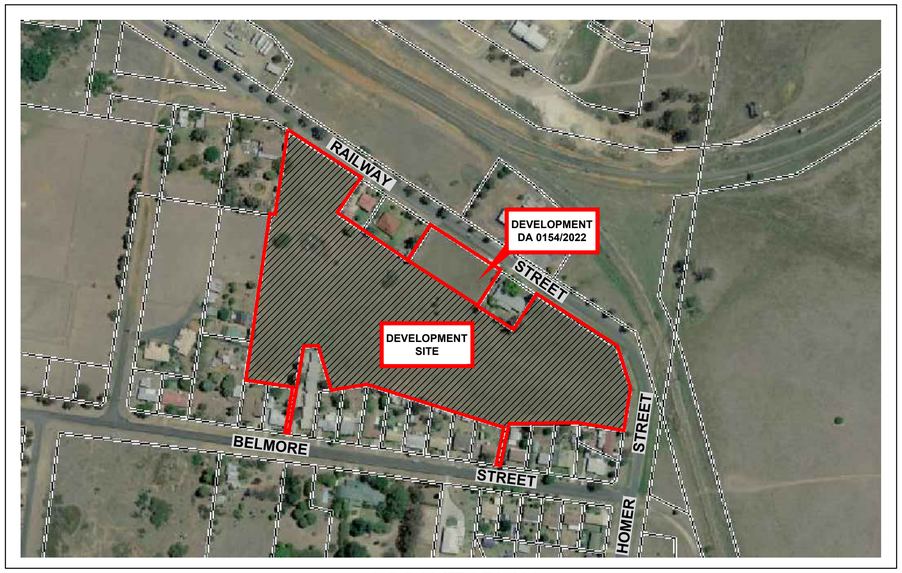
PROPOSED RESIDENTIAL SUBDIVISION
1 RAILWAY STREET, GULGONG
CIVIL ENGINEERING WORKS
FOR DEVELOPMENT APPLICATION

DRAWING SCHEDULE		
DRG No.	DESCRIPTION	REV.
GENERAL		
TEL2021184.CIV.DA.000	GENERAL NOTES, LOCALITY PLAN AND DRAWING SCHEDULE	B
TEL2021184.CIV.DA.001	EXISTING SERVICES AND DEMOLITION PLAN	A
EROSION AND SEDIMENT		
TEL2021184.CIV.DA.100	EROSION AND SEDIMENT CONTROL PLAN	B
TEL2021184.CIV.DA.101	EROSION AND SEDIMENT CONTROL DETAILS	A
EARTHWORKS		
TEL2021184.CIV.DA.200	BULK EARTHWORKS PLAN	A
TEL2021184.CIV.DA.201	EARTHWORKS TYPICAL CROSS SECTIONS SHEET 1 OF 2	A
TEL2021184.CIV.DA.202	EARTHWORKS TYPICAL CROSS SECTIONS SHEET 2 OF 4	A
TEL2021184.CIV.DA.203	EARTHWORKS TYPICAL CROSS SECTIONS SHEET 3 OF 4	A
TEL2021184.CIV.DA.204	EARTHWORKS TYPICAL CROSS SECTIONS SHEET 4 OF 4	A
ROADS		
TEL2021184.CIV.DA.300	STAGE LAYOUT PLAN	A
TEL2021184.CIV.DA.301	ROADWORKS AND DRAINAGE LAYOUT PLAN	B
TEL2021184.CIV.DA.302	ROAD 1 - LONGITUDINAL SECTIONS	A
TEL2021184.CIV.DA.303	ROAD 1 - CROSS SECTIONS SHEET 1 OF 3	A
TEL2021184.CIV.DA.304	ROAD 1 - CROSS SECTIONS SHEET 2 OF 3	A
TEL2021184.CIV.DA.305	ROAD 1 - CROSS SECTIONS SHEET 3 OF 3	A
STORMWATER		
TEL2021184.CIV.DA.400	STORMWATER CATCHMENT PLAN	B
BIO-RETENTION		
TEL2021184.CIV.DA.500	BIO-RETENTION BASIN 1 LAYOUT PLAN AND DETAILS SHEET 1 OF 2	A
TEL2021184.CIV.DA.501	BIO-RETENTION BASIN 1 LAYOUT PLAN AND DETAILS SHEET 2 OF 2	B



LOCALITY PLAN
N.T.S

COORDINATION NOTES

1. REFER ELECTRICAL CONSULTANTS DRAWINGS FOR ELECTRICAL RETICULATION SETOUT.
2. REFER LANDSCAPE ARCHITECTS DRAWINGS FOR SOIL STABILATION AND PLANTING DETAILS.
3. REFER SERVICE AUTHORITY FOR LOCATION AND CONSTRUCTION REQUIREMENTS APPLICABLE TO EXISTING SERVICES.

GENERAL NOTES

1. ALL WORK IS TO CONFORM TO THE CURRENT COUNCIL STANDARDS, DRAWINGS AND SPECIFICATIONS U.N.O.
2. WHERE CONNECTION IS TO BE MADE TO EXISTING CONSTRUCTION THE CONTRACTOR SHALL CONFIRM THE LOCATION AND LEVEL OF THIS CONSTRUCTION PRIOR TO COMMENCING WORK ON ANY CRITICAL SECTION. THE SUPERINTENDENT MAY VARY LEVELS AND GRADIENTS OF NEW WORKS TO ACHIEVE A SATISFACTORY CONNECTION.
3. LEVEL DATUM IS AHD.
4. ALL DIMENSIONS ARE IN METRES U.N.O.
5. PRIOR TO CONSTRUCTION THE CONTRACTOR WILL SATISFY HIMSELF OF THE CORRECT LOCATIONS OF ALL EXISTING SERVICES WHETHER INDICATED OR NOT ON THE PLANS. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTORS EXPENSE.
6. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY BENCH MARK LEVELS AND ADVISE THE SUPERINTENDENT OF ANY DISCREPANCIES.
7. PRIOR TO CONSTRUCTION THE CONTRACTOR IS TO CONFIRM WITH THE SUPERINTENDENT THE FOLLOWING:
   - 7.A. ALL INSPECTION HOLD POINTS, AND;
   - 7.B. ALL COMPLIANCE TESTING REQUIREMENTS.
8. ANY WORK ON EXISTING SERVICES THAT REQUIRE RELOCATION BY AUTHORITIES SHALL BE CARRIED OUT BY THE RELEVANT AUTHORITY, BUT WITHIN TERMS OF THE CONTRACT, AND SHALL BE CO-ORDINATED BY THE CONTRACTOR.
9. AT COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT LICENSED SURVEYOR TO CARRY OUT A "WORKS AS CONSTRUCTED" SURVEY IN ACCORDANCE WITH THE CURRENT COUNCIL STANDARDS AND SUBMIT THE DETAILS SHOWN ON A PLAN TO THE SUPERINTENDENT.
10. ALL VERGES ARE TO BE FULLY TURFED WITH COUCH REFER TO LANDSCAPE ARCHITECTS PLANS FOR DETAILS.

DISCLAIMER

ALL INFRASTRUCTURE INFORMATION (MAINS, SEWER, PIPES ETC.)
IS DERIVED FROM DIAL BEFORE YOU DIG RECORDS.
EVERY EFFORT WAS MADE TO ENSURE ACCURACY OF THESE
RECORDS WHEN COMPILED.
NO WARRANTY IS GIVEN TO CURRENCY OF DEPTHS AND LEVELS
DUE TO THE POSSIBILITY OF SUBSEQUENT ALTERATION OF LEVELS THROUGH FILLING
OR EXCAVATION. USERS OF THE INFORMATION IN THIS DRAWING/DESIGN SHOULD TAKE
ALL REASONABLE STEPS TO VERIFY THE RELEVANT INFORMATION BEFORE
COMMENCING EXCAVATING OR CONSTRUCTION WORK.
TELFORD CIVIL DESIGN AND CONSTRUCTION EXCELLENCE TAKE NO RESPONSIBILITY
FOR APPARENT ERRORS OR INACCURACIES IN THE INFORMATION PROVIDED.

IT IS THE CONTRACTOR RESPONSIBILITY TO CONTACT
"DIAL BEFORE YOU DIG" FOR THE LOCATION
OF EXISTING PUBLIC UTILITIES, PRIOR TO EXCAVATION.

DANGER :

LOCATION OF ALL EXISTING UNDERGROUND SERVICES
SHOWN ARE APPROXIMATE AS TAKEN OFF DBYD INFO.
EXTREME CAUTION TO BE EXERCISED WHEN WORKING IN THE
VICINITY OF AND AROUND THESE SERVICES. PLEASE CALL THE
RELEVANT AUTHORITIES TWO DAYS PRIOR TO CONSTRUCTION
FOR A MORE EXACT LOCATION OF THE EXISTING SERVICES.

DIAL BEFORE YOU DIG
www.1100.com.au

EARTHWORKS NOTES

1. EARTHWORKS NOTES ARE TO BE READ IN CONJUNCTION WITH THE GENERAL AND COORDINATION NOTES.
2. EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH PROCEDURES SET DOWN IN AS3798 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'.
3. BULK EARTHWORKS INCLUDING CLEARING, FILLING AND TESTING, ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT COUNCIL STANDARDS, DRAWINGS AND SPECIFICATIONS. COUNCIL STANDARDS SUPERSEDE ANY NOTES OR SPECIFICATIONS WRITTEN ON THE DESIGN DRAWINGS.
4. BULK EARTHWORKS LEVELS SHALL BE DETERMINED RELATIVE TO THE FINISHED SURFACE LEVELS. REFER ARCHITECTURAL DRAWINGS FOR SLAB LEVELS, TO THE STRUCTURAL ENGINEERS DRAWINGS FOR BUILDING AND PATH SLAB THICKNESS AND TO THE CIVIL ENGINEERS DRAWINGS FOR EXTERNAL FINISHED SURFACE LEVELS AND EXTERNAL PAVEMENT THICKNESSES
5. TOPSOIL SHALL BE STOCKPILED AS DIRECTED BY THE SUPERINTENDENT ON SITE.
6. PRIOR TO PLACEMENT OF ANY FILLING ALL TOPSOIL AND ORGANIC MATERIAL IS TO BE REMOVED AND THE SUBGRADE SHALL BE UNIFORMLY COMPACTED TO THE MINIMUM DRY DENSITY RATIOS SHOWN IN NOTE 10. ANY SOFT SPOTS REVEALED BY COMPACTION SHALL BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND BACKFILLED WITH COMPACTED SELECT FILL.
7. MOISTURE CONTENT OF COMPACTED FILL SHOULD BE MAINTAINED WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
8. FILL SHALL BE COMPACTED IN MAXIMUM 200mm THICK LAYERS (LOOSE THICKNESS) TO THE FOLLOWING MINIMUM DRY DENSITY RATIOS (STANDARD COMPACTION A.S.1289.5-1).
   - 8.A. UPPER 0.3m OF PAVEMENT SUBGRADE = 100%;
   - 8.B. UNDER BUILDINGS = 98%;
   - 8.C. GENERAL FILL = 95%.
9. ALL FILL MATERIAL PLACED ON THE SITE SHALL COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS (AS DEFINED BY SECTION 11 OF THE ENVIRONMENTAL PROTECTION ACT 1994), NOXIOUS, HAZARDOUS, DELETERIOUS AND ORGANIC MATERIALS. NO DEMOLITION MATERIAL IS TO BE USED. SUITABLE FILL MATERIAL IS DEEMED TO COMPLY WITH THE REQUIREMENTS OF CLAUSE 4.3 OF AS3798, 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS'.
10. IMPORTED FILL SHALL COMPLY WITH THE FOLLOWING:
    - 10.A. SOAKED CBR = MINIMUM OF 15%;
    - 10.B. LIQUID LIMIT = 30% MAX;
    - 10.C. PLASTICITY INDEX = 15% MAX;
    - 10.D. MAXIMUM AGGREGATE SIZE = 75mm;
    - 10.E. PASSING 0.075mm SIEVE = 30% MAX;
    - 10.F. SHRINK/SWELL INDEX = 1.0% MAX.
11. THE CONTRACTOR IS TO ENGAGE, AT THEIR EXPENSE, AN APPROVED NATA REGISTERED LABORATORY TO CARRY OUT SITE CONTROL TO 'LEVEL 1' STANDARD AS SET OUT IN APPENDIX B OF AS3798-2007 'GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS' AND PROVIDE A 'LEVEL 1' REPORT ON COMPLETION OF EARTHWORKS.

DRAINAGE NOTES

1. DRAINAGE NOTES ARE TO BE READ IN CONJUNTION WITH THE GENERAL AND COORDINATION NOTES.
2. CONTRACTOR IS TO CHECK THAT THE PROPOSED PIPE WORKS DO NOT CLASH WITH EXISTING SERVICES PRIOR TO ANY TRENCH EXCAVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CLASHES ARE FOUND FOR ADVICE ON ANY DESIGN REQUIREMENTS.
3. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE ASSESSMENT OF CONSTRUCTION LOADS AND PROVISION OF ANY TEMPORARY BRACING, PROPPING, ETC. REQUIRED DURING CONSTRUCTION. STRUCTURES SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED.
4. ALL TRENCH EXCAVATIONS AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE WORKPLACE HEALTH AND SAFETY 1989 AS AMENDED AND THE MINE REGULATIONS ACT.
5. ALL TRENCHES IN TRAFFICABLE AND NON TRAFFICABLE ZONES SHALL BE BACKFILLED TO DENSITY RATIOS, FREQUENCIES AND LAYER INTERVALS IN ACCORANCE WITH THE CURRENT COUNCIL STANDARDS. ALL TEST RESULTS SHALL FORWARDED TO THE SUPERINTENDENT AS THEY BECOME AVAILABLE.
6. ALL PRECAST CONCRETE PIPES ARE TO BE MANUFACTURED IN ACCORDANCE WITH AS 4058. STORMWATER PIPES SHALL BE TO FOLLOWING CLASSES U.N.O.
   - 6.A. REINFORCED CONCRETE PIPES (RCP) = CLASS 2;
   - 6.B. FIBRE REINFORCED PIPES (FRC) = CLASS 2;
   - 6.C. uPVC = CLASS 'SEH'.
7. ALL RCP PIPES SHALL HAVE THE FOLLOWING JOINTS U.N.O.
   - 7.A. RCP <=600 DIA = RUBBER RING JOINTED (RRJ).
   - 7.B. RCP >600 DIA = FLUSH JOINTED (FJ);
8. ROOFWATER PIPES SHALL BE uPVC PIPES CLASS 'SH' U.N.O.
9. REFER TO STORMWATER LONGITUDINAL SECTIONS FOR ALL STRUCTURE TYPES, SIZES, LEVELS AND GRATE TYPES. GRATES SHALL BE TRAFFICABLE CLASS 'D' U.N.O.
10. MANHOLE AND FIELD INLET ACCESS SHALL BE INSTALLED AS DESCRIBED BELOW IN ACCORDANCE WITH AS1657:
    - 10.A. GULLY/FIELD INLETS >1.35m DEPTH: STEP IRONS;
    - 10.B. MANHOLES 0.850m-3.0m DEPTH: STEP IRONS;
    - 10.C. MANHOLES >3.0m DEPTH: FIXED ACCESS LADDER.
11. TEST CERTIFICATES AND MATERIAL CERTIFICATION DOCUMENTATION IS REQUIRED FOR ALL PIPES, FITTINGS, BOX CULVERTS AND OTHER PRECAST CONCRETE PRODUCTS.
12. ALL STORMWATER SETOUT IS TO CENTRE OF STRUCTURE U.N.O.

EROSION AND SEDIMENT CONTROL NOTES

1. EROSION & SEDIMENT CONTROL (ESC) NOTES ARE TO BE READ IN CONJUNCTION WITH THE GENERAL AND COORDINATION NOTES.
2. ALL ESC MEASURES SHALL BE IN ACCORDANCE CURRENT COUNCIL STANDARDS, DRAWINGS AND SPECIFICATIONS U.N.O.
3. CONSTRUCTION OF ALL SEDIMENT CONTROL MANAGEMENT DEVICES SHALL BE TO THE SATISFACTION OF THE SUPERINTENDENT. THE CONTRACTOR IS TO FOLLOW THE CONSTRUCTION PHASE AS OUTLINED:
   - 3.A. CONSTRUCTION OF EROSION AND SEDIMENT DEVICES;
   - 3.B. STRIPPING TOPSOIL;
   - 3.C. BULK EARTHWORKS;
   - 3.D. SERVICES, BUILDING, PAVEMENT AND ROAD CONSTRUCTION;
   - 3.E. LANDSCAPED AREAS TO BE TOPSOILED, TURFED, MULCHED OR PLANTED.
4. THE CONTRACTOR IS TO PROVIDE A CONSTRUCTION TRAFFIC SHAKEDOWN DEVICE AT ALL RELEVANT POINTS OF EXIT FROM THE SITE. THE CONTRACTOR SHALL CLEAN OUT AND MAINTAIN THE SHAKEDOWN DEVICE REGULARLY TO ENSURE EFFICIENT OPERATION.
5. THE CONTRACTOR SHALL PROVIDE SILT FENCES IMMEDIATELY DOWNSTREAM OF ANY SOIL STOCKPILES.
6. BOTH TEMPORARY AND PERMANENT ESC MEASURES SHALL BE MAINTAINED AT A SUITABLE LEVEL/CONDITION THROUGHOUT CONSTRUCTION TO THE SATISFACTION OF THE SUPERINTENDENT.
7. ALL TEMPORARY ESC MEASURES SHALL BE MAINTAINED AND FULLY OPERATIONAL DURING THE CONSTRUCTION AND MAINTENANCE PERIOD, AND ARE TO BE REMOVED AFTER THE SATISFACTORY COMPLETION OF AN 'OFF MAINTENANCE' INSPECTION BY THE SUPERINTENDENT.
8. ALL ESC MEASURES ARE TO BE INSPECTED AT LEAST DAILY, PRIOR TO EXPECTED RAINFALL AND AFTER RAINFALL. ANY DAMAGE OR EXCESS EROSION/SEDIMENT IS TO BE REPAIRED/MANAGED AS REQUIRED TO MAINTAIN CONTROL DEVICES.
9. ALL ESC MEASURES MUST SUIT THE PREVAILING CLIMATE/WEATHER CONDITIONS AT THE TIME OF CONSTRUCTION.
10. THE CONTRACTOR IS TO ENSURE THE SUPPRESSION OF DUST AT ALL TIMES DURING THE CONSTRUCTION AND MAINTENANCE PERIOD OF THE DEVELOPMENT. ENVIRONMENTAL HARM AND NUISANCE FROM DUST IS TO BE PREVENTED. ACCEPTABLE METHODS INCLUDE:
    - 10.A. WATERING;
    - 10.B. PROMOTING VEGETATION IN WIND EROSION PRONE AREAS;
    - 10.C. CONSTRUCTING WIND BREAKS;
    - 10.D. MULCHING.
11. THE CONTRACTORS VEHICLES & PLANT SHALL NOT OPERATE OUTSIDE THE LIMITS OF THE IMMEDIATE CONSTRUCTION AREA AND ARE RESTRICTED FROM CROSSING OR DISTURBING AREAS NOT SUBJECT TO CONSTRUCTION.
12. ANY WATER TRAPPED WITHIN THE TEMPORARY SEDIMENT BASIN IS TO BE REGULARLY TESTED DURING THE COURSE OF CONSTRUCTION. REFER WATER QUALITY MONITORING TABLE FOR DETAILS.
13. ALL DISTURBED GROUND IS TO BE GRASS SEEDED TO PREVENT EROSION IF THE DISTURBED GROUND IS TO BE LEFT "OPEN" FOR A PERIOD OF GREATER THEN ONE (1) MONTH.
14. REFER DRAWING AS TEL2021184.CIV.DA - 100 TO 101 FOR EROSION AND SEDIMENT CONTROL DETAILS.

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
B	ISSUE FOR DEVELOPMENT APPLICATION	01/03/2022	P.B.T.	J.A.B.
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

Certification By Dr. Michel Chaaya in affiliation with Joe Bacha (formerly Australian Consulting Engineers):

[redacted]

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
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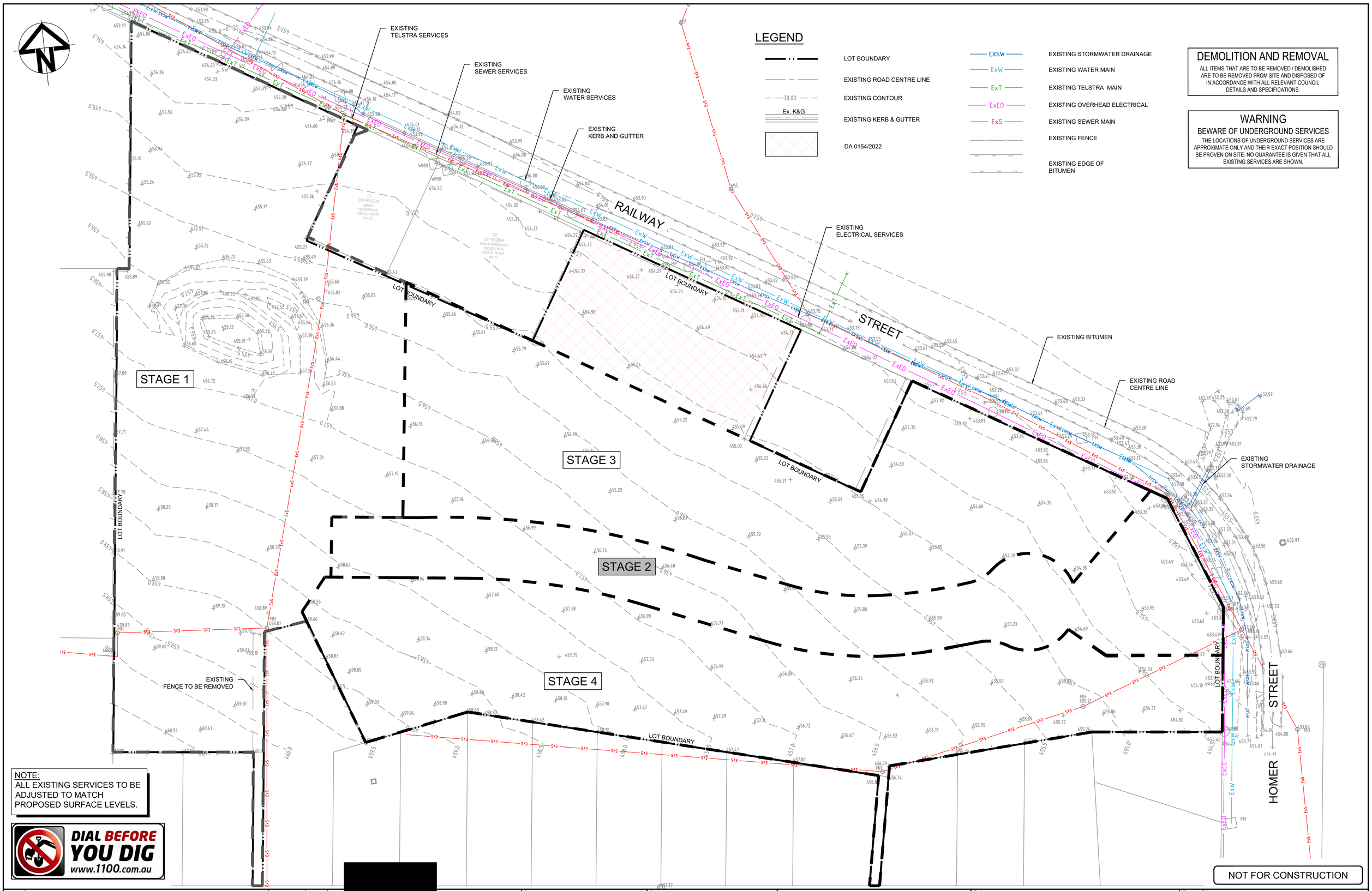
Scale: [redacted]

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: GENERAL NOTES, LOCALITY PLAN AND DRAWING SCHEDULE

Scale	Project No.	Dwg. No.	Issue
N.T.S. A1	2021184	000	B



Issue	Description	Date	Design	Check
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B

[redacted]

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Scale: 0 10 20 30 m — SCALE 1:500 @ A1

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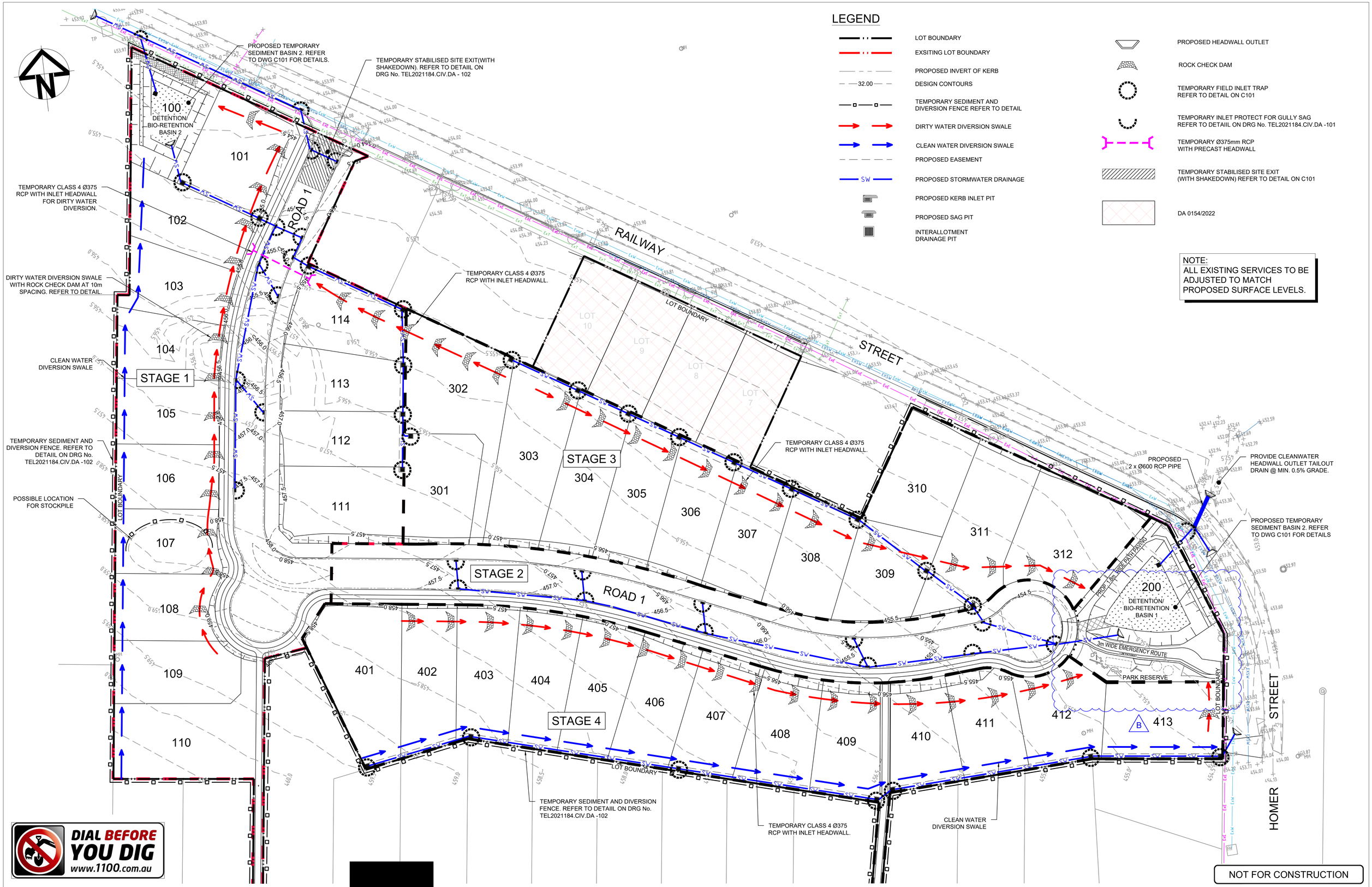
Company : Telford Consulting Pty Ltd

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: EXISTING SERVICES & DEMOLITION PLAN

Scale	Project No.	Dwg. No.	Issue
1:500 A1	2021184	001	A



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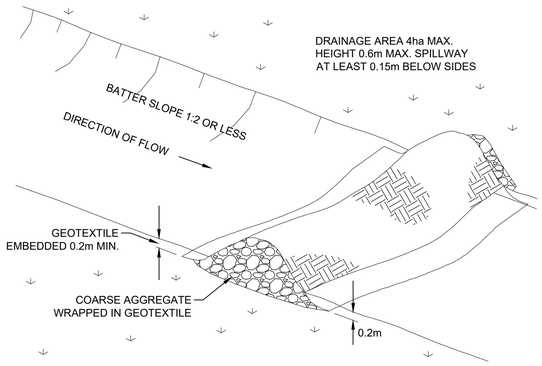
DEVELOPMENT APPLICATION

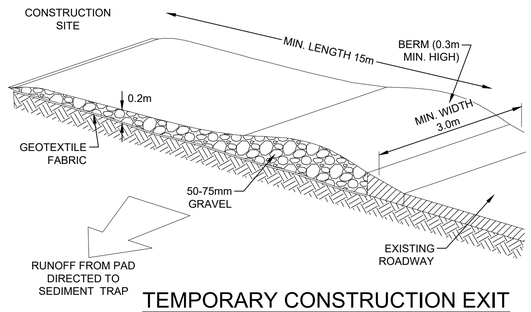
Drawing Title: EROSION AND SEDIMENT CONTROL PLAN

Scale	A1	Project No.	Dwg. No.	Issue
1:500		2021184	100	B



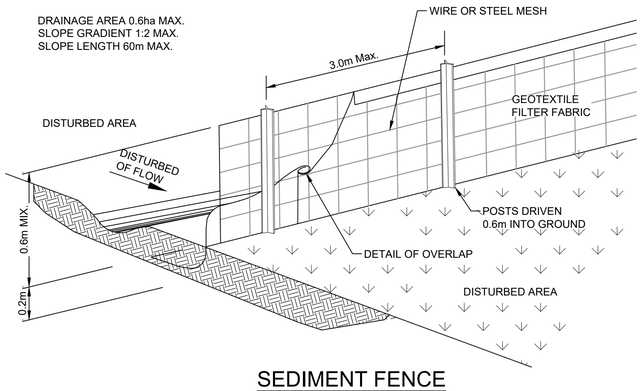
ROCK CHECK DAM

SCALE N.T.S



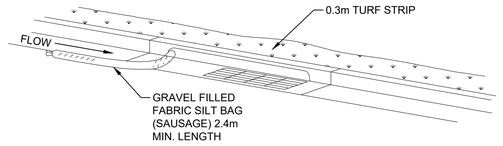
TEMPORARY CONSTRUCTION EXIT

SCALE N.T.S



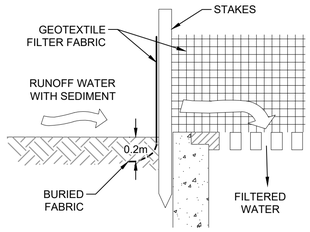
SEDIMENT FENCE

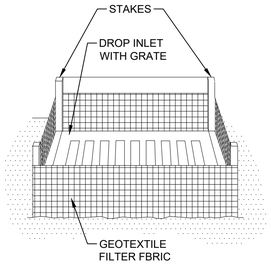
SCALE N.T.S



KERB INLET SEDIMENT TRAP

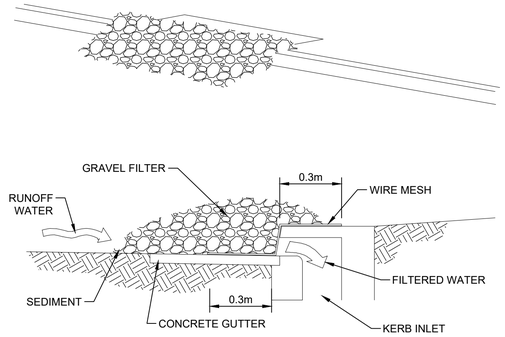
SCALE N.T.S





GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP

SCALE N.T.S



GRAVEL KERB INLET SEDIMENT TRAP

SCALE N.T.S

SEDIMENT BASIN SIZING CALCULATIONS - BASIN 1

$$Vs = 10*R_{(Y\%,5\text{-day})}*C_V*A$$

WHERE,

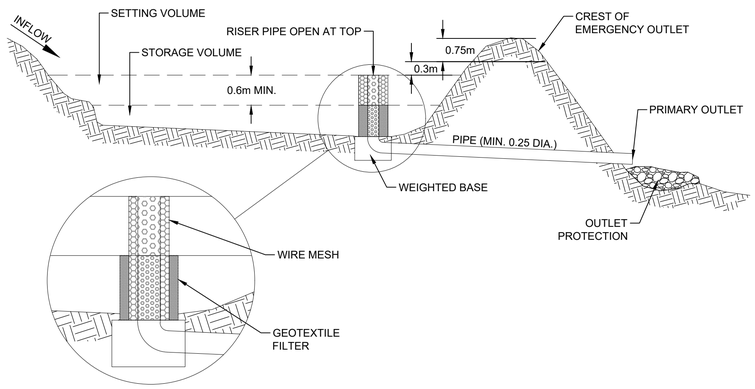
Vs = VOLUME OF SETTLING ZONE (m^3)
$R_{(Y\%,5\text{-day})}$ = Y%, 5-DAY RAINFALL DEPTH (mm)
C_V = VOLUMETRIC RUNOFF COEFFICIENT
A = EFFECTIVE CATCHMENT SURFACR AREA CONNECTED TO THE BASIN (ha)

$R_{(Y\%,5\text{-day})}$ = 23.3 mm
C_V = 0.5
A = 2.0905 ha

SETTLING ZONE VOLUME = 243.543 m^3

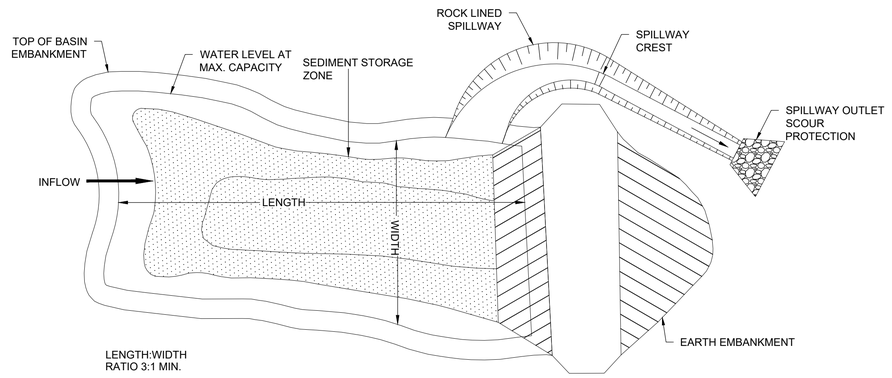
SEDIMENT STORAGE VOLUME = 50% SETTLING ZONE VOLUME = 121.771 m^3

TOTAL SEDIMENT BASIN VOLUME = 365.314 m^3



CROSS SECTION OF TYPICAL SEDIMENT BASIN

SCALE N.T.S



PLAN VIEW OF TYPICAL SEDIMENT BASIN

SCALE N.T.S

SEDIMENT BASIN SIZING CALCULATIONS - BASIN 2

$$Vs = 10*R_{(Y\%,5\text{-day})}*C_V*A$$

WHERE,

Vs = VOLUME OF SETTLING ZONE (m^3)
$R_{(Y\%,5\text{-day})}$ = Y%, 5-DAY RAINFALL DEPTH (mm)
C_V = VOLUMETRIC RUNOFF COEFFICIENT
A = EFFECTIVE CATCHMENT SURFACR AREA CONNECTED TO THE BASIN (ha)

$R_{(Y\%,5\text{-day})}$ = 23.3 mm
C_V = 0.5
A = 1.246 ha

SETTLING ZONE VOLUME = 145.16 m^3

SEDIMENT STORAGE VOLUME = 50% SETTLING ZONE VOLUME = 72.58 m^3

TOTAL SEDIMENT BASIN VOLUME = 217.74 m^3

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

[redacted]

Client: MR. ROY AMERY

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Scale

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Drawing Title: EROSION AND SEDIMENT CONTROL DETAILS

Scale	A1	Project No.	Dwg. No.	Issue
N.T.S.		2021184	101	A

LEGEND

- LOT BOUNDARY
- 32.00 DESIGN CONTOURS
- 32.00 EXISTING CONTOURS
- FLOW ARROWS
- RL 47.00 DESIGN SURFACE LEVEL
- DA 0154/2022

DENOTE -4.50 ; -4 (CUT)	DENOTE 0; 0.5 (FILL)
DENOTE -4 ; -3.50 (CUT)	DENOTE 0.5 ; 1.0 (FILL)
DENOTE -3.50; -3.0 (CUT)	DENOTE 1.0 ; 1.5 (FILL)
DENOTE -3.0; -2.50 (CUT)	DENOTE 1.5 ; 2.0 (FILL)
DENOTE -2.50 ; -2.00 (CUT)	DENOTE 2.0 ; 2.5 (FILL)
DENOTE -2.00; -1.50 (CUT)	DENOTE 2.5 ; 3.0 (FILL)
DENOTE -1.50 ; 1.00 (CUT)	DENOTE 3.0 ; 3.5 (FILL)
DENOTE -1.00 ; 0.50 (CUT)	DENOTE 3.5 ; 4.0 (FILL)
DENOTE -0.50 ; 0 (CUT)	DENOTE 4.0 ; 4.5 (FILL)

BULK EARTHWORKS VOLUMES

EXCLUDING TRIMMING WORKS, BOXING, AND TRENCHES

TOTAL CUT = -3029.366m^3

TOTAL FILL = 772.089m^3

BALANCE = -2257.277m^3(EXCESS)

NOTE:
ALL EXISTING SERVICES TO BE ADJUSTED TO MATCH PROPOSED SURFACE LEVELS.

DIAL BEFORE YOU DIG www.1100.com.au

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale: 0 10 20 30 m — SCALE 1:500 @ A1

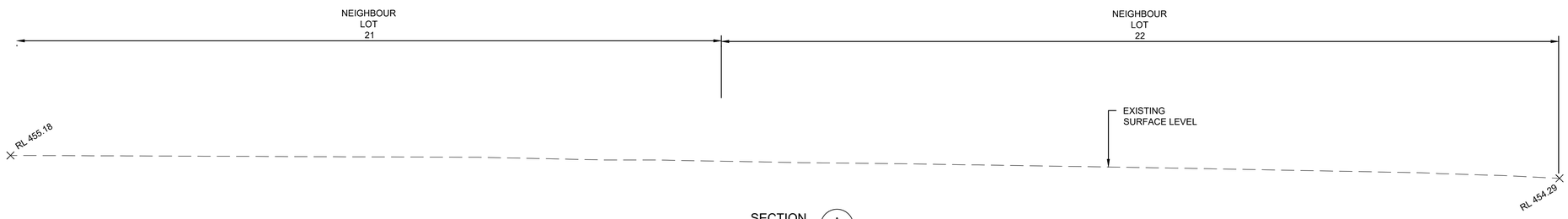
TELFORD CIVIL
DESIGN & CONSTRUCTION EXCELLENCE
Level 4, 470 Church Street, Parramatta NSW 2150
PO BOX 3579 Parramatta 2124
Email : info@telfordcivil.com.au
Phone : 02 7809 4931
Company : Telford Consulting Pty Ltd

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

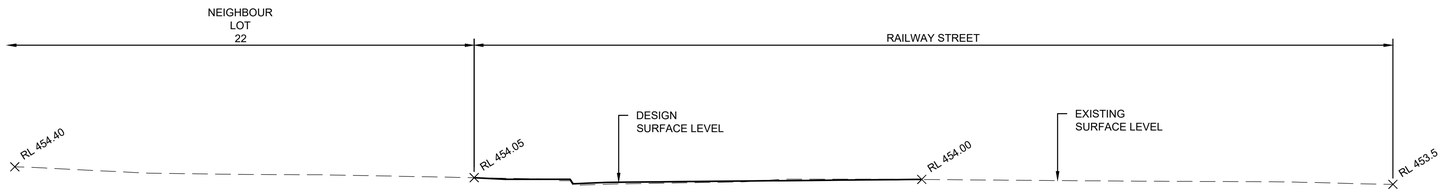
Drawing Title: BULK EARTHWORKS LAYOUT PLAN

Scale	Project No.	Dwg. No.	Issue
1:500 A1	2021184	200	A

SECTION A
SCALE 1:100 200



SECTION A
SCALE 1:100 200



SECTION A
SCALE 1:100 200

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B

1cm at full size 10cm 20cm

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
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Scale: 0 2 4 6 m
SCALE 1:100 @ A1

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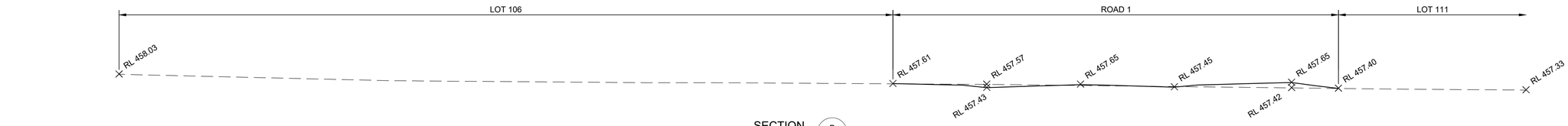
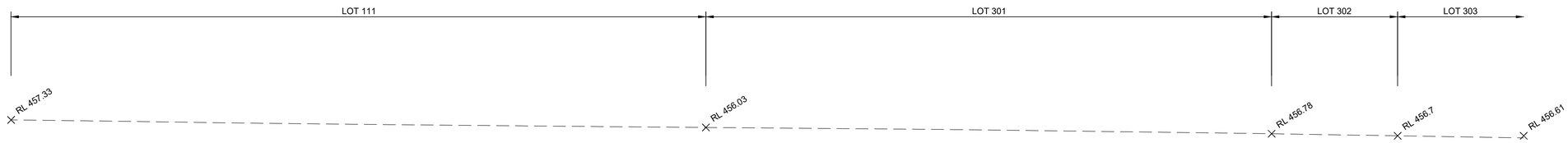
Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: EARTHWORKS
TYPICAL CROSS SECTIONS
SHEET 1 OF 4

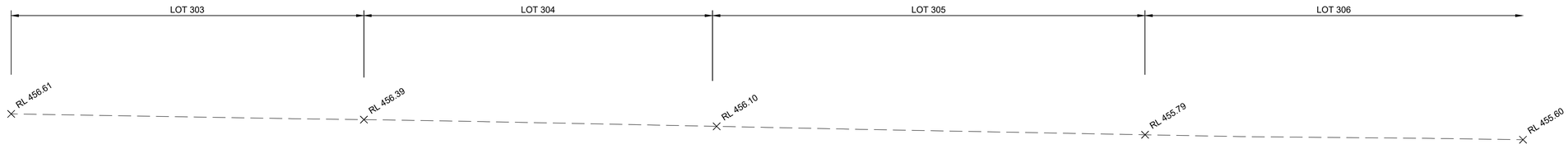
Scale	Project No.	Dwg. No.	Issue
1:100 A1	2021184	201	A



SECTION B 200
SCALE 1:100
NATURAL

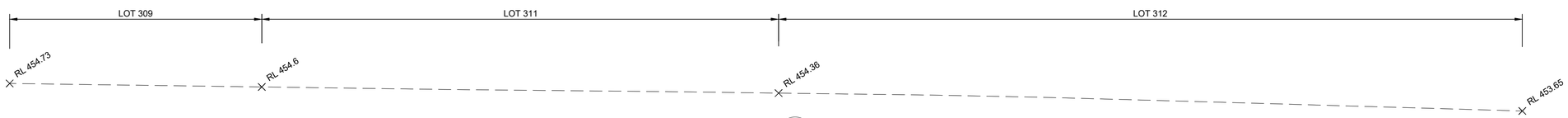


SECTION B 200
SCALE 1:100
NATURAL



SECTION B 200
SCALE 1:100
NATURAL

SECTION B 200
SCALE 1:100
NATURAL



SECTION B 200
SCALE 1:100
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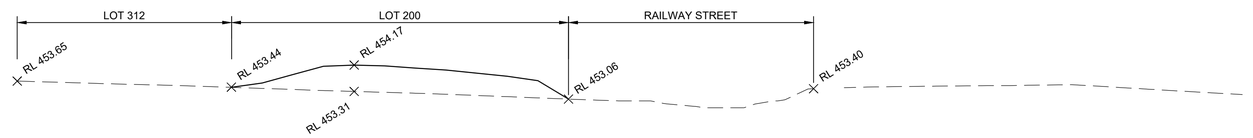

SECTION B 200
SCALE 1:100
NATURAL

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Check
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.

0 1cm at full size 10cm 20

[redacted]

Client
MR. ROY AMERY

Council
MID-WESTERN REGIONAL COUNCIL

Surveyor
Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
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WEB: www.premise.com.au

Scale
0 2 4 6 m
SCALE 1:100 @ A1

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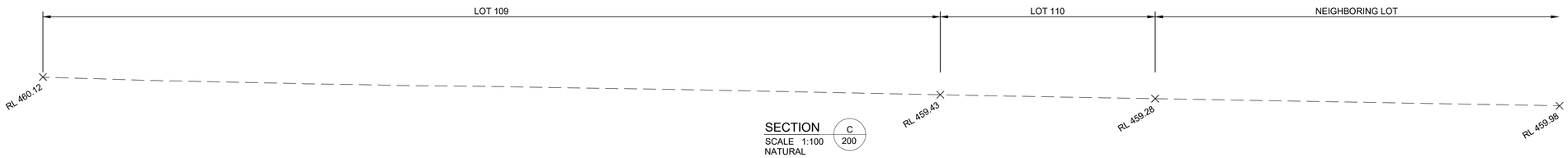
Project
1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

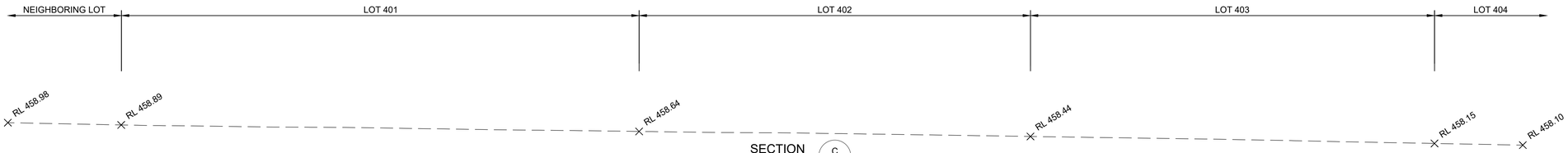
Drawing Title
EARTHWORKS
TYPICAL CROSS SECTIONS
SHEET 2 OF 4

Scale	A1	Project No.	Dwg. No.	Issue
1:100		2021184	202	A



SECTION C 200
SCALE 1:100
NATURAL

NATURAL



SECTION C 200
SCALE 1:100
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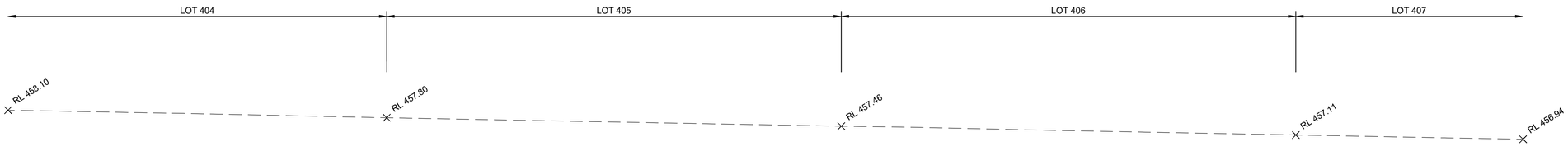
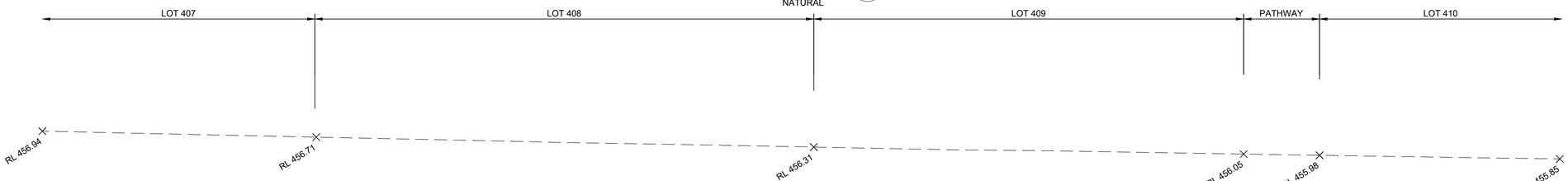


SECTION C 200
SCALE 1:100
NATURAL



SECTION C 200
SCALE 1:100
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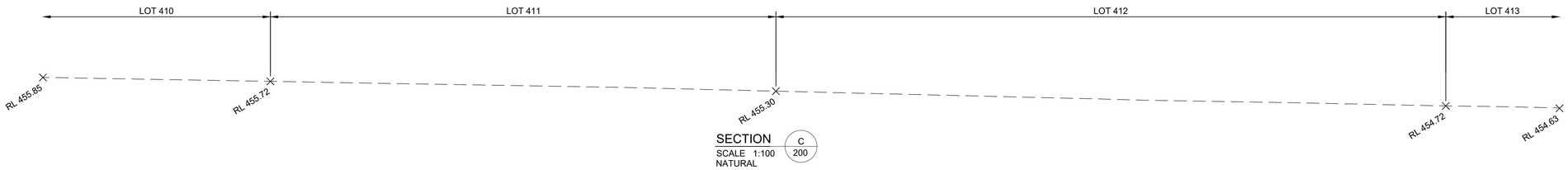
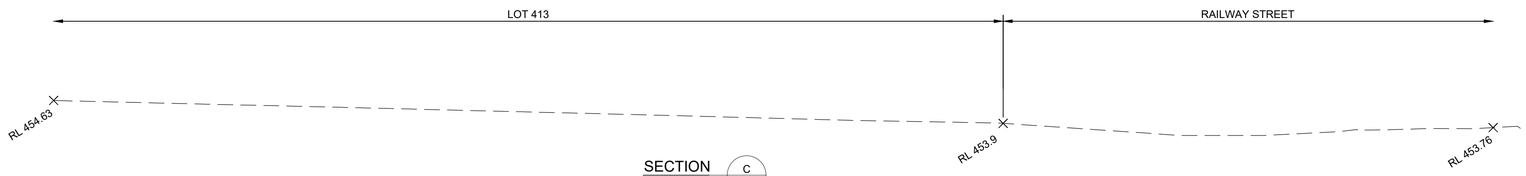


SECTION C 200
SCALE 1:100
NATURAL



SECTION C 200
SCALE 1:100
NATURAL

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

[redacted]

Client
MR. ROY AMERY

Council
MID-WESTERN REGIONAL COUNCIL

Surveyor
Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale
0 2 4 6 m
SCALE 1:100 @ A1

TELFORD CIVIL
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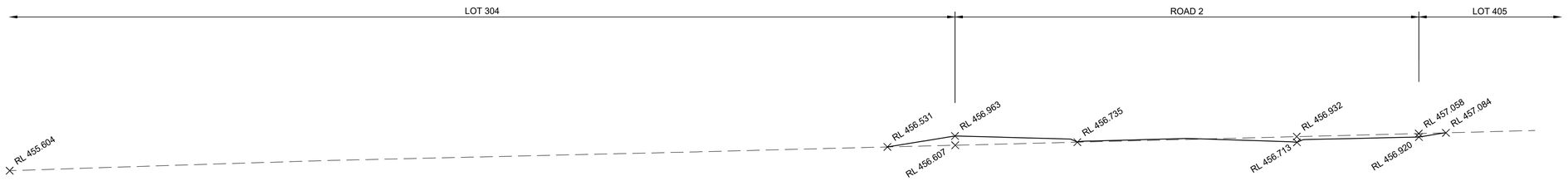
PO BOX 3579 Parramatta 2124
Email : info@telfordcivil.com.au
Phone : 02 7809 4931
Company : Telford Consulting Pty Ltd

Project
1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

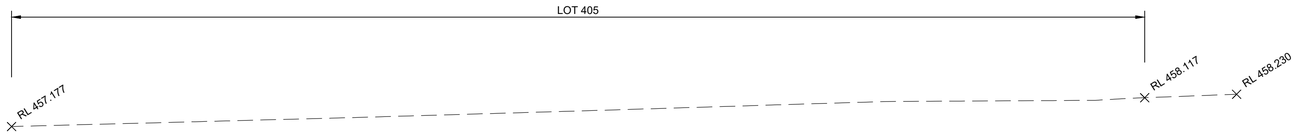
Drawing Title
EARTHWORKS
TYPICAL CROSS SECTIONS
SHEET 3 OF 4

Scale	A1	Project No.	Dwg. No.	Issue
1:100		2021184	203	A

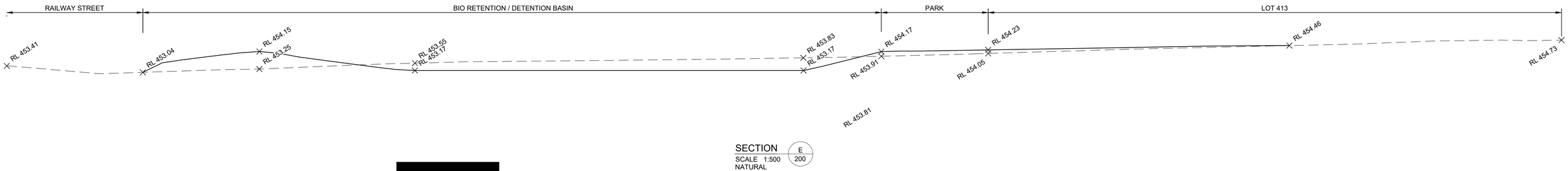
SECTION D
SCALE 1:100 200
NATURAL



SECTION D
SCALE 1:100 200
NATURAL



SECTION D
SCALE 1:100 200
NATURAL



SECTION E
SCALE 1:500 200
NATURAL

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

[redacted]

Client
MR. ROY AMERY

Council
MID-WESTERN REGIONAL COUNCIL

Surveyor
Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale
0 2 4 6 m
SCALE 1:100 @ A1

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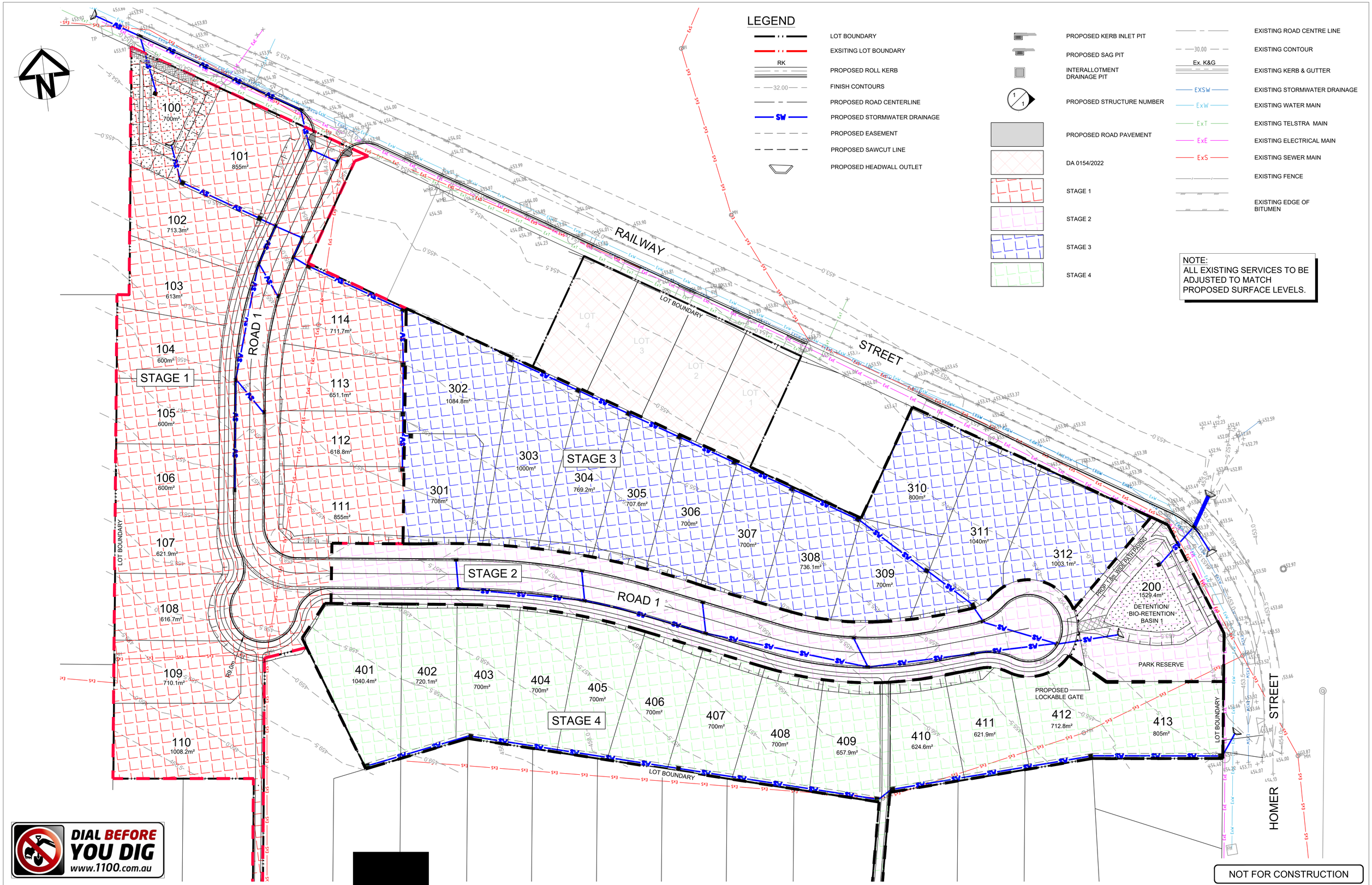
Project
1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title
EARTHWORKS
TYPICAL CROSS SECTIONS
SHEET 4 OF 4

Scale	A1	Project No.	Dwg. No.	Issue
1:100		2021184	204	A



Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

1cm at full size

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale: 0 10 20 30 m
SCALE 1:500 @ A1

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Parramatta NSW 2150
PO BOX 3579 Parramatta 2124
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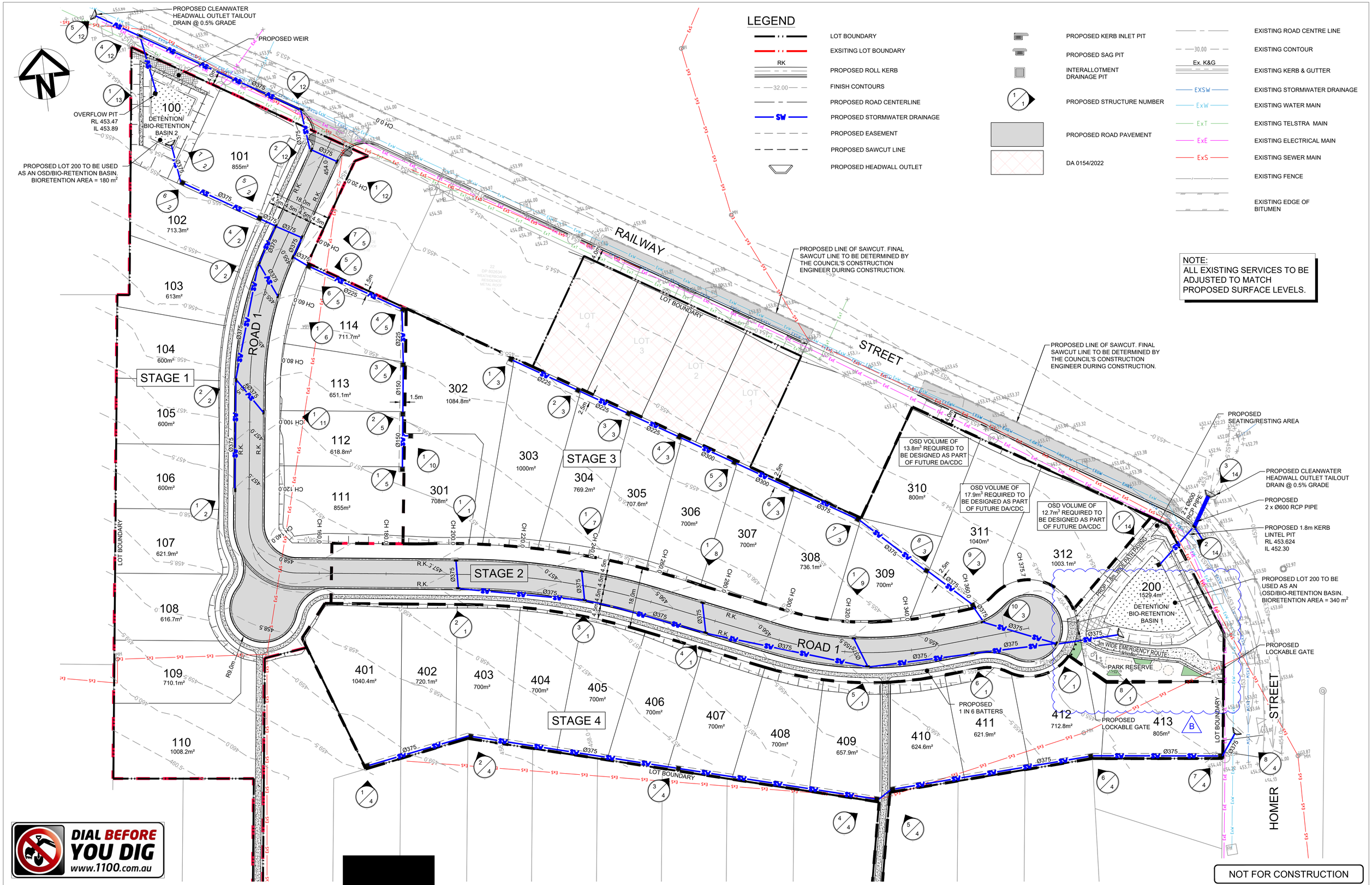
Phone : 02 7809 4931
Company : Telford Consulting Pty Ltd

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: STAGE LAYOUT PLAN

Scale	A1	Project No.	Dwg. No.	Issue
1:500		2021184	300	A



Issue	Description	Date	Design	Check
B	ISSUE FOR DEVELOPMENT APPLICATION	01/03/2022	P.B.T.	J.A.
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.

[redacted]

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale: 0 10 20 30 m — SCALE 1:500 @ A1

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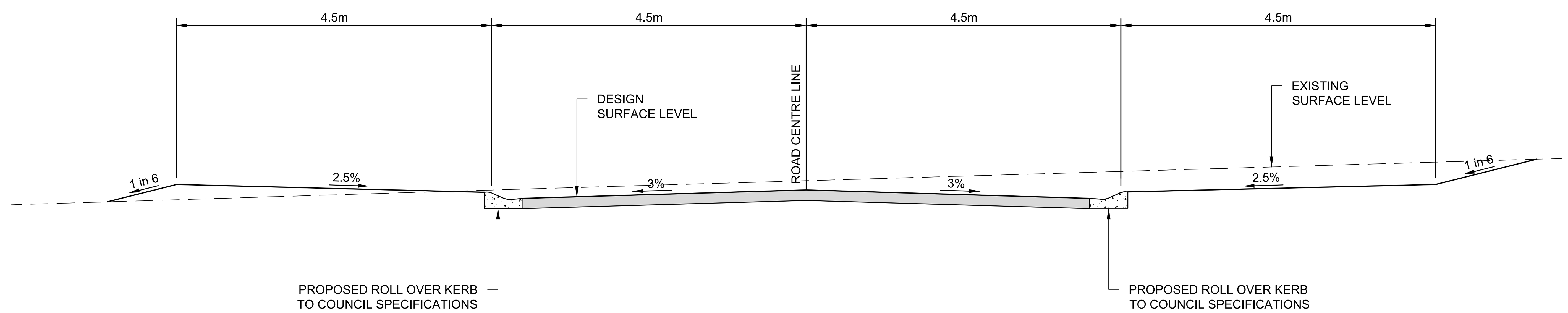
Company : Telford Consulting Pty Ltd

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: ROADWORKS AND DRAINAGE LAYOUT PLAN

Scale	A1	Project No.	Dwg. No.	Issue
1:500		2021184	301	B



ROAD 1 - TYPICAL CROSS SECTIONS

SCALE 1:50

Datum R.L. 446.000

EXISTING SURFACE LEVEL	454.124	454.500	454.518	454.622	454.805	456.975	457.426	458.157
CONTROL LINE PROPOSED LEVEL	454.125	454.024	454.007	454.035	454.220	456.925	457.455	458.042
CONTROL LINE CHAINAGE	0.000	10.113	13.365	17.613	25.113	100.000	114.671	139.671

EXISTING SURFACE LEVEL	458.183	457.893	457.490	456.560	456.385	456.249	456.001	454.896
CONTROL LINE PROPOSED LEVEL	458.099	457.994	457.479	456.517	456.118	455.958	455.652	454.459
CONTROL LINE CHAINAGE	150.294	164.671	200.000	266.003	291.003	300.000	316.003	375.673

ROAD 1 - LONGITUDINAL SECTION

SCALE (H) 1:500
(V) 1:100

0 400 800 1200 mm
SCALE 1:20 @ A1

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

[redacted]

Client
MR. ROY AMERY

Council
MID-WESTERN
REGIONAL COUNCIL

Surveyor
Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale
0 10 20 30 m
SCALE 1:500 @ A1
HORIZONTAL SCALE
0 2 4 6 m
SCALE 1:100 @ A1
VERTICAL SCALE

TELFORD CIVIL
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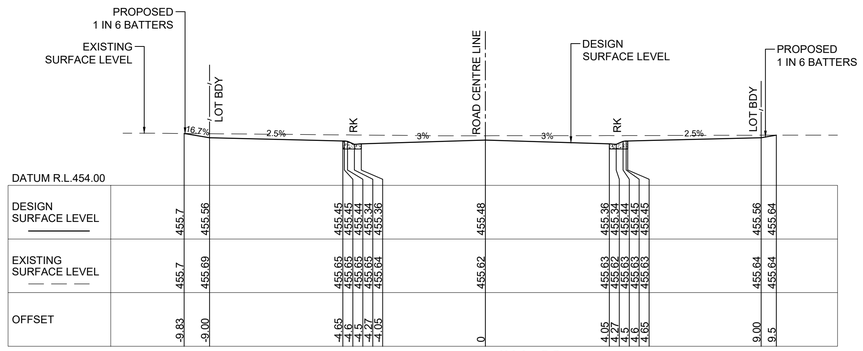
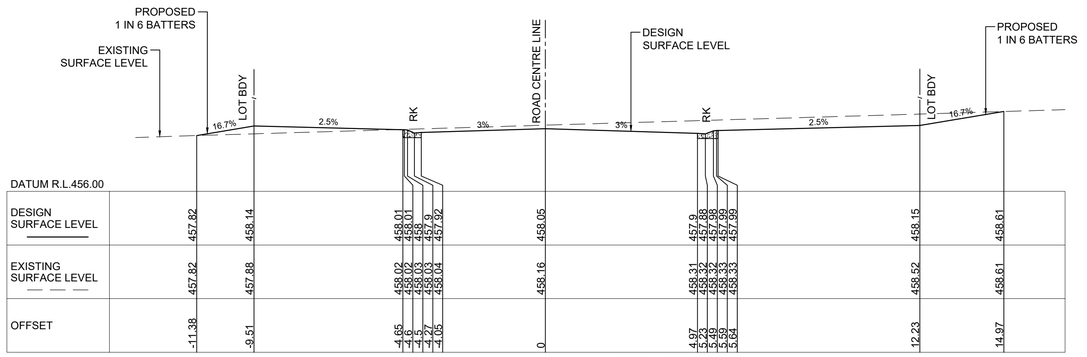
Project
1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title
ROAD 1
LONGITUDINAL SECTION

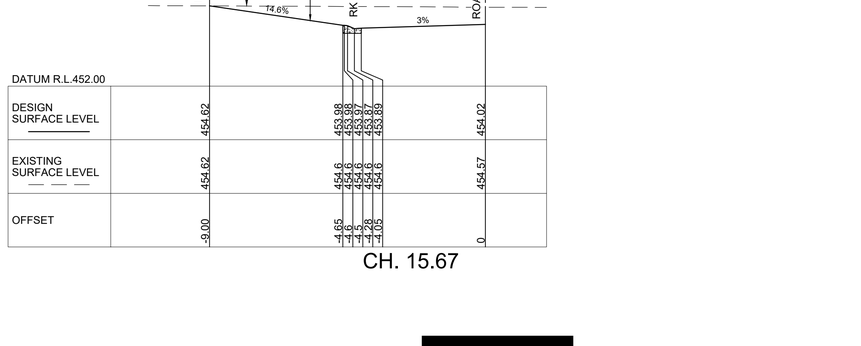
Scale A1	Project No.	Dwg. No.	Issue
AS SHOWN	2021184	302	A



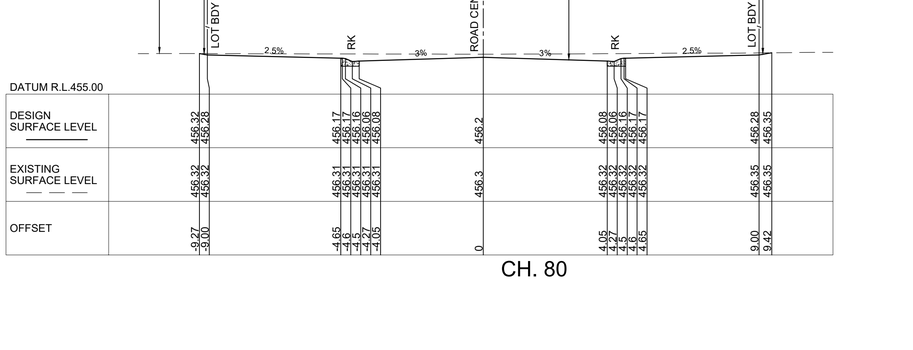
CH. 60



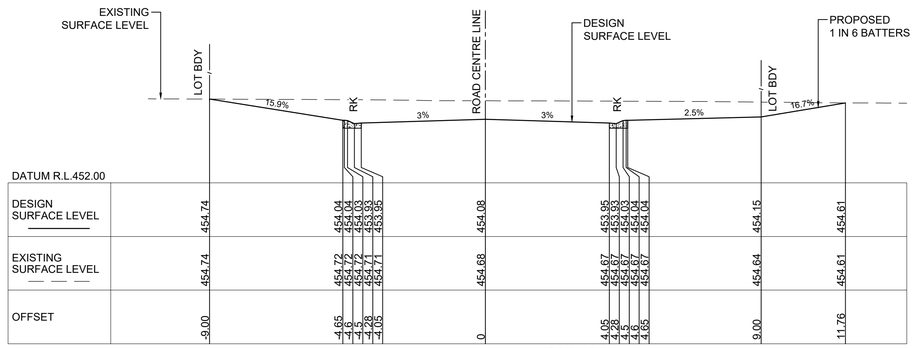
CH. 140



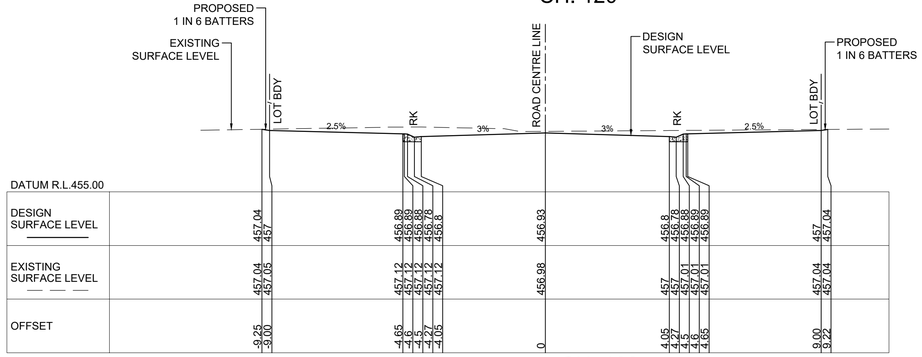
CH. 40



CH. 120



CH. 20



CH. 100

CH. 15.67

CH. 80

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

1cm at full size (0, 10cm, 20cm)

[redacted]

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
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Scale: 0 2 4 6 m
SCALE 1:100 @ A1

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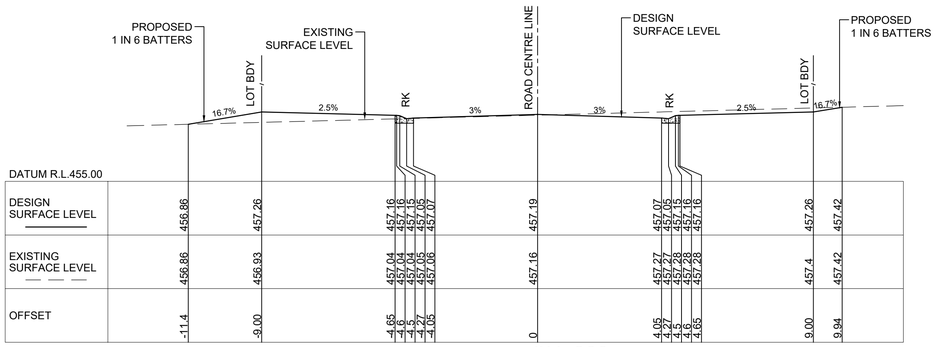
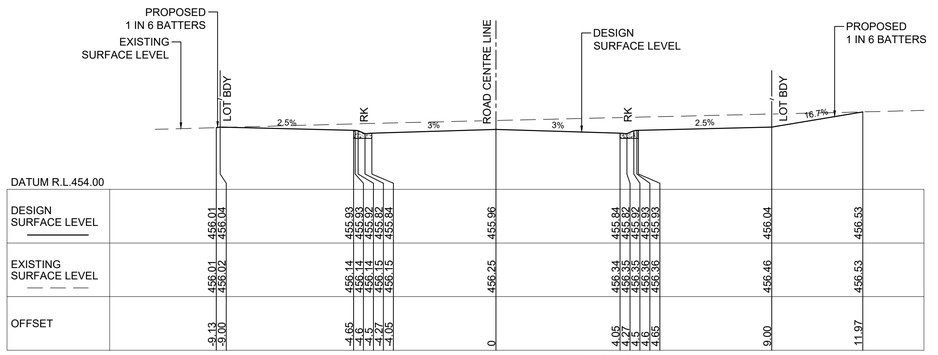
Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: ROAD 1
CROSS SECTIONS
SHEET 1 OF 3

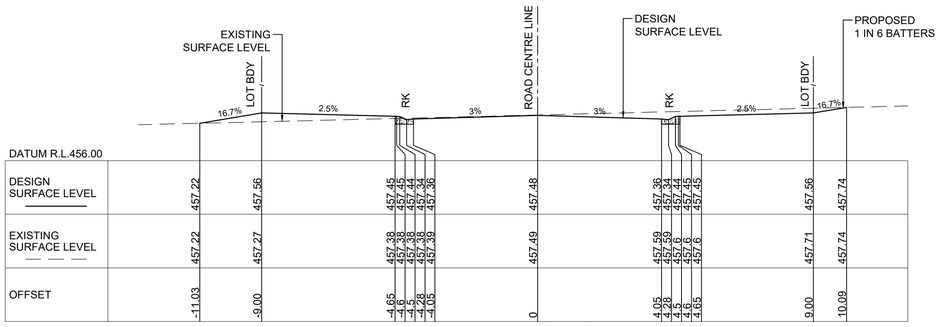
Scale	A1	Project No.	Dwg. No.	Issue
1:100		2021184	303	A



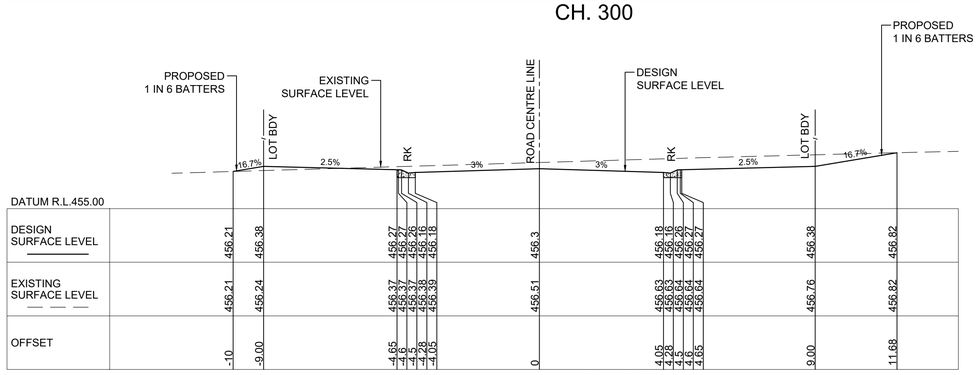
CH. 220



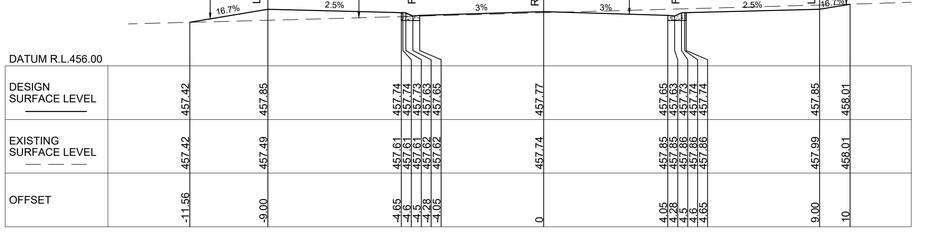
CH. 300



CH. 200



CH. 280



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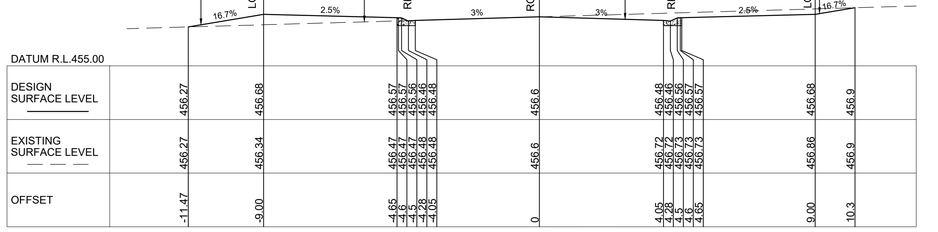

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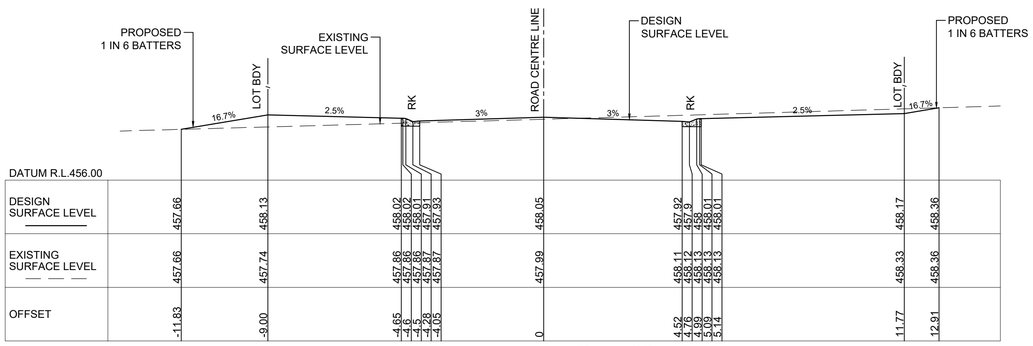
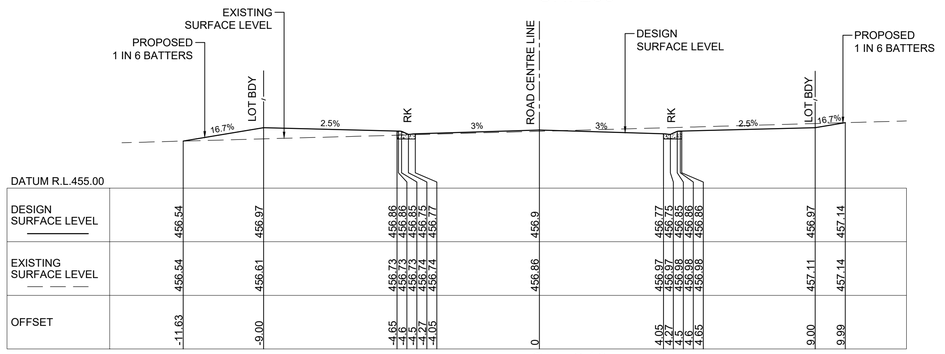


CH. 160



CH. 240

NOT FOR CONSTRUCTION

[redacted]

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

Client
MR. ROY AMERY

Council
MID-WESTERN REGIONAL COUNCIL

Surveyor
Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

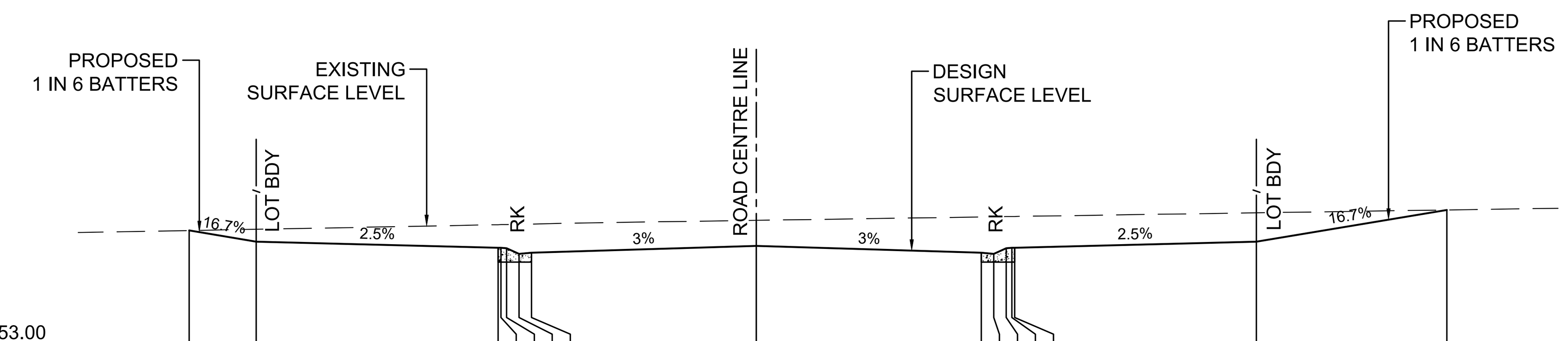
Scale
0 2 4 6 m
SCALE 1:100 @ A1

TELFORD CIVIL
DESIGN & CONSTRUCTION EXCELLENCE
Level 4, 470 Church Street,
Parramatta NSW 2150
PO BOX 3579 Parramatta 2124
Email : info@telfordcivil.com.au
Phone : 02 7809 4931
Company : Telford Consulting Pty Ltd

Project
1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title
ROAD 1
CROSS SECTIONS
SHEET 2 OF 3

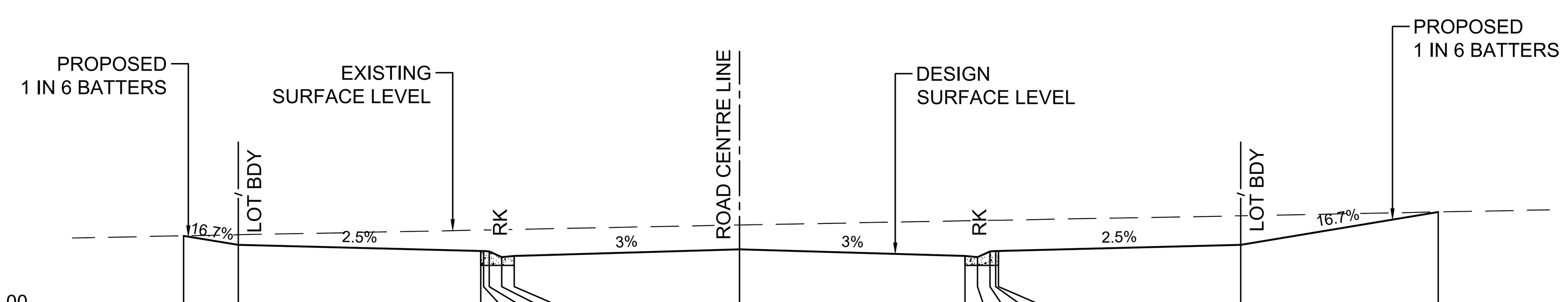
Scale	A1	Project No.	Dwg. No.	Issue
1:100		2021184	304	A



DATUM R.L.453.00

DESIGN SURFACE LEVEL	455.07	454.87	454.76	454.76	454.75	454.65	454.67	454.79	454.67	454.65	454.75	454.76	454.76	454.87	455.44
EXISTING SURFACE LEVEL	455.07	455.09	455.17	455.17	455.18	455.18	455.18	455.25	455.31	455.32	455.32	455.32	455.32	455.39	455.44
OFFSET	-10.21	-9.00	-4.65	-4.6	-4.5	-4.27	-4.05	0	4.05	4.27	4.5	4.6	4.65	9.00	12.43

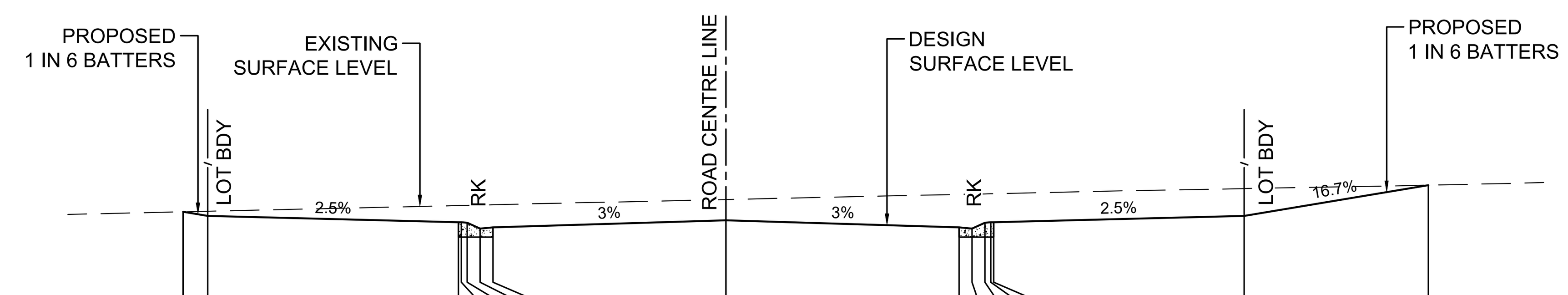
CH. 359.16



DATUM R.L.454.00

DESIGN SURFACE LEVEL	455.41	455.25	455.14	455.14	455.13	455.03	455.05	455.17	455.05	455.03	455.13	455.14	455.14	455.25	455.84
EXISTING SURFACE LEVEL	455.41	455.43	455.52	455.52	455.52	455.52	455.53	455.61	455.68	455.69	455.69	455.69	455.69	455.77	455.84
OFFSET	-9.99	-9.00	-4.65	-4.6	-4.5	-4.28	-4.05	0	4.05	4.28	4.5	4.6	4.65	9.00	12.55

CH. 340



DATUM R.L.454.00

DESIGN SURFACE LEVEL	455.72	455.65	455.54	455.54	455.53	455.43	455.45	455.57	455.45	455.43	455.53	455.54	455.54	455.65	456.18
EXISTING SURFACE LEVEL	455.72	455.73	455.83	455.83	455.83	455.84	455.84	455.93	456.02	456.03	456.03	456.04	456.04	456.12	456.18
OFFSET	-9.44	-9.00	-4.65	-4.6	-4.5	-4.28	-4.05	0	4.05	4.28	4.5	4.6	4.65	9.00	12.21

CH. 320

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

[redacted]

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise — DUBBO OFFICE, 1ST FLOOR, 62 WINGEWARRA STREET, DUBBO, NSW 2830, PH: (02) 6887 4500, WEB: www.premise.com.au

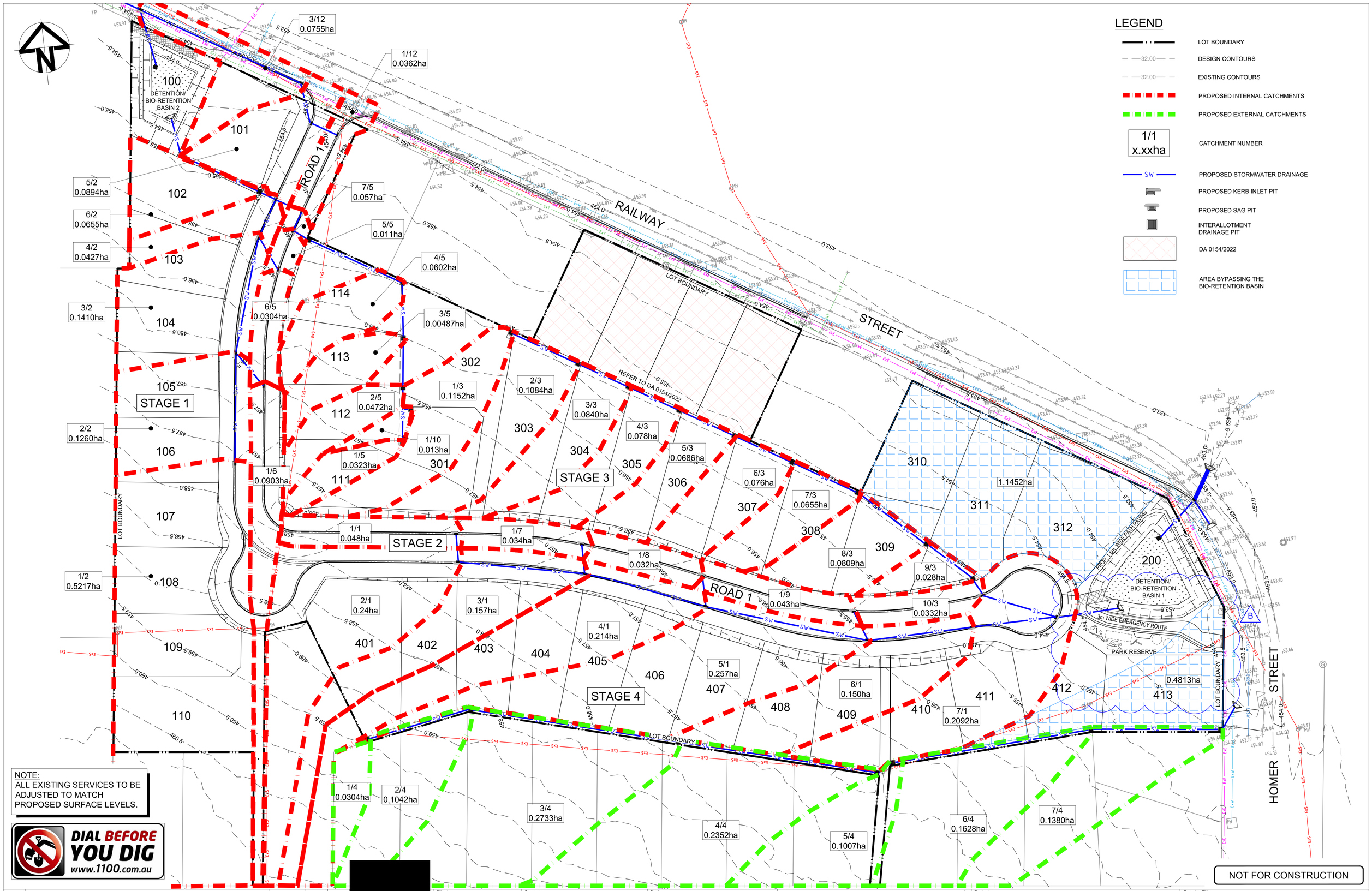
Scale: 0 2 4 6 m — SCALE 1:100 @ A1

TELFORD CIVIL — DESIGN & CONSTRUCTION EXCELLENCE
Level 4, 470 Church Street, Parramatta NSW 2150
PO BOX 3579 Parramatta 2124
Email : info@telfordcivil.com.au
Phone : 02 7809 4931
Company : Telford Consulting Pty Ltd

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: ROAD 1
CROSS SECTIONS
SHEET 3 OF 3

Scale A1	Project No.	Dwg. No.	Issue
1:100	2021184	305	A



Issue	Description	Date	Design	Checked
B	ISSUE FOR DEVELOPMENT APPLICATION	01/03/2022	P.B.T.	J.A.B.
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
DUBBO OFFICE
1ST FLOOR
62 WINGEWARRA STREET
DUBBO, NSW 2830
PH: (02) 6887 4500
WEB: www.premise.com.au

Scale: 0 20 40 60 80 m
SCALE 1:1500 @ A1

TELFORD CIVIL
DESIGN & CONSTRUCTION EXCELLENCE
Level 4, 470 Church Street, Parramatta NSW 2150
PO BOX 3579 Parramatta 2124
Email : info@telfordcivil.com.au
Phone : 02 7809 4931
Company : Telford Consulting Pty Ltd

Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: STORMWATER CATCHMENT PLAN

Scale	A1	Project No.	Dwg. No.	Issue
1:500		2021184	400	B

BIO-RETENTION BASIN NOTES:

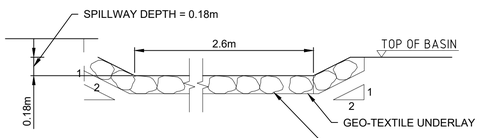
1. AN IMPERMEABLE LINER SHALL BE INSTALLED TO FULLY CONTAIN INFILTRATED WATER AND PREVENT INFILTRATION TO GROUNDWATER. LINER SUBGRADE SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY AND TO FORM CONTINUOUS BED FREE OF VOIDS AND FREE OF SHARP OBJECTS TO PREVENT TEARING. SUBGRADE SHALL BE GRADED AS SHOWN ON THE DRA1WINGS TO FORM ROUNDED BASE. LINER TO HAVE ALL WELDED JOINTS SEALED IN ACCORDANCE WITH THE PRODUCTS SPECIFICATIONS TO ENSURE THE SYSTEM IS WATER TIGHT. LINER NEEDS TO BE APPROPRIATELY KEYED INTO THE BATTERS AND EMBANKMENTS AND WRAPPED UP AGAINST DRAINAGE PITS TO TOP OF SOIL LAYER WITH CONSIDERATION TO PROTRUSIONS THROUGH THE LINERS SUCH AS OUTLET PIPES..
2. UNDERDRAINS SHALL BE LAID IN A MINIMUM OF 200MM DRAINAGE LAYER COMPRISED OF FINE GRAVEL (2-5)MM, WITH <2% FINES AND HYDRAULIC CONDUCTIVITY OF 400MM/HR. THE DRAINAGE LAYER DEPTH MUST ENSURE AT LEAST 50MM COVER OVER THE UNDERDRAIN. BRIDGING CRITERIA SHALL BE APPLIED TO AVOID MIGRATION OF THE ON-TOP LAYER INTO THE DRAINAGE LAYER. D15 (DRAINAGE LAYER) Ø5xD85 (ON-TOP LAYER).
3. WHERE INDICATED ON THE DESIGN DRAWINGS A TRANSITION LAYER SHALL BE INCLUDED. THE TRANSITION LAYER MATERIAL SHALL BE CLEAN, WELL GRADED SAND MATERIAL (TYPICALLY 1MM) CONTAINING <2% FINES. THE PARTICLE SIZE DISTRIBUTION OF THE SAND SHALL BE ASSESSED TO MEET BRIDGING CRITERIA THAT THE SMALLEST 15% OF THE SAND PARTICLES BRIDGE WITH THE LARGEST 15% OF THE FILTER MEDIA. D15 (TRANSITION LAYER) Ø5xD85 (FILTER MEDIA).
4. BIO-RETENTION FILTER MEDIA SHALL COMPLY WITH THE FOLLOWING:
   - HAVE A MINIMUM HYDRAULIC CONDUCTIVITY OF 200MM/HR. THIS SHOULD BE MEASURED ACCORDING TO ASTM F1815-06 STANDARD TEST METHODS FOR SATURATED HYDRAULIC CONDUCTIVITY, WATER RETENTION, POROSITY, AND BULK DENSITY OF PUTTING GREEN AND SPORTS TURF ROOT ZONES METHOD.
   - HAVE TOTAL CLAY AND SILT MIX LESS THAN 3% (W/W) TO REDUCE THE LIKELIHOOD OF STRUCTURAL COLLAPSE OF SUCH SOILS.
   - THE FILTER MEDIA SHALL BE GRADED LOAMY SAND WITHOUT GAP IN THE PARTICLE SIZE GRADING AND THE COMPOSITION SHALL NOT BE DOMINATED BY A SMALL PARTICLE SIZE RANGE. THE FOLLOWING IS A GUIDE FOR THE FILTER MEDIA PARTICLE SIZE DISTRIBUTION:
     - CLAY AND SILT<3%(<0.05MM)
     - VERY FINE SAND 5-30% (0.05-0.15MM)
     - FINE SAND 10-30% (0.25-1.0MM)
     - MEDIUM TO COARSE SAND 40-60% (0.25-1.0MM)
     - COARSE SAND 7-10% (1.0-2.0MM)
     - FINE GRAVEL <3% (2.0-3.4MM)
   - FILTER MEDIA SHALL BE TESTED (ACCORDING TO AS4419-2003) TO COMPLY WITH THE FOLLOWING:
     - TOTAL NITROGEN (TN) CONTENT < 800MG/KG
     - ORTHOPHOSPHATE (PO4) CONTENT < 40MG/KG
     - ORGANIC MATTER AT LEAST 3% (W/W)
     - PH 5.5-7.5 (PH 1:5 IN WATER)
     - ELECTRICAL CONDUCTIVITY (EC) <1.2DS/M
     - DISPERSIBILITY
5. AN ALTERNATIVE OPTION FOR BIORETENTION FILTER MEDIA IS AN ENGINEERED FILTER MEDIA. THIS IS A WASHED, WELL GRADED SAND WITH APPROPRIATE HYDRAULIC CONDUCTIVITY (SUCH AS MATERIALS USED FOR CONSTRUCTION OF GOLF GREENS). THE TOP 100MM OF THE FILTER MEDIA SHALL THAN BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS AS SHOWN BELOW:

CONSTITUENT	QUANTITY (KG/100 M2 FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT MIX	1
FERTILISER NPK (16.4.14)	4
LIME	20

6. POTENTIAL FILTER MEDIA SHALL BE ASSESSED BY A HORTICULTURALIST TO ENSURE THAT THEY ARE CAPABLE OF SUPPORTING A HEALTHY VEGETATION COMMUNITY.
7. THE BIO-RETENTION FILTER MEDIA SHALL BE TESTED TO DEMONSTRATE THE COMPLIANCE WITH THE ABOVE MENTIONED REQUIREMENTS AT THE FOLLOWING FREQUENCIES:
   - FOR BIO-RETENTION SYSTEMS <500M2, ONE SAMPLE PER 500M3 OF FILTER MEDIA.
   - FOR BIO-RETENTION SYSTEMS >500M2, ONE SAMPLE PER 500M3 OF FILTER MEDIA
   - FOR THE HYDRAULIC CONDUCTIBITY TEST PLUS ONE SAMPLE PER 2000M3 OF FILTER
   - MEDIA FOR ALL OTHER REQUIRED TESTS.
8. TESTING SHALL BE UNDERTAKEN ON THE ACTUAL MATERIAL TO BE DELIVERED TO THE SITE. THE SUPPLIER AND CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THE FILTER MEDIA MEETS THE SPECIFICATIONS AND THE CORRECT MATERIAL IS DELIVERED TO THE SITE PRIOR TO INSTALLATION. THE SUPPLIER SHALL ARRANGE FOR THE FILTER MEDIA TO BE TESTED BY A CERTIFIED LABORATORY IN ACCORDANCE WITH THE ABOVE SPECIFICATIONS. ON THE BASIS OF THE TESTING, THE SOIL LABORATORY AND SUPPLIER SHALL CERTIFY THAT THE MATERIAL MEETS THESE SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE SUPPLIER'S CERTIFICATION, TEST RESULTS, AND SUPPLY DOCKETS TO THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) FOR REVIEW AND APPROVAL.
9. AN IN-SITU MEASUREMENT OF HYDRAULIC CONDUCTIVITY SHALL BE UNDERTAKEN FOLLOWING COMPLETING THE CONSTRUCTION OF THE BIO-RETENTION SYSTEM AND PRIOR TO HAND OVER OF THE SYSTEM. THIS TESTING SHALL BE ACCORDING TO PRACTICE NOTE 1: IN-SITU MEASUREMENT OF HYDRAULIC CONDUCTIVITY (HATT AND LE COSTUMER, 2008), WHICH CAN BE FOUND IN WWW.MONASH.EDU.AU/FAWB/PUBLICATIONS/INDEX.HTML
10. THE FILTER MEDIA SHALL BE LIGHTLY COMPACTED DURING INSTALLATION TO PREVENT MIGRATION OF FINE PARTICLES. A SINGLE PASS OF COMPACTING MACHINERY (VIBRATING PLATE FOR SMALL SYSTEMS AND DRUM LAWN ROLLER FOR LARGER SYSTEMS) SHALL BE USED. NO HEAVY COMPACTION OR MULTI-PASS SHALL BE MADE.
11. FILTER MEDIA SHALL BE INSTALLED IN TWO LIFTS FOR DEPTHS OF OVER 500MM

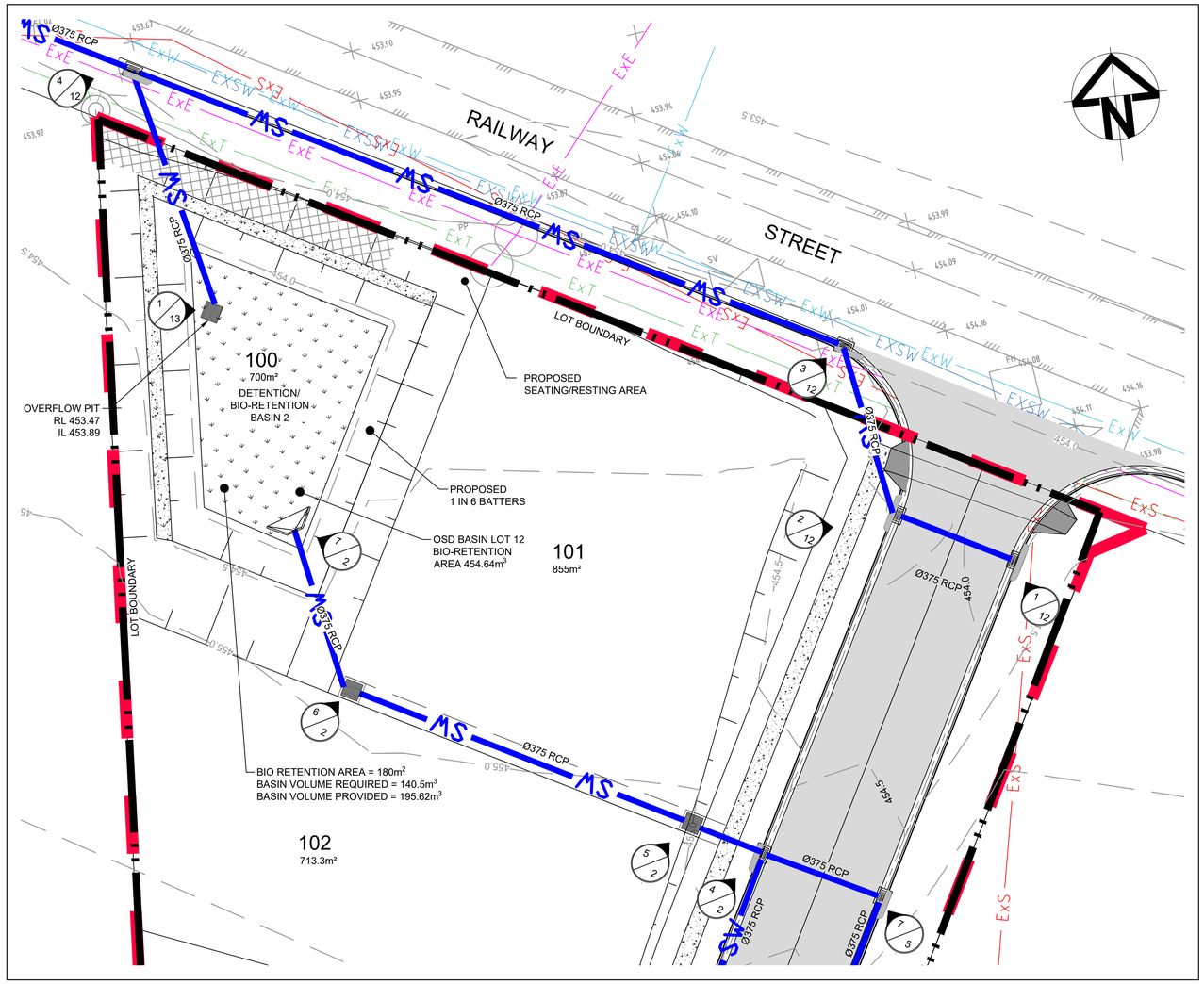
LEGEND

- LOT BOUNDARY
- SW — PROPOSED STORMWATER
- 100Ø SLOTTED uPVC PIPE @ 2m CRS WITH FLUSH POINT @ 30m CRS.
- 37.0 — FINISHED CONTOURS
- PROPOSED FILTER MEDIA
- PROPOSED SCOUR PROTECTION
- BASIN MAINTENANCE DRIVEWAY @ 1 in 6 MAX
- PROPOSED KERB INLET PIT
- PROPOSED SAG PIT
- INTERALLOTMENT DRAINAGE PIT



TYPICAL WEIR DETAIL

SCALE 1:50



BIO-RETENTION / DETENTION BASIN 1 LAYOUT PLAN

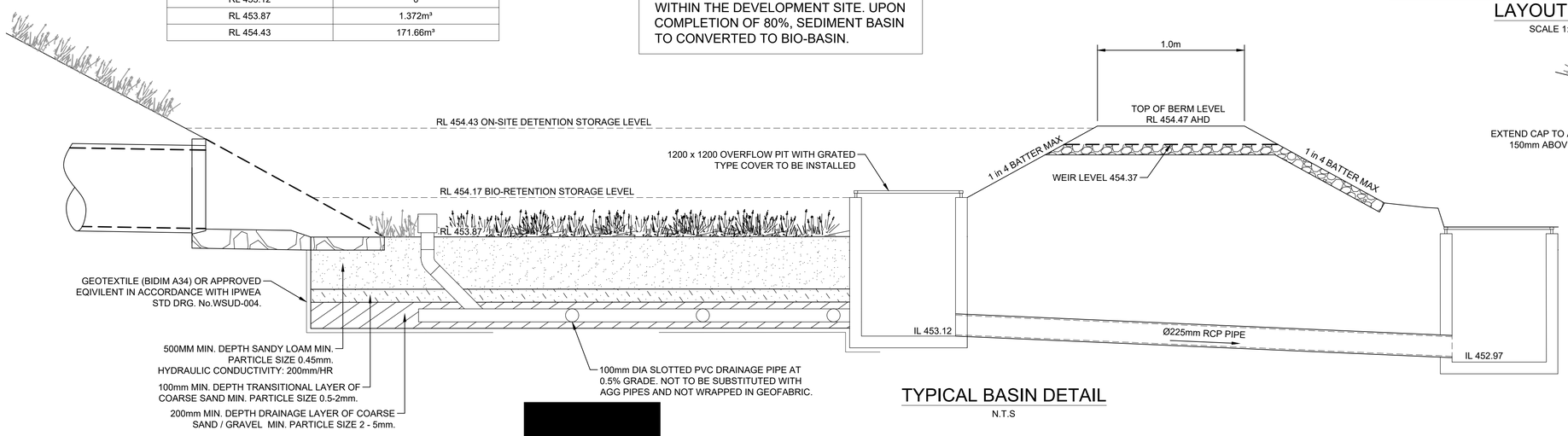
SCALE 1:200

BASIN SETOUT TABLE

LEVEL (m)	STAGED VOLUME (m³)
RL 453.12	0
RL 453.87	1.372m³
RL 454.43	171.66m³

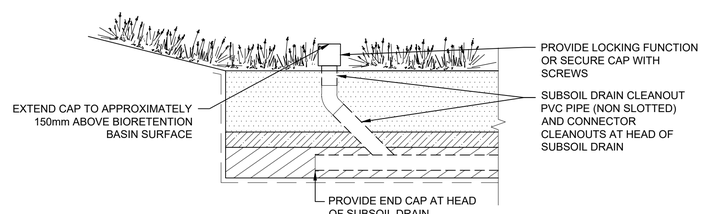
SEDIMENT BASIN NOTE :

SEDIMENT BASIN TO REMAIN UNTIL 80% OF ALL HOUSES ARE CONSTRUCTED WITHIN THE DEVELOPMENT SITE. UPON COMPLETION OF 80%, SEDIMENT BASIN TO CONVERTED TO BIO-BASIN.



TYPICAL BASIN DETAIL

N.T.S



TYPICAL FLUSH POINT DETAIL IN BIORETENTION

SCALE 1:20

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

[redacted]

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise

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DUBBO, NSW 2830
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Scale: 0 20 40 60 80 m — SCALE 1:1500 @ A1

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Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: BIO-RETENTION BASIN 1 LAYOUT PLAN AND DETAILS SHEET 1 OF 2

Scale A1	Project No.	Dwg. No.	Issue
1:500	2021184	500	A

BIO-RETENTION BASIN NOTES:

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   - HAVE TOTAL CLAY AND SILT MIX LESS THAN 3% (W/W) TO REDUCE THE LIKELIHOOD OF STRUCTURAL COLLAPSE OF SUCH SOILS.
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     - FINE SAND 10-30% (0.25-1.0MM)
     - MEDIUM TO COARSE SAND 40-60% (0.25-1.0MM)
     - COARSE SAND 7-10% (1.0-2.0MM)
     - FINE GRAVEL <3% (2.0-3.4MM)
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     - ORGANIC MATTER AT LEAST 3% (W/W)
     - PH 5.5-7.5 (PH 1:5 IN WATER)
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5. AN ALTERNATIVE OPTION FOR BIORETENTION FILTER MEDIA IS AN ENGINEERED FILTER MEDIA. THIS IS A WASHED, WELL GRADED SAND WITH APPROPRIATE HYDRAULIC CONDUCTIVITY (SUCH AS MATERIALS USED FOR CONSTRUCTION OF GOLF GREENS). THE TOP 100MM OF THE FILTER MEDIA SHALL THAN BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS AS SHOWN BELOW:

CONSTITUENT	QUANTITY (KG/100 M2 FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT MIX	1
FERTILISER NPK (16.4.14)	4
LIME	20

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7. THE BIO-RETENTION FILTER MEDIA SHALL BE TESTED TO DEMONSTRATE THE COMPLIANCE WITH THE ABOVE MENTIONED REQUIREMENTS AT THE FOLLOWING FREQUENCIES:
   - FOR BIO-RETENTION SYSTEMS <500M2, ONE SAMPLE PER 500M3 OF FILTER MEDIA.
   - FOR BIO-RETENTION SYSTEMS >500M2, ONE SAMPLE PER 500M3 OF FILTER MEDIA
   - FOR THE HYDRAULIC CONDUCTIBITY TEST PLUS ONE SAMPLE PER 2000M3 OF FILTER
   - MEDIA FOR ALL OTHER REQUIRED TESTS.
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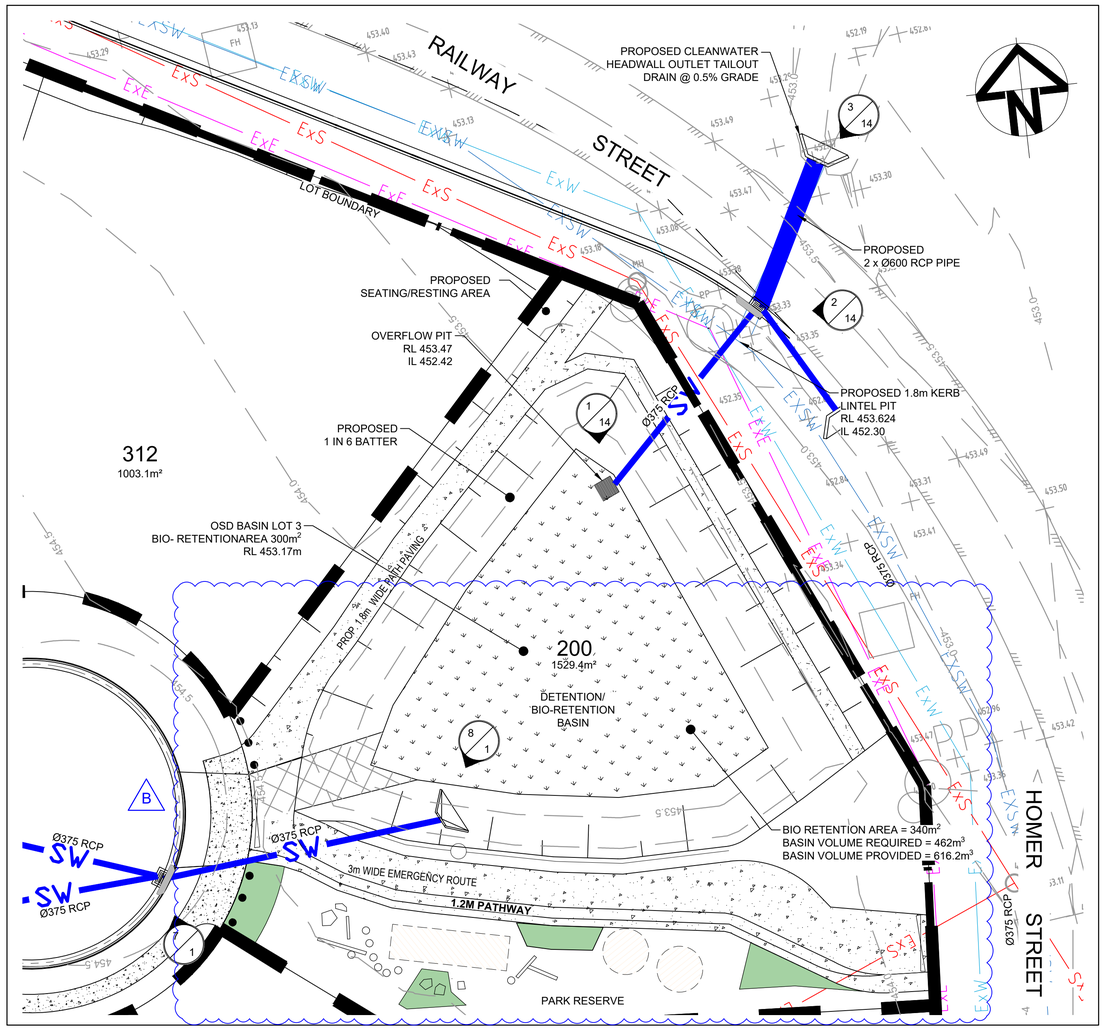
11. FILTER MEDIA SHALL BE INSTALLED IN TWO LIFTS FOR DEPTHS OF OVER 500MM

LEGEND

- LOT BOUNDARY
- PROPOSED STORMWATER DRAINAGE
- 100Ø SLOTTED uPVC PIPE @ 2m CRS WITH FLUSH POINT @ 30m CRS.
- 37.0 FINISHED CONTOURS
- PROPOSED FILTER MEDIA
- PROPOSED SCOUR PROTECTION
- BASIN MAINTENANCE DRIVEWAY @ 1 in 6 MAX
- PROPOSED KERB INLET PIT
- PROPOSED SAG PIT
- INTERALLOTMENT DRAINAGE PIT



BIO-RETENTION / DETENTION BASIN 2 LAYOUT PLAN

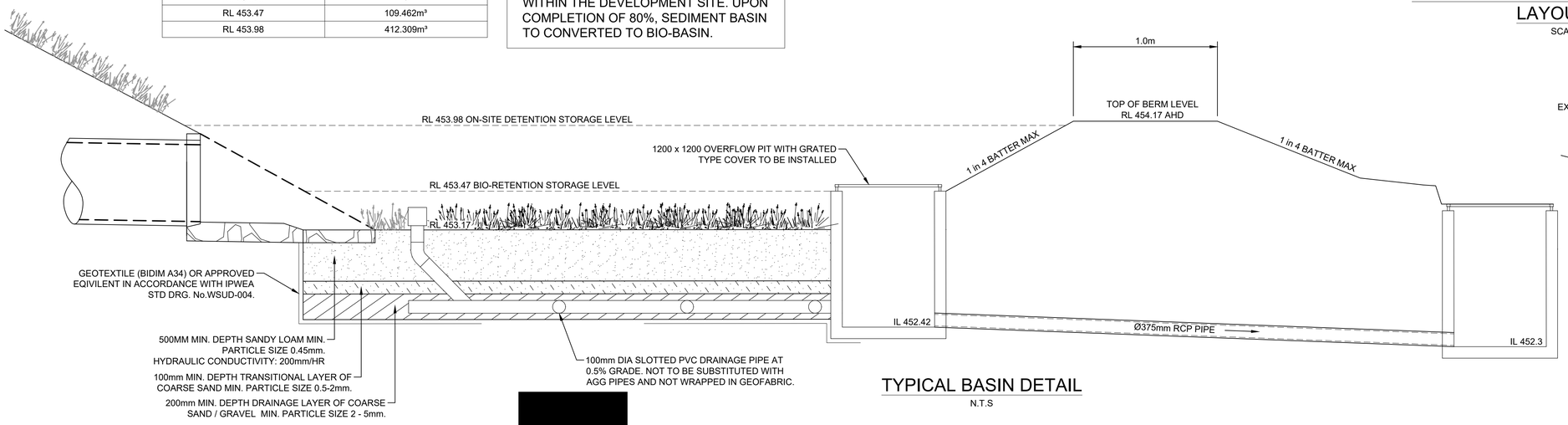
SCALE 1:200

BASIN SETOUT TABLE

LEVEL (m)	STAGED VOLUME (m³)
RL 452.42	0
RL 453.47	109.462m³
RL 453.98	412.309m³

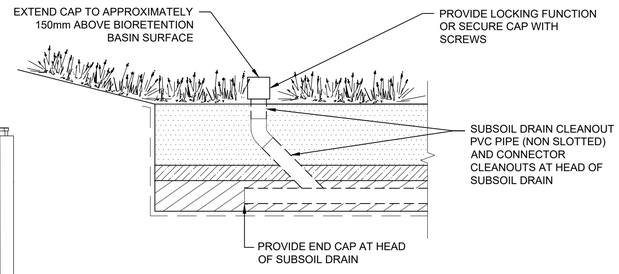
SEDIMENT BASIN NOTE :

SEDIMENT BASIN TO REMAIN UNTIL 80% OF ALL HOUSES ARE CONSTRUCTED WITHIN THE DEVELOPMENT SITE. UPON COMPLETION OF 80%, SEDIMENT BASIN TO CONVERTED TO BIO-BASIN.



TYPICAL BASIN DETAIL

N.T.S



TYPICAL FLUSH POINT DETAIL IN BIORETENTION

SCALE N.T.S.

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
B	ISSUE FOR DEVELOPMENT APPLICATION	01/03/2022	P.B.T.	J.A.B.
A	ISSUE FOR DEVELOPMENT APPLICATION	15/02/2022	P.B.T.	J.A.B.

0 1cm at full size 10cm 20cm

Client: MR. ROY AMERY

Council: MID-WESTERN REGIONAL COUNCIL

Surveyor: Premise
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Scale: 0 4 8 12 m
SCALE 1:200 @ A1

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Project: 1 RAILWAY STREET, GULGONG
PROPOSED RESIRENTIAL SUBDIVISION
CIVIL ENGINEERING PLANS
DEVELOPMENT APPLICATION

Drawing Title: BIO-RETENTION BASIN 2 LAYOUT PLAN AND DETAILS SHEET 2 OF 2

Scale A1	Project No.	Dwg. No.	Issue
AS SHOW	2021184	501	B