

**GENERAL NOTES:**

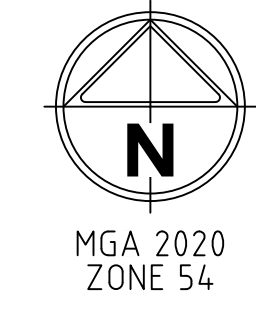
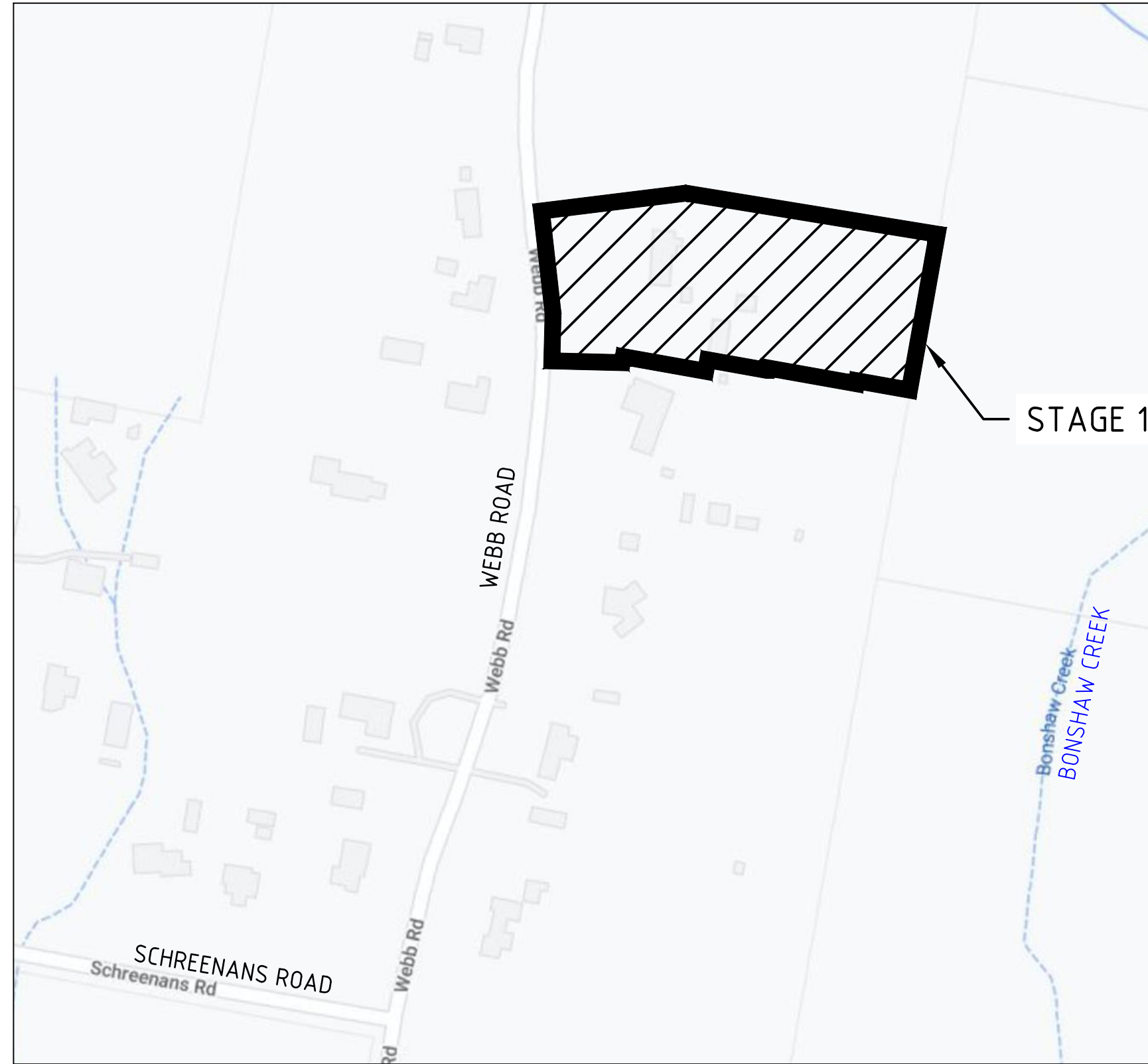
**A. GENERAL**

- ALL WORK TO BE CARRIED OUT TO CITY OF BALLARAT & IDM SPECIFICATIONS, STANDARD DRAWINGS AND TO THE SATISFACTION OF COUNCILS SENIOR SURVEILLANCE OFFICER OR HIS REPRESENTATIVE.
- ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM AND ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA) ZONE 54.
- THE LOCATION OF EXISTING SERVICES SHOULD BE DETERMINED BY THE CONTRACTOR PRIOR TO COMMENCING ANY EXCAVATION BY CONTACTING ALL SERVICE AUTHORITIES. ANY EXISTING SERVICES SHOWN ON THESE DRAWINGS ARE OFFERED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT.
- FILL AREAS ARE TO BE STRIPPED OF TOPSOIL, FILLED AND ONLY RE-TOPSOILED ON THE DIRECTION OF THE ENGINEER, TO THE FINAL FILL LEVELS SHOWN ON THE DRAWINGS. ALL FILLING IS TO BE:
  - APPROVED BY THE PROJECT GEOTECHNICAL CONSULTANT.
  - PLACED IN LAYERS NOT EXCEEDING 200MM LOOSE THICKNESS.
  - MOISTURE CONDITIONED TO WITHIN 85% TO 115% OF OPTIMUM MOISTURE CONTENT.
  - COMPACTED TO A MINIMUM 95% (STANDARD) DRY DENSITY RATIO.
  - PLACED UNDER "LEVEL 1" SUPERVISION IN ACCORDANCE WITH AS 3798-1996.
- EXISTING DEPRESSIONS & DRAINS TRAVERSING THE SITE ARE TO BE CLEANED OUT AND DESLUDGED TO FIRM BASE AND FILLED TO FINISHED SURFACE LEVELS TO THE SPECIFIED COMPACTION STANDARDS.
- TBM'S TO BE RE-ESTABLISHED BY THE LICENSED SURVEYOR IF FOUND TO BE MISSING AT THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR CARE AND MAINTENANCE OF TBM'S THEREAFTER.
- POSITION CONDUITS SO THAT A MINIMUM DISTANCE BETWEEN TAPPING IS 1.0M. CONDUITS TO BE LOCATED MIDWAY BETWEEN FENCE LINE OF LOT, UNLESS OTHERWISE SHOWN.
- BEFORE COMMENCING WORK ON EXCAVATIONS IN EXCESS OF 1.5 M DEEP, THE REQUIRED NOTICE IS TO BE SENT TO THE VICTORIAN WORKCOVER AUTHORITY IN ACCORDANCE WITH THE MINES ACT, 1958 NO 6320 SECTION 385 AND THE OCCUPATIONAL HEALTH AND SAFETY ACT 1985. THIS NOTIFICATION MUST BE RECEIVED BY THE AUTHORITY AT LEAST 3 DAYS PRIOR TO COMMENCING EXCAVATIONS, AND A COPY OF THE NOTIFICATION MUST BE PROVIDED TO THE SUPERINTENDENT.
- COUNCIL'S REPRESENTATIVE IS TO BE NOTIFIED IN WRITING SEVEN (7) DAYS PRIOR TO THE COMMENCEMENT OF WORKS.
- NO EXCAVATION WITHIN 5M OF ANY EXISTING TREE WITHOUT APPROVAL OF THE ENGINEER.
- NO BLASTING IS PERMITTED WITHIN THE CITY OF BALLARAT WITHOUT OBTAINING COUNCIL'S SPECIAL DISPENSATION.
- EXCAVATED MATERIAL SURPLUS TO FILLING REQUIREMENTS OF THE WORKS SHALL BE REMOVED FROM SITE AS SPECIFIED.
- ALL SURPLUS ROCK, CONCRETE AND BITUMINOUS RUBBLE SHALL BE DISPOSED OFF SITE AS SPECIFIED. THE CONTRACTOR SHALL CHECK WITH SUPERINTENDENT WHETHER ANY LARGE ROCKS ARE REQUIRED FOR LANDSCAPE PURPOSES PRIOR TO DISPOSAL.
- NATURESTRIPS AND ALL AREAS OF CUT OUTSIDE ROAD RESERVE TO BE SURFACED WITH 100MM MINIMUM COMPACTED LAYER OF TOPSOIL.
- CULTURAL HERITAGE AREAS TO BE STRIPPED OF TOPSOIL TO A DEPTH OF APPROXIMATELY 350MM AND PLACED ON EXISTING TOPSOIL STOCKPILE FOR RE-SPREADING AT A LATER DATE.

**B. ROAD WORKS**

- FOOTPATHS ARE TO BE 1.5M WIDE UNLESS SHOWN OTHERWISE. FOOTPATHS TO BE CONSTRUCTED TO THE CITY OF BALLARAT STANDARDS.
- CONSTRUCT LAYBACK SECTION AT VEHICLE CROSSING, REVERSING BAYS AND CAR PARKING BAYS AND PRAM CROSSING TO THE CITY OF BALLARAT STANDARDS.
- ALL CHAINAGES REFER TO ROAD PAVEMENT CENTRELINES EXCEPT IN COURT HEADS AND INTERSECTIONS WHERE CHAINAGES REFER TO BACK OF KERB.
- THE CONTRACTOR IS REQUIRED TO CONFINE CONSTRUCTION VEHICLES TO THE ROAD RESERVE AND EASEMENTS. ANY DAMAGE CAUSED TO ALLOTMENTS MUST BE MADE GOOD.
- ALL BATTERS SHALL BE TO THE CITY OF BALLARAT STANDARDS.
  - CUT 1 IN 12 UNLESS OTHERWISE SHOWN.
  - FILL 1 IN 12 UNLESS OTHERWISE SHOWN.
- ALL SET OUT INFORMATION GIVEN IS TO BACK OF KERB UNLESS OTHERWISE SHOWN.
- WHERE CRUSHED ROCK IS SHOWN UNDER CONCRETE FOOTPATHS CONSTRUCTED ON FILL, THE CRUSHED ROCK IS TO BE 20MM CLASS 3. WHERE CUT BATTERS ARE STEEPER THAN 1:6 THEY MUST BE HYDRO MULCHED.
- SUBGRADE BE COMPACTED TO A MINIMUM OF 90% STANDARD MAXIMUM DRY DENSITY (AS3798), WITH THE SUBBASE COMPACTED IN ACCORDANCE WITH SCALE C IN VIERODAS TABLE 304.071 USING FINE CRUSHED ROCK AND THE BASE COURSE TO AN AVERAGE OF 100% MINIMUM MODIFIED DRY DENSITY. ANY FILLING BENEATH ROAD PAVEMENT AREAS TO BE COMPACTED TO 100% OF MAXIMUM DRY DENSITY. COMPACTION TESTING TO BE AS PER COUNCIL REQUIREMENTS.
- ANY BACKFILL WITHIN 1.0M OF A COUNCIL ASSET (FOOTPATH OR ROAD) IS TO BE FCR. FILL MATERIAL IS ACCEPTABLE IF COMPACTED TO ENSURE 95% COMPACTION. COMPACTION TESTING TO BE PERFORMED AT ONE PER 60M OF TRENCH.
- CONCRETE TO HAVE 28DAY STRENGTH OF 25MPA UNLESS NOTED OTHERWISE
- MATERIALS AND SUPPLIERS CALLED IN THE SPECIFICATION, SCHEDULES OR PLANS SHALL NOT BE SUBSTITUTED WITHOUT PRIOR WRITTEN APPROVAL AS PER "ENVIRODEVELOPMENT - NATIONAL TECHNICAL STANDARD VERSION 2". ALL RECEIPTS MUST BE RETAINED AND PROVIDED UPON REQUEST.

# BONSHAW RUN STAGE 1 PENDLES NO1 PTY LTD



STAGE 12 WORKS

**LOCALITY PLAN**  
NOT TO SCALE

**DRAWING SCHEDULE**

DRAWING	DESCRIPTION	SHEET No.	REVISION
CR100	GENERAL NOTES - SHEET 1	1	A
CR200	ROAD LAYOUT PLANS - SHEET 1	2	A
CR201	ROAD LAYOUT PLANS - SHEET 2	3	A
CR300	ROAD LONG SECTIONS - SHEET 1	4	A
CR301	ROAD LONG SECTIONS - SHEET 2	5	A
CR302	ROAD LONG SECTIONS - SHEET 3	6	A
CR400	ROAD CROSS SECTIONS - SHEET 1	7	A
CR401	ROAD CROSS SECTIONS - SHEET 2	8	A
CR402	ROAD CROSS SECTIONS - SHEET 3	9	A
CR403	ROAD CROSS SECTIONS - SHEET 4	10	A
CR404	ROAD CROSS SECTIONS - SHEET 5	11	A
CR500	INTERSECTION DETAILS - SHEET 1	12	A
CR600	DRAINAGE LONG SECTIONS - SHEET 1	13	A
CR601	DRAINAGE LONG SECTIONS - SHEET 2	14	A
CR602	DRAINAGE LONG SECTIONS - SHEET 3	15	A
CR603	DRAINAGE LONG SECTIONS - SHEET 4	16	A
CR700	PAVEMENT AND TYPICAL DETAILS - SHEET 1	17	A
CR800	SIGNAGE AND LINEMARKING - SHEET 1	18	A

**LEGEND**

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN, VALVE AND HYDRANT	DW	DW
UNDERGROUND ELECTRICITY	E	E
OVERHEAD ELECTRICITY & POLE	OE	OE
TELECOMMUNICATIONS & SERVICE PIT	T	T
OPTIC FIBRE	OF	OF
OVERHEAD TELECOMMUNICATIONS	OT	OT
GAS MAIN	G	G
SEWER & MAINTENANCE STRUCTURE	S	S
CENTRAL INVERT	>	>
COUNCIL STORMWATER DRAIN AND PIT	[Symbol]	[Symbol]
STORM WATER DRAINAGE PROPERTY INLETS	[Symbol]	[Symbol]
COUNCIL STORM WATER PITS	[Symbol]	[Symbol]
HOUSE DRAIN	+H	+H
AG DRAIN AND FLUSHER	AG	AG
STORM WATER DRAINAGE PIT NUMBER	Ex 4.7	1
GAS & WATER CONDUITS	GW	GW
RIDGE / CHANGE OF GRADE LINE	- 169.00 -	169.00
SURFACE CONTOUR MINOR	- 168.90 -	168.90
SURFACE CONTOUR MAJOR	E123.45	F124.68
SURFACE LEVEL	T124.80	T124.80
BATTER LEVEL (TOP / TOE)	1 in 150	1 in 150
EARTHWORKS GRADE	[Symbol]	[Symbol]
SIGN AND POST	[Symbol]	[Symbol]
LIGHT & POLE (BY OTHERS)	[Symbol]	[Symbol]
STREET SIGN	[Symbol]	[Symbol]
PERMANENT SURVEY MARK	[Symbol]	[Symbol]
TEMPORARY BENCH MARK	[Symbol]	[Symbol]
BOLLARD	[Symbol]	[Symbol]
ROAD CHAINAGES	CH116.57 (L/R)TP	CH116.57 (L/R)TP
LOT CHAINAGES	CH20.06	CH20.06
SETOUT POINT	[Symbol]	[Symbol]
LIMIT OF WORKS	[Symbol]	[Symbol]
BATTER	[Symbol]	[Symbol]
EXCAVATION GREATER THAN 0.20m	[Symbol]	[Symbol]
FILLING GREATER THAN 0.20m	[Symbol]	[Symbol]
FENCES	[Symbol]	[Symbol]
TREE (& SURVEYED CANOPY) TO BE RETAINED	[Symbol]	[Symbol]
TREE TO BE PROTECTED	[Symbol]	[Symbol]
TREE TO BE REMOVED	[Symbol]	[Symbol]
VEGETATION LINE	[Symbol]	[Symbol]
FOOTPATH	[Symbol]	[Symbol]
TACTILE GROUND SURFACE INDICATOR	[Symbol]	[Symbol]
KERB TRANSITION	[Symbol]	[Symbol]



**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.

**SERVICE LOCATION TABLE**

ROAD NAME	POTABLE WATER				GAS		NBN (TELECOM)		ELECTRICITY			
	PROPOSED		EXISTING		SIDE	OFFSET	SIDE	OFFSET	POLE		U/G CABLE	
	SIDE	OFFSET	SIDE	OFFSET					SIDE	OFFSET	SIDE	OFFSET
WEBB ROAD	EAST	6.00m	WEST	VARIES	WEST	VARIES	EAST	1.80m	EAST	1.0x	EAST	2.70m
ROAD A	SOUTH	2.95m	-	-	SOUTH	2.40m	NORTH	1.80m	NORTH	1.0x	NORTH	2.70m
ROAD B	WEST	2.95m	-	-	WEST	2.40m	EAST	1.80m	EAST	1.0x	EAST	2.70m
KARDINIA STREET	EAST	2.95m	-	-	EAST	2.40m	WEST	1.80m	WEST	1.0x	WEST	2.70m

- TELECOMMUNICATIONS AND ELECTRICITY CABLES TO BE CONSTRUCTED IN A COMMON TRENCH IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARD DRG'S.
- GAS AND WATER MAINS TO BE CONSTRUCTED IN A COMMON TRENCH.
- \* = OFFSET FROM BACK OF KERB

Rev	Description	AW	Date
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VICTORIA 3350 AUSTRALIA 61 3 5312 7000  
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Designed  
**S.WOOD**  
Authorised  
**A.WILKIE**

Checked  
**B.IBBS**  
Date  
17/11/22

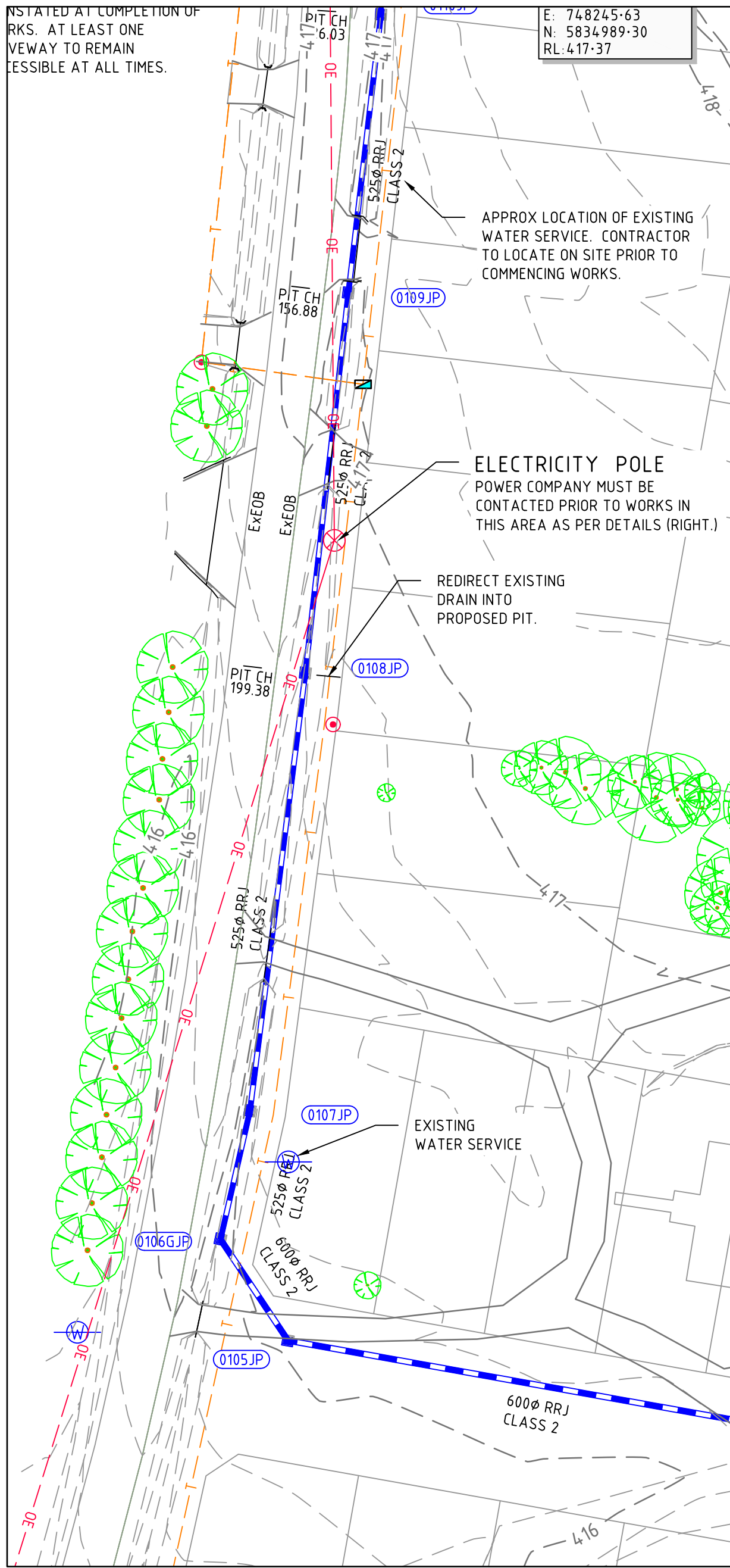
**BONSHAW RUN  
STAGE 1  
ROAD AND DRAINAGE  
GENERAL NOTES - SHEET 1**  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD

**PRELIMINARY** Drg No **310217CR100** Rev **A**

file name: 310217CR100.dwg, layout name: CR100, plotted by: Christopher Wood, file location: G:\310217\310217\310217\310217\310217.dwg, plot date: 23/12/2022 11:55 AM, Sheet 1 of 18 Sheets



SEE BELOW RIGHT FOR CONTINUATION



EXISTING PAVEMENT TO BE SAWCUT AND JOINED IN ACCORDANCE WITH COUNCIL STD DWG SD-R2. CRACK SEAL TO BE INCLUDED.

SAWCUT PAVEMENT REMOVE EXISTING CULVERT AND ENDWALLS. PAVEMENT DETAILS ON 310217CR700 & SD-R2. ALL EXCESS MATERIAL TO BE DISPOSED OF OFF SITE.

EXISTING DRIVEWAYS & CULVERTS TO BE REMOVED AND REINSTATED AT COMPLETION OF WORKS. AT LEAST ONE DRIVEWAY TO REMAIN ACCESSIBLE AT ALL TIMES.

APPROX LOCATION OF EXISTING WATER SERVICE. CONTRACTOR TO LOCATE ON SITE PRIOR TO COMMENCING WORKS.

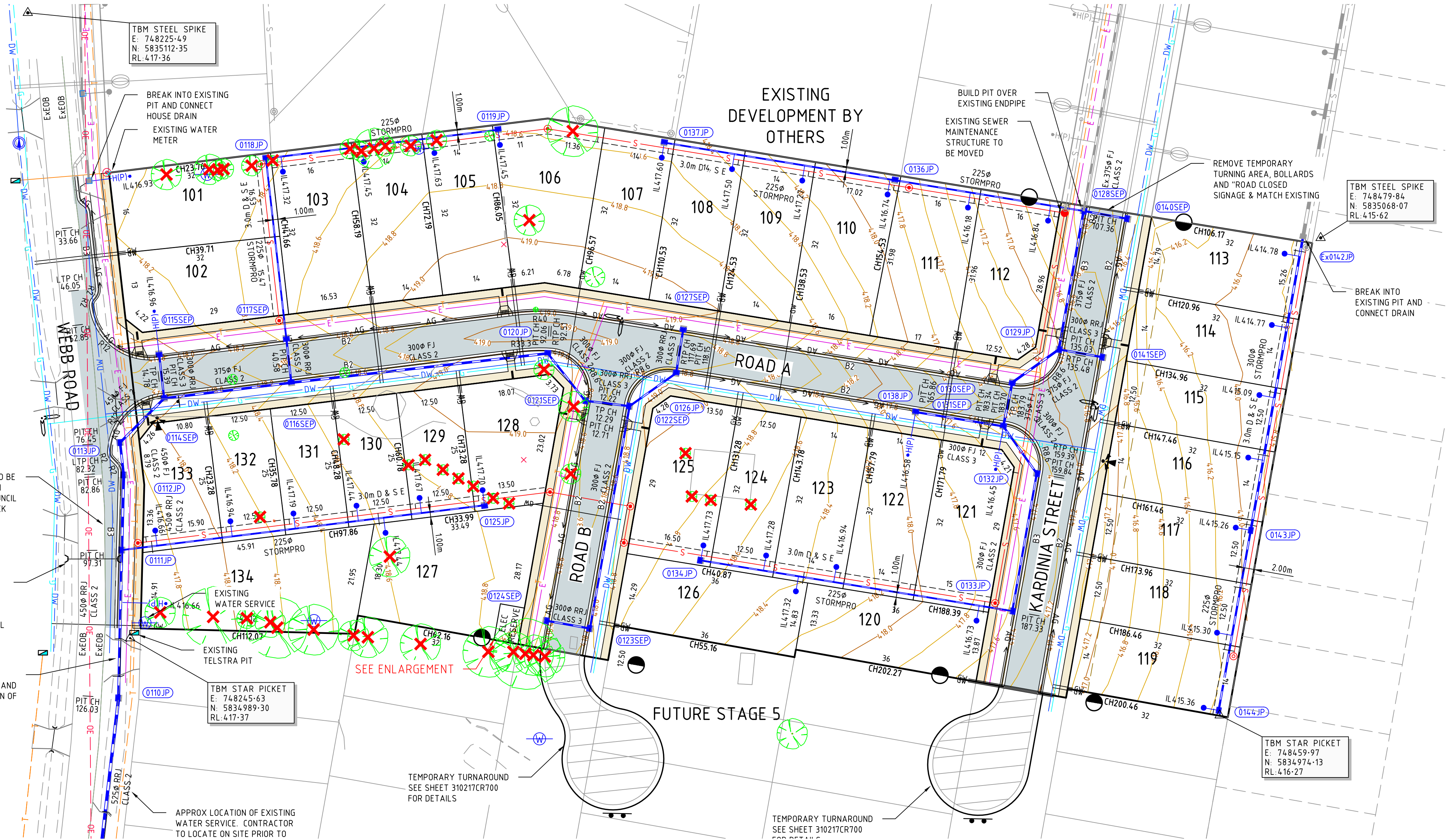
ELECTRICITY POLE POWER COMPANY MUST BE CONTACTED PRIOR TO WORKS IN THIS AREA AS PER DETAILS (RIGHT).

REDIRECT EXISTING DRAIN INTO PROPOSED PIT.

EXISTING WATER SERVICE

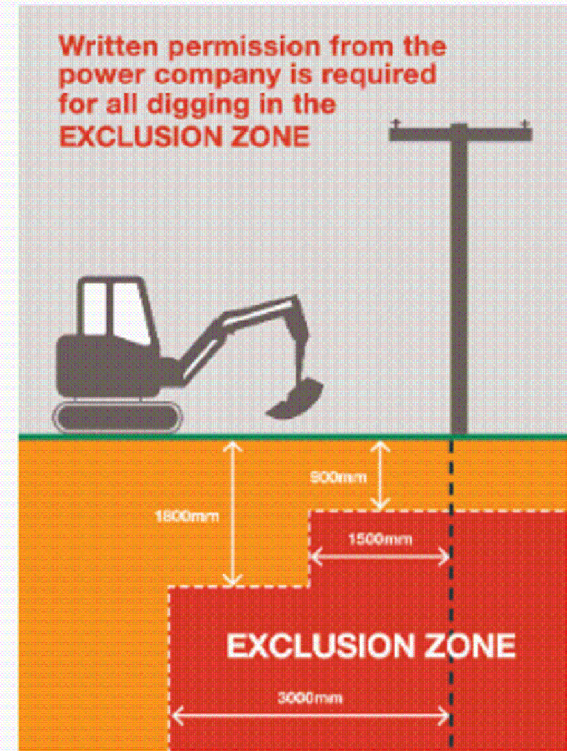
GRATED PIT TO "BUBBLE UP" AS TEMPORARY OUTLET. PIPES TO BE CLEANED AS PART OF STAGE 2.

SEE ABOVE LEFT FOR CONTINUATION



SEE ENLARGEMENT

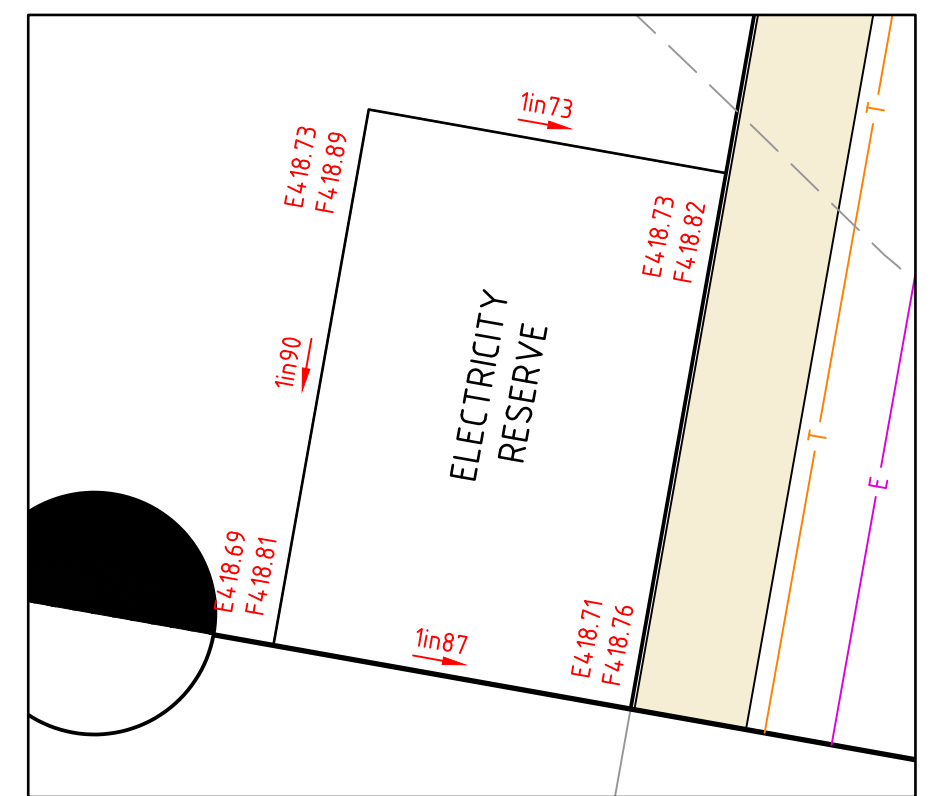
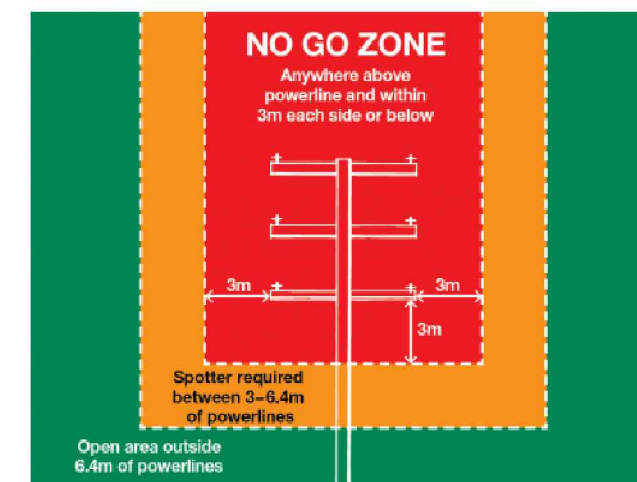
- You must contact the Power Company if you are digging:
- 900mm or deeper within 1,500mm of a power pole or light pole or stay wire
  - 1,800mm or deeper within 3,000mm of a power pole or light pole or stay wire.



**No Go Zones**

1. **Work outside 6.4m** from overhead power lines no specific requirements are established other than those described in established regulation, primarily the Victorian Occupational Health and Safety Regulations 2017.
2. **Work between 3.0m and 6.4m** from an overhead power line, a registered spotter is required. This is known as the Spotter Zone.
3. **Work within 3.0m** from an overhead power line, permission from the relevant network operator is required and additional preventative measures will need to be taken.

ESV produces stickers (pictured below) outlining the exclusions listed above. These are available via our [Merchandise](#) page.



ENLARGEMENT  
SCALE 1:100

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Designed  
S.WOOD  
Authorised  
A.WILKIE  
Checked  
B.IBBS  
Date  
17/11/22

**BONSHAW RUN  
STAGE 1  
ROAD AND DRAINAGE  
ROAD LAYOUT PLANS - SHEET 1  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD**

**PRELIMINARY** Dwg No **310217CR200** Rev **A**



DEPTH RANGES (100mm)

FROM	TO	COLOUR
-	-0.80	
-0.80	-0.70	
-0.70	-0.60	
-0.60	-0.50	
-0.50	-0.40	
-0.40	-0.30	
-0.30	-0.20	
-0.20	-0.10	
-0.10	0.00	
0.00	0.10	
0.10	0.20	
0.20	0.30	
0.30	0.40	
0.40	0.50	
0.50	0.60	
0.60	0.70	
0.70	0.80	
0.80	+	



**WARNING**  
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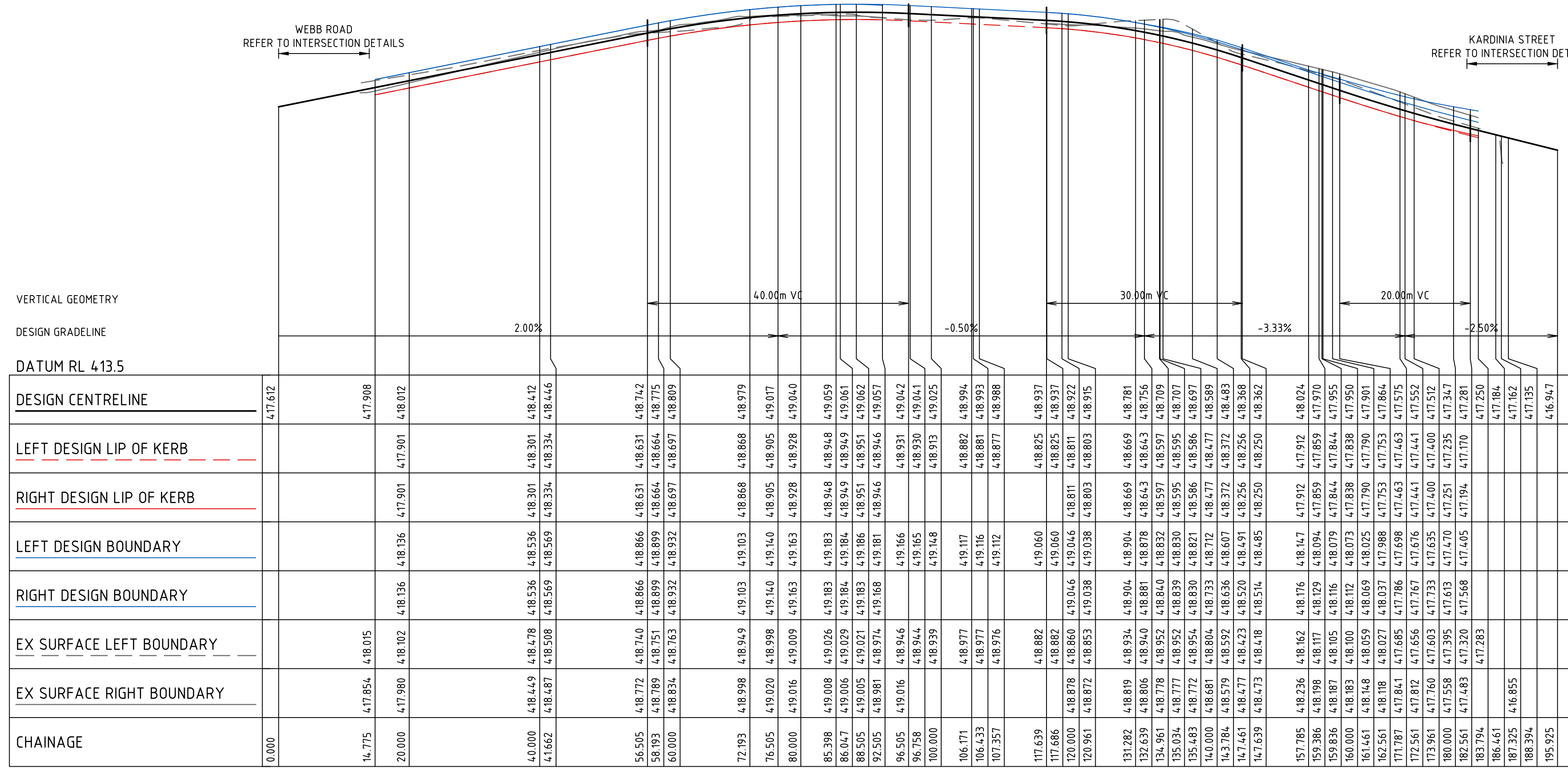
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17/11/22

**BONSHAW RUN  
STAGE 1  
ROAD AND DRAINAGE  
ROAD LAYOUT PLANS - SHEET 2**  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD

**PRELIMINARY** Dwg No **310217CR201** Rev **A**

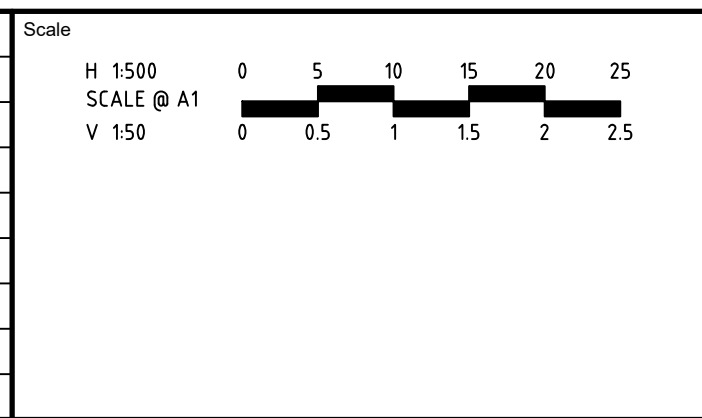


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ROAD A

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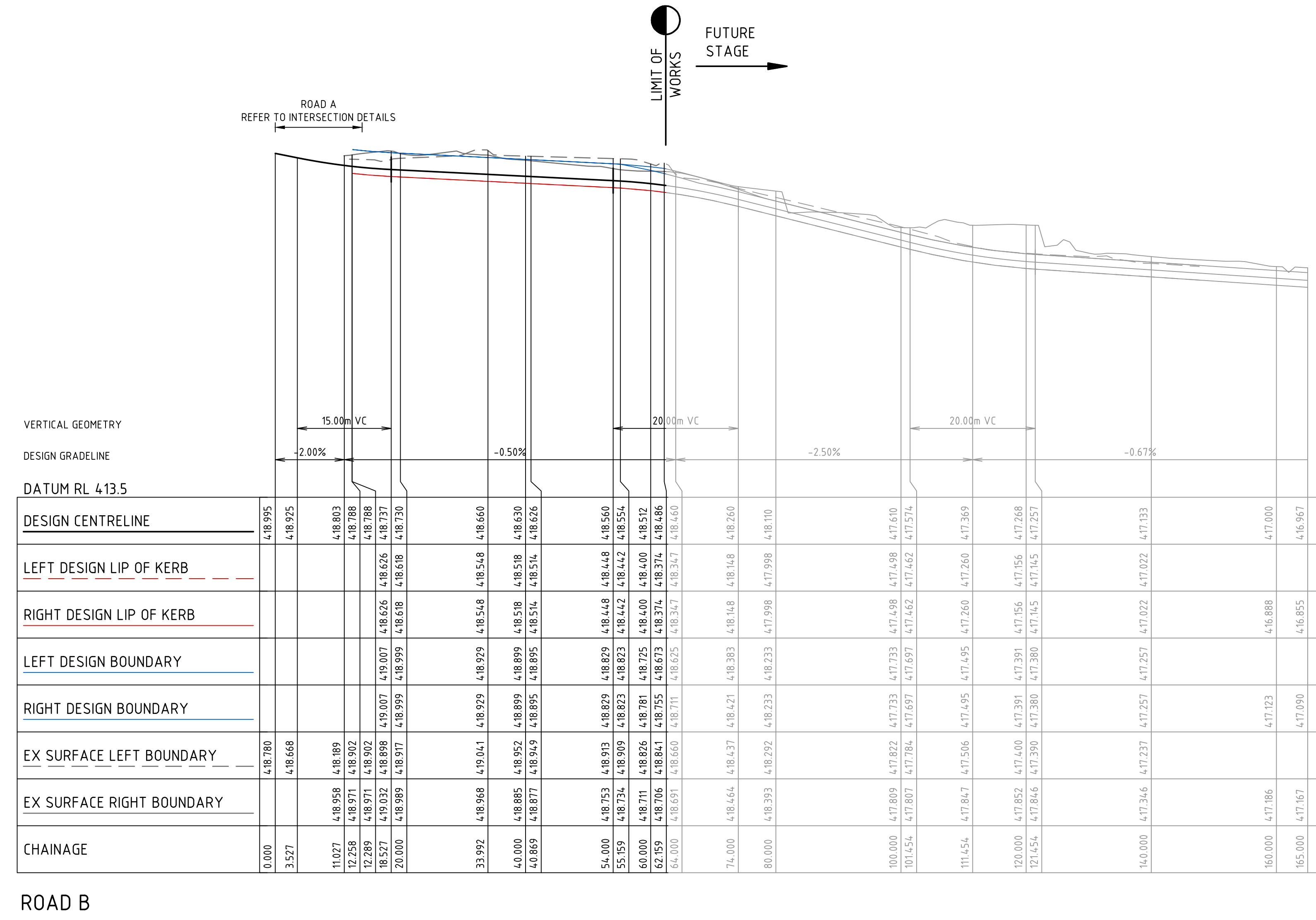
**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**CITY OF BALLARAT**  
**PENDLES NO1 PTY LTD**

**PRELIMINARY**

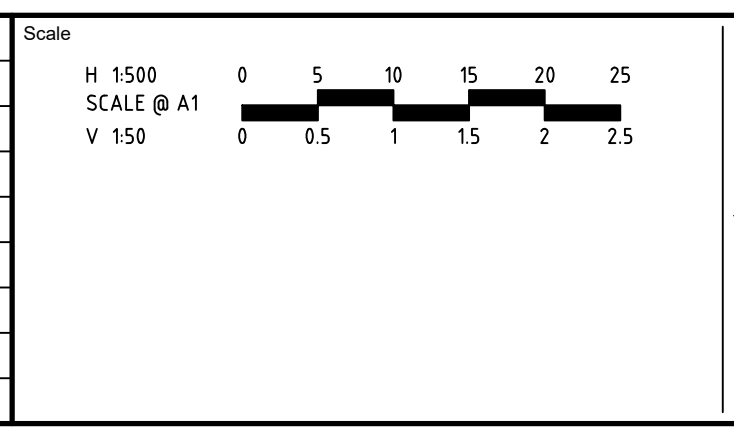
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Rev **A**

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Authorised <b>A.WILKIE</b>	Date 17/11/22

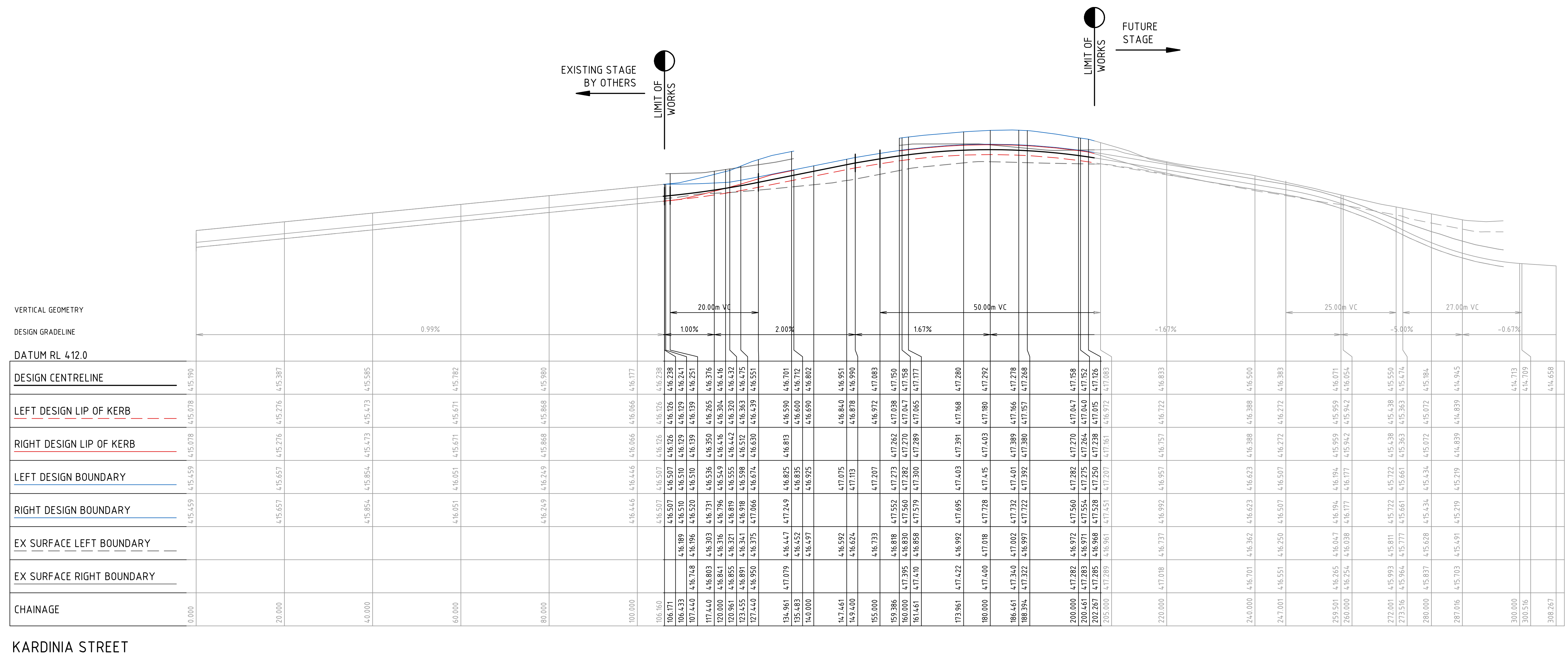
**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**ROAD LONG SECTIONS - SHEET 2**  
 CITY OF BALLARAT  
 PENDLES NO1 PTY LTD

**PRELIMINARY**

 Drg No  
**310217CR301**

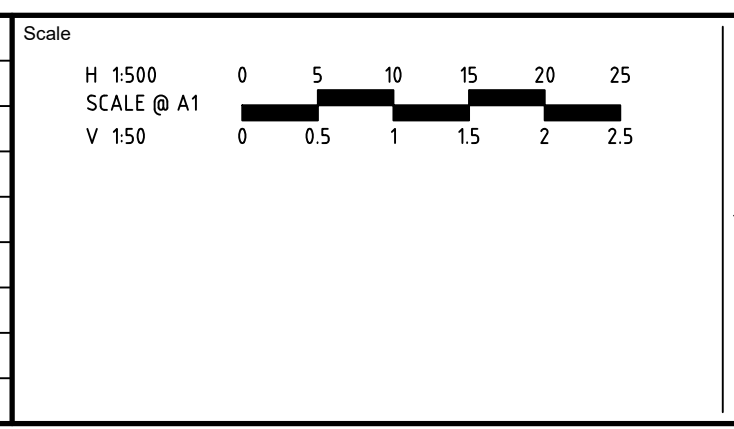
 Rev  
**A**

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KARDINIA STREET

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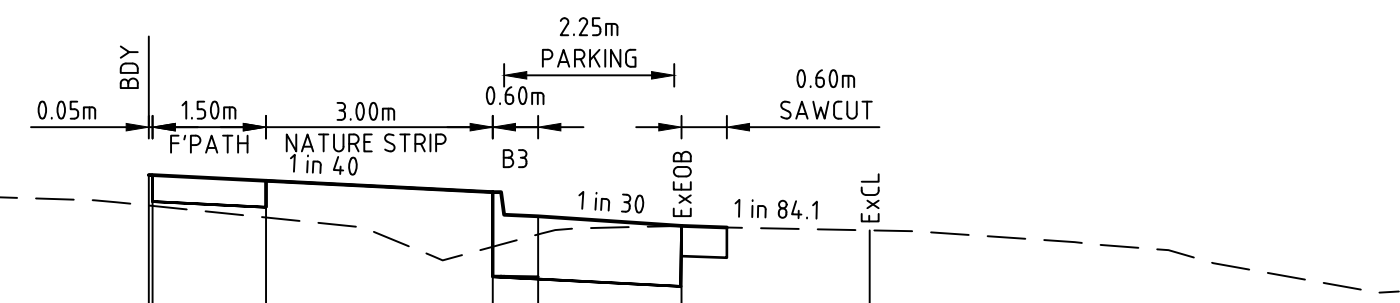
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Authorised A.WILKIE	Date 17/11/22

**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**ROAD LONG SECTIONS - SHEET 3**  
 CITY OF BALLARAT  
 PENDLES NO1 PTY LTD

Drg No      Rev  
**PRELIMINARY**      310217CR302      **A**

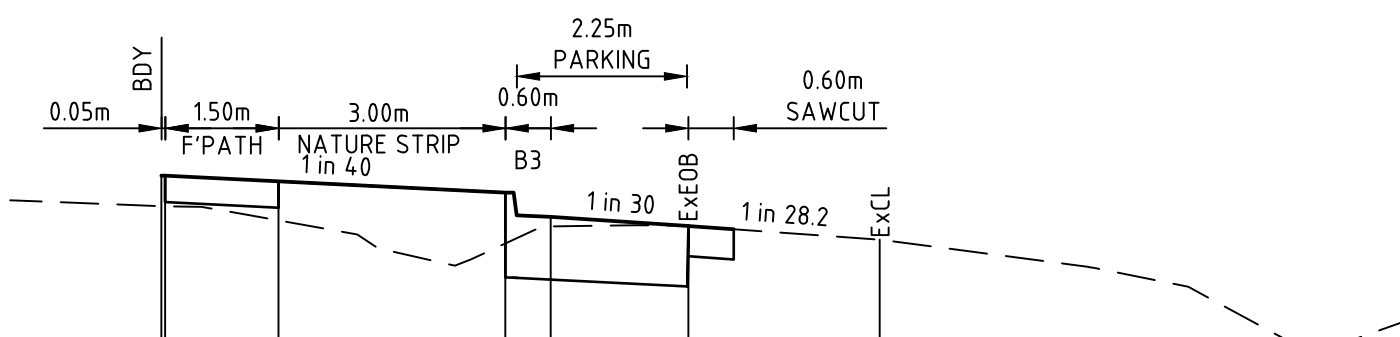


**FILLING NOTE**  
 ALL FILLING WITHIN ROAD RESERVES IS TO BE UNDERTAKEN USING LEVEL 1 SUPERVISION AND BE COMPLETED IN ACCORDANCE WITH AS 3798-2007 AND TO THE SATISFACTION OF COUNCIL AND THE SUPERINTENDENT. FILL AREAS ARE TO BE STRIPPED OF TOPSOIL, FILLED AND REPLACED WITH TOPSOIL (WHERE REQUIRED) TO OBTAIN THE FINAL LEVELS SHOWN ON THE DRAWINGS.



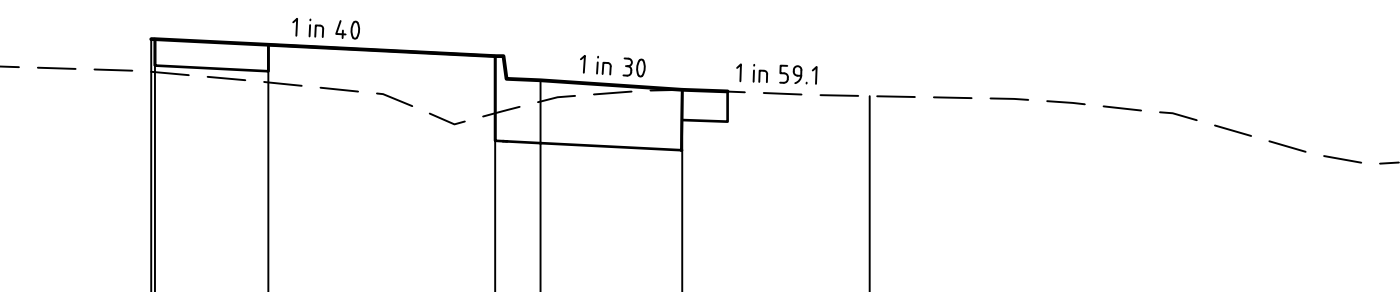
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OFFSET	-9.536 -9.486 -7.986 -4.986 -4.386 -2.490 0.000

WEBB ROAD CH 46.05



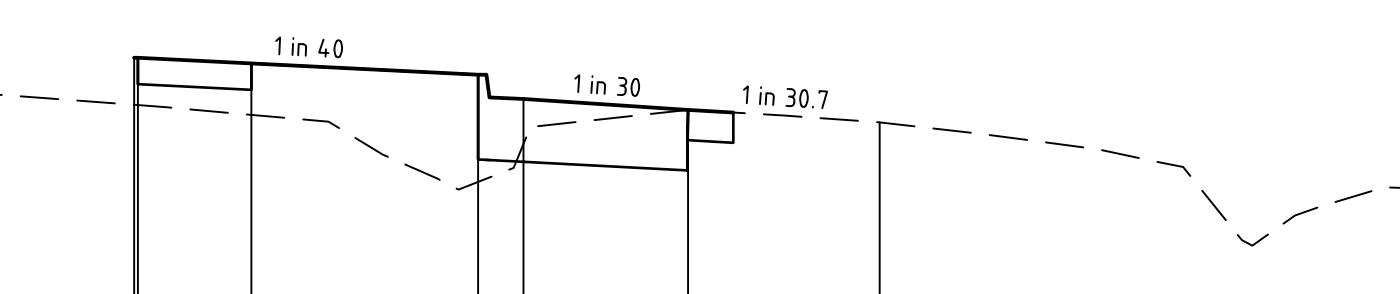
DATUM R.L. 415.0	
DESIGN SURFACE LEVEL	4.17600 4.17563 4.17488 4.17328 4.17267 4.17177
EXISTING SURFACE LEVEL	4.17398 4.17397 4.17304 4.17152 4.17264 4.17328
OFFSET	-9.502 -9.452 -7.952 -4.952 -4.352 -2.530 0.000

WEBB ROAD CH 112.07



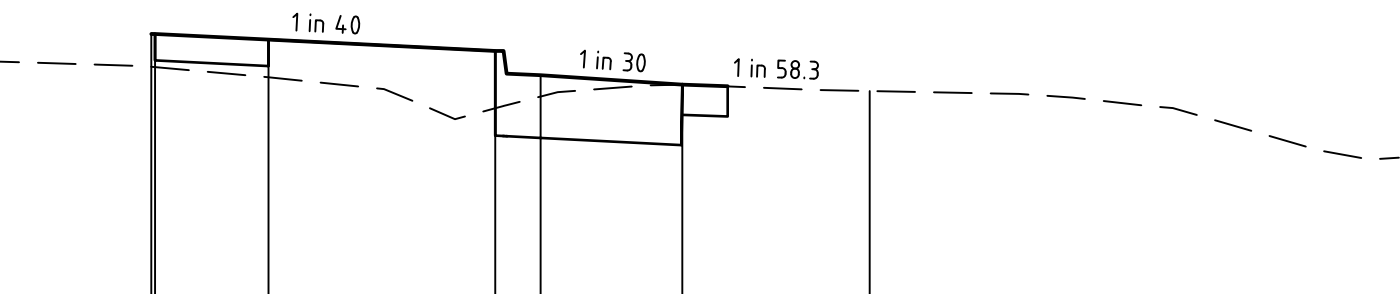
DATUM R.L. 416.0	
DESIGN SURFACE LEVEL	4.18176 4.18063 4.17841 4.17799
EXISTING SURFACE LEVEL	4.17959 4.17957 4.17889 4.17685 4.17763 4.17903 4.17841 4.17799
OFFSET	-9.504 -9.454 -7.954 -4.954 -4.354 -2.480 0.000

WEBB ROAD CH 40.00



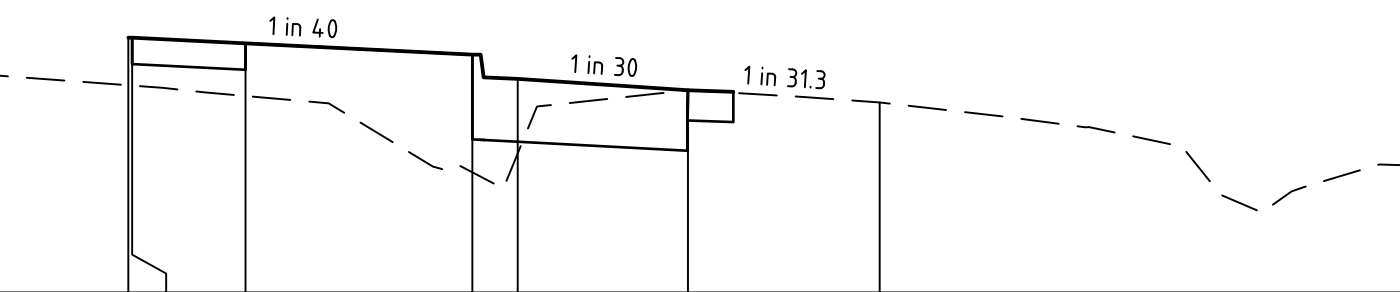
DATUM R.L. 415.0	
DESIGN SURFACE LEVEL	4.17672 4.17634 4.17559 4.17327 4.17244
EXISTING SURFACE LEVEL	4.17361 4.17359 4.17294 4.16851 4.17399 4.17327 4.17244
OFFSET	-9.861 -9.811 -8.311 -5.311 -4.711 -2.535 0.000

WEBB ROAD CH 100.00



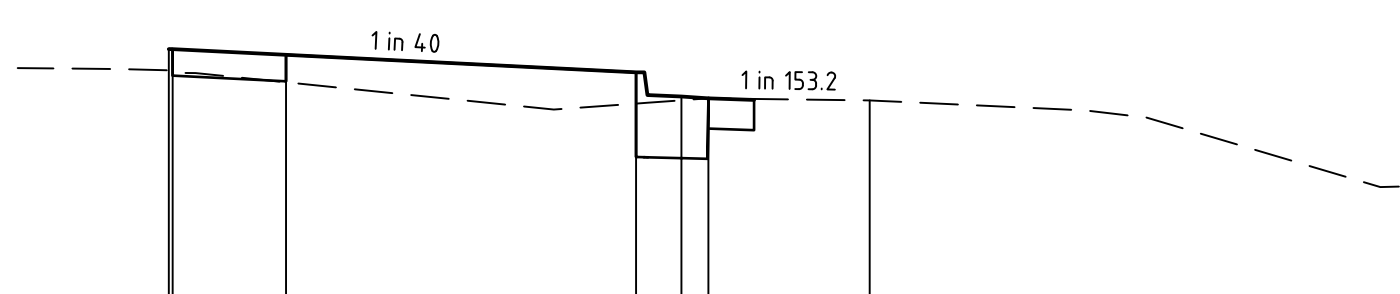
DATUM R.L. 416.0	
DESIGN SURFACE LEVEL	4.18178 4.18065 4.17843 4.17800
EXISTING SURFACE LEVEL	4.17960 4.17958 4.17891 4.17686 4.17764 4.17905 4.17843 4.17800
OFFSET	-9.503 -9.453 -7.953 -4.953 -4.353 -2.479 0.000

WEBB ROAD CH 39.72



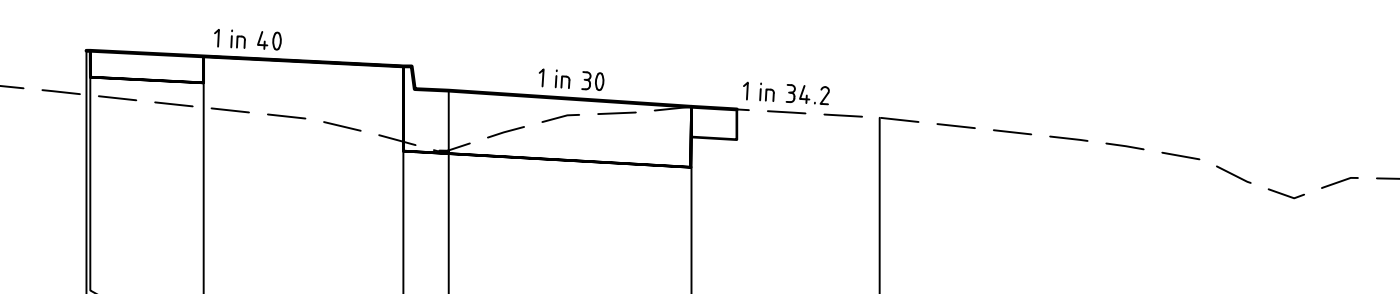
DATUM R.L. 416.0	
DESIGN SURFACE LEVEL	4.17685 4.17648 4.17573 4.17338 4.17257
EXISTING SURFACE LEVEL	4.17370 4.17368 4.17299 4.16795 4.17413 4.17413 4.17338 4.17257
OFFSET	-9.938 -9.888 -8.388 -5.388 -4.788 -2.535 0.000

WEBB ROAD CH 97.86



DATUM R.L. 416.0	
DESIGN SURFACE LEVEL	4.18144 4.18106 4.17991 4.17831 4.17819 4.17805
EXISTING SURFACE LEVEL	4.18004 4.18001 4.17925 4.17784 4.17806 4.17831 4.17819 4.17805
OFFSET	-9.271 -9.221 -7.721 -3.090 -2.490 -2.134 0.000

WEBB ROAD CH 23.76



DATUM R.L. 416.0	
DESIGN SURFACE LEVEL	4.17836 4.17798 4.17732 4.17465 4.17393
EXISTING SURFACE LEVEL	4.17544 4.17541 4.17460 4.17234 4.17372 4.17465 4.17393
OFFSET	-10.492 -10.442 -8.942 -6.300 -5.700 -2.489 0.000

WEBB ROAD CH 82.33

file name: 310217CR400.dwg, layout: rsm: CH40.00, plotted by: Sherryn Wood, file location: G:\310217\310217.dwg, AD Plot date: 23/11/2022, 11:16 AM, Sheet 7 of 18 Sheets

Scale	H 1:100	V 1:50
Scale @ A1	0 0.5 1 1.5 2 2.5	
Rev	A	PRELIMINARY ISSUE
AW	18/11/22	Date
Approved		Date

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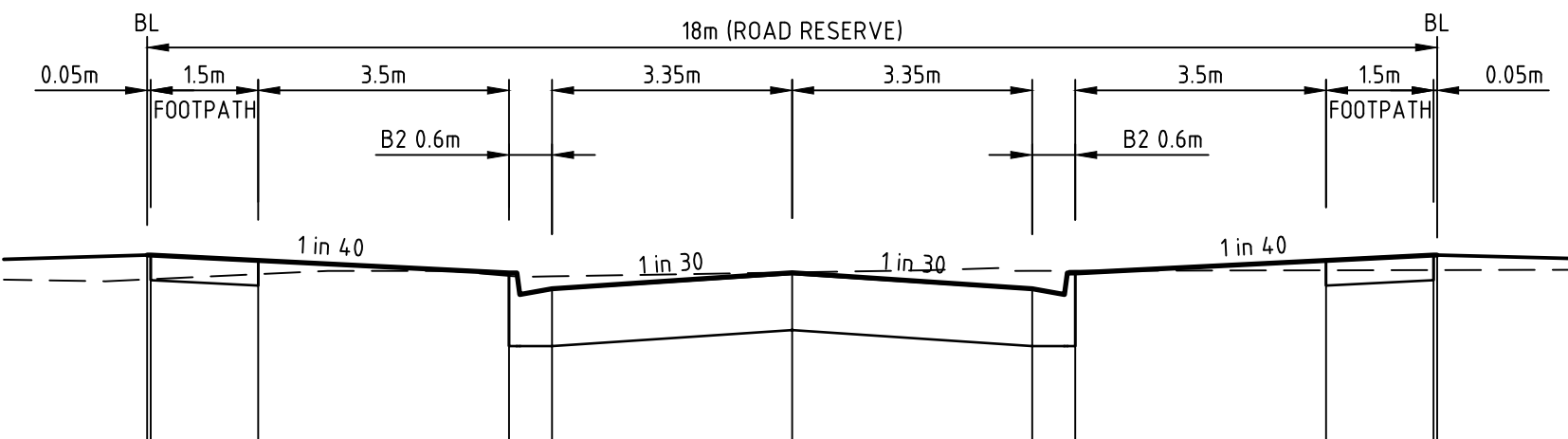
**spiire**  
 115 DOVETON STREET SOUTH BALLARAT  
 VICTORIA 3350 AUSTRALIA 61 3 5312 7000  
 spiire.com.au ABN 55 050 029 635

Designed	S.WOOD	Checked	B.IBBS
Authorised	A.WILKIE	Date	17/11/22

**BONSHAW RUN**  
**STAGE 1**  
 ROAD AND DRAINAGE  
 ROAD CROSS SECTIONS - SHEET 1  
 CITY OF BALLARAT  
 PENDLES NO1 PTY LTD

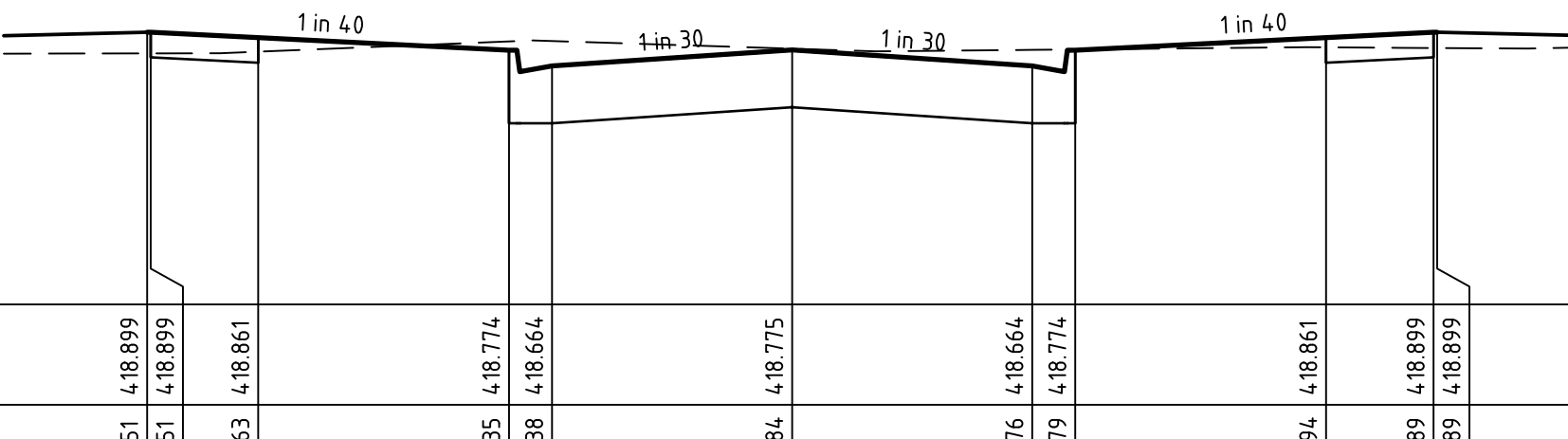
**PRELIMINARY** Drg No **310217CR400** Rev **A**

**FILLING NOTE**  
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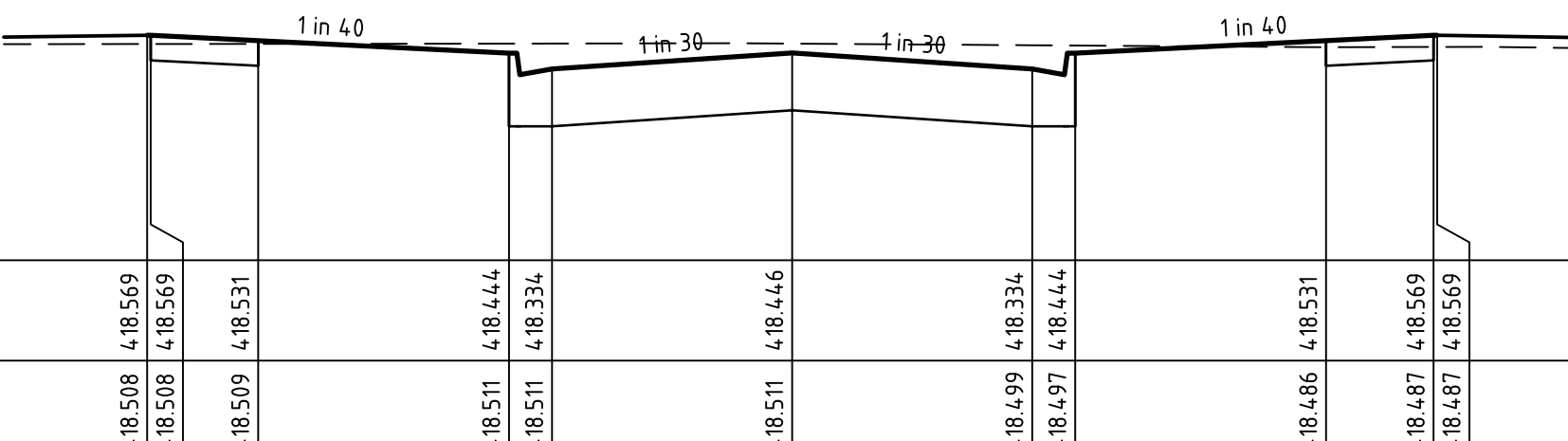
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DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 72.19



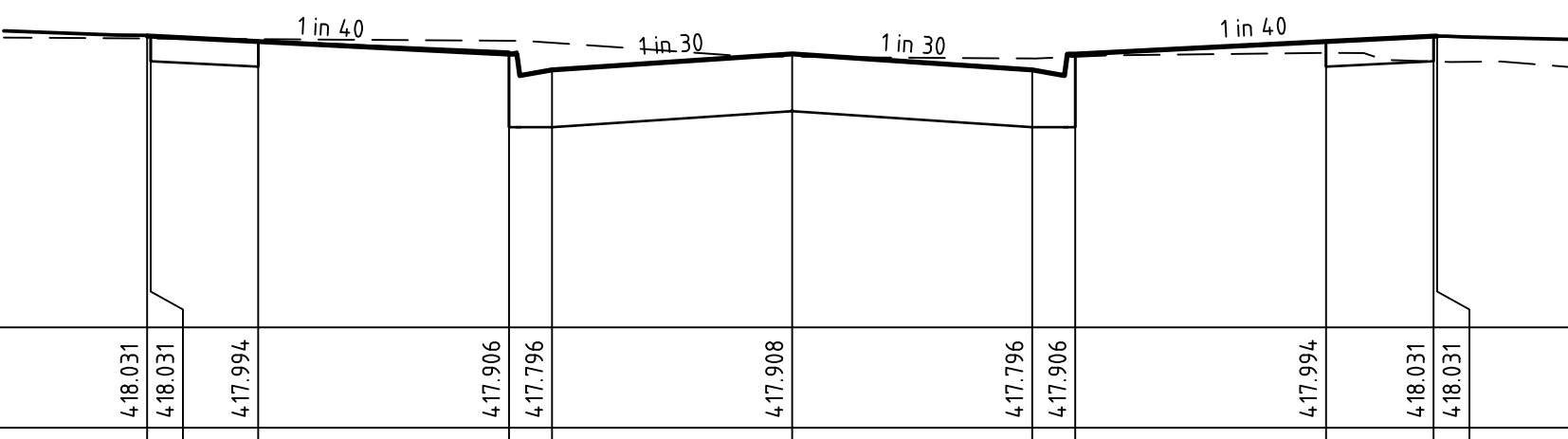
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DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 58.19



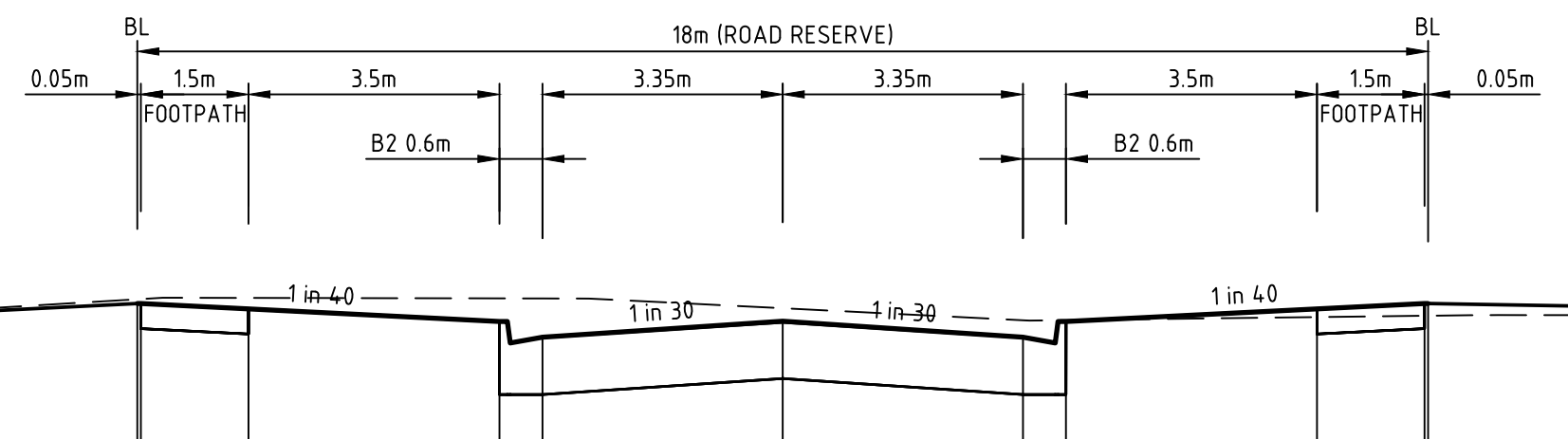
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EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 41.66



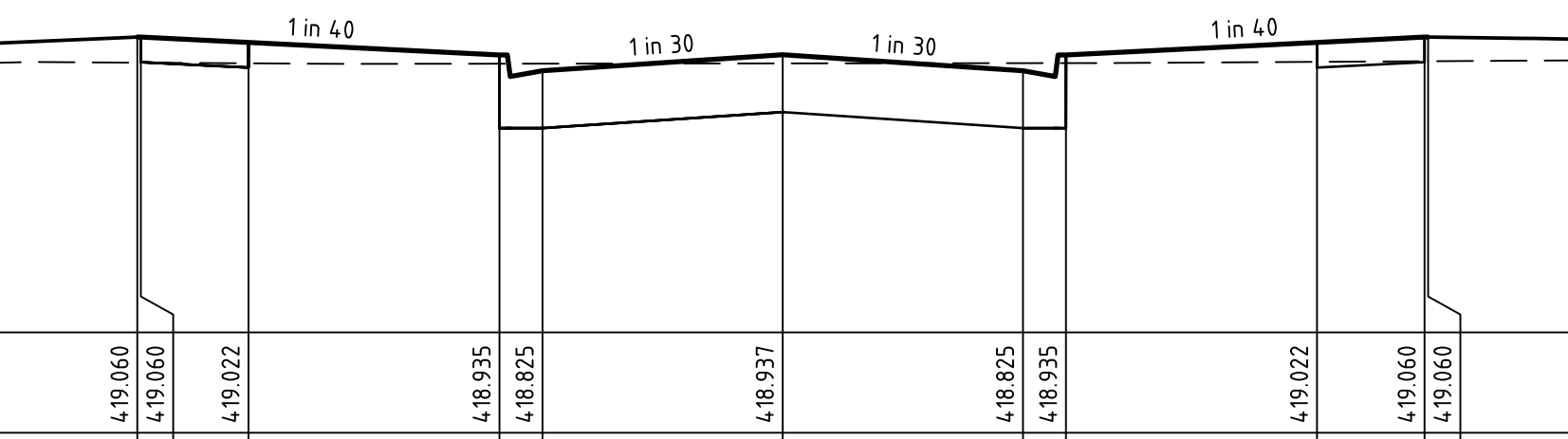
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EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 14.78



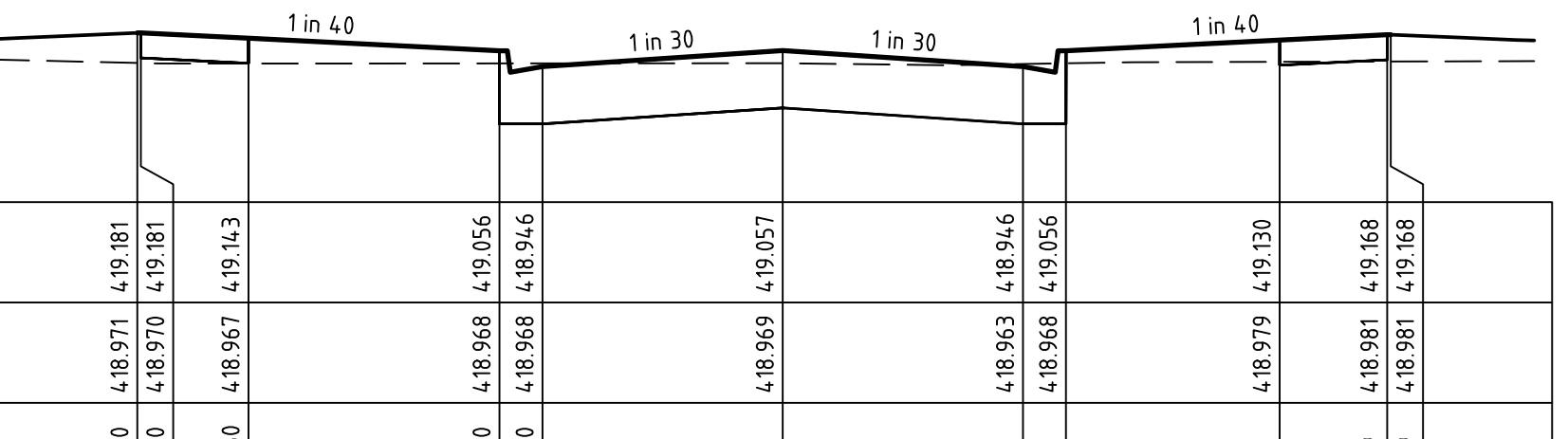
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DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 131.28



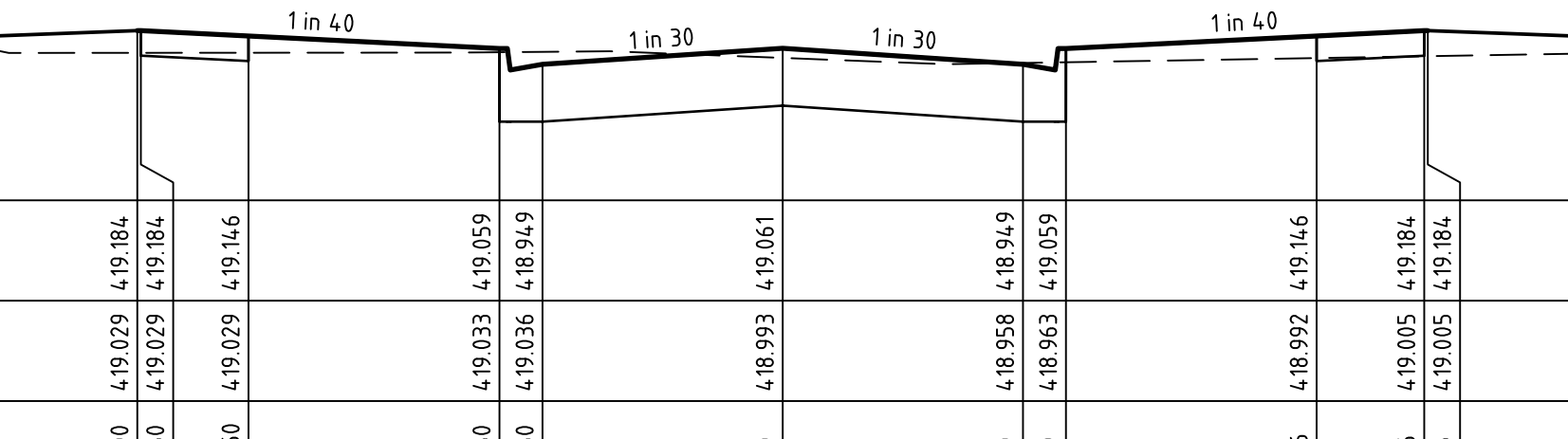
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DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 117.69



DATUM R.L. 418.0										
DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 92.50



DATUM R.L. 418.0										
DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 86.05

file name: 310217CR401.dwg, layout: csm, csl, dwt, plotted by: S. Wood, plot date: 23/11/22, 11:56 AM, Sheet: 8 of 18 Sheets

Scale  
 H 1:100  
 SCALE @ A1  
 V 1:50

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115 DOVETON STREET SOUTH BALLARAT  
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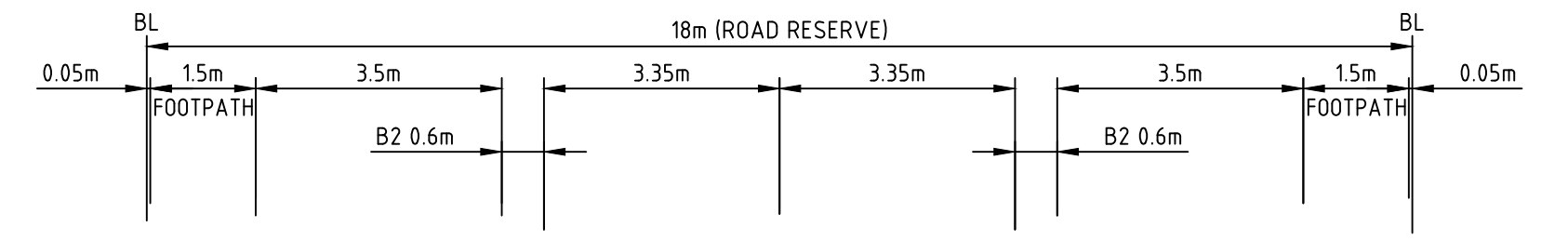
Designed S.WOOD	Checked B.IBBS
Authorised A.WILKIE	Date 17/11/22

**BONSHAW RUN  
 STAGE 1  
 ROAD AND DRAINAGE  
 ROAD CROSS SECTIONS - SHEET 2  
 CITY OF BALLARAT  
 PENDLES NO1 PTY LTD**

**PRELIMINARY** Dwg No **310217CR401** Rev **A**



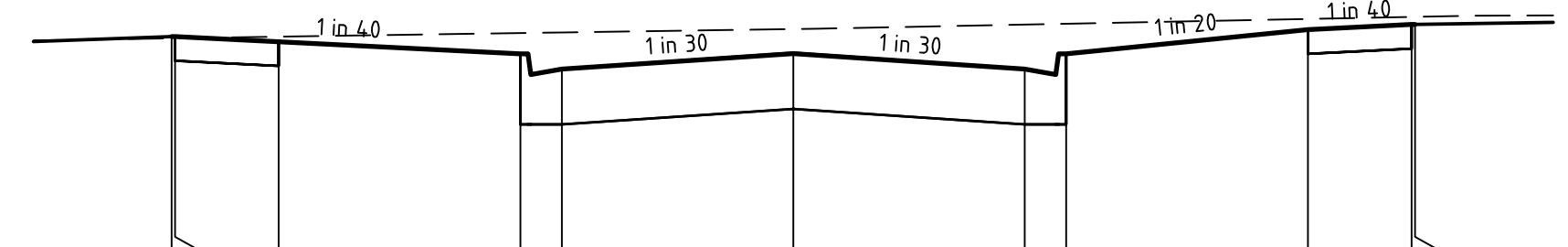
**FILLING NOTE**  
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DATUM R.L. 4.16.0

DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

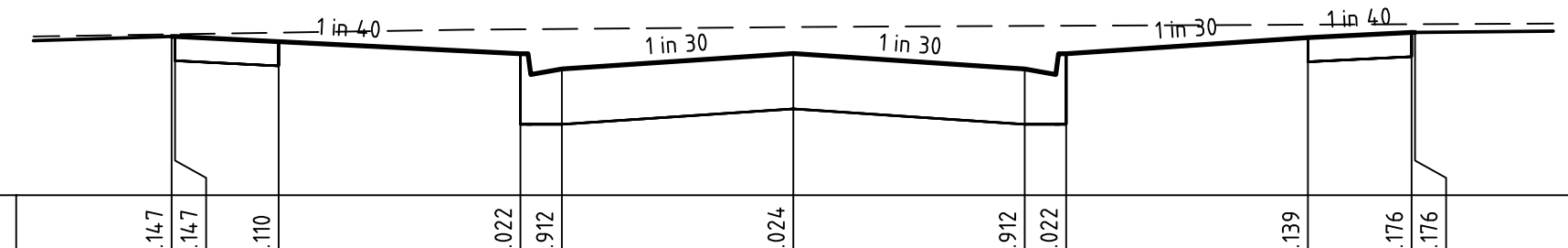
ROAD A CH 183.79



DATUM R.L. 4.16.0

DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

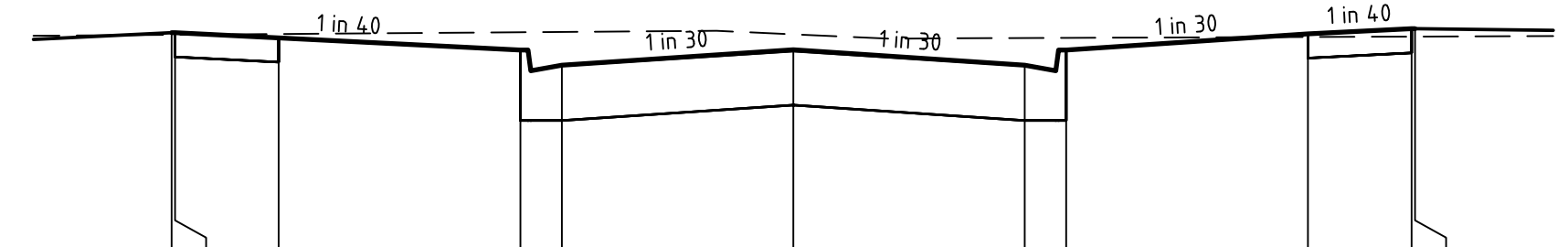
ROAD A CH 171.79



DATUM R.L. 4.17.0

DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 157.78



DATUM R.L. 4.17.0

DESIGN SURFACE LEVEL										
EXISTING SURFACE LEVEL										
OFFSET										

ROAD A CH 143.78

file name: 310217CR402.dwg, layout: csm: CML02, plotted by: Sharnes Wood, file location: G:\310217\310217\W\A\A01\A01.dwg, plot date: 23/11/2022, 11:06 AM, Sheet 9 of 18 Sheets

Scale	H 1:100	V 1:50
SCALE @ A1		
System Certified		
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Designed S.WOOD	Checked B.IBBS	Date 17/11/22
Authorised A.WILKIE		
		Drg No <b>310217CR402</b>
A PRELIMINARY ISSUE Rev Amendments		AW 18/11/22 Approved Date

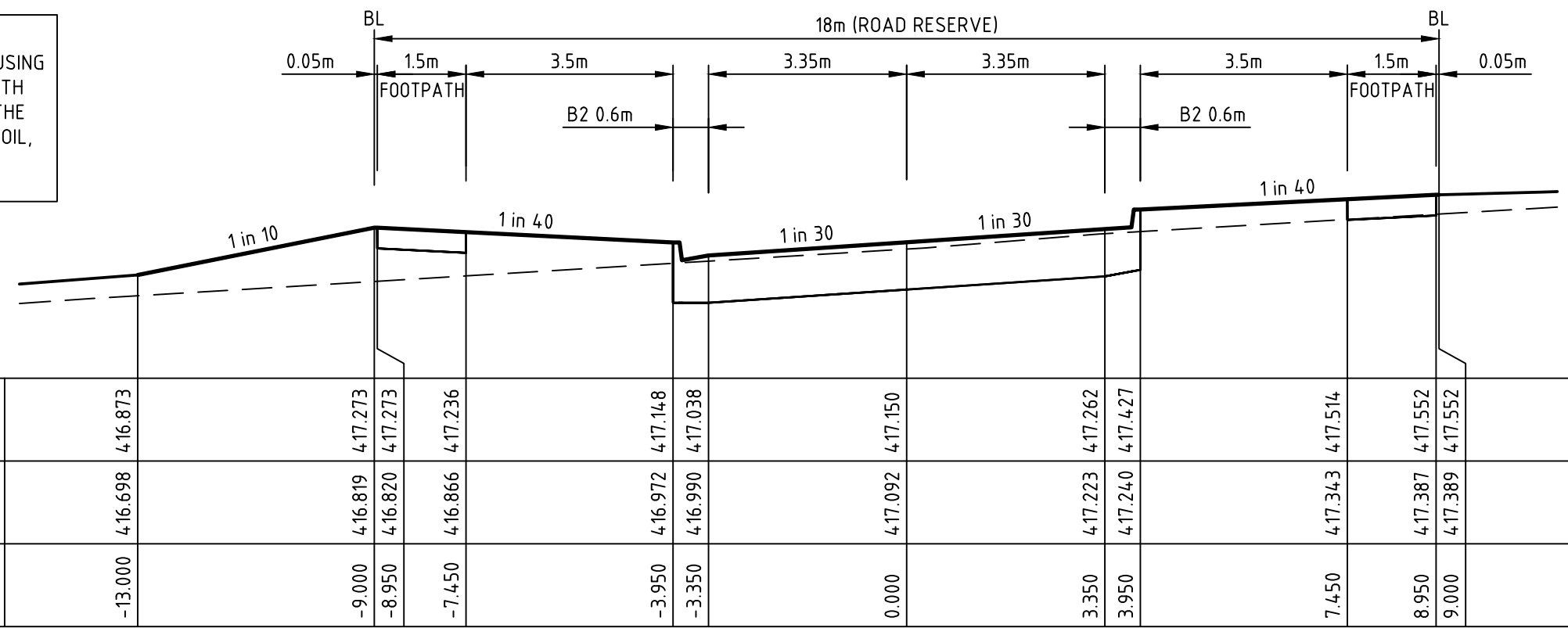
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Designed S.WOOD	Checked B.IBBS	Date 17/11/22	
Authorised A.WILKIE			Drg No <b>310217CR402</b>
A PRELIMINARY ISSUE Rev Amendments		AW 18/11/22 Approved Date	Rev <b>A</b>





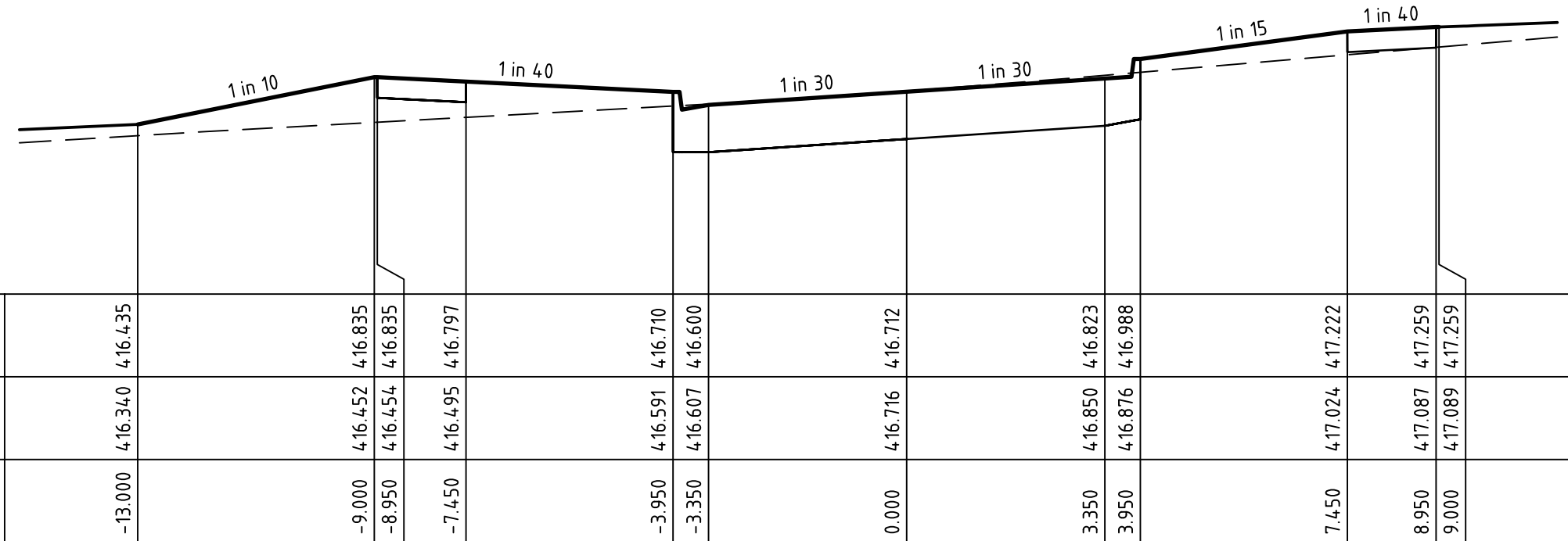


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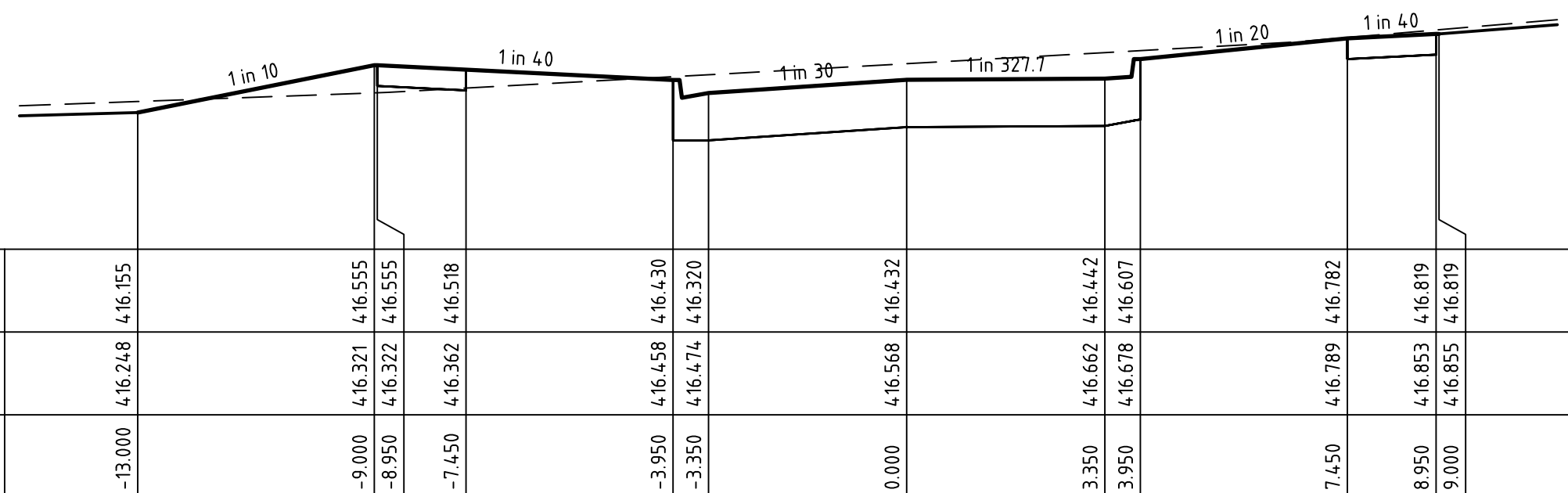
KARDINIA STREET

CH 159.39



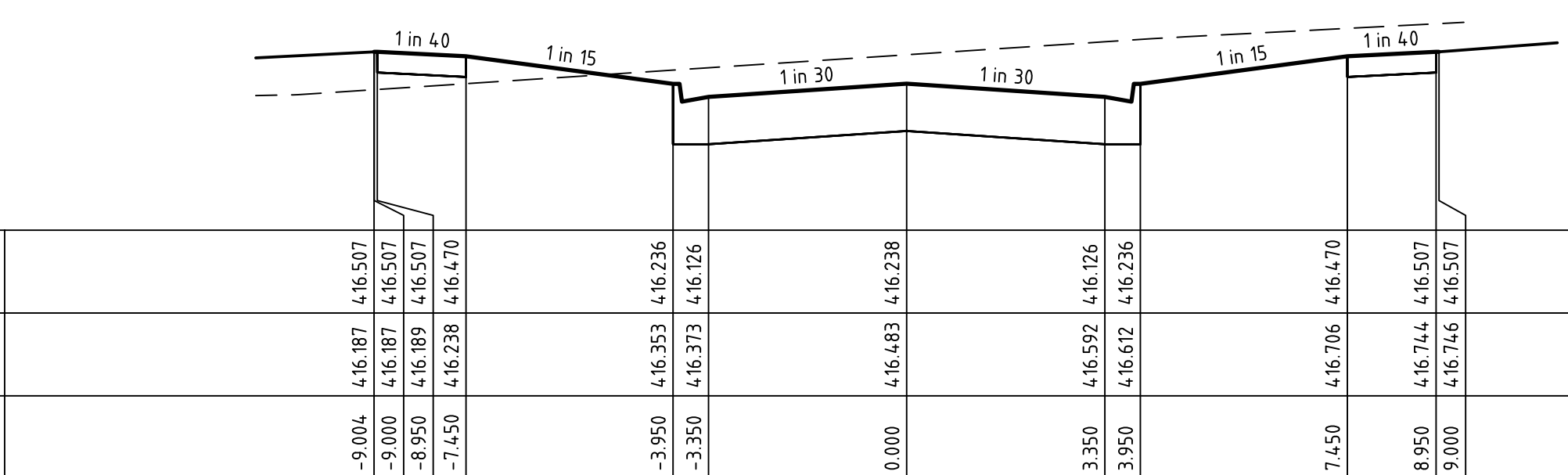
KARDINIA STREET

CH 135.48



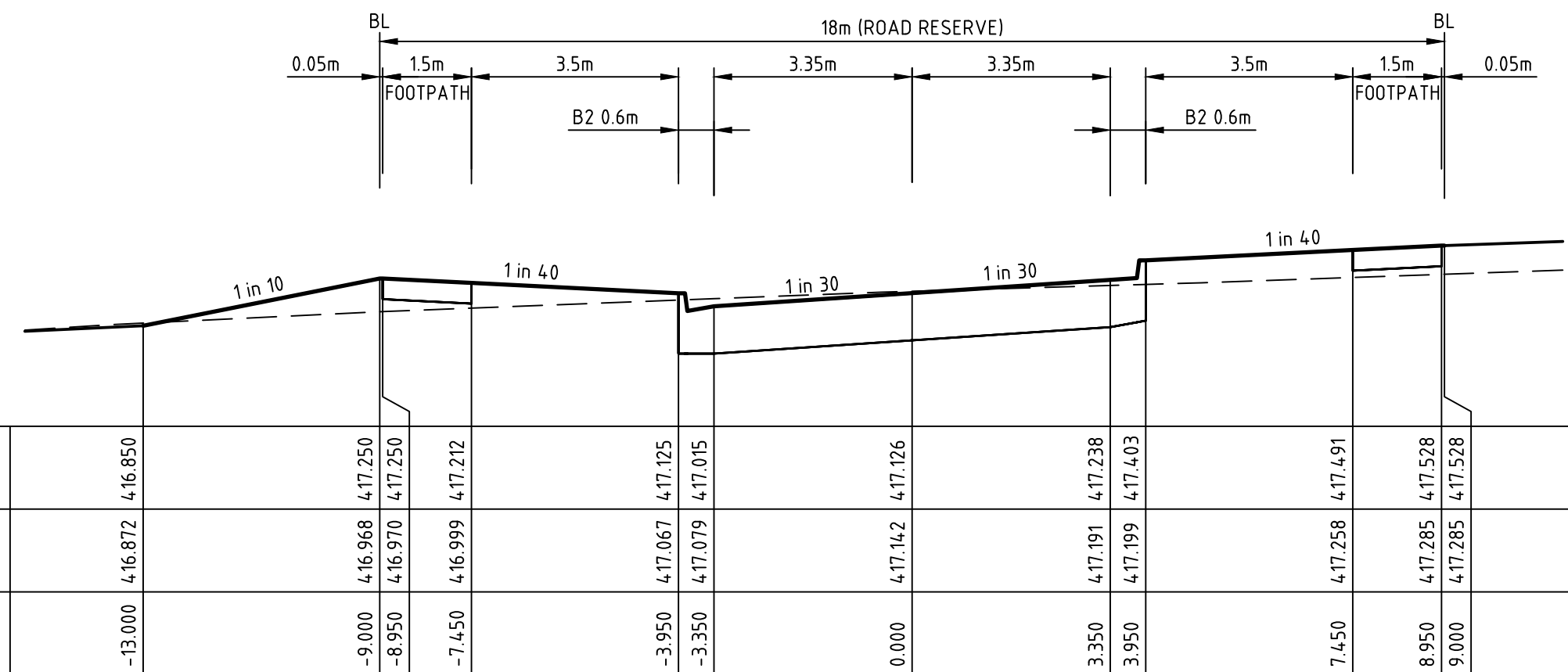
KARDINIA STREET

CH 120.96



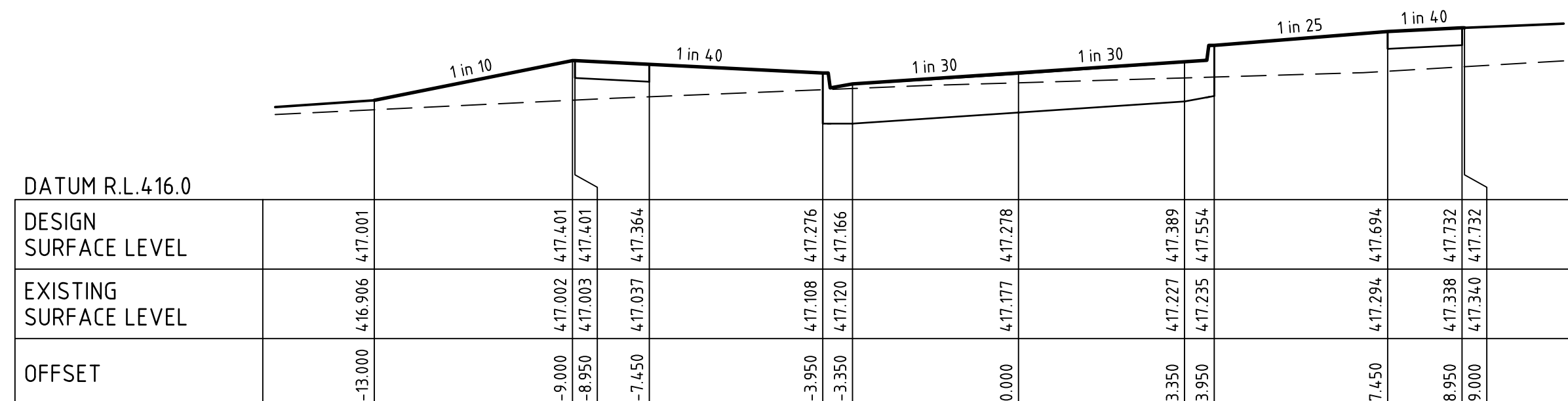
KARDINIA STREET

CH 106.17



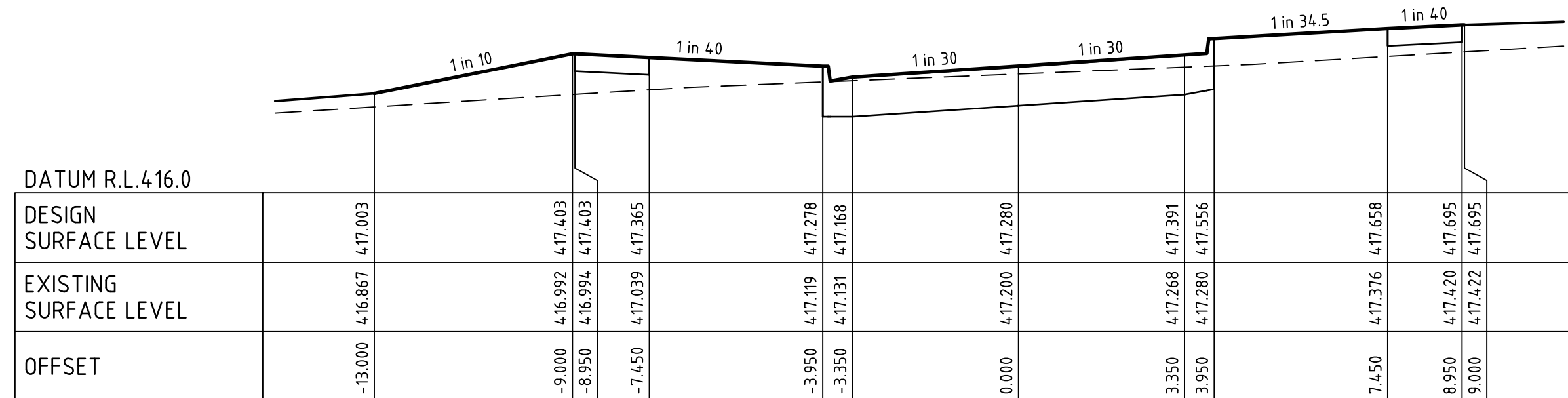
KARDINIA STREET

CH 202.27



KARDINIA STREET

CH 186.46



KARDINIA STREET

CH 173.96

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Rev	A	PRELIMINARY ISSUE	AW 18/11/22
Rev		Amendments	Approved Date

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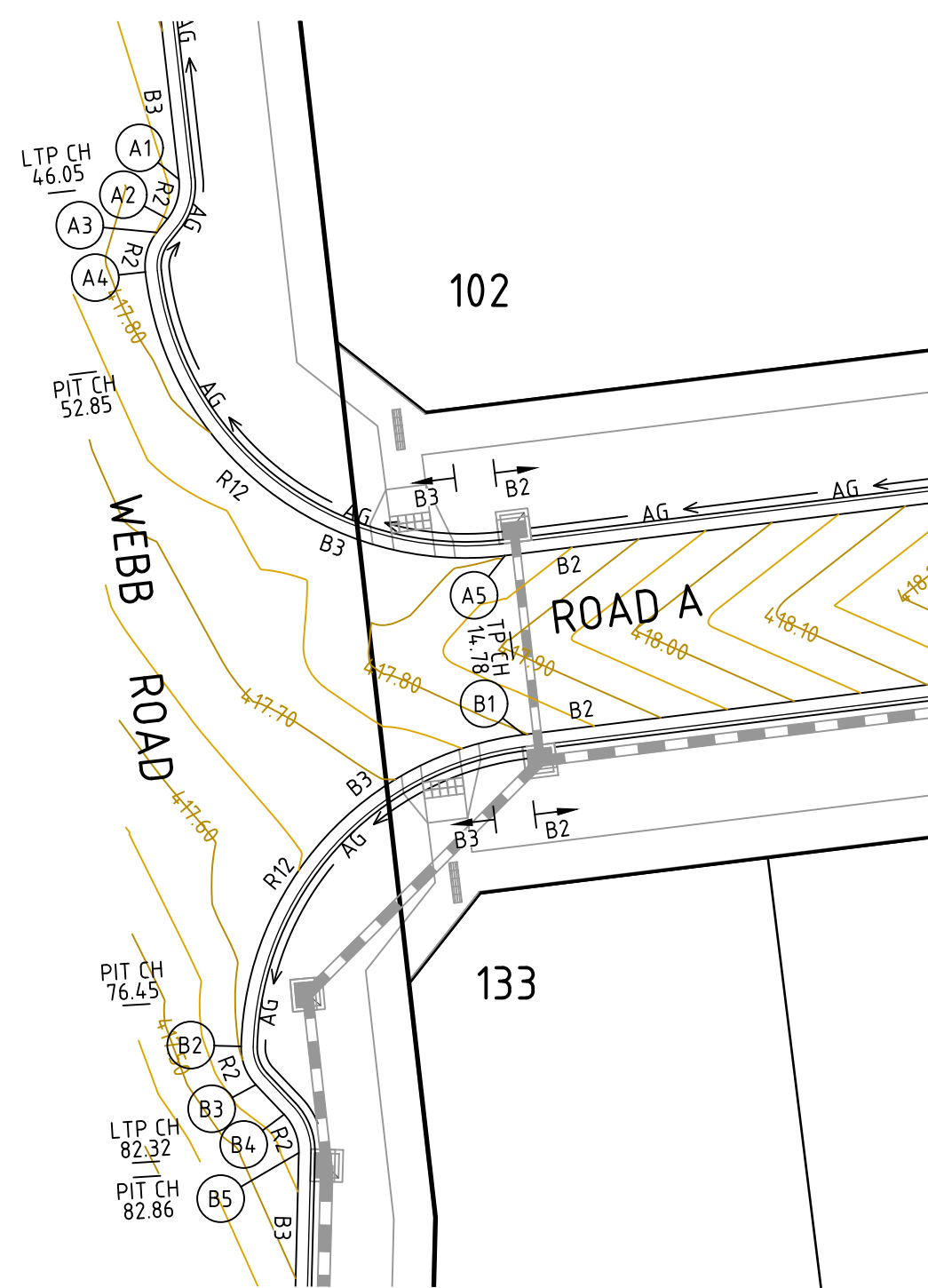
115 DOVETON STREET SOUTH BALLARAT  
 VICTORIA 3350 AUSTRALIA 61 3 5312 7000  
 spiire.com.au ABN 55 050 029 635

Designed	S.WOOD	Checked	B.IBBS
Authorised	A.WILKIE	Date	17/11/22

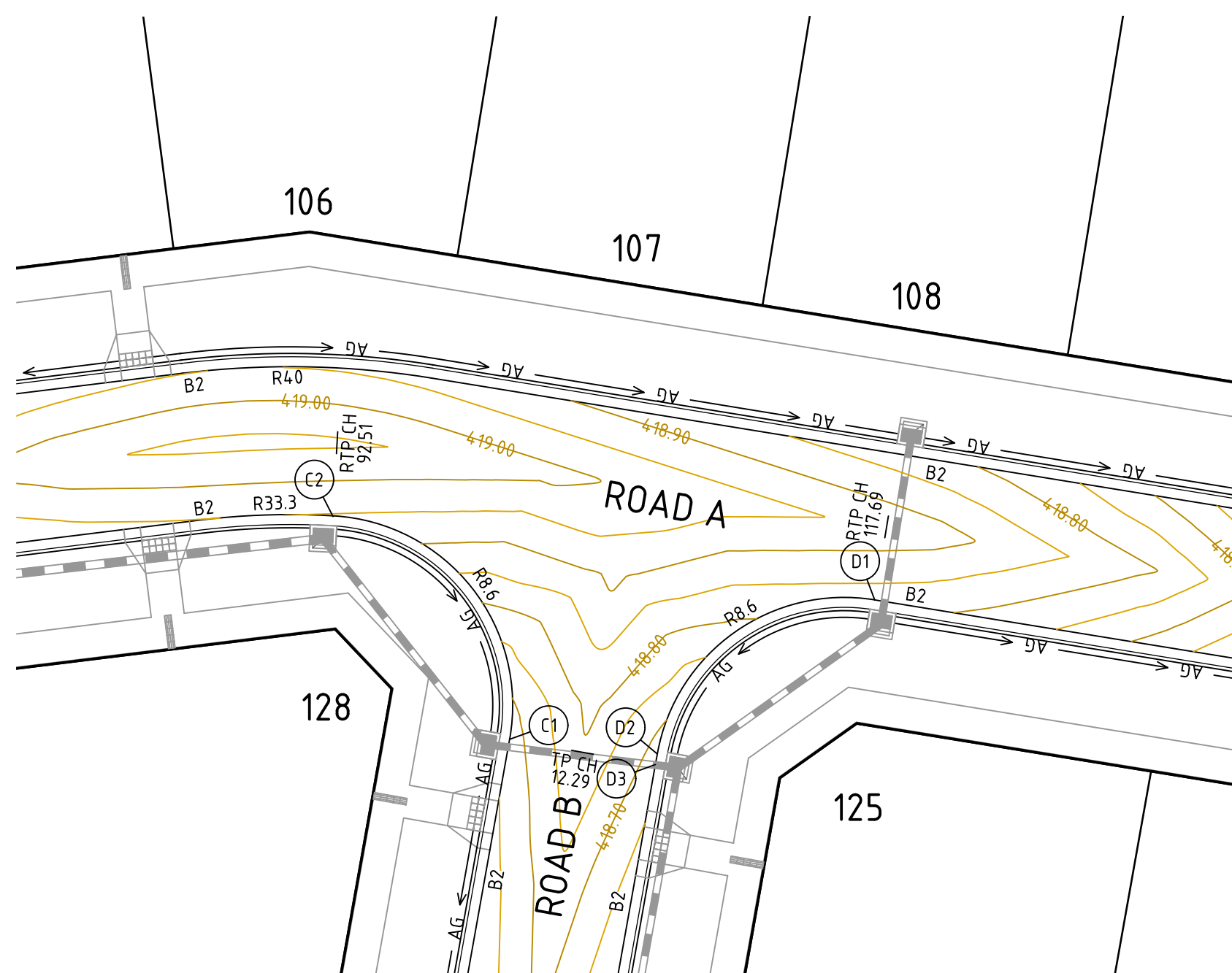
**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**ROAD CROSS SECTIONS - SHEET 5**  
 CITY OF BALLARAT  
 PENDLES NO1 PTY LTD

**PRELIMINARY** Drg No **310217CR404** Rev **A**





WEBB ROAD & ROAD A  
LIP OF KERB A AND B



ROAD A & ROAD B  
LIP OF KERB C AND D

ALIGNMENT E

POINT NO	EASTING	NORTHING	RL	CHAINAGE
E1	7484.19.094	5835038.562	417.139	0.000
E2	7484.19.449	5835038.505	417.130	0.359
¼	7484.22.771	5835038.615	417.046	3.704
½	7484.25.803	5835039.978	416.964	7.049
¾	7484.28.092	5835042.388	416.890	10.394
E3	7484.29.296	5835045.486	416.823	13.739

Curve no	l	Radius	Arc	Mid Ord	Qtr Ord	X	Y	l	Mid Ord RL
E23	-89.139	8.600	13.380	2.473	1.831	2.774	3.261	3.345	416.964

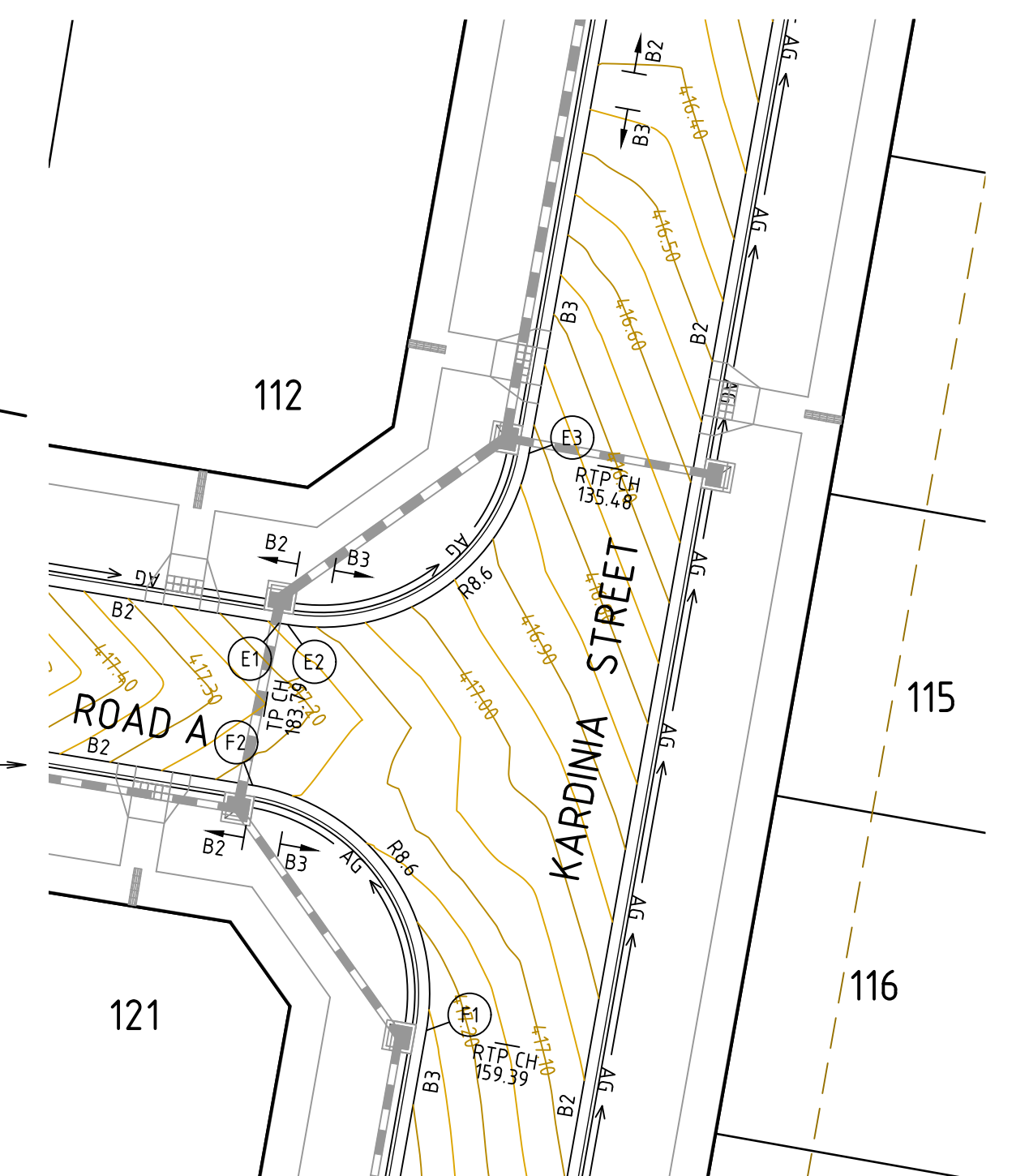
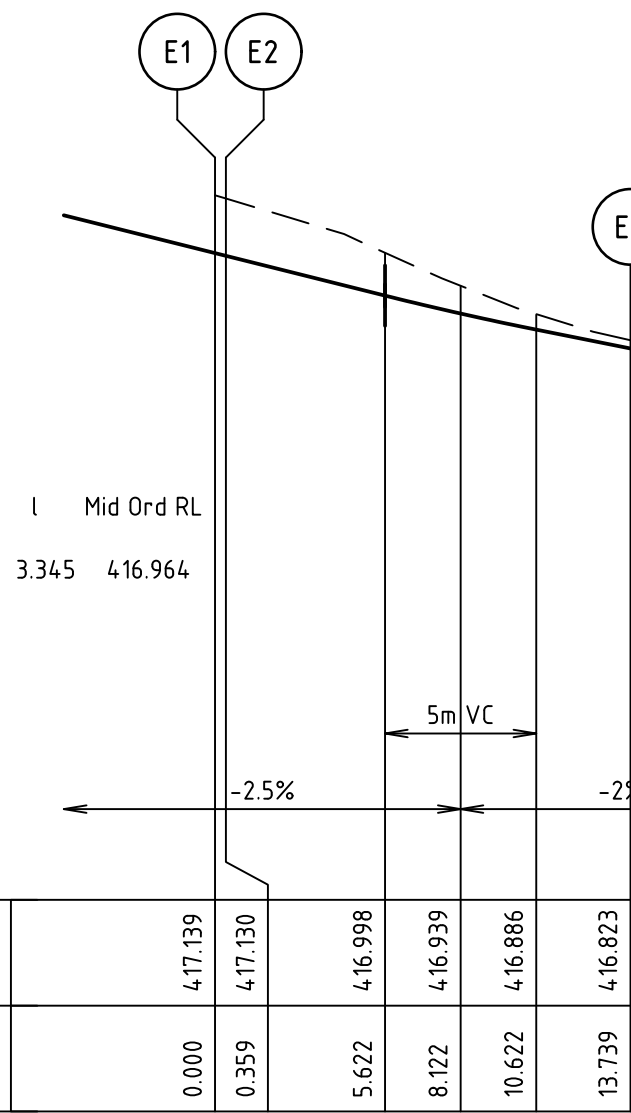
VERTICAL GEOMETRY

DESIGN GRADELINE

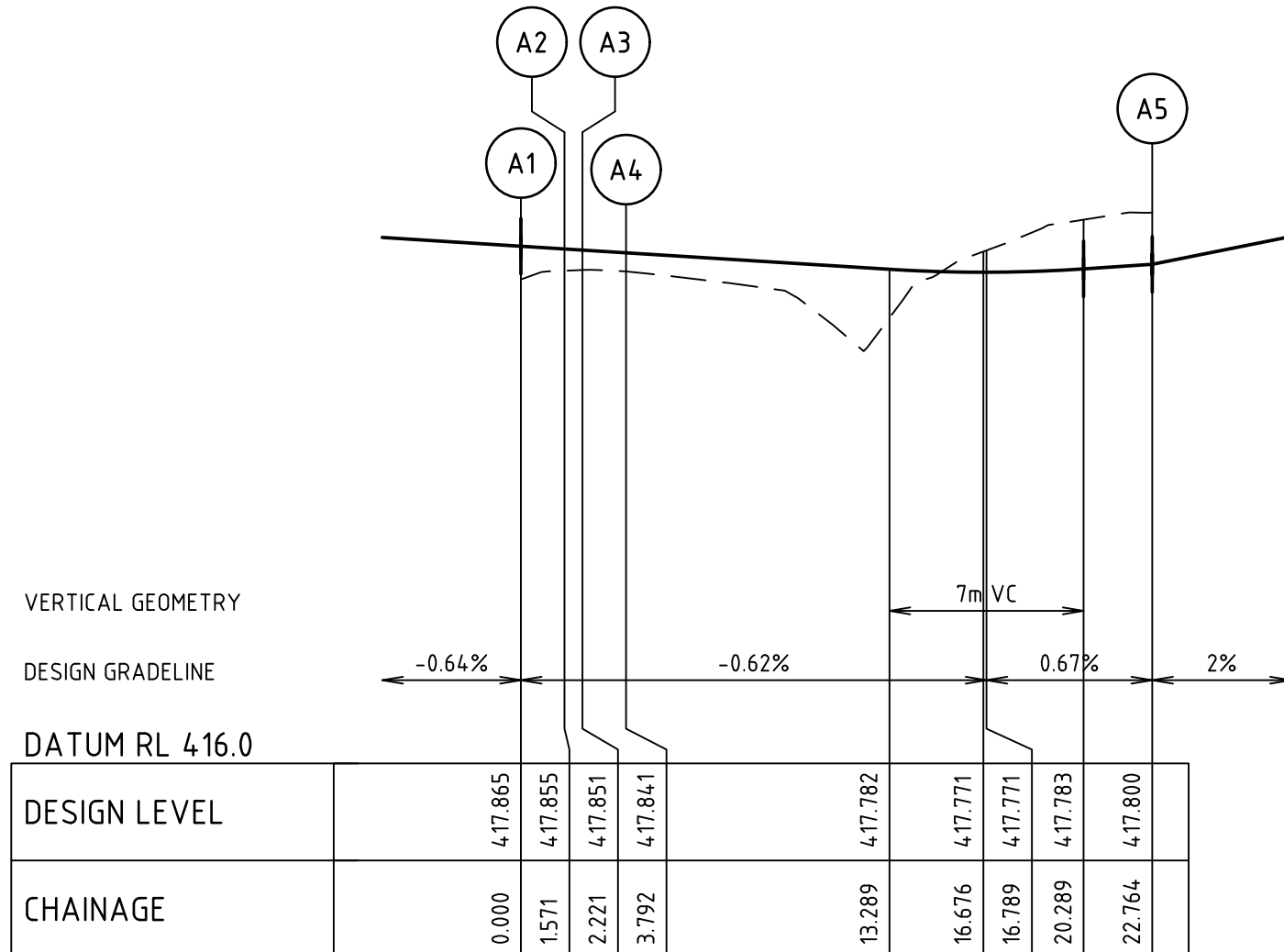
DATUM RL 415.0

DESIGN LEVEL	CHAINAGE
417.139	0.000
417.130	0.359
416.998	5.672
416.939	8.122
416.886	10.622
416.823	13.739

ALIGNMENT E



WEBB ROAD & ROAD A  
LIP OF KERB A AND B

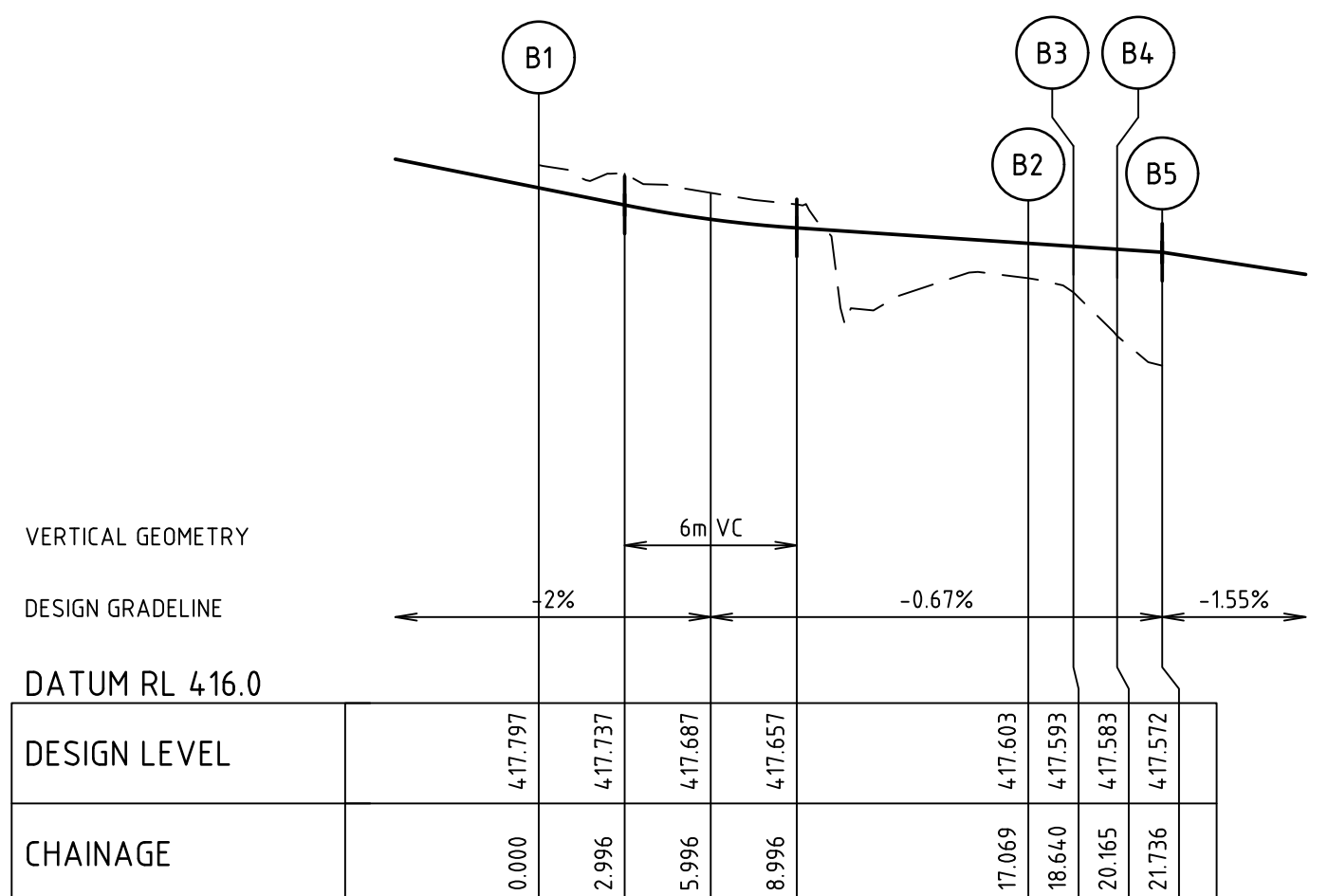


ALIGNMENT A

POINT NO	EASTING	NORTHING	RL	CHAINAGE
A1	748238.851	5835058.137	417.865	0.000
¼	748238.857	5835057.745	417.862	0.393
½	748238.786	5835057.359	417.860	0.785
¾	748238.641	5835056.995	417.857	1.178
A2	748238.428	5835056.666	417.855	1.571
A3	748238.023	5835056.157	417.851	2.221
¼	748237.810	5835055.828	417.848	2.614
½	748237.665	5835055.463	417.846	3.007
¾	748237.594	5835055.078	417.843	3.399
A4	748237.600	5835054.686	417.843	3.792
¼	748239.039	5835050.199	417.811	8.535
½	748242.095	5835046.612	417.782	13.278
¾	748246.296	5835044.477	417.773	18.021
A5	748250.995	5835044.126	417.800	22.764

Curve no	l	Radius	Arc	Mid Ord	Qtr Ord	X	Y	l	Mid Ord RL
A12	45.000	2.000	1.571	0.152	0.114	0.375	0.390	0.393	417.860
A34	-45.000	2.000	1.571	0.152	0.114	0.375	0.390	0.393	417.846
A45	-90.583	12.000	18.972	3.558	2.633	3.908	4.620	4.743	417.782

ALIGNMENT A



ALIGNMENT B

POINT NO	EASTING	NORTHING	RL	CHAINAGE
B1	748251.694	5835037.461	417.797	0.000
¼	748247.639	5835036.204	417.714	4.267
½	748244.276	5835033.614	417.661	8.535
¾	748242.025	5835030.015	417.632	12.802
B2	748241.168	5835025.857	417.603	17.069
¼	748241.197	5835025.466	417.601	17.462
½	748241.301	5835025.088	417.598	17.855
¾	748241.477	5835024.738	417.596	18.247
B3	748241.718	5835024.429	417.593	18.640
¼	748242.768	5835023.323	417.583	20.165
½	748243.009	5835023.014	417.580	20.558
¾	748243.185	5835022.663	417.578	20.951
B4	748243.290	5835022.285	417.575	21.343
B5	748243.318	5835021.894	417.572	21.736

Curve no	l	Radius	Arc	Mid Ord	Qtr Ord	X	Y	l	Mid Ord RL
B12	-81.500	12.000	17.069	2.909	2.158	3.655	4.178	4.267	417.661
B23	-45.000	2.000	1.571	0.152	0.114	0.375	0.390	0.393	417.598
B45	45.000	2.000	1.571	0.152	0.114	0.375	0.390	0.393	417.578

ALIGNMENT B

ALIGNMENT C

POINT NO	EASTING	NORTHING	RL	CHAINAGE
C1	748336.234	5835036.238	418.676	0.000
¼	748336.107	5835039.847	418.731	3.638
½	748334.509	5835043.085	418.824	7.276
¾	748331.722	5835045.382	418.910	10.914
C2	748328.239	5835046.332	418.946	14.553

Curve no	l	Radius	Arc	Mid Ord	Qtr Ord	Mid Ord RL
C12	-96.953	8.600	14.553	2.899	2.141	418.824

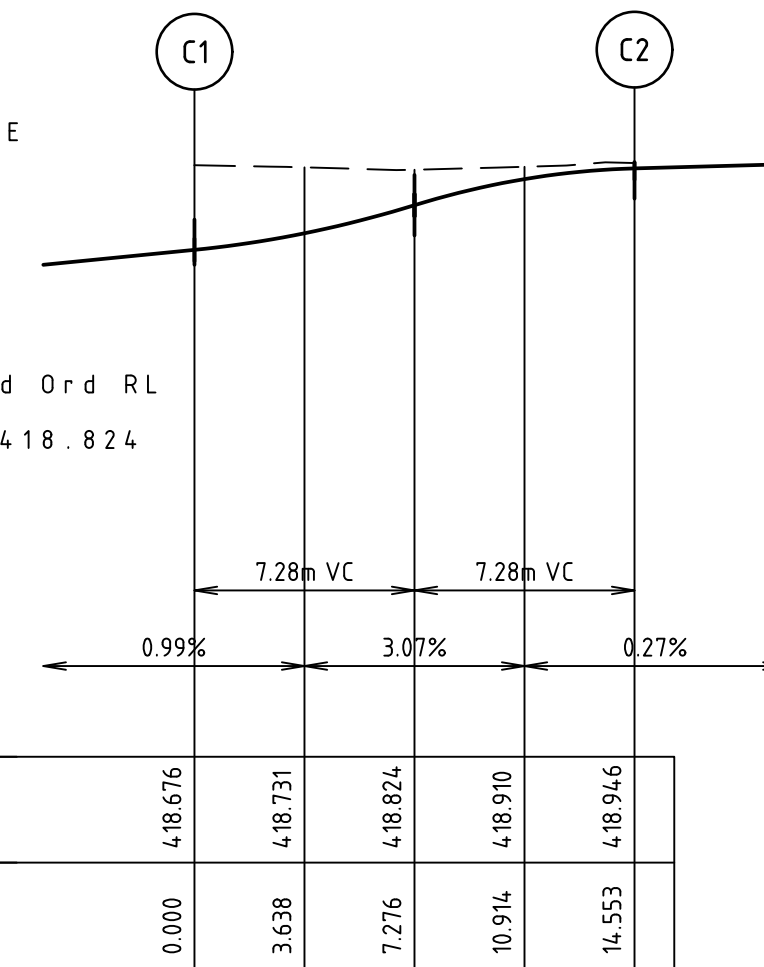
VERTICAL GEOMETRY

DESIGN GRADELINE

DATUM RL 417.0

DESIGN LEVEL	CHAINAGE
418.676	0.000
418.731	3.638
418.824	7.276
418.910	10.914
418.946	14.553

ALIGNMENT C



ALIGNMENT D

POINT NO	EASTING	NORTHING	RL	CHAINAGE
D1	748352.768	5835042.555	418.825	0.000
¼	748349.446	5835042.444	418.822	3.345
½	748346.414	5835041.082	418.781	6.690
¾	748344.125	5835038.672	418.724	10.035
D2	748342.922	5835035.573	418.681	13.380
D3	748342.836	5835035.095	418.676	13.866

Curve no	l	Radius	Arc	Mid Ord	Qtr Ord	Mid Ord RL
D12	-89.139	8.600	13.380	2.473	1.831	418.781

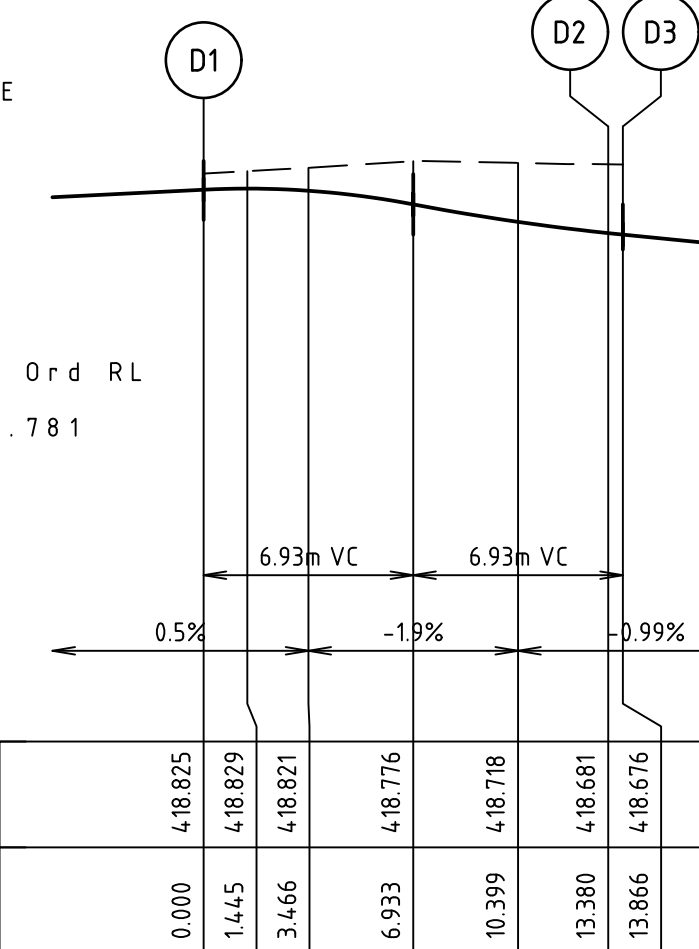
VERTICAL GEOMETRY

DESIGN GRADELINE

DATUM RL 417.0

DESIGN LEVEL	CHAINAGE
418.825	0.000
418.829	1.445
418.821	3.466
418.776	6.933
418.718	10.399
418.681	13.380
418.676	13.866

ALIGNMENT D



ALIGNMENT F

POINT NO	EASTING	NORTHING	RL	CHAINAGE
F1	748425.106	5835021.953	417.262	0.000
¼	748425.032	5835025.340	417.215	3.410
½	748423.655	5835028.435	417.168	6.819
¾	748421.190	5835030.758	417.142	10.229
F2	748418.019	5835031.949	417.167	13.638

Curve no	l	Radius	Arc	Mid Ord	Qtr Ord	X	Y	l	Mid Ord RL
F12	-90.861	8.600	13.638	2.565	1.898	2.806	3.321	3.410	417.168

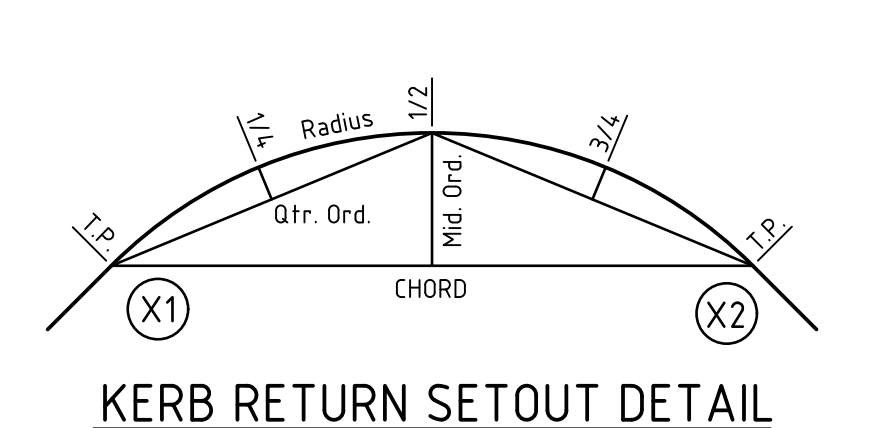
VERTICAL GEOMETRY

DESIGN GRADELINE

DATUM RL 416.0

DESIGN LEVEL	CHAINAGE
417.262	0.000
417.162	7.249
417.143	9.719
417.142	10.143
417.153	12.249
417.167	13.638

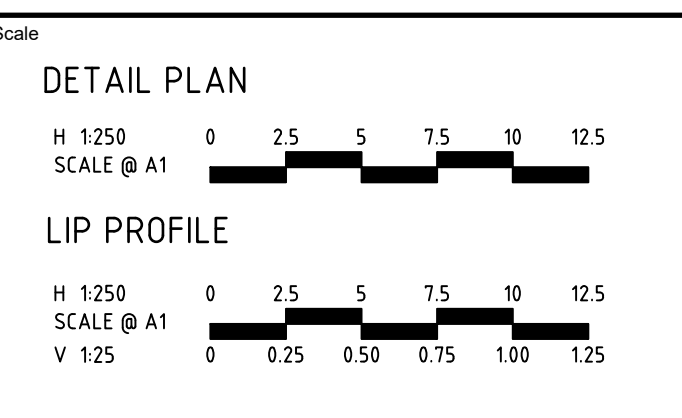
ALIGNMENT F



KERB RETURN SETOUT DETAIL

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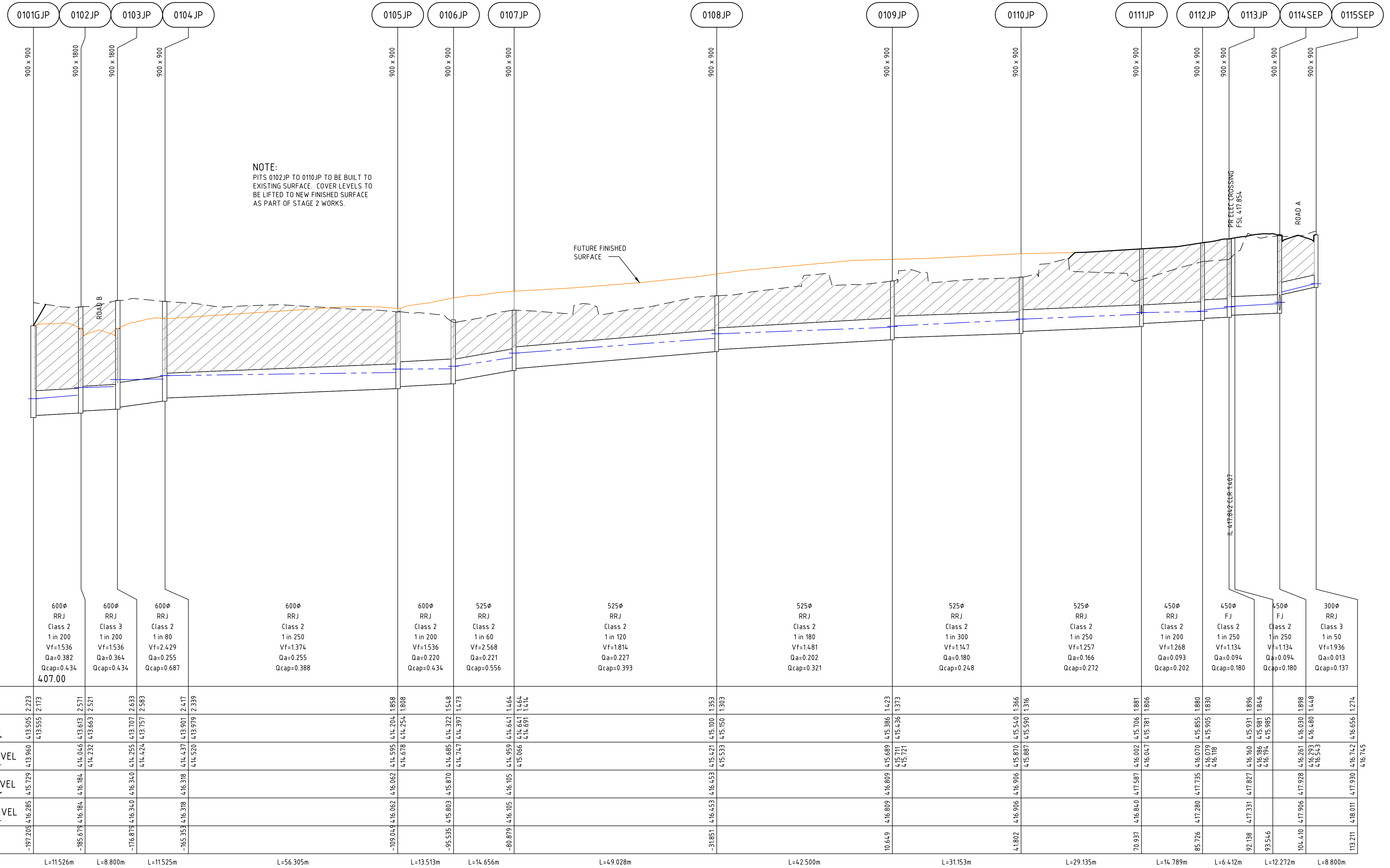
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Authorised <b>A.WILKIE</b>	Date 17/11/22

**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**INTERSECTION DETAILS - SHEET 1**  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD  
Drg No 310217CR500 Rev A





CRUSHED ROCK BACKFILL



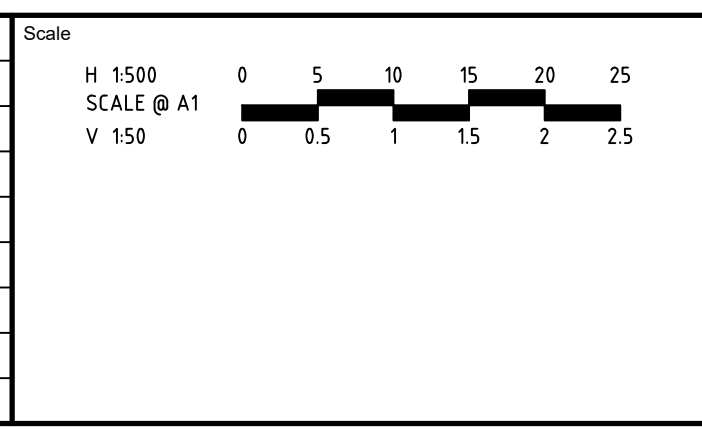
NOTE:  
PITS 0102JP TO 0110JP TO BE BUILT TO EXISTING SURFACE. COVER LEVELS TO BE LIFTED TO NEW FINISHED SURFACE AS PART OF STAGE 2 WORKS.

FUTURE FINISHED SURFACE

	0101GJP	0102JP	0103JP	0104JP	0105JP	0106JP	0107JP	0108JP	0109JP	0110JP	0111JP	0112JP	0113JP	0114SEP	0115SEP
Pipe Diameter	600Ø	600Ø	600Ø	600Ø	600Ø	600Ø	525Ø	525Ø	525Ø	525Ø	525Ø	450Ø	450Ø	450Ø	300Ø
Joint Type	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	RRJ	FJ	FJ	RRJ
Pipe Class	Class 2	Class 3	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 2	Class 3
Pipe Grade	1 in 200	1 in 200	1 in 80	1 in 250	1 in 200	1 in 200	1 in 60	1 in 120	1 in 180	1 in 300	1 in 250	1 in 200	1 in 250	1 in 250	1 in 50
Velocity (m/s)	Vf=1.536	Vf=1.536	Vf=2.429	Vf=1.374	Vf=1.536	Vf=1.536	Vf=2.568	Vf=1.814	Vf=1.481	Vf=1.147	Vf=1.257	Vf=1.268	Vf=1.134	Vf=1.134	Vf=1.936
Pipe Flow (m <sup>3</sup> /s)	Qa=0.382	Qa=0.364	Qa=0.255	Qa=0.255	Qa=0.220	Qa=0.221	Qa=0.227	Qa=0.202	Qa=0.202	Qa=0.180	Qa=0.166	Qa=0.093	Qa=0.094	Qa=0.094	Qa=0.013
Pipe Capacity (m <sup>3</sup> /s)	Qcap=0.434	Qcap=0.434	Qcap=0.687	Qcap=0.388	Qcap=0.434	Qcap=0.556	Qcap=0.393	Qcap=0.321	Qcap=0.248	Qcap=0.272	Qcap=0.202	Qcap=0.180	Qcap=0.180	Qcap=0.137	
DATUM R.L.	4.07.00														
DEPTH TO INVERT	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525
DESIGN INVERT LEVEL	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525
HYDRAULIC GRADE LEVEL	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525
FINISHED SURFACE LEVEL	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525
EXISTING SURFACE LEVEL	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525	4.13.525
CHAINAGE	-197.205	-185.679	-176.879	-165.353	-109.045	-95.535	-80.879	-31.851	10.649	41.802	70.937	85.726	92.138	93.546	104.410
	L=11.526m	L=8.800m	L=11.525m	L=56.305m	L=13.513m	L=14.656m	L=49.028m	L=42.500m	L=31.153m	L=29.135m	L=14.789m	L=6.412m	L=12.272m	L=8.800m	

file name: 310217CR600.dwg, layout name: CR600, plotted by: Stephen Wood, file location: G:\310217\310217\310217.dwg, plot date: 23/11/2022, 11:56 AM, Sheet 13 of 18 Sheets

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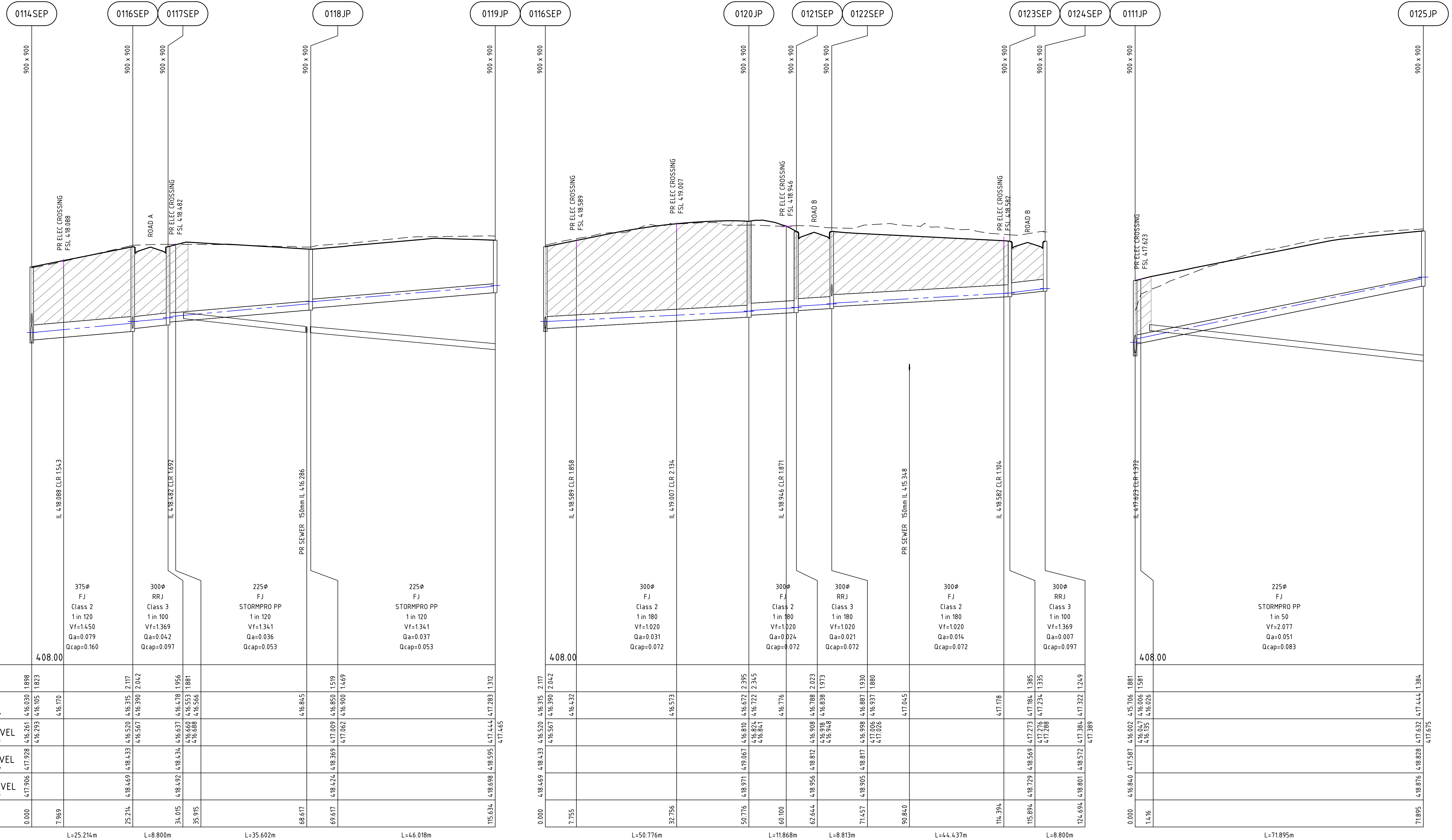
Designed S.WOOD	Checked B.IBBS
Authorised A.WILKIE	Date 17/11/22

**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**DRAINAGE LONG SECTIONS - SHEET 1**  
 CITY OF BALLARAT  
 PENDLES NO1 PTY LTD

**PRELIMINARY**    Dwg No **310217CR600**    Rev **A**



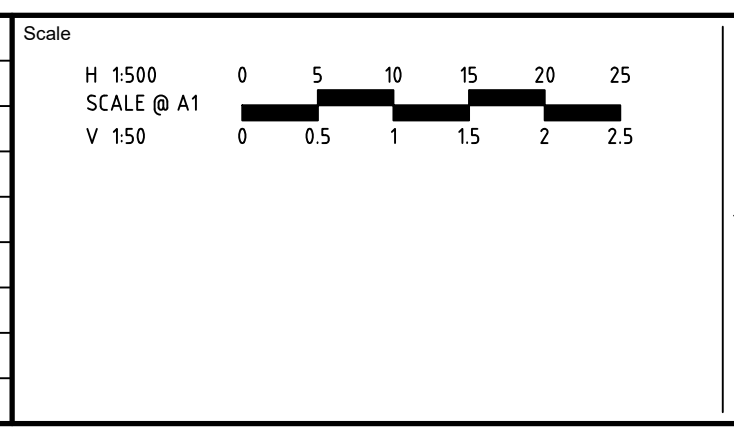
 CRUSHED ROCK BACKFILL




Section	Start Chainage	End Chainage	Length (m)	Pipe Diameter	Joint Type	Pipe Class	Pipe Grade	Velocity (m/s)	Pipe Flow (m³/s)	Pipe Capacity (m³/s)	DATUM R.L.
1	0.000	7.969	7.969	375	FJ	Class 2	1 in 120	Vf=1.450	Qa=0.079	Qcap=0.160	408.00
2	7.969	25.214	17.245	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
3	25.214	35.915	10.701	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
4	35.915	68.617	32.702	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
5	68.617	115.634	47.017	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
6	115.634	155.567	39.933	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
7	155.567	202.776	47.209	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
8	202.776	250.000	47.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
9	250.000	307.224	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
10	307.224	354.448	47.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
11	354.448	411.672	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
12	411.672	468.896	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
13	468.896	526.120	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
14	526.120	583.344	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
15	583.344	640.568	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
16	640.568	697.792	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
17	697.792	755.016	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
18	755.016	812.240	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
19	812.240	869.464	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
20	869.464	926.688	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
21	926.688	983.912	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
22	983.912	1041.136	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
23	1041.136	1098.360	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
24	1098.360	1155.584	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
25	1155.584	1212.808	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
26	1212.808	1270.032	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
27	1270.032	1327.256	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
28	1327.256	1384.480	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
29	1384.480	1441.704	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
30	1441.704	1498.928	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
31	1498.928	1556.152	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
32	1556.152	1613.376	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
33	1613.376	1670.600	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
34	1670.600	1727.824	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
35	1727.824	1785.048	57.224	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00
36	1785.048	1842.272	57.224	300	RRJ	Class 3	1 in 100	Vf=1.369	Qa=0.042	Qcap=0.097	408.00
37	1842.272	1900.000	57.728	225	FJ	STORMPRO PP	1 in 120	Vf=1.341	Qa=0.036	Qcap=0.053	408.00

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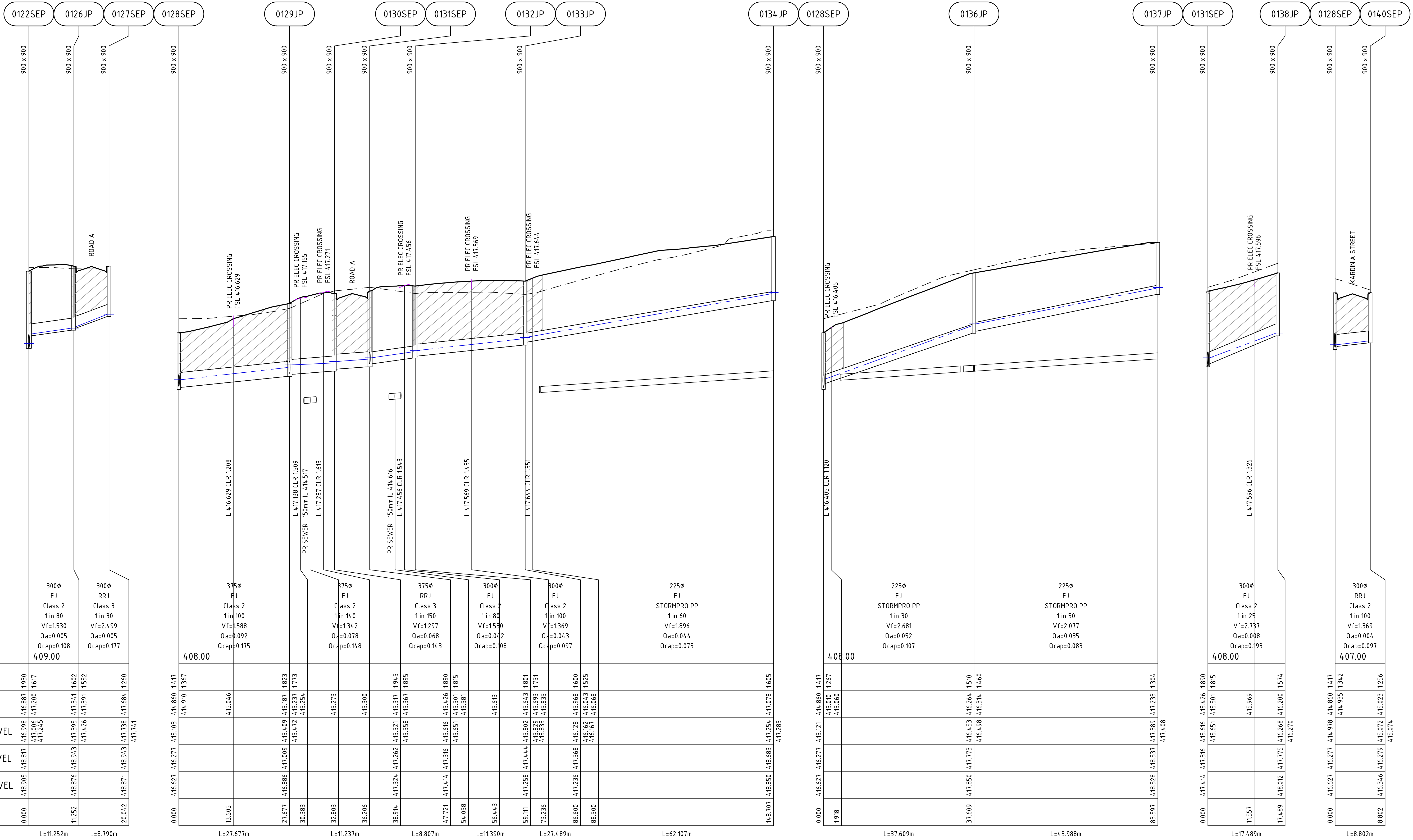
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Authorised <b>A.WILKIE</b>	Date 17/11/22

**BONSHAW RUN**
  
**STAGE 1**
  
**ROAD AND DRAINAGE**
  
**DRAINAGE LONG SECTIONS - SHEET 2**
  
 CITY OF BALLARAT
   
 PENDLES NO1 PTY LTD
   
**PRELIMINARY**

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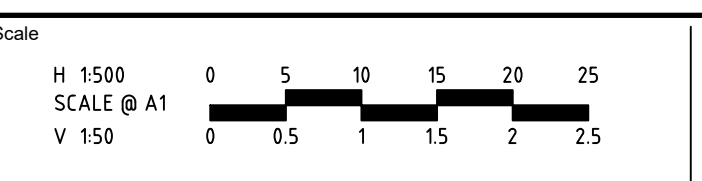


Pipe Diameter	300	300
Joint Type	FJ	RRJ
Pipe Class	Class 2	Class 3
Pipe Grade	1 in 80	1 in 30
Velocity (m/s)	Vf=1.530	Vf=2.499
Pipe Flow (m <sup>3</sup> /s)	Qa=0.005	Qa=0.005
Pipe Capacity (m <sup>3</sup> /s)	Qcap=0.108	Qcap=0.177
DATUM R.L.	409.00	

DEPTH TO INVERT	19.30	16.62
DESIGN INVERT LEVEL	417.70	417.38
HYDRAULIC GRADE LEVEL	417.24	417.31
FINISHED SURFACE LEVEL	418.87	418.94
EXISTING SURFACE LEVEL	418.95	418.94
CHAINAGE	0.000	20.042

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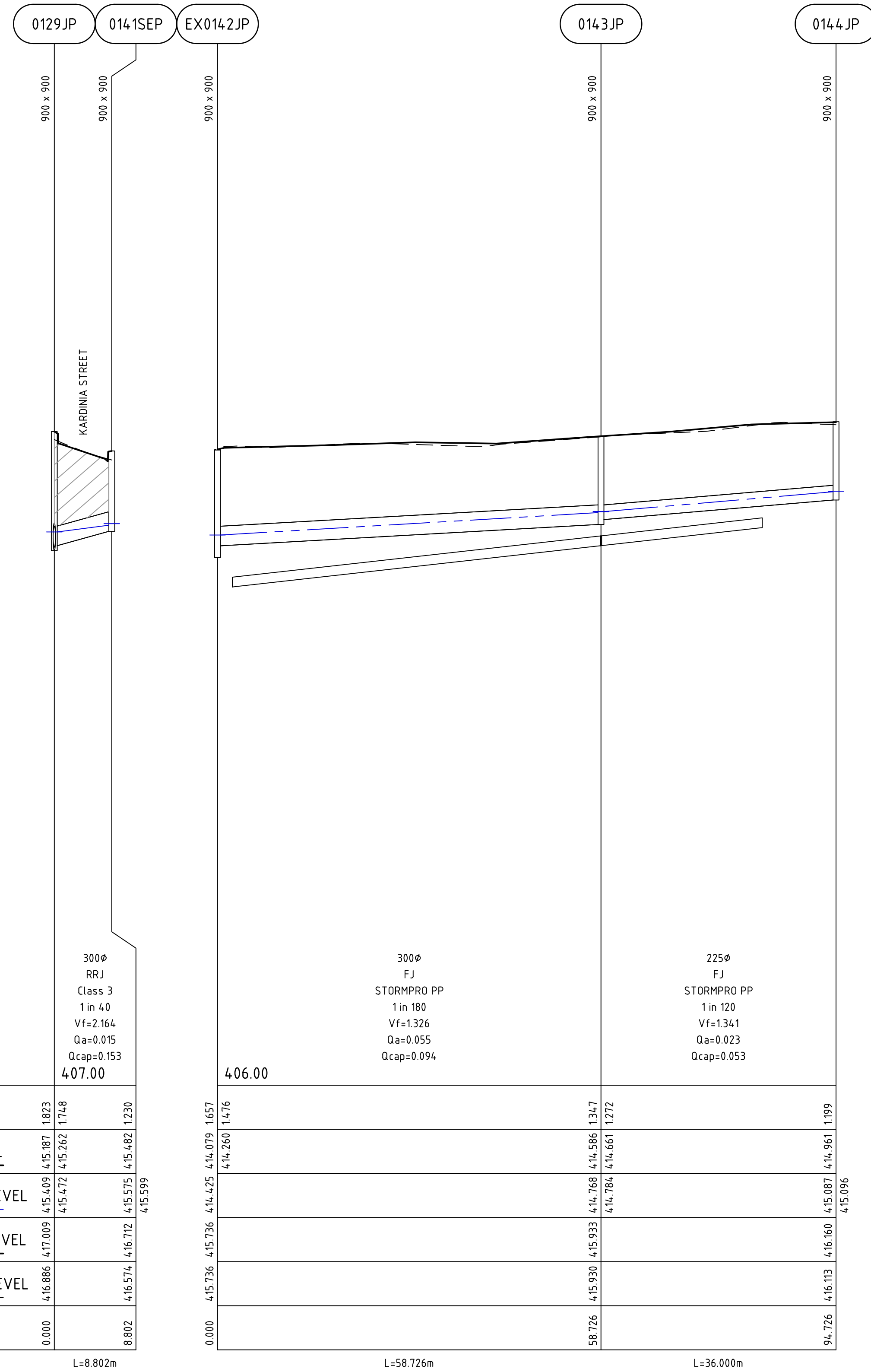
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Date  
17/11/22

**BONSHAW RUN  
STAGE 1  
ROAD AND DRAINAGE  
DRAINAGE LONG SECTIONS - SHEET 3  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD**

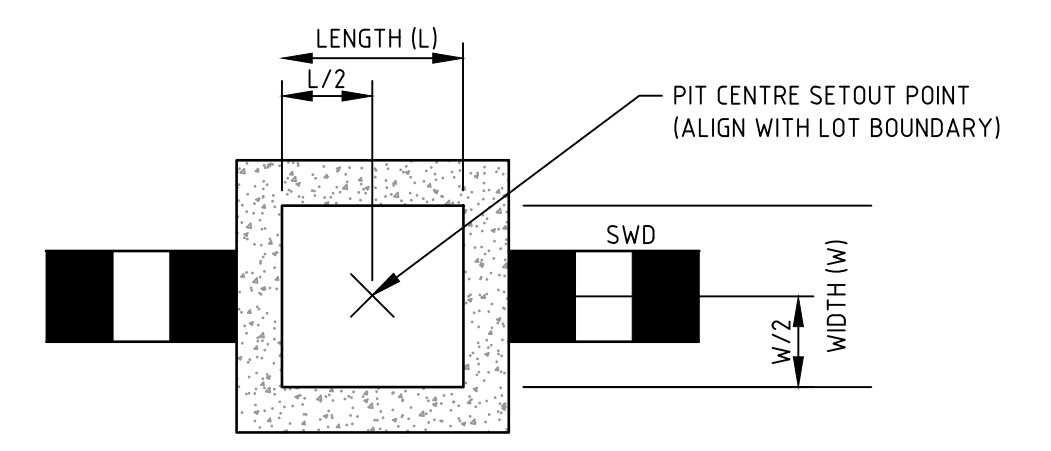
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DEPTH TO INVERT	DESIGN INVERT LEVEL	HYDRAULIC GRADE LEVEL	FINISHED SURFACE LEVEL	EXISTING SURFACE LEVEL	CHAINAGE
1823	415.187	415.472	417.009	416.886	0.000
1748	415.262	415.472	416.712	416.574	8.802
1657	414.079	414.425	415.575	416.113	406.00
1347	414.586	414.768	415.933	415.930	58.726
1272	414.661	414.784	415.987	416.113	94.726
1199	414.961	415.096	416.160	416.113	94.726

PIT NAME	TYPE	COORDINATES		INTERNAL		INLET		OUTLET		PIT		REMARKS	STEP IRON
		EASTING	NORTHING	WIDTH	LENGTH	DIA	INV LEVEL	DIA	INV LEVEL	FS LEVEL	DEPTH		
0101GJ P	GRATED JUNCTION PIT	748313.162	5834815.903	900	900	600	413.555			415.729	2.223	REFER TO COB SD-P10-2. GRATED LID TO BE ADDED (BUBBLE OUT PIT.)	X
0102JP	DOUBLE SIDE ENTRY PIT	748306.566	5834825.355	900	1800	600	413.663	600	413.613	416.184	2.571		X
0103JP	DOUBLE SIDE ENTRY PIT	748297.902	5834826.896	900	1800	600	413.757	600	413.707	416.340	2.633		X
0104JP	SIDE ENTRY PIT	748288.450	5834820.301	900	900	600	413.979	600	413.901	416.318	2.417	REFER TO COB SD-P1-2	X
0105JP	JUNCTION PIT	748233.017	5834830.169	900	900	600	414.254	600	414.204	416.062	1.858	REFER TO COB SD-P10-2	X
0106JP	JUNCTION PIT	748225.515	5834841.409	900	900	525	414.397	600	414.322	415.870	1.548	REFER TO COB SD-P10-2	X
0107JP	JUNCTION PIT	748228.794	5834855.694	900	900	525	414.691	525	414.641	416.105	1.464	REFER TO COB SD-P10-2	X
0108JP	JUNCTION PIT	748234.951	5834904.333	900	900	525	415.150	525	415.100	416.453	1.353	REFER TO COB SD-P10-2	X
0109JP	JUNCTION PIT	748239.733	5834946.564	900	900	525	415.436	525	415.386	416.809	1.423	REFER TO COB SD-P10-2	X
0110JP	JUNCTION PIT	748243.357	5834977.505	900	900	525	415.590	525	415.540	416.906	1.366	REFER TO COB SD-P10-2	X
0111JP	JUNCTION PIT	748243.979	5835006.633	900	900	450	415.781	525	415.706	417.587	1.881	REFER TO COB SD-P10-2	X
0112JP	JUNCTION PIT	748244.356	5835021.418	900	900	450	415.905	450	415.855	417.735	1.880	REFER TO COB SD-P10-2	X
0113JP	JUNCTION PIT	748243.644	5835027.790	900	900	450	415.981	450	415.931	417.827	1.896	REFER TO COB SD-P10-2	X
0114SEP	SIDE ENTRY PIT	748252.311	5835036.479	900	900	300	416.480	450	416.030	417.928	1.898	REFER TO COB SD-P1-2	X
0115SEP	SIDE ENTRY PIT	748251.313	5835045.223	900	900	375	416.105			417.930	1.274	REFER TO COB SD-P1-2	X
0116SEP	SIDE ENTRY PIT	748277.335	5835039.569	900	900	300	416.390	375	416.315	418.433	2.117	REFER TO COB SD-P1-2	X
0117SEP	SIDE ENTRY PIT	748276.345	5835048.314	900	900	225	416.553	300	416.478	418.434	1.956		
0118JP	JUNCTION PIT	748272.340	5835083.690	900	900	225	416.900	225	416.850	418.369	1.519	REFER TO COB SD-P10-2	X
0119JP	JUNCTION PIT	748318.011	5835089.330	900	900	225	417.283	225	417.283	418.595	1.312	REFER TO COB SD-P10-2	X
0120JP	JUNCTION PIT	748327.782	5835045.332	900	900	300	416.722	300	416.672	419.067	2.395	REFER TO COB SD-P10-2	X
0121SEP	SIDE ENTRY PIT	748335.127	5835036.010	900	900	300	416.838	300	416.788	418.812	2.023	REFER TO COB SD-P1-2	X
0122SEP	SIDE ENTRY PIT	748343.876	5835034.946	900	900	300	416.937	300	416.887	418.817	1.930	REFER TO COB SD-P1-2	X
0123SEP	SIDE ENTRY PIT	748336.089	5834991.197	900	900	300	417.234	300	417.184	418.569	1.385	REFER TO COB SD-P1-2	X
0124SEP	SIDE ENTRY PIT	748327.425	5834992.739	900	900			300	417.322	418.572	1.249	REFER TO COB SD-P1-2	X
0125JP	JUNCTION PIT	748315.333	5835015.445	900	900			225	417.444	418.828	1.384	REFER TO COB SD-P10-2	X
0126JP	JUNCTION PIT	748353.055	5835041.454	900	900	300	417.391	300	417.341	418.943	1.602	REFER TO COB SD-P10-2	X
0127SEP	SIDE ENTRY PIT	748354.456	5835050.132	900	900			300	417.684	418.943	1.260	REFER TO COB SD-P1-2	X
0128SEP	SIDE ENTRY PIT	748433.208	5835073.358	900	900	375	414.910			416.277	1.417	BUILD OVER EXISTING 17AEP. REFER TO COB SD-P1-2	X
0129JP	JUNCTION PIT	748428.340	5835046.112	900	900	375	415.237	375	415.187	417.009	1.823	REFER TO COB SD-P10-2	X
0130SEP	SIDE ENTRY PIT	748419.173	5835039.613	900	900	375	415.367	375	415.317	417.262	1.945	REFER TO COB SD-P1-2	X
0131SEP	SIDE ENTRY PIT	748417.407	5835030.985	900	900	300	415.501	375	415.426	417.316	1.890	REFER TO COB SD-P1-2	X
0132JP	JUNCTION PIT	748423.994	5835021.693	900	900	300	415.693	300	415.643	417.444	1.801	REFER TO COB SD-P10-2	X
0133JP	JUNCTION PIT	748419.176	5834994.630	900	900	225	416.043	300	415.968	417.568	1.600	REFER TO COB SD-P10-2	X
0134JP	JUNCTION PIT	748357.874	5835004.594	900	900			225	417.078	418.683	1.605	REFER TO COB SD-P10-2	X
0128SEP	SIDE ENTRY PIT	748433.208	5835073.358	900	900	225	415.010			416.277	1.417		
0136JP	JUNCTION PIT	748396.087	5835079.401	900	900	225	416.314	225	416.264	417.773	1.510	REFER TO COB SD-P10-2	X
0137JP	JUNCTION PIT	748350.699	5835086.801	900	900			225	417.233	418.537	1.304	REFER TO COB SD-P10-2	X
0138JP	JUNCTION PIT	748400.145	5835033.791	900	900			300	416.200	417.775	1.574	REFER TO COB SD-P10-2	X
0128SEP	SIDE ENTRY PIT	748433.208	5835073.358	900	900	300	414.935			416.277	1.417	REFER TO COB SD-P1-2	X
0140SEP	SIDE ENTRY PIT	748441.874	5835071.815	900	900			300	415.023	416.279	1.256	REFER TO COB SD-P1-2	X
0141SEP	SIDE ENTRY PIT	748437.006	5835044.570	900	900			300	415.482	416.712	1.230	REFER TO COB SD-P1-2	X
EX0142JP	JUNCTION PIT	748476.389	5835068.334	900	900	300	414.260			415.736	1.657	REFER TO COB SD-P10-2	X
0143JP	JUNCTION PIT	748466.090	5835010.518	900	900	225	414.661	300	414.586	415.938	1.352	REFER TO COB SD-P10-2	X
0144JP	JUNCTION PIT	748459.776	5834975.076	900	900			225	414.961	416.153	1.191	REFER TO COB SD-P10-2	X



TYPICAL DRAINAGE PIT SETOUT POINT 'C'  
JUNCTION PIT/ EASEMENT PIT  
NOT TO SCALE

file name: 310217CR603.dwg, layout name: CR603, plotted by: Scharon Wood, file location: \\spire\shared\310217\310217.dwg, date: 23/12/2022 11:16 AM, sheet 16 of 18 sheets

Scale	Scale	Scale
H 1500 SCALE @ A1 V 150	0 5 10 15 20 25 0 0.5 1 1.5 2 2.5	ISO 9001 ISO 14001 ISO 45001
A PRELIMINARY ISSUE	AW 18/11/22	© Spiire Australia Pty Ltd All Rights Reserved
Rev Amendments	Approved Date	This document is produced by Spiire Australia Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Spiire Australia Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

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**spiire**

115 DOVETON STREET SOUTH BALLARAT  
VICTORIA 3350 AUSTRALIA 61 3 5312 7000  
spiire.com.au ABN 55 050 029 635

Designed <b>S.WOOD</b>	Checked <b>B.IBBS</b>
Authorised <b>A.WILKIE</b>	Date 17/11/22

**BONSHAW RUN**  
**STAGE 1**  
**ROAD AND DRAINAGE**  
**DRAINAGE LONG SECTIONS - SHEET 4**  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD

**PRELIMINARY** Drg No **310217CR603** Rev **A**



**DESIGN PAVEMENT PROFILE**

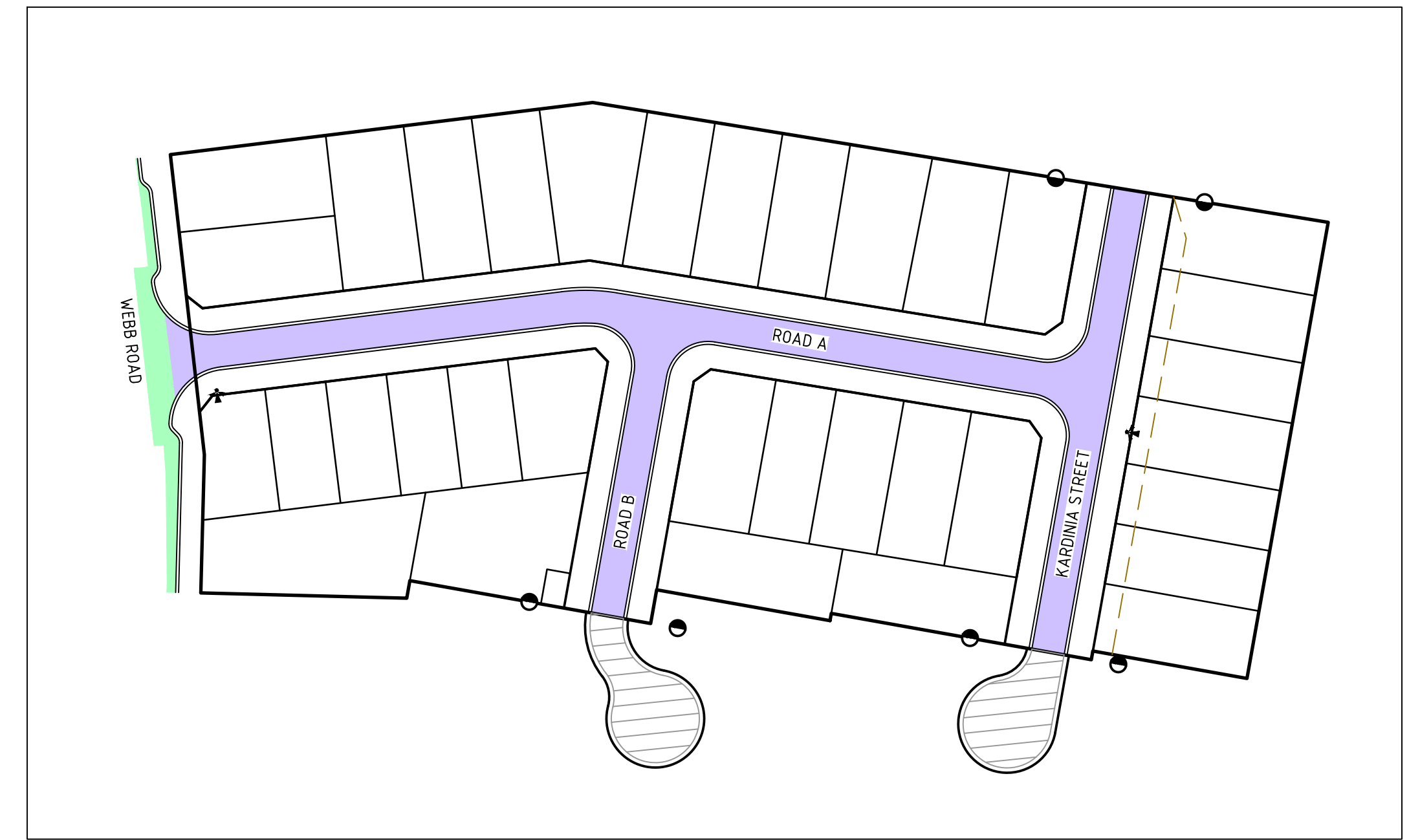
PAVEMENT LAYER	DESCRIPTION	DEPTH (mm)	
		TYPE A* (ACCESS STREET 1)	TYPE B* (ACCESS STREET 2)
ASPHALT WEARING COURSE (mm)	SIZE 14mm TYPE N ASPHALT CLASS 320 BITUMEN	35	
ASPHALT WEARING COURSE (mm)	SIZE 14mm TYPE H ASPHALT CLASS 320 BITUMEN		40
PRIMER COURSE	PRIME OR 7mm PRIMERSEAL	YES	YES
BASE COURSE (mm)	CLASS 1 or 2 20mm FCR WITH A MINIMUM CBR OF 80	165	160
SUBBASE COURSE (mm)	CLASS 3 20mm or 40mm FCR WITH A MINIMUM CBR OF 30	200	200
LOWER SUBBASE (mm)	CLASS 4 FCR WITH A MINIMUM CBR OF 15	-	210
<b>TOTAL PAVEMENT DEPTH</b>		<b>400</b>	<b>610</b>

\* REFER PAVEMENT PLAN FOR LOCATION OF PAVEMENT TYPES

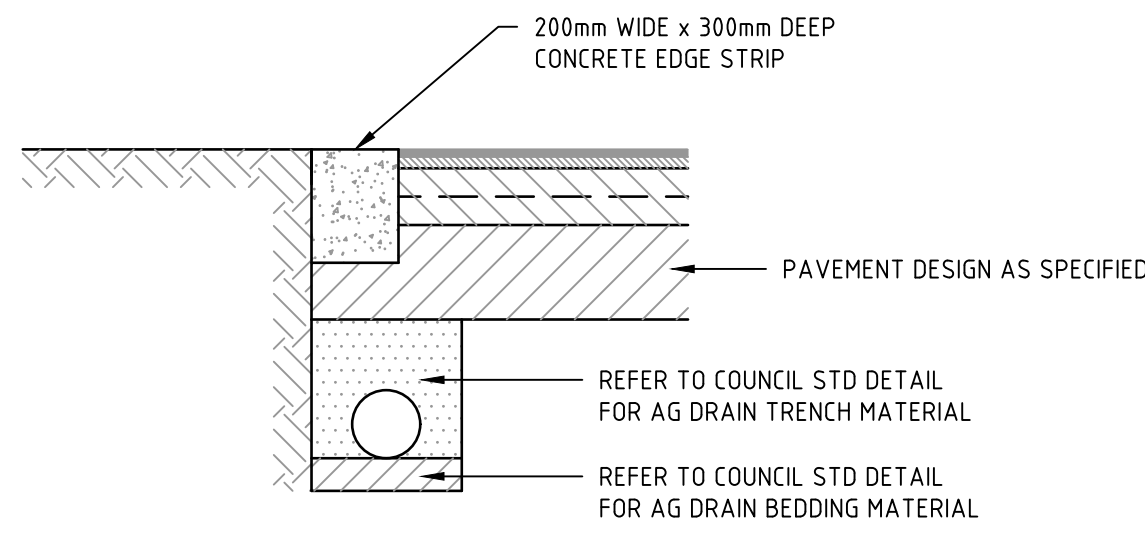
ROAD NAME	TYPE
WEBB ROAD	B
ROAD A	A
ROAD B	A
KARDINIA STREET	A

**GENERAL NOTES:**

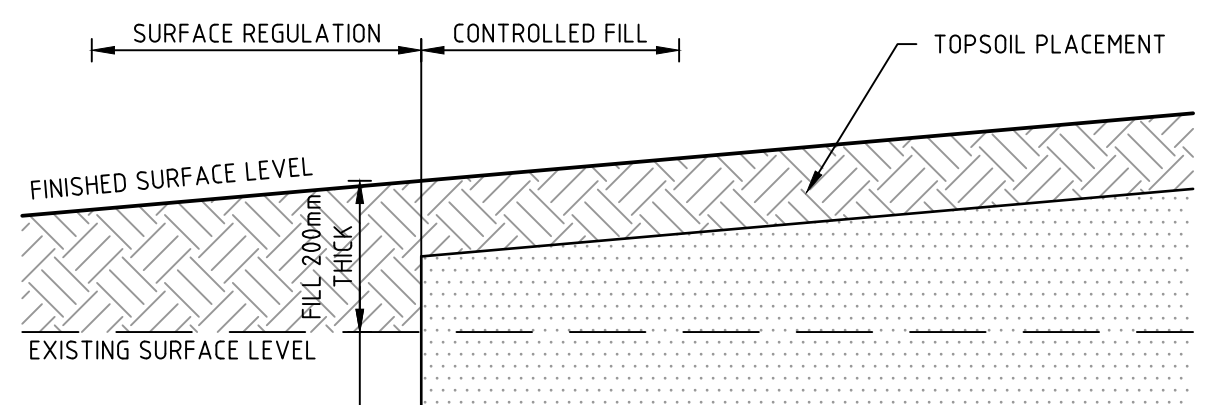
- ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS AND CCAA LITERATURE; OR VIC ROADS STANDARDS FOR NON RESIDENTIAL STREETS.
- ALL CONCRETE TO BE MINIMUM 32MP<sub>a</sub> COMPRESSIVE STRENGTH
- CONCRETE TO BE THOROUGHLY COMPACTED USING EITHER SURFACE AND/OR IMMERSION VIBRATORS, PARTICULARLY AROUND REINFORCEMENT AND IN CORNERS OF FORMS.
- PRIOR TO CASTING, THE UNBOUND GRANULAR SUBBASE MUST BE DAMP TO ENSURE NO EARLY "DRYING OUT" OF THE CONCRETE.
- CURING OF CONCRETE IS ESSENTIAL - IDEALLY BY MAINTAINING WET HESSIAN OR SEALING WITH PLASTIC SHEETING.
- SAW CUTTING OF CONCRETE SHOULD BE COMMENCED AS SOON AS CONCRETE PERMITS BY EXPERIENCED CONTRACTORS, BUT NO LATER THAN 12 HOURS AFTER POUR.
- ALL DOWELS TO BE GRADE 250R STEEL BARS, 450mm LONG AND PLACED AT 300mm CENTRES. REFER CCAA- "CONCRETE PAVEMENT DESIGN FOR RESIDENTIAL STREETS" FOR DOWEL DIAMETERS. DOWELS MUST BE ACCURATELY PLACED TO ENSURE THE JOINT DOES NOT "LOCK". INSERTION OF DOWELS DURING THE PLACING OF CONCRETE IS NOT ACCEPTABLE. DOWELS MUST BE SAWN AND NOT CROPPED.
- ALL JOINTS TO BE APPROPRIATELY SEALED TO RESIST THE INTRUSION OF SAND AND GRAVEL AND TO MINIMISE THE INGRESS OF WATER.



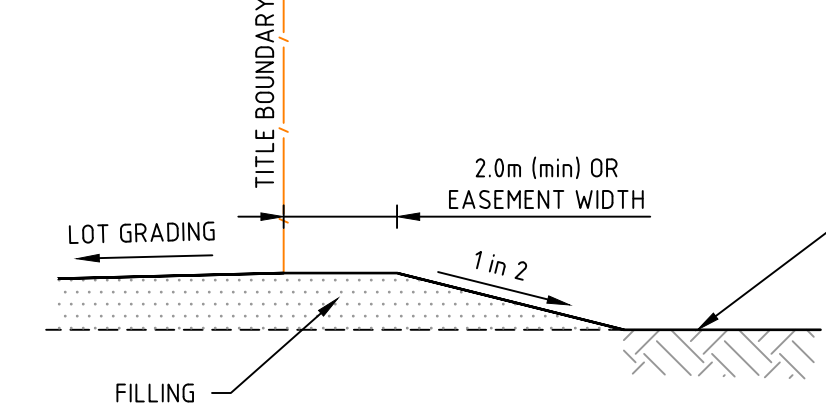
**PAVEMENT PLAN**



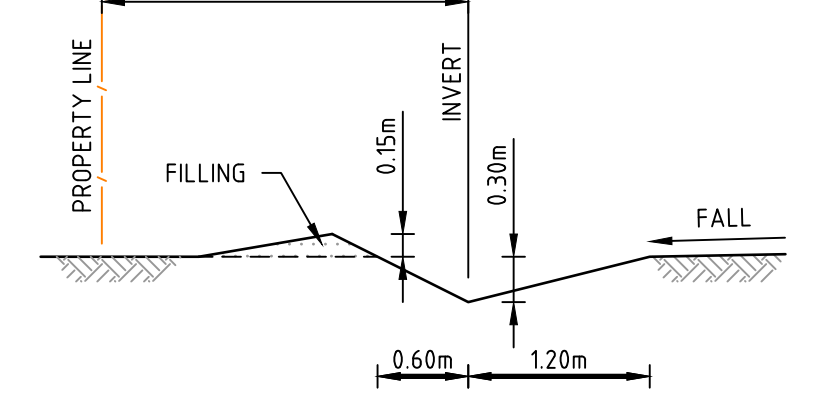
**LIMIT OF WORKS CONCRETE EDGE STRIP & PAVEMENT INTERFACE DETAIL**



**LOT REGRADING DETAIL**

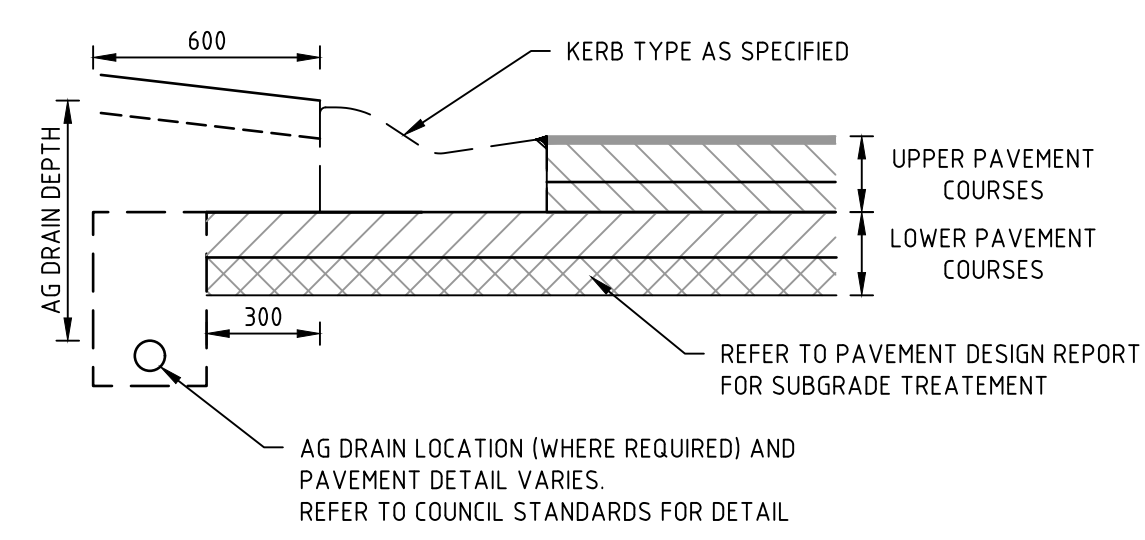


**LOT FILLING AT STAGE BOUNDARY**

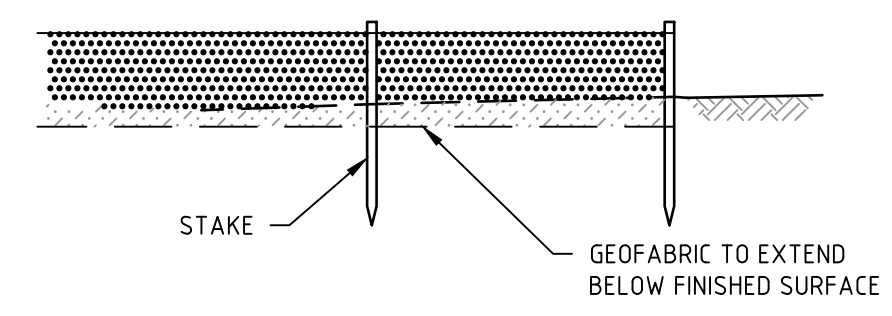


**TYPICAL CATCH DRAIN SECTION**

NOT TO SCALE

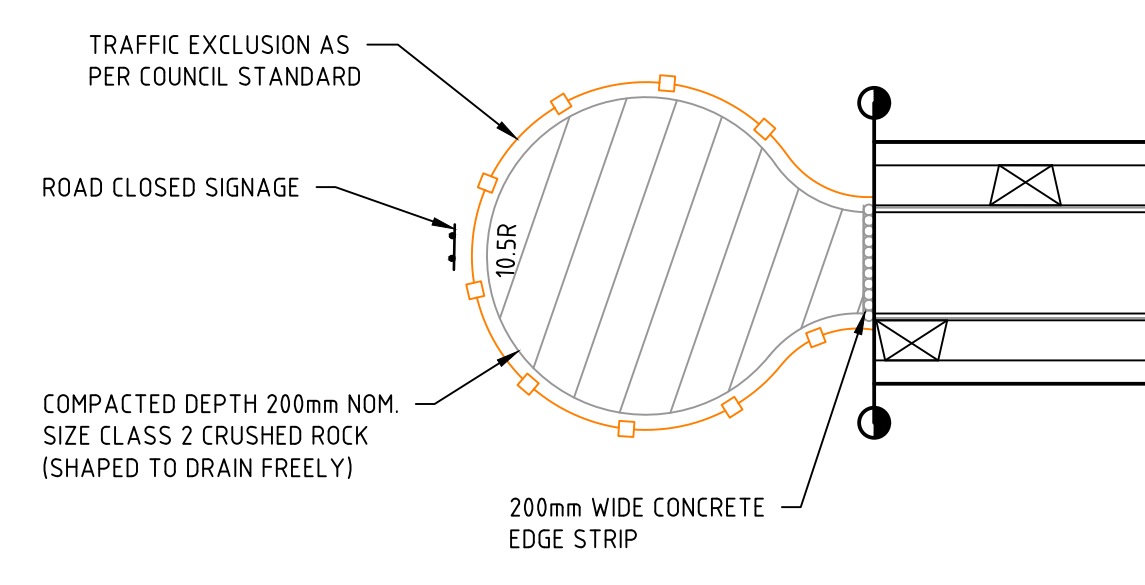


**TYPICAL SUBSURFACE DRAIN DETAIL FOR NON-EXPANSIVE SUBGRADE**  
REFER TO AUTHORITY REQUIREMENTS FOR SPECIFIC DETAILS

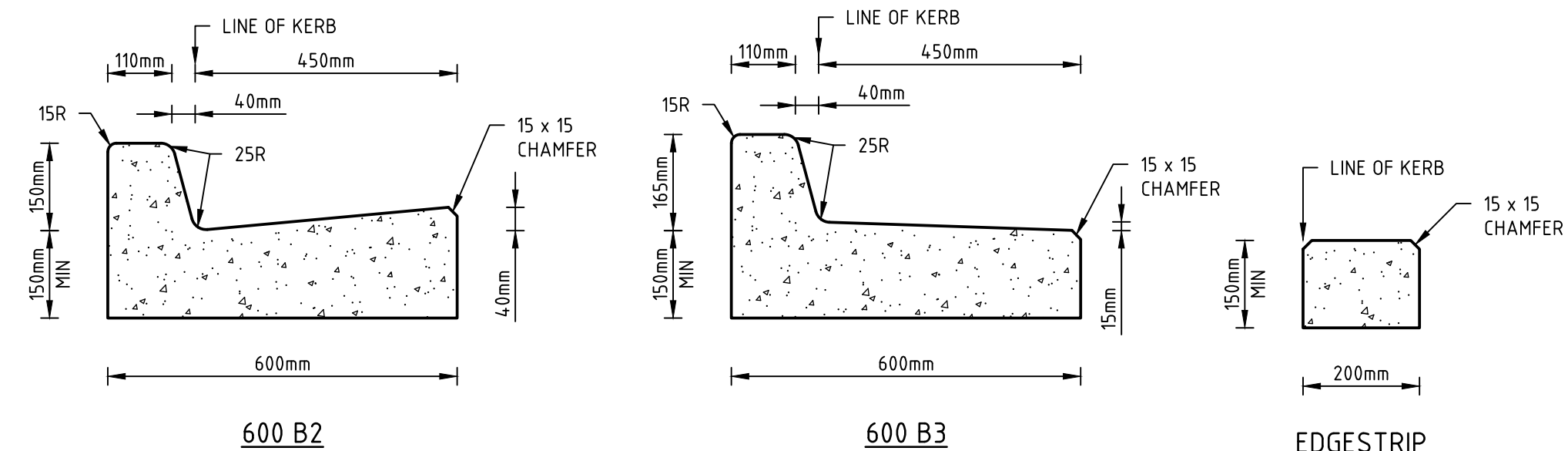


**SILT CONTROL FOR LOTS**  
GEOFABRIC SILT FENCE

NOT TO SCALE



**TEMPORARY TURNING AREA DETAIL**



**STANDARD KERB PROFILES**

NOTE: ALL KERB & CHANNEL AS PER GAA STD DRAWING EDCM 301



**PAVEMENT DETAILS**

THE PAVEMENT DESIGNS SHOWN HERE HAVE BEEN DESIGNED/PROVIDED BY GTS WHO ARE RESPONSIBLE FOR THE GEOTECHNICAL WORK ON THIS PROJECT. SPIIRE IS NOT RESPONSIBLE FOR THE WORK OF GTS.

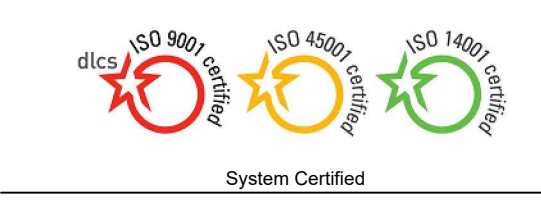
THE DESIGN HAS BEEN EXTRACTED FROM THE GTS REPORT ON "99-133 WEBB ROAD BONSHAW"  
THIS DOCUMENT SHOULD BE REVIEWED TO ENSURE THAT THE DESIGN HAS BEEN ACCURATELY REPRODUCED.

A COPY OF THE DOCUMENT WILL BE PROVIDED TO YOU ON REQUEST.

SPIIRE DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY, ADEQUACY OR APPROPRIATENESS OF THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS.  
ANY QUERIES IN RESPECT TO THE GEOTECHNICAL WORK AND PAVEMENT DESIGNS SHOULD BE ADDRESSED TO GTS AND SENT TO SPIIRE.

file name: 310217CR700.dwg, layout name: G5700, plotted by: Sherran Wood, file location: G:\310217\310217.dwg, plot date: 23/11/2022, 11:17 AM, Sheet 17 of 18 Sheets

Rev	Description	AW	Date
A	PRELIMINARY ISSUE	AW	18/11/22
Rev	Amendments	Approved	Date



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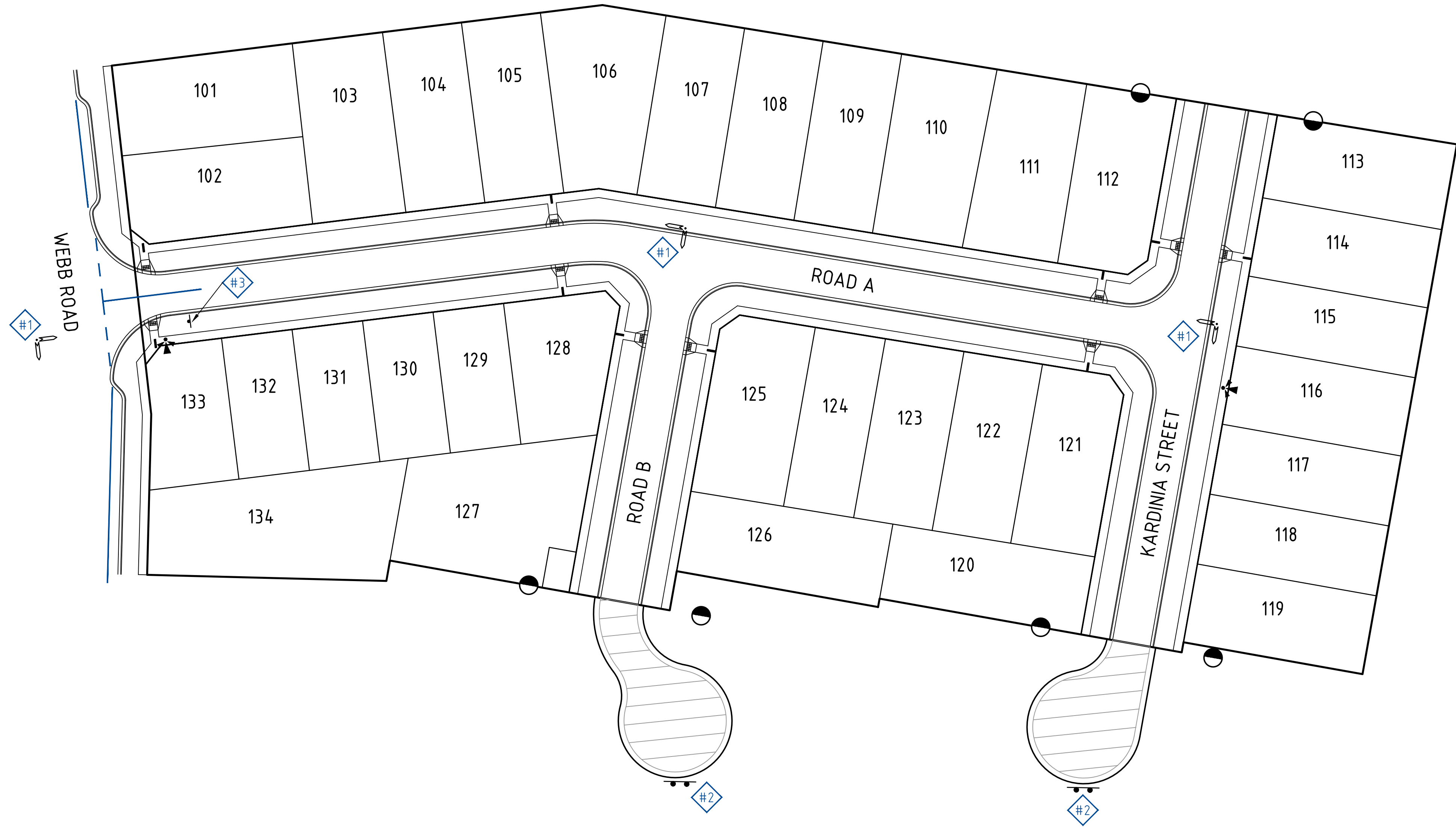
Designed  
S.WOOD  
Authorised  
A.WILKIE

Checked  
B.IBBS  
Date  
17/11/22

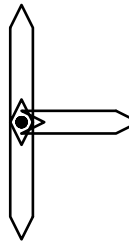
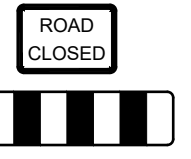


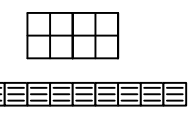
**BONSHAW RUN  
STAGE 1  
ROAD AND DRAINAGE  
PAVEMENT AND TYPICAL DETAILS - SHEET 1**  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD

**PRELIMINARY** Drg No **310217CR700** Rev **A**





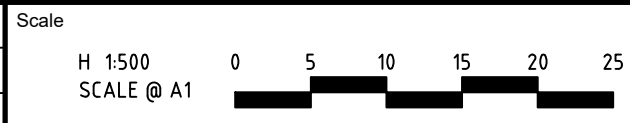
**LEGEND**

- #1  STREET NAME PLATES TO BE IN ACCORDANCE WITH CITY OF BALLARAT STANDARDS, INCLUDING "NO THROUGH ROAD" NOMINATION WHERE APPLICABLE
- #2  G9-20  
 D4-5
- #3  R1-2
-  TACTILE GROUND SURFACE INDICATORS (TGSI's)

**NOTE:**

1. STREET SIGNS ARE TO BE MOUNTED ON LIGHT POLES, WITH A COUNCIL APPROVED BRACKET, IN LIEU OF SIGN POLES WHERE THE TWO POLES ARE IN CLOSE PROXIMITY AND WHERE THE STREET SIGN WOULD NOT BE COMPROMISED IN ITS PURPOSE BY THE RELOCATION.
2. LINEMARKING TO BE IN ACCORDANCE WITH AS1742.2 - 2009

file name: 310217CR800.dwg, layout name: CR800, plotted by: Stephen Wood, file location: G:\310217\310217\310217\310217\310217.dwg, plot date: 23/11/2022, 10:17 AM, Sheet 18 of 18 Sheets



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115 DOVETON STREET SOUTH BALLARAT  
VICTORIA 3350 AUSTRALIA 61 3 5312 7000  
spiire.com.au ABN 55 050 029 635

Designed  
S.WOOD  
Authorised  
A.WILKIE

Checked  
B.IBBS  
Date  
17/11/22

**BONSHAW RUN  
STAGE 1  
ROAD AND DRAINAGE  
SIGNAGE AND LINEMARKING - SHEET 1**  
CITY OF BALLARAT  
PENDLES NO1 PTY LTD

**PRELIMINARY** Dwg No **310217CR800** Rev **A**

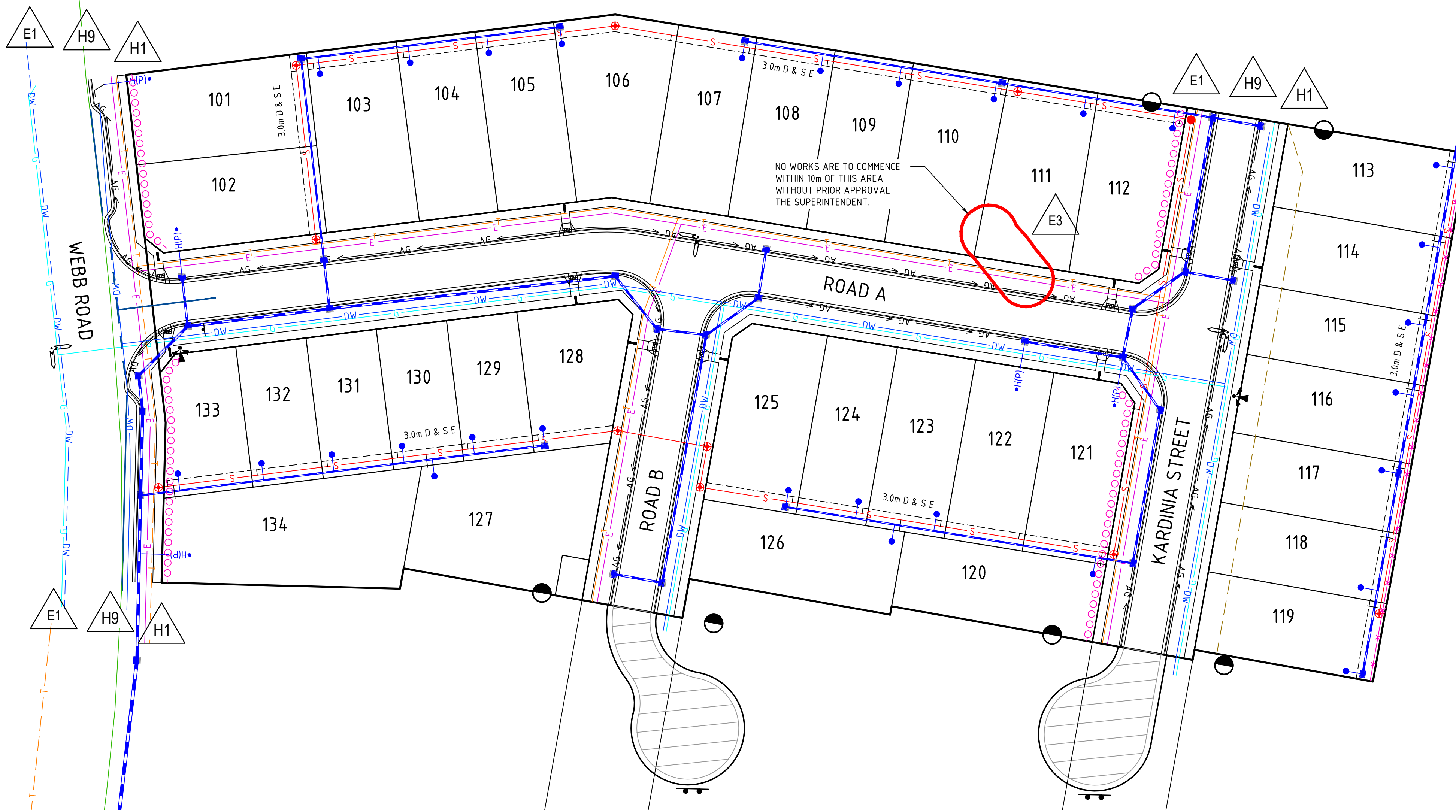
Rev	Description	Approved	Date
A	PRELIMINARY ISSUE	AW	18/11/22





ENVIRONMENTAL PROTECTION

E1 TRAFFIC AND SITE ACCESS ✓	E2 ENVIRONMENTAL AUDIT AREAS (CONTAMINATION) ✗	E3 ARCHAEOLOGICAL / HERITAGE ✓	E4 FLORA AND FAUNA ✓
E5 MANAGEMENT OF IMPORTED AND EXPORTED SOIL ✓	E6 DUST, NOISE AND ODOUR CONTROL ✓	E7 ASSESSMENT AND MANAGEMENT OF POTENTIALLY CONTAMINATED SOIL ✗	E8 STOCKPILING OF SOIL ✓
E9 EROSION AND SEDIMENT CONTROL ✓	E10 STORMWATER MANAGEMENT ✓	E11 SOLID WASTE MANAGEMENT ✗	E12 PLACEMENT OF TEMPORARY INFRASTRUCTURE ✓
CONTROL PUMPOUT POINT ★ CONTRACTOR TO MARK LOCATION OF SEDIMENT CONTROL POINTS ON PLAN FOR APPROVAL ALSO INDICATING METHOD	E13 HAZARDOUS CHEMICAL STORAGE AND HANDLING ✓ CONTRACTOR TO MARK LOCATION ON PLAN FOR APPROVAL	E14 BLASTING / VIBRATION CONTROL ✗	



**LEGEND**

□ SITE COMPOUND LOCATION OF SITE COMPOUND

✗✗✗ SILT FENCE

○○○○○○○ SILT SOCK (IF REQUIRED)

**WARNING**

**BEWARE OF UNDERGROUND SERVICES**  
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**BEWARE OF OVERHEAD ELECTRICITY**  
CONTRACTOR TO EXERCISE EXTREME CARE WHEN WORKING UNDER OVERHEAD ELECTRICITY. CONTACT POWERCOR FOR SAFETY GUIDELINES FOR WORKING UNDER POWERLINES

GENERAL NOTES

- REFER TO SPECIFICATION FOR DETAIL ON SPECIFIC CLAUSES.
- THE PURPOSE OF THIS PLAN & RELATED SPECIFICATION IS TO IDENTIFY ENVIRONMENTAL AND HEALTH AND SAFETY ISSUES THAT MUST BE CONSIDERED. THE CONTRACTOR SHALL USE THIS PLAN AND RELATED SPECIFICATIONS TO GENERATE THEIR OWN ENVIRONMENTAL MANAGEMENT AND HEALTH AND SAFETY PLAN TO IMPLEMENT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- EXISTING FENCINGS ARE SHOWN ON THE ENGINEERING DRAWINGS. UNLESS SPECIFIED FOR DEMOLITION THE CONTRACTOR SHALL NOT REMOVE OR RELOCATE THE FENCING UNLESS PRIOR WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE SUPERINTENDENT.
- THE CONTRACTOR IS TO PROVIDE SEDIMENT FENCE TO CONTROL SILT FOR ALL STORMWATER RUNOFF FROM THE SITE.
- SITE SECURITY IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY ADDITIONAL FENCING REQUIRED FOR THIS PURPOSE IS TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. SECURITY FENCING IS NOT SHOWN ON THIS PLAN.
- KEY ENVIRONMENTAL CONSIDERATIONS SURROUNDING THE SITE OF WORKS ARE MARKED AT TYPICAL LOCATIONS AND THEREFORE SHOULD NOT BE LIMITED TO THOSE AS NOTED. SIMILAR ENVIRONMENTAL TREATMENTS AND PRECAUTIONS SHOULD BE TAKEN FOR ALL POINTS AS MARKED.
- TREES TO BE REMOVED SHALL BE CLEARLY MARKED BY THE SUPERINTENDENT WITH BRIGHT VISIBLE TAPE.
- FOR FURTHER CLARIFICATIONS ON THE CULTURAL AND ARCHAEOLOGICAL SIGNIFICANCE AND PRESERVATIONS WITHIN THE SITE REFER TO THE 'ARCHAEOLOGICAL CONSULTING SERVICES' REPORT, JUNE 2004.

HEALTH AND SAFETY PROTECTION

H1 EXISTING UNDERGROUND SERVICES ✓ CONTRACTOR TO CONDUCT 'MOCS' INQUIRY AND NOTIFY ALL AUTHORITIES TO LOCATE EXISTING SERVICES.	H2 RESPONSIBILITIES ✓ CONTRACTOR TO FORWARD DETAILS OF THE NOMINATED OH&S REPRESENTATIVE.
H3 BLASTING ✗	H4 SITE ACCESS RESTRICTED AREAS ✗
H5 DUST CONTROL & NOISE CONTROL ✓	H6 SITE INDUCTIONS ✓ CONTRACTOR TO ENSURE THAT ALL SUBCONTRACTORS ARE AWARE OF THE REQUIREMENTS SETOUT IN THE EMP.
H7 MANAGEMENT OF CONTAMINATED SOIL / GROUNDWATER / SURFACE WATER ✗	H8 SIGNAGE ✓
H9 TRAFFIC MANAGEMENT ✓	H10 ACCIDENTAL DISTURBANCE OR CONTACT ✗
H11 EMERGENCY PROCEDURES ✓	H12 ACCIDENT REPORTING ✓
H13 OPERATING PLANT / MACHINERY ✓	H14 EXCAVATIONS, CONFINED SPACES & VOIDS ✓

file name: 310217CE000.dwg; layout name: EMB1; plotted by: Shannon Wood; file location: G:\310217\310217\310217\310217.dwg; plot date: 23/11/22; 2:11:17 AM; Sheet # of # Sheets

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Scale

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16 BRIDGE STREET BENDIGO  
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Designed S.WOOD	Checked B.IBBS
Authorised A.WILKIE	Date 18/11/22

**BONSHAW'S RUN  
STAGE 1**

**ENVIRONMENTAL MANAGEMENT PLAN - SHEET 1**  
BALLARAT CITY COUNCIL  
PENDLES NO1 PTY LTD

**PRELIMINARY** Drg No **310217CE001** Rev **A**



**Erosion & Sediment Control**

### Sediment Fence

U-shaped with posts at 1 m centres and a 300 mm (min) high spill-through weir with crest level below the upper ground level

**Erosion & Sediment Control**

### Stockpiles

A sediment fence should be located down-slope of stockpiles

**Erosion & Sediment Control**

### Fence Installation

Constructing a sediment trench up-slope of the fence can also extend the maintenance period

Sediment storage trench 1 m<sup>3</sup> volume per 200 m<sup>2</sup> of catchment area

**Erosion & Sediment Control**

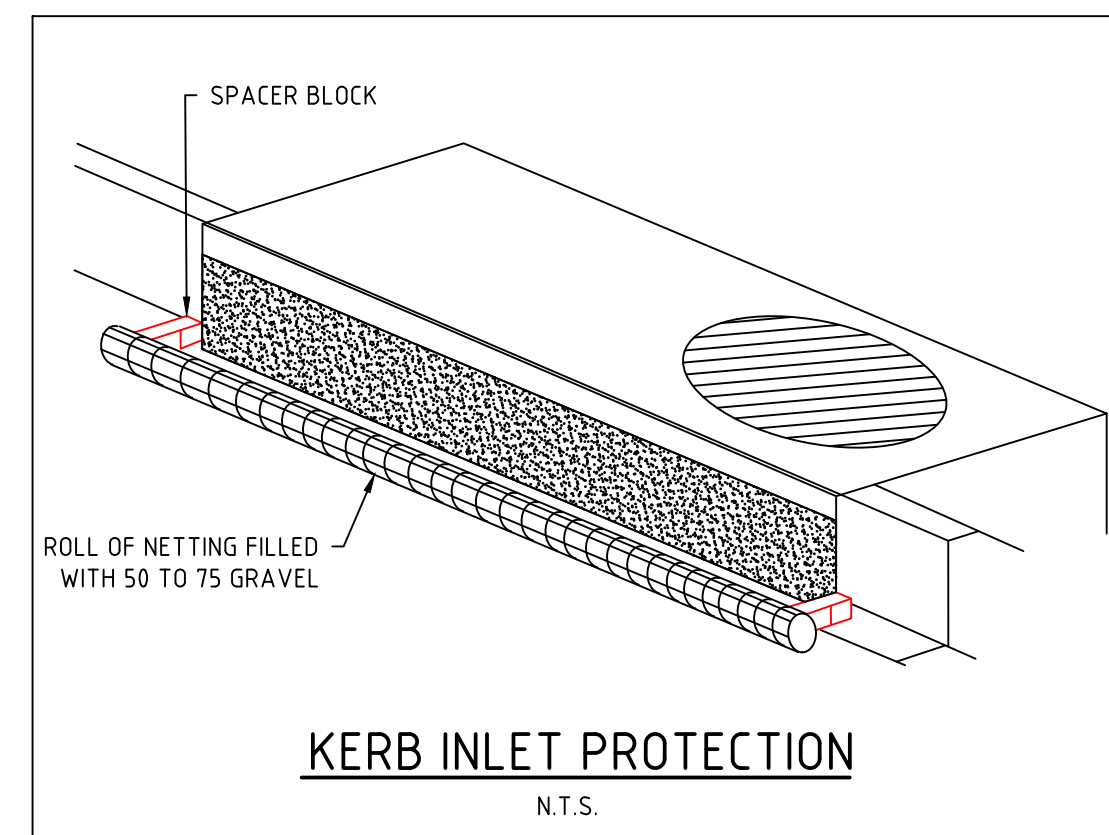
### Sediment Fence

A sediment fence is effectively a porous dam that aims to temporarily pond up-slope water allowing settlement

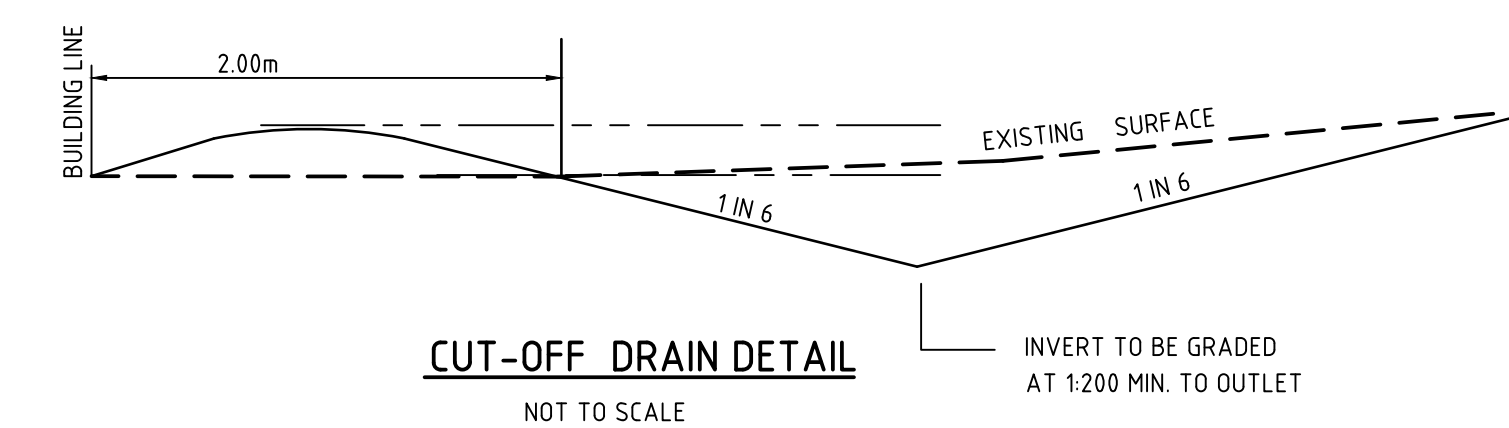
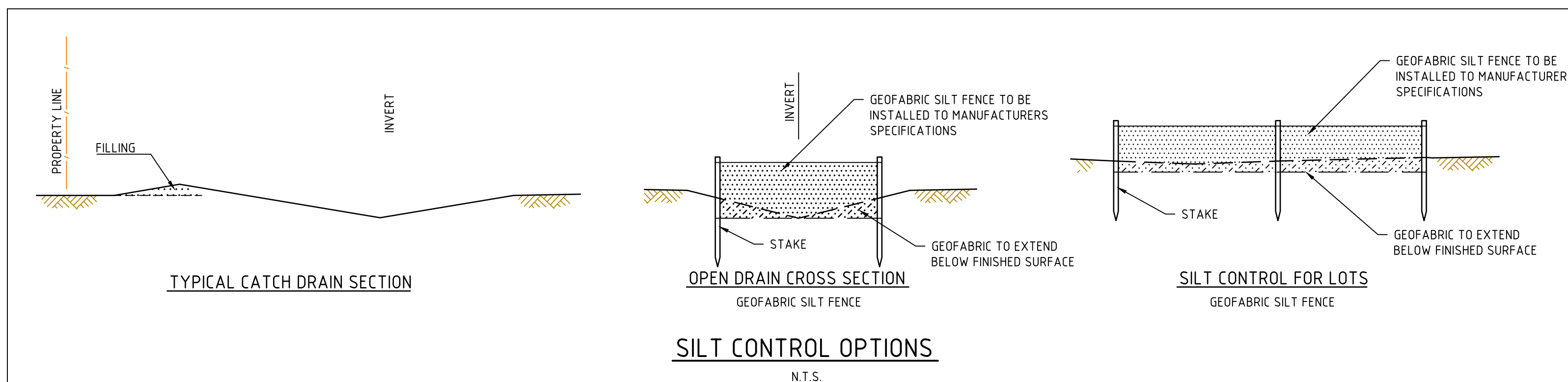
### ENVIRO DEVELOPMENT ACCREDITATION

THE CONTRACTOR WILL BE RESPONSIBLE TO ASSIST ABIWOOD (THE DEVELOPER) TO ACHIEVE ACCREDITATION OF "EnviroDevelopment". EnviroDevelopment IS A SCIENTIFICALLY BASED BRANDING SYSTEM DESIGNED TO MAKE IT EASIER FOR PURCHASERS TO RECOGNIZE AND THEREBY SELECT MORE ENVIRONMENTALLY SUSTAINABLE HOMES AND LIFESTYLES. MORE SPECIFICALLY THE CONTRACTOR WILL NEED TO MEET THE FOLLOWING REQUIREMENTS.

1. THE CONTRACTOR WILL COMMIT TO PROVIDING STORMWATER MANAGEMENT TO ENSURE WATERWAYS (KENSINGTON CREEK) ARE PROTECTED DURING CONSTRUCTION. THIS INCLUDES PROVIDING SILT TRAPS ONSITE AND IMPLEMENTING NO GO ZONES.
2. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE PRIOR TO OPERATION.
3. THE CIVIL DESIGN HAS BEEN UNDERTAKEN TO BALANCE CUT AND FILL VOLUMES TO MINIMIZE ANY EXPORTATION / IMPORTATION OF CUT / FILL ON THE SITE. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT SHOULD ANY SPOIL BE REQUIRED TO BE TAKEN OFFSITE OR IMPORTED.
4. A CONTAMINATION INVESTIGATION HAS BEEN UNDERTAKEN AT THE SITE. THIS INVESTIGATION CONCLUDES THAT THE SITE HAS A LOW RISK FOR SOIL CONTAMINATION. THIS ENVIRONMENTAL MANAGEMENT AND INARTICULATE ITEM 3 ABOVE ASSISTS IN MANAGING SOIL REMOVAL & IMPORTATION.
5. THE CONTRACTOR MUST USE THE FOLLOWING ENVIRONMENTALLY SUSTAINABLE MATERIALS AND SUPPLIERS: a) 95% OF CONSTRUCTED ROADS SHALL BE CONSTRUCTED USING WARM MIX ASPHALT REPLACING 40% BY WEIGHT OF HOT MIX ASPHALT. THE CONTRACTOR SHALL ALSO PROVIDE PROOF SUPPORTING THIS TECHNICAL INFORMATION.  
b) PCV MATERIAL USED WITHIN THE DEVELOPMENT MUST BE SOURCED FROM A SUPPLIER WHO IS ISO14001 CERTIFIED. THE CONTRACTOR SHALL ALSO PROVIDE PROOF SUPPORTING THIS TECHNICAL INFORMATION.
6. SOFT LANDSCAPING - THROUGHOUT THE PROJECT ANY VEGETATION DEBRIS FROM THE SITE IS TO BE MULCHED AND REUSED. ANY NON-CONTAMINATED TOPSOIL SHALL ALSO STOCKPILED AND RE-USED ONSITE.
7. THE CONTRACTOR SHALL BE AWARE THE SITE IS OF CULTURAL HERITAGE SIGNIFICANCE AND HAS A CULTURAL HERITAGE MANAGEMENT PLAN WHICH AT ALL TIMES MUST BE ADHERED TO. THE CONTRACTOR WILL BE REQUIRED TO UNDERTAKE A SITE INDUCTION WITH THE APPROPRIATE CULTURAL HERITAGE STAKEHOLDERS PRIOR TO WORKS COMMENCING. A COPY OF THE CULTURAL HERITAGE MANAGEMENT PLAN WILL BE PROVIDED TO THE CONTRACTOR PRIOR TO WORKS COMMENCING.



**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.



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Rev	Amendments	Approved	Date
A	PRELIMINARY	A.W.	18/11/22

Scale

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Designed S.WOOD	Checked B.IBBS
Authorised A.WILKIE	Date 18/11/22

**BONSHAW'S RUN  
STAGE 1**

ENVIRONMENTAL MANAGEMENT PLAN - SHEET 2  
BALLARAT CITY COUNCIL  
PENDLES NO1 PTY LTD

**PRELIMINARY** Drg No **310217CE002** Rev **A**