVEL	56.965 2 57.030 2 57.106 2	57.386 2	57.308 2 57.243 2 57.579 2 58.029 2	EXISTING LEVEL	254.265 254.267 254.266	254.164	254.098 254.303 254.412 254.769 254.979
OFFSET	4.859 2 3.596 2 3.000 2	0000 2	3.000 2 3.596 2 3.896 2 3.542 2 3.542 2	OFFSET	-4.117 -3.380 -3.000	0.000	3.000 3.738 4.038 5.038
	r 1 1	CH. 58280.	000			CH. 58	320.000
	1 in 4 49	6 4%	1 in 4		1 in 4 4.	5% 4.	$6\% 1 ip_{10} 0\% 1 in^{2}$
 DATUM RL 257.300							
DESIGN LEVEL	258.537 - 258.981 - 259.130 -	259.250 -	259.130 - 258.981 - 258.868 -	DESIGN LEVEL	255.300 - 255.547 - 255.653 -	255.518 -	255.380 - 255.227 - 255.152 - 255.152 - 255.988 -
EXISTING LEVEL	258.537 258.702 258.775	259.033	258.973 258.921 258.868	EXISTING LEVEL	255.300 255.406 255.401	255.378	255.119 255.169 255.271 255.537 255.988
OFFSET	-5.371 -3.596 -3.000	0.000	3.000 3.596 4.046	OFFSET	-4.412 -3.425 -3.000	000.0	3.000 3.613 3.913 4.913 6.586
·	CH.	58260.000				CH. 5830	06.024
RNING! RE OF UNDERGROUND SER cation of underground services eering survey and interpolated f ed by the Service Authorities. No curacy of the interpolated inform es are accurately located prior	EVICES has been compiled from rom Dial Before You Dig as lo responsibility is taken for nation supplied. Ensure all o commencement of work.					CI	ROSS SECTIONS
			Scales			Cli	Scale A
							B

Dimensions shown in metres

except where shown otherwise

20.01

A Issued For Construction

Revisions/Descriptions

Drawn

Approved

Date

	1 in 4		8%	8%
DATUM RL 249.800				
DESIGN LEVEL	- 777'I C7	251.524 - 251.619 -	0E1 270	BIC.107
EXISTING LEVEL	777.107	251.249 251.273	0E4 027	162.162
OFFSET	-4.009	-3.380 -3.000		000.0

CH. 58350.000

	1 in 4	8%	8%
DATUM RL 250.700			
DESIGN LEVEL	252.179 - 252.394 - 252.489 -	959 940 -	
EXISTING LEVEL	252.179 252.247 252.241	959 107	
OFFSET	-4.241 -3.380 -3.000		

CH. 58340.000

	1 in 4	8%	8%
DATUM RL 251.900			
DESIGN LEVEL	253.458 - 253.624 - 253.719 -	253.479 -	
EXISTING LEVEL	253.458 253.465 253.470	253.259	
OFFSET	-4.044 -3.380 -3.000	0.000	

CH. 58327.850









CRACOW ROAD UPGR DOWNFALL CREEK FLOO ANNOTATED CROS ENGIN ENG. AREA NAME Civil T Penrose









RADE (Ch. 57877m - 58640m)				Job No.	CRC00269
SS SECTIONS SHEET 4				Drawing No.	803
IEERING	CERTIFICATION (RPEQ)			_	٨
	SIGNATURE	NO.	DATE	Revision	A
	These				
				Series No.	15 of 28
					10 20



CH. 58375.000



SIGN LEVEL	250.017 -	250.356 - 250.464 -	250.337 -	250.205 - 250.056 - 249.981 -	249.981 -	252.045 -
ISTING LEVEL	250.017	250.081 250.121	250.223	250.050 250.368 250.528	250.918	252.045
FSET	-5.081	-3.726 -3.293	0.000	3.293 3.888 4.188	5.188	9.316
			CH. 5	8364.633		

		1 in 4		5.8%	5.9	9%	1 in A	0%		tin2		
DATUM RL 248.800								\sum				-
DESIGN LEVEL	טברו מבה מבה		250.721 - 250.822 -	0E0 627	100.007		250.287 - 250.287 -	250.212 -	250.212 -		252.055 -	
EXISTING LEVEL	096 096		250.395 250.435		200.024		250.574	250.694	250.986		252.055	
OFFSET	E OEO	000.0-	-3.607 -3.200		000.0		3.854	4.154	5.154		8.841	

DATUM RL
DESIGN
EXISTIN
OFFSE

¬WARNING!

BEWARE OF UNDERGROUND SERVICES

The location of underground services has been compiled from engineering survey and interpolated from Dial Before You Dig as provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

Scales 1.0 2.0 3.0 4.0 5.0 1:100 Scale A A Issued For Construction Dimensions shown in metres Revisions/Descriptions Approved Date 20.01 Drawn except where shown otherwise

CH. 58360.000

		1 in 4		4%	1.6%	1 in 4	
0							
ΈL	720 070	248.271 - 248.543 -	248.692 -		z40.03z -	248.775 - 248.641 - 248.503 -	
EVEL	720 070	248.271 248 202	248.288		248.038	248.591 248.558 248.503	
	, , , , , , , , , , , , , , , , , , ,	-5.184 -4 096	-3.500		000.0	3.500 4.035 4.587	

CH. 58400.000



CH. 58386.350



CH. 58380.000







	1 in 4
190 710	241.U01 247 552 -
180 710	100.142
500 2	-0.00.C- 776

	a in A	4%	2.6% 1 in 4
DATUM RL 246.700			
DESIGN LEVEL	247.836 - 248.224 - 248.224 -	248.506 -	248.592 - 248.478 - 248.275 -
EXISTING LEVEL	247.836 247.854 247.854	248.215	248.145 248.129 248.275
OFFSET	-5.482 -3.928 -3.337	000.0	3.332 3.786 4.597

	1 in 4	4%	0.9% 1 in 4
DATUM RL 247.100			
DESIGN LEVEL	248.213 - 248.497 - 248.646 -	248.785 -	248.753 - 248.623 - 248.428 -
EXISTING LEVEL	248.213 248.143 248.231	248.580	248.518 248.493 248.428
OFFSET	-5.204 -4.068 -3.472	0.000	3.472 3.992 4.773

NAME

T Penrose





CH. 58420.000

CH. 58408.383

CH. 58401.382

	(Ch. 57877m - 5	Job No.	CRC00269		
CROSS S	ECTIONS SHEE	Drawing No.	804		
ENGINEERING	CERTIFICATION (RPEQ)				
AME	SIGNATURE	NO.	DATE	Revision	A
Penrose Aug 24807 June 2023					
		Series No.	16 of 28		

							_
Existing surface level				esign surface level			
	1 in 2 0%	1 in 4 5°	% 5%	1 in 4	 DATUM RL 23	39.800	
DATUM RL 243.400	33 21	200 L	22	22	DESIGN	LEVEL	42 654 +
DESIGN LEVEL	245.45	244.78 244.85 245.01	245.16	245.31 245.21 245.06	EXISTING	GLEVEL	2 654 2
EXISTING LEVEL	245.451 245.353	245.307 245.293 245.069	244.675	244.994 245.025 245.067	OFESET		24
OFFSET	-6.262 -4.926	-3.926 -3.626 -3.000	0.000	3.000 3.417 3.991			ې مې
		CH. 58	8449.982				
	1/20	5	5%		~		
 DATUM RL 244.600					DATUM RL 24	40.300	
DESIGN LEVEL	46.623	245.848 + 245.923 + 246.079 +	46.229	246.379 +	DESIGN	LEVEL	
EXISTING LEVEL	246.623 2 246.756 2	246.418 246.298 246.046 2246.046 2246.046	245.851 2	246.113 246.113 246.148 246.169 2	EXISTING	GLEVEL	
OFFSET	-6.476 -4.926	-3.026 -3.000 -3.000 -3.000	0000.0	3.000 3.417 3.842	OFFSET		
		CH. 58	440.000				
	1 ir	14 50	% 5%	1 in 4			_
DATUM RL 245.800					DATUM RL 24	42.300	
DESIGN LEVEL	246.861 -	247.211 247.367	247.517 -	247.667 247.563 247.413	DESIGN		
EXISTING LEVEL	246.861	246.937 247.003	247.246	247.387 247.312 247.413	EXISTING	GLEVEL	
OFFSET	-5.024	-3.626 -3.000	0.000	3.000 3.417 4.019	OFFSET		
		CH.	58425.000				
ARE OF UNDERGROUND SER ocation of underground services eering survey and interpolated f	has been compiled	from Dig as					

provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

					Scales	
					0 1.0 2.0 3.0 4.0 5.0 Scale A	
A 20	Issued For Construction	Drawn	Approved	Date	Dimensions shown in metres	quality peo 245 Mar



CROSS SECTIONS

5% _1 in 4 5% 244.163 244.048 243.891 243.634 243.634 243.690 243.863 244.013 244.206 244.116 243.842 243.845 243.865 243.891 604 243.624 244. 2 -3.913 -3.688 -3.000 -4.913 -7.178 3.000 3.459 4.088 000.0

CH. 58460.000

CH. 58480.000



-4.815 -3.815 -3.665 -3.000 0.000 CH. 58484.427

2.4%

241.179

241.021

0%1 in 4

240.902 240.939 241.106

241.549 241.083 241.013 240.915

902

240.



2.4% <u>1</u> in 4

241.252 241.115 240.959

240.905 240.931 240.959

3.000 3.547 4.171



1% 0%1 in A DATUM RL 236.600 239.084 239.122 239.278 241.671 .084 **DESIGN LEVEL** 239. 239.795 239.739 239.505 241.671 .169 **EXISTING LEVEL** 240. 10.144 -3.972 -3.822 -3.197 -4.972 OFFSET

CH. 58500.000

	1 in 2					
		0	%1 in 4	1%	1%	1 in 4
DATUM RL 239.400						
DESIGN LEVEL	- 242.029 -	240.502 -	240.502 - 240.540 - 240.696 -	902 070	- 240.720	240.756 - 240.612 - 240.488 -
EXISTING LEVEL	242.029	241.369	240.911 240.843 240.555	213 010	240.017	240.453 240.469 240.488
OFFSET	۰.02 ۵	-4.775	-3.775 -3.625 -3.000		0000	3.000 3.577 4.073

			09	61 in 4	1%	1% 1 in 4
DATUM RL 239.400						
DESIGN LEVEL	- 669 676	040.44	240.502 -	240.502 - 240.540 - 240.696 -	240.726 -	240.756 - 240.612 - 240.488 -
EXISTING LEVEL	669676	040.44	241.369	240.911 240.843 240.555	240.617	240.453 240.469 240.488
OFFSET	6CU 6-	040.0	-4.775	-3.775 -3.625 -3.000	0.000	3.000 3.577 4.073

ple client focused solution driven ry Street, GYMPIE, QLD, 4570 617 924 437 Ph: 0477 322 555





CH. 58503.200



CH. 58488.200

	(Ch. 57877m - 5	Job No.	CRC00269			
SS S	ECTIONS SHEE	Drawing No.	805			
IEERING	CERTIFICATION (RPEQ)				Δ.	
	SIGNATURE	NO.	DATE	Revision	A	
	The					
		Series No.	17 of 28			
				11 - 20		



Scales 1.0 2.0 3.0 4.0 5.0 1:100 Scale A A Issued For Construction Dimensions shown in metres Revisions/Descriptions Date Drawn Approved 20.01 except where shown otherwise

	0%	1%		1%	1 ir	17.14	/
RL 236.500							
GN LEVEL	238.121 - 238.135 - 238.135 - 238.135 - 238.136 - 238.142 -	238.155 -	238.175 -	238.195 -	238.207 - 238.213 -	238.508 -	
ING LEVEL	238.121 238.124 238.174 238.181 238.206	238.200	238.208	238.184	238.134 238.118	238.508	
ET	-5.078 -5.078 -4.025 -3.875 -3.250	-2.000	0.000	2.000	3.250 3.827	5.934	

	0%
DATUM RL 236.500	
DESIGN LEVEL	238.177 - 238.177 - 238.112 -
EXISTING LEVEL	238.177 238.177 238.179
OFFSET	-5.155 -5.025

DATUM RL 236.500		
DESIGN LEVEL	201 000	- 101.02
EXISTING LEVEL	201 000	230.107
OFFSET	6 010	0.0-

DATUM RL 236.500	
DESIGN LEVEL	- 338 135
EXISTING LEVEL	738 135
OFFSET	A 018

			CH. 5	8514.20	0		
1 in 2			40/		40/	0.0%	
	$\overline{}$	<u>% 2.8%</u>	1%		1%	0.9%	
	238.121 -	238.121 - 238.125 - 238.142 -	238.155 -	238.175 -	238.195 -	238.207 - 238.202 - 238.035 -	
	238.521	238.438 238.431 238.404	238.363	238.322	238.245	238.122 238.065 238.035	

0.000

CH. 58512.458

-2.000

-4.025 -3.875 -3.250

CROSS SECTIONS





3.25 3.82 4.21 2.0(

3.250 3.827 4.161

2.000

0.0(

1 in 0% 1%

CH. 58518.200

_ 236.500							
N LEVEL	- 886 862	238.135 - 238.135 -	238.136 - 238.142 - 238.142 -	238.155 -	238.175 -	238.195 -	238.207 - 238.213 - 238.019 -
NG LEVEL	885.852	238.365 238.305	238.314 238.294 238.294	238.297	238.261	238.165	238.075 238.033 238.019
Т	531	025 025	875 250	000	000	000	250 327 216

239.631

239.631

-8.046

.025

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CH. 58526.200



CH. 58522.200



CH. 58520.000

	(Ch. 57877m - 5	Job No.	CRC00269						
SS S	ECTIONS SHEE	Drawing No.	806						
EERING	G CERTIFICATION (RPEQ)								
	SIGNATURE	NO.	DATE	Revision	A				
	These								
		Series No.	18 of 28						







CH. 58531.883

						11/12	
	 1 in 5.62	1%		_1%	1 in 5.80%		
DATUM RL 237.100							
DESIGN LEVEL	238.313 - 238.370 - 238.481 -	238.493 -	238.513 -	238.533 -	238.546 - 238.447 - 238.421 - 238.421 -		241.024 -
EXISTING LEVEL	238.313 238.349 238.420	238.497	238.698	238.693	239.079 239.274 239.324 239.627		241.024
OFFSET	-4.190 -3.875 -3.250	-2.000	0.000	2.000	3.250 3.827 3.977 4.977		10.184

CH. 58530.200

<mark>∟WARNING!</mark> -

BEWARE OF UNDERGROUND SERVICES

The location of underground services has been compiled from engineering survey and interpolated from Dial Before You Dig as provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

						Scales	
							quality pe
4	Issued For Construction		-				
	20.01	Revisions/Descriptions	Drawn	Approved	Date	Dimensions shown in metres except where shown otherwise	∠45 Ma ABN 73

- 2:31pm XREFS :- X_CRC_BSC_TITLE.dwg ; X_MC10_XS_08.dv













CH. 58577.683

1 in 4	5% 5%	% 1 in 4 0% 1 in	
242.864 - 242.964 - 243.089 -	242.939 -	242.789 - 242.601 - 242.564 - 242.564 -	243.789 -
242.864 242.869 242.875	242.763	242.843 243.084 243.132 243.453	243.789
-3.899 -3.501 -3.000	0.000	3.000 3.751 3.901 4.901	7.352



0%1 in 4	5%	5% 1 in 4 0%	1112
242.580 + 242.580 + 242.595 + 242.632 + 242.757 +	242.607 +	242.457 + 242.270 + 242.232 + 242.232 +	243.529 -
242.580 242.581 242.595 242.598 242.598	242.453	242.575 242.812 242.851 243.106	243.529
-4.708 -4.651 -3.651 -3.501 -3.000	0.000	3.000 3.751 3.901 4.901	7.495

CH. 58557.683

	(Ch. 57877m - 5	ר) ווסא	Job No.	CRC00269		
CROSS S	ECTIONS SHEE	Drawing No.	807			
ENGINEERING	CERTIFICATION (RPEQ)					
AME	SIGNATURE	NO.	DATE	Revision	A	
enrose	The	June 2023				
				Series No.	19 of 28	

DATUM RL 243.600								
DESIGN LEVEL	244.918 245.010 -	245.299 -	245.159					
EXISTING LEVEL	244.918 244.854 244.753 244.753	245.015	245.151 245.151 245.166 245.171 245.223 245.344 245.344					
OFFSET	-4.467 -4.096 -3.500	0000.0	3.500 4.096 4.396 5.396 6.213					
		CH. 58607.	415			_−Design su	ırface level	
Existing surface leve	1 in 4 3.1%	49	% 1 in 4 0% in 2		7 in 20% 1 in 4 2	% 4%	1 in 4 0%	2
DATUM RL 243.100				DATUM RL 244.900				
DESIGN LEVEL	244.314 - 244.824 - 244.967 -	245.077 -	244.937 - 244.788 - 244.713 - 244.713 - 245.050 -	DESIGN LEVEL	246.273 245.925 245.925 246.000 246.149	246.277	246.149 246.000 245.925 245.925	716 RON
EXISTING LEVEL	244.314 244.633 244.737	244.865	244.949 244.961 244.951 244.980 245.050	EXISTING LEVEL	246.273 246.173 246.029 245.983 246.013	246.264	246.184 246.179 246.262 246.537	216 ROD
OFFSET	-6.112 -4.072 -3.500	0.000	3.500 4.096 4.396 5.396 6.070	OFFSET	-5.792 -5.096 -4.096 -3.796 -3.200	0.000	3.200 3.796 4.096 5.096	7 076
	С	H. 58600.000				CH. 58640.00	0	
	1 in 4 2.4	% 49	<u>5 1 in 4 0%</u>		7 in 20% 1 in 4 4	% 4%	1 in 4 0%	2
DATUM RL 243.300	218 81	41	223 825	DATUM RL 244.800				
DESIGN LEVEL	244.4 244.7 244.8	244.7.	244.6 244.4 244.3 244.3 244.3	DESIGN LEVEL	246.146 245.83(245.83(245.905 246.05	246.184	246.054 245.905 245.830 245.830	246 743
EXISTING LEVEL	244.481 244.371 244.330	244.543	244.513 244.496 244.488 244.441 244.441 244.455	EXISTING LEVEL	246.146 246.055 245.901 245.845 245.860	246.120	246.027 246.042 246.125 246.399	246 743
OFFSET	-4.639 -3.732 -3.276	0.000	3.276 3.872 4.172 5.172 5.310	OFFSET	-5.791 -5.158 -4.158 -3.262	0.000.0	3.262 3.858 4.158 5.158	6 0R4
	(CH. 58588.8′	8			CH. 58636.90	8	
	1 in 4 59	6 5%	1 in 4 0% in 2		1 in 4 4	% 4%	1 in 4 0% 1 in	2
DATUM RL 242.400		<u>_</u>		DATUM RL 244.100	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		3 38 4	4
DESIGN LEVEL	244.03 244.51 244.63	244.47	244.32 244.15 244.09 244.09 244.42	DESIGN LEVEL	245.30 245.33	245.67	245.53 245.38 245.31 245.31	245.85
EXISTING LEVEL	244.030 244.125 244.166	244.289	244.232 244.210 244.200 244.322 244.424 244.424	EXISTING LEVEL	245.302 245.242 245.137	245.386	245.402 245.380 245.403 245.661	245.854
OFFSET	-5.509 -3.559 -3.100	0.000	3.100 3.788 4.013 5.013 5.675	OFFSET	-4.441 -4.096 -3.500	000.0	3.500 4.096 4.396 5.396	6.477
	С	H. 58580.00)			CH. 58620.0	00	
RNING! RE OF UNDERGROUND S cation of underground service	SERVICES ces has been compiled from							
ering survey and interpolate d by the Service Authorities curacy of the interpolated in the are accurately located pri	ed trom Dial Betore You Dig as s. No responsibility is taken for formation supplied. Ensure all or to commencement of work					CROSS	SECTION	S

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SS S	ECTIONS SHEE	Drawing No.	808		
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	SIGNATURE	NO.	DATE	Revision	A
	There	June 2023			
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SIGN SCHEDULE

							SIGN DETAILS STIFFENER DETAILS							NEW SUPP	ORT DETAILS				NEW FOOTI	NG DETAILS			
CHAINAGE (M)	POSITION	SIGN DESCRIPTION	SIGN TYPE	WORK DESCRIPTION	WIDTH (mm)	HEIGHT (mm)	AREA (m ²)	OFFSET FROM CARRIAGEW/ Y (mm)	HEIGHT ABOVE A CARRIAGEWA Y (mm)	TYPE	No.	SPACING (mm)	No. OF BRACKETS	No.	SPACING (mm)	DIMENSION (mm) NB	MATERIAL	POST LENGTH 1 (mm)	POST LENGTH 2 (mm)	SLEEVE LENGTH (mm)	SLEEVE SIZE (mm)	DIA. (mm)	DEPTH (mm)
57840	LHS	Guide, Traffic Instruction	G9-9A	Install New	1500	750	1.125	2000	1500	1	3	350	6	2	1200	50	Signfix Sign Support (or equivalent)	6500 (C.T.S.)	6500 (C.T.S.)	As per ma specifi	nufactures cations	300	750
57900	LHS	Warning, curve	W1-5B	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
57950	LHS	Warning, steep descent	W5-12B	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58000	LHS	Warning, curve	W1-3LB	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58120	LHS	Warning, curve	W1-3RB	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58240	LHS	Warning, curve	W1-3RB	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58348	LHS	vvarning, curve	W1-3LB	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58393	LHS	Warning, floodway	W5-7-1B	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58443	LHS	Flooding"	G9-21-1	Install New	2150	800	1.7200	2000	1500	1	3	350	6	2	1500	60.3	C350	3500 C.T.S	3500 C.T.S	-	-	300	750
58485	RHS	Warning, steep incline	W5-13B	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58493.131	LHS	Guide, Flood depth marker	G9-22-2	Install New																			
58515	LHS	Guide, Flood depth marker	G9-22-1	Install New								Refe	r Details in DTMR	Std Dra 1170	- Flood Depth Inc	licators - Installat	ion						
58520	RHS	Guide, Flood depth marker	G9-22-1	Install New																			
58541.2000	RHS	Guide, Flood depth marker	G9-22-2	Install New																			
58591	RHS	Guide, "Road Subject to Flooding"	G9-21-1	Install New	2150	800	1.7200	2000	1500	1	3	350	6	2	1500	60.3	C350	3500 C.T.S	3500 C.T.S	-	-	300	750
58641	RHS	Warning, floodway	W5-7-1B	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58691	RHS	Warning, curve	W1-3LB	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750
58741	RHS	Guide, Traffic Instruction	G9-9A	Install New	1500	750	1.125	2000	1500	1	3	350	6	2	1200	50	Signfix Sign Support (or equivalent)	6500 (C.T.S.)	6500 (C.T.S.)	As per ma specifi	nufactures cations	300	750
58791	RHS	Warning, curve	W1-5B	Install New	750	750	0.56	2000	1500	1	0	0	0	1	-	50	C350LO	3500	-	-	-	300	750



SIGN SETOUT

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PAVEMENT MARKING TYPES

		• • • • = •		
No.	TYPE	EXAMPLE	WIDTH	DESCRIPTION
LONG	ITUDINAL LINES			
С	Barrier Line (Single)		100mm	Continuous





	(Ch. 57877m - 5	ו) ווסא	Job No.	CRC00269		
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	The	June 2023				
				Series No.	22 of 28	





Rock Size (m)	Rock Mass (kg)	Percentage of rock larger than.
0.55	250	0%
0.40	100	50%
0.20	10	90%

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Series No.



DESIGN LINE MC10

CHAINAGE	OFFSET LHS	OFFSET RHS
57870.000	5.147	5.025
57880.000	5.722	5.265
57890.000	5.603	5.128
57900.000	5.535	3.981
57910.000	5.464	4.285
57920.000	5.247	4.450
57930.000	5.146	4.643
57940.000	5.157	4.758
57950.000	5.314	4.473
57960.000	5.438	4.756

DESIGN LINE MC10 OFFSET LHS OFFSET RHS CHAINAGE 57970.000 4.938 5.412 57980.000 4.009 5.321 57990.000 4.241 5.193 58000.000 4.927 4.785 58010.000 3.910 4.422 58020.000 4.204 4.200 4.253 58030.000 3.916 58040.000 4.332 4.279 58050.000 4.969 4.481 58060.000 4.377 4.534

DESIGN LI	NE MC10		DESIGN LII	NE MC10	
CHAINAGE	OFFSET LHS	OFFSET RHS	CHAINAGE	OFFSET LHS	OFFSET RHS
58070.000	4.357	4.842	58170.000	5.115	4.681
58080.000	5.022	4.613	58180.000	4.239	5.319
58090.000	5.742	4.545	58190.000	4.707	5.163
58100.000	5.500	4.891	58200.000	4.179	5.174
58110.000	5.060	5.524	58210.000	4.375	6.585
58120.000	4.298	5.483	58220.000	4.290	8.688
58130.000	7.898	5.733	58230.000	4.727	8.854
58140.000	9.567	4.386	58240.000	4.228	4.312
58150.000	4.960	4.298	58250.000	4.517	5.326
58160.000	5.042	4.780			

DESIGN LII	NE MC10		DESIGN LII	NE MC10	
CHAINAGE	OFFSET LHS	OFFSET RHS	CHAINAGE	OFFSET LHS	OFFSET RHS
58070.000	4.357	4.842	58170.000	5.115	4.681
58080.000	5.022	4.613	58180.000	4.239	5.319
58090.000	5.742	4.545	58190.000	4.707	5.163
58100.000	5.500	4.891	58200.000	4.179	5.174
58110.000	5.060	5.524	58210.000	4.375	6.585
58120.000	4.298	5.483	58220.000	4.290	8.688
58130.000	7.898	5.733	58230.000	4.727	8.854
58140.000	9.567	4.386	58240.000	4.228	4.312
58150.000	4.960	4.298	58250.000	4.517	5.326
58160.000	5.042	4.780			

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PLAN

LEGEND

- Tree to be removed

- Limit of clearing

	(Ch. 57877m - 5	Job No.	CRC00269		
RING	PLAN SHEET 1	Drawing No.	1600		
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				Series No.	24 of 28

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CONTROL LINE MC10

CHAINAGE	OFFSET LHS	OFFSET RHS
58260.000	5.371	4.046
58270.000	5.551	4.070
58280.000	4.859	6.542
58290.000	5.045	6.320
58300.000	4.113	6.889
58310.000	4.131	7.037
58320.000	4.117	7.388
58330.000	3.939	7.522
58340.000	4.241	9.025
58350.000	4.589	8.656
58360.000	5.050	8.841
58370.000	4.952	9.180
58380.000	5.216	8.341

CONTROL LINE MC10								
	CHAINAGE	OFFSET LHS	OFFSET RHS					
	58390.000	5.906	9.335					
	58400.000	5.184	4.587					
	58410.000	5.514	4.423					
	58420.000	5.608	4.059					
	58430.000	4.488	4.861					
	58440.000	6.476	3.842					
	58450.000	6.266	3.991					
	58460.000	7.197	4.088					
	58470.000	7.272	4.230					
	58480.000	7.945	4.200					
	58490.000	9.413	4.075					
	58500.000	10.267	13.156					
	58510.000	9.729	8.451					

	CONTROL LINE MC10									
ſ	CHAINAGE	OFFSET LHS	OFFSET RHS							
	58520.000	4.018	6.378							
	58530.000	5.798	10.358							
	58540.000	6.807	8.456							
	58550.000	3.727	8.335							
	58560.000	3.899	7.392							
	58570.000	4.392	6.157							
	58580.000	5.509	5.702							
	58590.000	4.534	5.362							
	58600.000	6.112	6.070							
	58610.000	4.464	6.153							
	58620.000	4.441	6.477							
	58630.000	5.858	6.821							
	58640.000	5.792	7.026							

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	CRACOW ROAD UPGRADE (Ch. 57877m - 58640m) Job No. CRC00269									
LIMIT OF CLEARING PLAN SHEET 2										
rawn		ENGINEERING	GERTIFICATION (RPEQ)			•			
B Doherty	ENG. AREA	NAME	SIGNATURE	NO.	DATE	Revision	A			
esigned	- Civil	T Penrose	The	24807	June 2023					
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	CRACOW ROAD UPGRADE (Ch. 57877m - 58640m) Job No. CRC00269									
TEMPOR	ARY ER	Drawing No.	1701							
awn		ENGINEERING	G CERTIFICATION (RPEQ)			Α			
B Doherty	ENG. AREA	NAME	SIGNATURE	NO.	DATE	Revision	A			
signed	Civil	P Meredith		15268	June 2023					
T Penrose						Series No.	27 of 28			

		Job No.	CRC00269				
TEMPOR	ARY ER	Drawing No.	1701				
awn		ENGINEERING	G CERTIFICATION (RPEQ)			٨
B Doherty	ENG. AREA	NAME	DATE	Revision	A		
signed	Civil	P Meredith		15268	June 2023		

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tle	CRACOW ROAD UPGR
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B Doherty	ENG. AREA	NAME
esigned	Civil	P Meredith
T Penrose		

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MATERIALS								
MATERIAL	ТҮРЕ							
Posts (either)	1.5kg/m (min) Steel Star Picket or 1500mm ² (min) Hardwood or 2500mm ² (min) Softwood							
Fence	Woven wire 14 guarge 150mm max aperture							
Filter Cloth	Filter as specified (terram 100, polyfelt ts500, Bidim u24 or equivalent)							
Prefabricated Unit	Geofab, envirofence or approved equivalent							

Client: Banana Shire Council

16/02/2023

Document Control

Document History

Date	Version	Name	Position	Action (Review/endorse/approve)			
17/02/2023	0.1	Bryan Doherty	Senior Designer (Civil)	Draft for internal review			

Certification

Date	Name	Position	Signature
16/02/2023	B. Doherty	Senior Designer	
16/02/2023	T. Penrose	RPEQ	

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Purpose of this Document 1.

The purpose of this document is to identify and control project specific risks, where possible, in the civil design phase to ensure the safety of constructors, maintenance providers and end users. All risks identified as part of the design are documented in this report and provided for appropriate risk management in future phases. Risks unable to be closed out in the design phase are be documented in the report and communicated to the Client, for action in the construction and or later phases. This document has been produced to provide support to the design undertaken for Cracow Road, Downfall Creek Floodway and Range upgrade.

Project Scope and Objectives 2.

Scope of works for this project include,

- Pavement widening and overlay .
- Geometric improvements
- Floodway reconstruction
- Signage and road edge guideposts. .
- Removal of large trees

Safe Design 3.

Safe design begins from the outset or planning phase of a project and is further refined in the concept and development phases. Safe design covers the:

- Design of a project or a component of a project and its intended purpose or future use
- Materials being used •
- Possible methods of construction, maintenance, and operation of the product, and
- Legislation, codes of practice and standards that need to be complied with. •

Safe design is a collaborative effort between all parties involved throughout the lifecycle of the project and where possible should eliminate or minimize the risk of project lifecycle occupational health and safety hazards as early as practical. It also encompasses the management and documentation of remaining risks so all parties involved can understand and be aware of all risks identified in the design phase of the project lifecycle.

Safe design consists of a balance between cost, functionality, and aesthetics; without compromise to the health and safety of those who will construct, use, and maintain the product and community expectations. While not all risks can be eliminated or it be cost effective to remove all risks, Safe Design principles in the planning phase should aim to:

- Prevent injury and disease .
- Improve useability of products, systems, and facilities
- Improve productivity in all phases •
- Reduce operation costs
- Better predict and manage production and operational costs over the lifecycle of a product •
- Comply with legislation, and
- Incorporate innovative design which fosters safer design practices and demands new thinking. .

Duty of Care/Disclaimer 4.

This document is not intended to be a standalone document, it should be read in conjunction with the Work Health and Safety Act 2011 and the Work Health and Safety Regulation 2011. The Act and Regulation applies to all phases of a project lifecycle from concept, through design, construction, maintenance, and decommissioning and provides that all risks to health and safety be eliminated, so far as is practical or minimised so far as is reasonably practical where they cannot be eliminated. To properly manage exposure to a risk, a person must:

- Identify hazards •
- Assess risks that may result because of the hazards
- Identify appropriate control measures to eliminate of minimise the level of risk •
- Implement control measures, and
- Monitor and review the effectiveness of control measures.

To comply with the above, assumptions are made during the assessment as to what construction and maintenance practices may be adopted which may differ from actual methods adopted by those undertaking the works. Use of this document does not remove any obligation of any party involved, either during or after this document is published. A duty of care applies to all parties during subsequent phases and it is incumbent on those involved to further assess risks and hazards include:

- the client .
- project managers
- constructor •
- maintenance personnel
- users
- visitors •
- demolishers, and
- disposers. •

Further Safety advice, hazard identification, risk assessment or control measures may indicate other risks associated with the project that have not been identified in the document. Reference is made to the principle of what is considered 'reasonably practical' regarding the extent of Safe Design achievable by the designers.

Use of this document does not remove the obligation of the client, constructor end user or other parties during the lifecycle of the project.

Any party who has read this document and disagrees with the assessment or requires clarification of an item should contact the Project Designer at their earliest opportunity.

5. Risk Management

Method	
Elimination	Remove the risk by modifying the design
Substitution	Remove or reduce the risk by modifying the design
Isolation	Physically separate the hazard
Engineered Control	Using Design Safety measure to reduce risks
Administration	Using formal process to reduce the risk
PPE	Ensure appropriate Personal Protective Equipment is used or worn.

The Risk Assessment Matrix is intended to assist our designers in:

- Fulfilling their obligations under the Work Health and Safety Act 2011.
- Achieving safe, economical and efficient constructions for our clients.

• Consulting and communicating with all parties involved in a project (designers, client, end-users, constructors etc.) to establish the hazards and risks identified during the design phase associated with the construction, operation, maintenance and decommissioning of a project.

• Consulting and communicating with all parties involved in a project on the controls that have or are required to mitigate these risks. This is not an exhaustive list and all parties should therefore undertake a thorough review of this document to satisfy themselves that it accurately reflects the intended purpose.

• Consulting and communicating to all parties the controls adopted to mitigate these risks and any residual risks that are considered present during construction, operation, maintenance and decommission that may need continual monitoring to achieve a safe working environment.

6. Appendix A – Safe Design Risk Register

	Safety in Design Register												
	Cracow Road, Downfall Creek Floodway and Range Upgrade												
Hazards Controls Action									Action				
No.	Project Phase	Risk Description	Consequence Description	Raw Likelihood 1. Very Unlikely 2. Unlikely 3. Possible 4. Likely	Risk (no controls) Consequence A. Minor B. Major C. Severe D. Critical	Risk Rating	Mitigation Strategy / Control Measures	Residu Likelihood 1. Very Unlikely 2. Unlikely 3. Possible 4. Likely	al Risk Consequence A. Minor B. Major C. Severe D. Critical	Risk Rating	Responsibility	By When	Comments / Notes
				5. Almost Certain	E. Catastrophic		Project is adequately scoped, discussed and documented during pre-detailed	5. Almost Certain	E. Catastrophic				
1	Pre-Design	Insufficient/inaccurate data collection. (e.g. GIS, Traffic Data, LIDAR, Aerial photography)	Risk results in inadequate or substandard design that could lead to potential safety risk to travelling public, Constructors and maintenance workers.	4	D	Significant	design phases to ensure data collection is appropriate. Detailed survey has been supplied for this project	1	с	Low	Designer/ Principal	Detailed Design	Residual risk with Principal
2	Pre-Design	Poor Scoping/Client brief on project requirements.	Risk results in inadequate design that could lead to potential safety risk. EDD, design exceptions, funding constraints.	4	D	Significant	Risks identified and accepted by Client. Mitigating treatments incorporated into design to the available funding.	2	В	Negligible	Designer/ Principal	Detailed Design	Residual risk with Principal Client decisions recorded within Design Decision Register.
1	Design	Errors and omissions in design.	Errors/omissions in design resulting in inadequate or substandard design that could lead to potential safety risk to travelling public. Constructor, maintenance – workers	3	E	Extreme	Design has been carried out in accordance with quality management procedures to avoid potential for errors in design. Design has been carried out in accordance with Australian Standards and quality management procedures in line with scope and deliverables to avoid potential for errors in design.	1	D	Moderate	Designer/ Principal	Detailed Design	Residual risk with Principal
2	Design	Design methodology poorly considers construction practices leading to potential safety risks for both construction workplace and the travelling public.	E.g. Traffic management, working near overhead power lines, lifting, trenching, site access, materials storage and handling (Asbetos identified within site), working close to travelling public due to corridor restrictions.	4	E	Extreme	Design incorporates learnings from previous projects and include recommendations from industry experts on appropriate site treatments in the design.	2	с	Low	Designer/ Principal	Detailed Design	Residual Risk transferred to Contractor.
3	Design	Project exceeds budget	Identified saftety issues will not be addressed leading to an unsafe environment for the travelling public.	3	D	Significant	NBRC to prepare contingency plans to reduce project cost to within budget constraints.	2	D	Moderate	NBRC	Detailed Design	Residual risk with Principal
4	Design	Hazards in designated clear zones and road corridor.	Poor Scoping of project requirements resulting in inadequate design that could lead to potential safety risk to travelling public, constructor, maintenance. Impact of errant vehicle resulting in injury or death.	3	E	Extreme	Risks identified and accepted by NBRC. Mitigating treatments have been incorporated into the design. Hazard Treatment Evaluation undertaken in accordance with Austroads and the information available at the time of detailed design.	2	D	Moderate	Designer/ Principal	Detailed Design	Residual risk with Principal
5	Design	Inadequate treatment of private entrance or turnout design.	This could lead to potential safety risk to travelling public. SISD, ASD, angles, vertical clearance, appropriate layout, design vehicle.	3	D	Significant	Private entrances and turnouts to be designed in accordance with NBRC standard drawing and incorporating validated road function, traffic volumes and usage. Key stakeholder consultation, EDD/Design Exceptions.	1	D	Moderate	Designer/ Principal	Detailed Design	Residual Risk with Principal
6	Design	Services not identified during design.	This could lead to the potential safety risk of constructors and/or closure of key services to the general public.	4	D	Significant	Contact DBYD and other relevant authorities to identify existing services (DBYD received 17/02/23). Designers have noted known services on drawings. Carry out field inspection to confirm and identify any potential service related issues e.g. potholing and locating activities. Contractor to complete service locations to verify existing infrastructure.	2	D	Moderate	Designer/ Principal	Detailed Design	Residual Risk with Principal and Contractor
1	Construction	Drainage during construction	Poor drainage during construction affecting pavements/traffic/etc	3	В	Low	Maintain flow paths during construction where practical. Make oumping equipment available if required.	2	А	Negligible	Contractor	Construction	Residual risk with Principal and contractor
2	Construction	Exposure to asbestos	Existing abandoned conduits/pits/culverts may be present which could be exposed during construction.	3	D	Significant	Details of existing services/culverts where known have been provided. Contractor to undertake appropriate intestigations as required.	1	D	Moderate	Contractor	Construction	Residual risk with Principal and Contractor It is unknown if any asbestos infrastructure is located within the project limit.
3	Construction	Deep excavation of trenches	Trench collapse injuries	2	E	Significant	Depth of culverts to be minimised where possible.	1	E	Moderate	Contractor	Construction	Residual risk with Principal and contractor
4	Construction	Design changes made by Contractor or Administrator following	Design changes do not meet safety requirements.	3	с	Moderate	Contractor / Administrator to advise the Designer or any proposed design	1	с	Low	NBRC	Construction	Residual risk with Principal and contractor
5	Construction	Working in vicinity of High Voltage Ergon power lines, both overhead and underground.	Death or serious injury	2	E	Significant	Contractor to identify all services and have construction procedures for working near HV services.	2	E	Significant	Contractor	Construction	Constructors shall conduct their own DBYD and verify all utilities on site prior to commencing any roadworks.
6	Construction	The risk of traffic not being managed adequately.	Traffic chaos, delays and accidents caused by lack of controls.	4	E	Extreme	Designer has nominated traftic volumes in design documentation. It is noted that the traffic volumes are low. Contractor to engage a suitably qualified traffic manager to implement traffic management controls considering road function; traffic volumes; constructability and road users.	2	E	Significant	Contractor	Construction	Residual Risk with Principal and Contractor
7	Construction	Working on top of high and steep embankments	Injury due to personnel fall or overturning construction plant	5	E	Extreme	Consider construction methodology prior to implemenation.	4	D	Significant	Contractor	Construction	Residual risk with Principal and contractor
8	Construction	Lighting levels during construction.	inducquate lighting of conflict points during construction resulting in confusion/collisions	3	В	Low	Temporary standalone LED lighting, if required.	2	В	Negligible	NBRC	Construction	Residual risk with Principal and contractor
9	Construction	Disruption / damage to existing services	Constructors may damage existing services during construction. Service may/may not have been shown on design plans.	3	D	Significant	Constructors to conduct dial before you dig and no work shall be carried out over utility or within 3m of services without prior notification to the appropriate service authorities. Contractor to complete service locations to verify existing infrastructure. Appropriate demarcations and planning by contractor to highlight any locations where work activities are undertaking in the vicinity of existing services.	2	D	Moderate	Contractor	Construction	Constructors shall conduct their own DBYD and verify all utilities on site prior to commencing any roadworks or excavations.
10	Construction	Unexpected weather events resulting in potential injury to construction personnel and/or travelling public	Sudden weather events resulting in the need to evacuate the site.	3	D	Significant	Constructor to consider location, likely duration and characteristics of project to determine likelihood of event and consider project specific mitigation strategies via risk management.	3	с	Moderate	Contractor	Construction	Residual Risk with Principal and Contractor
11	Construction	Unearthing unexpected soil types e.g. acid sulphate soil, sodic soils or contaminated soil from rail reserves. resulting in potential safety risk to construction personnel and general public.	This results in potential safety risk to construction personnel and general public.	3	D	Significant	 Design to consider location and likelihood of encountering specific soil type. Site inspection and/or geotechnical investigation to confirm presence of soils requiring specific treatment. Include comments in "notes to contract administrators" advising of potential for presence of hazardous materials. Experienced construction staff that can recognise potential hazards 	3	c	Moderate	Contractor	Construction	Residual Risk with Principal and Contractor
12	Construction	Incorrect or unsuitable surface treatment either temporary or permanent resulting in potential safety risk to the travelling public. e.g. line marking removal, appropriate seal design	This results in potential safety risk to construction personnel and general public.	3	E	Extreme	Constructor to consider road function, traffic volumes, location and seasonal conditions to propose suitable surface treatment.	2	E	Significant	Contractor	Construction	Residual Risk with Principal and Contractor
1	Maintenance	Final product leads to potential safety issues with maintenance activities.	Personel cannot undertake maintainance activities safely due to the proposed design.	3	с	Moderate	Design to consider maintenance requirements including provision of safe environment to facilitate maintenance activities including safe ingress and egress and clear work area. E.g. batter slopes, under bridge inspections, gardens in medium strips, allowance for access tracks etc.	1	E	Moderate	Balonne Shire Council	Ongoing	Residual risk with Principal
2	Maintenance	Inadequate as constructed information.	Existing conditions not accurately reflected.	4	E	Extreme	Adequate handover to maintenance provider.	1	D	Moderate	Balonne Shire Council	Ongoing	Residual risk with Principal
1	Finalisation	Applying all the appropriate standards.	This could result in an unsafe design.	2	E	Significant	Conduct a road safetly audit and action any outstanding issues.	1	D	Moderate	Designer	Ongoing	Residual risk with Principal