GENERAL NOTES

A. GENERAL

- 1. ALL WORK TO BE CARRIED OUT TO MURRAY RIVER COUNCIL SPECIFICATIONS, STANDARD DRAWINGS AND TO THE SATISFACTION OF COUNCILS SENIOR SURVEILLANCE OFFICER OR HIS REPRESENTATIVE.
- 2. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM AND ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA) ZONE 55.

3. 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.

- 4. 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
 - PLACED UNDER "LEVEL 1" SUPERVISION IN ACCORDANCE WITH AS 3798-1996
- 5. 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.
- 6. 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.
- 7. 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.

8. BEFORE COMMENCING WORK ON EXCAVATIONS IN EXCESS OF 1.5 M DEEP, A SAFE WORK METHOD STATEMENT (SWMS) MUST BE PREPARED. ALL EXCAVATIONS ARE TO BE IN ACCORDANCE WITH THE RELEVANT NSW ACTS AND REGULATIONS.

- 9. COUNCIL'S REPRESENTATIVE IS TO BE NOTIFIED IN WRITING 72 HOURS PRIOR TO THE COMMENCEMENT OF WORKS
- 10. NO EXCAVATION WITHIN 5M OF ANY EXISTING TREE WITHOUT APPROVAL OF THE ENGINEER.
- 11. NO BLASTING IS PERMITTED WITHOUT OBTAINING COUNCIL'S SPECIAL DISPENSATION.
- 12. EXCAVATED MATERIAL SURPLUS TO FILLING REQUIREMENTS OF THE WORKS SHALL BE REMOVED FROM SITE AS SPECIFIED.

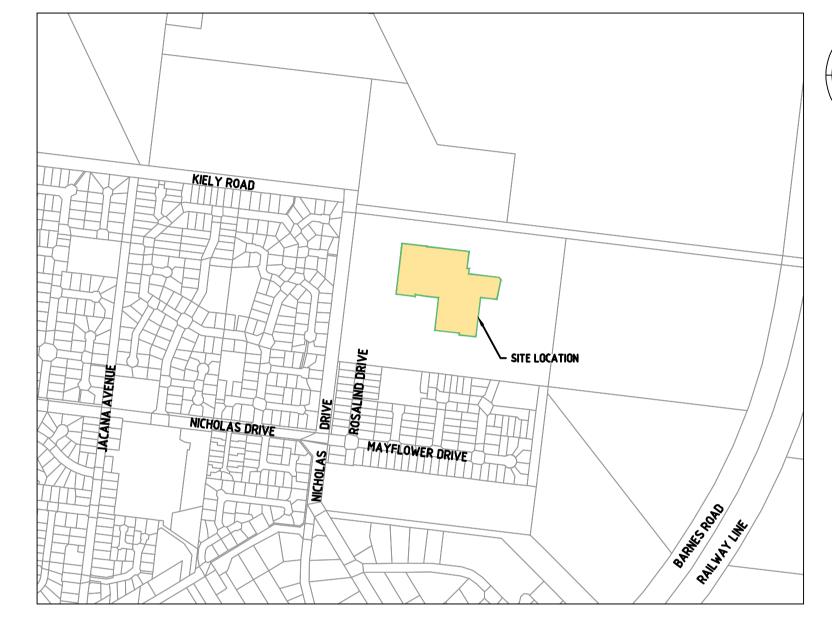
13. ALL SURPLUS ROCK, CONCRETE AND BITUMINOUS RUBBLE SHALL BE DISPOSED OFF SITE AS SPECIFIED. THE CONTRACTOR SHALL CHECK WITH SUPERINTENDENT WHETHER ANY LARGE ROCKS ARE REQUIRED FOR LANDSCAPE PURPOSES PRIOR TO

14. NATURESTRIPS AND ALL AREAS OF CUT OUTSIDE ROAD RESERVE TO BE SURFACED WITH 100MM MINIMUM COMPACTED LAYER OF TOPSOIL.

15. THE LOCATION OF ALL SERVICE CONDUITS ARE TO BE MARKED 5mm INTO THE FACE OF BOTH KERBS, IMMEDIATELY ABOVE THE CONDUIT WITH UNIFORM 50mm HIGH LETTER, WHERE CONDUITS CROSS FOOTPATHS, THE LOCATION IS TO BE MARKED IN THE PATH (NEAR THE EDGE) IN THE SAME FASHION.

16. ENVIRONMENTAL REQUIREMENTS - ALL TREES MUST BE PRESERVED AND PROTECTED AT ALL TIMES. TREES MARKED X ON THE

- 1. FOOTPATHS ARE TO BE 1.5M WIDE UNLESS SHOWN OTHERWISE. FOOTPATHS TO BE CONSTRUCTED TO THE MURRAY RIVER COUNCIL'S STANDARDS.
- 2. CONSTRUCT LAYBACK SECTION AT VEHICLE CROSSING, REVERSING BAYS AND CAR PARKING BAYS AND PRAM CROSSING TO MURRAY RIVER COUNCIL'S STANDARDS.
- 3. ALL CHAINAGES REFER TO ROAD PAVEMENT CENTRELINES EXCEPT IN COURT HEADS AND INTERSECTIONS WHERE CHAINAGES REFER
- 4. THE CONTRACTOR IS REQUIRED TO CONFINE CONSTRUCTION VEHICLES TO THE ROAD RESERVE AND EASEMENTS. ANY DAMAGE CAUSED TO ALLOTMENTS MUST BE MADE GOOD.
- 5. ALL BATTERS SHALL BE TO MURRAY RIVER COUNCIL STANDARDS.
- CUT 1 IN 12 UNLESS OTHERWISE SHOWN. - FILL 1 IN 12 UNLESS OTHERWISE SHOWN.
- 6. ALL SET OUT INFORMATION GIVEN IS TO LIP OF KERB UNLESS OTHERWISE SHOWN.
- 7. 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.
- 8. SUBGRADE BE COMPACTED TO A MINIMUM OF 98% STANDARD MAXIMUM DRY DENSITY (AS3798), WITH THE SUBBASE COMPACTED IN ACCORDANCE WITH SCALE C IN VICROADS 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.
- 9. ANY BACKFILL WITHIN 1.0M OF A COUNCIL ASSET (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.
- 10. CONCRETE TO HAVE 28DAY STRENGTH OF 25MPA UNLESS NOTED OTHERWISE
- 11. LEVEL 1 COMPACTION REPORT REQUIRED FOR ANY FILL ON THE ROAD RESERVE. THIS MUST BE PROVIDED TO MURRAY RIVER COUNCIL PRIOR TO ANY PROOF ROLL.
- 12. PAVEMENT TESTING IS TO BE COMPLETED IN ACCORDANCE WITH MURRAY RIVER COUNCIL 'ENGINEERING GUIDELINES FOR SUBDIVISIONS FOR SUBDIVISIONS AND DEVELOPMENT STANDARDS'.
- 13. THE PRE-APPROVED PREFERRED DRIVEWAY LOCATIONS SHOWN ON DRG NO. "309095CC030" ARE TO BE CONSTRUCTED BY EACH LANDOWNER AT A LATER DATE.



LOCALITY PLAN

NOT TO SCALE



WARNING BEWARE OF UNDERGROUND/OVERHEAD

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	FILTERED WATER		RAW WATER		IRRIGATION WATER		GAS		NBN (TELECOM)		ELECTRICITY			
	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	PC	OLE U/G		CABLE
	SIDL	ULISEI	SIDL	OLISEI	SIDL	ULISEL	יום ל	UII 3LI	SIDL	OITSLI	SIDE	OFFSET	SIDE	OFFSET
PRINCES WAY	W	2.15	W	2.55	-	-	W	2.95	Е	1.0	E	1.0x	E	0.40
CENTENNIAL STREET (NORTH-SOUTH) (LOT 322-326)	E	2.12	E	2.52	E	2.92	E	3.30	W	1.0	W	1.0x	W	0.40
CENTENNIAL STREET (NORTH-SOUTH)	E	2.15	Е	2.55	-	-	Е	2.95	W	1.0	W	1.0x	W	0.40
CENTENNIAL STREET (EAST-WEST)	N	2.15	N	2.55	-	-	N	2.95	S	1.0	S	1.0x	S	0.40
OAKES LANE	N	2.15	N	2.55	-	-	N	2.95	N	1.0	N	1.0x	N	0.40

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

				Sca
				l
В	AMENDED AS PER COUNCIL COMMENTS	J.F	09/08/22	
Α	ISSUED FOR APPROVAL	J.F	21/06/22	
Rev	Amendments	Approved	Date	



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Checked D.SHEEHAN B.IBBS Authorised Date J.FEHRING JUN 2022

BATTER LEVEL (TOP / TOE) T124.80 1 in 150 EARTHWORKS GRADE SIGN AND POST ____ LIGHT & POLE (BY OTHERS) \sim STREET SIGN \circ PERMANENT SURVEY MARK TEMPORARY BENCH MARK ROAD CHAINAGES (A2)— SETOUT POINT LIMIT OF WORKS EARTHWORK - FILL GREATER THAN 200mm EARTHWORK - CUT GREATER THAN 200mm BATTER ROCK BEACHING FENCE - TREE PROTECTION FENCE - VEHICLE EXCLUSION **FENCES** TREE (& SURVEYED CANOPY) TO BE RETAINED TREE TO BE REMOVED **VEGETATION LINE**

EXISTING

E123.45

PROPOSED

-GW)-

F124.68

DESCRIPTION

IRRIGATION WATER

SEWER & MANHOLE

SEWER RISING MAIN

UNDERGROUND ELECTRICITY

OVERHEAD ELECTRICITY & POLE

TELECOMMUNICATIONS & SERVICE PI

COUNCIL STORMWATER DRAIN & PIT

STORMWATER DRAINAGE PIT NUMBER

COUNCIL STORMWATER PITS

GAS & WATER CONDUITS

SURFACE CONTOUR MINOR

SURFACE CONTOUR MAJOR

SURFACE LEVEL

CONCRETE VEHICLE CROSSING

HYDRANT

GAS MAIN

RAW WATER

FILTERED WATER MAIN, VALVE AND

MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

MAIDENS GREEN

STAGE 3

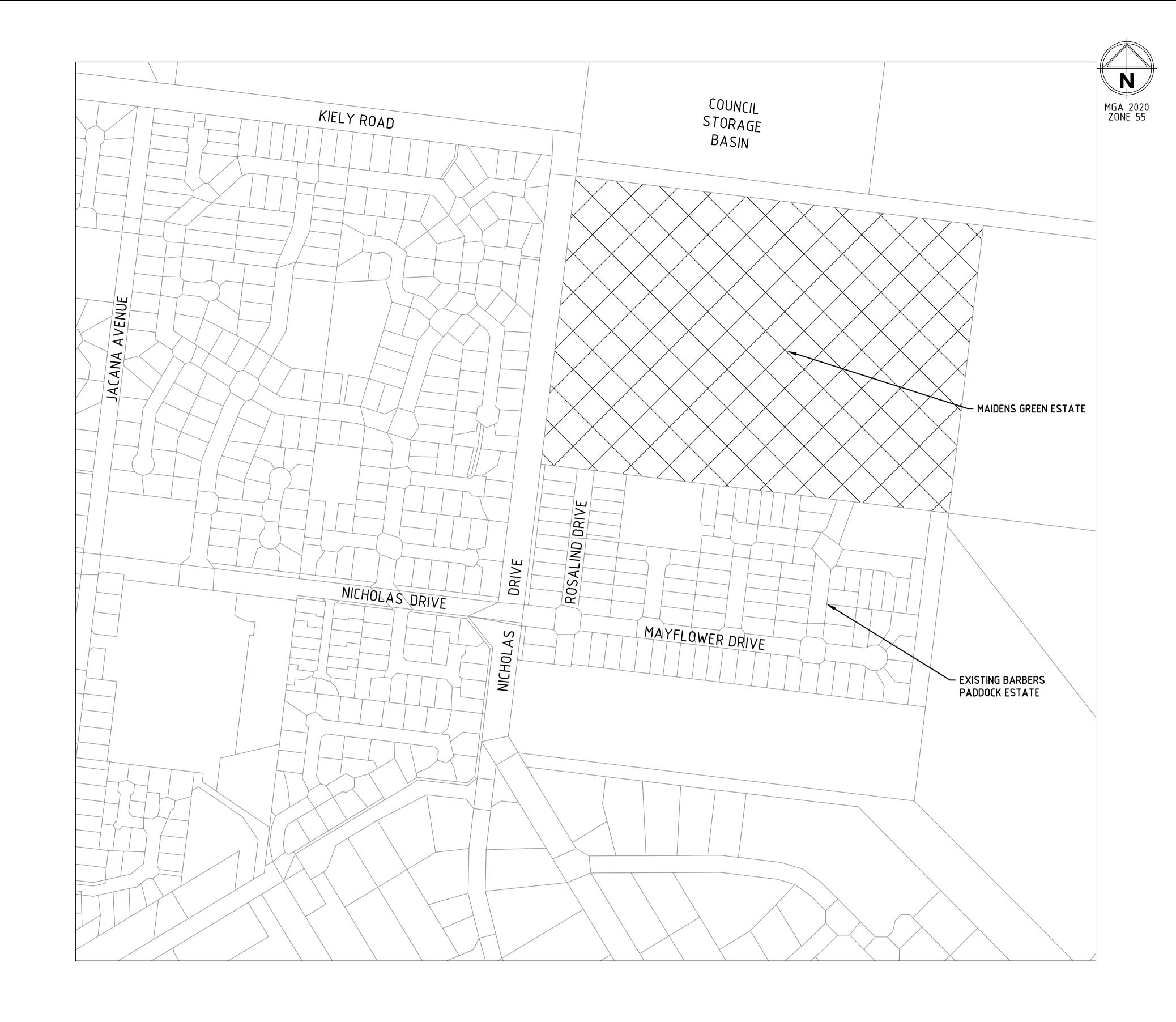
SHEET 1

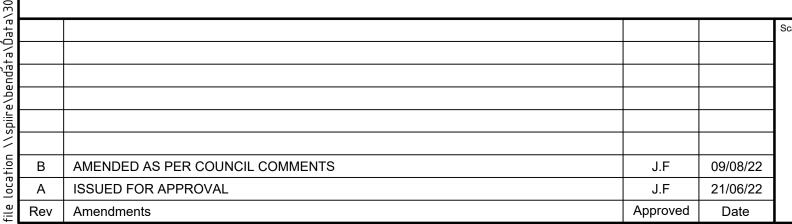
COVER SHEET

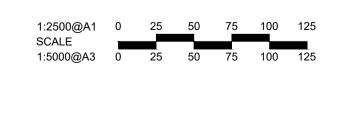
PRELIMINARY 309402CC001

DRAWING SCHEDULE

DRAWING	DESCRIPTION	SHEET No.	REVISION
CC001	COVER SHEET - FACESHEET	1	В
CC002	DRAWING SCHEDULE	2	В
CC005	GENERAL ARRANGEMENT PLAN - TYPICAL DETAILS AND SECTIONS	3	В
CC025	STAGING PLAN	4	В
CC030	ROAD LAYOUT PLAN	5	В
CC031	ROAD LAYOUT PLAN - DRAINAGE BASIN DETAILS	6	В
CC031	ROAD LAYOUT PLAN - CONCRETE JOINTING PLAN	7	А
CC100	ROAD LONGITUDINAL SECTIONS - PRINCES WAY & CENTENNIAL STREET	8	В
CC101	ROAD LONGITUDINAL SECTIONS - OAKES LANE	9	В
CC140	ROAD CROSS SECTIONS - PRINCES WAY	10	В
CC141	ROAD CROSS SECTIONS - CENTENNIAL STREET - SHEET 1 OF 2	11	В
CC142	ROAD CROSS SECTIONS - CENTENNIAL STREET - SHEET 2 OF 2	12	В
CC143	ROAD CROSS SECTIONS - OAKES LANE	13	В
CC270	INTERSECTION DETAILS - PRINCES WAY-CENTENNIAL STREET & CENTENNIAL STREET- OAKES LANE	14	В
CC400	HYDRAULICS - NOTES & LEGEND - DRAINAGE, SEWER & WATER NOTES	15	В
CC430	HYDRAULICS – DRAINAGE PROFILES – DRAINAGE LONGITUDINAL SECTIONS	16	В
CC431	HYDRAULICS – DRAINAGE PROFILES – DRAINAGE LONGITUDINAL SECTIONS	17	В
CC432	HYDRAULICS – DRAINAGE PROFILES – DRAINAGE LONGITUDINAL SECTIONS	18	В
CC500	HYDRAULICS - SEWER & WATER - WATER LAYOUT PLAN	19	В
CC501	HYDRAULICS - SEWER & WATER - WATER DETAILS	20	В
CC502	HYDRAULICS - SEWER & WATER - SEWER LAYOUT PLAN	21	В
CC530	HYDRAULICS - SEWER PROFILES	22	В









System Certified	319
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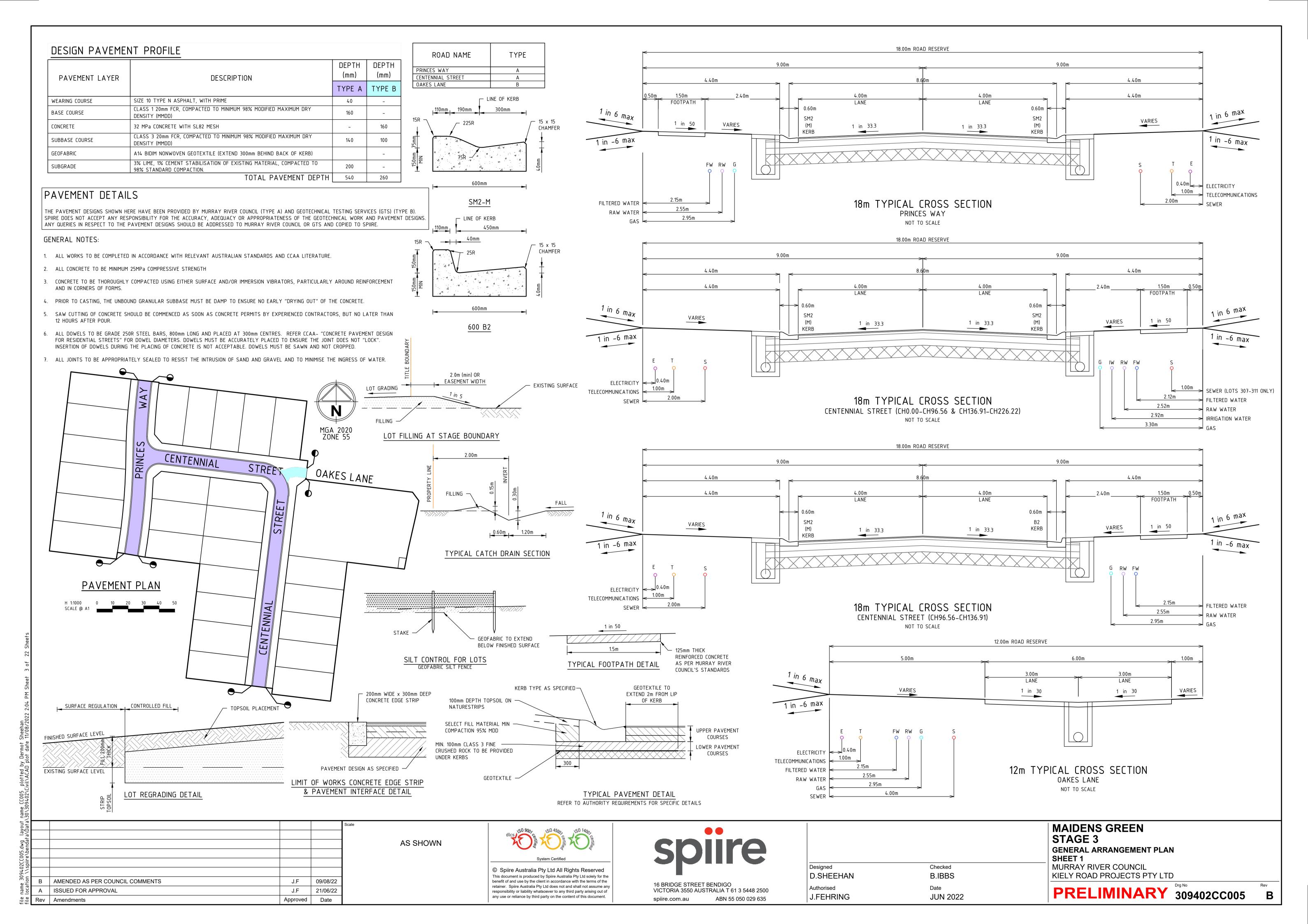


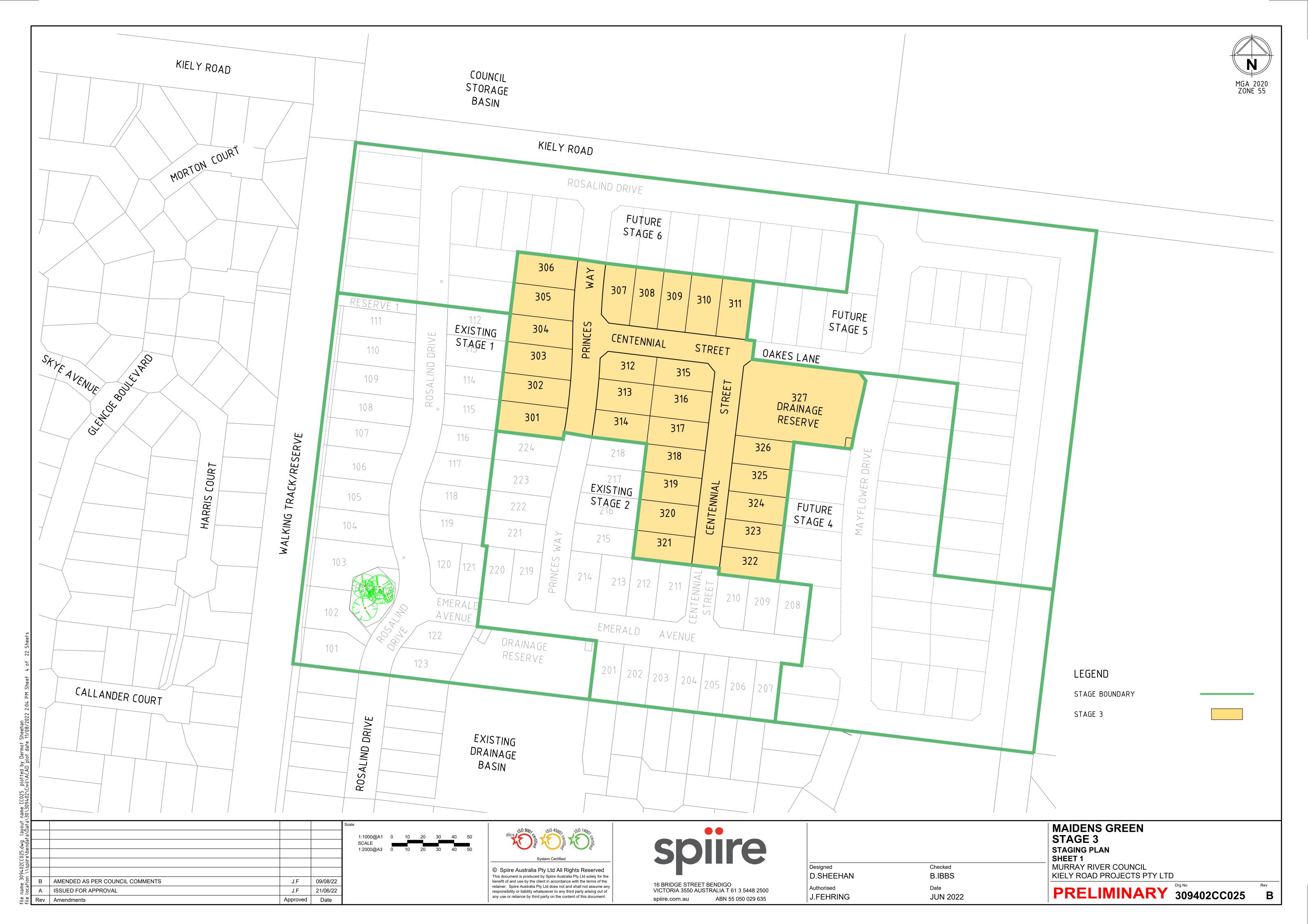
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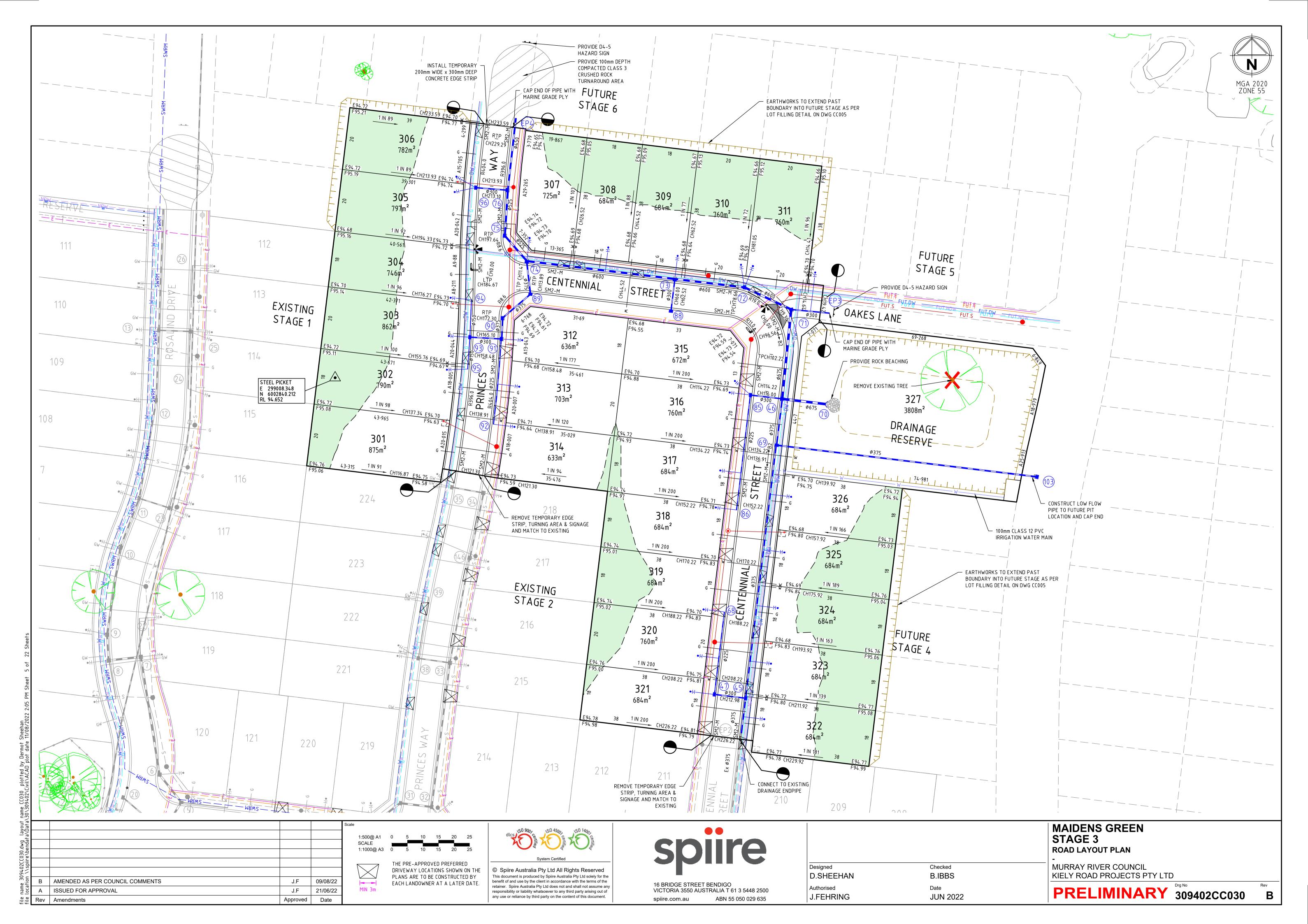
Designed	Checked
D.SHEEHAN	B.IBBS
Authorised J.FEHRING	Date JUN 2022

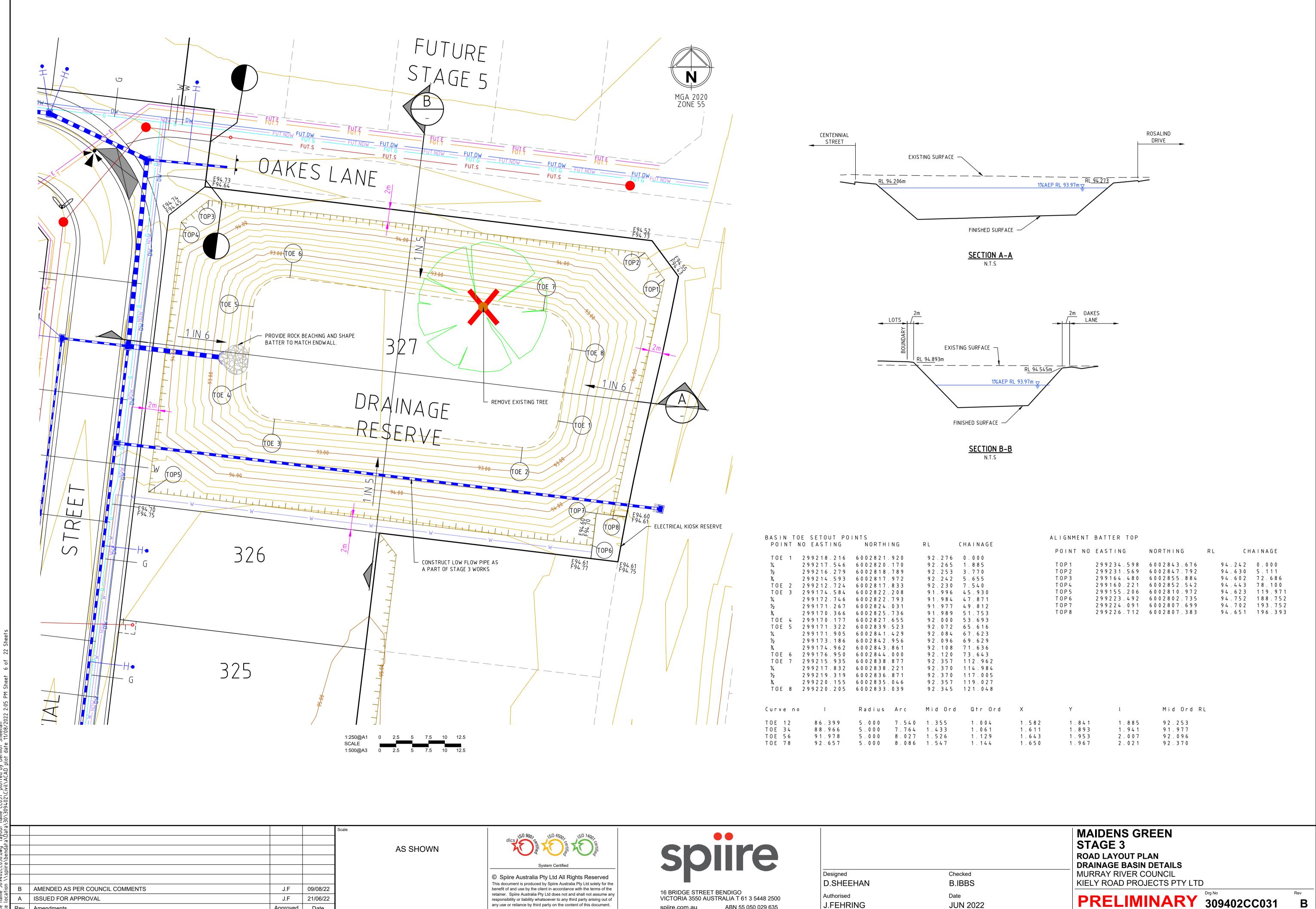
MAIDENS GREEN STAGE 3 DRAWING SCHEDULE
SHEET 1
MURRAY RIVER COUNCIL
KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC002 B









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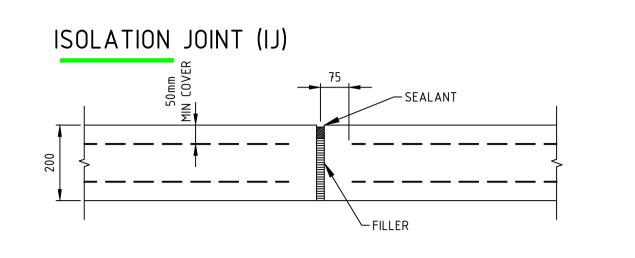
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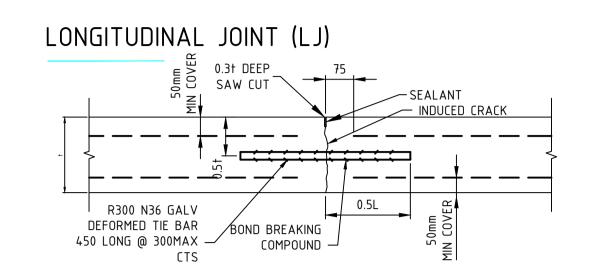
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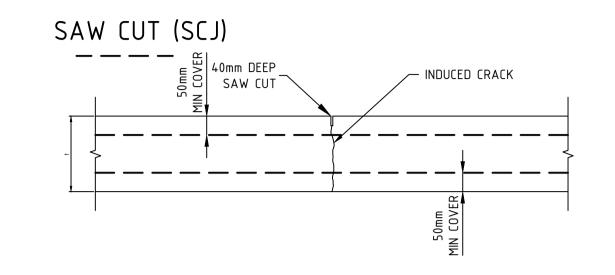
Approved

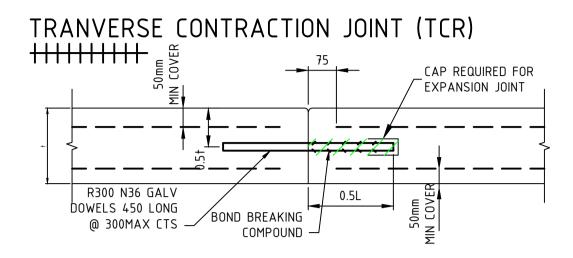
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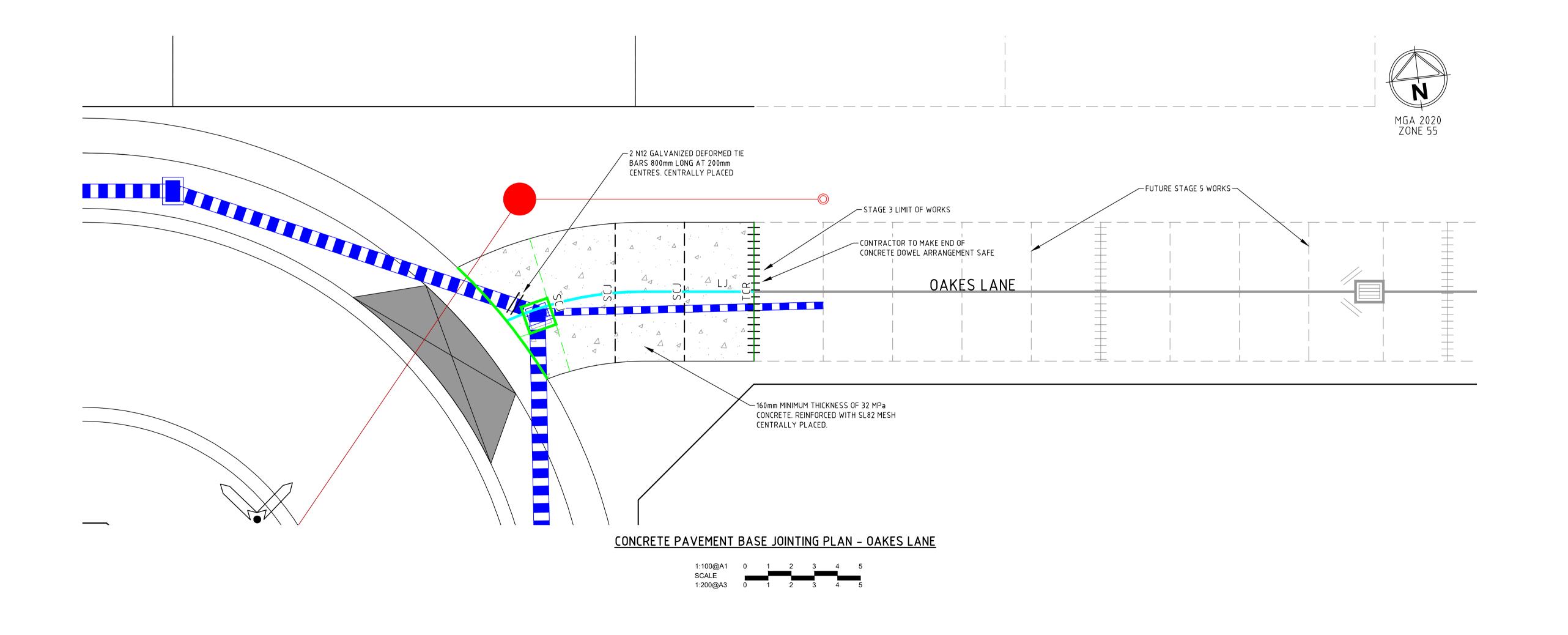
Date











WE JOROS See John 1911 July 1912 July 1912 July 1913 Jul





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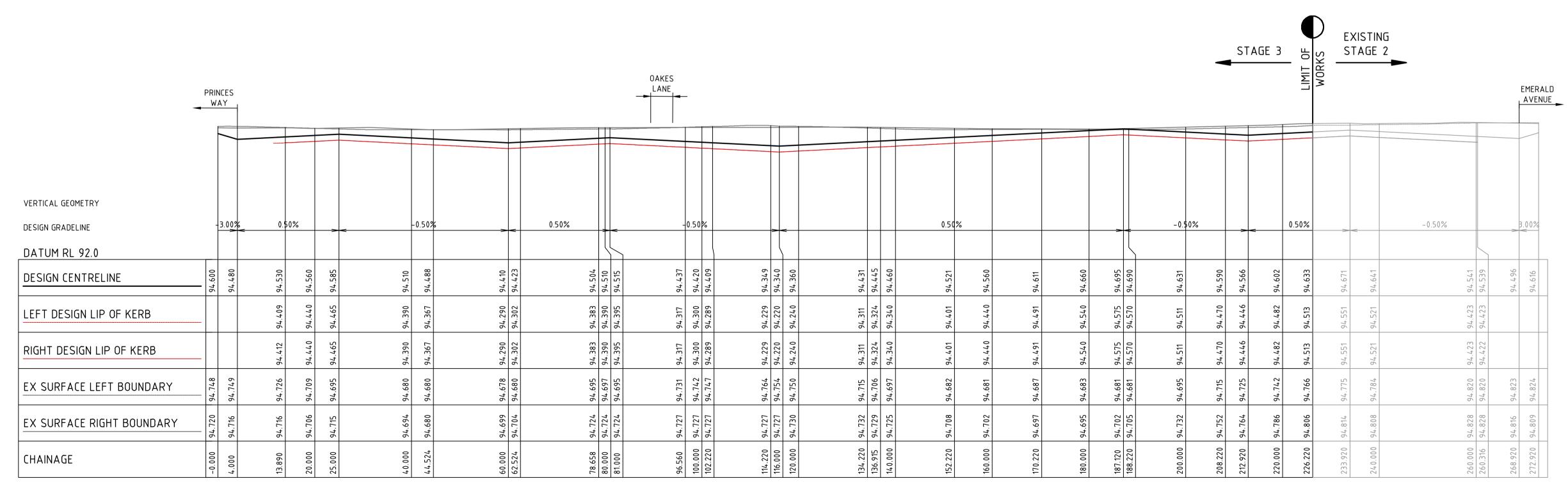
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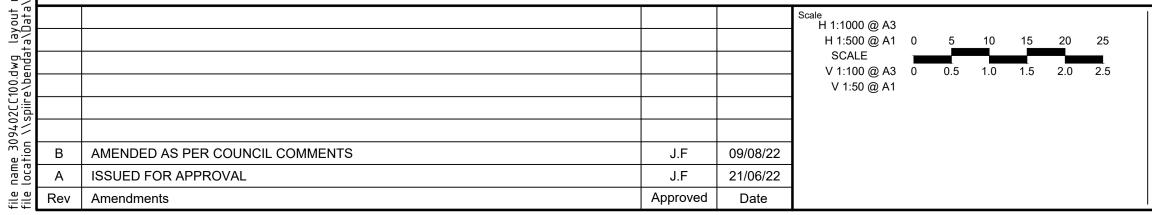
Designed	Checked
D.SHEEHAN	B.IBBS
Authorised J.FEHRING	Date AUG 2022

MAIDENS GREEN
STAGE 3
ROAD LAYOUT PLAN
CONCRETE JOINTING PLAN
MURRAY RIVER COUNCIL
KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC032 A



CENTENNIAL STREET





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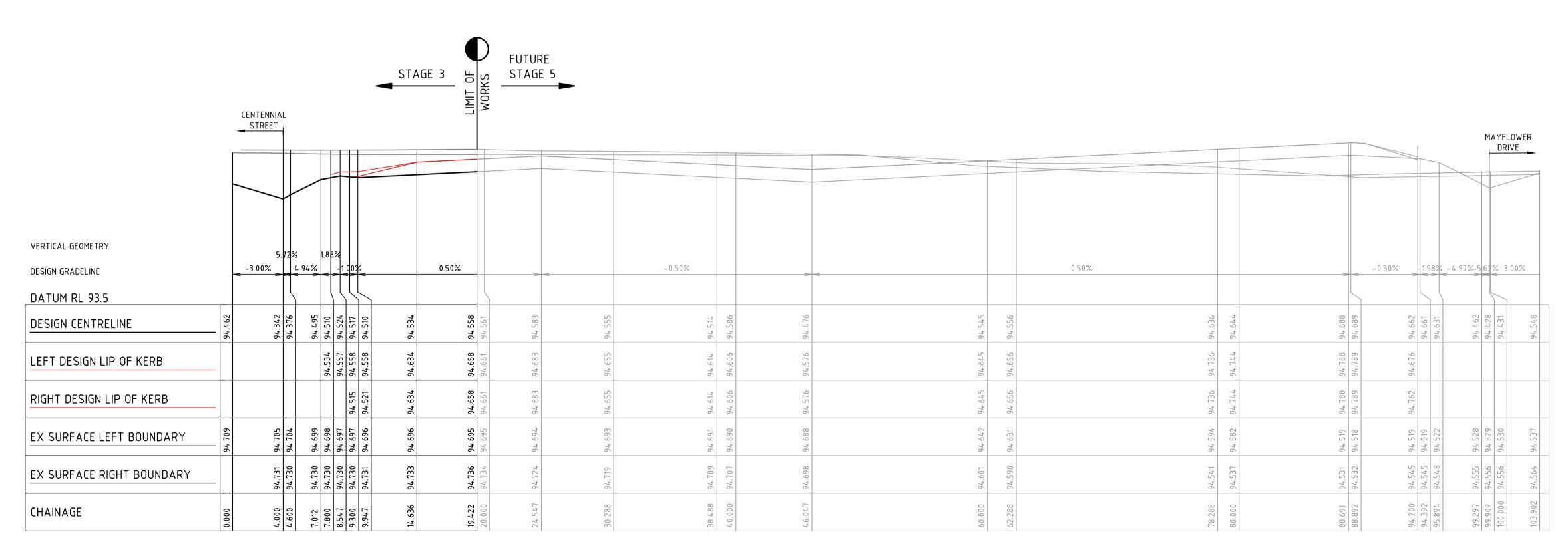
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MAIDENS GREEN STAGE 3 ROAD LONGITUDINAL SECTIONS PRINCES WAY & CENTENNIAL STREET MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC100 B



OAKES LANE

AMENDED AS PER COUNCIL COMMENTS J.F 09/08/22 A ISSUED FOR APPROVAL J.F 21/06/22 Approved

Scale
H 1:400 @ A3
H 1:200 @ A1 0 2 4 6 8 10 SCALE V 1:100 @ A3 0 0.5 1 1.5 2.0 2.5 V 1:50 @ A1



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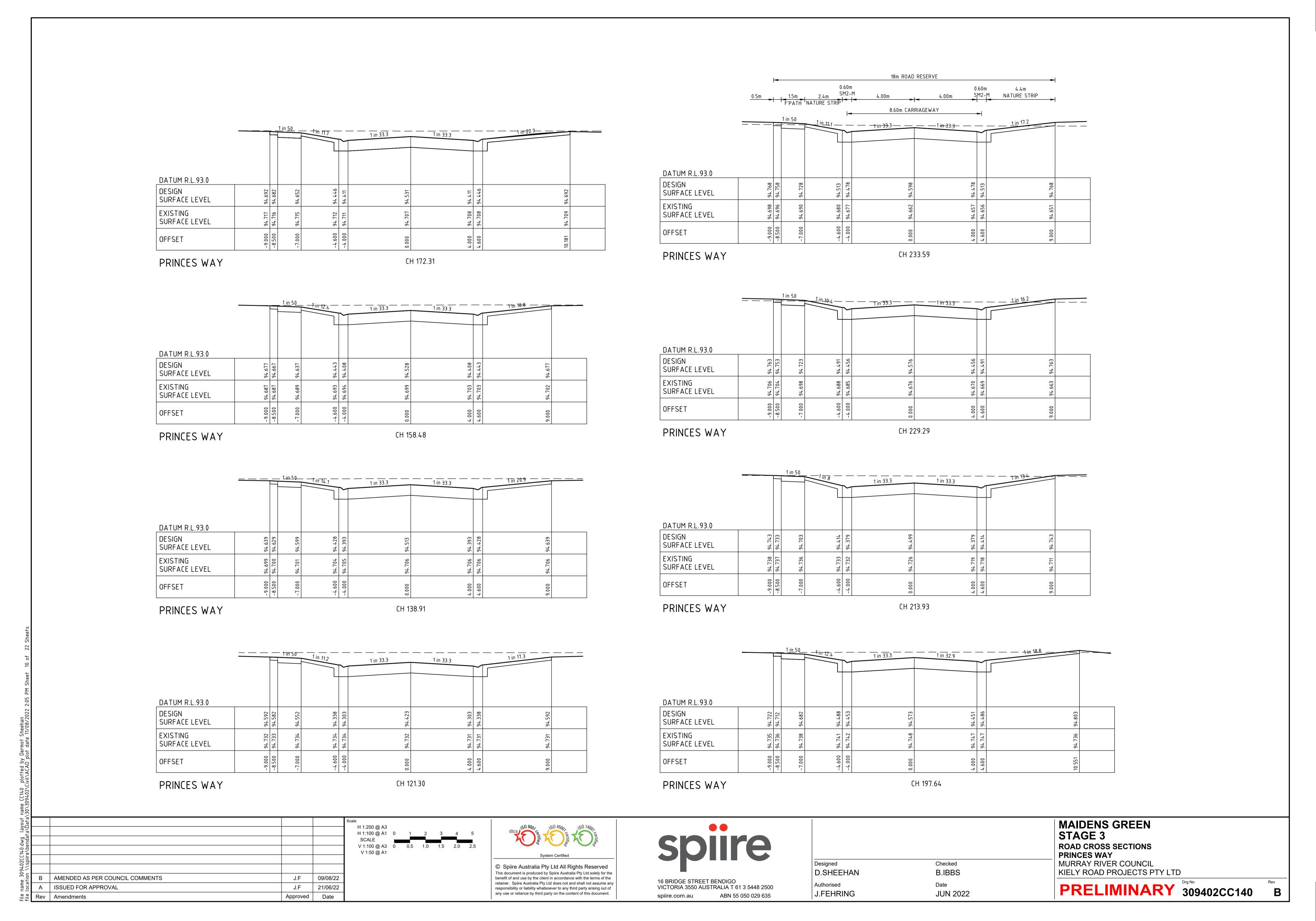
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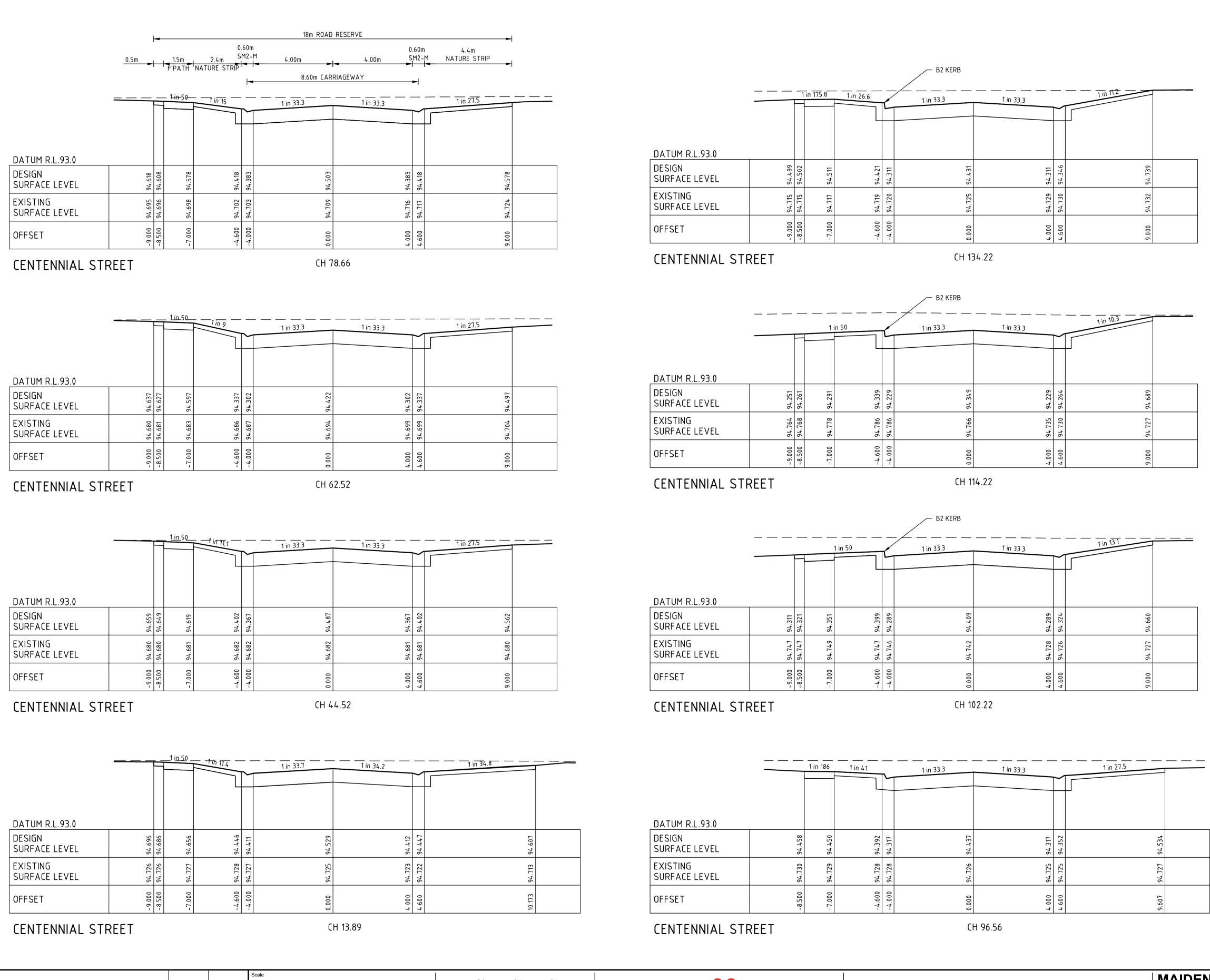
ABN 55 050 029 635

Designed	Checked
D.SHEEHAN	B.IBBS
Authorised	Date
J.FEHRING	JUN 2022

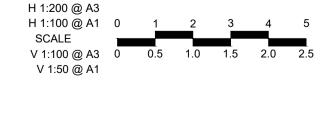
MAIDENS GREEN STAGE 3 ROAD LONGITUDINAL SECTIONS OAKES LANE
MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC101 B





AMENDED AS PER COUNCIL COMMENTS J.F 09/08/22 ISSUED FOR APPROVAL 21/06/22 J.F Rev Amendments Approved Date





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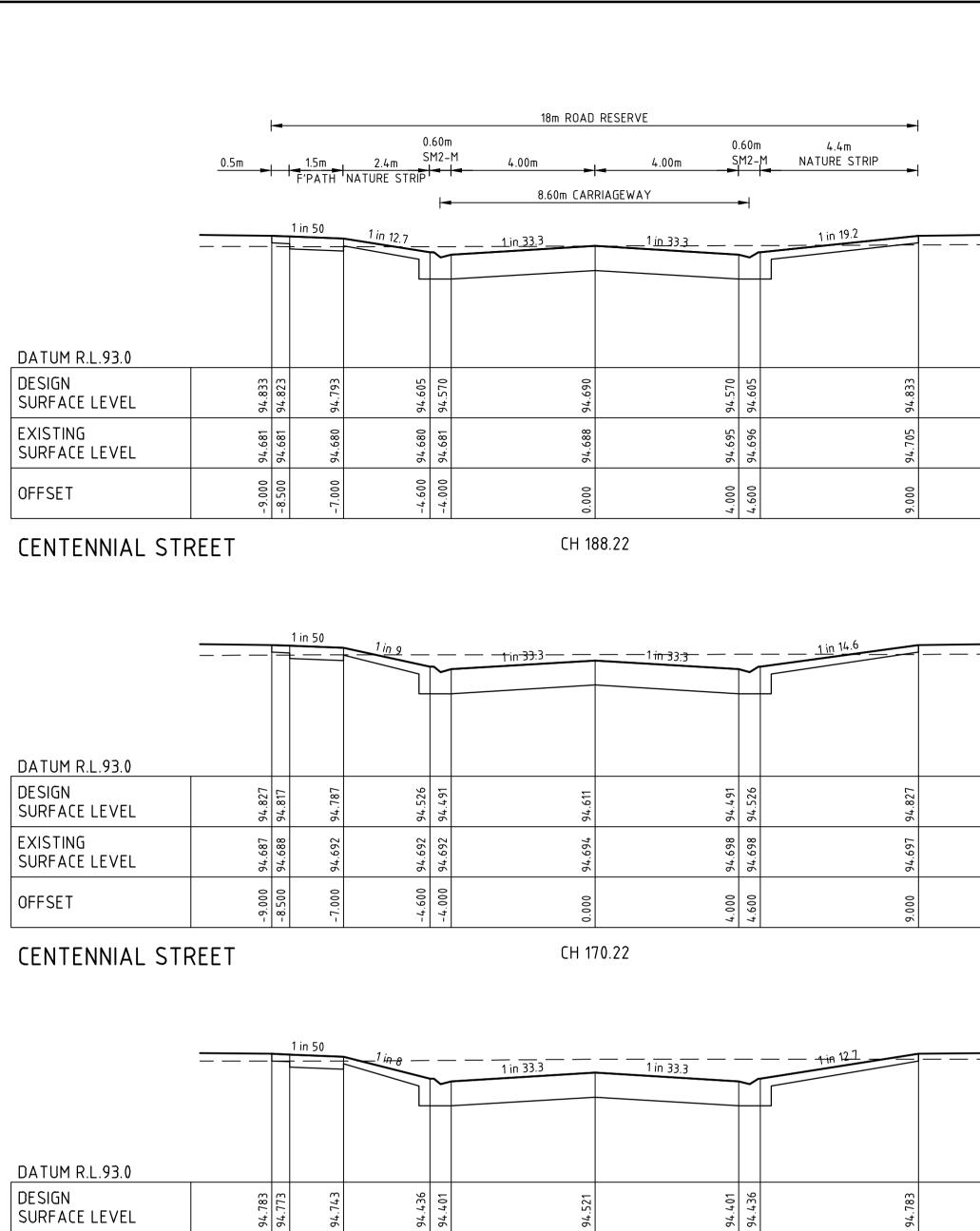


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Authorised	Date
J.FEHRING	JUN 2022

MAIDENS GREEN STAGE 3 ROAD CROSS SECTIONS CENTENNIAL STREET - SHEET 1 OF 2 MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC141 B



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94.783		DE SU
94.708		EX SU
9.000		OF

CENTENNIAL STREET

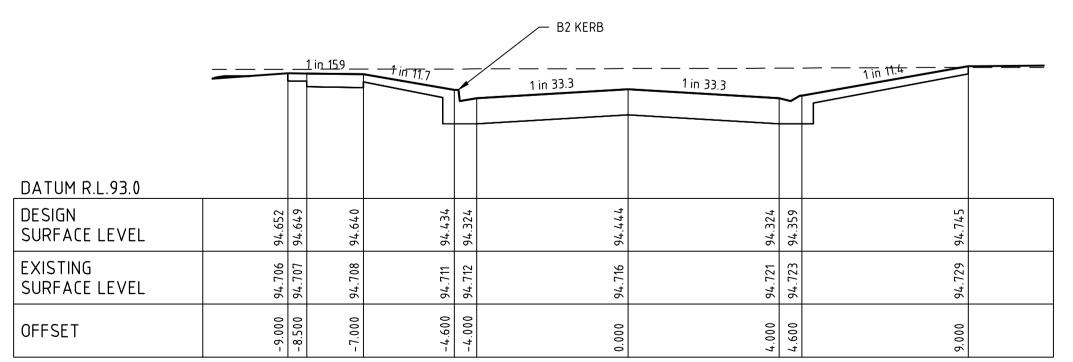
SURFACE LEVEL

SURFACE LEVEL

EXISTING

OFFSET

CH 152.22



CENTENNIAL STREET

CH 136.91

			1 in 50	1 in 12.1	<u> </u>	1 in 33.3	1 in 33.3		1 in 18.5	
DATUM R.L.93.0	1									
DESIGN SURFACE LEVEL	987.786	9 <i>LL</i> ⁻ 76	971.76	845.48	94.513	94.633		94.513	j	
EXISTING SURFACE LEVEL	94.766	891.76	94.773	94.781	94.783	161.46		908.46	94.806	
OFFSET	-9.000	-8.500	-7.000	-4.600	-4.000	0.000		4.000	9.000	

CENTENNIAL STREET

CH 226.22

			1 in 50		~	1 in 33.3	1 in 33.3	_	1 in 14.5	
DATUM R.L.93.0										
DESIGN SURFACE LEVEL	808.46	94.798	94.768	94.505	94.470	06:76			94.808	
EXISTING SURFACE LEVEL	94.715	94.716	94.719	94.723	94.725	94.732		94.742	94.752	
OFFSET	-9.000	-8.500	-7.000	-4.600	000.4-	000.0		4.600	000.6	

CENTENNIAL STREET

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CH 208.22

					Scale
					H 1:200 @ A3 H 1:100 @ A1
					SCALE
					V 1:100 @ A3 V 1:50 @ A1
	В	AMENDED AS PER COUNCIL COMMENTS	J.F	09/08/22	
	Α	ISSUED FOR APPROVAL	J.F	21/06/22	
<u>R</u>	lev	Amendments	Approved	Date	



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Authorised J.FEHRING	Date JUN 2022

MAIDENS GREEN STAGE 3 ROAD CROSS SECTIONS CENTENNIAL STREET - SHEET 2 OF 2 MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC142 B

B AMENDED AS PER COUNCIL COMMENTS J.F 09/08/22 21/06/22 A ISSUED FOR APPROVAL J.F Approved Date ≝≝ Rev Amendments

H 1:200 @ A3 H 1:100 @ A1 0 1 2 3 4 5 SCALE V 1:100 @ A3 0 0.5 1.0 1.5 2.0 2.5 V 1:50 @ A1



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Checked D.SHEEHAN B.IBBS Authorised Date J.FEHRING JUN 2022 MAIDENS GREEN STAGE 3 ROAD CROSS SECTIONS
OAKES LANE
MURRAY RIVER COUNCIL

KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC143 B

OFFSET CH 9.30 OAKES LANE

DATUM R.L.93.0

DESIGN SURFACE LEVEL

EXISTING SURFACE LEVEL

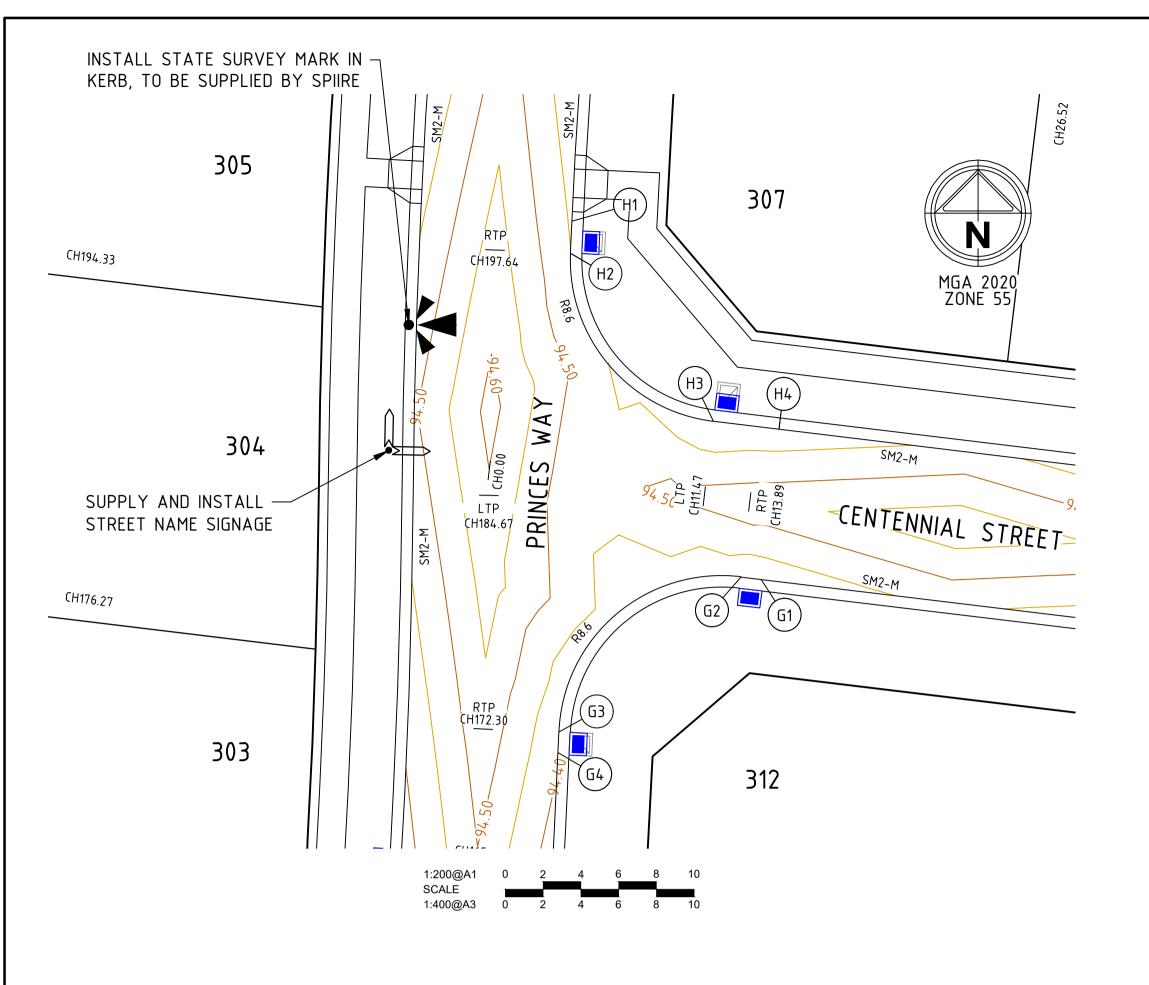
OAKES LANE CH 14.64

OFFSET

DATUM R.L.93.0 DESIGN SURFACE LEVEL EXISTING SURFACE LEVEL

SURFACE LEVEL EXISTING SURFACE LEVEL OFFSET OAKES LANE CH 19.42

	+	12m ROAD RESERVE							
	L	5.0m NATURE STRIP	3.0m	3.0m		1.0m NATURE STRIF			
	'		6.00m CAR	RIAGEWAY	1				
		1 in 77.5	1 in 30— —	– — 1 -in- 30— <u> </u>	in_50				
DATUM R.L.93.0									
DESIGN	722	85	558	658	638				



311

, CENTENNIAL'

STREET

SCALE 1:400@A3 0 2 4 6 8 10

INSTALL STATE SURVEY MARK IN

KERB, TO BE SUPPLIED BY SPIIRE

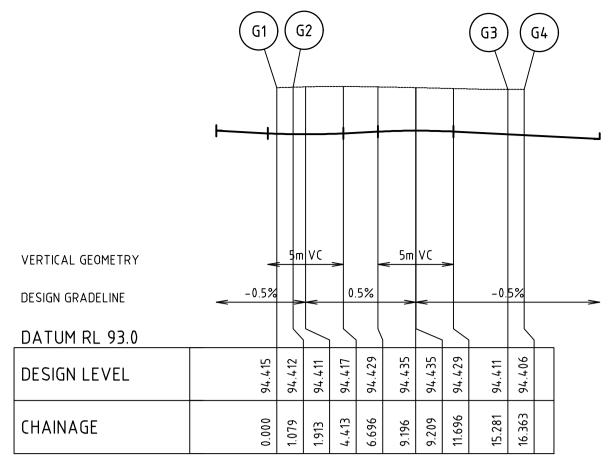
(K2)

(L1)

327

DRAINAGE

RESERVE



ALIGNMENT G

ALIGNMENT G

POINT NO EASTING NORTHING RL CHAINAGE

G1 299071.754 6002868.076 94.415 0.000 G2 299070.684 6002868.205 94.412 1.079 299067.171 6002867.901 94.419 4.629 299064.076 6002866.213 94.434 8.180 **½** 299061.918 6002863.425 94.429 11.730 G3 299061.060 6002860.006 94.411 15.281 G4 299061.016 6002858.924 94.406 16.363

Curve no I Radius Arc Mid Ord Qtr Ord X Y I Mid Ord RL

G23 -94.621 8.600 14.202 2.769 2.046 2.871 3.451 3.551 94.434

ALIGNMENT I

POINT NO EASTING NORTHING RL CHAINAGE

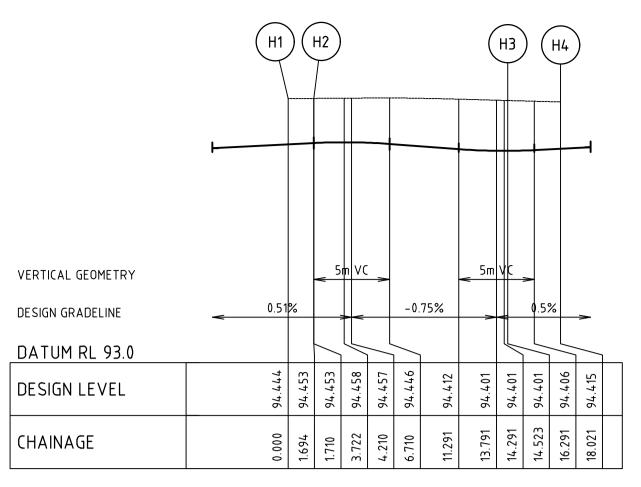
299134.986 6002860.449 94.383 0.000 299137.091 6002859.982 94.385 2.160 299139.065 6002859.114 94.377 4.320 299140.831 6002857.877 94.362 6.480 12 299142.322 6002856.319 94.348 8.639 299143.481 6002854.500 94.333 10.799 299144.262 6002852.490 94.318 12.959 299144.637 6002850.367 94.303 15.119 299144.589 6002848.211 94.289 17.279

Curve no I Radius Arc Mid Ord Qtr Ord X l Mid Ord RL 45.000 11.000 8.639 0.837 0.626 2.146 2.160 94.377 123 45.000 11.000 8.639 0.837 0.626 2.064 2.146 2.160 94.318

ALIGNMENT J

POINT NO EASTING	NORTHING	RL	CHAINAGE
J1 299152.532	6002847.253	94.289	0.000
14 299152.664	6002849.113	94.296	1.865
299152.613	6002850.977	94.303	3.731
34 299152.380	6002852.827	94.310	5.596
J2 299151.967	6002854.645	94.317	7.461
14 299151.377	6002856.414	94.325	9.327
299150.617	6002858.116	94.331	11.192
34 299149.694	6002859.736	94.339	13.057
J3 299148.616	6002861.258	94.346	14.923
% 299147.394	6002862.666	94.354	16.788
299146.040	6002863.948	94.361	18.653
34 299144.567	6002865.092	94.369	20.519
J4 299142.989	6002866.085	94.375	22.384
4 299141.322	6002866.919	94.383	24.249
299139.580	6002867.585	94.391	26.114
34 299137.782	6002868.078	94.389	27.980
J5 299135.944	6002868.391	94.383	29.845

Curve	no I	Radius	Arc	Mid Ord	Qtr Ord	X	Υ	l	Mid Ord RL
J12	-22.500	19.000	7.461	0.365	0.274	1.844	1.862	1.865	94.303
J23	-22.500	19.000	7.461	0.365	0.274	1.844	1.862	1.865	94.331
J34	-22.500	19.000	7.461	0.365	0.274	1.844	1.862	1.865	94.361
J45	-22.500	19.000	7.461	0.365	0.274	1.844	1.862	1.865	94.391



ALIGNMENT H

ALIGNMENT H

POINT NO EASTING NORTHING RL CHAINAGE

H1 299061.749 6002887.020 94.444 0.000 **14** 299061.731 6002886.597 94.446 0.424 **½** 299061.712 6002886.174 94.448 0.847 **½** 299061.694 6002885.750 94.450 1.271 H2 299061.677 6002885.327 94.453 1.694 **14** 299062.139 6002882.172 94.456 4.902 1/2 299063.719 6002879.403 94.436 8.109 **½** 299066.199 6002877.399 94.412 11.316 H3 299069.239 6002876.437 94.401 14.523 H4 299072.712 6002876.018 94.415 18.021

Curve no I Radius Arc Mid Ord Qtr Ord X Y I Mid Ord RL H12 -0.245 396.000 1.694 0.001 0.001 0.424 0.424 0.424 94.448 H23 -85.467 8.600 12.828 2.283 1.692 2.703 3.133 3.207 94.436

ALIGNMENT K

H 1:250 @ A1 0 2.5 5 7.5 10 12.5

V 1:50 @ A3 0 0.25 0.5 0.75 1 1.25

V 1:25 @ A1

POINT NO EASTING NORTHING RL CHAINAGE

K1 299151.770 6002864.514 94.534 0.000 1/4 299152.759 6002864.849 94.546 1.044 ½ 299153.765 6002865.125 94.558 2.087 299154.786 6002865.341 94.567 3.131 299155.818 6002865.495 94.578 4.175 299157.901 6002865.618 94.606 6.262 299158.944 6002865.586 94.620 7.306 K3 299159.983 6002865.492 94.643 8.349

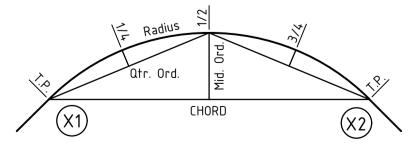
Curve no I Radius Arc Mid Ord Qtr Ord X Y I Mid Ord RL K12 13.668 17.500 4.175 0.124 0.093 1.039 1.043 1.044 94.558 K23 13.668 17.500 4.175 0.124 0.093 1.039 1.043 1.044 94.606

ALIGNMENT L

POINT NO EASTING NORTHING RL CHAINAGE

L1 299159.264 6002859.535 94.634 0.000 299158.208 6002859.613 94.602 1.060 299157.148 6002859.594 94.569 2.120 **3** 299156.095 6002859.477 94.538 3.180 L2 299155.057 6002859.264 94.515 4.240

Curve no I Radius Arc Mid Ord Qtr Ord X Y l Mid Ord RL L12 -21.125 11.500 4.240 0.195 0.146 1.050 1.059 1.060 94.569



KERB RETURN SETOUT DETAIL

AMENDED AS PER COUNCIL COMMENTS J.F 09/08/22 A ISSUED FOR APPROVAL J.F 21/06/22 Approved Date Rev | Amendments

315

CENTENNIAL STREET

SUPPLY AND INSTALL STREET NAME SIGNAGE

AS SHOWN

⁻⁹⁴.60



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16 BRIDGE STREET BENDIGO

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VICTORIA 3550 AUSTRALIA T 61 3 5448 2500 ABN 55 050 029 635

Checked **D.SHEEHAN B.IBBS** Authorised Date J.FEHRING JUN 2022

MAIDENS GREEN STAGE 3 **INTERSECTION DETAILS**

PRINCES WAY - CENTENNIAL STREET - OAKES LANE MURRAY RIVER COUNCIL

KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC270

GENERAL NOTES:

- ONLY PRODUCTS APPROVED AND CATALOGUED BY THE WATER AGENCY SHALL BE USED. WORKS MUST BE CONSTRUCTED ACCORDING TO WSA 03-2011-3.1 MRWA EDITION & MURRAY RIVER COUNCIL ENGINEERING GUIDELINES. THE CONTRACTOR SHALL ENSURE THAT THEY ARE CONVERSANT WITH ALL CURRENT REVISIONS, AMENDMENTS AND UPDATES THAT THE RELEVANT
- WATER AGENCY HAS MADE TO THEIR STANDARDS. DW ASSETS SHALL ONLY BE CONSTRUCTED AFTER DEEPER ASSETS AFFECTING THE WATER MAINS HAVE BEEN CONSTRUCTED (EG: SEWERAGE & DRAINAGE ASSETS).
- THIS DESIGN IS TO BE READ IN CONJUNCTION WITH ROAD AND DRAINAGE PLANS.
- THE CONTRACTOR SHALL OBTAIN A ROAD OPENING PERMIT FOR ANY WORKS WITHIN THE ROAD RESERVE AND COMPLY WITH ALL REQUIREMENTS OF THE ROAD AUTHORITY.
- FOR INTERPRETATION OF THE SYMBOLS USED IN THIS DESIGN, REFER TO DRAWING MRWA-W-100. TRAFFIC MANAGEMENT TO BE IN ACCORDANCE WITH AS1742.3 (TRAFFIC CONTROL DEVICE FOR WORKS IN ROADS)
- USE EXTREME CARE WHEN WORKING NEAR EXISTING TREES TO MINIMISE DAMAGE TO ROOT SYSTEM AND CANOPY.
- ALL TREES MUST BE PRESERVED AND PROTECTED AT ALL TIMES. TREES MARKED X ON DESIGN PLANS MAY BE REMOVED.
- 10. NO BLASTING IS PERMITTED WITHIN 20M OF EXISTING WATER MAINS.

SURVEY, SET OUT AND ASSET RECORDING

- 11. TEMPORARY BENCH MARKS (TBM) FOR THE SET OUT OF WORKS TO THE AUSTRALIAN HEIGHT
- DATUM (AHD) ARE PROVIDED IN THE DESIGN DRAWINGS. ALL LEVELS ARE IN METRES TO AHD.
- 13. ALL CO-ORDINATES ARE IN METRES TO THE MAP GRID OF AUSTRALIA (MGA 55- 2020).
- 14. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
- 15. THE CONTRACTOR IS DIRECTLY RESPONSIBLE FOR ENSURING THE PROJECT SET OUT IS CONSISTENT WITH THE DESIGN. SHOULD ACTUAL SITE CONDITIONS CONFLICT IN ANY WAY WITH THAT DOCUMENTED, THE CONTRACTOR SHALL CONTACT THE SUPERINTENDENT FOR CLARIFICATION BEFORE PROCEEDING.
- WHERE NOT ALLOWED FOR IN THE CONTRACT, THE CONTRACTOR IS TO ENGAGE A SUITABLY QUALIFIED AND EXPERIENCED SURVEYOR TO UNDERTAKE ASSET RECORDING OF THE WORK. ALL SURVEYOR WORKS AND DATA RECORDING SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE MRWA SURVEY MANUAL
- 17. ALL SPECIFIC PIPE MATERIALS (EG: PVC-0) SHALL BE INDICATED IN THE AS CONSTRUCTED INFORMATION

PRODUCTS AND MATERIALS

- ALL INSERTION/GASKET KITS ARE TO INCLUDE STAINLESS STEEL FASTENERS.
- FOR THE PIPE SCHEDULE, REFER TO TABLE .1.
- 20. FOR THE PIPE MATERIAL SCHEDULE, REFER TO TABLE. 2.
- 21. ALL WATER MAINS TO BE RRJ PVC-M SERIES 1 CLASS 12, UNLESS OTHERWISE NOTED.
- WHERE PE PIPE CONSTRUCTION IS REQUIRED, REFER TO DRAWING MRWA-W-103 AND WSA 01 (PE PIPELINE CODE). WELDERS SHALL BE ACCREDITED TO PMBWELD302B (ELECTROFUSION). BUTT WELDING IS NOT ACCEPTED BY MURRAY SHIRE COUNCIL
- 23. ALL HANDLING OF PIPES & FITTINGS TO BE CARRIED OUT IN ACCORDANCE WITH GENERAL SPECIFICATION FOR CONSTRUCTION OF PRESSURE PIPES

APPURTENANCES (FITTINGS)

- 24. ALL VALVES AND HYDRANTS SHALL BE MARKED ACCORDING TO DRAWINGS MRWA-W-300 AND
- 25. VALVE SURROUNDS, COVERS AND SPINDLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH DRAWING MRWA-W-302.
- 26. HYDRANT SURFACE ARRANGEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DRAWINGS
- FLANGE AND FLANGE BOLTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DRAWINGS
- MRWA-W-306A AND MRWA-W-306B. 28. FOR THE HYDRANT AND WASHOUT SCHEDULE, REFER TO TABLE .3.
- 25. ALL VALVES SHALL BE LOCATED DIRECTLY OUT FROM THE APEX OF THE SPLAY CORNER (UNLESS OTHERWISE INDICATED).
- 26. ALL VALVES ARE TO BE ANTI-CLOCKWISE CLOSING

WATER MAIN ALIGNMENT, TRENCHING & COVER

- 27. TRENCH, PIPE PLACEMENT, EMBEDMENT AND BACKFILL DIMENSIONS AS PER STANDARD DRAWING MRWA-W-202
- 28. OFFSETS OF MAINS FROM PROPERTY BOUNDARIES SHALL BE; MIN 600MM (MAINS < DN100) AND MIN 1M (MAINS > DN100), EXCEPT WHERE INDICATED IN THE DRAWINGS.
- 29. ALL WATER MAINS SHALL PASS OVER DRAINS AND SEWERS UNLESS SHOWN OTHERWISE IN THE
- DESIGN DRAWINGS. 30. MAINS SHALL BE ALIGNED IN ACCORDANCE WITH THE SERVICES ALIGNMENT SCHEDULE, REFER TO
- 31. THE MAXIMUM DEPTH FROM THE SURFACE LEVEL TO TOP OF PIPE MUST NOT EXCEED 1.5M

- 32. UNLESS OTHERWISE APPROVED BY THE WATER AGENCY, ALL EMBEDMENT MATERIALS SHALL BE IN ACCORDANCE WITH WSA-PS-361.
- 33. EMBEDMENT SHALL BE PLACED AS PER DRAWINGS MRWA-W-201 AND MRWA-W-202.

BACKFILI

- 34. BACKFILL IN TRAFFICABLE AND NON-TRAFFICABLE AREAS SHALL BE IN ACCORDANCE WITH MRWA SPECIFICATION NO. 04-03.1 (BACKFILL SPECIFICATION), AND AS DETAILED IN MRWA-W-201. THE CONTRACTOR IS REQUIRED TO OBTAIN WRITTEN CONFIRMATION OF THE ROAD AUTHORITIES ACCEPTANCE OF THE PROPOSED BACKFILL.
- COMPACTION TRIALS AND COMPACTION TESTING SHALL BE UNDERTAKEN IN ACCORDANCE WITH
- THE MRWA BACKFILL SPECIFICATIONS.
- TRENCH SUBSIDENCE OVER WATER MAINS IS NOT ACCEPTABLE. 37. ALL TRENCHES CROSSING PAVEMENT AREAS OR BENEATH KERB OR FOOTPATH ARE TO BE
- BACKFILLED WITH CLASS 3 20MM FINE CRUSHED ROCK. 38. ALL ROAD CROSSINGS FOR PROPERTY SERVICES TO BE BACKFILLED WITH 3% CEMENT STABILISED

THRUST RESTRAINT

- 39. FOR THE THRUST RESTRAINT SCHEDULE, REFER TO TABLE 6.
- 40. CONSTRUCT CONCRETE THRUST RESTRAINTS AS PER DRAWINGS MRWA-W- 204, 205A, 205B & 205C AS APPLICABLE.
- 41. THE CONTRACTOR SHALL CONFIRM THE ACTUAL GROUND CONDITIONS (USING STANDARD DRAWING MRWA-W-200 AS A GUIDE) AND DISCUSS WITH THE SUPERINTENDENT ANY GROUND CONDITIONS WHICH ARE FOUND TO BE DIFFERENT TO THAT NOMINATED. THE NOMINAL AHBP OF THE GROUND USED IN CALCULATING EACH THRUST RESTRAINT IS 50KPA.

CONNECTIONS (ALL TYPES)

42. CONNECTION OF > DN100 OFFTAKES TO EXISTING MAINS SHALL BE AS INDICATED IN THE DESIGN

- DRAWINGS AND AS PER DRAWING MRWA-W-106.
- CONNECTION OF DN40, 50 & 63 PE OFFTAKES SHALL BE AS PER DRAWING MRWA-W-107.
- 44. ALL WATER SERVICE ROAD CROSSINGS TO BE 32mm PN8 POLY (IF TWO PROPERTIES BEING CONNECTED) OR 25MM PN8 POLY (IF SINGLE PROPERTY CONNECTED). EACH SERVICE TO BE SLEEVED IN 50MM CLASS 12 UPVC.
- 45. WATER TAPPINGS (TREATED AND RAW) INCLUDING TAPPING SADDLES AND 20mm COPPER SERVICE CONNECTIONS, METER STOP TAP (TREATED) AND BALL VALVE QUICK ACTION (RAW) TO BE PROVIDED 1m WITHIN EACH LOT. TAPPING SADDLES ARE TO BE GUNMETAL STYLE ONLY. SEE STANDARD DRAWING (TO BE REQUESTED FROM MURRAY RIVER COUNCIL).

OTHER SERVICES

- 46. TO RECEIVE THE MOST UP TO DATE INFORMATION PRIOR TO CONSTRUCTION, "DIAL BEFORE YOU DIG "SHALL BE UNDERTAKEN TO AID IN THE LOCATION OF OTHER SERVICES. OTHER SERVICES SHALL BE CAREFULLY LOCATED PRIOR TO FULL EXCAVATION AT THE CONTRACTOR'S RISK AND COST. ANY CLASHES OF PROPOSED NEW WORKS WITH OTHER ASSETS SHALL BE REPORTED TO THE SUPERINTENDENT IMMEDIATELY FOR CLARIFICATION.
- 47. THE LOCATION AND DEPTH OF ANY EXISTING SERVICES SHOULD BE DETERMINED BY THE CONTRACTOR PRIOR TO COMMENCING ANY EXCAVATION BY CONTACTING ALL LOCAL SERVICE
- 48. OFFSETS TO OTHER SERVICES SHALL BE AS PER TABLE 5 OR OTHERWISE AS PER TABLE 5.5 OF WSA03-2011-3.1 MRWA EDITION. THESE CLEARANCES SHALL APPLY TO SURFACE COVERS AS WELL AS UNDERGROUND ASSETS.
- 49. VERTICAL CLEARANCES FROM OTHER SERVICES SHALL BE AS PER TABLE 7
- LAY MAINS OVER DRAINS UNLESS OTHERWISE SHOWN. 51. GAS & WATER MAINS TO BE LAID IN A COMMON TRENCH.

ASSET RECORDING

- 52. THE CONTRACTOR MUST RECORD ALL CONSTRUCTION DETAILS INCLUDING OFFSETS OF MAINS AND LOCATIONS OF FITTINGS SUCH AS VALVES, TEES, FIRE PLUGS ETC. AND TESTING DETAILS, USING APPROPRIATE "LINE SHEETS".
- 53. "LINE SHEETS" ARE TO BE PROVIDED TO THE SUPERVISING ENGINEER AS AS CONSTRUCTED PLANS, WITHIN 1 WEEK OF THE COMPLETE OF THE WORKS.

TESTING, ASSET ACCEPTANCE AND LIVE CONNECTIONS

- 54. POST CONSTRUCTION ACTIVITIES SUCH AS SWABBING, WATER QUALITY TESTING, PRESSURE TESTING AND CHLORINATION SHALL BE CARRIED OUT IN ACCORDANCE WITH WSA03-2011-3.1 MRWA EDITION AND THE MRWA WATER QUALITY COMPLIANCE SPECIFICATION & MURRAY RIVER COUNCIL REQUIREMENTS. ALL TEST RESULTS SHALL BE DOCUMENTED AND REPORTED TO THE SUPERINTENDENT.
- THE CONTRACTOR SHALL PROVIDE 14 DAYS NOTICE TO THE SUPERINTENDENT PRIOR TO TESTING
- 56. THE CONTRACTOR SHALL PROVIDE AT LEAST 10 DAYS NOTICE TO THE SUPERINTENDENT PRIOR TO CONNECTING NEW WORKS TO THE EXISTING NETWORK. SHUT DOWN WORK SHALL BE SCHEDULED
- FOR 9AM WEEKDAYS AND BE COMPLETED BETWEEN 9AM 4PM. 57. VALVES CONNECTING NEW ASSETS TO MURRAY RIVER COUNCIL'S LIVE SYSTEM SHALL ONLY BE
- OPERATED BY MURRAY RIVER COUNCIL. 58. ALL WORKS MUST BE CONSTRUCTED AND FINISHED IN A TRADESMANSHIP LIKE MANNER.

DRAINAGE NOTES

- 1. ALL DRAINAGE PIPES & PITS ARE TO BE AT 1m OFFSET TO PROPERTY BOUNDARIES UNLESS SHOWN OTHERWISE
- 2. THE CONTRACTOR MUST CONTACT SERVICING AUTHORITIES TO ARRANGE SERVICE LOCATIONS PRIOR TO COMMENCEMENT OF EXCAVATION FOR THIS PROJECT
- 3. PITS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARDS OF THE MUNICIPALITY. STEEL GRATES ARE TO BE HOT DIP GALVANISED AFTER MANUFACTURE. THE TOP OF ALL GRATES MUST BE APPROXIMATELY 150mm BELOW THE SURROUNDING SURFACE LEVEL. PROPERTY DRAINAGE CONNECTIONS ARE TO BE PROVIDED AS NECESSARY.
- 4. ALL SIDE ENTRY PITS IN ROLLOVER KERB & CHANNEL ARE TO BE CONSTRUCTED USING AN APPROVED ROLLOVER TYPE LINTEL OR A REINFORCED ROLLOVER PROFILE PIT LID. STANDARD SQUARE PROFILE PIT LIDS WITHOUT LINTEL ARE NOT ACCEPTABLE. SIDE ENTRY PIT THROAT CLEARANCE TO BE 100mm MAX.
- 5. PIT LIDS TO BE CLASS B IN NON-TRAFFICABLE AREAS AND CLASS D IN TRAFFICABLE AREAS.
- TRENCHES WITHIN PAVEMENT AREAS ARE TO BE BACKFILLED WITH CLASS 4 FCR. THE TRENCH IS TO BE BACKFILLED IN 150MM LAYERS AND CONSOLIDATED.
- 7. ALL PIPE STUBS ARE TO CONSIST OF ONE FULL PIPE LENGTH UNLESS SHOWN OTHERWISE.
- 8. FINISHED LEVELS FOR SIDE ENTRY PITS MUST BE DETERMINED FROM KERB LEVELS AND SHOULD BE SLOPED TO SUIT NATURESTRIPS ETC. THE FSLS INDICATED IN THE PIT SCHEDULE ARE BACK OF KERB LEVELS.
- STEP IRONS ARE NOT REQUIRED IN DRAINAGE PITS.
- 10. CONCRETE PIPES ARE TO BE CLASS 2 RRJ RCP AND PVC PIPES ARE TO BE CLASS SN8 UNLESS OTHERWISE
- 11. ALL EXCAVATIONS FOR DRAINAGE WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW SOUTH WALES WORK COVER AUTHORITY.
- 12. REINFORCEMENT BARS SHALL COMPLY WITH AS4671, GRADE 400Y. LAPS IN REINFORCEMENT BARS SHALL BE 300 MIN. AND CLEAR COVER 50 MIN.
- 13. CONCRETE SHALL BE NORMAL CLASS N32 STANDARD STRENGTH GRADE OR HIGHER COMPLYING WITH THE REQUIREMENTS OF AS1379.
- 14. ENDWALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT PROVISIONS OF AS3600.
- 15. DIRECT CONNECTION OF PVC HOUSE DRAIN TO RCP DRAINAGE TO BE CONSTRUCTED WITH "CONCONECT" OR APPROVED EQUIVALENT FITTING. 150mmø PVC PIPES ARE NOT TO BE DIRECTLY CONNECTED TO CONCRETE PIPES LESS THAN 450mmø IN DIAMETER. 100mmø HOUSE CONNECTION PIPE TO BE USED FOR ALL LOTS IN STAGE.
- 16. WHERE PVC HOUSE CONNECTIONS ARE MADE DIRECTLY TO PIPES, THE HOUSE CONNECTION IS TO BE RAISED TO SURFACE LEVEL WITHIN THE PROPERTY AND CAPPED AS PER SD520.
- 17. ALL DRAINAGE PIPES ARE TO BE INSPECTED VIA CCTV AFTER INSTALLATION, HARD COPY AND ELECTRONIC COPY OF THE CCTY IS TO BE PROVIDED TO MURRAY RIVER COUNCIL. CCTV MUST INCLUDE GRADES.

SEWER NOTES

- ALL LEVELS ARE IN METRES TO AUSTRALIAN HEIGHT DATUM (A.H.D.)
- CO-ORDINATES FOR SETTING OUT, WHERE SHOWN, ARE TO M.G.A.
- WORKS MUST BE TO CONSTRUCTED ACCORDING TO THE WSA SEWERAGE CODE OF AUSTRALIA WSA 02-2014-3.1. THE CONTRACTOR SHALL ENSURE THAT THEY ARE CONVERSANT WITH THE CURRENT REVISIONS, AMENDMENTS, SPECIFICATIONS, STANDARD DRAWINGS AND UPDATES THAT MURRAY RIVER COUNCIL HAVE MADE TO THEIR CONSTRUCTION STANDARD
- 4. ALL MATERIALS ARE TO BE IN ACCORDANCE WITH MURRAY RIVER COUNCIL'S PREFERRED EQUIPMENT MANUFACTURERS LIST.
- 5. THE CONTRACTOR MUST CLEARLY UNDERSTAND THE REQUIREMENTS OF THE WSA CODE FOR THE CONSTRUCTION OF MH'S AND THEIR BASES. REFER TO THE WSA 300 SERIES DOCUMENTS WITH CLEARLY DETAIL MINIMUM REQUIREMENTS AND DIMENSIONS IN MILLIMETRES ETC. ACCEPTABLE TO MURRAY RIVER COUNCIL.
- TRENCH SUBSIDENCE OVER SEWER MAINS IS NOT ACCEPTABLE TO MURRAY RIVER COUNCIL
- CHAINAGES WHERE SHOWN ON DETAIL PLANS ARE DISCONTINUOUS AT MAINTENANCE
- CHAINAGES SHOWN ON LONGITUDINAL PLANS ARE CONTINUOUS.
- 9. PIPE MATERIAL, UNLESS SHOWN OTHERWISE
- PIPELINE MATERIALS

PIPE TYPE	PIPE CLASS	AUS. STANDARD	LOCATION
PVC	SN10	AS/NZS 1260-2009	100¢ PROPERTY BRANCHES
PVC	SN8	AS/NZS 1260-2009	150¢ RETICULATION SEWERS
PVC	SN8	AS/NZS 1260-2009	225¢ RETICULATION SEWERS

NOTE: SEWERPRO PIPE IS NOT ACCEPTABLE

- 10. ACCESS CHAMBERS
- ACCESS CHAMBER COVERS SHALL BE LEVEL WITH AND SHALL CONFORM TO SLOPE AND CROSSFALL OF THE FINISHED SURFACE. THE FINISHED SURFACE LEVELS SHOWN ARE APPROXIMATE ONLY. THE PRINCIPAL CONTRACTOR IS RESPONSIBLE FOR SETTING THE CONSTRUCTION LEVELS INCLUDING COVER GRADES BASED ON THE ROAD AND DRAINAGE PLANS. ALL SEWER COVERS ARE TO BE CONSTRUCTED TO THESE LEVELS. MAXIMUM SLOPE FOR CLASS C OR D COVERS TO BE 1 IN 10.
- MAXIMUM SLOPE FOR CLASS A OR B COVERS TO BE 1 IN 4. ACCESS CHAMBERS AND INSPECTION SHAFTS IN ROAD RESERVES AND R.O.W.'S CONSTRUCTED PRIOR TO THE CONSTRUCTION OF FOOTPATHS SHALL BE PROVIDED WITH A TEMPORARY COVER. THE PLACING OF THE FINAL COVER SHALL NOT BE CARRIED OUT UNTIL THE CONCRETE FOOTPATH HAS BEEN CONSTRUCTED.
- ALL MAINTENANCE HOLE COVERS IN ROAD RESERVES MUST BE A CLASS D SOLID DUCTILE IRON LID. B. ALL ACCESS CHAMBERS TO BE 1050MM DIAMETER UNLESS OTHERWISE SHOWN.
- 11. EARTHWORKS

IN AREAS SUBJECT TO EARTHWORKS, THE CONSTRUCTION OF SEWERS MUST NOT COMMENCE UNTIL THE EARTHWORKS HAVE BEEN COMPLETED OR THE SUPERINTENDENT GIVES WRITTEN APPROVAL TO COMMENCE. SUCH APPROVAL WOULD NOT BE GIVEN UNLESS THE CONTRACTOR CAN DEMONSTRATE THAT THE SEWER WOULD BE SATISFACTORILY PROTECTED AGAINST DAMAGE FROM CONSTRUCTION LOADS.

WHERE CLEAR COVER LESS THAN 600MM, TYPE F2C BEDDING AND COVERING SHALL BE PLACED AROUND SEWERS. UNDER ROAD PAVEMENTS WHERE THE CLEARANCE BETWEEN THE TOP AND BOTTOM OF BOXING AND TOP OF SEWER IS LESS THAN 900MM, TYPE F2C BEDDING AND COVERING SHALL BE PLACED AROUND SEWERS.

- 12. THE CONTRACT IS IN ACCORDANCE WITH AS2124-1992. IN ACCORDANCE WITH CLAUSE 15 OF. AS2124-1992, THE CONTRACTOR MUST ENSURE THE SAFETY OF THE CONTRACTORS EMPLOYEES AND ALL OTHER PEOPLE WHO ARE ON OR ADJACENT THE SITE.
- 13. MURRAY RIVER COUNCIL MUST BE NOTIFIED BY THE CONTRACTOR 72 HOURS PRIOR TO COMMENCING WORKS ON EXISTING SEWER.
- 14. CONNECTION TO LIVE SEWER:
- CONFINED SPACE ENTRY MUST BE IN ACCORDANCE WITH BOTH MURRAY RIVER COUNCIL AND WH&S REQUIREMENTS. CONTRACTOR MUST NOT ENTER A CONFINED SPACE UNTIL ALL REQUIRED INFORMATION HAS BEEN SUBMITTED TO MURRAY RIVER COUNCIL.
- 15. PROPERTY BRANCH FITTINGS MUST BE LOCATED AT LEAST 1m WITHIN PROPERTY BEING SERVICED, AND CLEAR OF ANY OBSTRUCTIONS, PROPERTY CONNECTION POINT JUMP UPS ARE TO BE FINISHED 1m ABOVE FINISHED SURFACE LEVEL AS PER MURRAY RIVER COUNCIL REQUIREMENTS. PROPERTY BRANCH MUST BE A MINIMUM 1m FROM SIDE BOUNDARIES.
- 16. 7 CLEAR DAYS NOTICE PRIOR TO COMMENCEMENT OF THE WORKS MUST BE GIVEN TO THE SUPERINTENDENT.
- 17. WSA CODE REQUIREMENTS FOR MINIMUM VERTICAL, AND HORIZONTAL CLEARANCES FROM THE SEWER ASSETS TO OTHER SERVICES ARE NOT COMPROMISED.
- 18. ALL MH'S PROPOSED TO BE LOCATED WITHIN LOTS, CLOSE TO THE FOOTPATHS/STREET FRONTAGES, WHERE PROPOSED FINISHED SURFACES ARE CONTOURED, OR SLIGHTLY HIGHER THAN A FOOTPATH OR OTHER SURFACES. MURRAY RIVER COUNCIL REQUIRES THE CONCRETE COVERS OF THE MH'S CONSTRUCTED IN THESE LOCATIONS, USING A TAPERED PRECAST CONCRETE MAKE UP RINGS, OR PRECAST SPACER RINGS. REFER TO SEW-1308-V OF THE CODE.
- 19. SERVICE CONNECTIONS
- ALL NEW SERVICE CONNECTIONS MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF MURRAY RIVER COUNCIL SPECIFICATION OF WORKS FOR CONSTRUCTION OF RETICULATION SEWERS, ADDENDUM AND ASSOCIATED STRUCTURES, AS3500 AND THE SEWERAGE STANDARD DRAWINGS.

A. THE CONNECTION POINT MUST BE EXTENDED A MINIMUM OF 1.0 METRES INTO THE BOUNDARY OF A LOT.

BOUNDARY. A SIDE-LINE MUST NOT EXCEED A MAXIMUM LENGTH OF 3.0METRES IN LENGTH UNLESS

- A FURTHER DISTANCE MAY BE REQUIRED TO CLEAR STORM WATER DRAINS. THIS DISTANCE IS 300MM OR THE THE EDGE OF THE EASEMENT. B. PROPERTY CONNECTION SIDE-LINE MUST BE LOCATED A MINIMUM OF 1.0METRES FROM A SIDE
- APPROVED BY MURRAY RIVER COUNCIL. C. THE SIDE-LINE MUST BE CONSTRUCTED TO ACHIEVE A MINIMUM OF 600mm HORIZONTAL CLEARANCE FROM ANY OTHER SERVICES, FOR EXAMPLE 600mm MINIMUM FROM THE NEAREST EDGE OF A STORM WATER DRAIN OR PIT.
- 20. BLASTING NO BLASTING IS PERMITTED.

ABN 55 050 029 635

- 21. TESTING
- ALL NEW SEWERS MUST BE PRESSURE TESTED. WHERE THE CONTRACTOR DOES NOT HAVE A QUALITY ASSURANCE SYSTEM IN PLACE, ALL PIPES MUST BE INSPECTED BY THE SUPERVISING ENGINEER.

- 23. WI N25 GRADE CONCRETE GP TYPE CEMENT MUST BE USED IN ALL CONSTRUCTION, UNLESS OTHERWISE NOTED IN MURRAY RIVER COUNCIL'S DESIGN GUIDELINE.
- 24. SEWER SETOUTS

PRIOR TO WORKS COMMENCING.

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE HORIZONTAL ALIGNMENT AND FOR OFFSETTING PEGS DURING CONSTRUCTION.
- B. SETOUT AND VERIFICATION OF LEVELS SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.
- 25. THE CONTRACTOR MUST LOCATE ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF
- 26. THE LEVEL OF ALL EXISTING OUTFALL SEWERS MUST BE CONFIRMED BY THE CONTRACTOR
- 27. CLASS 3 FCR BACKFILL MUST BE USED WHERE SEWER MAINS CROSS ROAD PAVEMENT,
- FOOTPATHS OR DEFINED DRIVEWAYS. 28. PIPES JOINS ARE TO BE CONSTRUCTED STRICTLY TO THE MANUFACTURER'S SPECIFICATIONS -
- MANUALLY JOINED AND NOT USING MECHANICAL EQUIPMENT SUCH AS AN EXCAVATOR BUCKET ETC. 29. THE CONTRACTOR MUST ADHERE TO THE CODE OF PRACTICE FOR 'SAFETY PRECAUTIONS IN

TRENCHING OPERATIONS" UNDER THE "OCCUPATIONAL HEALTH & SAFETY ACT 2004"

- 30. CAST IRON CONCRETE INFILL STYLE COVERS ARE NOT ACCEPTABLE
- 31. THE CONCRETE FINISH OF THE MANHOLE BENCHING AND CHANNELS HAS BEEN FINISHED WITH A METAL FLOAT. A BROOM FINISH IS NOT ACCEPTABLE.
- 32. IN ACCORDANCE WITH SECTION 22.7 (WSA 02-2002-2.3, VERSION 1.0) MURRAY RIVER COUNCIL REQUIRES SATISFACTORY EVIDENCE IN THE FORM OF CALIBRATED CCTV RECORDING OF THE ASSETS ACCOMPANIED BY A DETAILED REPORT. A HARD AND ELECTRONIC COPY IS TO BE PROVIDED TO MURRAY RIVER COUNCIL. THE GRADE OF THE PIPE IS ALSO REQUIRED TO BE SHOWN ON CCTV.
- 33. IN ACCORDANCE WITH SECTION 8.10(WSA 02-2002-2.3, MELBOURNE RETAIL WATER AGENCIES EDITION, VERSION 1.0) WHERE TRENCH STOPS OR BULKHEADS ARE REQUIRED AS PART OF THE DESIGN FOR A
- SEWER MAIN EXTENSION THEY MUST BE CLEARLY DETAILED ON THE PRELIMINARY DESIGN PLANS. 34. PRIOR TO MURRAY RIVER PRACTICAL COMPLETION INSPECTION THE FOLLOWING MUST BE
- a. ALL STRUCTURES MUST REACH PRACTICAL COMPLETION PRIOR TO THE CCTV RECORDING b. SILICONE SEALANT OR SIMILAR, IS NOT AN ACCEPTABLE MATERIAL TO BE USED TO FILL THE REBATE IN
- CAST IRON MH COVERS. FERRO PRE IS ACCEPTABLE. c. CUT PIPES MUST BE CUT AT RIGHT ANGLE TO THE PIPE, BE DE BURRED AND PREPARED PER THE
- MANUFACTURERS SPECIFICATIONS PRIOR TO ANY PIPE JOINTS BEING CONSTRUCTED d. CLEANING FLUID MUST BE VISIBLE
- e. EXCESSIVE GLUE IS NOT ACCEPTABLE
- SECTIONS OF PIPE WHICH HAVE BEEN DISTORTED OR DAMAGED IN ANY WAY, MUST NOT BE
- CONSTRUCTED AS PART OF THE SEWER MAINS
- SEWERS MUST BE LAID STRAIGHT AND WITH A CONSISTENT UNIFORM GRADIENT
- SEWERS AND STRUCTURES (MH'S, MS'S, TMS'S) MUST BE FREE OF ANY DEBRIS SURFACE AND/OR TRENCH/GROUND WATER IS NOT PERMITTED TO ENTER SEWERS
- ANY SIGNS OF WATER INGRESS DUE TO MATERIAL FAILURE, JOINT CONSTRUCTION FAILURE, POROUS CONCRETE, DAMAGED CONCRETE PRODUCTS OR THE USE OF SECONDS WILL NOT BE ACCEPTABLE. ALL MATERIALS MUST BE OF THE HIGHEST QUALITY AND COMPLIANT WITH THE RELEVANT AUSTRALIAN
- STANDARDS k. ALL WORKS MUST BE CONSTRUCTED AND FINISHED IN A TRADESMANSHIP LIKE MANNER.
- SUBSTANDARD WORKS WILL NOT BE ACCEPTABLE. TRENCHES MUST BE REINSTATED PER THE MINIMUM REQUIREMENT OF THE WSA CODE. TRENCH
- SUBSIDENCE IS NOT ACCEPTABLE AT ANY TIME. m. ALL SEWER GRADES ARE DESIGNED TO THE 2014 WSA CODE AND INCLUDES ALL FUTURE LOTS THAT

ARE SERVICED WITHIN THIS SEWER NETWORK WHEN DETERMINING THE MINIMUM ACCEPTABLE GRADES.

AMENDED AS PER COUNCIL COMMENTS J.F 09/08/22 A ISSUED FOR APPROVAL J.F 21/06/22 Approved Rev | Amendments Date



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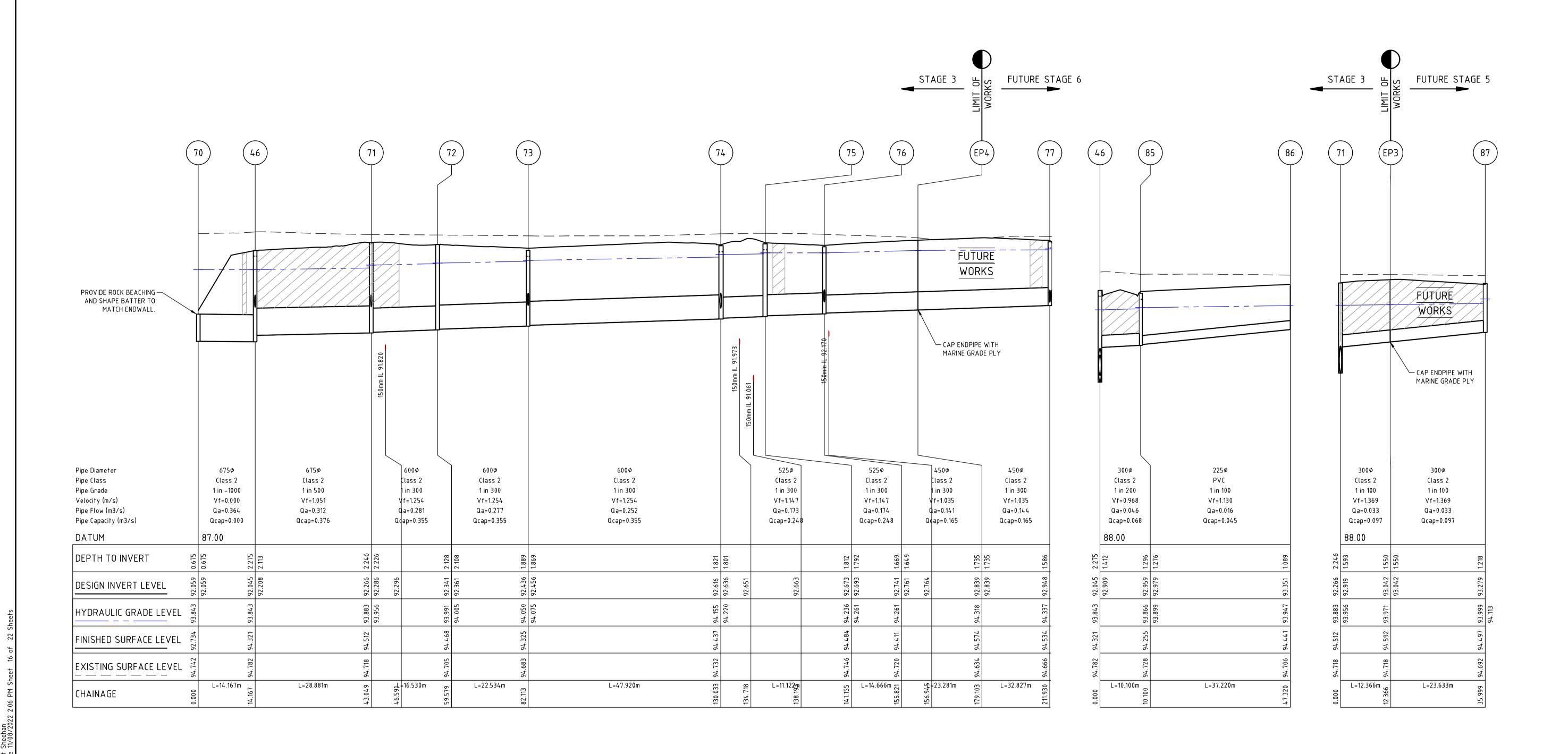
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Checked D.SHEEHAN B.IBBS Authorised Date J.FEHRING JUN 2022 **MAIDENS GREEN** STAGE 3 **HYDRAULICS - NOTES & LEGEND** SHEET 1 MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC400



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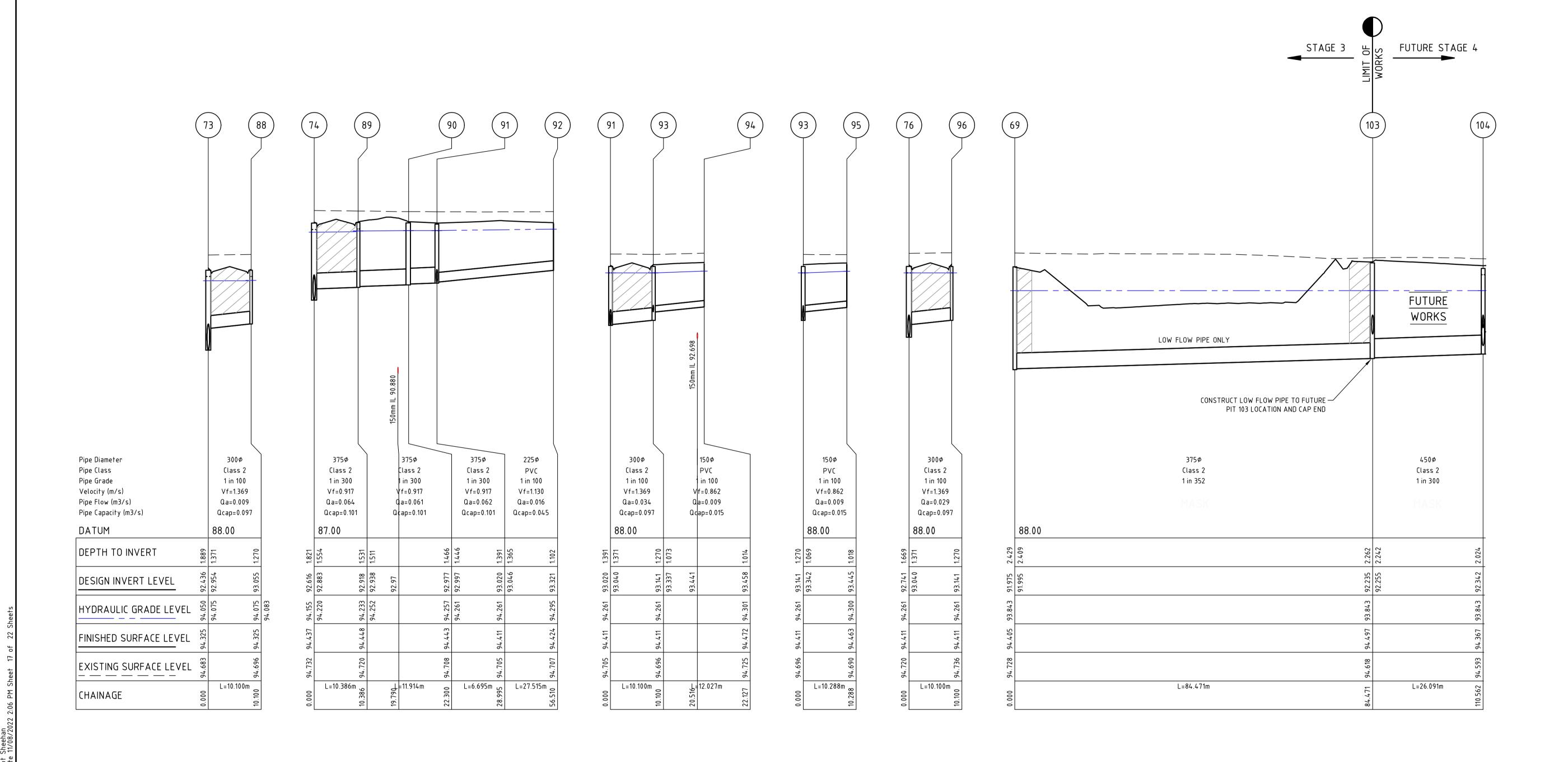
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MAIDENS GREEN STAGE 3 HYDRAULICS - DRAINAGE PROFILES SHEET 2 MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

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A ISSUED FOR APPROVAL

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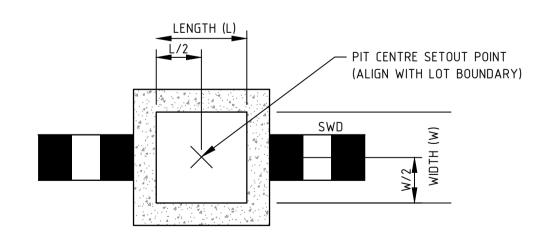
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PIT SETOUT CO-ORDINATES

NAME	POINT	EASTING	NORTHING							
68	CENTRE OF BASE	299133.488	6002764.941							
69	CENTRE OF BASE	299150.277	6002818.538							
70	CENTRE OF BASE	299165.990	6002831.750							
71	CENTRE OF BASE	299155.004	6002862.020							
72	CENTRE OF BASE	299139.944	6002869.269							
74	CENTRE OF BASE	299069.997	6002877.706							
75	CENTRE OF BASE	299062.904	6002885.873							
EP4	END OF PIPE	299066.453	6002923.628							
86	CENTRE OF BASE	299137.390	6002797.710							
EP3	END OF PIPE	299167.283	6002860.994							
89	CENTRE OF BASE	299071.154	6002867.091							
90	CENTRE OF BASE	299062.235	6002859.358							
92	CENTRE OF BASE	299059.247	6002825.277							
94	CENTRE OF BASE	299052.180	6002865.273							
95	CENTRE OF BASE	299050.948	6002842.994							
103	CENTRE OF BASE	299233.688	6002808.426							

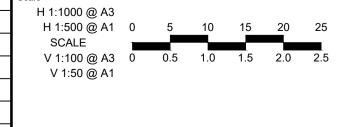
(E	P2) (45		69	46	45 47		68
TO EXISTING ENDPIPE		150mm III. 92:855	III II				150mm IL 92.723	
Pipe Diameter Pipe Class Pipe Grade Velocity (m/s) Pipe Flow (m3/s) Pipe Capacity (m3/s)	375¢ Class 2 1 in 300 Vf=0.917 Qa=0.078 Qcap=0.10	ı	375¢ Class 2 1 in 300 Vf=0.917 Qa=0.032 Qcap=0.101	375¢ Class 2 1 in 300 Vf=0.917 Qa=0.008 Qcap=0.101		300¢ Class 2 1 in 100 Vf=1.369 Qa=0.033 Qcap=0.097	225¢ PVC 1 in 64 Vf=1.415 Qa=0.017 Qcap=0.056	
DATUM DEPTH TO INVERT	86.00			29	78	88.00		01
		91.682 2.799 91.702 2.779	91.761	91.975 2.429	92.045 2.284	91.682 2.799 93.110 1.371 93.211 1.270 93.286 1.195	93.548	93.705 0.901
HYDRAULIC GRADE LEVEL		93.741 91.	9.79	93.875 91.	93.824 92	93.741 91. 93.787 93. 93.799 93. 93.913 93.	93	93.952 93.
FINISHED SURFACE LEVEL		94.481 93		93	94.330 93	1847		94.606 93
EXISTING SURFACE LEVEL		94.734 94		94.728 94	94.782 94	4.734		96'693
CHAINAGE			C01.040 L=81.922m D+0.707 C337.040	76 L=14.999m		76 L=10.097m L	L=26_700m	76 27.98

PIT S	CHEDULE									
PIT		INTE	RNAL	11	NLET	0	UTLET	PI	Γ	
NAME	TYPE	WIDTH	LENGTH	DIA	INV LEVEL	DIA	INV LEVEL	FS LEVEL	DEPTH	REMARKS
EP2	ENDPIPE			375	91.644	375	91.644	94.538	2.893	CONNECT TO EXISTING ENDPIPE
45	SIDE ENTRY PIT	600	900	375	91.702	375	91.682	94.481	2.799	AS PER IDM SD 440
				300	93.110					
69	JUNCTION PIT	900	600	375	91.995	375	91.975	94.405	2.429	AS PER IDM SD 410
				375	91.995					
46	SIDE ENTRY PIT	900	900	675	92.208	675	92.045	94.321	2.275	AS PER IDM SD 440, HAUNCHED TO 900X600
				300	92.909					
47	SIDE ENTRY PIT	600	900	225	93.286	300	93.211	94.481	1.270	AS PER IDM SD 440
68	ENDPIPE					225	93.705	94.606	0.901	INSPECTION OPENING AS PER IDM SD 515
70	HEADWALL	900	900	675	92.059			92.734	0.675	ENDWALL TO SUIT 675Ø PIPE
71	JUNCTION PIT	900	900	600	92.286	675	92.266	94.512	2.246	AS PER IDM SD 410, HAUNCHED TO 900X600
				300	92.919					
72	JUNCTION PIT	1200	900	600	92.361	600	92.341	94.468	2.128	AS PER IDM SD 440, HAUNCHED TO 900X600
73	SIDE ENTRY PIT	1200	900	600	92.456	600	92.436	94.325	1.889	AS PER IDM SD 440, HAUNCHED TO 900X600
				300	92.954					
74	SIDE ENTRY PIT	1200	900	525	92.636	600	92.616	94.437	1.821	AS PER IDM SD 440, HAUNCHED TO 900X600
				375	92.883					
75	SIDE ENTRY PIT	1200	900	525	92.693	525	92.673	94.484	1.812	AS PER IDM SD 440, HAUNCHED TO 900X600
76	SIDE ENTRY PIT	1200	900	450	92.761	525	92.741	94.411	1.669	AS PER IDM SD 440, HAUNCHED TO 900X600
				300	93.040					
EP4	ENDPIPE			450	92.839	450	92.839	94.574	1.735	CAP END WITH MARINE GRADE PLY
85	SIDE ENTRY PIT	600	900	225	92.979	300	92.959	94.255	1.296	AS PER IDM SD 440
86	ENDPIPE					225	93.351	94.441	1.089	INSPECTION OPENING AS PER IDM SD 515
EP3	ENDPIPE			300	93.042	300	93.042	94.592	1.550	CAP END WITH MARINE GRADE PLY
88	SIDE ENTRY PIT	600	900			300	93.055	94.325	1.270	AS PER IDM SD 440
89	SIDE ENTRY PIT	600	900	375	92.938	375	92.918	94.448	1.531	AS PER IDM SD 440
90	JUNCTION PIT	900	900	375	92.997	375	92.977	94.443	1.466	AS PER IDM SD 410, HAUNCHED TO 900X600
91	SIDE ENTRY PIT	900	900	225	93.046	375	93.020	94.411	1.391	AS PER IDM SD 440, HAUNCHED TO 900X600
				300	93.040					
92	ENDPIPE					225	93.321	94.424	1.102	INSPECTION OPENING AS PER IDM SD 515
93	SIDE ENTRY PIT	600	900	150	93.337	300	93.141	94.411	1.270	AS PER IDM SD 440
				150	93.342					
94	ENDPIPE					150	93.458	94.472	1.014	INSPECTION OPENING AS PER IDM SD 515
95	ENDPIPE					150	93.445	94.463	1.018	INSPECTION OPENING AS PER IDM SD 515
96	SIDE ENTRY PIT	600	900			300	93.141	94.411	1.270	AS PER IDM SD 440
103	JUNCTION PIT	1200	900	450	92.255	375	92.235	94.497	2.262	CAP END OF PIPE WITH MARINE GRADE PLY. PIT TO BE CONSTRUCTED IN STAGE 4
				450	92.817					



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

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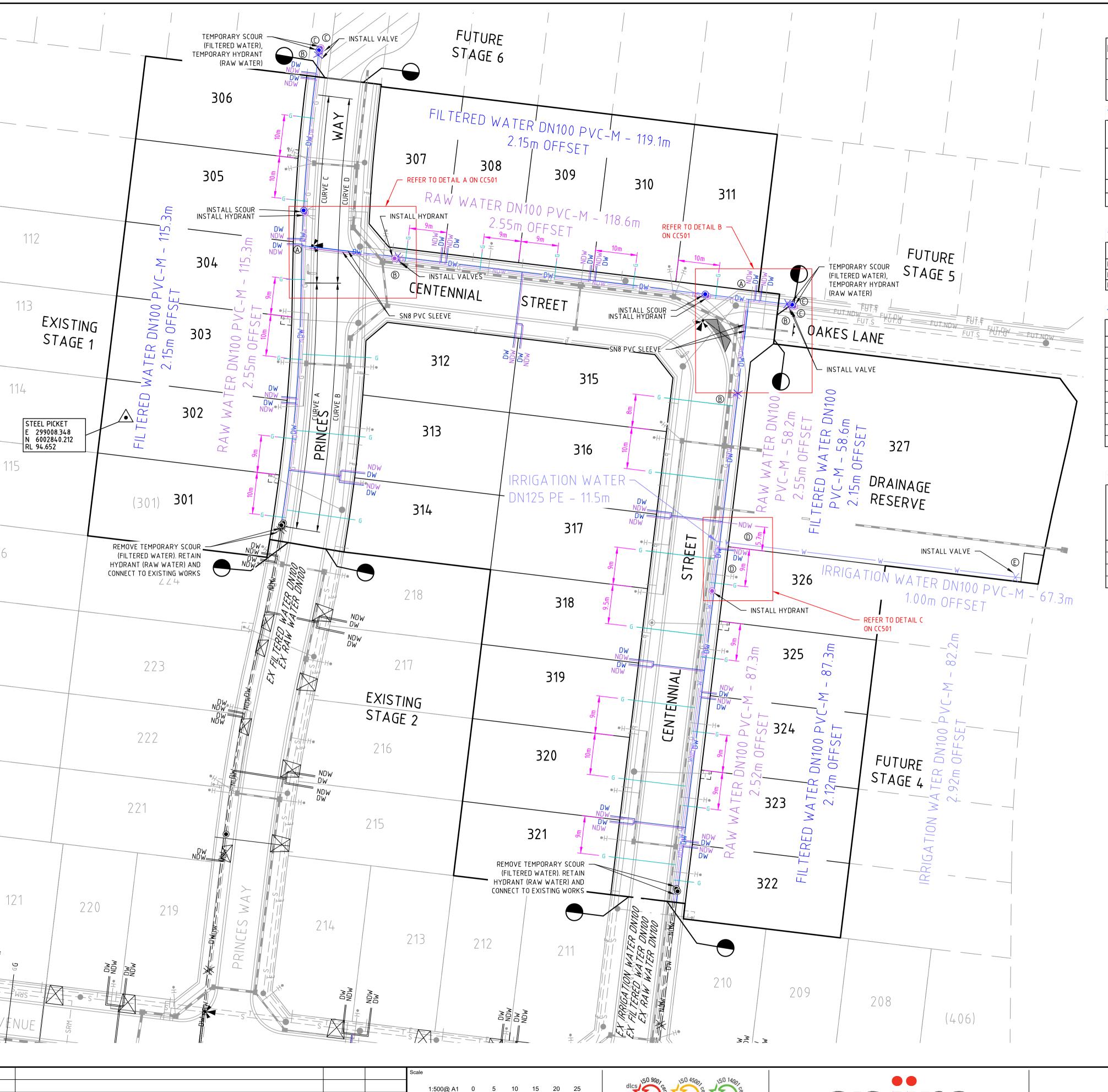
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Authorised J.FEHRING	Date JUN 2022

MAIDENS GREEN STAGE 3 HYDRAULICS - DRAINAGE PROFILES
SHEET 3
MURRAY RIVER COUNCIL KIELY ROAD PROJECTS PTY LTD

PRELIMINARY 309402CC432 B



AMENDED AS PER COUNCIL COMMENTS

ISSUED FOR APPROVAL

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J.F

Approved

09/08/22

21/06/22

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	FILTERED WATER	RAW WATER
MAXIMUM DESIGN HEAD(m	46m	49m
ZONE	RESIDENTIAL	RESIDENTIAL
TEST PRESSURE (kPa)	1000kPa	1000kPa



TABLE 1: NEW PIPE SCHEDULE

NEW WORK			FILTERED WATER	RAW WATER	IRRIGATION WATER
SIZE (mm)	TYPE	CLASS	LENGTH (m)	LENGTH (m)	LENGTH (m)
125	PE AS/NZS 4441	SERIES 1 PN12	-	-	11.5
100	PVC-M AS/NZS 4441	SERIES 1 PN12	380.3	379.4	149.5

TABLE 2: PIPE MATERIAL SCHEDULE

MATERIAL	REFERENCE
PVC-M	WSA-PS-209
PE (RETIC & SUBMAIN)	WSA-PS-207
PE (PROPERTY SERVICE)	WSA-PS-215

TABLE 3: HYDRANT & WASHOUT SCHEDULE

MAIN SIZE	FITTING TYPE	LOCATION	STREET	LOCATION
100	SCOUR – FW	IN LINE	PRINCES WAY	7.6m N OF SBL LOT 305
100	HYDRANT - RW	IN LINE	PRINCES WAY	7.0m N OF SBL LOT 305
100	SCOUR – FW	END OF LINE	PRINCES WAY	6.3m N OF NBL LOT 306
100	HYDRANT - RW	END OF LINE	PRINCES WAY	7.0m N OF NBL LOT 306
100	HYDRANT - RW	IN LINE	CENTENNIAL STREET	7.0m N OF SBL LOT 326
100	SCOUR – FW	IN LINE	CENTENNIAL STREET	7.4m E OF WBL LOT 311
100	HYDRANT - RW	IN LINE	CENTENNIAL STREET	8.0m E OF WBL LOT 311
100	HYDRANT - RW	IN LINE	CENTENNIAL STREET	1.7m E OF SPLAY LOT 307
100	SCOUR – FW	END OF LINE	OAKES LANE	8.4m E OF EBL LOT 311
100	HYDRANT - RW	END OF LINE	OAKES LANE	9.0m E OF EBL LOT 311

TABLE 4: CURVED PIPE AND DEFLECTION SCHEDULE

LOCATION	METHOD	RADIUS (m)	TOTAL PIPE LENGTH	PIPE LENGTHS
CURVE A	PVC SOC DEFLECTION	393.15	58.6	10
CURVE B	PVC SOC DEFLECTION	393.55	58.7	10
CURVE C	PVC SOC DEFLECTION	406.85	45.4	8
CURVE D	PVC SOC DEFLECTION	406.45	45.3	8

TABLE 5: SERVICE ALIGNMENT SCHEDULE (SEE DRG NO. 309402CC001 SERVICE OFFSET TABLE)

TABLE 6: THRUST RESTRAINT SCHEDULE

LOCATION	TYPE	THRUST AHBP (kPa) USED		THRUST AREA (m²)		QUANTITY
А	IN LINE	2 X DN100 TEE	50	0.46	2	
В	INLINE	2 X DN100 VALVE	50	0.60	4	
С	PLAIN	DN100 END	50	0.23	4	
D	PLAIN	DN125 PE SHRINKAGE	50	0.43	2	
Е	INLINE	DN100 VALVE	50	0.30	1	

TARIE 7. VEDTICAL CLEADANCES

TABLE #: VERTICAL LLEARANCES			
EXISTING OR PROPOSED MINIMUM VER			
SERVICE	CLEARANCE (mm)		
WATER MAINS ≤ DN375	150		
WATER MAINS > DN375	300		
GAS MAINS	150		
TELECO CONDUITS AND CABLES	150		
ELECTRICITY CONDUITS AND CABLES	225		
STORMWATER DRAIN & PITS	150		
SEWERS - GRAVITY	500		
SEWERS - PRESSURE & VACUUM	500		

LEGEND THRUST RESTRAINT - SEE TABLE 6 FOR DETAILS G — GAS CONDUIT

NDW SERVICE CONDUIT X X X VALVE HYDRANT. BELOW GROUND. TAPER

REMOVE FITTING ---- NDW ---- RAW WATER MAIN — DW — FILTERED WATER MAIN ----- W ----- IRRIGATION WATER MAIN --- DW --- EXISTING WATER MAIN

FOR ADDITIONAL SYMBOLS NOT INCLUDED HERE - VERTICAL CLEARANCE BETWEEN WATER MAINS SHALL DEPEND ON THE LARGER MAIN DIAMETER. REFER TO MRWA-W-100 - WATER MAINS SHALL CROSS OVER SEWERS AND DRAINS UNLESS SHOWN OTHERWISE.

- MAINTAIN ADDITIONAL CLEARANCE FROM HIGH VOLTAGE ELECTRICAL CABLES TO ALLOW FOR A PROTECTIVE BARRIER AND MARKING.

MAIDENS GREEN STAGE 3 **HYDRAULICS - SEWER & WATER** WATER LAYOUT PLAN

MURRAY RIVER COUNCIL

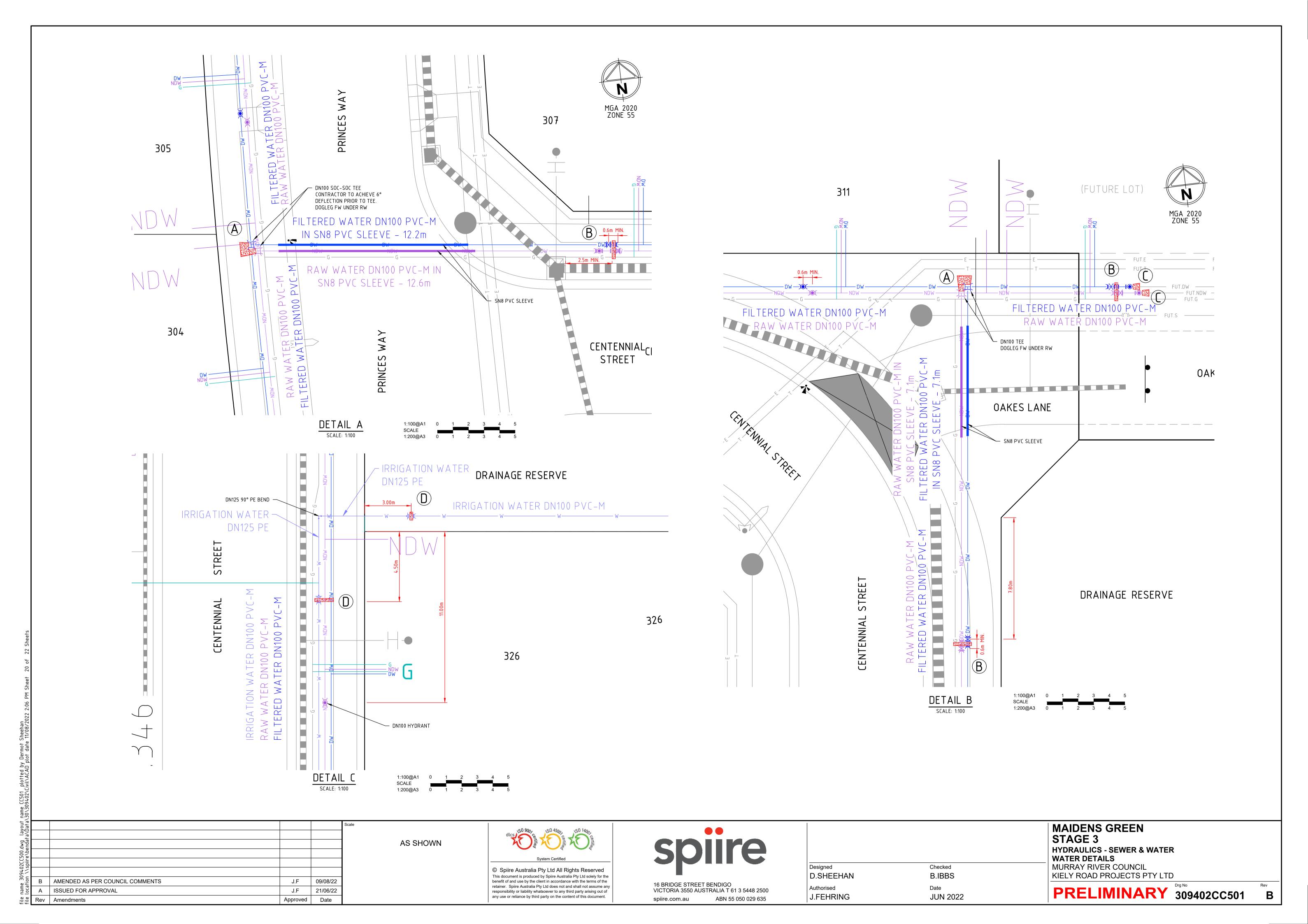
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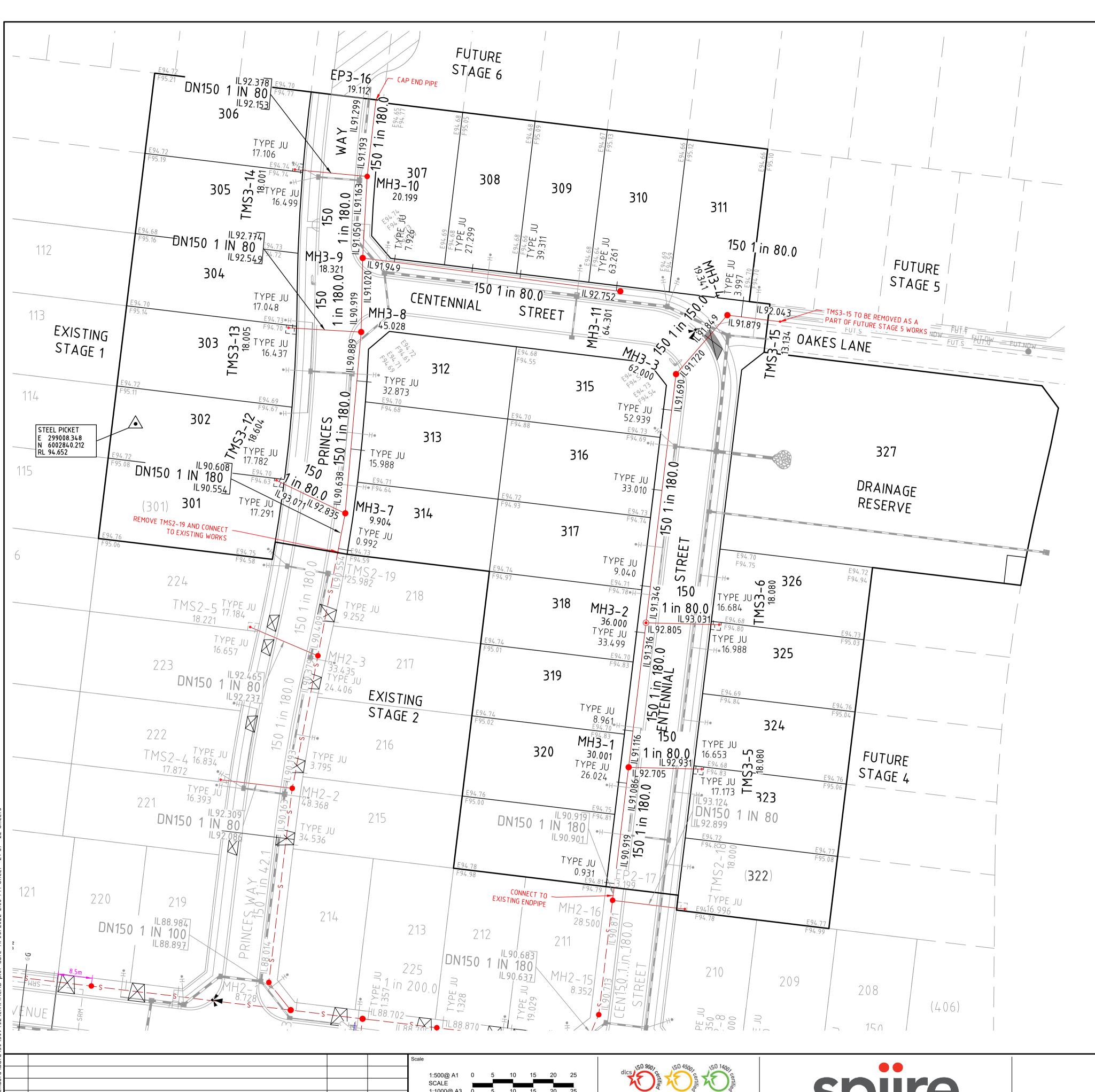
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SEWER STRUCTURE SETOUT TABLE

PIT	COORDINATES			
NAME	EASTING	NORTHING		
MH3-1	299130.354	6002755.247		
MH3-2	299134.665	6002790.988		
MH3-3	299142.090	6002852.541		
MH3-4	299154.794	6002867.125		
TMS3-5	299148.428	6002754.779		
TMS3-6	299152.739	6002790.520		
MH3-7	299060.246	6002818.094		
MH3-8	299064.168	6002862.968		
MH3-9	299064.542	6002881.285		
MH3-10	299065.677	6002901.452		
MH3-11	299128.313	6002873.041		
TMS3-12	299043.196	6002826.265		
TMS3-13	299046.193	6002864.005		
TMS3-14	299047.758	6002903.173		
TMS3-15	299167.833	6002865.552		
EP3-16	299067.878	6002920.437		

MAIDENS GREEN KIELY ROAD PROJECTS PTY LTD

STAGE 3 **HYDRAULICS - SEWER & WATER** SEWER LAYOUT PLAN MURRAY RIVER COUNCIL

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