HILLS ROAD, DERRINAL

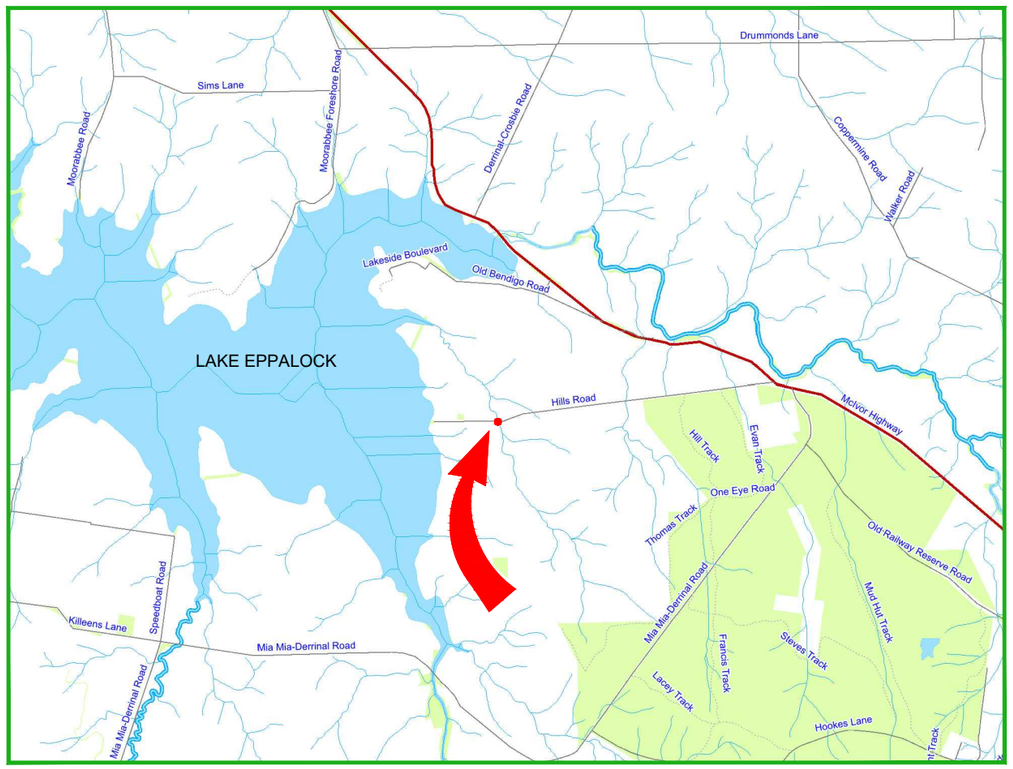
GB4640

BRIDGE UPGRADE

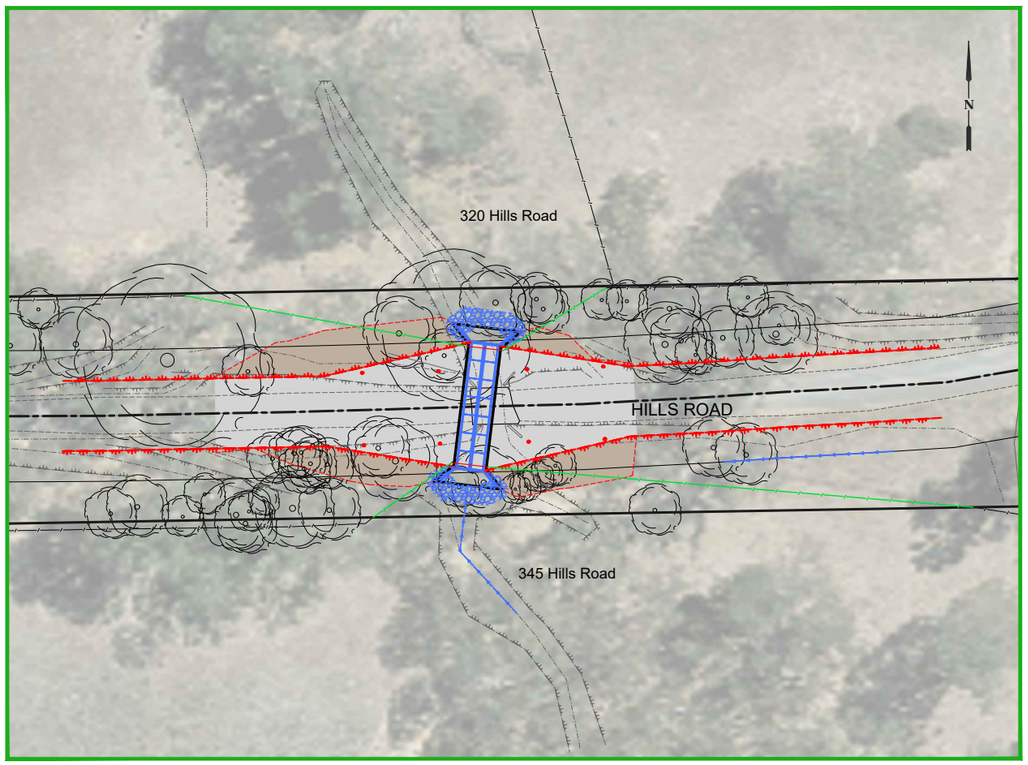
JUNE 2020

CITY OF GREATER BENDIGO

DOCUMENT CONTROL				
SHEET No.	SHEET DESC.	25/06/20	xx/xx/xx	xx/xx/xx
		DRAFT	TENDER	CONSTRUCTION
		REVISION	REVISION	REVISION
1	COVER SHEET	A		
2	GENERAL NOTES	A		
3	DEMOLITION PLAN	A		
4	DESIGN PLAN	A		
5	ROAD LONG SECTION & CROSS SECTIONS	A		
6	BASE SLAB & REINFORCEMENT DETAILS	A		
7	CREEK UNIT ARRANGEMENT	A		
8	HEAD & WING WALL DETAIL	A		
9	REINFORCEMENT SCHEDULE	A		
10	SETOUT	N/A		



LOCALITY MAP



PROJECT EXTENTS

AMENDMENTS			
Revision	Description	Approved by	Date
-	-	-	-

CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
BRIDGE UPGRADE

COVER SHEET

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
Approved by	N. SARTORI	-/-/20
Scale: -	Revision : A	
Original sheet size: A3	File : GB4240.dwg	
Sheet: 1 OF 10	Reference: GB4640	

PRELIMINARY DESIGN DRAFT 1

Plot Date: 20/05/2020

Plotted By: BAYLEY

ROAD CONSTRUCTION NOTES

1. All Works to be carried out in accordance with the Greater Bendigo City Council Standard Drawings, Specifications, approved plans and to the satisfaction of the Superintendent
2. These notes also refer to the latest version of the Infrastructure Design Manual (IDM and later version of the IDM standard Drawings)
3. The Superintendents Representative is to be notified seven days prior to the commencement of Works with a Pre-commencement meeting to be held between COGB, the consultant and the Contractor. A project management plan is to be submitted prior to the commencement of Works and prior to an onsite Pre-commencement meeting
4. Prior to commencement of the Works, the Contractor shall provide the following:
   - Source of quarry material
   - N.A.T.A. approved test results for the F.C.R that is to be used
   - If the source of the quarry material is changed during the course of the Works, then new test results shall be provided.
5. Prior to commencement of Works on site, the Contractor must ensure that all matters relating to the Occupational Health and Safety act 1985, have been and will be complied with
6. On the commencement of construction Works, the Contractor must comply with the recommendation of the Environment Protection Authority publication "Construction Techniques for Sediment Pollution Control". Appropriate siltation control is to be maintained throughout the construction and maintenance period of the Works.
7. The disposal site for spoil storage, and truck removal route, is to be submitted in writing to and approved by the Superintendent's Representative prior to the commencement of Works.
8. Where Works are in the vicinity of existing services, these services are to be located and exposed/proved prior to commencement of the work. Relevant authorities are to be notified 7 days prior to the Works.
9. All dimensions are in metres unless noted otherwise
10. All levels are to Australian Height Datum (AHD) unless noted otherwise
11. All co-ordinates are to Map Grid Australia (MGA) unless noted otherwise
12. The Contractor must arrange the requisite inspection of the Works with the Superintendent's Representative as per the hold points in the Specifications or as directed.
13. All redundant assets are to be removed and disposed offsite unless noted otherwise
14. All service conduit trenches under road pavements, under footpaths and under swales are to be backfilled as per COGB SD20 unless noted otherwise. Compaction standards noted in SD20 shall be achieved
15. Blasting is not accepted. The Superintendent is to be notified in writing if any blasting is necessary. Residents likely to be affected by the blasting and all relevant service authorities shall be notified in writing prior to Works commencing.
16. All existing assets affected by the Works (eg signs vehicle crossings, footpaths, kerb and line marking) shall be reinstated by the Contractor by the completion of Works, to the satisfaction of the Superintendent's Representative
17. At the completion of all Works, all rubbish, debris and surplus spoil shall be removed and the site shall be cleared to the satisfaction of the superintendent
18. The Contractor is to obtain a Building Permit for any structures, fences and for any retaining walls over 1.0m in height.
19. Any Infrastructure damage incurred during the Defects Liability Period noted on the contract is the responsibility of the Contractor and is to be reinstated to the satisfaction of the Superintendent's Representative.
20. All disturbed areas (eg Nature strips, batters, allotments and reserves) are to be reinstated to a clean, tidy condition, top dressed with 75mm loamy top soil, and sewn with grass seed. Grass seed type is to be COGB blend. NOTE: grass is to be established prior to the end of the Maintenance Period.
21. Any exposed aggregate concrete Works are to be achieved by sandblasting only. Washing aggregate off with water is not permitted
22. The Contractor shall notify the public of any impending road closures by providing sufficient signage 2 weeks prior to construction commencing.

FILL NOTES

1. All earthworks and compaction are to be in accordance with VicRoads Specification Section 173 and 204.
2. All fill materials are to be approved by the superintendent prior to being imported onto the works site, and unless noted otherwise are to be a clean clay based material free of vegetation matter or contaminants.
3. All filling is to comply with AS3798-1996 Appendix B, level 1 (or 2) as specified
4. The contractor is responsible for ensuring that all imported fill material, including topsoil, satisfies the description for clean fill material in EPA bulletin publication No 448 (Sep 95) and subsequent revisions. The contractor shall if required provide verification including test certificates to the superintendent and/or their representative.

SIGNAGE, GUIDE POSTS, DELINEATORS AND GUARD FENCE NOTES

1. All existing signage within the scope of Works area is to be removed immediately prior to Works commencing.
2. All new signage is to be installed in accordance with the "For Construction" plans, and notes within.
3. Any new signage must comply with AS1742 Parts 1-15 and VicRoads Traffic Engineering Manual Volume 2
4. All signs to be installed are to be Class 1 high intensity type and must comply with the requirements of AS1743-2001
5. All guideposts are to have delineators satisfying the requirements of AS1906.2 Section 3. Colors of delineators are to be in accordance with note 8 below.
6. Guideposts are to be installed 150mm clear of the edge of shoulder, or 600mm behind the face of kerb at the spacing's detailed below:

Curve Radii (m)	Outside	Inside
~~< 100~~	~~6~~	~~12~~
~~100 - 199~~	~~10~~	~~20~~
~~199 - 299~~	~~15~~	~~30~~
~~300 - 399~~	~~20~~	~~40~~
~~400 - 599~~	~~30~~	~~60~~
~~600 - 799~~	~~40~~	~~60~~
~~800 - 1199~~	~~60~~	~~60~~
~~1200 - 2000~~	~~90~~	~~90~~
Straights	150	150

~~NOTE: - On guard fence, adjust increments to suit post spacing - Post on inside of curve is to be placed opposite a post on outside of curve wherever practicable.~~

~~Guideposts on crests on a straight alignment are to be spaced such that at least 2 pairs of delineators (the nearest pair being not less that 40m ahead of the vehicle) are visible at all times. On crests with a horizontal curve, this requirement is to be combined with those in the above table.~~

7. At bridges or culverts the following guidepost/delineator conditions shall apply:

No Guard fence, structure >5m in length
4 guideposts, one pair at each end

~~Guard fence/bridge rail within 4m of closest traffic lane edge~~
~~Delineators to be placed on mounting brackets on guard fence/bridge rail, spaced at 12.5m centres. A delineator shall be located 5.0m from the leading end of the fence, discounting any flared sections of fence (unless the flare is within 4m of the traffic lane, in which case the delineator should be installed on the start of the flare)~~

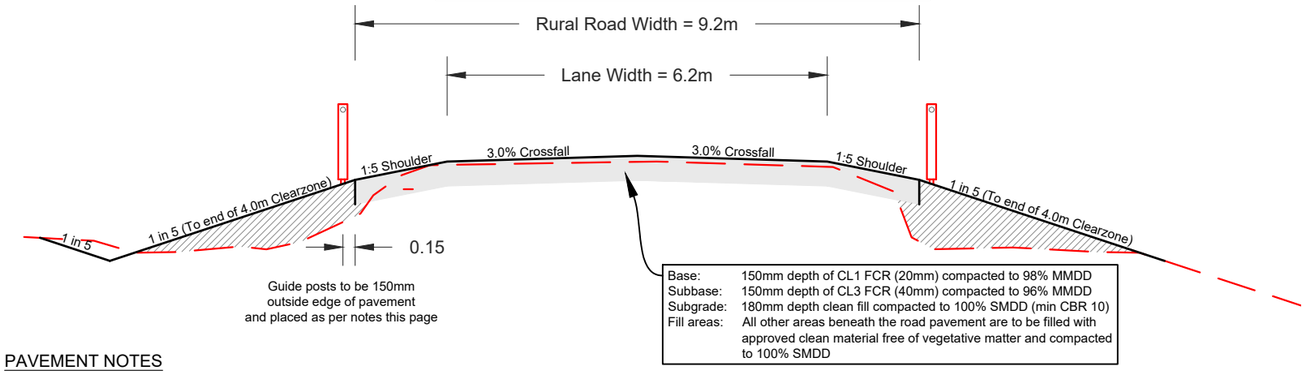
~~Guard fence/bridge rail more than 4.0m from closest traffic lane edge~~
~~Delineators are not placed on the barrier, fence or rail, but guideposts are continued along the edge of formation at the required spacing shown above~~

8. Delineators are to be colored as per the following
   - Red - left side of roadways
   - White - right side of roadways
   - Yellow - right side of one way roadways

CROWN UNIT DETAILS

1. Crown Units that are 1200mm or less in span shall be designed as per AS1597 Part 1. Crown Units that are greater than 1200mm but less than 4200mm in span shall be designed as per AS1597 Part 2.
2. All Box Culverts / Crown Units nominated for use in these plans shall be designed to withstand the appropriate combination of loading such that:
   D = 0-2m of backfill
   Q = SM1600 road traffic loading of AS5100
3. All Crown Units are to have cast-in lifting anchors suitable for lifting/handling purposes.
4. Where onsite storage is required, Crown Units are to be placed on timber bearers on firm level ground.
5. Backfill around Crown Units is to be done in 300mm layers, and on both sides simultaneously.
6. Allow 7 days curing time for the concrete base slab before placing Crown Units on top. Allow a further 7 days before reopening to traffic.
7. Crown Unit dimensions used for construction are not to vary from the sizes specified in the plans by more than +/- 10mm

HILLS ROAD - DESIGN SECTION



PAVEMENT NOTES

1. Compaction of road pavements is to be in accordance with the requirements of VicRoads Standard Specifications for Roadworks (Section 304).Testing must be carried out by a N.A.T.A. approved laboratory, or by calibrated nuclear densometer test to the relevant Australian Standard.
2. Compaction tests are to be undertaken in the following locations:
   - At ⅔ depth of the pavement layer
   - At alternating sides of the road
   - 1.0m in from the seal edge or lip of kerb
   - At even spacings.
3. The number of compaction tests shall comply with the table below:

Location	Number of Compaction tests
~~Court bowls~~	~~3~~
~~Intersections~~	~~2~~
Straights	1 per 500m2

4. Copies of the geotechnical results are to be submitted to the Superintendent's Representative
5. Subbase and base materials are to be at 85% Optimum Moisture Content (OMC) during compaction, and maintained at 85% OMC until proof rolling
6. Typical Compaction levels required (unless noted otherwise):
   - Subgrade: To be compacted to a minimum density ratio of 100% of the Standard Maximum Dry Density (SMDD)
   - Subbase: To be compacted to a minimum density ratio of 96% of the Modified Maximum Dry Density (MMDD). Flexible pavements shall be compacted in accordance with Scale C in VicRoads Table 304.082.
   - Base: To be compacted to a minimum density ratio of 98% of the Modified Maximum Dry Density (MMDD). Flexible pavements shall be compacted in accordance with Scale C in VicRoads Table 304.082.
7. Proof Rolling of the subgrade, sub base and base must be undertaken at the expense of the Contractor in accordance with AS3798 and the requirements of section 173 and 204.12 of the VicRoads Specification. The Superintendent's Representative must be present during the proof rolling. The subgrade must not deflect more than 2mm vertically within 300mm of the test roller in isolated locations.
8. Identification and treatment of soft areas during proof rolling shall be dealt with as per Sections 12.7.11 and 12.7.12 of the IDM or at the discretion of the Superintendent's Representative.
9. ~~Refer to COGB Pavement Report XXXX for further information~~

VEGETATION NOTES

1. No tree or native vegetation is to be disturbed or removed without prior approval from the Superintendent's Representative. Any approved trees or vegetation removed as part of the works are not to be burnt onsite.
2. All trees and shrubs are to be retained unless otherwise shown or directed by the Superintendent's Representative.
3. If fencing is required as a condition of the planning permit or as a result of the pre-construction meeting, a three strand star picket and wire fence shall be constructed.
4. If tree roots are discovered during excavation works, works in the immediate area shall cease until the Superintendent's Representative has inspected, and has approved works to proceed.

SPRAY SEAL NOTES

1. All works relating to the construction of a spray seal shall comply with VicRoads specification 408.
2. The Contractor shall determine the design rates of application for primer, primerbinder, binder, surface pre-treatments, remedial works, and aggregate in accordance with the procedures set out in the current Austroads Sprayed Seal design method as listed in section 175
3. Prime shall be given a minimum of 24 hours absorption time
4. ~~Bridge Deck Note: The concrete bridge deck is to be thoroughly cleaned with high pressure water prior to priming. The primer rate on the concrete deck should be between 0.25 and 0.3 Litre/m2~~
5. At least 1 week prior to the commencement of sealing, the Contractor shall submit the rates of application for bituminous material, aggregate, and rates for pre treatment for review by the Superintendent. The should be done via submission in writing of the form: 408.16 'Schedule of Details' in VicRoads Specification 408.
6. At the completion of works, a job completion report (JCR) is to be submitted to the Superintendent for review. The JCR form can be found in VicRoads specification 408 Attachment A

STRUCTURAL CONCRETE and REINFORCEMENT NOTES Including Bridges, Crown Unit Slabs, Endwalls

1. All workmanship and materials shall be in accordance with relevant sections of the Specification.
2. Clear cover to Reo shall be 50mm everywhere unless noted otherwise.
3. Reinforcement is shown diagrammatically and not necessarily in a true projection.
4. All nuts to be Gal. nyloc, snug tightened (typical).
5. All reinforcement shall be securely supported in its correct position during construction by approved bar chairs, spacers or support bars.
6. All reinforcement is to be Grade N, hot rolled deformed bars to AS4671.
7. Bends, hooks, cogs and fitments for Grade 500 shall be in accordance with AS5100 - 2004
8. Laps, splices and anchorage details for Grade 500 reinforcing shall be in accordance with AS5100 (Splices to be staggered such that not more than 50% occur at any location).
9. Mesh splices are to be lapped. The two outermost transverse wires of one sheet of mesh are to overlap the two outermost transverse wires of the sheet being lapped.
10. Lap splicing of bars is to be over the noted distance and connected using wire spiraling unless noted otherwise.
11. Welding of reinforcement will not be permitted without approval from the Superintendent's Representative.
12. Any approved welding is to be 6mm fillet, laid down with approved covered electrode to AS1554, unless directed otherwise.
13. All Structural concrete shall have a minimum 28 day strength of 32MPa unless noted otherwise. (Blinding concrete to be 20MPa)
14. All concrete work shall have fillets or chamfers of 20x20 unless noted otherwise.
15. All concrete shall be placed with the assistance of an approved mechanical vibrator.
16. Surface finishes are as follows:
    - Abutments/wings Class 2
    - Bridge Deck Class 3
    - Endwalls Class 2
    - Pits Class 2
    - Spillways Class 3

AMENDMENTS			
Revision	Description	Approved by	Date
-	-	-	-

CITY OF GREATER BENDIGO

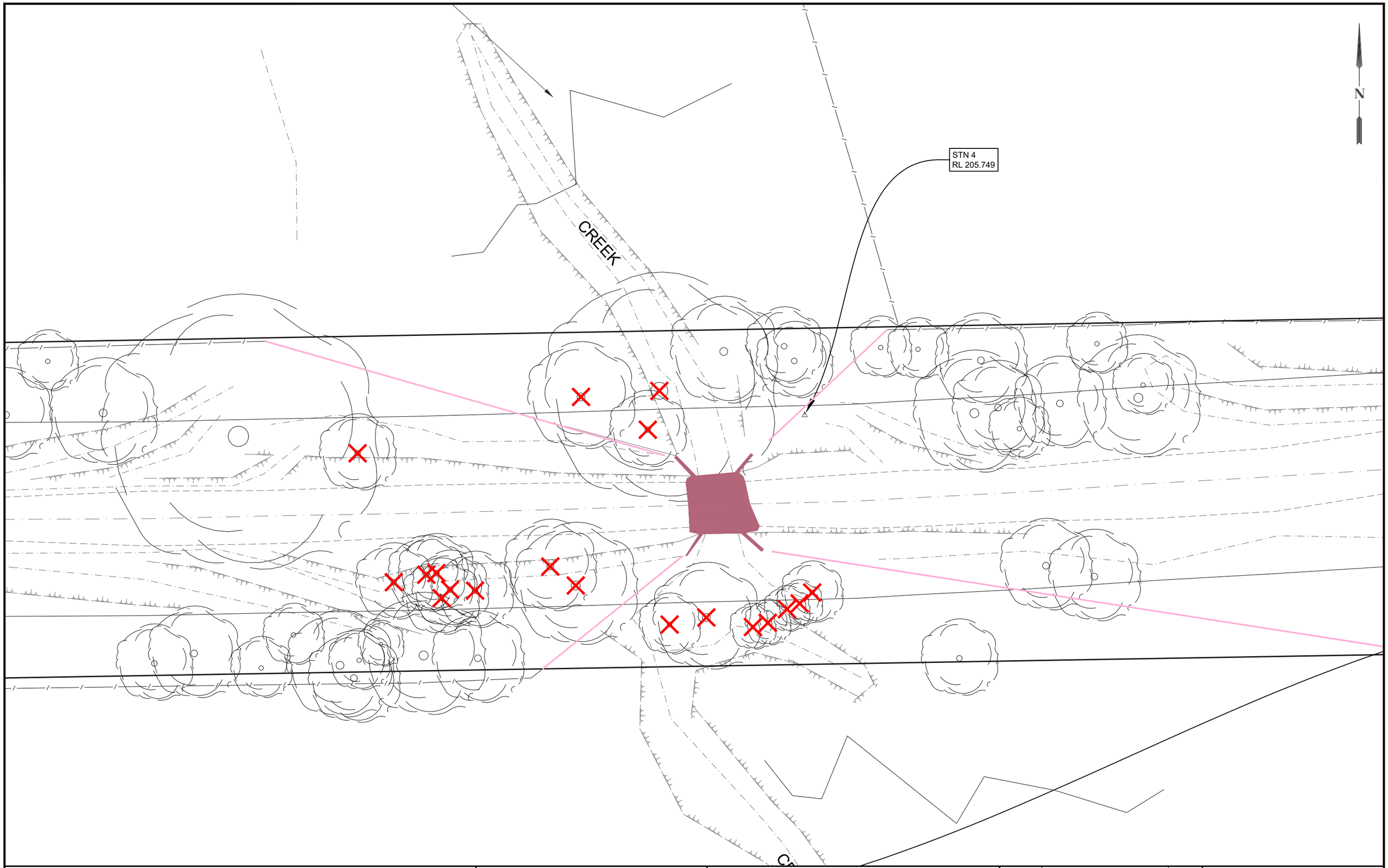
HILLS ROAD
DERRINAL
BRIDGE UPGRADE

GENERAL NOTES

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
Approved by	N. SARTORI	-/-/20
Scale: -	Revision : A	
Original sheet size: A3	File : GB4240.dwg	
Sheet: 2 OF 10	Reference: GB4640	

PRELIMINARY DESIGN DRAFT 1

Plot Date: 20/05/2020
Plotted By: BAYLEY



LEGEND

Removal:
- Existing timber bridge deck and subframe
- Piles to a minimum of 300mm below natural surface
- Abutment and endwall structures.

Removal: Tree

Fence Removal

AMENDMENTS

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CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
BRIDGE UPGRADE

DEMOLITION PLAN

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
Approved by	N. SARTORI	-/-/20
Scale: -	Revision : A	
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Sheet: 3 OF 10	Reference: GB4640	

PRELIMINARY DESIGN
DRAFT 1

Plot Date: 20/05/2020
Plotted By: BAYLEY

Lane Width: 3.1m (GRD 6 Table 4.5)
Shoulder: 1.5m (GRD 6 Table 4.5)
Min Carriageway = 9.2m (GRD 6 Table 4.5)

Clearzone (At Culverts): Fill Batter 5%. AADT = <750, Des Speed = 100km/h.
Clearzone = 5.5m
Dist. from Centre -> Edge of clearzone = 8.6m

Hazards include: Design Wingwall, Existing trees.
Design Batters are at least 1:5, so not a hazard.
Likelihood of crash: Low. Removal of existing trees will clear most of the hazards. Endwall is a minor hazard compared to the rest of Hills Road where trees are present much closer to the traffic lane.
Guard Fence would be expensive for little gain.

Use pedestrian fencing to protect motorists turning around or pedestrians.

N

STN 4
RL 205.749

CREEK

Reconstruct Post and Wire Fencing (Vicroads SD3101) between edge of pedestrain fencing and property boundary as shown.

Rock Beaching: 500mm depth of 50:50 mix of 300mm and 500mm diameter rock spall

5.0m of Pedestrian Fencing (Vicroads SD3143) 0.5m offset from Endwall.

CH – 230.00
CH – 220.00
CH – 210.00
CH – 200.00
CH – 190.00
CH – 180.00
CH – 170.00
CH – 160.00
CH – 150.00
CH – 140.00
CH – 130.00
CH – 120.00
CH – 110.00

1500 x 1200 Crown Units.

5.0m of Pedestrian Fencing (Vicroads SD3143) 0.5m offset from Endwall.

Reflective Guideposts to be placed along edge of shoulder at Spacings as per AS1742.2.

Reconstruct Post and Wire Fencing (Vicroads SD3101) between edge of pedestrain fencing and property boundary as shown.

Flood Calcs
A = 287.9 Ha
Q (1%) = 7560l/s

Reconstruct Road as per design long section and cross sections. Typical section shown on page 2.

LEGEND

- Unsealed Road
- Batter works area
- Rock Beaching 500mm depth of 50:50 mix 300mm and 500mm rock spall
- Design Bridge Culverts. See Page 6 & 7 for details.
- Design Table Drain Invert
- Pedestrian Fencing Vicroads SD3143
- DESIGN CONTOURS - Levels to AHD (0.10m interval)
- EXISTING CONTOURS - Levels to AHD (0.10m interval)
- Post and Wire Fencing Vicroads SD3101 (Type A)

AMENDMENTS

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CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
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DESIGN PLAN

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
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PRELIMINARY DESIGN DRAFT 1

Plot Date: 20/05/2020
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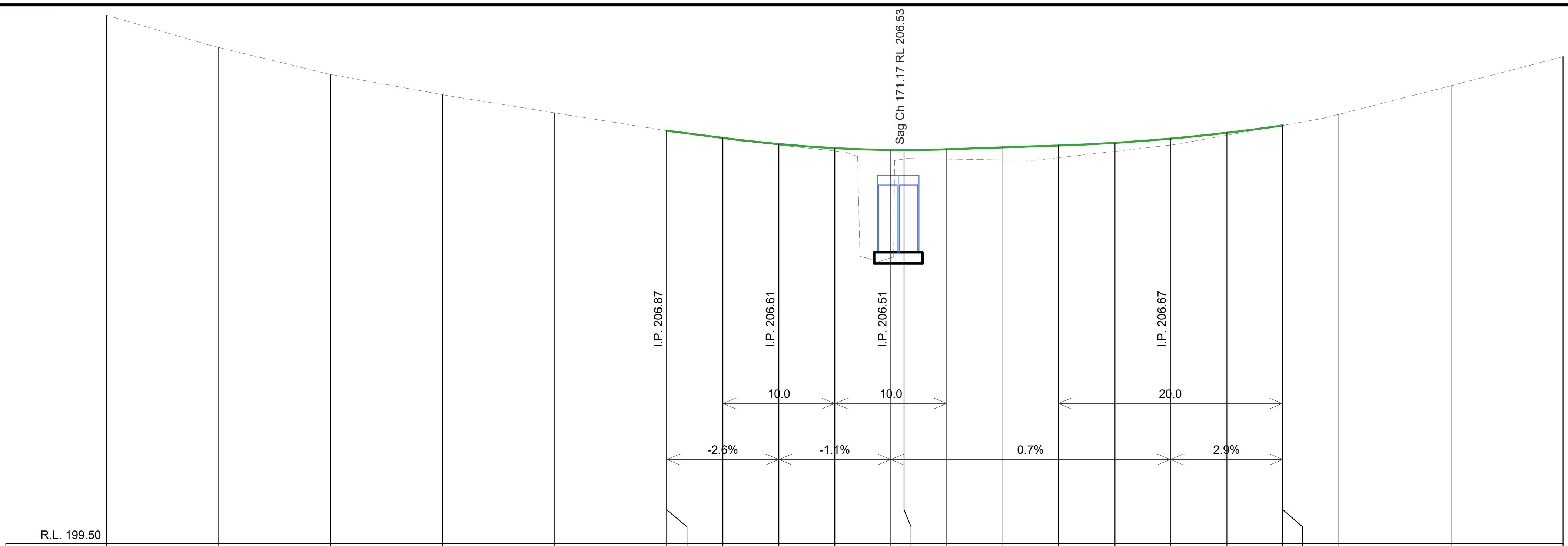
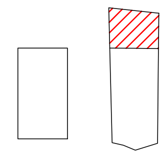


CHAINAGE	NS	DESIGN Centreline
100.00	208.93	
110.00	208.36	
120.00	207.88	
130.00	207.51	
140.00	207.19	
149.99	206.87	206.87
150.00	206.87	206.87
155.00	206.73	206.74
160.00	206.61	206.63
165.00	206.51	206.56
170.00	204.60	206.53
171.17	206.37	206.53
175.00	206.36	206.54
180.00	206.35	206.57
184.95	206.39	206.61
190.00	206.50	206.65
194.95	206.61	206.73
200.00	206.79	206.83
204.95	206.96	206.96
205.00	206.97	206.97
210.00	207.16	
220.00	207.67	
230.00	208.19	

HILLS ROAD CENTRELINE LONGITUDINAL SECTION CH 100.000 To 230.000
SCALES: H 1:500 V 1:100 (A3)

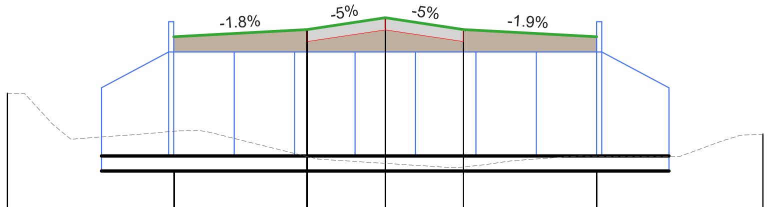


Flow Area Changes
Existing Creek is shown on Left.
Flow Area through design Culverts is shown on Right.

Existing: 3.68m2
Design: 3.6m2

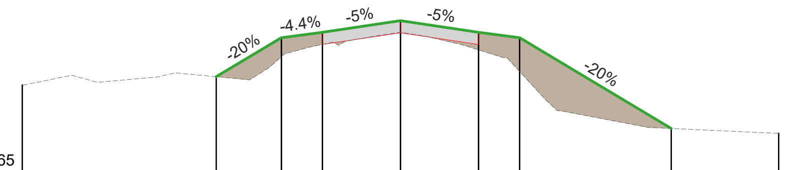
Area is very similar when the existing Bridge thickness is taken into account with the existing flow area.

See Calculations Sheet for reasoning to choosing 2 x 1200 x 1500 box culverts.



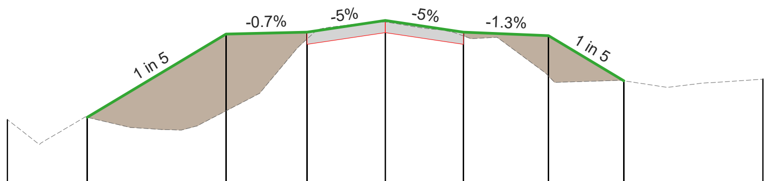
OFFSETS	-15.00	-8.38	-3.10	0.00	3.10	8.19	15.00
DES.		206.28	206.37	206.53	206.37	206.28	
NS	205.53	205.03	204.69	204.60	204.55	204.70	204.99

Ch 170.00



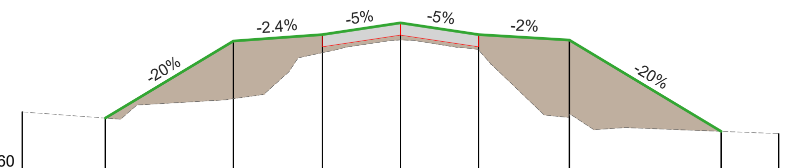
OFFSETS	-15.00	-7.31	-4.73	-3.10	0.00	3.10	4.73	10.74	15.00
DES.		205.91	206.43	206.50	206.65	206.50	206.43	205.23	
NS	205.80	205.91	206.18	206.34	206.50	206.27	205.98	205.23	205.16

Ch 190.00



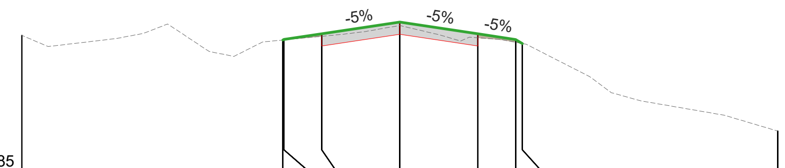
OFFSETS	-15.00	-11.83	-6.32	-3.10	0.00	3.10	6.49	9.48	15.00
DES.		205.35	206.45	206.48	206.63	206.48	206.43	205.84	
NS	205.32	205.35	205.44	206.39	206.61	206.43	205.90	205.84	205.86

Ch 160.00



OFFSETS	-15.00	-11.71	-6.63	-3.10	0.00	3.10	6.70	12.72	15.00
DES.		205.32	206.33	206.42	206.57	206.42	206.35	205.14	
NS	205.40	205.32	205.57	206.18	206.35	206.22	205.36	205.14	205.11

Ch 180.00



OFFSETS	-15.00	-4.64	-4.60	-3.10	0.00	3.10	4.60	4.87	15.00
DES.		206.60	206.61	206.68	206.83	206.68	206.60	206.55	
NS	206.66	206.60	206.60	206.65	206.79	206.63	206.57	206.55	205.40

Ch 200.00

CL ????? CROSS SECTIONS
SCALES: H 1:300 V 1:100 (A3)

AMENDMENTS

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-	-	-	-

CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
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ROAD LONG SECTION & CROSS SECTIONS

Survey	H. WHYTOCK	02/04/2020
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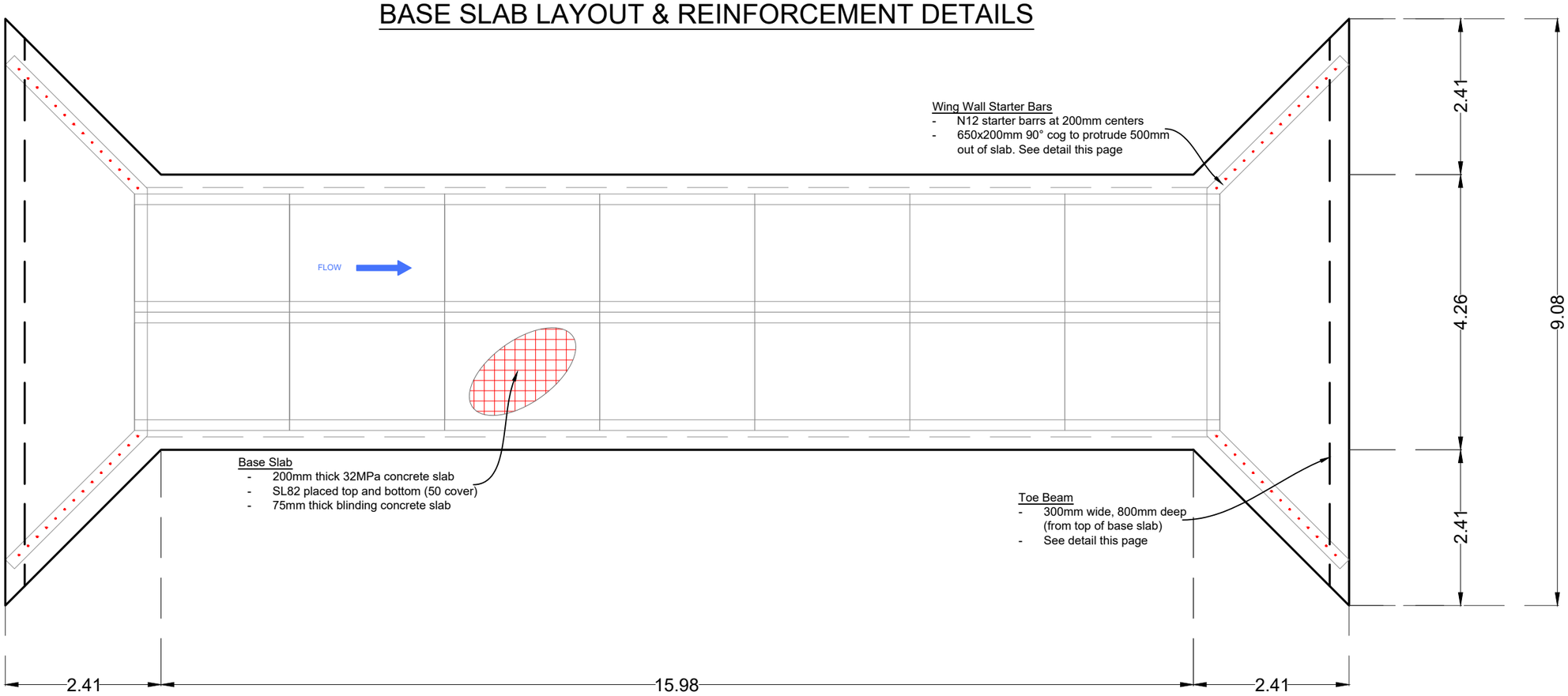
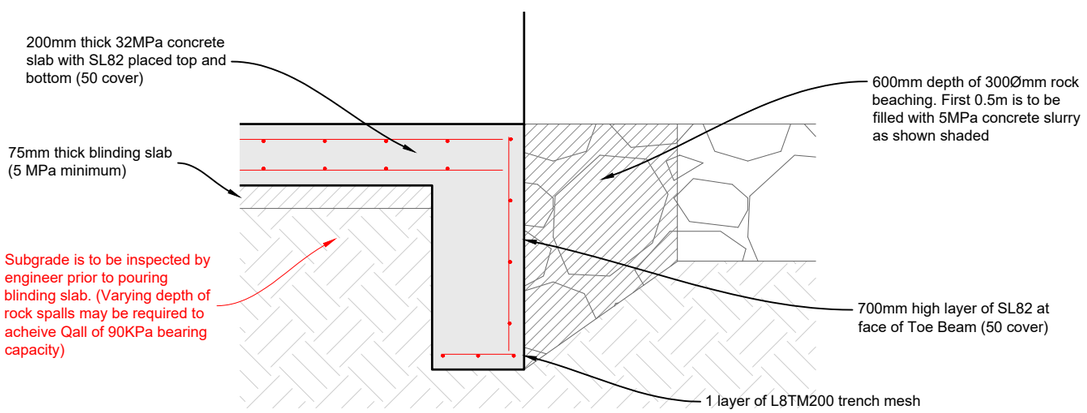
PRELIMINARY DESIGN DRAFT 1

Plot Date: 20/05/2020
Plotted By: BAYLEY

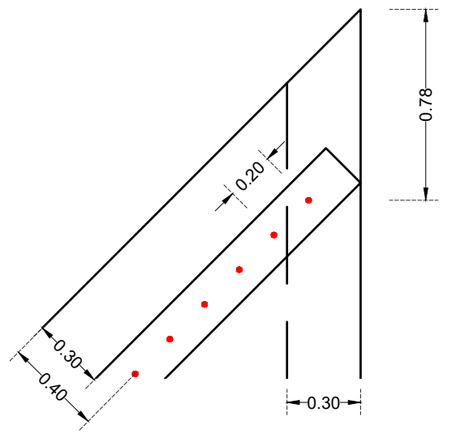
BASE SLAB LAYOUT & REINFORCEMENT DETAILS



Slab and Toe Beam detail



Wing wall starter bar detail



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DERRINAL
BRIDGE UPGRADE

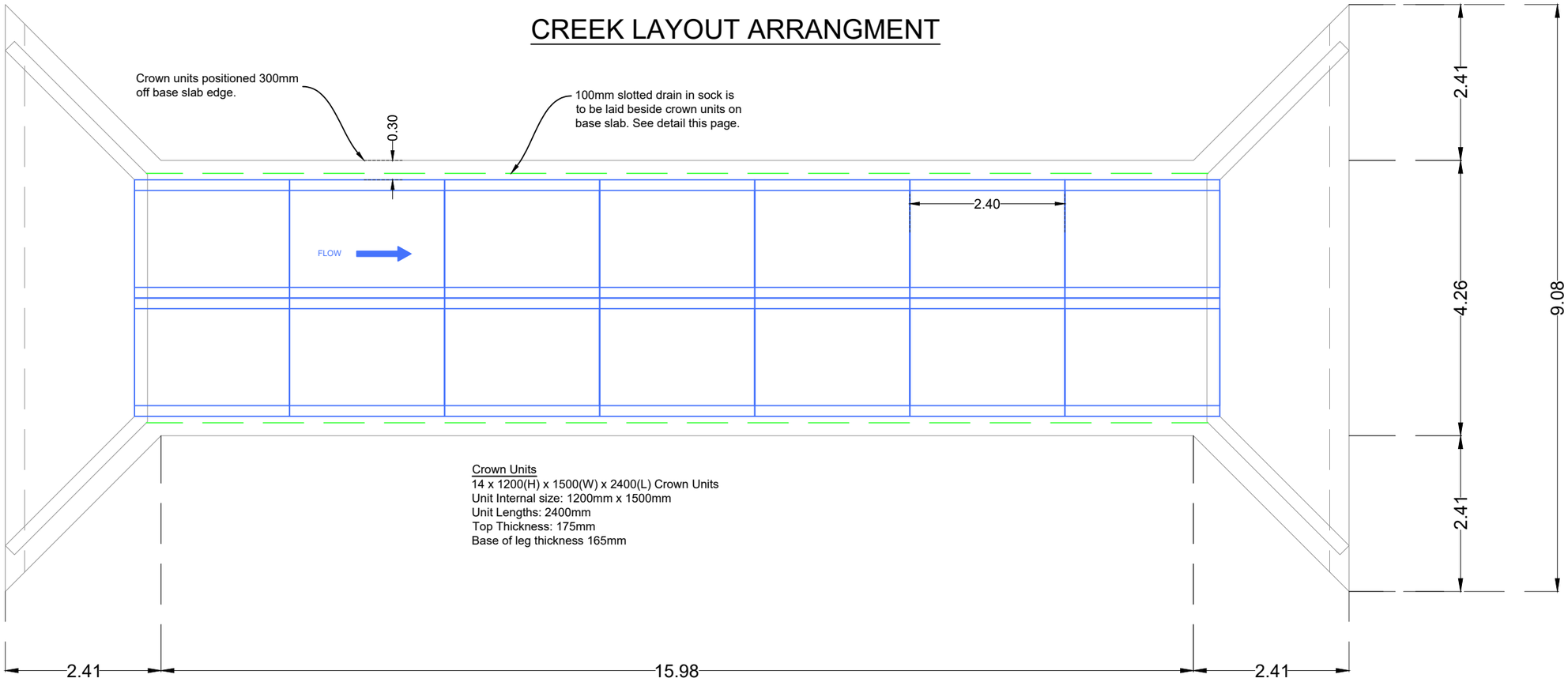
BASE SLAB & REINFORCEMENT DETAILS

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
Approved by	N. SARTORI	-/-/20
Scale: -	Revision : A	
Original sheet size: A3	File : GB4240.dwg	
Sheet: 6 OF 10	Reference: GB4640	

PRELIMINARY DESIGN DRAFT 1

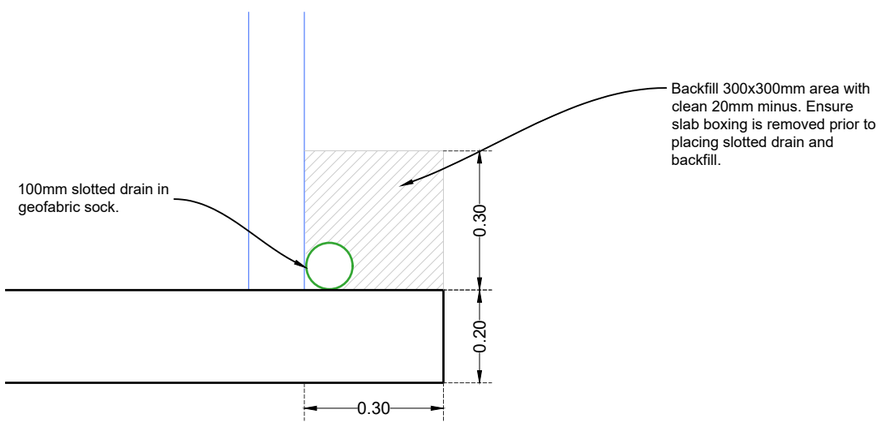
Plot Date: 20/05/2020
Plotted By: BAYLEY

CREEK LAYOUT ARRANGMENT

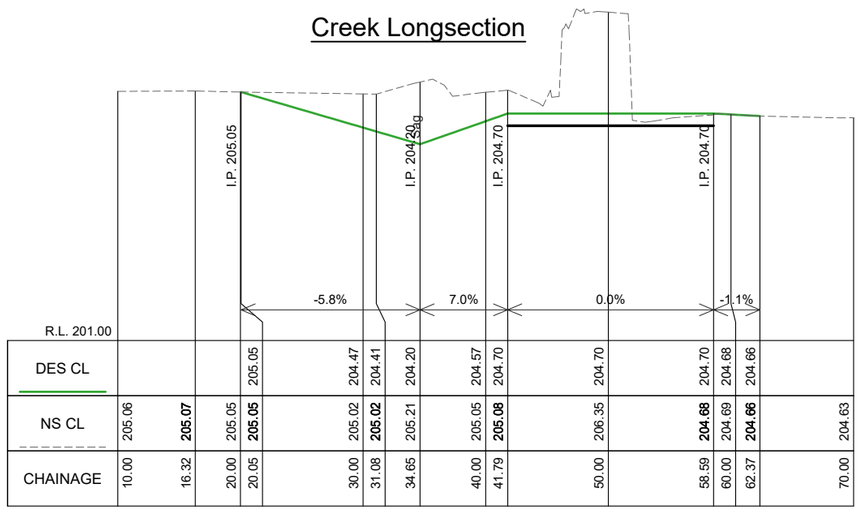


Crown Units
14 x 1200(H) x 1500(W) x 2400(L) Crown Units
Unit Internal size: 1200mm x 1500mm
Unit Lengths: 2400mm
Top Thickness: 175mm
Base of leg thickness 165mm

Slotted Drain Detail



Creek Longsection



R.L. 201.00													
DES CL				205.05	204.47	204.41	204.20	204.57	204.70	204.70	204.70	204.68	204.66
NS CL	205.06	**205.07**	205.05	**205.05**	205.02	**205.02**	205.21	205.05	**205.08**	206.35	**204.68**	204.69	**204.66**	204.63
CHAINAGE	10.00	16.32	20.00	20.05	30.00	31.08	34.65	40.00	41.79	50.00	58.59	60.00	62.37	70.00

CREEK LONGITUDINAL SECTION CH 10.000 To 70.000
SCALES: H 1:500 V 1:100 (A3)

AMENDMENTS			
Revision	Description	Approved by	Date
-	-	-	-

CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
BRIDGE UPGRADE

CREEK UNIT ARRANGEMENT

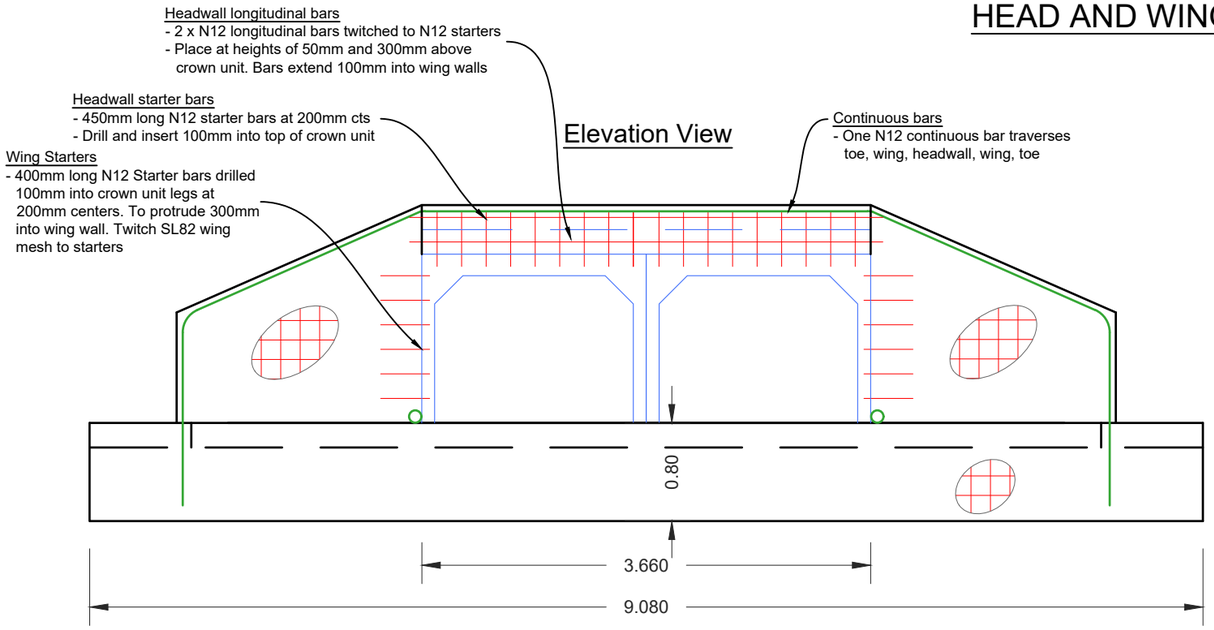
Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
Approved by	N. SARTORI	-/-/20
Scale: -	Revision : A	
Original sheet size: A3	File : GB4240.dwg	
Sheet: 7 OF 10	Reference: GB4640	

PRELIMINARY DESIGN DRAFT 1

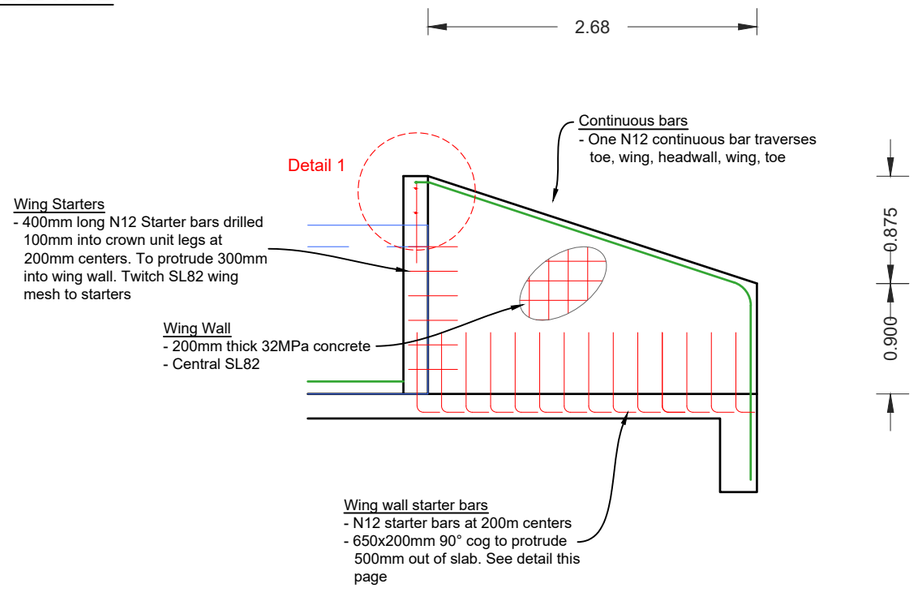
Plot Date: 20/05/2020
Plotted By: BAYLEY

HEAD AND WING DETAIL

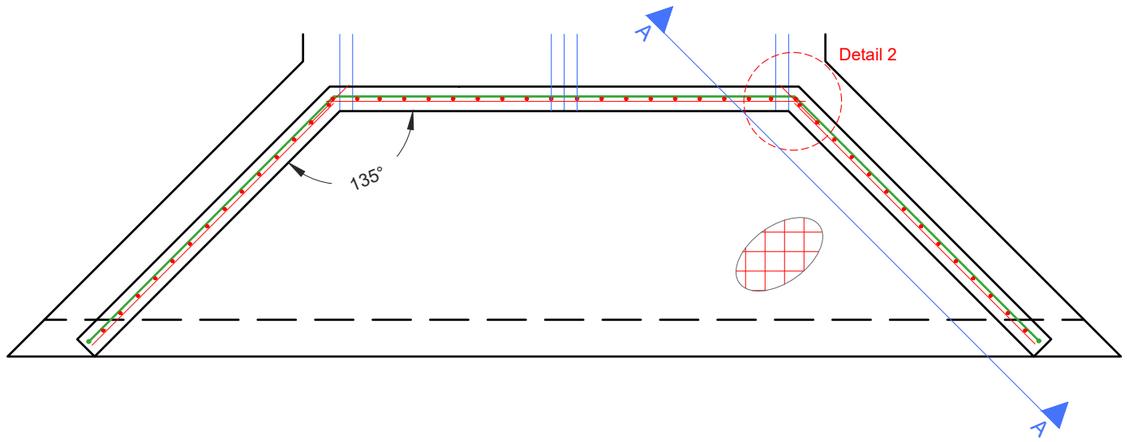
Elevation View



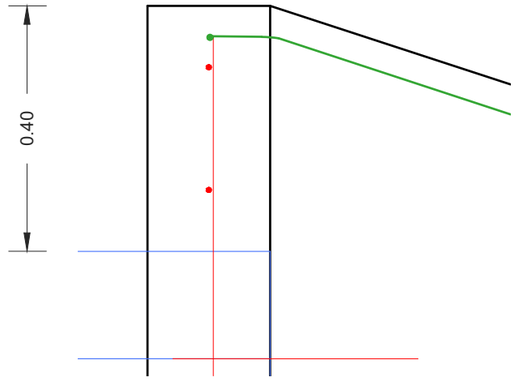
Section A-A



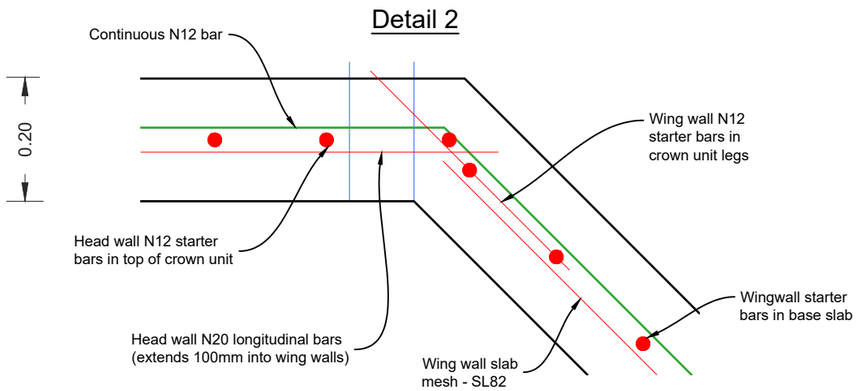
Plan View



Detail 1



Detail 2



AMENDMENTS			
Revision	Description	Approved by	Date
-	-	-	-

CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
BRIDGE UPGRADE

HEAD & WING WALL DETAIL

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
Checked	A. SMITH	-/-/20
Approved by	N. SARTORI	-/-/20
Scale: 1:50 & 1:10	Revision : A	
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PRELIMINARY DESIGN
DRAFT 1

Plot Date: 20/05/2020
Plotted By: BAYLEY

NO.	REO LOCATION	VOL REQ.	REINFORCING COMPONENT	COMMENTS
1	BASE SLAB	200.2 m2	SL82 MESH	SLAB AREA = 100.2 m2
2	BASE SLAB	52	N12 - 650X200 90° COG STARTER BAR	DIAGRAM 1
3	BASE SLAB	313	BAR CHAIRS (MESH @ 50 & 150mm)	SLAB AREA = 100.2 m2
4	SLAB TOE	14.6 m2	SL82 MESH	SINGLE FACE AREA = 7.3 m2
5	SLAB TOE	18.2 m	L11TM200 TRENCH MESH	TOE L = 9.1 m
6	WING WALLS	18.4 m2	SL82 MESH	SINGLE FACE AREA = 4.6 m2
7	WING WALLS	24	N12 - 400mm STRAIGHT STARTER BAR	DIAGRAM 2
8	HEAD WALLS	36	N12 - 450mm STRAIGHT STARTER BAR	DIAGRAM 3
9	HEAD WALLS	15.44m	N12 - LONGITUDINAL BAR	SINGLE BAR LENGTHS = 3.86 m
10	END WALLS	23.0 m	N12 - CONTINUOUS BAR	SINGLE BAR LENGTHS = 11.5 m

DIMENSIONS DO NOT INCLUDE OVERLAPS

No. Bar Chairs based on 1 chair per 0.64m2.
Since two layers, this is then doubled.
2 x 100.2/0.64 = 313.125.
0.64 found on here:
https://www.wolters.com.au/faqs/mesh-faq

If there is a better calc, let me know.

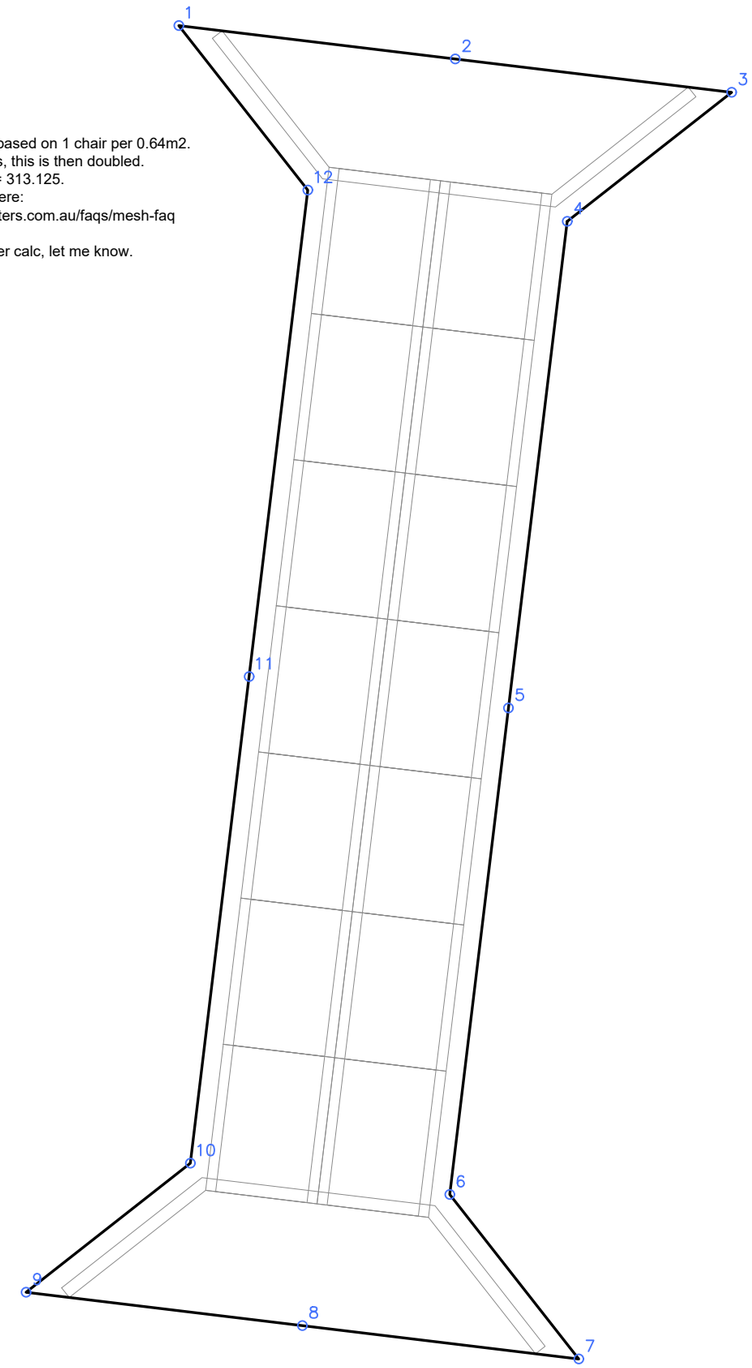
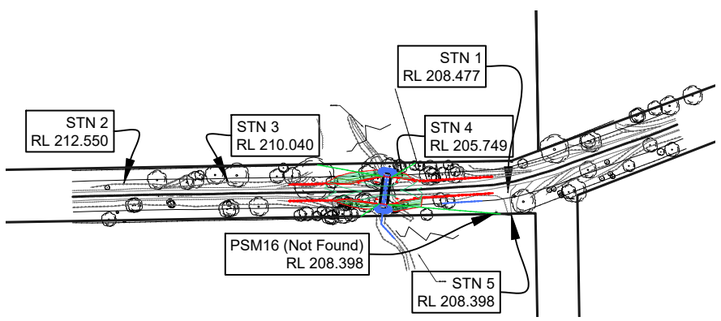


DIAGRAM 1
650 x 200 N12 90° COG
Wing wall Starter bars
Set in Base slab

DIAGRAM 2
400mm long N12
Wing wall Starter bars
Drilled into crown legs

DIAGRAM 3
450mm long N12
Head wall starter bars
Drilled into crown tops



STATION DATA				
Point #	Description	Easting	Northing	Level
901	STN 1	288886.656	5914931.611	208.477
902	STN 2	288669.552	5914936.231	212.550
903	STN 3	288728.314	5914937.837	210.040
904	STN 4	288826.916	5914940.389	205.749
905	STN 5	288888.557	5914918.876	208.398
1871	PSM16 (Not Found)	288880.000	5914920.000	208.398

SETOUT			
Point #	Easting	Northing	Level
1	288814.092	5914943.276	204.700
2	288818.599	5914942.732	204.700
3	288823.106	5914942.188	204.700
4	288820.425	5914940.084	204.700
5	288819.467	5914932.152	204.700
6	288818.509	5914924.219	204.700
7	288820.613	5914921.538	204.700
8	288816.106	5914922.082	204.700
9	288811.599	5914922.626	204.700
10	288814.280	5914924.730	204.700
11	288815.238	5914932.662	204.700
12	288816.195	5914940.595	204.700

AMENDMENTS			
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-	-	-	-

CITY OF GREATER BENDIGO

HILLS ROAD
DERRINAL
BRIDGE UPGRADE

REINFORCEMENT SCHEDULE & BASE SLAB

Survey	H. WHYTOCK	02/04/2020
Design	B. JANSSEN	xxxx
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PRELIMINARY DESIGN
DRAFT 1

Plot Date: 20/05/2020
Plotted By: BAYLEY