



Nimbin 22.0m

Keerong Road



80kph Curve Alignment

Curve Alignment Signage



Nimbin Road



Access to Lismore Quarry

Nimbin Road



55kph Curve Alignment

Speed Advisory Signage



55 km/h



CAMS, Guide posts and pavement markings

Lismore 7.0m

PLAN	SCALE BAR @A1	
LONG SECTION	HORIZ	VERT
CROSS SECTION	HORIZ	VERT
DATUM	LOCAL	AHD
CONTOUR INTERVAL	SURVEYED BY	GM
	DATE	AUG. 2020
	DESIGNED	CP & BVG
	DRAWN	CP & BVG
	CHECKED	SB

APPROVED	AMENDMENT TO SCALE	BY	DATE
	PRELIMINARY DESIGN - VER B	BG	AUG/20
	PRELIMINARY DESIGN - VER C	BG	OCT/20
	50% DESIGN - VER C	BG	DEC/2023
	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
DESIGN SERVICES ENGINEER - DATE			
MANAGER - WORKS - DATE			

SERVICES			
PLANS CHECKED BY	DATE	ACTION	Y/N
JOB NO			
SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			

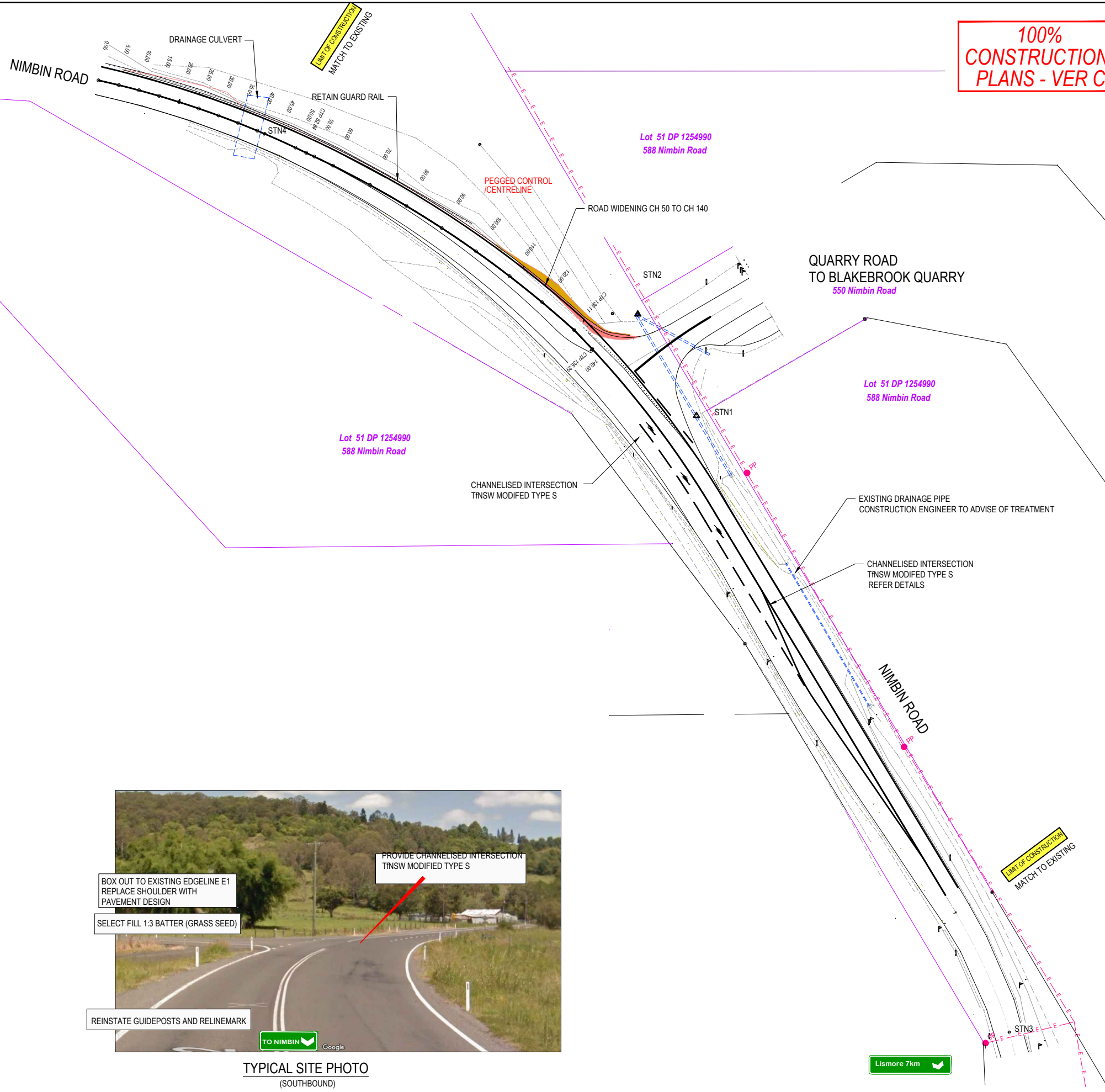


LISMORE CITY COUNCIL
INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
EXISTING INTERSECTION AND SIGNAGE

AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV	2	33
CAD		
2023-180 - DESIGN		
PLAN No. 2023-180		

100%
CONSTRUCTION
PLANS - VER C

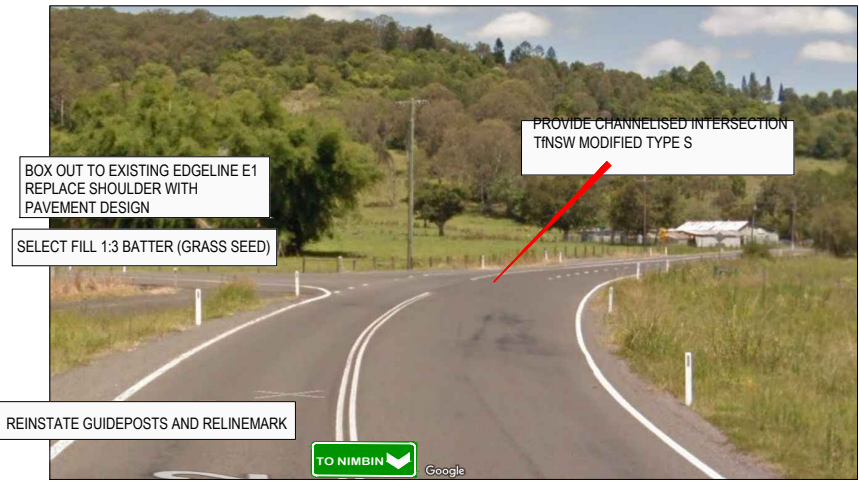
Nimbin



BENCHMARKS

STN 1 - DUMPY	RL.10.000
STN 2 - DH	RL.9.381
STN 3 - GIN IN BIT	RL.11.280
STN 4 - GIN IN BIT	RL.8.733

LEGEND - ROADS	
	PROPERTY BOUNDARY
	PEGGED LINE
	ALIGNMENT
	EDGE OF DESIGN FORMATION
	APPROXIMATE EXTENT OF DESIGN BATTER
	DRAINAGE LINE - EXISTING
	DRAINAGE LINE - DESIGN
	KERB & GUTTER / LAYBACK - EXISTING
	KERB & GUTTER / LAYBACK - DESIGN
	EDGE OF BITUMEN - EXISTING
	TABLE DRAIN - EXISTING
	TABLE DRAIN - DESIGN
	TOP OF BANK - EXISTING
	BOTTOM OF BANK - EXISTING
	CENTERLINE - EXISTING
	FENCE - EXISTING
	GUARD FENCE - EXISTING
	GUARD FENCE - DESIGN
	TELSTRA
	OPTIC FIBRE
	OVERHEAD TELSTRA
	ELECTRICITY
	UNDERGROUND ELECTRICITY
	WATER
	SEWER
	GAS
	DECOMMISSIONED GAS
	RETAINING / HEAD WALL
	HANDRAIL FENCE - DESIGN
	EXTENT OF BATTER - DESIGN
	SUB-SOIL DRAINAGE - DESIGN
	SUB-SOIL FLUSH POINT - DESIGN
	WATER - PROPOSED
	WATER - DECOMMISSIONED
	WATER SERVICE - PROPOSED
	ZONE BOUNDARY VALVE - EXISTING
	ZONE BOUNDARY VALVE - PROPOSED
	TELSTRA CABLE MARKER
	TELSTRA TWIN PIT
	TELSTRA SINGLE PIT
	ENDANGERED, PROTECTED OR THREATENED SPECIES
	TREE TO RETAIN
	TREE TO BE PROTECTED
	TREE TO BE REMOVED
	PERMANENT MARK
	BENCH MARK
	STREET SIGN - EXISTING
	DRAINAGE PIT - EXISTING
	DRAINAGE PIT - DESIGN
	STOP VALVE
	HYDRANT
	WATER METER
	SEWER MANHOLE
	GUIDE POST
	POWER POLE
	POWER STAY POLE
	POWER STAY ANCHOR
	STREET LIGHT POLE
	PEDESTRIAN KERB RAMP
	EXTENT OF WORKS
	DESIGN PAVEMENT
	KERB AND GUTTER
	STOP VALVE - PROPOSED
	HYDRANT - PROPOSED
	WATER METER - PROPOSED
	AIR VALVE - PROPOSED



TYPICAL SITE PHOTO
(SOUTHBOUND)

PLAN	SCALE BAR @A1	0 10 20 30 40
LONG SECTION	HORIZ	VERT
CROSS SECTION	HORIZ	VERT
DATUM LOCAL AND	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

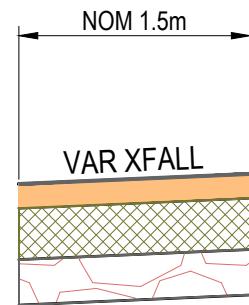
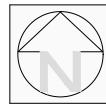
APPROVED	AMENDMENT NOT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
	PRELIMINARY DESIGN - VER B	BG	OCT/20
	50% DESIGN - VER C	BG	DEC/2023
	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
DESIGN SERVICES ENGINEER - DATE			
MANAGER - WORKS - DATE			

SERVICES			
PLANS CHECKED BY	DATE	ACTION	Y/N
JOB NO			
SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			

LISMORE CITY COUNCIL

INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
GENERAL PLAN

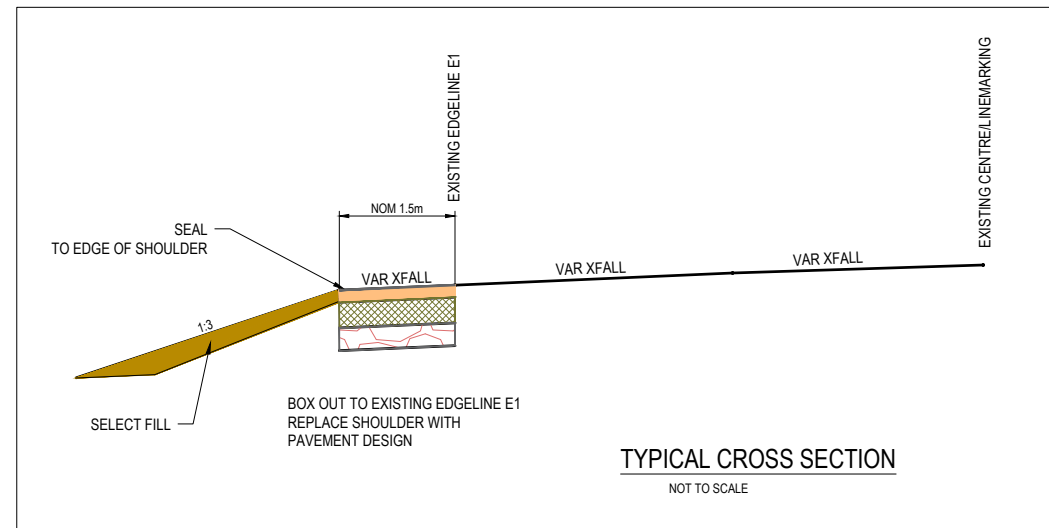
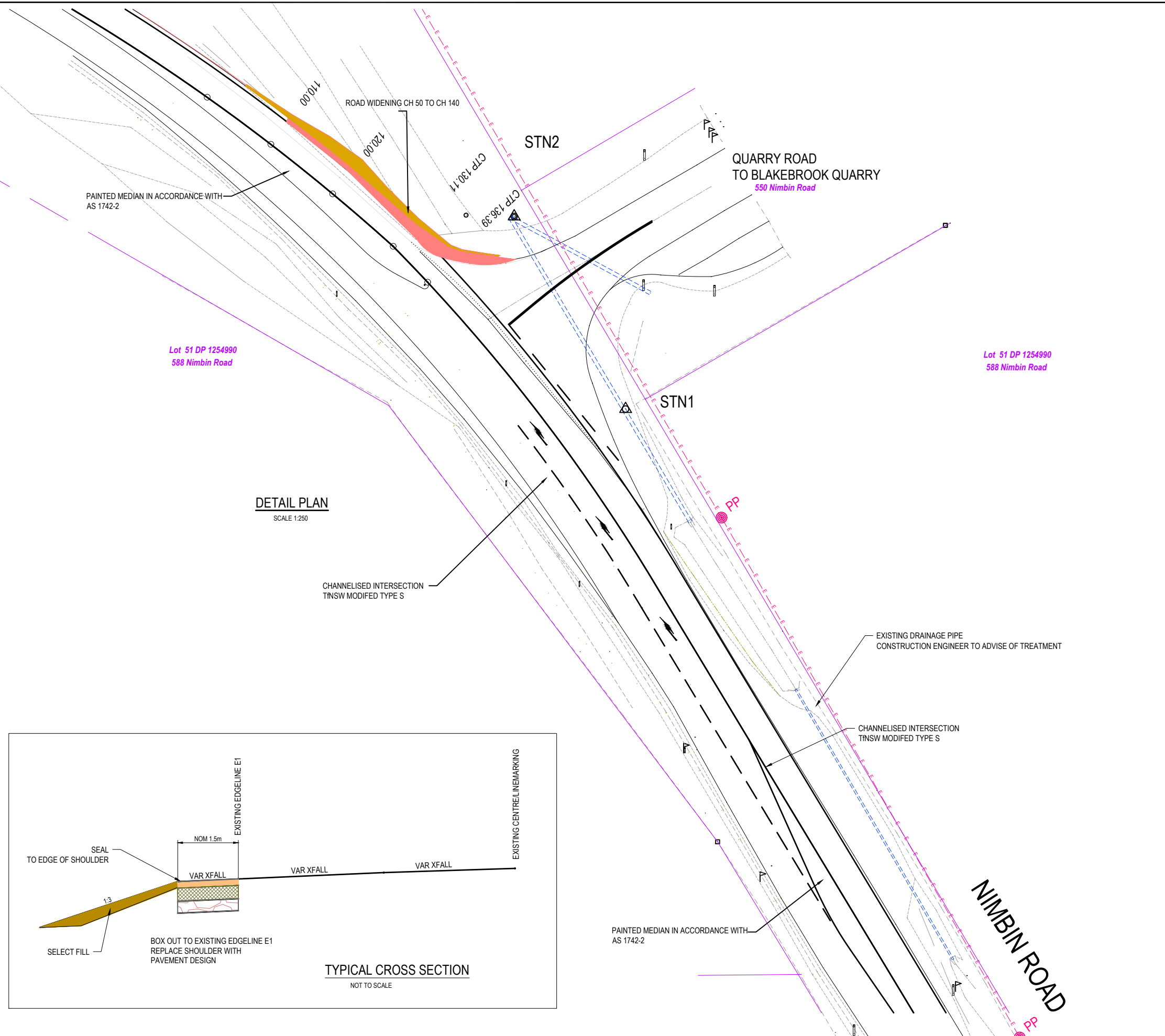
AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C.DWG	3	33
2023-180 - DESIGN		
PLAN No. 2023-180		



DGB20 150mm @1%
 DGS40 200mm
 E5 ROCK 3540mm
 ROCK BRIDGING LAYER
 DEPTH SUBJECT TO TESTING
 A34 GEOTEXTILE WRAPPED

PAVEMENT DESIGN
 NOT TO SCALE

DETAIL PLAN
 SCALE 1:250



TYPICAL CROSS SECTION
 NOT TO SCALE

LEGEND - ROADS	
	PROPERTY BOUNDARY
	PEGGED LINE
	ALIGNMENT
	EDGE OF DESIGN FORMATION
	APPROXIMATE EXTENT OF DESIGN BATTER
	DRAINAGE LINE - EXISTING
	DRAINAGE LINE - DESIGN
	KERB & GUTTER / LAYBACK - EXISTING
	KERB & GUTTER / LAYBACK - DESIGN
	EDGE OF BITUMEN - EXISTING
	TABLE DRAIN - EXISTING
	TABLE DRAIN - DESIGN
	TOP OF BANK - EXISTING
	BOTTOM OF BANK - EXISTING
	CENTERLINE - EXISTING
	FENCE - EXISTING
	GUARD FENCE - EXISTING
	GUARD FENCE - DESIGN
	TELSTRA
	OPTIC FIBRE
	OVERHEAD TELSTRA
	ELECTRICITY
	UNDERGROUND ELECTRICITY
	WATER
	SEWER
	DECOMMISSIONED GAS
	RETAINING / HEAD WALL
	HANDRAIL FENCE - DESIGN
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	SUB-SOIL FLUSH POINT - DESIGN
	WATER - PROPOSED
	WATER - DECOMMISSIONED
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	ENDANGERED, PROTECTED OR THREATENED SPECIES
	TREE TO RETAIN
	TREE TO BE PROTECTED
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	PERMANENT MARK
	BENCH MARK
	STREET SIGN - EXISTING
	DRAINAGE PIT - EXISTING
	DRAINAGE PIT - DESIGN
	STOP VALVE
	HYDRANT
	WATER METER
	SEWER MANHOLE
	GUIDE POST
	POWER POLE
	POWER STAY POLE
	POWER STAY ANCHOR
	STREET LIGHT POLE
	PEDESTRIAN KERB RAMP
	EXTENT OF WORKS
	DESIGN PAVEMENT
	KERB AND GUTTER
	STOP VALVE - PROPOSED
	HYDRANT - PROPOSED
	WATER METER - PROPOSED
	AIR VALVE - PROPOSED

LEGEND - WATER

PLAN	SCALE BAR @A1	APPROVED
LONG SECTION	HORIZ VERT	AMENDMENT NOT TO SCALE
CROSS SECTION	HORIZ VERT	BY DATE
DATUM LOCAL AND	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

SERVICES	
PLANS CHECKED BY	DATE ACTION Y/N
JOB NO	
SEWER	
WATER	
TELSTRA	232913298 05/12/2023 N
E. ENERGY	232913297 05/12/2023 N
R.E.F.	

LISMORE CITY COUNCIL	
INTERSECTION UPGRADE	
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK	
DETAIL PLAN	

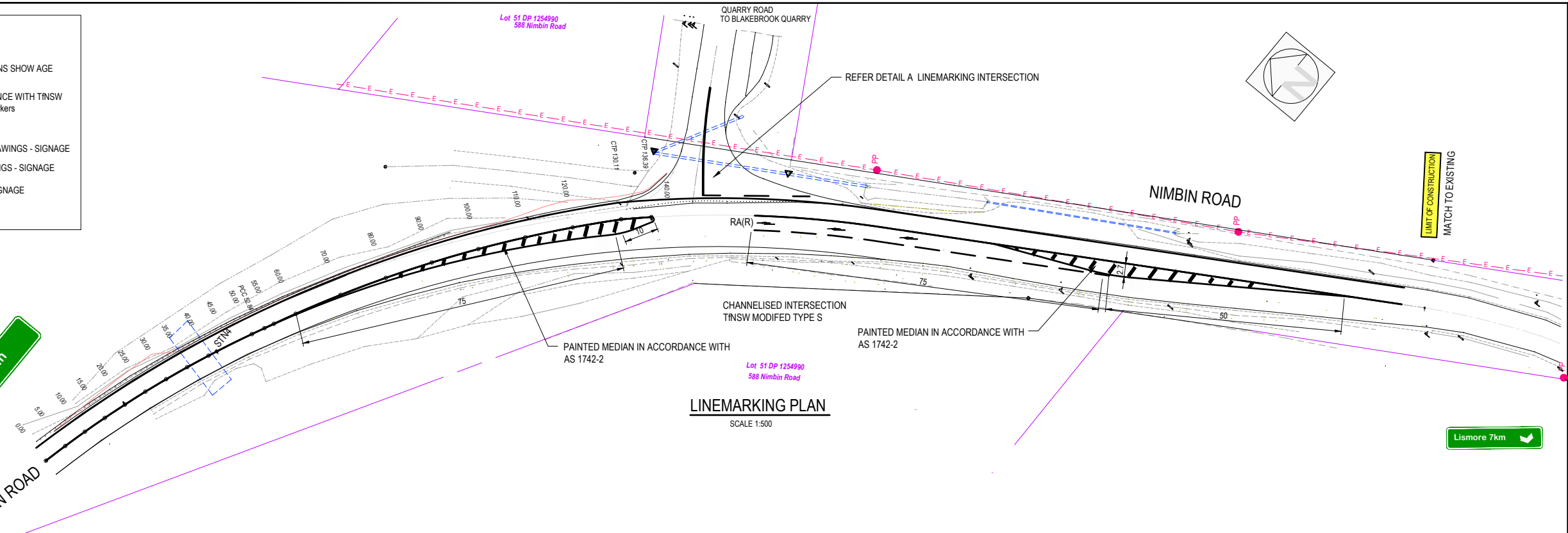
AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV	4	33
CADWIS		
2023-180 - DESIGN		
PLAN No. 2023-180		

GENERAL SIGNS AND LINE MARKING NOTES:

1. ENSURE THAT EXISTING SIGNS ARE CORRECT AS PER SIGNS AND LINEMARKING PLAN. IF CORRECT NO NEED TO REPLACE UNLESS SIGNS SHOW AGE AND NO LONGER REFLECTIVE
2. INSTALL RAISED PAVEMENT MARKERS @ 12m SPACINGS IN ACCORDANCE WITH TNSW TECHNICAL DIRECTIONS DELINEATION - Section 15 Raised Pavement markers
3. STREET SIGN INSTALLATION - REFER SD3573 STANDARD DRAWINGS - SIGNAGE
4. SPACING OF CAMS - REFER TABLE 4.3 AND TABLE 4.6 - STANDARD DRAWINGS - SIGNAGE
5. SPACING OF GUIDE POSTS - REFER TABLE 16.1 - STANDARD DRAWINGS - SIGNAGE
6. SPACING OF RRPMS - REFER TABLE 15.2 - STANDARD DRAWINGS - SIGNAGE
7. ALL EXISTING SIGNAGE TO BE REPLACED AS NECESSARY



NIMBIN ROAD



LINEMARKING PLAN
SCALE 1:500

Lismore 7km

TABLE 4.3 SPACING OF CHEVRON ALIGNMENT MARKERS

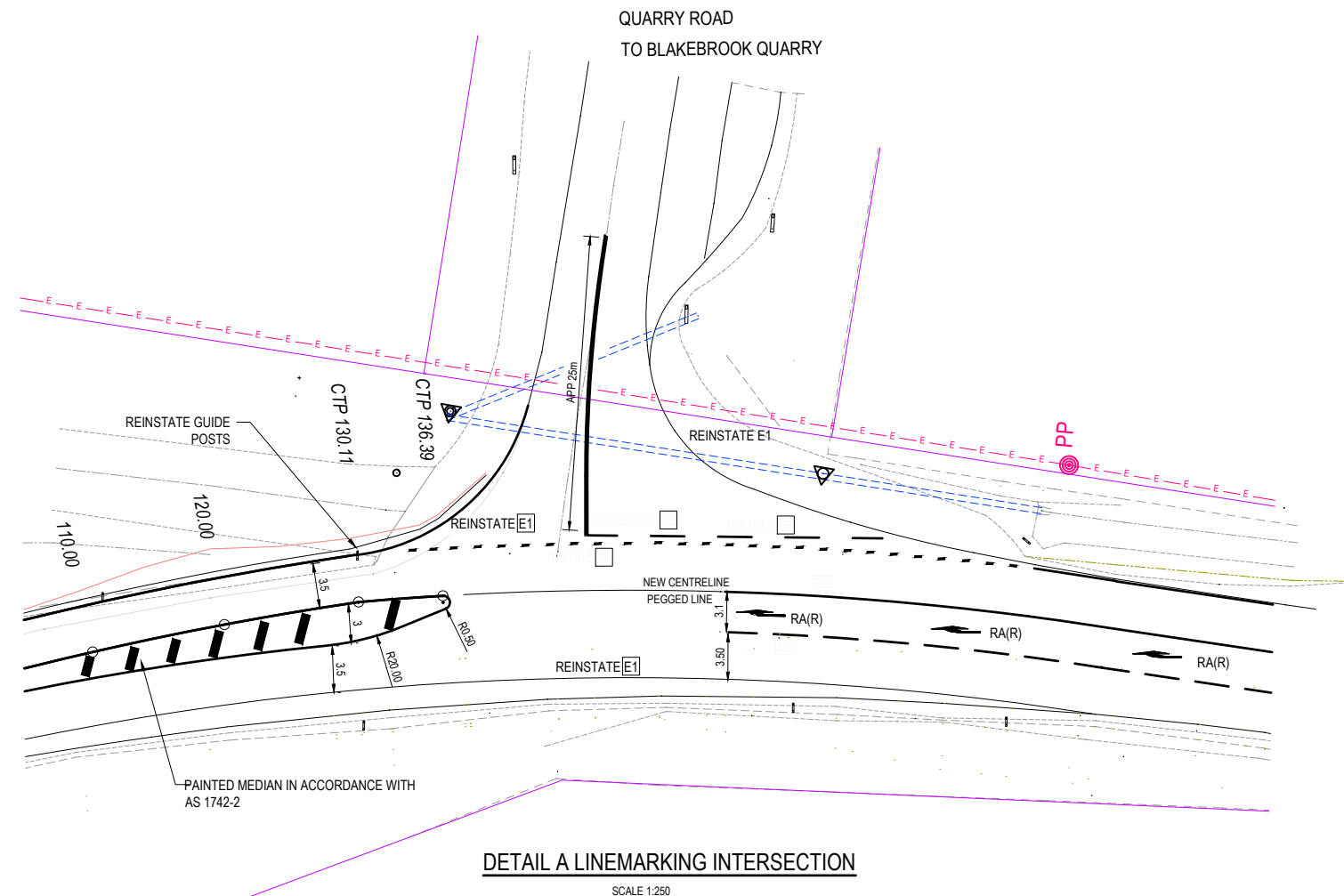
Curve radius	CAM spacing*	
	85 th percentile approach speed	
	Less than 85 km/h	85 km/h and greater
<50	10	6
50-99	12	8
100-149	18	12
150-199	24	16
200-249	30	20
250-300	36	24
>300	40	26

* The spacings in this Table are subject to a tolerance of ±10%

TABLE 16.1 SPACING OF GUIDE POSTS

Curve radius	Spacing (m)	
	On outside curve	On inside curve
< 100	6	12
100 - 199	10	20
200 - 299	15	30
300 - 399	20	40
400 - 599	30	60
600 - 699	40	60
800 - 1999	60	60
1200 - 2000	90	90
> 2000 including straights	150	150

Table 16.1: Spacing of posts on curves (including spacing of delineators on guard fence)



DETAIL A LINEMARKING INTERSECTION

SCALE 1:250

TRAFFIC FACILITIES, CONTROL DEVICES AND SIGNPOSTING LEGEND
NOTES: SIGNPOSTING & LINEMARKING IN ACCORDANCE WITH TRAFFIC AUTHORITY OF NSW - GUIDELINES FOR TRAFFIC FACILITIES
 - REFER AUSTRALIAN STANDARD AS1742.2:2009 AND AS1742.10:1990 (OR CURRENT VERSION)

	CHEVRON ALIGNMENT MARKER		LINEMARKING
	SIGHT BOARD		LANE LINES
	SPEED ADVISORY SIGN		EDGE LINE
	T-INTERSECTION SIGN		CONTINUITY LINES
			GUIDEPOSTS
			CURVE ALIGNMENT SIGNS

PLAN
 LONG SECTION HORZ VERT
 CROSS SECTION HORZ VERT
 DATUM LOCAL AND
 CONTOUR INTERVAL
 SCALE BAR @A1
 0 10 20 30 40
 1:500
 SURVEYED BY GM
 DATE AUG. 2020
 FILE
 DESIGNED CP & BVG
 DRAWN CP & BVG
 CHECKED SB

APPROVED
 AMENDMENT TO SCALE
 PRELIMINARY DESIGN - VER B BG AUG/20
 PRELIMINARY DESIGN - VER C BG OCT/20
 50% DESIGN - VER C BG DEC/2023
 100% CONSTRUCTION PLANS - VER C BG JAN/2024
 DESIGN SERVICES ENGINEER - DATE
 MANAGER - WORKS - DATE

SERVICES
 PLANS CHECKED BY DATE ACTION Y/N
 JOB NO
 SEWER
 WATER
 TELSTRA 232913298 05/12/2023 N
 E. ENERGY 232913297 05/12/2023 N
 R.E.F.

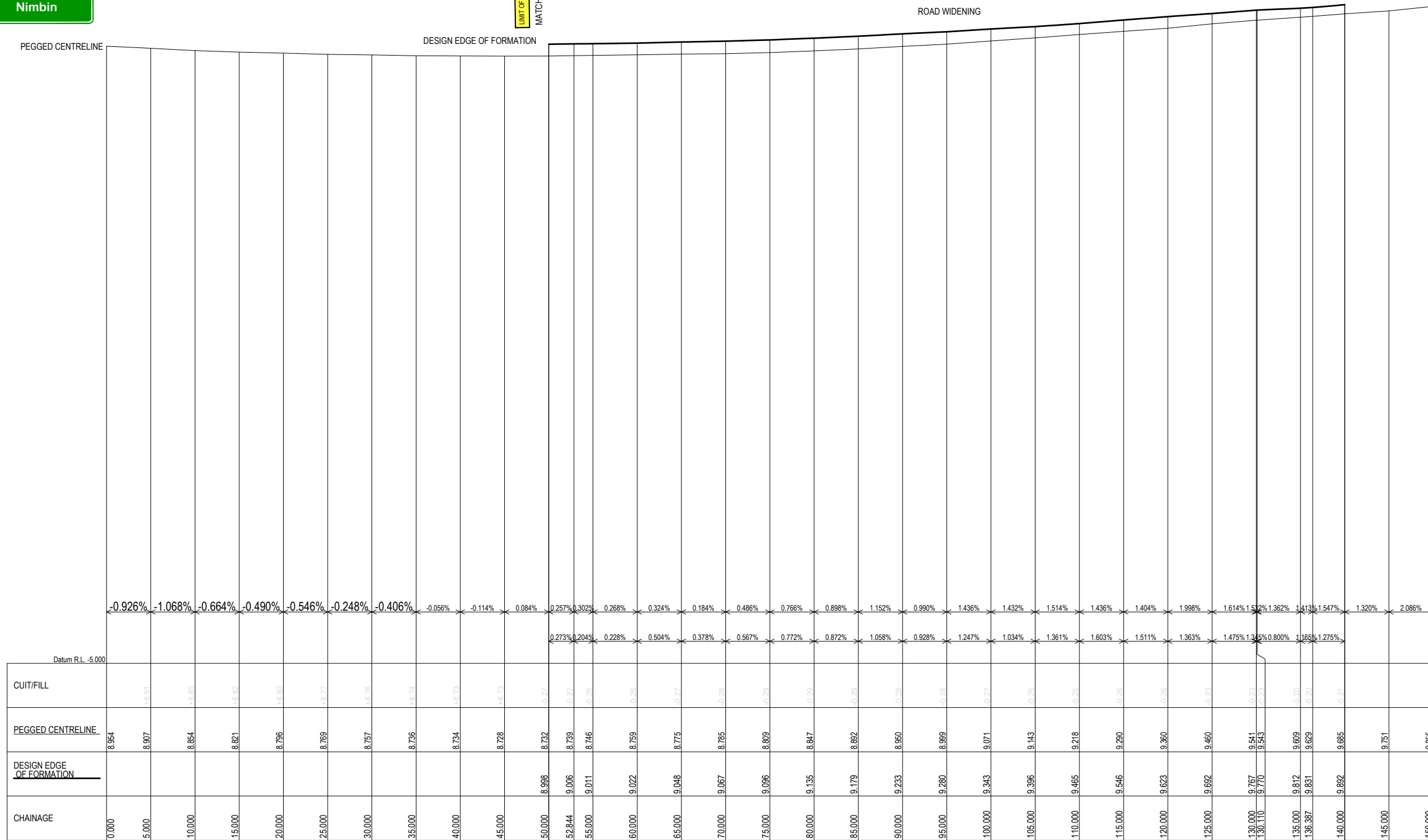
LISMORE CITY COUNCIL
 INTERSECTION UPGRADE
 550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
 LINEMARKING AND STREET FURNITURE

AUTOCAD
 2023-180 80% DESIGN PLANS REV
 C.DWG
 2023-180 - DESIGN
 SHEET No. 5
 No. OF SHEETS 33
 PLAN No. 2023-180

← Nimbin

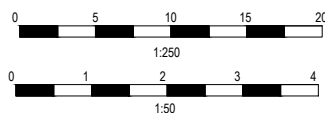
LIMIT OF CONSTRUCTION
MATCH TO EXISTING

Lismore 7km →

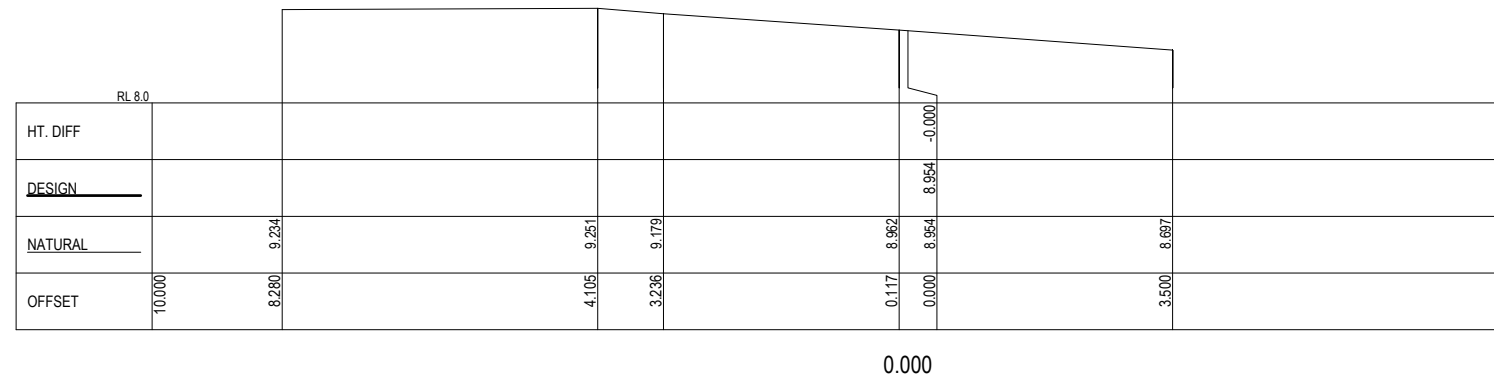
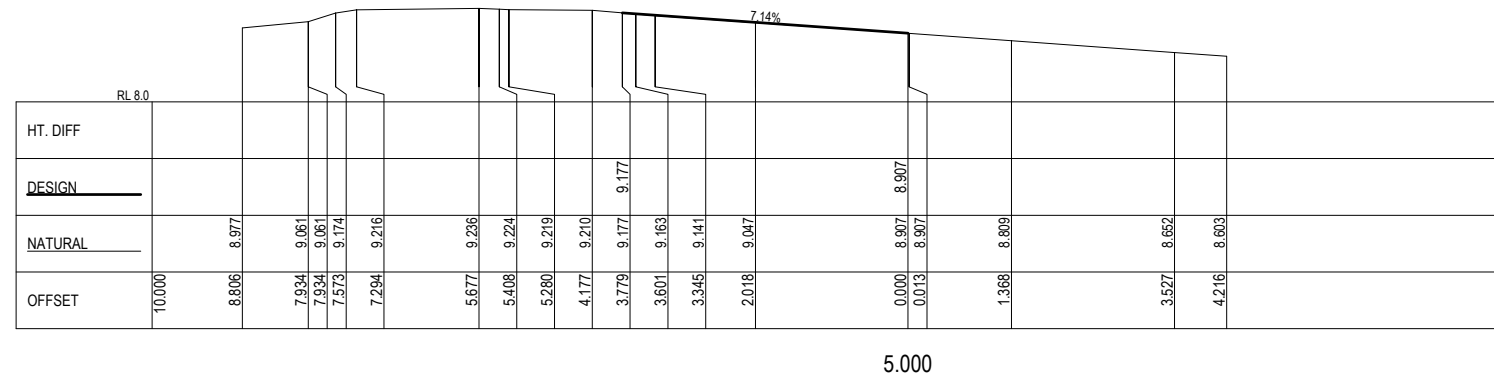
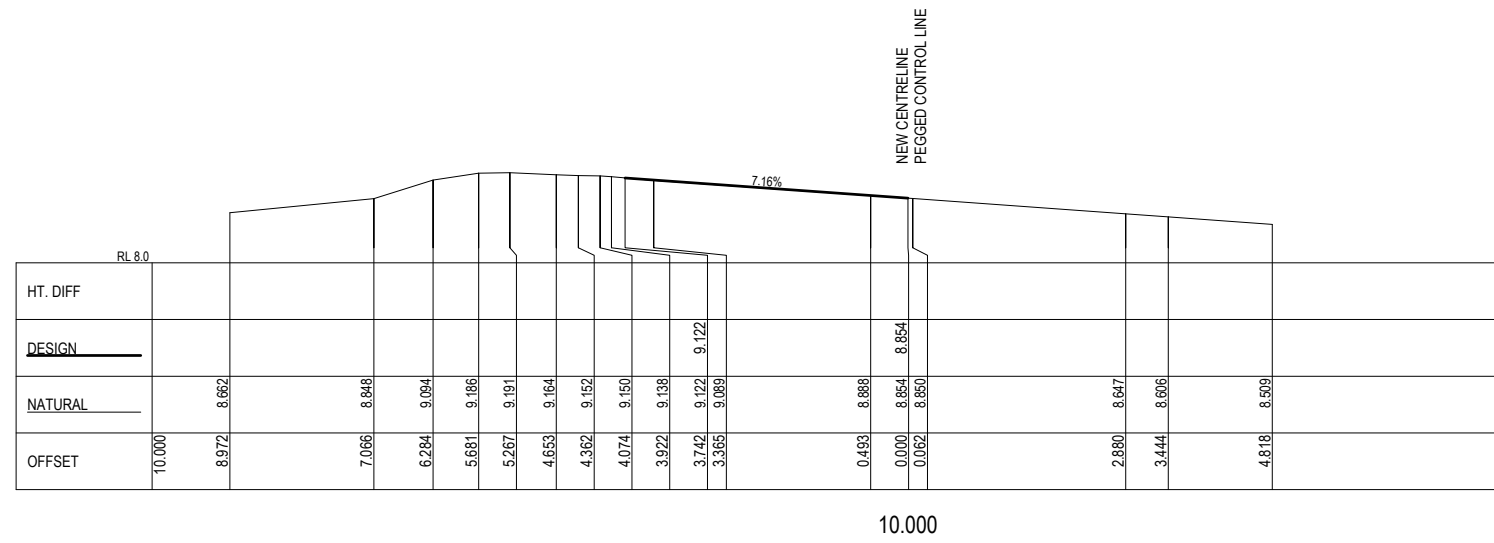


Scale Horizontal 1:250 Vertical 1:50

SCALE BARS @A1



PLAN LONG SECTION HORIZ 1:250 VERT 1:50 CROSS SECTION HORIZ VERT		APPROVED AMENDMENT NOT TO SCALE PRELIMINARY DESIGN - VER B BG AUG/20 PRELIMINARY DESIGN - VER C BG OCT/20 50% DESIGN - VER C BG DEC/2023 100% CONSTRUCTION PLANS - VER C BG JAN/2024		SERVICES PLANS CHECKED BY DATE ACTION Y/N JOB NO SEWER WATER TELSTRA 232913298 05/12/2023 N E. ENERGY 232913297 05/12/2023 N R.E.F.		LISMORE CITY COUNCIL INTERSECTION UPGRADE 550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK LONGITUDINAL SECTION - DESIGN EDGE OF FORMATION		AUTOCAD 2023-180 80% DESIGN PLANS REV C.DWG CCAD 2023-180 - DESIGN PLAN No. 2023-180		SHEET No. 6 No. OF SHEETS 33	
DATUM LOCAL AHD CONTOUR INTERVAL		SURVEYED BY GM DATE AUG. 2020 FILE		DESIGNED CP & BVG DRAWN CP & BVG CHECKED SB		DESIGN SERVICES ENGINEER - DATE MANAGER - WORKS - DATE					



PLAN	SCALE BAR @A1	
LONG SECTION	HORIZ	VERT
CROSS SECTION	HORIZ 1:50	VERT 1:50
DATUM LOCAL AND	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

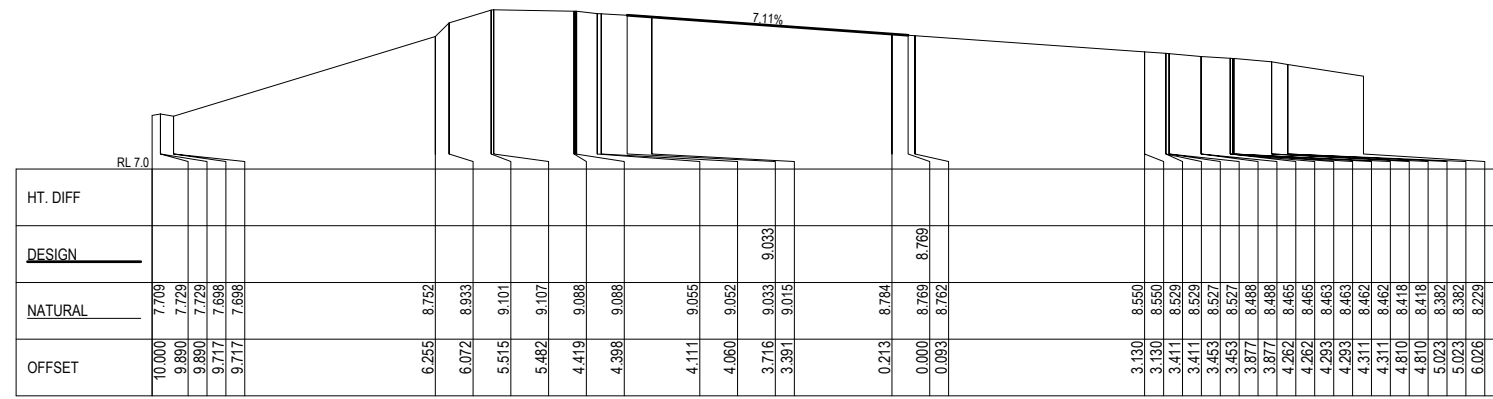
APPROVED	AMENDMENT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
	PRELIMINARY DESIGN - VER B	BG	OCT/20
	50% DESIGN - VER C	BG	DEC/2023
	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
DESIGN SERVICES ENGINEER - DATE			
MANAGER - WORKS - DATE			

SERVICES			
PLANS CHECKED BY	DATE	ACTION	Y/N
JOB NO			
SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			

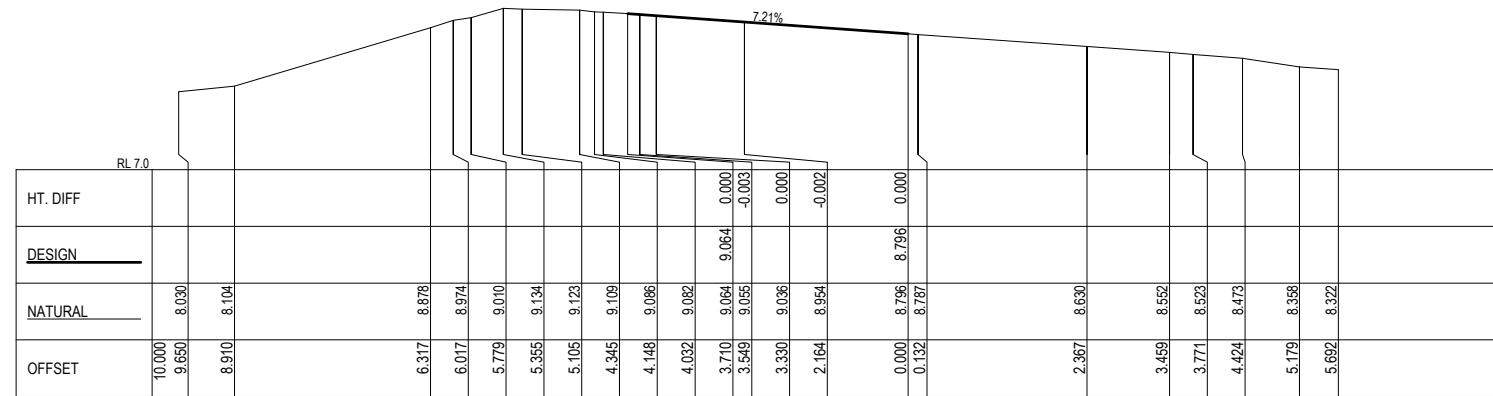


LISMORE CITY COUNCIL
INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
CROSS SECTIONS CH.0 TO CH.10

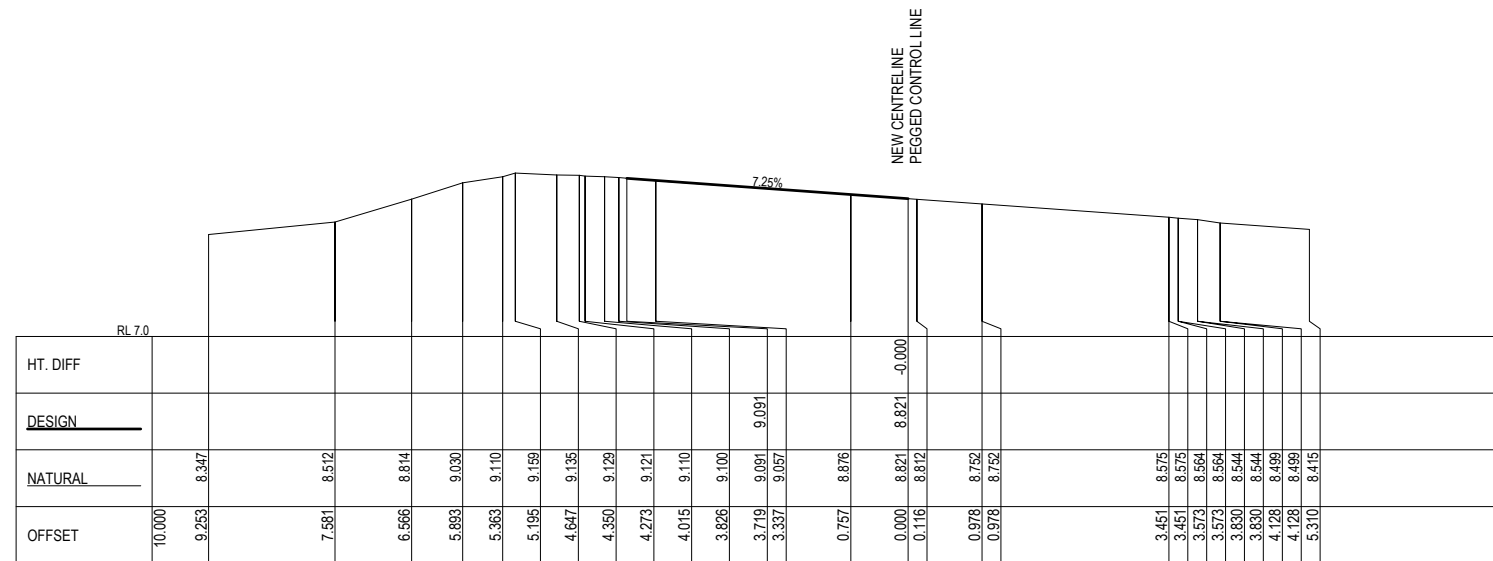
AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV	7	33
CAD		
2023-180 DESIGN		
PLAN No. 2023-180		



25.000



20.000



15.000

NEW CENTRELINE
PEGGED CONTROL LINE

PLAN	SCALE BAR @A1	APPROVED
LONG SECTION	HORIZ 1:50, VERT 1:50	AMENDMENT NOT TO SCALE
CROSS SECTION	HORIZ 1:50, VERT 1:50	BY BG DATE AUG/20
DATUM LOCAL AHD	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

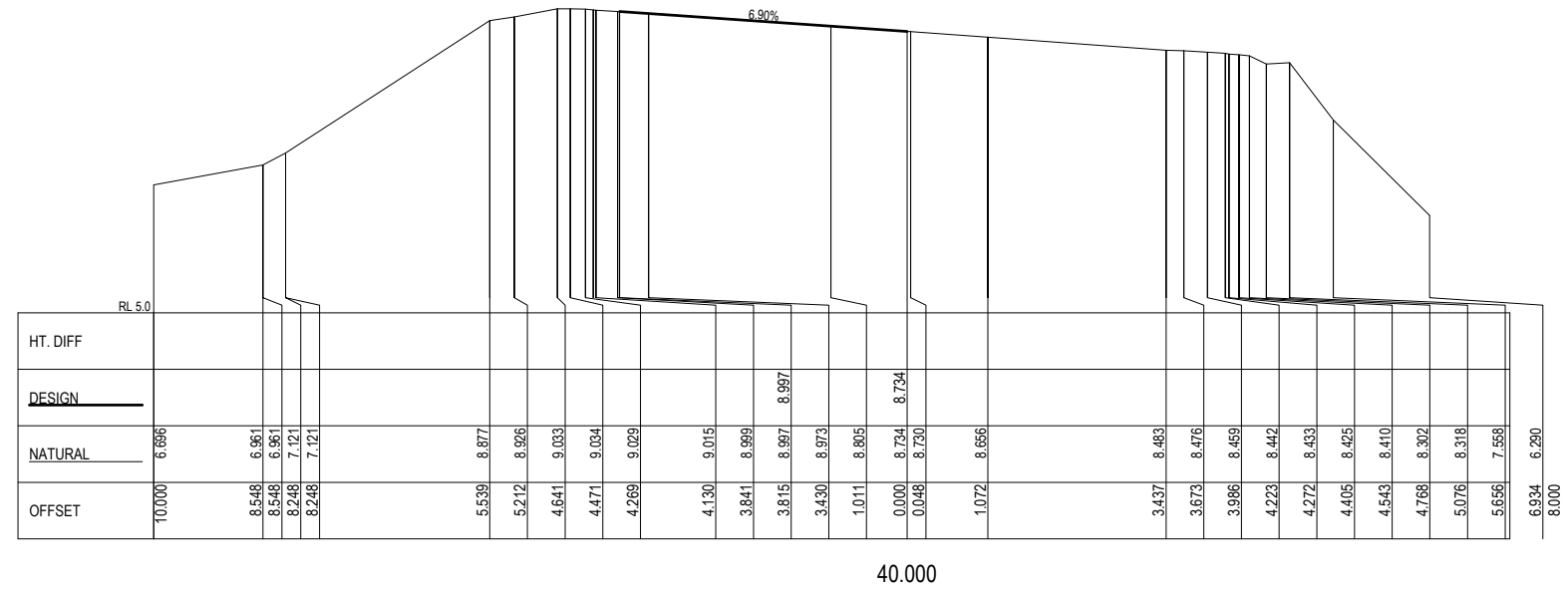
DESIGN SERVICES ENGINEER - DATE	MANAGER - WORKS - DATE

SERVICES		
PLANS CHECKED BY	DATE	ACTION Y/N
JOB NO		
SEWER		
WATER		
TELSTRA	232913298	05/12/2023 N
E. ENERGY	232913297	05/12/2023 N
R.E.F.		

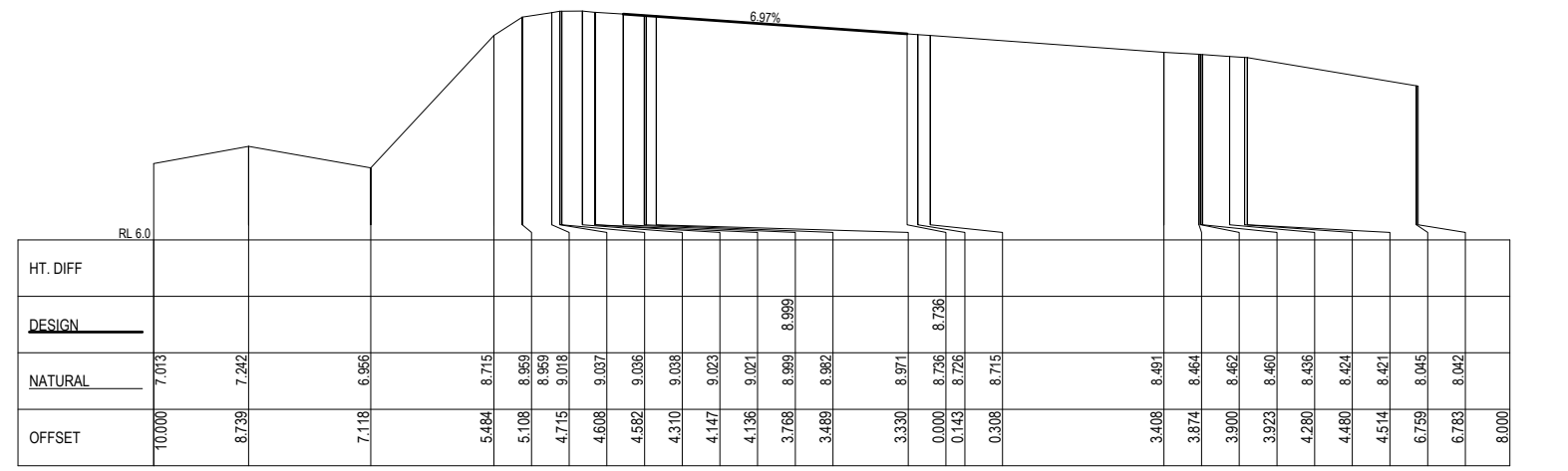


LISMORE CITY COUNCIL
INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
CROSS SECTIONS CH. 15 TO CH 25

AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C DWG	8	33
2023-180 DESIGN		
PLAN No. 2023-180		

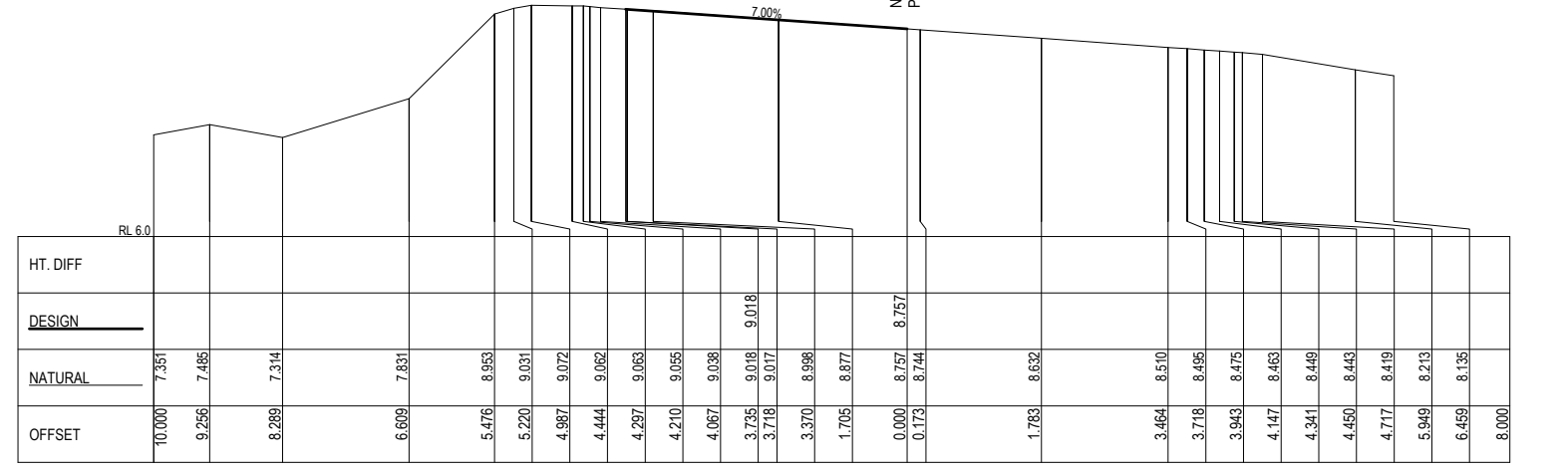


40.000



35.000

NEW CENTRELINE
PEGGED CONTROL LINE



30.000

PLAN	SCALE BAR @A1	0 1 2 3 4
LONG SECTION	HORIZ	VERT
CROSS SECTION	HORIZ 1:50	VERT 1:50
DATUM LOCAL AHD	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

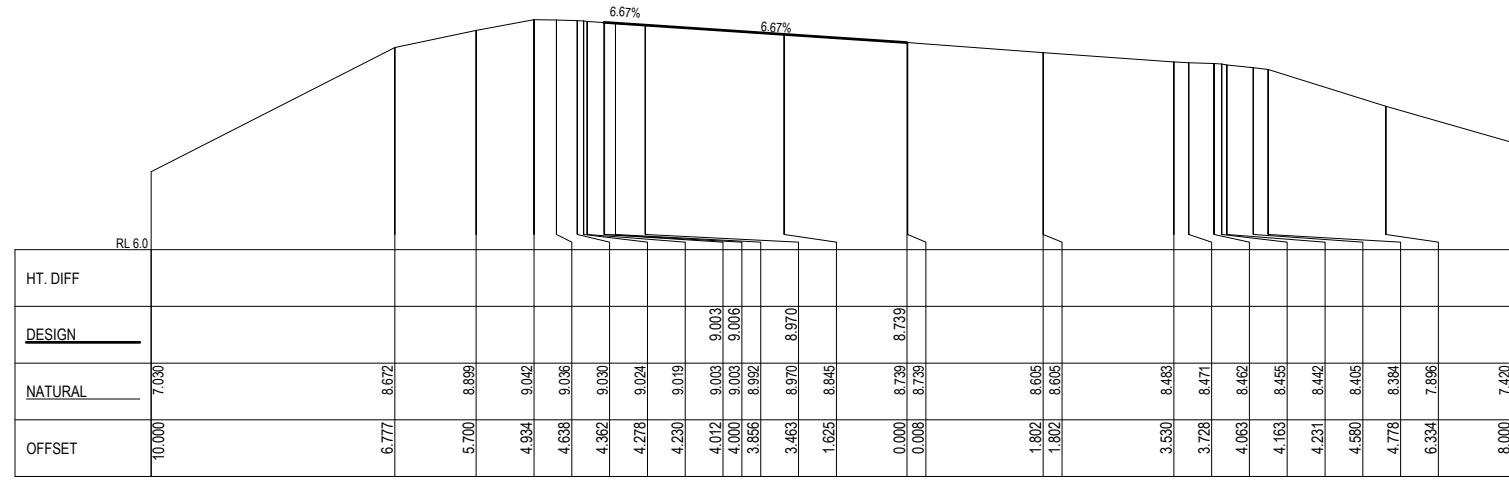
APPROVED	AMENDMENT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
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MANAGER - WORKS - DATE			

SERVICES			
PLANS CHECKED BY	DATE	ACTION Y/N	
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SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			

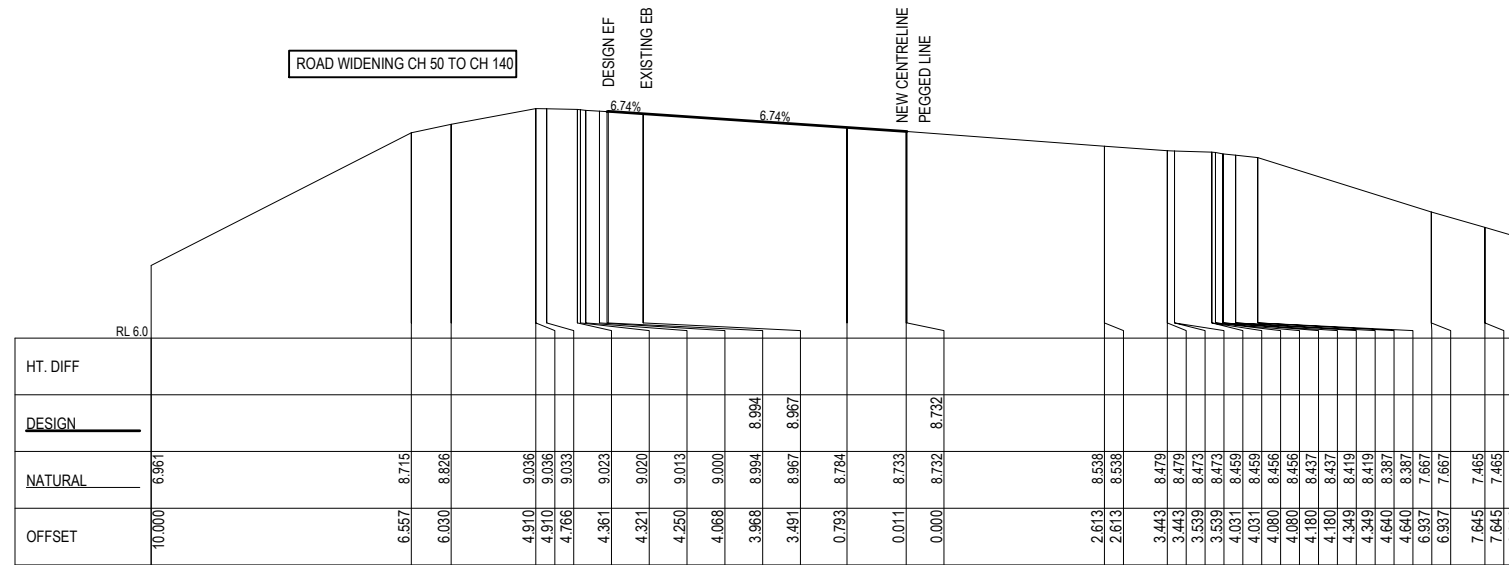


LISMORE CITY COUNCIL
INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
CROSS SECTIONS CH.30 TO CH.40

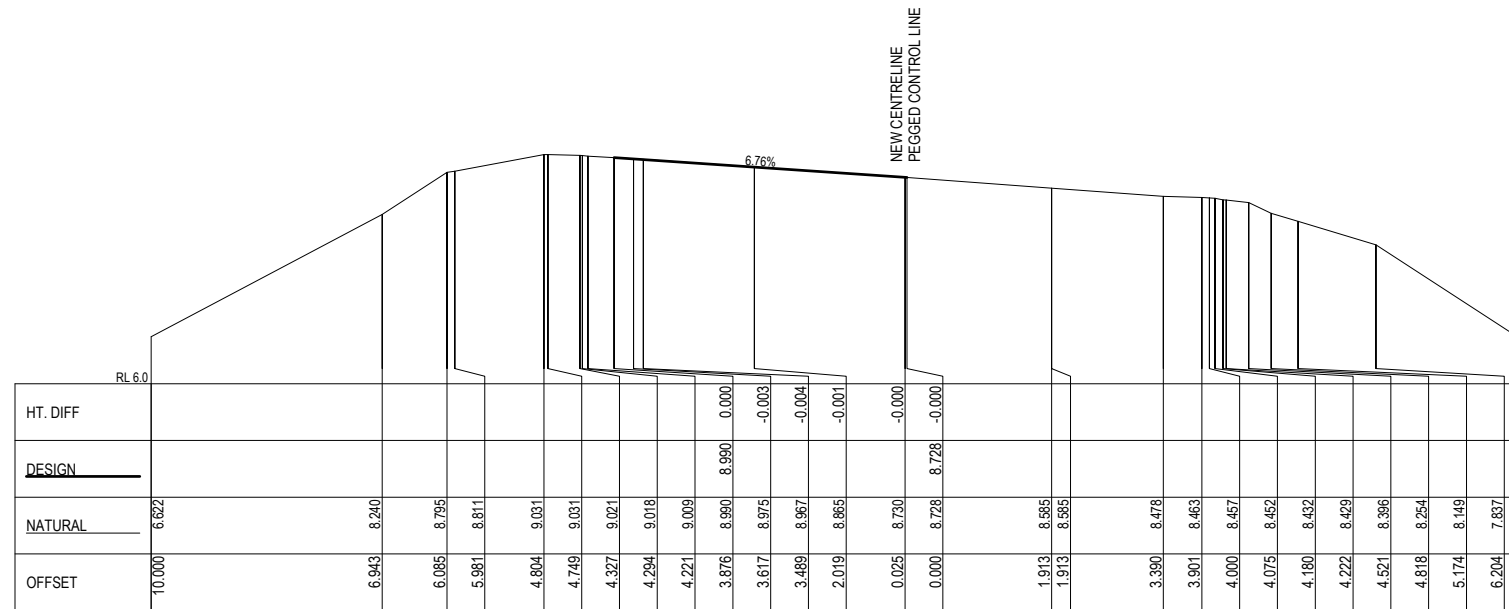
AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C DWG	9	33
CCAD		
2023-180 DESIGN		
PLAN No. 2023-180		



52.845



50.000



45.000

PLAN	SCALE BAR @A1	
LONG. SECTION	HORIZ	VERT
CROSS SECTION	HORIZ 1:50	VERT 1:50
DATUM LOCAL AND	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

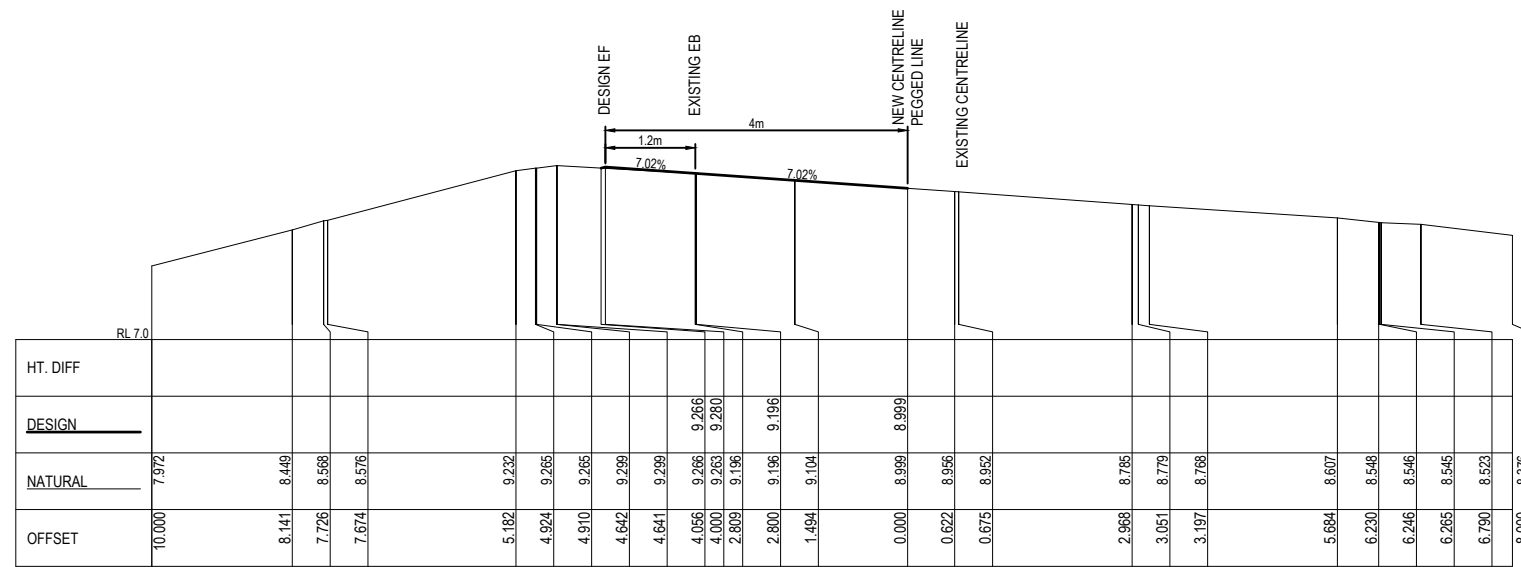
APPROVED	AMENDMENT NOT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
	PRELIMINARY DESIGN - VER B	BG	OCT/20
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	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
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WATER			
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E. ENERGY	232913297	05/12/2023	N
R.E.F.			

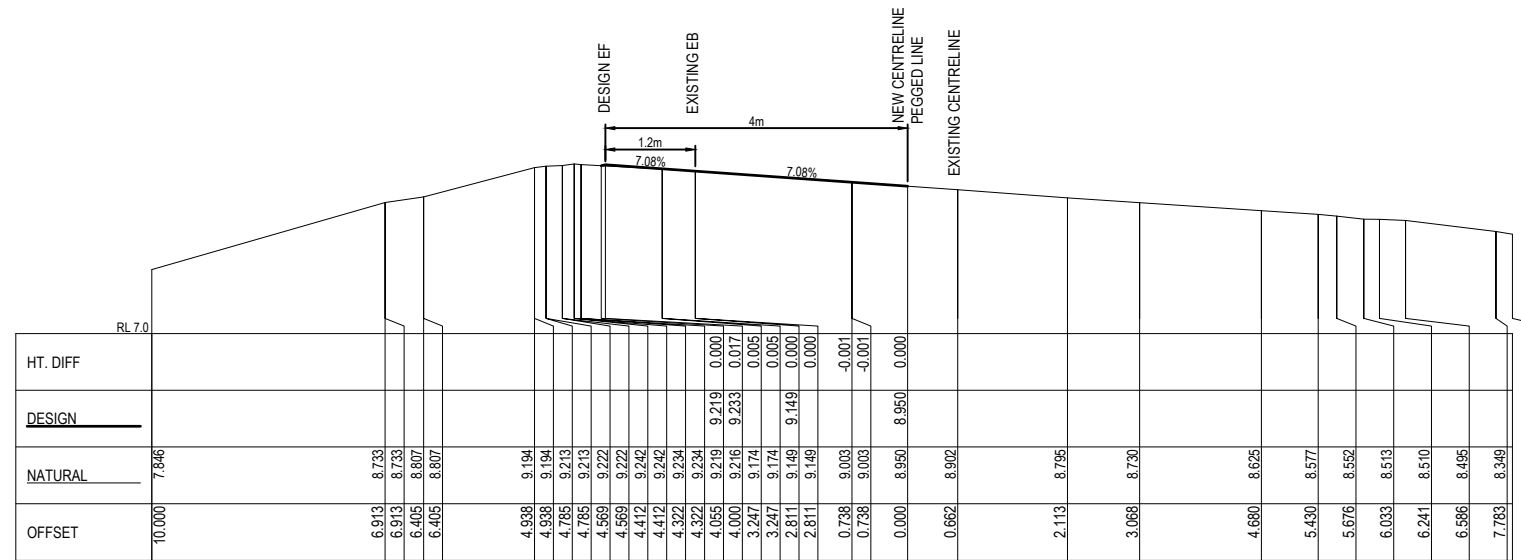
LISMORE CITY COUNCIL

INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
CROSS SECTIONS CH.45 TO CH.52.845

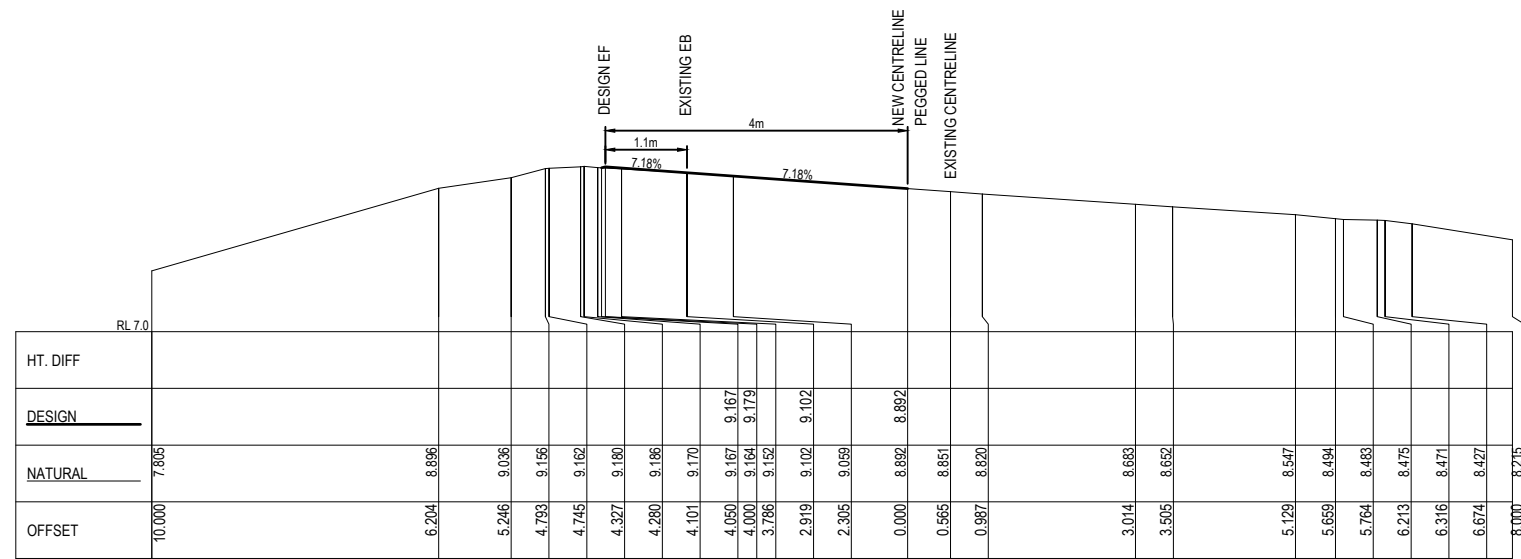
AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV	10	33
2023-180 DESIGN		
PLAN No. 2023-180		



95.000



90.000



85.000

PLAN	SCALE BAR @A1	APPROVED
LONG SECTION	HORIZ 1:50, VERT 1:50	AMENDMENT NOT TO SCALE
CROSS SECTION	HORIZ 1:50, VERT 1:50	BY BG DATE AUG/20
DATUM LOCAL AHD	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	CHECKED SB	DESIGN SERVICES ENGINEER - DATE
		MANAGER - WORKS - DATE

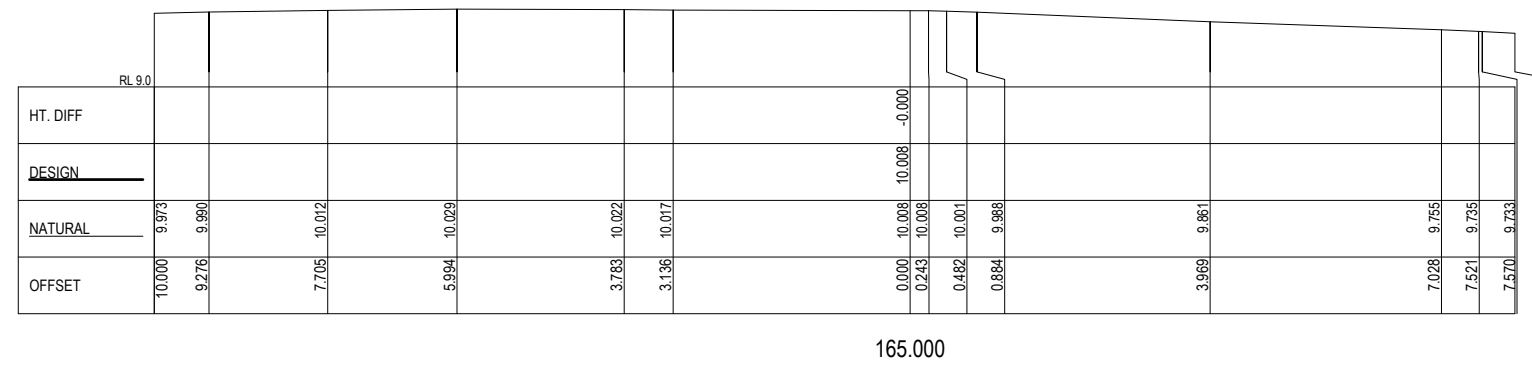
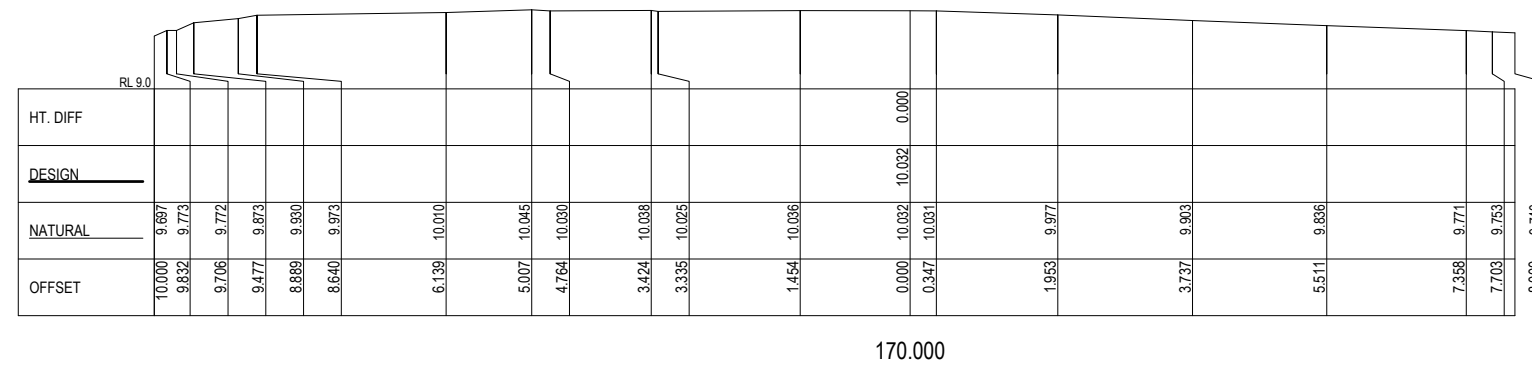
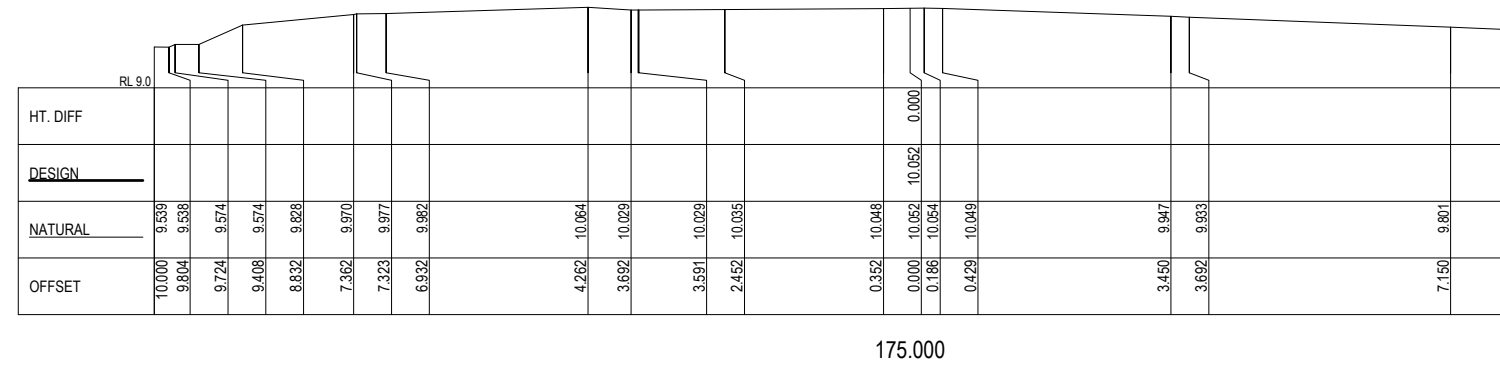
SERVICES		PLANS CHECKED BY	DATE	ACTION Y/N
JOB NO				
SEWER				
WATER				
TELSTRA	232913298		05/12/2023	N
E. ENERGY	232913297		05/12/2023	N
R.E.F.				

LISMORE CITY COUNCIL	
INTERSECTION UPGRADE	
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK	
CROSS SECTIONS CH.85 TO CH.95	



AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C.DWG	13	33
CCAD	PLAN No. 2023-180	
2023-180 - DESIGN		

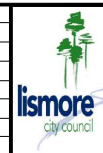
LISMORE CITY COUNCIL	
INTERSECTION UPGRADE	
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK	
CROSS SECTIONS CH.85 TO CH.95	



PLAN	SCALE BAR @A1
LONG SECTION	HORIZ 1:50, VERT 1:50
CROSS SECTION	HORIZ 1:50, VERT 1:50
DATUM LOCAL AHD	CONTOUR INTERVAL
SURVEYED BY GM	DESIGNED CP & BVG
DATE AUG. 2020	DRAWN CP & BVG
FILE	CHECKED SB

APPROVED	AMENDMENT NOT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
	PRELIMINARY DESIGN - VER B	BG	OCT/20
	50% DESIGN - VER C	BG	DEC/2023
	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
DESIGN SERVICES ENGINEER - DATE			
MANAGER - WORKS - DATE			

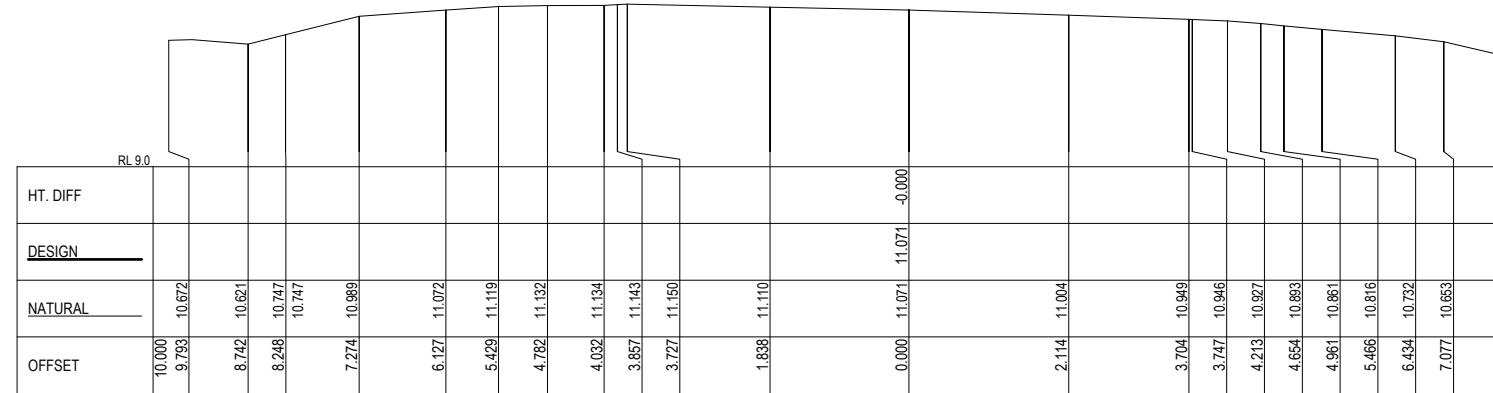
SERVICES			
PLANS CHECKED BY	DATE	ACTION Y/N	
JOB NO			
SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			



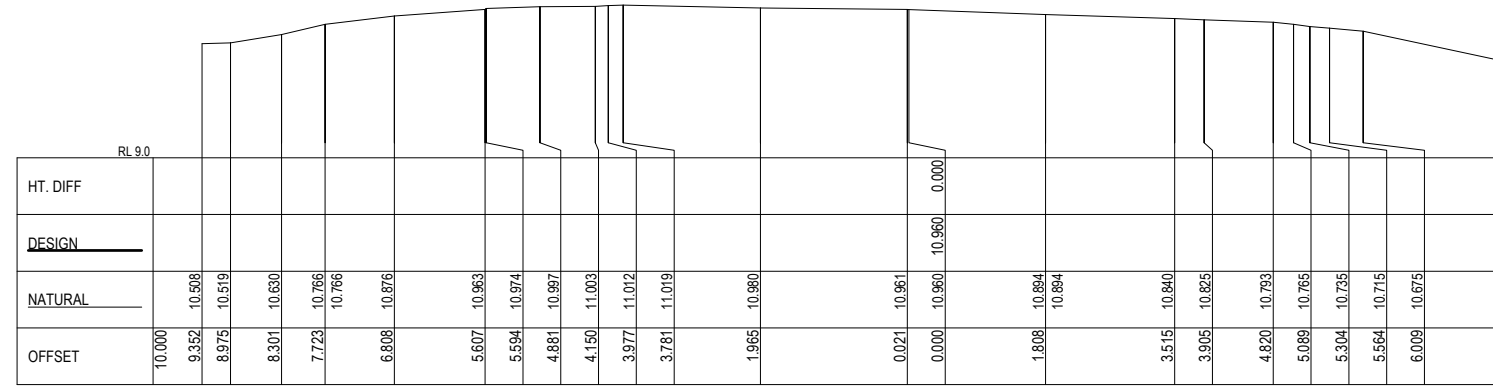
LISMORE CITY COUNCIL

INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
CROSS SECTIONS CH. 165 TO CH 175

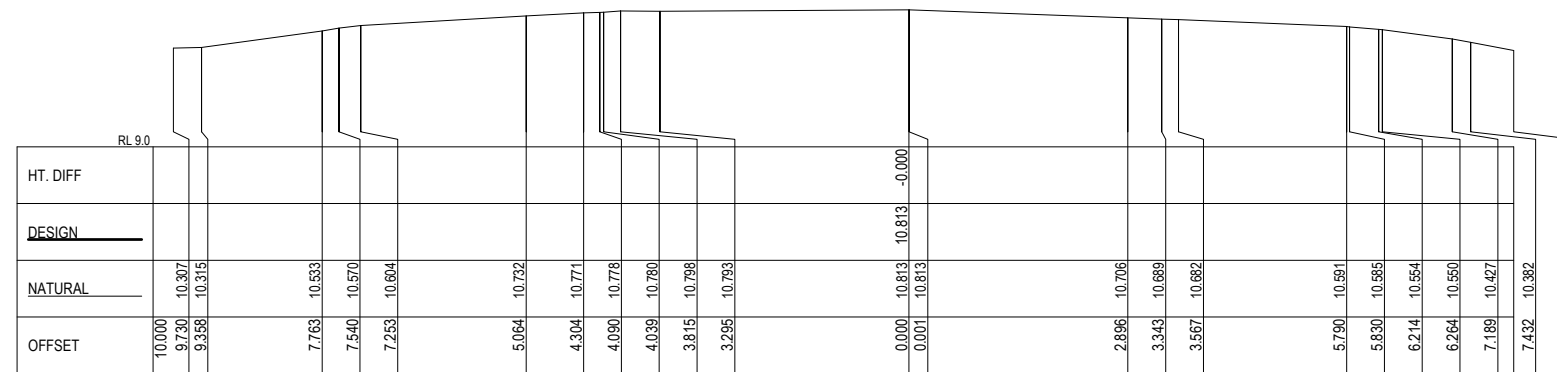
AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C.DWG	19	33
2023-180 DESIGN		
PLAN No. 2023-180		



292.545



280.000



260.000

PLAN	SCALE BAR @A1	
LONG SECTION	HORIZ	VERT
CROSS SECTION	HORIZ 1:50	VERT 1:50
DATUM LOCAL AND	SURVEYED BY GM	DESIGNED CP & BVG
CONTOUR INTERVAL	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

APPROVED	AMENDMENT NOT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
	PRELIMINARY DESIGN - VER B	BG	OCT/20
	50% DESIGN - VER C	BG	DEC/2023
	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
DESIGN SERVICES ENGINEER - DATE			
MANAGER - WORKS - DATE			

SERVICES			
PLANS CHECKED BY	DATE	ACTION	Y/N
JOB NO			
SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			



LISMORE CITY COUNCIL
INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
CROSS SECTIONS CH.260 TO CH.292.545

AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C DWG	22	33
CCAD		
2023-180 DESIGN		
PLAN No. 2023-180		



CABLE/PIPE LOCATION
Assets were found in the search area

COMPANY NAME:	Lismore City Council
ATTENTION:	Mesut Yildiz
SEARCH LOCATION:	559a Nimbin Road Blakebrook NSW 2480
SEQUENCE NO:	232913297
DATE:	Monday, 4 December 2023

Provision of Plans:
Please first enclosed plans depicting approximate locations of Essential Energy assets in the search location. The excavator must not assume that there may not be assets owned by other network operators in the search location.

Underground assets searched for	Underground assets found
Essential Energy Electrical	<input checked="" type="checkbox"/>
Essential Energy Water & Sewerage	<input type="checkbox"/>

Plans are updated from time to time to record changes to underground assets and may be updated by Essential Energy without notice. In the event that excavation does not commence within 28 days of receipt of a plan, a new plan should be obtained.

The excavator must retain the plans on site for the duration of the works.

The excavator shall report all damage made to Essential Energy assets immediately. Note that damage includes gouges, dents, holes and gas escapes.

IN CASE OF EMERGENCY OR TO REPORT DAMAGE:
PHONE 13 23 80

DISCLAIMER

Please be aware that plans may not reflect alterations to surface levels or the position of roads, buildings, fences etc. Cable and pipe locations are approximate and the plans are not suitable for scaling purposes. Essential Energy does not retain plans for privately-owned underground electrical or water & sewerage assets located on private property. Privately-owned underground electrical assets located on private property are the responsibility of the owner.

The plans have been prepared for Essential Energy's sole use and benefit. Essential Energy cannot and does not warrant the accuracy or completeness of the plans. Essential Energy supplies them at its cost with the object of reducing the serious risk of unintentional damage being caused to its cables and pipes. Essential Energy does not accept any responsibility for any omissions, inaccuracies or errors in the plans, or any reliance placed on the material. Any reliance placed on any plan provided in response to your request is at your own risk.

www.essentialenergy.com.au
Page 1 of 2
ABN 37 428 185 228
PO Box 8730 Port Macquarie NSW 2484
Telephone: 13 23 91 Facsimile: 1800 304 636



Essential Energy retains all Intellectual and Industrial property rights which exist or may exist in or with respect to the plan(s). The material provided is not to be copied or distributed beyond you.

You release Essential Energy from and against all claims, demands, actions and proceedings arising out of or in any way related to the use of the provided material.

Location of Assets on Site:
The plans indicate only that cables and pipes may exist in the general vicinity – they do not pinpoint the exact location of the cables and pipes.

If it is found that the location of cables or pipes on the plans can be improved, please notify Essential Energy on 13 23 91 or fax 1800 304 636.

All individuals have a duty of care they must observe when working in the vicinity of underground cables and pipes. It is the excavator's responsibility to visually expose the underground cables and pipes manually, ie. by using hand-held tools and non-destructive pot-holing techniques prior to any mechanical excavation. The excavator will be held responsible for all damage caused to the Essential Energy network or cables and pipes, and for the costs associated with the repair of any such damage. The excavator will also be held responsible for all damage caused to any persons.

When digging in the vicinity of underground assets, persons should observe the requirements of the applicable Codes of Practice published by the NSW Work Cover Authority or Safe Work Australia, and any amendments from time to time by the Authorities, including although not limited to:

- Excavation Work
- Managing Electrical Risks in the workplace
- How to manage and control asbestos in the workplace

(Please refer to <https://www.workcover.nsw.gov.au/law-and-policy/legislation-and-codes/codes-of-practice>)

When digging in the vicinity of electrical assets persons should observe the requirements of the Electricity Supply Act 1995.

Persons excavating near live underground electrical reticulation and/or earthing cables must exercise extreme caution at all times and adhere to the requirements of Essential Energy's Electrical Safety Rules. (These are available on our website: <http://www.essentialenergy.com.au/content/safety-community> and include:

- Work near Essential Energy's Underground Assets: <http://www.essentialenergy.com.au/assets/codesofpractice/works/CEOP041.pdf>, and
- Asbestos Fact Sheet: <http://www.essentialenergy.com.au/assets/codesofpractice/AsbestosFactSheet.pdf>

In some situations these procedures call for work to be performed by authorised staff. Should there be any doubt as to the exact location of any underground electrical assets, and the potential for conflict with live underground cables caused by excavation at your work site, you should contact 13 23 91 to arrange for an on-site visit by an Essential Energy representative. No construction or mechanical excavation work is to commence prior to this on-site visit and approval being obtained.

When digging in the vicinity of water or sewer assets persons should observe the requirements of the Water Management Act 2000.

Should there be any doubt as to the exact location of any underground water and sewer assets, and the potential for conflict with underground water and sewer pipes caused by excavation at your work site, you should contact 13 23 91 to arrange for an on-site visit. No construction or excavation work is to commence prior to this on-site visit and approval being obtained.

Prior Notification:
Please note that for excavation depths greater than 250mm near power poles and stays you should allow for advance notice in your construction program to permit Essential Energy time to allocate the necessary field resources to carry out the inspection at the site a minimum of fourteen (14) working days prior to work commencing. This service may incur a fee and this can be negotiated with the local Area Coordinator at the time of making the appointment. Failure to give reasonable notice to the local Area Coordinator may result in disruption to Essential Energy's planned works program in the district and could incur an extra charge over and above the normal rate for the service.

For further information please call 13 23 91.

www.essentialenergy.com.au
Page 2 of 2
ABN 37 428 185 228
PO Box 8730 Port Macquarie NSW 2484
Telephone: 13 23 91 Facsimile: 1800 304 636



When working near underground electrical infrastructure

NSW legislation requires people who are planning to do excavation work to obtain copies of underground electrical cable plans through Dial Before You Dig (Phone 1100) and to make sure that the plans are no more than 30 days old when excavation commences.

The aim of the legislation is to ensure that when workers dig or drive items near underground electrical cables, ducting, and pipes, they will establish the exact location of the cables and thus avoid coming into contact with them or damaging them. These items carry vital services such as electricity, water, gas and communications, and establishing their location before digging will help ensure worker safety and prevent damage to the network which may cause disruption of essential services to local communities.

Excavate safely and protect underground assets
Dial Before You Dig (DBYD) is the first step to excavating safely. You should use DBYD when you will be undertaking (but not restricted to) the following:

- Any excavation using machinery digging deeper than 150mm. This includes but is not restricted to back hoes, excavators, borers & kangaroo hammers (ploughing or ripping activities)
- Any excavation using hand tools deeper than 300mm which includes shovels, spades and crow bars
- Any vertical or horizontal boring.

Note: The above examples are general and may not cover all situations in the regulations where a DBYD would be required e.g. driving metal posts in the ground.

Regardless of the size of your project you should lodge an enquiry with DBYD before commencing work. This applies to small tasks like backyard landscaping, driving items into the ground as well as heavy work such as directional core or directional drilling. DBYD advise to respond to enquiries within two business days.

Dial Before You Dig
Phone 1100
Web www.1100.com.au
Download the DBYD iPhone app



Be safe, because they need you

No Go Zone for powered excavation
Extract from WorkCover "Work near Underground Assets"

TABLE 1: Types of assets and limits of underground approach

Assets	Clearances	No Go Zone for Powered Excavation	Controls	Typical Depths
Low voltage electricity cables – voltages less than or equal to 1000V (LHV)	Close proximity with the use of hand tools	300 mm	Must contact asset owner for specific conditions	450 – 750 mm
Electricity conductors from 1.1000V (LHV) up to 33,000V (33 kV)	Close proximity with the use of hand tools	600 mm	Must contact asset owner for specific conditions	900 mm
Underground sub-transmission cables 33,000V up to 132,000V (132 kV)	Must contact asset owner	Must contact asset owner	Must be carried out under the supervision of the asset owner	900 mm
High Voltage Electricity cables – voltages from 1000V (LHV) up to (33 kV)	Close proximity with the use of hand tools	Must contact asset owner	Must contact asset owner for specific conditions	600 – 1000 mm
Extra High Voltage Electricity Transmission cables – voltages above (132 kV) and 500,000V (500 kV)	Must contact asset owner	Must contact asset owner	Work must be carried out under the supervision of the asset owner	800 – 1200 mm

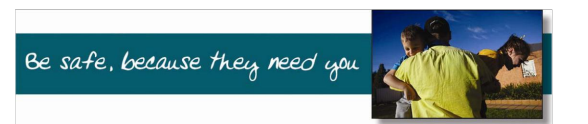
How to expose cables or pipes
Location plans provide an indication of the presence of underground assets only; they do not pinpoint the exact location. This is why manual exposure is required, which can be done by pot-holing. Underground assets must first be exposed by pot-holing with non-conductive tools to identify their location. Excavation with hand tools shall be carried out carefully up to, but not closer than, the minimum distances specified in Table 1. Several pot-holes may need to be dug manually to determine and satisfy yourself of the exact locations of cables or pipes to avoid any mishaps. Manual pot-holing needs to be undertaken with extreme care, common sense and while employing techniques least likely to damage cables. For example, orientate shovel blades and trowels parallel to the cable rather than digging across the cable. Look out for sand, plastic strips or specially marked bricks when excavating, which signal the presence of underground cables.

For directional boring parallel to the asset and at the level of the asset, a clearance of 600 mm shall be maintained from the edge of the nearest asset and pot holes at 10m intervals to ensure clearances are maintained with a safety observer appointed.

- The four Ps of safe excavation**
- Plan** – Plan your job. Use the Dial Before You Dig service before your job is due to begin to help keep your project safe. Contact Essential Energy on 13 23 91 to identify any underground pipes and/or cables in the vicinity
 - Protect** – Pot-holing (digging by hand) is a method to assist in establishing the exact location of all underground infrastructure. Only use air/vacuum equipment to pot hole that operates at or less than 13,790kpa (2000psi)
 - Protect** – Protecting and supporting exposed infrastructure is the excavator's responsibility. Always erect safety barriers in areas at risk to protect underground networks
 - Proceed** – But ONLY when you have planned, pot-holed and put the protective measures in place.

No Go Zone for powered excavation
Directional boring is powered excavation and contact with the asset owner must be made before excavation takes place. For directional boring across the line of an asset a minimum clearance of 300 mm from the asset shall be maintained. When boring across the line of an underground asset, the location of the asset's shall be positively proven by hand digging (pot-holing) or by another approved method and a safety observer appointed.

Note: Where the risk assessment identifies a potential risk of making contact with either underground assets, safety observer/s would be required. The safety observer's



Digging safely

You cannot be too careful when it comes to safe excavation. Avoiding underground ducting pipe and cable damage is as simple as having the right tools, the right skills and the right information.

- Study the plans you receive from asset owners thoroughly
- Check to see if they relate to the area you requested and make sure you understand them. If you are unclear about what the symbols mean, how to proceed, contact the relevant network owner
- Check the work area for other forms of electrical equipment, including street lights, ground substations, phone boxes or traffic lights – all good indicators that underground cables will be present
- Remember underground cables can also be present even if overhead powerlines have been identified
- Never assume the depth or alignment of pipes and cables. Installed networks assets may not have been installed in a straight line
- Always observe any instructions stated on the plans provided by the asset owner
- Remember, plans and maps identifying the location of underground cables and depths can alter after road upgrades or developments and underground assets may be as little as a few millimetres below the surface
- Other service lines (for example gas mains (pipes) and communication cables) can also be present. Shared trenches are frequently used on underground runs to premises
- New electrical cables are sometimes laid using existing old conduits
- Various methods of protecting underground cables may be utilised for exposed electrical bricks, conduits, concrete or flat PVC barriers) or may be direct buried or installed by under-boring methods which may have no visual disturbance of the ground
- Ensure overhead & electrical structures aren't undermined during excavation.

Excavating around electrical poles
Anyone intending to excavate around any electrical item risks serious injury or death as a result of contact with underground cables or the earthing system.

Assets around poles
For excavation depths greater than 250mm near power poles and stays you must arrange for an Essential Energy representative to attend the works 2 weeks prior to work commencing. Call Essential Energy on 13 23 91. More information is available in Essential Energy's operational procedure, "Work near Essential Energy's underground assets: CEOP041" which can be found at essentialenergy.com.au/construction

Unless otherwise agreed, underground assets and other obstructions around poles are to be kept a minimum distance of 300mm from the periphery of the pole, to allow inspectors by the asset owner employees.

No excavation within 10 metres of a SWER transformer pole is to occur without the approval of the local electrical asset owner. It should be noted that the NSW Service and Installation Rules require a sketch of the underground service/consumers mains to be marked inside the transformer.

The risks are higher for those earthing systems of the SWER constructions as the earthing is utilised as the return path.

When there are potentially dangerous electrical current flowing through them. Usually they have a green and yellow covering but could be a bare cable buried directly in the ground.

Even if the map provided does not show underground cables, earth cables may be present. These earth cables are usually associated with electrical equipment located



Typically any electrical item installed on a pole will have an earth wire running down the pole into the ground, which includes:

- Transformers in urban and rural situations
- Isolation, protection and regulation items.

Transformers located on the ground (padmount and kiosk), besides having underground electrical cables, will have an earthing system installed around them.

Damaged earthing
If an earth cable has been damaged, maintain a clearance of eight (8) metres and contact Essential Energy on 13 23 91. DONT ATTEMPT to re-join the cable - this will place you at serious risk.

Operating near underground cables and earth's
Underground cables should never be moved or relocated unless under the express authority of the organisation or person responsible for the powerlines

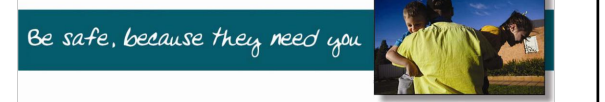
- The excavator shall report all damage made to Essential Energy assets immediately. Damage includes: gouges, dents, holes and gas escapes
- Never undermine poles, cables, earthing cable, pad-mount and kiosk substations.

Make sure it can't go wrong
You should ensure that people at work, their equipment (tools and plant) or materials do not come within close proximity to underground powerlines unless:

- A written risk assessment has been completed and a safe system of work implemented
- The relevant safety precautions and worker training requirements, including WorkCover Codes of Practice and Essential Energy's requirements, have been implemented and complied with.

If working in close proximity to underground cables is unavoidable and the risk assessment has been completed, the following should be considered to control the risks and ensure work safety:

- Have the power switched off by Essential Energy
- Consider all conductors as live unless it is positively known they have been de-energised
- Where appropriate, provide ground markings to identify location and warn workers of the presence of underground power and other assets.



Emergency situations

In the event that contact with an underground powerline occurs or cables are exposed or damaged, remembering the following points could help save a life:

- If the situation is at all life threatening, immediately contact the Emergency Services on 000 (triple zero)
- Call Essential Energy's 24-hour supply interruptions line – 13 20 80 to switch off the power if required or report damage or exposure cables / conduits
- If any other underground assets are damaged you should contact the affected asset owners immediately
- Treat underground cables as alive, even if they appear to be dead
- Keep everyone at least eight metres away from the incident site, the person or any machinery making contact with underground cable
- Don't panic or touch the person receiving the electric shock – this could place you at risk
- Untrained, unqualified persons should not attempt to rescue a person receiving an electric shock. All too often secondary deaths occur when others go to the aid of earlier victims
- Remain on/inside the machinery until the supply is disconnected
- If possible, break contact between the machinery and underground cable.

For more information
Essential Energy's Public Safety team is available to facilitate Electrical Awareness sessions and discuss any questions relating to electrical safety. For more information on electrical safety please call

- Essential Energy General Enquiries 13 23 91
- Essential Energy Supply Interruptions 13 20 80
- WorkCover NSW 13 10 50
- Dial Before You Dig www.1100.com.au
- Follow us on social media
- or visit essentialenergy.com.au/safety

- Safety first: before you dig or drive items into the ground**
- Contact DBYD
 - DO NOT attempt to excavate within a 10m of any power pole or electrical item
 - Contact Essential Energy on 13 23 91 for assistance to locate cables and earthing
 - Locate asset: Pot-hole
 - Proceed only if you have satisfied yourself it is safe

PLAN	SCALE BAR @A1	APPROVED	AMENDMENT NOT TO SCALE	BY	DATE	SERVICES		LISMORE CITY COUNCIL		AUTOCAD	SHEET No.	No. OF SHEETS
LONG SECTION	HORIZVERT		PRELIMINARY DESIGN	BG	AUG/20	JOB NO	PLANS CHECKED BY	DATE	ACTION Y/N	2023-180 80% DESIGN PLANS REV	24	33
CROSS SECTION	HORIZVERT		PRELIMINARY DESIGN - VER B	BG	OCT/20	SEWER				CCAD		
			50% DESIGN - VER C	BG	DEC/2023	WATER				2023-180 - DESIGN		
DATUM LOCAL AND	SURVEYED BYGM	DESIGNED	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024	TELSTRA	232913298	05/12/2023	N	PLAN No. 2023-180		
CONTOUR INTERVAL	DATEAUG. 2020.	DRAWN				E. ENERGY	232913297	05/12/2023	N			
	FILE	CHECKED				R.E.F.						



PLAN	SCALE BAR @A1
LONG. SECTION	HORIZ VERT
CROSS SECTION	HORIZ VERT
DATUM LOCAL AND	SURVEYED BY GM
CONTOUR INTERVAL	DATE AUG. 2020
	DESIGNED CP & BVG
	DRAWN CP & BVG
	CHECKED SB

APPROVED	AMENDMENT TO SCALE	BY	DATE
	PRELIMINARY DESIGN	BG	AUG/20
	PRELIMINARY DESIGN - VER B	BG	OCT/20
	50% DESIGN - VER C	BG	DEC/2023
	100% CONSTRUCTION PLANS - VER C	BG	JAN/2024
DESIGN SERVICES ENGINEER - DATE			
MANAGER - WORKS - DATE			

SERVICES			
PLANS CHECKED BY	DATE	ACTION Y/N	
SEWER			
WATER			
TELSTRA	232913298	05/12/2023	N
E. ENERGY	232913297	05/12/2023	N
R.E.F.			

LISMORE CITY COUNCIL

INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
SERVICES - SHEET 3

AUTOCAD	SHEET No.	No. OF SHEETS
2023-180 80% DESIGN PLANS REV C.DWG	25	33
2023-180 - DESIGN		
PLAN No. 2023-180		

100%
CONSTRUCTION
PLANS - VER C

OPENING ELECTRONIC MAP ATTACHMENTS -
Telstra Cable Plans are generated automatically in either PDF or DWF file types dependent on the site address and the size of area selected. You may need to download and install free viewing software from the internet e.g.
PDF Map Files (max size A3)
Adobe Acrobat Reader (<http://get.adobe.com/reader/>).

DWF Map Files (all sizes over A3)
Autodesk Viewer (Browser) (<https://viewer.autodesk.com/>) or Autodesk Design Review (<http://usa.autodesk.com/design-review/>) for DWF files. (Windows)

Telstra BYDA map related enquiries
email - Telstra.Plans@team.telstra.com
1800 653 935 (AEST Business Hours only)

REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY
Report online - <https://www.telstra.com.au/forms/report-damage-to-telstra-equipment>
Ph: 13 22 03
If you receive a message asking for a phone or account number say: "I don't have one" then say "Report Damage" then press 1 to speak to an operator.

Telstra New Connections / Disconnections
13 22 00

Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).
NetworkIntegrity@team.telstra.com
<https://www.telstra.com.au/consumer-advice/digging-construction>

Certified Locating Organisation (CLO)
<https://dbydlocator.com/certified-locating-organisation/>
Please refer to attached Accredited Plant Locator.pdf

Telstra Smart Communities
Information for new developments (developers, builders, homeowners)
<https://www.telstra.com.au/smart-community>

LEGEND

For more info contact a Certified Locating Organisation or Telstra Plan Services 1800 653 935

Exchange (marked on street)
Footway Access Chamber (see notes from 1.0 to 1.3.4.6)
Pillar / Cabinet (see notes from 1.0 to 1.3.4.6)
Above ground complex equipment housing (eg RM)
Other Carrier Telecommunications Cable/Asset
OC
Dist MC
Main Cable ducts on a Distribution plan
Blocked or damaged duct.

Cable Joining Pit (Number / Letter indicating Pit Type)
Elevated joint (above ground joint on buried cable)
Telstra Plant in shared Utility trench
Aerial Cable / Overhead (includes on wall)
Aerial Cable (attached to joint Use Pole eg. Power)
Direct Buried Cable
Marker Post Installed
Marker Post, Transponder
Marker Post, Transponder
Optical Fibre cable direct buried

Some examples of conduit type and size:
A - Asbestos cement, P - PVC / Plastic, C - Concrete, GI - Galvanised Iron, F - Earthenware
Conduit class normally range from 20mm to 100mm
P50 - 50mm PVC conduit
P100 - 100mm PVC conduit
A100 - 100mm asbestos cement conduit

Some Examples of how to read Telstra Plans
One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pit, approximately 20.0m apart, with a direct buried 50-pair cable along the same route
Two separate conduit runs between two footway access chambers (manholes) approximately 24.0m apart. A rest of four 100mm PVC conduits (P100) containing assorted cables to three ducts (one being empty) and one empty 100mm concrete duct (C200)

WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK. A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. The exact position of Telstra assets can only be validated by physically exposing them. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

Certified Locating Organisations (CLO)
Find the closest CLO to your worksite on: <https://dbydlocator.com/certified-locating-organisation/>

Read the disclaimer and click: [Click here to read disclaimer](#)

A national map and an A-Z list of Certified Locating Organisations is displayed.

Use the map to zoom to your work area and choose the closest Locator indicated.

OR search by entering the postcode of your work area.

1. Enter the post/zip code
2. Choose your search radius
3. Click filter (If there is no result, you may have to increase the search radius)
4. Click on the closest Locator for CLO details or view the results displayed below the map

Locator skills have been tested, and the Organisation has calibrated location and safety equipment.
Telstra is aware of each Certified Locating Organisation and their employee locators.
Only a DBYD Certified Locator registered with a Certified Locating Organisation is authorised to access Telstra network for locating purposes.
Each Certified Locator working for a CLO is issued with a photo ID Card, authorising them to access Telstra pits and manholes for the purpose of cable and plant locations.
Please ask to see your Locators' CLO ID Card.

www.dbydlocator.com

Before You Dig Australia

Think before you dig

This document has been sent to you because you requested plans of the Telstra network through Before You Dig Australia (BYDA).

If you are working or excavating near telecommunications cables, or there is a chance that cables are located near your site, you are responsible to avoid causing damage to the Telstra network.

Please read this document carefully. Taking your time now and following the steps below can help you avoid damaging our network, interrupting services, and potentially incurring civil and criminal penalties.

Our network is complex and working near it requires expert knowledge. Do not attempt these activities if you are not qualified to do so.

Your checklist

- 1. Plan**
Plan your work with the latest plans of our network. Plans provided through the BYDA process are indicative only*. This means the actual location of our asset may differ substantially from that shown on the plans. Refer to steps 2 and 3 to determine actual location prior to proceeding with construction.
- 2. Prepare**
Engage a DBYD Certified Locating Organisation (CLO) via dbydlocator.com to identify, validate and protect Telstra assets before you commence work.
- 3. Pothole**
Validate underground assets by potholing by hand or using non-destructive vacuum extraction methods. Electronic detection alone (step 2) is not deemed to validate underground assets and must not be used for construction purposes. If you cannot validate the Telstra network, you must not proceed with construction.
- 4. Protect**
Protect our network by maintaining the following distances from our assets:
 - 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
 - 500mm Vibrating Plate or Wacker Packer Compactor
 - 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant
 - 1.0m Jackhammers/Pneumatic Breakers
 - 2.0m Boring Equipment (in-line, horizontal and vertical)
- 5. Proceed**
You can proceed with your work only once you have completed all the appropriate preparation, potholing and protection.

Useful information

Report any damage immediately
<https://www.telstra.com.au/forms/report-damage-to-telstra-equipment>
13 22 03
If you receive a message asking for an account or phone number say "I don't have one" Then say "Report Damage" then press 1 to speak to an operator.

Relocating assets
If your project requires the relocation of a Telstra asset, please contact the Telstra Network Integrity Group:
[Request Asset Relocation Or Commercial Works \(telstra.com.au\)](mailto:RequestAssetRelocationOrCommercialWorks@team.telstra.com)
NetworkIntegrity@team.telstra.com
 1800 810 443 (AEST business hours only)

Never try to move or alter our network infrastructure without authorisation. By law, only authorised people can work on our assets or enter a facility owned or operated by us. Any interference, including unauthorised entry or tampering, may result in legal action.

Further information
Plan enquiries
1800 653 935 (AEST business hours only)
Telstra.Plans@team.telstra.com

Information on how to find cables and request asset relocations:
<https://www.telstra.com.au/consumer-advice/digging-construction>

Asset Plan Readers
PDF Adobe Acrobat Reader DC Install for all versions
DWF Download Design Review | DWF Viewer | Autodesk

Disclaimer and legal details

*Telstra advises that the accuracy of the information provided by Telstra conforms to Quality Level D as defined in AS5488-2013. It is a criminal offence under the Criminal Code Act 1995 (Cth) to tamper or interfere with telecommunications infrastructure. Telstra will also take action to recover costs and damages from persons who damage assets or interfere with the operation of Telstra's networks.

By receiving this information including the indicative plans that are provided as part of this information package you confirm that you understand and accept the risks of working near Telstra's network and the importance of taking all of the necessary steps to confirm the presence, alignments and various depths of Telstra's network. This in addition to, and not in replacement of, any duties and obligations you have under applicable law.

When working in the vicinity of a telecommunications plant you have a "Duty of Care" that must be observed. Please read and understand all the information and disclaimers provided below.

The Telstra network is complex and requires expert knowledge to interpret information, to identify and locate components, to pothole underground assets for validation and to safely work around assets without causing damage. If you are not an expert and/or qualified in these areas, then you must not attempt these activities. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers. The 5 Ps to prevent damage to Telstra assets are listed above. Construction activities and/or any activities that potentially may impact on Telstra's assets must not commence without first understanding these steps. Construction activities can include anything that involves breaking ground, potentially affecting Telstra assets.

If you are designing a project, it is recommended that you also undertake these steps to validate underground assets prior to committing to your design.

This Notice has been provided as a guide only and may not provide you with all the information that is required for you to determine what assets are on or near your site of interest. You will also need to collate and understand all of the information received from other Utilities and understand that some Utilities are not a part of the BYDA program and make your own enquiries as appropriate. It is the responsibility of the entities undertaking the works to protect Telstra's network during excavation / construction works.

Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose.

Telstra plans or other details are provided only for the use of the applicant, its servants, agents, or Certified Locating Organisation. The applicant must not give the plans or details to any parties other than these and must not generate profit from commercialising the plans or details. Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage. Please ensure Telstra plans and information provided always remains on-site throughout the inspection, location, and construction phase of any works.

Telstra plans are valid for 60 days after issue and must be replaced if required after the 60 days.

Data Extraction Fees
In some instances, a data extraction fee may be applicable for the supply of Telstra information. Typically, a data extraction fee may apply to large projects, planning and design requests or requests to be supplied in non-standard formats. For further details contact Telstra Plan Services.

Telstra does not accept any liability or responsibility for the performance of or advice given by a Certified Locating Organisation. Certification is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.

Neither the Certified Locating Organisation nor any of its employees are an employee or agent of Telstra. Telstra is not liable for any damage or loss caused by the Certified Locating Organisation or its employees.

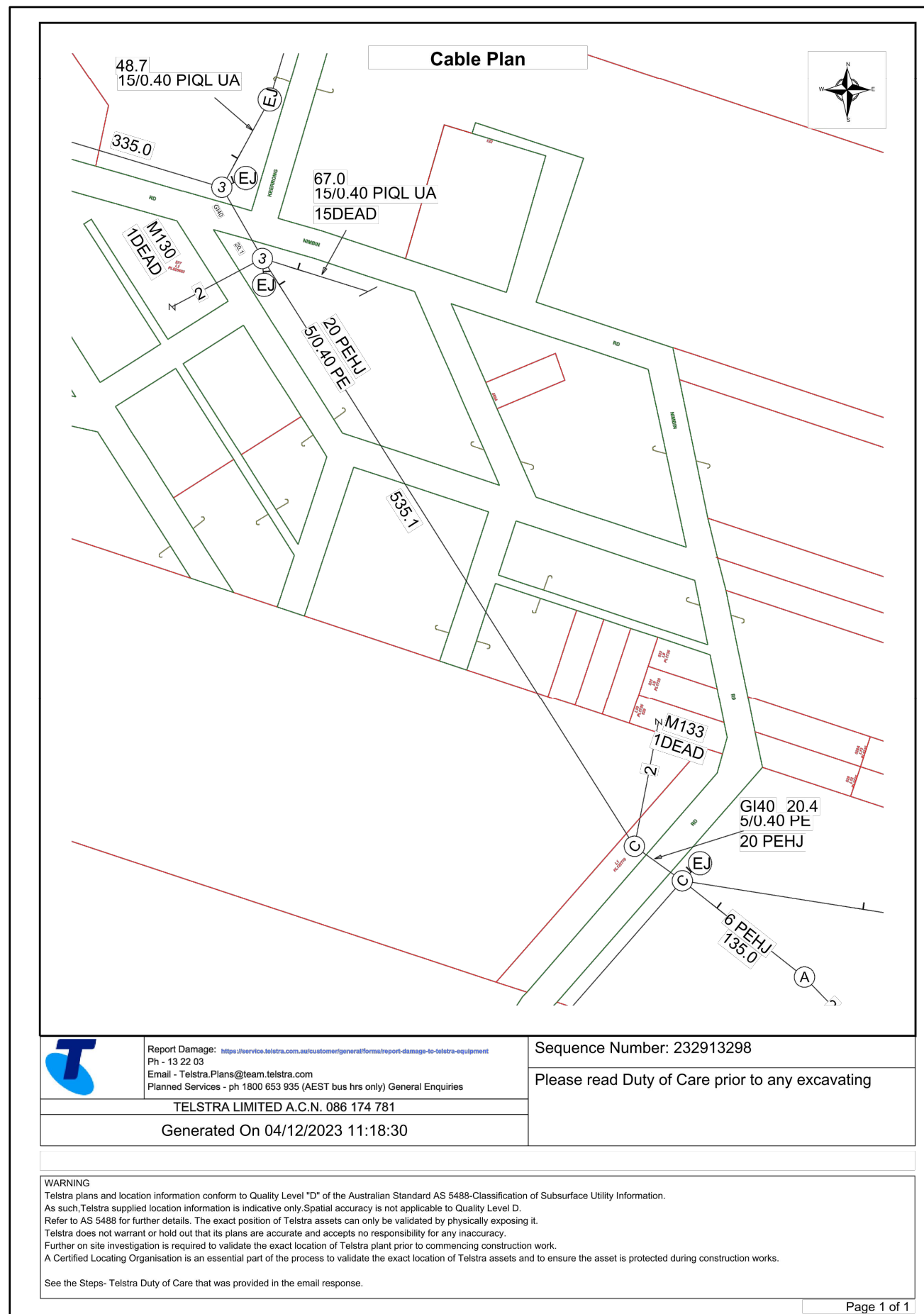
Once all work is completed, the excavation should be reinstated with the same type of excavated material unless specified by Telstra. The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

When using excavators and other machinery, also check the location of overhead power lines. Workers and equipment must maintain safety exclusion zones around power lines.

WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK. A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. The exact position of Telstra assets can only be validated by physically exposing them. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

Privacy Note
Your information has been provided to Telstra by BYDA to enable Telstra to respond to your BYDA request. Telstra keeps your information in accordance with its privacy statement. You can obtain a copy of www.telstra.com.au/privacy or by calling us at 1800 039 039 Business hours only.

PLAN	SCALE BAR @A1	APPROVED	AMENDMENT NOT TO SCALE	BY	DATE	SERVICES		LISMORE CITY COUNCIL		AUTOCAD	SHEET No.	No. OF SHEETS
LONG SECTION	HORIZVERT		PRELIMINARY DESIGN	BG	AUG/20	PLANS CHECKED BY	DATE	ACTION Y/N	2023-180 80% DESIGN PLANS REV		26	33
CROSS SECTION	HORIZVERT		PRELIMINARY DESIGN - VER B	BG	OCT/20	JOB NO			C.DWG			
			50% DESIGN - VER C	BG	DEC/2023	SEWER			2023-180 - DESIGN			
			100% CONSTRUCTION PLANS - VER C	BG	JAN/2024	WATER			PLAN No. 2023-180			
DATUM LOCAL ANQ	SURVEYED BY GM	DESIGNED CP & BVG				TELSTRA	232913298	05/12/2023	N			
CONTOUR INTERVAL	DATE AUG. 2020.	DRAWN CP & BVG				E. ENERGY	232913297	05/12/2023	N			
	FILE	CHECKED SB				R.E.F.						



PLAN		SCALE BAR @A1		APPROVED		AMENDMENT NOT TO SCALE		BY DATE		SERVICES		LISMORE CITY COUNCIL		AUTOCAD		SHEET No.		No. OF SHEETS	
LONG SECTION		HORZ VERT		DESIGNED		PRELIMINARY DESIGN		BG AUG/20		PLANS CHECKED BY		INTERSECTION UPGRADE		2023-180 80% DESIGN PLANS REV		27		33	
CROSS SECTION		HORZ VERT		CP & BVG		PRELIMINARY DESIGN - VER B		BG OCT/20		JOB NO		550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK		C.DWG					
DATUM LOCAL AND		SURVEYED BY GM		CP & BVG		50% DESIGN - VER C		BG DEC/2023		SEWER		SERVICES - SHEET 5		2023-180 - DESIGN					
CONTOUR INTERVAL		DATE AUG. 2020		CP & BVG		100% CONSTRUCTION PLANS - VER C		BG JAN/2024		WATER				PLAN No. 2023-180					
		FILE		SB						TELSTRA 232913298 05/12/2023 N									
										E. ENERGY 232913297 05/12/2023 N									
										R.E.F.									

CONSTRUCTION NOTES:

1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCEMENT OF EARTHWORKS AND KEEP FUNCTIONAL THROUGH THE PROJECT AND UNTIL SITE HAS BEEN STABILISED.
2. EXISTING SERVICES TO BE LOCATED, PROTECTED, SUPPORTED AND/OR REMOVED AS REQUIRED IN ACCORDANCE WITH THE RELEVANT AUTHORITIES SPECIFICATIONS.
3. ALL EXISTING SERVICE COVERS TO BE ADJUSTED TO NEW FINISHED SURFACES AS REQUIRED.
4. STRIP TOPSOIL OF ALL EARTHWORKS AREAS, STOCKPILE AND RESPREAD ON BATTERS AND LANDSCAPE AREAS.
5. PLACE 80mm MIN THICK TOPSOIL ON ALL BATTERS AND EARTHWORK AREAS. 80% GRASS COVER TO BE ACHIEVED BY END OF PROJECT.
6. EXISTING FENCES TO BE PRESERVED, RELOCATED AND/OR REMOVED AS DIRECTED BY THE SUPERINTENDENT.
7. CONTRACTOR WILL BE HELD RESPONSIBLE FOR DAMAGE TO EXISTING ROADS AND OTHER ASSETS CAUSED BY CONSTRUCTION EQUIPMENT.
8. SURFACES OF EXISTING ROADS THAT ARE USED AS ACCESS BY CONTRACTOR SHALL BE KEPT FREE OF OBSTRUCTION MATERIALS, DIRT AND OTHER FOREIGN MATTER AT ALL TIMES.
9. THE CONTRACTOR SHALL REINSTATE AND/OR MAKE GOOD ANY DISTURBED AREAS ASSOCIATED WITH THE WORK TO THE SATISFACTION OF THE SUPERINTENDENT.
10. DUST SUPPRESSION MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION.
11. ALL NEW WORKS SHALL MAKE A SMOOTH TRANSITION TO EXISTING.

EROSION CONTROL NOTES:

- WORKS ON THE SITE SHALL BE CARRIED OUT IN THE FOLLOWING SEQUENCE:
- INSTALL BARRIER AND SILT FENCES
 - STRIP AND STOCKPILE TOPSOIL
 - UNDERTAKE SITE DEVELOPMENT WORKS
 - REHABILITATE SITE, CLEANUP & REMOVE RUBBISH DEBRIS
 - REMOVE TEMPORARY SOIL AND WATER MANAGEMENT WORKS ONCE APPROVED TO DO SO BY COUNCIL

1. GENERAL

- (A) TEMPORARY DRAINAGE CONTROL. FLOW SHOULD BE DIVETED AROUND THE WORK AROUND THE WORK SITE WHERE POSSIBLE.
- (B) ALL DRAINAGE, EROSION AND SEDIMENT CONTROLS TO BE INSTALLED AND BE OPERATIONAL BEFORE COMMENCING UP-SLOPE EARTHWORKS.
- (C) ALL CONTROL MEASURES TO BE INSPECTED AT LEAST WEEKLY AND AFTER SIGNIFICANT RUNOFF PRODUCING STORMS.
- (D) CONTROL MEASURES MAY BE REMOVED WHEN ON-SITE EROSION IS CONTROLLED AND 70% PERMANENT SOIL COVERAGE IS OBTAINED OVER ALL UPSTREAM DISTURBED LAND.
- (E) IN AREAS WHERE RUNOFF TURBIDITY IS TO BE CONTROLLED, EXPOSED SURFACES TO BE EITHER MULCHED, COVERED WITH EROSION CONTROL BLANKETS OR TURFED IF EARTHWORKS ARE EXPECTED TO BE DELAYED FOR MORE THAN 14 DAYS.
- (F) STRAW BALE SEDIMENT TRAPS ARE A SECONDARY OPTION WHICH GENERALLY SHOULD NOT BE USED IF OTHER OPTIONS ARE AVAILABLE.

2. CHECK DAM NOTES

- (A) CHECK DAMS MAY BE CONSTRUCTED OF A VARIETY OF MATERIALS (E.G. STRAW BALES, SEDIMENT FENCE, ROCK & GEOTEXTILE, SAND BAGS, ETC.)
- (B) SPILLWAY TO BE OVER INVERT OF DRAIN WITH DISCHARGE NOT PERMITTED TO FLOW AROUND ENDS.
- (C) SPILLWAY TO BE LESS THAN 1 METER ABOVE INVERT OF DRAIN.
- (D) SOME FORM OF DISSIPATION MAY BE REQUIRED BELOW SPILLWAYS OF CHECK DAMS (E.G. ROCK, SAND BAGS).
- (E) CHECK DAMS TO BE SPACED SO THE TOE OF THE UPSTREAM CHECK IS LEVEL WITH THE SPILLWAY OF THE NEXT DOWNSTREAM CHECK. (REFER TO DIAGRAM ABOVE).
- (F) SHORT-TERM USE OF SAND BAGS DURING TABLING DRAIN SHAPING AT END OF WORK DAY.
- (G) LONG-TERM USE AGGREGATE.

3. SEDIMENT FENCE

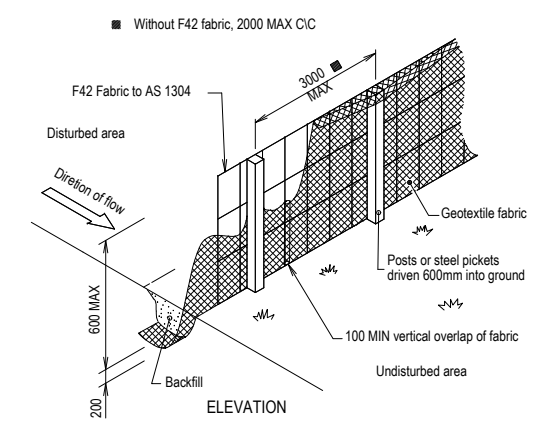
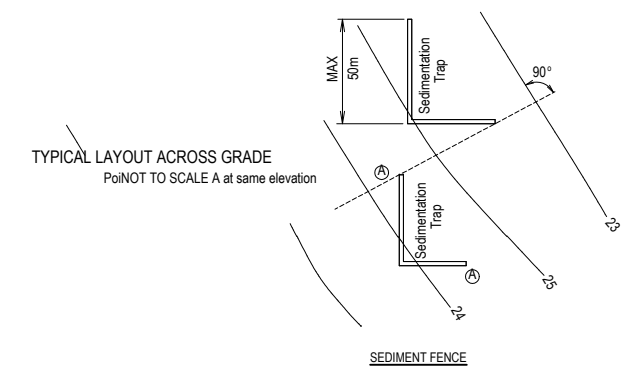
- (A) NOT TO BE LOCATED IN AREAS OF CONCENTRATED FLOW.
- (B) NORMALLY LOCATED ALONG THE CONTOUR WITH A MAXIMUM CATCHMENT AREA 0.6 HA PER 100M LENGTH OF FENCE.
- (C) WOVEN FABRICS ARE PREFERRED, NON-WOVEN FABRICS MAY BE USED ON SMALL WORK SITES, i.e. OPERATIONAL PERIOD LESS THAN 6 MONTHS OR ON SITES WHERE SIGNIFICANT TO SCALE EDDIMENT RUNOFF IS NOT EXPECTED.
- (D) WHERE FENCES NEED TO BE LOCATED ACROSS THE CONTOUR THE LAYOUT SHALL CONFIRM TO 'TYPICAL LAYOUT ACROSS GRADE'.
- (E) FENCES ARE REQUIRED 2M MIN FROM TOE OF CUT OR FILL BATTERS, WHERE NOT PRACTICAL ONE FENCE CAN BE AT THE TOE WITH A SECOND FENCE 1m MIN AWAY. FENCE SHOULD NOT BE LOCATED PARALLEL WITH TOE IF CONCENTRATION OF FLOW WILL OCCUR BEHIND THE FENCE.

4. PROVIDE ON GRADE KERB INLET SEDIMENT TRAPS AS REQUIRED (REFER DIAGRAM)

CONSTRUCTION NOTES:

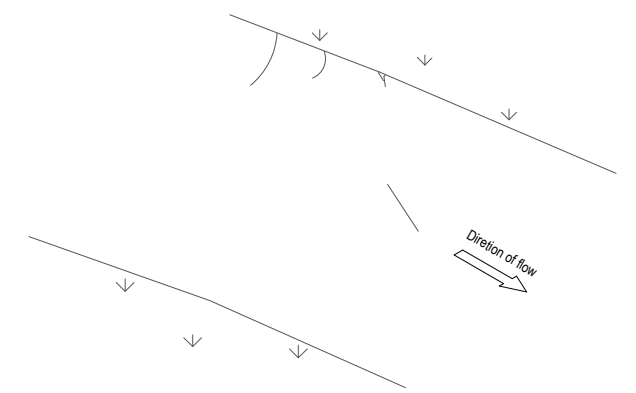
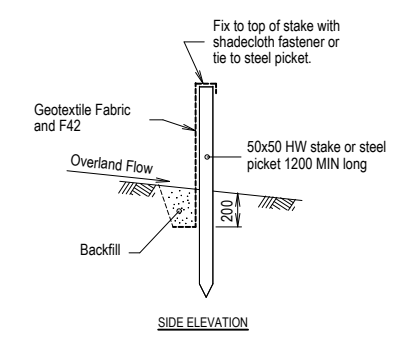
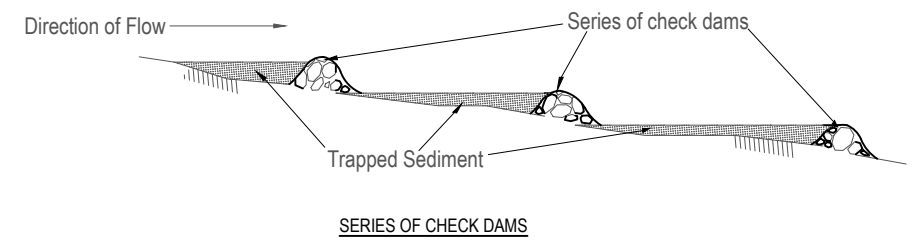
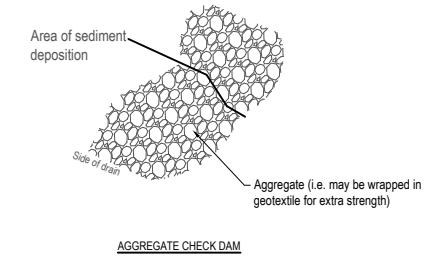
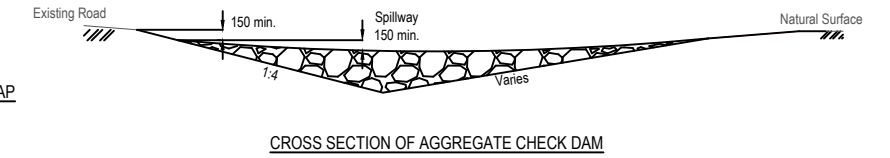
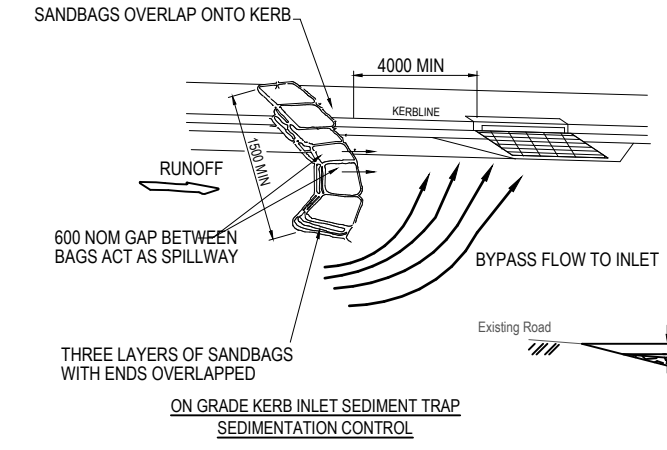
1. ALL NEW WORKS SHALL MAKE A SMOOTH TRANSITION TO EXISTING.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION AND LEVEL OF ALL EXISTING SERVICES, REGARDLESS OF WHAT IS SHOWN ON THESE DRAWINGS, PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENT TO SCALE WITH THE SUPERINTENDENT AND THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
3. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE SUPERINTENDENT.
4. THE CONTRACTOR SHALL ENSURE THAT NO NUISANCE OR INTERFERENCE WITH THE AMENITY OF THE AREA IS CREATED BY REASON OF ANY PROCESS OR OPERATION DURING THE WORK, CAUSING THE EMISSION OF NOISE, DUST, SMOKE OR ANY POLLUTED DISCHARGE WHATSOEVER. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJACENT AND ADJOINING PROPERTIES.
5. THE CONTRACTOR SHALL DISPOSE OF ANY SURPLUS EXCAVATED MATERIAL AS DIRECTED BY THE SUPERINTENDENT.

6. THE CONTRACTOR SHALL OBSERVE REQUIREMENT TO SCALE OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT AND ANY OTHER ACTS AND REGULATIONS PERTAINING TO THE WORKS. THE PRINCIPLE AND THE SUPERINTENDENT ACCEPT NO RESPONSIBILITY FOR ANY FINES OR LEGAL ACTION THAT MAY BE INSTIGATED BY ACTIONS OF THE CONTRACTOR OR SUB CONTRACTORS.
7. THE CONTRACTOR AND THEIR SUBCONTRACTOR SHALL PROVIDE THEIR "SAFE WORK METHOD STATEMENT" TO THEIR SUPERINTENDANT BEFORE THE COMMENCEMENT OF ANY WORKS.
8. THE CONTRACTOR SHALL PROVIDE RELEVANT TRAFFIC CONTROL PLAN PRIOR TO COMMENCEMENT.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ANY COUNCIL OR OTHER SERVICE PROVIDERS ASSETS CONTAINED AT THE SITE DURING CONSTRUCTION. THE PRINCIPLE AND SUPERINTENDANT ACCEPT NO RESPONSIBILITY FOR DAMAGE CAUSED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS TO THESE ASSETS.
10. ALL WORK CARRIED OUT IN CONFINED SPACES IS TO BE DONE BY PERSONNEL SPECIFICALLY QUALIFIED FOR CONFINED SPACES WORK.



SEDIMENTATION CONTROL

PLACE SEDIMENT FENCES ALONG TOE OF BATTERS WHERE THERE ARE NO TABLE DRAINS
PLACE SEDIMENT FENCES ACROSS TABLE DRAINS AT INTERVALS OF NOT MORE THAN 60m.



PLAN LONG SECTION CROSS SECTION	SCALE BAR @A1	APPROVED DESIGN SERVICES ENGINEER - DATE MANAGER - WORKS - DATE	AMENDMENT TO SCALE PRELIMINARY DESIGN PRELIMINARY DESIGN - VER B 50% DESIGN - VER C 100% CONSTRUCTION PLANS - VER C	BY DATE BG AUG/20 BG OCT/20 BG DEC/2023 BG JAN/2024	SERVICES PLANS CHECKED BY DATE ACTION Y/N TELSTRA E. ENERGY R.E.F.	LISMORE CITY COUNCIL INTERSECTION UPGRADE 550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK STANDARD DRAWINGS - SHEET 1	AUTOCAD 2023-180 80% DESIGN PLANS REV C.D.W.E CCAD 2023-180 - DESIGN	SHEET No. 28	No. OF SHEETS 33
SURVEYED BY DATE FILE		DESIGNED DRAWN CHECKED		DATUM LOCAL AND CONTOUR INTERVAL		PLAN No. 2023-180			

FIGURE A INFILTRATION FROM SIDE OF TRENCH

FIGURE B INFILTRATION FROM TOP OF TRENCH

FIGURE C CALCULATION OF AREA OF GEOTEXTILE PER METRE OF TRENCH LENGTH

AREAMETRE LENGTH OF FABRIC USED (CALCULATED TO INCLUDE LAPS):
FOR FIGURE A, AREA = 2D+3W
FOR FIGURE B, AREA = 2(D+W+300)

NOTE
1. ALL DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ISSUE STATUS: FOR USE FOR AMENDMENTS REFER TO SHEET No 02	AS ORIGINAL	REGISTRATION NUMBER	MD.R33.A06	SHEET No	01
ISSUE No	DATE	AMENDMENT DESCRIPTION	ISSUE No	No OF VOLUMES	VOLUME No
1	15.04.2011	TITLE BLOCK, MINOR REVISION	1	6	6
2	15.04.2011	TITLE BLOCK, MINOR REVISION	2	6	6

STAGE 1 CONSTRUCT BEFORE PLACEMENT OF SELECTED MATERIAL

STAGE 2 PLACE SELECTED MATERIAL

STAGE 3 TRENCH THROUGH SELECTED MATERIAL ZONE AND PLUG

STAGE 4 PLACE PAVEMENT LAYERS

NOTES
1. 100mm DIA CORRUGATED PERFORATED PLASTIC DRAINAGE PIPE MAY BE REPLACED WITH A RIGID STRIP FILTER.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ISSUE STATUS: FOR USE FOR AMENDMENTS REFER TO SHEET No 02	AS ORIGINAL	REGISTRATION NUMBER	MD.R33.A07	SHEET No	01
ISSUE No	DATE	AMENDMENT DESCRIPTION	ISSUE No	No OF VOLUMES	VOLUME No
1	15.04.2011	TITLE BLOCK, MINOR REVISION	1	6	6
2	15.04.2011	TITLE BLOCK, MINOR REVISION	2	6	6

OPTIONS FOR TRENCH DRAINS

Drain Grade (%)	Maximum Outlet Spacing (m)	Trench Width W (mm)			Minimum Aggregate Filter Material size ^b					Pipe Required	
		200	300	500	F20	F14	F10	F7 ^c	F6 ^{c,d}	No	Yes ^e
0.5 to ≤ 1.0	50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
> 1.0 to ≤ 3.0	100 ^f	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
> 3.0 to ≤ 5.0	120	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
> 5.0	120	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

NOTES
a. Trench drains used to drain pavement drainage layers are to be 300 wide and extend 500 below drainage layer with F20 aggregate and corrugated perforated plastic drainage pipes (2x100 on low side and 1x100 on high side) with maximum 150mm fabric filter or 300 rigid strip filter wrapped in geotextile. Maximum outlet spacing of 50m or as specified elsewhere.
b. No fine aggregate can be substituted for any coarse aggregate filter material.
c. Where Class F5 aggregate filter material is used, a pipe must be used due to the likelihood of the drain clogging with fines.
d. Where Class F3 or Class F7 aggregate filter material are used with a corrugated perforated plastic drainage pipe, the pipe must be enclosed in a seamless tubular filter fabric.
e. Pipe can be either 100 nominal diameter corrugated perforated plastic pipe or 150 high rigid strip filter.
f. For grades greater than 5% the maximum outlet spacing can be increased to 150m.
g. All dimensions in millimetres unless shown otherwise.

ISSUE STATUS: FOR USE FOR AMENDMENTS REFER TO SHEET No 02	AS ORIGINAL	REGISTRATION NUMBER	MD.R33.A06	SHEET No	02
ISSUE No	DATE	AMENDMENT DESCRIPTION	ISSUE No	No OF VOLUMES	VOLUME No
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2	15.04.2011	TITLE BLOCK, MINOR REVISION	2	6	6

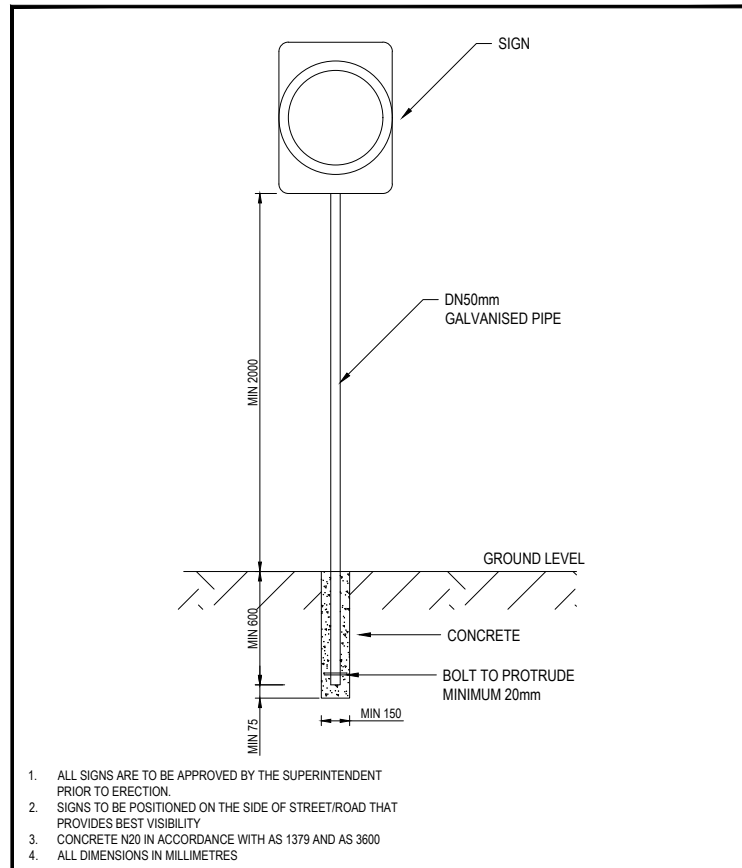
PLAN FOR CUTTINGS

PLAN FOR FILLS

SECTION 1-1

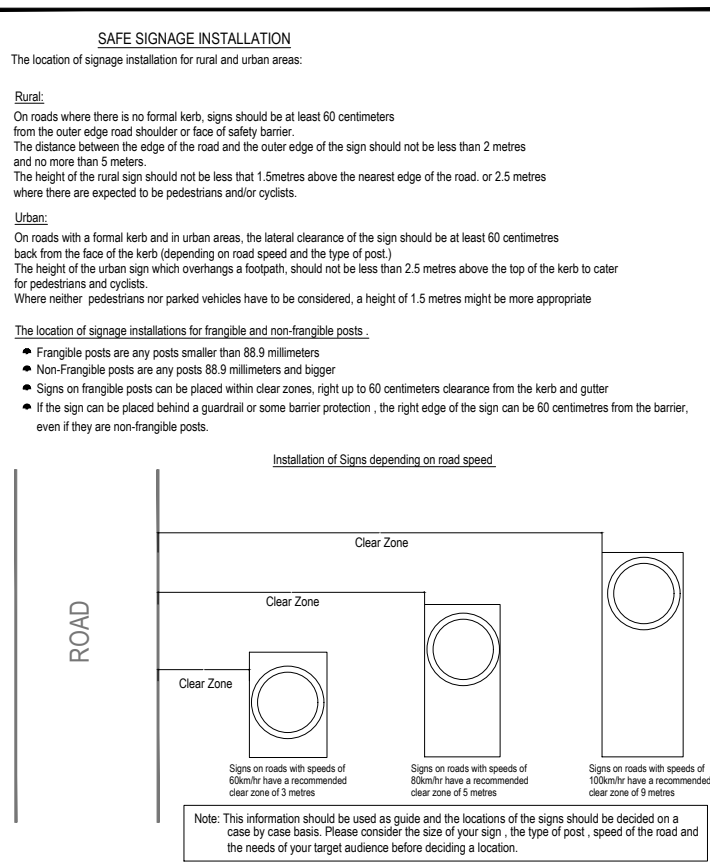
NOTES
1. MAY BE REQUIRED FOR USE ON STEEP GRADES WHERE SIGNIFICANT MOISTURE IN PAVEMENT LAYERS IS EXPECTED AND WHERE THE LONGITUDINAL FLOW PATH IS GREATER THAN THE TRANSVERSE FLOW PATH (LONGITUDINAL GRADE EXCEEDS CROSSFALL) AND/OR IN SLOPE.
2. SPACING TO BE BASED ON RATIO OF FLOW PATH LENGTHS (LONGITUDINAL/HORIZONTAL).
3. CONSIDER PERMEABILITY OF PAVEMENT LAYERS IN RELATION TO SUITABILITY OF APPLICATION.
4. CONSIDER INTERACTION WITH DRAINAGE LAYERS WHERE GROUND WATER IS ENCOUNTERED.
5. FOR TWO WAY CROSS FALL SITUATIONS OUTLETS ARE REQUIRED ON BOTH SIDES.
6. WHERE SLOTTED FRCP IS SUBSTITUTED WITH CLASS 1 100 CORRUGATED PERFORATED PLASTIC DRAINAGE PIPE EXTEND INTRA-PAVEMENT DRAIN TO 300mm BELOW THE SELECTED MATERIAL ZONE AND PLACE THE DRAINAGE PIPE 100mm ABOVE THE BOTTOM OF THE TRENCH.
7. ALL DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE.

ISSUE STATUS: FOR USE FOR AMENDMENTS REFER TO SHEET No 02	AS ORIGINAL	REGISTRATION NUMBER	MD.R37.A01	SHEET No	01
ISSUE No	DATE	AMENDMENT DESCRIPTION	ISSUE No	No OF VOLUMES	VOLUME No
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2	15.04.2011	TITLE BLOCK, MINOR REVISION	2	6	6

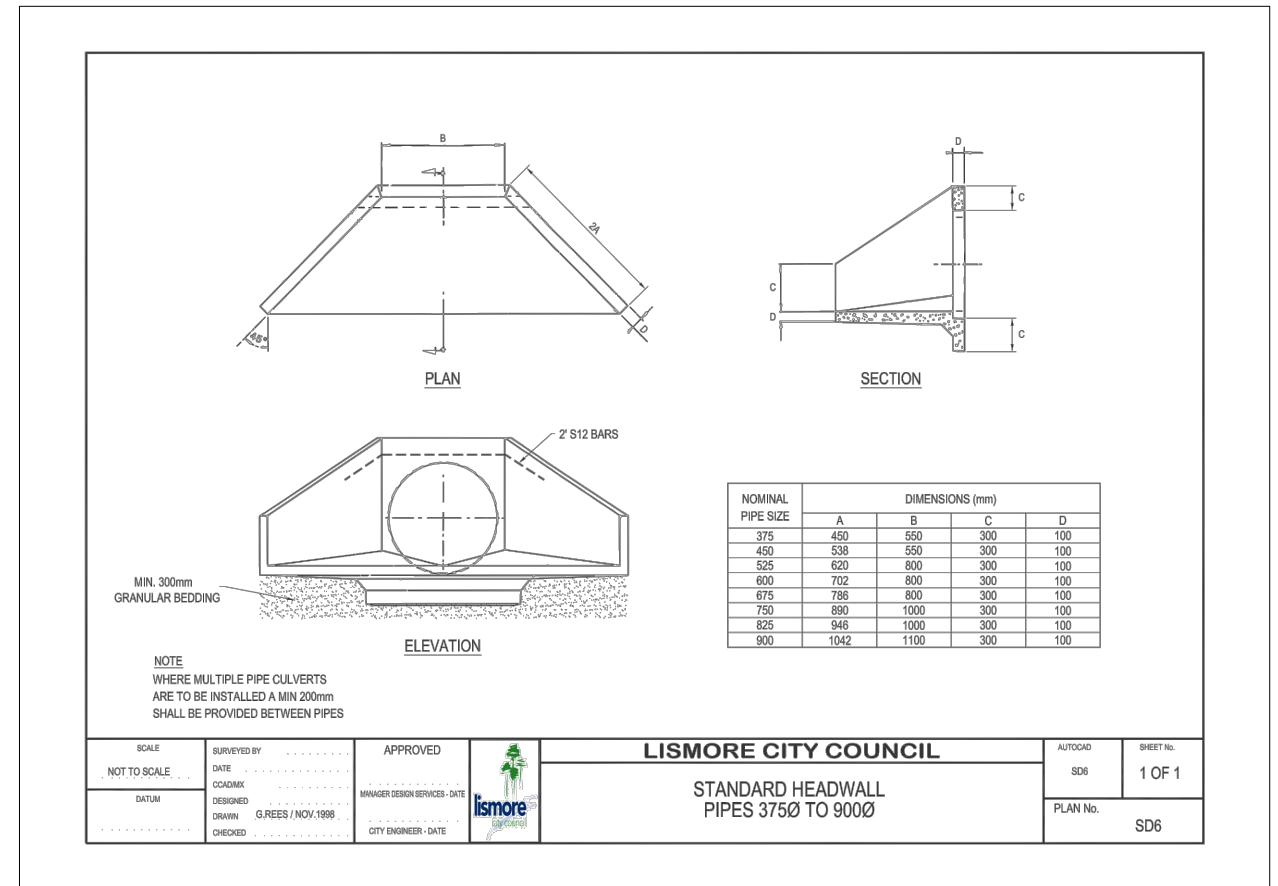


- ALL SIGNS ARE TO BE APPROVED BY THE SUPERINTENDENT PRIOR TO ERECTION.
- SIGNS TO BE POSITIONED ON THE SIDE OF STREET/ROAD THAT PROVIDES BEST VISIBILITY
- CONCRETE N20 IN ACCORDANCE WITH AS 1379 AND AS 3600
- ALL DIMENSIONS IN MILLIMETRES

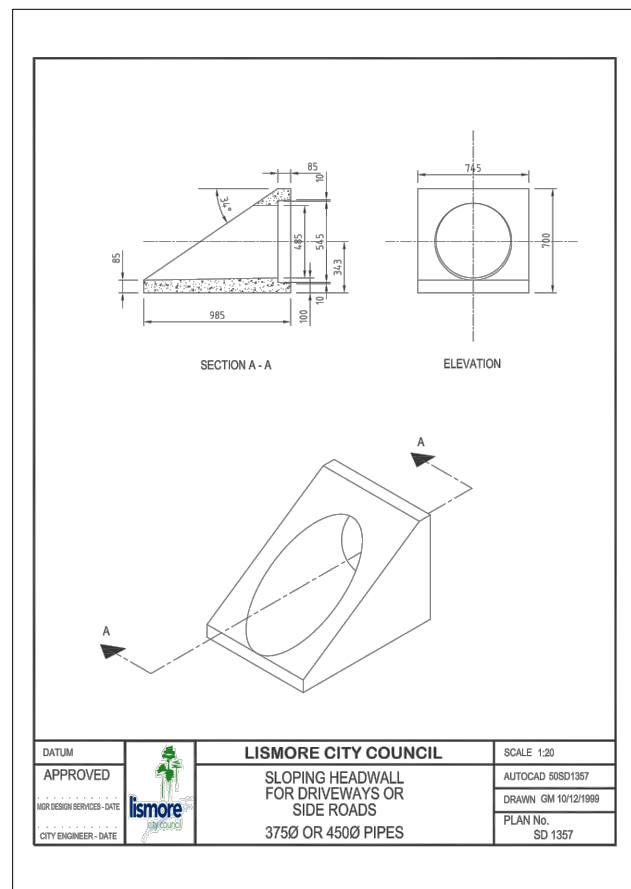
DATUM NA	LISMORE CITY COUNCIL	SCALE 1:20
APPROVED	DESIGN SERVICES ENGINEER - DATE	AUTOCAD SD.3573
	STANDARD DRAWING - SD3573	DRAWN LB 11/10/16
	SINGLE STREET SIGN INSTALLATION	PLAN No. SD.3573
	SHEET 1	



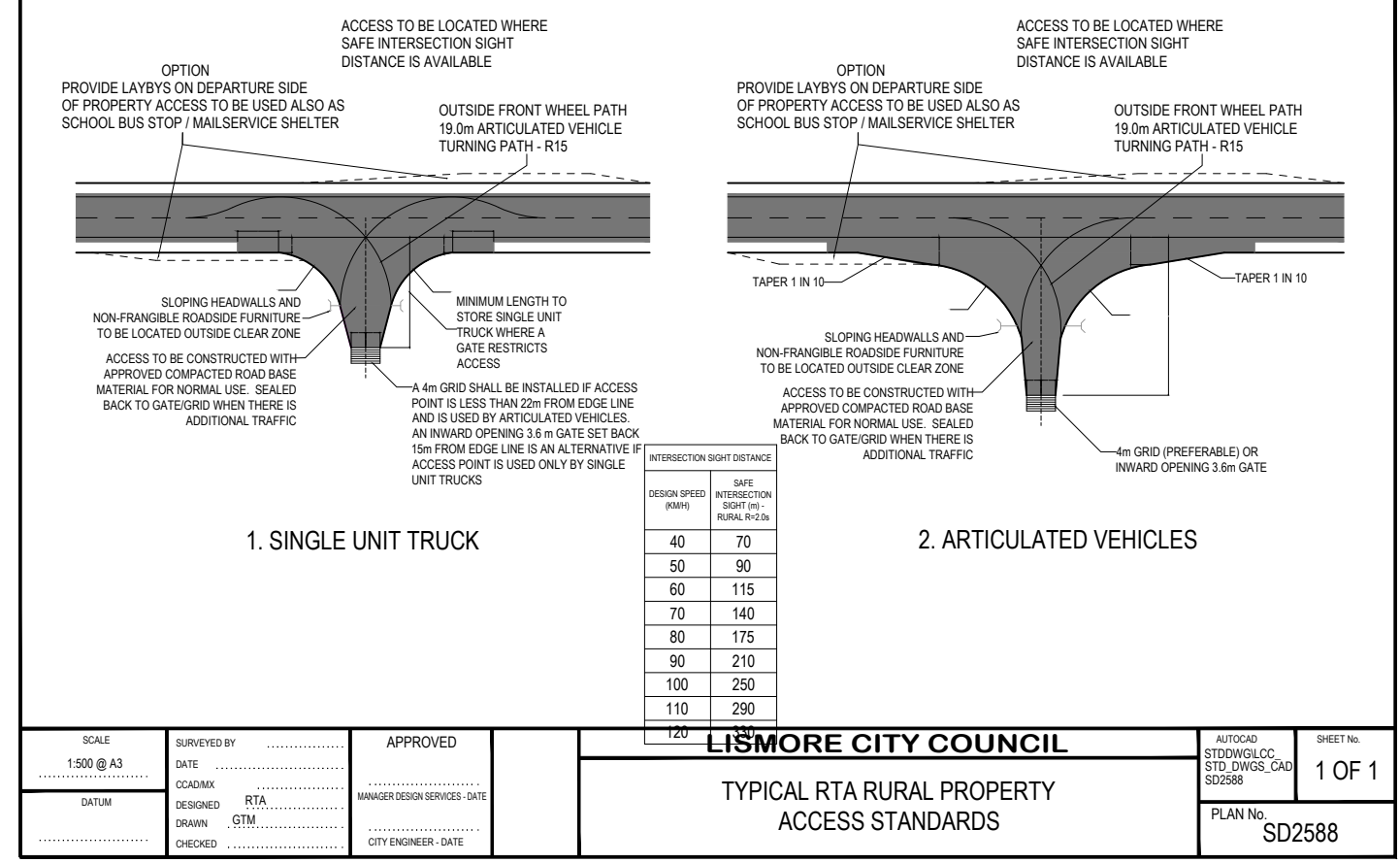
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APPROVED	DESIGN SERVICES ENGINEER - DATE	AUTOCAD SD.3573
	STANDARD DRAWING - SD3573	DRAWN LB 11/10/16
	SINGLE STREET SIGN INSTALLATION	PLAN No. SD.3573
	SHEET 2	



SCALE NOT TO SCALE	SURVEYED BY DATE	APPROVED	LISMORE CITY COUNCIL	AUTOCAD SD6	SHEET No. 1 OF 1
DATUM	DESIGNED CCADMX	MANAGER DESIGN SERVICES - DATE	STANDARD HEADWALL PIPES 375Ø TO 900Ø	PLAN No. SD6	
	DRAWN G. REES / NOV. 1998	CITY ENGINEER - DATE			



DATUM NA	LISMORE CITY COUNCIL	SCALE 1:20
APPROVED	DESIGN SERVICES ENGINEER - DATE	AUTOCAD S08D1357
	SLOPING HEADWALL FOR DRIVEWAYS OR SIDE ROADS	DRAWN GM 10/12/1999
	375Ø OR 450Ø PIPES	PLAN No. SD 1357



SCALE 1:500 @ A3	SURVEYED BY DATE	APPROVED	LISMORE CITY COUNCIL	AUTOCAD STDWGLCC STD. DWGS_CAD SD2588	SHEET No. 1 OF 1
DATUM	DESIGNED RTA	MANAGER DESIGN SERVICES - DATE	TYPICAL RTA RURAL PROPERTY ACCESS STANDARDS	PLAN No. SD2588	
	DRAWN GTM	CITY ENGINEER - DATE			

PLAN	SCALE BAR @A1	APPROVED
LONG SECTION	HORIZ VERT	AMENDMENT NOT TO SCALE
CROSS SECTION	HORIZ VERT	BY DATE
DATUM LOCAL AND CONTOUR INTERVAL	SURVEYED BY GM	DESIGNED CP & BVG
	DATE AUG. 2020	DRAWN CP & BVG
	FILE	CHECKED SB

DESIGN SERVICES ENGINEER - DATE	MANAGER - WORKS - DATE	SERVICES
		PLANS CHECKED BY DATE ACTION Y/N
		JOB NO
		SEWER
		WATER
		TELSTRA
		E. ENERGY
		R.E.F.

LISMORE CITY COUNCIL
INTERSECTION UPGRADE
550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK
STANDARD DRAWINGS - STREET FURNITURE

AUTOCAD 2023-180 80% DESIGN PLANS REV C.DWG'S	SHEET No. 31	No. OF SHEETS 33
PLAN No. 2023-180		

R145 Pavement Marking (Performance Based)

APPENDIX 1 - LONGITUDINAL LINES

Line	Type	Pattern and Dimensions	Reference Section*
DIVIDING LINES			
Dividing (Separation) line on 2 lane road	S1		4.2
	S2	NO LONGER USED	
Dividing (Separation) line on multi lane road	S6		4.2
Dividing (Barrier) lines (Restricted overtaking in one direction)	BS		4.4
Dividing (Barrier) lines	BB		4.4

NOTES:
 *Dimensions in m unless stated otherwise (1:1)
 *Section in TNSW Delineation Manual

R145 Pavement Marking (Performance Based)

APPENDIX 2 - TRANSVERSE LINES

Line Type	Use	Dimensions (m)	Colour
TF	Stop Line		White
TF1		NO LONGER USED	
TF2		NO LONGER USED	
TB	Give Way Line (Used with signs)		White
TB1	Give Way Line (Used on right hand side of road)		White
PCW	Pedestrian Cross Walk Lines		White
PX	Pedestrian Crossing		White

Dimensions in m unless stated otherwise
1:1

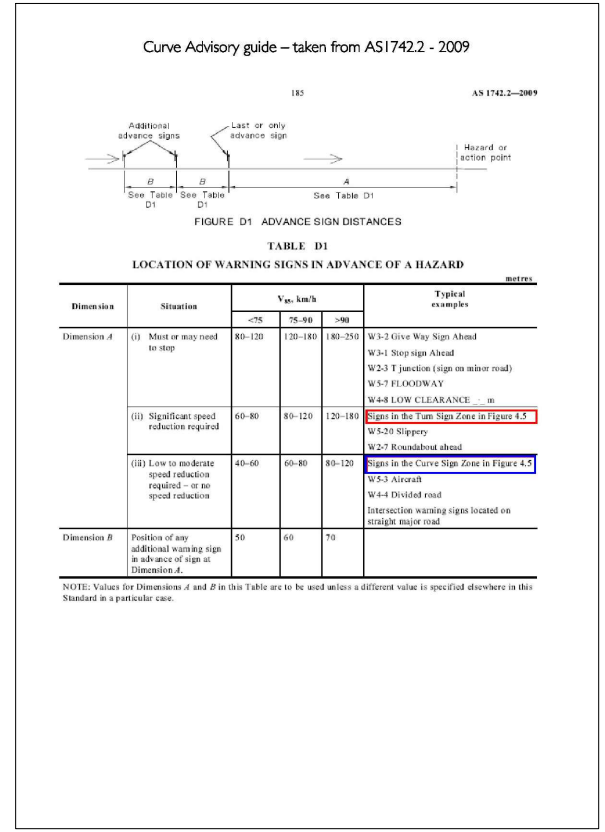
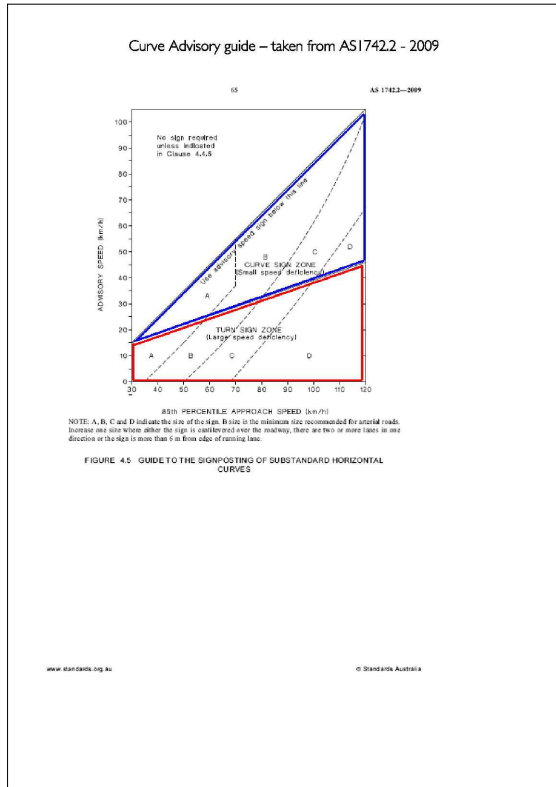
R145 Pavement Marking (Performance Based)

Line	Type	Pattern and Dimensions	Reference Section*
EDGE LINES			
Left hand edge line on general purpose road	E1		4.7
Left hand edge line on Motorway	E2		4.7
Right hand edge line on divided carriageway	E3		4.7
Outline of traffic island or freeway ramp gore	E4		4.7
Outline of painted median	E5		4.7
Line applied to incline face of median kerb	E6		4.7

NOTES:
 *Dimensions in m unless stated otherwise (1:1)
 *Section in TNSW Delineation Manual

Curve radius	Spacing (m)	
	On outside curve	On inside curve
< 100	6	12
100 - 199	10	20
200 - 299	15	30
300 - 399	20	40
400 - 599	30	60
600 - 699	40	60
800 - 1999	60	60
1200 - 2000	90	90
> 2000 including straights	150	150

Table 16.1: Spacing of posts on curves (including spacing of delineators on guard fence)



PLAN SCALE BAR @A1 0 10 20 30 40

LONG SECTION HORZ VERT

CROSS SECTION HORZ VERT

DATUM LOCAL AHD

CONTOUR INTERVAL

SURVEYED BY GM

DATE AUG. 2020

DESIGNED CP & BVG

DRAWN CP & BVG

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APPROVED

AMENDMENT TO SCALE

BY DATE

PRELIMINARY DESIGN BG AUG/20

PRELIMINARY DESIGN - VER B BG OCT/20

50% DESIGN - VER C BG DEC/2023

100% CONSTRUCTION PLANS - VER C BG JAN/2024

DESIGN SERVICES ENGINEER - DATE

MANAGER - WORKS - DATE

SERVICES

PLANS CHECKED BY DATE ACTION Y/N

JOB NO

SEWER

WATER

TELSTRA 232913298 05/12/2023 N

E. ENERGY 232913297 05/12/2023 N

R.E.F.

LISMORE CITY COUNCIL

INTERSECTION UPGRADE

550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK

STANDARD DRAWINGS - STREET FURNITURE

AUTOCAD 2023-180 80% DESIGN PLANS REV C.DWG

CCAD 2023-180 - DESIGN

SHEET No. 32

No. OF SHEETS 33

PLAN No. 2023-180

57 AS 1742.2-2009

(d) **Multi-lane kerbed roads**
Lane lines and a dividing line shall be provided in accordance with Item (c). This should include the marking of kerbside lanes as running lanes except where parking is permitted at all times and is frequent during most of the day, in which case the kerbside lane may be separated from the running lanes by an edge line, if necessary for guidance of moving traffic.

4.2.2.4 Urban roads—divided and one-way roadways
Lane lines shall be provided in accordance with Clause 4.2.2.3(c) or Clause 4.2.2.3(d) as appropriate.

Edge lines, if provided, shall be placed on both edges of an unkerbed one-way roadway. Edge lines are not required on a kerbed roadway if the kerbs provide adequate edge delineation.

NOTE: Edge lines are normally required but may be subject to road authority practice.

4.2.3 No-overtaking zones—barrier lines
On horizontal and vertical curves on two-way sealed pavements where the overtaking sight distance is substandard, barrier lines shall be created 'no-overtaking' zones where required in accordance with Clause 5.3.3.

Barrier lines may also be required on the approaches to certain mid-block features, including medians and other central roadway obstructions, and on undivided approaches to intersections in some circumstances. These situations are covered elsewhere in this Standard.

4.2.4 Guide posts

4.2.4.1 General
Guide posts are used to mark the edge of the road formation in the absence of other features, such as guard fence or bridge rail, which also perform this function. They assist the road user by indicating the alignment of the road ahead, especially at horizontal and vertical curves, and under some circumstances, by providing a gauge with which to assess available sight distance. Where provided, in accordance with Clause 4.2.2 they shall be designed and installed as given in the Clauses below.

4.2.4.2 Design and construction of guide posts
The minimum requirement for a guide post shall be a white post 1000 ±100 mm high and 100 mm minimum wide facing oncoming traffic, double sided on a two-way roadway.

A delineator (see Clause 4.2.5) shall be mounted on each white face displayed towards oncoming traffic, in both directions on a two-way road.

Guide posts shall be constructed so that they do not constitute a hazard if struck by a vehicle.

4.2.4.3 Siting and alignment
Guide posts shall be placed at or near the edge of formation and wherever practicable, the distance from the pavement edge shall be constant, generally between 1.2 m and 3.0 m. Taking into account the effect of super-elevation and irregularities in shoulder contours, posts should be set so that their tops are on a smooth grade.

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4.2.4.4 Spacing
The spacing of guide posts shall be as follows:

(a) **On straight sections**
The nominal spacing of guide posts on a straight section of road shall be 150 m, with the posts in pairs, one each side of the formation. This spacing may be reduced to 75 m in areas subject to frequent fogs.

The nominal spacing of guide posts may be increased to 300 m if all of the following conditions are met:

- The traffic volume is less than 1500 vpd.
- The road consists mainly of long straights or long curves of radius greater than 2000 m in flat terrain.
- A minimum of two pairs of delineators are visible at all times.

(b) **On curves**
The spacing shall be as given in Table 4.1, except that spacings shown in excess of 75 m may be reduced to 75 m in areas subject to frequent fogs.

(c) **On curve transitions**
Where curves include spiral transitions, guide post spacing throughout the curve shall be in accordance with spacing required for the circular portion of the curve. The first posts on the curve for each direction of travel shall be located at the point where the curve just noticeably starts to deviate from the alignment of the straight (i.e. the beginning of the curve or, if identified on road alignment plans, the TS point or for non-transitioned curves, the TC point).

(d) **In cuttings**
Guide posts shall be continued through cuttings.

(e) **At crests**
On crests having a straight alignment, posts shall be arranged so that the delineators on at least two pairs are visible at all times to a driver, excluding any posts that are less than 40 m ahead of the driver. Where a horizontal curve occurs on or just beyond a crest, this requirement need apply only to posts on the outside of the curve. The requirements of Items (b) or (c), or both, shall apply.

(f) **Bridges and culverts**
At bridges and culverts where guard fence, bridge rail or width markers are not provided and kerbing or headwall is at or inside the edge of formation, guide posts shall be erected as follows:

- At structures 5 m or more in length in the direction of travel, four posts—one at each end of headwall or kerbing, plus additional pairs of posts at spacings of 10 m maximum for structures longer than 10 m.
- At structures less than 5 m in length in the direction of travel, at least two posts—one on each left-hand approach end of headwall or kerbing.

Where kerbing or headwall is at least 4 m from the edge of running lane, the additional posts specified in Items (i) or (ii) are not required. Only posts at the spacing specified elsewhere in this Clause, are provided.

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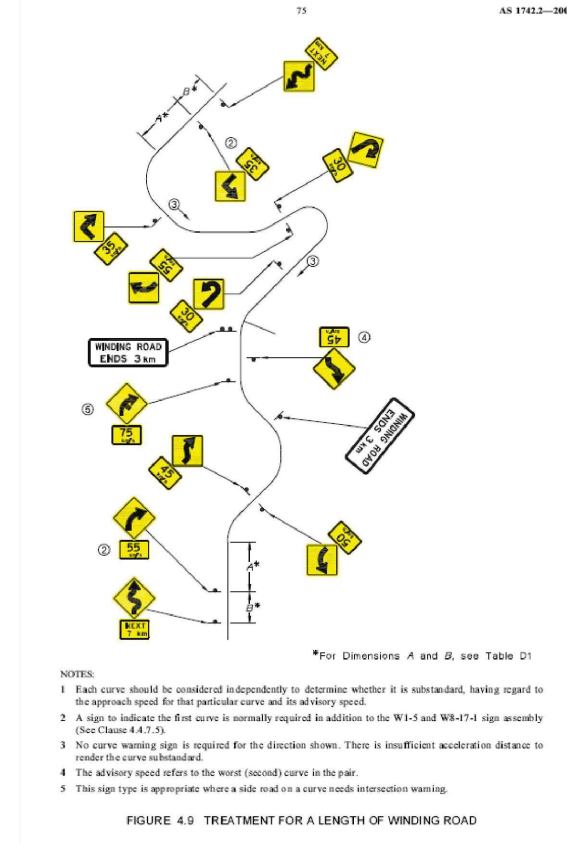


TABLE 4.3
SPACING OF CHEVRON ALIGNMENT MARKERS (CAMs)

Curve radius	CAM spacing ^a	
	85 th percentile approach speed	
	Less than 85 km/h	85 km/h and greater
<50	10	6
50-99	12	8
100-149	18	12
150-199	24	16
200-249	30	20
250-300	36	24
>300	40	26

* The spacings in this Table are subject to a tolerance of ±10%

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TABLE 4.1
SPACING OF GUIDE POSTS ON CURVES
(Including spacing of guard fence, barrier or rail delineators in accordance with Clause 4.2.5.4 (b)(ii))

Curve radius (Note 1)	Spacing (Note 2)	
	On outside of curve	On inside of curve (Note 3)
<100	6	12
100-199	10	20
200-299	15	30
300-399	20	40
400-499	30	60
500-599	40	60
600-699	40	60
800-1 999	60	60
1 200-2 000	90 (Note 4)	90 (Note 4)
>2 000 incl. straights	150 (see Note 4)	150 (see Note 4)

NOTES:
1 Where the radius of an existing curve is not available from records, it may be determined approximately by measuring the middle ordinate offset from a chord of known length using either the edge of pavement or a marked longitudinal line as a guide.
2 On guard fence, spacing should be adjusted, if necessary, to the nearest multiple of post spacing.
3 Each post on the inside of a curve is placed opposite a post on the outside of the curve wherever practicable.
4 Spacing is reduced to 75 m in areas subject to fog. (See also Clause 4.2.4.4(a)).
5 The spacings given in this Table are based on approximations of the following formulae:
Curve radii up to 150 m: $S = 0.03R + 5$
Curve radii 150 m to 2000 m: $S = 0.06R$
where
S = spacing, in metres
R = curve radius, in metres

4.2.5 Delineators

4.2.5.1 General
Delineators are small retroreflectors or panels of retroreflective material that are attached to guide posts, guard fence, bridge end posts or similar supports, to provide a coherent pattern of delineation of the edges of the roadway as an aid to night driving.

4.2.5.2 Colour
The following colours shall be used for the purposes described:

- White**
On the right side of two-way roadways.
- Yellow**
On the right side of one-way roadways (including divided roads).
- Red**
On the left side of the roadway.

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4.2.5.3 Performance requirements
Requirements for delineators are specified in AS/NZS 1906.2.

4.2.5.4 Mounting locations

(a) **On guide posts**
Delineators shall be affixed to all guide posts.

They shall be centrally placed on the post between 50 mm and 100 mm clear distance from the top of the post. In order to present a coherent line and pattern of delineators to the night driver, particular attention should be paid to the vertical and horizontal alignment of guide posts and to their spacing in accordance with Clause 4.2.4.4. No more than one delineator shall be displayed in any one direction on any guide post, guard fence post, bridge end post or other support. Extraneous delineators not conforming with the pattern, e.g. on trees or at private entrances, shall not be permitted. On small radius curves, if a delineator is more than about 15 degrees away from the normal to the line of sight of approaching drivers, it should be rotated, by use of brackets or other means, to more nearly face those drivers.

(b) **On guard fence, safety barrier or bridge rail**
Delineators shall be located and spaced as follows:

- Fence, barrier or rail more than 4 m from edge of running lane**—no delineators shall be placed on any of these. Delineators shall be placed on guide posts located at the normal shoulder width from edge of running lane and at the spacing given in Clause 4.2.4.4.
- Fence, barrier or rail between 2 m and 4 m from edge of running lane**—delineators shall be placed on these to conform as nearly as practicable to the spacings of guide posts given in Clause 4.2.4.4 up to a maximum spacing of 20 m. At least one delineator shall be provided at each end of each length of fence, barrier or rail.
- Fence, barrier or rail closer than 2 m to edge of running lane**—delineators shall be placed on these at 4 m maximum spacing on curves of 100 m radius or less, or 8 m maximum spacing elsewhere.

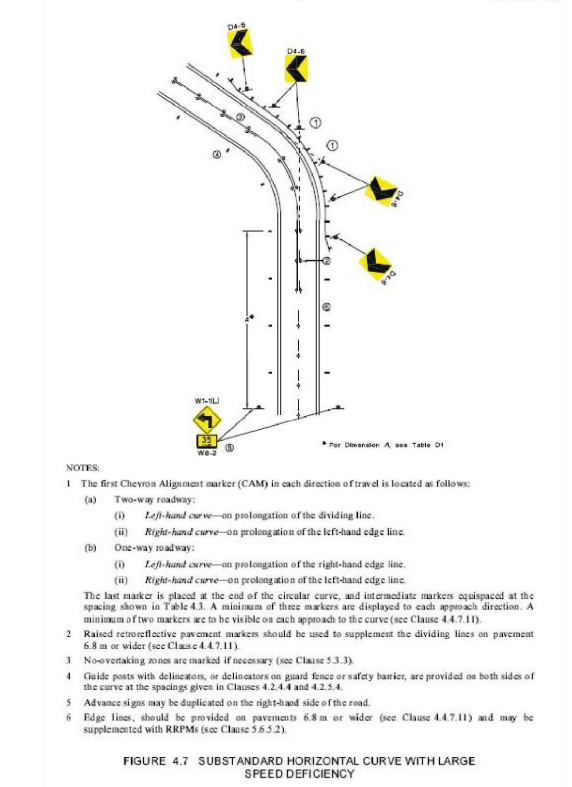
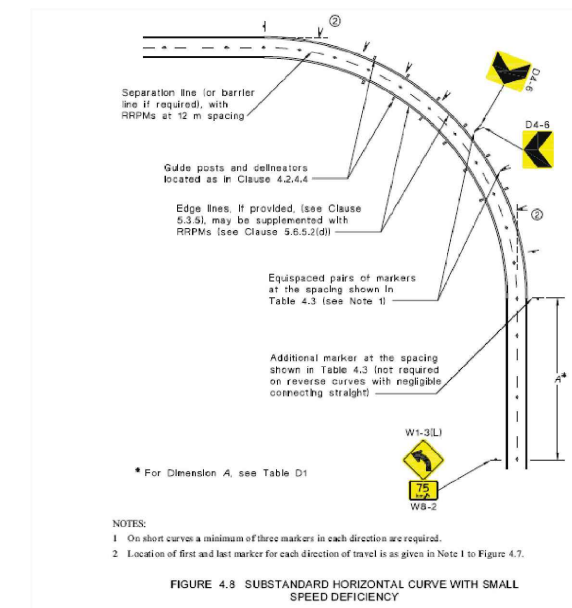
Delineators are usually attached either to brackets set into the fold of the fence or to plates mounted on the fence posts or top of the barrier or rail so that they protrude above the top line of the fence. In the latter case, consideration should be given to the use of frangible mountings.

4.2.6 Snow poles
Snow poles are a special form of usually tall guidepost used to mark the edges of the road formation when hidden by snow. They are provided for the benefit of both normal traffic and snow clearing plant.

Snow poles shall be of adequate cross-section to be stable under prevailing snow drift conditions, but shall be at least 100 mm in diameter. The colour shall be orange, and they shall be of sufficient height to protrude at least 300 mm above the deepest likely snow drift at the pole location. They shall be constructed so that they do not constitute a hazard if struck by a vehicle.

Delineators shall be provided as for guideposts, except that an additional delineator facing in each direction may be placed on each post at a height at which it will be visible at night above the deepest prevailing snow drifts at that location.

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PLAN SCALE BAR @A1 0 10 20 30 40

LONG SECTION HORIZ VERT 1:500

CROSS SECTION HORIZ VERT 1:500

DATUM LOCAL AND

CONTOUR INTERVAL

SURVEYED BY GM

DATE AUG. 2020

DESIGNED CP & BVG

DRAWN CP & BVG

CHECKED SB

APPROVED

AMENDMENT NOT TO SCALE

BY DATE

PRELIMINARY DESIGN BG AUG/20

PRELIMINARY DESIGN - VER B BG OCT/20

50% DESIGN - VER C BG DEC/2023

100% CONSTRUCTION PLANS - VER C BG JAN/2024

DESIGN SERVICES ENGINEER - DATE

MANAGER - WORKS - DATE

SERVICES

PLANS CHECKED BY	DATE	ACTION Y/N
JOB NO		
SEWER		
WATER		
TELSTRA	232913298	05/12/2023 N
E. ENERGY	232913297	05/12/2023 N
R.E.F.		

LISMORE CITY COUNCIL

INTERSECTION UPGRADE

550 NIMBIN ROAD AND BLAKEBROOK QUARRY, LAKEBROOK

STANDARD DRAWINGS - STREET FURNITURE

lismore city council

AUTOCAD

2023-180 80% DESIGN PLANS REV

C.DWG

CCAD

2023-180 - DESIGN

PLAN No. 2023-180

SHEET No. 33

No. OF SHEETS 33