BASS HIGHWAY WEST OF WESTBURY DUPLICATION BETWEEN BIRRALEE ROAD OVERPASS AND EXTON

Submission to the Parliamentary Standing Committee on Public Works

Version: 2 Date: May 2015

Transport Infrastructure Services
Department of State Growth

Tasmania
Explore the possibilities

Document Development History

Build Status:

Version	Date	Author	Reason	Sections
1	10 April 2015	S Meyer	Initial release	
2	17 May 2015	S. Meyer	Revised	

Amendments in this Release:

Section Title	Section Number	Amendment Summary
Utilities	2.6	Amended
Development Approvals	3.5	Updated to show submission of DA
Costs	4.2	Estimate updated
Appendix B		Draft Detail Design Drawings added
Appendix C		Project Estimate Summary Updated

Distribution:

Copy No	Version	Issue Date	Issued To
1 - 10	1	10 April 2015	Parliamentary Standing Committee on Public Works
11 - 12	1	10 April 2015	Department of State Growth

Table of Contents

1 Introduction

The Department of State Growth (State Growth) is progressing through to detailed design for the duplication of the Bass Highway West of Westbury between the Birralee Road overpass and Exton. Funding has been approved under the National Highway Upgrade Programme and will be governed under the National Partnership Agreement on Land Transport Infrastructure Projects.

This report aims to provide evidence to the Parliamentary Standing Committee on Public Works in support of the project outcomes.

1.1 Background

Improvements to the Bass Highway are being delivered as part of the Australian Government's $229 million National Highway Upgrade Programme. The programme funds upgrades such as shoulder and centreline widening, ripple strips and wire rope barriers, overtaking lanes, turning lanes and pavement improvements across Australia.

Construction of the project is planned to commence in October 2015 and be completed by the end of March 2016.

1.2 Project Objectives

The project objective is to improve driver safety and eliminate head on crashes by reducing confusion currently occurring due to changes between single and dual carriageways on a short section of highway. Other objectives to be achieved by this project include:

- Reduce severity of loss of control crashes.
- Develop a consistent road environment.
- Provide a minimum AusRAP 3 star safety standard for this section of the National Highway.

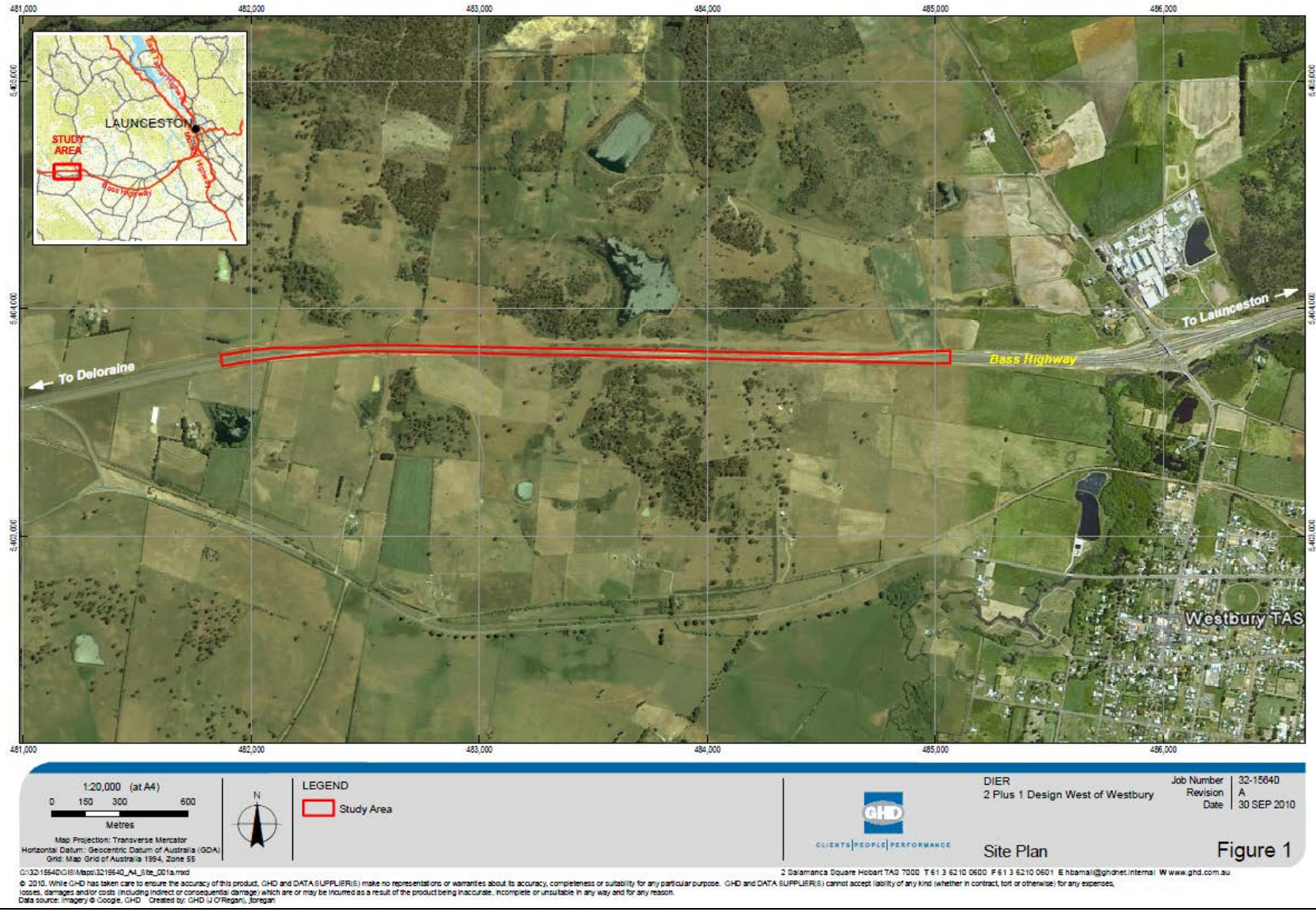
1.3 Project Location

The project site is located on the Bass Highway (A0249), west of the Birralee Main Road Overpass, between Link/Chainage 16/8.5 and Link/Chainage 16/11.7.

The project site is shown in Figure 1.

This section of the Bass Highway is a single carriageway, with a single lane in each direction. The adjacent sections of the Highway, to both east and west, are dual carriageways with two lanes in each direction. The geometry of the transitions between the existing dual and single carriageway sections suggests that the existing single carriageway has been designed to be the westbound carriageway of a future dual carriageway upgrade.

Figure 1 Project Location



1.4 Strategic Context of the Project

The Bass Highway forms part of Tasmania's National Highway network and as such provides a primary task of connecting freight and passenger movements across northern Tasmania. It connects the major northern cities of Burnie, Devonport and Launceston.

2 Project Details

2.1 Proposed Works

The project involves the conversion of 3.2km of Bass Highway single carriageway to dual carriageway and will include the installation of flexible safety barriers between two existing sections of dual carriageway.

Design plans are attached as Appendix B

2.2 Design Speed

The design speed limit is 110 km/hr.

2.3 Road Cross Section

The design elements adopted for the second carriageway is outlined below. This geometry has been selected to ensure a consistent cross-section is maintained with that of the dual carriageway each side of this section of the Bass Highway.

Second Carriageway Design Elements

Element	Dimension
Median width (shoulder to shoulder)	13m
Median slope	6(H) : 1(V)
Median Side Verge width	0.5m
Median Side Shoulder width	1.0m
Lane width	2 x 3.5m
Outside Shoulder width	2.0m
Outside Verge width	1.0m
Table drain width	3.2m
Table drain slope	3(H) : 1(V)
Cut batter slope	1.5(H) : 1(V)
Fill batter slope	2(H) : 1(V)

2.4 Safety Benefits

In the ten year period 1 January 2005 to 3 February 2015 there have been one fatal and three serious casualty crashes on this section of the Bass Highway. The fatal crash involved a head-on collision and the two serious casualty crashes involved loss-of-control.

Refer to Appendix A for the map of crashes reported to Police for the noted ten year period.

The RACT has previously advised that changing between single and dual carriageway is potentially dangerous because an inattentive driver might overtake thinking they were on a dual carriageway when in fact they were on a single carriageway.

There have also been reports of drivers heading to the wrong side of the road at the points where the single carriageway becomes dual carriageway. These locations have since been heavily signed.

2.5 Drainage

The new drainage for the dual carriageway and median is designed to drain to match existing outlets. It is intended to construct grated pits in the median and extend and upgrade existing culverts to suit.

2.6 Utilities

A review of services in this section of the Bass Highway was undertaken, with a summary provided below:

- There is no telecommunications infrastructure in the vicinity of the project site.
- There are no power or light poles in the vicinity of the project site and Tasnetworks confirmed that they do not have underground assets in the vicinity of the project.
- An existing 375 diameter asbestos cement water main crosses the Bass Highway in the vicinity of Link/Chainage 16/8.76. An additional 100 diameter also crosses the highway reserve. It is expected that neither main will impact on the road construction.
- There is a TasGas high pressure gas transmission pipeline running roughly parallel to the Bass Highway through the private property immediately north of the Highway reservation.
- TasGovNet indicated that there is a fibre optic cable running along a similar route to the TasGas pipeline.

3 Social, Environmental Impacts and Stakeholder Engagement

3.1 Property Acquisition

The design of the duplication indicates that the road reserve is sufficient for the proposed works and no further acquisition is required. However the fence line will need to relocated back to the property line. Fencing agreements will need to be obtained from the property owners in regard to the proposed fencing to be provided.

3.2 Flora and Fauna

An assessment of the area has been undertaken for the project. The survey found:

- No threatened vegetation communities were identified during the survey;
- Some impact upon native vegetation which provides marginal habitat for threatened (foraging) and non-threatened (foraging and possibly nesting/denning) native fauna. The available habitat is not considered to be optimal for any of the locally occurring threatened fauna and no nesting or denning for threatened species was observed;
- Three declared weed species. These were:
    - Rubus fruticosus aggregate (blackberry);
    - Salix sp.(willow); and
    - Ulex europaeus (gorse).

3.3 Aboriginal Heritage

Advice received from Aboriginal Heritage Tasmania confirmed that, given the area is highly disturbed and an existing highway, there is no additional Aboriginal cultural heritage required for the project to proceed. Standard practices relating to the unanticipated discovery of Aboriginal artefacts apply.

3.4 Historic Heritage Assessment

A desktop heritage assessment was undertaken for a 2+1 treatment of the Bass Highway. The desktop heritage assessment involved searches of a number of statutory and non-statutory lists.

The search revealed that there are no sites listed within the study area. The closest sites identified were in excess of 500m away from the Bass Highway, which is also clear of the extended study area for the proposed Bass Highway duplication.

3.5 Development Approvals

Consultation with Meander Valley Council's planning officers has been undertaken. A discretionary Development Application (DA) is required for submission, as well as a public display inviting representations. Lodgement of the DA was undertaken in April 2015.

3.6 Stakeholder Engagement

Representatives from GHD and the Department of State Growth met with Meander Valley Council officers on 17 March 2015 to discuss the project and the submission of a development application. Officers were shown the preliminary design plans.

Affected Landowners

Glen Avon Farms Pty Ltd – 135 Birralee Road, Westbury – Geoff Gleeson (Property Manager). The property bounds the Bass Highway and Birralee Road. The project team met with Mr Gleeson at the farm office on Tuesday 24 March 2015, and discussed the need to move the existing fence line onto the correct property boundary.

Andrew Wadley – 3480 Meander Valley Road, Westbury. The property is split by the Bass Highway and served by a stock and vehicle underpass. The project team met with Mr & Mrs Wadley at their home on Tuesday 24 March 2015. Mr & Mrs Wadley had some concerns about the impact on farming operations by the proposed construction methodology and timing for the extension of the underpass. The project team agreed to review options and report back to Mr & Mrs Wadley.

Andrew Johnston – 3630 Meander Valley Road, Westbury. Mr Johnston was contacted by phone to arrange an on-site meeting to discuss the project. His property is adjacent to the existing Bass Highway dual carriageway and he was not concerned with the new construction proposed.

Future consultation

Meander Valley Council and the affected landowners will be further consulted as the project develops and documentation is finalised.

4 Project Program and Costs

4.1 Project Program

The current program identifies a construction completion date (practical completion) of May 2016. After this date, there is the 12 month Defects Liability Period.

Key Milestones	Completion Date
Scoping PPR Approval	May 2015
Preliminary Design Approval	April 2015
Submission of Development and Delivery PPR	May 2015
Detail Design Complete	May 2015
Development Approval	June 2015
Parliamentary Standing committee for Public Works Approval	June 2015
Tender Awarded	September 2015
Construction Commence	October 2015
Construction Completion	May 2016

4.2 Costs

Strategic costs estimates have been prepared for the project. The outturn costs are provided below:

P50 $8,293,000

P90 $9,377,000

The cost estimate is provided in Appendix C.

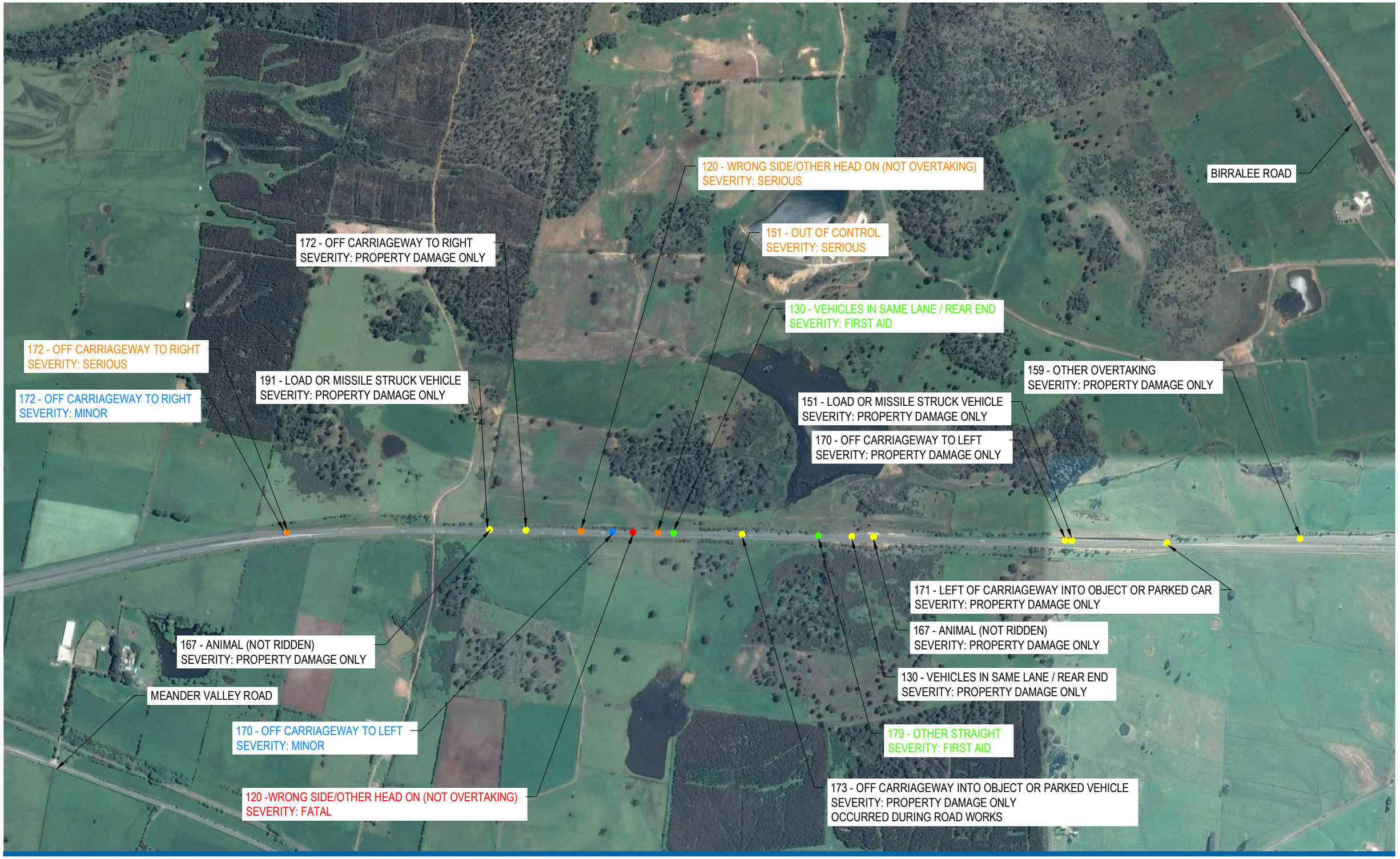
During April, the detailed design will be completed and the cost estimate refined.

5 Conclusion

This project has been designed using appropriate design standards and guidelines.

When complete, this project will improve safety and consistency of a 3.2km section of the Bass Highway. The Bass Highway is a critical element in Tasmania's transport network. The upgraded section will continue to provide a safer and more efficient link between the northern cities; major industrial producers and the national land transport network.

Appendix A: Map of crashes reported to Police



DEPARTMENT OF STATE GROWTH
BASS HIGHWAY - WEST OF WESTBURY

CRASH REPORTED TO TAS POLICE
01/01/2005 - 03/02/2015

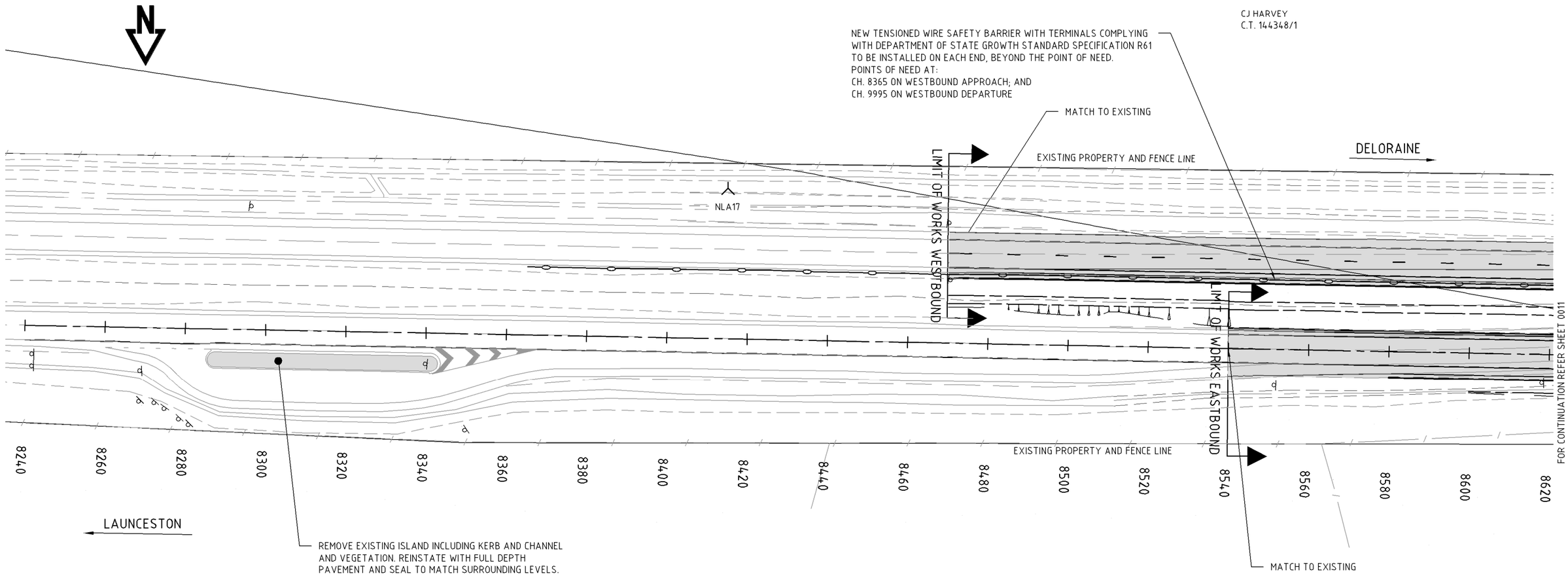
Job Number	32-17560
Revision	A
Date	MAR 2015

Figure 01

2 Salamanca Square Hobart TAS 7000 Australia **T** 61 3 6210 0600 **F** 61 3 6210 0601 **E** hbamail@ghd.com **W** www.ghd.com

Plot Date: 23 March 2015 - 9:33 AM Plotted by: Mathew Brooks Cad File No: G:\32\17560\CADD\Drawings\32-17560-FIG001.DWG

Appendix B: Drawings



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
SPM 10088	486005.909	5403852.477	175.776
NLA 17	485193.019	5403760.218	183.715
NLA 18	485412.863	5403757.413	177.392

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

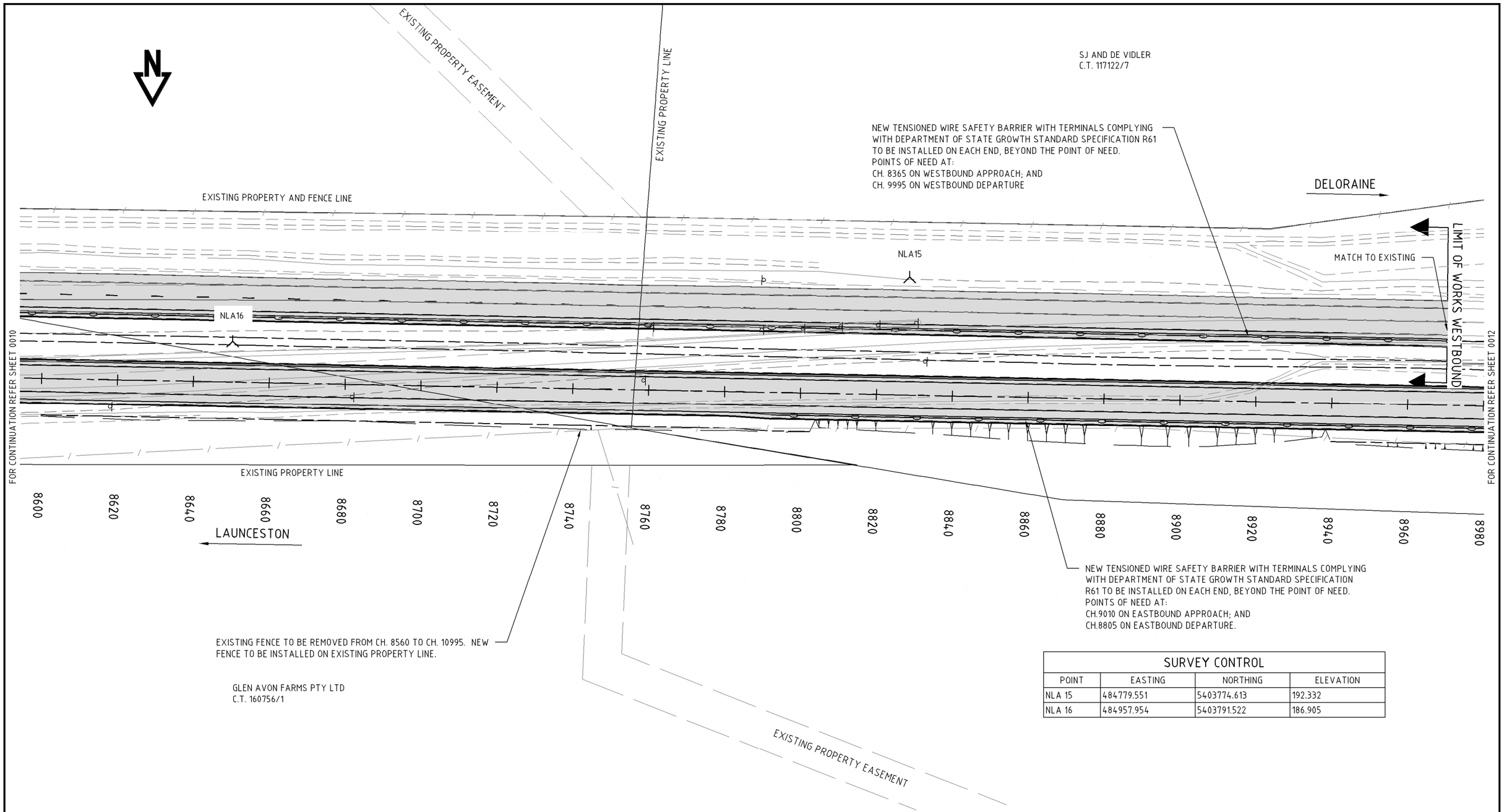
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.8240 TO CH.8780

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0010

REGISTRATION NUMBER

REVISION A



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 15	484779.551	5403774.613	192.332
NLA 16	484957.954	5403791.522	186.905

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

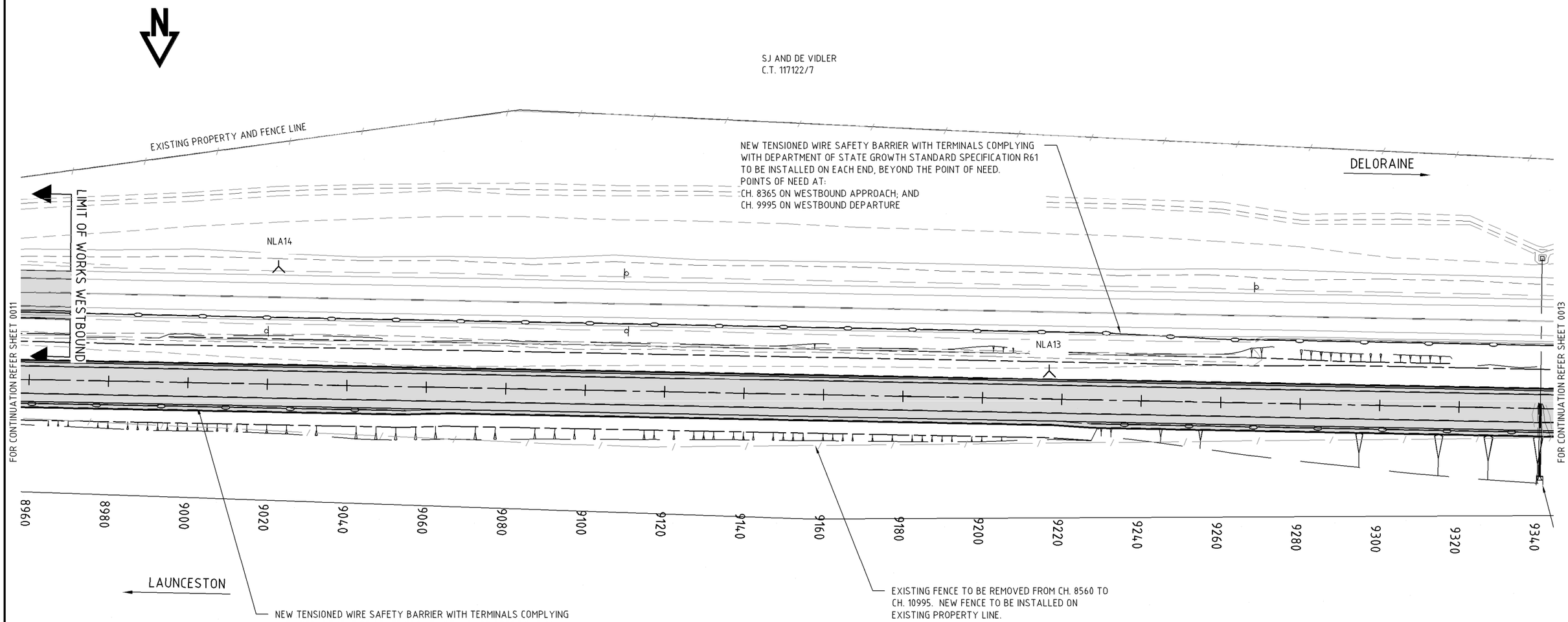
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.8780 TO CH.9140

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0011

REGISTRATION NUMBER

REVISION A



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 13	484391.565	5403805.925	209.005
NLA 14	484585.552	5403779.727	201.751

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

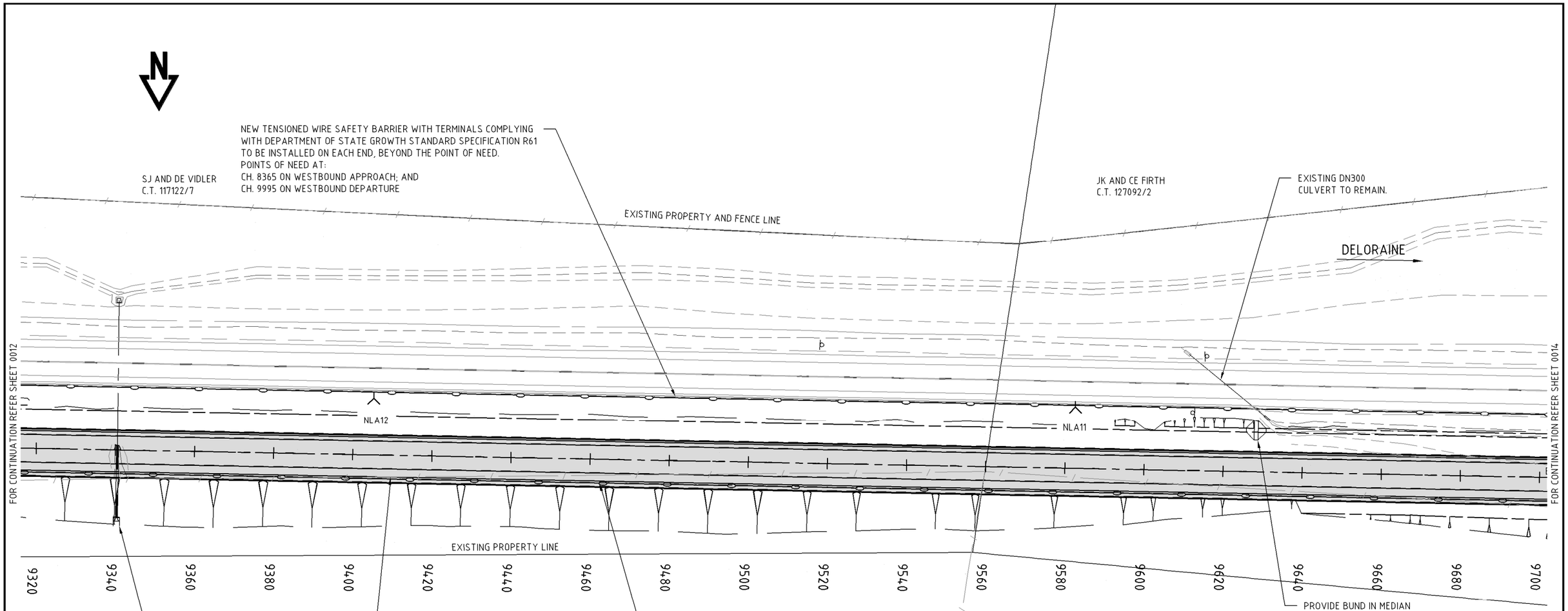
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.9140 TO CH.9500

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0012

REGISTRATION NUMBER

REVISION A



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 11	484025.777	5403804.596	214.726
NLA 12	484203.133	5403802.346	210.534

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

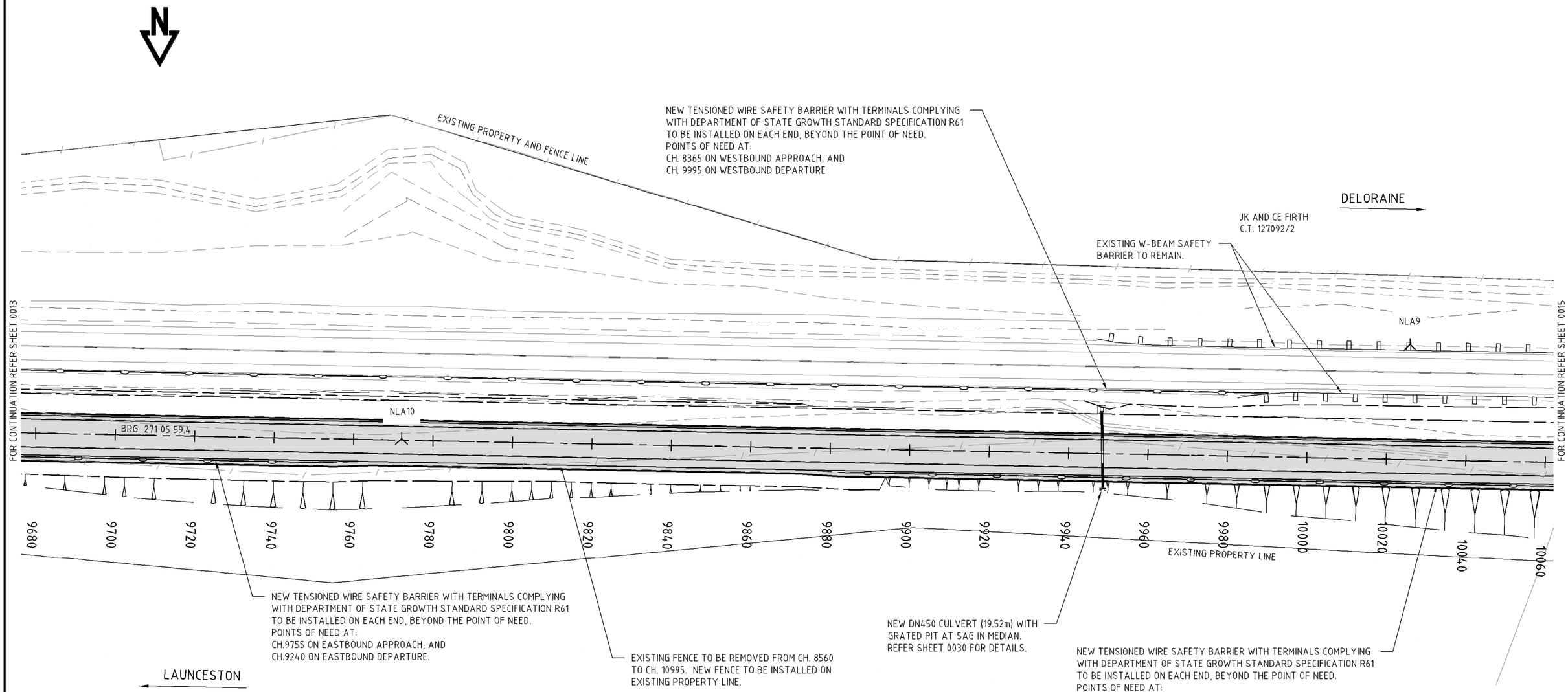
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.9500 TO CH.9860

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0013

REGISTRATION NUMBER

REVISION A



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 9	483582.579	5403799.603	216.550
NLA 10	483836.420	5403823.334	220.409

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

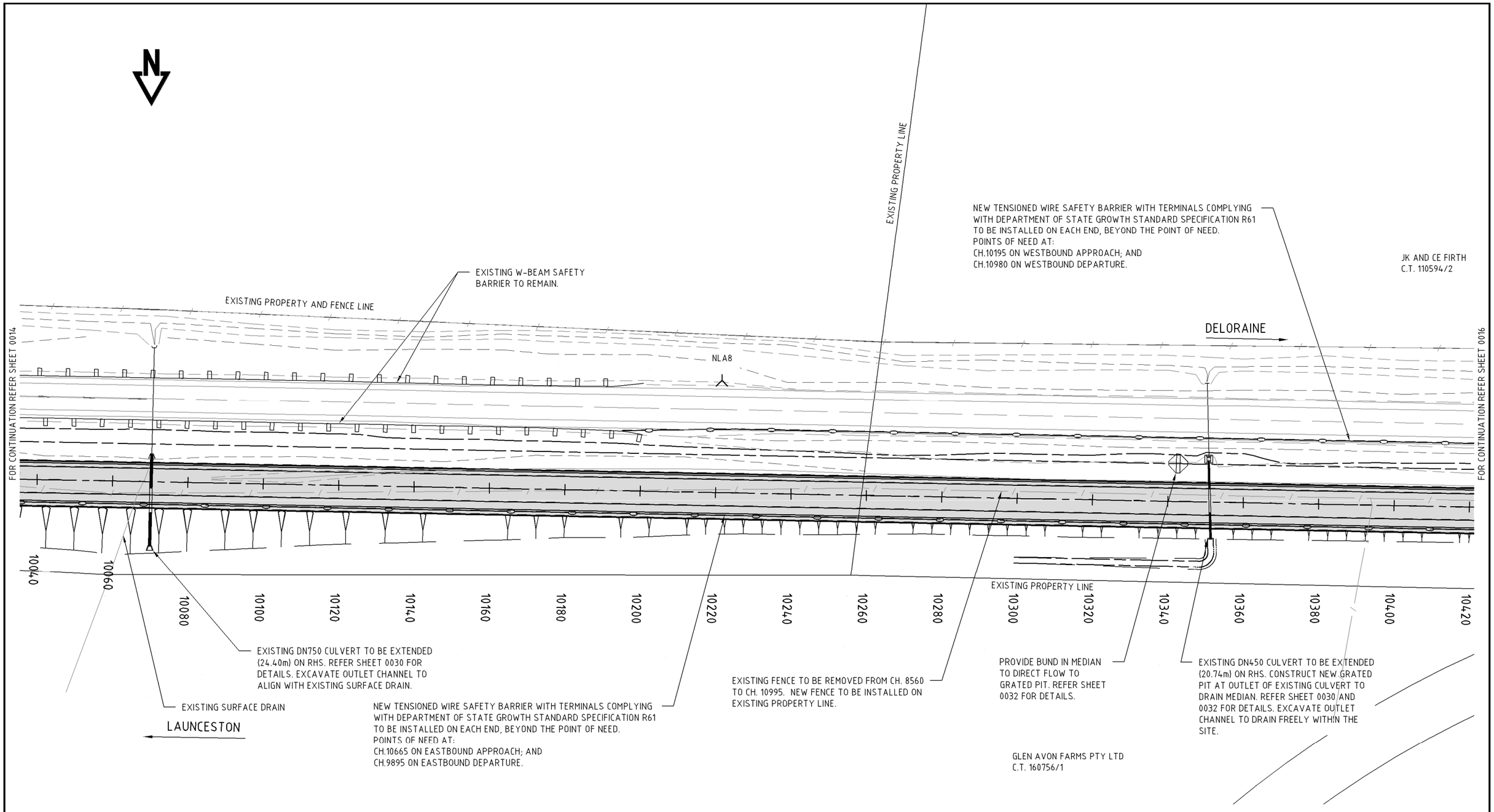
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.9860 TO CH.10220

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0014

REGISTRATION NUMBER

REVISION A



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 8	483386.929	5403802.548	218.826

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.10220 TO CH.10580

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0015

REGISTRATION NUMBER

REVISION A

N

JK AND CE FIRTH
C.T. 110594/2

NEW TENSIONED WIRE SAFETY BARRIER WITH TERMINALS COMPLYING WITH DEPARTMENT OF STATE GROWTH STANDARD SPECIFICATION R61 TO BE INSTALLED ON EACH END, BEYOND THE POINT OF NEED.
POINTS OF NEED AT:
CH.10195 ON WESTBOUND APPROACH; AND
CH.10980 ON WESTBOUND DEPARTURE.

PROVIDE BUND IN MEDIAN TO DIRECT FLOW TO GRATED PIT. REFER SHEET 0032 FOR DETAILS.

JK AND CE FIRTH
C.T. 110594/2

DELORAINE

EXISTING PROPERTY AND FENCE LINE

NLA7

NLA6

FOR CONTINUATION REFER SHEET 0015

FOR CONTINUATION REFER SHEET 0017

10400 10420 10440 10460 10480 10500 10520 10540 10560 10580 10600 10620 10640 10660 10680 10700 10720 10740 10760 10780

EXISTING PROPERTY LINE

EXISTING DN525 CULVERT TO BE EXTENDED WITH DN525 CULVERT (21.96m) ON RHS. CONSTRUCT NEW GRATED PIT AT OUTLET OF EXISTING CULVERT TO DRAIN MEDIAN. REFER SHEET 0031 AND 0032 FOR DETAILS. EXCAVATE OUTLET CHANNEL TO DRAIN FREELY WITHIN THE SITE.

EXISTING FENCE TO BE REMOVED FROM CH. 8560 TO CH. 10995. NEW FENCE TO BE INSTALLED ON EXISTING PROPERTY LINE.

PIVOT - END OF BOOM ARC.

PIVOT - WHEEL ARC.

LAUNCESTON

GLEN AVON FARMS PTY LTD
C.T. 160756/1

SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 6	482927.921	5403810.247	222.263
NLA 7	483135.094	5403807.064	220.930

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.10580 TO CH.10940

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0016

REGISTRATION NUMBER

REVISION A

N

NEW TENSIONED WIRE SAFETY BARRIER WITH TERMINALS COMPLYING WITH DEPARTMENT OF STATE GROWTH STANDARD SPECIFICATION R61 TO BE INSTALLED ON EACH END, BEYOND THE POINT OF NEED.
POINTS OF NEED AT:
CH.10195 ON WESTBOUND APPROACH; AND
CH.10980 ON WESTBOUND DEPARTURE.

EXISTING PROPERTY LINE

NEW TENSIONED WIRE SAFETY BARRIER WITH TERMINALS COMPLYING WITH DEPARTMENT OF STATE GROWTH STANDARD SPECIFICATION R61 TO BE INSTALLED ON EACH END, BEYOND THE POINT OF NEED.
POINTS OF NEED AT:
CH.11085 ON WESTBOUND APPROACH; AND
CH.11660 ON WESTBOUND DEPARTURE.

SL AND AT WADLEY
C.T. 119953/1

DELORAINE

EXISTING W-BEAM SAFETY BARRIER TO REMAIN.

NLA5

NLA4

FOR CONTINUATION REFER SHEET 0016

FOR CONTINUATION REFER SHEET 0018

EXISTING PROPERTY AND FENCE LINE

10760 10780 10800 10820 10840 10860 10880 10900 10920 10933.009 TP 10940 10960 10980 11000 11020 11040 11060 11080 11100 11120 11140

EXISTING FENCE TO BE REMOVED FROM CH. 8560 TO CH. 10995. NEW FENCE TO BE INSTALLED ON EXISTING PROPERTY LINE.

EXISTING DN375 CULVERT TO BE EXTENDED (22.57m) ON RHS. REFER SHEET 0031 FOR DETAILS.

EXISTING DN525 CULVERT TO BE EXTENDED (20.74m) ON RHS. CONSTRUCT NEW GRATED PIT AT INLET OF EXISTING CULVERT TO DRAIN MEDIAN. REFER SHEET 0031 FOR DETAILS.

NEW W-BEAM SAFETY BARRIER WITH TERMINALS COMPLYING WITH DEPARTMENT OF STATE GROWTH STANDARD SPECIFICATION R61 TO BE INSTALLED ON EACH END, BEYOND THE POINT OF NEED.
POINTS OF NEED AT:
CH.11115 ON EASTBOUND APPROACH; AND
CH.10970 ON EASTBOUND DEPARTURE.

EXISTING STOCK UNDERPASS TO BE EXTENDED 14m ON RHS AND WINGWALL ADDED. EXISTING DN300 CULVERTS EITHER SIDE OF STOCK UNDERPASS TO BE EXTENDED 22m ON RHS. REFER SHEETS 0200 - 0201 FOR DETAILS.

SL AND AT WADLEY
C.T. 119953/1

LAUNCESTON

SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 4	482545.892	5403832.278	223.683
NLA 5	482708.359	5403807.037	226.517

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

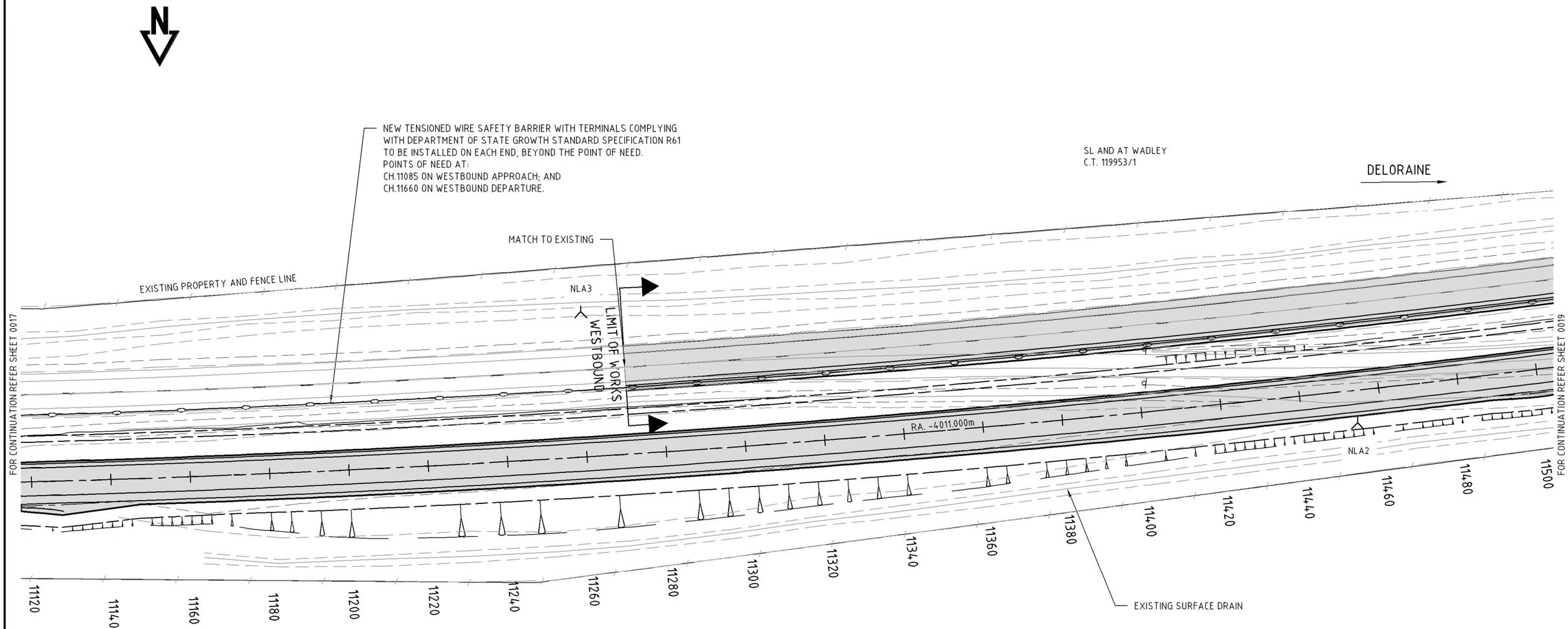
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.10940 TO CH.11300

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0017

REGISTRATION NUMBER

REVISION A



SL AND AT WADLEY
C.T. 119953/1

SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA 2	482154.970	5403830.491	223.555
NLA 3	482350.476	5403802.468	226.018

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

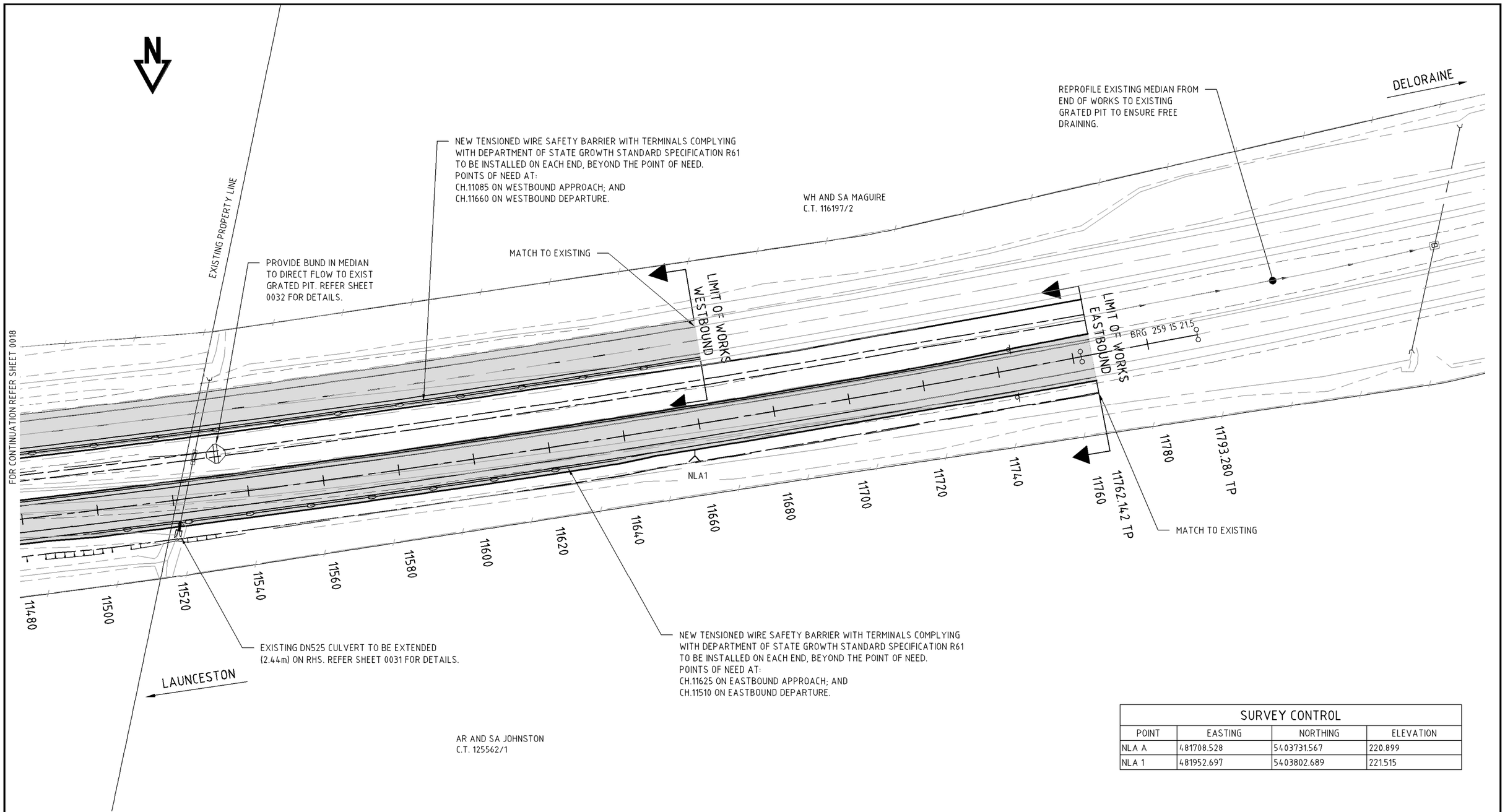
BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.11300 TO CH.11660

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0018

REGISTRATION NUMBER

REVISION A



SURVEY CONTROL			
POINT	EASTING	NORTHING	ELEVATION
NLA A	481708.528	5403731.567	220.899
NLA 1	481952.697	5403802.689	221.515

BASE SURVEY SUPPLIED BY
Noel Leary
SURVEYED ON APRIL 2011
HORIZONTAL DATUM: GDA94
GRID: MGA94, ZONE 55
LEVEL DATUM: AHD

DIAL BEFORE YOU DIG www.1100.com.au

-WARNING-
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL SERVICES ARE SHOWN.

TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

No.	Amendment Description	Initials	Date
A	DRAFT DETAIL DESIGN ISSUE	M.A.K.*	11.05.2015

A3 original | This sheet may be prepared using colour and may be incomplete if copied

SCALES
0 10 20 30 40 50
SCALE 1:1000

Co-ordinate System: MGA Zone 55 | Height Datum: A.H.D.

GHD | Tasmanian Government

DESIGNED T.McPHILLIPS
REVIEWED

Department of State Growth

BASS HIGHWAY (A0249)
WEST OF WESTBURY DUPLICATION BETWEEN
BIRALEE ROAD OVERPASS AND EXTON

GENERAL ARRANGEMENT PLAN - CH.11660 TO CH.11793

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
	32-17560-C010_C019.dwg	11-May-15, 4:31 PM	0019

REGISTRATION NUMBER

REVISION A

Appendix C: P50/P90 Cost Estimate

Project Element	Preliminary Cost Estimate $ M	
Client costs	0.63	
Construction	7.20	
Contingencies	P50 0.46	P90 1.54
Subtotal Project Estimate	**8.29**	**9.37**
Escalation	0.0	0.0
Total Project Outturn Cost, to nearest $0.1 M	**8.3**	**9.4**

PROJECT ESTIMATE

Rates are exclusive of GST

Contract No. 2220-2-11
Bass Highway (A0249)
West of Westbury Duplication

Project Estimate Summary

Base Date of Estimate:	May 2015
Phase	Detail

	Item		Amount *Totals have been rounded*		
1	Scoping Phase				
	Not used				
	Subtotal: Scoping Phase				Nil
2	Development Phase				
	Design - Concept	$			-
	Design - Preliminary	$			-
	Design - Detailed	$			181,700.00
	Design Applications, Permits, Fees, Advertising etc.	$			9,700.00
	State Growth - Project Management	$			108,050.00
	State Growth - Public Consultation	$			21,700.00
	Subtotal: Development Phase	$			321,150.00
3	Property Acquisition				
	Subtotal: Property Acquisition	$			-
4	Delivery Phase				
	State Growth - Project Management	$			108,050.00
	State Growth - Contract Management	$			169,300.00
	State Growth - Miscellaneous	$			-
	Insurances	$			32,400.00
	Subtotal: Delivery Phase	$			309,750.00
5	Total Client Costs	$			630,900.00
	Construction				
	Project Specific	$			324,903.00
	Earthworks	$			3,003,437.00
	Drainage	$			285,492.40
	Pavement	$			2,066,412.00
	Bituminous Surfacing	$			590,868.00
	Traffic Facilities	$			605,194.00
	Landscaping	$			146,361.50
	Miscellaneous	$			179,500.00
	Precast Units	$			-
	Note: Direct & indirect costs factored into rates				
	Subtotal: Contractor's Costs	$			7,202,167.90
8	Client Supplied Materials or Services				
	Services	$			-
	Service Track	$			-
	Street Lighting	$			-
	Reseal	$			-
	Subtotal: Client Supplied Materials or Services	$			-
9	Total Construction Cost (TCC)	$			7,202,167.90
10	Base Estimate (Lines 5 + 9)	$			7,833,068
			P50		P90
12	Total Contingency	$	459,434.84	$	1,543,622.58
			6%		20%
	Total Contingency	$	459,434.84	$	1,543,622.58
13	Project Estimate (Lines 10 + 12)	$	8,292,502.74	$	9,376,690.48
	Cash Flow: Start Escalation 8/05/2015		Start Construction		30/09/2015
	Lead Escalation				
14	*(applied to Project Estimate excl. Development Phase)*	$	-	$	-
15	Total Outturn Cost (rounded to nearest $1000)	$	8,293,000	$	9,377,000