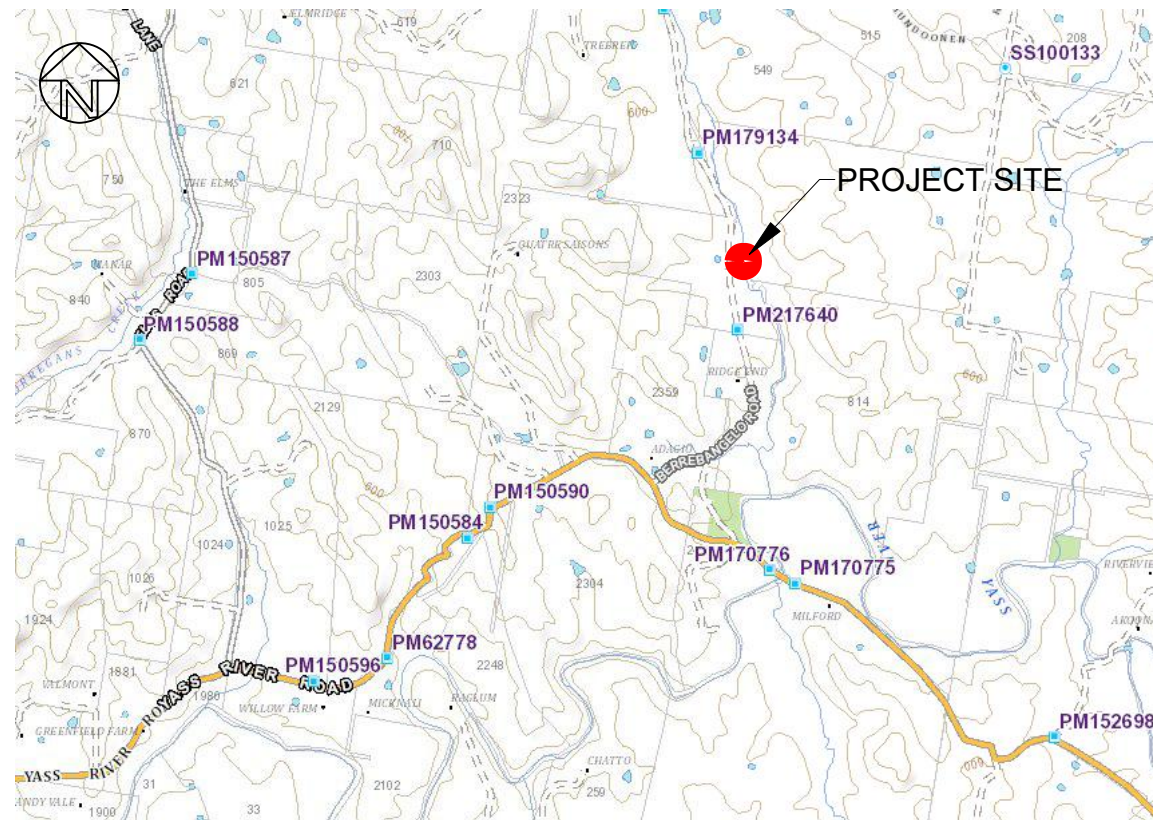


CAMILLE BATEMAN

HICKEYS CREEK CROSSING

739 BERREBANGELO ROAD

Genium Project No. 23036



Site Plan - Not to Scale

DRAWING LIST

- 22036 - 010 Cover Sheet, Drawing List, and Locality Plan
- 22036 - 050 General Notes and Existing Site
- 22036 - 100 General Arrangement
- 22036 - 200 Culvert Details
- 22036 - 300 Access Road Cross Sections and Standard Details
- 22036 - 1000 Safety in Design Register



| Rev | Date | Description |
|-----|------------|---------------|
| A | 02/04/2024 | Initial Issue |
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739 Berrebangelo Road



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|---|-------------------|----------------------|-------------|
| Client: Camille Bateman | | Status: For Approval | |
| Cover Sheet, Drawing List and Locality Plan | | Scale: AS SHOWN | Size: A3 |
| Datum: GDA2020/AHD | Sheet: 23036 -010 | 1 of 6 | Revision: A |

GENERAL NOTES

- G1. All works shall be undertaken in accordance with the drawings and specifications and completed in a sound, efficient, and workmanlike manner in accordance with sound engineering practice.
- G2. Where details are not shown in the drawings, works are to be completed to meet the requirements of relevant Australian Standards, AusSpec, Austroads, WSA Codes, and Council Policies and conditions.
- G3. Locations of existing services shown on the drawings are approximate only. The Contractor is to check the location of existing services prior to commencing works including potholing to verify both location and depth. The Contractor is solely responsible for any damage caused to utility services as a result of the construction works.
- G4. The Contractor shall at all times comply with the requirements of the Work Health and Safety Act 2011 and relevant Workcover codes of practice and at all times exercise appropriate care and control of the works to ensure the safety of workers and others in the vicinity of the site.
- G5. All works are to be set out by a competent surveyor and recovery pegs provided to ensure the setout location and levels of the works are available throughout the project.
- G6. The Contractor shall not disturb any survey control marks. Should any survey control marks be inadvertently disturbed or removed the Contractor shall advise the Superintendent immediately. The Contractor shall replace any damaged or removed survey marks at their expense.
- G7. Prior to commencing any excavation in sealed or concrete roadways or paths, the extent of the excavation is to be saw-cut to create a neat edge. The depth of the saw-cut shall be deep enough to prevent the surface of the road or pathway breaking away during excavation.

EROSION & SEDIMENT CONTROL

- ES1. The Contractor is to prepare a detailed Erosion and Sediment Control plan (ESCP) to the satisfaction of the Superintendent/Council prior to commencing works.
- ES2. The Contractor is to implement, maintain and progressively modify erosion and sediment control measures in accordance with the NSW Department of Housing - managing Urban Stormwater, Soils and Construction ("Blue Book") and any Council requirements. Control measures will be implemented to suit the Contractors staging and work methods and are to be maintained for the duration of the works or until disturbed areas are revegetated.
- ES3. The Contractor is to provide and maintain adequate dust control measures for the duration of the works including outside normal working hours where required.
- ES4. The Contractor shall be responsible for implementation, operation, and maintenance of all required erosion and sediment control measures. All control features are to be regularly inspected to ensure they are working satisfactorily.
- ES5. Appropriate protection shall be provided to all trees and other vegetation which are not required to be removed as part of the works. Protection is to be provided prior to commencing works to the satisfaction of the Superintendent/Council.

REVEGETATION

- R1. Unless otherwise specified, all disturbed areas and roadside embankments are to be prepared with 100mm of topsoil and stabilised using Hydromulch in accordance with the *NSW RMS Guideline for Batter Surface Stabilisation using vegetation*.
- R2. Where road pavements are 'daylighted' to the table drains, topsoil is to be placed on the road side slope of the table drain. The topsoil is to extend vertically 200mm up the side slope, measured from the invert of the table drain.



PLAN VIEW
SCALE 1:500

| Rev | Date | Description |
|-----|------------|---------------|
| A | 02/04/2024 | Initial Issue |
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Client: Camille Bateman

General Notes and
Existing Site

| | | | |
|----------------|--------------|----------|--|
| Status | For Approval | | |
| Date | Scale | Size | |
| GDA2020/AHD | 1:500 | A3 | |
| Drawing Number | Sheet | Revision | |
| 23036 -050 | 2 of 6 | A | |



RECONSTRUCT 4.6m WIDE ROAD TO SUIT NEW DESIGN LEVELS. MATCH INTO EXISTING AT EITHER END OF PROPOSED DESIGN. ROAD TO BE CONSTRUCTED FROM SAME OR SIMILAR MATERIAL USED ON SITE. NEW EMBANKMENTS TO BE FINISHED WITH 100mm OF TOPSOIL AND REVEGETATED.

INSTALL FLOOD DEPTH INDICATOR (G9-22-1). HEIGHT OF MARKER TO REFER TO FSL OF CONCRETE SLAB AT MIDSPAN OF CULVERT.

REMOVE EXISTING TREE



MATCH ROAD INTO EXISTING AT EITHER END OF WORKS

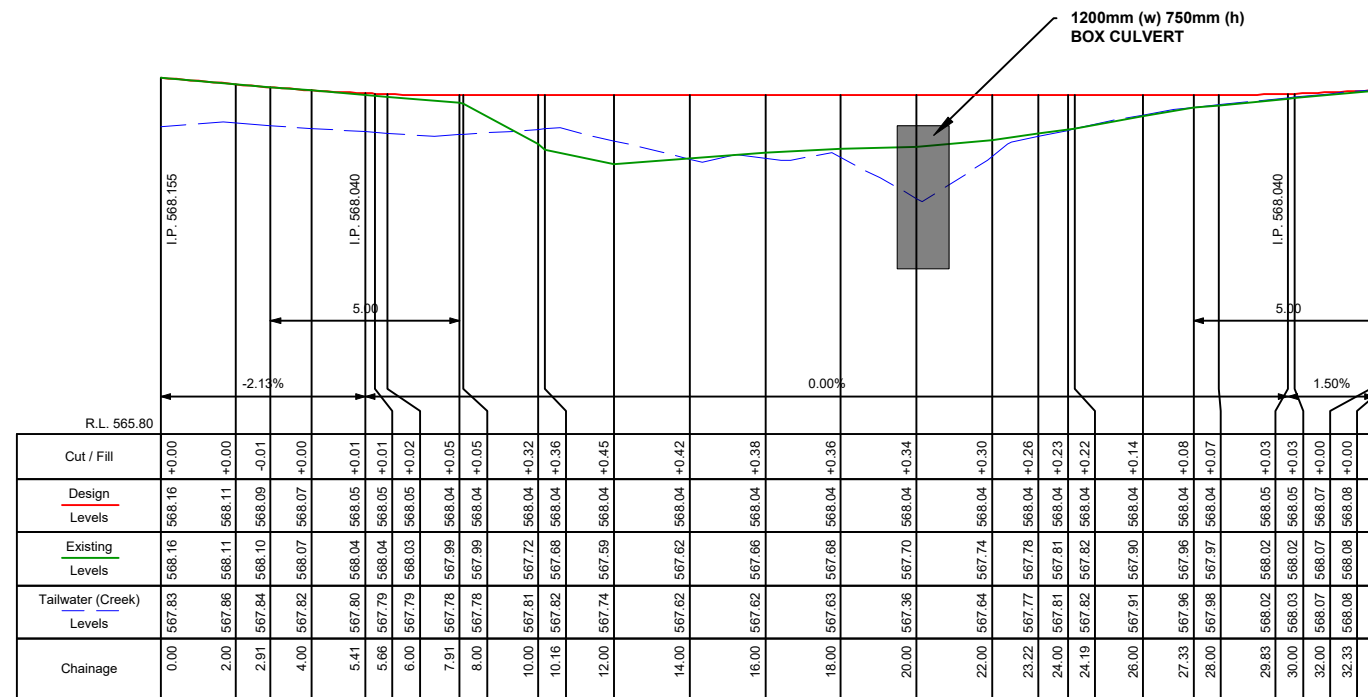
← TO BERREBANGELO ROAD

REMOVE EXISTING PIPE CULVERT. CONSTRUCT NEW SINGLE CELL 1200mm (w) 750mm (h) BOX CULVERT USING PRECAST COMPONENTS BY CAPITAL PRECAST OR APPROVED EQUIVALENT. REFER TO SHEET 22034-200 FOR DETAILS. TOPSOIL AND REVEGETATE ALL DISTURBED AREAS.

INSTALL FLOOD DEPTH INDICATOR (G9-22-1). HEIGHT OF MARKER TO REFER TO FSL OF CONCRETE OF SLAB AT MIDSPAN OF CULVERT.

PER FISHERIES REQUIREMENTS. CULVERT INLET AND OUTLET TO BE RECESSED INTO EXISTING CREEK INVERT BY 300mm. PROVIDE SCOUR PROTECTION FOR FULL WIDTH OF CONCRETE SLAB USING D50=300mm ROCK x 600mm DEEP ON A34 GEOTEXTILE FABRIC. EXTEND ROCK PROTECTION FROM EDGES OF SLAB TO A MINIMUM LENGTH 2m UPSTREAM OF INLET APRON AND 4.8m DOWNSTREAM FROM OUTLET APRON.

PLAN VIEW
SCALE 1:200



LONGITUDINAL SECTION - ACCESS ROAD
SCALE 1:200H - 1:50V

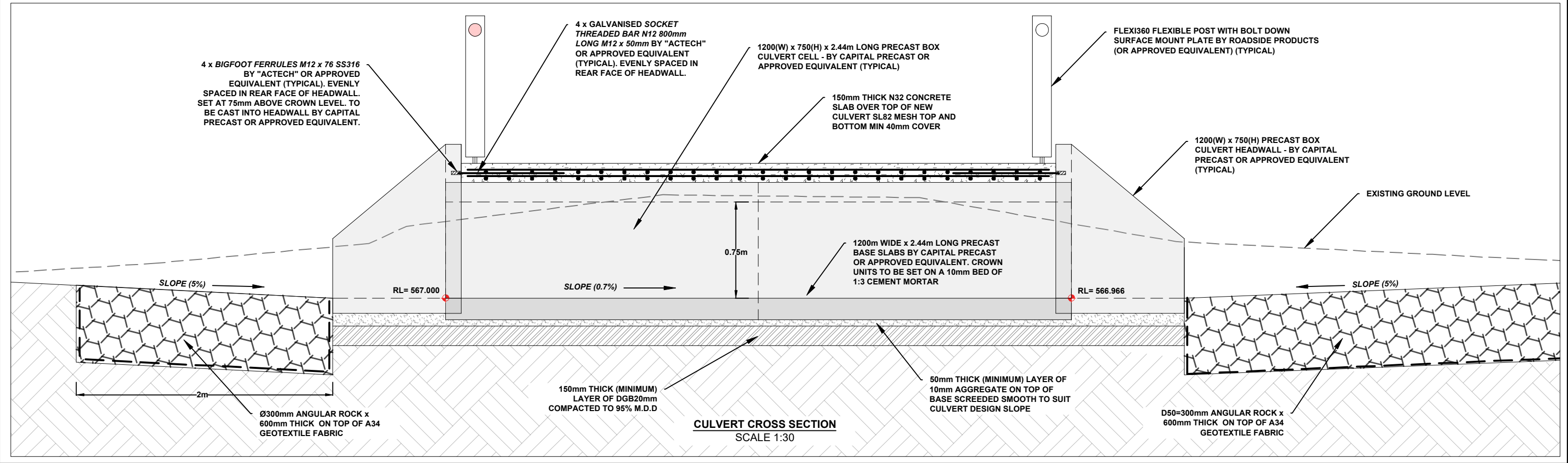
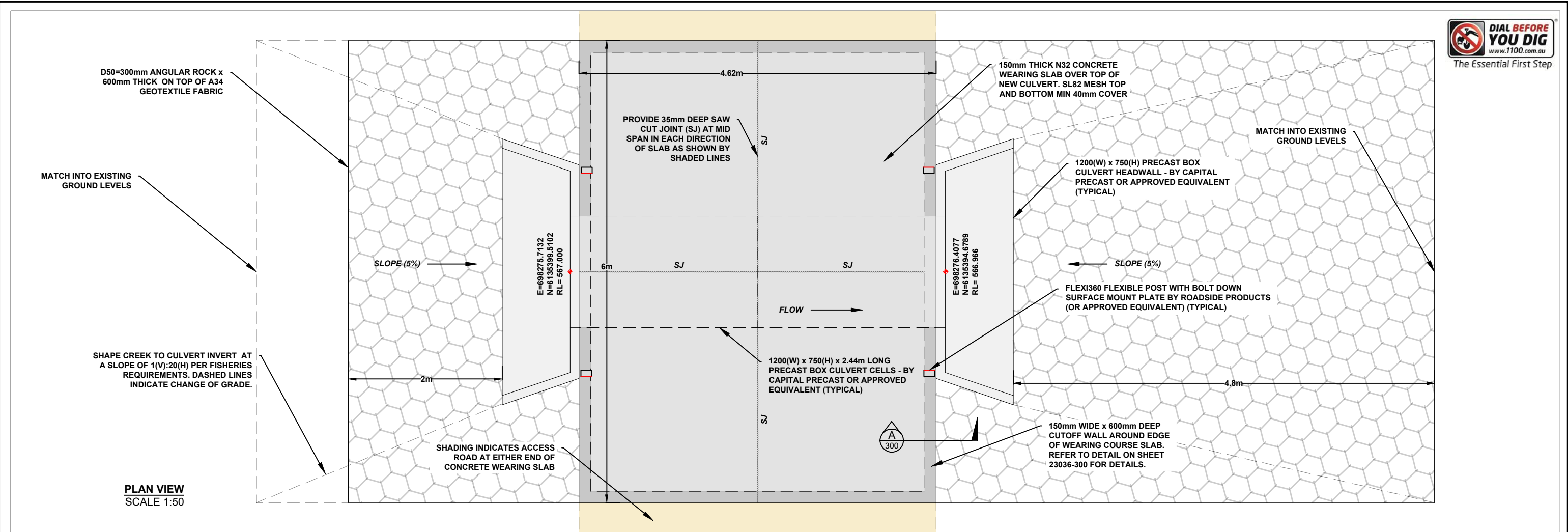
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|----------------------------|--------------|----------------------|
| Client: Camille Bateman | | Status: For Approval |
| Drawing Number: 23036 -100 | Scale: 1:500 | Size: A3 |
| Sheet: 3 of 6 | Revision: A | |



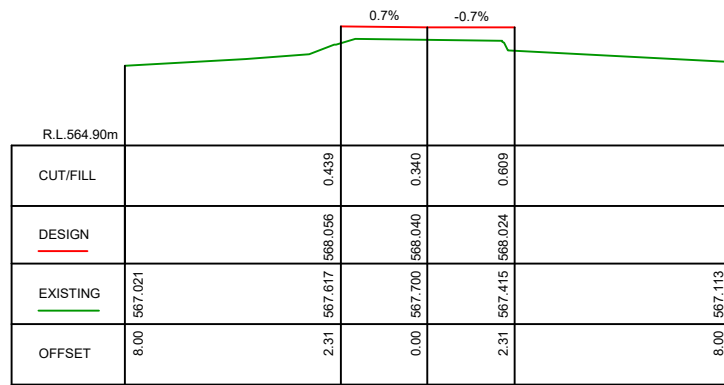
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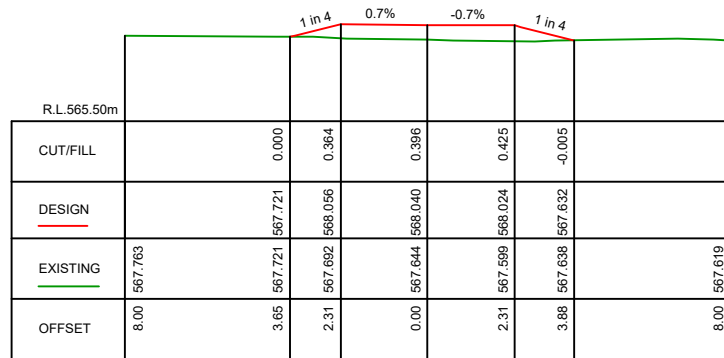
Genium CIVIL ENGINEERING

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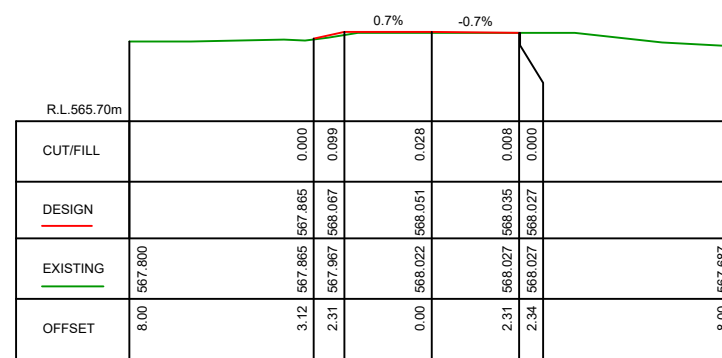
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| Client: Camille Bateman | Status: For Approval |
| Culvert Details | Scale: 1:500 Size: A3 |
| Drawing Number: 23036 -200 | Sheet: 4 of 6 Revision: A |



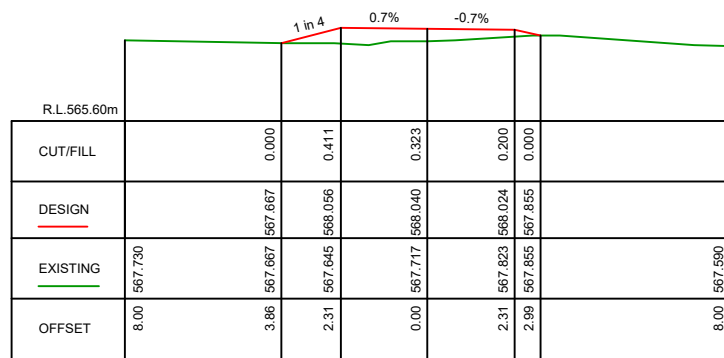
Ch 20.00 m



Ch 15.00 m



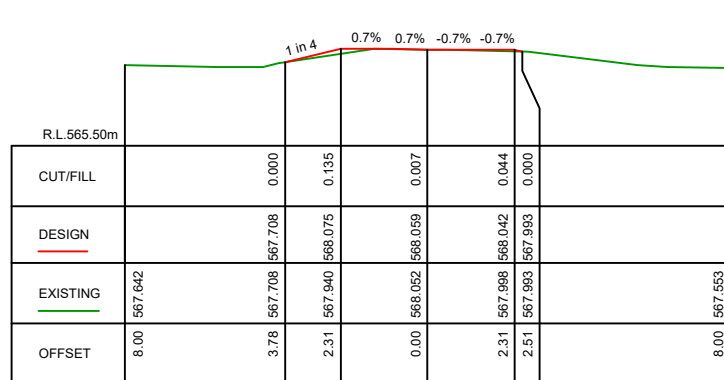
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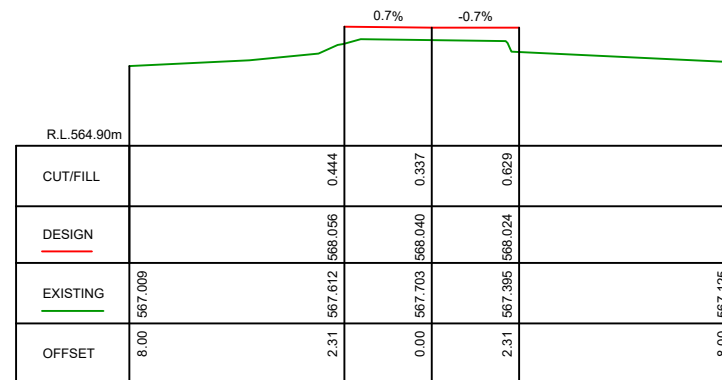
Ch 10.00 m



Ch 25.00 m

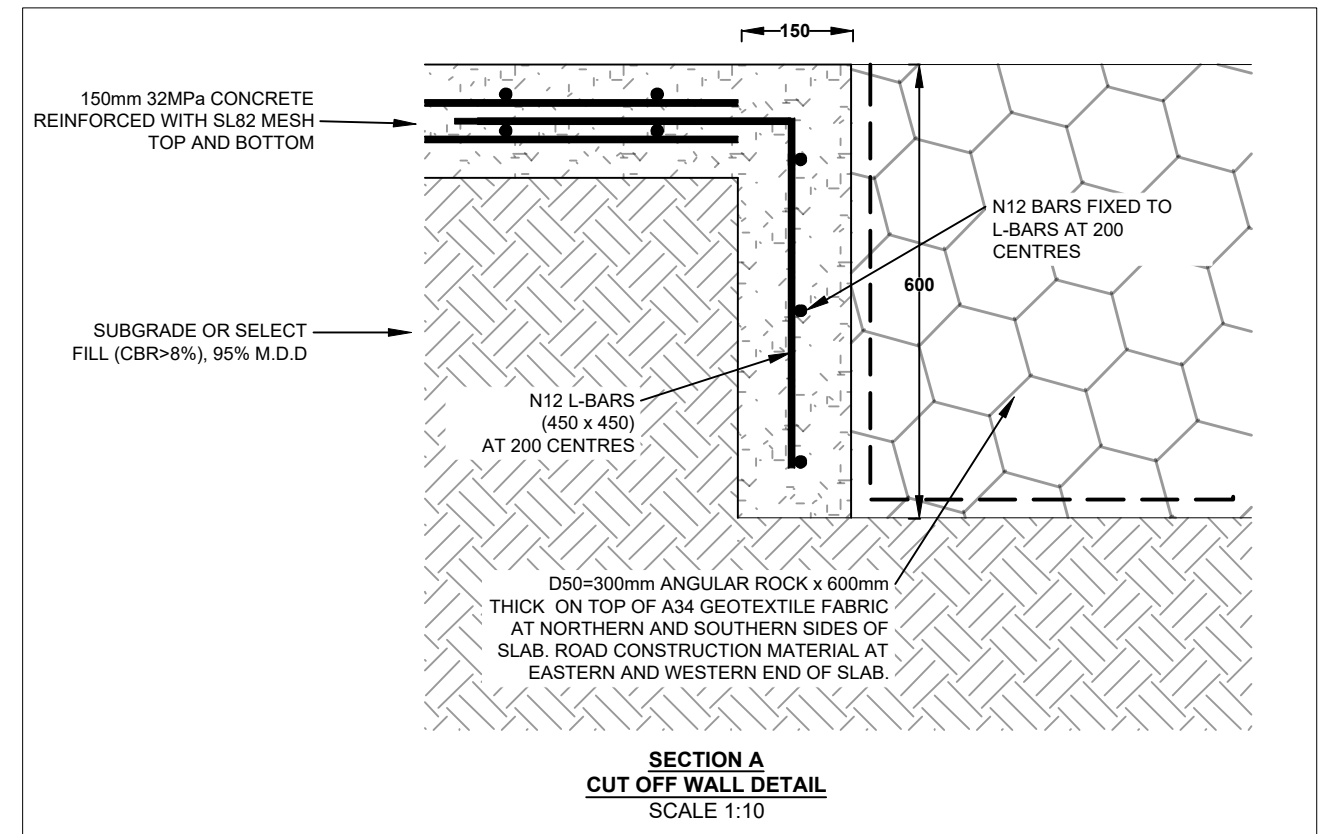
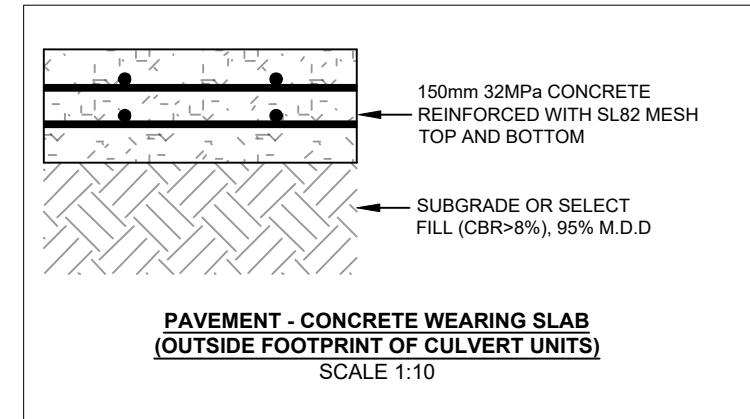


Ch 5.00 m



Ch 20.20 m

ACCESS ROAD CROSS SECTION
SCALE 1:200H 1:200V



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|---|--|----------------------|
| Client: Camille Bateman | | Status: For Approval |
| Access Road Cross Sections and Standard Details | | Scale: AS SHOWN |
| Drawing Number: 23036 -300 | | Size: A3 |
| Sheet: 5 of 6 | | Revision: A |

| SAFETY IN DESIGN REGISTER | | | | | | | | | | | |
|---------------------------|--------------------------------------|--|-----------------|-------------|--------------|--|---------------------|------------|-------------|-------------|------------|
| Project No. | | 23036 | | | Revision No. | | 1 | | Date: | | March 2024 |
| Project | | Hickeys Creek Crossing - 739 Berrebangelo Road | | | Client: | | Camille Bateman | | | | |
| Reference | Element | Risk | Risk Assessment | | | Controls | Residual Assessment | | | | |
| | | | Likelihood | Consequence | Risk rating | | Responsible Person | Likelihood | Consequence | Risk rating | |
| 1 | Vertical Geometry | Vehicle Accident due to travelling at a speed above the design alignment speed. | Rare | Serious | L | Road approaches are of very low standard and as such speed not likely to be an issues. Design of culvert undertaken for low speed use. | GEN | Rare | Serious | L | |
| 2 | Horizontal Gemoetry | Vehicle Accident due to travelling at a speed above the design alignment speed. | Rare | Serious | L | Road approaches are of very low standard and as such speed not likely to be an issues. Design of culvert undertaken for low speed use. | GEN | Rare | Serious | L | |
| 3 | Causeway Edge | Vehicle Accident due to vehicles leaving road and not being able to recover due to edge of culvert/causeway. | Possible | Serious | M | Flexible guide posts specified to delineate edge of causeway even during small overtopping events. | GEN | Rare | Serious | L | |
| 4 | Culverts and Roadways | Over topping of roads during rainfall events. Damage to Road Pavement and/or hazard to road users. | Frequent | Serious | H | Culvert has been designed to be overtopped for rainfall events as frequent as a 12EY rainfall event. Flows depths are expected to be 32mm for 12 EY events, 92mm for 1EY events, 112mm for 50% AEP events, 202mm for 20% AEP events and 262mm for 10% AEP events. Subject to external factors (debris build up and access road integrity) the culvert should be trafficable for events up to a 10% AEP, although it will be flooded. Client confirmed that this is adequate. Concrete wearing surface, Flexible guideposts and Depth Markers to be installed to provide guidance on flow depths. | GEN | Unlikely | Moderate | L | |
| 5 | Culvert Inlet/Outlets | Scouring of Culvert Inlet/Outlets during rainfall events | Likely | Serious | H | Concrete wearing surface, headwalls & cutoff walls designed to prevent scour of crossing. Scour protection upstream and downstream of causeway specified to prevent scouring of creek bed. | GEN | Unlikely | Moderate | L | |
| 6 | Roadside Embankments | Scouring of roadside embankments during rainfall events | Likely | Minor | M | Embankments designed to be revegetated in accordance with NSW RMS Guideline for Batter Surface Stabilisation using vegetation. | GEN | Unlikely | Minor | L | |
| 7 | Structural Adequacy of Road Pavement | Constructed pavement is structurally inadequate leading to premature failure | Possible | Major | H | Design based on TMR QLD standard designs & Austroads Standards. Contractor to construct in accordance with relevant standards and foundation to be proof rolled to ensure adequate bearing capacity. | GEN | Rare | Serious | L | |
| 8 | Road Construction | Road not constructed in accordance with AusSpec standards | Possible | Serious | M | Reputable Contractor to be engaged to undertake works. Works to be overseen by a suitably qualified person. | CON | Unlikely | Moderate | L | |
| 9 | Design Vehicle | Damage to road pavement or road surface as a result of use by oversized vehicle/s | Unlikely | Serious | M | Culverts to be designed for SM1600 loading. Headwalls and wearing slab designed for predominantly light vehicle use with occasional heavy vehicle use. | GEN | Rare | Moderate | L | |

GEN = Genium
DEV = Developer
CON = Contractor
COU = Council

| Risk Evaluation Matrix | | | | | | | | |
|------------------------|-----------|-------------|----------|---------|-------|--------|--------------|--|
| Risk Ratings: | | Consequence | | | | | | |
| | | Minor | Moderate | Serious | Major | Severe | Catastrophic | |
| Likelihood | Very High | | | | | | | |
| | High | | | | | | | |
| | Medium | | | | | | | |
| | Low | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Frequent | L1 | M | H | H | VH | VH | VH | |
| Likely | L2 | M | M | H | H | VH | VH | |
| Possible | L3 | L | M | M | H | H | VH | |
| Unlikely | L4 | L | L | M | M | H | H | |
| Rare | L5 | L | L | L | M | M | H | |
| Improbable | L6 | L | L | L | L | M | M | |

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| Client: Camille Bateman | | Status: For Approval | |
| Safety in Design Register | | Drawing Number: GDA2020/AHD | Scale: N/A |
| | | Sheet: 6 of 6 | Revision: A |