Drafting and Design Presentation Standards
Volume 2: Road Design Concept and Development Presentation

Part 2: Development Phase Drawings (Preliminary and Detailed Design Phase Stages)

March 2024

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Feedback

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Amendment Register

Issue / Rev no.	Reference section	Description of revision	Authorised by	Date
1	-	Initial Release	Director (Road Design) Geospatial, Design and Capability (E&T)	Sep 2015
2	2.13, 2.23, 3.24	Updates to Roadway Lighting, and Roadway Safety Barrier System sections	Director (Road Design) Hydraulics, Design and Spatial (E&T)	Sep 2022
3	All	General textual refinements, amendments and inclusion of registered drawing examples	Director (Road Design) Hydraulics, Design and Spatial (E&T)	March 2024

Contents

Figures

3 Rural road design drawings (preliminary and detailed design)

3.1 General

Rural road design is generally a combination of 'Brownfield' and 'Greenfield' design domains.

Projects vary from simple shoulder widening and/or overlay works, to high-speed multi-lane highway construction.

The presentation of rural road design drawings will be dependent on the complexity of the project. Some projects will only require a control line set-out plan and a series of typical cross sections, whereas more complex projects will require the full suite of drawings as depicted in the typical drawing list below.

The major test for the reasonableness of a presentation standard adopted for a particular project is that of context sensitivity. The approach is to define the presentation standards that will provide appropriate levels of detail for the construction of the project.

3.2 Typical drawing list

A typical drawing list for a complex rural road design project is:

- locality plan and drawing list (Section 3.3)
- typical cross sections (Section 3.4)
- existing features (Section 3.5)
- control line and set-out details (Section 3.6)
- working plans / general arrangement (Section 3.8)
- drainage cross sections (Section 3.9)
- drainage details (Section 3.9.2)
- pavement details (Section 3.10)
- pavement markings and signage (Section 3.11)
- intersection details (Section 3.12)
- private access details (Section 3.13)
- miscellaneous details (Section 3.14)
- street lighting (Section 3.15)
- traffic signals (Section 3.16)
- landscaping layout and details (Section 3.17)
- noise barriers (Section 3.18)
- annotated cross sections (if required) (Section 3.19)
- construction staging details (Section 3.20)
- erosion and sediment control (Section 3.21)
- extended design domain (Section 3.22), and
- as constructed (Section 3.23).

3.3 Locality plan and drawing list

This drawing is the ‘cover sheet’ for the drawing set and provides a locality plan, drawing list and the submitted and approval signature block.

Considerations

Locality Plan

- Scale – select scale to show project site relative to landmarks
- Use background map that adequately shows extent of project and its relationship to local area, for example Cadastral Boundaries (if not available then use DCDB), photo mosaic, etc.
- Orientate the locality plan to match the project plans (where possible)
- Add names of streets, creeks, local landmarks and so on
- Include north point

Drawing List

- Add drawing list attribute to standard sheet
- Include all drawings in the scheme
- Continue on additional sheet(s) if necessary

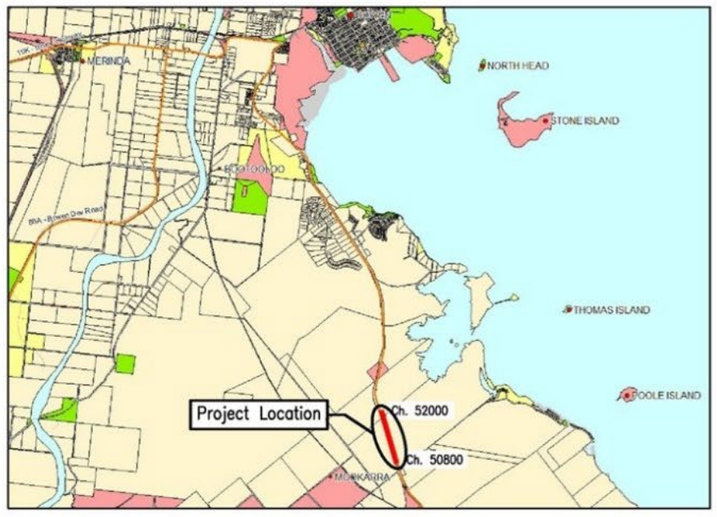
Submission and approval

- Add approvals attribute to standard sheet – refer to the DDPSM Volume 1, Chapter 1, Figure 1.6.2.3.

Figure 3.3(a) – Locality plan and drawing list – generic example 1

SOUTHBOUND OVERTAKING LANE SOUTH OF DUCK CREEK

JOB NO: *269/10J/2*
CONTRACT NO: *MACD-1362*
LOCAL AUTHORITY: *WHITSUNDAY REGIONAL COUNCIL*
ROAD: *BRUCE HIGHWAY (PROSERPINE – BOWEN) (10J)*
LOCATION: *CHAINAGES 50800 – 52000*



LOCALITY MAP

DRAWING INDEX

DRAWING NUMBER	REVISION	SERIES NUMBER	DRAWING DESCRIPTION
605781	A	1 of 18	Drawing Index and Locality Map
605782	A	2 of 18	Typical Cross Section
605783	A	3 of 18	Control Line Setout
605784	A	4 of 18	Working Plan Ch. 50800 – 51540
605785	A	5 of 18	Working Plan Ch. 51540 – 52000
605786	A	6 of 18	Pavement Marking and Signage Detail (Sheet 1 of 2)
605787	A	7 of 18	Pavement Marking and Signage Detail (Sheet 2 of 2)
605788	A	8 of 18	Private Entrance Details
605789	A	9 of 18	Drainage Cross Sections and Schedule
605790	A	10 of 18	Environmental Details and Records
605791–8	A	11–18 of 18	Control Line MCBH1 Annotated Cross Sections (8 Sheets)

SCHEME SUBMITTED *(External Consultants or Internal Business Unit):*
This design meets the requirements of all relevant Australian Standards, Austroads Guidelines and Transport and Main Roads – Policies. References, Standards, Planning and Design Instructions, Guidelines and the requirements of the project brief/functional specifications.

SIGNED: TITLE:
Organisation: DATE:

SCHEME SCOPE AND FINANCIAL APPROVAL: *(Regional Director or Delegate):*
I hereby certify that this scheme complies with the intent of the scope and financial limits of the relevant project on QTRIP and the scheme is approved for release in accordance with that program.

SIGNED: TITLE: DATE:

Survey File:
269_0016.12da

G				
F				
E				
D				
C				
B				
A	Issued For Construction			
	Revisions/Descriptions	Certification	Date	Microfiled
CAD FILES				

Associated Job Nos
Auxiliary Drg Nos
Survey Data: Datum; Horiz. Grid; Height Origin; Survey Books
Scales
Dimensions shown in except where shown otherwise

CTL CHGE
Reference Points: Preceding RP; Dist. to start of job (km); From start to end of job; From end to Following RP; Following RP
Through Chainage from

Drawn
Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA; NAME; SIGNATURE; NO.; DATE

Queensland Government
Job No.
Contract. No.
Drawing No.
Series Number of
MRR_Detail (02/14)

Figure 3.3(b) – Locality plan and drawing list – generic example 2

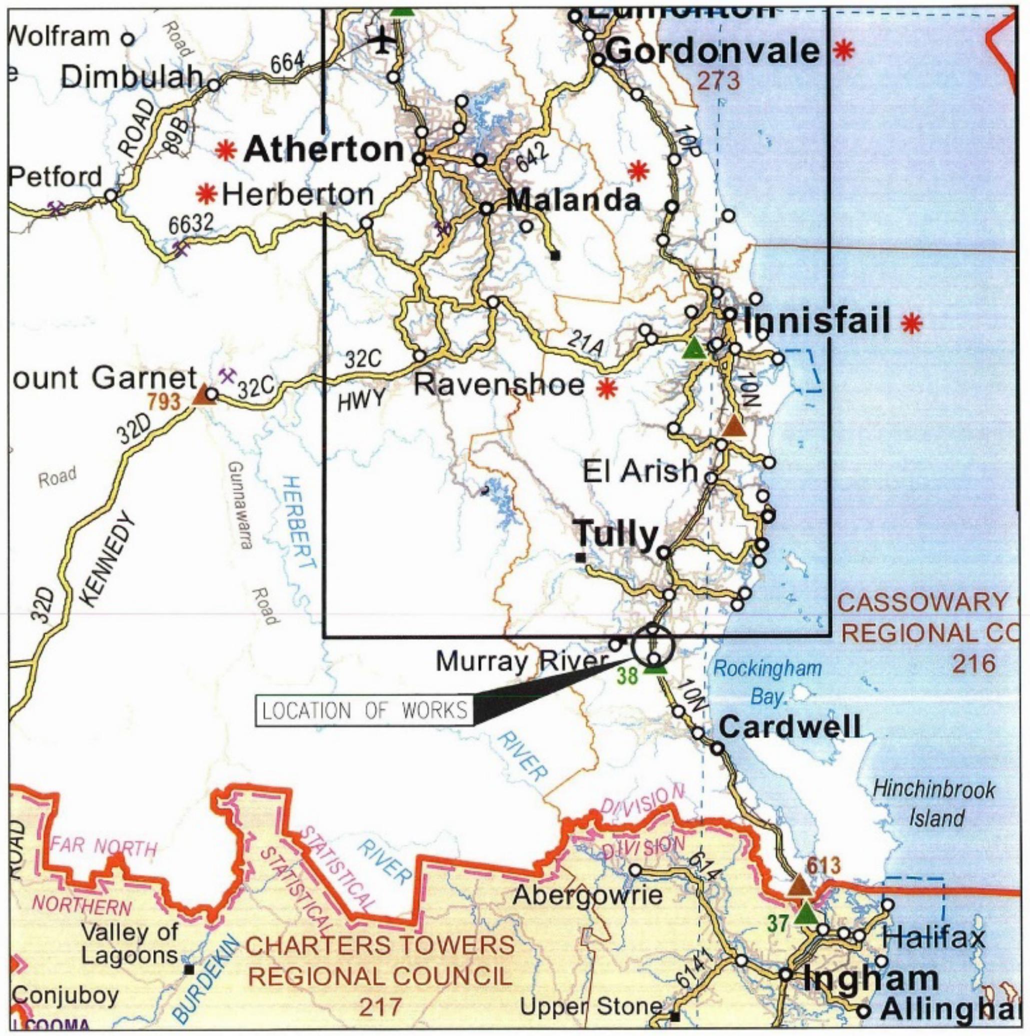
Department of Transport and Main Roads

PUNGI CREEK - DUNDONALD CREEK OVERTAKING LANES

DRAWING LIST

DRAWING No.	REVISION	SERIES No.	DESCRIPTION
590567	A	1 of 27	DRAWING LIST, LOCALITY PLAN AND SIGNATURE BLOCK
590568	A	2 of 27	TYPE CROSS SECTIONS AND DETAILS PLAN
590569	A	3 of 27	SURVEY AND CONTROL LINE SETOUT SHEET 1 of 2
590570	A	4 of 27	SURVEY AND CONTROL LINE SETOUT SHEET 2 of 2
590571	A	5 of 27	WORKING PLAN CONTROL LINE MC01 SHEET 1 of 3
590572	A	6 of 27	WORKING PLAN CONTROL LINE MC01 SHEET 2 of 3
590573	A	7 of 27	WORKING PLAN CONTROL LINE MC01 SHEET 3 of 3
590574	A	8 of 27	WORKING PLAN CONTROL LINE MC10 SHEET 1 of 3
590575	A	9 of 27	WORKING PLAN CONTROL LINE MC10 SHEET 2 of 3
590576	A	10 of 27	WORKING PLAN CONTROL LINE MC10 SHEET 3 of 3
590577	A	11 of 27	WORKING PLAN CONTROL LINE MC20 CENTRAL MEDIAN DRAIN SHEET 1 of 3
590578	A	12 of 27	WORKING PLAN CONTROL LINE MC20 CENTRAL MEDIAN DRAIN SHEET 2 of 3
590579	A	13 of 27	WORKING PLAN CONTROL LINE MC20 CENTRAL MEDIAN DRAIN SHEET 3 of 3
590580	A	14 of 27	WORKING PLAN CONTROL LINE MC30
590581	A	15 of 27	DRAINAGE PLAN AND CROSS SECTION SHEET 1 of 4
590582	A	16 of 27	DRAINAGE PLAN AND CROSS SECTION SHEET 2 of 4
590583	A	17 of 27	DRAINAGE PLAN AND CROSS SECTION SHEET 3 of 4
590584	A	18 of 27	DRAINAGE PLAN AND CROSS SECTION SHEET 4 of 4
590585	A	19 of 27	PAVEMENT MARKING AND SIGNS PLAN SHEET 1 of 3
590586	A	20 of 27	PAVEMENT MARKING AND SIGNS PLAN SHEET 2 of 3
590587	A	21 of 27	PAVEMENT MARKING AND SIGNS PLAN SHEET 3 of 3
590588	A	22 of 27	MISCELLANEOUS DETAILS SHEET 1 OF 2
590589	A	23 of 27	MISCELLANEOUS DETAILS SHEET 2 OF 2
590590	A	24 of 27	SERVICE RELOCATION PLAN SHEET 1 of 3
590591	A	25 of 27	SERVICE RELOCATION PLAN SHEET 2 of 3
590592	A	26 of 27	SERVICE RELOCATION PLAN SHEET 3 of 3
590593	A	27 of 27	EROSION AND SEDIMENT CONTROL

10 SHEETS OF UNANNOTATED CROSS SECTIONS (XS01–XS10)



LOCALITY PLAN
NTS

				Associated Job Nos	Survey Data		Scales	
					Datum			
				Auxiliary Drg Nos	Horiz. Grid			
					Height Origin			
A	Issued For Construction				Survey Books		Dimensions shown in except where shown otherwise	
	Revisions/Descriptions	Certification	Date	Microfilmed				
CAD FILES								

Reference Points				
Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
Through Chainage from THRUCH				

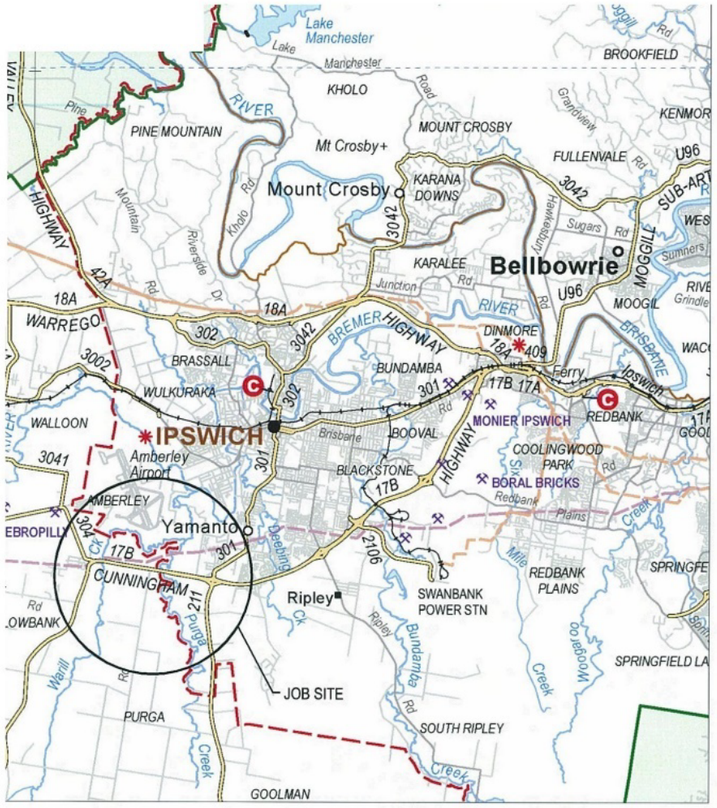
Drawn	ENGINEERING CERTIFICATION (RPEQ)				
	ENG. AREA	NAME	SIGNATURE	NO.	DATE
Designed					

Queensland Government

Job No.	
Contract. No.	
Drawing No.	
Series Number	NO. of OF
	MRR_Detail (02/14)

Figure 3.3(c) – Locality plan and drawing list – generic example 3

Department of Transport and Main Roads



LOCALITY MAP

SCHEME SUBMITTED *(External Consultants or Internal Business Unit)*:

In the effect of Section 115 of the Professional Engineers Act 2002, the professional engineering services in the areas of engineering required for this project have been carried out by or under the supervision of registered professional engineers who are registered under the Act in respect of the areas of engineering.
I also certify that the design meets the requirements of all relevant Department of Main Roads Qld – Policies, References, Standards, Planners and Designers Instructions, Codes of Practice, Guidelines, and Brief/Functional Specification/s.
By the signing of this statement I have deemed to certify all drawings in this contract as listed on this drawing index as being in accordance with the above.

SIGNED: TITLE:

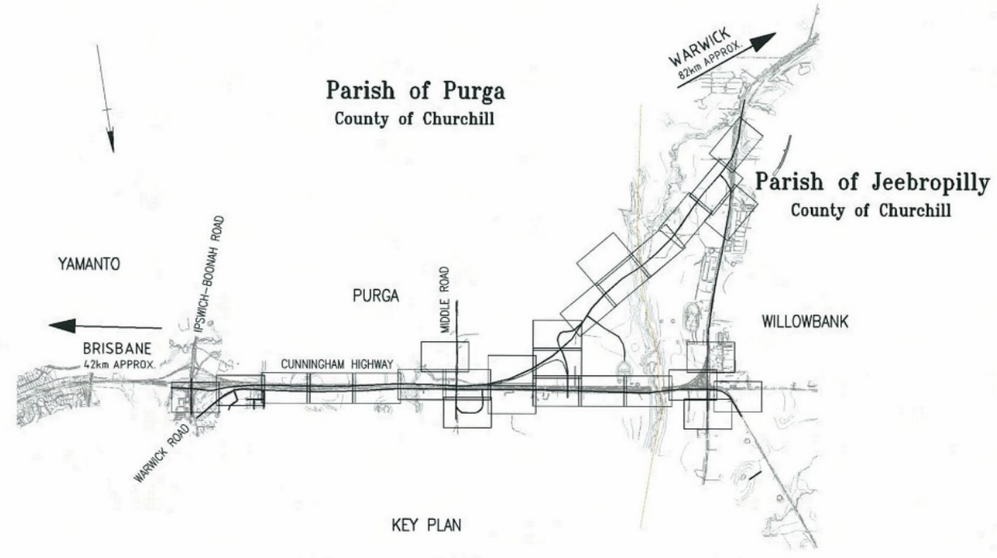
RPEQ No.: DATE:

SCHEME APPROVED: *(District Director or Delegate)*:

I hereby certify that the scheme complies with the intent of the relevant project on the Roads Program and the scheme is approved for release in accordance with that program.

SIGNED: TITLE: DATE:

CUNNINGHAM HIGHWAY
YAMANTO INTERCHANGE TO EBENEZER CREEK
Option 4B
Preliminary Design Drawings



KEY PLAN

					Associated Job Nos	Survey Data	Scales									Queensland Government	
						Datum										Job No.	
					Auxiliary Drg Nos	Horiz. Grid										Contract. No.	
						Height Origin		Reference Points					Drawn	ENGINEERING CERTIFICATION (RPEQ)					Drawing No.	
A	Issued For Construction					Survey Books	Dimensions shown in except where shown otherwise	Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP		ENG. AREA	NAME	SIGNATURE	NO.	DATE	Series Number	NO. of OF
	Revisions/Descriptions	Certification	Date	Microfilled				Through Chainage from THRUCH					Designed						MRR_Detail (02/14)
CAD FILES																			

Figure 3.3(d) – Locality plan and drawing list – generic example 4

Department of Transport and Main Roads

DRAWING INDEX

DWG. No.	DRAWING TITLE
4B_DI-00	COVER SHEET
4B_DI-01	DRAWING INDEX - SHEET 1 OF 3
4B_DI-02	DRAWING INDEX - SHEET 2 OF 3
4B_DI-03	DRAWING INDEX - SHEET 3 OF 3

TYPICAL CROSS SECTIONS AND DETAILS

DWG. No.	DRAWING TITLE
4B_TC-01	TYPICAL CROSS SECTIONS - SHEET 1 OF 18
4B_TC-02	TYPICAL CROSS SECTIONS - SHEET 2 OF 18
4B_TC-03	TYPICAL CROSS SECTIONS - SHEET 3 OF 18
4B_TC-04	TYPICAL CROSS SECTIONS - SHEET 4 OF 18
4B_TC-05	TYPICAL CROSS SECTIONS - SHEET 5 OF 18
4B_TC-06	TYPICAL CROSS SECTIONS - SHEET 6 OF 18
4B_TC-07	TYPICAL CROSS SECTIONS - SHEET 7 OF 18
4B_TC-08	TYPICAL CROSS SECTIONS - SHEET 8 OF 18
4B_TC-09	TYPICAL CROSS SECTIONS - SHEET 9 OF 18
4B_TC-10	TYPICAL CROSS SECTIONS - SHEET 10 OF 18
4B_TC-11	TYPICAL CROSS SECTIONS - SHEET 11 OF 18
4B_TC-12	TYPICAL CROSS SECTIONS - SHEET 12 OF 18
4B_TC-13	TYPICAL CROSS SECTIONS - SHEET 13 OF 18
4B_TC-14	TYPICAL CROSS SECTIONS - SHEET 14 OF 18
4B_TC-15	TYPICAL CROSS SECTIONS - SHEET 15 OF 18
4B_TC-16	TYPICAL CROSS SECTIONS - SHEET 16 OF 18
4B_TC-17	TYPICAL CROSS SECTIONS - SHEET 17 OF 18
4B_TC-18	TYPICAL CROSS SECTIONS - SHEET 18 OF 18

EXISTING FEATURES AND SERVICES

DWG. No.	DRAWING TITLE
4B_EF-00	EXISTING FEATURES AND SERVICES - KEY SHEET AND LEGEND
4B_EF-01	EXISTING FEATURES AND SERVICES - SHEET 1 OF 28
4B_EF-02	EXISTING FEATURES AND SERVICES - SHEET 2 OF 28
4B_EF-03	EXISTING FEATURES AND SERVICES - SHEET 3 OF 28
4B_EF-04	EXISTING FEATURES AND SERVICES - SHEET 4 OF 28
4B_EF-05	EXISTING FEATURES AND SERVICES - SHEET 5 OF 28
4B_EF-06	EXISTING FEATURES AND SERVICES - SHEET 6 OF 28
4B_EF-07	EXISTING FEATURES AND SERVICES - SHEET 7 OF 28
4B_EF-08	EXISTING FEATURES AND SERVICES - SHEET 8 OF 28

EXISTING FEATURES AND SERVICES CONTINUED

DWG. No.	DRAWING TITLE
4B_EF-09	EXISTING FEATURES AND SERVICES - SHEET 9 OF 28
4B_EF-10	EXISTING FEATURES AND SERVICES - SHEET 10 OF 28
4B_EF-11	EXISTING FEATURES AND SERVICES - SHEET 11 OF 28
4B_EF-12	EXISTING FEATURES AND SERVICES - SHEET 12 OF 28
4B_EF-13	EXISTING FEATURES AND SERVICES - SHEET 13 OF 28
4B_EF-14	EXISTING FEATURES AND SERVICES - SHEET 14 OF 28
4B_EF-15	EXISTING FEATURES AND SERVICES - SHEET 15 OF 28
4B_EF-16	EXISTING FEATURES AND SERVICES - SHEET 16 OF 28
4B_EF-17	EXISTING FEATURES AND SERVICES - SHEET 17 OF 28
4B_EF-18	EXISTING FEATURES AND SERVICES - SHEET 18 OF 28
4B_EF-19	EXISTING FEATURES AND SERVICES - SHEET 19 OF 28
4B_EF-20	EXISTING FEATURES AND SERVICES - SHEET 20 OF 28
4B_EF-21	EXISTING FEATURES AND SERVICES - SHEET 21 OF 28
4B_EF-22	EXISTING FEATURES AND SERVICES - SHEET 22 OF 28
4B_EF-23	EXISTING FEATURES AND SERVICES - SHEET 23 OF 28
4B_EF-24	EXISTING FEATURES AND SERVICES - SHEET 24 OF 28
4B_EF-25	EXISTING FEATURES AND SERVICES - SHEET 25 OF 28
4B_EF-26	EXISTING FEATURES AND SERVICES - SHEET 26 OF 28
4B_EF-27	EXISTING FEATURES AND SERVICES - SHEET 27 OF 28
4B_EF-28	EXISTING FEATURES AND SERVICES - SHEET 28 OF 28
4B_EF-29	POTHOLE LOCATIONS AND INFORMATION

GENERAL ARRANGEMENT LAYOUT

DWG. No.	DRAWING TITLE
4B_GA-00	GENERAL ARRANGEMENT LAYOUT - KEY SHEET AND LEGEND
4B_GA-01	GENERAL ARRANGEMENT LAYOUT - SHEET 1 OF 28
4B_GA-02	GENERAL ARRANGEMENT LAYOUT - SHEET 2 OF 28
4B_GA-03	GENERAL ARRANGEMENT LAYOUT - SHEET 3 OF 28
4B_GA-04	GENERAL ARRANGEMENT LAYOUT - SHEET 4 OF 28
4B_GA-05	GENERAL ARRANGEMENT LAYOUT - SHEET 5 OF 28
4B_GA-06	GENERAL ARRANGEMENT LAYOUT - SHEET 6 OF 28
4B_GA-07	GENERAL ARRANGEMENT LAYOUT - SHEET 7 OF 28
4B_GA-08	GENERAL ARRANGEMENT LAYOUT - SHEET 8 OF 28
4B_GA-09	GENERAL ARRANGEMENT LAYOUT - SHEET 9 OF 28
4B_GA-10	GENERAL ARRANGEMENT LAYOUT - SHEET 10 OF 28
4B_GA-11	GENERAL ARRANGEMENT LAYOUT - SHEET 11 OF 28
4B_GA-12	GENERAL ARRANGEMENT LAYOUT - SHEET 12 OF 28
4B_GA-13	GENERAL ARRANGEMENT LAYOUT - SHEET 13 OF 28
4B_GA-14	GENERAL ARRANGEMENT LAYOUT - SHEET 14 OF 28
4B_GA-15	GENERAL ARRANGEMENT LAYOUT - SHEET 15 OF 28
4B_GA-16	GENERAL ARRANGEMENT LAYOUT - SHEET 16 OF 28

GENERAL ARRANGEMENT LAYOUT CONTINUED

DWG. No.	DRAWING TITLE
4B_GA-17	GENERAL ARRANGEMENT LAYOUT - SHEET 17 OF 28
4B_GA-18	GENERAL ARRANGEMENT LAYOUT - SHEET 18 OF 28
4B_GA-19	GENERAL ARRANGEMENT LAYOUT - SHEET 19 OF 28
4B_GA-20	GENERAL ARRANGEMENT LAYOUT - SHEET 20 OF 28
4B_GA-21	GENERAL ARRANGEMENT LAYOUT - SHEET 21 OF 28
4B_GA-22	GENERAL ARRANGEMENT LAYOUT - SHEET 22 OF 28
4B_GA-23	GENERAL ARRANGEMENT LAYOUT - SHEET 23 OF 28
4B_GA-24	GENERAL ARRANGEMENT LAYOUT - SHEET 24 OF 28
4B_GA-25	GENERAL ARRANGEMENT LAYOUT - SHEET 25 OF 28
4B_GA-26	GENERAL ARRANGEMENT LAYOUT - SHEET 26 OF 28
4B_GA-27	GENERAL ARRANGEMENT LAYOUT - SHEET 27 OF 28
4B_GA-28	GENERAL ARRANGEMENT LAYOUT - SHEET 28 OF 28

PLANNING LAYOUTS

DWG. No.	DRAWING TITLE
4B_PL-00	KEY SHEET AND LEGEND
4B_PL-01	PLANNING LAYOUT - SHEET 1 OF 28
4B_PL-02	PLANNING LAYOUT - SHEET 2 OF 28
4B_PL-03	PLANNING LAYOUT - SHEET 3 OF 28
4B_PL-04	PLANNING LAYOUT - SHEET 4 OF 28
4B_PL-05	PLANNING LAYOUT - SHEET 5 OF 28
4B_PL-06	PLANNING LAYOUT - SHEET 6 OF 28
4B_PL-07	PLANNING LAYOUT - SHEET 7 OF 28
4B_PL-08	PLANNING LAYOUT - SHEET 8 OF 28
4B_PL-09	PLANNING LAYOUT - SHEET 9 OF 28
4B_PL-10	PLANNING LAYOUT - SHEET 10 OF 28
4B_PL-11	PLANNING LAYOUT - SHEET 11 OF 28
4B_PL-12	PLANNING LAYOUT - SHEET 12 OF 28
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4B_PL-15	PLANNING LAYOUT - SHEET 15 OF 28
4B_PL-16	PLANNING LAYOUT - SHEET 16 OF 28
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4B_PL-18	PLANNING LAYOUT - SHEET 18 OF 28
4B_PL-19	PLANNING LAYOUT - SHEET 19 OF 28
4B_PL-20	PLANNING LAYOUT - SHEET 20 OF 28
4B_PL-21	PLANNING LAYOUT - SHEET 21 OF 28
4B_PL-22	PLANNING LAYOUT - SHEET 22 OF 28
4B_PL-23	PLANNING LAYOUT - SHEET 23 OF 28
4B_PL-24	PLANNING LAYOUT - SHEET 24 OF 28
4B_PL-25	PLANNING LAYOUT - SHEET 25 OF 28
4B_PL-26	PLANNING LAYOUT - SHEET 26 OF 28
4B_PL-27	PLANNING LAYOUT - SHEET 27 OF 28
4B_PL-28	PLANNING LAYOUT - SHEET 28 OF 28

Last Modified: Sep 15, 2014 - 4:30pm

A	Issued For Construction			
	Revisions/Descriptions	Certification	Date	Microfiled

Associated Job Nos

Auxiliary Drg Nos

Survey Data: Datum; Horiz. Grid; Height Origin; Survey Books

Scales

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP; Dist. to start of job (km); From start to end of job; From end to Following RP; Following RP

Through Chainage from

Drawn

Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA; NAME; SIGNATURE; NO.; DATE

Queensland Government

Job No.

Contract. No.

Drawing No. A

Series Number of

MRR_Detail (02/14)

CAD FILES F:\Jobs\814000\814068\Standards Plans Clint\3. Rural Projects\1. Locality Plan and Drawing List\97.dwg

Figure 3.3(e) – Locality plan and drawing list – registered example 1

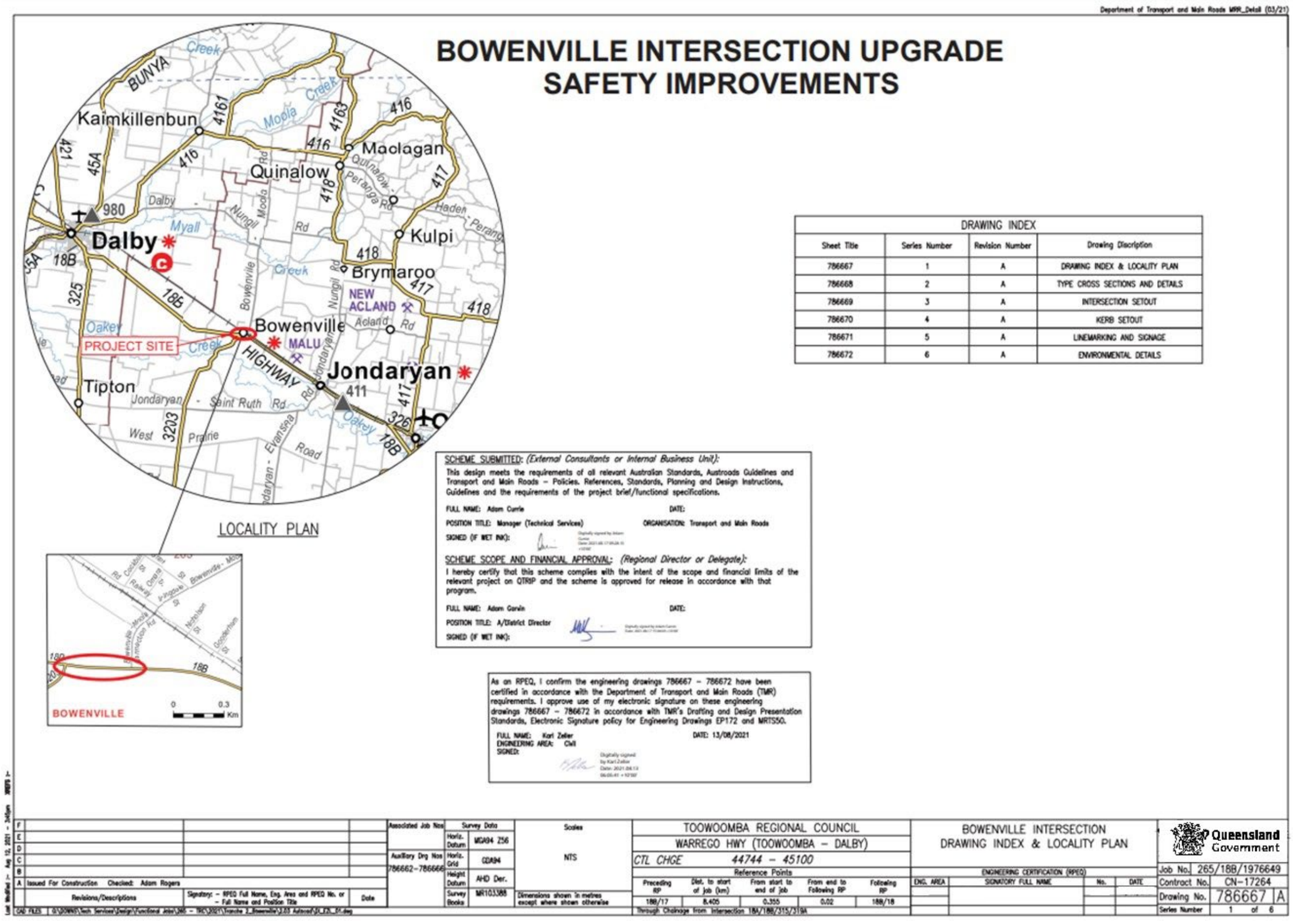
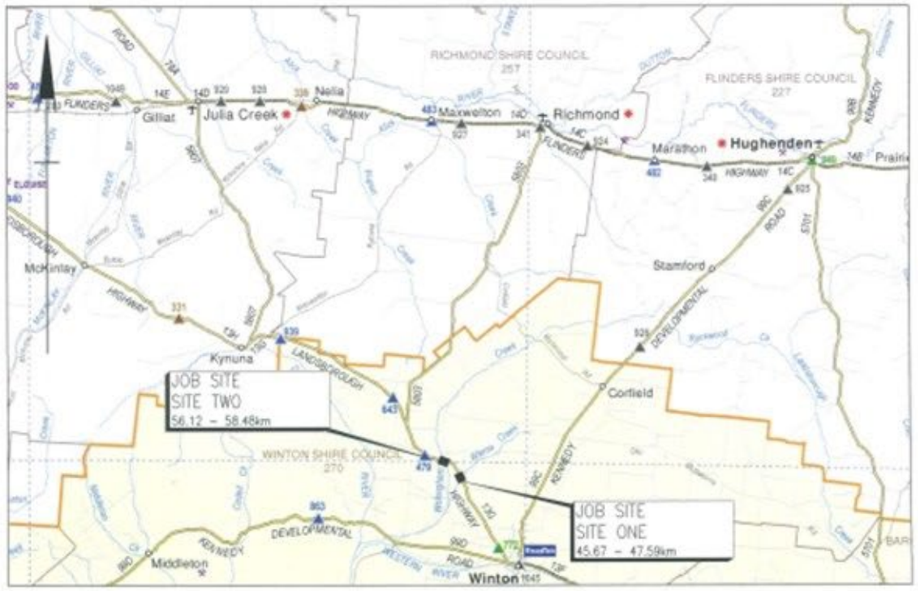


Figure 3.3(f) – Locality plan and drawing list – registered example 2

LANDSBOROUGH HIGHWAY - PAVEMENT REHABILITATION WORKS



LOCALITY PLAN
N.T.S.

DRAWING LIST

Drawing Number	Rev	Series Number	Drawing Description
783419	A	DI–01 of 01	DRAWING LIST, LOCALITY PLAN AND SIGNATURE BLOCK
783420	A	TC–101 of 01	TYPICAL CROSS SECTIONS
783421	A	WP–101 of 04	SITE 1 WORKING PLAN SHEET 1 OF 4
783422	A	WP–102 of 04	SITE 1 WORKING PLAN SHEET 2 OF 4
783423	A	WP–103 of 04	SITE 1 WORKING PLAN SHEET 3 OF 4
783424	A	WP–104 of 04	SITE 1 WORKING PLAN SHEET 4 OF 4
783425	A	WP–201 of 04	SITE 2 WORKING PLAN SHEET 1 OF 4
783426	A	WP–202 of 04	SITE 2 WORKING PLAN SHEET 2 OF 4
783427	A	WP–203 of 04	SITE 2 WORKING PLAN SHEET 3 OF 4
783428	A	WP–204 of 04	SITE 2 WORKING PLAN SHEET 4 OF 4
783429	A	DD–CS–101 of 01	SITE 1 DRAINAGE CROSS SECTIONS
783430	A	DD–CS–201 of 01	SITE 2 DRAINAGE CROSS SECTIONS
783431	A	MD–101 of 01	DRAINAGE DETAILS
XA–101 of 08	A	XA–101 of 08	SITE 1 ANNOTATED CROSS SECTIONS (8 SHEETS)
XA–201 of 13	A	XA–201 of 13	SITE 2 ANNOTATED CROSS SECTIONS (13 SHEETS)

TOTAL NUMBER OF DRAWINGS = 13
NOTE: ANNOTATED SECTIONS PROVIDED FOR INFORMATION ONLY

SIGNATURE BLOCK

SCHEME SUBMITTED *(External Consultants or Internal Business Unit)*:

This design meets the requirements of all the relevant Australian Standards, Austroads Guidelines and Transport and Main Roads – Policies, References, Standards, Planning and Design Instructions, Guidelines and the requirements of the project brief/functional specifications.

SIGNED: TITLE:

ORGANISATION: DATE:

SCHEME SCOPE AND FINANCIAL APPROVAL: *(Regional Director or Delegate)*:

I hereby certify that the scheme complies with the intent of the scope and financial limits of the relevant project on QTRIP and the scheme is approved for release in accordance with that program.

SIGNED: TITLE: DATE:

Associated Job Nos:
Auxiliary Drg Nos: 783419–783431
Survey Data: Horiz. Datum: GDA94; Horiz. Grid: MGA94 Zone 54; Height Datum: AHD Derived; Survey Books: MR102709, MR102710
Scales: NTS
Dimensions shown in metres except where shown otherwise

WINTON SHIRE COUNCIL (270)
LANDSBOROUGH HIGHWAY (WINTON–KYNUNA) (13G)
CTL CHGE 45673 – 58489.8 (IN SECTIONS)

Reference Points				
Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
3	21.25	12.8	23.13	6

through Chainage from RP 13F/13G/98C 45.67 – 58.48km (IN SECTIONS)

DRAWING LIST, LOCALITY PLAN AND SIGNATURE BLOCK

Drawn:
Designed:
ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | No. | DATE

Queensland Government

Job No.: 270/13G/1584687
Contract No.: CN–14017
Drawing No.: 783419 A
Series Number: DI–101 of 01

A Issued for Construction
Revisions/Descriptions | Name or RPEQ No. | Signature | Date
CAD FILES: C:\users\...

3.4 Type cross sections / typical cross sections

A type cross section details the nominal cross section profile of the road (it represents the standard on a straight and delivers consistency of profile). A project may have more than one type cross section to cover different requirements, for example: “A - Roadway Excavation and Embankment”, “B - Floodway Formation”. There may also be more than one Roadway Excavation and Embankment type in a project, for example: “A - Roadway Excavation and Embankment” and “B - Roadway Excavation and Embankment”.

The type cross section approach is the standard method for presenting most rural road designs and they can also be used for less complex projects (e.g., NDRRA reconstruction works). Type cross sections can be used for construction rather than having to produce annotated cross sections supplemented by typical cross sections that are intended to help gain an appreciation of the complexity of the works.

Type cross sections must be supplemented with Working Plans which detail the variations to the cross section profile with respect to aspects such as:

- Roadway width variations (pavement and shoulders incl. details of tapers as relevant) due to curve widening, restricted visibility widening, manoeuvre widening, berms for slope stability, benching for sight lines in cuttings, safety barrier installations, tapers to bridges, railway / light rail crossings, widening of table drains to achieve required table drain longitudinal slope, etc.
- Roadway cross fall variations (pavement and shoulders) due to curve superelevation, transitioning to bridges, railway / light rail crossings, cross fall variations to manage road surface drainage, pavement types and depths, shoulder types and depths, etc.
- Roadway special treatments such as subsoil drains, pavement markings, etc.

Typical cross sections are actual project cross sections representing design details to be adopted at particular locations and possibly in like situations if there is no separate typical cross section. These drawings identify the project extents in cross section form. The typical cross section drawings may contain additional details which are relevant to the cross section profile, for example pavement tie-ins, kerb details and so on. Typical cross section drawings are generally required for complex projects where there are considerable cross sectional changes throughout the job and where individual interval annotated cross sections are needed to construct the project works (regardless of if the job is built from the three dimensional 12D model of from individual annotated cross sections).

Considerations

Type / typical cross sections

- Scale – select scale to adequately show detail and fit page
- Show fully dimensioned type / typical cross sections
- Label traffic lanes, auxiliary lanes, shoulders, and so on
- Show edge drainage treatments – K&C, table drains, swales
- Show median treatments
- Show roadside barrier treatments
- Show verge rounding

- Show fencing location – boundary fence, noise barriers
- Identify existing and proposed boundaries
- Show cut / fill slopes
- Identify subsoil pavement drainage
- Show relative location of control lines
- Use various type / typical sections as necessary to cover alternative treatments throughout the project
- Identify the extent over which each type / typical cross section applies

Pavement details

For small projects where the full set of drawings for the job does not include a separate set of drawings for pavements (i.e., specific pavement design drawings package is not provided), then show the following on the first Type / Typical Cross Section sheet:

1. show traffic data and projected ESAs for design year
2. show CBR of subgrade used in the pavement design, and
3. identify details of pavement layers (if not shown elsewhere).

Generally, the majority of pavement details should be shown in a separate set of pavement drawings (refer Section 3.10 *Pavement Details*) and the above requirements should be applied to those pavement drawings in preference to type / typical cross sections in order to keep all relevant pavement information together.

Notes

- Include notes and legends as necessary to clearly explain all details necessary to ensure correct interpretation of the design.

Figure 3.4(a) – Type cross sections – generic example 1 – Sheet 1 of 2

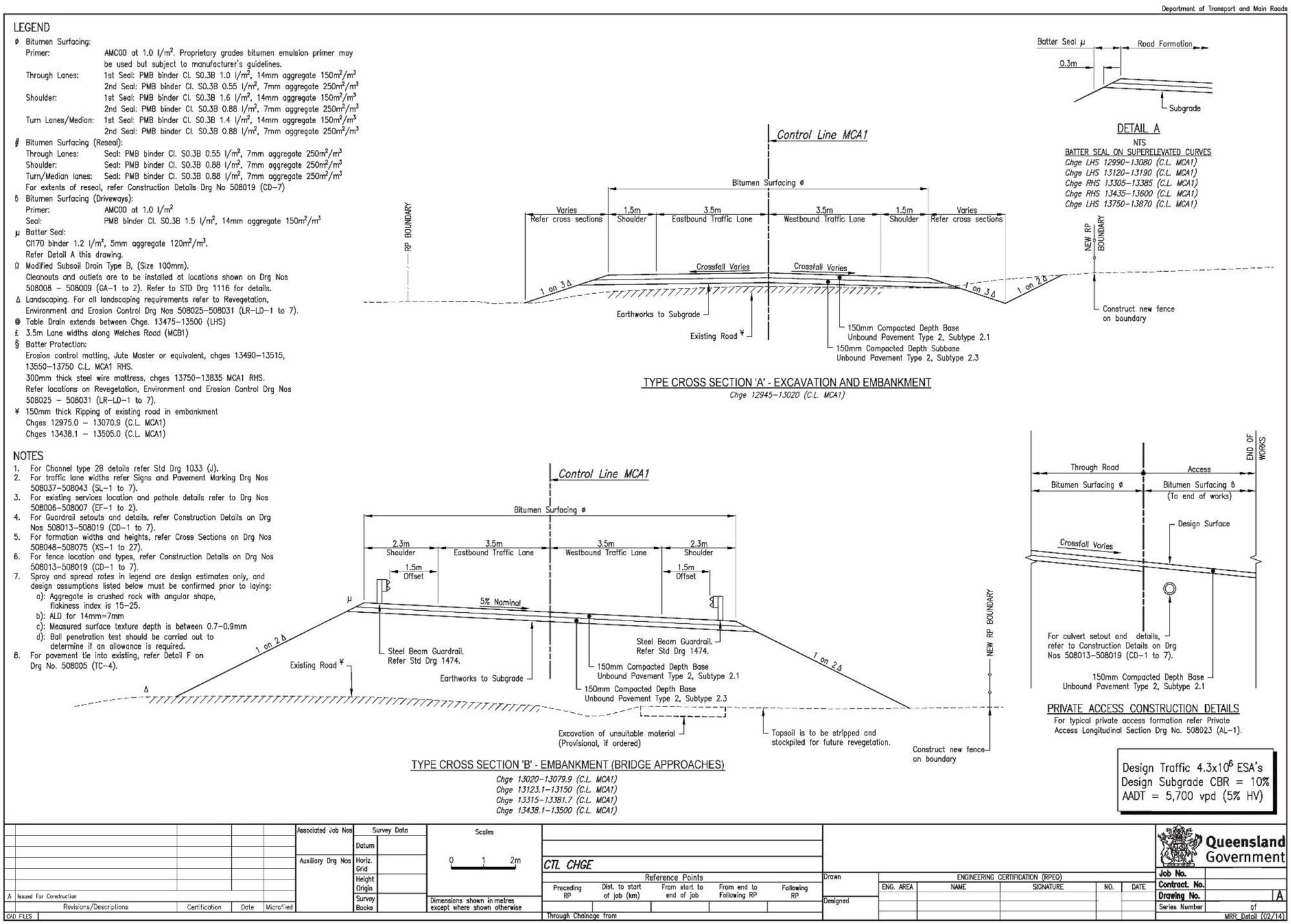


Figure 3.4(b) – Type cross sections – generic example 1 – Sheet 2 of 2

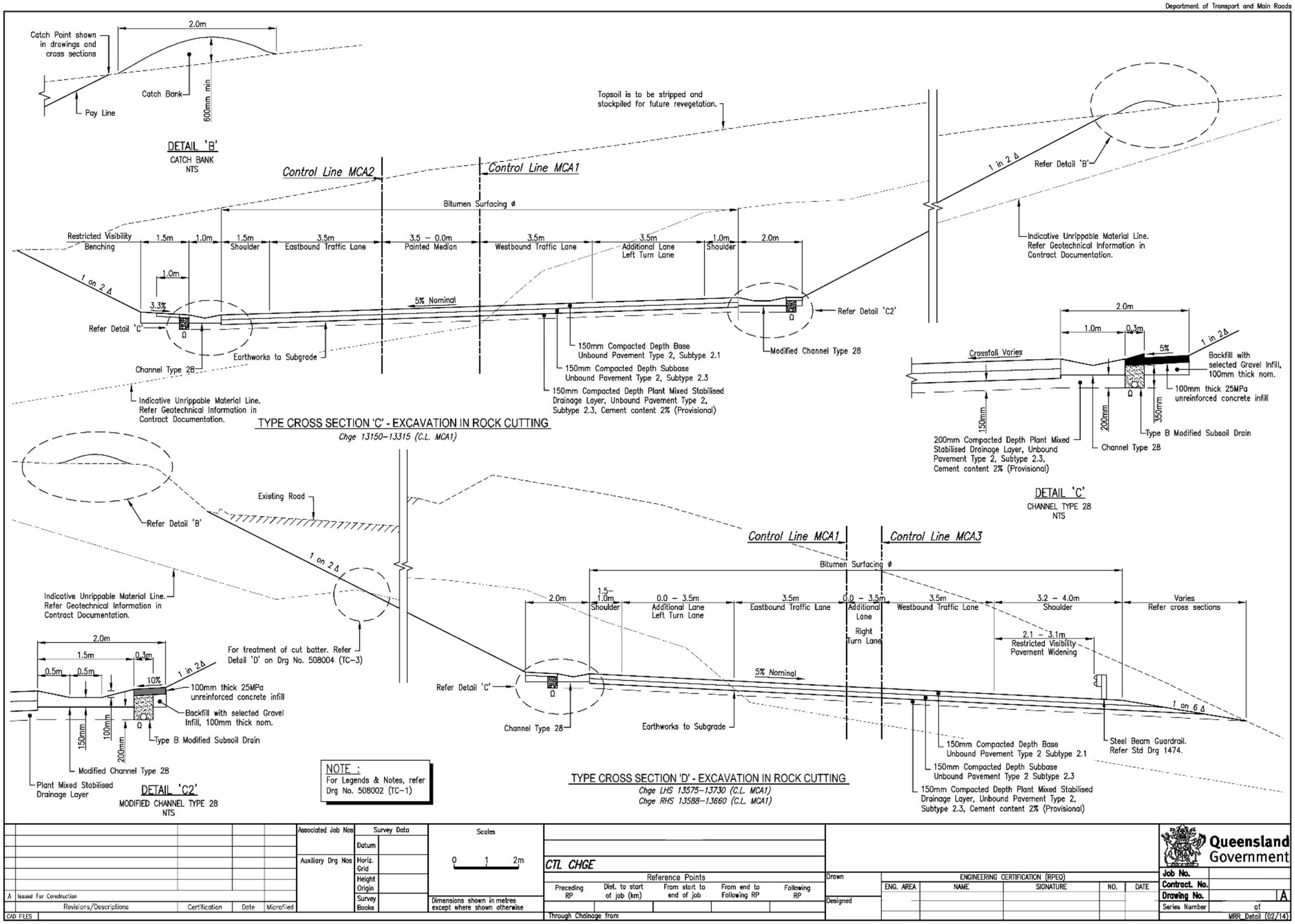


Figure 3.4(c) – Type cross sections – generic example 2

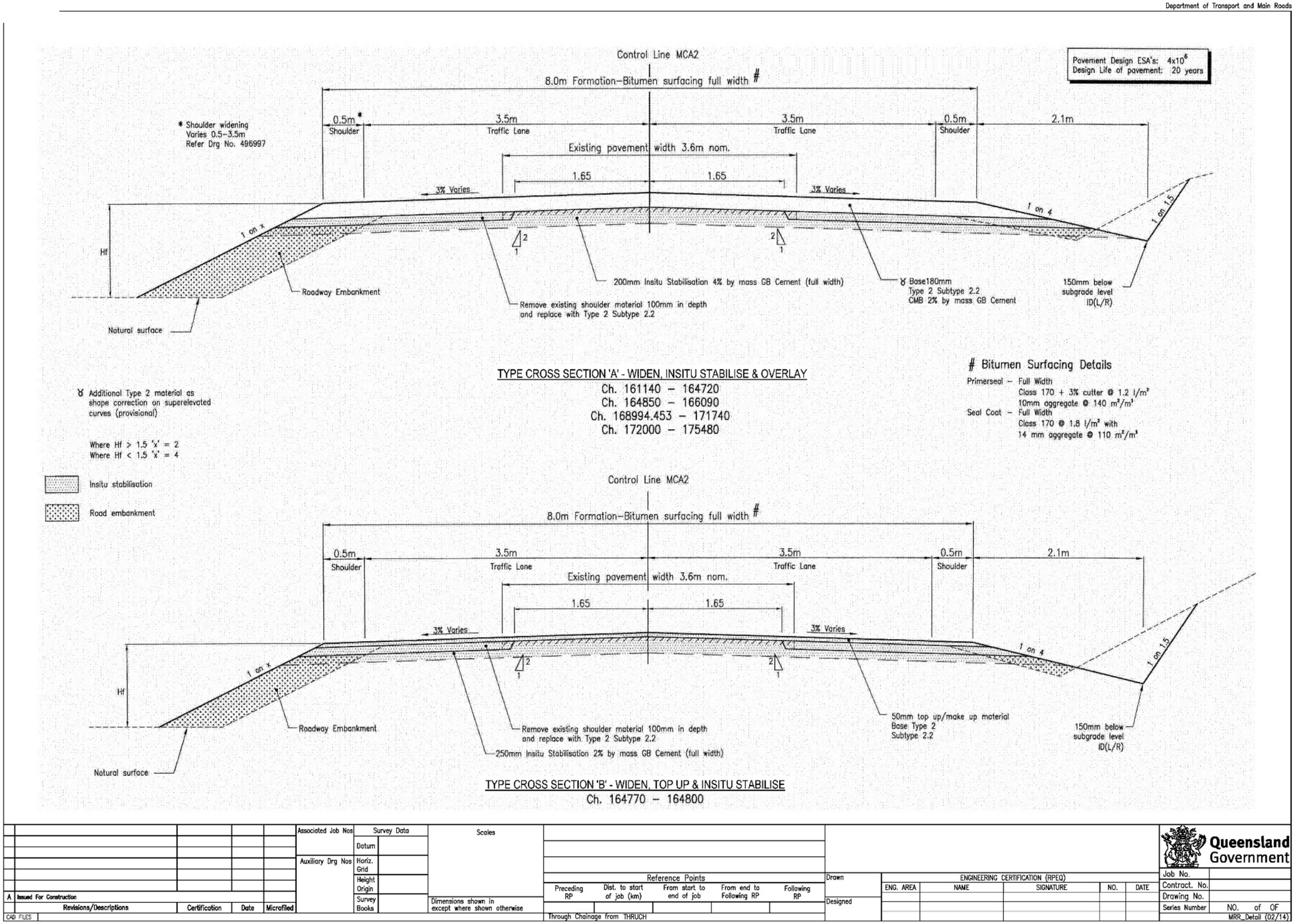


Figure 3.4(d) – Type cross sections – generic example 3

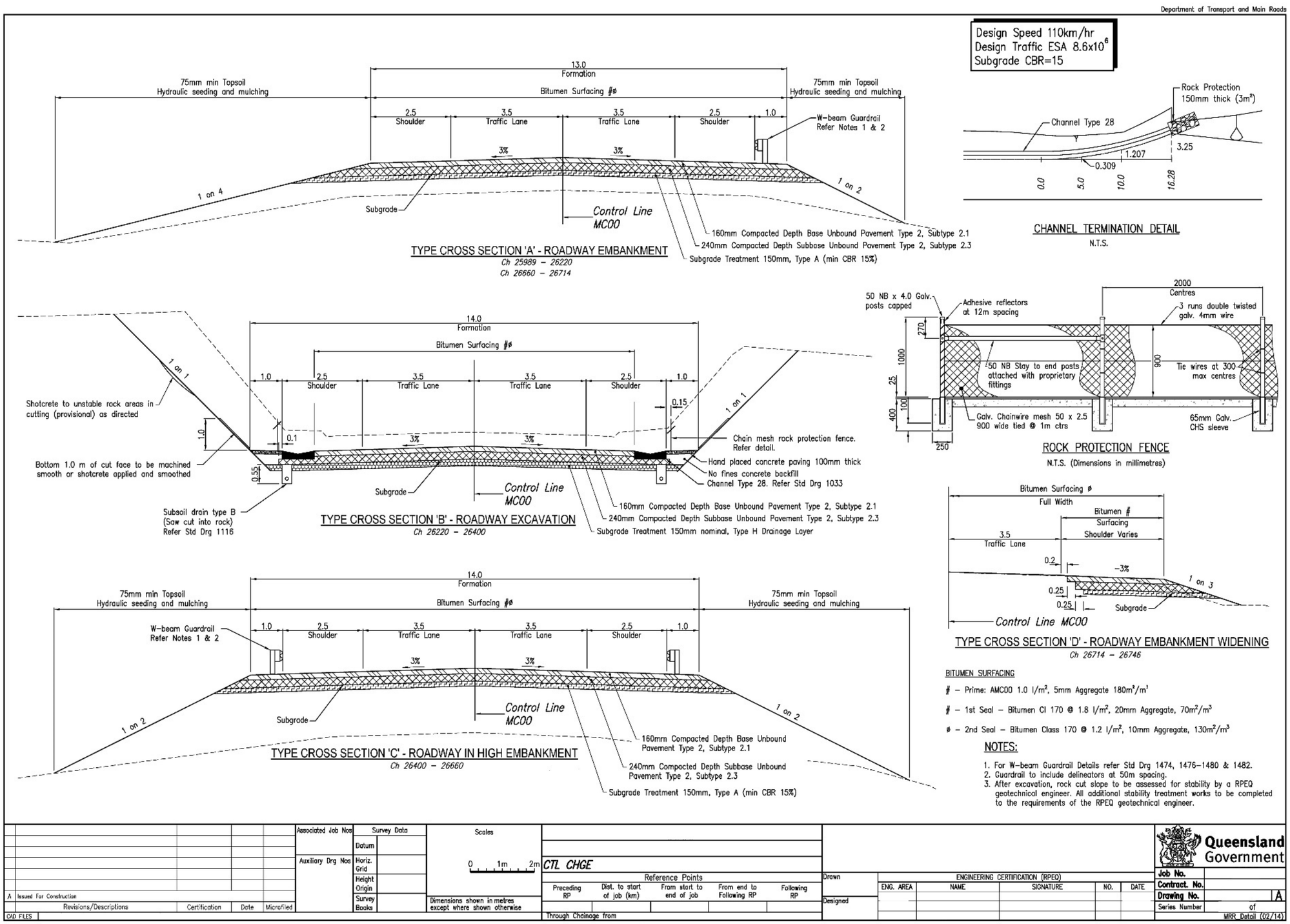


Figure 3.4(e) – Typical cross sections – generic example 1

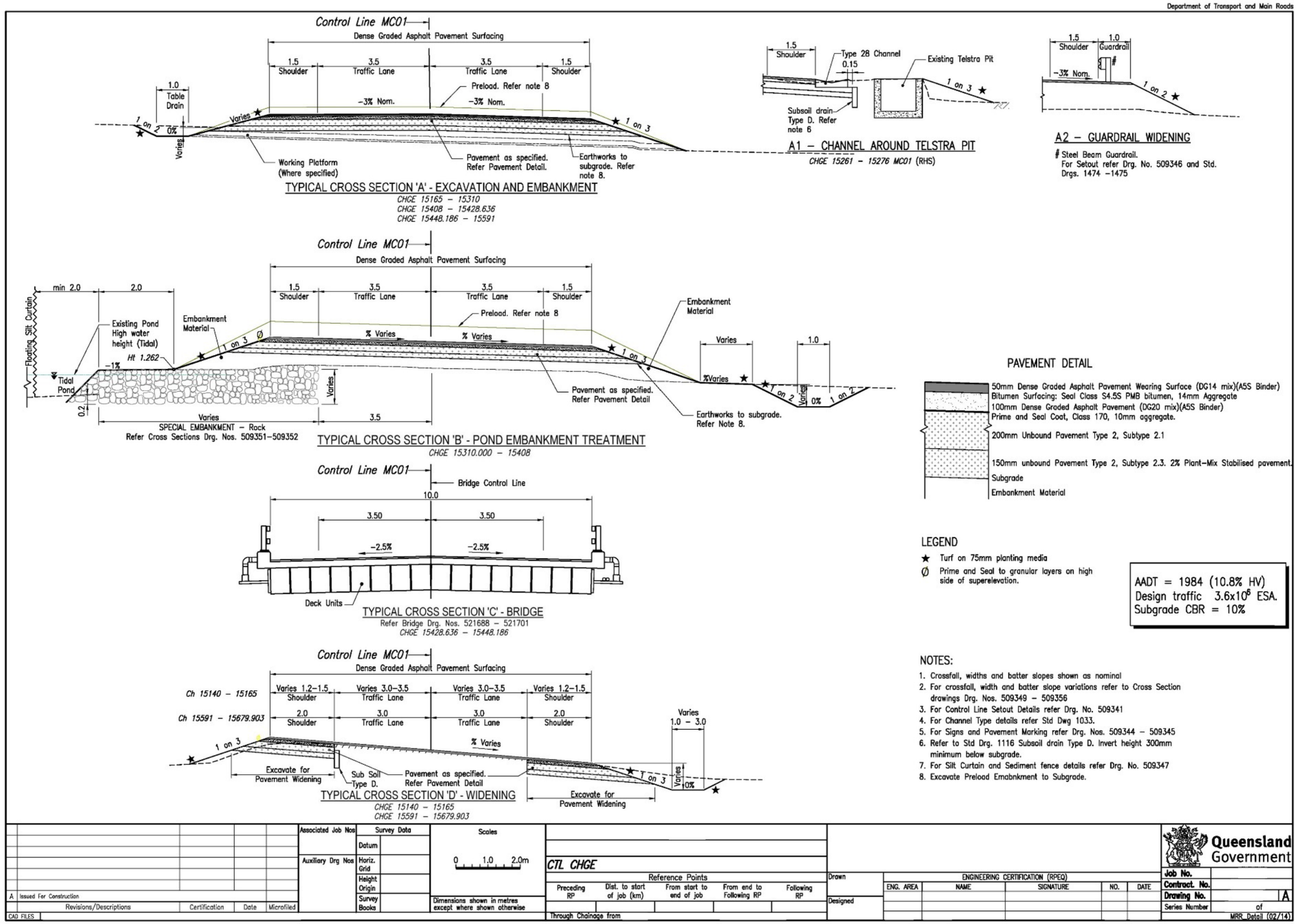


Figure 3.4(f) – Typical cross sections – generic example 2

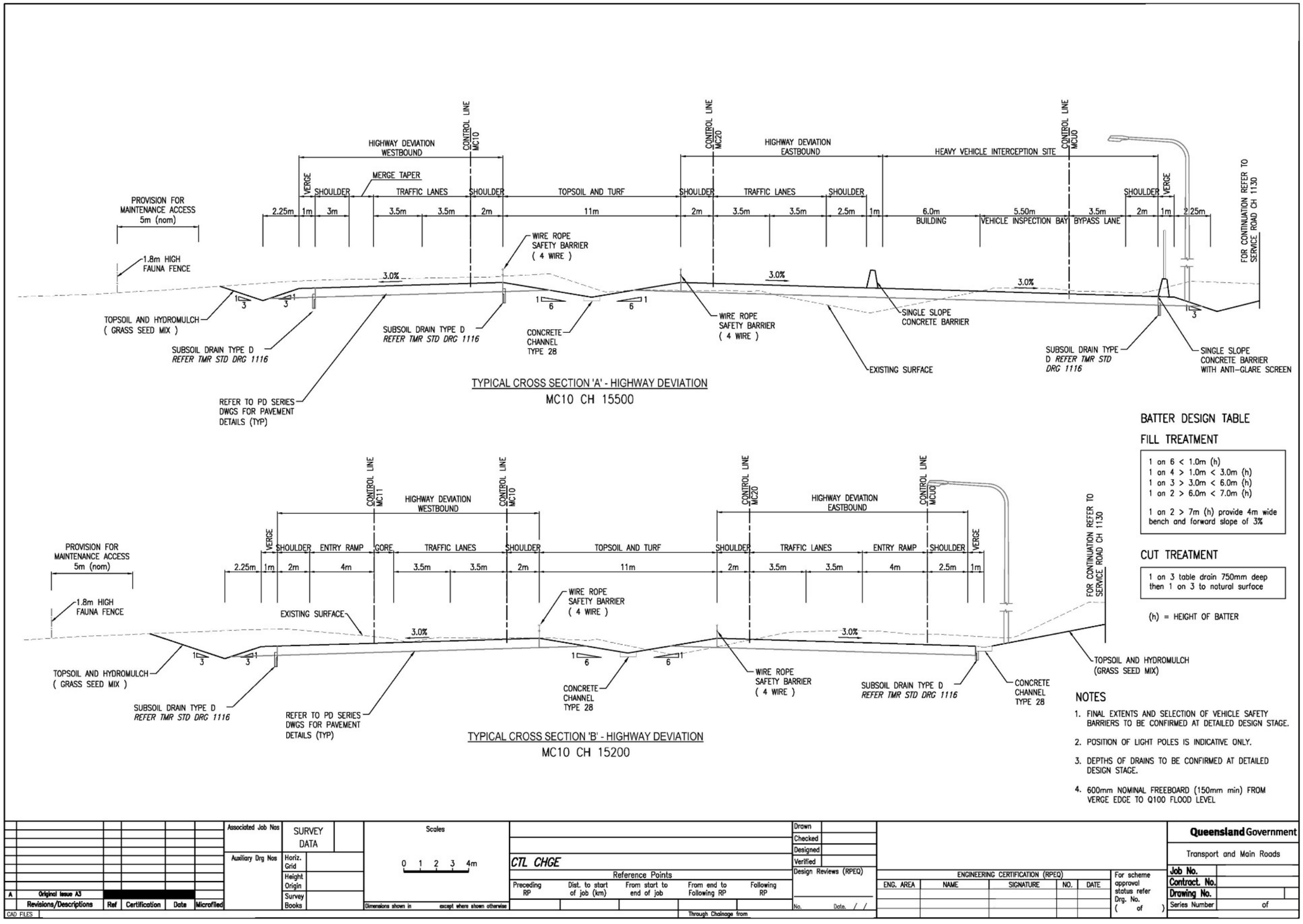


Figure 3.4(g) – Typical cross sections – registered example 1

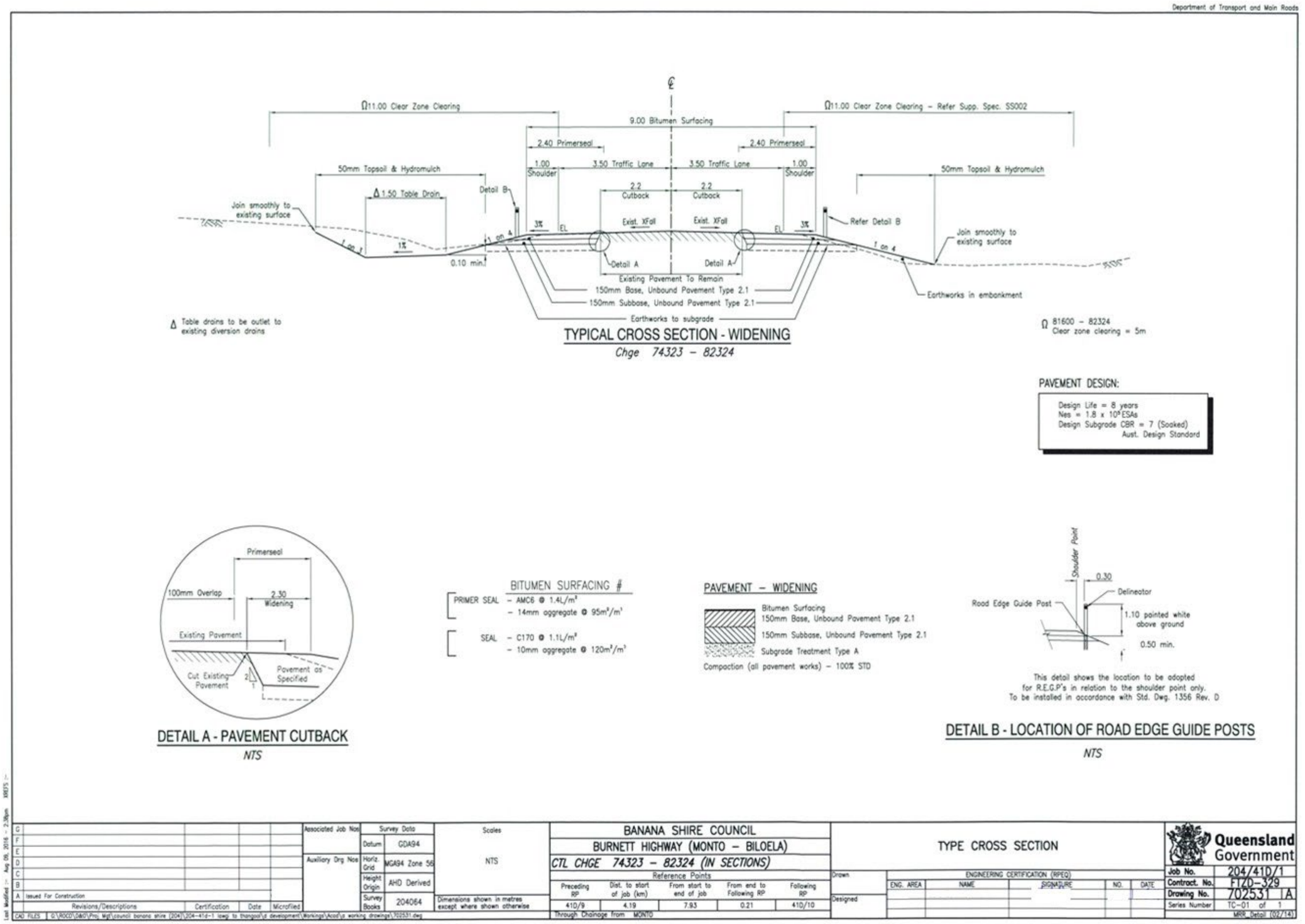


Figure 3.4(h) – Type cross sections – registered example 2

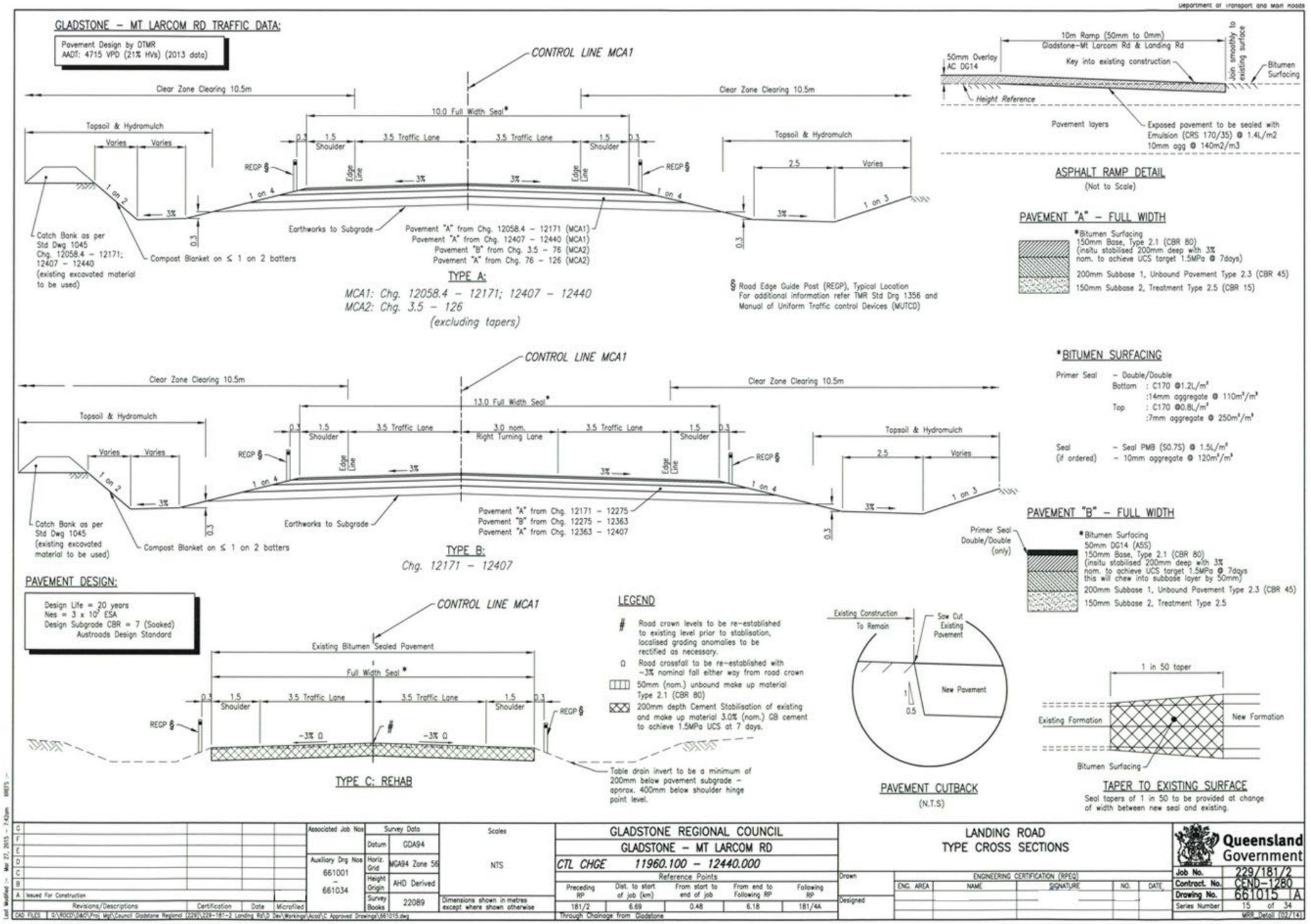
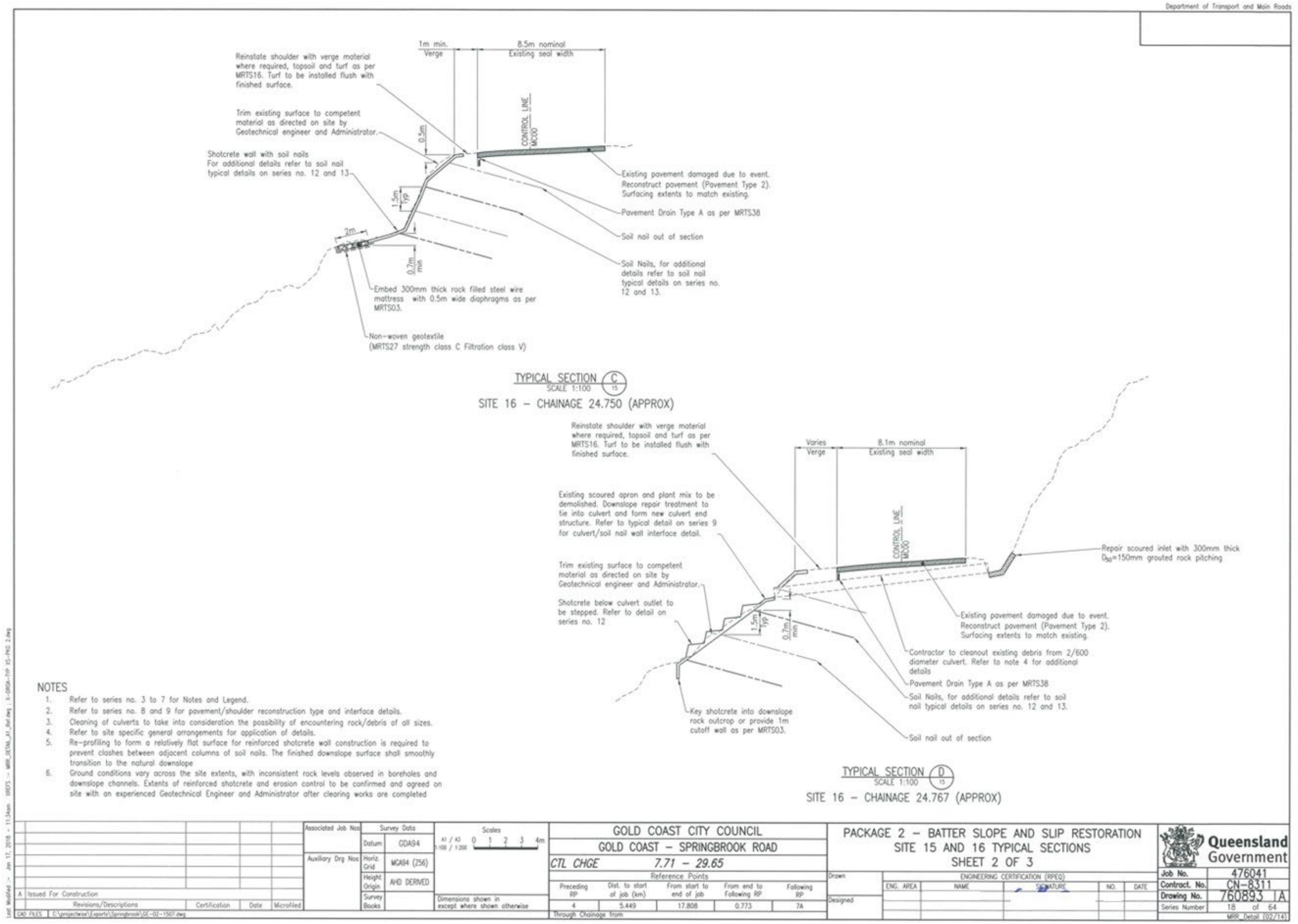


Figure 3.4(i) – Type cross sections – registered example 3



3.5 Existing features / Public Utility Plant (PUP)

The existing features drawing shows features such as the existing survey and topography, buildings, roadway infrastructure, and PUP. This is overlaid with the proposed roadway layout to assist in wholistically representing the project

For complex projects where there are substantial potential service conflicts and relocation of services are likely to be convoluted then a separate set of PUP drawings will be required. This may be more likely in confined brownfield urban situations.

3.5.1 Existing Features

Considerations

Scale

- Typically, 1:250 at A1/1:500 at A3, or 1:500 at A1/1:1000 at A3 to clearly enable visualisation without excessive clutter which may introduce misinterpretation of content.

Background

- Surveyed features showing existing roadway, accesses, buildings, accesses and public utility services

Drawing

- Show proposed roadway layout including K&C, medians, islands, urban borders, structures and road furniture
- Show transition details to the existing road infrastructure
- Show property and road reserve boundaries (usually in red ink)

Services

- Show existing public utility plant services, if not too complex with excessive detail at scale, otherwise show separate drawings. The positions of services are generally shown for guidance only and locations may not be accurately represented on the drawings as other services may be present on site that are not yet located. Therefore, designers should note on the drawings that it is the responsibility of the contractor / constructor to verify the additional and actual positions of all services on site.
- Show PUP potholing information (actual / collected) if available – refer to Figures 3.5(a), 3.5(b) and 3.5(c) in the DDPSM Volume 2, Part 2 – *Development Phase Drawings*.
- If proposed PUP is not too complex then it may be appropriate to include proposed relocation of services on this drawing, otherwise show on separate potholing drawings for example.
- If there are potential other services suspected, and not identified by service authorities, within close proximity of proposed works they may be shown in approximate locations and highlighted for awareness only subject to further investigation during construction.

Figure 3.5(a) – Existing features plan with PUP potholing information – generic example sheet 1 of 3

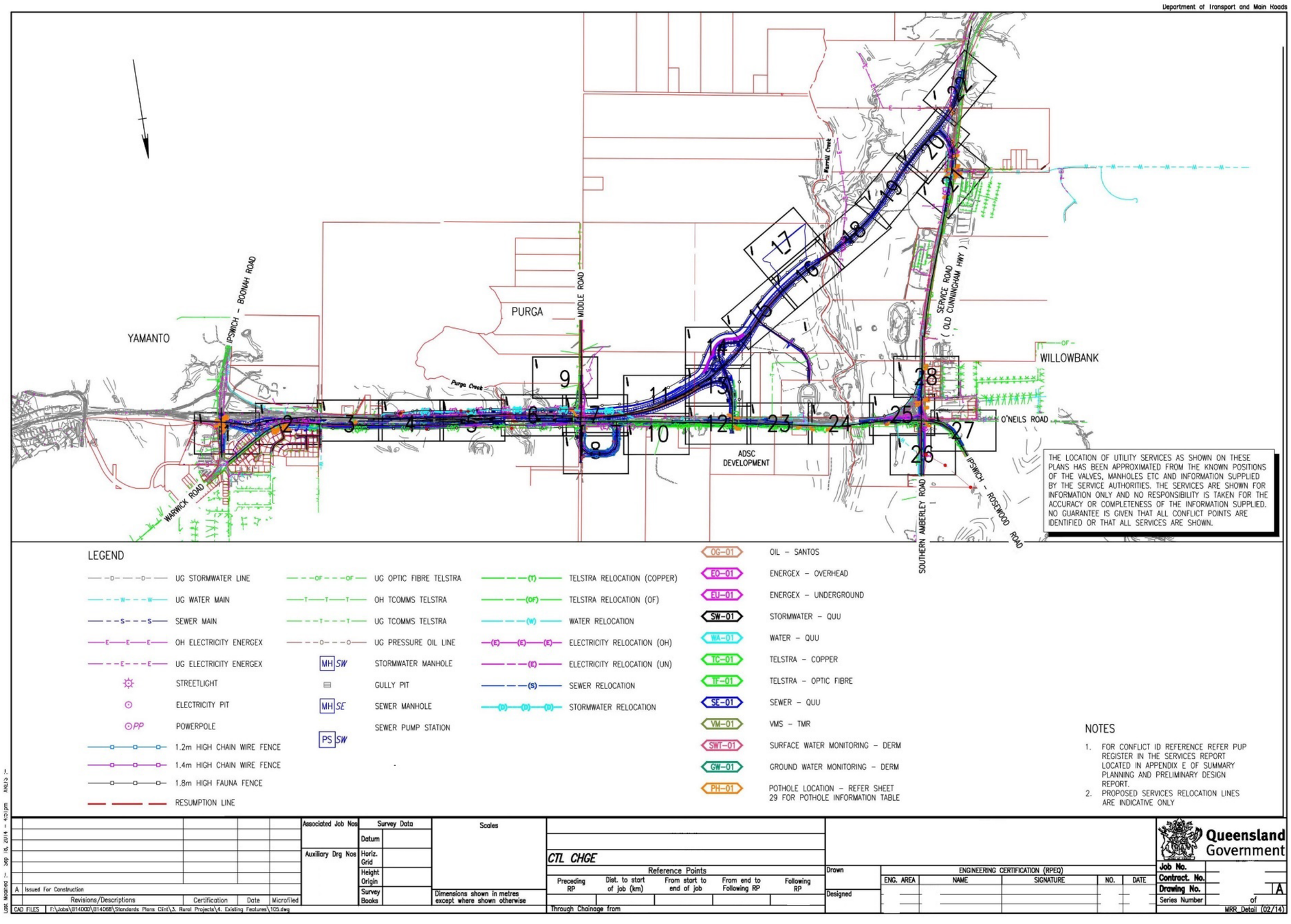


Figure 3.5(b) – Existing features plan with PUP potholing information – generic example sheet 2 of 3

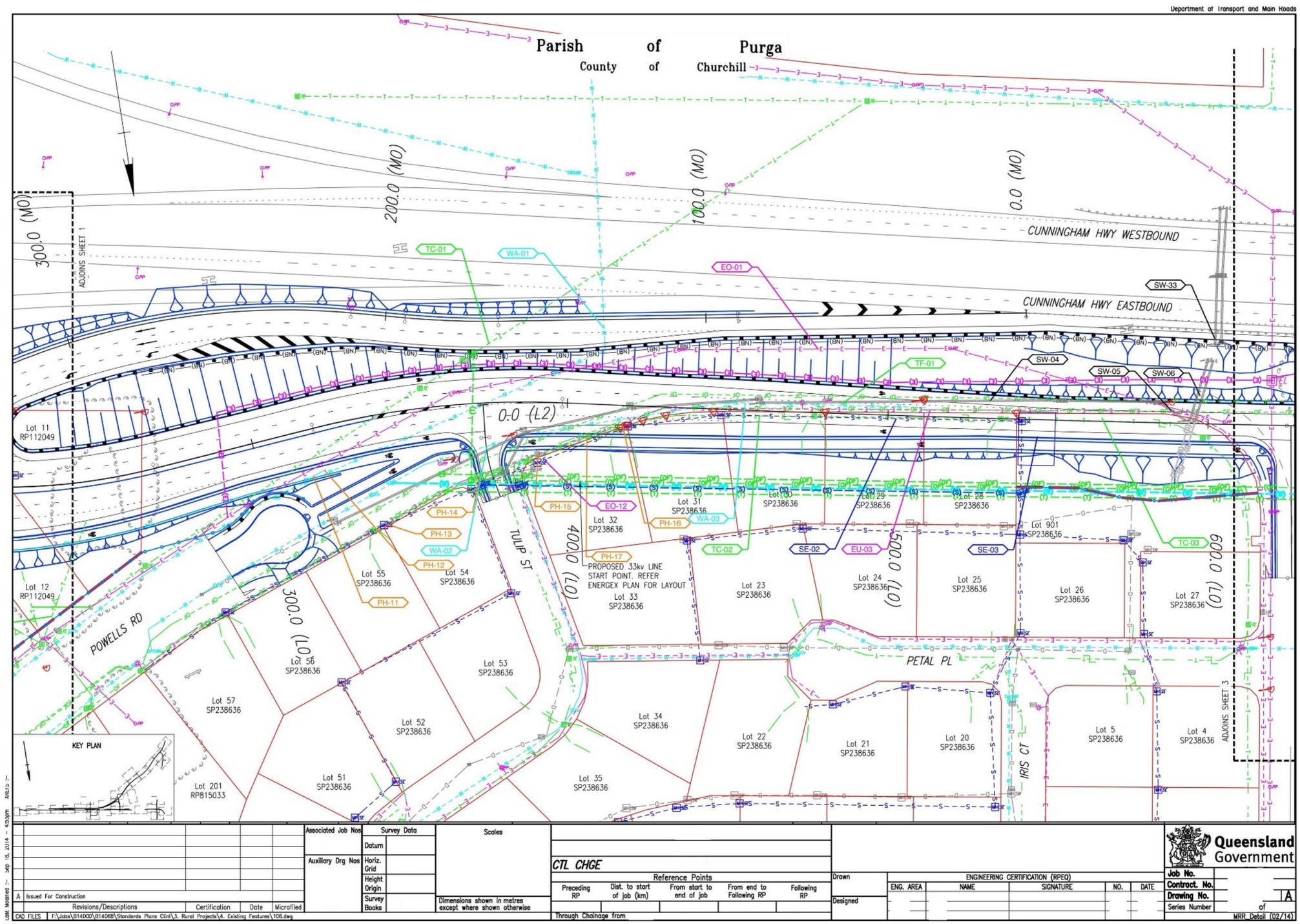


Figure 3.5(c) – Existing features plan with PUP potholing information – generic example sheet 3 of 3

Department of Transport and Main Roads

POTHOLE INFORMATION

NO.	PLAN REF NO.	EASTING	NORTHING	DEPTH/HEIGHT	SERVICE DESCRIPTION
PH-01	4B_EF-01	474226.694	6940131.655	46.580	ENERGEX PIT 650x350
PH-02	4B_EF-01	474223.832	6940104.305	45.789	ENERGEX PIT 500x270
PH-03	4B_EF-01			VARIES	P80 STREET LIGHTING ENERGEX CABLE
PH-04	4B_EF-01	474219.379	6940067.112	44.767	ENERGEX PIT 650x350
PH-05	4B_EF-01	474217.653	6940064.708	44.711	ENERGEX PIT 600DIA LID
PH-06	4B_EF-01			VARIES	2xP125 STREET LIGHTING ENERGEX CABLE
PH-07	4B_EF-01	474202.703	6940066.969	44.369	ENERGEX PIT 650DIA LID
PH-08	4B_EF-01	474201.016	6940057.714	44.094	ENERGEX PIT
PH-09	4B_EF-01	474199.570	6940048.007	43.782	ENERGEX PIT
PH-10	4B_EF-01	474198.261	6940035.589	43.632	ENERGEX PIT 650DIA LID
PH-11	4B_EF-02	473906.446	6940140.665	52.368	WATER VALVE
PH-12	4B_EF-02	473902.758	6940139.413	52.332	FIRE HYDRANT
PH-13	4B_EF-02	473886.262	6940158.917	53.346	TELSTRA PIT 650x350
PH-14	4B_EF-02			VARIES	P100 TELSTRA CABLE
PH-15	4B_EF-02	473836.080	6940144.751	49.726	TELSTRA PIT 1300x500
PH-16	4B_EF-02	473808.609	6940139.715	48.363	TELSTRA PIT 650X 350
PH-17	4B_EF-02			VARIES	P50 TELSTRA CABLE
PH-18	4B_EF-03	473390.488	6940211.255	48.559	TELSTRA UTILITY
PH-19	4B_EF-04	473092.190	6940194.965	43.872	FIRE HYDRANT
PH-20	4B_EF-07			VARIES	300DICL WATER MAIN
PH-21	4B_EF-07	471975.797	6940428.457	23.220	TELSTRA PIT 1300x500
PH-22	4B_EF-12	471030.563	6940583.681	25.909	TELSTRA UTILITY 100PR
PH-23	4B_EF-12	471030.427	6940583.181	25.396	P50 TELSTRA CABLE
PH-24	4B_EF-12			VARIES	300DICL WATER MAIN
PH-25	4B_EF-12	469391.365	6939025.834	31.083	LIGHT POLE
PH-26	4B_EF-20			VARIES	P80 STREET LIGHTING ENERGEX CABLE
PH-27	4B_EF-21	469417.525	693124.920	32.753	LIGHT POLE
PH-28	4B_EF-21			VARIES	P100 WATER MAIN
PH-29	4B_EF-21			VARIES	P50 TELSTRA CABLE
PH-30	4B_EF-21	469442.580	6939198.611	33.708	TELSTRA PIT 1300x500
PH-31	4B_EF-21	469414.750	6939197.592	34.403	TELSTRA PIT 1300x500
PH-32	4B_EF-21			VARIES	P100 TELSTRA CABLE
PH-33	4B_EF-21	469422.323	6939223.920	35.246	TELSTRA PIT 1200x800
PH-34	4B_EF-21			VARIES	2xP100 TELSTRA CABLE
PH-35	4B_EF-21	469419.498	6939219.606	35.047	WATER VALVE
PH-36	4B_EF-21			VARIES	150AC WATER MAIN
PH-37	4B_EF-22			VARIES	P200 WATER MAIN
PH-38	4B_EF-23			VARIES	P125 ENERGEX CABLE
PH-39	4B_EF-23 & 24			VARIES	P100 TELSTRA CABLE
PH-40	4B_EF-24			VARIES	300DICL WATER MAIN
PH-41	4B_EF-25			VARIES	P100 TELSTRA CABLE
PH-42	4B_EF-25			VARIES	2xA100 TELSTRA CABLE
PH-43	4B_EF-25			VARIES	P100 TELSTRA CABLE
PH-44	4B_EF-25			VARIES	2xP100 TELSTRA CABLE
PH-45	4B_EF-25			VARIES	300DICL WATER MAIN
PH-46	4B_EF-25	469847.769	6940611.388	30.802	FIRE HYDRANT
PH-47	4B_EF-25			VARIES	150DICL WATER MAIN
PH-48	4B_EF-25	469823.960	6940608.542	31.754	FIRE HYDRANT
PH-49	4B_EF-28			VARIES	P100 TELSTRA CABLE
PH-50	4B_EF-28	469794.007	6940396.860	41.253	TELSTRA PIT 1300x500

NOTES

1. IF DEPTH DESCRIPTION STATES "VARIES" REFER 12D MODEL FOR INFORMATION

A Issued For Construction

Revisions/Descriptions | Certification | Date | Microfilmed

CAD FILES | F:\Jobs\814000\814068\Standards Plans Clint\3. Rural Projects\4. Existing Features\107.dwg

Associated Job Nos | Auxiliary Drg Nos

Survey Data | Datum | Horiz. Grid | Height Origin | Survey Books

Scales

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP

Through Chainage from

Drawn | Designed

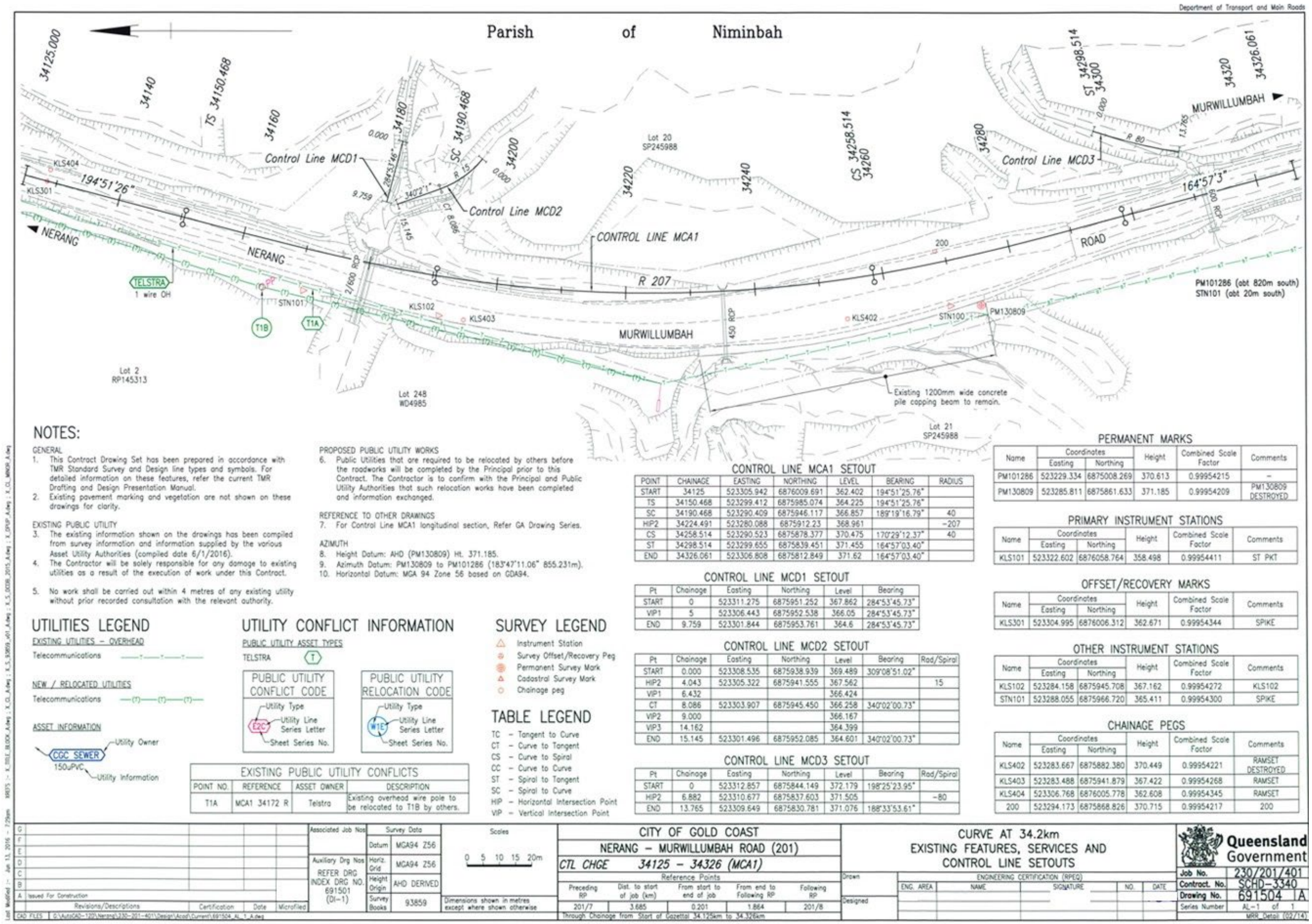
ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

Job No. | Contract. No. | Drawing No. A | Series Number of

MRR_Detail (02/14)

Figure 3.5(d) – Existing features plan – registered example



3.5.2 Public Utility Plant (PUP) – conflicts, potholing and field investigation

These drawings show the location of the existing public utility plant services in relation to the proposed road layout. This information is generally plotted from Before You Dig Australia (BYDA) information and other service authority data.

Where survey is available the location of the PUP should match the surveyed location.

The preliminary design drawings must identify potential service conflicts which require further investigation before detailed design. PUP conflict plans are required for discussions with utility service providers.

Field investigation drawings (potholing and cable locating) are required at preliminary design or detailed design. These types of drawing will assist utility service stakeholders with conflict resolution and finalisation of the relocation plans and construction drawings.

Depending on the complexity of each project, PUP conflicts, potholing and field Investigation drawings may be complemented with schedule tables or field investigation registers containing the specific investigation details; these tables can be presented within the set of drawings as per Figure 3.6(c) in the DDPSM Volume 2, Part 1 – *Concept Phase Drawings* and also see Figure 3.5(o) below, or alternatively the schedule tables or field investigation registers can be produced as spreadsheets which must be submitted together with the drawings – refer to Figure 3.5(f) and Figure 3.5(o) below.

Considerations

Scale

- Usually 1:1000 (horizontal) at A1

Background

- Surveyed features showing existing roadway, accesses, buildings, accesses, etc.

Drawing

- Show proposed roadway alignment including K&C, medians, islands, footpaths, batters
- Show cadastral boundaries in red colour (if not available then use DCDB)
- Show all existing PUP with possible services conflicts. If there are extensive conflicts then drawings can become convoluted with too much information, then consider producing a set of conflict / field investigation plans for each public utility service (e.g., telecommunications, water, electricity, etc.). This will also facilitate discussions with separate utility service stakeholders.
- If proposed PUP potholing and field investigations are extensive then it may be appropriate to include PUP investigation schedule tables.

Figure 3.5(e) – Public utility plant – Conflict Plans generic example – sheet 1 of 11

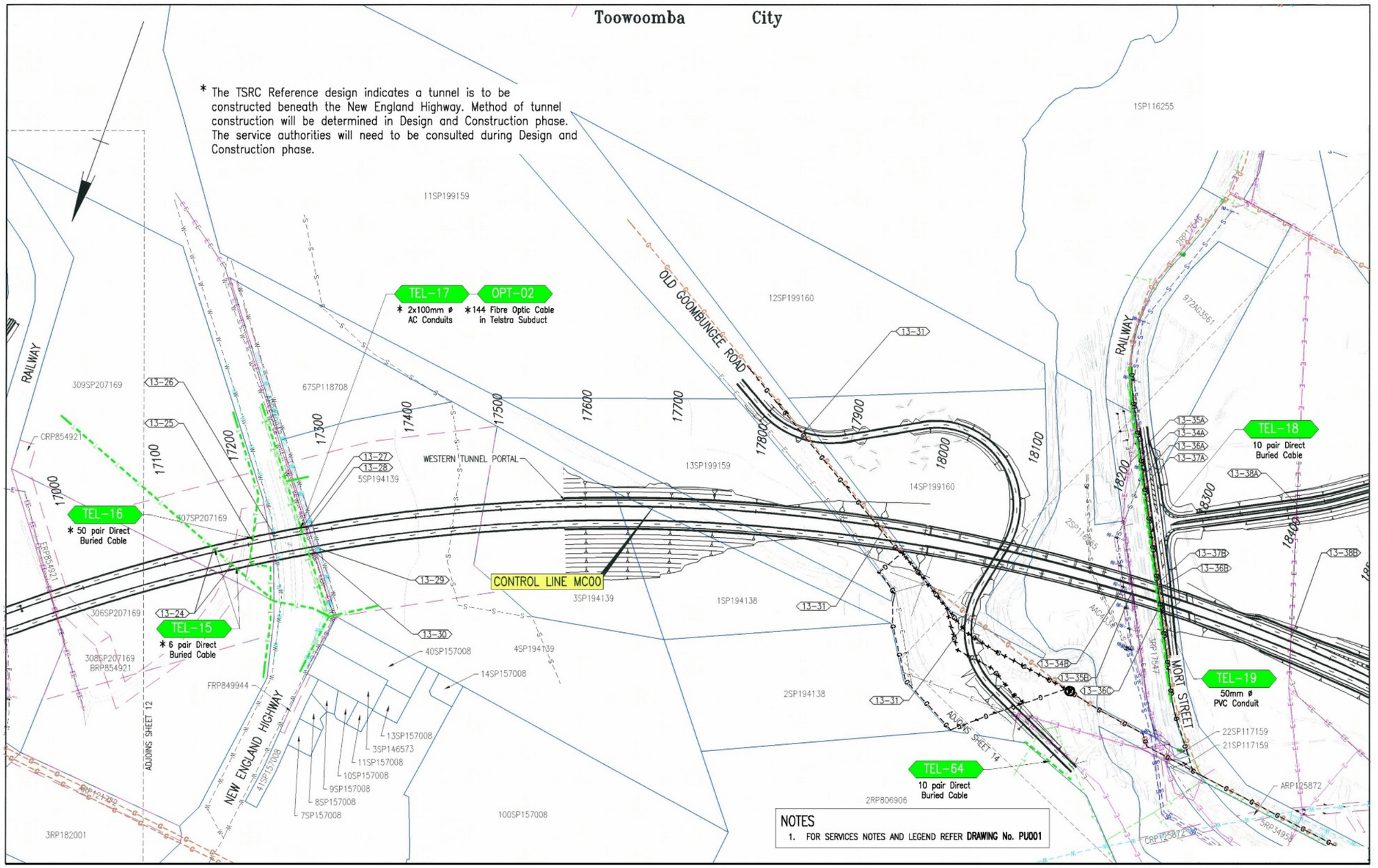


Figure 3.5(f) – Public utility plant – Conflict Plans generic example – sheet 2 of 11

Queensland Government

UTILITY SERVICES CONFLICT REGISTER - TELECOMMUNICATIONS

Department of Transport and Main Roads

	TMR 2014 Label	2012 DBYD Label	Drg No.	Chainage	Asset Owner	Description	Location	General Comments	Treatment Required?	Asset to be Abandoned	Length Abandoned (m)	New Asset	Length of New Asset (m)	Protection of Asset	Length of Protection (m)
GENERAL NOTE: The information shown in this table is indicative based on the TSRC Reference Design, TMR REVISED UTILITY SERVICES LAYOUT 2014 TELECOMMUNICATIONS DRAWINGS and collated data from the various Service Authorities. The Project Co is to determine services final conflict lengths and required treatments with the various Service Authorities during the Design and Construction Phase. The corresponding Service Authorities schedules relating to the information below can be referenced in the Public Utility Plant Report. The conduit and cable sizes shown in this register are based on DBYD information obtained by TMR. Current DBYD information and discussions with service authorities will be required to verify sizes at Design and Construction Phase.														
TELECOMMUNICATIONS	**TEL-01**	01-2	PU001 & PU002	30-930 (MC20)	Telstra	28 Fibre Optic Direct Buried Cable	Running along the southern side of the Warrego Highway	The TSRC Reference design indicates this direct buried Fibre Optic cable will be located in both cut and fill. Project Co to investigate further and verify treatments of either relocation or protection during Design and Construction phase.	Yes	Refer General Comments	Length to be determined with Telstra during Design and Construction phase	Relocate Direct Buried Fibre Optic Cable to Project Co/Telstra requirements if required	Length to be determined with Telstra during Design and Construction phase	Refer General Comments	Length to be determined with Telstra during Design and Construction phase
	PTL-01	03-5A	PU003	1014 (MC80)	Powertel/AAPT	Southbrook-Laidley Intercapital Fibre Optic Direct Buried Cable	Running along the southern side of Postman's Ridge Road	Powertel have provided two options for their direct buried cable. The first is to relocate the cable and the second is to provide protection over the cable. Project Co to verify treatment during Design and Construction phase.	Yes	Direct Buried Fibre Optic Cable	2000	Direct Buried Fibre Optic Cable	Length to be determined with Powertel during Design and Construction phase	Type of protection to be determined with Powertel during Design and Construction phase	500
		03-5B	PU003	3120 (MC00)											
		03-5C	PU003	190 (MC60)											
	TEL-02	03-6A	PU003	1014 (MC80)	Telstra	30 pair Direct Buried Cable	Running along the southern side of Postman's Ridge Road	The TSRC Reference design indicates this direct buried cable will be located in both cut and fill. Project Co to investigate further and verify treatments of either relocation or protection during Design and Construction phase.	Yes	Refer General Comments	Length to be determined with Telstra during Design and Construction phase	Relocate Direct Buried Cable to Project Co/Telstra requirements if required	Length to be determined with Telstra during Design and Construction phase	Refer General Comments	Length to be determined with Telstra during Design and Construction phase
		03-6B	PU003	3120 (MC00)											
		03-6C	PU003	190 (MC60)											
	TEL-03	New	PU003	55-190 (MC60)	Telstra	2 pair and 6 pair Direct Buried Cables	Running along the southern side of Postman's Ridge Road	The TSRC Reference design indicates these direct buried cables will be in cut at this location. The associated No. 8 pit will also be located in the bottom of the proposed drain. Project Co to investigate further and verify treatments of either relocation or protection during Design and Construction phase.	Yes	Refer General Comments	Length to be determined with Telstra during Design and Construction phase	Relocate Direct Buried Cables to Project Co/Telstra requirements if required	Length to be determined with Telstra during Design and Construction phase	Refer General Comments	Length to be determined with Telstra during Design and Construction phase
	TEL-04	New	PU003	195 (MC60)	Telstra	50mm dia PVC conduit	Crossing Postman's Ridge Road between a No. 8 pit and a No. 5 pit before heading east along the northern side of Postmans Ridge Road to a No. 5 pit	The TSRC Reference design indicates this conduit will be located in cut. Project Co to investigate further and verify treatments of either relocation or protection during Design and Construction phase.	Yes	Refer General Comments	Length to be determined with Telstra during Design and Construction phase	Relocate 50mm dia conduit to Project Co/Telstra requirements if required	Length to be determined with Telstra during Design and Construction phase	Refer General Comments	Length to be determined with Telstra during Design and Construction phase
	OPT-01	03-9A	PU003	3305 (MC00)	Optus	36 Fibre Optic Cable in Optus conduit	Running along easement C/RP122500 to the north of Postmans Ridge Road	Optus have indicated they propose to relocate Fibre Optic cable between the nearest two cable joints. Project Co to investigate further during Design and Construction phase to mitigate conflict.	Yes	36 Fibre Optic Cable in Optus Conduit	3500	36 Fibre Optic Cable	3500		
		03-9B	PU003	530 (MC60)											
	TEL-05	New	PU004	204 (MC50)	Telstra	50mm dia PVC conduit	Crossing Murphys Creek Road between a No. 8 pit and a No. 5 pit	The TSRC Reference Design indicates the No. 5 pit will be located in a proposed table drain. Project Co to investigate further and verify treatment during Design and Construction phase	Yes	50mm dia conduit	Length to be determined with Telstra during Design and Construction phase	Relocate 50mm dia conduit and No. 5 pit to Project Co/Telstra requirements if required	Length to be determined with Telstra during Design and Construction phase		
	TEL-06	04-15A	PU004	4520 (MC00)	Telstra	10 pair Direct Buried Cable	Running along the western side of Old Murphys Creek Road reserve before rejoining the existing Murphy Creek Road	TSRC Reference Design indicates fill at this location. Project Co to investigate protection of direct buried cable with Telstra during Design and Construction phase.	Yes	10 pair Direct Buried Cable	Length to be determined with Telstra during Design and Construction phase	Relocate Direct Buried Cable to Project Co/Telstra requirements if required	Length to be determined with Telstra during Design and Construction phase	Refer General Comments	Length to be determined with Telstra during Design and Construction phase
		04-15B	PU004	780-1000 (MC50)											
	TEL-07	New	PU004	5580 (MC00)	Telstra	6 Fibre Optic Direct Buried Cable	Crossing the TSRC road corridor approximately 1.2km to the west of Murphys Creek Road	TSRC Reference Design indicates a deep cutting at this location. Project Co to investigate further during Design and Construction phase.	Yes	Direct buried 6 Fibre Optic cable	Length to be determined with Telstra during Design and Construction phase	Relocate Direct Buried Fibre Optic Cable to Project Co/Telstra requirements.	Length to be determined with Telstra during Design and Construction phase		
	TEL-08	06-18A	PU006	8440 (MC00)	Telstra	6 pair Direct Buried cable and Elevated Joint	Running along the eastern side of Six Mile Creek Road	TSRC Reference Design indicates fill at this location. Project Co to investigate treatment further during the Design and Construction phase	Yes	6 pair Direct Buried cable and Elevated Joint	Length to be determined with Telstra during Design and Construction phase	Relocate Direct Buried Cable and Elevated Joint to Project Co/Telstra requirements	Length to be determined with Telstra during Design and Construction phase		

Page 1 of 7

Figure 3.5(g) – Public utility plant – Conflict Plans generic example – sheet 3 of 11

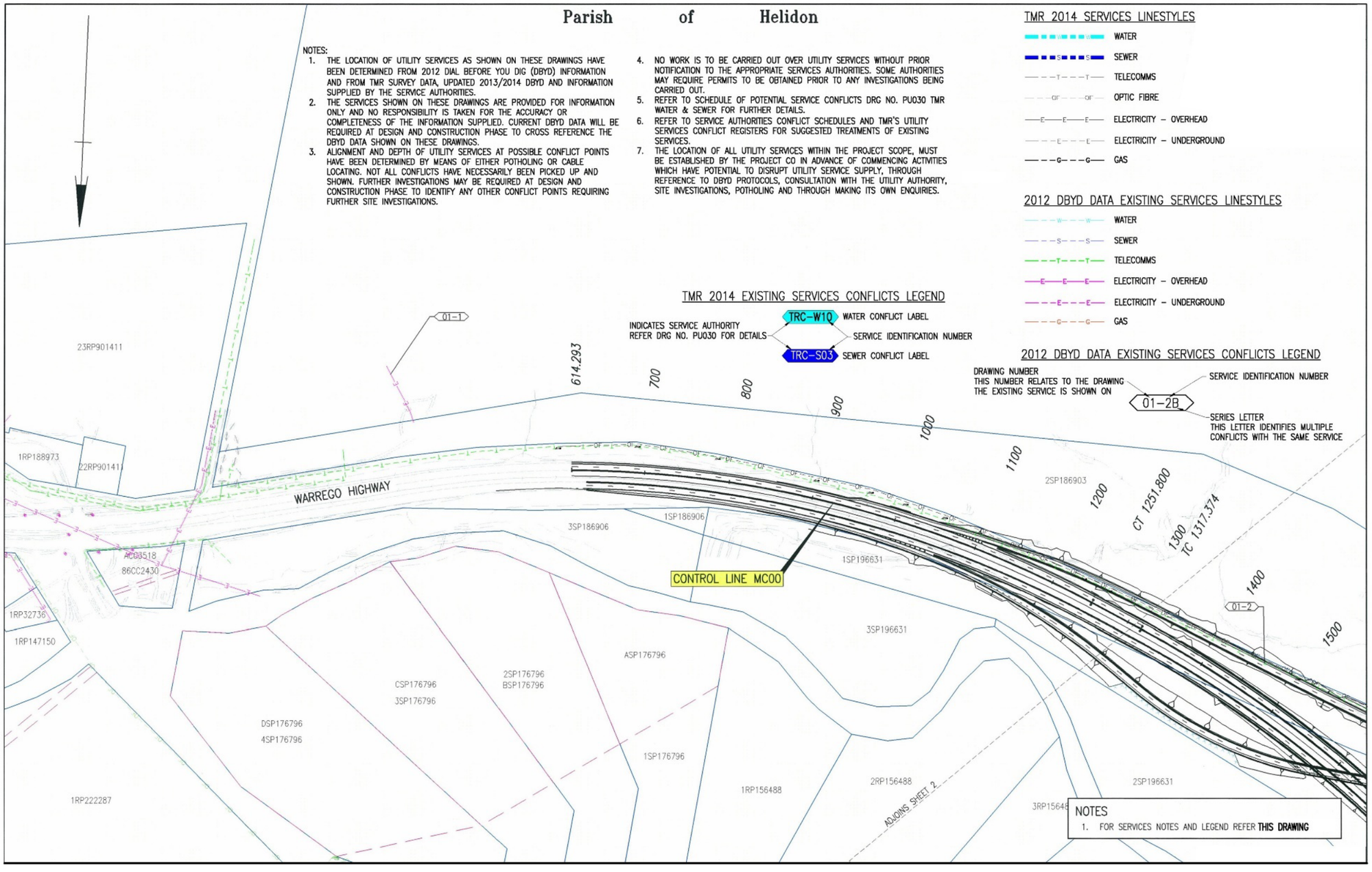
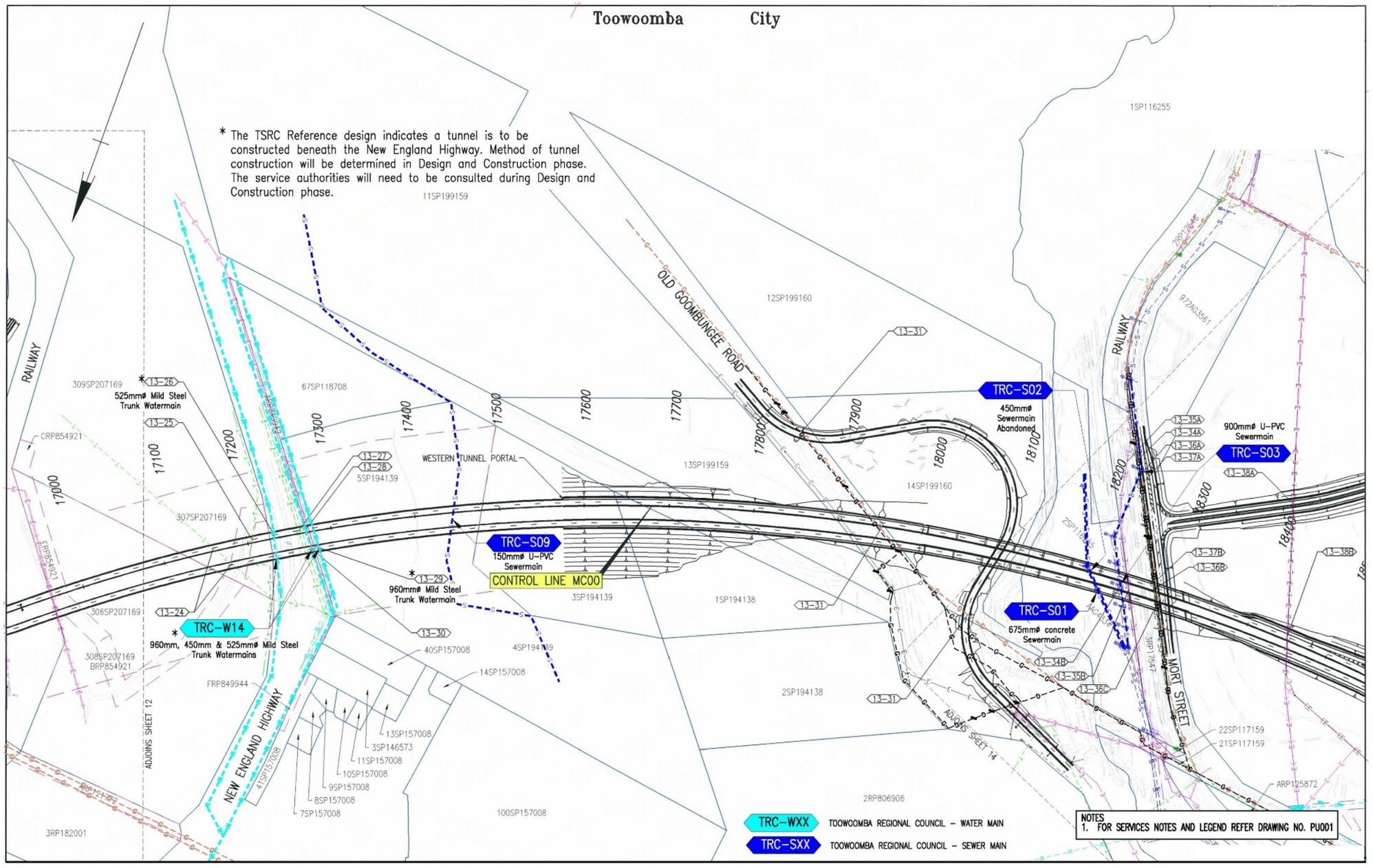


Figure 3.5(h) – Public utility plant – Conflict Plans generic example – sheet 4 of 11



Queensland Government
TRANSPORT AND MAIN ROADS

0 2 4 6 8m
SCALE

TMR REVISED UTILITY SERVICES LAYOUT 2014
WATER & SEWER DRAWINGS

PUBLIC UTILITY PLANT DRAWINGS
DRG NO. PU013 TMR WATER & SEWER
SHEET 13 OF 30

Figure 3.5(i) – Public utility plant – Conflict Plans generic example – sheet 5 of 11

Queensland Government

UTILITY SERVICES CONFLICT REGISTER - WATER AND SEWER

Department of Transport and Main Roads

	TMR 2014 Label	2012 DBYD Label	Drg No.	Chainage	Asset Owner	Description	Location	General Comments	Treatment Required?	Asset to be Abandoned	Length Abandoned (m)	New Asset	Length of New Asset (m)	Protection of Asset	Length of Protection (m)
GENERAL NOTE: The information shown in this table is indicative based on the TSRC Reference Design, TMR REVISED UTILITY SERVICES LAYOUT 2014 WATER & SEWER DRAWINGS and collated data from the various Service Authorities. The Project Co is to determine services final conflict lengths and required treatments with the various Service Authorities during the Design and Construction Phase. The corresponding Service Authorities schedules relating to the information below can be referenced in the Public Utility Plant Report.															
WATER	QUU-W01A	03-4A	PU003	1014 (MC80)	Qld Urban Utilities	2x200mm dia DICL	Running along the southern side of Postmans Ridge Road	Where the TSRC reference design joins existing surface at the Eastern end of Postmans Ridge Road re-alignment, there is a mismatch in heights of 0.5m. Needs to be investigated further in Design and Construction phase.	Yes	200mm dia DICL Watermains	330m on northern watermain and 655m on southern watermain	Replace 200mm dia water mains to Project Co/QUU requirements	330m on northern watermain and 655m on southern watermain		
	QUU-W01B	03-4B	PU003	3130 (MC00)	Qld Urban Utilities	2x200mm dia DICL									
	QUU-W01C	03-4C	PU003	250 (MC60)	Qld Urban Utilities	200mm dia DICL									
	QUU-W02	New	PU003	282 (MC60)	Qld Urban Utilities	150mm dia DICL and PVC	Running along easement E/SP216699 from the northern side of Postmans Ridge Road to the eastern side of Murphys Creek Road	The TSRC reference design indicates fill at this location. The 150mm dia watermain and valvework will be in possible conflict. Project Co to investigate during design and Construction Phase to avoid possible relocation	Yes	150mm dia DICL and PVC	50	Replace 150mm dia water main to Project Co/QUU requirements	50		
	PVE-W03	New	PU003	3104 (MC00)	Private	Bore and Pump	This LV supply to a pump is located in a property to the southern side of Postmans Ridge Road.	This underground bore and pump is located on a property owned by TMR and could still be in use. A possible conflict has been identified with TSRC Reference design. Project Co to verify during Design and Construction phase if bore and pump are to be abandoned.	Yes	Bore and Pump	Length to be determined during Design and Construction phase				
	TRC-W14	13-26	PU013	17250 (MC00)	TRC	525mm dia	Running along either side of the New England Highway	The TSRC reference design indicates a tunnel to be constructed beneath the New England Highway. Method of tunnel construction will be determined in Design and Construction phase. TRC will need to be consulted during this Design and Construction phase as to appropriate treatment if required.	Possible						
		13-29	PU013			960mm dia									
		New	PU013			450mm dia									
	TRC-W01	14-40	PU014	18820 (MC00)	TRC	675mm dia Pre-Stressed Concrete	Crossing through the grounds of Baillie Henderson Hospital, TSRC and Mort Street Ramps	TSRC reference design indicates this watermain will be in a 13m deep cutting at this location. Project Co to investigate further during Design and Construction phase.	Yes	675mm diaPre-Stressed Concrete	600	Replace 675mm dia water main to Project Co/TRC requirements	600		
	TRC-W02	14-39B	PU014	0-580 (MCM6) & 19515 (MC00)	TRC	375mm dia DICL	Running along the southern side of Hermitage Road	Oakey water supply pipeline. TSRC Reference design indicates it will be in cut at this location. Investigate further during Design and Construction phase as to appropriate treatment required.	Yes	375mm dia DICL	1000	Replace 375mm dia water main to Project Co/TRC requirements	1000		
	TRC-W03	14-39A	PU014	0-580 (MCM6)	TRC	150mm dia AC	Running along northern side of Hermitage Rd before crossing to southern side and joins into 375mm dia main at Ch580 (MCM6)	TSRC Reference design indicates the 150mm dia watermain will be in cut at this location. Investigate further during Design and Construction phase as to appropriate treatment required.	Yes	150mm dia AC	1000	New 150mm dia water main to Project Co/TRC requirements	1000		
	TRC-W04	New	PU015	1420-1465 (MCM6)	TRC	375mm dia DICL	Running along the southern side of Hermitage Road	Oakey water supply pipeline. TSRC Reference design indicates it will be in cut at this location. Investigate further during Design and Construction phase as to appropriate treatment required.	Possible	375mm dia DICL	300	Replace 375mm dia water main to Project Co/TRC requirements if required	300		
	TRC-W05	New	PU015	20220 (MC00)	TRC	100mm dia DICL	Crossing East to West through the TRC Landfill site.	Water supply to the TRC Landfill site. Water main may need to be abandoned if Landfill site is relocated due to TSRC alignment. Investigate further at Design and Construction phase.	Yes	100mm dia DICL	250	Replace 100mm dia water main to Project Co/TRC requirements	250		
	TRC-W06	15-46A	PU015	65-273 (MCM7)	TRC	100mm dia U-PVC	Running along either side of Bedford Street	Watermain runs along the western side of Bedford St before angling across to the eastern side from chainage 180 - 200.	Yes	100mm dia U-PVC	350	Replace 100mm dia water main to Project Co/TRC requirements	350		
	TRC-W07	15-46B	PU015	125 (MCM7)	TRC	100mm dia Cast Iron	Crossing Bedford St then heading to House	House to be abandoned due to TSRC. Verify with TRC during Design and Construction phase if water main no longer required.	Yes	100mm dia Cast Iron	100				
	TRC-W08	New	PU015	50 (MCM7)	TRC	100mm dia U-PVC	Crossing Bedford St then heading through TRC landfill site	Original Water supply to the TRC Landfill site. Water main may need to be abandoned if Landfill site is relocated due to TSRC alignment. Investigate further at Design and Construction phase.	Possible	100mm dia U-PVC	200	Replace 100mm dia water main to Project Co/TRC requirements	200		

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Figure 3.5(j) – Public utility plant – Conflict Plans generic example – sheet 6 of 11

Queensland Government

UTILITY SERVICES CONFLICT REGISTER - WATER AND SEWER

Department of Transport and Main Roads

	TMR 2014 Label	2012 DBYD Label	Drg No.	Chainage	Asset Owner	Description	Location	General Comments	Treatment Required?	Asset to be Abandoned	Length Abandoned (m)	New Asset	Length of New Asset (m)	Protection of Asset	Length of Protection (m)
GENERAL NOTE: The information shown in this table is indicative based on the TSRC Reference Design, TMR REVISED UTILITY SERVICES LAYOUT 2014 WATER & SEWER DRAWINGS and collated data from the various Service Authorities. The Project Co is to determine services final conflict lengths and required treatments with the various Service Authorities during the Design and Construction Phase. The corresponding Service Authorities schedules relating to the information below can be referenced in the Public Utility Plant Report.															
WATER	MPS-W05	New	PU029	No Chainage Private Access	Millmerran Power Station (INTERGEN)	250mm dia DICL pressurised pipeline	Located on the northern side of the Gore Highway where a new access to properties off Newton Road is to be constructed.	TSRC reference design indicates a minor private entrance is to be constructed to Newton Road. A possible conflict may exist with the TSRC reference design. Project Co to investigate further during the Design and Construction phase.	Possible	250mm dia DICL	Length to be determined with MPS during Design and Construction phase				
SEWER	PVE-S01	New	PU011	656 (MCF0)	Private	Abandoned Septic Tank	The septic tank is located beneath the proposed Wallens Road realignment	This abandoned septic tank is located on a property owned by TMR. A possible conflict has been identified with TSRC Reference design. Project Co to verify during Design and Construction phase if septic tank is to be removed.	Yes	Abandoned Septic Tank	Length to be determined during Design and Construction phase				
	TRC-S09	New	PU013	17460 (MCC0)	TRC	150mm dia U-PVC	Running through property Lot 4 SP194139 to the western side of the New England Highway	The TSRC reference design indicates a tunnel to be constructed beneath the New England Highway. Method of tunnel construction will be determined in Design and Construction phase. TRC will need to be consulted during this Design and Construction phase as to appropriate treatment if required.	Possible						
	TRC-S01	New	PU013	18215 (MC00)	TRC	675mm dia concrete	Running through property Lot 2 SP116255 to the eastern side of the Mort St rail corridor	Sewer may conflict with a bridge pier on the eastbound carriageway of the TSRC.	Possible	675mm dia concrete	200		200		
	TRC-S02	New	PU013	18215 (MC00)	TRC	450mm dia	Running through property Lot 2 SP116255 to the eastern side of the Mort St rail corridor	TRC have indicated this sewer main has been abandoned. Sections in conflict with TSRC works to be removed and remaining ends to be plugged. Verification required at Design and Construction phase.	Yes	450mm dia	50				
	TRC-S03	13-34A	PU013	250 (MCM1)	TRC	900mm dia U-PVC	Running along the eastern side of Mort Street	Sewer is located below proposed TSRC reference design table drain. Investigate further during Design and Construction phase as to appropriate treatment required.	Possible	900mm dia U-PVC	100	Replace 900mm dia sewer main to Project Co/TRC requirements	100		
		13-34B	PU013	18240 (MC00)			Running through property Lot 2 SP116255 to the eastern side of the Mort St rail corridor	TSRC reference design shows sewer main may run between bridge piers. Clearance and appropriate treatment to main to be verified in Design and Construction phase.	Possible		100		100		
	TRC-S04	15-43	PU015	1000-1465 (MCM6)	TRC	750mm dia Class 4 and Class 8 RCP	Running along the southern side of Hermitage Rd before crossing it and heading along the Hermitage Rd realignment	TWIP-Toowoomba Wastewater Infrastructure Project. May clash with Hermitage Rd re-alignment. Investigate further during Design and Construction phase as to appropriate treatment required.	Yes	750mm dia Class 4 and Class 8 RCP	750	Replace 750mm dia sewer main to Project Co/TRC requirements	750		
	TRC-S05	New	PU015	1300-1350 (MCM6)	TRC	150mm dia U-PVC	Running through property Lot 4 SP189518 to the north of Hermitage Road	Sewer main connection for Teen Challenge buildings off Bedford Street. TSRC reference design indicates the section of sewer installed in 1979, running through a number of properties towards Bedford St may be clear of the proposed works. A section connecting to the new 750mm dia sewer may be in conflict with the TSRC reference design. Investigate further during Design and Construction phase as to appropriate treatment required.	Yes	150mm dia U-PVC	400	Replace 150mm dia sewer main to Project Co/TRC requirements	400		
	TRC-S06	15-45	PU015	1000-1300 (MCM6)	TRC	150mm dia	located to the north of Hermitage Rd and running along the Hermitage Rd realignment	TRC have indicated this sewer main has been abandoned. Sections in conflict with TSRC works to be removed and remaining ends to be plugged. Verification required at Design and Construction phase.	Yes	150mm dia	300				

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Figure 3.5(k) – Public utility plant – Conflict Plans generic example – sheet 7 of 11

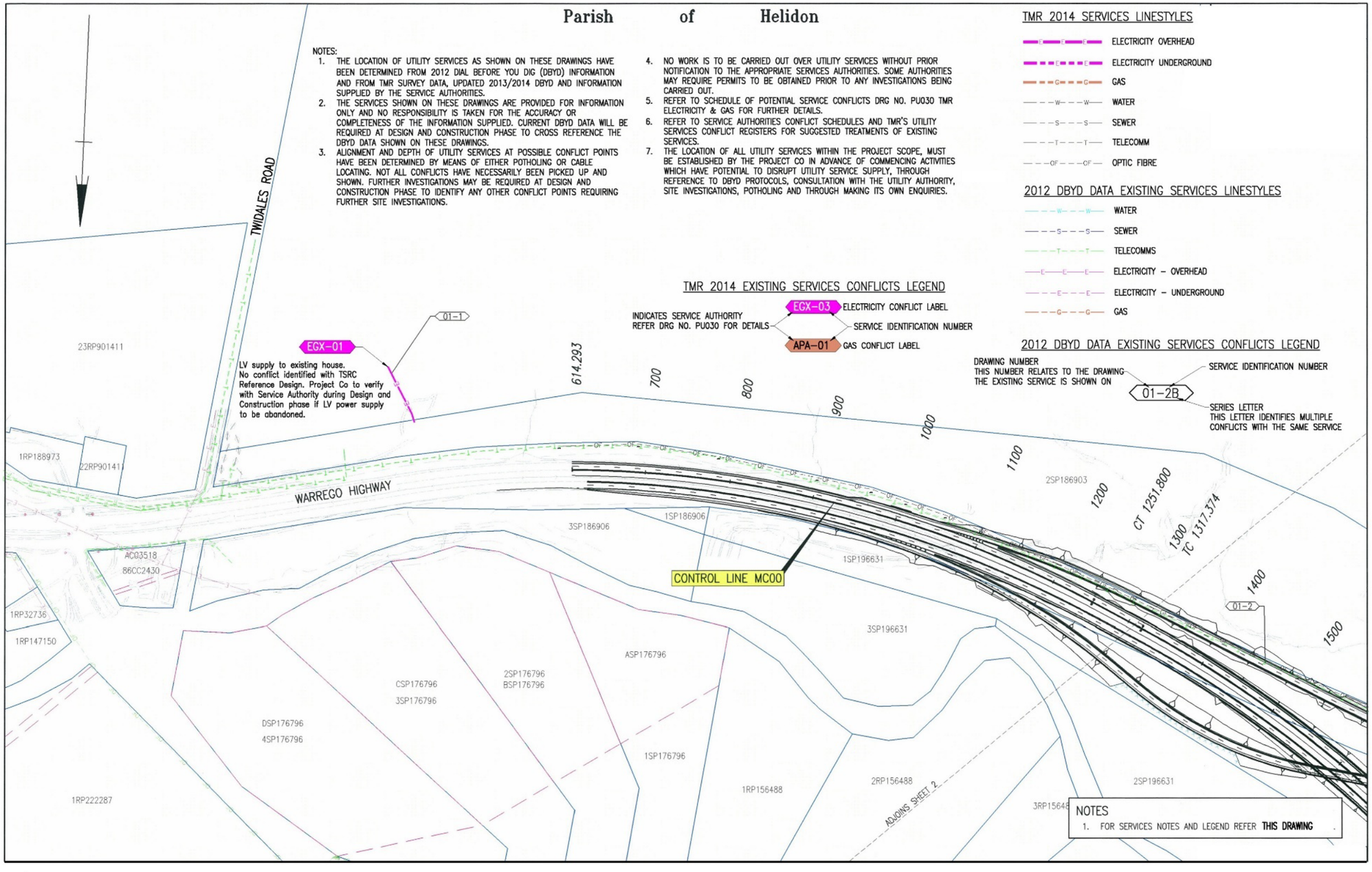

Figure 3.5(l) – Public utility plant – Conflict Plans generic example – sheet 8 of 11

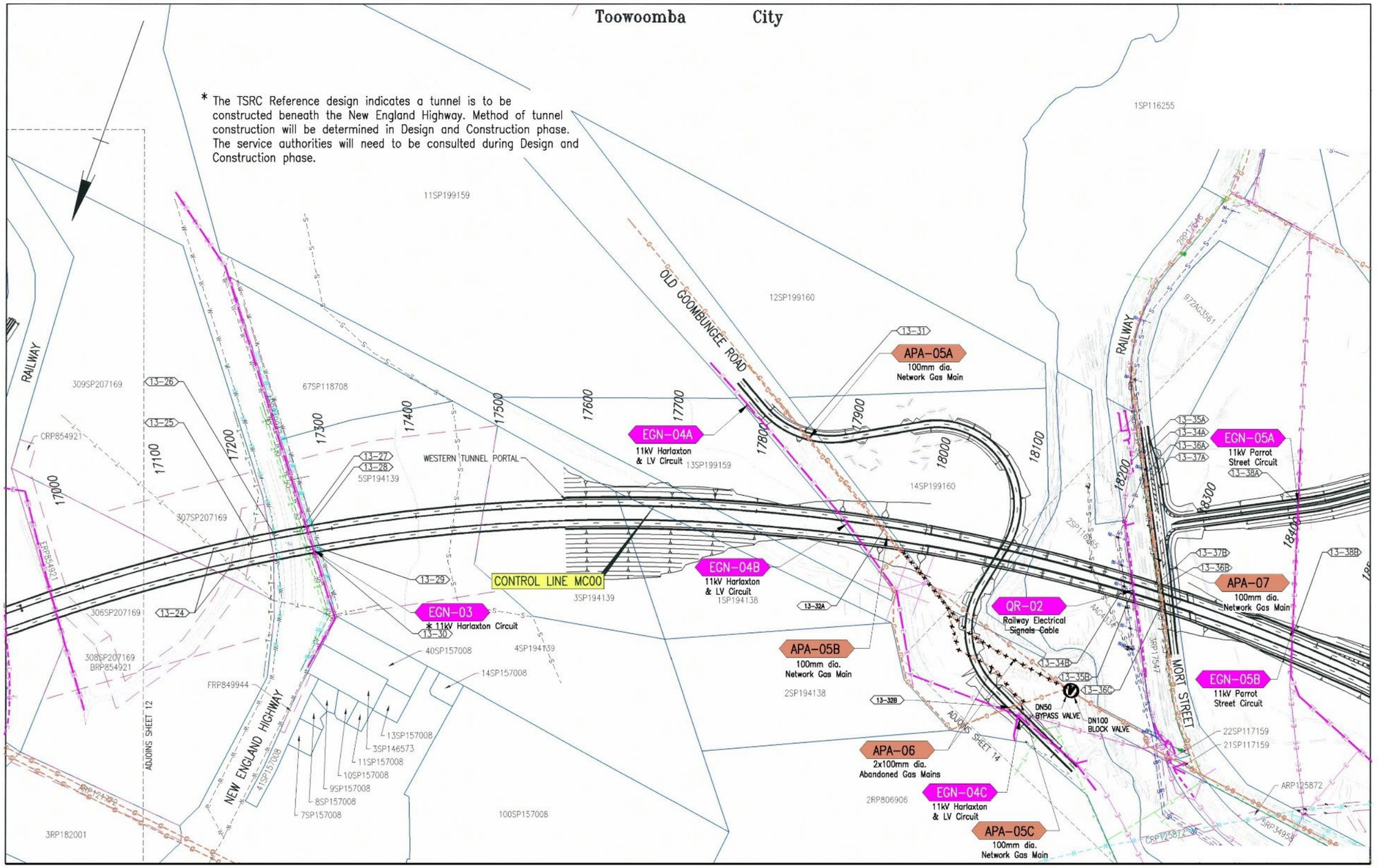

Figure 3.5(m) – Public utility plant – Conflict Plans generic example – sheet 9 of 11

Queensland Government

UTILITY SERVICES CONFLICT REGISTER - ELECTRICITY

Department of Transport and Main Roads

	TMR 2014 Label	2012 DBYD Label	Drg No.	Chainage	Asset Owner	Description	Location	General Comments	Treatment Required?	Asset to be Abandoned	Length Abandoned (m)	New Asset	Length of New Asset (m)	Protection of Asset	Length of Protection (m)
GENERAL NOTE: The information shown in this table is indicative based on the TSRC Reference Design, TMR REVISED UTILITY SERVICES LAYOUT 2014 ELECTRICITY & GAS DRAWINGS and collated data from the various Service Authorities. The Project Co is to determine services final conflict lengths and required treatments with the various Service Authorities during the Design and Construction Phase. The corresponding Service Authorities schedules relating to the information below can be referenced in the Public Utility Plant Report.															
ELECTRICITY	**EGX-01 (Private Supply)**	01-1	PU001	450 (MC00)	Private Service (Off Energex Supply)	LV House supply (Overhead)	This LV house supply is located on the southern side of the Warrego Highway and heads south-east to Twidales Road.	This existing house and property is owned by TMR. Possible conflict identified with TSRC Reference design. Project Co to verify during Design and Construction phase if power supply is to be abandoned from the Energex supply.	Possible	LV House Supply	Length to be determined during Design and Construction phase				
	EGX-02A	03-3A	PU003	880 (MC80)	Energex	11kV and LV circuit	Running along the southern side of Postmans Ridge Road	Energex have identified that the poles are to stay on existing alignment but are to be raised to specified clearances above TSRC. Negotiations are required with land holders for new pole locations. Project Co to verify clearance heights to TSRC during the Design and Construction phase.	Yes	11kV and LV circuit	400 & 250	Relocate 11kV and LV circuit to Project Co/Energex requirements	Length to be determined with Energex during Design and Construction phase		
	EGX-02B	03-3B	PU003	1014 (MC80)											
	EGX-02C	03-3C	PU003	3120 (MC00)											
	EGX-02D	03-3D	PU003	265 (MC60)											
	PVE-01	New	PU003	3105 (MC00)	Private Service (Off Energex Supply)	LV Pump Supply (Underground)	This LV supply to a pump is located in a property to the southern side of Postmans Ridge Road.	This underground LV supply to a pump is located on a property owned by TMR. A possible conflict has been identified with TSRC Reference design. Project Co to verify during Design and Construction phase if power supply is to be abandoned.	Yes	LV Pump Supply	Length to be determined during Design and Construction phase				
	EGX-03A	03-7A	PU003	3275 (MC00)	Energex	33kV and 11kV circuit	Running along easement D/RP206335 to the northern side of Postmans Ridge Road	Energex have indicated that the 11kV circuit is to be recovered and the 33kV circuit is to be overbuilt on the existing LV circuit along Postmans Ridge Road. Negotiations are required with land holders for new pole locations. Project Co to verify clearance heights to TSRC during the Design and Construction phase.	Yes	33kV and 11kV circuit	1500	Relocate 33kV and recover 11kV circuit to Project Co/Energex requirements	Length to be determined with Energex during Design and Construction phase		
		03-8A													
	EGX-03B	03-7B	PU003	495 (MC60)											
		03-8B													
	EGX-04A	03-10A	PU003	3430 (MC00)	Energex	110kV circuit	Running along easement B/RP150612 and crossing the TSRC and the realigned Postmans Ridge Road	Energex have identified that three timber poles are to be replaced with concrete poles to gain clearances over TSRC. Negotiations are required with land holders for new pole locations. Project Co to verify clearance heights to TSRC during the Design and Construction phase.	Yes	110kV circuit	400	Relocate 110kV circuit to Project Co/Energex requirements	Length to be determined with Energex during Design and Construction phase		
		03-11A	PU003												
	EGX-04B	03-10B	PU003	630 (MC60)											
		03-11B	PU003												
	EGN-01A	04-14A	PU004	65 (MC50)	Ergon	33kV circuit	Perseverance Creek Line. Running along the eastern side of Murphys Creek Road before crossing to the western side.	Ergon have specified to relocate poles between pole no's. 3258201 and 3258202. TSRC Reference design indicates both Murphy's Creek Road and the TSRC are in cut. Project Co to verify extent of relocation during Design and Construction phase.	Yes	33kV circuit	Length to be determined with Ergon during Design and Construction phase	Relocate 33kV circuit to Project Co/Ergon requirements	Length to be determined with Ergon during Design and Construction phase		
	EGN-01B	04-14B	PU004	543 (MC50)											
	EGN-01C	04-14C	PU004	4455 (MC00)											
	EGX-05	New	PU004	40 (MC50)	Energex	11kV & LV circuit with Transformer	Crossing Murphys Creek Road then heading along the northern side of Six Mile Creek Road	Relocate pole transformer and adjacent pole. Energex pole No. SP737554. This pole is located within the clear zone for 100km/h along Murphys Creek Rd. Project Co to confirm relocated pole is out of clearzone during the Design and Construction phase.	Yes	11kV & LV circuit with pole transformer	Length to be determined with Energex during Design and Construction phase	Relocate 11kV & LV circuit with pole transformer to Project Co/Energex requirements	Length to be determined with Energex during Design and Construction phase		
	PLK-01	06-17	PU006	7290 (MC00)	Powerlink	275kV Transmission Lines	Tarong to Middle Ridge Transmission Line corridor crossing the TSRC	The TSRC Reference design indicates a cutting approx. 38m deep at this location. Refer to Powerlink Impact Assessment Study for required works/clearances to be maintained and Powerlink access track details, during the Design and Construction phase.	Possible						
	EGX-06	06-19	PU006	8485 (MC00)	Energex	11kV circuit with Transformer	Running along Six Mile Creek Road	Relocate pole transformer and adjacent pole. Energex pole No. SP775276. No allowance made for vegetation removal or approvals to clear vegetation.	Yes	11kV circuit and pole transformer	250	Relocate 11kV circuit and pole transformer to Project Co/Energex requirements	Length to be determined with Energex during Design and Construction phase		
	EGX-07	08-20	PU008	10790 (MC00)	Energex	11kV circuit	Power supply to Quarry crossing Unnamed Road (Unformed Road)	Relocate 11kV circuit. Energex pole No's. 244394 & 244395. TSRC Reference design indicates where the 11kV circuit crosses it will be in approx. 34m of fill at this location. Project Co to verify fill during the Design and Construction phase. No allowance made for vegetation removal or approvals to clear vegetation.	Yes	11kV circuit	450	Relocate 11kV circuit to Project Co/Energex requirements	Length to be determined with Energex during Design and Construction phase		

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Figure 3.5(n) – Public utility plant – Conflict Plans generic example – sheet 10 of 11

Queensland Government

UTILITY SERVICES CONFLICT REGISTER - GAS

Department of Transport and Main Roads

	TMR 2014 Label	2012 DBYD Label	Drg No.	Chainage	Asset Owner	Description	Location	General Comments	Treatment Required?	Asset to be Abandoned	Length Abandoned (m)	New Asset	Length of New Asset (m)	Protection of Asset	Length of Protection (m)
GENERAL NOTE: The information shown in this table is indicative based on the TSRC Reference Design, TMR REVISED UTILITY SERVICES LAYOUT 2014 ELECTRICITY & GAS and collated data from the various Service Authorities. The Project Co is to determine services final conflict lengths and required treatments with the various Service Authorities during the Design and Construction Phase. The corresponding Service Authorities schedules relating to the information below can be referenced in the Public Utility Plant Report.															
GAS	APA-01A	03-12A	PU003	3315 (MC00)	APA	250mm & 400mm dia High Pressure Transmission Lines	Roma to Brisbane Pipeline. Crossing the TSRC to the north of Postmans Ridge Road	The TSRC Reference design is mostly in fill at this location. Project Co is to verify with APA during the Design and Construction phase if the Gas Lines are to be Relocated or Protected	Yes	250mm & 400mm dia High Pressure Transmission Lines	200	Relocate 250mm & 400mm dia Transmission Lines to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	100
	APA-01B	03-12B	PU003	540 (MC60)	APA	250mm & 400mm dia High Pressure Transmission Lines	Roma to Brisbane Pipeline. Crossing the TSRC to the north of Postmans Ridge Road	The TSRC Reference design is in fill at this location. Project Co is to verify with APA during the Design and Construction phase if the Gas Lines are to be Relocated or Protected	Yes	250mm & 400mm dia High Pressure Transmission Lines	200	Relocate 250mm & 400mm dia Transmission Lines to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	50
	APA-02	New	PU003	3580 (MC00)	APA	Cathodic Protection Test Pit & Line	Crossing the TSRC to the north of Postmans Ridge Road		Yes	Cathodic Protection Test Pit & Line	Length to be determined with APA during Design and Construction phase	Relocate Cathodic Protection Test Pit & Line to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase		
	APA-03	04-12C	PU004	20 (MC50)	APA	250mm & 400mm dia High Pressure Transmission Lines	Roma to Brisbane Pipeline. Heading along Six Mile Creek Road before crossing Murphys Creek Road	TSRC Reference design indicates cut at this location. Further investigation required at Design and Construction phase to avoid possible relocation or protection.	Possible	250mm & 400mm dia High Pressure Transmission Lines	50	Relocate 250mm & 400mm dia Transmission Lines to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	50
	APA-04	12-21	PU012	16760 (MC00)	APA	250mm & 400mm dia High Pressure Transmission Lines	Roma to Brisbane Pipeline. Running through easement A/RP122362 to the East of the rail corridor and close to eastern tunnel portal.	APA have indicated this conflict is located within a 500m exclusion zone due to the potentially unstable range escarpment material. Refer to PUP report "APA Escarpment Presentation" for further details and information on DBYD. The TSRC Reference design is in fill at this location. Project Co is to verify with APA during the Design and Construction phase if the Gas Lines are to be Relocated or Protected	Yes	250mm & 400mm dia High Pressure Transmission Lines	Length to be determined with APA during Design and Construction phase	Relocate 250mm & 400mm dia Transmission Lines to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	Length to be determined with APA during Design and Construction phase
	APA-05A	13-31	PU013	100 (MCV0)	APA	100mm dia Network main	Southern side of Old Goombungee Road crossing realigned section	TSRC Reference design indicates cut at this location. Further investigation required at Design and Construction phase to avoid possible relocation or protection.	Yes	100mm dia Network main	100	Relocate 100mm dia Network main to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	100
	APA-05B	13-32A	PU013	17945 (MC00)	APA	100mm dia Network main	Southern side of Old Goombungee Road before crossing to the northern side	The TSRC Reference design is in fill at this location. Project Co is to verify with APA during the Design and Construction phase if the Gas Lines are to be Relocated or Protected	Yes	100mm dia Network main	120	Relocate 100mm dia Network main to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	120
	APA-05C	13-32B	PU013	675 (MCV0)	APA	100mm dia Network main	Crossing Old Goombungee Road	TSRC Reference design indicates cut at this location. Further investigation required at Design and Construction phase to avoid possible relocation or protection.	Yes	100mm dia Network main	100	Relocate 100mm dia Network main to Project Co/APA requirements	Length to be determined with APA during Design and Construction phase	Refer to APA Conflict Schedule for proposed protection option	100

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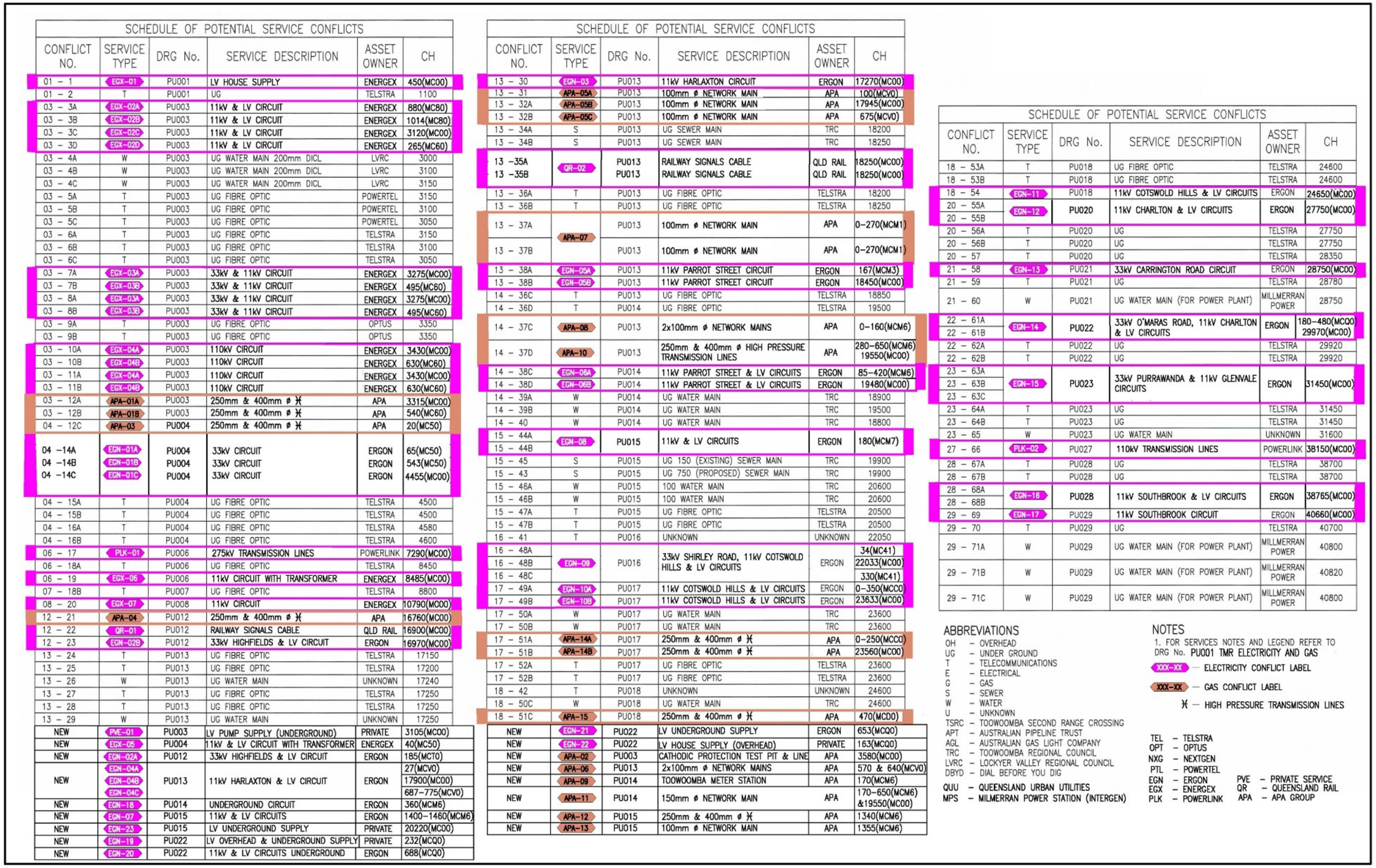
Figure 3.5(o) – Public utility plant – Conflict Plans generic example – sheet 11 of 11



SCHEDULE OF POTENTIAL SERVICE CONFLICTS

CONFLICT NO.	SERVICE TYPE	DRG No.	SERVICE DESCRIPTION	ASSET OWNER	CH
01 – 1	EGX-01	PU001	LV HOUSE SUPPLY	ENERGEX	450(MC00)
01 – 2	T	PU001	UG	TELSTRA	1100
03 – 3A	EGX-02A	PU003	11kV & LV CIRCUIT	ENERGEX	880(MC80)
03 – 3B	EGX-02B	PU003	11kV & LV CIRCUIT	ENERGEX	1014(MC80)
03 – 3C	EGX-02C	PU003	11kV & LV CIRCUIT	ENERGEX	3120(MC00)
03 – 3D	EGX-02D	PU003	11kV & LV CIRCUIT	ENERGEX	265(MC60)
03 – 4A	W	PU003	UG WATER MAIN 200mm DICL	LVRC	3000
03 – 4B	W	PU003	UG WATER MAIN 200mm DICL	LVRC	3100
03 – 4C	W	PU003	UG WATER MAIN 200mm DICL	LVRC	3150
03 – 5A	T	PU003	UG FIBRE OPTIC	POWERTEL	3150
03 – 5B	T	PU003	UG FIBRE OPTIC	POWERTEL	3100
03 – 5C	T	PU003	UG FIBRE OPTIC	POWERTEL	3050
03 – 6A	T	PU003	UG FIBRE OPTIC	TELSTRA	3150
03 – 6B	T	PU003	UG FIBRE OPTIC	TELSTRA	3100
03 – 6C	T	PU003	UG FIBRE OPTIC	TELSTRA	3050
03 – 7A	EGX-03A	PU003	33kV & 11kV CIRCUIT	ENERGEX	3275(MC00)
03 – 7B	EGX-03B	PU003	33kV & 11kV CIRCUIT	ENERGEX	495(MC60)
03 – 8A	EGX-03A	PU003	33kV & 11kV CIRCUIT	ENERGEX	3275(MC00)
03 – 8B	EGX-03B	PU003	33kV & 11kV CIRCUIT	ENERGEX	495(MC60)
03 – 9A	T	PU003	UG FIBRE OPTIC	OPTUS	3350
03 – 9B	T	PU003	UG FIBRE OPTIC	OPTUS	3350
03 – 10A	EGX-04A	PU003	110kV CIRCUIT	ENERGEX	3430(MC00)
03 – 10B	EGX-04B	PU003	110kV CIRCUIT	ENERGEX	630(MC60)
03 – 11A	EGX-04A	PU003	110kV CIRCUIT	ENERGEX	3430(MC00)
03 – 11B	EGX-04B	PU003	110kV CIRCUIT	ENERGEX	630(MC60)
03 – 12A	APA-01A	PU003	250mm & 400mm ø ⋈	APA	3315(MC00)
03 – 12B	APA-01B	PU003	250mm & 400mm ø ⋈	APA	540(MC60)
04 – 12C	APA-03	PU004	250mm & 400mm ø ⋈	APA	20(MC50)
04 –14A	EGN-01A	PU004	33kV CIRCUIT	ERGON	65(MC50)
04 –14B	EGN-01B	PU004	33kV CIRCUIT	ERGON	543(MC50)
04 –14C	EGN-01C	PU004	33kV CIRCUIT	ERGON	4455(MC00)
04 – 15A	T	PU004	UG FIBRE OPTIC	TELSTRA	4500
04 – 15B	T	PU004	UG FIBRE OPTIC	TELSTRA	4500
04 – 16A	T	PU004	UG FIBRE OPTIC	TELSTRA	4580
04 – 16B	T	PU004	UG FIBRE OPTIC	TELSTRA	4600
06 – 17	PLK-01	PU006	275kV TRANSMISSION LINES	POWERLINK	7290(MC00)
06 – 18A	T	PU006	UG FIBRE OPTIC	TELSTRA	8450
06 – 19	EGX-06	PU006	11kV CIRCUIT WITH TRANSFORMER	ENERGEX	8485(MC00)
07 – 18B	T	PU007	UG FIBRE OPTIC	TELSTRA	8800
08 – 20	EGX-07	PU008	11kV CIRCUIT	ENERGEX	10790(MC00)
12 – 21	APA-04	PU012	250mm & 400mm ø ⋈	APA	16760(MC00)
12 – 22	QR-01	PU012	RAILWAY SIGNALS CABLE	QLD RAIL	16900(MC00)
12 – 23	EGN-02B	PU012	33kV HIGHFIELDS & LV CIRCUIT	ERGON	16970(MC00)
13 – 24	T	PU013	UG FIBRE OPTIC	TELSTRA	17150
13 – 25	T	PU013	UG FIBRE OPTIC	TELSTRA	17200
13 – 26	W	PU013	UG WATER MAIN	UNKNOWN	17240
13 – 27	T	PU013	UG FIBRE OPTIC	TELSTRA	17250
13 – 28	T	PU013	UG FIBRE OPTIC	TELSTRA	17250
13 – 29	W	PU013	UG WATER MAIN	UNKNOWN	17250
NEW	PVE-01	PU003	LV PUMP SUPPLY (UNDERGROUND)	PRIVATE	3105(MC00)
NEW	EGX-05	PU004	11kV & LV CIRCUIT WITH TRANSFORMER	ENERGEX	40(MC50)
NEW	EGN-02A	PU012	33kV HIGHFIELDS & LV CIRCUIT	ERGON	185(MCT0)
NEW	EGN-04A	PU013	11kV HARLAXTON & LV CIRCUIT	ERGON	27(MCV0)
	EGN-04B				17900(MC00)
	EGN-04C				687–775(MCV0)
NEW	EGN-18	PU014	UNDERGROUND CIRCUIT	ERGON	360(MCM6)
NEW	EGN-07	PU015	11kV & LV CIRCUITS	ERGON	1400–1460(MCM6)
NEW	EGN-23	PU015	LV UNDERGROUND SUPPLY	PRIVATE	20220(MC00)
NEW	EGN-19	PU022	LV OVERHEAD & UNDERGROUND SUPPLY	PRIVATE	232(MCQ0)
NEW	EGN-20	PU022	11kV & LV CIRCUITS UNDERGROUND	ERGON	688(MCQ0)

SCHEDULE OF POTENTIAL SERVICE CONFLICTS

CONFLICT NO.	SERVICE TYPE	DRG No.	SERVICE DESCRIPTION	ASSET OWNER	CH
13 – 30	EGN-03	PU013	11kV HARLAXTON CIRCUIT	ERGON	17270(MC00)
13 – 31	APA-05A	PU013	100mm ø NETWORK MAIN	APA	100(MCV0)
13 – 32A	APA-05B	PU013	100mm ø NETWORK MAIN	APA	17945(MC00)
13 – 32B	APA-05C	PU013	100mm ø NETWORK MAIN	APA	675(MCV0)
13 – 34A	S	PU013	UG SEWER MAIN	TRC	18200
13 – 34B	S	PU013	UG SEWER MAIN	TRC	18250
13 –35A	QR-02	PU013	RAILWAY SIGNALS CABLE	QLD RAIL	18250(MC00)
13 –35B		PU013	RAILWAY SIGNALS CABLE	QLD RAIL	18250(MC00)
13 – 36A	T	PU013	UG FIBRE OPTIC	TELSTRA	18200
13 – 36B	T	PU013	UG FIBRE OPTIC	TELSTRA	18250
13 – 37A	APA-07	PU013	100mm ø NETWORK MAIN	APA	0–270(MCM1)
13 – 37B		PU013	100mm ø NETWORK MAIN	APA	0–270(MCM1)
13 – 38A	EGN-05A	PU013	11kV PARROT STREET CIRCUIT	ERGON	167(MCM3)
13 – 38B	EGN-05B	PU013	11kV PARROT STREET CIRCUIT	ERGON	18450(MC00)
14 – 36C	T	PU013	UG FIBRE OPTIC	TELSTRA	18850
14 – 36D	T	PU014	UG FIBRE OPTIC	TELSTRA	19500
14 – 37C	APA-08	PU013	2x100mm ø NETWORK MAINS	APA	0–160(MCM6)
14 – 37D	APA-10	PU013	250mm & 400mm ø HIGH PRESSURE TRANSMISSION LINES	APA	280–650(MCM6) 19550(MC00)
14 – 38C	EGN-06A	PU014	11kV PARROT STREET & LV CIRCUITS	ERGON	85–420(MCM6)
14 – 38D	EGN-06B	PU014	11kV PARROT STREET & LV CIRCUITS	ERGON	19480(MC00)
14 – 39A	W	PU014	UG WATER MAIN	TRC	18900
14 – 39B	W	PU014	UG WATER MAIN	TRC	19500
14 – 40	W	PU014	UG WATER MAIN	TRC	18800
15 – 44A	EGN-08	PU015	11kV & LV CIRCUITS	ERGON	180(MCM7)
15 – 44B					
15 – 45	S	PU015	UG 150 (EXISTING) SEWER MAIN	TRC	19900
15 – 43	S	PU015	UG 750 (PROPOSED) SEWER MAIN	TRC	19900
15 – 46A	W	PU015	100 WATER MAIN	TRC	20600
15 – 46B	W	PU015	100 WATER MAIN	TRC	20600
15 – 47A	T	PU015	UG FIBRE OPTIC	TELSTRA	20500
15 – 47B	T	PU015	UG FIBRE OPTIC	TELSTRA	20500
16 – 41	T	PU016	UNKNOWN	UNKNOWN	22050
16 – 48A	EGN-09	PU016	33kV SHIRLEY ROAD, 11kV COTSWOLD HILLS & LV CIRCUITS	ERGON	34(MC41)
16 – 48B					22033(MC00)
16 – 48C					330(MC41)
17 – 49A	EGN-10A	PU017	11kV COTSWOLD HILLS & LV CIRCUITS	ERGON	0–350(MCC0)
17 – 49B	EGN-10B	PU017	11kV COTSWOLD HILLS & LV CIRCUITS	ERGON	23633(MC00)
17 – 50A	W	PU017	UG WATER MAIN	TRC	23600
17 – 50B	W	PU017	UG WATER MAIN	TRC	23600
17 – 51A	APA-14A	PU017	250mm & 400mm ø ⋈	APA	0–250(MCC0)
17 – 51B	APA-14B	PU017	250mm & 400mm ø ⋈	APA	23560(MC00)
17 – 52A	T	PU017	UG FIBRE OPTIC	TELSTRA	23600
17 – 52B	T	PU017	UG FIBRE OPTIC	TELSTRA	23600
18 – 42	T	PU018	UNKNOWN	UNKNOWN	24600
18 – 50C	W	PU018	UG WATER MAIN	TRC	24600
18 – 51C	APA-15	PU018	250mm & 400mm ø ⋈	APA	470(MCD0)
NEW	EGN-21	PU022	LV UNDERGROUND SUPPLY	ERGON	653(MCQ0)
NEW	EGN-22	PU022	LV HOUSE SUPPLY (OVERHEAD)	PRIVATE	163(MCQ0)
NEW	APA-02	PU003	CATHODIC PROTECTION TEST PIT & LINE	APA	3580(MC00)
NEW	APA-06	PU013	2x100mm ø NETWORK MAINS	APA	570 & 640(MCV0)
NEW	APA-09	PU014	TOOWOOMBA METER STATION	APA	170(MCM6)
NEW	APA-11	PU014	150mm ø NETWORK MAIN	APA	170–650(MCM6) &19550(MC00)
NEW	APA-12	PU015	250mm & 400mm ø ⋈	APA	1340(MCM6)
NEW	APA-13	PU015	100mm ø NETWORK MAIN	APA	1355(MCM6)

SCHEDULE OF POTENTIAL SERVICE CONFLICTS

CONFLICT NO.	SERVICE TYPE	DRG No.	SERVICE DESCRIPTION	ASSET OWNER	CH
18 – 53A	T	PU018	UG FIBRE OPTIC	TELSTRA	24600
18 – 53B	T	PU018	UG FIBRE OPTIC	TELSTRA	24600
18 – 54	EGN-11	PU018	11kV COTSWOLD HILLS & LV CIRCUITS	ERGON	24650(MC00)
20 – 55A	EGN-12	PU020	11kV CHARLTON & LV CIRCUITS	ERGON	27750(MC00)
20 – 55B					
20 – 56A	T	PU020	UG	TELSTRA	27750
20 – 56B	T	PU020	UG	TELSTRA	27750
20 – 57	T	PU020	UG	TELSTRA	28350
21 – 58	EGN-13	PU021	33kV CARRINGTON ROAD CIRCUIT	ERGON	28750(MC00)
21 – 59	T	PU021	UG	TELSTRA	28780
21 – 60	W	PU021	UG WATER MAIN (FOR POWER PLANT)	MILLMERRAN POWER	28750
22 – 61A	EGN-14	PU022	33kV O'MARAS ROAD, 11kV CHARLTON & LV CIRCUITS	ERGON	180–480(MCQ0) 29970(MC00)
22 – 61B					
22 – 62A	T	PU022	UG	TELSTRA	29920
22 – 62B	T	PU022	UG	TELSTRA	29920
23 – 63A	EGN-15	PU023	33kV PURRAWANDA & 11kV GLENVALE CIRCUITS	ERGON	31450(MC00)
23 – 63B					
23 – 63C					
23 – 64A	T	PU023	UG	TELSTRA	31450
23 – 64B	T	PU023	UG	TELSTRA	31450
23 – 65	W	PU023	UG WATER MAIN	UNKNOWN	31600
27 – 66	PLK-02	PU027	110kV TRANSMISSION LINES	POWERLINK	38150(MC00)
28 – 67A	T	PU028	UG	TELSTRA	38700
28 – 67B	T	PU028	UG	TELSTRA	38700
28 – 68A	EGN-16	PU028	11kV SOUTHBROOK & LV CIRCUITS	ERGON	38765(MC00)
28 – 68B					
29 – 69	EGN-17	PU029	11kV SOUTHBROOK CIRCUIT	ERGON	40660(MC00)
29 – 70	T	PU029	UG	TELSTRA	40700
29 – 71A	W	PU029	UG WATER MAIN (FOR POWER PLANT)	MILLMERRAN POWER	40800
29 – 71B	W	PU029	UG WATER MAIN (FOR POWER PLANT)	MILLMERRAN POWER	40820
29 – 71C	W	PU029	UG WATER MAIN (FOR POWER PLANT)	MILLMERRAN POWER	40800

ABBREVIATIONS

OH – OVERHEAD
UG – UNDER GROUND
T – TELECOMMUNICATIONS
E – ELECTRICAL
G – GAS
S – SEWER
W – WATER
U – UNKNOWN
TSRC – TOOWOOMBA SECOND RANGE CROSSING
APT – AUSTRALIAN PIPELINE TRUST
AGL – AUSTRALIAN GAS LIGHT COMPANY
TRC – TOOWOOMBA REGIONAL COUNCIL
LVRC – LOCKYER VALLEY REGIONAL COUNCIL
DBYD – DIAL BEFORE YOU DIG
QUU – QUEENSLAND URBAN UTILITIES
MPS – MILMERRAN POWER STATION (INTERGEN)

NOTES

1. FOR SERVICES NOTES AND LEGEND REFER TO DRG No. PU001 TMR ELECTRICITY AND GAS

XXX-XX — ELECTRICITY CONFLICT LABEL

XXX-XX — GAS CONFLICT LABEL

⋈ — HIGH PRESSURE TRANSMISSION LINES

TEL – TELSTRA
OPT – OPTUS
NXG – NEXTGEN
PTL – POWERTEL
EGN – ERGON
EGX – ENERGEX
PLK – POWERLINK
PVE – PRIVATE SERVICE
QR – QUEENSLAND RAIL
APA – APA GROUP

Queensland Government
TRANSPORT AND MAIN ROADS

TMR REVISED UTILITY SERVICES LAYOUT 2014
ELECTRICITY & GAS DRAWINGS

PUBLIC UTILITY PLANT DRAWINGS
DRG NO. PU030 TMR ELECTRICITY & GAS
SHEET 30 OF 30

3.6 Control line set-out and details

This drawing details the control line configuration and the set-out tables for the proposed master alignment and sub-alignments.

Considerations:

Scale

- Select to allow representation of survey and control lines (consider 1:250 at A1/1:500 at A3 if high degree of detail)

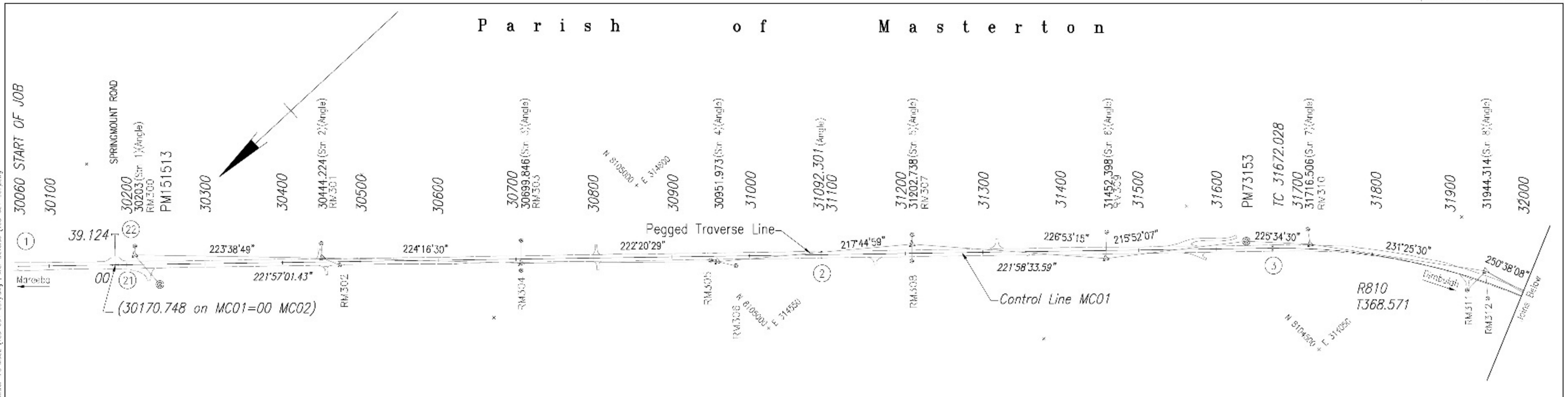
Survey

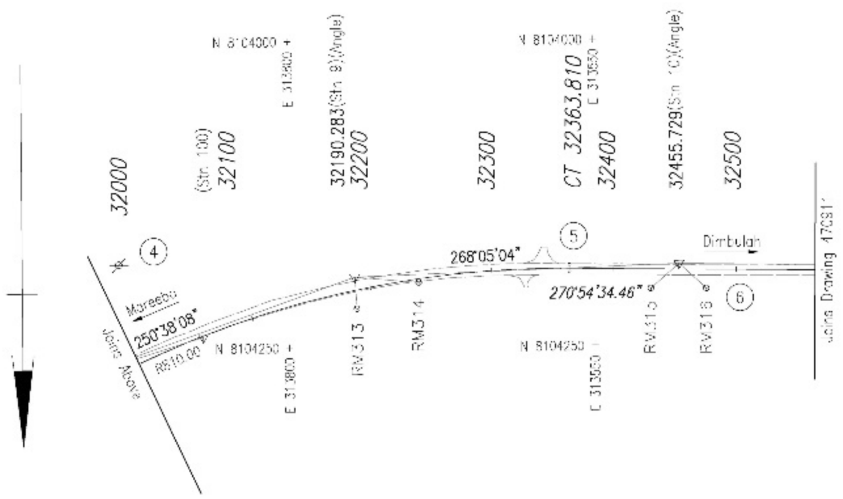
- Benchmarks and permanent survey marks (PSMs)
- Survey stations and survey line (full) connecting stations
- Recovery marks (offset pegs) if warranted
- Show property boundaries (red)

Drawing

- Draw all control lines to be used for setting out of construction
- Annotate control lines with name, start and end chainages, bearings and radii
- Tabulate coordinates of points necessary to set-out control line on site (start, end, TPs, IPs or centre of curve)
- Show control line chainages on the drawing
- Where possible set-out control line tables on the same sheet of the referenced control line to avoid cross referencing between sheets.

Figure 3.6(a) – Control line set-out and details – generic example 1





PEGGED TRAVERSE DATA

Station #	Chainage	Easting	Northing	Height	Combined Point Scale Factor	Comments	Quality
STN1	30203.000	315172.346	8105534.289	491.058	0.99993549	STN1 STAR PKT	TL
STN2	30444.224	315005.850	8105359.738	488.813	0.99993660	STN2 STAR PKT	TL
STN3	30699.846	314827.399	8105176.713	488.680	0.99993744	STN3 STAR PKT	TL
STN4	30951.973	314657.580	8104990.355	488.167	0.99993830	STN4 STAR PKT	TL
STN5	31202.738	314504.058	8104792.077	487.742	0.99993907	STN5 STAR PKT	TL
STN6	31452.398	314321.803	8104621.452	487.215	0.99993999	STN6 STAR PKT	TL
STN7	31716.506	314156.508	8104416.507	483.942	0.99994126	STN7 STAR PKT	TL
STN8	31944.314	313978.409	8104274.460	485.830	0.99994179	STN8 STAR PKT	TL
STN9	32190.283	313746.355	8104192.903	486.351	0.99994277	STN9 STAR PKT	TL
STN10	32455.729	313481.057	8104184.030	485.611	0.99994411	STN10 STAR PKT	TL
STN100	----------	313870.487	8104240.823	483.404	0.99994266	STN100 DUMPY PEG	PISO

OFFSET PEGS DATA

Station #	Chainage	Easting	Northing	Height	Combined Point Scale Factor	Comments	Quality
RM300	----------	315180.289	8105526.185	491.610	0.99993536	RM300 BOLT ON R/WAY CLIP	POPP
RM301	----------	315020.343	8105348.291	489.366	0.99993645	RM301 BOLT IN R/WAY CLIP	POPP
RM302	----------	314983.808	8105349.694	489.108	0.99993666	RM302 AP IN H/WALL	POPP
RM303	----------	314848.527	8105157.188	489.013	0.99993729	RM303 BOLT IN R/WAY CLIP	POPP
RM304	----------	314820.362	8105183.315	488.763	0.99993746	RM304 SPKT AT FNCE	POPP
RM305	----------	314664.258	8104995.401	488.845	0.99993816	RM305 AP IN H/WALL	POPP
RM306	----------	314637.593	8104976.716	488.281	0.99993837	RM306 SPKT AT FNCE	POPP
RM307	----------	314512.474	8104783.378	487.735	0.99993903	RM307 BOLT IN R/WAY CLIP	POPP
RM308	----------	314488.349	8104806.625	487.806	0.99993913	RM308 STAR PICKET AT FNC	POPP
RM309	----------	314345.507	8104597.606	486.917	0.99993993	RM309 BOLT IN R/WAY CLIP	POPP
RM310	----------	314172.634	8104405.730	486.103	0.99994085	RM310 BOLT ON BRIDGE	POPP
RM311	----------	313976.251	8104308.472	483.635	0.99994214	RM311 NAIL ON POST	POPP
RM312	----------	313950.404	8104296.549	481.408	0.99994261	RM312 SPKT AT FNCE	POPP
RM313	----------	313744.525	8104218.918	486.258	0.99994280	RM313 SPKT AT FENCE	POPP
RM314	----------	313694.041	8104197.774	486.173	0.99994304	RM314 AP IN H/WALL	POPP
RM315	----------	313504.212	8104204.042	485.873	0.99994396	RM315 SPKT AT FENCE	POPP
RM316	----------	313458.700	8104204.785	485.955	0.99994416	RM316 SPKT AT FENCE	POPP

PERMANENT SURVEY DETAILS

PM#	Chainage	Easting	Northing	Height	Combined Point Scale Factor	Comments	Quality
PM151513	----------	315122.243	8105536.102	490.401	0.99993582	PM151513 BRASS PLAQUE	PFSC
PM73153	31634.263	314215.243	8104474.075	486.154	0.99994065	PM73153 BRASS PLAQUE	PFSC

CONTROL LINE MC01 DATA

Point No.	Co-ordinates Easting (X)	Co-ordinates Northing (Y)	Remarks
1	315263.477	8105654.161	Start 30060
2	314575.397	8104886.414	Angle 31092.301
3	314155.685	8104455.430	TC 31672.028
4	313939.157	8104181.425	IP R810
5	313570.632	8104187.276	CT 32363.810
6	313434.459	8104189.438	END 32500

CONTROL LINE MC02 DATA

Point No.	Co-ordinates Easting (X)	Co-ordinates Northing (Y)	Remarks
21	315179.670	8105560.921	Start 00
22	315208.936	8105534.856	End CH39.124

NOTE:
The horizontal survey datum for this project is MGA94 Zone 55. This entire survey is true MGA94 as scale factor has been applied. Included in the Coordinate Table is each point's combined Point Scale Factor. These values are used to compute the Line Scale Factors between two points. The Line Scale Factor is the mean of the Combined Point Scale Factors of the end points of the line. The Line Scale Factor is used to compute the Spherical Distance between two points. Spherical Distance = Grid Distance/Line Scale Factor

A Issued for Construction

Revisions/Descriptions | Certification | Date | Microfiled

Associated Job Nos | Survey Data | Datum | Auxiliary Drg Nos | Horiz. Grid | Height Origin | Survey Books

Scales

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP

Through Chainage from

Drawn | Designed | ENGINEERING CERTIFICATION (RPEQ) | ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

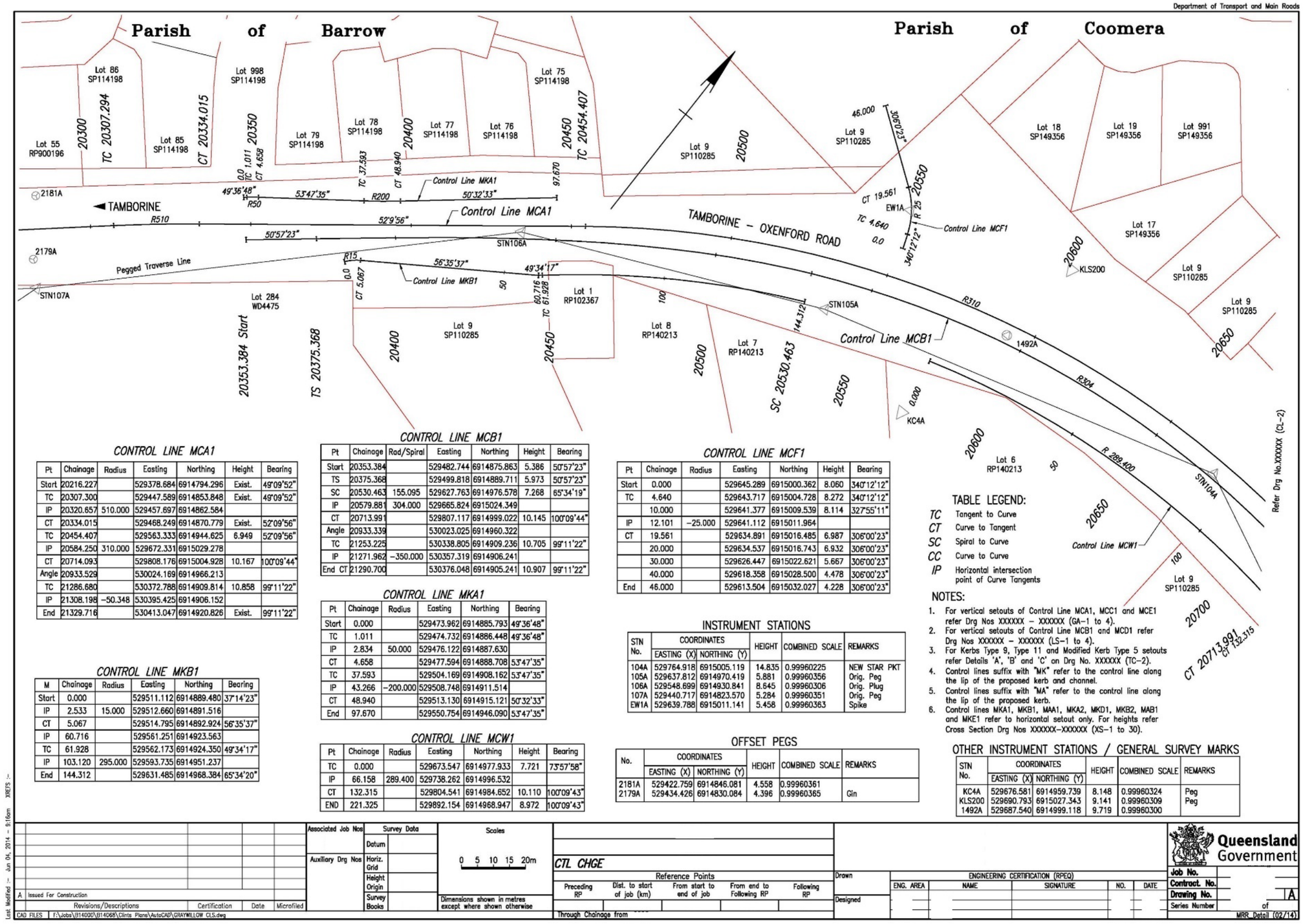
Job No. | Contract No. | Drawing No. A | Series Number of

MRR_Detail (02/14)

CAD FILES P:\Jobs\B14000\B14068\Clints Plans\AutoCAD\MUTCHILBA\470786_Alignment Setout Details.dwg

Last Modified :- Jun 04, 2014 - 10:30am XREFS :- xref survey 1000 (133 604 607).dwg ; xref TitleBlock (133 604 607).dwg ; xref Control line MC01 (133 604 607).dwg ; xref CR02300 (133 604 607).dwg ; xref Control line MC02 (133 604 607).dwg ; xref traverse (133 604 607).dwg

Figure 3.6(b) – Control line set-out and details – generic example 2



CONTROL LINE MCA1

Pt	Chainage	Radius	Easting	Northing	Height	Bearing
Start	20216.227		529378.684	6914794.296	Exist.	49°09'52"
TC	20307.300		529447.589	6914853.848	Exist.	49°09'52"
IP	20320.657	510.000	529457.697	6914862.584		
CT	20334.015		529468.249	6914870.779	Exist.	52°09'56"
TC	20454.407		529563.333	6914944.625	6.949	52°09'56"
IP	20584.250	310.000	529672.331	6915029.278		
CT	20714.093		529808.176	6915004.928	10.167	100°09'44"
Angle	20933.529		530024.169	6914966.213		
TC	21286.680		530372.788	6914909.814	10.858	99°11'22"
IP	21308.198	–50.348	530395.425	6914906.152		
End	21329.716		530413.047	6914920.826	Exist.	99°11'22"

CONTROL LINE MKB1

M	Chainage	Radius	Easting	Northing	Bearing
Start	0.000		529511.112	6914889.480	37°14'23"
IP	2.533	15.000	529512.660	6914891.516	
CT	5.067		529514.795	6914892.924	56°35'37"
IP	60.716		529561.251	6914923.563	
TC	61.928		529562.173	6914924.350	49°34'17"
IP	103.120	295.000	529593.735	6914951.237	
End	144.312		529631.485	6914968.384	65°34'20"

CONTROL LINE MCB1

Pt	Chainage	Rad/Spiral	Easting	Northing	Height	Bearing
Start	20353.384		529482.744	6914875.863	5.386	50°57'23"
TS	20375.368		529499.818	6914889.711	5.973	50°57'23"
SC	20530.463	155.095	529627.763	6914976.578	7.268	65°34'19"
IP	20579.881	304.000	529665.824	6915024.349		
CT	20713.991		529807.117	6914999.022	10.145	100°09'44"
Angle	20933.339		530023.025	6914960.322		
TC	21253.225		530338.805	6914909.236	10.705	99°11'22"
IP	21271.962	–350.000	530357.319	6914906.241		
End CT	21290.700		530376.048	6914905.241	10.907	99°11'22"

CONTROL LINE MKA1

Pt	Chainage	Radius	Easting	Northing	Bearing
Start	0.000		529473.962	6914885.793	49°36'48"
TC	1.011		529474.732	6914886.448	49°36'48"
IP	2.834	50.000	529476.122	6914887.630	
CT	4.658		529477.594	6914888.708	53°47'35"
TC	37.593		529504.169	6914908.162	53°47'35"
IP	43.266	–200.000	529508.748	6914911.514	
CT	48.940		529513.130	6914915.121	50°32'33"
End	97.670		529550.754	6914946.090	53°47'35"

CONTROL LINE MCW1

Pt	Chainage	Radius	Easting	Northing	Height	Bearing
TC	0.000		529673.547	6914977.933	7.721	73°57'58"
IP	66.158	289.400	529738.262	6914996.532		
CT	132.315		529804.541	6914984.652	10.110	100°09'43"
END	221.325		529892.154	6914968.947	8.972	100°09'43"

CONTROL LINE MCF1

Pt	Chainage	Radius	Easting	Northing	Height	Bearing
Start	0.000		529645.289	6915000.362	8.060	340°12'12"
TC	4.640		529643.717	6915004.728	8.272	340°12'12"
	10.000		529641.377	6915009.539	8.114	327°55'11"
IP	12.101	–25.000	529641.112	6915011.964		
CT	19.561		529634.891	6915016.485	6.987	306°00'23"
	20.000		529634.537	6915016.743	6.932	306°00'23"
	30.000		529626.447	6915022.621	5.667	306°00'23"
	40.000		529618.358	6915028.500	4.478	306°00'23"
End	46.000		529613.504	6915032.027	4.228	306°00'23"

INSTRUMENT STATIONS

STN No.	COORDINATES EASTING (X)	COORDINATES NORTHING (Y)	HEIGHT	COMBINED SCALE	REMARKS
104A	529764.918	6915005.119	14.835	0.99960225	NEW STAR PKT
105A	529637.812	6914970.419	5.881	0.99960356	Orig. Peg
106A	529548.699	6914930.841	8.645	0.99960306	Orig. Plug
107A	529440.717	6914823.570	5.284	0.99960351	Orig. Peg
EW1A	529639.788	6915011.141	5.458	0.99960363	Spike

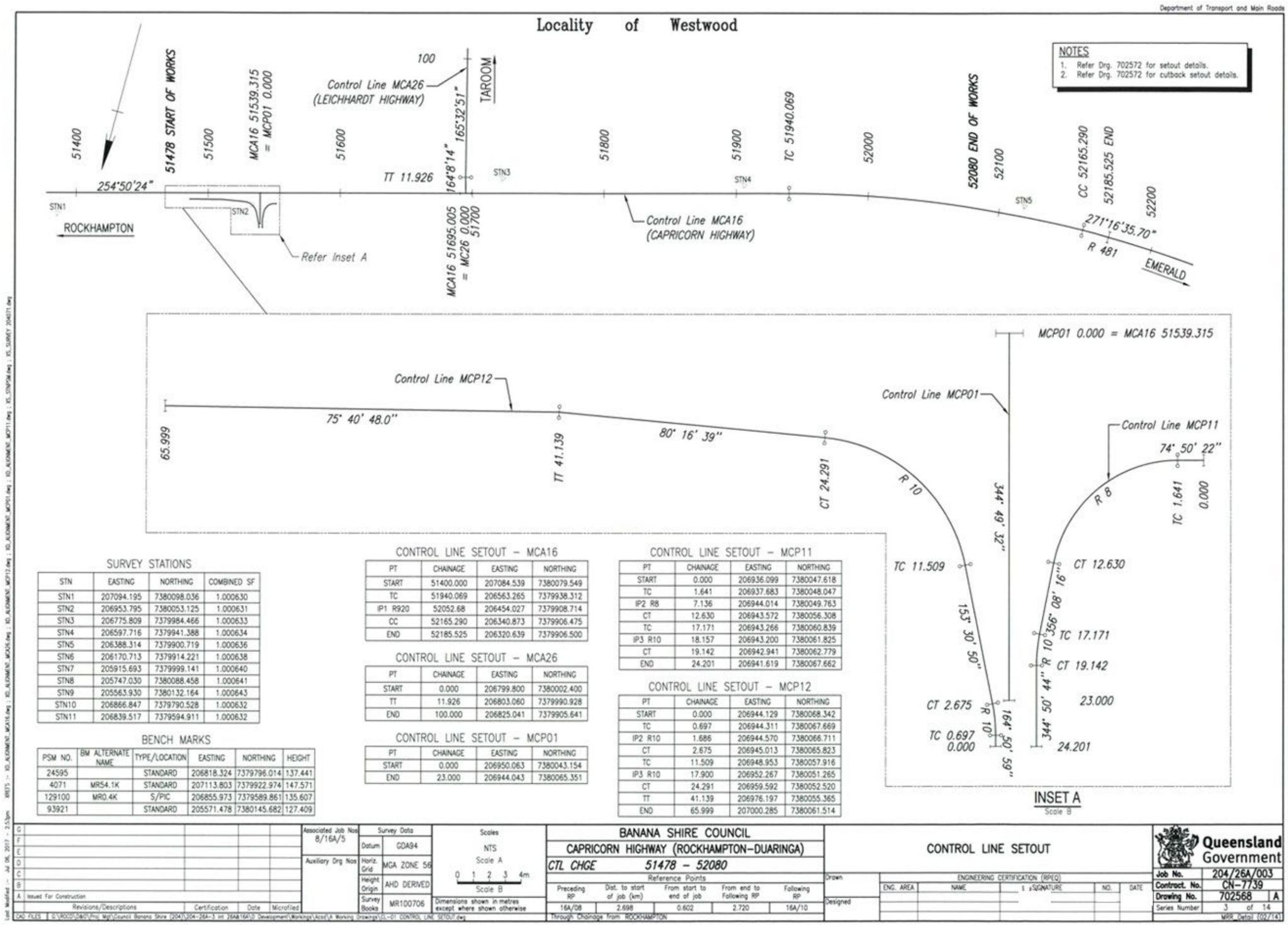
OFFSET PEGS

No.	COORDINATES EASTING (X)	COORDINATES NORTHING (Y)	HEIGHT	COMBINED SCALE	REMARKS
2181A	529422.759	6914846.081	4.558	0.99960361	
2179A	529434.426	6914830.084	4.396	0.99960365	Gin

OTHER INSTRUMENT STATIONS / GENERAL SURVEY MARKS

STN No.	COORDINATES EASTING (X)	COORDINATES NORTHING (Y)	HEIGHT	COMBINED SCALE	REMARKS
KC4A	529676.581	6914959.739	8.148	0.99960324	Peg
KLS200	529690.793	6915027.343	9.141	0.99960309	Peg
1492A	529687.540	6914999.118	9.719	0.99960300	

Figure 3.6(c) – Control line set-out and details – registered example 1



SURVEY STATIONS

STN	EASTING	NORTHING	COMBINED SF
STN1	207094.195	7380098.036	1.000630
STN2	206953.795	7380053.125	1.000631
STN3	206775.809	7379984.466	1.000633
STN4	206597.716	7379941.388	1.000634
STN5	206388.314	7379900.719	1.000636
STN6	206170.713	7379914.221	1.000638
STN7	205915.693	7379999.141	1.000640
STN8	205747.030	7380088.458	1.000641
STN9	205563.930	7380132.164	1.000643
STN10	206866.847	7379790.528	1.000632
STN11	206839.517	7379594.911	1.000632

BENCH MARKS

PSM NO.	BM ALTERNATE NAME	TYPE/LOCATION	EASTING	NORTHING	HEIGHT
24595		STANDARD	206818.324	7379796.014	137.441
4071	MR54.1K	STANDARD	207113.803	7379922.974	147.571
129100	MR0.4K	S/PIC	206855.973	7379589.861	135.607
93921		STANDARD	205571.478	7380145.682	127.409

CONTROL LINE SETOUT – MCA16

PT	CHAINAGE	EASTING	NORTHING
START	51400.000	207084.539	7380079.549
TC	51940.069	206563.265	7379938.312
IP1 R920	52052.68	206454.027	7379908.714
CC	52165.290	206340.873	7379906.475
END	52185.525	206320.639	7379906.500

CONTROL LINE SETOUT – MCA26

PT	CHAINAGE	EASTING	NORTHING
START	0.000	206799.800	7380002.400
TT	11.926	206803.060	7379990.928
END	100.000	206825.041	7379905.641

CONTROL LINE SETOUT – MCP01

PT	CHAINAGE	EASTING	NORTHING
START	0.000	206950.063	7380043.154
END	23.000	206944.043	7380065.351

CONTROL LINE SETOUT – MCP11

PT	CHAINAGE	EASTING	NORTHING
START	0.000	206936.099	7380047.618
TC	1.641	206937.683	7380048.047
IP2 R8	7.136	206944.014	7380049.763
CT	12.630	206943.572	7380056.308
TC	17.171	206943.266	7380060.839
IP3 R10	18.157	206943.200	7380061.825
CT	19.142	206942.941	7380062.779
END	24.201	206941.619	7380067.662

CONTROL LINE SETOUT – MCP12

PT	CHAINAGE	EASTING	NORTHING
START	0.000	206944.129	7380068.342
TC	0.697	206944.311	7380067.669
IP2 R10	1.686	206944.570	7380066.711
CT	2.675	206945.013	7380065.823
TC	11.509	206948.953	7380057.916
IP3 R10	17.900	206952.267	7380051.265
CT	24.291	206959.592	7380052.520
TT	41.139	206976.197	7380055.365
END	65.999	207000.285	7380061.514

Revisions/Descriptions	Certification	Date	Microfiled
A Issued For Construction			

Associated Job Nos: 8/16A/5
Auxiliary Drg Nos:
Survey Data: Datum CDA94; Horiz. Grid MGA ZONE 56; Height Origin AHD DERIVED; Survey Books MR100706
Scales: NTS; Scale A 0 1 2 3 4m; Scale B
Dimensions shown in metres except where shown otherwise

BANANA SHIRE COUNCIL
CAPRICORN HIGHWAY (ROCKHAMPTON–DUARINGA)
CTL CHGE 51478 – 52080
Reference Points

Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
16A/08	2.698	0.602	2.720	16A/10

Through Chainage from ROCKHAMPTON

CONTROL LINE SETOUT

Drawn
Designed
ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE

Queensland Government
Job No. 204/26A/003
Contract. No. CN–7739
Drawing No. 702568 A
Series Number 3 of 14
MRR Detail (02/14)

CAD FILES G:\ROCOR\DWG\Proj Mgt\Council Banana Shire (204)\204-26A-3 int 26A816A\D Development\Workings\Acad\A Working Drawings\CL-01 CONTROL LINE SETOUT.dwg

Last Modified – Jul 06, 2017 - 2:53pm

Figure 3.6(d) – Control line set-out and details – registered example 2

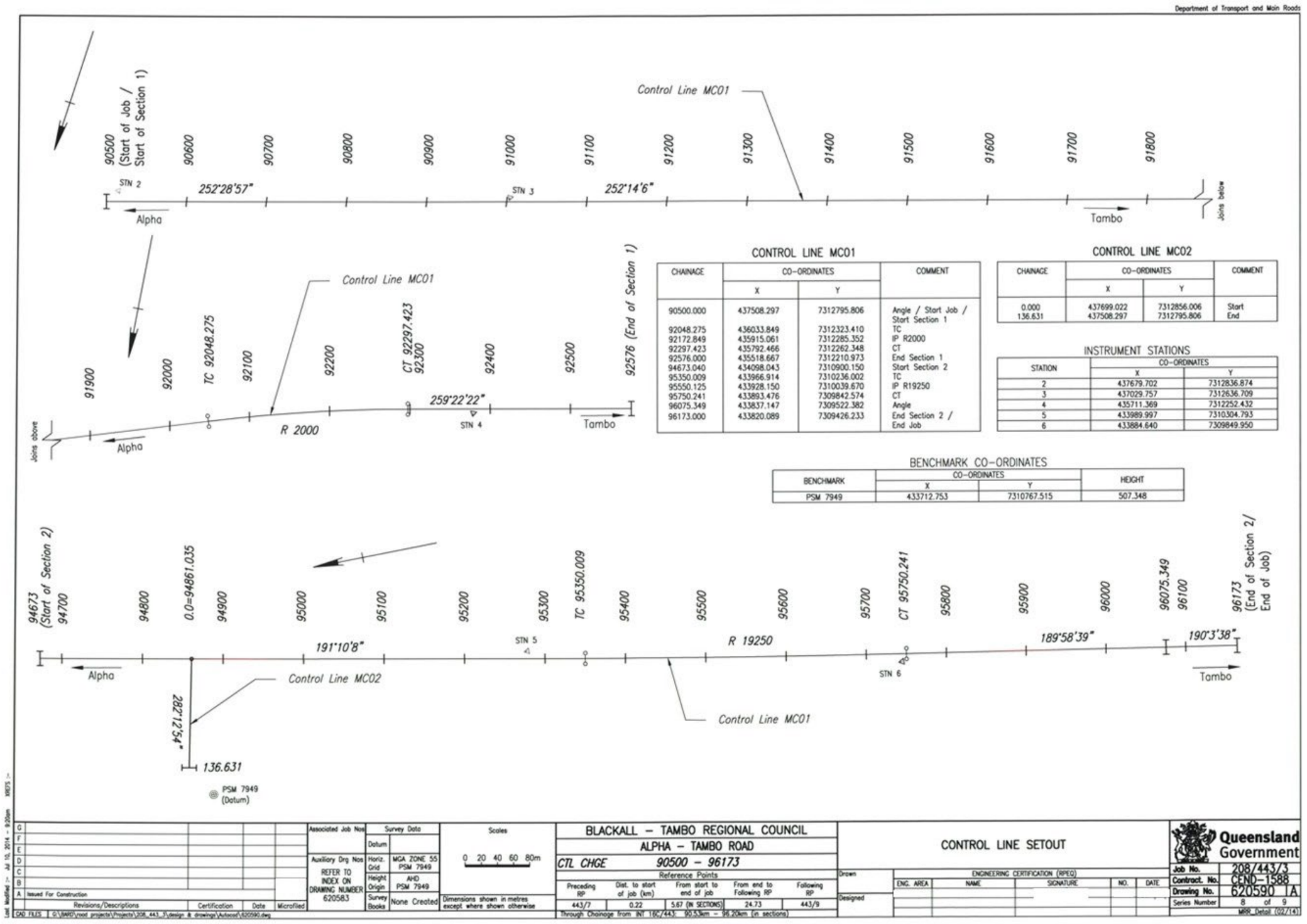


Figure 3.6(e) – Control line set-out and details – registered example 3

CONTROL LINE MCA1 DATA

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	D.ANGLE
START	75428.371	366330.448	8118923.230	16.869	1°20'42.08"			
TC	75488.574	366331.861	8118983.416	16.809	1°20'42.08"			
IP2		366332.830	8119024.679	16.765		5000.000	82.548	0°56'45.33"
CT	75571.122	366334.480	8119065.921	16.681	2°17'27.42"			
TC	75819.297	366344.401	8119313.898	15.355	2°17'27.42"			
IP3		366348.651	8119420.132	14.720		-900.000	211.657	13°28'28.11"
CT	76030.954	366328.030	8119524.432	14.245	348°48'59.31"			
TC	76296.031	366276.617	8119784.476	13.729	348°48'59.31"			
IP4		366252.971	8119904.078	13.814		2400.000	243.625	5°48'57.99"
CC	76539.656	366241.567	8120025.460	12.991	354°37'57.29"			
IP5		366221.098	8120243.318	12.711		-2400.000	436.428	10°25'08.25"
CT	76976.084	366161.569	8120453.882	14.375	344°12'49.05"			
TC	77044.655	366142.914	8120519.867	15.275	344°12'49.05"			
IP6		366122.332	8120592.668	16.297		2700.000	151.270	3°12'36.16"
CT	77195.925	366105.859	8120666.508	17.318	347°25'25.20"			
TC	77485.275	366042.856	8120948.915	21.124	347°25'25.20"			
IP7		366008.237	8121104.090	22.454		771.000	313.583	23°18'12.59"
CT	77798.858	366037.830	8121260.301	22.034	10°43'37.80"			
END	77900.551	366056.759	8121360.217	21.639	10°43'37.80"			

CONTROL LINE MCA2 DATA

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	D.ANGLE
START	75428.674	366344.711	8118922.828	17.429	1°37'18.55"			
TC	75816.909	366355.699	8119310.907	14.905	1°37'18.55"			
IP2		366358.875	8119423.077	14.273		-1000.000	223.496	12°48'19.26"
CT	76040.404	366337.110	8119533.162	14.013	348°48'59.29"			
TC	76400.850	366267.201	8119886.763	13.471	348°48'59.29"			
IP3		366253.771	8119954.690	13.242		1350.000	138.363	5°52'20.29"
CC	76539.213	366247.362	8120023.635	12.840	354°41'19.58"			
IP4		366226.950	8120243.205	12.638		-2405.600	439.806	10°28'30.53"
CT	76979.019	366166.958	8120455.406	14.301	344°12'49.05"			
TC	77047.305	366148.380	8120521.117	14.933	344°12'49.05"			
IP5		366127.836	8120593.783	15.762		2695.000	150.990	3°12'36.16"
CT	77198.295	366111.394	8120667.486	16.761	347°25'25.20"			
TC	77453.434	366055.840	8120916.503	20.231	347°25'25.20"			
IP6		366019.215	8121080.669	21.775		830.000	331.909	22°54'43.33"
CT	77785.343	366049.393	8121246.142	21.660	10°20'08.53"			
END	77900.158	366069.993	8121359.094	21.205	10°20'08.53"			

CONTROL LINE MCC1 DATA

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	D.ANGLE
START	-65.771	366380.907	8119955.544	NaN	354°39'26.80"			
IP2		366376.509	8120002.574	NaN		526.723	94.220	10°14'56.42"
CC	28.449	366380.549	8120049.637	11.056	4°54'23.22"			
IP3		366384.916	8120100.511	11.087		-163.000	98.965	34°47'13.60"
CT	127.414	366359.477	8120144.784	11.359	330°07'09.62"			
TC	151.218	366347.619	8120165.423	11.265	330°07'09.62"			
IP4		366334.738	8120187.841	11.136		300.000	51.583	9°51'06.10"
CT	202.801	366325.882	8120212.133	11.007	339°58'15.72"			
TC	321.934	366285.080	8120324.061	11.337	339°58'15.72"			
IP5		366276.113	8120348.658	11.490		-3000.000	52.360	1°00'00.02"
CT	374.294	366266.719	8120373.095	11.621	338°58'15.70"			
TC	498.994	366221.971	8120489.490	12.338	338°58'15.70"			
IP6		366204.636	8120534.582	13.310		600.000	96.411	9°12'23.71"
CT	595.405	366194.738	8120581.867	14.102	348°10'39.40"			
END	627.795	366188.102	8120613.570	NaN	348°10'39.40"			

OFFSET/RECOVERY MARKS: POPP

NAME	EASTING	NORTHING	HEIGHT	COMBINED SCALEFACT	COMMENT
RM300	366312.015	8118907.316	17.178	0.99980841	ORIG BOLT IN CONC
STN420	366314.352	8119263.630	14.780	0.99980878	ORIG STAR PKT
RM301	366403.337	8119542.021	13.228	0.99980873	ORIG BOLT IN CONC
RM302	366338.713	8119752.834	12.895	0.99980899	BOLT IN HEADWALL
RM303	366277.793	8119975.952	12.508	0.99980925	NAIL IN CONC
RM304	366170.950	8120643.747	14.839	0.99980924	ORIG STAR PKT
RM306	366073.284	8121178.042	19.901	0.99980876	ORIG STAR PKT

PERMANENT MARKS: PPMK

NAME	EASTING	NORTHING	HEIGHT	COMBINED SCALEFACT	COMMENT
PM92801	366475.880	8119609.197	12.456	0.99980861	BRASS PLAQUE
PM106155	366082.421	8120423.722	15.373	0.99980945	BRASS PLAQUE
PM108670	366069.807	8120040.982	12.488	0.99980994	BRASS PLAQUE
PM108671	366253.042	8119613.934	13.147	0.99980924	BRASS PLAQUE
PM145006	366285.626	8120037.231	11.854	0.99980933	STAR PKT IN CONC COLLAR
PM99556	366233.219	8120174.923	11.609	0.99980954	BRASS PLAQUE IN HEADWALL
PM99559	366254.118	8120273.952	11.637	0.99980947	BRASS PLAQUE
PM145008	366114.241	8120823.061	17.643	0.99980898	STAR PKT
PM22972	366371.076	8119457.440	13.194	0.99980884	BRASS PLUG
PM163727	366189.127	8120200.231	11.936	0.99980964	BRASS PLAQUE
PM112842	366141.873	8120666.853	15.866	0.99980917	ORIG STAR PKT IN CONC COLLAR
PM45083	366063.509	8121016.760	20.229	0.99980875	BRASS PLAQUE
PM76224	366378.910	8120095.671	10.582	0.99980922	BRASS PLAQUE

PRIMARY INSTRUMENT STATIONS: PISP

NAME	EASTING	NORTHING	HEIGHT	COMBINED SCALEFACT	COMMENT
STN500	366324.495	8119316.715	14.724	0.99980875	ORIG SPIKE
STN20	366368.259	8119262.800	14.463	0.99980865	ORIG STAR PKT
STN419	366321.445	8119441.760	13.896	0.99980889	ORIG STAR PKT
STN518	366237.427	8119496.098	13.602	0.99980922	ORIG STAR PKT
STN517	366245.940	8119735.991	13.125	0.99980926	ORIG STAR PKT
STN516	366203.588	8119944.803	12.189	0.99980955	ORIG STAR PKT
STN414	366184.717	8120264.194	11.657	0.99980969	ORIG STAR PKT
STN413	366142.840	8120467.223	13.682	0.99980951	ORIG STAR PKT
STN12	366142.592	8120636.690	15.389	0.99980925	ORIG STAR PKT
STN412	366098.920	8120626.124	15.900	0.99980931	ORIG STAR PKT
STN611	366057.289	8120808.850	18.981	0.99980896	STAR PKT
STN610	366009.869	8120999.822	21.569	0.99980871	ORIG NAIL IN SEWER MANHOLE
STN409	365999.226	8121180.902	23.155	0.99980850	ORIG SPIKE
STN624	366300.340	8119553.864	13.587	0.99980901	BOLT IN CONC FOOTING
STN428	366294.105	8120317.585	11.413	0.99980937	STAR PKT
STN31	366397.993	8120073.310	10.847	0.99980912	NAIL IN KERB
STN430	366346.899	8120181.253	11.497	0.99980918	STAR PKT
STN530	366322.614	8120228.886	7.466	0.99980990	STAR PKT
STN429	366294.340	8120276.188	10.983	0.99980944	STAR PKT
STN22	366317.499	8118908.693	16.934	0.99980843	STAR PKT
STN23	366317.902	8119107.550	15.352	0.99980868	BOLT IN FOOTPATH
STN450	366324.233	8119263.488	14.625	0.99980877	ORIG NAIL IN FOOTPATH
STN24	366354.829	8119549.044	13.429	0.99980886	ORIG NAIL IN CONC
STN17	366315.015	8119749.017	12.965	0.99980906	ORIG STAR PKT
STN16	366274.233	8119953.676	12.649	0.99980924	ORIG STAR PKT
STN15	366246.944	8120163.483	11.679	0.99980949	ORIG STAR PKT
STN14	366232.562	8120270.800	11.678	0.99980953	ORIG SPIKE
STN13	366180.352	8120478.674	13.389	0.99980944	ORIG STAR PKT
STN11	366096.256	8120818.606	17.325	0.99980909	ORIG STAR PKT
STN25	366064.596	8121199.309	20.208	0.99980874	STAR PKT
STN27	366229.959	8120484.427	12.181	0.99980946	BOLT IN KERB
STN28	366266.642	8120368.797	12.000	0.99980937	STAR PKT
STN29	366314.608	8120273.218	11.028	0.99980936	STAR PKT
STN30	366330.473	8120167.871	12.558	0.99980907	STAR PKT
STN32	366258.093	8120186.430	8.231	0.99980999	BOLT IN FOOTPATH
STN33	366227.047	8120171.526	7.676	0.99981018	BOLT IN FOOTPATH
STN34	366200.636	8120167.669	8.131	0.99981020	BOLT IN FOOTPATH
STN35	366142.174	8120158.707	12.037	0.99980978	BOLT IN FOOTPATH

SAFETY IN DESIGN INFORMATION

THERE MAY BE ADDITIONAL HAZARDS / RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING. REFER TO THE FOLLOWING: REPORT NO.60439912-RP-SID-01

LAST PRINTED: Monday, December 05, 2016 15:04:53

A	Issued for Construction				
	Revisions/Descriptions	Certification	Date	Microfiled	

CAD FILES J:\60439912\S. CAD\20-SHEETS\674816-CL.dwg

Associated Job Nos: Auxiliary Drg Nos 674801 TO 674988

Survey Data	
Datum	GDA
Horiz. Grid	MGA94Zone55
Height Origin	AHD
Survey Books	MR93832

Scales: Dimensions shown in metres except where shown otherwise

CAIRNS REGION
BRUCE HIGHWAY (INNISFAIL – CAIRNS)
CTL CHGE 75450 – 77790 (MCA1)

Reference Points				
Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
10P/17A	0.445	2.34	7.61	10P/21A

Through Chainage from INNISFAIL 75.45 km – 77.79 km

CONTROL LINE AND SURVEY SETOUT
SHEET 4 OF 4
SETOUT TABLES

Drawn
Designed

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE

Queensland Government

Job No.	274/10P/1
Contract. No.	FRND-101
Drawing No.	674816 A
Series Number	CL-04 of 4

MRR_Detail (02/14)

3.7 Longitudinal section

The longitudinal section drawing details the horizontal and vertical profile geometry of all control lines. For detailed requirements and considerations refer to DDSPM Volume 2 – Part 2, Chapter 2: *Urban Road Design Drawings*, Section 2.9. These particular drawings are required together with layout plans as an alternative to producing rural working plans which combine both aspects on the same drawing.

3.8 Working plan / general arrangement

Working plan drawings are a combined plan and longitudinal section drawing. The plan shows the extents of the project and construction details and details both the vertical and horizontal geometry.

The general arrangement plan drawings detail the configuration and location of significant items of the proposed construction works for the road alignment and intersection layouts.

3.8.1 Working plan

Considerations

- Scale – 1:1000 at A1 plan and horizontal, 1:100 Vertical (10 to 1 distortion)
- Longitudinal section templates are available from the *Transport and Main Roads 12D Model Customisation* User Library
- Show existing survey data (survey stations, co-ordinates, heights and so on)
- Show control line set-out and label control lines
- Show chainages, TPs, curvature data, bearings
- Identify pavement and shoulder widening
- Show guardrail extents, reference to standard drawings
- Identify bridge location and provide reference to design details
- Identify pavement and surfacing details
- Show pavement markings (if not shown on separate drawing)
- Show signage (if not shown on separate sheet)
- Show road edge guide posts and delineators
- Identify operating speed
- Show superelevation details
- Details on extended design domain

Figure 3.8(a) – Working plan – generic example 1

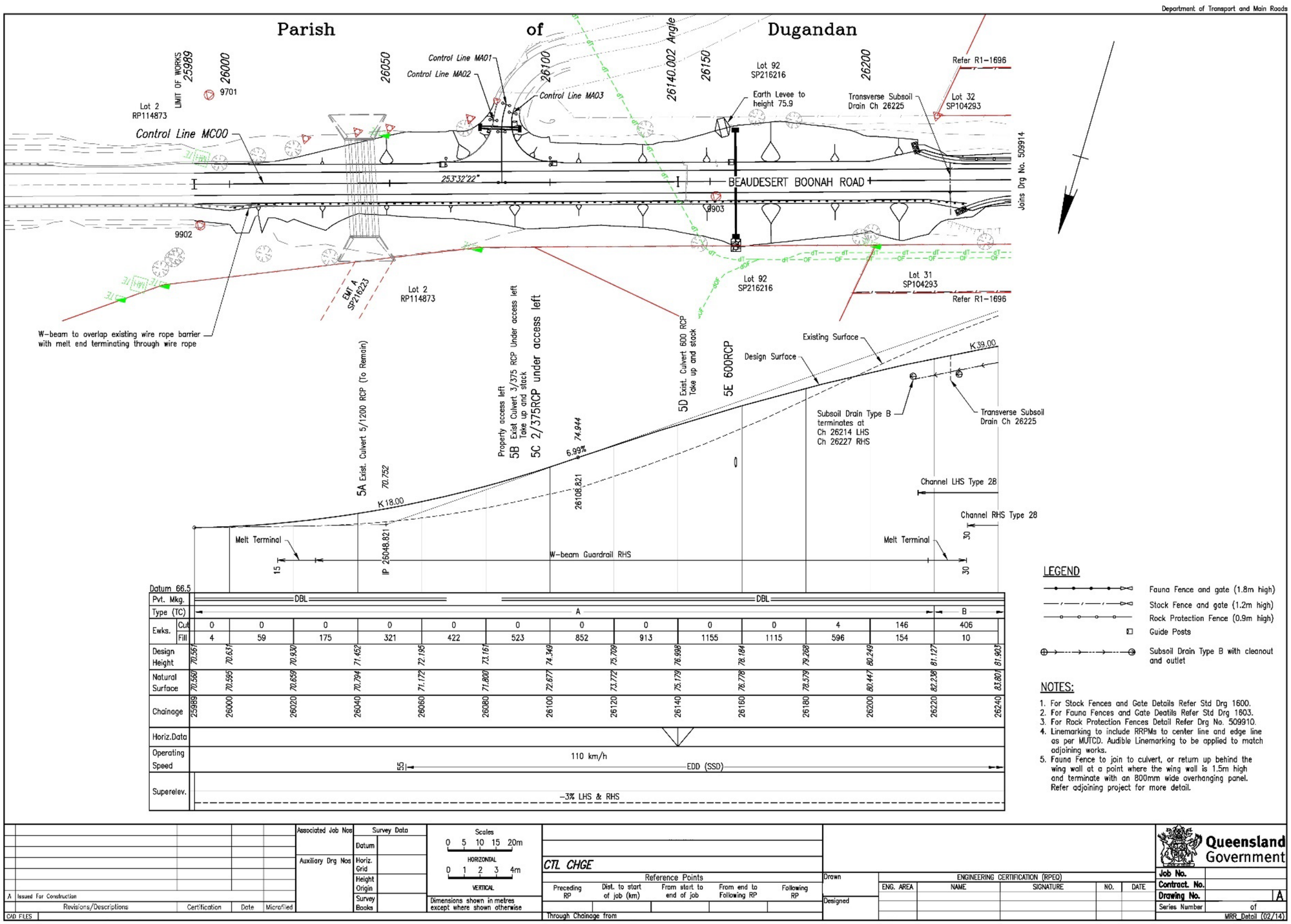
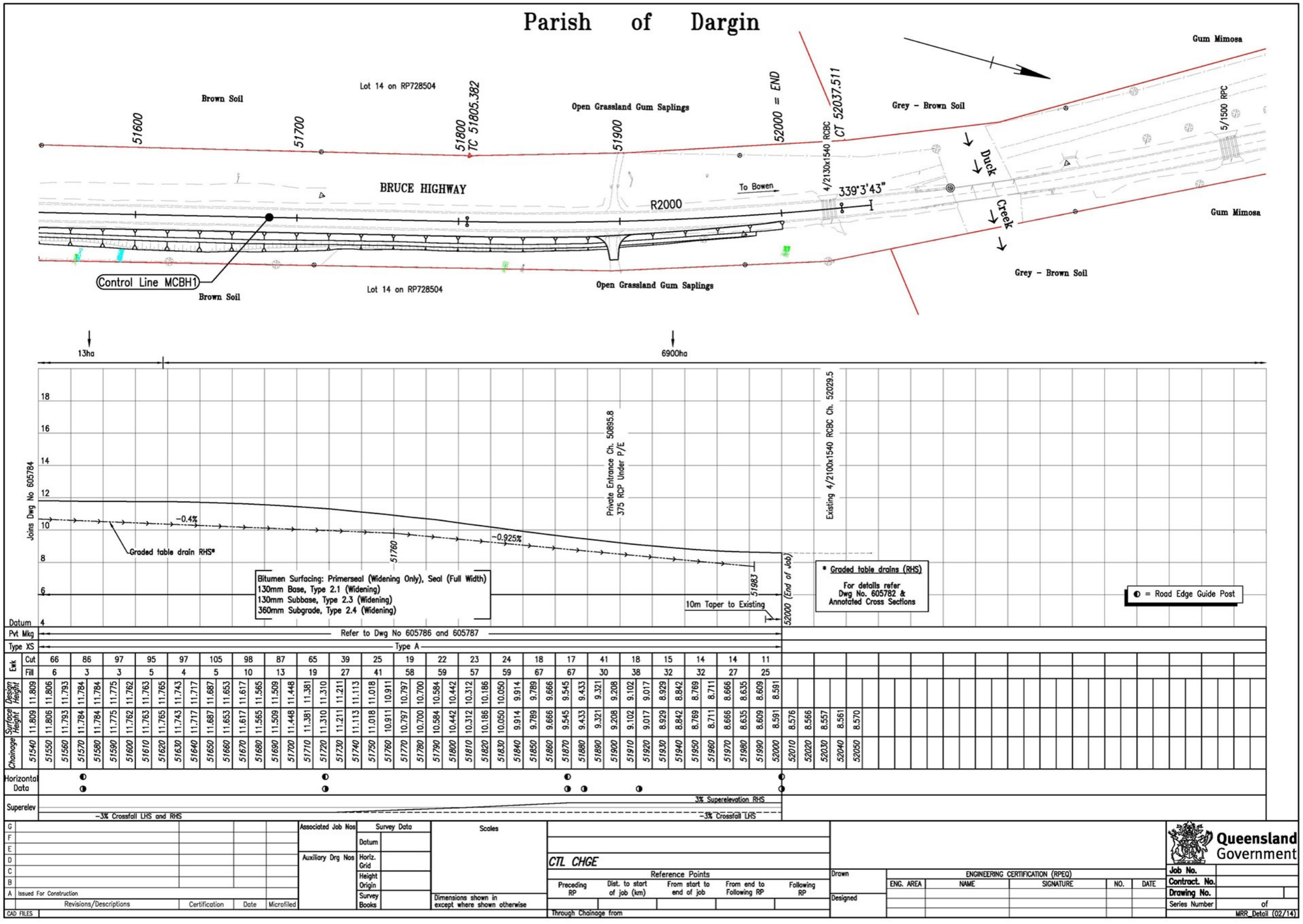


Figure 3.8(b) – Working plan – generic example 2



Chainage	Design Height	Surface Height	Ewk Fill	Ewk Cut
51540	11.809	11.809	6	66
51550	11.806	11.806		
51560	11.793	11.793		
51570	11.784	11.784	3	86
51580	11.784	11.784		
51590	11.775	11.775	3	97
51600	11.762	11.762		
51610	11.763	11.763	5	95
51620	11.765	11.765		
51630	11.743	11.743	4	97
51640	11.717	11.717		
51650	11.687	11.687	5	105
51660	11.653	11.653		
51670	11.617	11.617	10	98
51680	11.565	11.565		
51690	11.509	11.509	13	87
51700	11.448	11.448		
51710	11.381	11.381	19	65
51720	11.310	11.310		
51730	11.211	11.211	27	39
51740	11.113	11.113		
51750	11.018	11.018	41	25
51760	10.911	10.911		
51770	10.797	10.797	58	19
51780	10.700	10.700		
51790	10.584	10.584	59	22
51800	10.442	10.442		
51810	10.312	10.312	57	23
51820	10.186	10.186		
51830	10.050	10.050	59	24
51840	9.914	9.914		
51850	9.789	9.789	67	18
51860	9.666	9.666		
51870	9.545	9.545	67	17
51880	9.433	9.433		
51890	9.321	9.321	30	41
51900	9.208	9.208		
51910	9.102	9.102	38	18
51920	9.017	9.017		
51930	8.929	8.929	32	15
51940	8.842	8.842		
51950	8.769	8.769	32	14
51960	8.711	8.711		
51970	8.666	8.666	27	14
51980	8.635	8.635		
51990	8.609	8.609	25	11
52000	8.591	8.591		
52010		8.576		
52020		8.566		
52030		8.557		
52040		8.561		
52050		8.570		

Figure 3.8(c) – Working plan – generic example 3

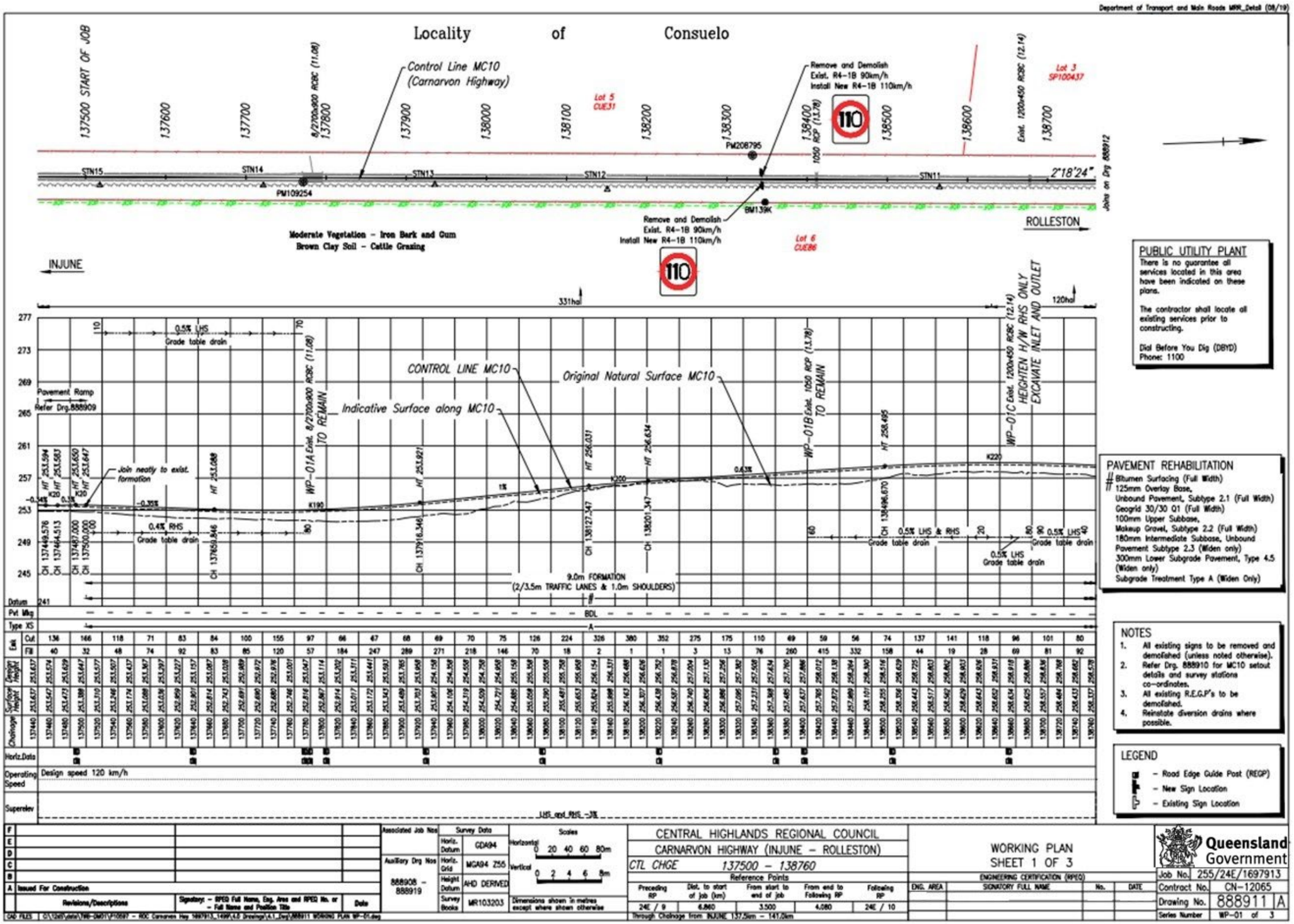


Figure 3.8(d) – Working plan – registered example 1

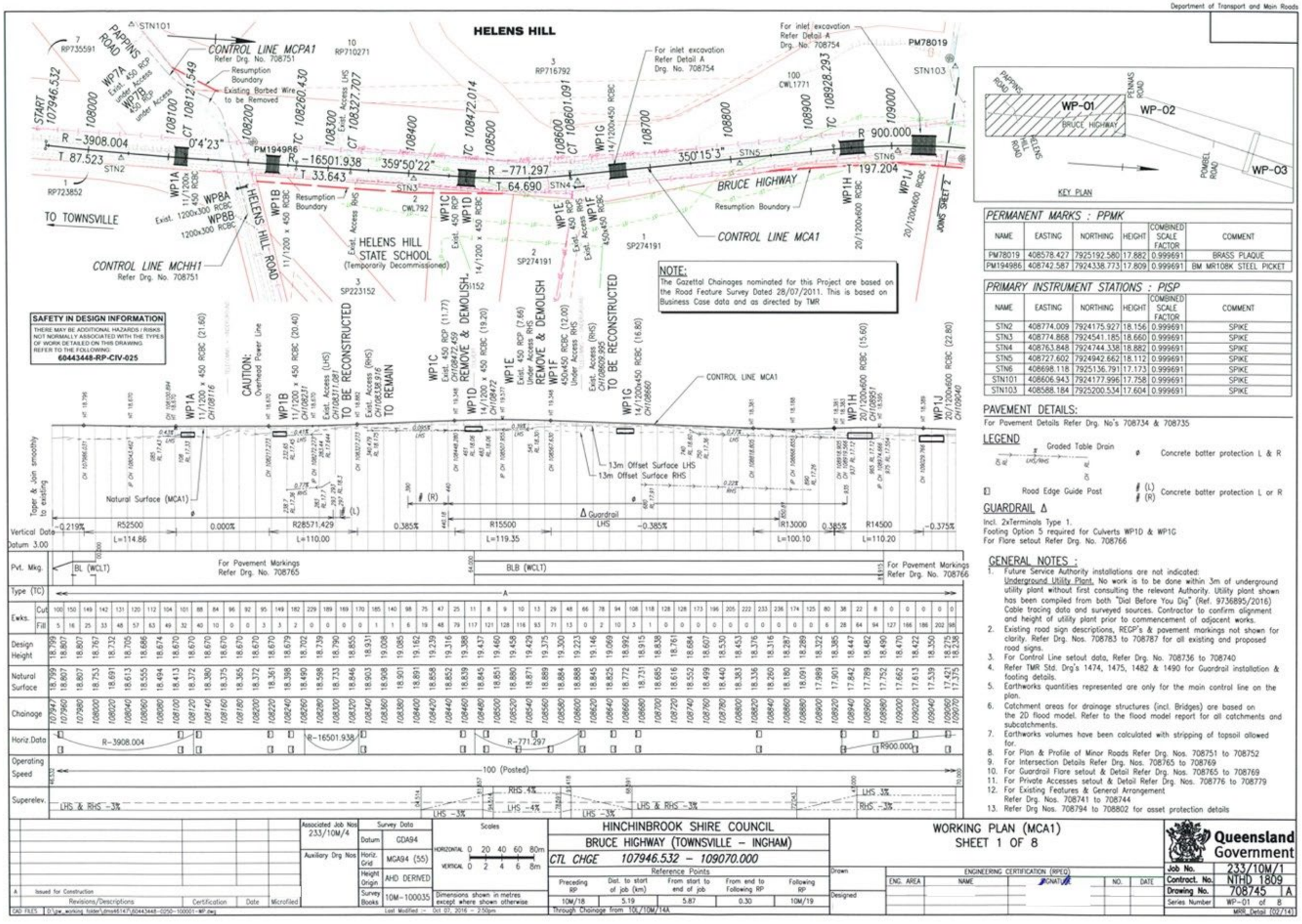
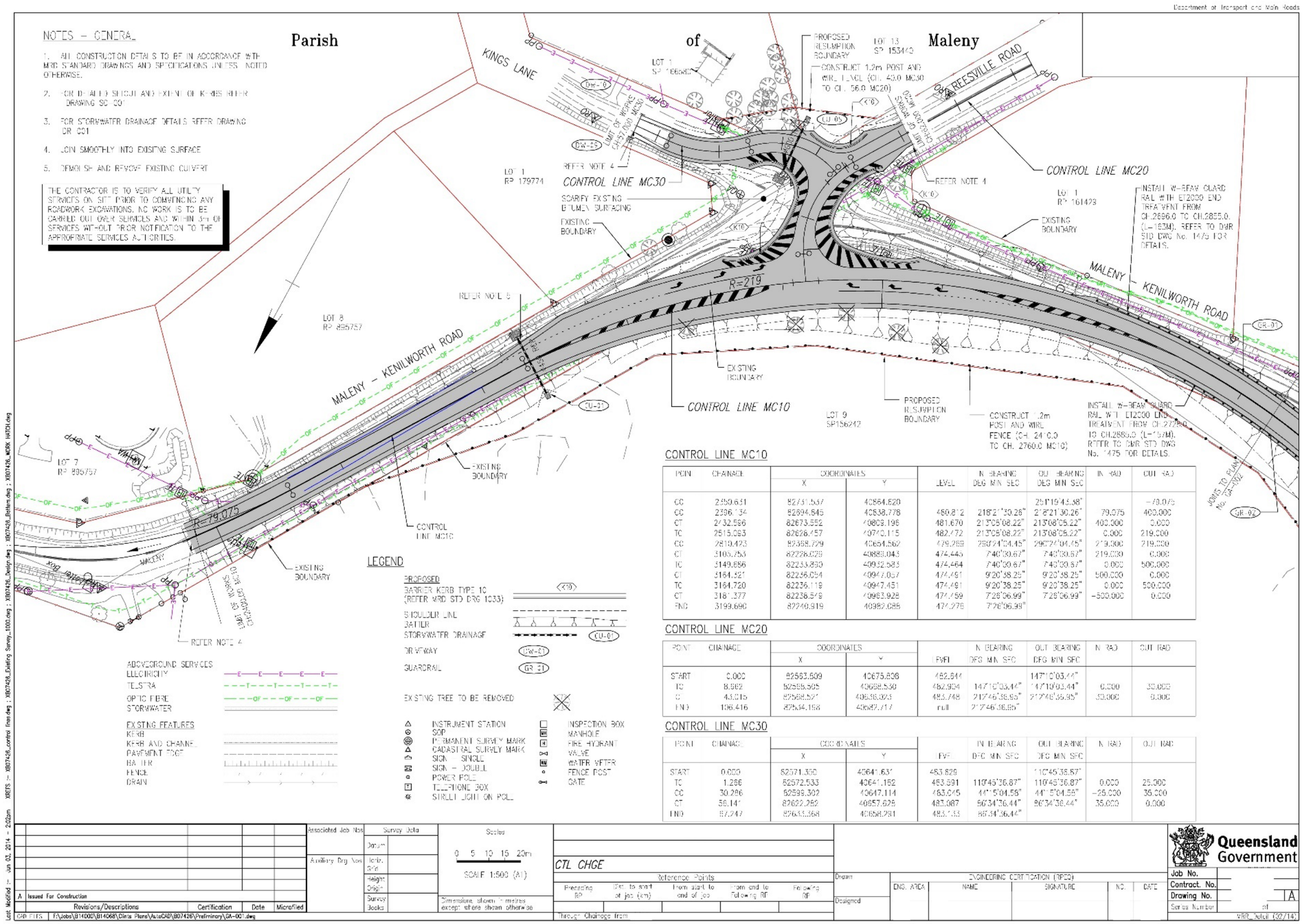


Figure 3.8(e) – Working plan – registered example 2



3.8.2 General arrangement plan

Considerations

Scale

- Usually 1:500 at A1/1:1000 at A3 (consider 1:250 at A1/1:500 at A3 if high degree of detail)

Background

- Topographical survey
- Property boundaries and descriptions
- Existing roadway beyond new roadwork (connection to existing construction)

Drawing

- Show proposed roadway layout including K&C, medians, islands, footpaths, share paths, accesses, etc.
- Show control lines to be used for construction
- Detail change points (widths, chainages and crossfall) of proposed traffic and parking lanes, shoulders, bicycle lanes, bus lanes, bus bays, footpath, accesses, and so on
- Detail the location and extents of new guardrail, concrete barriers, crash terminals, retaining walls, noise walls, etc.
- Show proposed connection details to existing guardrail, concrete barriers, footpaths, etc.
- Show proposed bridges, abutments, culverts, headwalls, etc.
- Detail construction activities and construction requirements
- Show other features as necessary

Figure 3.8(f) – General arrangement – generic example 1

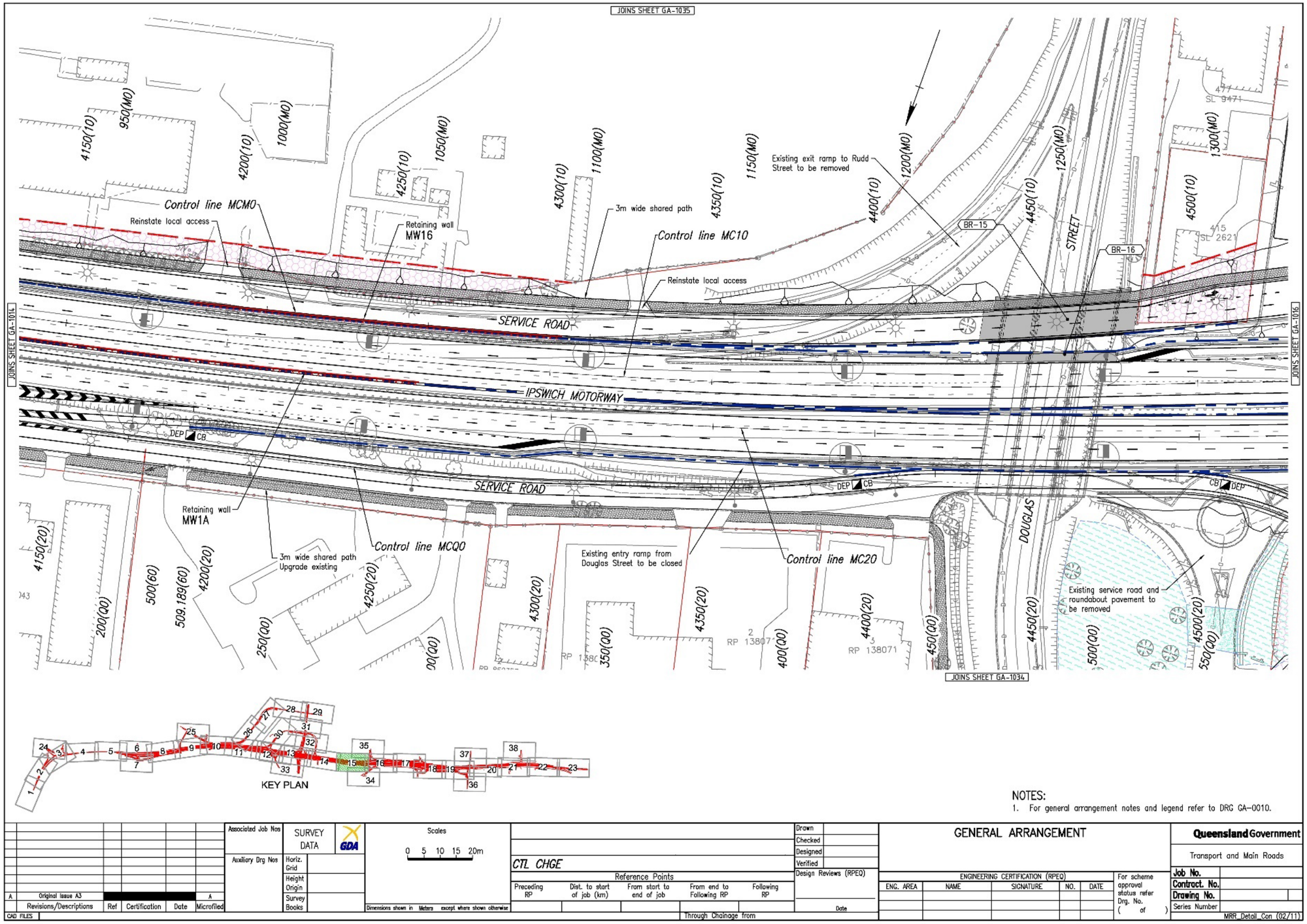
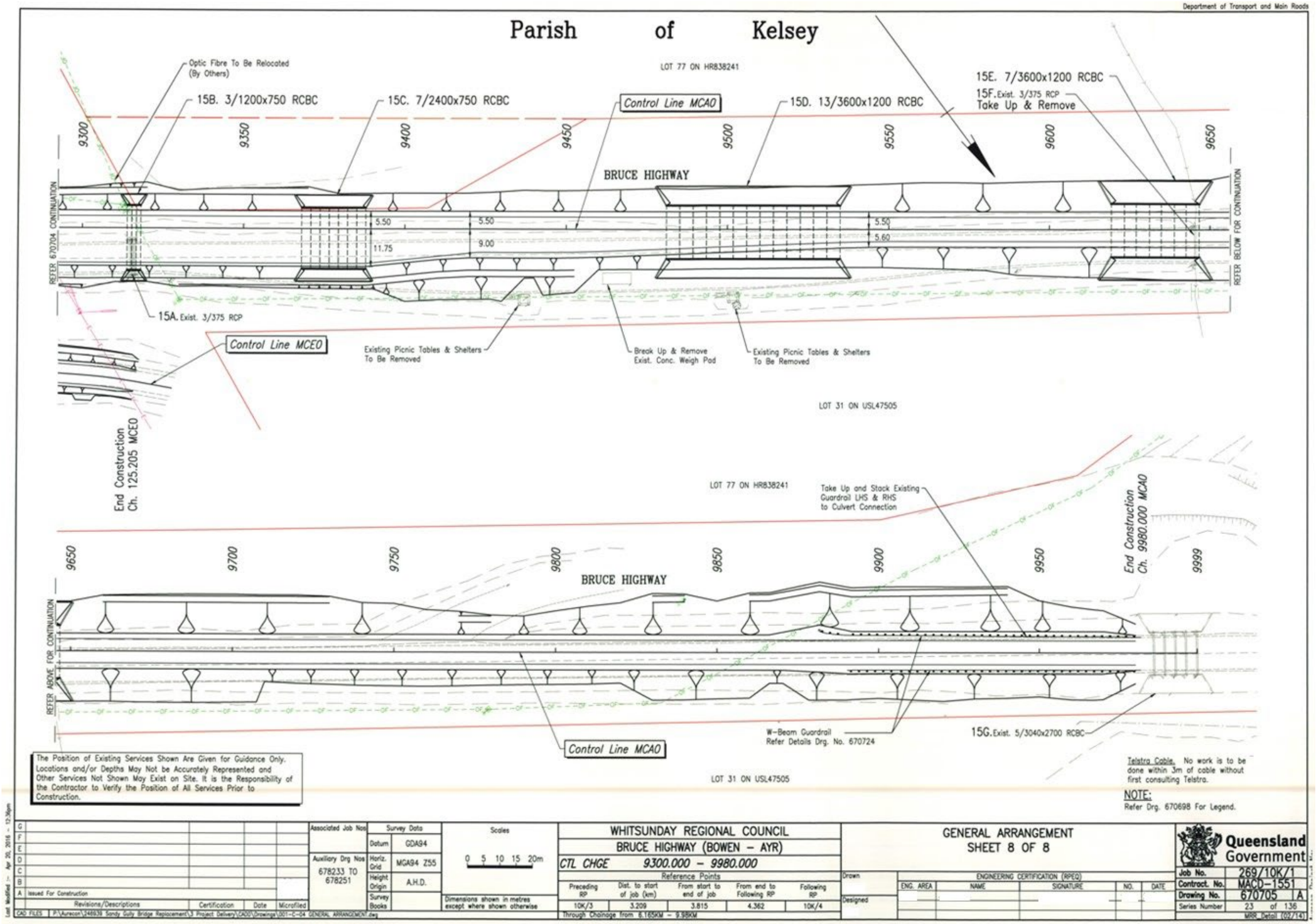


Figure 3.8(g) – General arrangement – generic example 2



3.9 Drainage

For further detailed requirements and considerations also refer to the DDSPM Volume 2 – Part 2, Chapter 2: *Urban Road design Drawings*, Section 2.11.

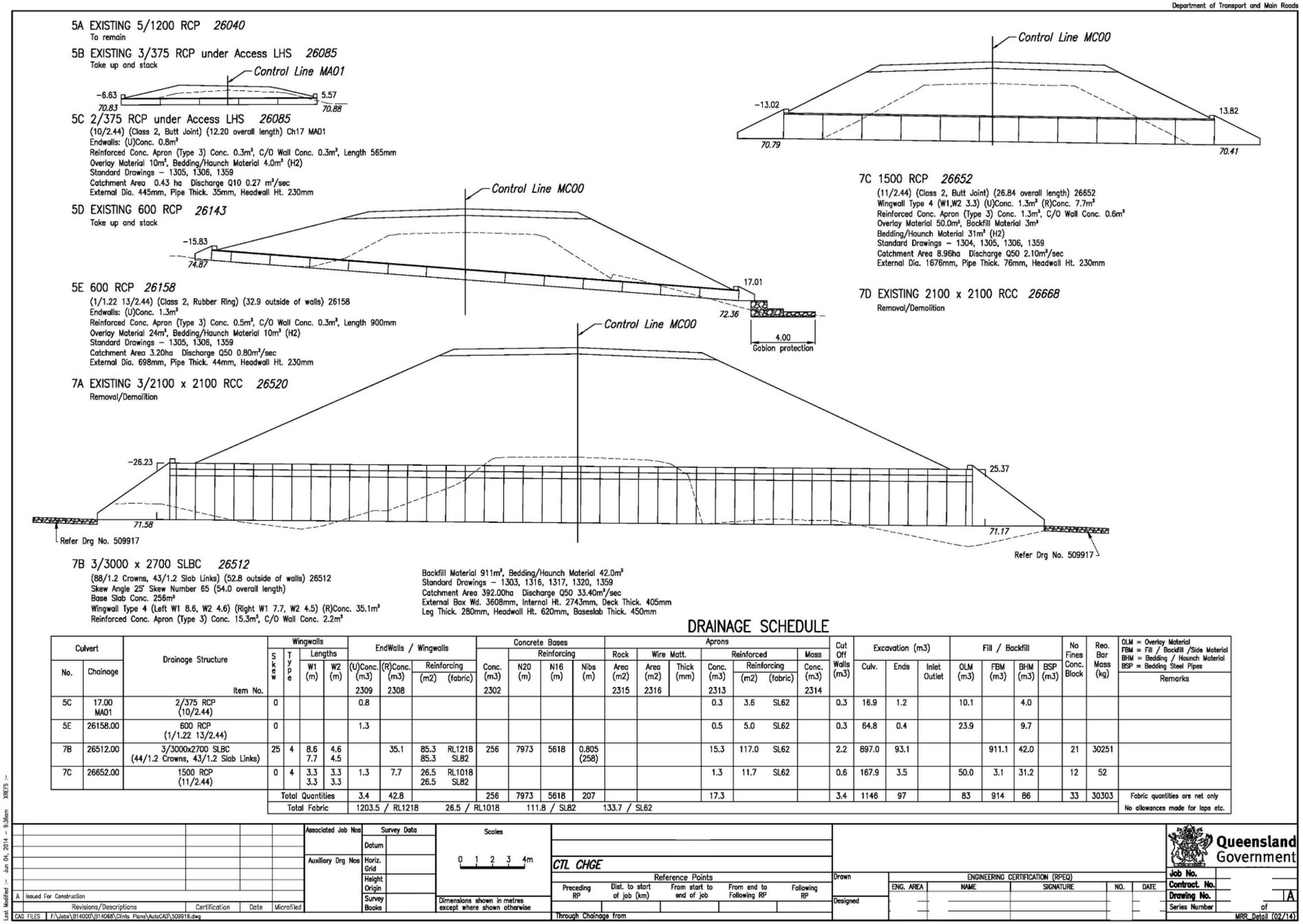
3.9.1 Drainage cross sections

The drainage cross sections drawing provide details of the cross drainage culverts, i.e., new culverts and extension of existing culverts.

Considerations

- Output is directly from the department's culvert program
- Show existing culverts
- Show existing culverts to remain and/or extend or remove
- Show new culverts
- Show flow directions
- Show culvert identification number
- Identify the culvert skew angle and/or skew number
- Provide a drainage schedule – output directly from Transport and Main Roads "Culvert"
- Detail pipes (correct class for cover, vehicle and construction loading requirements)
- Detail set-out coordinates and/or offset distances from control line

Figure 3.9(a) – Drainage cross sections – generic example 1



DRAINAGE SCHEDULE

Culvert No.	Culvert Chainage	Drainage Structure / Item No.	Wingwalls Skew	Wingwalls Type	Wingwalls Lengths W1 (m)	Wingwalls Lengths W2 (m)	EndWalls / Wingwalls (U)Conc. (m3) 2309	EndWalls / Wingwalls (R)Conc. (m3) 2308	EndWalls / Wingwalls Reinforcing (m2)	EndWalls / Wingwalls Reinforcing (fabric)	Concrete Bases Conc. (m3) 2302	Concrete Bases Reinforcing N20 (m)	Concrete Bases Reinforcing N16 (m)	Concrete Bases Reinforcing Nibs (m)	Aprons Rock Area (m2) 2315	Aprons Wire Matt. Area (m2) 2316	Aprons Wire Matt. Thick (mm)	Aprons Reinforced Conc. (m3) 2313	Aprons Reinforced Reinforcing (m2)	Aprons Reinforced Reinforcing (fabric)	Aprons Mass Conc. (m3) 2314	Cut Off Walls (m3)	Excavation (m3) Culv.	Excavation (m3) Ends	Excavation (m3) Inlet Outlet	Fill / Backfill OLM (m3)	Fill / Backfill FBM (m3)	Fill / Backfill BHM (m3)	Fill / Backfill BSP (m3)	No Fines Conc. Block	Reo. Bar Mass (kg)	Remarks
5C	17.00 MA01	2/375 RCP (10/2.44)	0				0.8											0.3	3.6	SL62		0.3	16.9	1.2		10.1		4.0				
5E	26158.00	600 RCP (1/1.22 13/2.44)	0				1.3											0.5	5.0	SL62		0.3	64.8	0.4		23.9		9.7				
7B	26512.00	3/3000x2700 SLBC (44/1.2 Crowns, 43/1.2 Slab Links)	25	4	8.6 7.7	4.6 4.5		35.1	85.3 85.3	RL1218 SL82	256	7973	5618	0.805 (258)				15.3	117.0	SL62		2.2	897.0	93.1			911.1	42.0		21	30251	
7C	26652.00	1500 RCP (11/2.44)	0	4	3.3 3.3	3.3 3.3	1.3	7.7	26.5 26.5	RL1018 SL82								1.3	11.7	SL62		0.6	167.9	3.5		50.0	3.1	31.2		12	52	
		Total Quantities					3.4	42.8			256	7973	5618	207				17.3				3.4	1146	97		83	914	86		33	30303	Fabric quantities are net only
		Total Fabric					1203.5 / RL1218		26.5 / RL1018			111.8 / SL82				133.7 / SL62															No allowances made for laps etc.

OLM = Overlay Material
FBM = Fill / Backfill /Side Material
BHM = Bedding / Haunch Material
BSP = Bedding Steel Pipes

Last Modified :- Jun 04, 2014 - 9:36am XREFS :-

Revisions/Descriptions	Certification	Date	Microfiled
A Issued For Construction			

CAD FILES | F:\Jobs\814000\814068\Clints Plans\AutoCAD\509916.dwg

Associated Job Nos | Survey Data: Datum | Auxiliary Drg Nos | Horiz. Grid | Height Origin | Survey Books

Scales: 0 1 2 3 4m

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP

Through Chainage from

Drawn | Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

Job No. | Contract No. | Drawing No. A | Series Number | of

MRR_Detail (02/14)

Figure 3.9(b) – Drainage cross sections – generic example 2

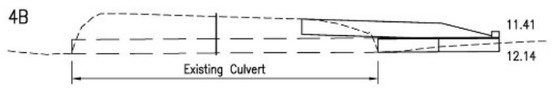
DRAINAGE SCHEDULE

Culvert No.	Culvert Chainage	Drainage Structure	Wingwalls Skew	Wingwalls Type	Wingwalls Lengths W1 (m)	Wingwalls Lengths W2 (m)	EndWalls / Wingwalls (U)Conc. (m3) 2309	EndWalls / Wingwalls (R)Conc. (m3) 2308	EndWalls / Wingwalls Reinforcing (m2)	EndWalls / Wingwalls Reinforcing (fabric)	Concrete Bases Conc. (m3) 2302	Concrete Bases Reinforcing RL1218 (m2)	Concrete Bases Reinforcing N12 (m)	Concrete Bases Reinforcing Nibs (m)	Aprons Rock Area (m2) 2315	Aprons Wire Matt. Area (m2) 2316	Aprons Wire Matt. Thick (mm)	Aprons Reinforced Conc. (m3) 2313	Aprons Reinforced Reinforcing (m2)	Aprons Reinforced Reinforcing (fabric)	Aprons Mass Conc. (m3) 2314	Cut Off Walls (m3)	Excavation (m3) Culv.	Excavation (m3) Ends	Excavation (m3) Inlet Outlet	Fill / Backfill OLM (m3)	Fill / Backfill FBM (m3)	Fill / Backfill BHM (m3)	Fill / Backfill BSP (m3)	No Fines Conc. Block	Reo. Bar Mass (kg)	Remarks
4A	50902.10	5/900 RCP (5/1.22 5/2.44)	0	4	0.0 4.1	0.0 4.1	2.9	2.8	11.7	RL818								4.5	34.1	SL62		0.7	14.4	6.6		17.6	1.1	8.0		6	22	
4B	50971.67	2/525 RCP (4/2.44)	0				0.8											0.3	3.0	SL62		0.2	3.0	1.2		4.6		2.0				
4C	51246.10	4/2100x900 RCBC (20/1.2)	0	4	0.0 5.0	0.0 5.0		4.6	15.8	RL818	13.3	62.1	334	0.745 (30)				7.1	55.0	SL62		1.0	21.8	21.8			36.8	4.5		8	398	
4D	51418.70	4/750 RCP (12/2.44)	0	4	0.0 3.4	0.0 3.4	1.9	2.1	8.6	RL818								2.6	20.2	SL62		0.5	11.1	9.5		24.7	0.8	11.2		6	13	
		Total Quantities					5.6	9.5			13.3	62.1	334	22				14.4				2.4	50	39		46	38	25		20	431	Fabric quantities are net only
		Total Fabric					62.1 / RL1218		36.1 / RL818			112.3 / SL62																			No allowances made for laps etc.

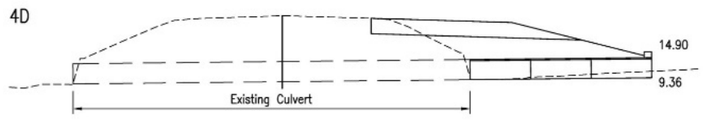
OLM = Overlay Material
FBM = Fill / Backfill /Side Material
BHM = Bedding / Haunch Material
BSP = Bedding Steel Pipes

NOTES

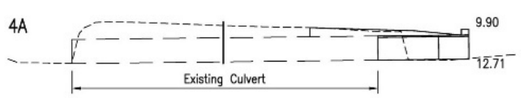
1. Cut off walls to be provided on all new aprons.
2. No alterations are to be made to the designed invert levels without prior approval in writing by the Superintendent.



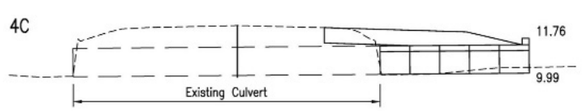
Existing 2/525 RCP Ch. 50971.67
EXTEND 4.88 (4/2.44) (Class 3) (17.23 overall length)
Endwalls: (U)Conc. 0.8m³
Reinforced Concrete Apron (Type 3) Conc. 0.3m³, C/O Wall Conc. 0.2m³, Length 790mm
Overlay Material 4.6m³, Bedding/Haunch Material 2.0m³ (H2)
Standard Drawings – 1305, 1306, 1359



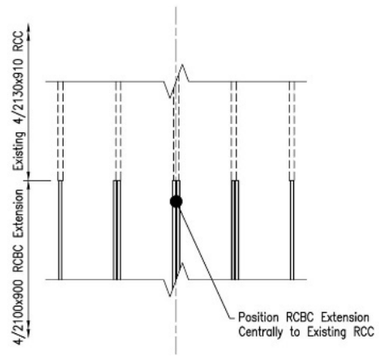
Existing 4/750 RCP (12/2.44) Ch. 51418.7
EXTEND 7.32 RHS (Class 3) (23.33 overall length)
Reinforced Concrete Wingwall (Type 4) (Right W1,W2 3.4) (U)Conc. 1.9m³ (R)Conc. 2.1m³
Reinforced Concrete Apron (Type 3) Conc. 2.6m³, C/O Wall Conc. 0.5m³
Overlay Material 24.7m³, Backfill Material 0.8m³
Bedding/Haunch Material 11.2m³ (H2)
Standard Drawings – 1304, 1305, 1306, 1359



Existing 5/900 RCP Ch. 50902.1
REMOVE 1.22 RHS EXTEND 3.66 RHS
(5/1.22 5/2.44) (Class 3) (16.00 overall length)
Reinforced Concrete Wingwall (Type 4) (Right W1,W2 4.1) (U)Conc. 2.9m³ (R)Conc. 2.8m³
Reinforced Concrete Apron (Type 3) Conc. 4.5m³, C/O Wall Conc. 0.7m³
Overlay Material 17.6m³, Backfill Material 1.1m³
Bedding/Haunch Material 8.0m³ (H2)
Standard Drawings – 1304, 1305, 1306, 1359



Existing 4/2130x910 RCC Ch. 51246.1
EXTEND 6.0 RHS WITH 4/2100x900 RCBC (20/1.2) (18.39 overall length)
Base Slab Conc. 13.3m³
Reinforced Concrete Wingwall (Type 4) (Right W1,W2 5.0) (R)Conc. 4.6m³
Reinforced Concrete Apron (Type 3) Conc. 7.1m³, C/O Wall Conc. 1.0m³
Backfill Material 36.8m³, Bedding/Haunch Material 4.5m³
Standard Drawings – 1303, 1316, 1317, 1320, 1359



CULVERT 4C EXTENSION ALIGNMENT DETAIL

G					
F					
E					
D					
C					
B					
A	Issued For Construction				
	Revisions/Descriptions	Certification	Date	Microfiled	

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Associated Job Nos
Auxiliary Drg Nos
Survey Data: Datum, Horiz. Grid, Height Origin, Survey Books
Scales
Dimensions shown in except where shown otherwise

CTL CHGE
Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP
Through Chainage from

Drawn
Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

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Contract. No.
Drawing No.
Series Number
of

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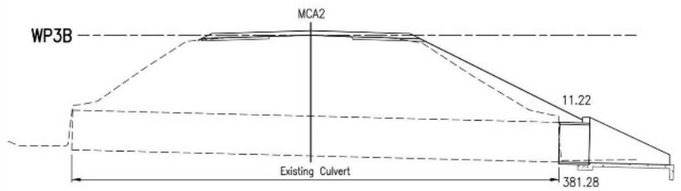
Figure 3.9(c) – Drainage cross sections – generic example 3

Department of Transport and Main Roads

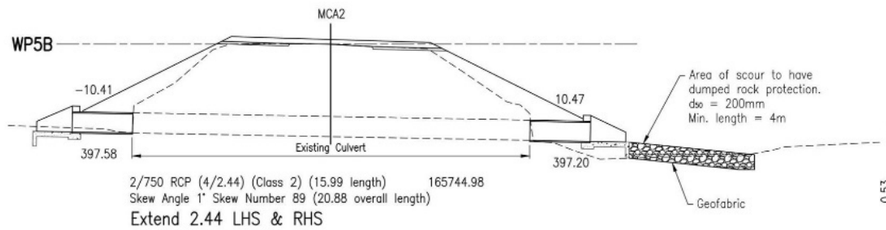
DRAINAGE SCHEDULE

Culvert No.	Culvert Chainage	Drainage Structure	Wingwalls: Skew	Wingwalls: Type	Wingwalls: Lengths W1 (m)	Wingwalls: Lengths W2 (m)	EndWalls / Wingwalls: (U)Conc. (m3) 2309	EndWalls / Wingwalls: (R)Conc. (m3) 2308	EndWalls / Wingwalls: Reinforcing (m2)	EndWalls / Wingwalls: Reinforcing (fabric)	Concrete Bases: Conc. (m3) 2302	Concrete Bases: Reinforcing RL1218 (m2)	Concrete Bases: Reinforcing N12 (m)	Concrete Bases: Reinforcing Nibs (m)	Aprons: Rock Area (m2) 2315	Aprons: Wire Matt. Area (m2) 2316	Aprons: Wire Matt. Thick (mm)	Aprons: Reinforced Conc. (m3) 2313	Aprons: Reinforced Reinforcing (m2)	Aprons: Reinforced Reinforcing (fabric)	Aprons: Mass Conc. (m3) 2314	Cut Off Walls (m3)	Excavation (m3): Culv.	Excavation (m3): Ends	Excavation (m3): Inlet Outlet	Fill / Backfill: OLM (m3)	Fill / Backfill: FBM (m3)	Fill / Backfill: BHM (m3)	Fill / Backfill: BSP (m3)	No Fines Conc. Block	Reo. Bar Mass (kg)	Remarks
WP1B	161625.58	3/375 RCP (3/1.22)	2				0.6											0.2	2.5	SL62		0.2	1.1	1.6		0.0		0.4				
WP3B	164063.70	2/1500 RCP (2/1.22)	2	4	0.0 3.4	0.0 3.2	1.7	4.3	12.8 12.8	RL1018 SL82								1.6	13.3	SL62		0.4	3.2	13.0			1.5	1.8		5	26	
WP4A	164587.79	2/750 RCP (2/1.22)	1	4	0.0 1.5	0.0 1.5	0.8	1.1	3.5	RL818								0.4	3.8	SL62		0.2	1.1	0.7		0.1	0.3	0.7		2	5	
WP5A	165704.15	2/600 RCP (2/1.22)	2				1.0											0.4	3.9	SL62		0.2	0.4	0.4				0.4				
WP5B	165744.98	2/750 RCP (4/2.44)	1	4	1.5 1.5	1.5 1.5	1.7	2.2	7.0	RL818								0.8	7.5	SL62		0.4	4.1	3.6		8.0	0.7	3.6		4	9	
WP11B	174643.82	2/600 RCP (2/1.22)	8				1.0											0.4	3.8	SL62		0.2	0.9	1.8		0.7		0.4				
WP12A	175335.12	900 RCP (3/1.22)	16	4	0.0 2.2	0.0 1.5	0.3	1.2	5.0	RL818								0.1	1.7	SL62		0.1	0.8			9.8	0.5	1.9		3	9	
WP12B	175445.46	375 RCP (1/1.22)	0				0.3											0.1	1.2	SL62		0.1	0.4	1.1		0.4		0.2				
		Total Quantities					7.3	8.9										4.0				2.0	11	22		19	3	9		14	48	Fabric quantities are net only
		Total Fabric					12.8 / RL1018		15.5 / RL818			12.8 / SL82		37.5 / SL62																		No allowances made for laps etc.

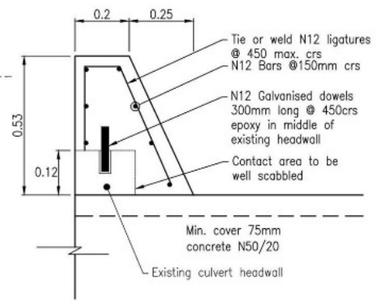
OLM = Overlay Material
FBM = Fill / Backfill /Side Material
BHM = Bedding / Haunch Material
BSP = Bedding Steel Pipes



Exist. 2/1500 RCP (2/1.22) (Class 2) (19.65 length) 164063.70
Skew Angle 2° Skew Number 88 (20.86 overall length)
Extend 1.22 RHS



2/750 RCP (4/2.44) (Class 2) (15.99 length) 165744.98
Skew Angle 1° Skew Number 89 (20.88 overall length)
Extend 2.44 LHS & RHS



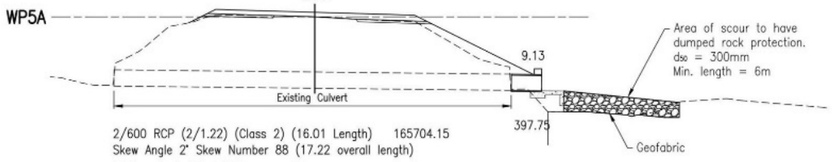
Refer to Std Drg 1043 & 1044

HEADWALL RAISING DETAIL
N.T.S.

WP3A Exist. 3/900 RCP (overall length 18.4) *163511.8*
To Remain

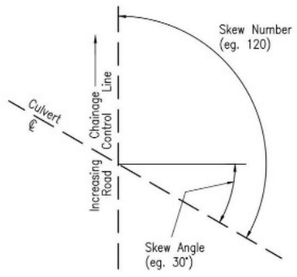
WP2B Exist. 4/2140x1220 RCC (overall length 9.84) *163124.1*
To Remain

WP2A Exist. 4/1500 RCP (overall length 12.9) *162383.2*
To Remain



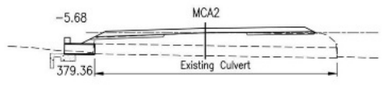
2/600 RCP (2/1.22) (Class 2) (16.01 Length) 165704.15
Skew Angle 2° Skew Number 88 (17.22 overall length)
Extend 1.22 RHS

WP4B Exist. 9/2130x1830 RCC (overall length 18.19) *164786.2*
To Remain

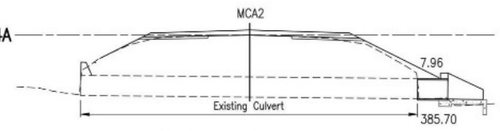


SKEW NUMBER DIAGRAM

WP1B



Exist. 3/375 RCP (3/1.22) (Class 2) (9.8 length) 161625.58
Skew Angle 2° Skew Number 88 (10.99 overall length)
Extend 1.22 LHS



2/750 RCP (2/1.22) (Class 2) (13.57 length) 164587.79
Skew Angle 1° Skew Number 91 (14.79 overall length)
Raise Headwall LHS Refer to Detail
Extend 1.22 RHS

WP1A Exist. 8/2130x1820 RCC (overall length 10.4) *161373.5*
To Remain

NOTES:
1) Refer to standard drawings 1303, 1304, 1305, 1306, 1359.
2) All Drainage Cross Sections are control line chainages.
3) All culvert lengths are measured along the centreline of each cell or barrel of the culvert.
4) All culverts to be installed using embankment method. Culvert supports Type H2 unless otherwise specified.
5) Rock protection on all batters around culvert endwalls (LHS & RHS). (50 – 150mm Grading)

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Revisions/Descriptions	Certification	Date	Microfiled
A Issued For Construction			

CAD FILES | F:\Jobs\B14000\B14068\Clints Plans\AutoCAD\Example plans for David Witherspoon\217-98C-2\498846.dwg

Associated Job Nos
Auxiliary Drg Nos
Survey Data: Datum, Horiz. Grid, Height Origin, Survey Books
Scales
Dimensions shown in metres except where shown otherwise

CTL CHGE
Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP
Through Chainage from

Drawn
Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government
Job No.
Contract No.
Drawing No. A
Series Number of
MRR_Detail (02/14)

Figure 3.9(d) – Drainage cross sections – registered example 1

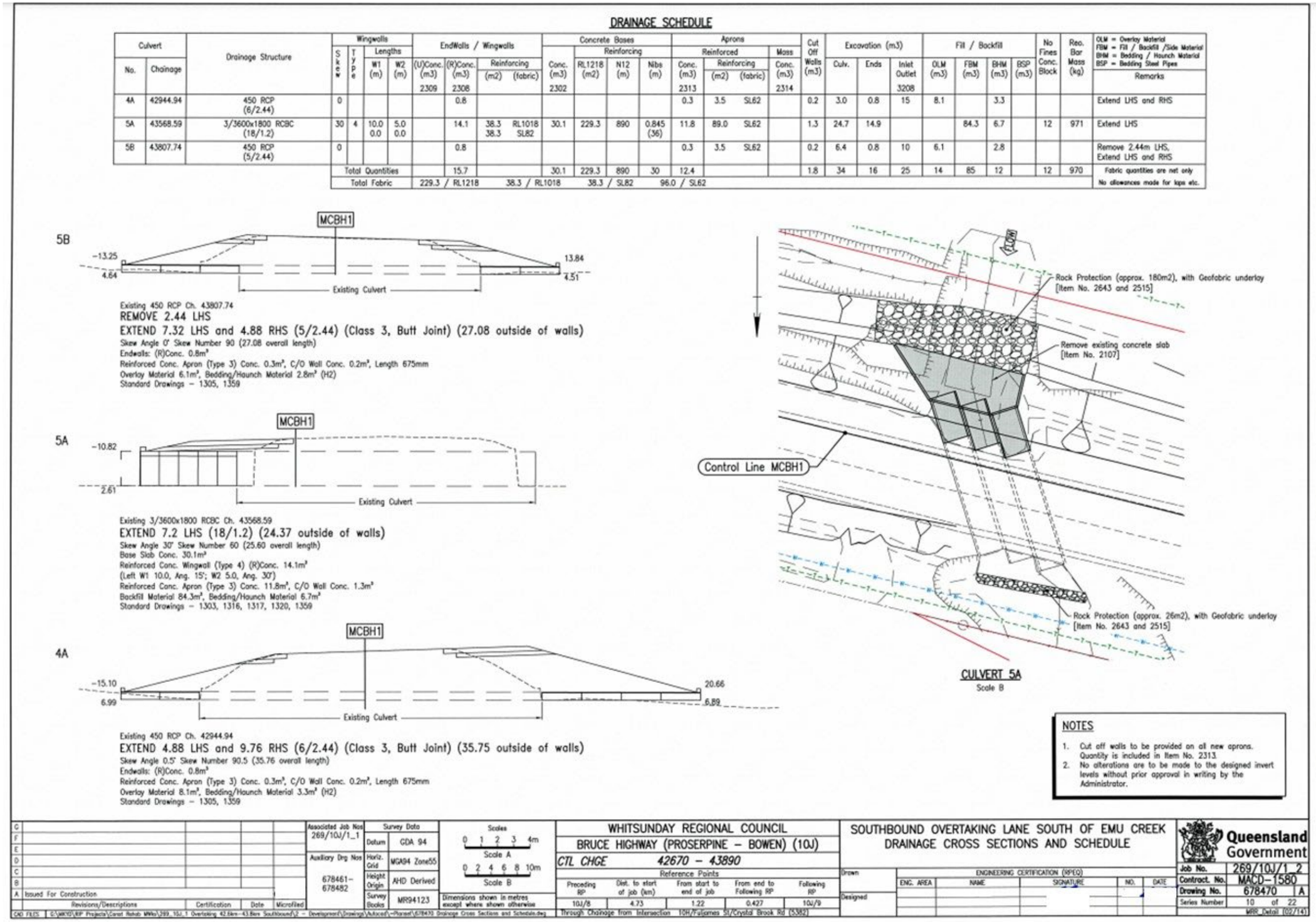


Figure 3.9(e) – Drainage cross sections – registered example 2

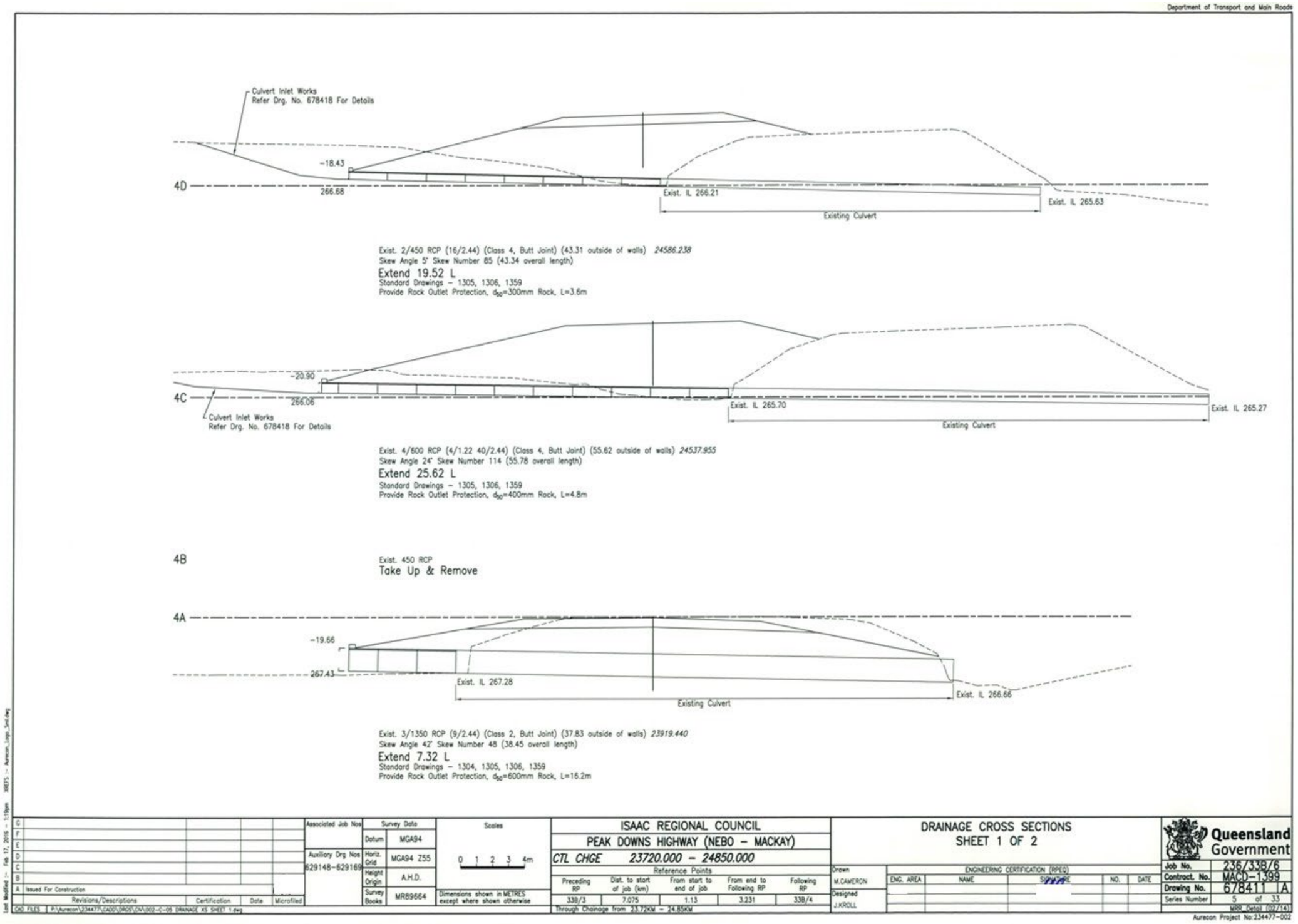


Figure 3.9(f) – Drainage cross sections – registered example 3

Department of Transport and Main Roads

WP–05F Exist. 3/2100x1200 RCC
REMOVE & DEMOLISH *81619 MCA1*

WP–05E 375 RCP (5/2.44) (Class 4, Butt Joint) (12.20 overall length)
Inlet 198.486 Outlet 198.405. Flow West to East.
Under Access LHS (Refer Drg. 702542 for details) *81512 MCA1*

WP–05D 375 RCP (1/1.22 5/2.44) (Class 4, Butt Joint) (13.42 overall length)
Inlet 197.956 Outlet 197.801. Flow West to East.
Under Access RHS (Refer Drg. 702542 for details) *81431 MCA1*

WP–05C Exist. 375 RCP Under Access RHS
REMOVE & DEMOLISH *81431 MCA1*

WP–05B 375 RCP (1/1.22 4/2.44) (Class 4, Butt Joint) (10.98 overall length)
Inlet 195.655 Outlet 195.441. Flow West to East.
Under Access LHS (Refer Drg. 702542 for details) *81313 MCA1*

WP–05A Exist. 10/1200x600 RCC
TO REMAIN *81040 MCA1*

WP–04L Exist. 12/1200x900 RCC
TO REMAIN *80098 MCA1*

WP–04K 375 RCP (5/2.44) (Class 4, Butt Joint) (12.20 overall length)
Inlet 196.089 Outlet 195.993. Flow East to West.
Under Access RHS (Refer Drg. 702542 for details) *79978 MCA1*

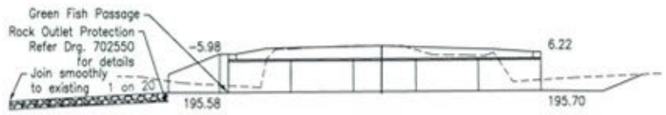
WP–04J 375 RCP (6/2.44) (Class 4, Butt Joint) (14.64 overall length)
Inlet 197.445 Outlet 197.361. Flow East to West.
Under Access RHS (Refer Drg. 702542 for details) *79805 MCA1*

WP–04H Exist. 375 RCP Under Tollemaches Rd Intersection LHS
TO REMAIN *79659 MCA1*

WP–04G 375 RCP (1/1.22 5/2.44) (Class 4, Butt Joint) (13.42 overall length)
Inlet 198.023 Outlet 197.989. Flow East to West.
Under Access RHS (Refer Drg. 702542 for details) *79580 MCA1*

WP–04F 375 RCP (1/1.22 4/2.44) (Class 4, Butt Joint) (10.98 overall length)
Inlet 198.510 Outlet 198.347. Flow West to East.
Under Access LHS (Refer Drg. 702542 for details) *79319 MCA1*

WP–06E Exist. 450 RCP Under Access LHS
TO REMAIN *82065 MCA1*

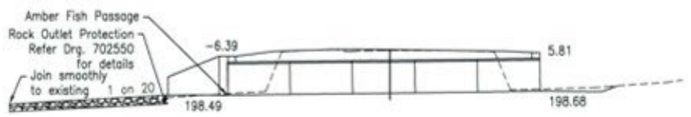


WP–06D 5/1200 RCP (25/2.44) (Class 4, Butt Joint) (12.20 overall length)
82025.5 MCA1

WP–06C Exist. 3/2100x1200 RCC
REMOVE & DEMOLISH *82025.5 MCA1*

WP–06B 375 RCP (5/2.44) (Class 4, Butt Joint) (12.20 overall length)
Inlet 200.388 Outlet 200.380. Flow East to West.
Under Access LHS (Refer Drg. 702542 for details) *81738 MCA1*

WP–06A 375 RCP (/2.44) (Class 4, Butt Joint) (12.20 overall length)
Inlet 200.296 Outlet 200.179. Flow West to East.
Under Access LHS (Refer Drg. 702542 for details) *81709 MCA1*



WP–05G 7/1200 RCP (35/2.44) (Class 4, Butt Joint) (12.20 overall length)
81619 MCA1

Last Modified :- Aug 09, 2016 - 2:40pm XREFS :- X_0_30.dwg

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A	Issued For Construction				
	Revisions/Descriptions	Certification	Date	Microfiled	

CAD FILES G:\ROCD\D&D\Proj Mgt\council banana shire (204)\204-41d-1 lowgi to thangool\d development\Workings\Acad\a working drawings\702548.dwg

Associated Job Nos
Auxiliary Drg Nos

Survey Data	
Datum	GDA94
Horiz. Grid	MGA94 Zone 56
Height Origin	AHD Derived
Survey Books	204064

Scales: 0 1 2 3 4m
Dimensions shown in metres except where shown otherwise

BANANA SHIRE COUNCIL
BURNETT HIGHWAY (MONTO – BILOELA)
CTL CHGE 74323 – 82324 (IN SECTIONS)

Reference Points					
Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP	
410/9	4.19	7.93	0.21	410/10	

Through Chainage from MONTO

DRAINAGE CROSS SECTIONS
SHEET 3 of 3

Drawn
Designed

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE

Queensland Government

Job No.	204/41D/1
Contract. No.	FTD–329
Drawing No.	702548 IA
Series Number	DD–03 of 5

MRR_Detail (02/14)

3.9.2 Drainage details

This drawing provides specific drainage details, for example special headwall details, box culvert spanning slabs, subsoil drainage, open channel treatments and protection, and so on.

Considerations

Scale

- To suit details (consider 1:20 at A1/1:40 at A3 if high degree of detail)

Drawing

- Provide specific drainage details and treatments as required for construction

Subsoil drainage

For small projects where the full set of drawings for the job does not include a separate set of drawings for pavements (i.e., specific pavement design drawings package is not provided), then drawings showing the following are required:

- show subsoil drainage location and direction of flow
- show outlet locations
- show special outlet details, and
- show locations of the subsoil drain clean out points (flush points).

Generally, the majority of pavement details should be shown in a separate set of pavement drawings (refer Section 3.10 *Pavement Details*) and the above requirements should be applied to those pavement drawings in order to keep all relevant pavement information together.

Figure 3.9(g) – Drainage detail – generic example 1

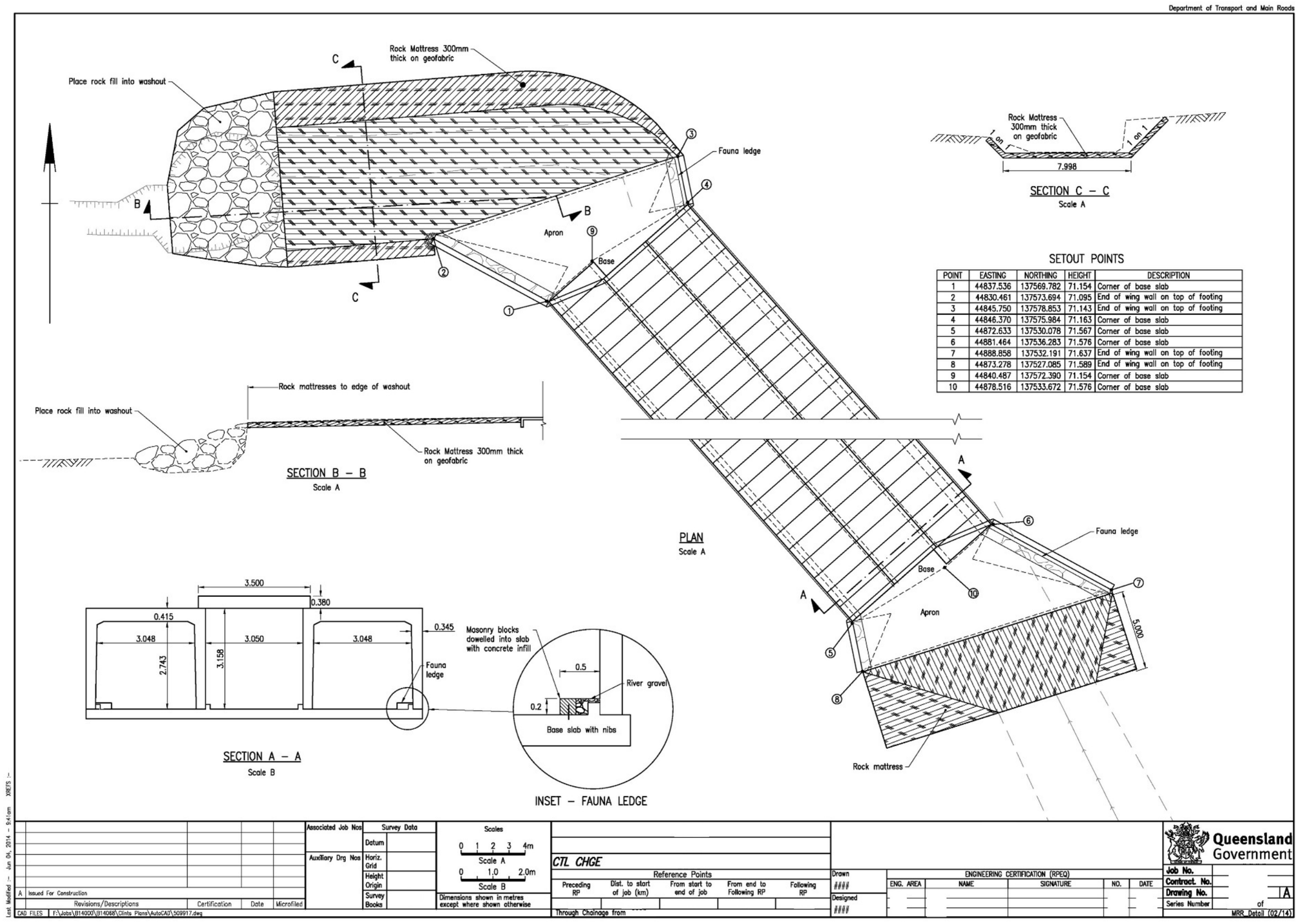


Figure 3.9(h) – Drainage detail – generic example 2

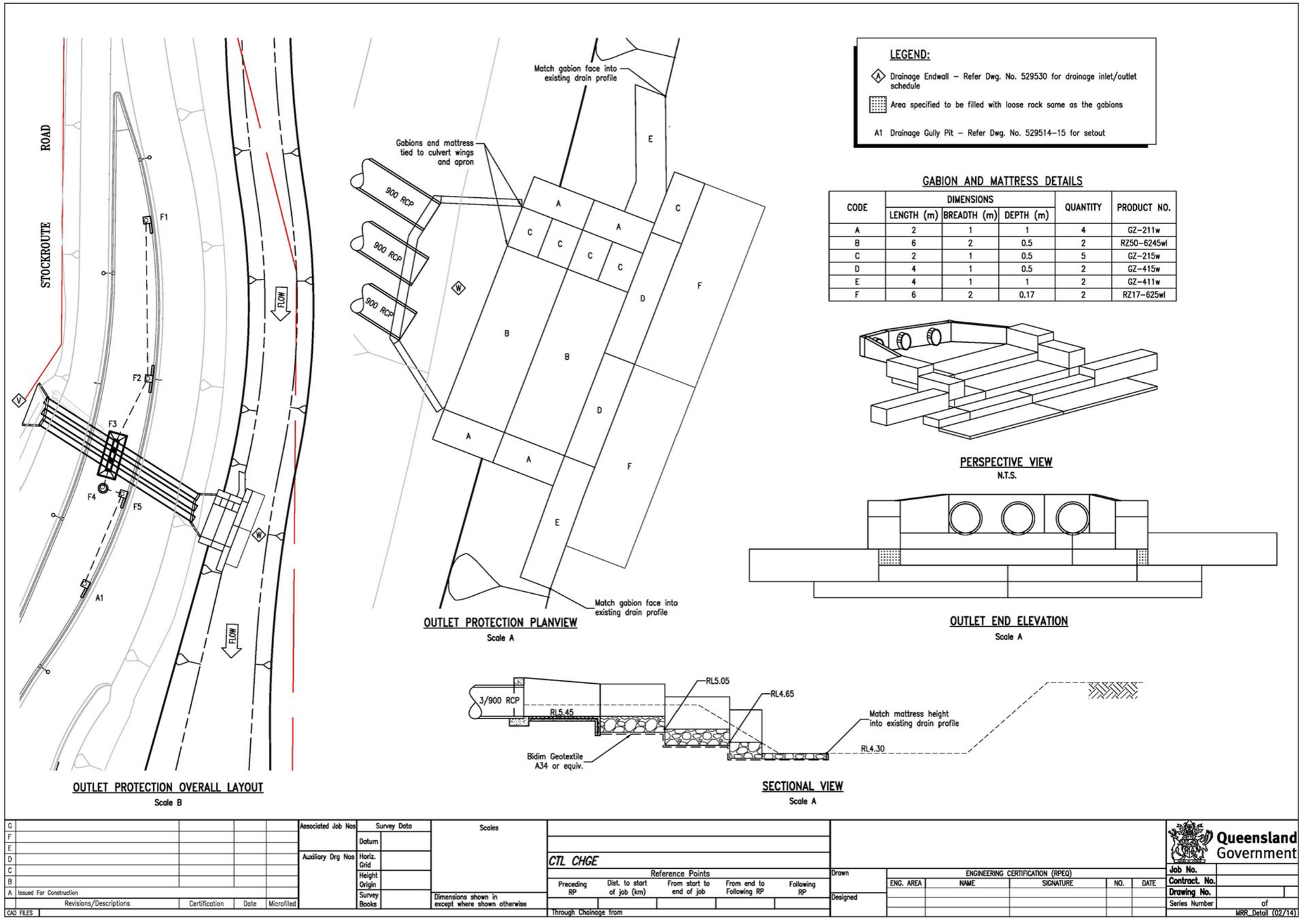


Figure 3.9(i) – Subsoil drainage details – generic example

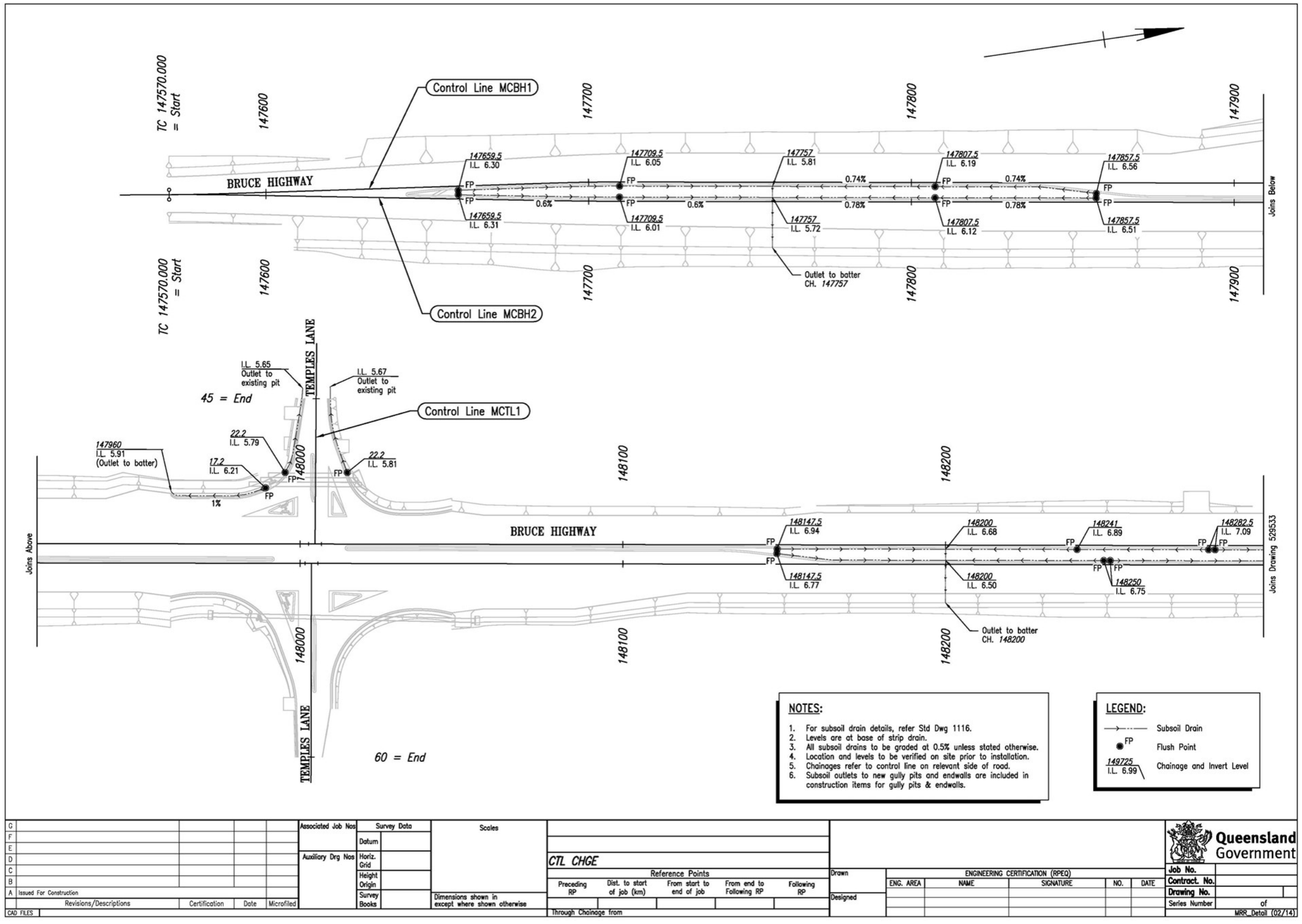


Figure 3.9(j) – Drainage detail – registered example 1

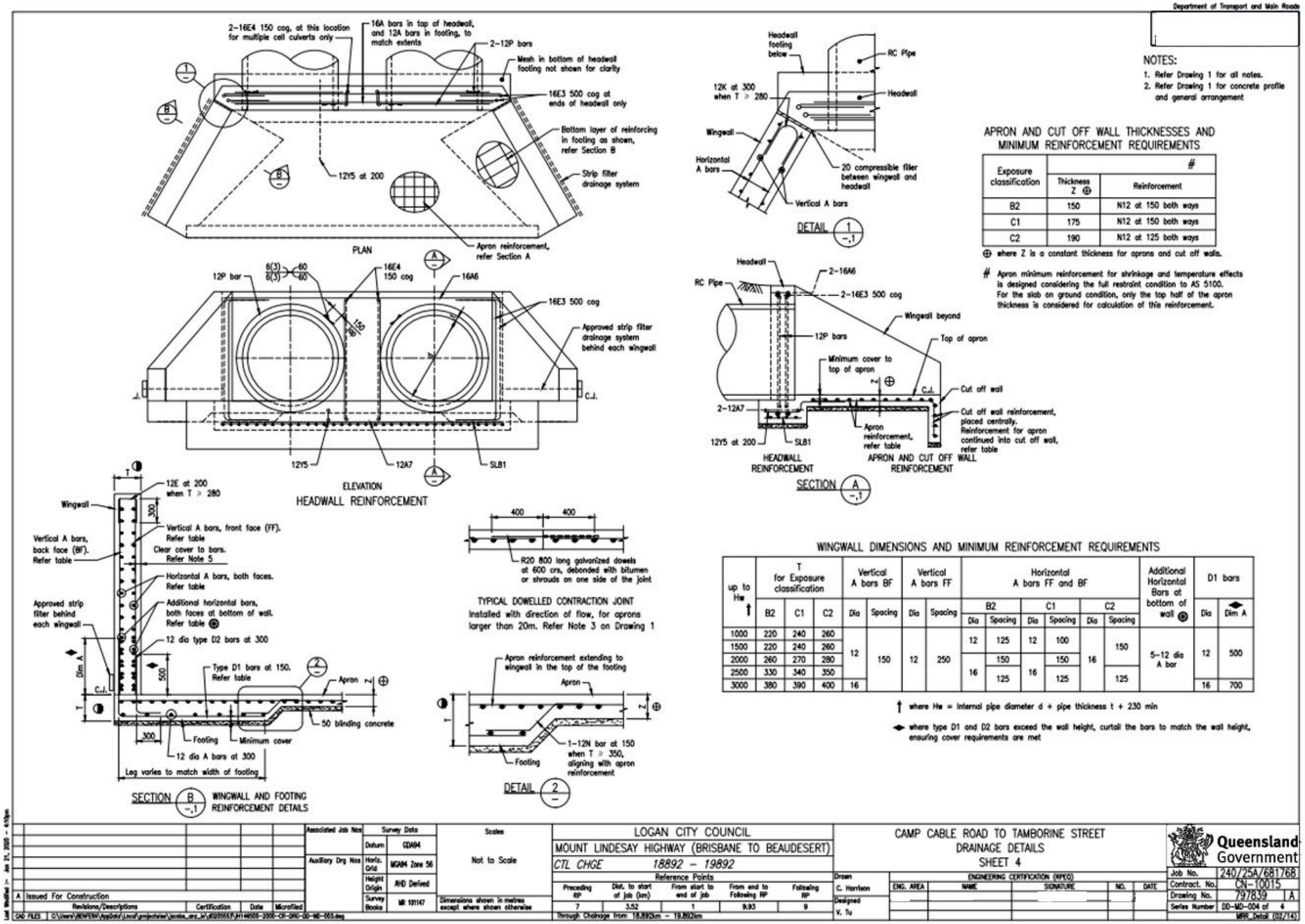
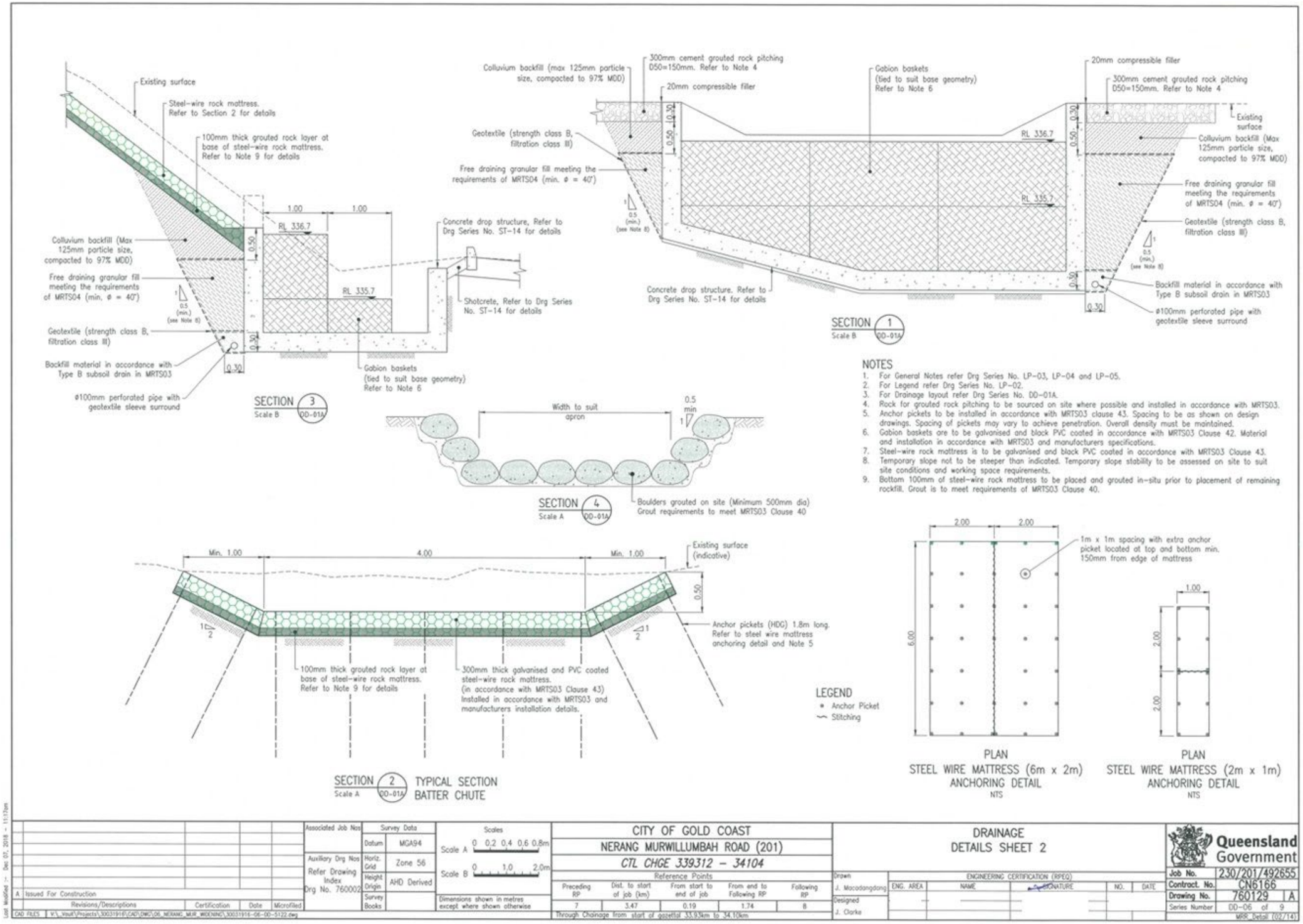


Figure 3.9(k) – Drainage detail – registered example 2



3.10 Pavement details

The pavement details drawings identify the pavement designs, pavement types and treatments, and the pavement layouts.

Considerations

Scale

- Usually 1:500 at A1/1:1000 at A3 (consider 1:250 at A1/1:500 at A3 if high degree of detail)

Drawing

- Show traffic data and projected ESAs for design year
- Show CBR of subgrade used in the pavement design
- Include legend detailing all pavement designs and types
- Show treatment on plan view including medians, footpaths and so on
- Include details of connections to existing construction (tapers and so on)
- Provide details of pavement drainage in plan and sections, including outlet locations
- Provide relevant pavement notes
- It is preferential to use colour to differentiate between pavement types as this substantially improves clarity.

Figure 3.10(a) – Pavement details – generic example 1

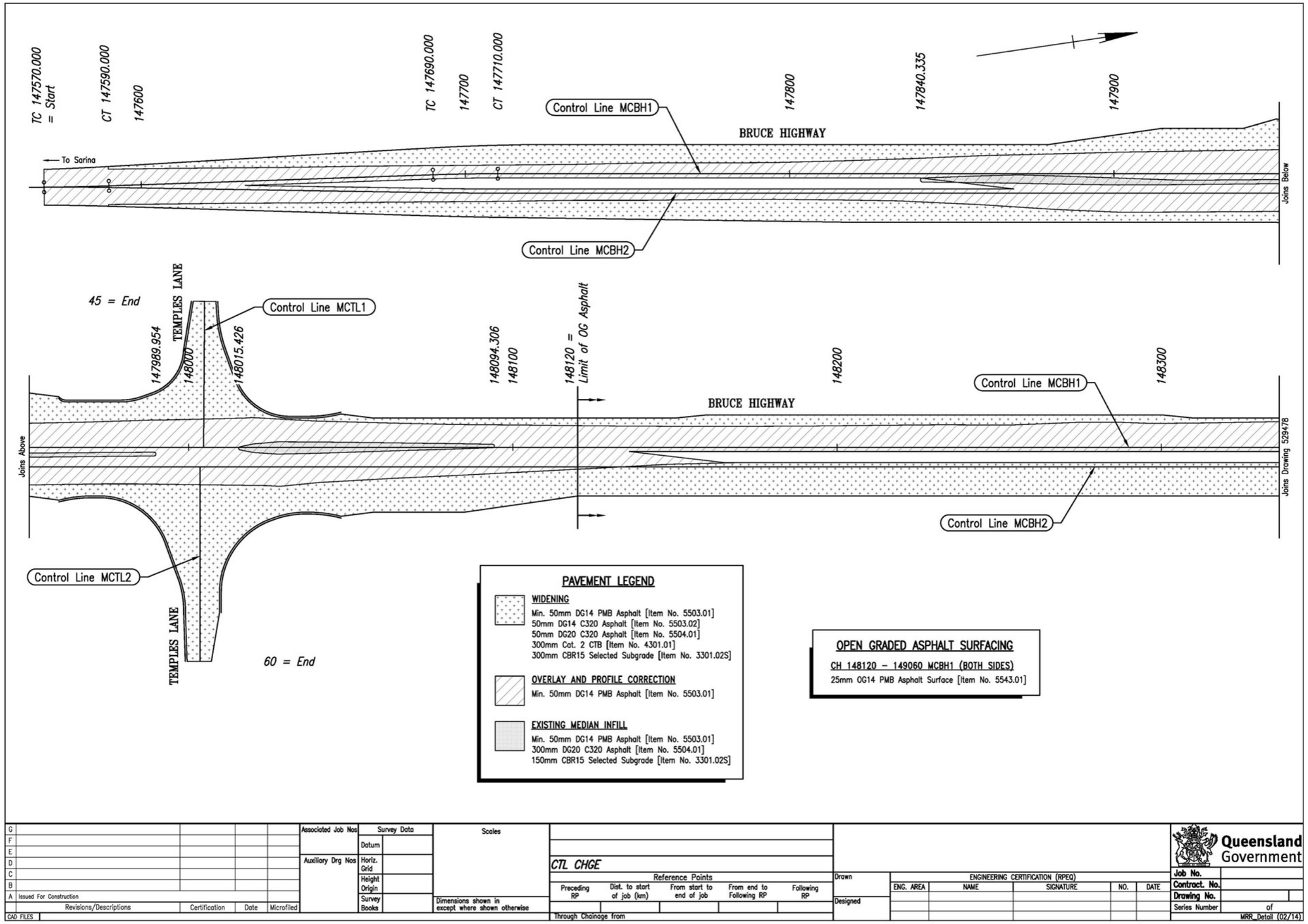


Figure 3.10(b) – Pavement details – generic example 2

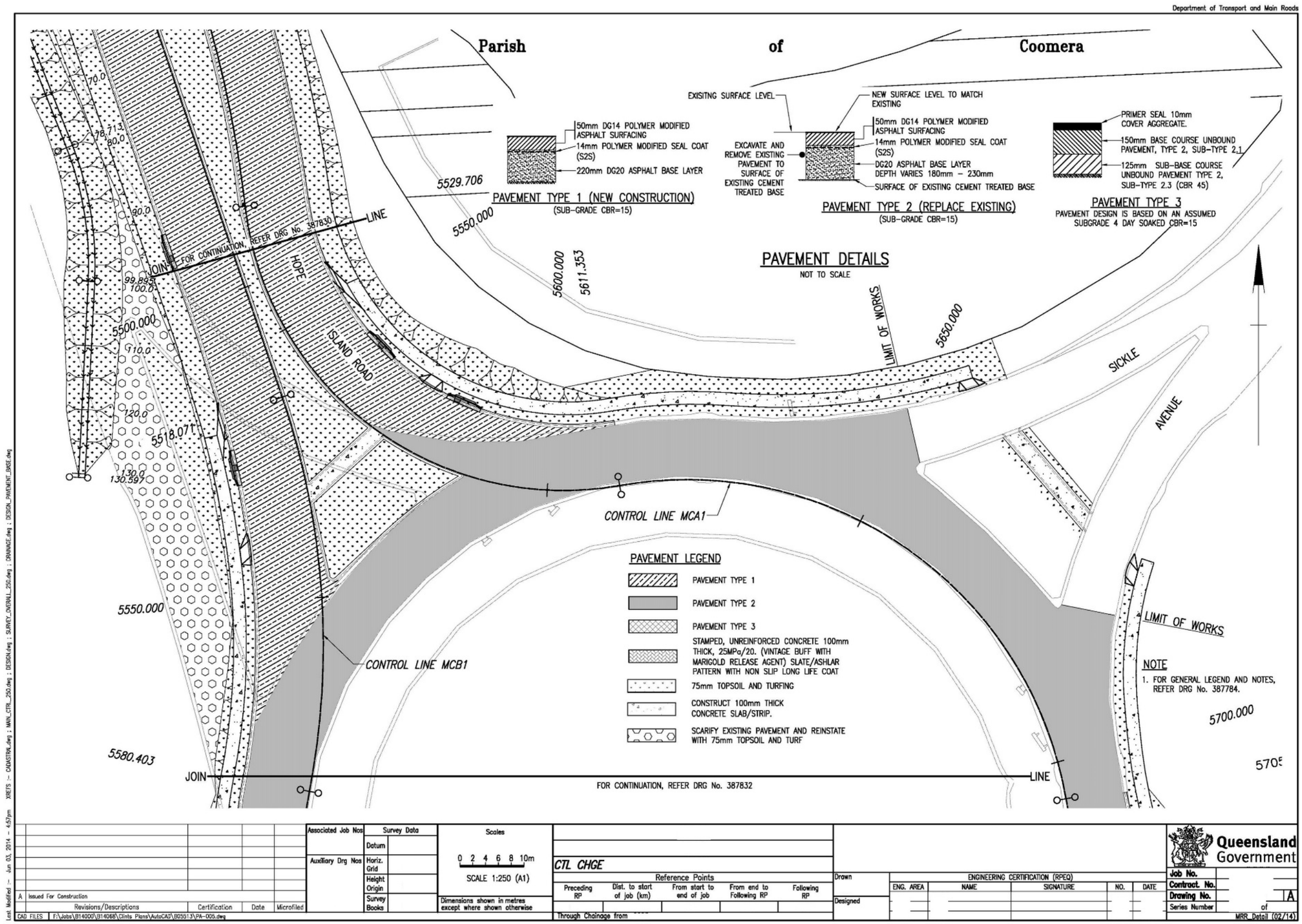


Figure 3.10(c) – Pavement details – generic example 3

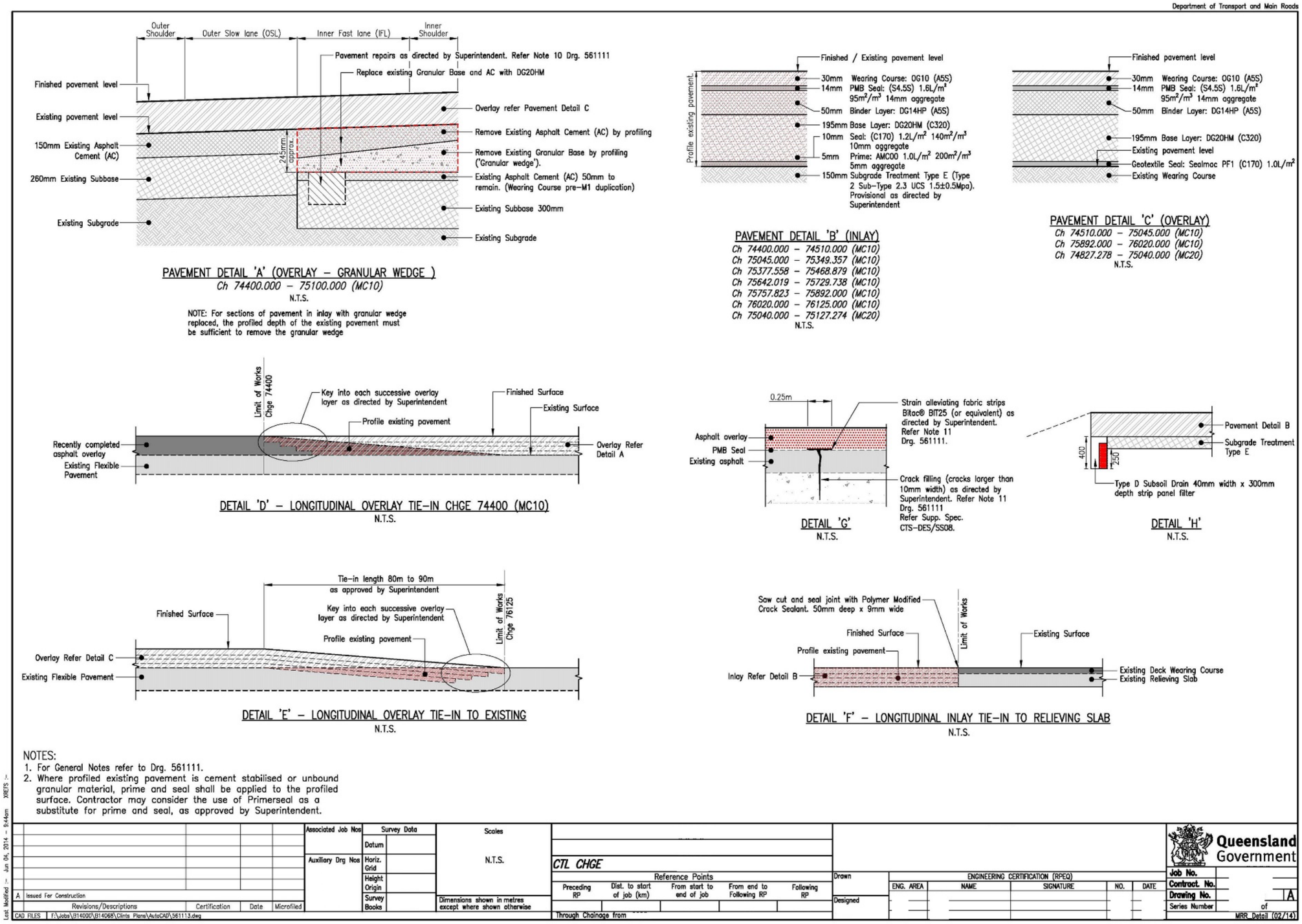


Figure 3.10(d) – Pavement details – generic example 4 – sheet 1 of 2

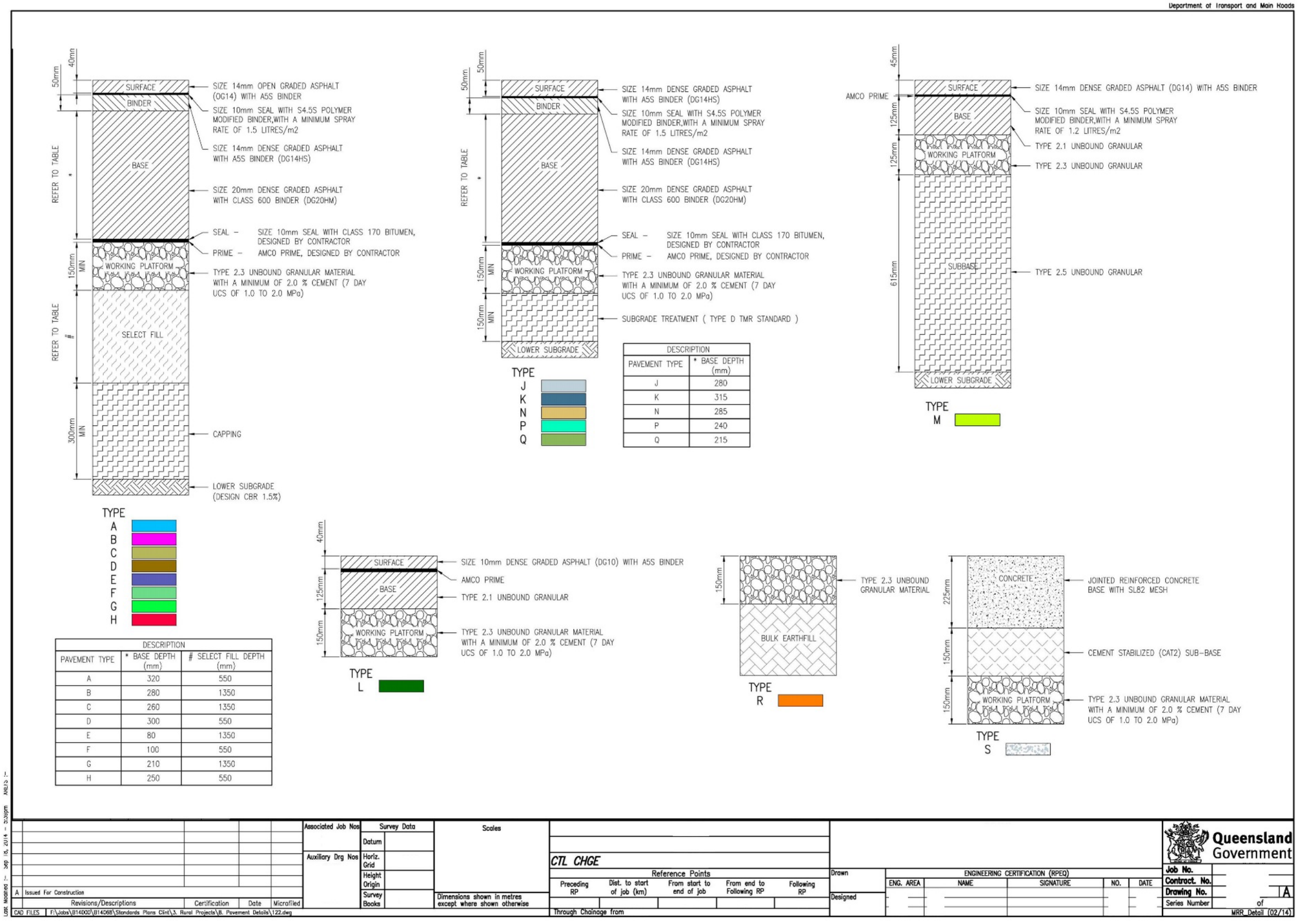


Figure 3.10(e) – Pavement details – generic example 4 – sheet 2 of 2

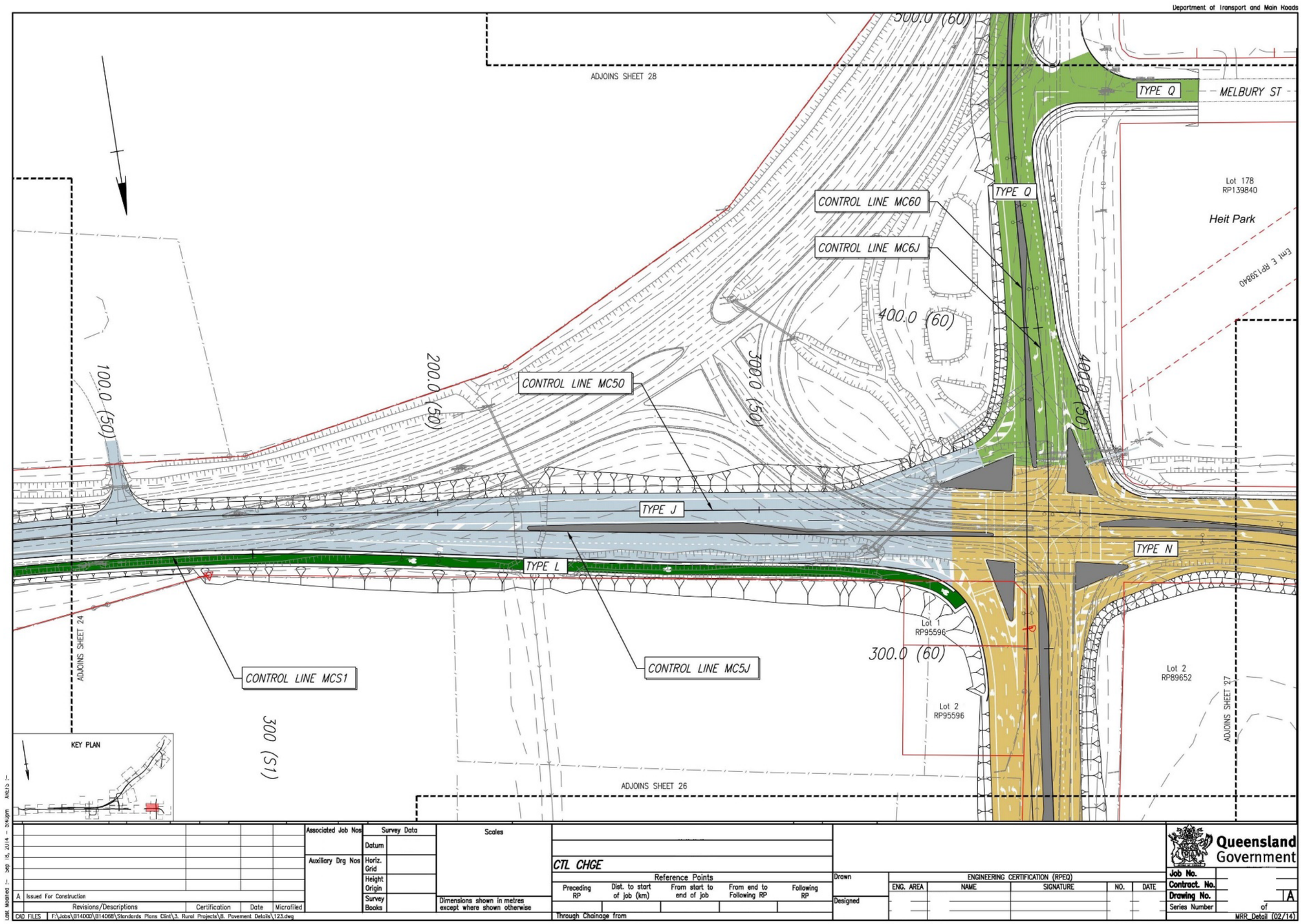


Figure 3.10(f) – Pavement Subsoil Drainage Layout – generic example

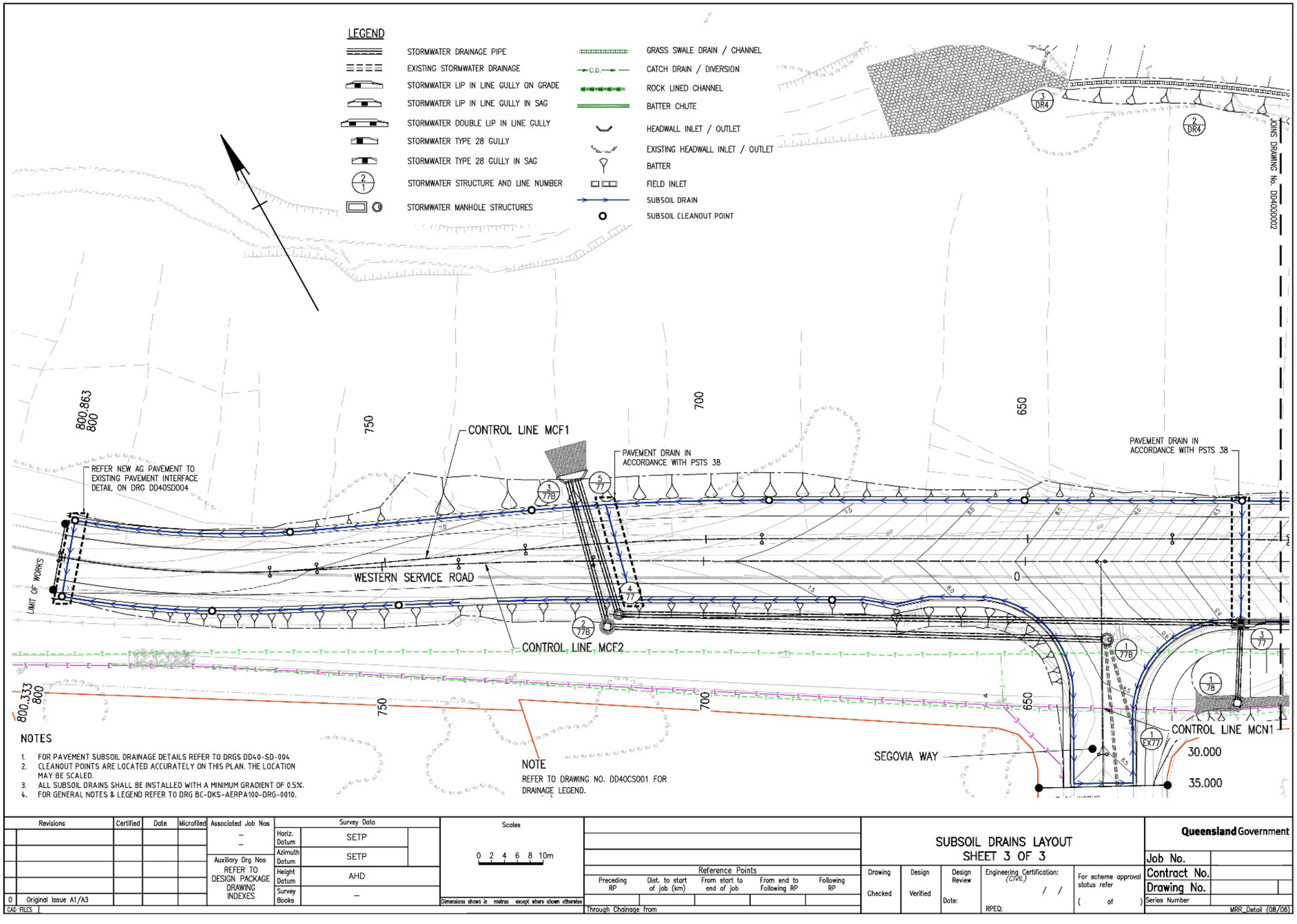
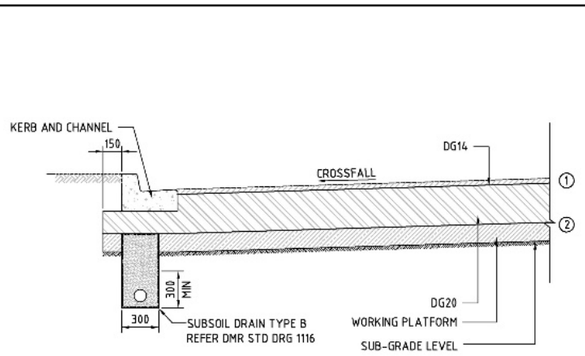
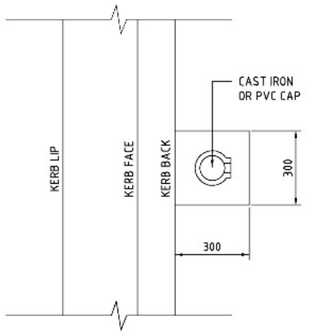


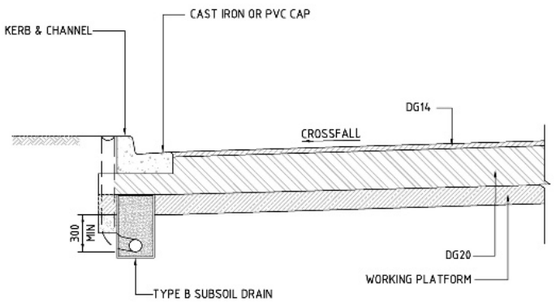
Figure 3.10(g) – Pavement Subsoil Drains Details – generic example



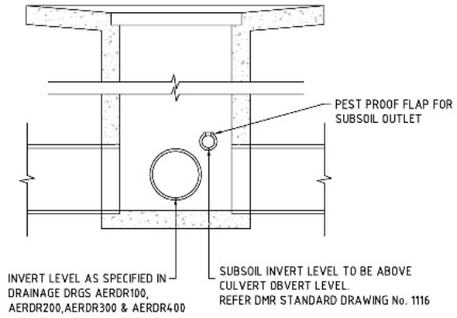
EDGE TREATMENT - KERB AND CHANNEL
ADJACENT TO NEW AG PAVEMENT
NTS



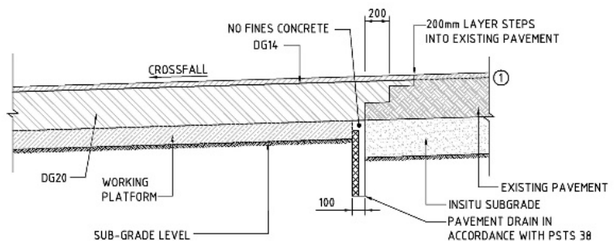
SUBSOIL DRAIN CLEAN OUT
KERBED SHOULDER (PLAN VIEW)
NTS



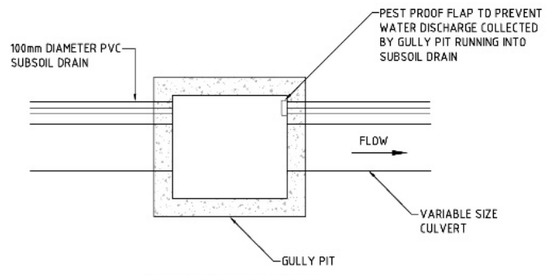
SUBSOIL DRAIN CLEANOUT
KERBED SHOULDER
NTS



SUBSOIL DRAIN OUTLET
DISCHARGE INTO GULLY PIT/ACCESS CHAMBER (CROSS SECTION)
NTS



NEW AG PAVEMENT TO EXISTING
PAVEMENT INTERFACE
NTS



SUBSOIL DRAIN OUTLET
DISCHARGE INTO GULLY PIT/ACCESS CHAMBER (PLAN)
NTS

Revisions	Certified	Date	Microfiled	Associated Job Nos	Survey Data		Scales
				–	Horiz. Datum	SETP	0 100 200 300 400mm
				–	Azimuth Datum	SETP	
				Auxiliary Drg Nos	Height Datum	AHD	
				REFER TO DESIGN PACKAGE DRAWING INDEXES	Survey Books	–	
0 Original Issue A1/A3							Dimensions shown in metres except where shown otherwise
CAD FILES							

Reference Points				
Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
Through Chainage from				

SUBSOIL DRAIN DETAILS
SHEET 1 OF 1

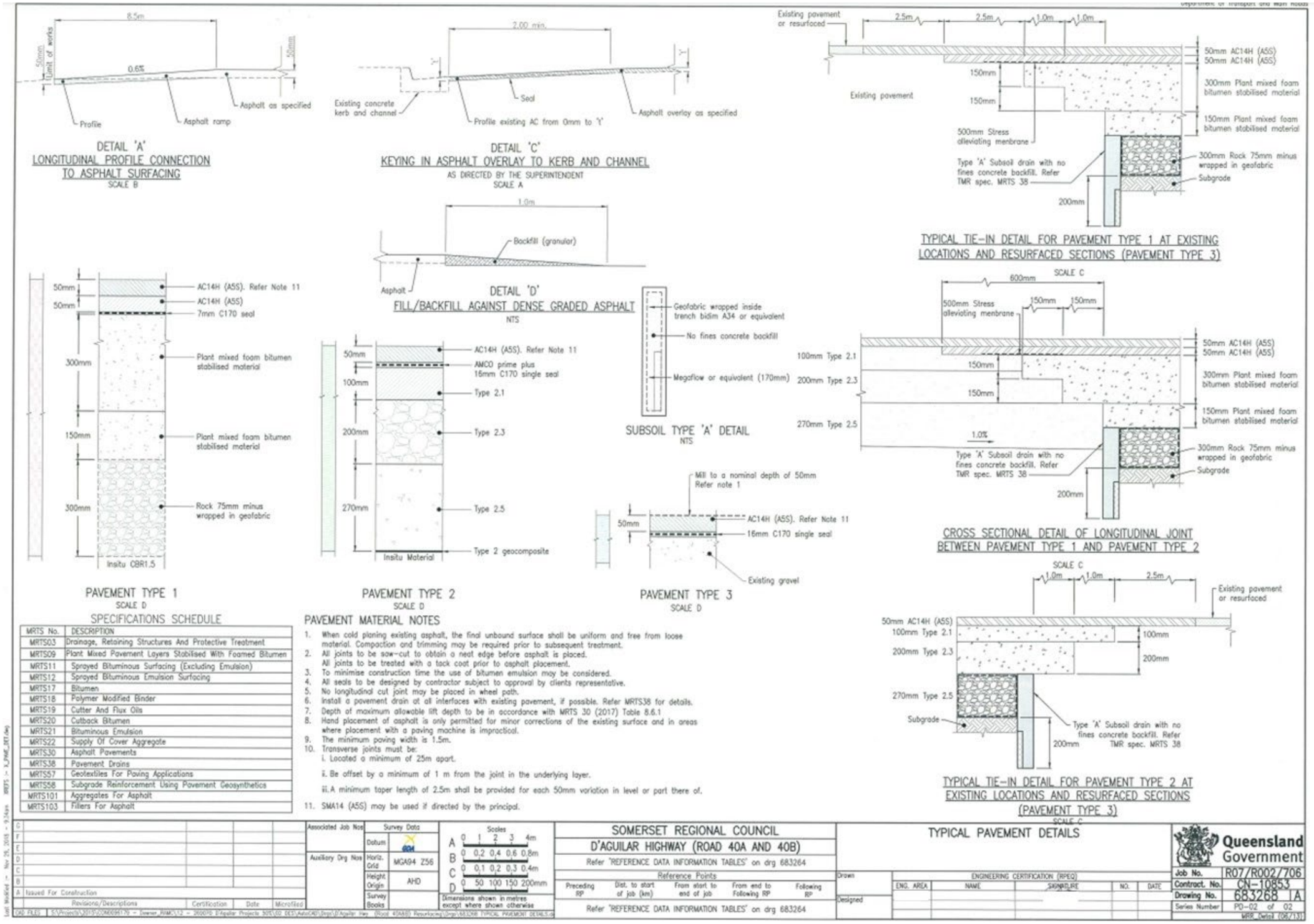
Drawing	Design	Design Review	Engineering Certification: (CIVIL)	For scheme approval status refer
Checked	Verified	Date:	/ / RPEQ:	(of)

Queensland Government

Job No.	
Contract No.	
Drawing No.	
Series Number	

MRR_Detail (08/06)

Figure 3.10(h) – Pavement details – registered example 1



MRTS No.	DESCRIPTION
MRTS03	Drainage, Retaining Structures And Protective Treatment
MRTS09	Plant Mixed Pavement Layers Stabilised With Foamed Bitumen
MRTS11	Sprayed Bituminous Surfacing (Excluding Emulsion)
MRTS12	Sprayed Bituminous Emulsion Surfacing
MRTS17	Bitumen
MRTS18	Polymer Modified Binder
MRTS19	Cutter And Flux Oils
MRTS20	Cutback Bitumen
MRTS21	Bituminous Emulsion
MRTS22	Supply Of Cover Aggregate
MRTS30	Asphalt Pavements
MRTS38	Pavement Drains
MRTS57	Geotextiles For Paving Applications
MRTS58	Subgrade Reinforcement Using Pavement Geosynthetics
MRTS101	Aggregates For Asphalt
MRTS103	Fillers For Asphalt

1. When cold planing existing asphalt, the final unbound surface shall be uniform and free from loose material. Compaction and trimming may be required prior to subsequent treatment.
2. All joints to be saw-cut to obtain a neat edge before asphalt is placed. All joints to be treated with a tack coat prior to asphalt placement.
3. To minimise construction time the use of bitumen emulsion may be considered.
4. All seals to be designed by contractor subject to approval by clients representative.
5. No longitudinal cut joint may be placed in wheel path.
6. Install a pavement drain at all interfaces with existing pavement, if possible. Refer MRTS38 for details.
7. Depth of maximum allowable lift depth to be in accordance with MRTS 30 (2017) Table 8.6.1
8. Hand placement of asphalt is only permitted for minor corrections of the existing surface and in areas where placement with a paving machine is impractical.
9. The minimum paving width is 1.5m.
10. Transverse joints must be:
    i. Located a minimum of 25m apart.
    ii. Be offset by a minimum of 1 m from the joint in the underlying layer.
    ii. A minimum taper length of 2.5m shall be provided for each 50mm variation in level or part there of.
11. SMA14 (A5S) may be used if directed by the principal.

Job No.	R07/R002/706
Contract. No.	CN-10853
Drawing No.	683268 1A
Series Number	PD-02 of 02

Figure 3.10(i) – Pavement details – registered example 2

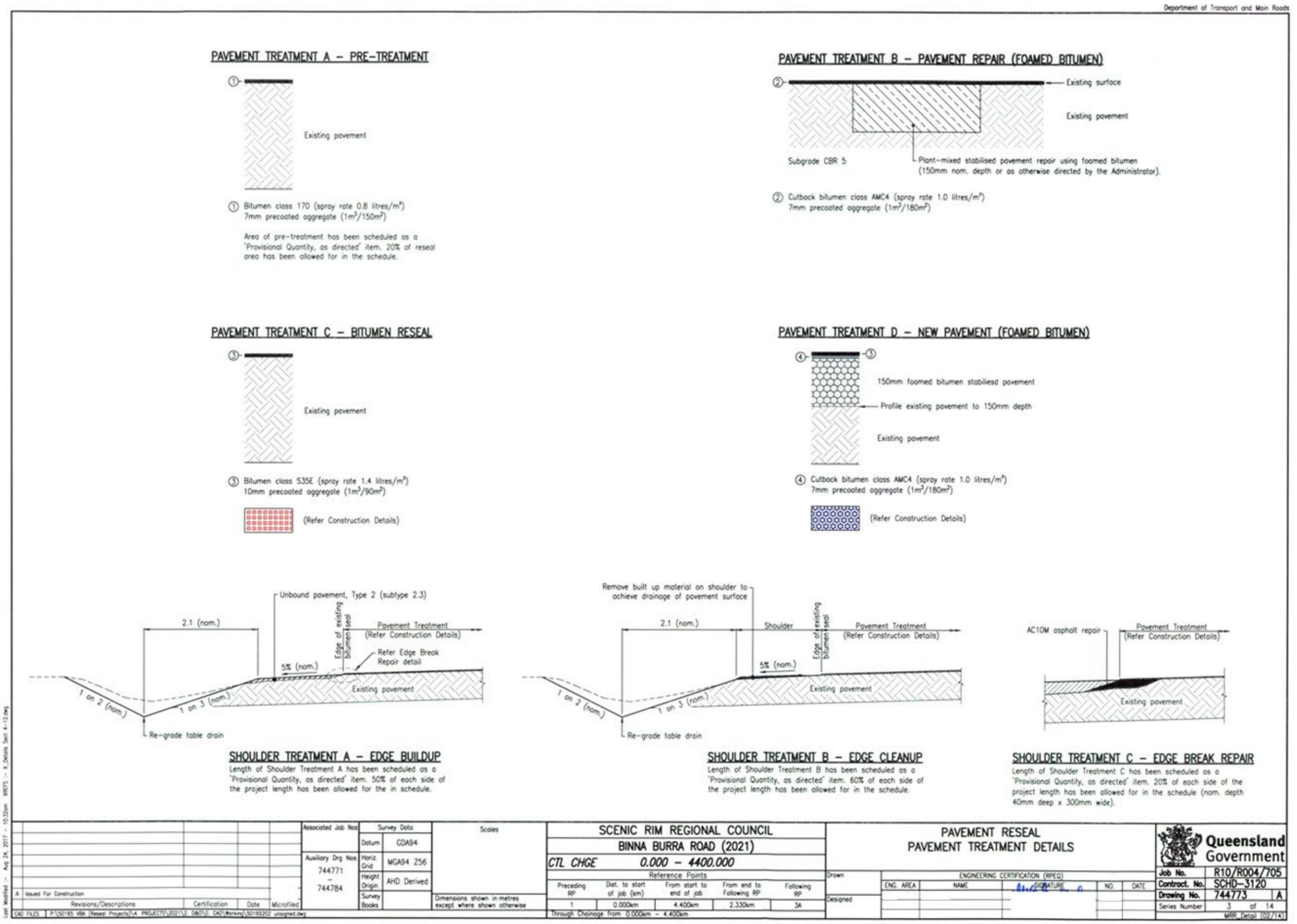
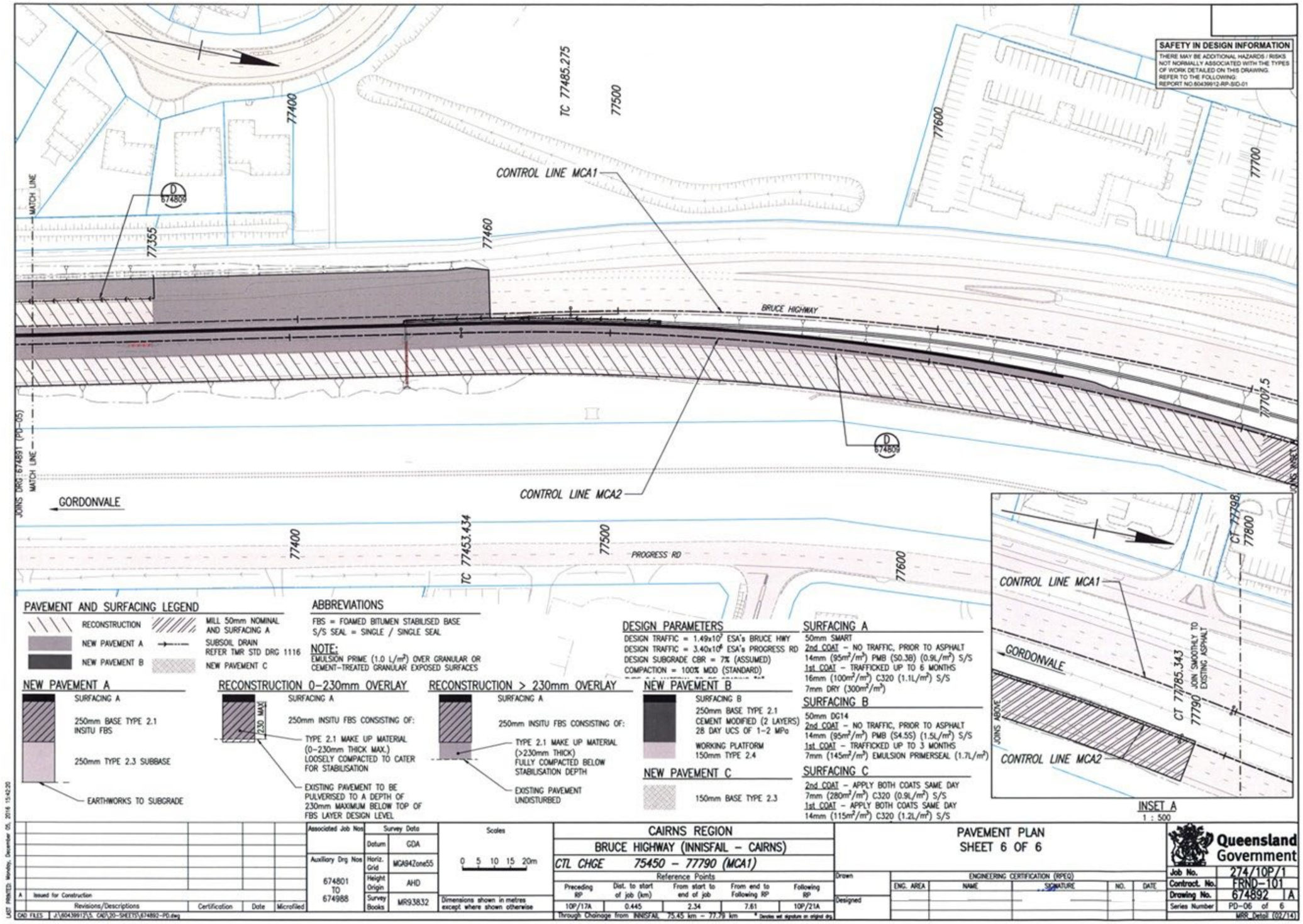


Figure 3.10(j) – Pavement details – registered example 3



3.11 Pavement marking and signage

This drawing details the roadway pavement markings and the type, size and location of the roadway signage.

Considerations

Scale

- Usually 1:500 at A1/1:1000 at A3 (consider 1:250 at A1/1:500 at A3 if high degree of detail)

Drawing

- Consider combining pavement markings and signs on same drawing
- Include a legend for pavement markings (code, explanation and width)
- Show lane widths, shoulder widths, cycle lane widths, etc., but if drawing is convoluted with too much information, then for details of widths and tapers of traffic lanes, shoulders, bicycle lanes, bus lanes, chevrons, and so on, refer to general arrangement or working plans
- Show new sign details – (in accordance with the *Manual of Uniform Traffic Control Devices* (MUTCD) Ref No. size code)
- Show existing signs to be removed or to be relocated.
- If drawing is convoluted with too much information, then it may be appropriate to provide tables on a separate drawing showing sign information such as sign number / location, new sign, existing sign to remain / relocate / remove, sign type and size, number of posts including type and size, and so on – refer Example 3, Figures 2.12(c), 2.12(d) and 2.12(e)
- Include a legend for signs:
  - existing – remain / remove / relocate
  - new – own post / joint mount.

Figure 3.11(a) – Pavement marking and signage – generic example 1

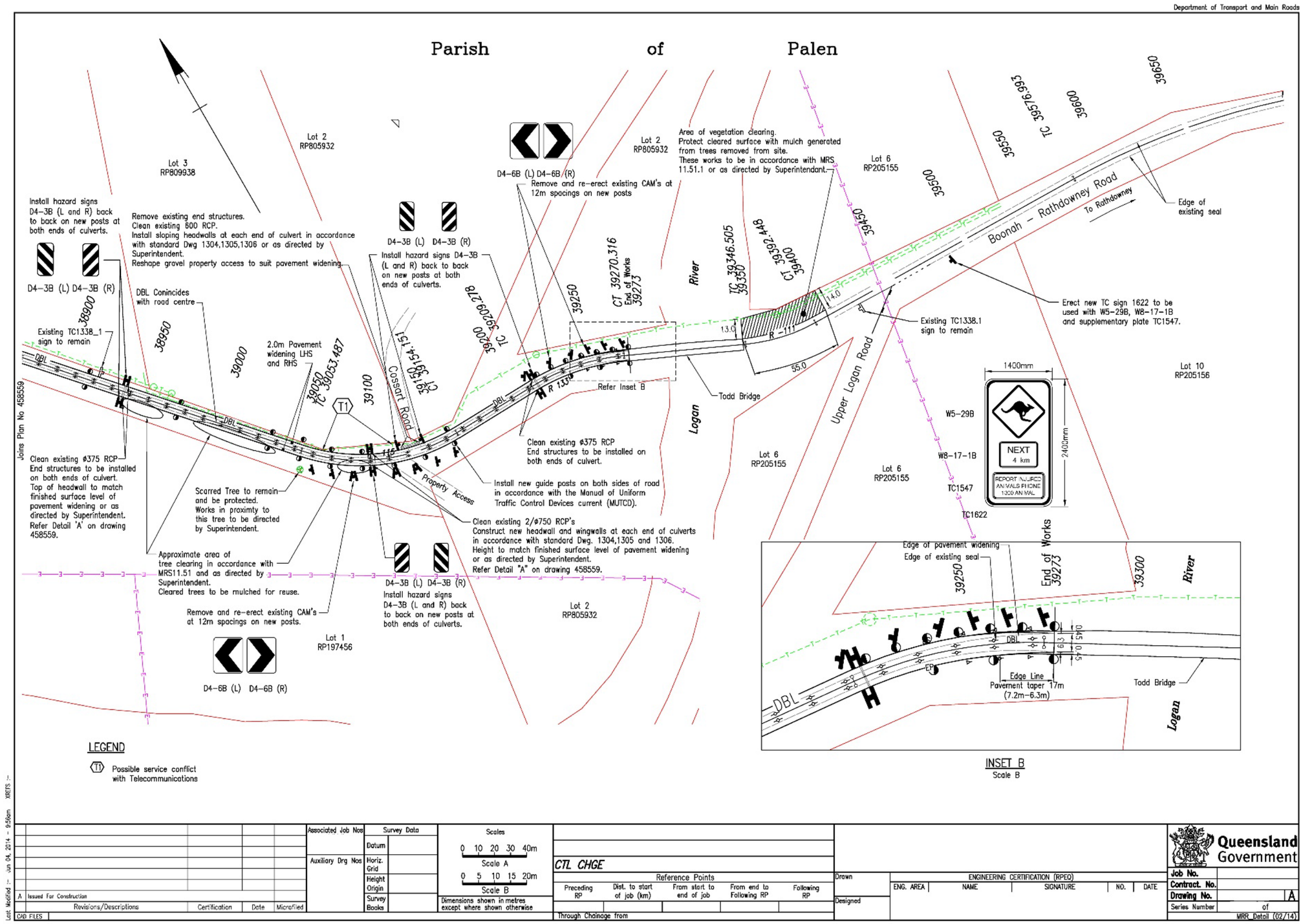


Figure 3.11(b) – Pavement marking and signage – generic example 2

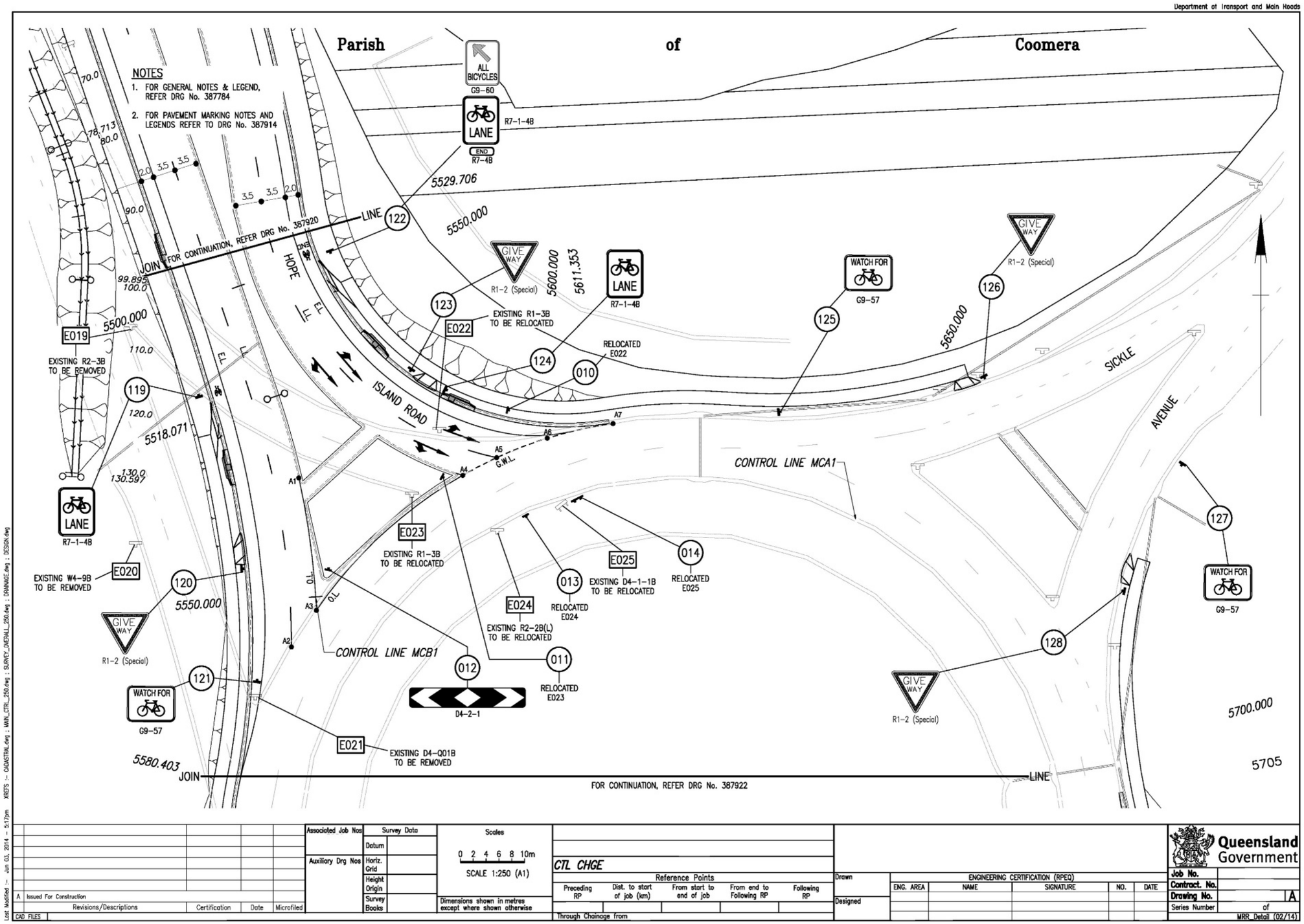


Figure 3.11(c) – Pavement marking and signage – registered example 1

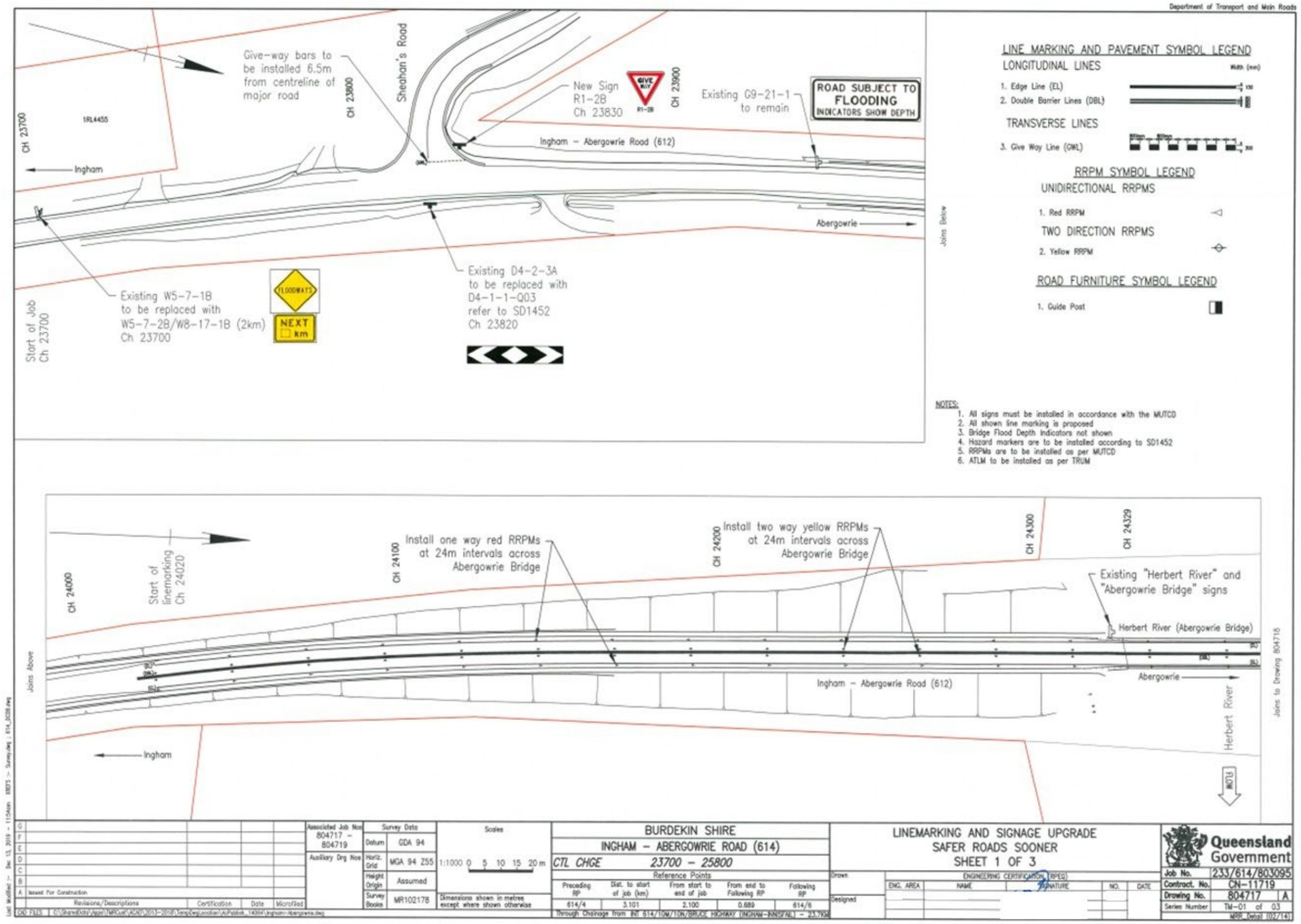
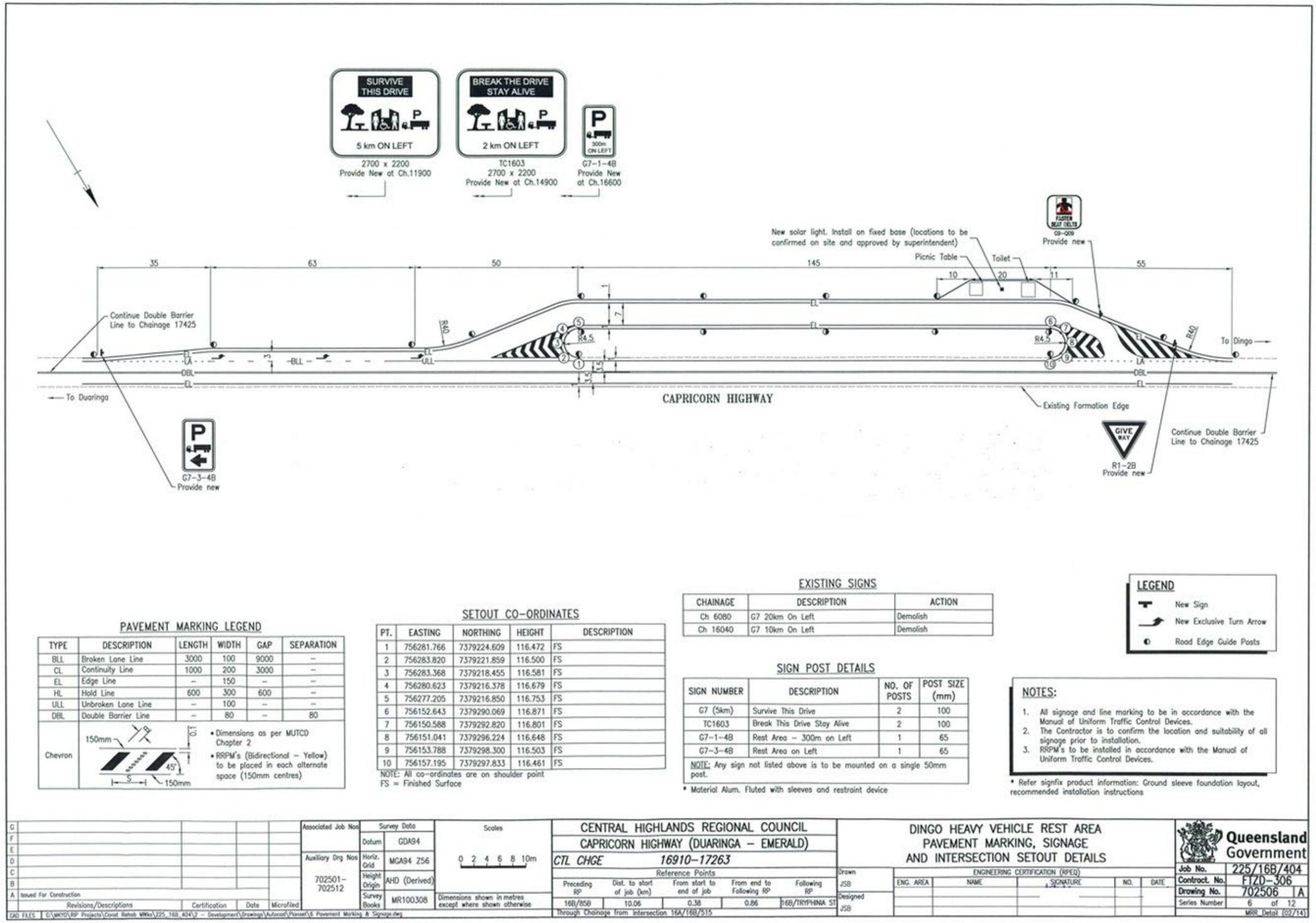


Figure 3.11(d) – Pavement marking and signage – registered example 2



PAVEMENT MARKING LEGEND

TYPE	DESCRIPTION	LENGTH	WIDTH	GAP	SEPARATION
BLL	Broken Lane Line	3000	100	9000	–
CL	Continuity Line	1000	200	3000	–
EL	Edge Line	–	150	–	–
HL	Hold Line	600	300	600	–
ULL	Unbroken Lane Line	–	100	–	–
DBL	Double Barrier Line	–	80	–	80
Chevron	150mm, 45°, S, 150mm, LCT				

- Dimensions as per MUTCD Chapter 2
- RRPM's (Bidirectional – Yellow) to be placed in each alternate space (150mm centres)

SETOUT CO-ORDINATES

PT.	EASTING	NORTHING	HEIGHT	DESCRIPTION
1	756281.766	7379224.609	116.472	FS
2	756283.820	7379221.859	116.500	FS
3	756283.368	7379218.455	116.581	FS
4	756280.623	7379216.378	116.679	FS
5	756277.205	7379216.850	116.753	FS
6	756152.643	7379290.069	116.871	FS
7	756150.588	7379292.820	116.801	FS
8	756151.041	7379296.224	116.648	FS
9	756153.788	7379298.300	116.503	FS
10	756157.195	7379297.833	116.461	FS

NOTE: All co-ordinates are on shoulder point
FS = Finished Surface

EXISTING SIGNS

CHAINAGE	DESCRIPTION	ACTION
Ch 6080	G7 20km On Left	Demolish
Ch 16040	G7 10km On Left	Demolish

SIGN POST DETAILS

SIGN NUMBER	DESCRIPTION	NO. OF POSTS	POST SIZE (mm)
G7 (5km)	Survive This Drive	2	100
TC1603	Break This Drive Stay Alive	2	100
G7-1-4B	Rest Area – 300m on Left	1	65
G7-3-4B	Rest Area on Left	1	65

NOTE: Any sign not listed above is to be mounted on a single 50mm post.

* Material Alum. Fluted with sleeves and restraint device

LEGEND

- New Sign
- New Exclusive Turn Arrow
- Road Edge Guide Posts

NOTES:

1. All signage and line marking to be in accordance with the Manual of Uniform Traffic Control Devices.
2. The Contractor is to confirm the location and suitability of all signage prior to installation.
3. RRPM's to be installed in accordance with the Manual of Uniform Traffic Control Devices.

* Refer signfix product information: Ground sleeve foundation layout, recommended installation instructions

G				
F				
E				
D				
C				
B				
A	Issued For Construction			
	Revisions/Descriptions	Certification	Date	Microfilled

CAD FILES: G:\MKYD\RP Projects\Const Rehab MWks\225_16B_404\2 – Development\Drawings\Autocad\Planset\6 Pavement Marking & Signage.dwg

Associated Job Nos
Auxiliary Drg Nos: 702501–702512

Survey Data	
Datum	GDA94
Horiz. Grid	MGA94 Z56
Height Origin	AHD (Derived)
Survey Books	MR100308

Scales: 0 2 4 6 8 10m
Dimensions shown in metres except where shown otherwise

CENTRAL HIGHLANDS REGIONAL COUNCIL
CAPRICORN HIGHWAY (DUARINGA – EMERALD)
CTL CHGE 16910–17263

Reference Points				
Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
16B/858	10.06	0.38	0.86	16B/TRYPHINIA ST

Through Chainage from Intersection 16A/16B/515

DINGO HEAVY VEHICLE REST AREA
PAVEMENT MARKING, SIGNAGE
AND INTERSECTION SETOUT DETAILS

Drawn: JSB
Designed: JSB

ENGINEERING CERTIFICATION (RPEQ)				
ENG. AREA	NAME	SIGNATURE	NO.	DATE

Queensland Government

Job No.	225/16B/404
Contract. No.	FTZD–306
Drawing No.	702506 A
Series Number	6 of 12

MRR Detail (02/14)

Figure 3.11(e) – Pavement marking and signage – registered example 3

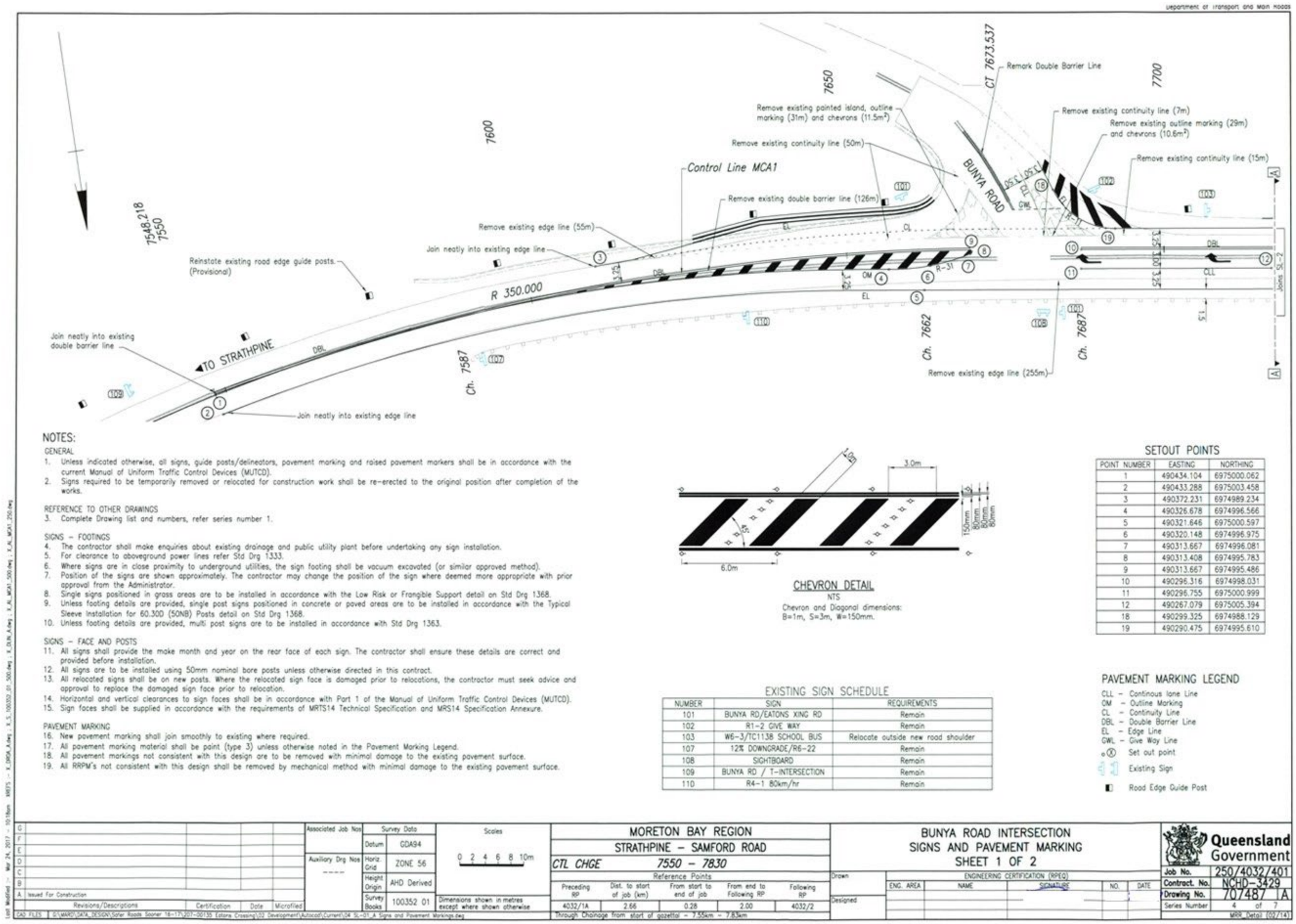


Figure 3.11(f) – Pavement marking and signage – registered example 4

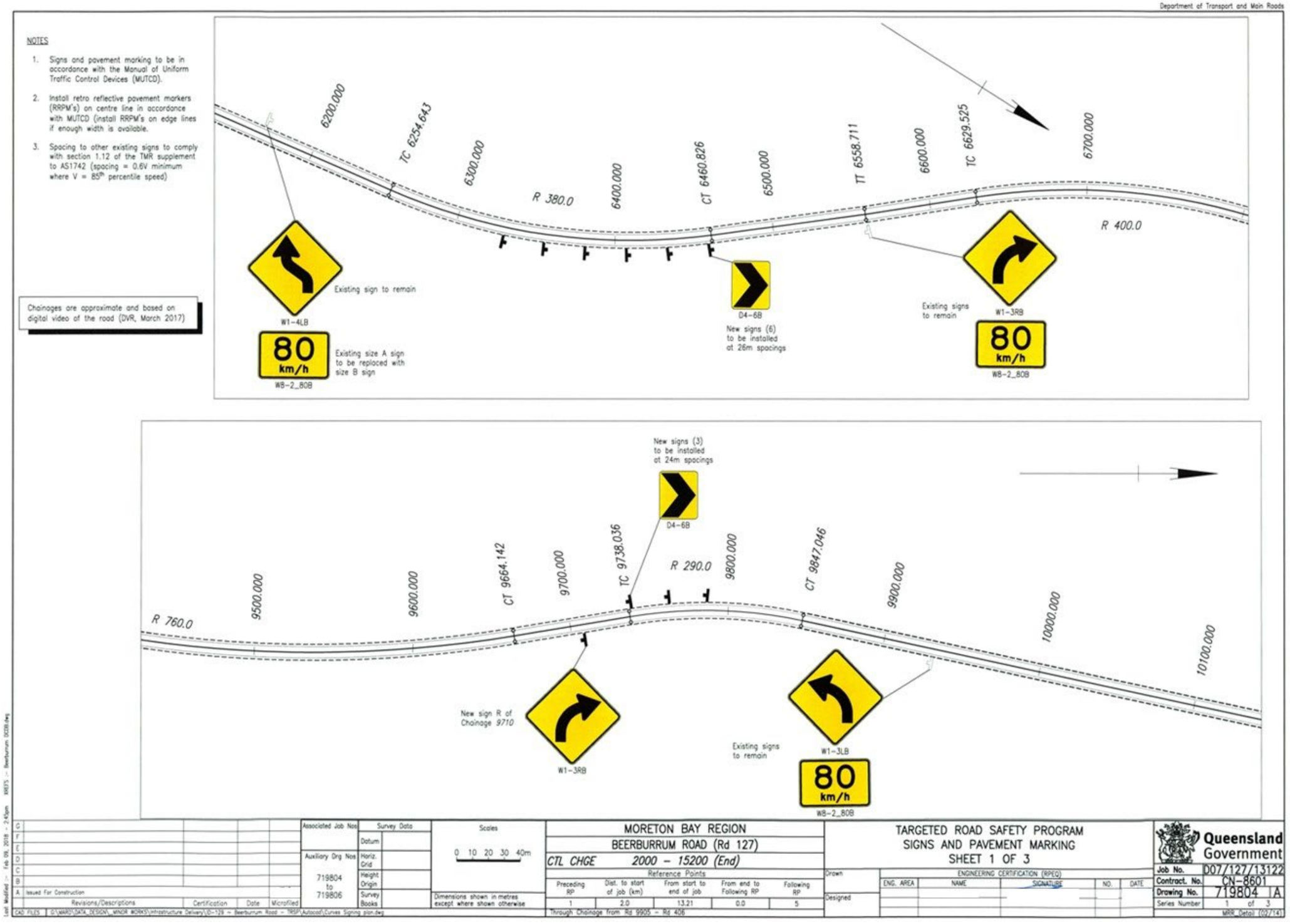
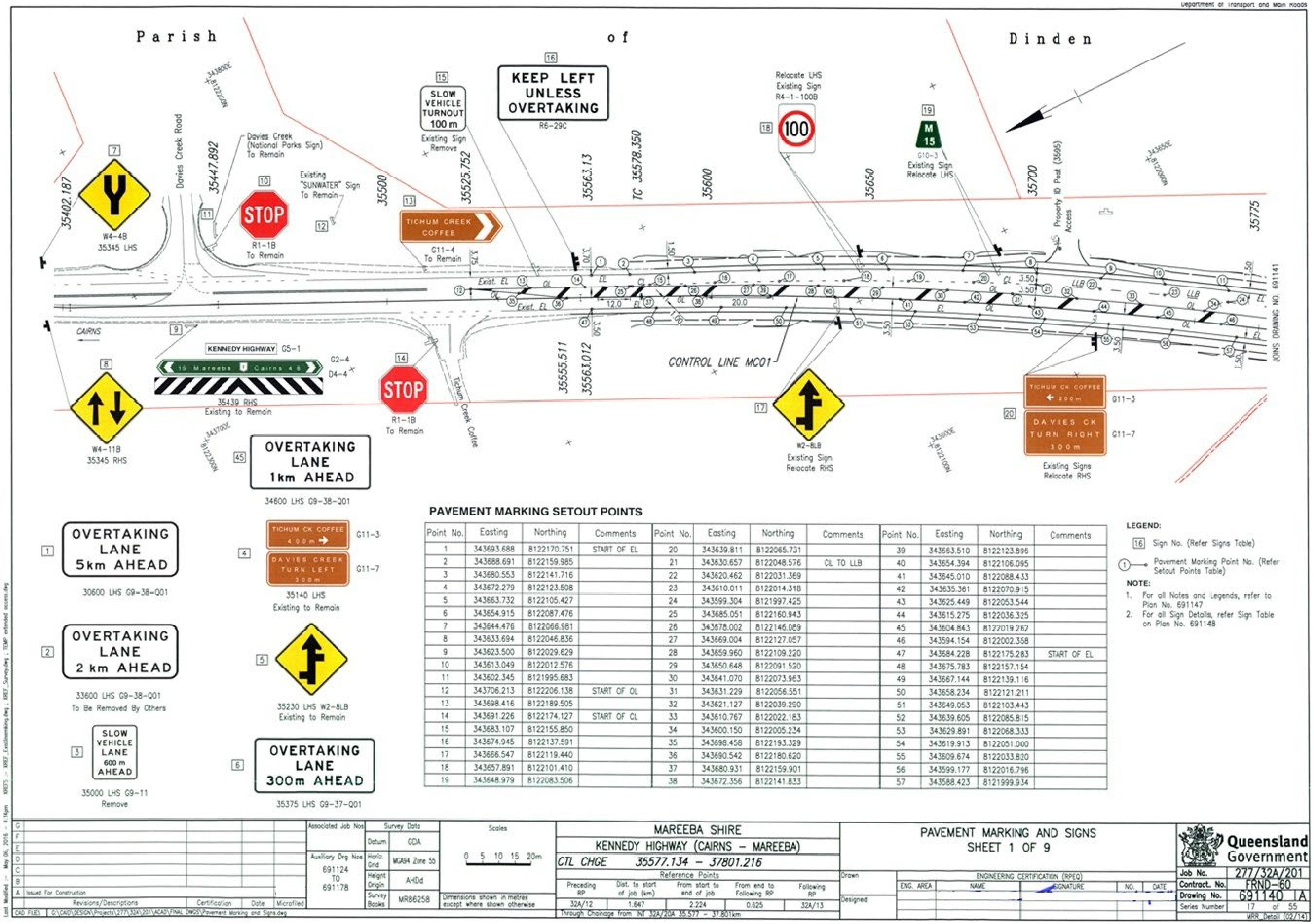


Figure 3.11(g) – Pavement marking and signage – registered example 5



PAVEMENT MARKING SETOUT POINTS

Point No.	Easting	Northing	Comments	Point No.	Easting	Northing	Comments	Point No.	Easting	Northing	Comments
1	343693.688	8122170.751	START OF EL	20	343639.811	8122065.731		39	343663.510	8122123.896	
2	343688.691	8122159.985		21	343630.657	8122048.576	CL TO LLB	40	343654.394	8122106.095	
3	343680.553	8122141.716		22	343620.462	8122031.369		41	343645.010	8122088.433	
4	343672.279	8122123.508		23	343610.011	8122014.318		42	343635.361	8122070.915	
5	343663.732	8122105.427		24	343599.304	8121997.425		43	343625.449	8122053.544	
6	343654.915	8122087.476		25	343685.051	8122160.943		44	343615.275	8122036.325	
7	343644.476	8122066.981		26	343678.002	8122146.089		45	343604.843	8122019.262	
8	343633.694	8122046.836		27	343669.004	8122127.057		46	343594.154	8122002.358	
9	343623.500	8122029.629		28	343659.960	8122109.220		47	343684.228	8122175.283	START OF EL
10	343613.049	8122012.576		29	343650.648	8122091.520		48	343675.783	8122157.154	
11	343602.345	8121995.683		30	343641.070	8122073.963		49	343667.144	8122139.116	
12	343706.213	8122206.138	START OF OL	31	343631.229	8122056.551		50	343658.234	8122121.211	
13	343698.416	8122189.505		32	343621.127	8122039.290		51	343649.053	8122103.443	
14	343691.226	8122174.127	START OF CL	33	343610.767	8122022.183		52	343639.605	8122085.815	
15	343683.107	8122155.850		34	343600.150	8122005.234		53	343629.891	8122068.333	
16	343674.945	8122137.591		35	343698.458	8122193.329		54	343619.913	8122051.000	
17	343666.547	8122119.440		36	343690.542	8122180.620		55	343609.674	8122033.820	
18	343657.891	8122101.410		37	343680.931	8122159.901		56	343599.177	8122016.796	
19	343648.979	8122083.506		38	343672.356	8122141.833		57	343588.423	8121999.934	

3.12 Intersection details

This drawing shows the intersection layout details required for the construction of the intersection.

Considerations

Scale

- Usually 1:250 at A1/1:500 at A3 depending on complexity. The scale should be sufficient to show relationship between construction elements such as roadworks, drainage, services, and road furniture

Design

- Large scale of intersection detail
- Show kerb and median set-out points. Where possible set-out tables should be on the same sheet that the set-out points are positioned to avoid cross referencing between sheets
- Show pavement marking and signage, and set-out details
- Show proposed roadway edges including K&C, medians, islands, footpaths, accesses
- Show control lines to be used for construction set-out
- Include tables to identify control line numbers, point numbers, co-ordinates, heights and features
- Show road contours (as required) to assist in visualising geometry.
- Show other features as necessary

Figure 3.12(a) – Intersection details – generic example 1

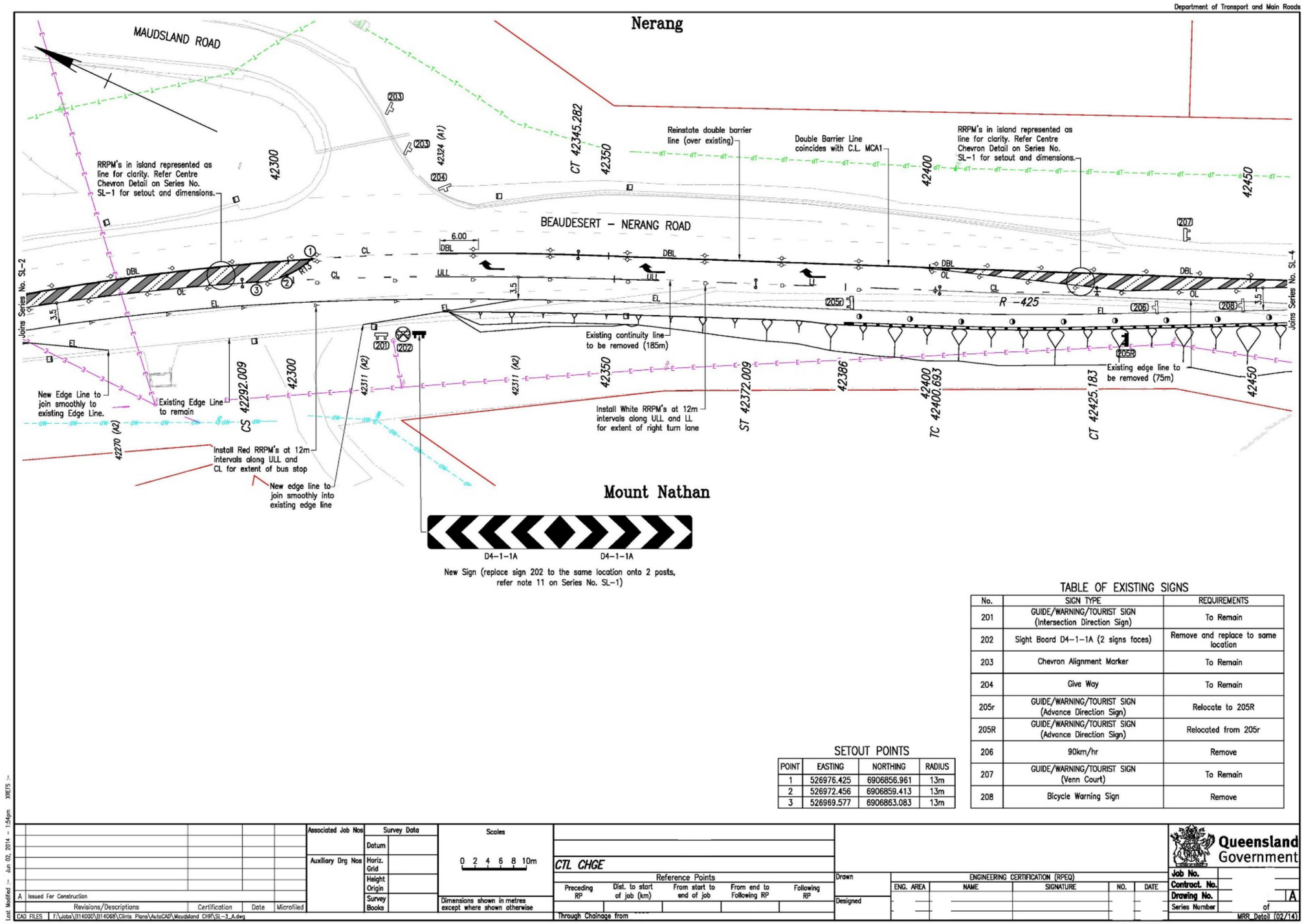


TABLE OF EXISTING SIGNS

No.	SIGN TYPE	REQUIREMENTS
201	GUIDE/WARNING/TOURIST SIGN (Intersection Direction Sign)	To Remain
202	Sight Board D4–1–1A (2 signs faces)	Remove and replace to same location
203	Chevron Alignment Marker	To Remain
204	Give Way	To Remain
205r	GUIDE/WARNING/TOURIST SIGN (Advance Direction Sign)	Relocate to 205R
205R	GUIDE/WARNING/TOURIST SIGN (Advance Direction Sign)	Relocated from 205r
206	90km/hr	Remove
207	GUIDE/WARNING/TOURIST SIGN (Venn Court)	To Remain
208	Bicycle Warning Sign	Remove

SETOUT POINTS

POINT	EASTING	NORTHING	RADIUS
1	526976.425	6906856.961	13m
2	526972.456	6906859.413	13m
3	526969.577	6906863.083	13m

Last Modified :– Jun 02, 2014 – 1:54pm XREFS :–

A	Issued For Construction			
	Revisions/Descriptions	Certification	Date	Microfiled

CAD FILES | F:\Jobs\B14000\B14068\Clints Plans\AutoCAD\Maudsland CHR\SL–3_A.dwg

Associated Job Nos | Auxiliary Drg Nos

Survey Data: Datum | Horiz. Grid | Height Origin | Survey Books

Scales: 0 2 4 6 8 10m

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP

Through Chainage from

Drawn | Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

Job No. | Contract. No. | Drawing No. A | Series Number of

MRR_Detail (02/14)

Figure 3.12(b) – Intersection details – generic example 2

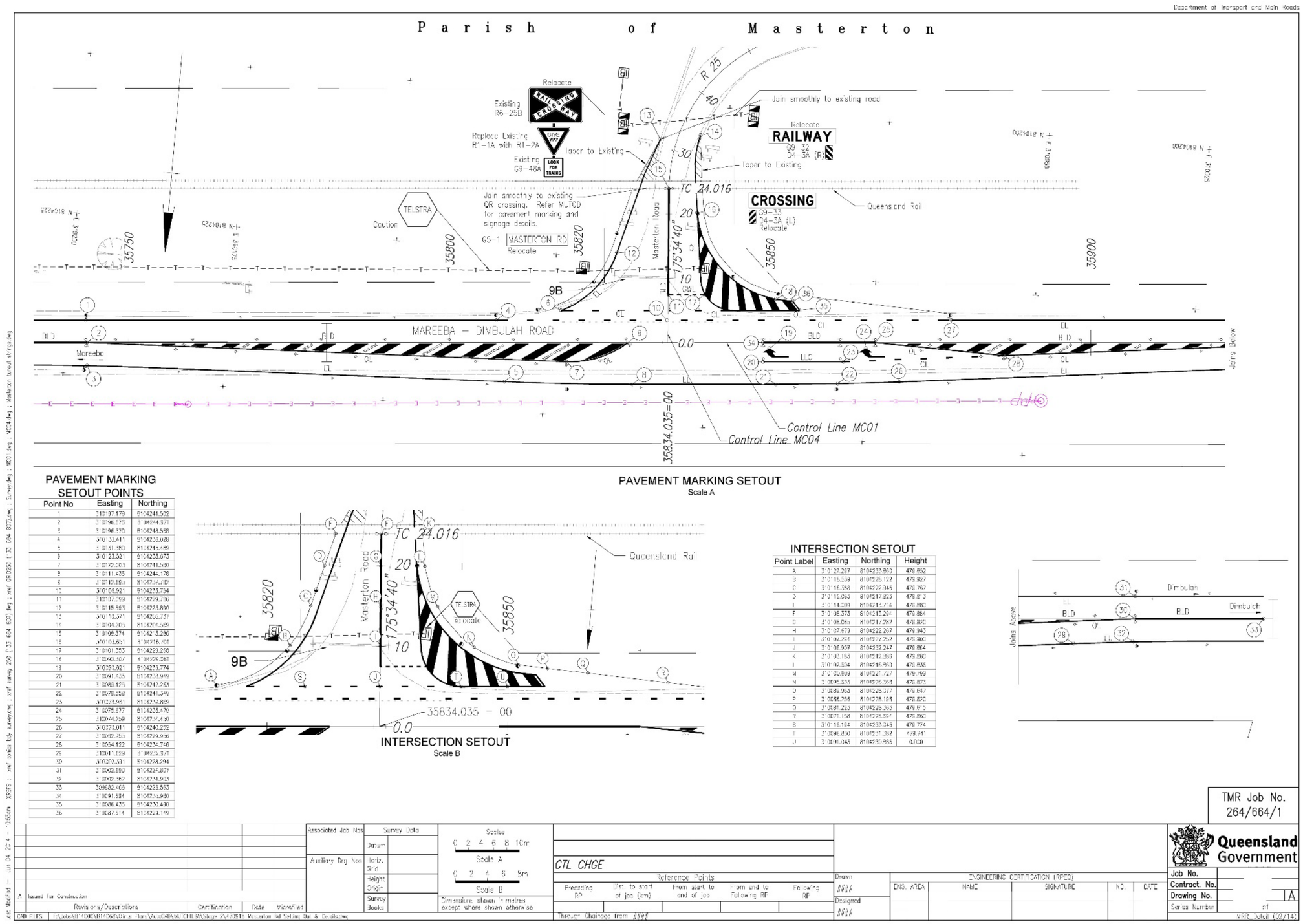


Figure 3.12(c) – Intersection details – generic example 3

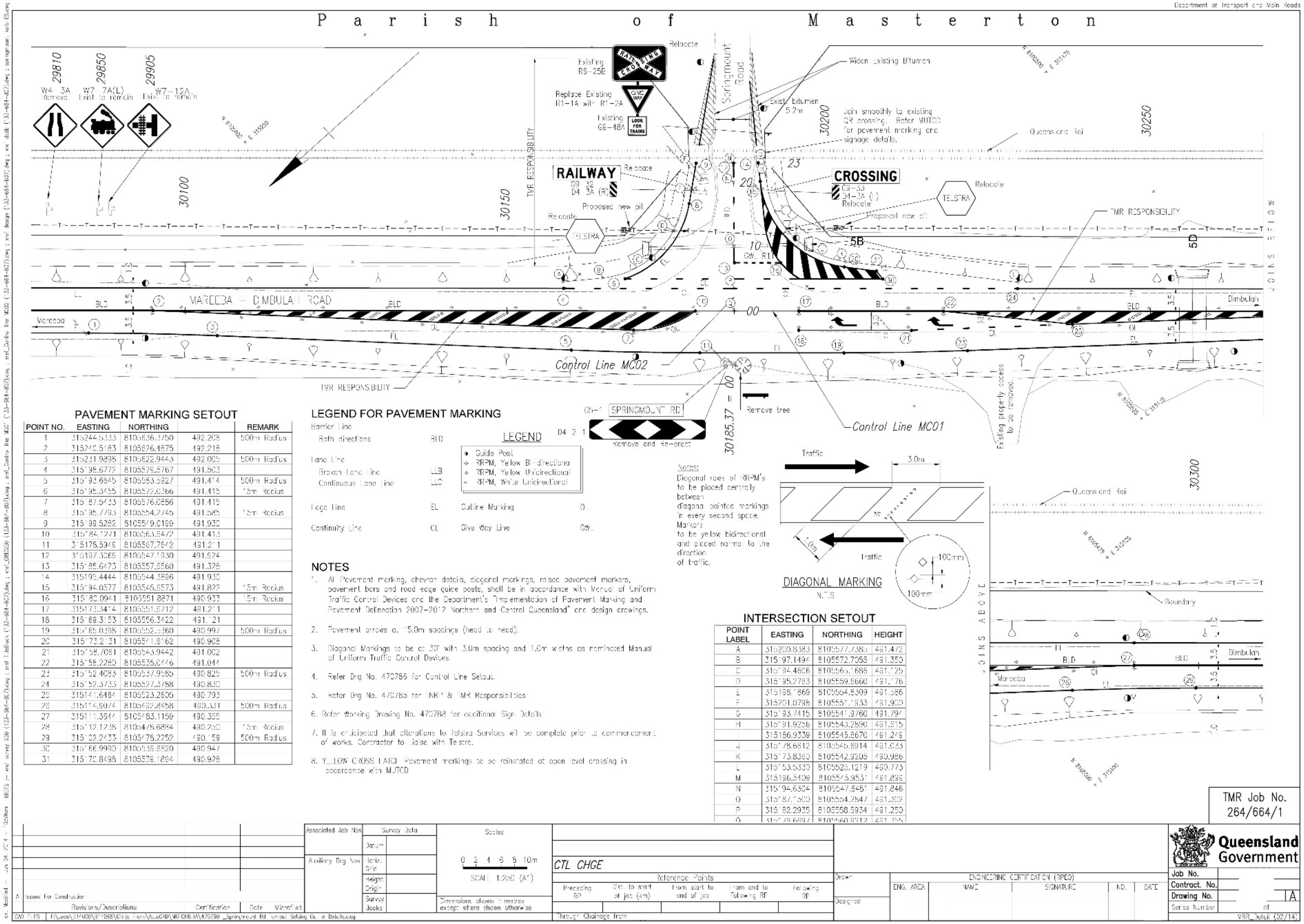


Figure 3.12(d) – Intersection details – generic example 4

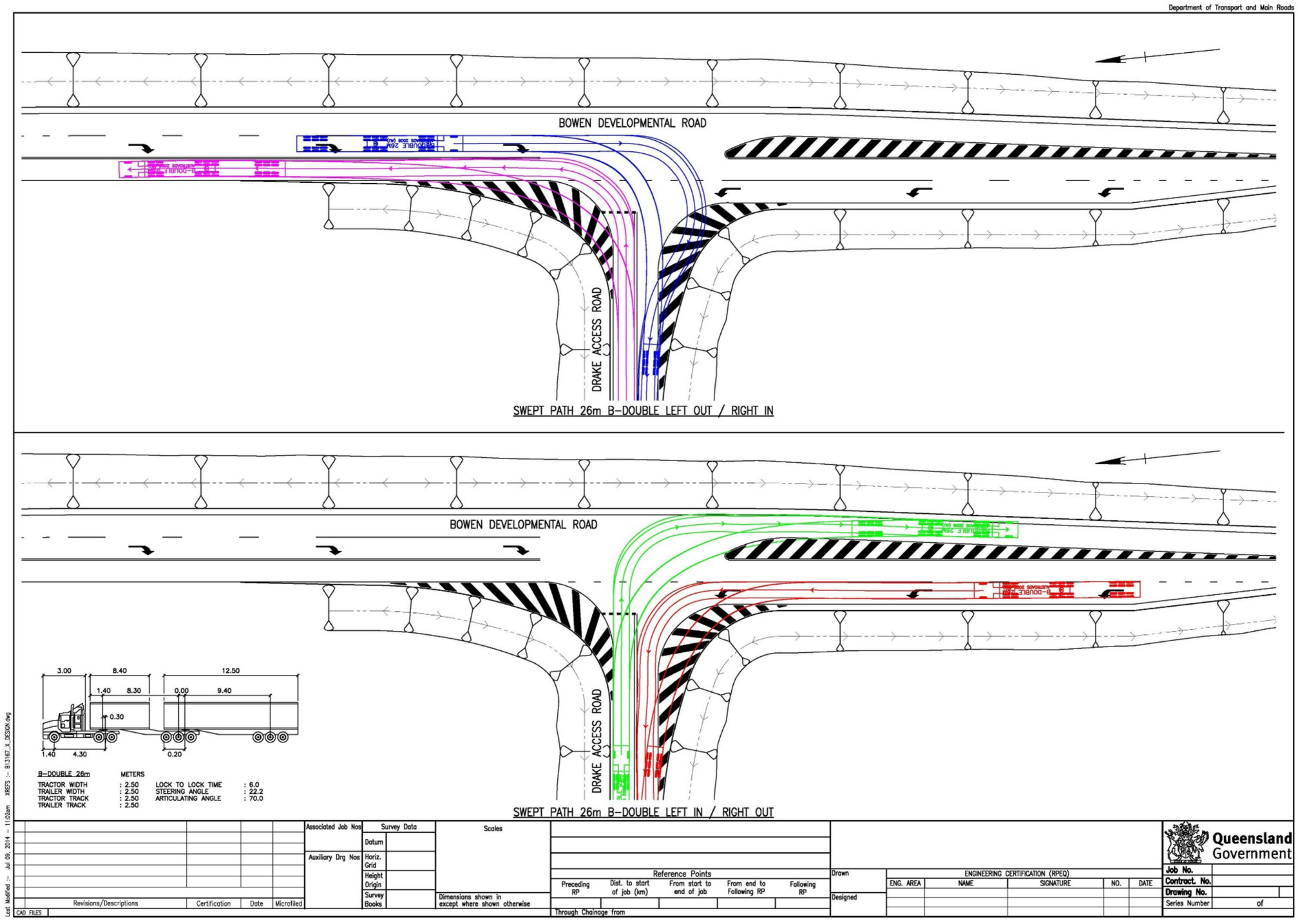
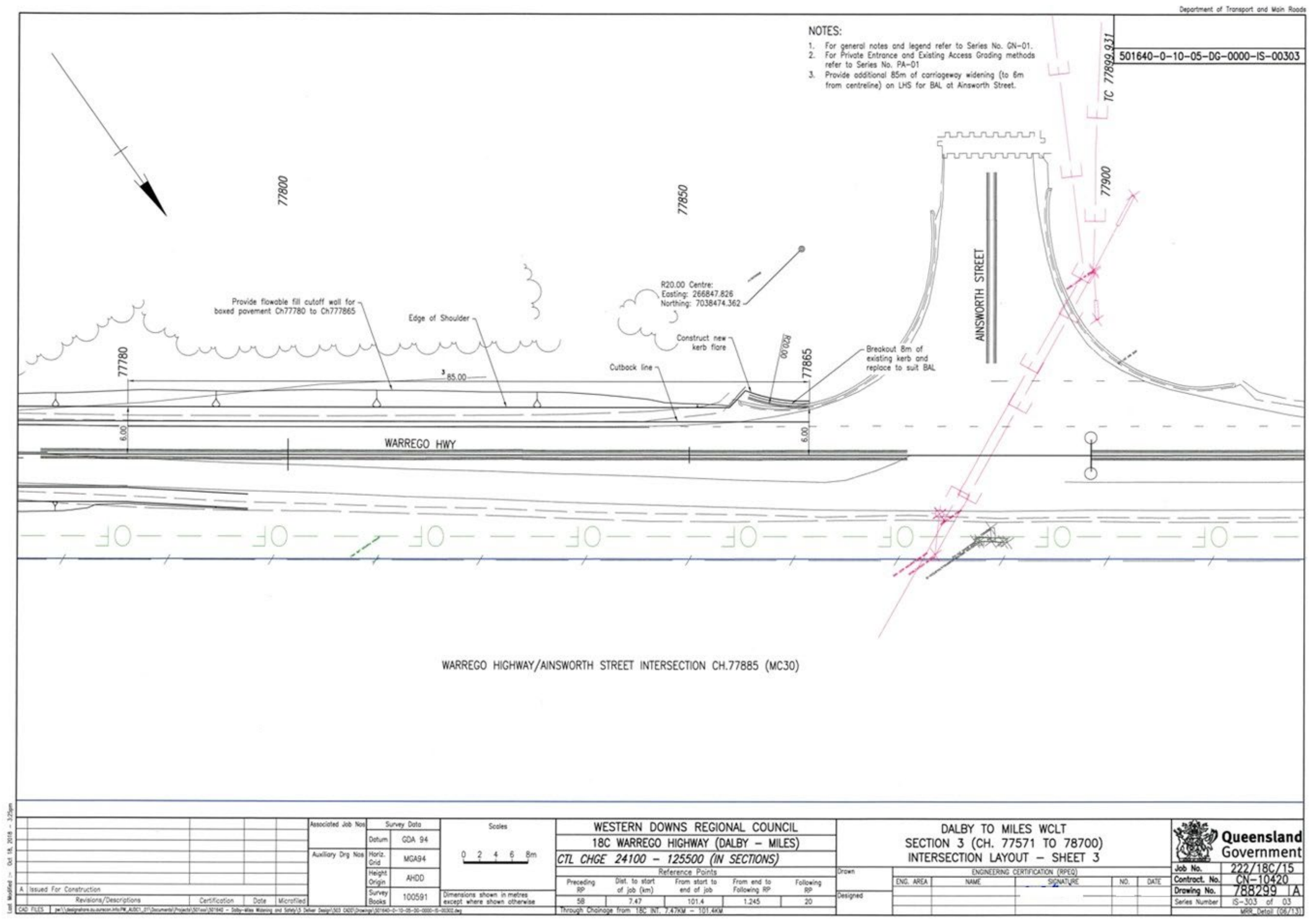


Figure 3.12(e) – Intersection details – registered example



3.13 Private access details

The private access details drawing provides details for the construction of the private accesses.

Considerations:

Scale

- Usually 1:250 at A1/1:500 at A3

Design

- Provide control line set-out details
- Provide a longitudinal section along the access
- Show existing culverts / new culverts
- Show signs and pavement markings (if applicable)
- Show pavement widths
- Identify existing and relocated services
- Show pavement type and surfacing details
- Provide a typical cross section on the access (if appropriate)

Figure 3.13(a) – Private access details – generic example 1

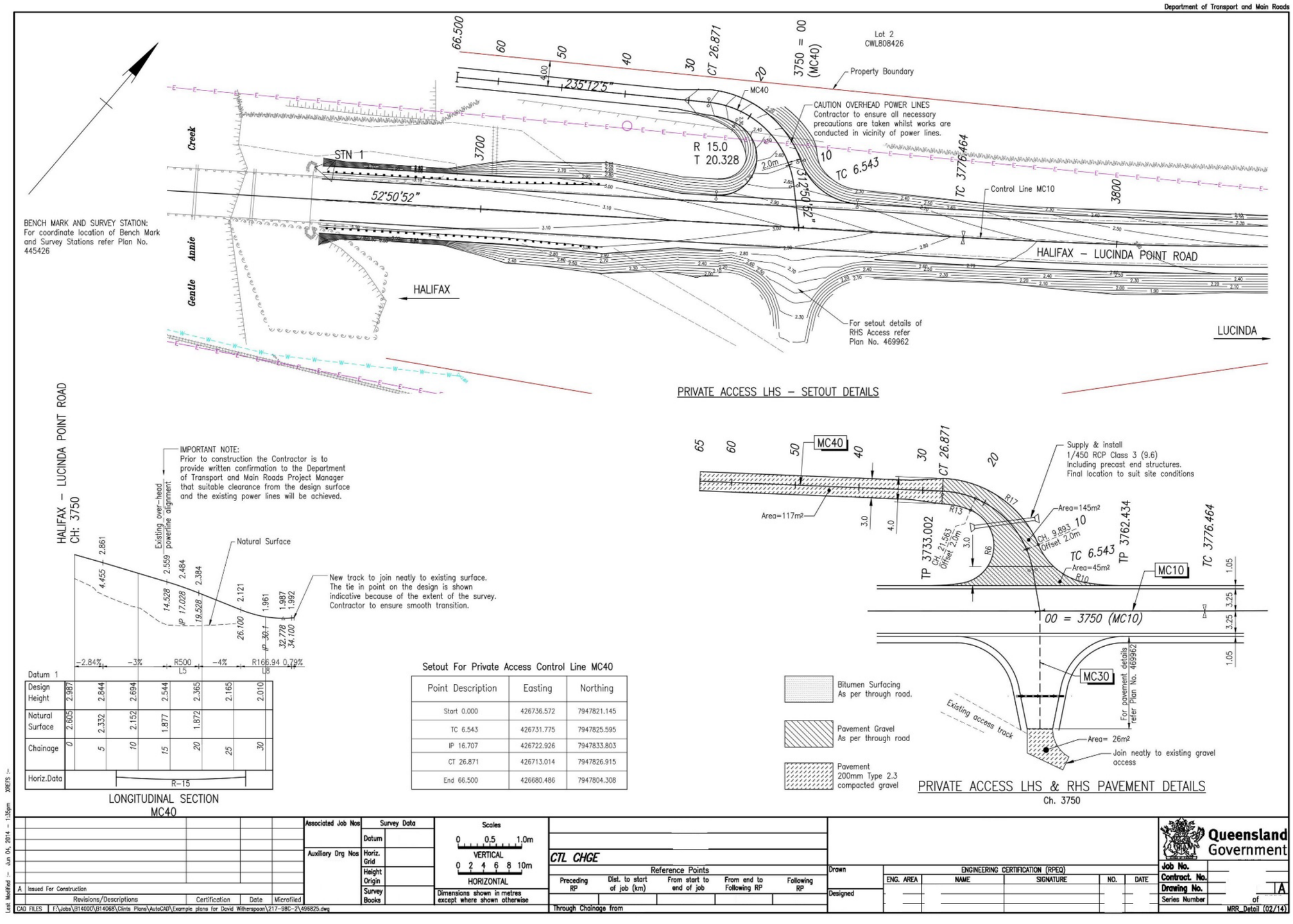


Figure 3.13(b) – Private access details – generic example 2

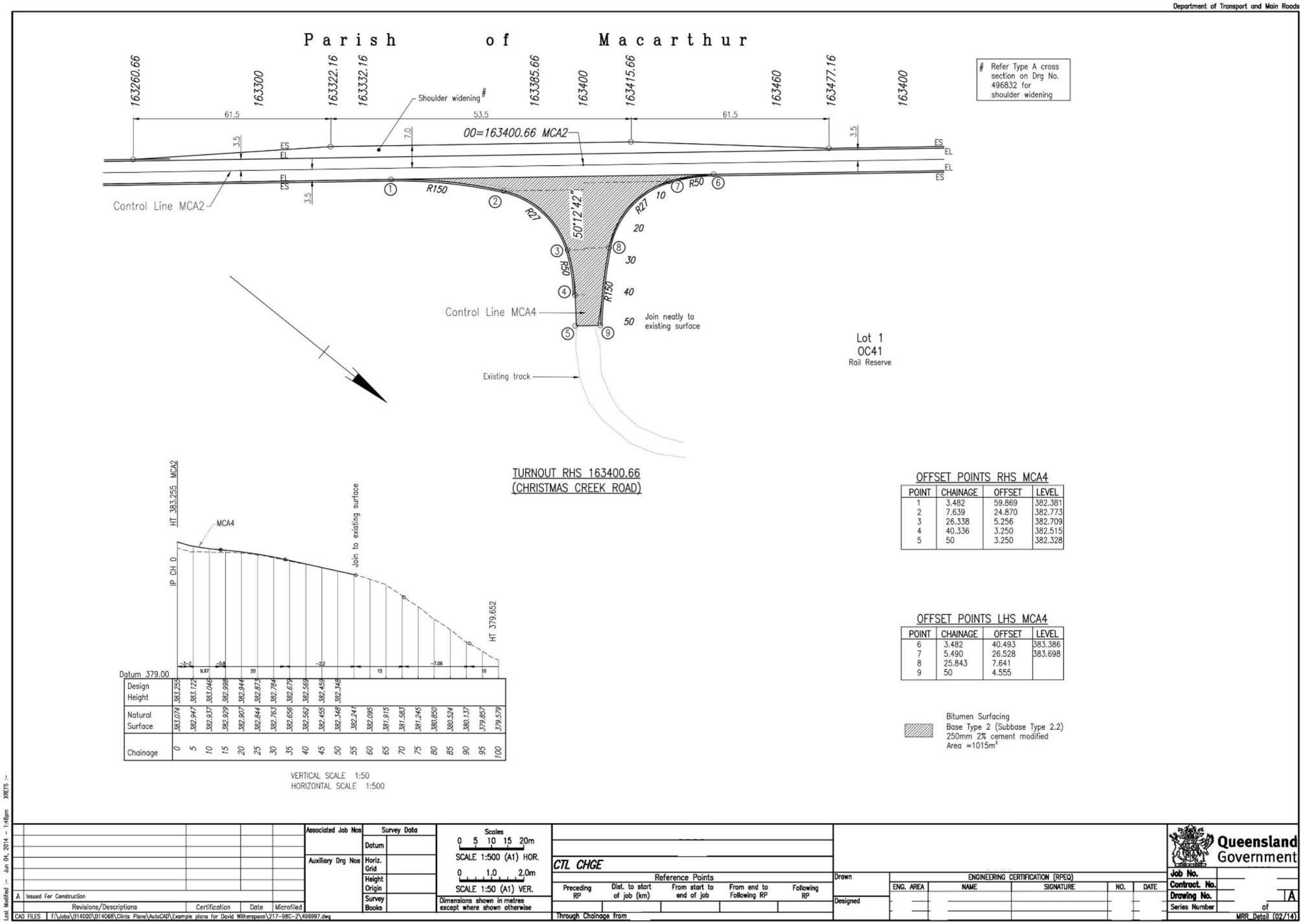
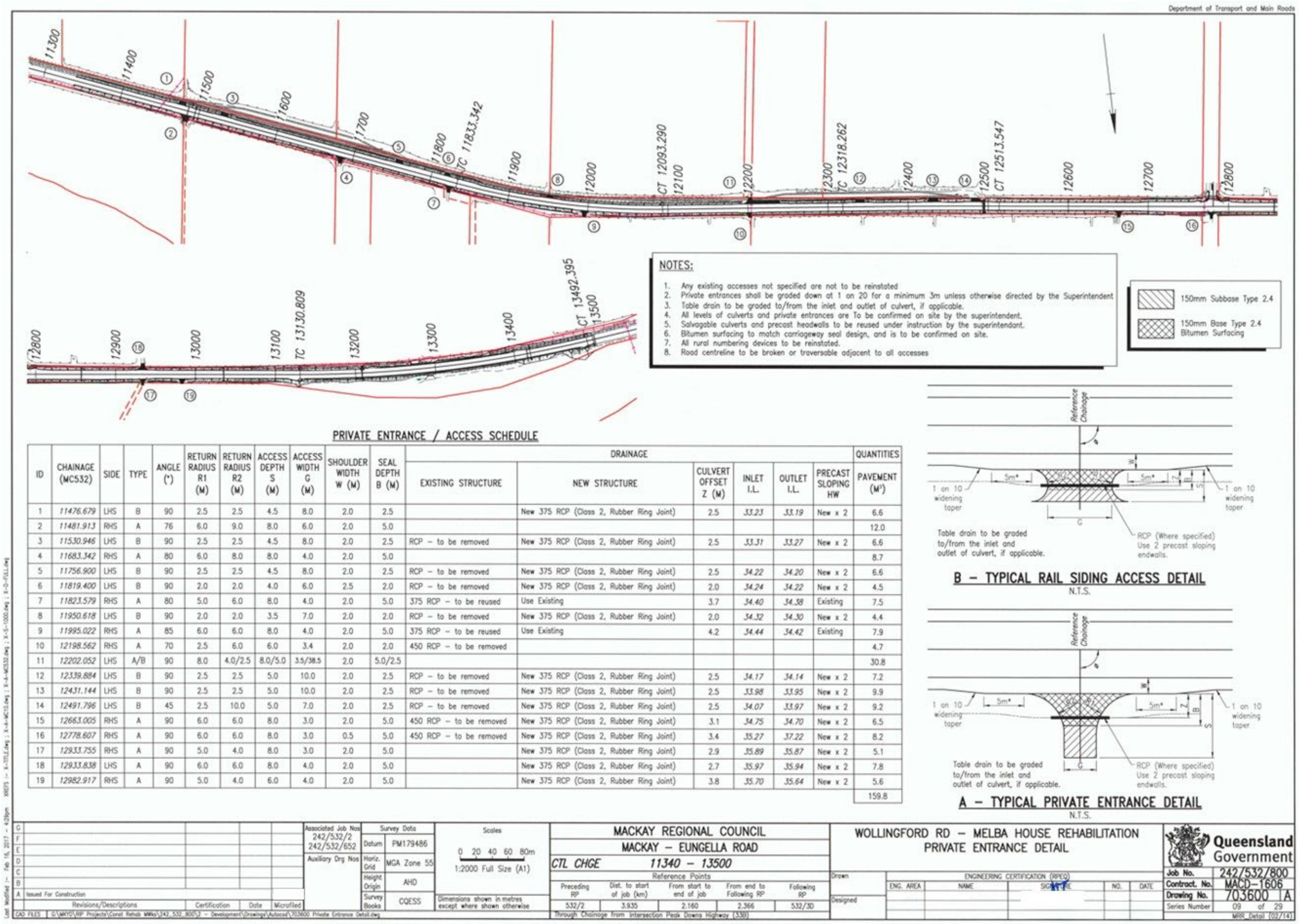


Figure 3.13(c) – Private access details – registered example 1



ID	CHAINAGE (MC532)	SIDE	TYPE	ANGLE (°)	RETURN RADIUS R1 (M)	RETURN RADIUS R2 (M)	ACCESS DEPTH S (M)	ACCESS WIDTH G (M)	SHOULDER WIDTH W (M)	SEAL DEPTH B (M)	DRAINAGE						QUANTITIES
											EXISTING STRUCTURE	NEW STRUCTURE	CULVERT OFFSET Z (M)	INLET I.L.	OUTLET I.L.	PRECAST SLOPING HW	PAVEMENT (M^2)
1	*11476.679*	LHS	B	90	2.5	2.5	4.5	8.0	2.0	2.5		New 375 RCP (Class 2, Rubber Ring Joint)	2.5	*33.23*	*33.19*	New x 2	6.6
2	*11481.913*	RHS	A	76	6.0	9.0	8.0	6.0	2.0	5.0							12.0
3	*11530.946*	LHS	B	90	2.5	2.5	4.5	8.0	2.0	2.5	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.5	*33.31*	*33.27*	New x 2	6.6
4	*11683.342*	RHS	A	80	6.0	8.0	8.0	4.0	2.0	5.0							8.7
5	*11756.900*	LHS	B	90	2.5	2.5	4.5	8.0	2.0	2.5	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.5	*34.22*	*34.20*	New x 2	6.6
6	*11819.400*	LHS	B	90	2.0	2.0	4.0	6.0	2.5	2.0	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.0	*34.24*	*34.22*	New x 2	4.5
7	*11823.579*	RHS	A	80	5.0	6.0	8.0	4.0	2.0	5.0	375 RCP – to be reused	Use Existing	3.7	*34.40*	*34.38*	Existing	7.5
8	*11950.618*	LHS	B	90	2.0	2.0	3.5	7.0	2.0	2.0	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.0	*34.32*	*34.30*	New x 2	4.4
9	*11995.022*	RHS	A	85	6.0	6.0	8.0	4.0	2.0	5.0	375 RCP – to be reused	Use Existing	4.2	*34.44*	*34.42*	Existing	7.9
10	*12198.562*	RHS	A	70	2.5	6.0	6.0	3.4	2.0	2.0	450 RCP – to be removed						4.7
11	*12202.052*	LHS	A/B	90	8.0	4.0/2.5	8.0/5.0	3.5/38.5	2.0	5.0/2.5							30.8
12	*12339.884*	LHS	B	90	2.5	2.5	5.0	10.0	2.0	2.5	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.5	*34.17*	*34.14*	New x 2	7.2
13	*12431.144*	LHS	B	90	2.5	2.5	5.0	10.0	2.0	2.5	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.5	*33.98*	*33.95*	New x 2	9.9
14	*12491.796*	LHS	B	45	2.5	10.0	5.0	7.0	2.0	2.5	RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	2.5	*34.07*	*33.97*	New x 2	9.2
15	*12663.005*	RHS	A	90	6.0	6.0	8.0	3.0	2.0	5.0	450 RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	3.1	*34.75*	*34.70*	New x 2	6.5
16	*12778.607*	RHS	A	90	6.0	6.0	8.0	3.0	0.5	5.0	450 RCP – to be removed	New 375 RCP (Class 2, Rubber Ring Joint)	3.4	*35.27*	*37.22*	New x 2	8.2
17	*12933.755*	RHS	A	90	5.0	4.0	8.0	3.0	2.0	5.0		New 375 RCP (Class 2, Rubber Ring Joint)	2.9	*35.89*	*35.87*	New x 2	5.1
18	*12933.838*	LHS	A	90	6.0	6.0	8.0	4.0	2.0	5.0		New 375 RCP (Class 2, Rubber Ring Joint)	2.7	*35.97*	*35.94*	New x 2	7.8
19	*12982.917*	RHS	A	90	5.0	4.0	6.0	4.0	2.0	5.0		New 375 RCP (Class 2, Rubber Ring Joint)	3.8	*35.70*	*35.64*	New x 2	5.6
																	159.8

Figure 3.13(d) – Private access details – registered example 2

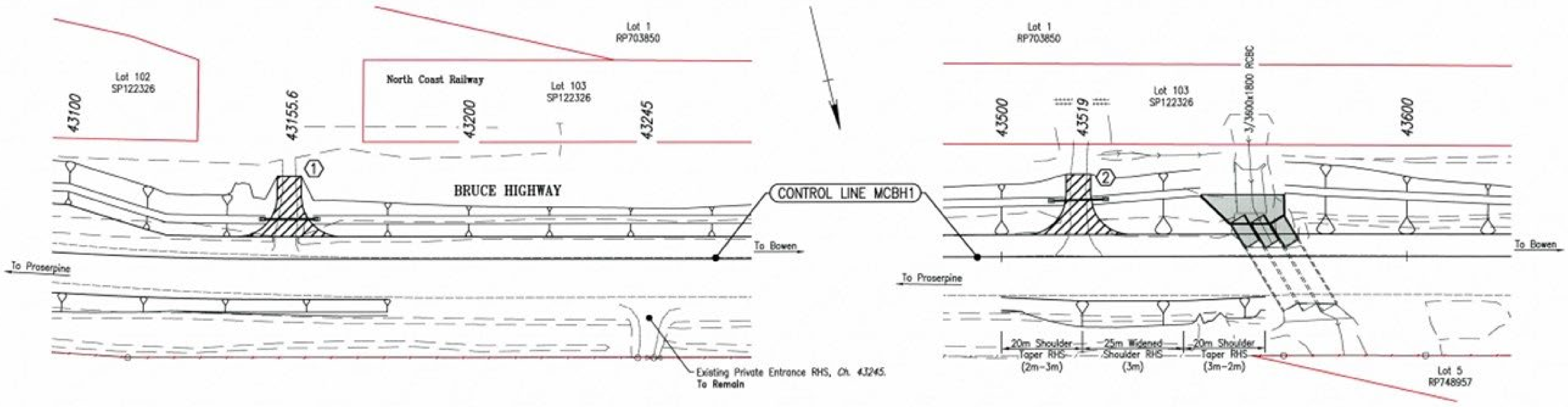
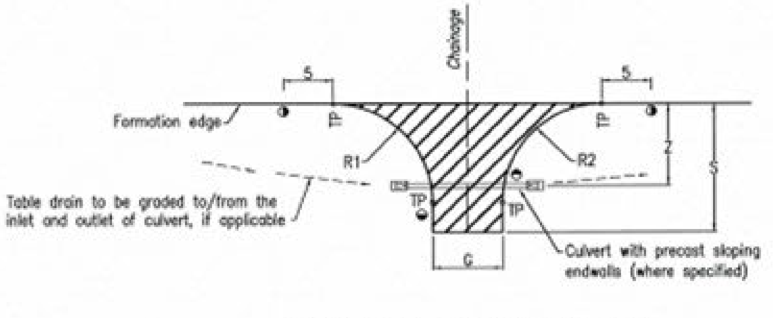
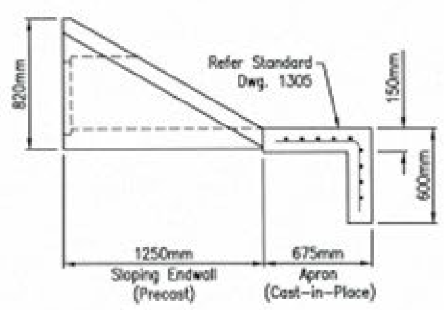


TABLE OF PRIVATE ENTRANCES

ID	CHAINAGE	Angle (°)	R1 (m)	R2 (m)	S (m)	G (m)	APPROX SLOPE	DRAINAGE						QUANTITIES	
								STRUCTURE	OFFSET Z (m)	INLET I.L.	OUTLET I.L.	PRECAST SLOPING HW	APRONS (m^3)	PAVEMENT (m^2) [4155]	BITUMEN S. (m^2)
1	43155.6 LHS	90	10	10	15	6	4%	Existing 375 RCP – DEMOLISH 450 RCP (12.2m Length) with precast sloping endwalls	4.8	5.95	5.77	2	0.3	30	–
2	43519 LHS	90	10	10	15	6	0.5%	Existing 480 ARMCO – DEMOLISH 450 RCP (12.2m Length) with precast sloping endwalls	8.9	3.47	3.37	2	0.3	31	–
											TOTAL	4	0.6	61	–



TYPICAL PRIVATE ENTRANCE DETAIL
Not To Scale



SLOPING ENDWALL AND TYPE 3 APRON
Not To Scale

200mm, Type 2.5 Unbound Pavement

NOTES:

1. All levels of culverts and private entrances are to be confirmed on site by the project Administrator.
2. Aprons to be provided on Precast Sloping Endwalls. Refer detail this Drawing.

A Issued For Construction

Associated Job Nos 269/10J/1_1 | Survey Data: Datum GDA 94; Horiz. Grid MGA94 Zone55; Height Origin AHD Derived; Survey Books MR94123 | Auxiliary Drg Nos 678461–678482

Scales 0 5 10 15 20m | Dimensions shown in metres except where shown otherwise

WHITSUNDAY REGIONAL COUNCIL
BRUCE HIGHWAY (PROSERPINE – BOWEN) (10J)
CTL CHGE 42670 – 43890

Reference Points: Preceding RP 10J/8; Dist. to start of job (km) 4.73; From start to end of job 1.22; From end to Following RP 0.427; Following RP 10J/9
Through Chainage from Intersection 10H/Fullgrass St/Crystal Brook Rd (5382)

SOUTHBOUND OVERTAKING LANE SOUTH OF EMU CREEK
PRIVATE ENTRANCE DETAILS

Queensland Government
Job No. 269/10J/1_2
Contract No. MACD–1580
Drawing No. 678469 A
Series Number 9 of 22

3.14 Miscellaneous details

The miscellaneous details drawing provides specific project details, for example, retailing walls.

Considerations

Drawings

- Scale – draw to a scale necessary to show the required level of detail and to be clear, concise, readable and easily understood.
- Show here any details necessary for construction not shown anywhere else in the project drawings or in referred standard drawings.

Figure 3.14(a) – Miscellaneous details – generic example 1

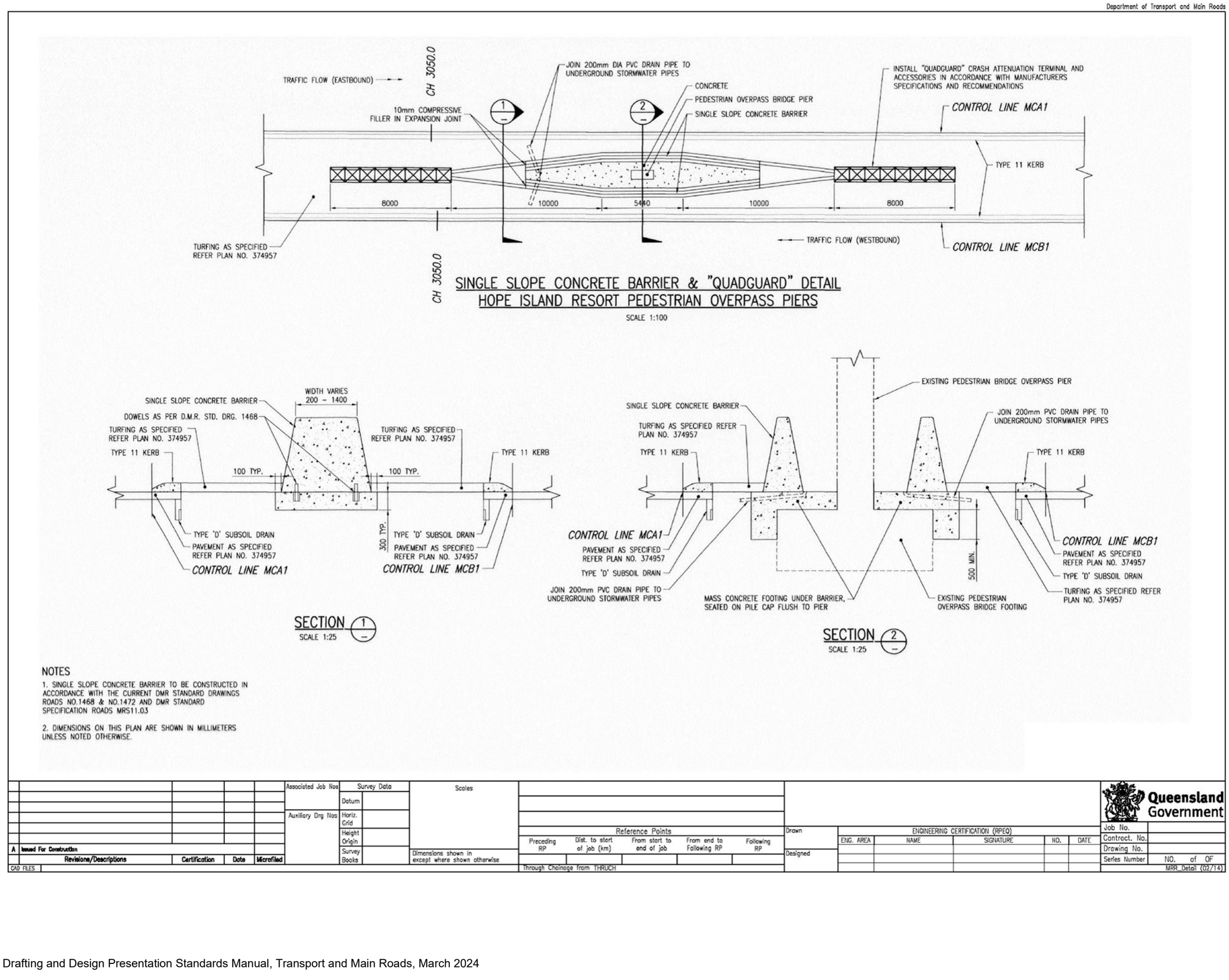


Figure 3.14(b) – Miscellaneous details – generic example 2

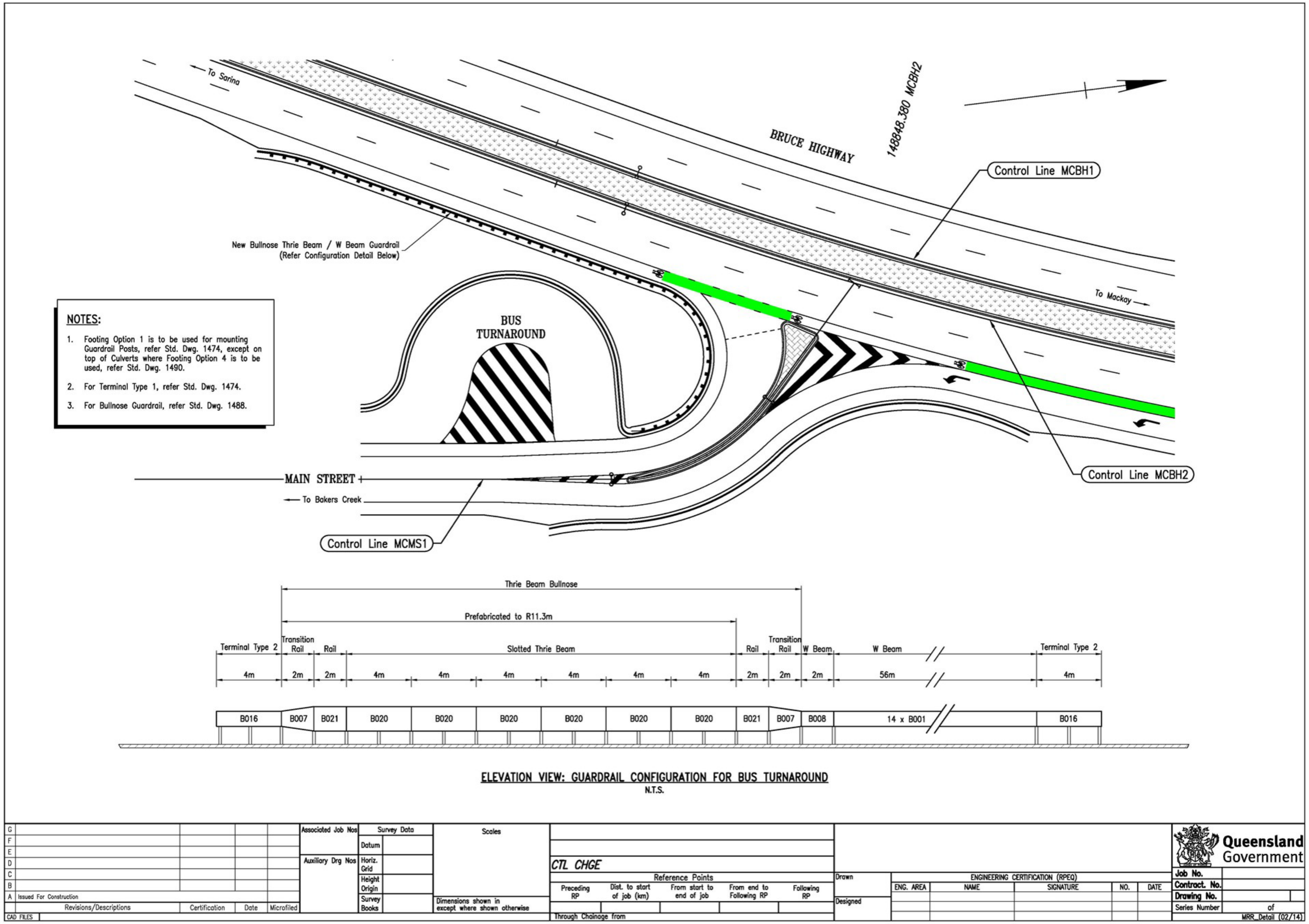
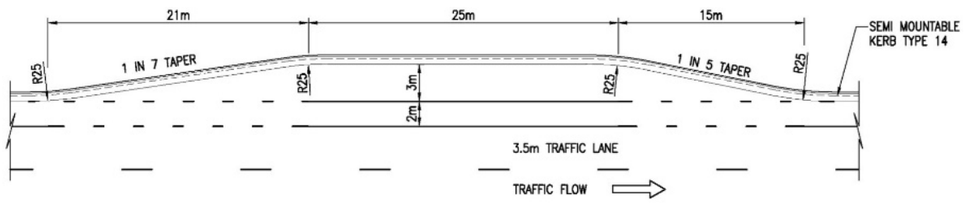
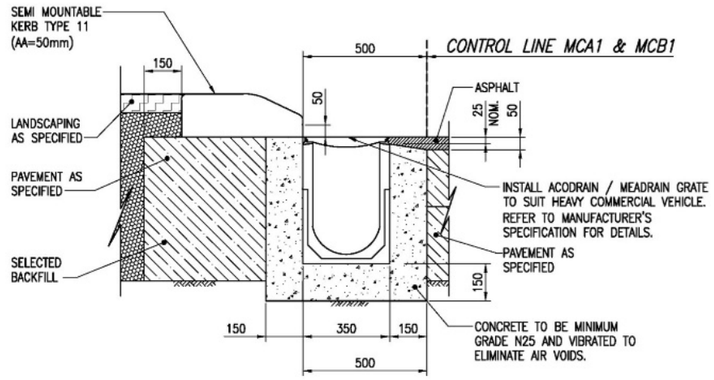


Figure 3.14(c) – Miscellaneous details – generic example 3

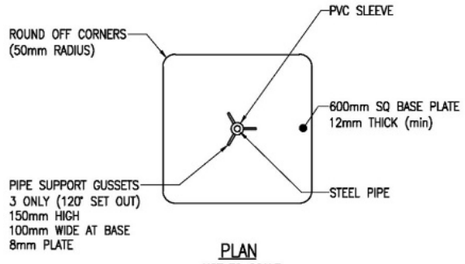
Department of Transport and Main Roads



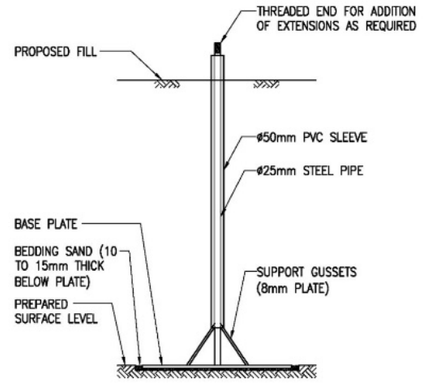
TYPICAL BUS BAY DETAIL
NOT TO SCALE



S300K POWERDRAIN / MEADRAIN U 3000 DETAIL
DIMENSIONS ARE IN MILLIMETRES
NOT TO SCALE



PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

SETTLEMENT NOTES:
1. PIPE TO BE SET AT 90° TO BASE PLATE.
2. REMOVE SOIL CONTAINING ORGANIC MATERIAL BELOW SETTLEMENT PLATE

SETTLEMENT PLATE DETAIL
NOT TO SCALE

NOTE:
1. ALL DIMENSIONS IN MILLIMETRES U.N.O.

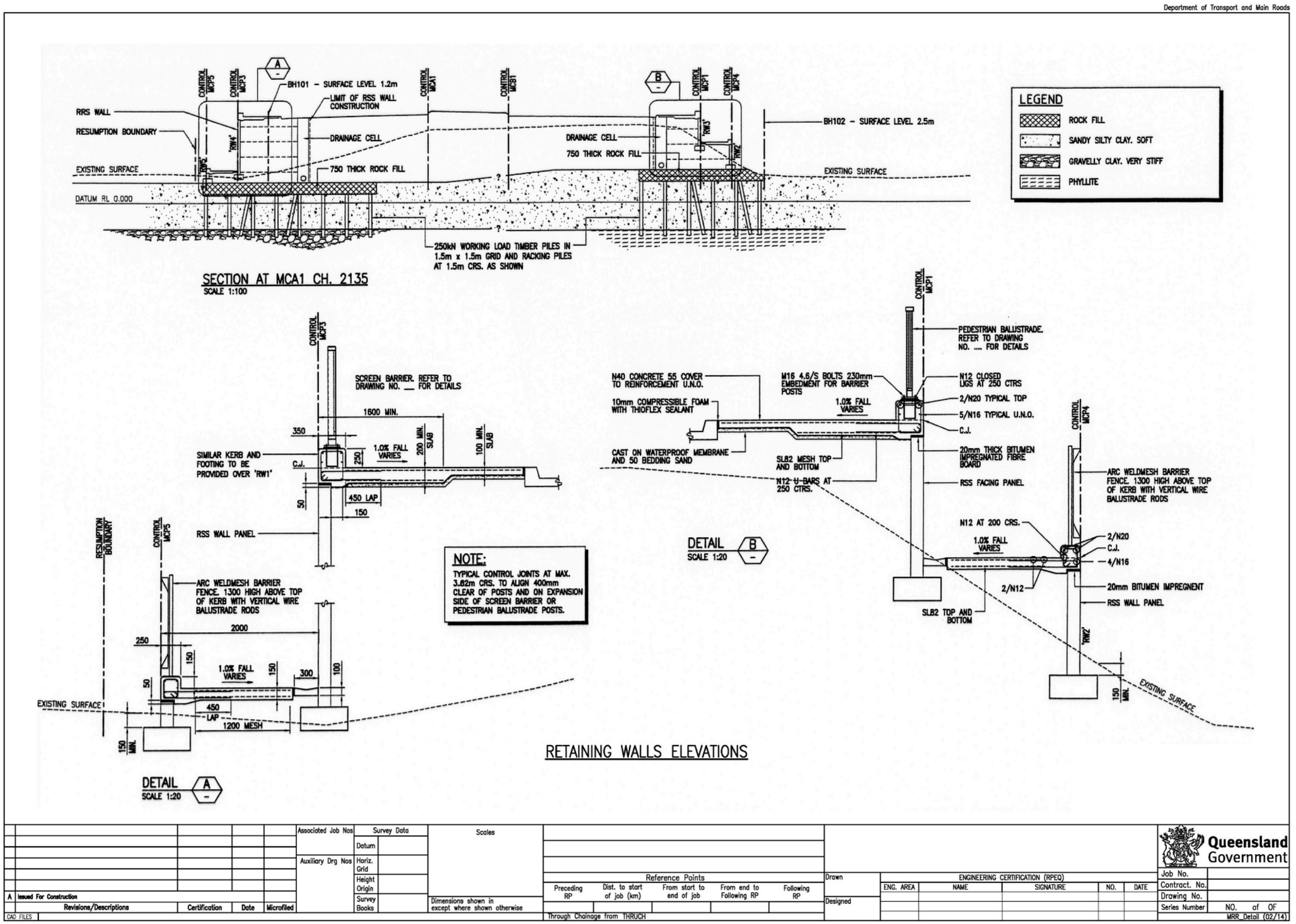
Last Modified: Jun 03, 2014 - 5:36pm XREFS:-

Revisions/Descriptions	Certification	Date	Microfiled
A Issued For Construction			
CAD FILES: F:\Jobs\B14000\B14068\Clints Plans\AutoCAD\B0513\MD-002.dwg			

Associated Job Nos
Auxiliary Drg Nos
Survey Data: Datum; Horiz. Grid; Height Origin; Survey Books
Scales: NOT TO SCALE
Dimensions shown in metres except where shown otherwise
CTL CHGE
Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP
Through Chainage from
Drawn
Designed
ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government
Job No.
Contract. No.
Drawing No. A
Series Number of
MRR_Detail (02/14)

Figure 3.14(d) – Miscellaneous details – generic example 4



3.15 Street lighting

Refer to Roadway Lighting section of the DDSPM Volume 2, Part 2, Chapter 2: *Urban Road design Drawings*, Section 2.13.

3.16 Traffic signals

Refer Traffic Signals section of the DDSPM Volume 2, Part 2, Chapter 2: *Urban Road design Drawings*, Section 2.14.

3.17 Landscaping

Rural road landscape design drawings shall typically be prepared by the civil designer in consultation with the department's landscape architects and/or District / Region environmental officers. Seeding treatments (including hydromulching standard / bonded fibre matrix, organics blanket or organics blanket) are typically specified for embankment and cut batters, and drains, where the risk of damaging rainfall events is low. Where the risk is high, and watering is included in the contract, turf is typically specified for drains.

The designer, or the department's landscape architects and environmental officers, when unfamiliar with local grass and native vegetation species, should consult local or centralised seed merchants for native grass, shrub or trees species, and agricultural seed merchants and agronomists for pasture grass species, including suitability and availability of seed species. Revegetation contractors, familiar with the project area and experienced in undertaking seeding operations for the department, can also provide beneficial information on the success of the different seeding treatments and species. Refer to MRTS16 *Landscape and Revegetation Works* (and MRTS16 Appendix) for soil, seeding, turfing and planting material / construction requirements, and MRS16 *Landscape and Revegetation Works* for Standard Work Items.

Rural ‘main street‘ projects such as approaches to regional towns and significant streets in towns are to be prepared by a qualified landscape architect with a minimum of 10 years relevant experience, unless otherwise specified.

All landscape design drawings are to be prepared in consultation with an appropriately qualified Registered Professional Engineer of Queensland (RPEQ). The RPEQ certifies the drawings to demonstrate the proposed landscape works do not conflict with engineering requirements of the civil design (sight visibility, clear zones, drainage design flows and so on) and structural design (proximity to retaining structures and so on). The RPEQ’s name and number are to be shown with the signature. For vegetation setback and clearance safety requirements, refer to Appendix 4 of the department's *Road Landscape Manual.*

For standards and landscape drawing / detailing presentation requirements, refer Section 2.15 *Landscaping* of the DDSPM Volume 2, Part 2.

Figure 3.17(a) – Landscaping layout and details – generic example 1

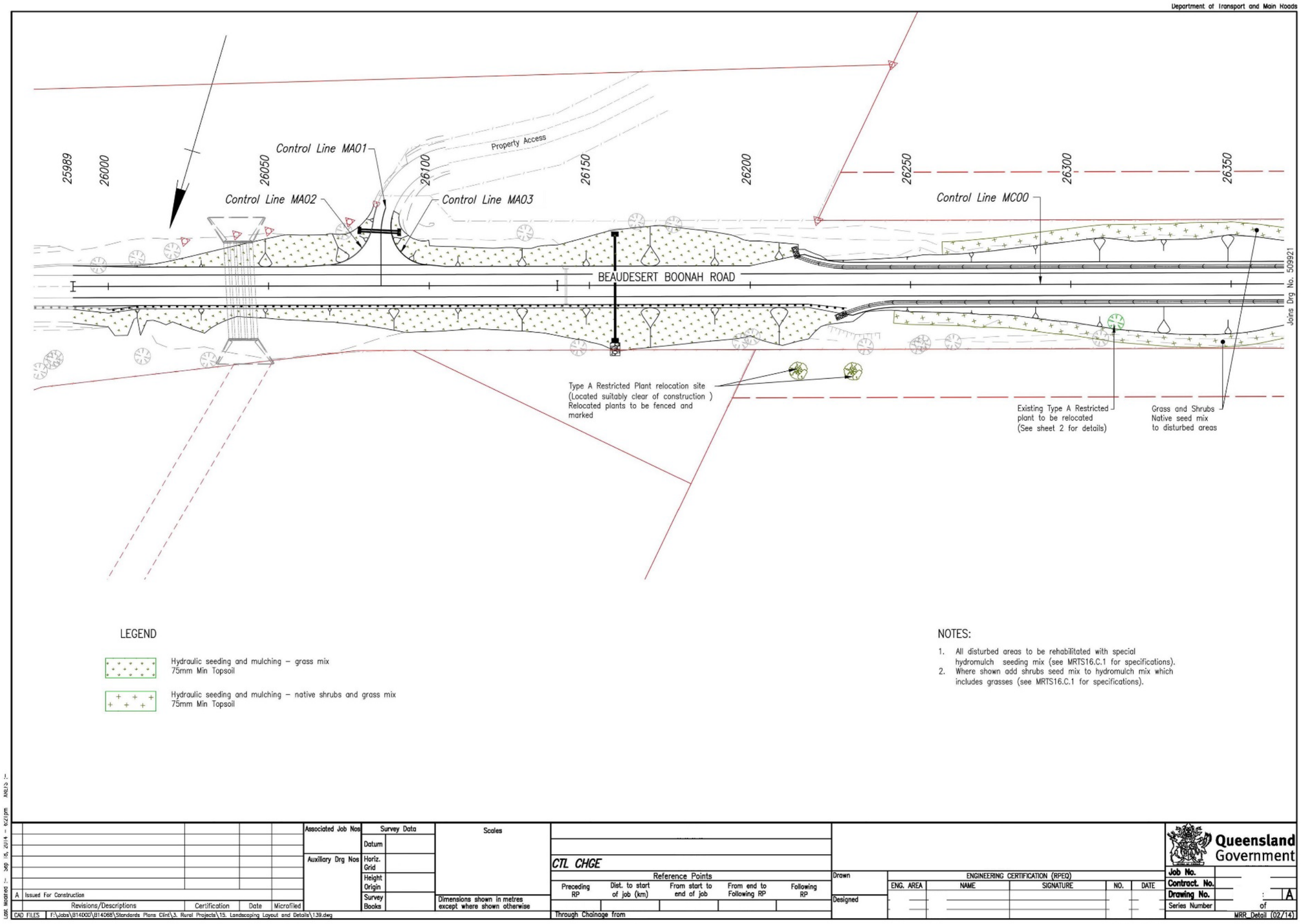


Figure 3.17(b) – Landscaping details and layouts – generic example 2 – sheet 1 of 4

LANDSCAPE & REVEGETATION LEGEND

DRAWINGS

THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH MRS16 AND MRTS16 LANDSCAPE AND REVEGETATION WORKS, MRTS16.1 ANNEXURE AND MRTS16 APPENDICES; AND ASSOCIATED STANDARD DRAWINGS.
DISCREPANCIES OR OMISSIONS SHALL BE REPORTED DIRECTLY TO THE ADMINISTRATOR.
SERVICES AND SERVICE EASEMENTS ARE INDICATIVE ONLY; THE CONTRACTOR SHALL LOCATE SERVICES AND SERVICE EASEMENTS PRIOR TO COMMENCING WORKS.

WORK ITEMS

CONSTRUCTION RELATED WORK ITEMS ARE SCHEDULED IN THE LANDSCAPE AND REVEGETATION WORKS LEGEND.
PLAN PREPARATION, MATERIAL TESTING; AND MATERIAL MANUFACTURING AND SUPPLY RELATED WORK ITEMS ARE SCHEDULED BELOW.

WORK ITEM	DESCRIPTION
3802	PREPARATION OF A SOIL MANAGEMENT PLAN – CONSTRUCTION – FORM A
3803P	TOPSOIL TESTING – FORM C (PROVISIONAL QUANTITY, IF ORDERED)
3804P	MANUFACTURED SITE TOPSOIL COMPLIANCE TESTING – FORM D (PROVISIONAL QUANTITY, IF ORDERED)
3805P	SUBSOIL TESTING – FORM E (PROVISIONAL QUANTITY, IF ORDERED)
3807P	SUPPLY OF AMELIORATION AGENT – AGRICULTURAL LIME (PROVISIONAL QUANTITY, IF ORDERED)
3808P	SUPPLY OF AMELIORATION AGENT – AGRICULTURAL DOLOMITE (PROVISIONAL QUANTITY, IF ORDERED)
3809P	SUPPLY OF AMELIORATION AGENT – AGRICULTURAL GYPSUM (PROVISIONAL QUANTITY, IF ORDERED)
3810P	SUPPLY OF AMELIORATION AGENT – ORGANIC SOIL CONDITIONER (PROVISIONAL QUANTITY, IF ORDERED)
3828P	MANUFACTURE OF SITE TOPSOIL (PROVISIONAL QUANTITY, IF ORDERED)
3829P	SUPPLY OF IMPORTED PLANTING MEDIA (PROVISIONAL QUANTITY, IF ORDERED)
3854P	MANUFACTURE OF SITE ORGANIC MULCH (PROVISIONAL QUANTITY, IF ORDERED) [DOUBLE TUB GRIND]
3855P	SUPPLY OF IMPORTED ORGANIC MULCH (PROVISIONAL QUANTITY, IF ORDERED) [HOOP PINE]
3816P	KNOCK–DOWN HERBICIDE APPLICATION PRIOR (PROVISIONAL QUANTITY, IF ORDERED)
3891	ESTABLISHMENT PERIOD
3892P	ESTABLISHMENT PERIOD WATERING (PROVISIONAL QUANTITY, AS DIRECTED)
3895	MONITORING PERIOD [365 DAYS]
3896P	MONITORING PERIOD WATERING (PROVISIONAL QUANTITY, AS DIRECTED)

VEGETATION SETBACK AND CLEARANCE REQUIREMENTS

THE CONTRACTOR SHALL INSTALL LANDSCAPE AND REVEGETATION TREATMENTS AS PER THE SETBACK AND CLEARANCE REQUIREMENTS INCLUDING –

- CLEAR ZONES AND SIGHT VISIBILITY ZONES SHOWN ON THE DRAWINGS
- MINIMUM VEGETATION SETBACK AND CLEARANCE SCHEDULE SHOWN ON THE NOTES AND LEGENDS DRAWING, OR
- AS PER APPENDIX 4 OF THE ROAD LANDSCAPE MANUAL WHERE NOT SHOWN ON THE DRAWINGS

CONTAINER STOCK SETOUT

CONTAINER STOCK SHALL BE SETOUT IN STAGGERED ARRANGEMENTS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

WHERE MORE THAN ONE PLANT SPECIES IS SPECIFIED FOR A PLANTING AREA, EACH SPECIES SHALL BE MIXED EVENLY AND RANDOMLY THROUGHOUT THE AREA UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

WHERE SITE CONDITIONS, SERVICES, ROAD FURNITURE, LIGHTING OR SIGNS DO NOT ACCOMMODATE PLANTING PATTERNS OR SPACINGS, MINOR ADJUSTMENTS MAY BE MADE AT NO COMPROMISE TO SETBACK AND CLEARANCE REQUIREMENTS, SPECIFIED PLANT QUANTITIES OR DESIGN INTENT.

ADJUSTMENT TO THE SETOUT OF PLANT MATERIAL SHALL BE SUBMITTED IN WRITING TO THE ADMINISTRATOR FOR A DETERMINATION AS TO ITS SUITABILITY.

BARE, DISTURBED OR UNSTABLE AREAS

BARE, DISTURBED AND / OR UNSTABLE AREAS BEYOND THE EXTENT OF THE SPECIFIED LANDSCAPE AND REVEGETATION TREATMENTS SHALL BE TREATED WITH THE ABUTTING LANDSCAPE AND REVEGETATION TREATMENT.

WEED, PEST AND DISEASE CONTROL

LANDSCAPE AND REVEGETATION TREATMENTS SHALL BE KEPT FREE OF WEEDS, PESTS AND DISEASES THROUGHOUT THE CONTRACT PERIOD.

ESTABLISHMENT AND MONITORING PERIODS

THE LANDSCAPE AND REVEGETATION ESTABLISHMENT PERIOD FOR EACH LOT IS 12 WEEKS.

THE LANDSCAPE AND REVEGETATION MONITORING PERIOD IS AS PER MRTS16 UNLESS OTHERWISE SPECIFIED IN MRTS16.1.

LANDSCAPE & REVEGETATION LEGEND

TREATMENT	STANDARD DRAWING DETAIL		STANDARD ITEM NUMBER	WORK OPERATION DESCRIPTION
HYDROMULCH – MIX 1				
HYDROMULCH NATIVE SEEDING	1651	1	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
SLOPE ≤ 1 ON 4			3821	CULTIVATION [150 MM]
			3830.01	INSTALL TOPSOIL [75 MM]
			3839	HYDROMULCH NATIVE SEEDING – DOUBLE PASS [MIX 1]
TURF				
TURF	1651	7	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
SLOPE ≤ 1 ON 4			3821	CULTIVATION [150 MM]
			3830.01	INSTALL TOPSOIL [75 MM]
			3847	TURF [GRADE A COUCH]
PLANTING – LOMANDRA EDGE				
PLANTING BROADACRE AREAS	1653	3	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
< 25 L CONTAINERS			3821	CULTIVATION [150 MM]
SLOPE ≤ 1 ON 4			3830.02	INSTALL TOPSOIL [150 MM]
			3856.01	INSTALL MULCH [100 MM]
			3868.02	PLANTING [140 MM – 2/M2]
PLANTING – CLEAR ZONE				
PLANTING BROADACRE AREAS	1653	3	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
< 25 L CONTAINERS			3821	CULTIVATION [150 MM]
SLOPE ≤ 1 ON 4			3830	INSTALL TOPSOIL [150 MM]
			3856.01	INSTALL MULCH [100 MM]
			3868.03	PLANTING [200 MM – 1/M2]
PLANTING – SIGHT VISIBILITY				
PLANTING BROADACRE AREAS	1653	4	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
WITH RIPPING			3820	RIPPING [300 MM]
< 25 L CONTAINERS			3821	CULTIVATION [150 MM]
SLOPE ≤ 1 ON 4			3830	INSTALL TOPSOIL [150 MM]
			3856.01	INSTALL MULCH [100 MM]
			3868.01	PLANTING [90 MM – 6/M2]
PLANTING – CONTAINED MEDIAN				
PLANTING CONTAINED AREAS	1653	2	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
WITH RIPPING			3820	RIPPING [300 MM]
< 25 L CONTAINERS			3821	CULTIVATION [150 MM]
SLOPE ≤ 1 ON 4			3830.03	INSTALL TOPSOIL [300 MM]
			3856.01	INSTALL MULCH [100 MM]
			3868.02	PLANTING [140 MM – 2/M2]
PLANTING – FEATURE TREE				
PLANTING BROADACRE AREAS	1654	2	3819	SPREAD AMELIORATION AGENT ON SUBSOIL
WITH RIPPING			3820	RIPPING [300 MM]
≥ 25 L CONTAINERS			3830.04	INSTALL TOPSOIL [500 MM]
SLOPE ≤ 1 ON 4			3856.02	INSTALL MULCH [150 MM]
			3868.04	PLANTING [100 L]

CIVIL AND DRAINAGE LEGEND

- CLEAR ZONE
- SIGHT VISIBILITY ZONE
- SIGHT VISIBILITY TO SIGNAGE
- E—E—E— EXISTING ELECTRICITY O/H
- —T—T— EXISTING TELECOMMUNICATIONS U/G
- OF—OF— EXISTING OPTIC FIBRE U/G
- W—W— WATER U/G
- CONCRETE BARRIER
- W–BEAM
- OPTIC FIBRE PIT
- TELECOMMUNICATIONS PIT
- POWER POLE
- ELECTRICITY PIT

A	Original issue A3				
Revisions/Descriptions	Ref	Certification	Date	Microfilm	

CAD FILES

Associated Job Nos

Auxiliary Drg Nos

SURVEY DATA — GDA

Horiz. Grid

Height Origin

Survey Books

Scales

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points

Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP

Through Chainage from

Drawn

Checked

Designed

Verified

Design Reviews (RPEQ)

No. Date. / /

LANDSCAPE PLANS
NOTES AND LEGENDS

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE

For scheme approval status refer Drg. No. (of)

Queensland Government

Transport and Main Roads

Job No.

Contract. No.

Drawing No.

Series Number | of

MRR_Detail (01/10)

Figure 3.17(c) – Landscaping details and layouts – generic example 2 – sheet 2 of 4

MINIMUM VEGETATION SETBACK AND CLEARANCE SCHEDULE

PARAMETER	DESCRIPTION: NON-FRANGIBLE VERSUS FRANGIBLE VEGETATION	SETBACK	CLEARANCE	VALUE
ROADSIDE AREAS WITHOUT BARRIERS	ALL NON-FRANGIBLE VEGETATION; MEASURED FROM CARRIAGEWAY EDGE LINE TO CLEAR ZONE	✓		AS PER RPDM
ROADSIDE AREAS WITH BARRIERS TEST	NON-FRANGIBLE VEGETATION; CONCRETE BARRIERS	✓		1.5M
	FRANGIBLE VEGETATION; CONCRETE BARRIERS	✓		0.5M OR ½ MATURE DIAMETER – WHICHEVER IS GREATEST
	NON-FRANGIBLE VEGETATION; WIRE ROPE BARRIERS	✓		2.0M
	FRANGIBLE VEGETATION; WIRE ROPE BARRIERS	✓		0.5M OR ½ MATURE DIAMETER – WHICHEVER IS GREATEST
	NON-FRANGIBLE VEGETATION; W-BEAM & TRS BEAM BARRIERS (ALSO INCLUDES A 'HAZARD FREE ZONE', WHICH TYPICALLY EXTENDS 6M BEHIND THE BACK OF THE GUARDRAIL AND FOR 22.5M FROM EACH END)	✓		1.0M
	FRANGIBLE VEGETATION; STEEL BARRIERS (ALSO INCLUDES A 'HAZARD FREE ZONE', WHICH TYPICALLY EXTENDS 6M BEHIND THE BACK OF THE GUARDRAIL AND FOR 22.5M FROM EACH END)	✓		1.0M
ROADSIDE GENERAL	NON-FRANGIBLE VEGETATION (GENERAL); FROM ROAD PAVEMENT EDGE	✓		2.5M **A
	NON-FRANGIBLE VEGETATION (GENERAL); FROM ROAD PAVEMENT EDGE		✓	7.0M
	NON-FRANGIBLE VEGETATION (>15M IN MATURE HEIGHT KNOWN TO HAVE A REPUTATION OF LIMB DROP AND / OR LARGE SEED DROP DURING HIGH WIND / STORM EVENTS); FROM ROAD PAVEMENT EDGE	✓		10.0M
	FRANGIBLE VEGETATION		✓	0.5M OR ½ MATURE DIAMETER – WHICHEVER IS GREATEST
ROADSIDE STRUCTURES AND FURNITURE	NON-FRANGIBLE VEGETATION; TREE CANOPY FROM FAUNA FENCE (RELATIVE TO REAR / FAUNA SIDE OF FENCE)		✓ SPECIES DEPENDENT (REFER TO THE FAUNA SENSITIVE ROAD DESIGN MANUAL)	3.0M **B
	NON-FRANGIBLE VEGETATION; FROM OUTER PARAPET / RAILS AND PIERS OF BRIDGES	✓		5.0M
	NON-FRANGIBLE VEGETATION; EITHER SIDE OF RETAINING STRUCTURES AS PER RPEQ'S DETERMINATION		✓	AS PER RPEQ
	FRANGIBLE VEGETATION (GENERAL); INCLUDES BUT NOT LIMITED TO FENCING, RETAINING WALLS, KERBS, GARDEN EDGING, AND DRAINAGE CHANNELS **C		✓	0.5M OR ½ MATURE DIAMETER – WHICHEVER IS GREATEST
	FRANGIBLE VEGETATION; FROM FAUNA FENCE (RELATIVE TO REAR/ FAUNA SIDE OF FENCE)	✓		1.0M (GROUND COVERS) AND 1.5M (SHRUBS)
MAINTENANCE ACCESS PATHS / TRACKS	NON-FRANGIBLE VEGETATION	✓		1.0M
	FRANGIBLE VEGETATION		✓	0.5M OR ½ MATURE DIAMETER – WHICHEVER IS GREATEST
NOISE BARRIERS (WHERE MAINTENANCE ACCESS IS REQUIRED)	NON-FRANGIBLE VEGETATION		✓	1.5M
	FRANGIBLE VEGETATION		✓	1.0M
ROAD SIGNAGE	APPROACH SIDE: 1. VEGETATION WITHIN SIGHTLINE TRIANGLE – CLEARANCE AS INDICATED 2. VEGETATION WITHIN SIGHTLINE TRIANGLE HAVING MAXIMUM MATURE HEIGHT OF 500MM BELOW BOTTOM EDGE OF SIGN – NO REQUIREMENTS NECESSARY. 3. IN ADDITION TO NOTES 1 & 2 ALL VEGETATION TO COMPLY WITH RP & D MANUAL AND/OR CLEAR ZONE AND SIGHT VISIBILITY REQUIREMENTS WHERE PRESENT.	✓		ENSURE SIGHT DISTANCE TRIANGLES ACROSS ROAD LANDSCAPES (WITH HORIZONTAL CURVATURE) ARE ACHIEVED SO THAT THE DRIVER HAS TIME TO RECOGNISE AND REACT TO THE SIGN. VEGETATION THAT WILL BLOCK SIGHTLINE, LONGITUDINAL SIGHT DISTANCE TRIANGLE START POINT TO BE MINIMUM OF 1.4V M IN ADVANCE OF THE SIGN (WHERE V IS THE 85TH PERCENTILE SPEED) AND SIGHTED TO FAR OUTSIDE EDGE OF SIGN. EYE MEASUREMENT TO BE TAKEN TO CENTRE OF TRAFFIC LANE. FOR SIGHT-DISTANCE CALCULATIONS REFER TO RP & D MANUAL. FOR SIGN LOCATION/PLACEMENT REFER TO MUTCD
	DEPARTURE SIDE: 1. SINGLE-SIDED SIGNS WITH FRANGIBLE VEGETATION – MAINTENANCE AREA REQUIREMENTS APPLY AS INDICATED. 2. DOUBLE-SIDED SIGNS NEED TO COMPLY WITH NOTES 1 & 2 FOR APPROACH SITUATIONS. 3. IN ADDITION TO NOTES 1 & 2 ALL VEGETATION TO COMPLY WITH RP & D MANUAL AND / OR CLEAR ZONE AND SIGHT VISIBILITY REQUIREMENTS WHERE PRESENT.	✓		SINGLE-SIDED SIGNS – 10.0M (MIN) DOUBLE-SIDED SIGNS – AS PER 'APPROACH SIDE' ABOVE
SIGHT DISTANCE	VEGETATION SIGHT DISTANCE TRIANGLE. PLANTINGS IN THESE ZONES SHOULD PROVIDE A CLEAR VISIBILITY BOTH HORIZONTALLY AND VERTICALLY WHEN THE EYE HEIGHT AND THE TARGET HEIGHT ARE CONSIDERED.		✓	SIGHT DISTANCE AS PER RPDM PROPOSED MATURE PLANTINGS AND LANDFORM COMBINATION HEIGHTS SHOULD BE AT LEAST 100MM OUTSIDE THE VERTICAL LIMITS OF THE SIGHT TRIANGLE
PEDESTRIAN AND CYCLIST ENVIRONMENTS	NON-FRANGIBLE VEGETATION (GENERAL); FROM PAVEMENT EDGE – PATHWAY, CYCLEWAY OR OTHER	✓		1.0M
	NON-FRANGIBLE VEGETATION (>15M IN MATURE HEIGHT KNOWN TO FALL OR HAVE A REPUTATION OF LIMB DROP AND / OR LARGE SEED DROP DURING HIGH WIND/STORM EVENTS; OR PLANTS WITH AGGRESSIVE / SPREADING ROOT SYSTEM); FROM PAVEMENT EDGE – PATHWAY, CYCLEWAY OR OTHER	✓		10.0M
	FRANGIBLE VEGETATION		✓	0.5M OR ½ MATURE DIAMETER – WHICHEVER IS GREATEST
LIGHTING (ROADWAY LIGHTING ONLY) – FOR STREET LIGHTING/ PUBLIC LIGHTING; REFER DIRECTLY TO LOCAL AUTHORITY REQUIREMENTS	NON-FRANGIBLE VEGETATION AND FRANGIBLE VEGETATION (GREATER THAN 4M IN HEIGHT)	✓		10.0M
	FRANGIBLE VEGETATION (ALL OTHER)	✓		1.0M
CCTV VIEW-SHED	VEGETATION BELOW VIEW-SHED		✓	MAXIMUM MATURE HEIGHT OF 1.0M BELOW BOTTOM EDGE OF VIEW-SHED
	VEGETATION BELOW VIEW-SHED	✓		½ MATURE DIAMETER
ABOVE GROUND ELECTRICAL SERVICES (RELATIVE TO ENERGEX, ERGON ENERGY AND ENERGY AUSTRALIA REQUIREMENTS ONLY) FOR POWERLINK (HIGH VOLTAGE TRANSMISSION LINES) SETBACKS AND CLEARANCES; REFER DIRECTLY TO POWERLINK REQUIREMENTS	< 33KV (LOW VOLTAGE LINE) – BELOW POWERLINES: FRANGIBLE VEGETATION OR 'ENERGEX'S SAFE TREE PLANTS' (3.5M MAXIMUM MATURE HEIGHT FOR MIN. 7.0M EITHER SIDE OF ALIGNMENT – REFER FURTHER TO BELOW REQUIREMENT)	N/A – MATURE HEIGHT WILL BE BELOW ACTUAL LINE	N/A – MATURE HEIGHT WILL BE BELOW ACTUAL LINE	N/A – MATURE HEIGHT WILL BE BELOW ACTUAL LINE
	≤ 33KV (LOW VOLTAGE LINE) – NEAR POWERLINES, INCLUDING POLES: NON-FRANGIBLE VEGETATION (45° RULE; AS PER 'ENERGEX'S SAFE TREE PROGRAM')		✓	TO EQUAL AT LEAST MATURE HEIGHT, OR MIN. 7.0M (THAT WHICH IS GREATER)
	≤ 33KV (LOW VOLTAGE LINE) – AROUND POLES: FRANGIBLE VEGETATION		✓	4.0M
	> 33KV (HIGH VOLTAGE LINE) – BELOW POWERLINES: FRANGIBLE VEGETATION OR 'ENERGEX'S SAFE TREE PLANTS' (3.5M MAXIMUM MATURE HEIGHT FOR MIN. 10.0M EITHER SIDE OF ALIGNMENT – REFER FURTHER TO BELOW REQUIREMENT)	N/A – MATURE HEIGHT WILL BE BELOW ACTUAL LINE	N/A – MATURE HEIGHT WILL BE BELOW ACTUAL LINE	N/A – MATURE HEIGHT WILL BE BELOW ACTUAL LINE
	> 33KV (HIGH VOLTAGE LINE) – NEAR POWERLINES, INCLUDING POLES: NON-FRANGIBLE VEGETATION (45° RULE; AS PER 'ENERGEX'S VEGETATION MANAGEMENT STANDARD')		✓	TO EQUAL AT LEAST MATURE HEIGHT, OR MIN. 10.0M (THAT WHICH IS GREATER)
	> 33KV (HIGH VOLTAGE LINE) – AROUND POLES: FRANGIBLE VEGETATION		✓	6.0M
	SUBSTATIONS, TOWER STRUCTURES AND ANY OTHER FACILITIES (GENERALLY 2.0M STANDARD HOWEVER OFTEN BY NEGOTIATION WITH OWNER): FRANGIBLE VEGETATION		✓	MIN. 1.0M OR DIAMETER AS REQUIRED BY OWNER (THAT WHICH IS GREATER)
UNDERGROUND WATER (INCLUDING DRAINAGE AND SEWERAGE), ELECTRICAL OR ANY OTHER UNDERGROUND SERVICES; TELECOMMUNICATIONS AND FIBRE OPTICS**C	ALL VEGETATION WITH A MATURE HEIGHT ≤ 3.5M	✓		2.0M
	ALL VEGETATION WITH A MATURE HEIGHT ≤ 3.5M (GENERAL UNDERGROUND SERVICES AND PIPING)	✓		AS PER ARBORIST ADVICE OR MIN. 4.0M (THAT WHICH IS GREATER)
	ALL VEGETATION WITH A MATURE HEIGHT ≤ 3.5M (DRAINAGE SUMP)	✓		AS PER ARBORIST ADVICE OR MIN. 6.0M (THAT WHICH IS GREATER)
GAS SERVICES	ALL VEGETATION WITH A MATURE HEIGHT ≤ 3.5M	✓		2.0M
	ALL VEGETATION WITH A MATURE HEIGHT < 3.5M	✓		AS PER ARBORIST ADVICE OR MIN. 3.5M (THAT WHICH IS GREATER)
SERVICE PITS AND INSPECTION POINTS**G	ALL VEGETATION WITH A MATURE HEIGHT ≤ 3.5M	✓		1.0M

NOTES – REFER TO THE ROAD LANDSCAPE MANUAL, APPENDIX 4 – VEGETATION SETBACKS AND CLEARANCES, FOR REFERENCED REQUIREMENTS **A TO **G AND REQUIREMENT RATIONALE.

A Original Issue A3
Revisions/Descriptions | Ref | Certification | Date | Microfilmed
CAD FILES
Associated Job Nos
Auxiliary Drg Nos
SURVEY DATA GDA
Horiz. Grid | Height Origin | Survey Books
Scales
Dimensions shown in metres except where shown otherwise
CTL CHGE
Reference Points
Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP
Through Chainage from
Drawn | Checked | Designed | Verified | Design Reviews (RPEQ)
No. Date / /
LANDSCAPE PLANS
NOTES AND LEGENDS
ENGINEERING CERTIFICATION (RPEQ)
ENG. AREA | NAME | SIGNATURE | NO. | DATE
For scheme approval status refer Drg. No. (of)
Queensland Government
Transport and Main Roads
Job No.
Contract. No.
Drawing No.
Series Number of
MRR_Detail (01/10)

Figure 3.17(d) – Landscaping details and layouts – generic example 2 – sheet 3 of 4

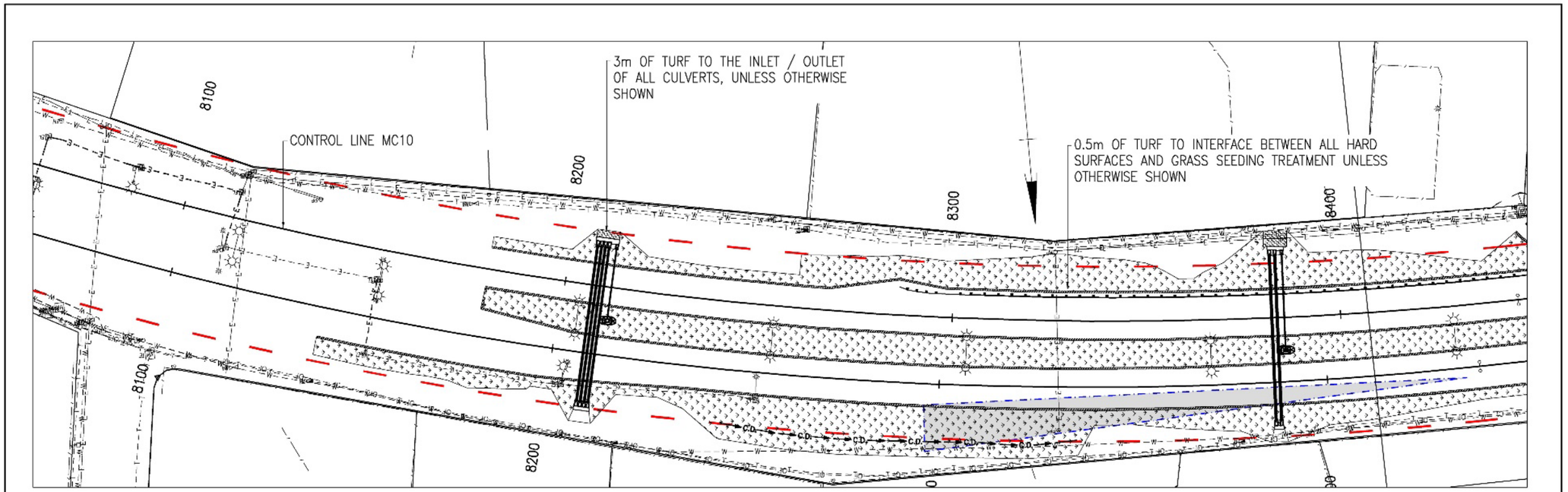


Figure 3.17(e) – Landscaping details and layouts – generic example 2 – sheet 4 of 4

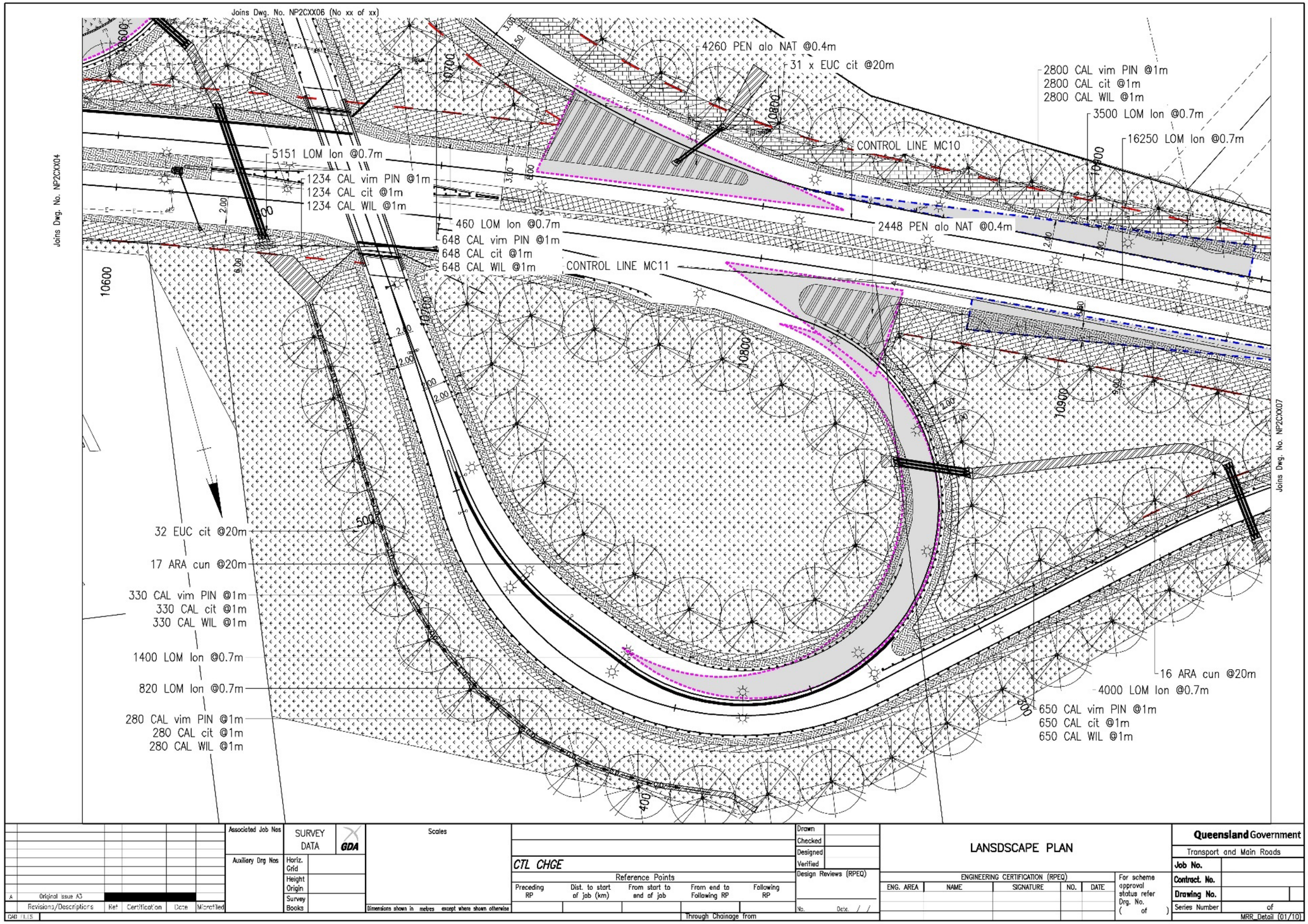


Figure 3.17(f) – Landscaping layout and details – registered example 1

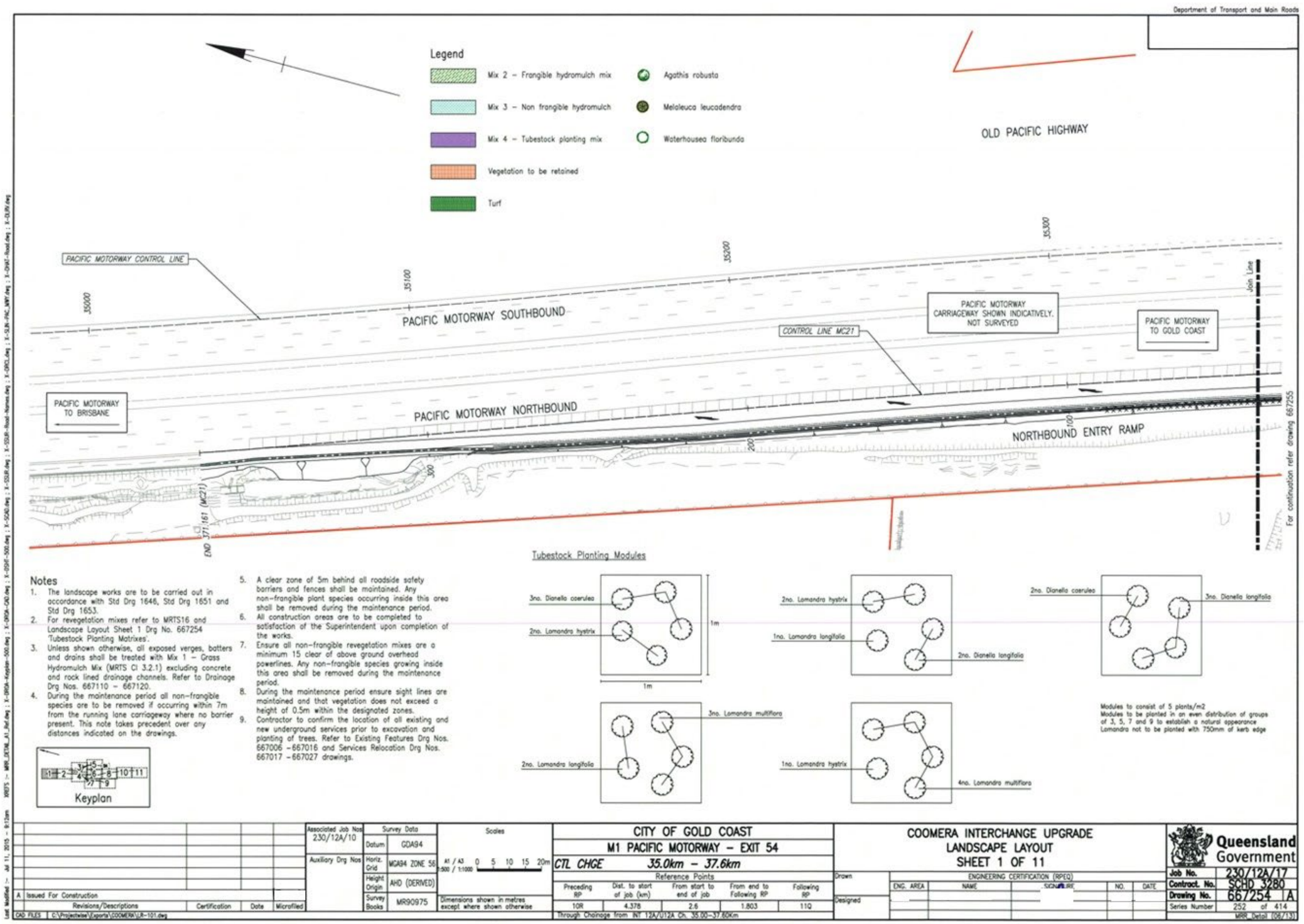


Figure 3.17(g) – Landscaping layout and details – registered example 2

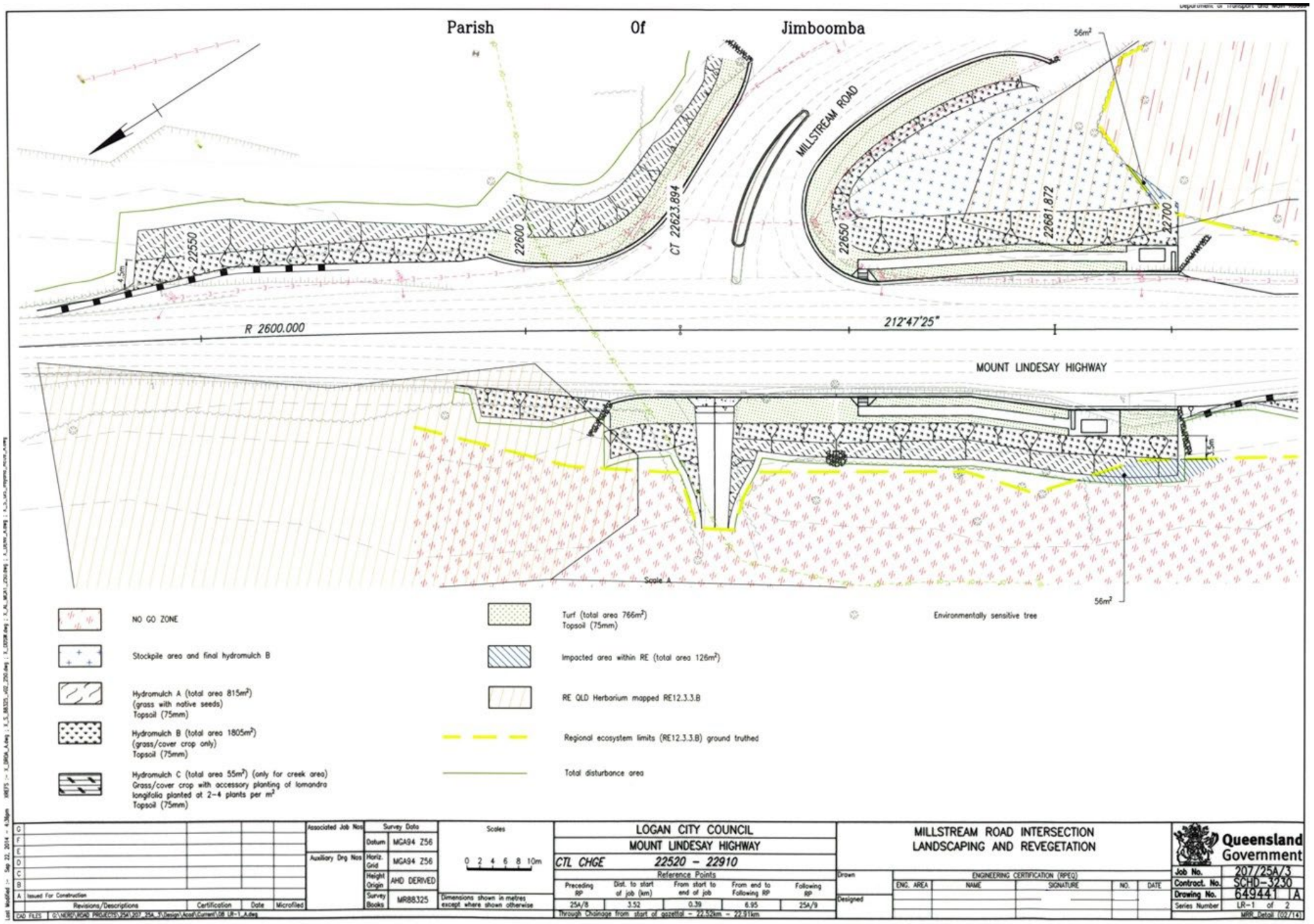


Figure 3.17(h) – Landscaping layout and details – registered example 3

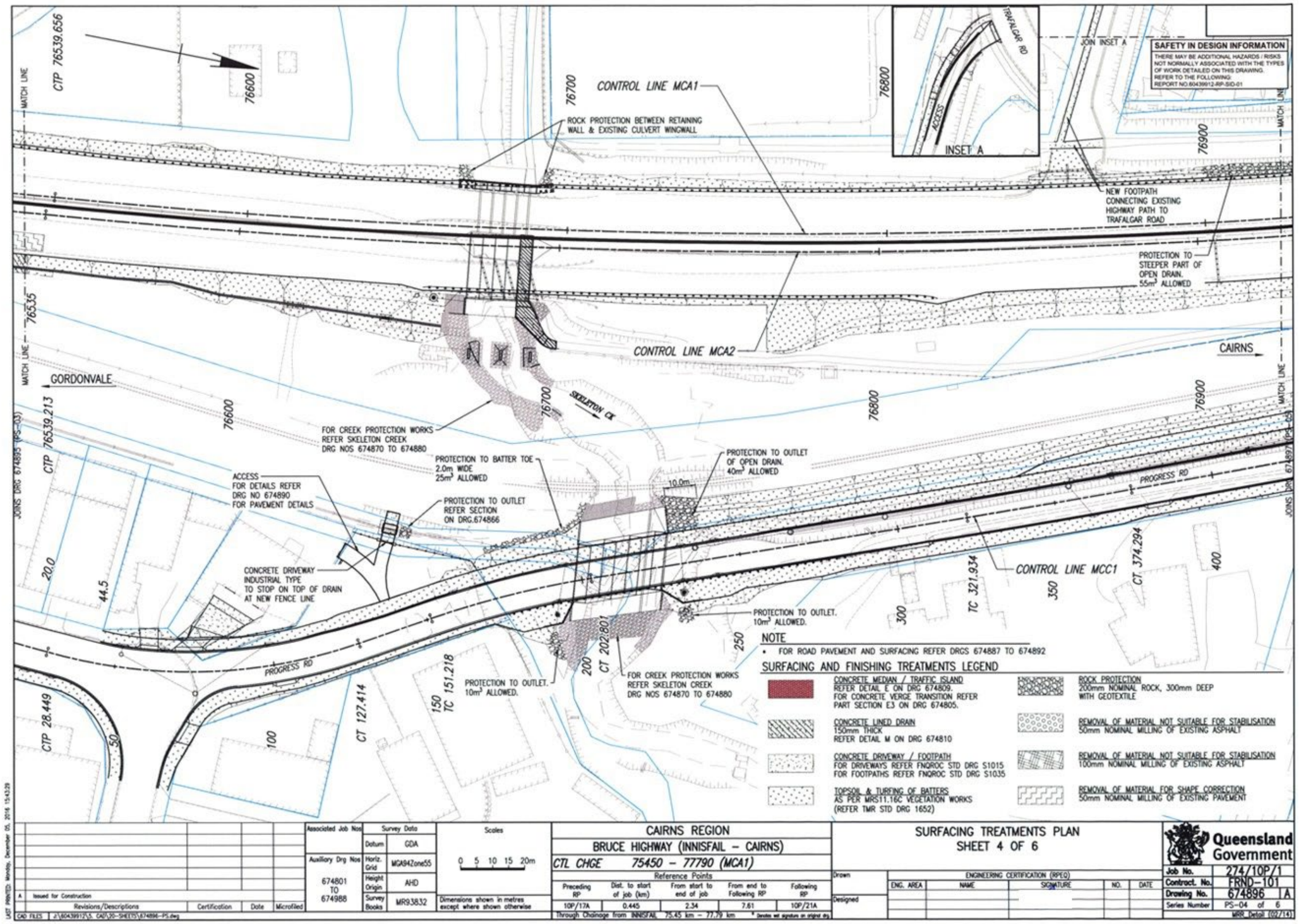


Figure 3.17(i) – Landscaping layout and details – registered example 4

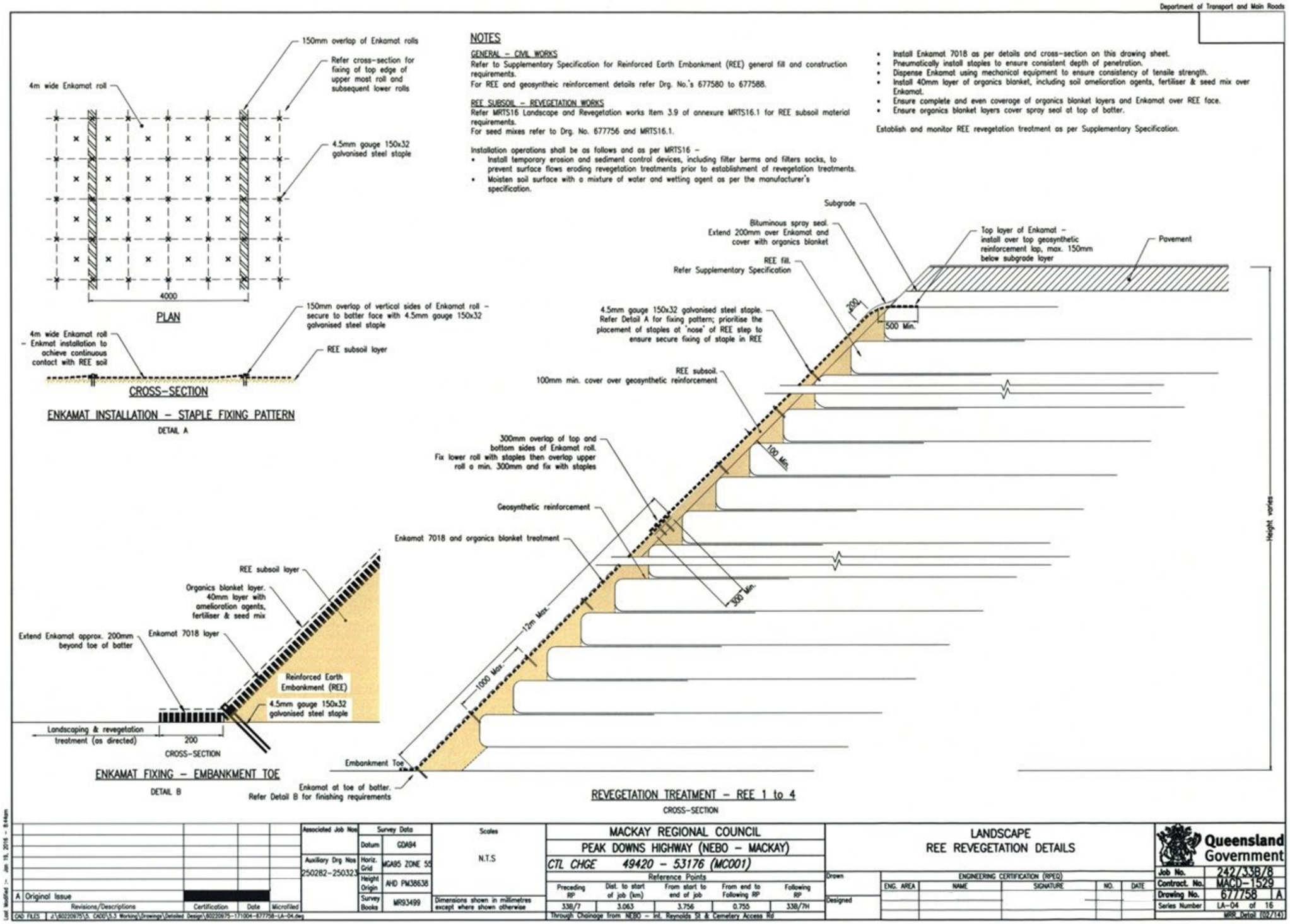
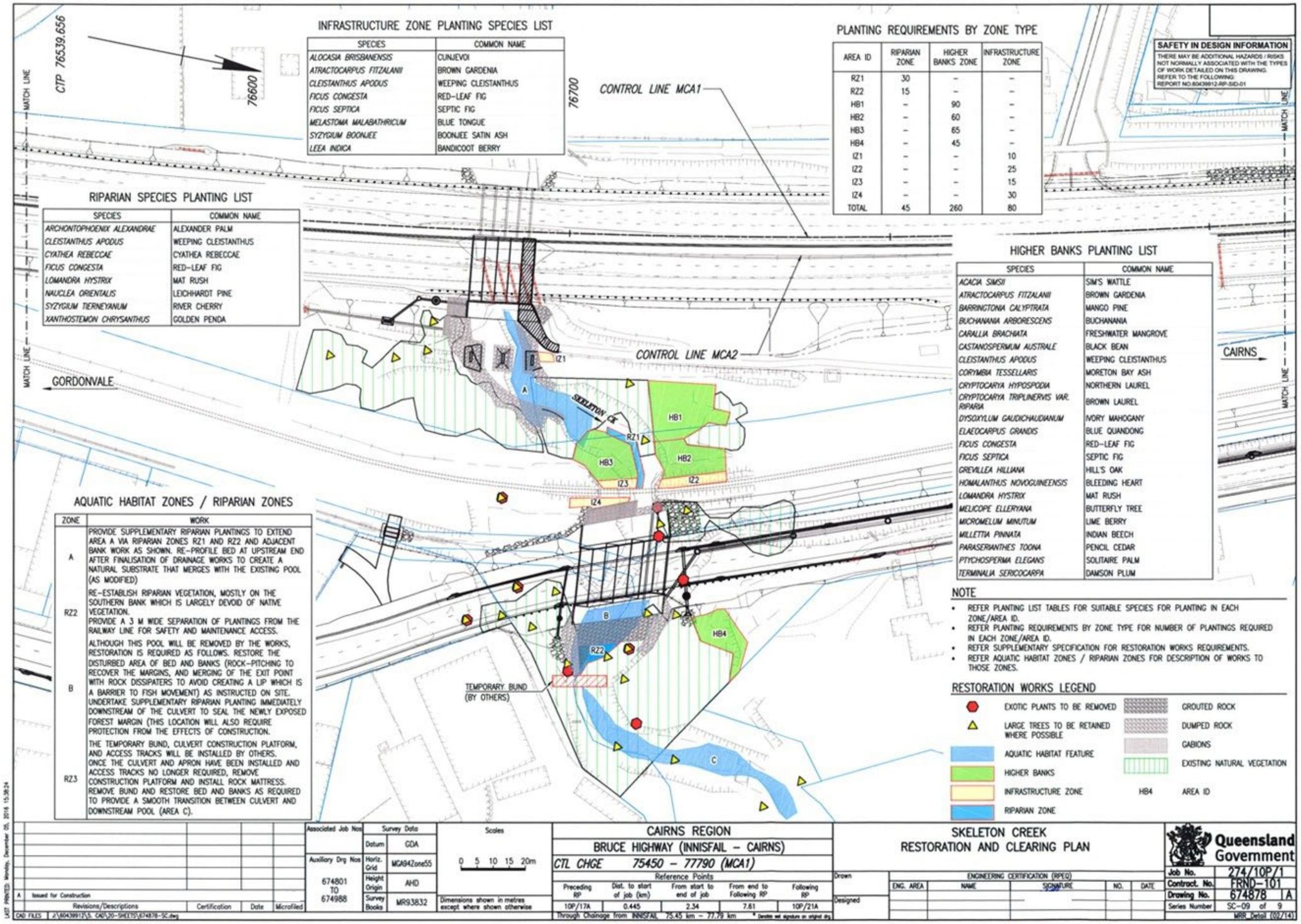


Figure 3.17(j) – Landscaping layout and details – registered example 5



3.18 Noise barriers

Noise barrier drawings are to depict construction detail and consider all design elements of the proposed noise barrier including, location, height and length as determined from an approved noise assessment report.

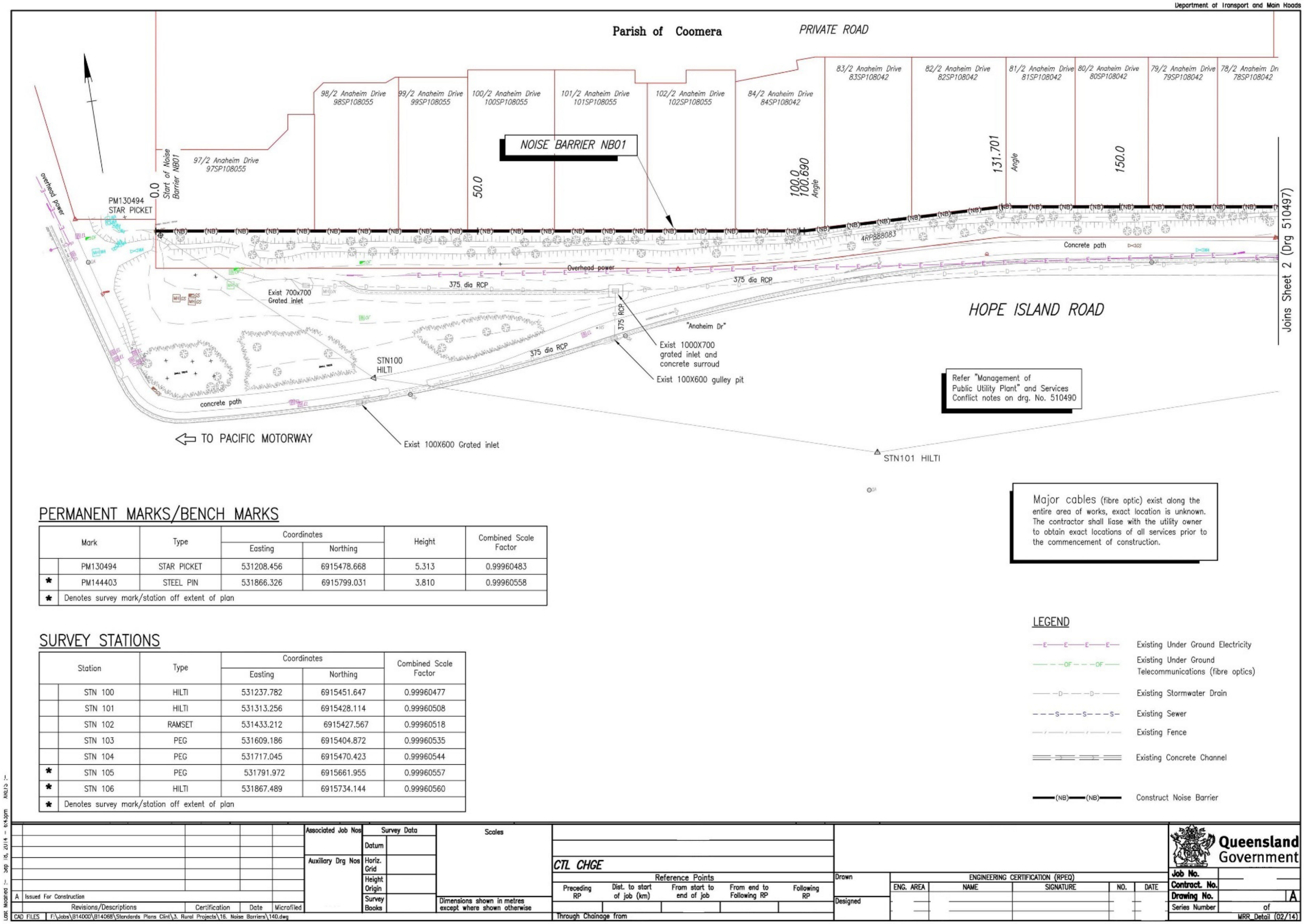
These drawings are to refer to other relevant standard drawings and standard specifications as they relate to the project specific requirements.

Considerations

Drawing

- Show existing features, including PUP
- Show control line of barrier
- Detail post and footing details including chainage locations
- Identify design wind speed
- Identify design strength of subsoil along the noise barrier alignment
- Add relevant notes and details
- Identify service conflicts including existing drainage
- Show design height of barrier
- Provide a longitudinal section on each noise barrier showing minimum noise barrier height in accordance with the approved noise study and the designed height and intermediate and end panels locations
- Typical sections of noise barrier
- Show location of panels – intermediate and end
- Show other detail (as applicable)

Figure 3.18(a) – Noise barrier – generic example 1



PERMANENT MARKS/BENCH MARKS

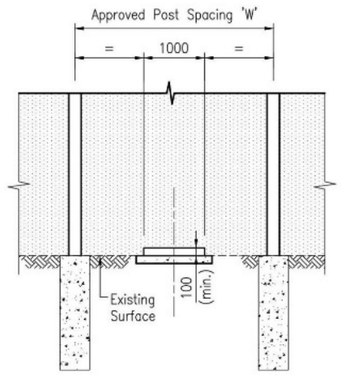
	Mark	Type	Coordinates Easting	Coordinates Northing	Height	Combined Scale Factor
	PM130494	STAR PICKET	531208.456	6915478.668	5.313	0.99960483
*	PM144403	STEEL PIN	531866.326	6915799.031	3.810	0.99960558
*	Denotes survey mark/station off extent of plan					

SURVEY STATIONS

	Station	Type	Coordinates Easting	Coordinates Northing	Combined Scale Factor
	STN 100	HILTI	531237.782	6915451.647	0.99960477
	STN 101	HILTI	531313.256	6915428.114	0.99960508
	STN 102	RAMSET	531433.212	6915427.567	0.99960518
	STN 103	PEG	531609.186	6915404.872	0.99960535
	STN 104	PEG	531717.045	6915470.423	0.99960544
*	STN 105	PEG	531791.972	6915661.955	0.99960557
*	STN 106	HILTI	531867.489	6915734.144	0.99960560
*	Denotes survey mark/station off extent of plan				

Figure 3.18(b) – Noise barrier – generic example 2

Department of Transport and Main Roads



STANDARD DRAINAGE SLOT DETAIL (IF ORDERED)

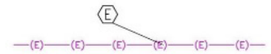
NOTE:

7. Where specified, drainage slots shall be provided in the barrier along at low points along the existing surface. (Where directed on site – provisional quantity)
8. Concrete slab at drainage slots to be 1200mm wide x 100mm thick and to extend 500mm each side of noise barrier. Concrete to be N25/20.
9. 1200mm wide rock protection shall be provided on the downstream side of drainage slots, extending for 1200mm from the concrete slab. (Where directed on site – provisional quantity)

NOTE – SERVICE CONFLICTS

The locations of utility services have been approximated from the known positions of marker posts, ground survey data and information supplied by the relevant services authorities. Details of utility services are provided for information only and no responsibility is taken for the accuracy and completeness of the information supplied.

Approximate positions of service conflict points are shown thus:



Not all conflicts have necessarily been shown.

Letter Codes:

OF	Optic Fibre Cable
T	Telecommunications
E	Electricity
W	Water Supply
S	Sewer
D	Drainage
SS	Subsoil Drain

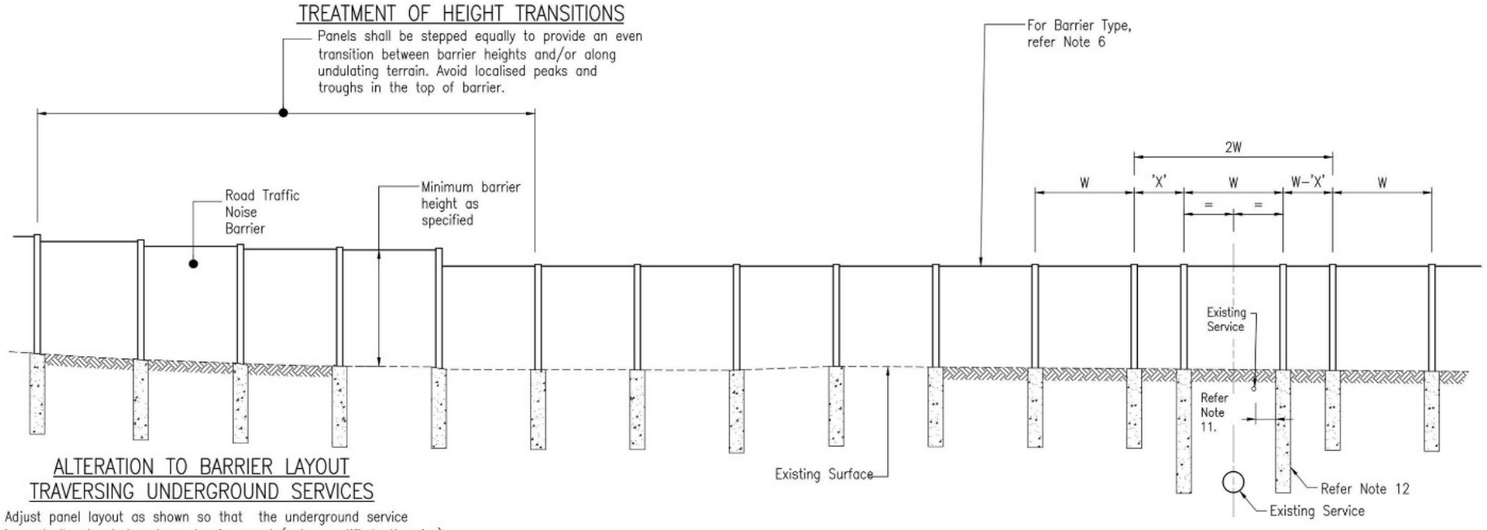
It shall be the Contractor's responsibility to check all utility services on site, and to liaise with the appropriate Authorities to determine the exact location and depth/height of existing utility services, and obtain all relevant permits etc. to work over, under or within the vicinity of the utility services. No work is to be carried out over, under or within 3m of the utility services without prior notification and approval of the relevant Authority, and the Superintendent.
Where utility services are altered or repaired as a result of the contractor's construction activities or to facilitate the construction activities and such work is not occasioned by the design or amended construction requirements for the works, the cost of such work shall be borne by the contractor.

GENERAL NOTES:

1. Any proposed variations to the details are to have the prior approval of the Superintendent.
2. All approved variations to the noise barrier shall be marked on the drawings and noted as 'AS CONSTRUCTED' and delivered to the Superintendent at the end of the project.
3. No trees are to be cleared without the prior approval of the Superintendent.
4. Where any part of the noise barrier is to be located on a property boundary, the property boundary shall be identified and pegged by a Cadastral Surveyor before that part of the works is commenced.
5. All steel posts shall be identified by welding, or by another method approved by the Superintendent, a label on the noise barrier post which must be clearly visible after galvanising eg NB04/65.710 indicates post at chainage 65.710 on noise barrier control line NB04.
6. Noise Barriers are to be Concrete Panels and UB posts. For noise barrier details, refer Std Drg No. 1608. Concrete sill to be omitted unless directed otherwise.

TREATMENT OF HEIGHT TRANSITIONS

Panels shall be stepped equally to provide an even transition between barrier heights and/or along undulating terrain. Avoid localised peaks and troughs in the top of barrier.



ALTERATION TO BARRIER LAYOUT TRAVERSING UNDERGROUND SERVICES

10. Adjust panel layout as shown so that the underground service is centrally located under a barrier panel (unless notified otherwise).
11. Where it is not possible to achieve location as per Note 10, ensure the posts are located to provide a minimum clearance of 0.5m from the edge of the footing to the edge of the service. At these locations no work shall proceed until approved by the Superintendent.
12. Post foundation shall extend to the invert level of the service or design depth, whichever is the greater (unless notified otherwise).
13. W = approved post spacing (unless notified otherwise).

NOISE BARRIERS – GENERAL ARRANGEMENT

Revisions/Descriptions	Certification	Date	Microfiled
A Issued For Construction			

Associated Job Nos | Auxiliary Drg Nos | Survey Data: Datum, Horiz. Grid, Height Origin, Survey Books | Scales: Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP | Through Chainage from

Drawn | Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

Job No. | Contract. No. | Drawing No. A | Series Number | of

CAD FILES | F:\Jobs\B14000\B14068\Standards Plans Clint\3. Rural Projects\16. Noise Barriers\141.dwg

MRR_Detail (02/14)

Figure 3.18(c) – Noise barrier – generic example 3

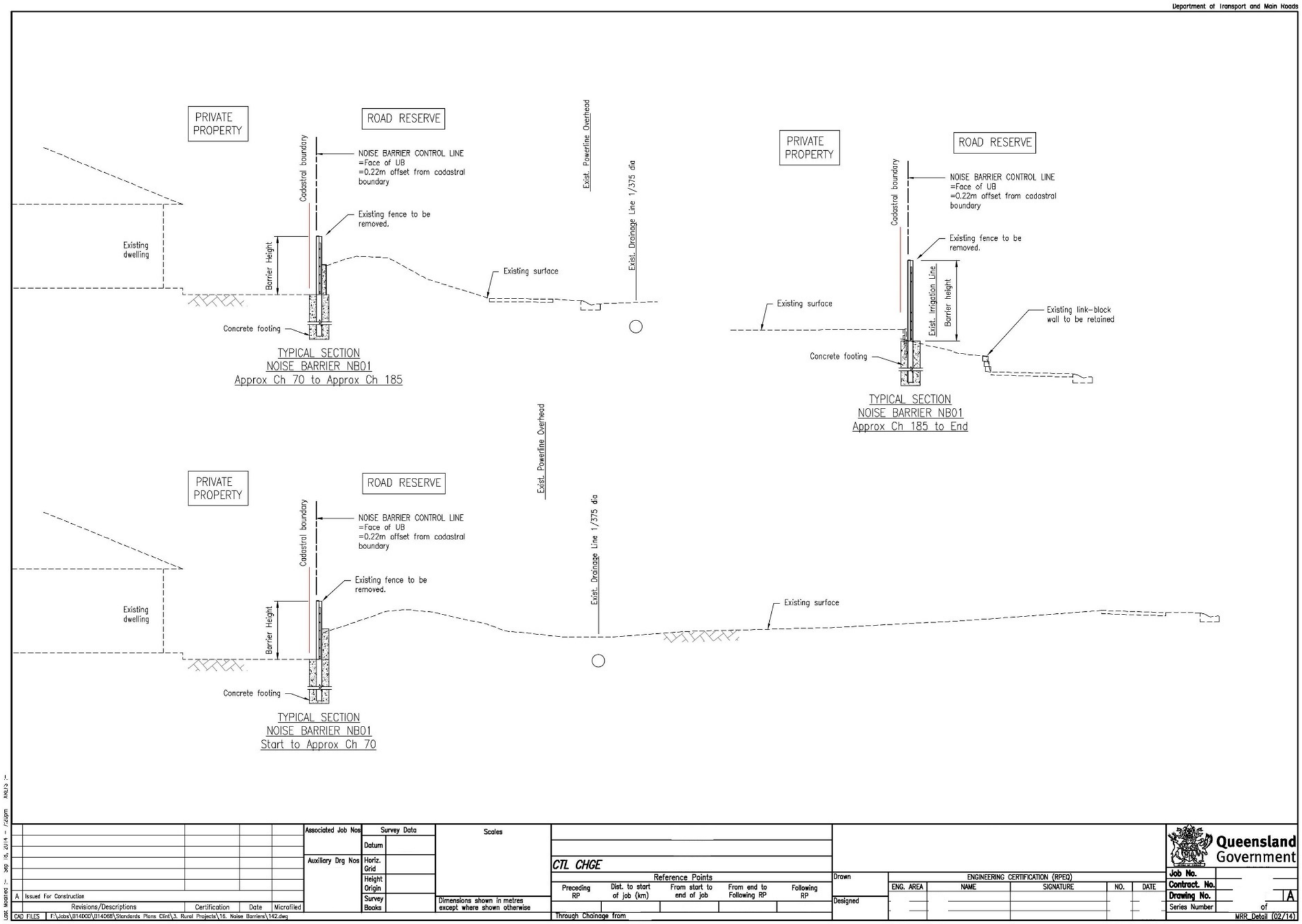


Figure 3.18(d) – Noise barrier – generic example 4

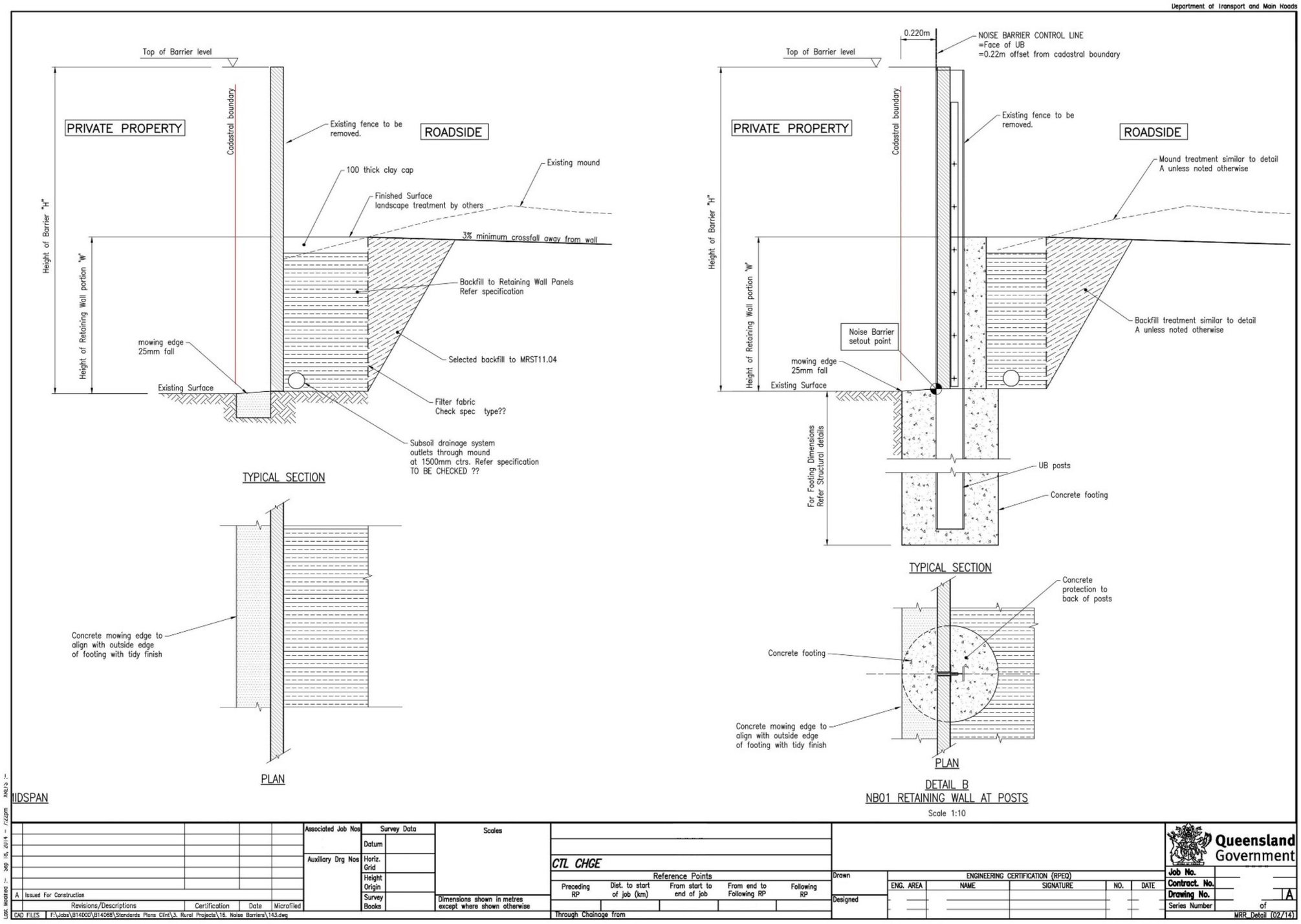


Figure 3.18(e) – Noise barrier – generic example 5

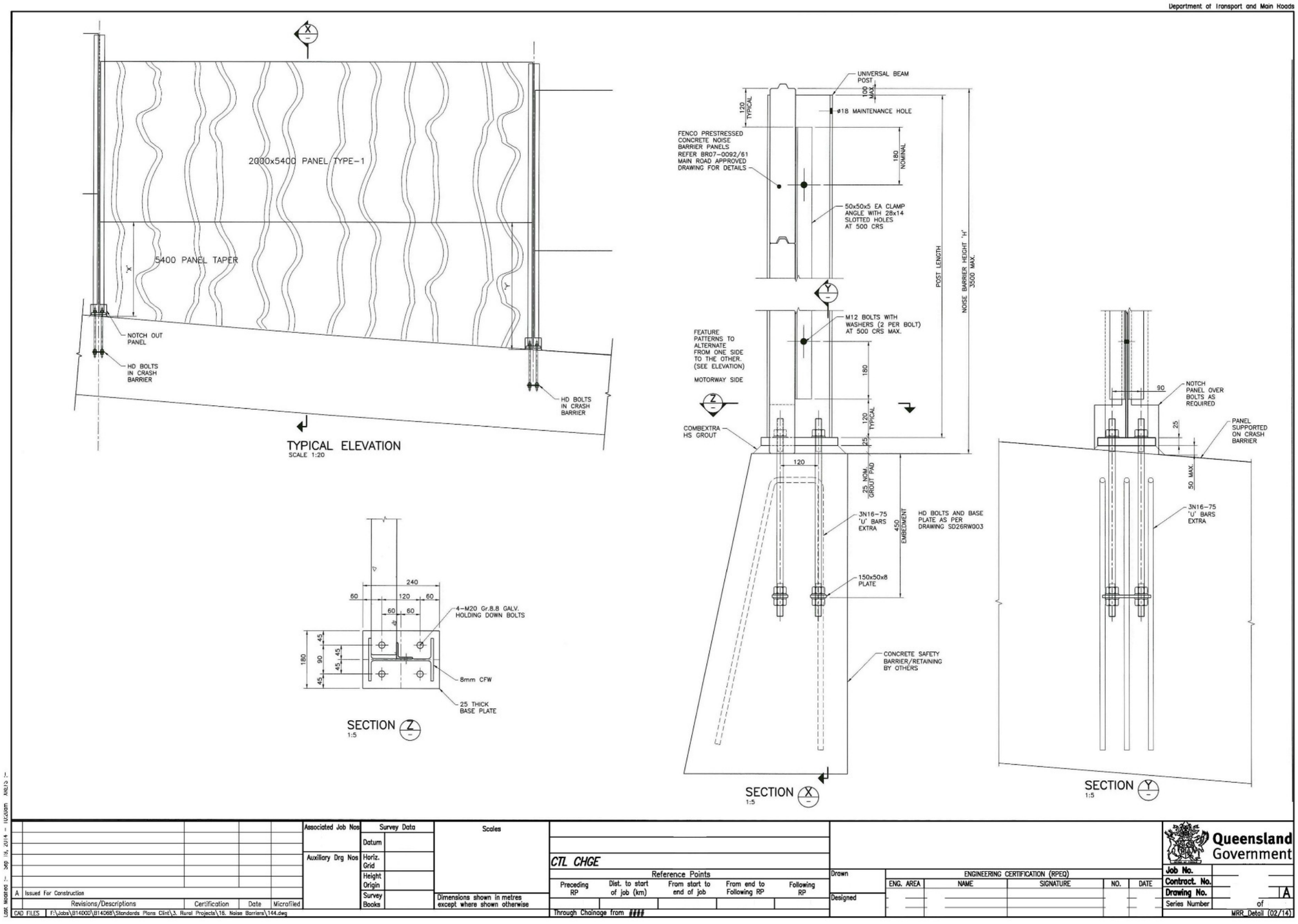


Figure 3.18(f) – Noise barrier – generic example 6

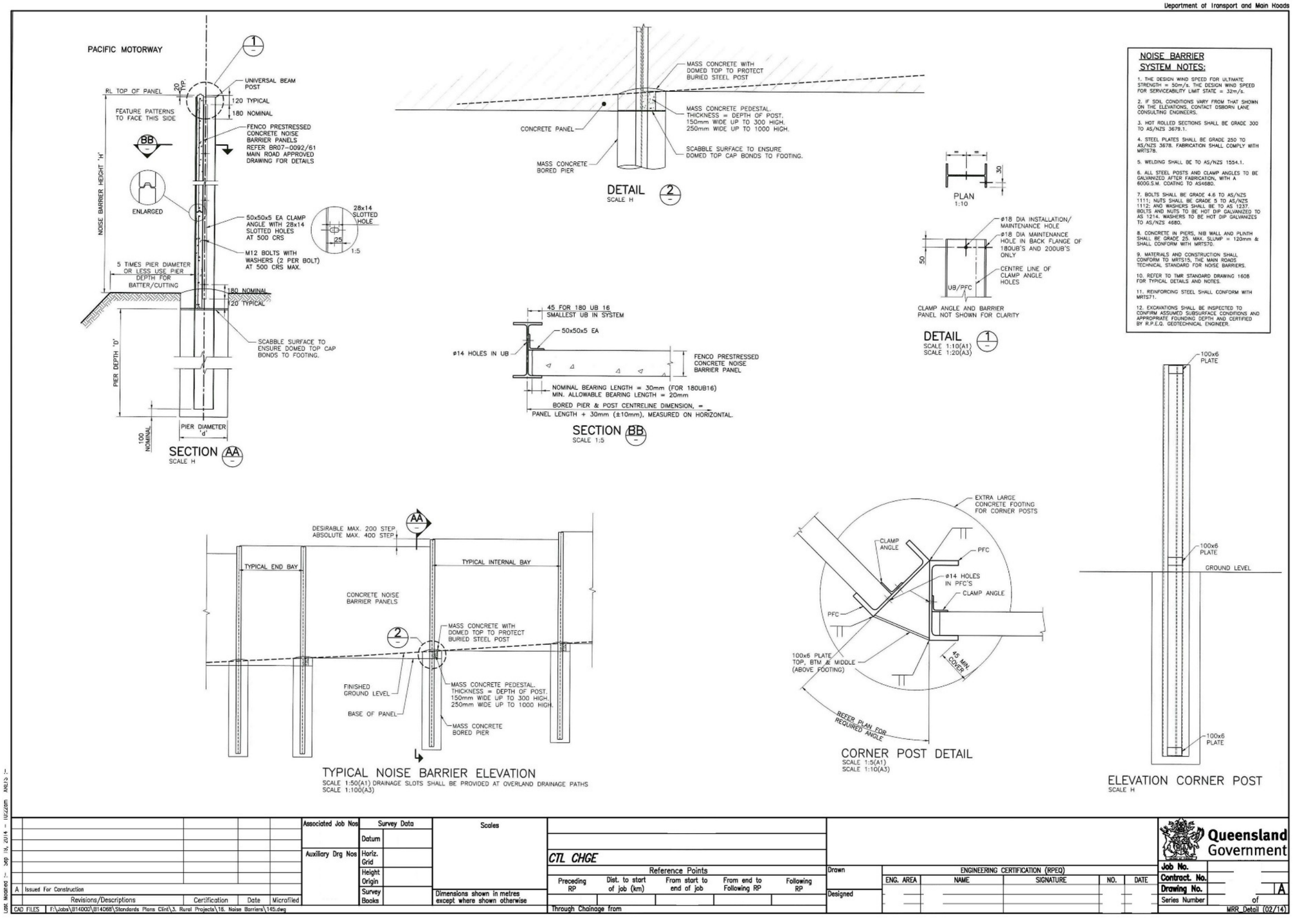
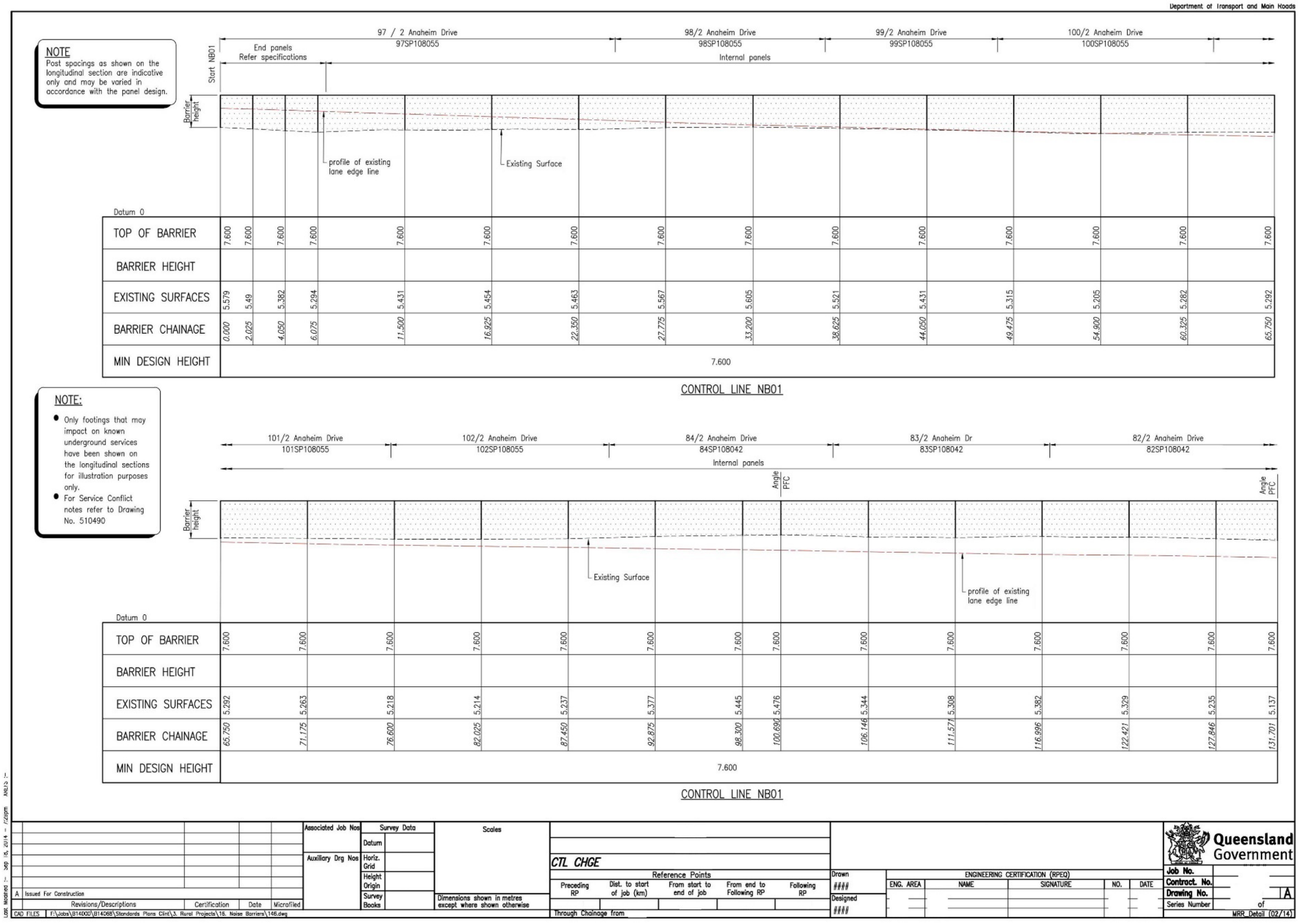


Figure 3.18(g) – Noise barrier – generic example 7



3.19 Annotated cross sections (if required)

Note: Electronic design models are generally made available to the construction contractor, therefore annotated cross sections may not be required as part of the tender documentation.

The annotated cross sections indicate the extents of the construction works necessary to complete the project works. They provide the designer and the client with a better understanding of the issues involved with the construction of the works.

Considerations

Scale

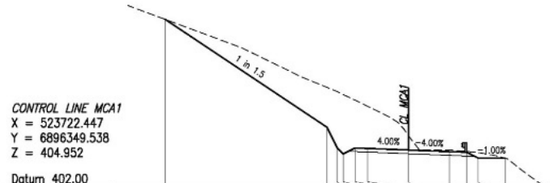
- Consider 1:100 at A1/1:200 at A3
- Natural scale (not exaggerated)

Drawing

- Annotated cross section templates are available from the *Transport and Main Roads 12D Model Customisation* User Library (several templates are available).

Figure 3.19(a) – Annotated cross sections – generic example 1

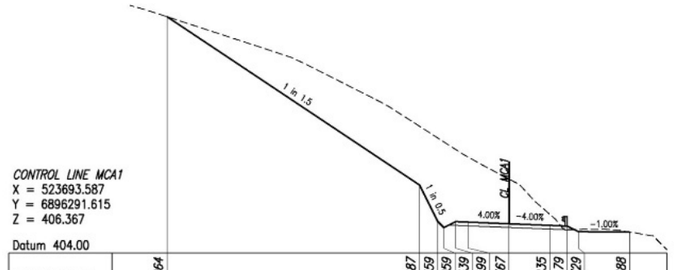
Department of Transport and Main Roads



CONTROL LINE MCA1
X = 523722.447
Y = 6896349.538
Z = 404.952
Datum 402.00

DESIGN HEIGHT	415.495					406.791	405.144	404.644	405.124	405.084	404.952	404.820	404.764	404.314	404.292	404.292
SUBGRADE HEIGHT	415.495					406.791	405.144	404.644	404.824	404.784	404.652	404.520	404.464	404.314	404.292	404.292
EXISTING SURFACE	415.495					410.009	409.669	409.427	408.963	408.480	406.104	404.935	404.841	404.744	404.292	404.292
OFFSETS	-19.639					-6.583	-5.760	-5.260	-4.300	-3.300	0.000	3.300	4.700	5.600	7.791	

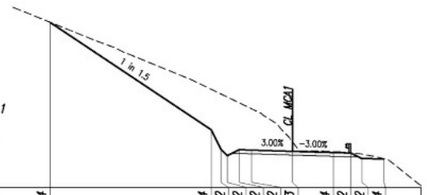
CHAINAGE 8260.000



CONTROL LINE MCA1
X = 523693.587
Y = 6896291.615
Z = 406.367
Datum 404.00

DESIGN HEIGHT	423.064					409.487	406.559	406.059	406.539	406.499	406.367	406.235	406.179	405.729	405.688	
SUBGRADE HEIGHT	423.064					409.487	406.559	406.059	406.239	406.199	406.067	405.935	405.879	405.729	405.688	
EXISTING SURFACE	423.064					414.230	413.290	412.969	412.353	411.745	409.971	407.114	405.929	405.914	405.688	
OFFSETS	-27.590					-7.224	-5.760	-5.260	-4.300	-3.300	0.000	3.300	4.700	5.600	9.728	

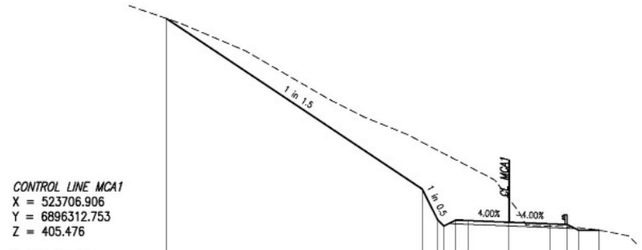
CHAINAGE 8325.000



CONTROL LINE MCA1
X = 523723.864
Y = 6896354.333
Z = 404.903
Datum 402.00

DESIGN HEIGHT	415.314					406.644	405.052	404.552	405.032	405.002	404.903	404.804	404.762	404.312	404.294	
SUBGRADE HEIGHT	415.314					406.644	405.052	404.552	404.732	404.702	404.603	404.504	404.462	404.312	404.294	
EXISTING SURFACE	415.314					409.905	409.520	409.279	408.816	408.333	405.661	404.877	404.775	404.676	404.294	
OFFSETS	-19.561					-6.556	-5.760	-5.260	-4.300	-3.300	0.000	3.300	4.700	5.600	7.380	

CHAINAGE 8255.000



CONTROL LINE MCA1
X = 523706.906
Y = 6896312.753
Z = 405.476
Datum 402.00

DESIGN HEIGHT	421.915					408.150	405.668	405.168	405.648	405.608	405.476	405.344	405.288	404.838	404.822	
SUBGRADE HEIGHT	421.915					408.150	405.668	405.168	405.348	405.308	405.176	405.044	404.988	404.838	404.822	
EXISTING SURFACE	421.915					411.921	411.269	411.009	410.513	409.997	407.359	405.174	405.102	405.031	404.822	
OFFSETS	-27.649					-7.001	-5.760	-5.260	-4.300	-3.300	0.000	3.300	4.700	5.600	7.269	

CHAINAGE 8300.000

Last Modified :- Jun 05, 2014 - 11:55am XREFS :-

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A	Issued For Construction			
	Revisions/Descriptions	Certification	Date	Microfilled

CAD FILES: G:\NERI\CTS\Design\Reference Material\Reference Groups\Design Technical Reference Group\2014\140605\Beechmont\XS-2.dwg

Associated Job Nos

Auxiliary Drg Nos

Survey Data: Datum; Horiz. Grid; Height Origin; Survey Books

Scales: 0 2 4 6 8m

Dimensions shown in metres except where shown otherwise

CTL CHGE

Reference Points: Preceding RP | Dist. to start of job (km) | From start to end of job | From end to Following RP | Following RP

Through Chainage from

Drawn

Designed

ENGINEERING CERTIFICATION (RPEQ): ENG. AREA | NAME | SIGNATURE | NO. | DATE

Queensland Government

Job No.

Contract. No.

Drawing No. 1A

Series Number of

MRR_Detail (02/14)

Figure 3.19(b) – Annotated cross sections – generic example 2

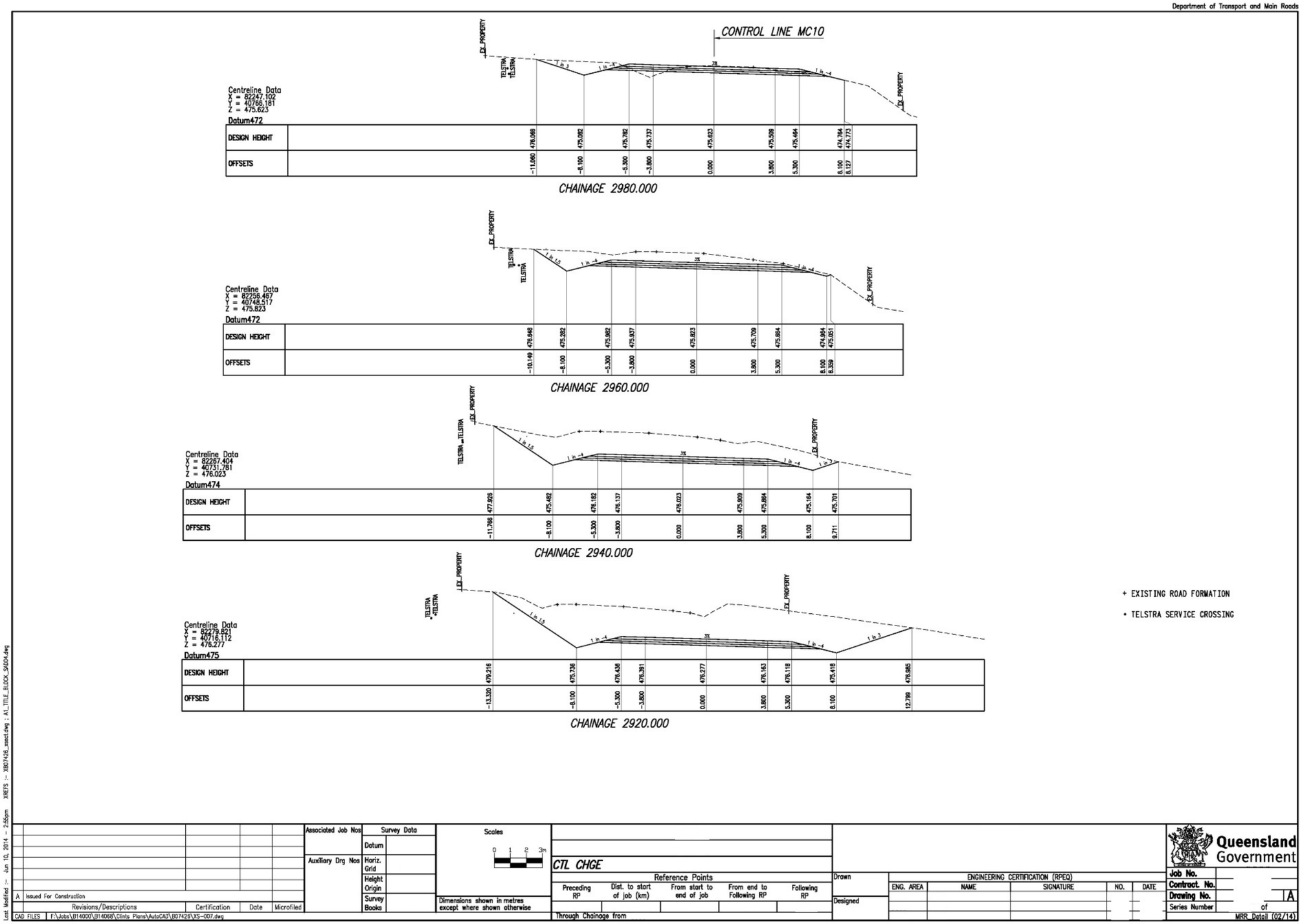


Figure 3.19(c) – Annotated cross sections – generic example 3

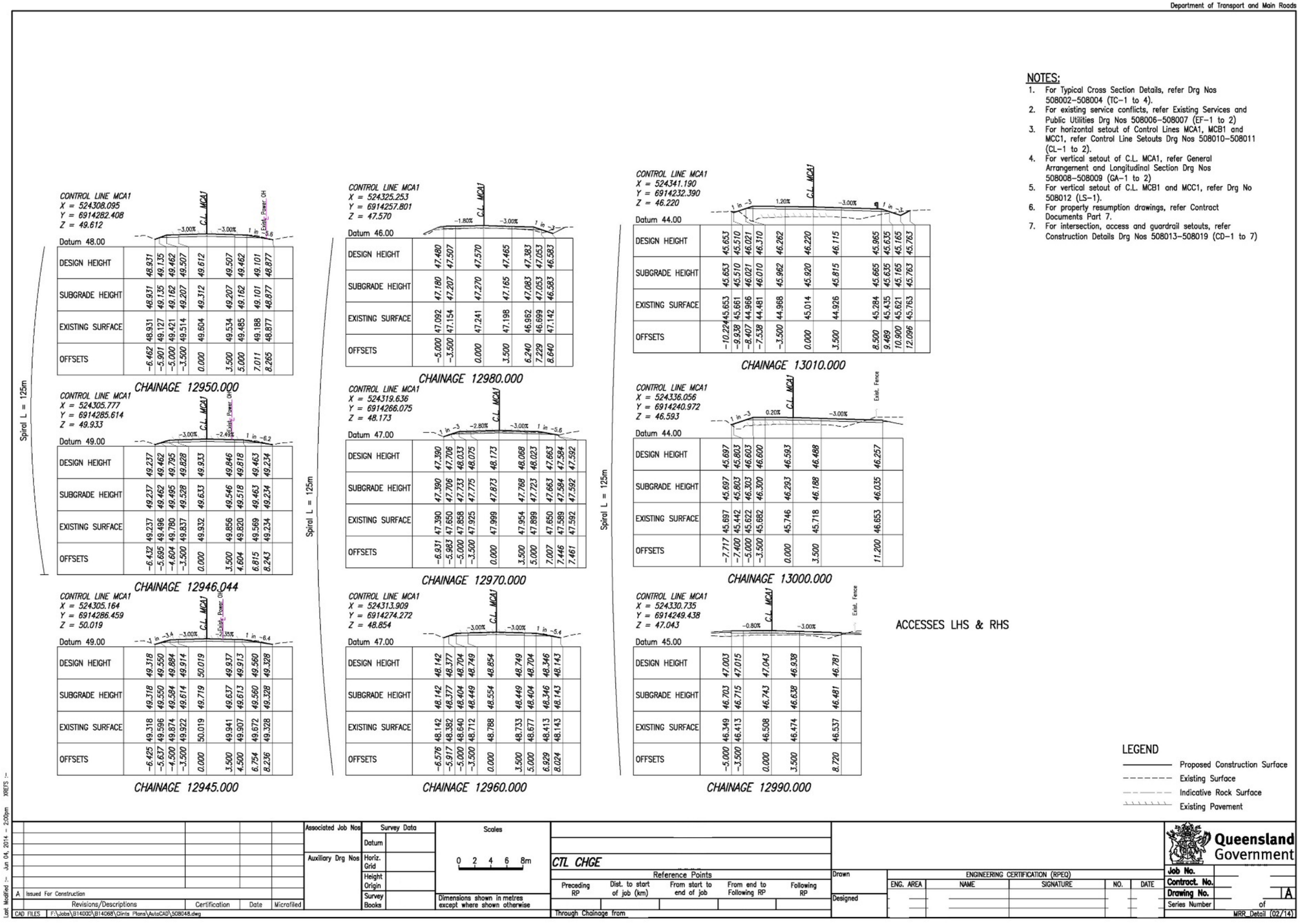


Figure 3.19(d) – Annotated cross sections – generic example 4

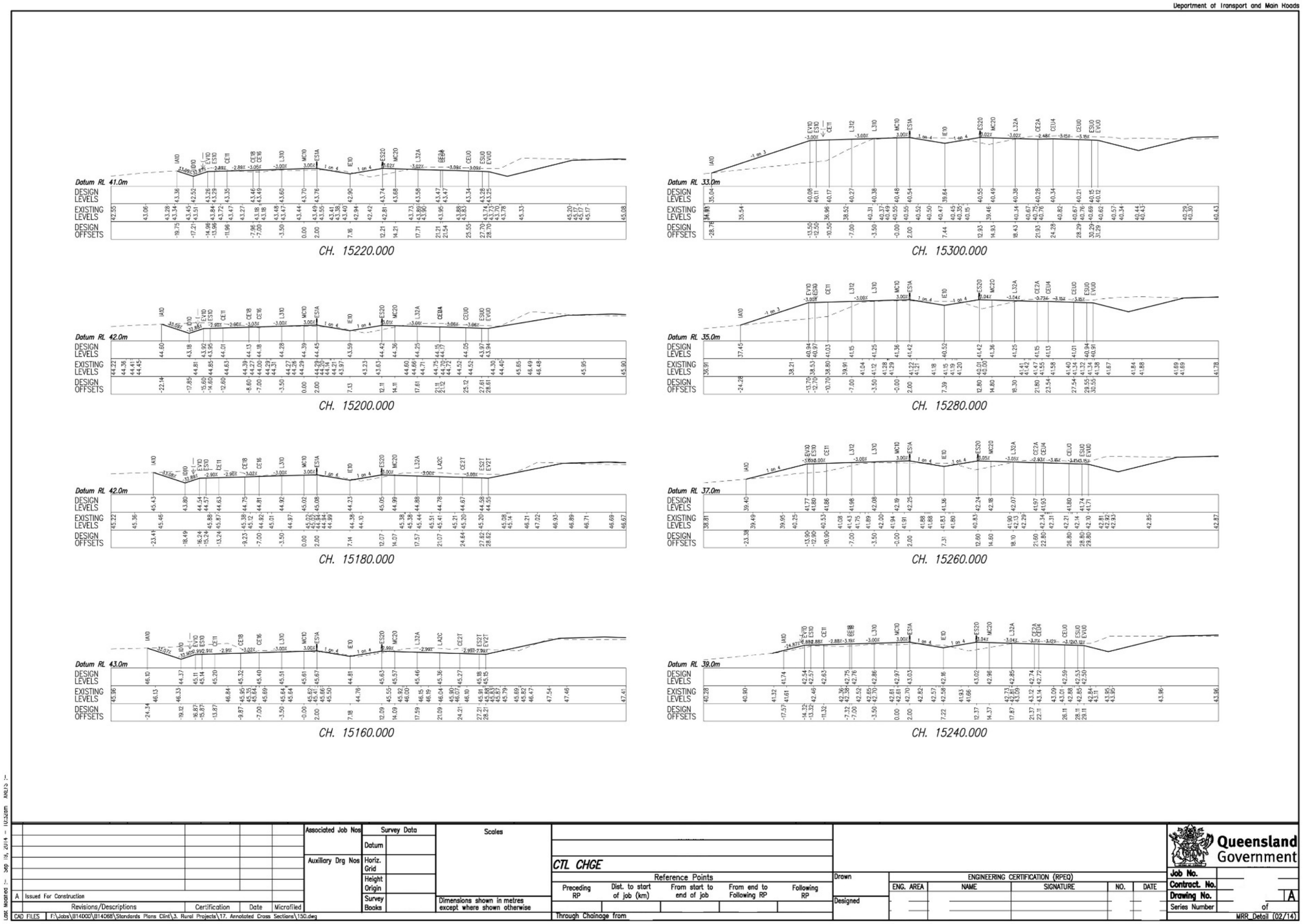
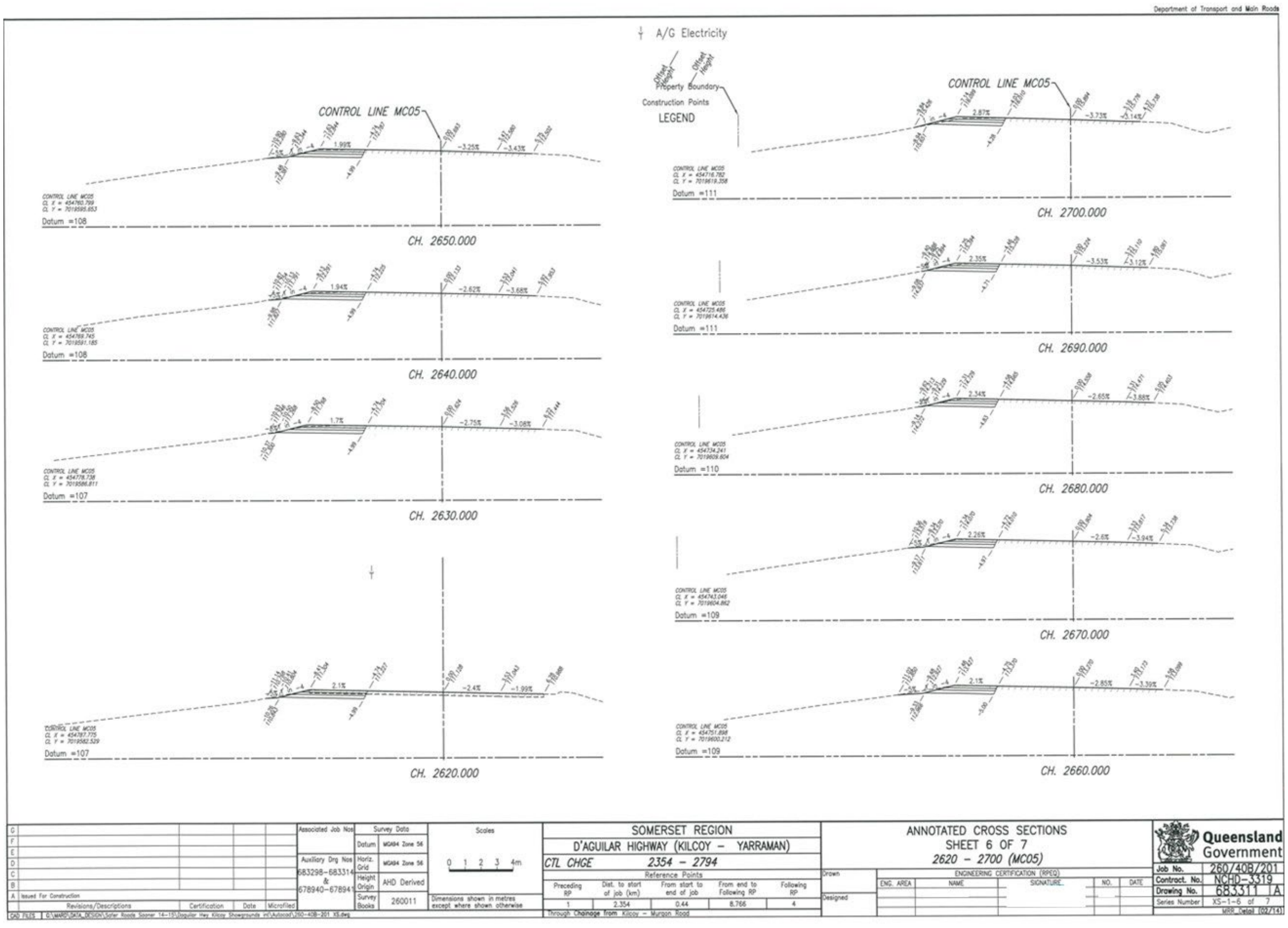


Figure 3.19(e) – Annotated cross sections – registered example



3.20 Construction staging details

Traffic management and construction staging requirements are generally the responsibility of the construction contractor. However, the designer is responsible for demonstrating the constructability of the project.

Traffic management / sequencing plans may not be presented to the construction contractor as part of the tender documents.

When preparing traffic management layout plans:

Consider

- Safety for all road users, including pedestrians, cyclists and motorcyclists
- Traffic management during construction
- Sequencing and staging of construction (where traffic travel during construction)
- Appropriate speed restriction for the conditions and traffic volumes
- Turning paths for heavy vehicles
- Temporary pavement markings and signage
- Site access / exit to construction areas (safety in design requirements)
- Construction requirements (area for construction, safety clearances and requirements, etc.)
- Appropriate temporary safety barriers and end treatments
- Temporary construction and interface between temporary pavement and existing
- Horizontal and vertical alignment
- Sight lines around and over temporary barriers and at intersections
- Readability of the intended temporary travel paths
- Pavement widths / curve widening
- Access for pedestrians and cyclists
- Access to properties and businesses
- Street lighting requirements
- Temporary traffic control, i.e., traffic signals, traffic controllers
- Detours and side tracks
- Constructability issues have been addressed
- Undertaking a road safety audit of the traffic management plans

Figure 3.20(a) – Construction staging – generic example 1 – sheet 1 of 2

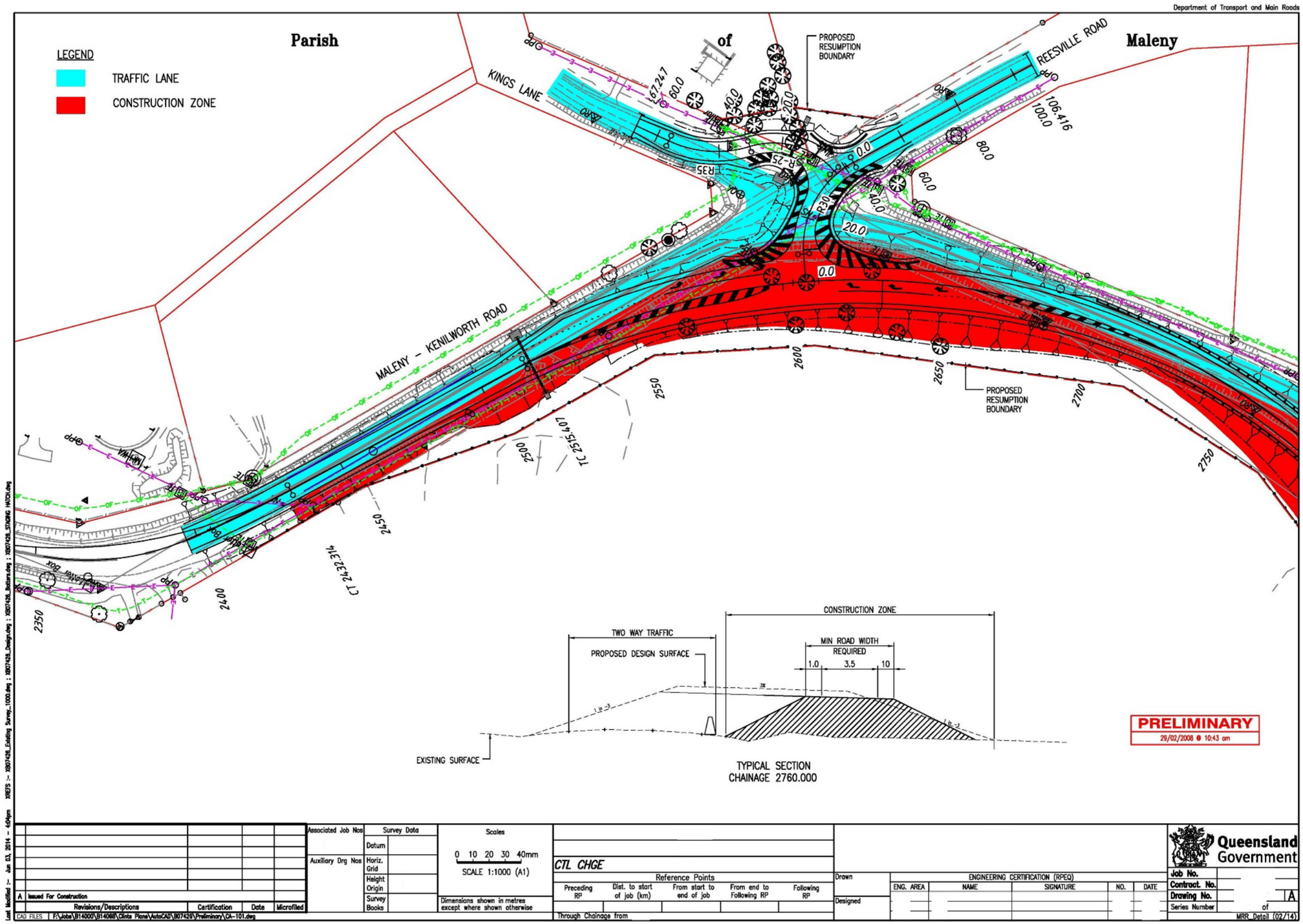


Figure 3.20(b) – Construction staging – generic example 1 – sheet 2 of 2

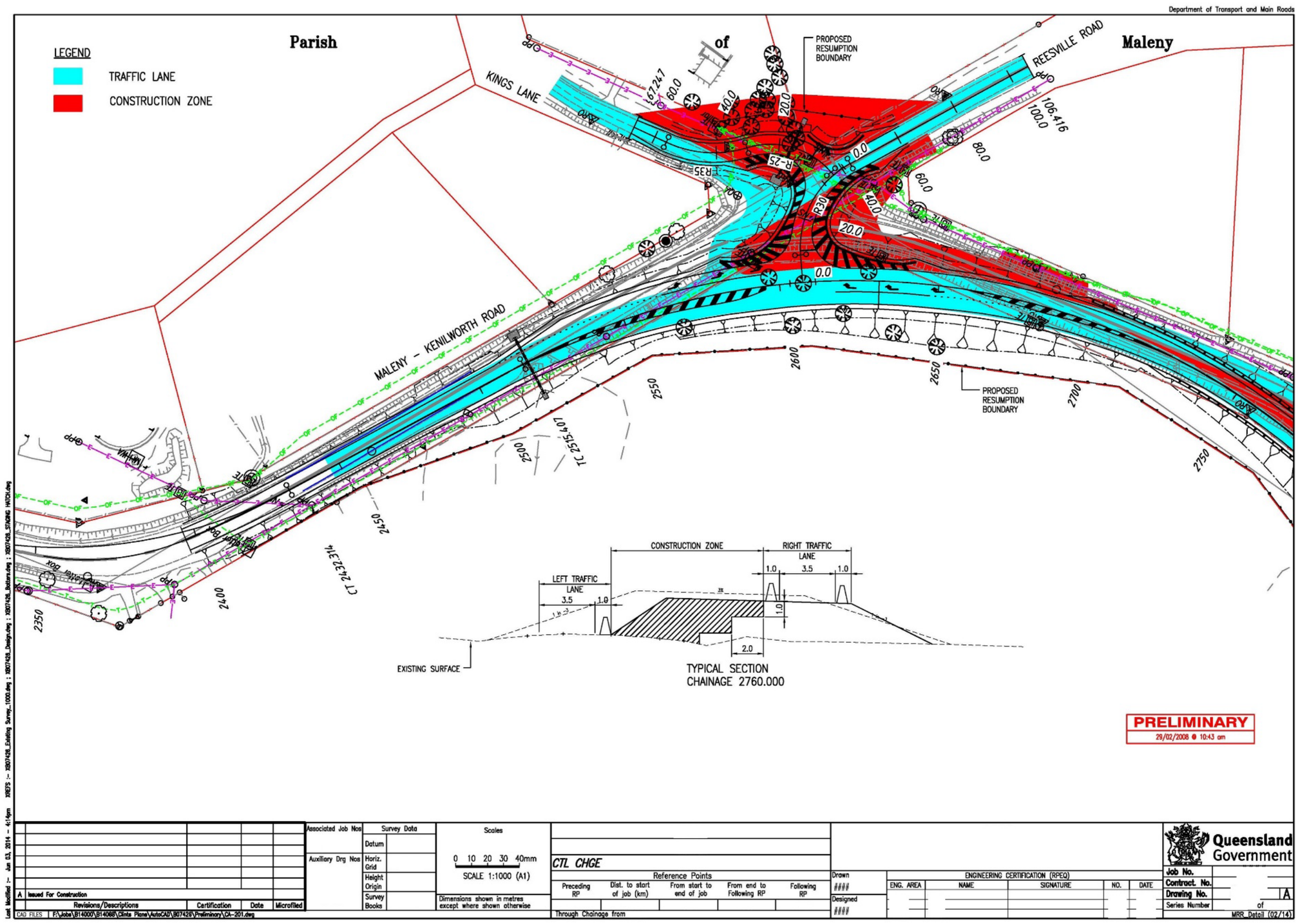


Figure 3.20(c) – Construction staging – generic example 2 – sheet 1 of 2

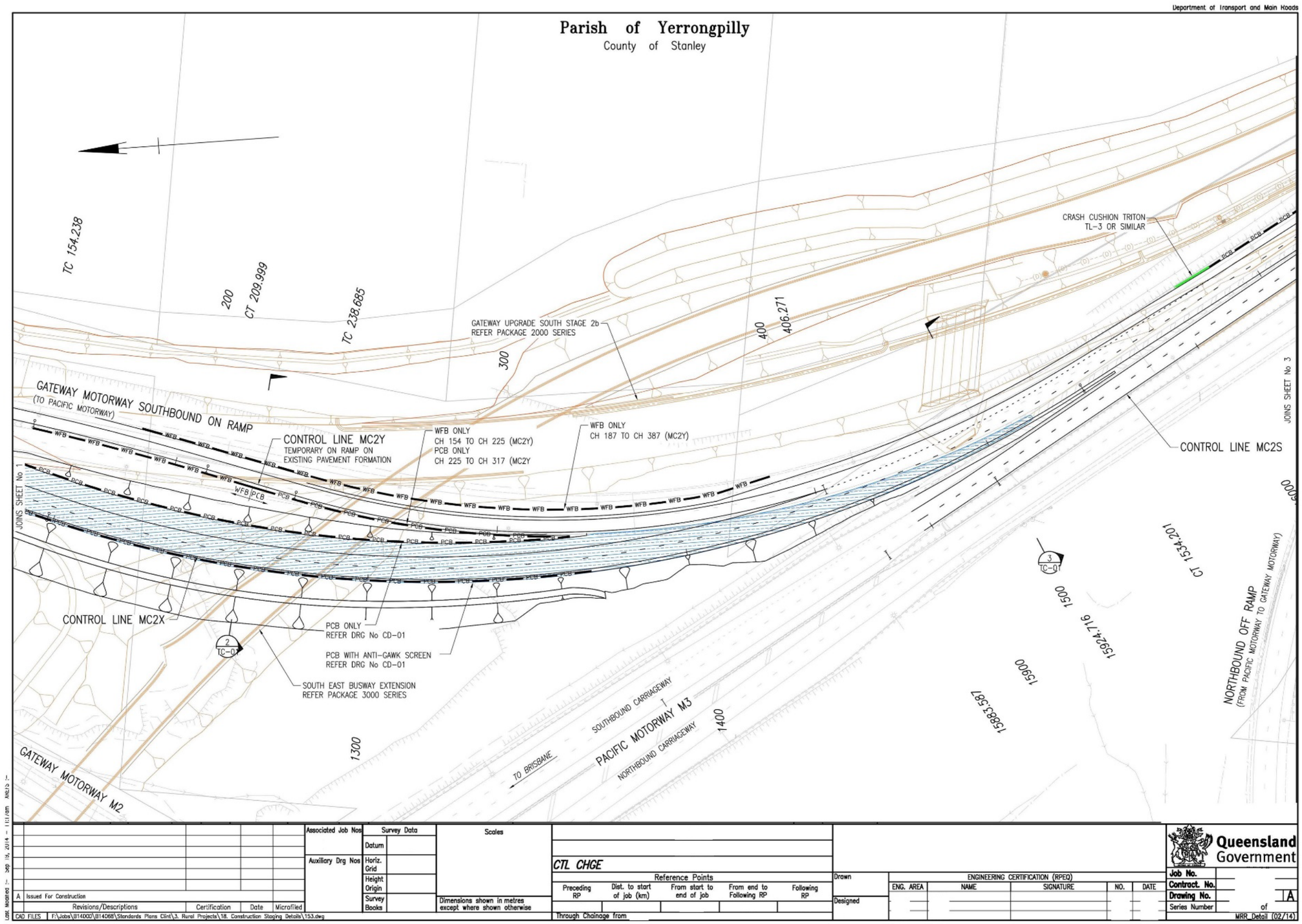


Figure 3.20(d) – Construction staging – generic example 2 – sheet 2 of 2

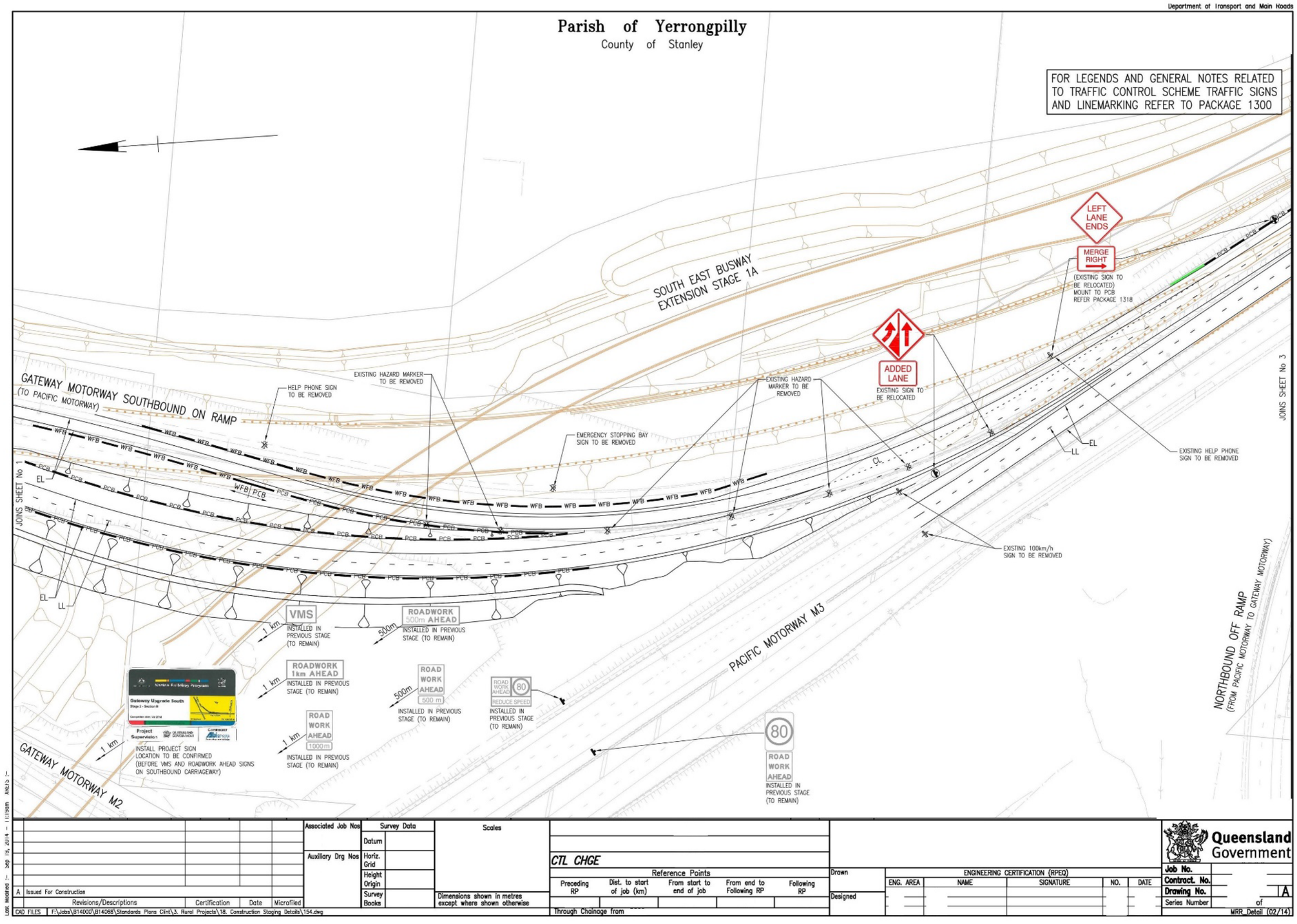


Figure 3.20(e) – Construction staging – generic example 3 – sheet 1 of 2

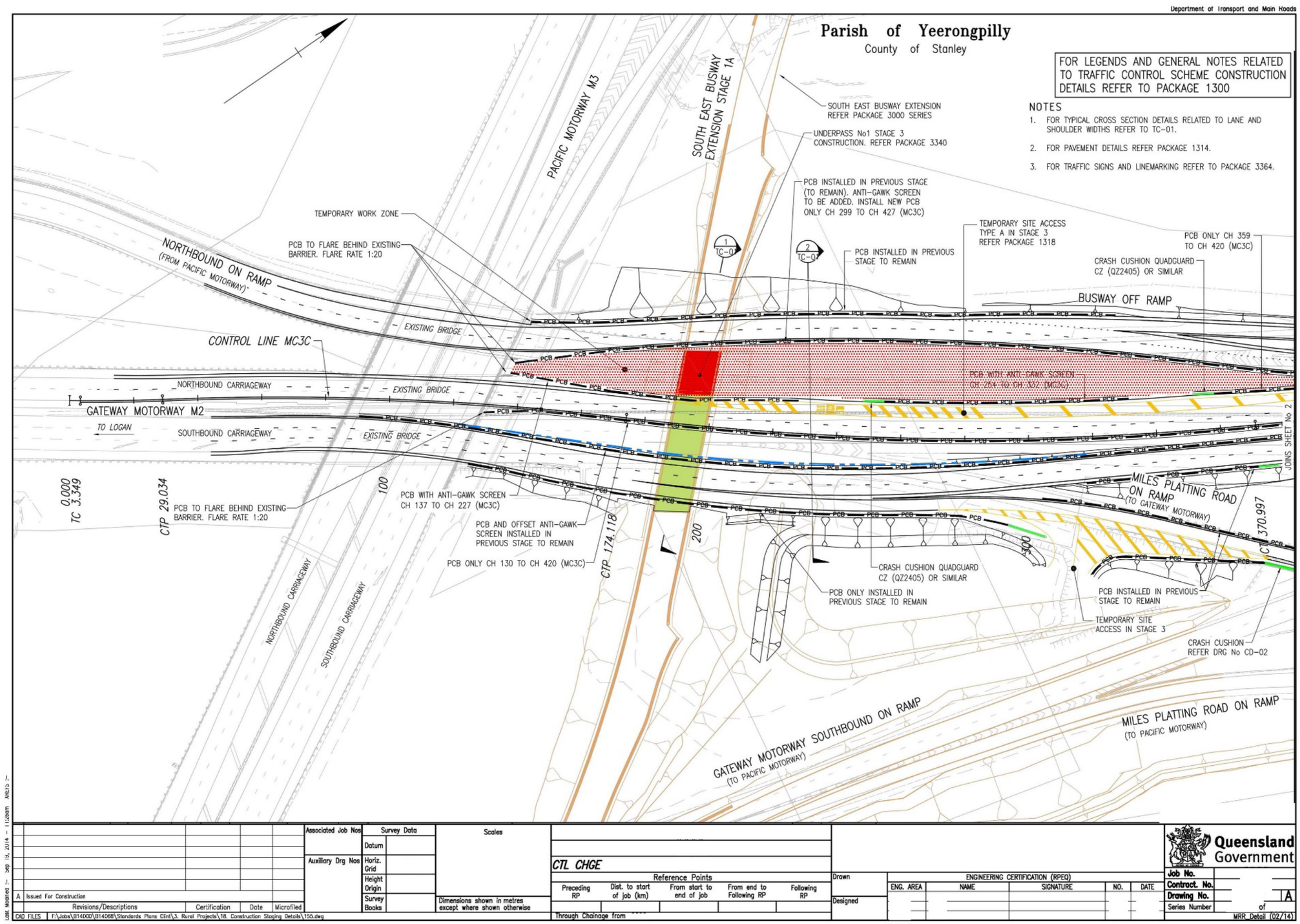
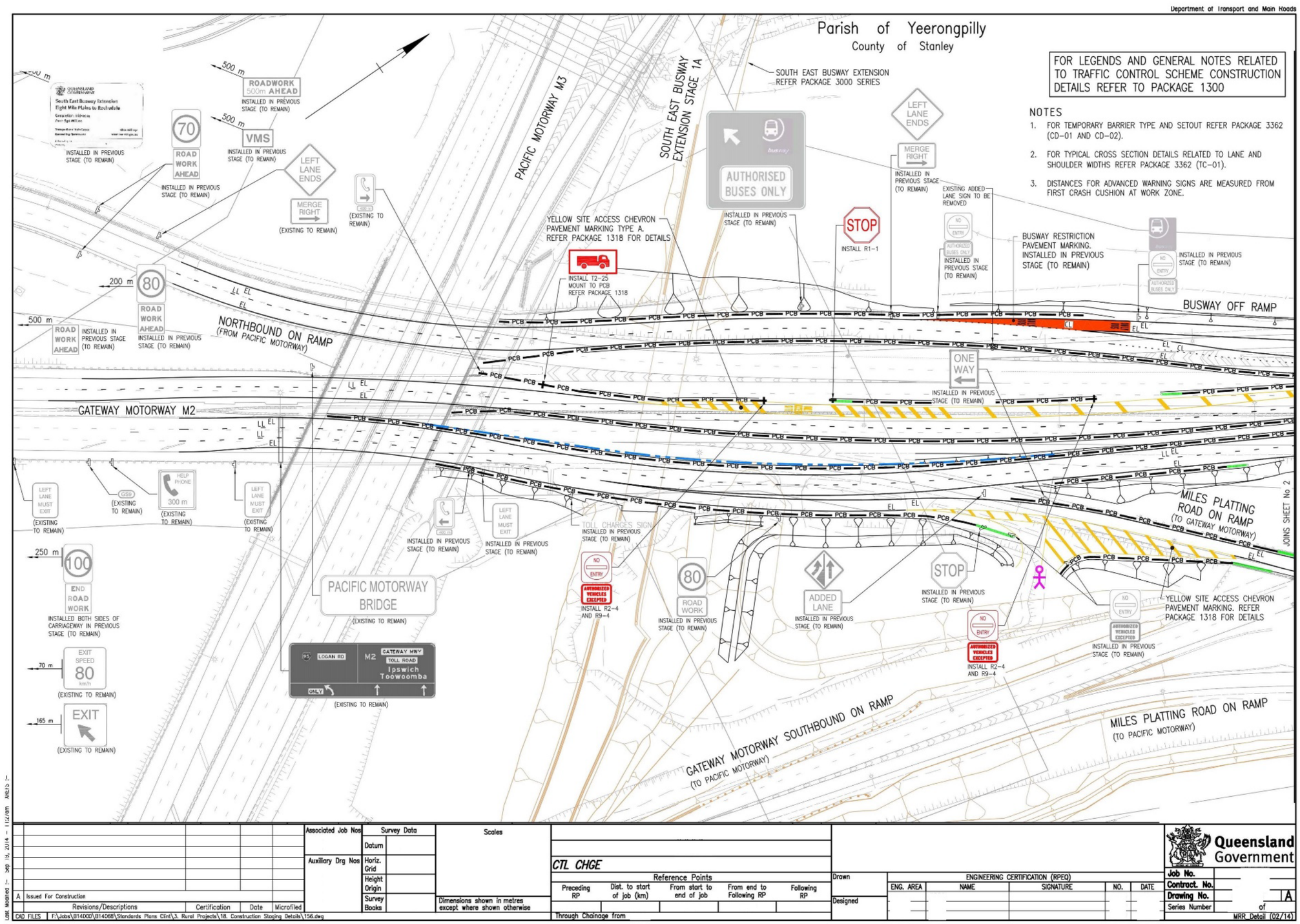


Figure 3.20(f) – Construction staging – generic example 3 – sheet 2 of 2



3.21 Erosion and sediment control details

Preparation for acceptance of erosion and sediment control drawings is normally the responsibility of the construction contractor (refer MRS52 and MRTS52 *Erosion and Sediment Control*). However, the designer should prepare erosion and sediment control drawings and present these to the contractor for guidance as to the minimum standards required by Transport and Main Roads.

An erosion and sediment control plan drawing shows a possible approach for sediment and erosion management.

The drawing should be included in contract documentation so that tenderers can use it as a basis for pricing. After the contract has been awarded the contractors can choose to adopt the drawing(s) or develop their own:

- EMP(C) (Environmental Management Plan (Construction) drawings)
- EMP(C) drawing shows the environmental risks associated with the construction of a project.

The standard sets out what must be contained on the drawings but allows the option that information is shown on drawings and diagrams as opposed to just text. EMP(C) drawings are not intended to replace a text-based document but to provide an efficient means of conveying information.

Considerations:

It is intended that these drawings could completely replace a text-based document complementing Specification MRS52 *Erosion and Sediment Control*.

Scale

- Scale – Appropriate to level of detail

Drawing

- Show the design measures and techniques proposed to control erosion and sedimentation during construction and operation, on design layout
- Show areas to be landscaped, for example seeded, turfed, etc.
- Detail sediment fences, erosion sock locations and rip rap
- Show check dams (stepped) and sediment basins
- Show rock mattress batter chute
- Define the limit of clearing (chainage / offset)
- Show existing bitumen treatment
- Provide additional supporting information for work to be done

Figure 3.21(a) – Erosion and sediment control details – generic example

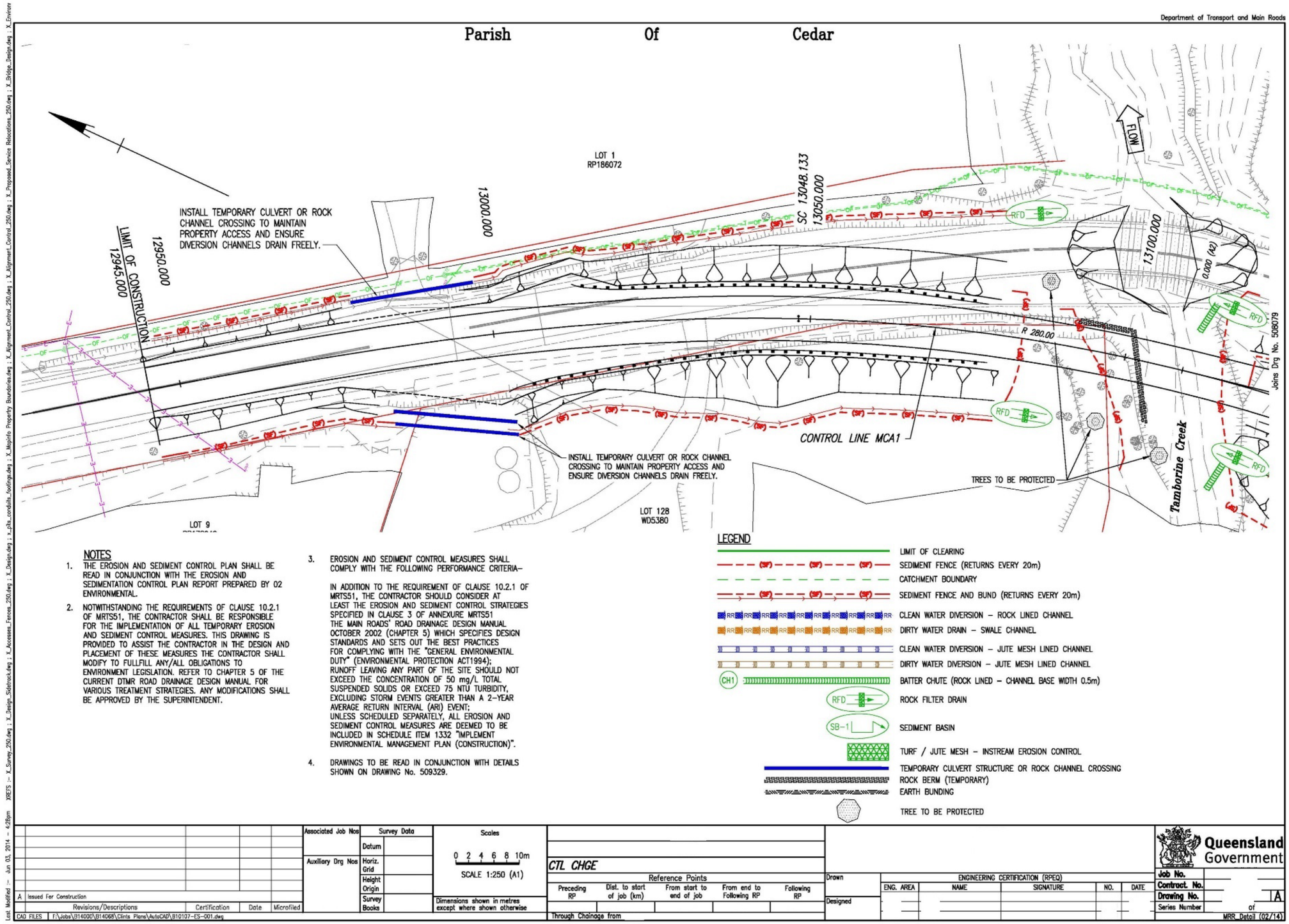


Figure 3.21(b) – Erosion and sediment control details – registered example 1

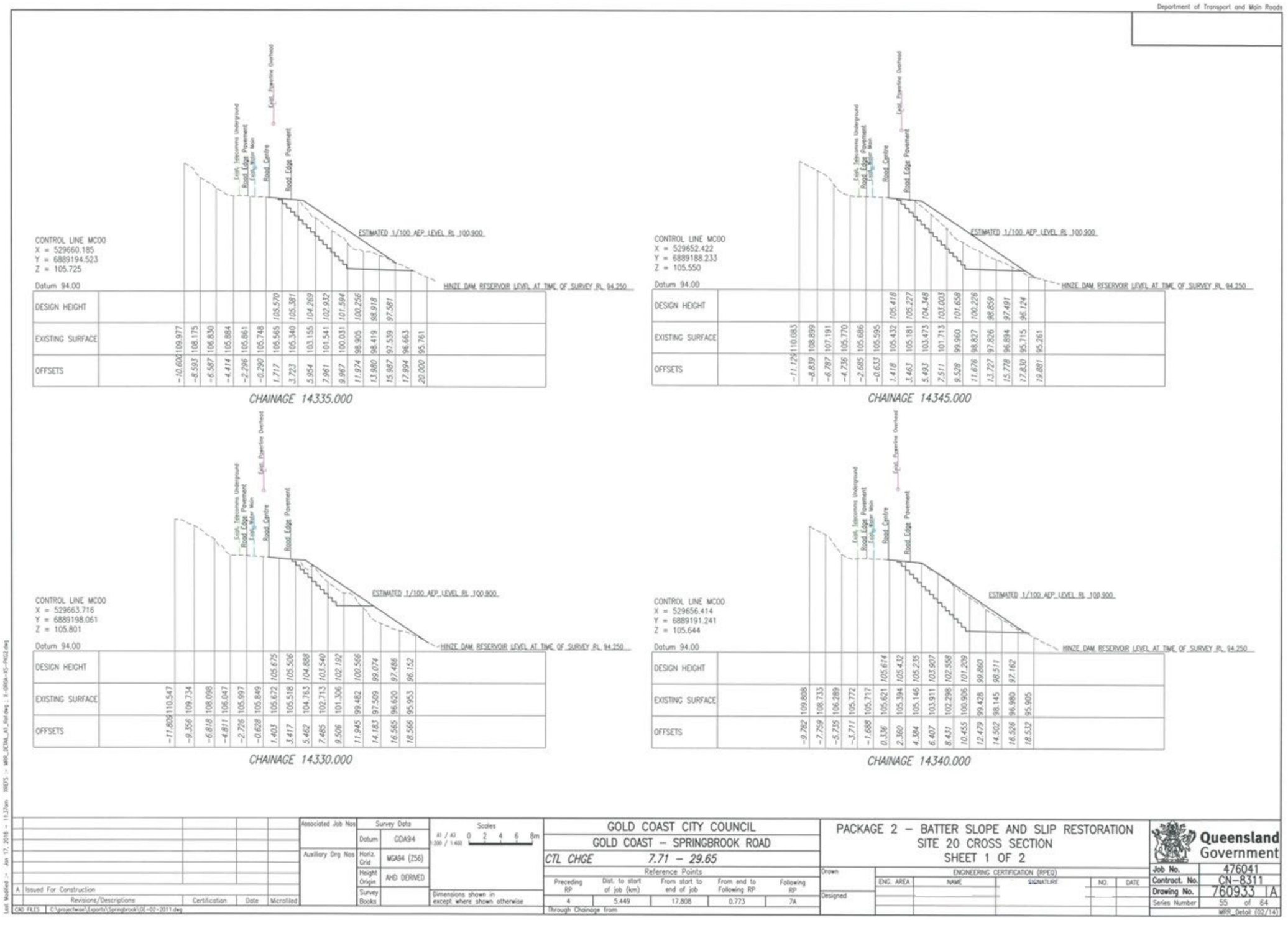


Figure 3.21(c) – Erosion and sediment control details – registered example 2

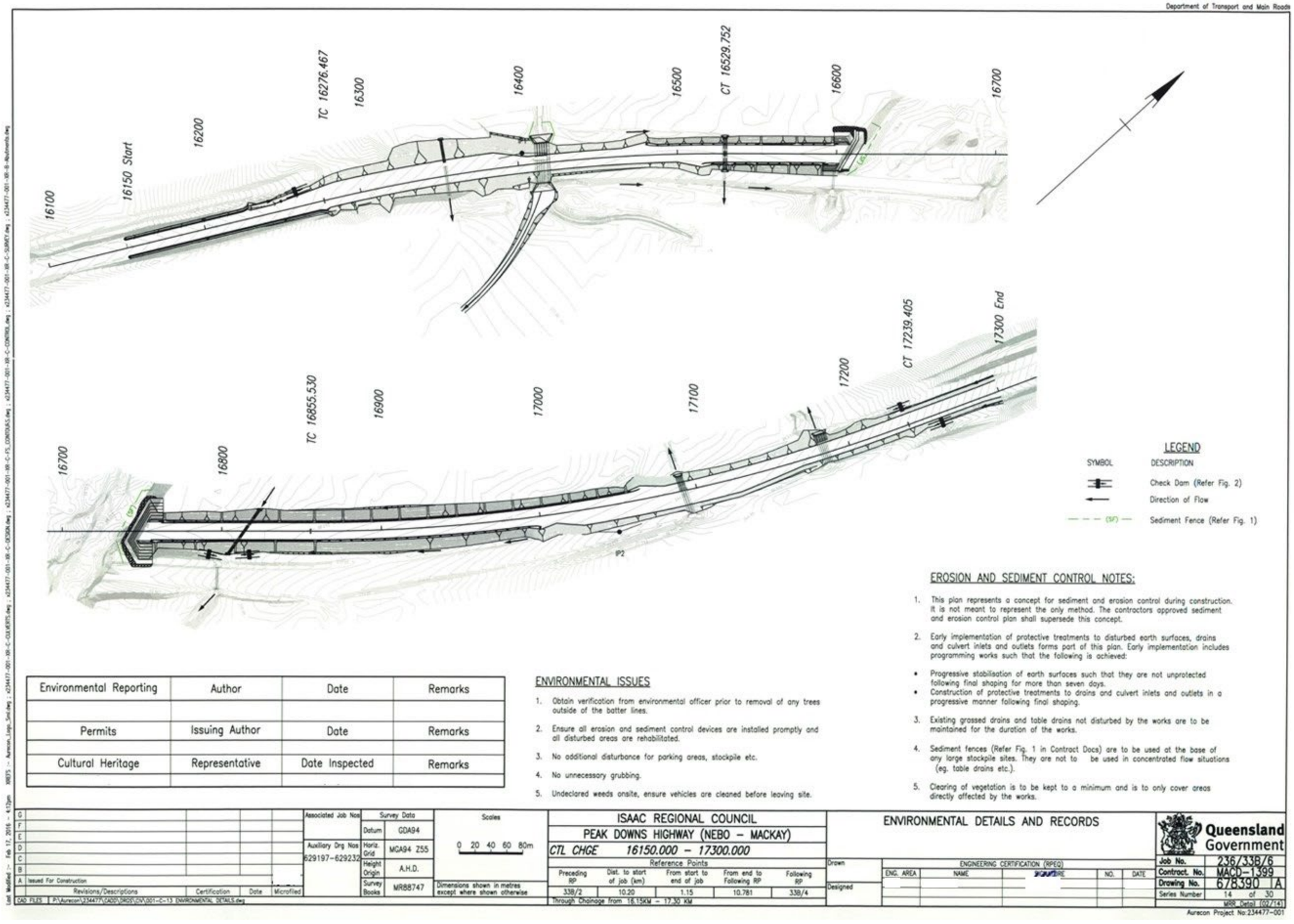
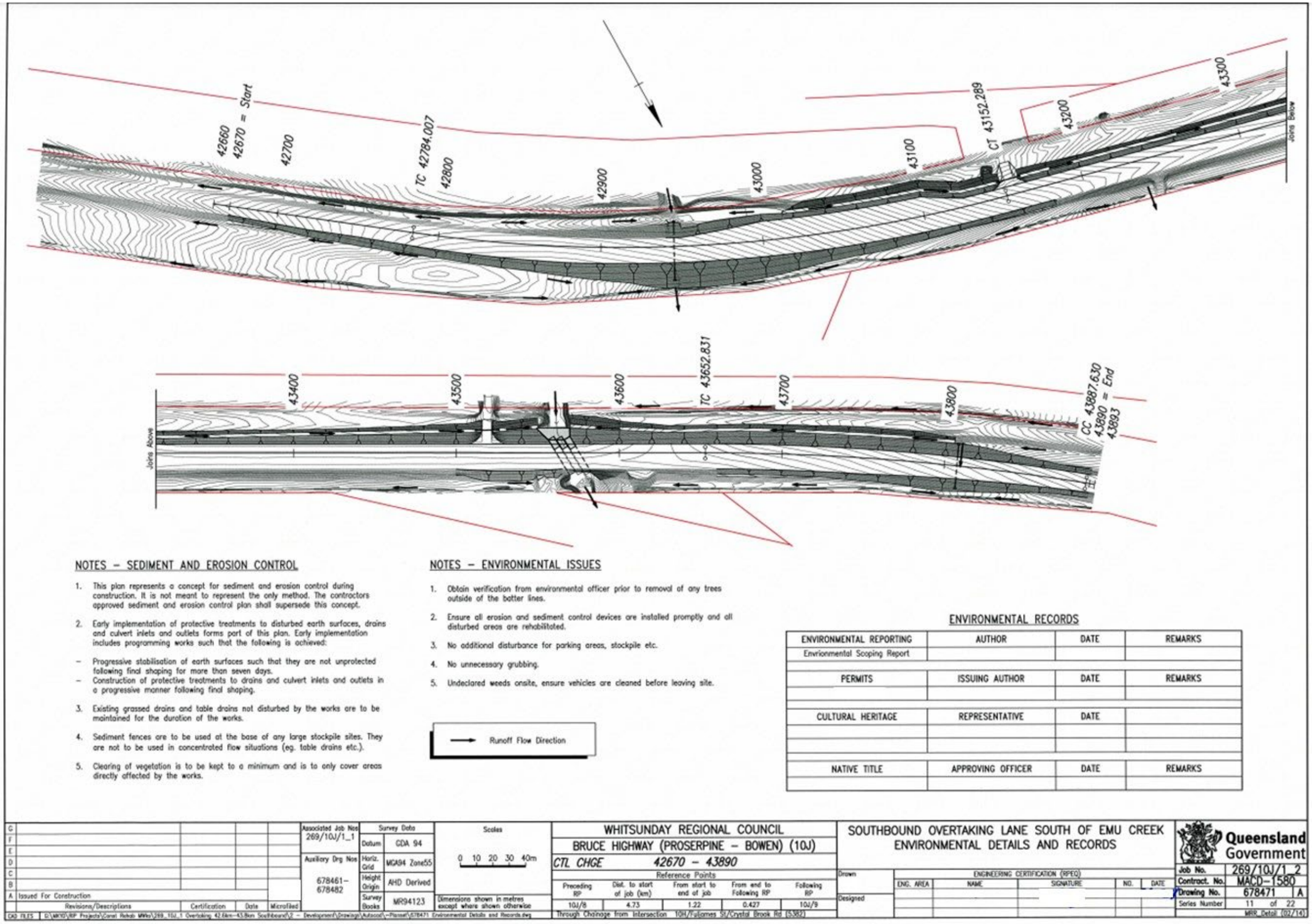


Figure 3.21(d) – Erosion and sediment control details – registered example 3



NOTES – SEDIMENT AND EROSION CONTROL

1. This plan represents a concept for sediment and erosion control during construction. It is not meant to represent the only method. The contractors approved sediment and erosion control plan shall supersede this concept.
2. Early implementation of protective treatments to disturbed earth surfaces, drains and culvert inlets and outlets forms part of this plan. Early implementation includes programming works such that the following is achieved:
   - Progressive stabilisation of earth surfaces such that they are not unprotected following final shaping for more than seven days.
   - Construction of protective treatments to drains and culvert inlets and outlets in a progressive manner following final shaping.
3. Existing grassed drains and table drains not disturbed by the works are to be maintained for the duration of the works.
4. Sediment fences are to be used at the base of any large stockpile sites. They are not to be used in concentrated flow situations (eg. table drains etc.).
5. Clearing of vegetation is to be kept to a minimum and is to only cover areas directly affected by the works.

NOTES – ENVIRONMENTAL ISSUES

1. Obtain verification from environmental officer prior to removal of any trees outside of the batter lines.
2. Ensure all erosion and sediment control devices are installed promptly and all disturbed areas are rehabilitated.
3. No additional disturbance for parking areas, stockpile etc.
4. No unnecessary grubbing.
5. Undeclared weeds onsite, ensure vehicles are cleaned before leaving site.

→ Runoff Flow Direction

ENVIRONMENTAL RECORDS

ENVIRONMENTAL REPORTING	AUTHOR	DATE	REMARKS
Environmental Scoping Report			
PERMITS	**ISSUING AUTHOR**	**DATE**	**REMARKS**
CULTURAL HERITAGE	**REPRESENTATIVE**	**DATE**	
NATIVE TITLE	**APPROVING OFFICER**	**DATE**	**REMARKS**

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A	Issued For Construction			
	Revisions/Descriptions	Certification	Date	Microfilmed

CAD FILES: G:\MRV0\RP Projects\Canal Rehab MWs\269_10J_1 Overtaking 42.6km-43.8km Southbound\2 – Development\Drawings\Autocad\–Planset\678471 Environmental Details and Records.dwg

Associated Job Nos	269/10J/1_1
Auxiliary Drg Nos	678461–678482
Survey Data	
Datum	GDA 94
Horiz. Grid	MGA94 Zone55
Height Origin	AHD Derived
Survey Books	MR94123

Scales: 0 10 20 30 40m

Dimensions shown in metres except where shown otherwise

WHITSUNDAY REGIONAL COUNCIL

BRUCE HIGHWAY (PROSERPINE – BOWEN) (10J)

CTL CHGE 42670 – 43890

Reference Points

Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP
10J/8	4.73	1.22	0.427	10J/9

Through Chainage from Intersection 10H/Tyldesley St/Crystal Brook Rd (5.382)

SOUTHBOUND OVERTAKING LANE SOUTH OF EMU CREEK

ENVIRONMENTAL DETAILS AND RECORDS

Drawn

Designed

ENGINEERING CERTIFICATION (RPEQ)

ENG. AREA	NAME	SIGNATURE	NO.	DATE

Queensland Government

Job No.	269/10J/1_2
Contract. No.	MACD–1580
Drawing No.	678471 A
Series Number	11 of 22

MRR_Detail (02/14)

Figure 3.21(e) – Erosion and sediment control details – registered example 4

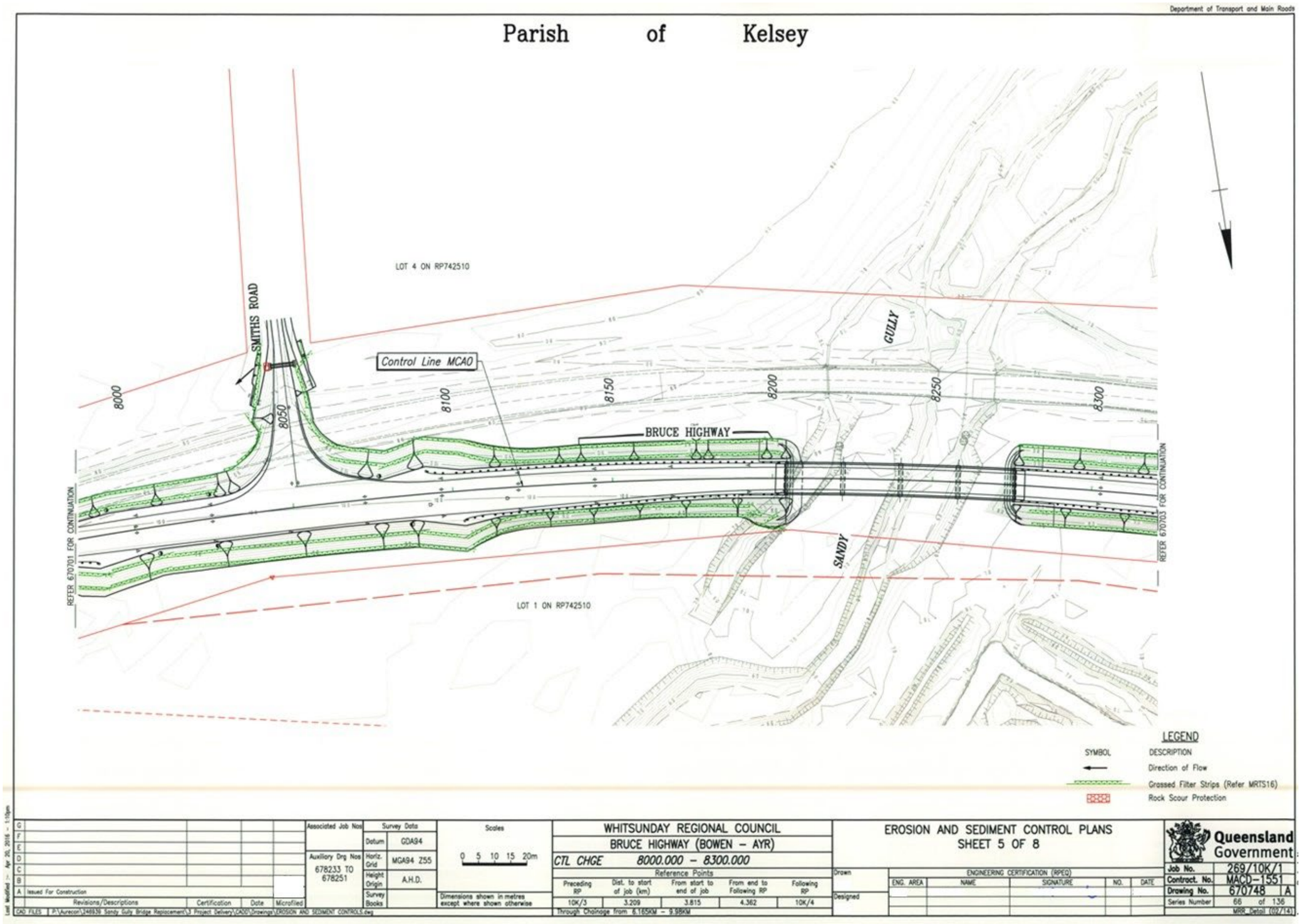


Figure 3.21(f) – Erosion and sediment control details – registered example 5

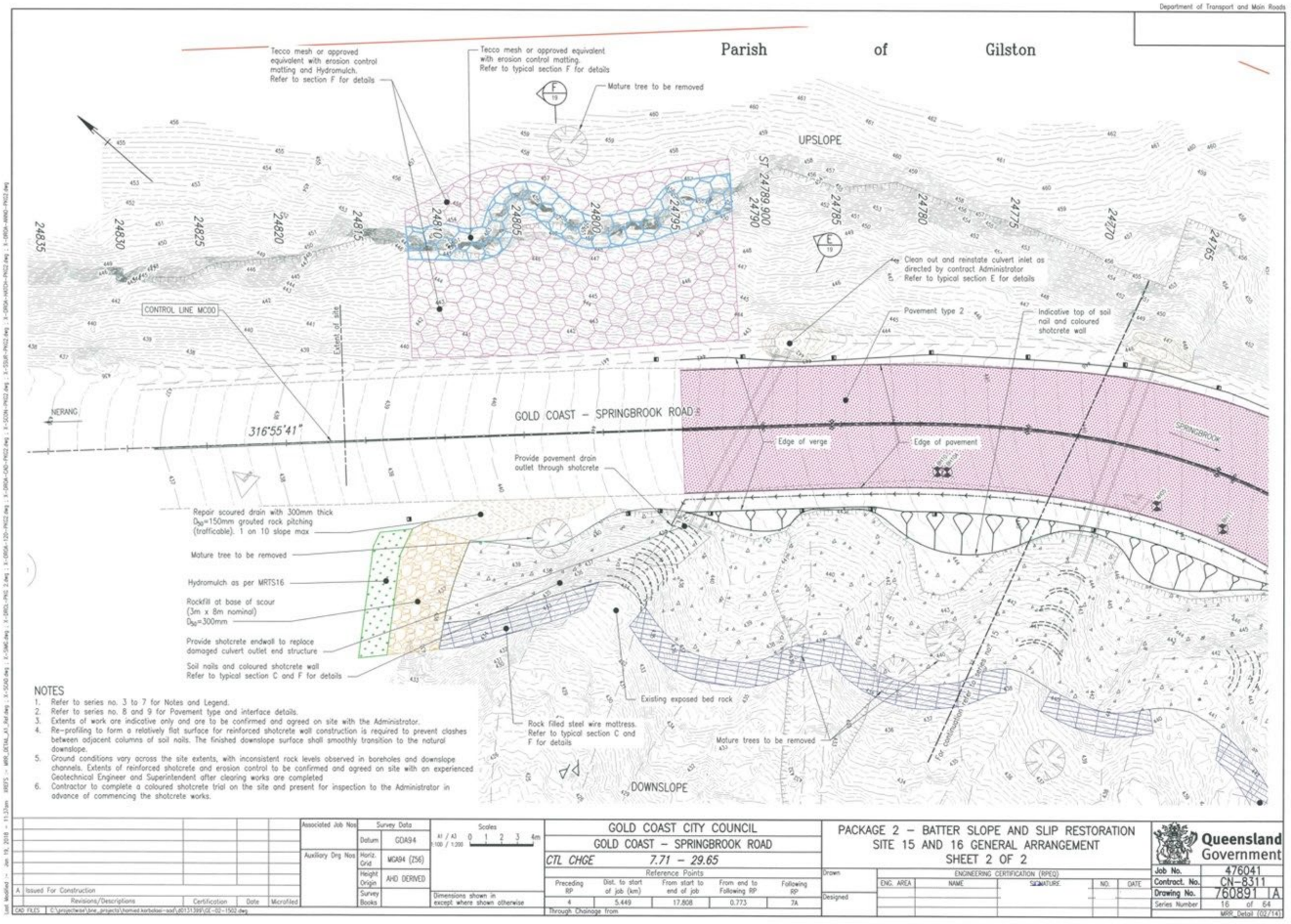
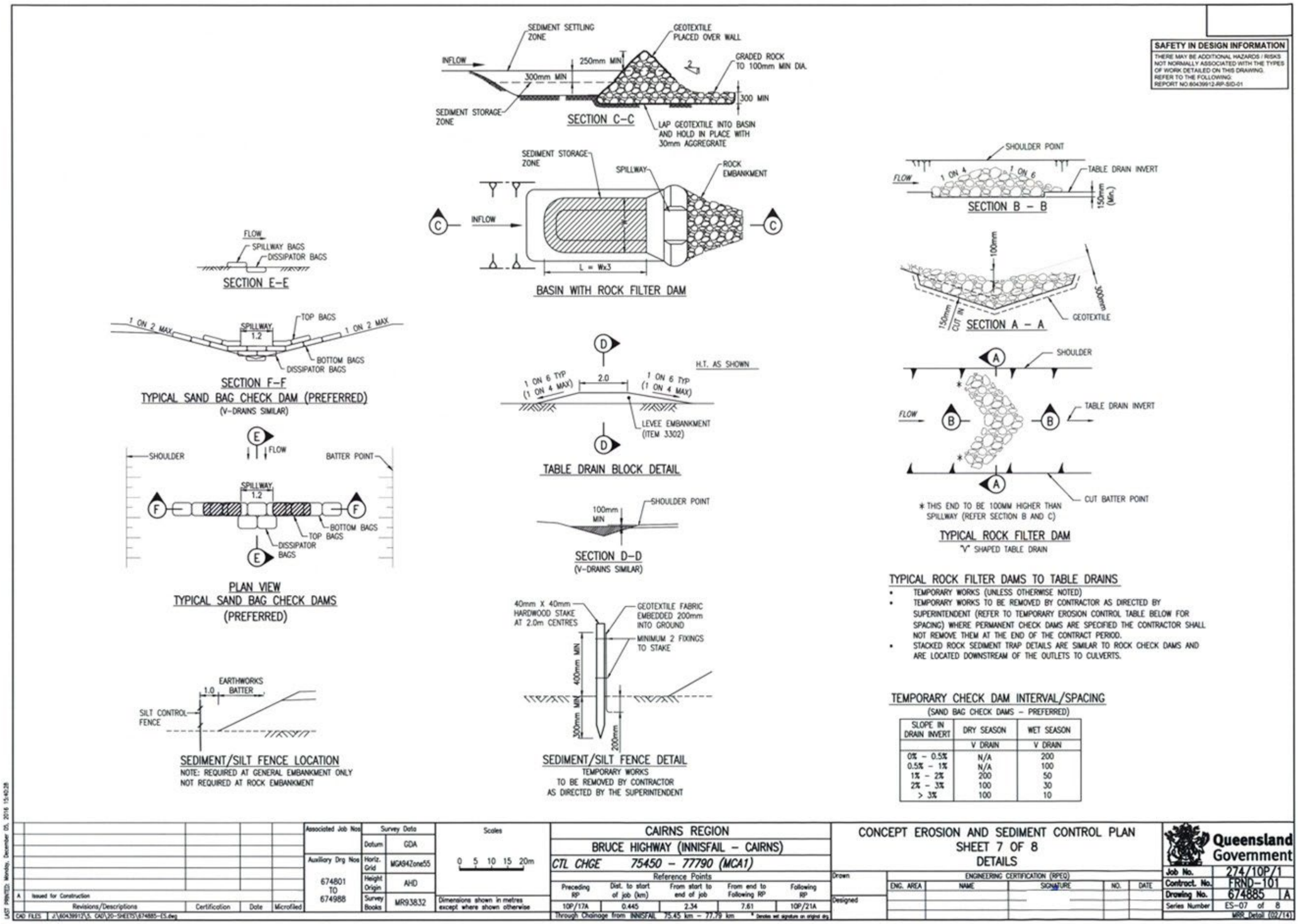


Figure 3.21(g) – Erosion and sediment control details – registered example 6



3.22 Extended design domain (EDD) and Design Exceptions (DE)

Refer to the Extended Design Domain and Design Exception section of the DDSPM Volume 2, Part 2, Chapter 2: *Urban Road design Drawings*, Section 2.21.

3.23 As Constructed

Refer to As Constructed section of the DDSPM Volume 2, Part 2, Chapter 2: *Urban Road design Drawings*, Section 2.22.

3.24 Road safety barrier system

Refer to Road safety barrier system section of DDSPM Volume 2, Part 2, Chapter 2: *Urban Road design Drawings*, Section 2.23.