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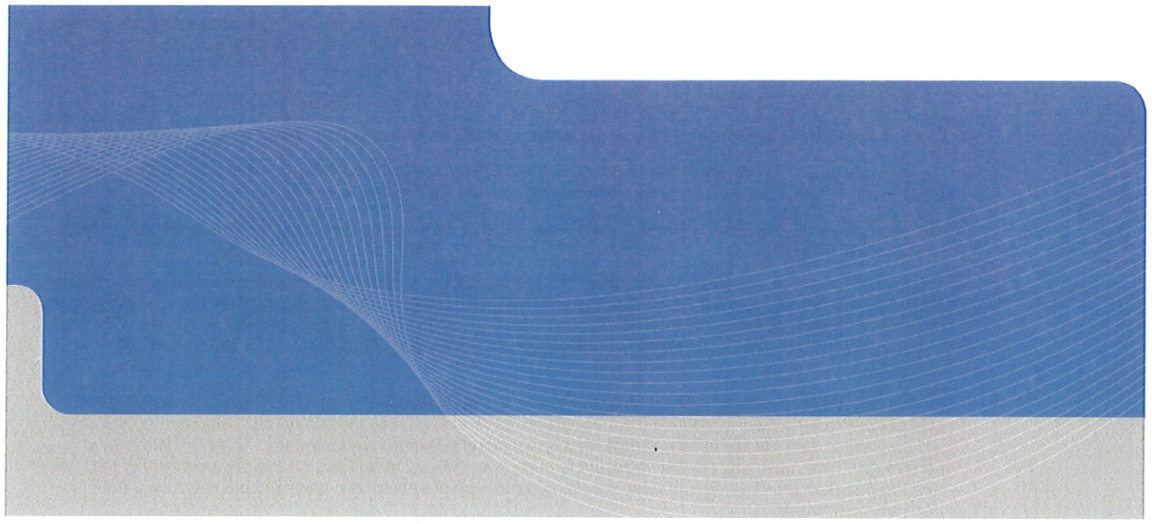
Department of Infrastructure, Energy & Resources

Report for Bass Highway North of Gannons Hill Road

Submission to Parliamentary Standing Committee on Public Works

July 2012



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- *were limited to those specifically detailed in the Project Agreement (1280-2-47) and subsequent written directions provided by DIER's Project Manager;*
- *did not include any services not specifically identified by DIER.*

The opinions, conclusions and any recommendations in this Report are based on assumptions made by GHD when undertaking services and preparing the Report ("Assumptions"), including (but not limited to):

- *those identified in the various Sections of the Report for Bass Highway, North of Gannons Hill 2 Plus 1 Preliminary Design*

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GHD has prepared the preliminary cost estimate set out in Section 5 of this Report ("Cost Estimate"):

- *using information reasonably available to the GHD employee(s) who prepared this Report; and*
- *based on assumptions and judgments made by GHD, including historical rates provided by DIER and that a competitive market for the proposed construction work exists.*

The Cost Estimate has been prepared for the purpose of preliminary project budgeting and must not be used for any other purpose.

The Cost Estimate is a preliminary estimate only. Actual prices, costs and other variables may be different to those used to prepare the Cost Estimate and may change. Unless as otherwise specified in this Report, no detailed quotation has been obtained for actions identified in this Report. GHD does not represent, warrant or guarantee that the project can or will be undertaken at a cost which is the same or less than the Cost Estimate.

Where estimates of potential costs are provided with an indicated level of confidence, notwithstanding the conservatism of the level of confidence selected as the planning level, there remains a chance that the cost will be greater than the planning estimate, and any funding would not be adequate. The confidence level considered to be most appropriate for planning purposes will vary depending on the conservatism of the user and the nature of the project. The user should therefore select appropriate confidence levels to suit their particular risk profile.

GHD has prepared this Report on the basis of information provided by DIER, which GHD has not independently verified or checked ("Unverified Information") beyond the agreed scope of work.

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1. Introduction

1.1 Background

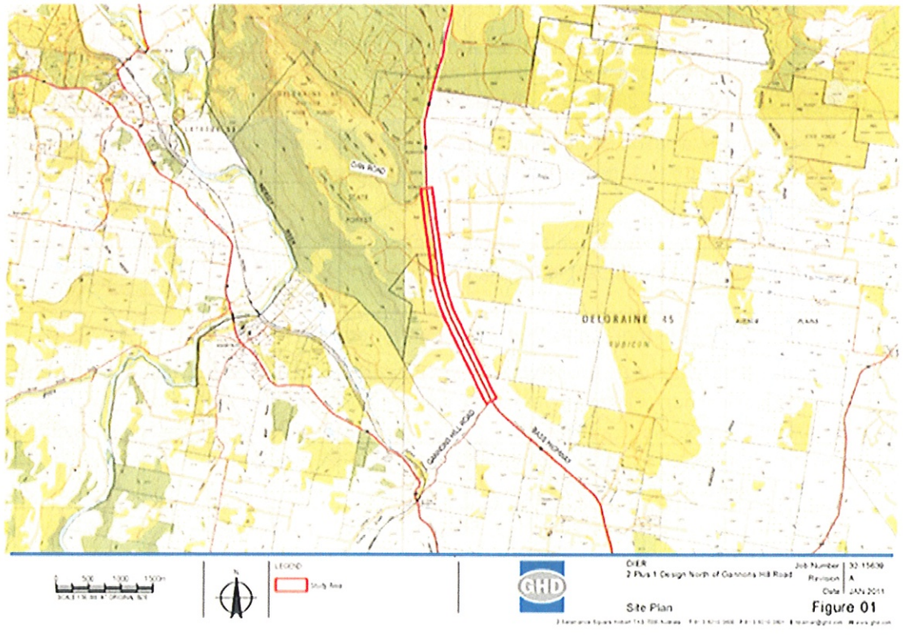
The section of the Bass Highway north of Gannons Hill Road is a single carriageway, with a single lane in each direction. The adjacent sections of the Highway, which also have single lanes in each direction, form a series of slightly undulating straights that potentially provide several overtaking opportunities.

In June 2010 DIER's Manager Traffic Safety issued a Project Initiation Report (PIR) following investigations arising from the recent crash history in the area. The PIR and subsequent Project Brief were for the widening of the Bass Highway to accommodate three lanes and a narrow painted median containing a tensioned wire rope safety barrier to separate opposing traffic.

1.2 Project Location

The project site is located on the Bass Highway (A0249), from the Gannons Hill Road junction to Dan Road (Forestry Road) and is part of the AusLink National Network linking Launceston and Devonport.

Figure 1 Project Location



The project site is part of DIER Road Link 28, with a distance of 3.45 km referenced by Link/Chainage 28/0.0 and Link/Chainage 28/3.45. The project extents are shown in Figure 1.

1.3 Project Objectives

The project seeks to improve road safety by preventing head-on crashes and reducing the severity of loss of control crashes.

1.4 Project Justification

This project has eventuated due to an elevated serious casualty crash rate caused by head-on crashes. The Department of Infrastructure, Energy and Resources (DIER) conducted a review of serious and fatal head-on crashes in Tasmania (March 2009) and found most of the serious head-on crashes occur on high-speed, high-volume roads and involve one driver losing control of their vehicle and crossing onto the wrong side of the road.

Head-on crashes are the type of collision most likely to result in death. Head-on crashes are especially tragic because they involve a second vehicle that typically does not have anything to do with the cause of the crash.

The detailed crash analysis found serious casualty head-on crashes are generally dispersed across the road network and therefore difficult to treat.

This site is one of three sites across the State that has a cluster of head-on crashes that can be cost effectively treated with the provision of a median barrier. A median barrier has the ability to reduce head-on collisions by 90% and reduce the severity of other loss of control crashes.

Funding from the Road Safety Strategy Levy has been secured due to the number of serious and fatal outcomes and the proposed treatment is recognised as 'safe system' endorsed by both the Tasmanian Road Safety Strategy 2007-2016 and recently released National Road Safety Strategy.

An economic evaluation of the project has indicated the treatment is expected to generate a Benefit Cost Ratio (BCR) of 1.6 to 1, deliver substantial savings in road trauma and will represent good value for the committed funds.

The project has been designed to minimise land acquisition and extensive land-owner consultation has occurred to lessen the impact to their current operations.

1.4.1 Why Not Upgrade to Dual Divided Carriageway

Despite some community expectations, the transport demand does not warrant the provision of dual divided traffic lanes until the current traffic volume more than doubles. Currently there are less than 6,500 vehicles per day travelling along this section of the Highway and based on historic traffic figures, the length weighted average traffic growth between 1986 and 2011 of 2% per year, dual traffic lanes will not be required for another 40 years.

Upgrading to dual traffic lanes will substantially increase the cost of the scheme (almost double the cost), would not deliver a worthwhile BCR and restrict limited funding that could be used at other crash sites.

1.4.2 Why Not Straighten the Highway

Realignment of the highway to remove the horizontal curves would cost substantially more; result in the existing highway being redundant; would not be the best use of the limited funding; would involve substantial impact to land owners and would segregate land holdings. This option is considered not cost-effective compared with this project, as the BCR would be considerably lower.

1.4.3 Serious Casualty Head-on Crash Cluster

There is a clear need for safety improvements on this section of the Highway as there have been 9 reported casualty crashes over 5 year period (2005-2009) over a relatively short distance of 3.5 kilometres. Of these crashes, 3 have resulted in serious casualty crashes (including two fatality crashes), with fatal outcomes coming from head-on collisions, where a vehicle has crossed to the wrong travel lane. This equates to a serious casualty crash rate of 0.86 crashes per kilometre.

This is compared with the proceeding 5.3 kilometres section from Elizabeth Town to Gannons Hill Junction, where two serious casualty crashes has occurred over the same time period. Both of these crashes resulted from errant vehicles losing control on a bend, leaving the traffic lane to the left and colliding with roadside objects. Funds from the Road Safety Strategy Levy were allocated some 2 years ago to provide flexible safety barrier on the outside of bends on this section. This equates to a serious casualty crash rate of 0.38 crashes per kilometre.

Whilst, in the following 5.6 kilometre section from Dan Road to Parramatta Creek, there were three serious casualty crashes. One resulted from a person falling from a moving vehicle and the two other crashes were errant vehicles losing control on bends. This equates to a serious casualty crash rate of 0.53 crashes per kilometre.

An economic evaluation based on crash severity has revealed the proposed treatment has a Benefit-Cost-Ratio (BCR) of 1.6 to 1, based on P90 cost estimate, discount rate of 4% and based on a 15 year life cycle.

1.4.4 Use of Flexible Barriers (wire rope)

DIER has a preference to using flexible barriers where possible due to the benefits the flexible barriers offer over other barrier types, and this is supported by the Australia Transport Safety Bureau.

Flexible barrier has advantages over other types of barriers, these include superior containment properties; they cause less damage to vehicles and their occupants; they can be easier and safer to repair; and they are cheaper to install.

1.4.5 Motorcyclists Concerns with Flexible Barriers

Motorcyclists have commonly referred to flexible barrier (wire rope) as cheese cutters. However, there is no evidence to support this and in fact the issue for motorcyclists is the posts holding the wire ropes. When a motorcyclist loses control and is separated from their bike, all roadside furniture, including trees, embankments, opposing vehicles and all safety barriers oppose a significant injury risk.

Latest research concludes that there is no statistical significant association between the barrier types and injury outcome. Meaning if a motorcyclist lost control and then if they collided with a wire rope barrier or concrete barrier the outcomes is going to be similar. However, if a passenger vehicle lost control and

collided with a solid barrier the injury outcome to the occupants would be significantly greater than if the passenger vehicle collided with a flexible barrier.

DIER has been working with the Tasmanian Motorcycling Council since 2009 regarding some of their concerns and this project will consider the use of padding on the wire rope uprights on tight curves. The padding is designed to provide 360 degree protection for motorcyclists if they separate from their bike and slide along the pavement. Motorcyclists represent 4% of the registered vehicles in the Australian fleet.

1.4.6 Cyclists' Use of the Highway

Currently the highway through this section has 3.5 metre wide traffic lanes with sealed shoulders varying between 0.5 and 1 metre. The project will maintain the current traffic lanes width at 3.5 metres but widen the shoulders to a consistent 2.0 metres wide.

Although the project will not include bicycle facilities the wider sealed shoulders will provide greater separation between a cyclist and moving traffic.

1.4.7 Upgrading of the Heavy Vehicle Weighbridge Site

On the western side of the highway a heavy vehicle weighbridge site known as 'Forest Farm' exists and the current layout is poor and creates operational issues when opened. Whilst the project is widening on the western side of the Highway, improvements to the approach and departure lanes from this site will be upgraded.

The site will also benefit from enhanced traffic management provided by remote controlled electronic signs (operated by on-site vehicle inspector). These electronic signs will assist the Vehicle Inspectors to manage the site by limiting the number of heavy vehicles entering the site, preventing heavy vehicles from queuing on the highway, and assisting heavy vehicles to rejoin the highway in a safer manner.

1.4.8 Safety Benefits

The proposed project incorporates major improvements and design elements that will address existing road safety issues. These include:

- Provision of painted median and tensioned wire rope safety barrier separating opposed traffic lanes to prevent head-on crashes;
- Provision of roadside safety barriers to reduce the severity of crashes where vehicles leave the road;
- Provision of channelised right-turn facilities at Gannons Hill Road and Dan Road junctions;
- Provision of left turn facilities at Gannons Hill Road and Dan Road junctions;
- Provision of sealed shoulders to provide additional recovery space where vehicle control is lost; and
- Inclusion of audible lines on the median.

1.4.9 Road User Benefit

In addition to the road safety benefits, road users will derive benefits from the following:

- Wider sealed shoulders will provide more space for cyclists; and
- Additional and safer overtaking opportunities.

2. The Existing Situation

2.1 The Road

The current speed zoning through the project site is 110km/h. For many years this section of the Bass Highway was seen as providing one of the better overtaking opportunities between Devonport and Elizabeth Town. Over the last few decades additional overtaking facilities have been provided on adjacent sections of the Highway but the straights between Gannons Hill Road and Dan Road are still commonly utilised for overtaking despite there being safer locations for doing so on either side.

2.2 Traffic Conditions

Generally this section of the Bass Highway appears to operate at Level of Service A.

Available traffic data is summarised in Table 1.

Table 1 Traffic Data

Traffic Characteristic	Value
Estimated Traffic Flow (two-way)	6,500 vehicles per day
Percentage trucks	18.0%

2.3 The Road Side

The abutting land consists of a mixture of cleared pasture land, areas of roadside remnant wood land and plantation forest. Access to the abutting properties is generally provided from licensed accesses along the Highway.

3. The Project

3.1 Proposed Works

Initially the proposed road works comprised the following measures to:

- Install a third lane to provide overtaking with the following chainages
  - Chainage 170 to 1460 - two lanes northbound and one lane southbound; and
  - Chainage 1580 to 3310 one lane northbound and two lanes southbound.
- Widen the existing carriageway to provide for a 1.8m wide painted median with tensioned wire rope safety barrier (TWRSB) between the opposed travelling lanes;
- Provide clearance of 1.15m offset to the TWRSB on the side that has the single traffic lane and 0.65m on the side that has two travelling lanes;
- Restrict access at private accesses in the section incorporating TWRSB to left-in / left-out movements to / from the adjacent through lane of the Bass Highway;
- Incorporate a channelised right turn short treatment and left turn deceleration lane in accordance with Austroads guidelines at Gannons Hill Road Junction;
- Incorporate a channelised right turn treatment and left turn deceleration lane in accordance with Austroads guidelines at Dan Road Junction;
- Improve the vertical alignment at the southern approach to Gannons Hill Road Junction on the Bass Highway to provide 110 km/h Safe Intersection Sight Distance;
- Provide for vehicles to undertake U-turns at turning facilities near either end of the TWRSB installation. Located on Gannons Hill Road and Dan Road to provide two-way access to private properties;
- Provide roadside TWRSB and/or w-beam safety barrier as appropriate to minimise exposure to roadside hazards; and
- Relocate the existing overhead Aurora poles and power lines.

The highway is to be widened on the western side from ch 170 to 1800 and on the eastern side from ch 1580 to ch 3310 to accommodate the overtaking lanes. This layout avoid impacts on:

- a house on the eastern side of the highway at ch 540;
- the existing weighbridge site on the western side of the highway between ch 2320 to ch 2500; and
- a *eucalyptus ovata* forest and woodland located between ch 2060 to ch 3420 to western side of the highway.

At the Gannons Hill and Dan road junctions the highway is widened both sides to accommodate the junction upgrade works.

Following on-going consultation with landowners DIER decided to allow two breaks in the TWRSB median to be incorporated into the proposed design. The breaks in the TWRSB median are to be located adjacent to the accesses to the Padman's Dairy and to the Forest Farm Dairy within the project site. At the Padman's Dairy it is proposed to provide a turning facility (G-turn) to cater for traffic to more safely enter the access or to undertake a U turn. At Forest Farm the highway is to be widened to allow

northbound traffic to pass around a vehicle propped in the traffic lane waiting to turn right into the Dairy access. It is not proposed to allow traffic to undertake a U turn at the Forest Farm access. This traffic will need to travel to Dan Road in order to undertake a U turn manoeuvre.

The design is shown on the drawings included as Appendix B.

3.2 Road Cross Section

The design incorporates the cross sectional elements shown in Table 2 for the Bass Highway:

Table 2 2 Plus 1 Design Elements

Element	Dimension
Lane width	3.5m
Shoulder width	2.0m
Verge width with / without safety barrier	1.0m / 0.5m
Table drain width	2.4m
Fill batter slope	2(H) : 1(V)
Cut batter slope	2(H) : 1(V)
Median width	1.8m
Median development length	108m
Lane development length (diverge)	110m
Lane merge length (merge)	180m
Merge overlap	100m
Minimum sight distance to start of merge	410m

3.3 Specific Design Issues

This section describes issues that have arisen during the design process and what measures have been taken to address them.

3.3.1 Sight Distance through Tensioned Wire Rope Safety Barrier

Stopping Sight Distance (SSD) is the distance to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead. For cars it is usually measured to a point 0.2m above the road surface and should generally be provided along all traffic lanes.

A fundamental component of this project is the incorporation of a median safety barrier to separate opposing traffic. Given the relatively tight curves through part of the project site there are some locations where SSD cannot be provided by looking over the top of the barrier.

Whilst this is undesirable, there are several locations throughout the Tasmanian road network where sight distance is constrained in this way without any apparent adverse impact on road safety, for example the Brooker Highway at Cornelian Bay.

Using tensioned wire rope safety barrier rather than New Jersey barrier or w-beam guard rail with a motorcycle impact attenuator system could be considered advantageous, as it is potentially less visually obstructive.

4. Construction Program and Costs

4.1 Construction Program

The target date for advertising tenders is August 2012. This will allow the physical works on site to commence around the start of November 2012. A warm dry summer may allow the majority of the works to be completed over the 2012/2013 construction season. However it is anticipated that the project will need to be extended into the spring of 2013.

4.2 Costs

The project is funded under the Tasmanian Road Safety Strategy. The cost of the works has been estimated based on historical rates for similar works delivered by DIER recently. The main components of the estimate are shown in Table 3.

Table 3 Base Estimate

Item	Estimated Cost
Project Specific	$72,000
Earthworks	$551,910
Drainage	$408,680
Pavement	$1,823,780
Bitumen Surfacing	$838,098
Traffic Facilities	$654,985
Landscaping	$234,770
Miscellaneous	$115,000
SUB-TOTAL	**$4,699,223.00**
Additional Items (eg acquisition)	$108,000
Professional Fees	$400,000
DIER Internal Overheads and Fees	$550,278
DIER Supplied Materials or Services	$55,395
TOTAL BASE ESTIMATE	**$5,812,896**
P50 Estimate	**$6,434,512**
P90 Estimate	**$7,214,345**

The base estimate has subsequently been probabilistically modelled and P50 and P90 estimates obtained. The P50 estimate notionally represents the project budget that will not be exceeded 50% of the time and the P90 estimate similarly represents the project budget that will not be exceeded 90% of the time.

It should be noted that as the base estimate is derived from historic rates, the P50 & P90 estimates by their nature already incorporate some allowance for risk and presume a stable market.

5. Environmental and Social Implications

5.1 Environmental Issues

The project has been subjected to the following investigations:

- Botanical Survey and Fauna Habitat Assessment;
- Aboriginal Heritage Desktop Assessment; and
- European Heritage Desktop Assessment

5.1.1 Botanical Survey and Fauna Habitat Assessment

A Botanical Survey and Fauna Habitat Assessment of the project site was undertaken by GHD in December 2010.

The report found that the proposed upgrade to the Bass Highway may impact on one native vegetation community. This community, *Eucalyptus ovata* forest and woodland (DOV), is listed as a threatened community under State legislation, and is restricted to part of the western side of the highway.

The design has been developed to avoid impact on the *Eucalyptus ovata* forest and woodland (DOV) community.

No threatened plant species were found within the survey area.

The study site contains limited habitat values for threatened fauna, although the study area may be providing foraging habitat for some species. Sediment control measures and avoiding impacts to the *Eucalyptus ovata* forest and woodland (DOV) community will limit possible impacts to potential habitat for threatened fauna.

5.1.2 Aboriginal Heritage Desktop Assessment

Initial advice from Aboriginal Heritage Tasmania (AHT) was that *"there are a number of Aboriginal heritage sites recorded close to the road easement, including artefact scatters and isolated artefacts."* An Aboriginal heritage investigation is therefore required to identify whether the proposed project or related infrastructure will impact on any Aboriginal heritage and to offer mitigation advice.

Additional details were subsequently provided to AHT who revised their advice as follows:

> *"Thank you for the additional information which was provided on the 22nd of July 2011. Aboriginal Heritage Tasmania has completed a review of the Tasmanian Aboriginal Site Index (TASI) regarding the proposed Highway upgrade at Gannons Hill Road and can advise that there is no need for an Aboriginal heritage survey. This review was undertaken with particular regard to the further information you provided to AHT and a further review of the relevant previous reports. Further, AHT note that the area that was initially proposed as the impact site has been reduced since the previous advice was given.*
>
> *Aboriginal Heritage Tasmania have no objection to the project proceeding."*

5.1.3 European Heritage Desktop Assessment

GHD undertook a desktop investigation which suggested that the study area may be sensitive from a heritage perspective.

Follow up fieldwork was therefore undertaken in conjunction with an archaeologist. In total, three sites were encountered in the field:

- Potential Junction Inn site (area of particular archaeological sensitivity).
- Potential Early Road remains (former Port Sorrel Road).
- Mile Post.

The proposed works have now been amended to avoid excavation in the area of archaeological sensitivity (potential Junction Inn site).

Works involving the potential early road remains cannot be avoided and are not considered to be a detrimental heritage outcome.

The mile post can be removed from site and replaced upon completion.

A precautionary approach will be applied to the study area as a whole given the potential to encounter cultural material in the field.

5.2 Public Consultation

A Stakeholder Engagement Plan, that provides information to the community has been developed and will be implemented throughout the project. Key stakeholders include the Meander Valley Council, property owners and the local community. Key stakeholders have been written to individually.

A Stakeholder Engagement Plan (SEP) has been developed for this project. The SEP is used by DIER and its Consultants to go about stakeholder engagement. Key stakeholders for this project include the Meander Valley Council, property owners and the local community and Fonterra Aust Ltd.

Initial consultation was undertaken with all landowners with property adjacent to the project site as well as Council in June 2011 to inform the landowners of the proposed works.

Further meetings have been held with the landowners in January 2012 and June 2012

A public display was held in May 2012 at Ashgrove Cheese at Elizabeth Town at Epping Forrest.

5.2.1 Landowners

Through substantial land owner consultation, the project design has been significantly modified to accommodate the requests of various abutting land owners. These include;

- Significant upgrading of the Gannons Hill Junction, including the provision of formal right turn lane, removal of vertical crest south of the junction to improve sight distance and provision of a short tapered left turn lane.
- Breaks in the median safety barrier adjacent to two large dairy farms to minimise the impact to these businesses.

5.2.2 Fonterra Australia Limited

Fonterra are the milk carriers that collect milk from both the Padman's Dairy and from the Forest Farm's Dairy. B-doubles are used to pick-up from both properties and Fonterra are concerned about the turning movements into the dairies being impacted by the proposed 2 plus 1 installation and also the extra travel costs that will result.

It is more economical for the milk carrier to pick up Padman's milk on its return journey to the plant rather than on its outward journey. Therefore Fonterra currently turn right into and right out of the Padman dairy to pick up milk. The Padman access is a concern due to it being located on the eastbound, one lane section.

The access to Padman's Dairy is tight for b-double movements. Fonterra would like some form of widening on the approach and departure to the Padman's Dairy access to allow for traffic to pass while the milk carrier enters and leaves the access. Fonterra pick up from Padman's Dairy at night when traffic volumes are reduced for safety reasons.

Fonterra have similar concerns with the access to Forest Farm, however the access can more easily accommodate b-doubles and it is located on an eastbound two-lane section of the Highway. Due to the size of the Forrest Farm Dairy operation Fonterra collect milk from the dairy twice each day.

5.2.3 Meander Valley Council

A planning permit is required to be lodged with Meander Valley Council. The proposed road works would be classified under the Meander Valley Planning Scheme 1995 as 'Major Road Improvements'. This is because the upgrade involves the construction of additional lanes. The works would be a Permitted (with a Permit) application. This means that Council has to grant a permit, and does not need to be placed on public exhibition.

Council officers were briefed on the project during a meeting held on 12 January 2012. The officers did not identify any substantial concerns with respect to the proposed road works.

5.2.4 Responses from Stakeholders

DIER has received some responses from various stakeholders over the past 18 months. A report on the representations and DIER's response are included as Appendix C.

5.3 Service Authorities

5.3.1 Telstra

Telstra has telecommunications infrastructure in the vicinity of the project site. However, it is generally running parallel to the Highway and is clear of the proposed works. There is one road crossing in the vicinity of Dudley Road that is to be replaced.

5.3.2 Aurora Energy

Aurora Energy confirmed that they do not have underground assets in the vicinity of the project site. However, Aurora Energy did point out that they do not hold records of underground private cables including connections.

Power poles are located on the western side of the highway from Ch. 00 to Ch. 2370. The power line crosses the highway from Ch. 2270 to Ch. 2370. From Ch. 2370 to Ch. 3800 the power poles are located on the eastern side of the highway.

The poles will require relocation from Ch 00 to Ch 1680 on the western side of the highway and from Ch 2380 to Ch 2500 on the eastern side of the highway due to the proposed works.

6. Conclusions and Recommendations

The design for the proposed upgrading of the section of the Bass Highway north of Gannons Hill Road has been carried out in accordance with the appropriate design standards and guidelines. The requirements of abutting landowners, Meander Valley Council and public utility owners have been considered and incorporated as appropriate. The design of the proposed work has been reviewed and modified taking into account the issues raised by the landowners during the development of the project. The safety improvements have not been compromised by accommodation of these concerns.

Once complete, the works will provide improved safety by separating opposing traffic; providing upgraded junction treatments at Gannons Hill Road and Dan Road; and provide additional opportunities for safe overtaking.

It is recommended that the project be approved.

Appendix A

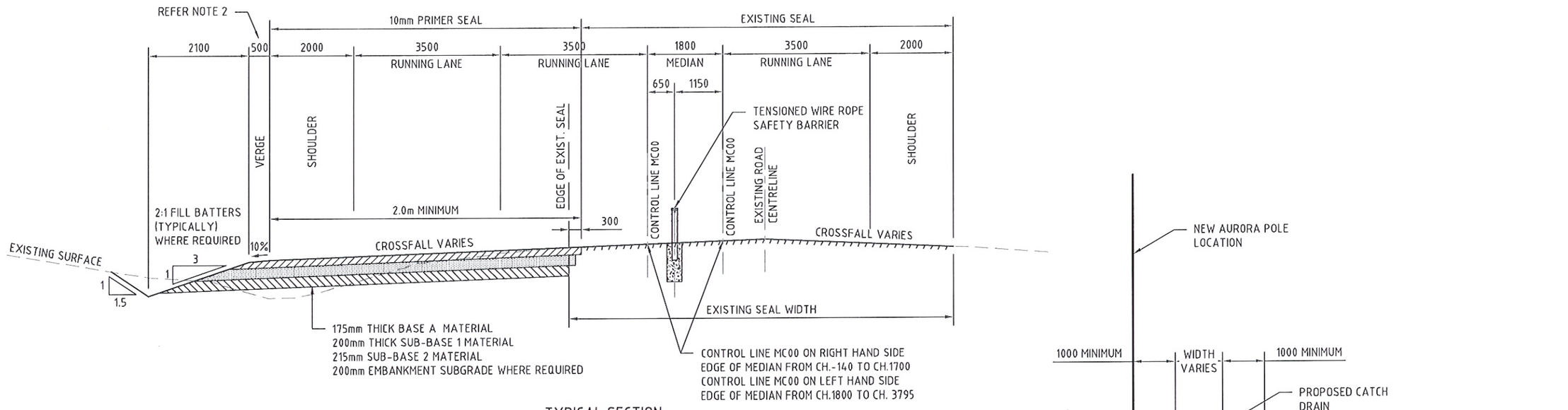
Crash Data

Table A1 Crash History 2007 - 2011

Crash No.	Year	Time	Severity	Wet/Dry	Type of Vehicles	Description
30073107	2007	0600	Prop. Dam.	Dry	1 – Car	Driver fell asleep, cross to opposite, leaves cwy, hit shed
20050724	2005	0940	Prop. Dam.	Dry	1 - Car 2 – H Vehicle	Northbound HV turning right into access hit by northbound vehicle trying to overtake turning vehicle
20051699	2005	0915	Minor Injury Prop. Dam.	Dry	1 - Car 2 - Car	Vehicle attempting to overtake collided with rear of front vehicle
30050522	2009	1600	Fatal	Dry	1 - Car 2 - Car	Northbound vehicle cross to opposite side, collided with southbound vehicle
30055416	2007	0617	Fatal Prop. Dam.	Dry	1 - Car 2 - H Vehicle	Northbound vehicle on opposite side of road collided with southbound heavy vehicle
30020901	2005	1900	Prop. Dam.	Dry	1 - Car 2 - Car	Police conducting random breath test, two northbound vehicles collided
30025408	2007	0151	Serious	Dry	1 – M Cycle 2 - Car	Motor Cycle travelling northbound collided with another northbound vehicle also overtaking
20050034	2005	1715	Prop. Dam.	Dry	1 - Car 2 - Car	Vehicle turning right out of Gannons Hill Road collided with southbound vehicle
30074627	2007	1745	Minor Injury Prop. Dam.	Dry	1 – M Cycle 2 - Car	Vehicle turning right into Gannons Hill Road collided with northbound vehicle

Appendix B

Drawings

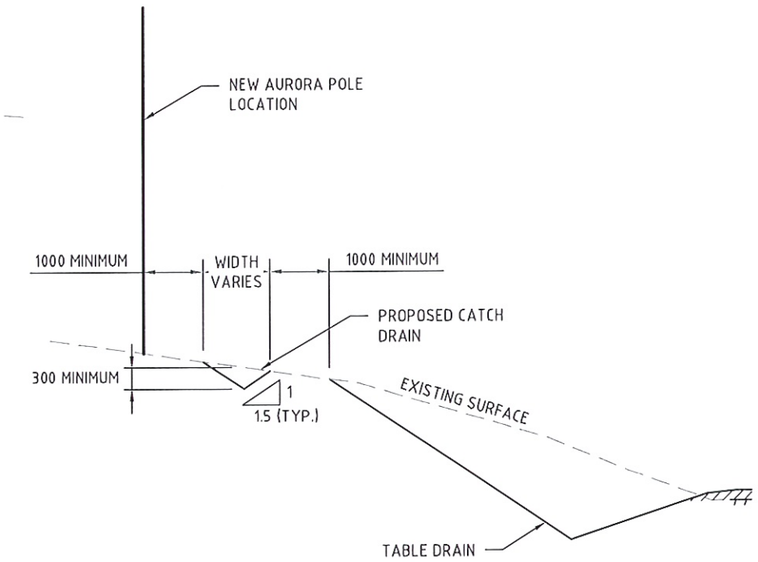


TYPICAL SECTION

SCALE 1:100

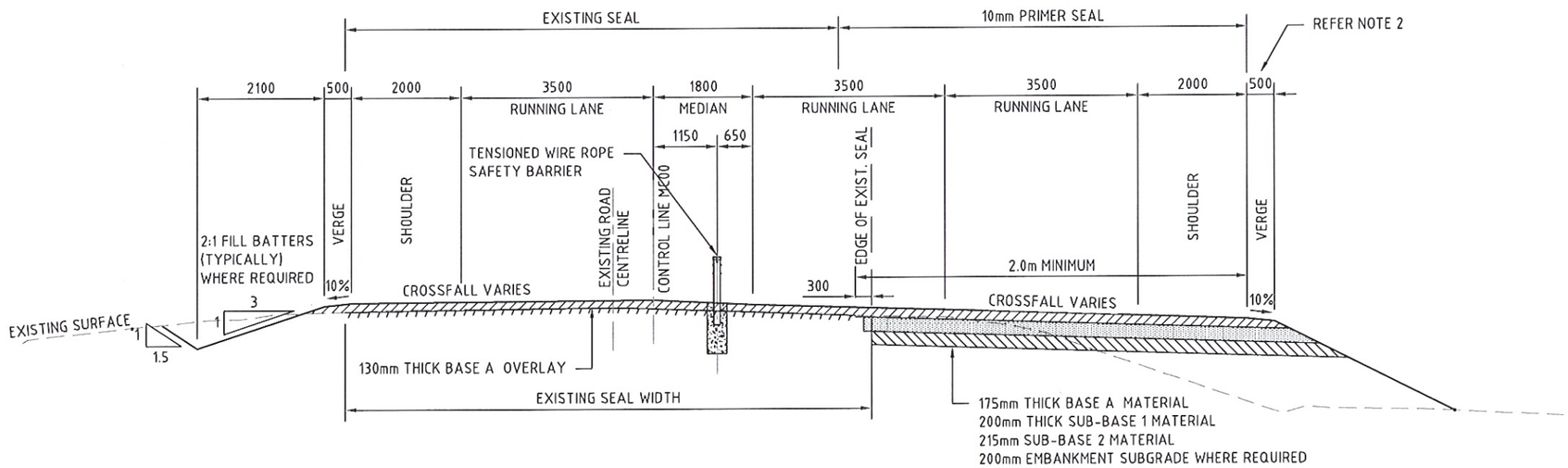
NOTES:

1. VERGES TO BE PRIMED.
2. WHERE ROADSIDE SAFETY BARRIER IS REQUIRED VERGE IS TO BE WIDENED TO 1.0m.
3. AT TRANSITIONS BETWEEN CH.1640 AND CH.2010 WIDENING WILL BE ON BOTH SIDES.
4. WIDENING OCCURS ON BOTH SIDES OF HIGHWAY.
5. PAVEMENT WIDENS AT DANS ROAD AND GANNONS HILL ROAD TO PROVIDE FOR CHR TREATMENT.



TYPICAL SECTION U.N.O.
CATCH DRAIN
CH 55 TO CH.1550 LHS
CH -105 TO CH.150 RHS

SCALE 1:100



TYPICAL SECTION
130mm OVERLAY - CH.2050 TO CH.2600

SCALE 1:100

PRELIMINARY

No.	Amendment Description	Initials	Date
A	PSCPW SUBMISSION ISSUE	DR'	05.07.12

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SCALES
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SCALE 1:100 AT ORIGINAL SIZE

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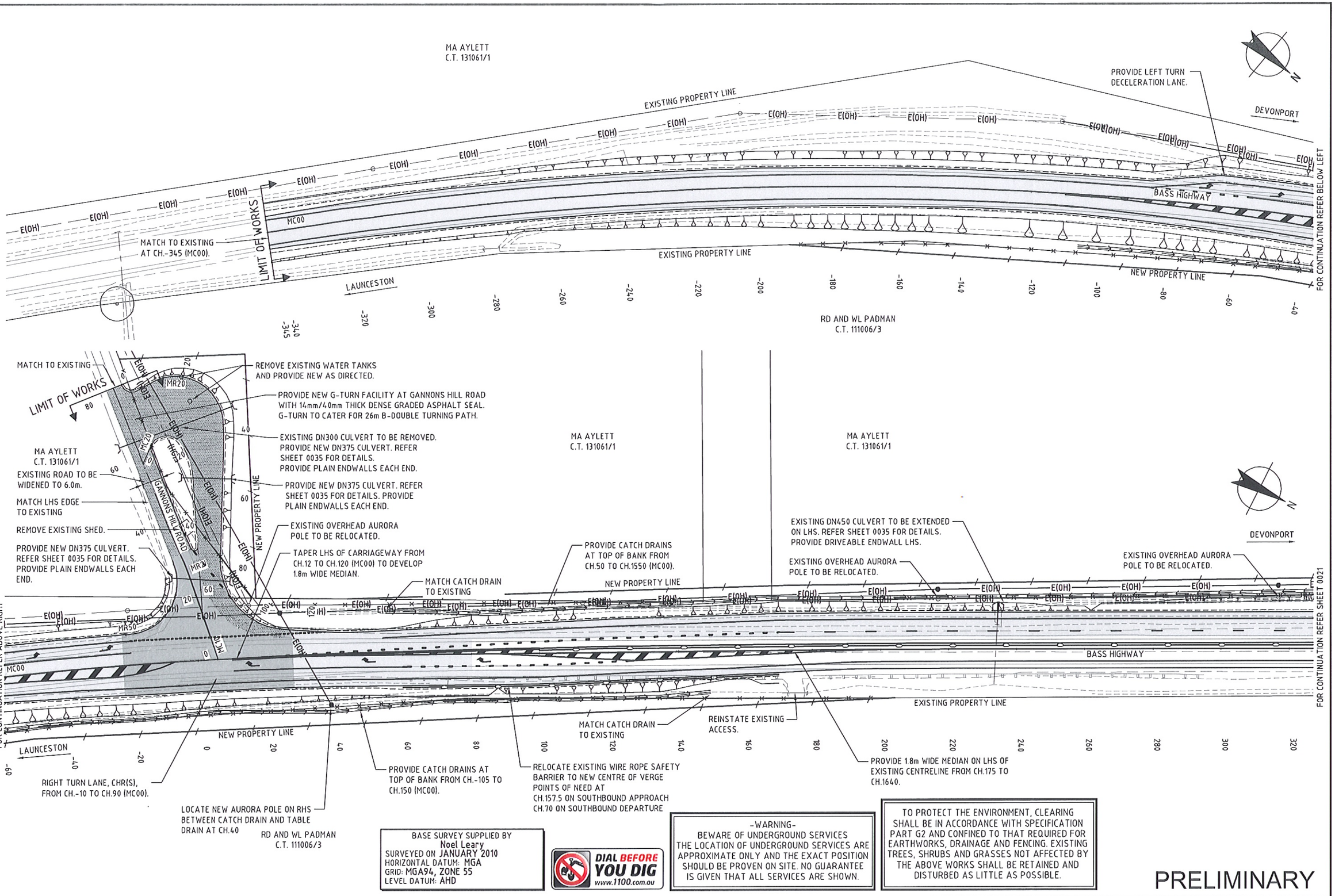
BASS HIGHWAY (A0249)
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

TYPICAL SECTIIONS

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C005.dwg	05-Jul-12, 12:40 PM	0005

REGISTRATION NUMBER
A0249.005

REVISION A



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PRELIMINARY

No.	Amendment Description	Initials	Date
E	PSCPW SUBMISSION ISSUE	DR*	05.07.12
D	PSCPW SUBMISSION ISSUE	DR*	25.05.12
C	ISSUED TO LAND OWNERS	DR*	14.05.12
B	ISSUED TO DIER FOR INFORMATION	DR*	30.04.12
A	ISSUED FOR DA LODGEMENT	DR*	06.03.12

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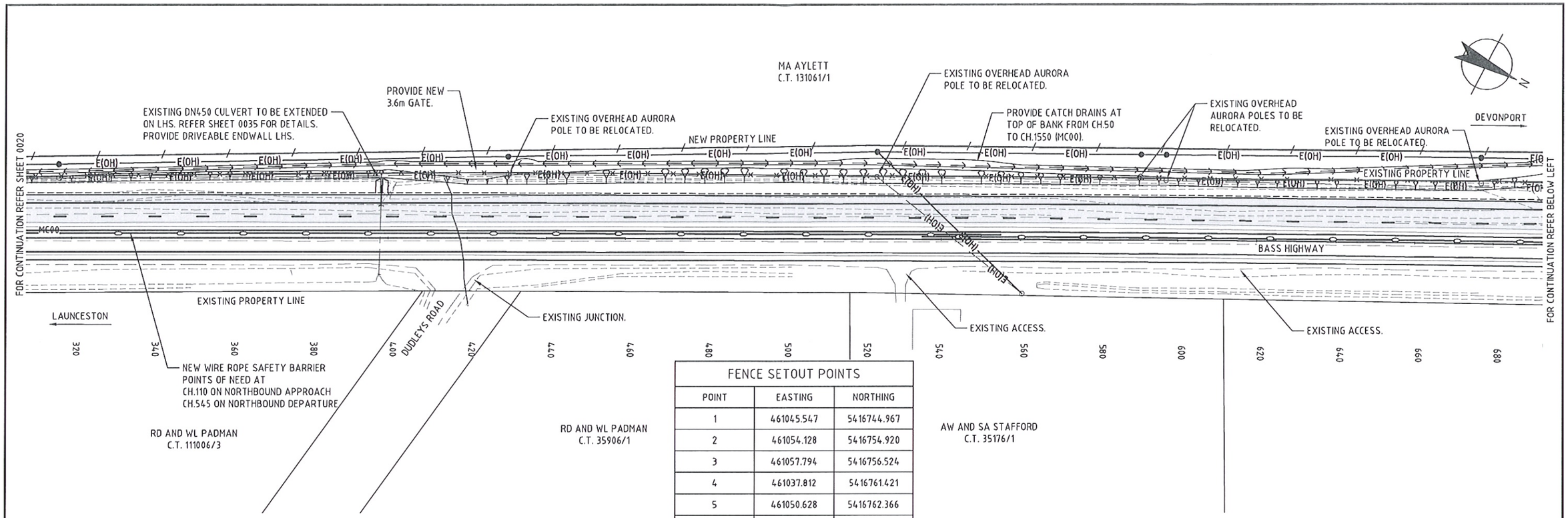
BASS HIGHWAY (A0249)
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

GENERAL ARRANGEMENT PLAN - CH.-345 TO CH.320

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C020_C025.dwg	05-Jul-12, 12:40 PM	0020

REGISTRATION NUMBER
A0249.005

REVISION E



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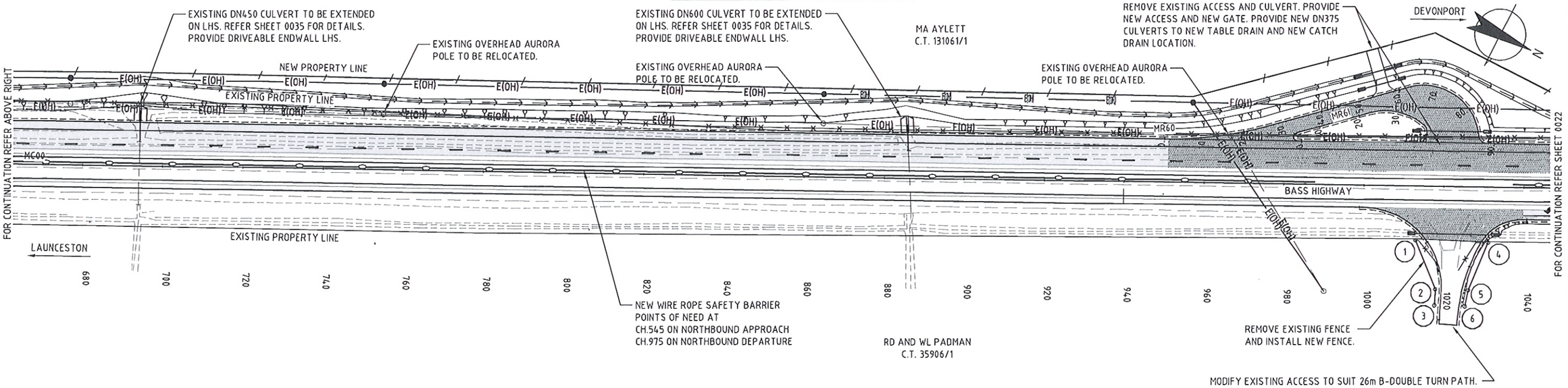

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A	ISSUED FOR DA LODGEMENT	DR*	06.03.12

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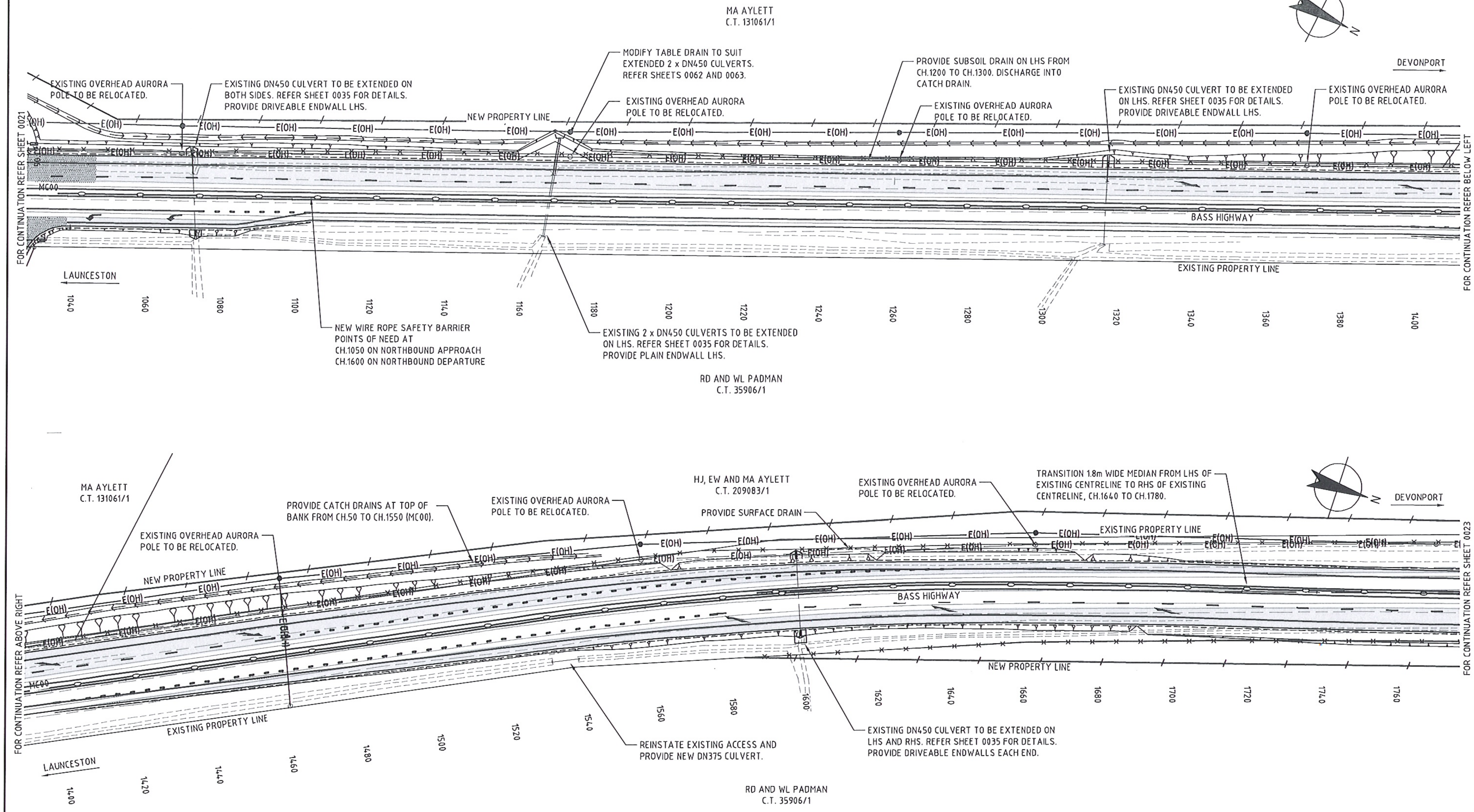
BASS HIGHWAY (A0249)
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

GENERAL ARRANGEMENT PLAN - CH.320 TO CH.1040

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C020_C025.dwg	05-Jul-12, 12:40 PM	0021

REGISTRATION NUMBER
A0249.005

REVISION D



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A	ISSUED FOR DA LODGEMENT	DR*	06.03.12

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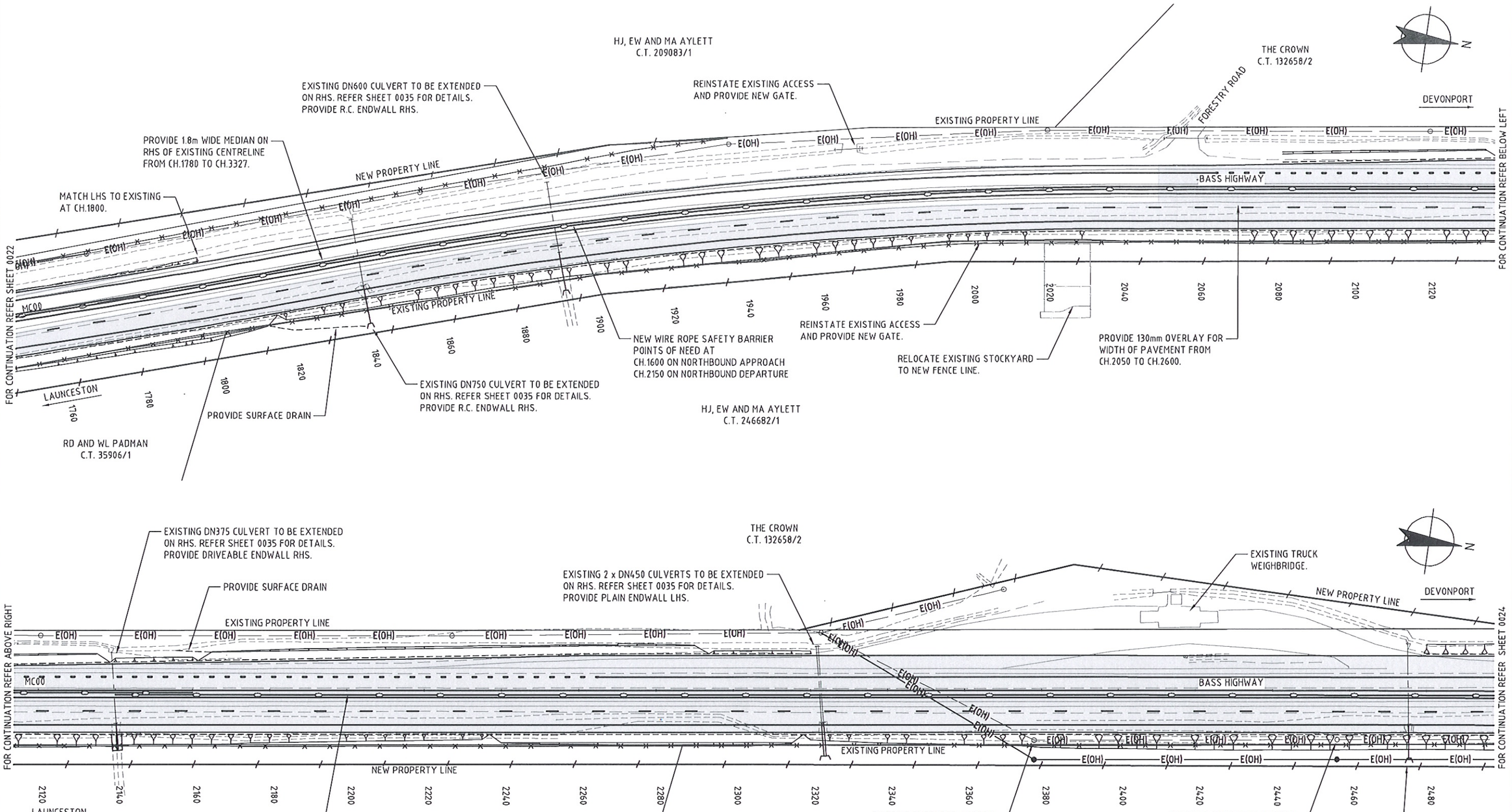
BASS HIGHWAY (A0249)
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

GENERAL ARRANGEMENT PLAN - CH.1040 TO CH.1760

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C020_C025.dwg	05-Jul-12, 12:40 PM	0022

REGISTRATION NUMBER
A0249.005

REVISION D



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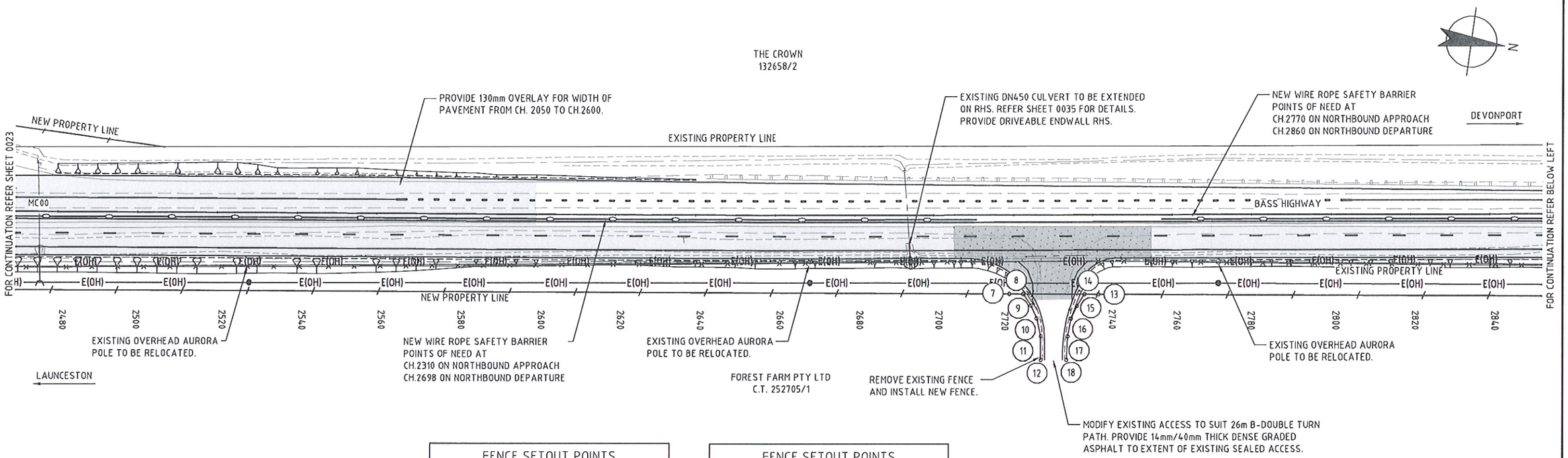
BASS HIGHWAY (A0249)
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

GENERAL ARRANGEMENT PLAN - CH.1760 TO CH.2480

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C020_C025.dwg	05-Jul-12, 12:40 PM	0023

REGISTRATION NUMBER
A0249.005

REVISION D



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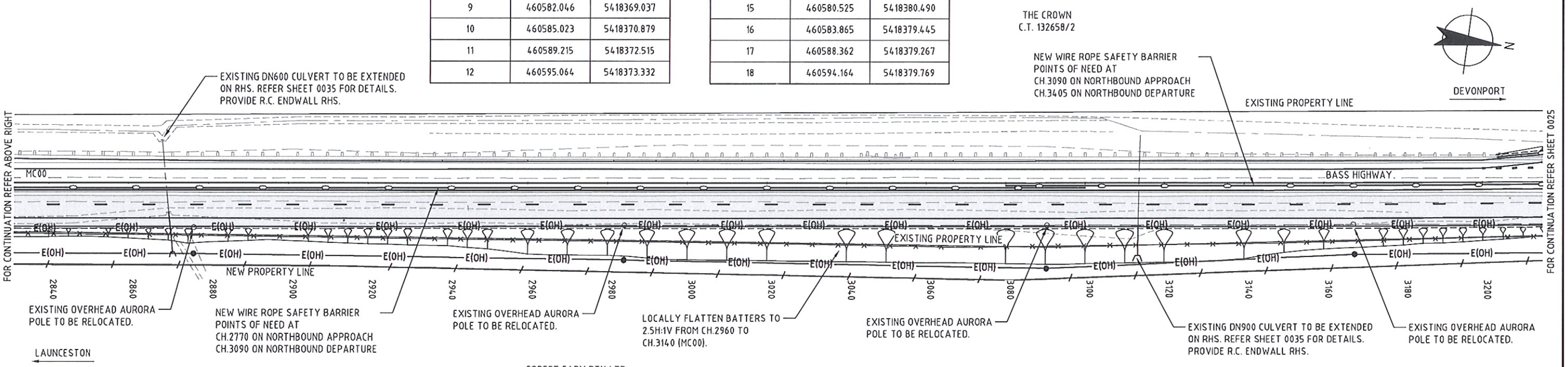

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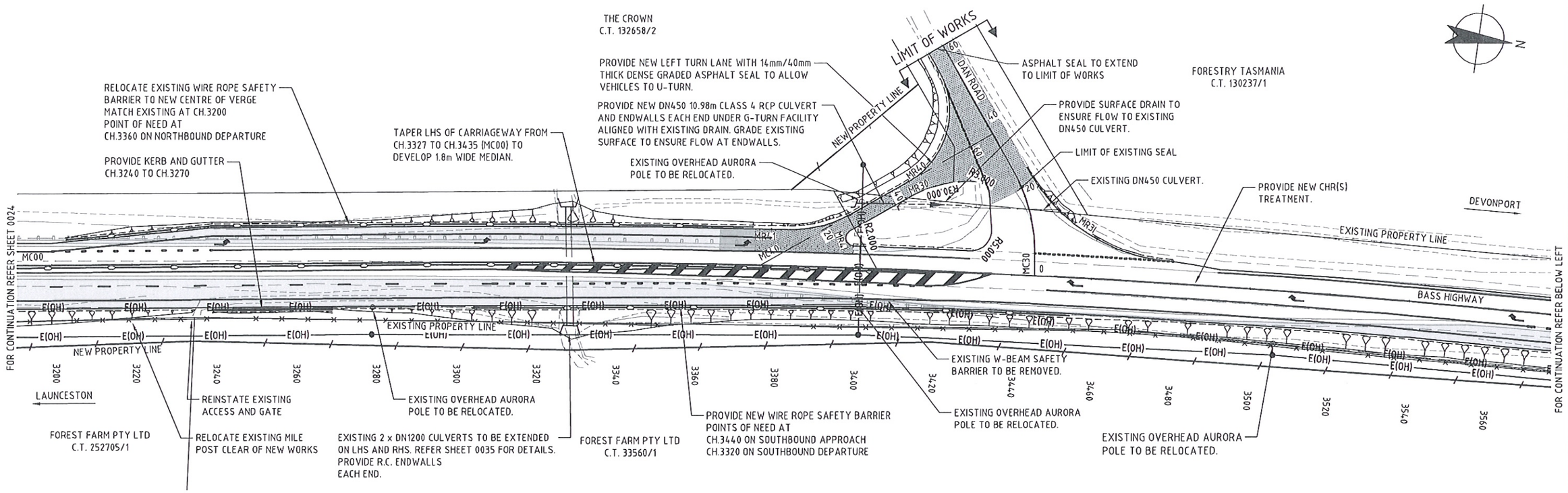
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

GENERAL ARRANGEMENT PLAN - CH.2480 TO CH.3200

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C020_C025.dwg	05-Jul-12, 12:40 PM	0024

REGISTRATION NUMBER
A0249.005

REVISION D



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BASS HIGHWAY (A0249)
GANNONS HILL ROAD TO DAN ROAD
2 PLUS 1 INSTALLATION

GENERAL ARRANGEMENT PLAN - CH.3200 TO CH.3780

CONTRACT No.	DRAWING	PRINTED DATE	SHEET No.
2119	32-16179-C020_C025.dwg	05-Jul-12, 12:40 PM	0025

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A0249.005

REVISION D

Appendix C

Report on Responses

REPORT ON RESPONSES

Bass Highway at Gannons Hill Road – 2 Plus 1 Project

Public Consultation throughout April 2012

Overview

Public Displays at Ashgrove Cheese Factory, Bass Highway, Elizabeth Town 13-16 April 2012.
Public Displays at Meander Valley Council's Offices in Westbury 16-26 April 2012.

Public notices placed by DIER; in both the Advocate and Examiner newspapers.

Public Display Venue	Total # Forms Received	Project Supported	Against Proposal
Ashgrove Cheese Factory	8	2	6
Council Chambers	0	0	0
Written Submissions (Email/hardcopy)	1	0	1

Summary of Concerns

- Additional travel time when leaving and entering properties.
- Reduced access and additional travel time for emergency services, particularly fire service.
- Emergency response to an accident on one side of the safety barrier will be hampered, ie ambulances from Launceston will have to travel all the way to northern end of barrier to respond to an accident at southern end of 2 plus 1.
- Additional travel time and reduced access for milk tankers.
- Vehicles, including B-double trucks, will be asked to turn across three lanes of traffic at either end of the safety barrier. Provision of right-hand turns into properties would appear more appropriate option.
- Additional travel time and access for farm equipment shared between properties along subject site and with other properties in Elizabeth Town area.
- Farm equipment used on either side of highway. Safety barrier will lead to significant increase, possibly up to 6.5km travel. Average speed of some equipment is 20km/hr, additional time on highway increases risk of crashes.
- Additional travel time and cost in fuel for farm vehicles and equipment.
- Proposed southern site for G-turn (Gannons Hill Road) has poor sight lines; this is a dangerous access.

- U-turns on high speed highways are dangerous, especially when slow moving vehicles such as B-Doubles will be required to use them.
- Wire rope deadly to motor cyclists.
- Government wasting money on this kind of project. More important things to spend $$ on.

The representations were from adjacent landholders, a summary of each representation is attached as Appendix A.

Background

The Public Display was attended by DIER's project manager Guna Ginneliya and A/Senior Project Officer Road Safety Strategy Janice Miller on 13 April 2012.

Janice Miller relocated the display on Monday 16 April and packed-up the display on 26 April. On each date any forms received to that point were collected.

Public Display consisted of a birds-eye view of the 3.5km section of the highway together with a poster summarising key attributes of the project. Plan included highlighted sections such as merge points, g-turns and access points.

Five adjacent landholders attended on 13 April. Two landholder families operating dairies have considerable concerns (see above and attached representations).

Numerous truck drivers and other service providers regularly visiting the farms also visited the displays on 13 April. None were happy with proposal. A few wrote responses.

Janice Miller
A/Senior Project Officer, Road Safety Strategy
3 May 2012

Appendix A: Summary of Comments Received

Adjacent Landholder	Issues raised at 12 January 2012 meeting with DIER and GHD	Issues raised with DIER on 13 April 2012 or submitted during public consultation process 13-26 April 2012.	Response from DIER
S Stafford	Access for Emergency Services		DIER consulted with Ambulance Services some 12 months ago, about the provision of a median barrier and accessibility to the other carriageway. It was agreed that a turn facility would be provided approximately every 3 kilometres. This was acceptable to the Ambulance Service.
	Compensation for additional travel distance and time.	Concern over additional travel time at end of working shift and additional cost in petrol (verbal on 13 April no written response).	Compensation is only available to adjacent landholders where property is being acquired.
R, W and S Padman	Additional travel distance and time for milk trucks. Fonterra may pass the costs on to the farmer.	Additional travel distance and time for milk trucks. Fonterra may pass the costs on to the farmer.	Processor costs will be considered in the compensation package to landholder.
	B-double trucks turning across three lanes of highway is a concern.	B-double trucks turning into Gannons Hill Road to access G-turn will be extremely dangerous.	The vertical crest south of Gannons Hill Road junction is to be removed to provide adequate sight distance for all traffic using the junction. A right turn lane is being provided for vehicles turning into Gannons Hill Road.

Adjacent Landholder	Issues raised at 12 January 2012 meeting with DIER and GHD	Issues raised with DIER on 13 April 2012 or submitted during public consultation process 13-26 April 2012.	Response from DIER
	Drainage around Gannons Hill Road is poor. Fencing requirements if land is to be acquired. Acquisition process and compensation.		Agreeable to improved drainage work across adjacent paddocks. Fencing agreed to landholders' requirements. Acquisition and compensation advice provided.
		Access for emergency services, especially Ambulance. Police will not be able to apprehend speed offenders as they will be unable to quickly cross the road and follow vehicle.	DIER consulted with Ambulance Services some 12 months ago, about the provision of a median barrier and accessibility to the other carriageway. It was agreed that a turn facility would be provided approximately every 3 kilometres. This was acceptable to the Ambulance Service. Police patrols along this section of highway will be no different to other sections of divided dual highway.
		Landholder lives south of dairy and will have to travel length of flexible safety barrier to access dairy entrance. Farm equipment is shared between this property and one at Sassafras. The 2m shoulder is inadequate for slow moving vehicles to get out of the way of faster vehicles.	The inconvenience will be outweighed by the traffic safety benefit the scheme will provide. Farm equipment travelling along the highway is considered to be a low frequency event. While not ideal to slow traffic on the highway, the interruption will be negligible.
		Devaluation of our property biggest concern. Will be seeking significant compensation.	DIER believes there will be no impact on property valuations due to the road safety initiative.

Adjacent Landholder	Issues raised at 12 January 2012 meeting with DIER and GHD	Issues raised with DIER on 13 April 2012 or submitted during public consultation process 13-26 April 2012.	Response from DIER
		No need to make a straight stretch of the Highway faster. The bend where fatalities have occurred could be straightened and widened with a median barrier for 1km without overtaking lanes. Gannons Hill Road should be moved 200m north to allow for better vision and access.	There will be no change to the road alignment and speed limits will remain the same. Safe turning areas for traffic are being provided by improving the existing junctions at either end of the safety barrier. The vertical crest south of Gannons Hill Road junction is to be removed to provide adequate sight distance for all traffic using the junction.
M Aylett	Relocating gravity-fed water troughs from Gannons Hill Road-Bass Highway junction must be to a dry area of paddock where gravity-feed will continue to work. Fencing requirements for land to be acquired. Acquisition of our land – how will that work? Pole relocations will require landholder to sign-off on way leave with Aurora.		DIER's consultant GHD investigating options including provision of solar-powered pump if no suitable dry gravity-fed location can be found. Fencing agreed to landholders' requirements. Acquisition and compensation advice provided.
	Will there be a left-turn deceleration lane for Gannons Hill Road?		A short left-turn lane into Gannons Hill Road will be provided for light vehicles. It is considered that few heavy vehicles would make the left turn.

Adjacent Landholder	Issues raised at 12 January 2012 meeting with DIER and GHD	Issues raised with DIER on 13 April 2012 or submitted during public consultation process 13-26 April 2012.	Response from DIER
G, J and T Bennett	Will work be done on left-turn deceleration lane for Gannons Hill Road? Sight distance on southern approach to Gannons Hill Road is deficient.	Also concerned about safety risks to employees and contractors having to use G-turns.	A short left-turn lane into Gannons Hill Road will be provided for light vehicles. It is considered that few heavy vehicles would make the left turn. The vertical crest south of Gannons Hill Road junction is to be removed to provide adequate sight distance for all traffic using the junction.
	Why not widen opposite side of highway?		Would impact on existing weighbridge and native forest block.
	Fencing requirements for land to be acquired. Brick and picket fences into property will need to be replaced if road is widened. Lamps at entrance are powered from adjacent shed through underground wires. Acquisition process – how does it work? Pole relocations will require landholder to sign-off on way leave with Aurora.		Fencing agreed to landholders' requirements. GHD preparing plans in consultation with Bennetts for front fences. Operation of lamps will remain the same after relocation. Acquisition and compensation advice provided.

Adjacent Landholder	Issues raised at 12 January 2012 meeting with DIER and GHD	Issues raised with DIER on 13 April 2012 or submitted during public consultation process 13-26 April 2012.	Response from DIER
	Milk tankers visit the farm twice a day. Extra travel time will impact financially on farmer as costs are passed on by processor. Other processors and suppliers are regular visitors to the farm. Cost of additional travel may be passed on to landholder. Need a break in the wire barrier opposite farm entrance.	Need a break in the barrier opposite main entrance to farm. Location of G-turns at Dan Road and Gannons Hill Road not an option due to extra costs to our business.	Processor costs will be considered in the compensation package to landholder. Head-on (veering right) crashes occur more often on a curved alignment than a straight road. Break at dairy would be on a sweeping curve, compromising the benefits of separating traffic on a bend with a flexible safety barrier.
	Access for Emergency Services		DIER consulted with Ambulance Services some 12 months ago, about the provision of a median barrier and accessibility to the other carriageway. It was agreed that a turn facility would be provided approximately every 3 kilometres. This was acceptable to the Ambulance Service.
M & M Bennett		Traffic can build-up behind slow moving vehicles travelling north. Passing lane going north should be 2/3 total distance. There are good passing opportunities north of the site for southbound vehicles; there is nothing after this section for northbound vehicles until Latrobe.	The north-bound overtaking lane will provide greater certainty to overtake slow moving vehicles, than the current situation. The design of the scheme limits the exposure a vehicle will have behind a slow moving vehicle to 1.5km.

Adjacent Landholder	Issues raised at 12 January 2012 meeting with DIER and GHD	Issues raised with DIER on 13 April 2012 or submitted during public consultation process 13-26 April 2012.	Response from DIER
		Additional travel distance and times for farm equipment travelling between share-farms in region. 2m shoulders too narrow for faster vehicles to pass where one lane. Need 2 breaks – one at G Bennett's and one at Padman's.	The inconvenience will be outweighed by the traffic safety benefit the scheme will provide. The shoulder designs meet the functional fit of the highway. Head-on (veering right) crashes occur more often on a curved alignment than a straight road. Break at dairy would be on a sweeping curve, compromising the benefits of separating traffic on a bend with a flexible safety barrier.
		Section of road to be 2 plus 1 not as dangerous as the 2km south of Gannons Hill Road where there have been several deaths over recent years. Gannons Hill Road is extremely dangerous and will be worse when B-doubles turn from a dead stop. Local school bus no longer enters Bass Highway from Gannons Hill Road as considered too dangerous.	There is a cluster of head-on crashes at this location that can be treated by a median barrier. The type of crashes further south are more varied. The vertical crest south of Gannons Hill Road junction is to be removed to provide adequate sight distance for all traffic using the junction.

GHD

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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	D Rolph	L Ashlin		M King		6/7/12