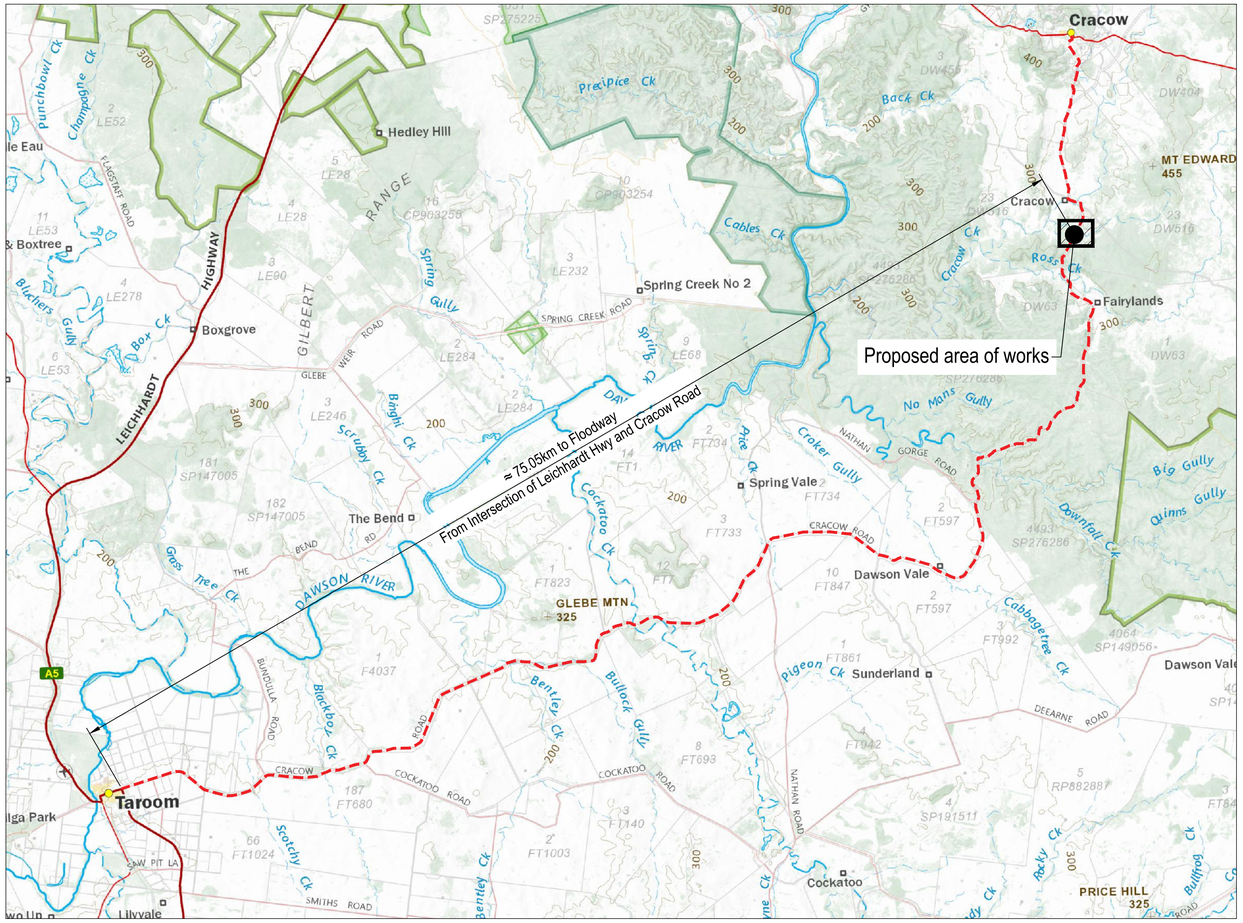
CRACOW ROAD, SITE 8 - SUNNY SLOPES CREEK FLOODWAY

ROAD AND FLOODWAY UPGRADE



LOCALITY PLAN
(Not to scale)

DRAWING INDEX

Drawing Number	Date	Drawing Description
001		Project Cover Sheet
002		General Notes
300		Survey Control and Services Plan
400		Roadworks and Setout Plan Sheet 1
500		Pavement Plan
600		Longitudinal Section Sheet 1
601		Longitudinal Section Sheet 2

DRAWING INDEX

Drawing Number	Date	Drawing Description
700		Typical Cross Sections
800		Annotated Cross Sections Sheet 1
801		Annotated Cross Sections Sheet 2
802		Annotated Cross Sections Sheet 3
803		Annotated Cross Sections Sheet 4
804		Annotated Cross Sections Sheet 5
805		Annotated Cross Sections Sheet 6

DRAWING INDEX

Drawing Number	Date	Drawing Description
1000		Supplementary Signs and Linemarking Details
1200		Floodway Details
1600		Limit of Clearing Plan
1700		Temporary Erosion and Sediment Control Sheet 1
1701		Temporary Erosion and Sediment Control Sheet 2
1702		Temporary Erosion and Sediment Control Sheet 3

STANDARD DRAWINGS:
ROADWORKS

Dwg.	Rev.	Description
CMDG-R-081	E	Sign Location and Installation Details
CMDG-R-094	B	Floodway - Bed Level Crossing

DEPARTMENT OF TRANSPORT AND MAIN ROADS - STANDARD DRAWINGS:
ROAD FURNITURE

1170	D	Flood Depth Indicators - Installation

GENERAL EARTHWORKS AND PROPERTY ACCESS

1178	E	Diversion of Water from Roadway and Table Drains

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
PROJECT COVER SHEET

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	001
Revision	A
Series No.	1 of 20

XREFS :- X_CRC_BSC_TITLE.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

SAFETY IN DESIGN NOTES:

1. Potential safety hazards identified by the Designer have been assessed for this project in accordance with Safe Design of Structures - Code of Practices by Safe Work Australia, 2012. Refer to the ***Safety In Design Report*** for the potential safety hazards.
2. Disclaimer: It must be acknowledged that new and/or different risks may become apparent during each project phase.The designer has ensured, so far as reasonably practicable, that the structure/municipal work is designed to minimise risk to the health and safety of persons involved in construction or use related activities. Further, in Appendix A - Safety in Design Risk Register of the ***Safety In Design Report***, assumptions may have been made within the different project phases as to how the project and/or project elements will be constructed and maintained. This may differ from the end methods adopted.
3. Any person who undertakes alterations, variations or modifications to these design drawings, without consultation and approval from the original or subsequent designer, will assume the duties of a designer and will be held responsible for the safety in design for this project.
4. All works must comply with W.H. & S. Act, 2011.

GENERAL NOTES:

1. Works shall be undertaken generally in accordance with the relevant CMDG construction specifications except where specific DTMR specification requirements are detailed within these Project specific Drawings. The most current version shall be adopted, unless noted otherwise.
2. Works to be measured in accordance with project specific *Supplementary Specification for Measurement and Work Operations for Work Items.*
3. If any archaeological or cultural material is exposed on the work site all works shall cease. The D.E.H.P., Aboriginal Land Council and B.S.C. are to be notified.
4. All works are to comply with the requirements of the Environmental Protection Act, 1994.
5. Disposal/movement of material in areas of Red Imported Fire Ants are to comply with the D.A.F.F. regulations. Refer the Department's website: ***www.daff.qld.gov.au/fireants*** for the current information.
6. Prior to commencement of work a Risk Management Plan to minimise the chance of spreading Fire Ants is to be completed.
7. The positions shown on drawings for public utilities services are based on the B.Y.D.A. information supplied at time of design and are indicative only. Prior to construction the current Service Authority information is to be obtained from B.Y.D.A. (website: www.byda.com.au). The position and depth of each service is to be verified by the relevant Service Authority on site before the start of any construction.
8. Where these drawings make reference to the Administrator or Contract Administrator it shall mean the Superintendent managing the works.
9. Prior to commencement of work contact the Superintendent if any PSM's are in the vicinity of the work site.
10. Order of Precedence of Documents, Ambiguities or Discrepancies - The following order of precedence shall apply where there is any ambiguity, discrepancy or inconsistency between the design documents comprising the Contract, with the higher in the list having a higher priority:
    a. These Project Specific Drawings
    b. Technical Specifications
    c. Standard Drawings

    The several documents forming the Contract are to be taken as mutually explanatory of one another. If either party discovers any ambiguity or discrepancy in any document prepared for the purpose of executing the Work Under the Contract, that party shall notify the Superintendent in writing of the ambiguity or discrepancy as soon as possible,
11. The Scheme Drawings listed on the Project Cover Sheet are to be read as a whole and not in isolation. Any isolated drawing separated from the control set will be considered voided and is not to be used.
12. All drawings are to be read in conjunction with the project's specification and all relevant Standard Drawings.
13. All drawings are to be read in conjunction with the Abbreviation Table shown.
14. Materials and workmanship - Where materials, material components, workmanship and procedures are not specifically described by the Contract, they shall be in accordance with the relevant Australian Standard. Where no Australian Standard is available, other specifications shall be used in the following order of priority:
    a. manufacturer's recommendations, and
    b. accepted industry standards.

    At a minimum materials and workmanship shall be the best of their respective kinds and fit for the purpose for which they are intended.

    Any product trade names have been used to establish a quality requirement. Written approval to be obtained prior to using any substitutions.
15. Dimensions / Levels - All levels and setout points shall be confirmed on site by a registered surveyor prior to construction. The Contractor shall seek clarification from the Superintendent for any discrepancy prior to proceeding with works. Dimensions shall not be scaled from drawings.
16. Set Out of Individual Installations - The Contractor shall set out an installation as shown on the Drawings in sufficient detail to identify the location, length and levels of the proposed installation. Once the initial set out is complete the Superintendent will determine the design appropriateness of the set out with regard to the actual site conditions. The Superintendent may direct amendments to the set-out details. Payment for such amendments will be made at appropriate rates in the Schedule of Rates or, where such rates are not deemed by the Superintendent to be appropriate, as determined by the Superintendent. Installations to be set out in accordance with the above requirements include:
    a. drainage pipes, culverts, slabs and structures
    b. landscaping
    c. traffic control
17. Existing Services - Locate service prior to commencing works. Services are shown on these drawings for information only. No responsibility is taken for the accuracy or completeness of the information supplied. Take care to protect services from damage, and report any hits or damage to the service authority immediately.

EROSION AND SEDIMENT CONTROL NOTES:

1. During construction all necessary precautions shall be taken to control erosion and downstream sedimentation. Monitor the prevailing weather conditions and protect any downstream construction and gully inlets.
2. All sediment control devices, sediment fences, check dams, straw bales, stone traps and entry/exit sediment traps are to be in accordance with the E&SC plans within these project drawings or amended as required by the Contractor's suitably qualified professional.

EARTHWORK NOTES:

1. All unsuitable material is to be stripped prior to placement of structural fill.
2. All unsuitable material is to be removed in accordance with the specification or as directed by the Superintendent.
3. All contaminated soil to be removed in accordance with the specification or as directed by the Superintendent.
4. Earthwork quantities include existing road pavement excavated where applicable.
5. Earthwork quantities include unsuitable and or contaminated material except where noted otherwise.
6. Earthwork quantities in cut are bank (nett) volumes and in fill are compacted volumes.
7. Class A1 or B material to comply with the requirements of TMR MRTS04, and specific requirements within these project drawings.

LINEMARKING NOTES:

1. All linemarking, signs and traffic devices shall comply with the M.U.T.C.D. - current edition.
2. Ensure that signage has clear sight distance, otherwise adjust location accordingly.
3. Superseded linemarking and signage to be removed.

SERVICE ADJUSTMENT NOTES:

1. Service Authority infrastructure adjustments are to be performed by contractors approved by the relevant service authority.

BEFORE YOU DIG www.byda.com.au

XREFS :- X_CRC_BSC_TITLE.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Dimensions shown in metres except where shown otherwise

crc quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

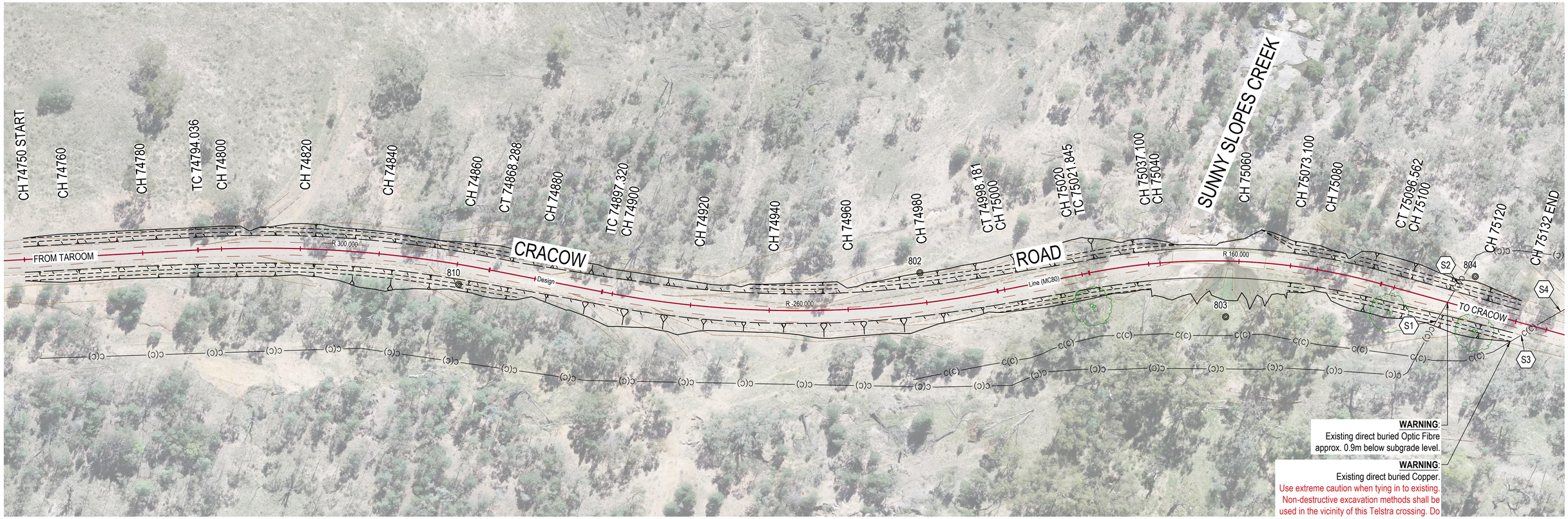
Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
GENERAL NOTES

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	002
Revision	A
Series No.	2 of 20



WARNING:
Existing direct buried Optic Fibre approx. 0.9m below subgrade level.

WARNING:
Existing direct buried Copper.
Use extreme caution when tying in to existing. Non-destructive excavation methods shall be used in the vicinity of this Telstra crossing. Do not extend or over excavate.

PLAN

Scale: 1:500

LEGEND

403 ◎ - Survey Mark and Label

C(C) - Comms, Direct buried Optic Fibre

ENGINEERING SURVEY CONTROL

STATION	EASTING	NORTHING	LEVEL	REMARKS
801	228465.365	7188978.445	297.546	PBMK
810	228530.253	7189085.253	291.467	PBMK
802	228577.086	7189192.389	281.367	PBMK
803	228620.011	7189257.856	275.583	PBMK
804	228637.527	7189319.484	278.960	PBMK

PERMANENT SURVEY MARKS

PSM	EASTING	NORTHING	LEVEL	LOCATION
PM153060	229326.704	7183818.420	311.390	PPMK - Approx. 5.50 km South

SERVICES LOCATION TABLE

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	1.808	276.616	278.059	1.443	Trace wire/rodded Conduit	Comms - Optic Fibre
S2	1.391	277.071	278.052	0.981	Trace wire/rodded Conduit	Comms - Optic Fibre
S3	0.275	278.327	n/a	n/a	Trace wire/rodded Conduit	Comms - Copper
S4	0.398	278.150	n/a	n/a	Trace wire/rodded Conduit	Comms - Copper

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.

	Revisions/Descriptions	Drawn	Approved	Date
A	Issue for Construction			
20.01				

Scales (sheet size A1)

Scale A 0 5 10 15 20 25 1:500

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
SURVEY CONTROL AND SERVICES PLAN

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	300
Revision	A
Series No.	3 of 20

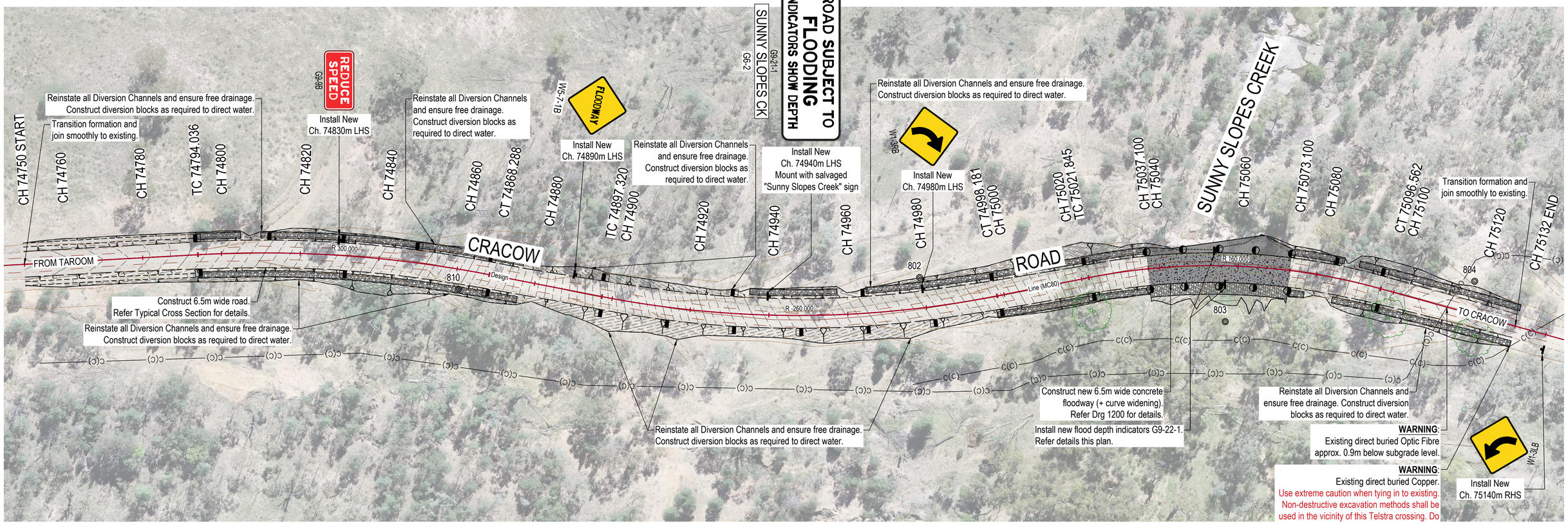
XREFS :- X_CRC_BSC_TITLE.dwg ; X_IMAGE.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_DESIGN.dwg ; X_DESIGN_TADPOLES.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

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.

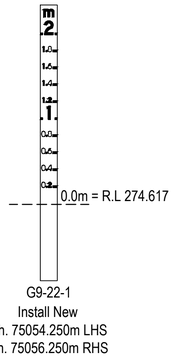


PLAN

Scale: 1:500

DESIGN LINE SETOUT (MC80)

POINT	CHAINAGE	EASTING	NORTHING	LEVEL	BEARING	RAD/SPIRAL	A.LENGTH	D.ANGLE
IP 1	74713.721	228464.459	7188954.576	297.909	21°52'43.46"			
TC	74794.036	228494.388	7189029.106	295.893	21°52'43.46"			
IP 2	74831.162	228508.294	7189063.735	293.673		R = 300.000	74.252	14°10'51.75"
CT	74868.288	228530.259	7189093.902	290.468	36°03'35.21"			
TC	74897.320	228547.349	7189117.372	287.565	36°03'35.21"			
IP 3	74947.751	228577.411	7189158.659	283.190		R = -260.000	100.860	22°13'35.21"
CT	74998.181	228589.623	7189208.250	279.501	13°50'00.00"			
TC	75021.845	228595.281	7189231.228	277.264	13°50'00.00"			
IP 4	75059.203	228604.379	7189268.177	274.679		R = 160.000	74.716	26°45'20.84"
CT	75096.562	228629.137	7189297.073	277.625	40°35'20.84"			
TC	75150.353	228664.135	7189337.922	278.834	40°35'20.84"			
IP 5	75201.871	228697.725	7189377.127	278.937		R = -650.000	103.036	9°04'56.44"
CT	75253.389	228724.704	7189421.142	279.040	31°30'24.40"			
IP 6	75260.675	228728.512	7189427.354	279.055	31°30'24.40"			

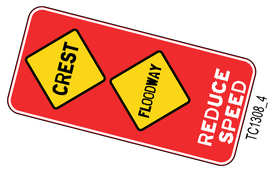


G9-22-1
Install New
Ch. 75054.250m LHS
Ch. 75056.250m RHS

LEGEND

- Red / White - Flexible Guidepost
- Red / White - Flexible Tubular Guidepost
- New Sign Location
- Existing Sign Location
- 403 - Survey Mark and Label

Install New
Ch. 75170m RHS
Mount with salvaged
"Sunny Slopes Creek" sign



Install New
Ch. 75220m RHS

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 5 10 15 20 25 1:500

Dimensions shown in metres except where shown otherwise

crc quality people client focused solution driven

245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ROADWORKS AND SETOUT PLAN SHEET 1

Drawn: B Doherty
Designed: B Doherty

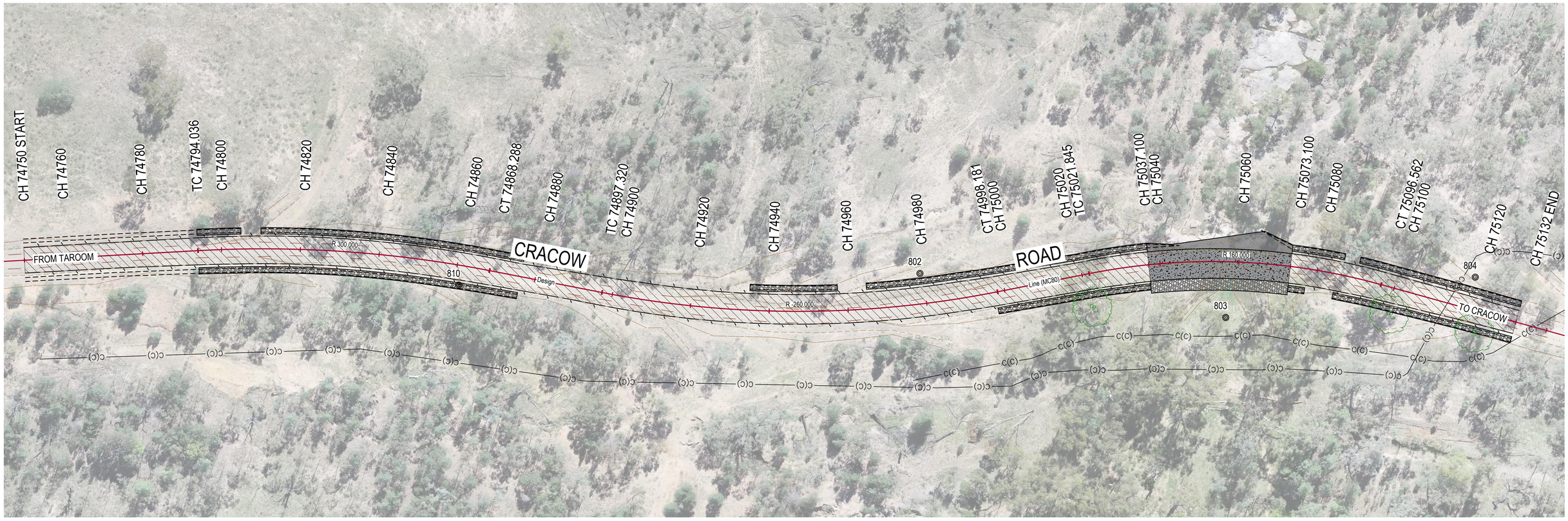
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	400
Revision	A
Series No.	4 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_DESIGN.dwg ; X_HATCH.dwg ; X_IMAGE.dwg ; X_GUIDEPOSTS.dwg ; X_CONTOURS.dwg ; X_DESIGN_TADPOLES.dwg

Last Modified :- Nov 24, 2023 - 9:21pm



PLAN

Scale: 1:500

LEGEND

New pavement to be constructed. Refer Pavement Type 1 Details.

New concrete floodway to be constructed. Refer Standard Drawing CMDG-R-094

PAVEMENT TYPE 1 DETAILS

New pavement to be constructed

155mm Stabilised Base, Full Width,
Imported Unsealed Pavement Material**
Insitu stabilised, GB binder (Cement/Fly Ash)
Target UCS value 1 - 2 MPa at 7 Days. Contractor to
undertake additive testing to confirm percentage of stabilising agent
by mass. A nominal 3% by mass used for estimating purposes only.

Design Subgrade CBR 6 (soaked)

155mm Total thickness

All works to be carried out in accordance with the relevant CMDG Construction Specifications.

PAVEMENT DESIGN
(Lower Order Roads Design Guide)

Design Period:	20 Years
Design Traffic:	5.1 x 10^4 DESA
Design Subgrade CBR:	6 (Soaked)

**
UNSEALED PAVEMENT SPECIFICATION
(Lower Order Roads Design Guide)

Local borrow pit material to satisfy the following specifications

Grading Coefficient (Gc):	16 - 34
Shrinkage Product (Sp):	100 - 240
WPI:	< 1200
PI:	≥ 7%
Passing 0.075mm Sieve:	≥ 14%

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.

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 5 10 15 20 25 1:500

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
PAVEMENT PLAN

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

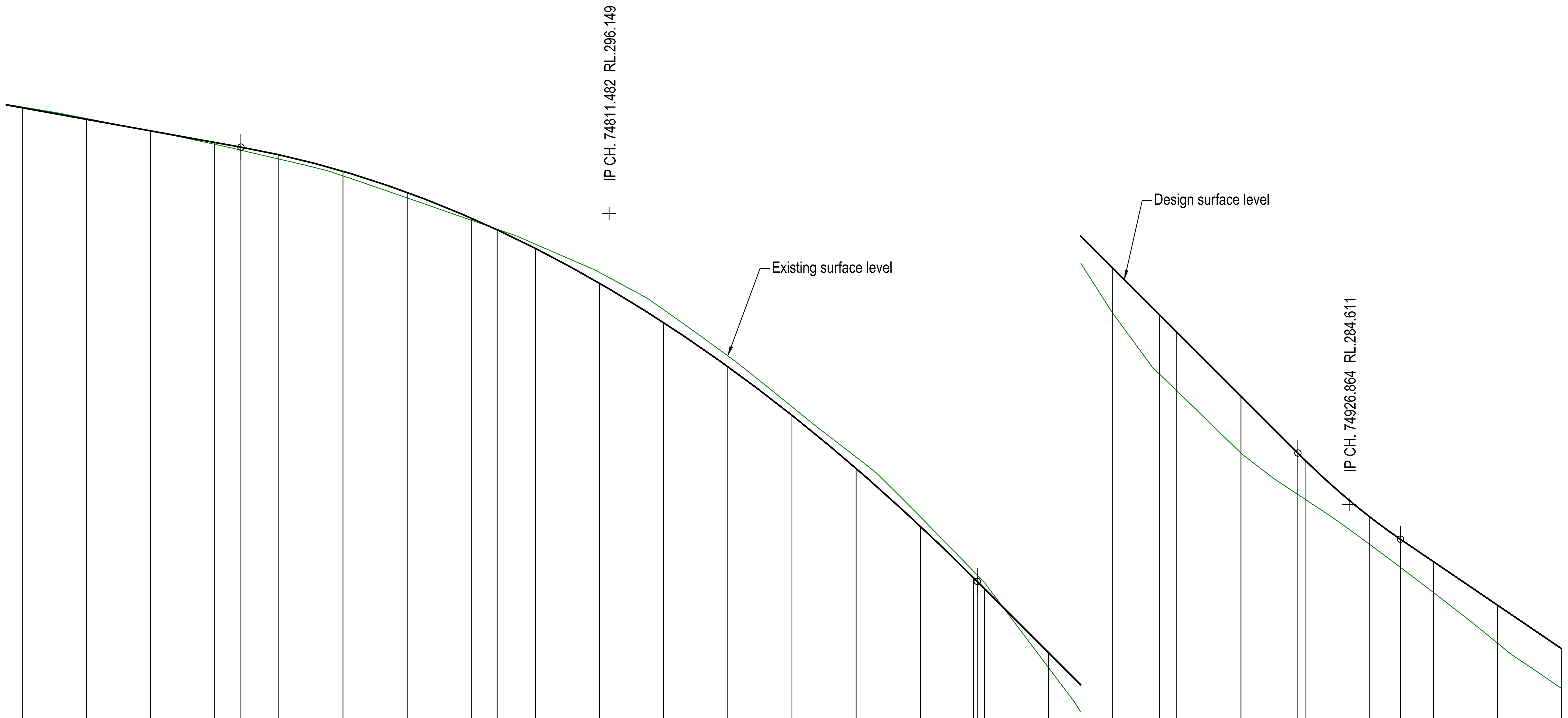
ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	500
Revision	A
Series No.	5 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_HATCH.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_DESIGN.dwg ; X_IMAGE.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

> **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.



Horizontal Curve Data: R300m; R-260m

Vertical Curve Length (m) / Vertical Curve Radius (m): 114.8 VC, R = 1400; 16 VC, R = 500

Vertical Geometry Grade (%) / Vertical Grade Length (m): -1.8 %, 97.761; -10 %, 115.383; -6.8 %, 74.862

DATUM R.L.: 285.000; 278.000

DESIGN CHAINAGE	CUT / FILL DEPTHS	DESIGN LINE LEVELS	EXISTING SURFACE LEVELS
74720.000	-0.013	297.796	297.809
74730.000	-0.014	297.616	297.630
74740.000	0.001	297.436	297.435
74750.000	0.03	297.256	297.226
74754.082	0.049	297.182	297.133
74760.000	0.067	297.063	296.996
74770.000	0.072	296.805	296.733
74780.000	0.086	296.476	296.390
74790.000	0.033	296.075	296.042
74794.036	-0.008	295.893	295.901
74800.000	-0.065	295.603	295.668
74810.000	-0.168	295.059	295.227
74820.000	-0.202	294.444	294.646
74830.000	-0.169	293.757	293.926
74840.000	-0.134	292.999	293.133
74850.000	-0.178	292.170	292.348
74860.000	-0.149	291.269	291.418
74868.288	-0.101	290.468	290.569
74868.882	-0.099	290.409	290.508
74870.000	-0.094	290.297	290.391
74880.000	0.234	289.297	289.063
74890.000	0.703	288.297	287.594
74897.320	0.925	287.565	286.641
74900.000	0.916	287.297	286.381
74910.000	0.888	286.297	285.409
74918.864	0.646	285.411	284.765
74920.000	0.608	285.298	284.690
74930.000	0.431	284.421	283.990
74934.864	0.439	284.067	283.628
74940.000	0.481	283.718	283.236
74950.000	0.592	283.038	282.445
74960.000	0.621	282.358	281.737

SUPER ELEVATION: LHS and RHS -4%; LHS 4% / RHS -4%; RHS 4% / LHS -4%

Super elevation chainages: 74750.0, 74773.0, 74788.0, 74803.0, 74859.3, 74882.8, 74906.3, 74960.0

LONGITUDINAL SECTION

Horizontal Scale A
Vertical Scale B

XREFS :- X_CRC_BSC_TITLE.dwg ; X_MC80_LSECT_01.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

20.01	Revisions/Descriptions	Drawn	Approved	Date
A	Issue for Construction			

Scales (sheet size A1)
Scale A 0 5 10 15 20 25 1:500
Scale B 0 0.5 1.0 1.5 2.0 2.5 1:50

Dimensions shown in metres except where shown otherwise

quality people client focused solution driven

245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
LONGITUDINAL SECTION SHEET 1

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

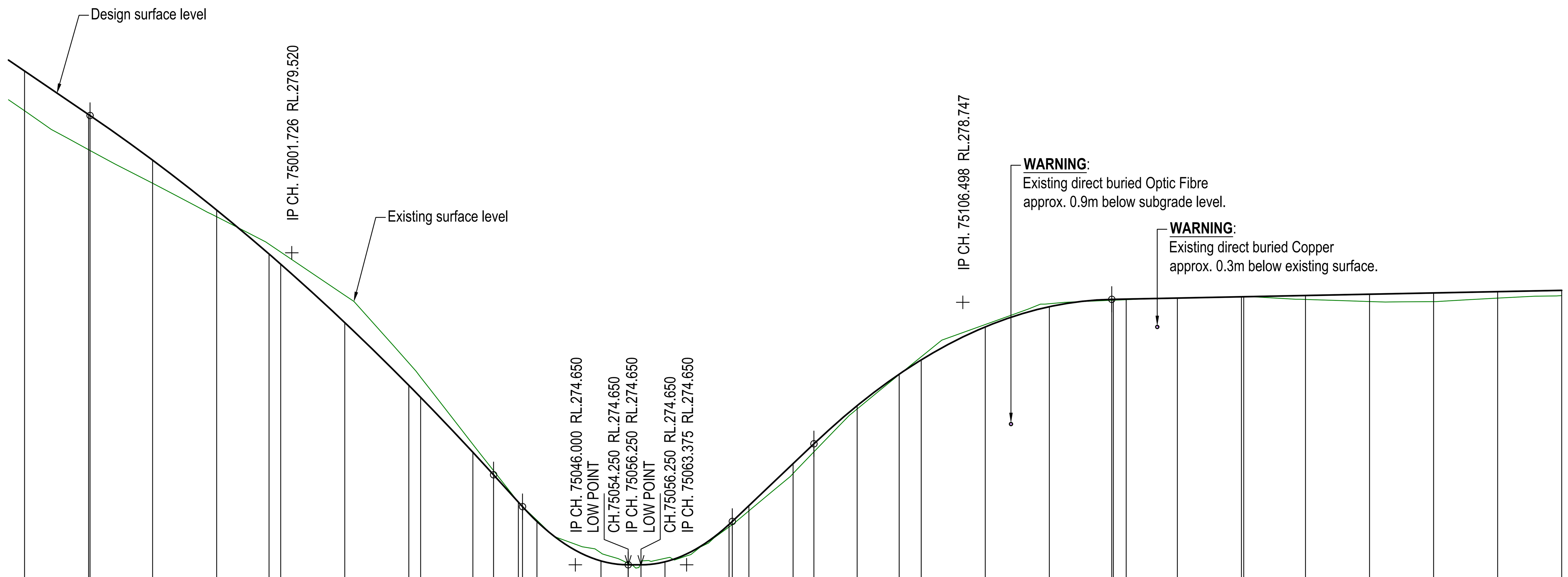
ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose	[signature]	24087	24/11/23

Job No.	CRC00292
Drawing No.	600
Revision	A
Series No.	6 of 20

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.



Horizontal Curve Data: R-260m; R160m; R-650m

Vertical Curve Length (m) / Vertical Curve Radius (m): 63 VC, R = 1500; 16.5 VC, R = 150; 14.25 VC, R = 150; 46.5 VC, R = 500

Vertical Geometry Grade (%) / Vertical Grade Length (m): -6.8 %, 74.862; -11 %, 44.274; 0 %, 17.375; 9.5 %, 43.123; 0.2 %, 154.177

DATUM R.L.271.000

DESIGN CHAINAGE	CUT / FILL DEPTHS	DESIGN LINE LEVELS	EXISTING SURFACE LEVELS
74960.000	0.621	282.358	281.737
74970.000	0.549	281.678	281.129
74970.226	0.546	281.662	281.116
74980.000	0.361	280.966	280.605
74990.000	0.104	280.187	280.083
74998.181	-0.154	279.501	279.654
75000.000	-0.19	279.342	279.532
75010.000	-0.426	278.430	278.856
75020.000	-0.348	277.452	277.800
75021.845	-0.314	277.264	277.578
75030.000	-0.124	276.407	276.530
75033.226	-0.065	276.055	276.121
75037.100	0.001	275.629	275.628
75037.750	-0.003	275.558	275.560
75040.000	-0.018	275.327	275.345
75050.000	-0.125	274.710	274.835
75054.250	-0.024	274.650	274.674
75056.250	-0.042	274.650	274.692
75060.000	-0.053	274.697	274.750
75070.000	0.039	275.280	275.241
75070.500	0.049	275.327	275.277
75073.100	0.081	275.574	275.493
75080.000	0.155	276.229	276.075
75083.248	0.125	276.538	276.413
75090.000	0.051	277.134	277.082
75096.562	0.007	277.625	277.618
75100.000	-0.048	277.849	277.896
75110.000	-0.037	278.364	278.400
75120.000	-0.046	278.679	278.725
75129.748	0.015	278.793	278.778
75130.000	0.014	278.794	278.779
75132.000	0.01	278.798	278.788
75140.000	0	278.814	278.814
75150.000	0.003	278.834	278.831
75150.353	0.003	278.834	278.831
75160.000	0.062	278.854	278.792
75170.000	0.115	278.874	278.759
75180.000	0.136	278.894	278.758
75190.000	0.101	278.914	278.813
75200.000	0.082	278.934	278.852

SUPER ELEVATION: RHS 4% / LHS -4%; RHS 1% / LHS -1%; RHS -7.0% / LHS -9.2%

74960.0 74989.2 75030.8 75087.0 75092.6

LONGITUDINAL SECTION

Horizontal Scale A
Vertical Scale B

XREFS :- X_CRC_BSC_TITLE.dwg ; X_MC80_LSECT_02.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

	Revisions/Descriptions	Drawn	Approved	Date
A	Issue for Construction			
20.01				

Scales (sheet size A1)

Scale A 0 5 10 15 20 25 1:500

Scale B 0 0.5 1.0 1.5 2.0 2.5 1:50

Dimensions shown in metres except where shown otherwise

quality people client focused solution driven

245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
LONGITUDINAL SECTION SHEET 2

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose	(signed)	24087	24/11/23

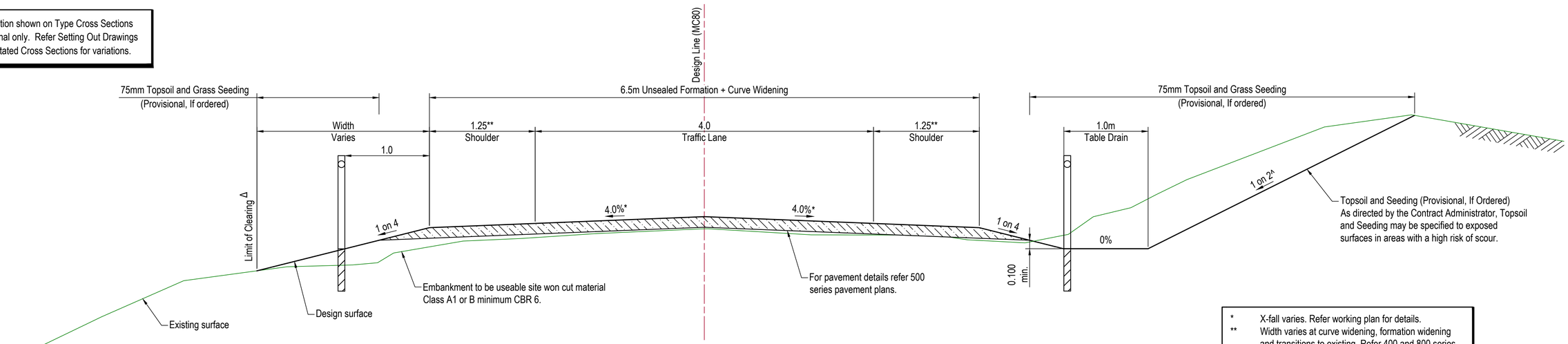
Job No.	CRC00292
Drawing No.	601
Revision	A
Series No.	7 of 20

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.

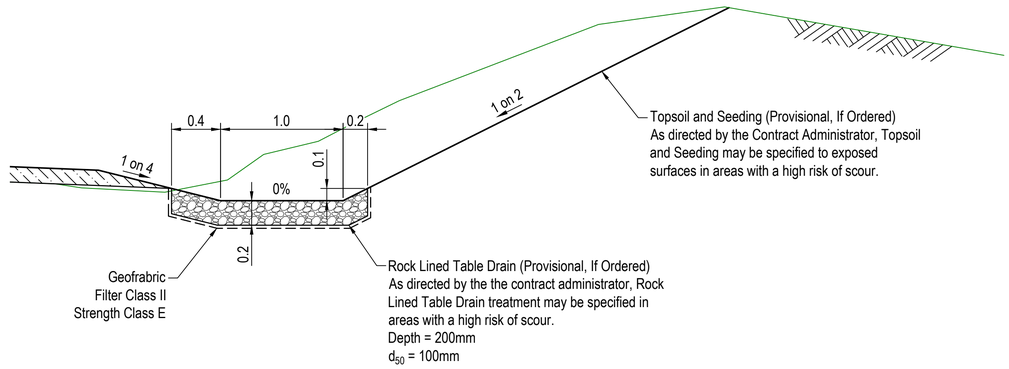
Information shown on Type Cross Sections is nominal only. Refer Setting Out Drawings & Annotated Cross Sections for variations.



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

TYPICAL CROSS SECTION A

Ch. START - END (MC80)
(Excluding Floodway)
Not to Scale



ROCK LINED TABLE DRAIN

Not to Scale

XREFS :- X_CRC_BSC_TITLE.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

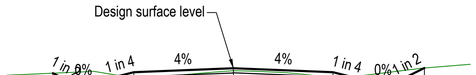
Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
TYPICAL CROSS SECTIONS

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

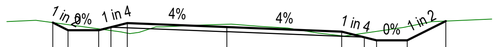
Job No.	CRC00292
Drawing No.	700
Revision	A
Series No.	8 of 20



DATUM RL 295.200

DESIGN LEVEL	296.550	296.298	296.298	296.583	296.713	296.583	296.398	296.298	296.298	296.721
EXISTING LEVEL	296.550	296.572	296.583	296.518	296.398	296.403	296.631	296.406	296.447	296.494	296.618	296.721
OFFSET	-5.893	-5.389	-4.389	-3.989	-3.250	0.000	3.250	3.989	4.389	5.389	6.235

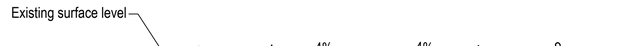
CH. 74773.036



DATUM RL 294.000

DESIGN LEVEL	295.591	295.341	295.341	295.441	295.575	295.445	295.295	295.110	295.010	295.641
EXISTING LEVEL	295.591	295.523	295.386	295.332	295.247	295.536	295.160	295.246	295.304	295.457	295.641
OFFSET	-5.684	-5.185	-4.185	-3.785	-3.250	0.000	3.750	4.489	4.889	5.889	7.150

CH. 74803.036



DATUM RL 295.600

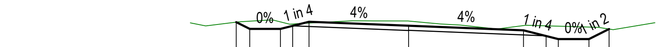
DESIGN LEVEL	296.917	296.648	296.648	296.748	296.933	297.063	296.933	296.748	296.648	296.648	297.117
EXISTING LEVEL	296.917	296.947	296.931	296.877	296.803	296.996	296.780	296.764	296.838	297.000	297.117
OFFSET	-5.925	-5.389	-4.389	-3.989	-3.250	0.000	3.250	3.989	4.389	5.389	6.325

CH. 74760.000

DATUM RL 294.100

DESIGN LEVEL	295.749	295.469	295.469	295.569	295.706	295.603	295.455	295.270	295.170	295.814
EXISTING LEVEL	295.749	295.688	295.546	295.470	295.365	295.668	295.322	295.410	295.468	295.614	295.814
OFFSET	-5.761	-5.200	-4.200	-3.800	-3.250	0.000	3.699	4.438	4.838	5.838	7.127

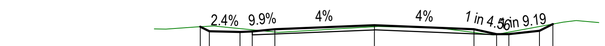
CH. 74800.000



DATUM RL 289.900

DESIGN LEVEL	291.453	291.232	291.232	291.332	291.465	291.335	291.185	291.001	290.901	290.901	291.228
EXISTING LEVEL	291.453	291.484	291.462	291.391	291.424	291.489	291.340	291.332	291.321	291.292	291.228
OFFSET	-5.627	-5.185	-4.185	-3.785	-3.250	0.000	3.750	4.489	4.889	5.889	6.544

CH. 74859.288



DATUM RL 295.800

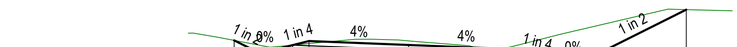
DESIGN LEVEL	297.134	296.986	296.962	296.979	297.052	297.182	297.052	296.890	296.893	297.002	297.221
EXISTING LEVEL	297.134	297.151	297.073	297.033	296.960	297.133	296.946	296.881	296.955	297.140	297.221
OFFSET	-5.686	-5.389	-4.389	-3.989	-3.250	0.000	3.250	3.989	4.389	5.389	5.827

CH. 74754.082

DATUM RL 294.400

DESIGN LEVEL	295.917	295.699	295.699	295.799	295.945	295.893	295.749	295.564	295.464	295.464	296.037
EXISTING LEVEL	295.917	295.940	295.767	295.690	295.595	295.901	295.610	295.694	295.750	295.890	296.037
OFFSET	-5.669	-5.233	-4.233	-3.833	-3.250	0.000	3.600	4.339	4.739	5.739	6.884

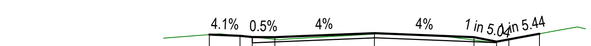
CH. 74794.036



DATUM RL 291.500

DESIGN LEVEL	293.151	292.896	292.896	292.996	293.129	292.999	292.849	292.665	292.565	292.565	294.153
EXISTING LEVEL	293.151	293.053	292.957	292.996	293.045	293.133	293.043	293.230	293.331	293.566	294.153
OFFSET	-5.695	-5.185	-4.185	-3.785	-3.250	0.000	3.750	4.489	4.889	5.889	9.066

CH. 74840.000



DATUM RL 295.900

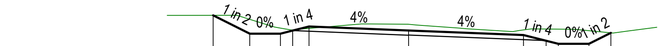
DESIGN LEVEL	297.209	297.169	297.129	297.126	297.256	297.126	296.979	297.053	297.237
EXISTING LEVEL	297.209	297.169	297.129	297.054	297.226	297.031	296.979	297.053	297.237
OFFSET	-5.389	-4.389	-3.989	-3.250	0.000	3.250	3.989	4.389	5.389

CH. 74750.000

DATUM RL 295.000

DESIGN LEVEL	296.385	296.137	296.137	296.237	296.406	296.476	296.341	296.156	296.056	296.056	296.501
EXISTING LEVEL	296.385	296.407	296.295	296.229	296.127	296.390	296.242	296.304	296.337	296.429	296.501
OFFSET	-5.825	-5.328	-4.328	-3.928	-3.250	0.000	3.366	4.105	4.505	5.505	6.393

CH. 74780.000



DATUM RL 293.000

DESIGN LEVEL	294.938	294.340	294.340	294.440	294.574	294.444	294.294	294.109	294.009	294.009	294.367
EXISTING LEVEL	294.938	294.808	294.522	294.464	294.513	294.646	294.461	294.491	294.487	294.437	294.367
OFFSET	-6.382	-5.185	-4.185	-3.785	-3.250	0.000	3.750	4.489	4.889	5.889	6.604

CH. 74820.000

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.

CROSS SECTIONS

Scale A

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ANNOTATED CROSS SECTIONS SHEET 1

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	800
Revision	A
Series No.	9 of 20

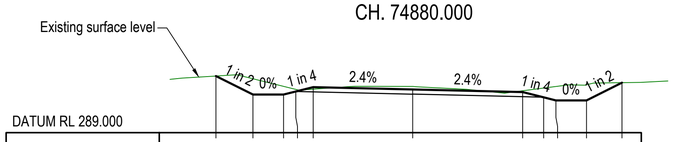
XREFS :- X_CRC_BSC_TITLE.dwg ; X_MC80_XSECT_01.dwg

Last Modified :- Nov 24, 2023 - 9:21pm

DATUM RL 287.700

DESIGN LEVEL	289.021	289.161	289.313	289.297	289.281	289.123	288.974
EXISTING LEVEL	289.021	288.911	288.946	289.063	288.848	288.916	288.974
OFFSET	-4.543	-3.981	-3.373	0.000	3.405	4.037	4.631

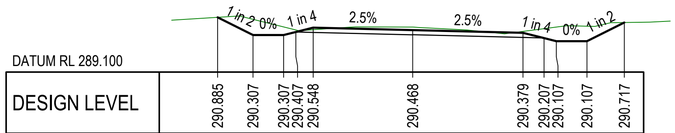
CH. 74880.000



DATUM RL 289.000

DESIGN LEVEL	290.848	290.244	290.244	290.344	290.486	290.324	290.153	290.053	290.632
EXISTING LEVEL	290.848	290.760	290.512	290.412	290.420	290.366	290.455	290.507	290.563	290.632
OFFSET	-6.425	-5.217	-4.217	-3.817	-3.250	3.590	4.275	4.675	5.675	6.833

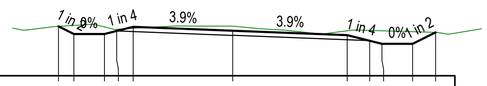
CH. 74868.882



DATUM RL 289.100

DESIGN LEVEL	290.885	290.307	290.307	290.407	290.548	290.468	290.379	290.207	290.107	290.717
EXISTING LEVEL	290.885	290.820	290.572	290.473	290.481	290.569	290.426	290.516	290.567	290.595	290.717
OFFSET	-6.371	-5.215	-4.215	-3.815	-3.250	0.000	3.600	4.288	4.688	5.688	6.908

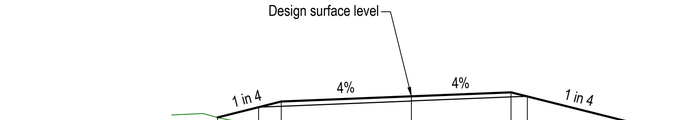
CH. 74868.288



DATUM RL 289.800

DESIGN LEVEL	291.411	291.161	291.161	291.261	291.395	291.269	291.124	290.940	290.840	291.216
EXISTING LEVEL	291.411	291.442	291.394	291.315	291.350	291.418	291.267	291.277	291.266	291.237	291.216
OFFSET	-5.688	-5.187	-4.187	-3.787	-3.250	0.000	3.738	4.473	4.873	5.873	6.624

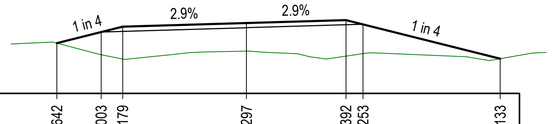
CH. 74860.000



DATUM RL 284.300

DESIGN LEVEL	285.976	286.310	286.495	286.665	286.795	286.661	285.731
EXISTING LEVEL	285.976	285.698	285.549	285.766	285.427	285.504	285.731
OFFSET	-6.328	-4.989	-4.250	0.000	3.250	3.785	7.509

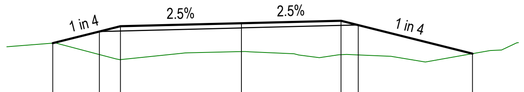
CH. 74906.320



DATUM RL 285.000

DESIGN LEVEL	286.642	287.003	287.179	287.297	287.392	287.253	286.133
EXISTING LEVEL	286.642	286.261	286.121	286.381	286.218	286.299	286.133
OFFSET	-6.189	-4.742	-4.039	0.000	3.250	3.805	8.285

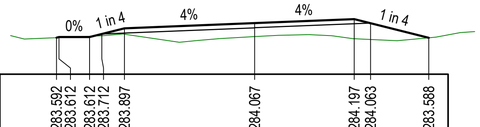
CH. 74900.000



DATUM RL 285.200

DESIGN LEVEL	286.915	287.296	287.468	287.565	287.645	287.504	286.572
EXISTING LEVEL	286.915	286.544	286.378	286.641	286.539	286.531	286.572
OFFSET	-6.160	-4.638	-3.950	0.000	3.250	3.815	7.544

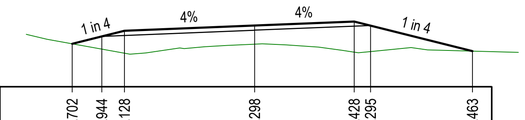
CH. 74897.320



DATUM RL 282.400

DESIGN LEVEL	283.592	283.612	283.612	283.712	283.897	284.067	284.197	284.063	283.588
EXISTING LEVEL	283.592	283.595	283.638	283.655	283.705	283.628	283.557	283.532	283.588
OFFSET	-6.470	-6.389	-5.389	-4.989	-4.250	0.000	3.250	3.785	5.685

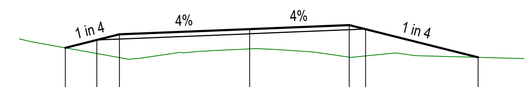
CH. 74934.864



DATUM RL 283.300

DESIGN LEVEL	284.702	284.944	285.128	285.298	285.428	285.295	284.463
EXISTING LEVEL	284.702	284.527	284.394	284.690	284.430	284.448	284.463
OFFSET	-5.957	-4.989	-4.250	0.000	3.250	3.785	7.111

CH. 74920.000



DATUM RL 283.400

DESIGN LEVEL	284.799	285.056	285.241	285.411	285.541	285.407	284.489
EXISTING LEVEL	284.799	284.614	284.481	284.765	284.493	284.535	284.489
OFFSET	-6.017	-4.989	-4.250	0.000	3.250	3.785	7.458

CH. 74918.864

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.

CROSS SECTIONS

Scale A

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ANNOTATED CROSS SECTIONS SHEET 2

Drawn: B Doherty
Designed: B Doherty

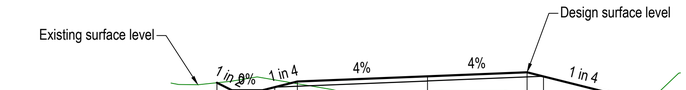
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	801
Revision	A
Series No.	10 of 20

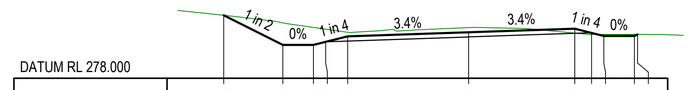
XREFS :- X_CRC_BSC_TITLE.dwg : X_MC80_XSECT_02.dwg

Last Modified :- Nov 24, 2023 - 9:21pm



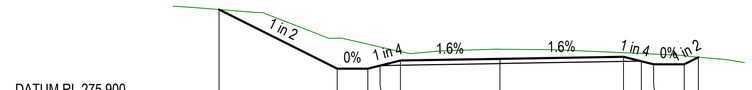
DATUM RL 279.700							
DESIGN LEVEL	281.451	281.207	281.207	281.492	281.662	281.792	281.658	280.915
EXISTING LEVEL	281.451	281.506	281.613	281.546	281.421	281.116	281.070	281.011	280.915
OFFSET	-6.876	-6.389	-5.389	-4.989	-4.250	0.000	3.250	3.785	6.759

CH. 74970.226



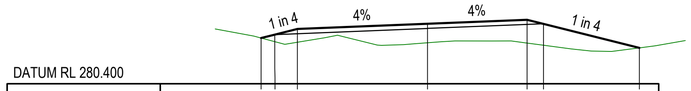
DATUM RL 278.000								
DESIGN LEVEL	280.055	279.089	279.089	279.189	279.368	279.501	279.617	279.480	279.380	279.430
EXISTING LEVEL	280.055	279.807	279.659	279.602	279.500	279.654	279.474	279.430	279.430	279.430
OFFSET	-7.997	-6.067	-5.067	-4.667	-3.950	0.000	3.466	4.013	5.413	5.513

CH. 74998.181



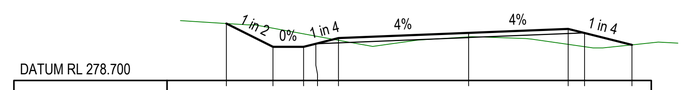
DATUM RL 275.900								
DESIGN LEVEL	278.874	276.944	276.944	277.044	277.210	277.264	277.330	277.185	277.085	277.317
EXISTING LEVEL	278.874	277.938	277.743	277.651	277.498	277.578	277.465	277.439	277.421	277.366	277.317
OFFSET	-9.173	-5.314	-4.314	-3.914	-3.250	0.000	4.034	4.616	5.016	6.016	6.480

CH. 75021.845



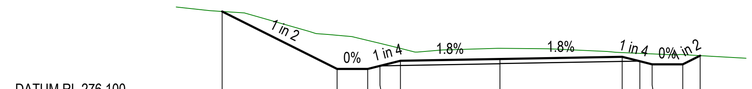
DATUM RL 280.400						
DESIGN LEVEL	281.892	282.003	282.188	282.358	282.488	282.354	281.571
EXISTING LEVEL	281.892	281.774	281.754	281.737	281.728	281.657	281.571
OFFSET	-5.434	-4.989	-4.250	0.000	3.250	3.785	6.917

CH. 74960.000



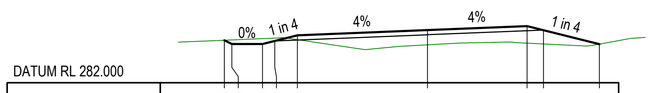
DATUM RL 278.700							
DESIGN LEVEL	280.559	279.799	279.799	279.899	280.083	280.253	280.383	280.250	279.863
EXISTING LEVEL	280.559	280.406	280.222	280.149	280.013	280.124	279.879	279.802	279.863
OFFSET	-7.910	-6.389	-5.389	-4.989	-4.250	0.000	3.250	3.785	5.332

CH. 74989.181



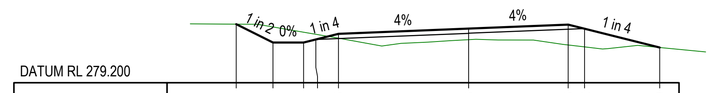
DATUM RL 276.100								
DESIGN LEVEL	279.003	277.127	277.127	277.227	277.394	277.452	277.523	277.378	277.278	277.561
EXISTING LEVEL	279.003	278.226	278.059	277.963	277.797	277.800	277.661	277.636	277.618	277.594	277.561
OFFSET	-9.071	-5.318	-4.318	-3.918	-3.250	0.000	3.990	4.569	4.969	5.969	6.536

CH. 75020.000



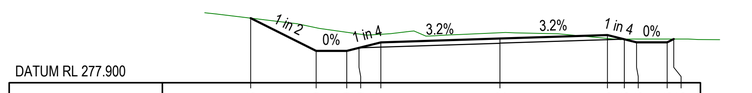
DATUM RL 282.000							
DESIGN LEVEL	283.386	283.263	283.263	283.363	283.548	283.718	283.848	283.714	283.258
EXISTING LEVEL	283.386	283.396	283.438	283.454	283.405	283.236	283.290	283.264	283.258
OFFSET	-6.635	-6.389	-5.389	-4.989	-4.250	0.000	3.250	3.785	5.610

CH. 74940.000



DATUM RL 279.200								
DESIGN LEVEL	281.111	280.511	280.511	280.611	280.796	280.966	281.096	280.962	280.349
EXISTING LEVEL	281.111	281.020	280.849	280.780	280.654	280.605	280.432	280.369	280.349
OFFSET	-7.588	-6.389	-5.389	-4.989	-4.250	0.000	3.250	3.785	6.238

CH. 74980.000



DATUM RL 277.900								
DESIGN LEVEL	280.008	278.939	278.939	279.039	279.217	279.342	279.455	279.318	279.218	279.325
EXISTING LEVEL	280.008	279.694	279.545	279.488	279.480	279.532	279.346	279.319	279.325	279.325
OFFSET	-8.139	-6.002	-5.002	-4.602	-3.889	0.000	3.510	4.059	4.459	5.459	5.674

CH. 75000.000

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.

CROSS SECTIONS

Scale A

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ANNOTATED CROSS SECTIONS SHEET 3

Drawn: B Doherty
Designed: B Doherty

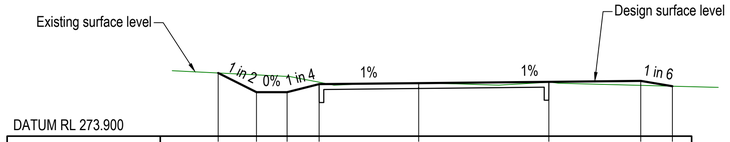
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	802
Revision	A
Series No.	11 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_MC80_XSECT_03.dwg

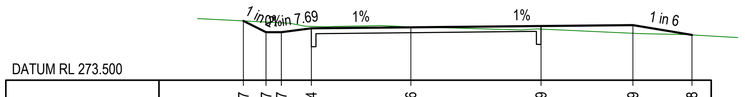
Last Modified :- Nov 24, 2023 - 9:22pm



DATUM RL 273.900

DESIGN LEVEL	275.960	275.335	275.335	275.596	275.629	275.672	275.702	275.529
EXISTING LEVEL	275.960	275.899	275.849	275.659	275.628	275.658	275.556	275.529
OFFSET	-6.547	-5.296	-4.296	-3.250	0.000	4.250	7.250	8.283

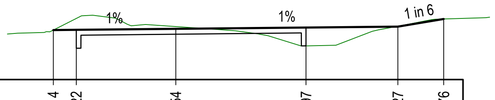
CH. 75037.100



DATUM RL 273.500

DESIGN LEVEL	275.437	275.067	275.067	275.194	275.226	275.269	275.299	274.978
EXISTING LEVEL	275.437	275.399	275.373	275.259	275.240	275.170	275.031	274.978
OFFSET	-5.468	-4.728	-4.228	-3.250	0.000	4.250	7.250	9.177

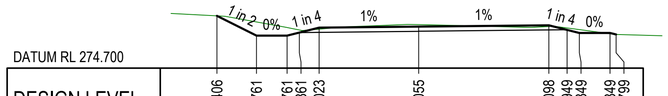
CH. 75041.100



DATUM RL 273.000

DESIGN LEVEL	274.614	274.622	274.654	274.697	274.727	274.976
EXISTING LEVEL	274.614	274.994	274.728	274.097	274.740	274.976
OFFSET	-4.000	-3.250	0.000	4.250	7.250	8.746

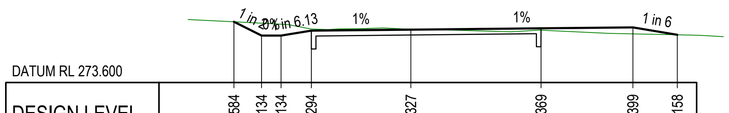
CH. 75053.100



DATUM RL 274.700

DESIGN LEVEL	276.406	275.761	275.761	275.861	276.023	276.055	276.098	275.949	275.849	275.849	275.799
EXISTING LEVEL	276.406	276.207	276.025	275.945	275.974	276.121	276.059	276.012	275.958	275.826	275.799
OFFSET	-6.587	-5.296	-4.296	-3.896	-3.250	0.000	4.250	4.846	5.246	6.246	6.446

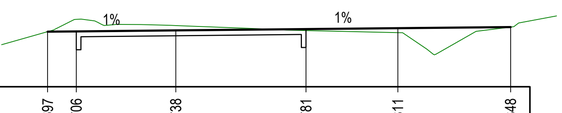
CH. 75033.226



DATUM RL 273.600

DESIGN LEVEL	275.584	275.134	275.134	275.294	275.327	275.369	275.399	275.158
EXISTING LEVEL	275.584	275.537	275.504	275.346	275.345	275.309	275.188	275.158
OFFSET	-5.776	-4.874	-4.237	-3.250	0.000	4.250	7.250	8.700

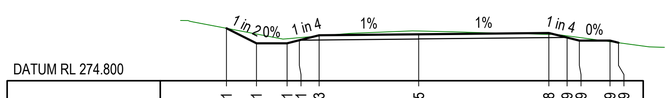
CH. 75040.000



DATUM RL 272.900

DESIGN LEVEL	274.697	274.706	274.738	274.781	274.811	274.848
EXISTING LEVEL	274.697	275.098	274.897	274.733	274.666	274.848
OFFSET	-4.187	-3.250	0.000	4.250	7.250	10.931

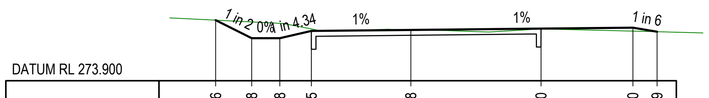
CH. 75049.100



DATUM RL 274.800

DESIGN LEVEL	276.511	276.021	276.021	276.121	276.283	276.315	276.358	276.209	276.109	276.109	276.039
EXISTING LEVEL	276.511	276.324	276.170	276.204	276.259	276.422	276.310	276.265	276.211	276.076	276.039
OFFSET	-6.275	-5.296	-4.296	-3.886	-3.250	0.000	4.250	4.846	5.246	6.246	6.525

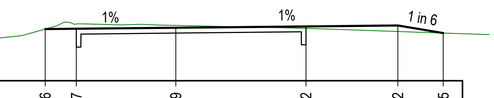
CH. 75030.845



DATUM RL 273.900

DESIGN LEVEL	275.876	275.288	275.288	275.525	275.558	275.600	275.630	275.499
EXISTING LEVEL	275.876	275.819	275.772	275.590	275.560	275.590	275.519	275.499
OFFSET	-6.373	-5.197	-4.278	-3.250	0.000	4.250	7.250	8.038

CH. 75037.750



DATUM RL 273.200

DESIGN LEVEL	274.886	274.897	274.929	274.972	275.002	274.755
EXISTING LEVEL	274.886	275.050	275.004	274.908	274.806	274.755
OFFSET	-4.263	-3.250	0.000	4.250	7.250	8.729

CH. 75045.100

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.

CROSS SECTIONS

Scale A

XREFS :- X_CRC_BSC_TITLE.dwg : X_MC80_XSECT_04.dwg

Last Modified :- Nov 24, 2023 - 9:22pm

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc quality people client focused solution driven

245 Mary Street, GYMPIE, QLD, 4570

ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

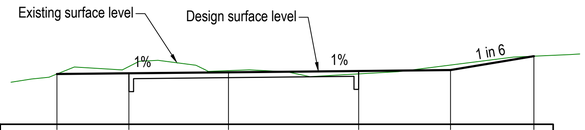
Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ANNOTATED CROSS SECTIONS SHEET 4

Drawn: B Doherty

Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

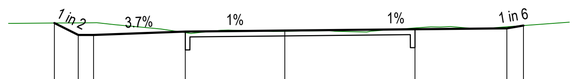
Job No.	CRC00292
Drawing No.	803
Revision	A
Series No.	12 of 20



DATUM RL 273.000

DESIGN LEVEL	274.641	274.664	274.697	274.739	274.769	275.223
EXISTING LEVEL	274.641	274.885	274.750	274.644	274.933	275.223
OFFSET	-5.601	-3.250	0.000	4.250	7.250	9.971

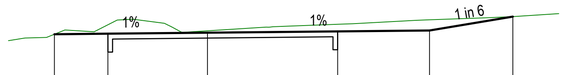
CH. 75060.000



DATUM RL 273.500

DESIGN LEVEL	275.445	275.057	275.057	275.168	275.200	275.243	275.273	275.363
EXISTING LEVEL	275.445	275.452	275.455	275.133	275.175	275.285	275.323	275.363
OFFSET	-7.522	-6.745	-6.245	-3.250	0.000	4.250	7.250	7.790

CH. 75069.100



DATUM RL 273.000

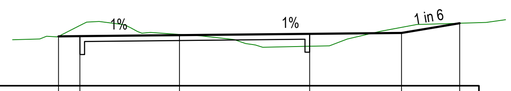
DESIGN LEVEL	274.602	274.620	274.652	274.695	274.725	275.178
EXISTING LEVEL	274.602	274.912	274.715	274.927	275.073	275.178
OFFSET	-4.997	-3.250	0.000	4.250	7.250	9.970

CH. 75057.100

DATUM RL 273.200

DESIGN LEVEL	274.828	274.879	274.911	274.954	274.984	274.782
EXISTING LEVEL	274.828	274.939	274.894	274.739	274.838	274.782
OFFSET	-8.346	-3.250	0.000	4.250	7.250	8.461

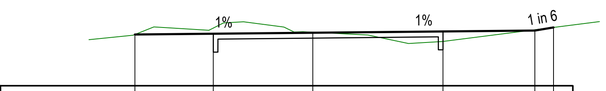
CH. 75065.100



DATUM RL 273.000

DESIGN LEVEL	274.610	274.617	274.650	274.693	274.723	275.039
EXISTING LEVEL	274.610	274.965	274.674	274.288	274.904	275.039
OFFSET	-3.950	-3.250	0.000	4.250	7.250	9.148

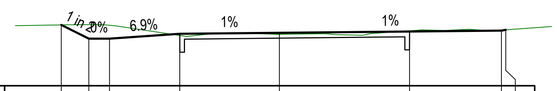
CH. 75054.250



DATUM RL 273.000

DESIGN LEVEL	274.670	274.696	274.728	274.771	274.801	274.902
EXISTING LEVEL	274.670	274.881	274.746	274.444	274.825	274.902
OFFSET	-5.808	-3.250	0.000	4.250	7.250	7.859

CH. 75061.100



DATUM RL 273.600

DESIGN LEVEL	275.585	275.135	275.135	275.294	275.327	275.369	275.399	275.423
EXISTING LEVEL	275.585	275.593	275.572	275.240	275.277	275.392	275.413	275.423
OFFSET	-7.121	-6.221	-5.546	-3.250	0.000	4.250	7.250	7.391

CH. 75070.500

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.

CROSS SECTIONS

Scale A

XREFS :- X_CRC_BSC_TITLE.dwg ; X_MC80_XSECT_05.dwg

Last Modified :- Nov 24, 2023 - 9:22pm

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

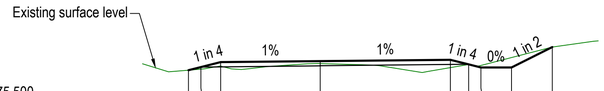
Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ANNOTATED CROSS SECTIONS SHEET 5

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

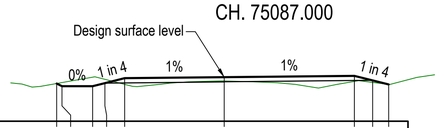
Job No.	CRC00292
Drawing No.	804
Revision	A
Series No.	13 of 20



DATUM RL 275.500

DESIGN LEVEL	276.585	276.686	276.848	276.880	276.923	276.774	276.674	276.674	277.339
EXISTING LEVEL	276.585	276.619	276.717	276.800	276.670	276.760	276.739	276.997	277.339
OFFSET	-4.302	-3.896	-3.250	0.000	4.250	4.846	5.246	6.246	7.577

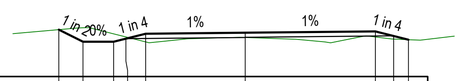
CH. 75087.000



DATUM RL 275.100

DESIGN LEVEL	276.331	276.244	276.344	276.505	276.538	276.580	276.431	276.301
EXISTING LEVEL	276.331	276.362	276.538	276.467	276.303	276.413	276.400	276.367	276.301
OFFSET	-5.470	-5.296	-4.296	-3.896	-3.250	0.000	4.250	4.846	5.370

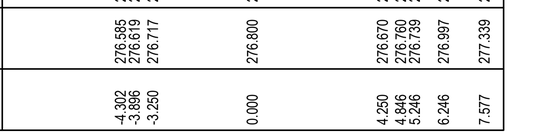
CH. 75083.248



DATUM RL 274.800

DESIGN LEVEL	276.330	275.935	275.935	276.035	276.197	276.229	276.272	276.123	276.002
EXISTING LEVEL	276.330	276.390	276.193	276.092	275.929	276.075	276.091	276.022	276.002
OFFSET	-6.086	-5.296	-4.296	-3.896	-3.250	0.000	4.250	4.846	5.328

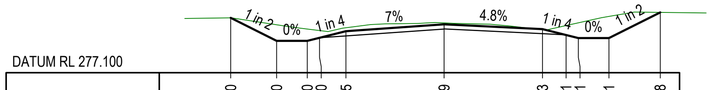
CH. 75080.000



DATUM RL 273.900

DESIGN LEVEL	275.787	275.280	275.280	275.541	275.574	275.616	275.646	275.657
EXISTING LEVEL	275.787	275.772	275.593	275.435	275.493	275.595	275.630	275.657
OFFSET	-6.311	-5.296	-4.296	-3.250	0.000	4.250	7.250	8.307

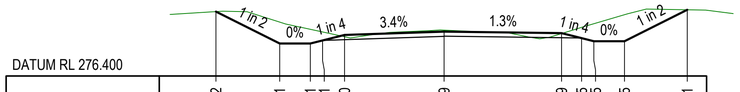
CH. 75073.100



DATUM RL 277.100

DESIGN LEVEL	278.890	278.140	278.140	278.240	278.455	278.679	278.523	278.331	278.231	279.068
EXISTING LEVEL	278.890	278.665	278.525	278.476	278.566	278.725	278.520	278.638	278.727	278.937	279.068
OFFSET	-6.968	-5.467	-4.467	-4.067	-3.205	0.000	3.213	3.983	4.383	5.383	7.058

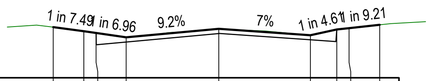
CH. 75120.000



DATUM RL 276.400

DESIGN LEVEL	278.502	277.461	277.461	277.561	277.740	277.849	277.799	277.635	277.535	278.561
EXISTING LEVEL	278.502	278.160	277.923	277.837	277.682	277.896	277.785	277.987	278.105	278.400	278.561
OFFSET	-7.448	-5.367	-4.367	-3.967	-3.250	0.000	3.835	4.490	4.890	5.890	7.940

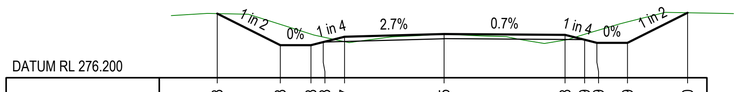
CH. 75100.000



DATUM RL 277.200

DESIGN LEVEL	278.853	278.720	278.662	278.521	278.798	278.589	278.776	278.820	278.928
EXISTING LEVEL	278.853	278.720	278.662	278.521	278.788	278.589	278.776	278.820	278.928
OFFSET	-5.405	-4.405	-4.005	-3.023	0.000	2.992	3.853	4.253	5.253

CH. 75132.000



DATUM RL 276.200

DESIGN LEVEL	278.293	277.263	277.263	277.363	277.537	277.625	277.598	277.439	277.339	278.320
EXISTING LEVEL	278.293	277.941	277.623	277.527	277.376	277.618	277.428	277.617	277.737	278.021	278.320
OFFSET	-7.408	-5.346	-4.346	-3.946	-3.250	0.000	3.950	4.588	4.988	5.988	7.950

CH. 75096.562

DATUM RL 277.200

DESIGN LEVEL	278.868	278.704	278.601	278.579	278.526	278.793	278.594	278.688	278.699	278.783	278.997
EXISTING LEVEL	278.868	278.829	278.707	278.649	278.516	278.778	278.589	278.772	278.849	278.958	278.997
OFFSET	-5.743	-5.414	-4.414	-4.014	-3.057	0.000	3.033	3.876	4.276	5.276	5.703

CH. 75129.748

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.

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

CROSS SECTIONS

Scale A

NOTE:

1. This drawing is to be read in conjunction with the Notes and Legend on Drg. #### / 002.
2. For pavement details refer Pavement and Surface Treatment Plan drg. #### / 500.

A	Issue for Construction				
20.01	Revisions/Descriptions	Drawn	Approved	Date	

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
ANNOTATED CROSS SECTIONS SHEET 5

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

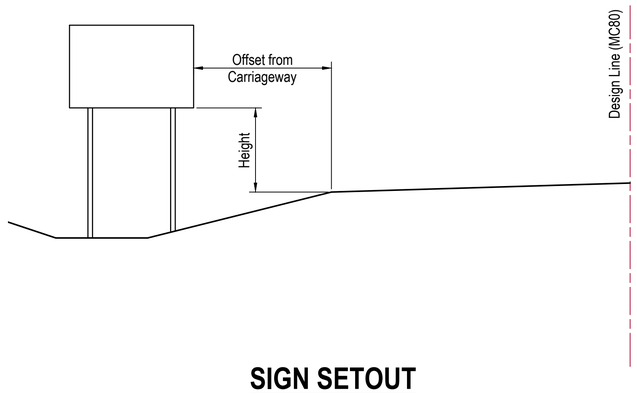
Job No.	CRC00292
Drawing No.	805
Revision	A
Series No.	14 of 20

XREFS :- X_CRC_BSC_TITLE.dwg : X_MC80_XSECT_06.dwg

Last Modified :- Nov 24, 2023 - 9:22pm

SIGN SCHEDULE

CHAINAGE (M)	POSITION	SIGN DESCRIPTION	SIGN TYPE	WORK DESCRIPTION	SIGN DETAILS					STIFFENER DETAILS				NEW SUPPORT DETAILS							NEW FOOTING DETAILS			
					WIDTH (mm)	HEIGHT (mm)	AREA (m^2)	OFFSET FROM CARRIAGEWAY (mm)	HEIGHT ABOVE CARRIAGEWAY (mm)	TYPE	No.	SPACING (mm)	No. OF BRACKETS	Type	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)
74830	LHS	Guide, "Reduce Speed"	G9-9	Install New	1800	900	1.6200	2000	1500	1	2	350	4	CHS Steel	2	1500	60.3	C350	3500 C.T.S.	3500 C.T.S.	-	-	300	750
74890	LHS	Warning, Floodway	W5-7-1	Install New	750	750	0.5600	2000	1500	1	-	-	-	CHS Steel	1	-	60.3	C350	3500 C.T.S.	-	-	-	300	750
74940	LHS	Guide, "Road Subject to Flooding" Guide, "Sunny Slopes Ck"	G9-21-1 -	Install New Salvaged	2150	800	1.7200	2000	1500	1	3	350	6	CHS Steel	2	1500	60.3	C350	3500 C.T.S.	3500 C.T.S.	-	-	300	750
74980	LHS	Warning, Curve Right	W1-3R	Install New	750	750	0.5600	2000	1500	1	-	-	-	CHS Steel	1	-	60.3	C350	3500 C.T.S.	-	-	-	300	750
75054.250	LHS	Guide, Flood depth marker	G9-22-1	Install New	Refer Details in DTMR Std Drg 1170 - Flood Depth Indicators - Installation																			
75056.250	RHS	Guide, Flood depth marker	G9-22-1	Install New																				
75140	RHS	Warning, Curve Left	W1-3L	Install New	750	750	0.5600	2000	1500	1	-	-	-	CHS Steel	1	-	60.3	C350	3500 C.T.S.	-	-	-	300	750
75170	RHS	Guide, "Road Subject to Flooding" Guide, "Sunny Slopes Ck"	G9-21-1 -	Install New Salvaged	2150	800	1.7200	2000	1500	1	3	350	6	CHS Steel	2	1500	60.3	C350	3500 C.T.S.	3500 C.T.S.	-	-	300	750
75220	RHS	Special Warning, Crest / Floodway / Reduce Speed	TC1308_4B	Install New	1200	2400	2.8800	2000	1500	1	6	350	12	CHS Steel	2	1500	60.3	C350	3500 C.T.S.	3500 C.T.S.	-	-	300	750



SIGN SETOUT

PAVEMENT MARKING TYPES

No.	TYPE	EXAMPLE	WIDTH	DESCRIPTION
LONGITUDINAL LINES				
C	Barrier Line (Single)		100mm	Continuous (on floodway)

XREFS :- X_CRC_BSC_TITLE.dwg

Last Modified :- Nov 24, 2023 - 9:22pm

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
SUPPLEMENTARY SIGNS AND LINEMARKING DETAILS

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

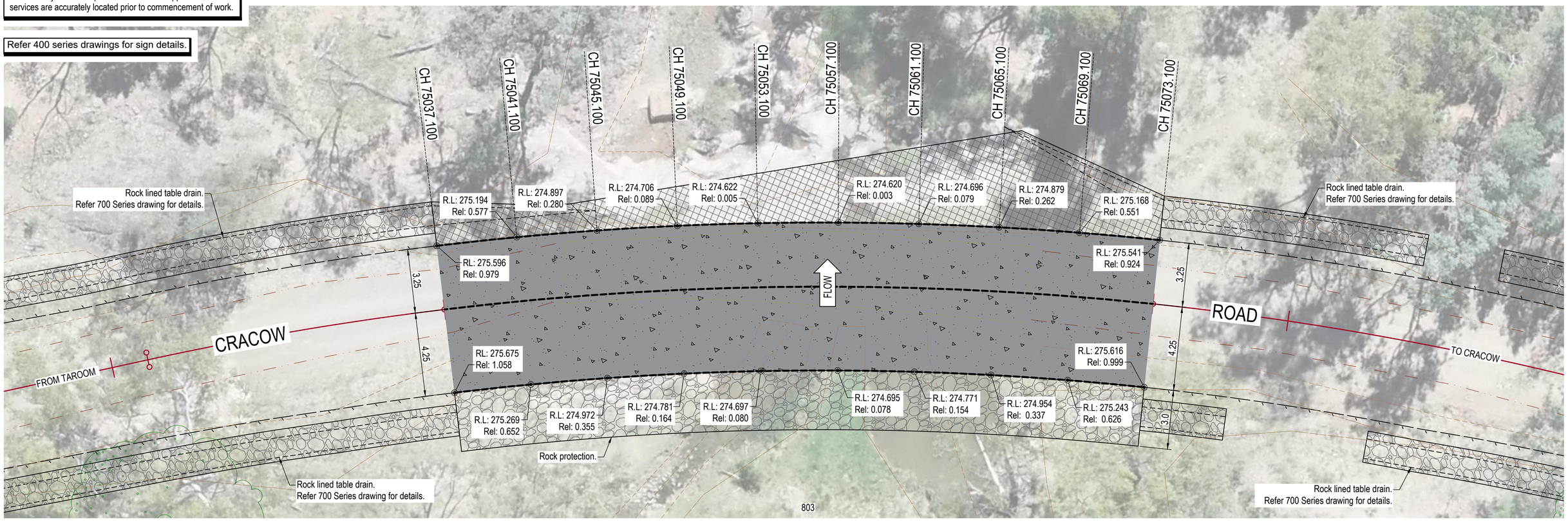
Job No.	CRC00292
Drawing No.	1000
Revision	A
Series No.	15 of 20

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.

Refer 400 series drawings for sign details.



PLAN

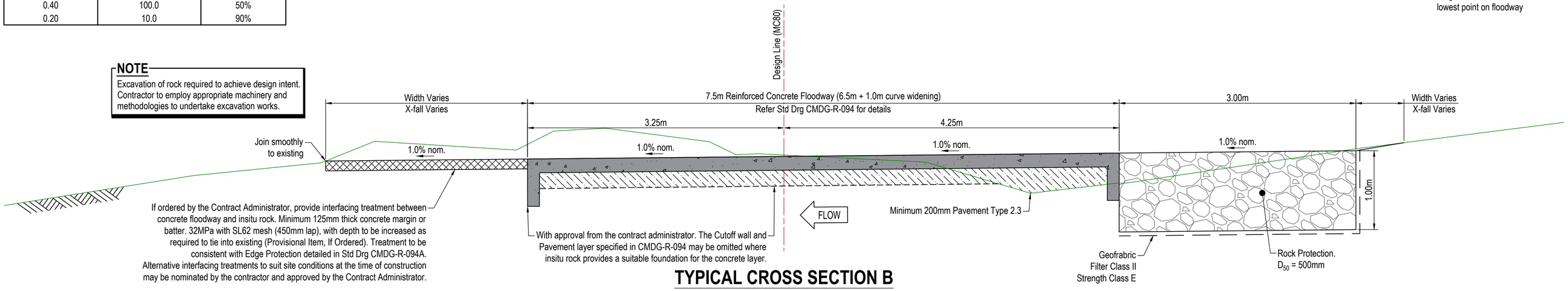
Scale: 1:100

OUTLET ROCK PROTECTION GRADING DETAILS

Rock Size (m)	Rock Mass (kg)	Percentage of rock larger than.
0.55	250.0	0%
0.40	100.0	50%
0.20	10.0	90%

NOTE

Excavation of rock required to achieve design intent. Contractor to employ appropriate machinery and methodologies to undertake excavation works.



TYPICAL CROSS SECTION B

Chge 75037.100 - 75073.100 (MC80 - Floodway)

Not to Scale

LEGEND

R.L: Reduced Level AHD
Rel: Height relative to lowest point on floodway

A	Issue for Construction				
20.01	Revisions/Descriptions	Drawn	Approved	Date	

Scales (sheet size A1)

Scale A 0 1.0 2.0 3.0 4.0 5.0 1:100

Dimensions shown in metres except where shown otherwise

crc quality people client focused solution driven

245 Mary Street, GYMPIE, QLD, 4570

ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
FLOODWAY DETAILS

Drawn: B Doherty

Designed: B Doherty

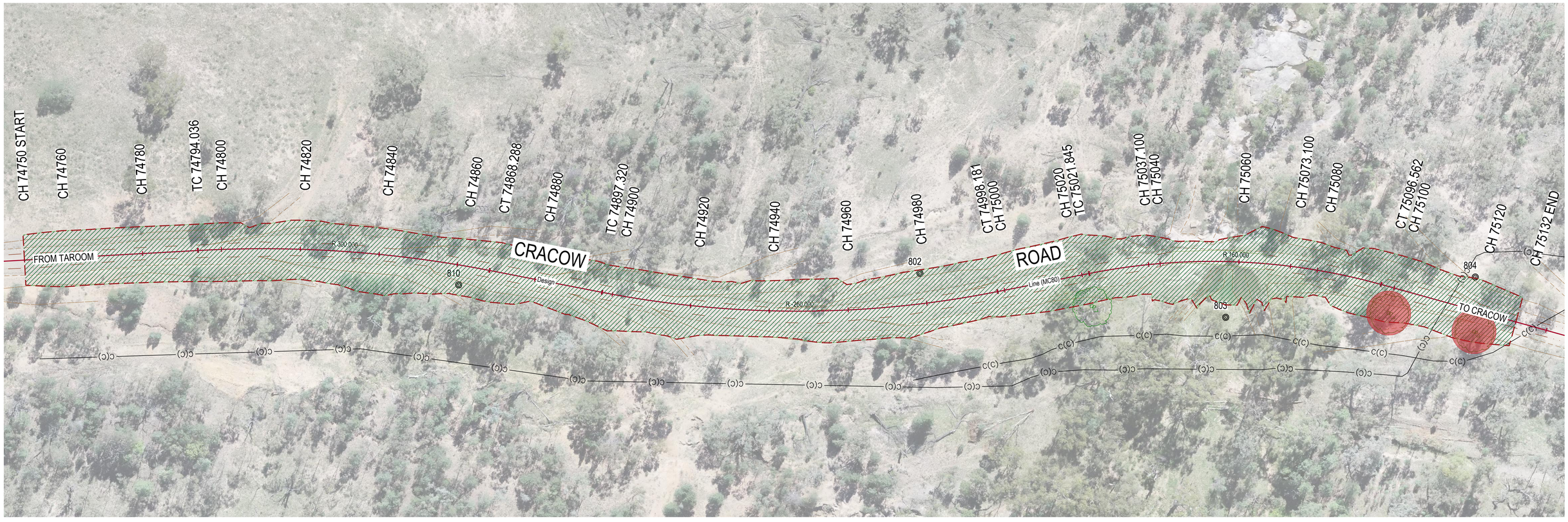
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	1200
Revision	A
Series No.	16 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_IMAGE.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_DESIGN.dwg ; X_HATCH.dwg

Last Modified :- Nov 27, 2023 - 10:44am



DESIGN LINE MC80

CHAINAGE	OFFSET LHS	OFFSET RHS
74750.0000	6.389	6.389
74760.0000	6.925	7.325
74770.0000	6.857	7.205
74780.0000	6.825	7.393
74790.0000	6.695	7.690
74800.0000	6.761	8.127
74810.0000	6.408	8.108
74820.0000	7.382	7.604
74830.0000	6.819	8.511
74840.0000	6.695	10.066
74850.0000	6.266	8.741
74860.0000	6.688	7.624
74870.0000	7.515	7.865

DESIGN LINE MC80

CHAINAGE	OFFSET LHS	OFFSET RHS
74880.0000	5.543	5.631
74890.0000	7.373	7.125
74900.0000	7.189	9.285
74910.0000	7.280	8.031
74920.0000	6.957	8.111
74930.0000	6.976	6.791
74940.0000	7.635	6.610
74950.0000	8.096	7.609
74960.0000	6.434	7.917
74970.0000	7.851	7.762
74980.0000	8.588	7.238
74990.0000	8.990	6.290
75000.0000	9.139	6.674

DESIGN LINE MC80

CHAINAGE	OFFSET LHS	OFFSET RHS
75010.0000	9.591	7.474
75020.0000	10.071	7.536
75030.0000	7.489	7.533
75040.0000	6.776	9.700
75050.0000	5.131	10.645
75060.0000	6.601	10.971
75070.0000	8.265	8.548
75080.0000	7.086	6.328
75090.0000	7.848	9.034
75100.0000	8.448	8.940
75110.0000	7.659	7.423
75120.0000	7.968	8.058
75130.0000	6.706	6.659

LEGEND

- Tree to be removed
- Limit of clearing
- 403 - Survey Mark and Label
- C(C) - Comms, Direct buried Optic Fibre

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 5 10 15 20 25 1:500

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
LIMIT OF CLEARING PLAN

Drawn: B Doherty
Designed: B Doherty

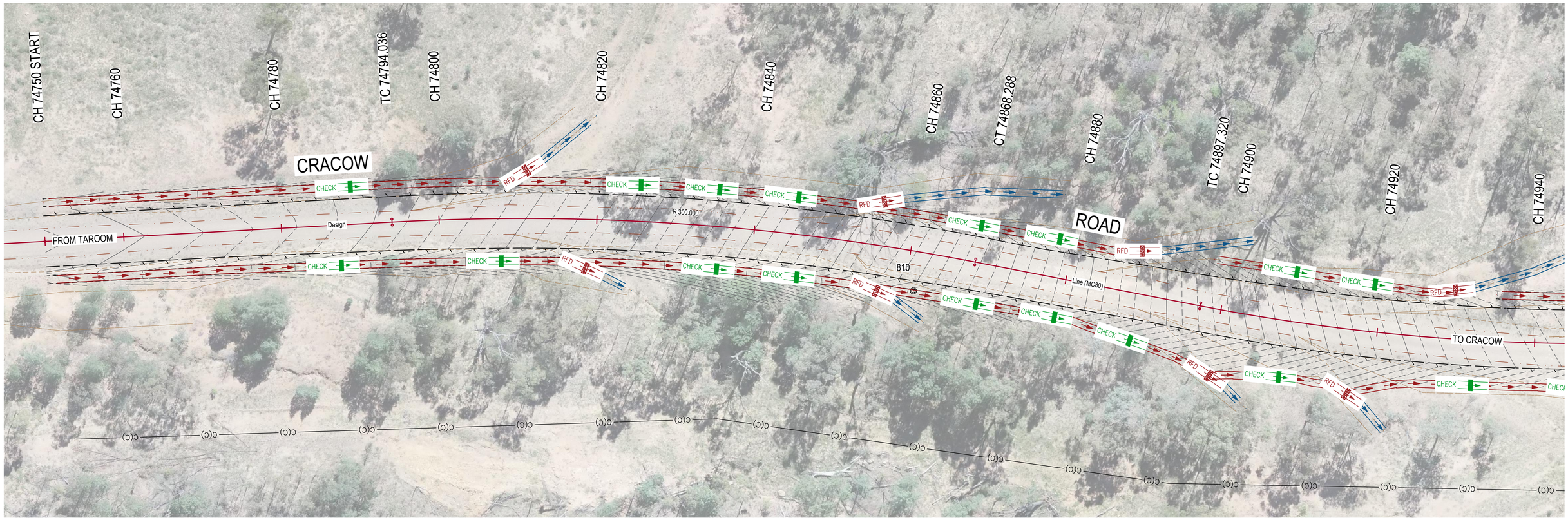
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	T Penrose		24087	24/11/23

Job No.	CRC00292
Drawing No.	1600
Revision	A
Series No.	17 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_DESIGN.dwg ; X_IMAGE.dwg ; X_HATCH.dwg ; X_LIMIT OF CLEARING.dwg

Last Modified :- Nov 24, 2023 - 9:22pm



PLAN
Scale: 1:250

LEGEND

- Diversion Bank
- (SF) Silt Fence
- Geo Log
- Dirty Water Flow
- Clean Water Flow
- CHECK Rock Check Dam
- RFD End of line rock check dam (to act as rock filter dam)
- Existing Trees
- 403 Survey Mark and Label

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 2 4 6 8 10 12 1:250

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
TEMPORARY EROSION AND SEDIMENT CONTROL SHEET 1

Drawn: B Doherty
Designed: B Doherty

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	P Meredith		15268	

Job No.	CRC00292
Drawing No.	1700
Revision	A
Series No.	18 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_DESIGN.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_CONTOURS.dwg ; X_ENS.dwg ; X_IMAGE.dwg ; X_HATCH.dwg

Last Modified :- Nov 24, 2023 - 9:22pm

PLAN

Scale: 1:250

LEGEND

- Diversion Bank
- (SF) Silt Fence
- Geo Log
- Dirty Water Flow
- Clean Water Flow
- CHECK Rock Check Dam
- RFD End of line rock check dam (to act as rock filter dam)
- Existing Trees
- 403 Survey Mark and Label

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 2 4 6 8 10 12 1:250

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
TEMPORARY EROSION AND SEDIMENT CONTROL SHEET 2

Drawn: B Doherty
Designed: B Doherty

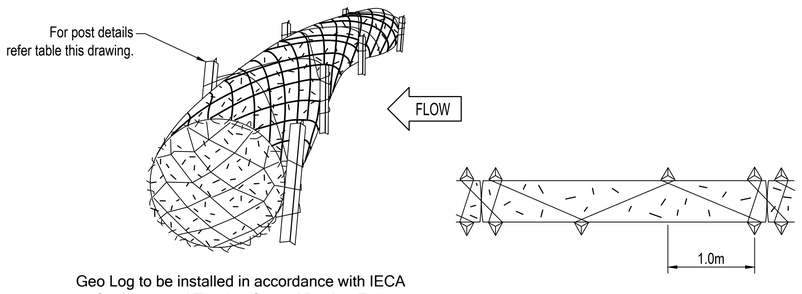
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	P Meredith		15268	

Job No.	CRC00292
Drawing No.	1701
Revision	A
Series No.	19 of 20

XREFS :- X_CRC_BSC_TITLE.dwg ; X_DESIGN.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_CONTOURS.dwg ; X_ENS.dwg ; X_IMAGE.dwg ; X_HATCH.dwg

Last Modified :- Nov 24, 2023 - 9:22pm



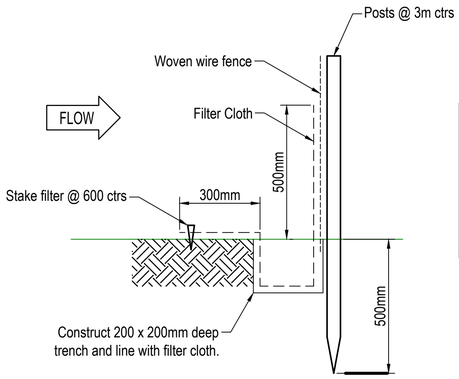
Geo Log to be installed in accordance with IECA Sediment and Erosion Control Design Fact Sheets - Instream Practices

GEO-LOG STAKING METHOD

N.T.S

MATERIALS

MATERIAL	TYPE
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



Erection Notes

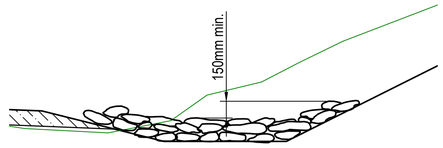
Woven fence to be fastened securely to fence posts with wire ties or staples. Filter cloth to be fastened securely to woven wire fence with teis speaced every 600mm at top of mid section. When two sections of filter cloth adjoin each other they shall be overlapped by 150mm and folded and material removeed when bulging of fence occurs.

SILT FENCE

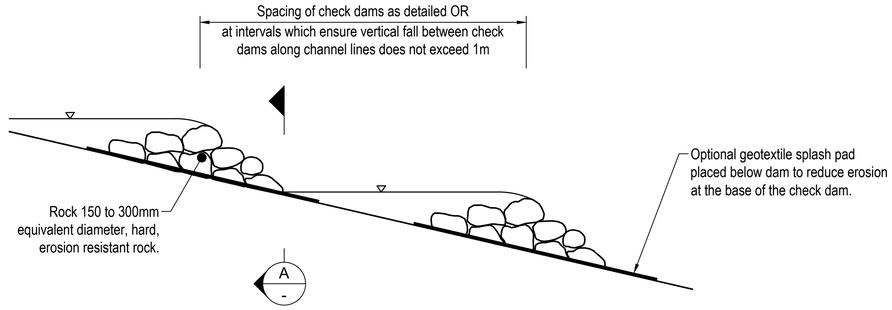
N.T.S

LEGEND

- Diversion Bank
- (SF) Silt Fence
- Geo Log
- Dirty Water Flow
- Clean Water Flow
- CHECK Rock Check Dam
- RFD End of line rock check dam (to act as rock filter dam)
- Existing Trees



SECTION A -

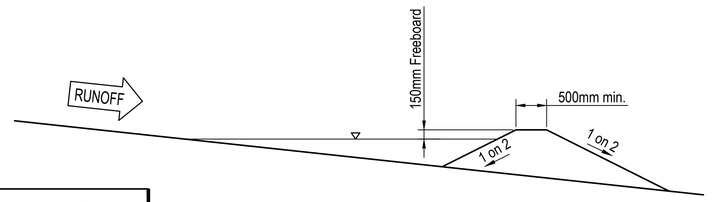


ROCK CHECK DAM

N.T.S

Notes

1. Design and construction of all sediment management devices is the contractors responsibility and shall be completed and effective prior to:
   (i) Stripping of topsoil and grass.
   (ii) Bulk earthworks to the site.
   (iii) Service installations.
2. All sediment management devices are to remain in place until notice from the Contract Administrator
3. Both temporary and permanent sediment management devices shall be maintained at a suitable level/condition throughout construction. Sediment fences are to be cleaned out when capacity is reduced by 30%.
4. If erosion and sediment control devices have been found to be deficient or failed in service, due to unforeseen circumstances, corrective action is to be undertaken immediately which may include amendments/additions to the original approved erosion control plans. such additions or amendments are to be approved by the Contract Administrator.
5. All erosion and sediment control devices are to be inspected at least weekly, before and after rainfall events. Any damage or excess erosion/sediment is to be repaired/managed as required to maintain control devices.
6. Devices shown on the drawings shall not necessarily be limited to the locations shown. Additional devices may be required as directed by Contract Administrator.
7. Rock check dams to be installed per detail this drawing in drainage channels with slopes greater than 2%. Spacing of check dams to be at every 1.0m vertical drop in drainage channel.
8. Contract Administrator to order installation of topsoil and grass seeding to disturbed areas.
9. The contractor shall ensure all turfed and/or seeded areas are regularly watered to ensure vegetation is maintained until there is 80% coverage.
10. Stockpiles shall be protected from erosion and sediment loss by:
    - The installation of diversion works on the upstream side.
    - The use of silt fences or other approved controls on the downstream side.
    - Compaction.
    - Re-vegetation if left exposed for longer than 30 days



A minimum freeboard of 300mm is recommended for non-vegetated earth embankments.

DIVERSION BANK

N.T.S

XREFS :- X_CRC_BSC_TITLE.dwg ; X_DESIGN.dwg ; X_SURVEY.dwg ; X_CONTROL.dwg ; X_CONTOURS.dwg ; X_ENS.dwg ; X_IMAGE.dwg ; X_HATCH.dwg

Last Modified :- Nov 24, 2023 - 9:22pm

A	Issue for Construction			
20.01	Revisions/Descriptions	Drawn	Approved	Date

Scales (sheet size A1)

Scale A 0 2 4 6 8 10 12 1:250

Dimensions shown in metres except where shown otherwise

crc
quality people client focused solution driven
245 Mary Street, GYMPIE, QLD, 4570
ABN 73 617 924 437 Ph: 0477 322 555

Client: Banana SHIRE — SHIRE OF OPPORTUNITY

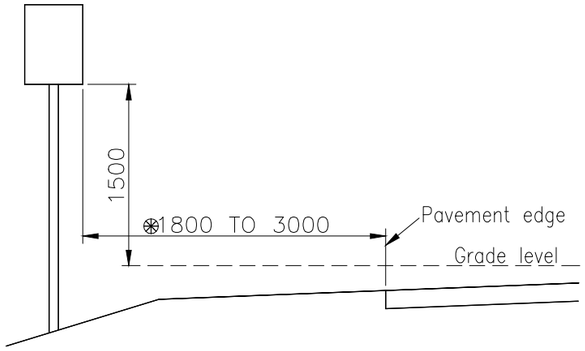
Title: CRACOW ROAD UPGRADE (Ch. 74750m - 75140m)
SITE 8 - SUNNY SLOPES CREEK FLOODWAY
TEMPORARY EROSION AND SEDIMENT CONTROL SHEET 3

Drawn: B Doherty
Designed: B Doherty

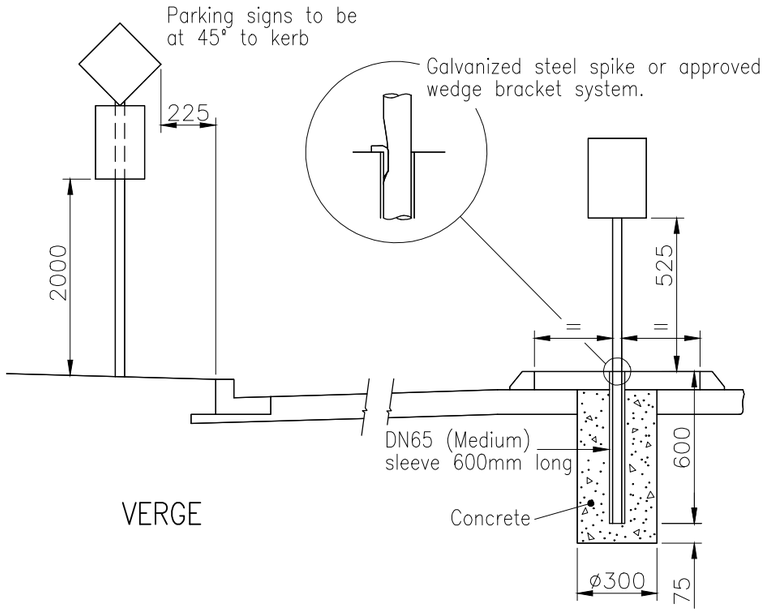
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE
Civil	P Meredith		15268	

Job No.	CRC00292
Drawing No.	1702
Revision	A
Series No.	20 of 20



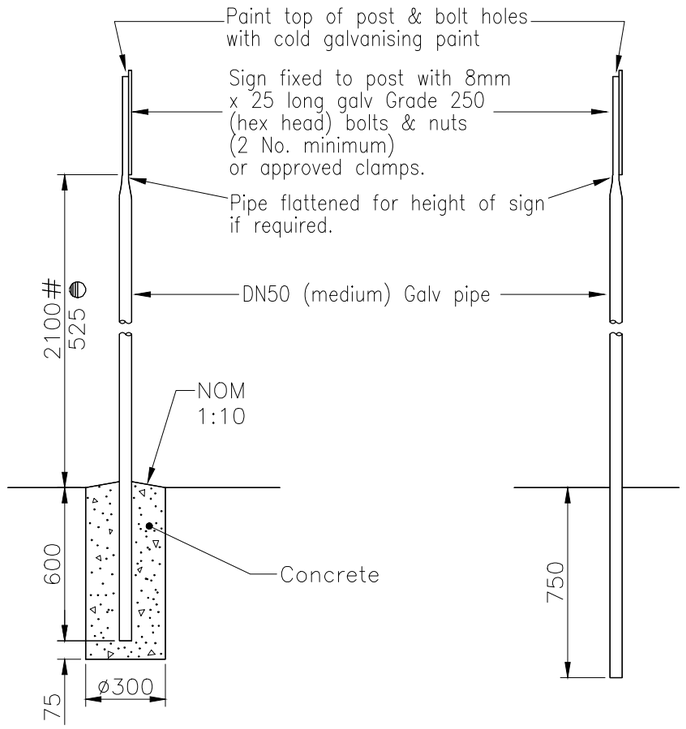
LOCATION OF SIGNS – RURAL ROADS



VERGE

MEDIAN

LOCATION OF SIGNS – STREETS



STREETS

RURAL ROADS

NOTES:

1. All signs to be reflectorised Class 1 to AS1743 unless noted otherwise.
2. Size & sign type has been included in the schedule and/or in the project drawings. Special standards are to be provided at large signs when indicated in the project drawings.
3. All signs are to be approved by the Superintendent prior to erection.
4. Where signs are to be erected in streets where footpaths are not constructed to permanent levels the Rural Roads type base shall be adopted.
5. Signs shall be out of aluminium or aluminium alloy not less than 2mm thick to AS 2848.
6. The DN65 sleeve and spike shall only be used on medians.
7. All pipes to be galvanised. Steel pipe to AS 1074. Galvanising to AS/NZS 4680.
8. Concrete N25 in accordance with AS 1379 and AS 3600.
9. Hexagonal head bolts to AS 1111.
   Nuts to AS 1112.
   Washers to AS 1237.
   Galvanizing to AS 1214.
10. All dimensions in millimetres.
11. Sleeve to be provided as directed by Council

LEGEND

\# on footpaths

⊛ As directed by the Superintendent

⊖ on medians

APPLICABILITY TABLE

Council	BSC	CHRC	GRC	IRC	LSC	MRC	RRC
Applicable	Yes	Yes	Yes	Yes	Yes	Yes	Yes

REVISIONS		DATE
E	IRC ADDED	12/2016
D	GRC AND LSC ADDED	09/2014
C	MRC ADDED	04/2011
B	NOTE 11 ADDED	07/2010
A	POST AMALGAMATION REVIEW	01/2010

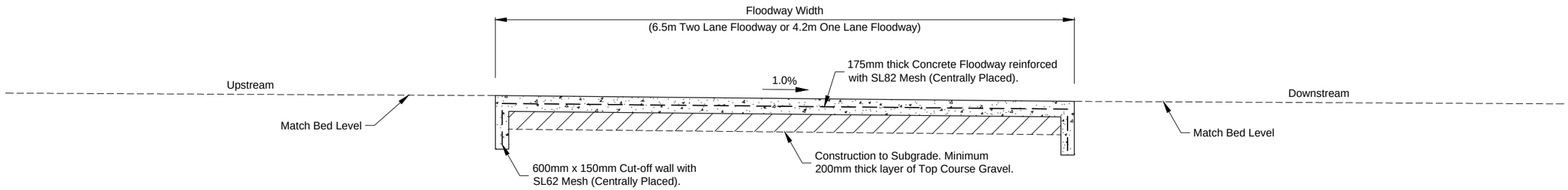
Capricorn Municipal Development Guidelines

Incorporating:

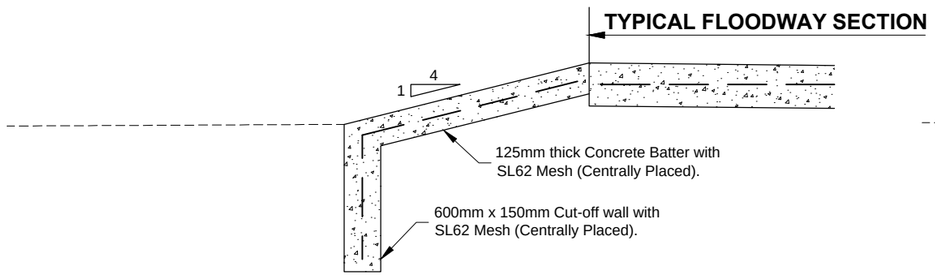
Banana Shire Council (BSC)
Central Highlands Regional Council (CHRC)
Gladstone Regional Council (GRC)
Isaac Regional Council (IRC)
Livingstone Shire Council (LSC)
Maranoa Regional Council (MRC)
Rockhampton Regional Council (RRC)

SIGN LOCATION AND INSTALLATION DETAILS

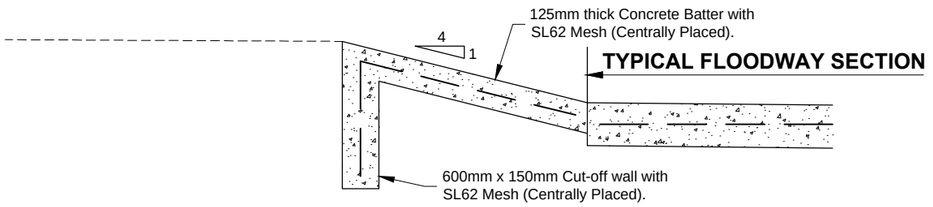
ROADS
STANDARD DRAWING
CMDG-R-081
REV. A B C D E



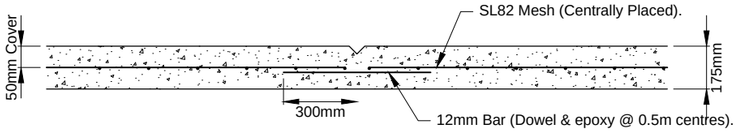
TYPICAL SECTION
Scale 1: 50



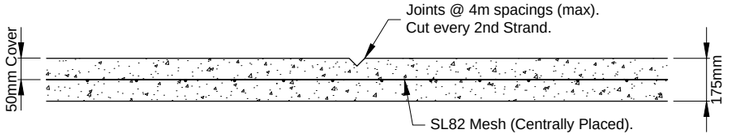
EDGE PROTECTION - FILL SITUATION
Scale 1: 25



EDGE PROTECTION - CUT SITUATION
Scale 1: 25



LONGITUDINAL CONSTRUCTION JOINT
Scale 1: 25



TRANSVERSE JOINT
Scale 1: 25

NOTES:
1. **Provide Transverse joints at 4.0m spacings.**
2. **Provide longitudinal joints at centreline for two-lane floodway.**
3. **Provide longitudinal joints at shoulder where edge-protection is required.**
4. **Concrete strength to be 32 MPa.**
5. **Lap Reinforcement fabric 250mm.**
6. **Floodway signage to be installed in accordance with MUTCD (Part 2, Figure 4.27).**
7. **Delineation to be installed on floodway shoulder at maximum 5m centres and spaced evenly to suit floodway length. Delineation to be installed at centreline of two-lane floodway.**
8. **Floodway depth markers to be installed at lowest point on floodway aligned to downstream side.**

WATERWAY BARRIER WORKS - COMPLIANCE NOTES:
1. **Floodway site to be checked on Queensland Government Spatial Data Layer "*Queensland Waterways for Waterway Barrier Works*" to determine if assessable or self-assessable codes apply.**
2. **The lowest level of the floodway must be installed at the level of lowest point of the natural stream bed (Within the footprint of the crossing.)**
3. **There must be a height difference of at least 100mm from the lowest point of the crossing to the edges of the low flow section of the crossing.**
4. **The level of the remainder of the crossing must be no higher than the lowest point of the natural stream bed outside of the low flow channel.**
5. **Refer to *Code for self-assessable development, Minor waterway barrier works, Part 4: Bed level crossings* for more information and alternative treatments.**

APPLICABILITY TABLE

Council	BSC	CHRC	GRC	IRC	LSC	MRC	RRC
Applicable	Yes	Yes	Yes	No	Yes	Yes	Yes
Applicable DWG	CMDG-R-094A						

REVISIONS		DATE
B	IRC ADDED	12/2016
A	ORIGINAL ISSUE	04/2016

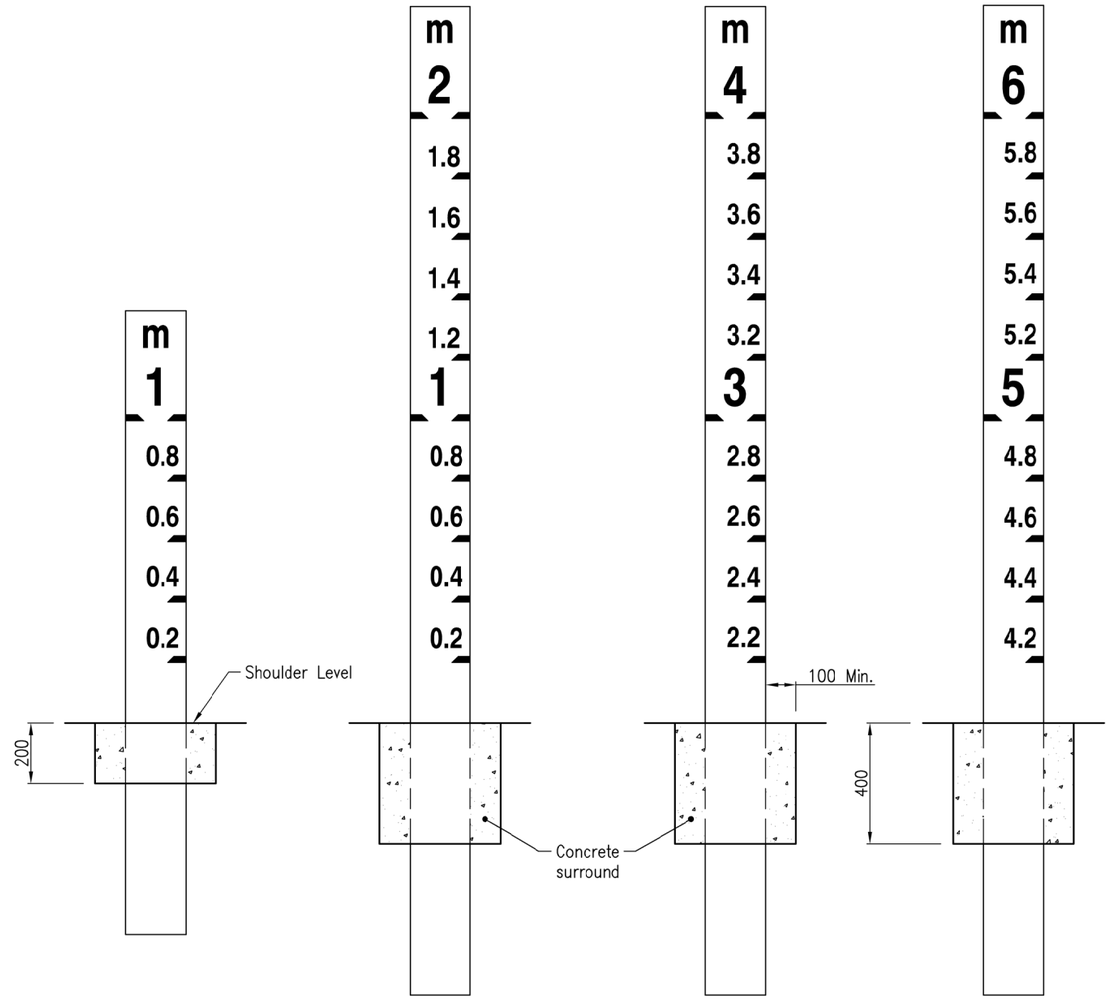
Capricorn Municipal Development Guidelines

Incorporating:

Banana Shire Council (BSC)
Central Highlands Regional Council (CHRC)
Gladstone Regional Council (GRC)
Isaac Regional Council (IRC)
Livingstone Shire Council (LSC)
Maranoa Regional Council (MRC)
Rockhampton Regional Council (RRC)

FLOODWAY – BED LEVEL CROSSING

ROADS
STANDARD DRAWING
CMDG-R-094
REV. A B



G9-22-1A G9-22-1B G9-22-2 G9-22-3

NOTES:

FLOOD DEPTH INDICATORS:

1. To be located at the chainages specified or as directed by the Superintendent.
2. Zero mark to be set at the lowest pavement level on the section of road subject to flooding.
3. G9-22-2 and G9-22-3 indicators to be erected on progressively higher ground where flood depths are in excess of 1.5m or 3.5m respectively.
4. To conform with the details as shown in the MUTCD.

CONCRETE SURROUND:

5. To be class N20/20 and provide 100mm minimum cover all round.
6. Dimensions are in millimetres unless shown otherwise.

ASSOCIATED DEPARTMENTAL DOCUMENTS:

Standard Drawings
Specifications
Manual of Uniform Traffic Control Devices Part 2 (MUTCD)

REFERENCED DOCUMENTS:

Departmental Specifcctions:
MRTS14 Road Furniture
MRTS70 Concrete

Australian Standards:
AS1743 Road Signs – Specifications

Department of Transport and Main Roads

FLOOD DEPTH INDICATORS

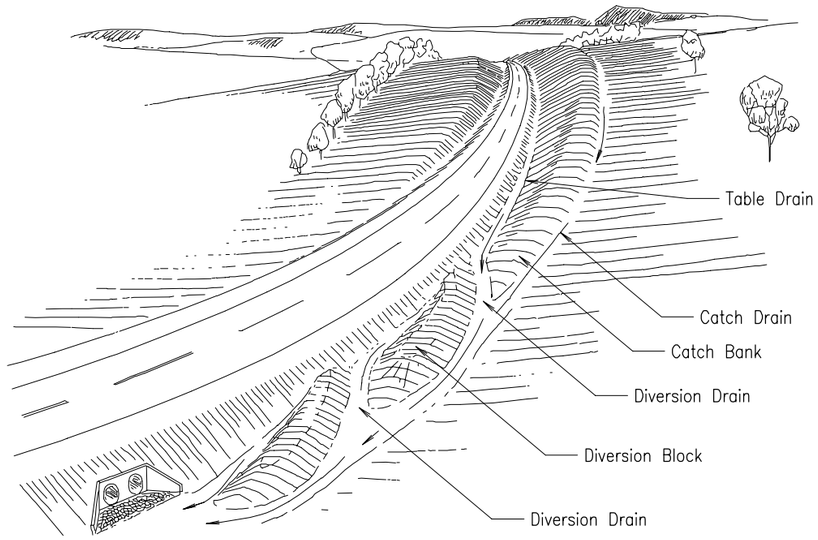
INSTALLATION

Queensland Government

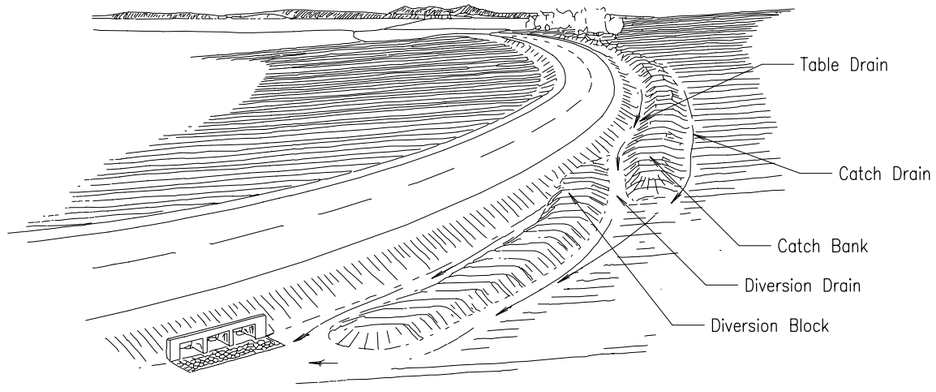
A3
Not to Scale

Standard Drawing No
1170
Date 11/2022

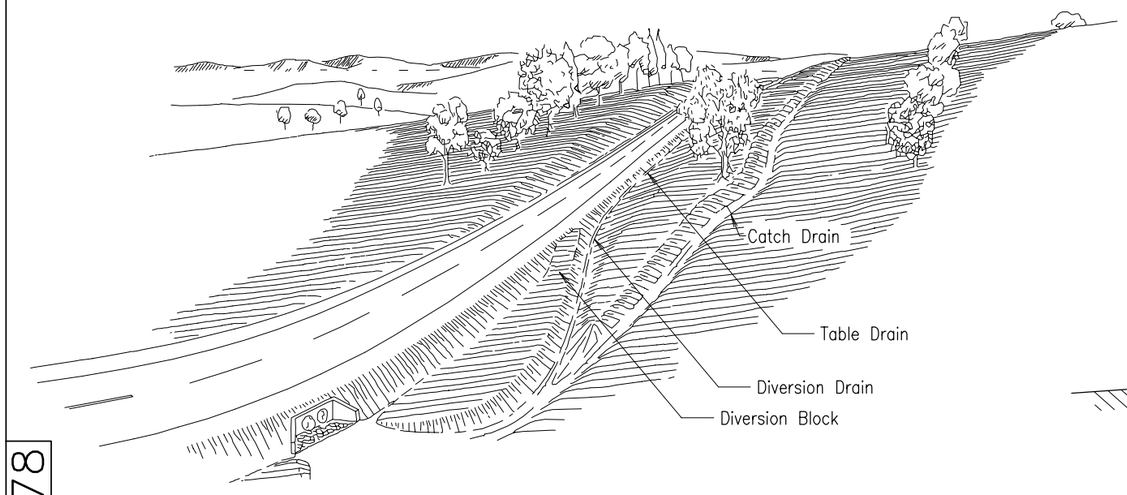
A B C D



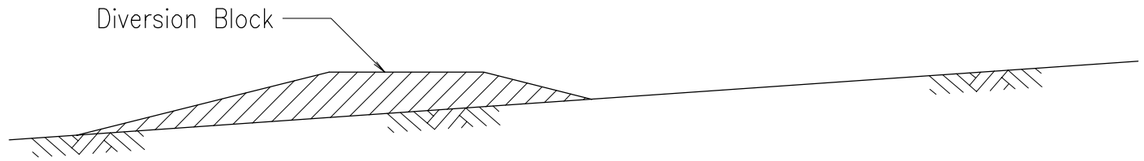
CATCH BANK ON
EARTHWORKS SECTIONS



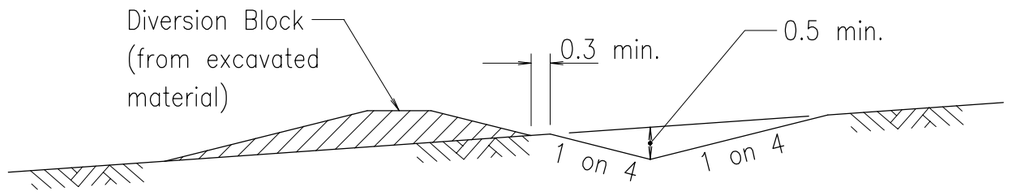
CATCH BANK ON
LOW FORMATION SECTIONS



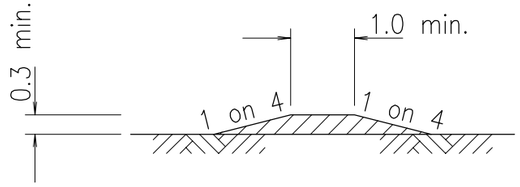
CATCH DRAINS ON
EARTHWORKS SECTIONS



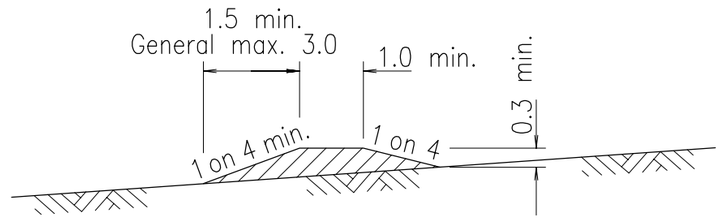
DIVERSION DRAIN IN ERODIBLE SOILS



DIVERSION DRAIN IN NON-ERODIBLE SOILS



DIVERSION BLOCK



CATCH BANK

NOTES:

1. DIVERSION DRAINS, unless shown otherwise in the scheme documents, shall be constructed at culverts and at intervals not exceeding 120m on grades up to 2%, 60m on grades 2% to 4%, 30m on grades 4% to 8% and 15m on grades over 8% (except in cuttings). They shall **have a cross sectional area at least equal to the cross sectional area of the table drains carrying water to them.**
2. ERODIBLE SOILS have sodic and/or dispersive characteristics. Soil testing is required prior to design.
3. DRAINAGE INTO PRIVATE PROPERTIES, with the cooperation of property owners, is to be discharged into contour banks and behind diversion banks to dams where possible.
4. DIMENSIONS are in metres unless shown otherwise.

ASSOCIATED DOCUMENTS:

Department of Main Roads Manual of Standard Drawings Roads
Department of Main Roads Manual of Standard Specifications Roads
Department of Main Roads Road Drainage Design Manual

REFERENCED DOCUMENTS:

Standard Drawings:

1045 Revegetation Treatment of Cut Batters

Standard Specifications:

General Earthworks

1178

DIVERSION OF WATER	Queensland Government Department of Main Roads	
DIVERSION OF WATER FROM ROADWAY AND TABLE DRAINS	Size A3	Drawing No 1178
	Scales as shown	Date 10/03
		A B C D E

Cracow Road – Site 8

Sunny Slopes Floodway

Safety in Design

Client: Banana Shire Council

24/11/2023

Document Control

Document History

Date	Version	Name	Position	Action (Review/endorse/approve)
25/09/2023	0.1	Bryan Doherty	Senior Designer (Civil)	Draft
24/11/2023	1.0	Bryan Doherty	Senior Designer (Civil)	Final

Certification

Date	Name	Position	Signature
06/11/2023	B. Doherty	Senior Designer	
06/11/2023	T. Penrose	RPEQ	

Contents

Document Control 1

Document History 1

Certification 1

Contents 1

1. Purpose of this Document 2
2. Project Scope and Objectives 2
3. Safe Design 2
4. Duty of Care/Disclaimer 3
5. Risk Management 4
6. Appendix A – Safe Design Risk Register 5

1. Purpose of this Document

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, Site 8, Sunny Slopes Creek Floodway (Ch. 76680 – 76859m).

2. Project Scope and Objectives

Scope of works for this project include,

- Pavement widening and overlay and stabilized floodway approaches.
- Geometric improvements, where possible.
- Floodway reconstruction and protective works.
- Signage and road edge guideposts.

3. Safe Design

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.

4. Duty of Care/Disclaimer

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

Table 1 – Methods of controlling risk in order of preference

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, Site 8, Sunny Slopes Creek Floodway Upgrade

Hazards							Controls				Action		
				Raw Risk (no controls)				Residual Risk					
				Likelihood	Consequence			Likelihood	Consequence				
No.	Project Phase	Risk Description	Consequence Description	1. Very Unlikely 2. Unlikely 3. Possible 4. Likely 5. Almost Certain	A. Minor B. Major C. Severe D. Critical E. Catastrophic	Risk Rating	Mitigation Strategy / Control Measures	1. Very Unlikely 2. Unlikely 3. Possible 4. Likely 5. Almost Certain	A. Minor B. Major C. Severe D. Critical E. Catastrophic	Risk Rating	Responsibility	By When	Comments / Notes
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	Project is adequately scoped, discussed and documented during pre-detailed design phases to ensure data collection is appropriate. Detailed survey has been supplied for this project	1	C	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	B	Negligible	Designer/ Principal	Detailed Design	Residual risk with Principal Client decisions recorded within Design Decision Register.
3	Design	Existing bed rock may affect proposed levels to be within DAF accepted development guidelines	Errors/omissions in design resulting in inadequate or substandard design that could lead to potential risk to the environment.	3	E	Extreme	Design has taken into account DAF guidelines and designed accordingly. Rock protection on the downstream side of the floodway has been omitted given the presence of large in ground boulders.	1	D	Moderate	Designer/ Principal	Detailed Design	Residual risk with Principal
4	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
5	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	C	Low	Designer/ Principal	Detailed Design	Residual Risk transferred to Contractor.
6	Design	Project exceeds budget	Identified saftety issues will not be addressed leading to an unsafe environment for the travelling public.	3	D	Significant	BSC to prepare contingency plans to reduce project cost to within budget constraints.	2	D	Moderate	BSC	Detailed Design	Residual risk with Principal
7	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 BSC. 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
8	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. • Locating activites have been carried out as part of the design phase. Depth information shown on plans. • Contractor to complete service locations to verify no existing infrastructure is present within the works footprint.	2	D	Moderate	Designer/ Principal	Detailed Design	Residual Risk with Principal and Contractor
9	Design	Presence of Telstra services within project extents	Interruption of a public utility assett, potential safety risk of constructors and/or closure of key services to the general public.	4	D	Significant	• Potholing of service undertaken through Design phase. • Depths to services shown. • no works to be undertaken outside of project extents, especially just past the end of the project where Telstra is extremely shallow.	2	D	Moderate	Designer/ Principal	Detailed Design	Residual Risk with Principal and Contractor
10	Design	Sub standard geomtry due to the presence of Telstra assets	Potential safety risk to road users not achieving required sight distance.	4	D	Significant	Design allows for maximum achievable sight distance under LORDG standards without affecting Telstra assets. Provision of additional warning signage to make motorists aware of the crest and floodway	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	B	Low	Maintain flow paths during construction where practical. Make pumping equipment available if required.	2	A	Negligible	Contractor	Construction	Residual risk with Principal and contractor
2	Construction	Excavation of large rock/bed rock to achieve desired design levels	Unable to excavate to achieve adherence to DAF guidelines	4	D	Significant	Design to reduce extent of excavation as much as possible within floodway extents. Contractor to undertake site visit to assess excavation requirements and euquipment required to achieve desired design levels. If extent of rock to be removed is not feasible, then submission of appropriate development premits may be required for DAF purposes.	1	D	Moderate	Contractor	Construction	Residual risk with Principal and Contractor
3	Construction	Exposure to asbestos	Existing abandoned conduits/pits/culverts may be present which could be exposed during construction.	2	D	Moderate	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.
4	Construction	Deep excavation of trenches	Trench collapse injuries	2	E	Significant	Depth of culverts to be minimised where possible. Contractor to employ appropriate temporary work measures.	1	E	Moderate	Contractor	Construction	Residual risk with Principal and contractor
5	Construction	Design changes made by Contractor or Administrator following design completion	Design changes do not meet safety requirements.	3	C	Moderate	Contractor / Administrator to advise the Designer or any proposed design changes. Follow RFI process.	1	C	Low	BSC	Construction	Residual risk with Principal and contractor
6	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.	1	E	Moderate	Contractor	Construction	Constructors shall conduct their own DBYD and verify all utilities on site prior to commencing any roadworks.
7	Construction	The risk of traffic not being managed adequately.	Traffic chaos, delays and accidents caused by lack of controls.	2	E	Significant	Designer has nominated traffic 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.	1	E	Moderate	Contractor	Construction	Residual Risk with Principal and Contractor
8	Construction	Working on top of high and steep embankments	Injury due to personnel fall or overturning construction plant	3	E	Extreme	Consider construction methodology prior to implemenation.	2	D	Moderate	Contractor	Construction	Residual risk with Principal and contractor
9	Construction	Lighting levels during construction.	Inadequate lighting of conflict points during construction resulting in confusion/collisions	2	B	Negligible	Temporary standalone LED lighting, if required.	1	B	Negligible	BSC	Construction	Residual risk with Principal and contractor
10	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.
11	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.	4	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	D	Significant	Contractor	Construction	Residual Risk with Principal and Contractor
12	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
13	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	D	Significant	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	C	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	BSC	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	BSC	Ongoing	Residual risk with Principal
3	Finalisation	Not applying all the appropriate standards.	This could result in an unsafe design.	3	D	Significant	Carry out appropriate design reviews and RPEQ approvals	1	D	Moderate	Designer	Ongoing	Residual risk with Principal