



Sapphire to Woolgoolga Upgrade

Environmental Review

Material Re-use Strategy

**May 2016
Revision 0.8**

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1 Introduction

1.1 Introduction

The NSW Roads and Maritime Services (Roads and Maritime) are upgrading the Pacific Highway on the Mid North Coast of NSW between Sapphire and Woolgoolga. The upgrade consists of:

- A new southern section, 15 km dual carriageway, between Sapphire and South Woolgoolga largely within the existing highway corridor. The existing highway is being upgraded to provide a local traffic access route without the need to mix with high speed through traffic (refer to Figure 1.1)
- A new 'greenfield' northern section, 10 km bypass from South Woolgoolga to the west of Woolgoolga which re-joins the existing highway alignment in the vicinity of Arrawarra Beach Road (refer to Figure 1.1)

The principle objectives of the Pacific Highway Upgrade Program are detailed within Section 3.1 of the Sapphire to Woolgoolga Environmental Assessment (Connell Wagner, 2007) and specified below:

'The principal objectives of the Pacific Highway Upgrade Program are to:

- *Significantly reduce road accidents and injuries.*
- *Improve transport efficiency by reducing travel times and freight costs.*
- *Develop a route that involves the community and considers their interests.*
- *Provide a route that supports economic development.*
- *Manage the upgrading of the route in accordance with Ecologically Sustainable Development principles.*
- *Provide the best value for money.'*

On the 5th of December 2006, the NSW Minister for Planning declared the Sapphire to Woolgoolga upgrade (S2W) a major project under Section 75B(1)(b) of the Environmental Planning and Assessment Act and a critical infrastructure project under section 7C of the Act.

The Roads and Maritime completed an Environmental Assessment (EA) of the Sapphire to Woolgoolga Pacific Highway Upgrade (the Project) in November 2007. The EA identified a range of environmental, social and planning issues associated with the construction and operation of the Sapphire to Woolgoolga Pacific Highway Upgrade and proposed measures to mitigate or manage those potential impacts.

The EA was publicly exhibited between November 2007 and February 2008. Following public exhibition, submissions from stakeholders were received and addressed by the RTA in the Submissions Report which was lodged with the Director-General in July 2008.

After consideration of the EA and Submissions Report, the Minister for Planning approved the Sapphire to Woolgoolga Pacific Highway Upgrade project under Part 75J of the *Environmental Planning & Assessment Act 1979* (EP&A Act) on 15 January 2009, subsequently issuing a set of approval conditions for the project.

A significant project activity is the excavation, storage and management of excavated materials and the project team aims to beneficially re-use as much of the excavated materials as possible. Material that can be used for beneficial reuse for engineering purposes is deemed suitable. Material that does not meet engineering specifications is deemed to be unsuitable material. Unsuitable material must be placed in permanent locations within the road corridor or off site.

Due to a number of significant constraints including the size of the project, hilly terrain, land availability, tight road corridor, high rainfall, geotechnical conditions and the sensitive environment the management of unsuitable material has presented a significant challenge to the project team and a strategic approach must be applied to ensure sustainable outcomes are achieved.

The project is proposing to reuse excess material generated during construction of the project at various sites outside the Pacific Highway alignment. The material will be beneficially reused to ensure that the local landform suits its proposed use or to improve the amenity alongside the project, and provide beneficial future re-use opportunities at each of the sites. Re-use opportunities within the Project alignment have been maximised to date and are further detailed in Section 3.2.

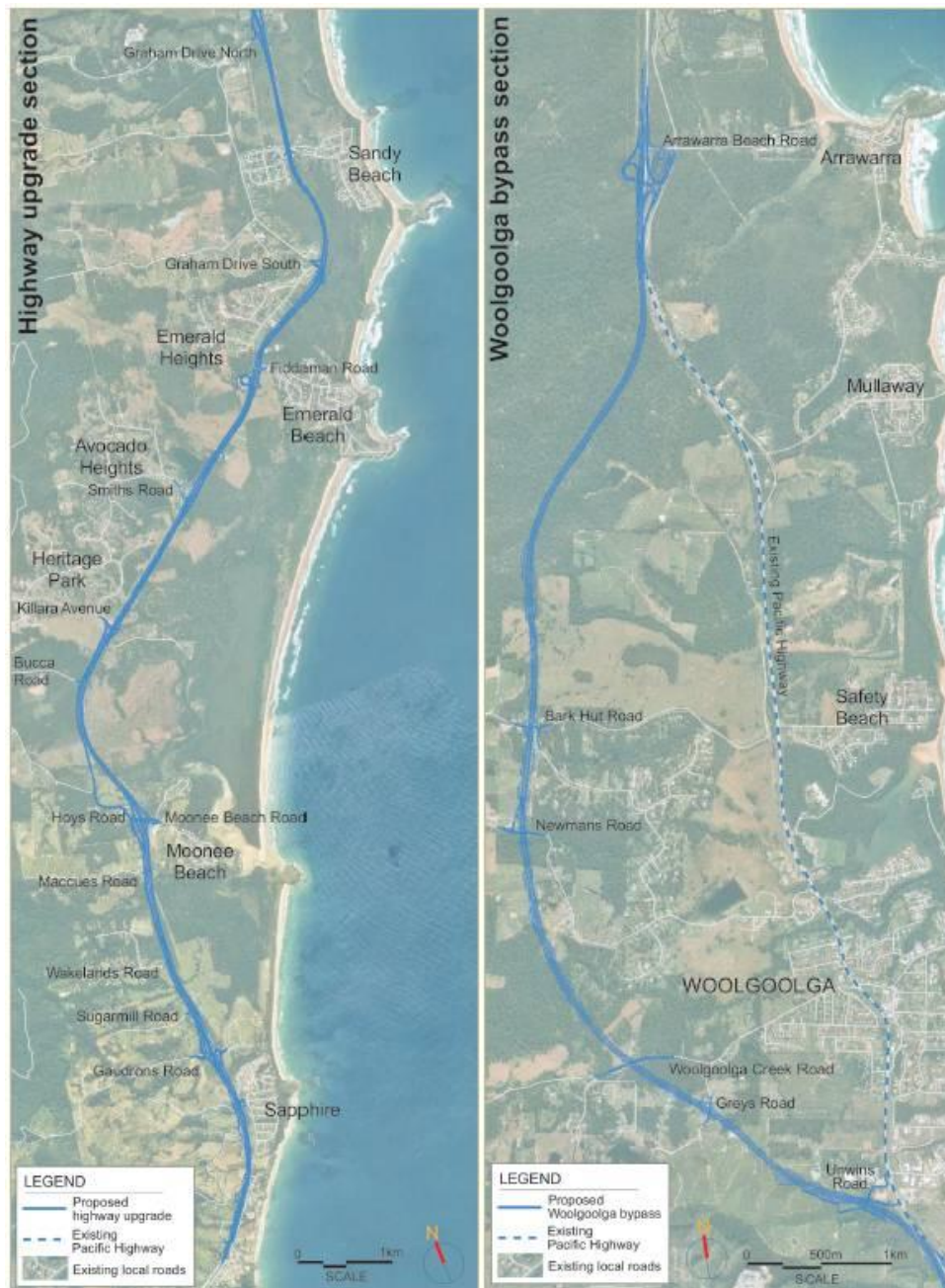


Figure 1.1: Sapphire to Woolgoolga Pacific Highway Upgrade Locality Plan.

1.2 Background

Ancillary temporary facility stockpiles were established during the first half of the Sapphire to Woolgoolga Pacific Highway upgrade due to insufficient space available within the tight road corridor alignment. The requirement for placement locations for surplus unsuitable material far exceeded estimations prior to project commencement, primarily associated with the effects of the record breaking La Nina weather event of 2010-2012 – “April 2010 to March 2012 was Australia’s wettest two-year period on record” (BoM, 2012). These stockpiles were previously assessed and approved in November 2010 and January 2011, respectively as part of the Ministers Condition of Approval 2.34 *Ancillary Facility*. These approvals provided for twelve temporary stockpiles. The Ancillary Facility condition in the Minister’s Conditions of Approval contemplates temporary construction stockpiles and do not provide a mechanism for beneficial re-use of a permanent nature.

The temporary status of the southern stockpiles has been reviewed by the Sapphire to Woolgoolga Pacific Highway Upgrade project to ascertain where material can be

beneficially reused with minimal environmental impacts. The Project is proposing to permanently retain unsuitable material at five (5) sites that provide a beneficial reuse, which were previously assessed as part of the temporary stockpile approval submitted to Department of Planning and Infrastructure (DP&I) on 23 November 2010 and approved on 6 January 2011. The surplus material has been placed as proposed in this modification application and environmental review. These proposed sites are referenced as follows in the previous ancillary facility approval:

- SPW 1 (South) - 817 – 817a Pacific Highway, Korora (Lot 50 DP 847756)
- SPW 3 (South) - 18c The Mountain Way, Sapphire Beach (Lot 4 DP 249773)
- SPW 4 (South) – 10 Gaudrons Road, Sapphire Beach (Lot 22 DP 1030498)
- SPW 6 (South) - 16 Sugarmill Road, Sapphire Beach (Lot 11 DP 243972)
- SPW 7 (South) - 1225 Pacific Highway, Moonee Beach (Lot 4 DP 599177)



Figure 1.2: Proposed beneficial reuse sites adjacent to project boundary for surplus unsuitable material

Further details of each site are provided in Section 2.

Section 3 describes the alternatives, need and justification for this proposal.

Stockpiled / other unsuitable material has been used on the project for:

- Where suitable engineering material, treated with lime and reused on site
- Landscaped mounds

- Subdivisions at Sapphire and Emerald
- Gun Club development
- Coffs Harbour City Council landfill day-cover material

This document assesses the environmental risks of the proposed beneficial reuse of surplus unsuitable material on Roads and Maritime land through earthworks to improve landform for potential future development or to improve amenity for adjacent landowners and describes the environmental management controls and safeguards to manage the risks.

1.3 Legislative Requirements

The Project was declared a critical infrastructure project under section 75C and a major project under section 75B (1) (b) of the *Environmental Planning and Assessment Act 1979* through NSW Government Ministerial orders 10507 and 10509. The Minister for Planning approved the Sapphire to Woolgoolga Pacific Highway Upgrade project under Part 75J of the *Environmental Planning & Assessment Act 1979* (EP&A Act) on 15 January 2009, subsequently issuing a set of approval conditions for the project. These conditions were subsequently modified on 14 November 2009, 22 February 2010, 9 September 2010, 29 October 2010, 25 February 2011, 19 October 2012 and 5 June 2013.

The ministerial order specifies the Project would entail:

'Development for all associated or ancillary works, activities, uses, structures or facilities for the purposes of the Project, and includes (but is not limited to) works, activities, uses, structures or facilities for the following:

- a) Construction (including demolition works) and operation (excluding maintenance) of the Project;*
- b) Access for construction and operation of the Project including access for pedestrians, public transport and vehicles;*
- c) Environmental management and pollution control for the Project;*
- d) Associated interchanges, intersections, bridges, overpasses, ramps, service roads and road modifications for the Project;*
- e) Any changes to the route of the existing carriageway or road for the Project;*
- f) Any re-alignment, modification, demolition or replacement of the existing carriageway or road for the Project; and*
- g) Any winning or obtaining extractive material as part of the construction work for the Project.*

Development does not include activities comprising of surveys, test drilling, test excavations, preliminary geotechnical investigations or the like associated with the design and environmental assessments required for the Project prior to the commencement of construction.'

The proposal is consistent with the Ministerial Orders for the project, in particular items a) and c) specifically, to facilitate the construction of the Highway to a standard required by Roads and Maritime. Further, the preferred option

- has minimal environmental risk,
 - has environmental benefits including beneficial reuse,
 - minimises greenhouse gas emissions (in comparison to long distance haulage to other locations),
 - improves visual amenity for some of the community;
 - minimises operational noise impacts from the Highway traffic at some locations;
- and

In accordance with Section 4 O1.1 of the Environment Protection Licence (EPL) for the Project, all licensed activities must be carried out in a competent manner. This includes –

- (a) *the processing, handling, movement and storage of materials and substances used to carry out the activity; and*
- (b) *the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.*

All five sites are currently included in the EPL premises boundary and will be managed in accordance with EPL 13278 and the DP&I approved Construction Environment Management Plan (CEMP) until stabilised.

In accordance with the *Protection of the Environment Operations Act 1997*, a completed and signed notice under Section 143 (3A) is not required prior to transporting the material, as the land is either in the project boundary or owned by the Roads and Maritime. This material is on Roads and Maritime owned land.

1.4 Purpose of this Environmental Assessment

The purpose of this Environmental Assessment is to:

- Describe the proposed activity and scope of works;
- Assess the environmental impacts associated with undertaking the proposed works; and
- Identify the environmental management and mitigation measures outlined in the MCoA (Minister's Conditions of Approval), Statement of Commitments (SoC), Project EA, and approved CEMP and associated sub-plans that are relevant to the proposed works.

Roads and Maritime have reviewed the original approval and have determined that the requirement to manage surplus unsuitable material outside the project boundary was not considered previously in the approval documents, a modification to the project approval to facilitate the beneficial reuses identified in this assessment is therefore being submitted for determination by the Department of Planning and Infrastructure.

2 Description of Activity

2.1 Location and Setting

The Sapphire to Woolgoolga project proposes to permanently retain surplus material in five separate locations adjoining the Sapphire to Woolgoolga Pacific Highway Upgrade on Roads and Maritime owned land.

Each proposal provides site-specific benefits for future land uses or greater benefit to the community and surrounding environment. The associated benefits of retaining the surplus material include utilising the material as engineered fill, carrying out specific earthworks for approved landuse, noise attenuation, screening, and landscape aesthetics and take into account greenhouse gas generation where possible. In all cases the retention of the surplus material has been designed to ensure adjoining land holders are not adversely impacted.

Whilst all of the locations where the material is proposed to be retained currently lie within the EPL premises boundary and are approved ancillary facilities, eventually the locations will be re-sold and exist outside the road corridor. Thus, the importance of the material being verified that it satisfies the Excavated Natural Material (ENM) criteria as prescribed by the *Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption*. Documentation demonstrating that the material meets the Excavated Natural Material Exemption 2012 criteria is included in Appendix F.

In addition to the five below-listed locations where it is proposed to permanently retain surplus material, the project has implemented alternative reuse opportunities within the project boundary in parallel with the proposal described in this assessment. These locations are examined for environmental aspects and consistency with the Ministers Approval, Statement of Commitments, the Ministerial Order, project objectives, project environmental assessment and detailed design requirements. A listing of these reuse opportunities that have been determined as consistent by Roads and Maritime following consultation with the relevant agencies are included in Section 3.

The identified five areas that are suitable for the material to be beneficially retained are summarised in the Table 2.1 below, and also discussed in Sections 2.1.1 to 2.1.5 in further detail.

Table 2.1: Proposal and beneficial reuse issues for the five nominated areas.

Site Identification	Pre Existing Condition	Proposal for permanent retention of material	Re-Use Benefit	Quantity of Material (m ³)
Reuse Location 1 Roads and Maritime-owned land: 817 – 817a Pacific Highway, Korora (Lot 50 DP 847756).	The site was previously utilised as a banana plantation. The site is currently being utilised as a temporary stockpile site approved by DP&I as ancillary facility – SPW 1.	Material has been used to carry out earthworks to create an improved landform comprising of a level building pad/area.	Improved landform comprising of a level pad/area.	1,236
Reuse Location 2 Roads and Maritime-owned land: 18c The Mountain Way, Sapphire Beach (Lot 4 DP 249773).	The site was previously utilised as a banana plantation. The site is currently being utilised as a temporary stockpile site approved by DP&I as ancillary facility – SPW 3.	Material has been used to carry out earthworks to improve land for future development.	Improved landform comprising flat terraces for potential agricultural uses.	60,300
Reuse Location 3 Roads and Maritime-owned land: 10 Gaudrons Road, Sapphire Beach (Lot 22 DP 1030498).	The site was previously a rural residential parcel of land. The site is currently being utilised as a temporary stockpile site approved by DP&I as ancillary facility – SPW 4.	Material has been used to carry out earthworks to provide improvements to low-lying areas within the site and drainage benefits for residences to the west.	Improved landform by providing improvements to low-lying areas within the site and drainage benefits for residences to the west.	1,268
Reuse Location 4 Roads and Maritime-owned land: 16 Sugarmill Road, Sapphire Beach (Lot 11 DP 243972).	The site was previously a rural residential parcel of land. The site is currently being utilised as a temporary stockpile site approved by DP&I as ancillary facility – SPW 6.	Material has been used to carry out earthworks to provide an improved landform, screening and noise benefits for residences to the west.	Improved landform by providing a level section. Screening and noise attenuation.	4,219
Reuse Location 5 Roads and Maritime-owned land: 1225 Pacific Highway, Moonee Beach (Lot 4 DP 599177).	The site was previously a rural residential parcel of land. The site is currently being utilised as a temporary stockpile site approved by DP&I as ancillary facility – SPW 7.	Material has been used to carry out earthworks to provide a landscape mound for screening.	Screening, noise attenuation, landscape aesthetics.	16,084
TOTAL VOLUME OF BENEFICIAL RE-USES 1 TO 5				83,107

2.1.1 Reuse Location 1: 817 – 817a Pacific Highway, Korora (SPW1)

The property, 817 – 817a Pacific Highway, Korora, is currently owned by Roads and Maritime, and was the site of a temporary stockpile that was utilised throughout construction of the S2W project. This site was previously assessed as part of the temporary stockpile submission to DP&I in November 2010 – *Site SPW1* (approved 6 January 2011) in accordance with the Ministers Condition of Approval 2.34 Ancillary Facilities.

As the property is expected to be sold following project completion, the project is proposing to retain suitable (ENM) material in this location that has been placed to provide a level building pad that has been incorporated into the existing landform.

The area was already disturbed resulting from the area being previously utilised as a banana farm and subsequently as a temporary stockpile site. No further clearing was required to create the proposed level building pad, and approximately 1,236m³ of material has been utilised in this location. Table 2.1.1 summarises the potential environmental impacts and associated mitigation measures associated with SPW1.

The regraded landform does not change the original catchment boundaries and is located on land that sits above the 100 year ARI flood level. The regraded landform includes a catch drain to spread the flow on the downstream side of the regraded landform. The proposed regraded landform will have no significant impact to the local drainage or flood levels in the area.

Table 2.1.1 SPW 1 potential environmental impacts and mitigation measures

Environmental aspect	Potential impact	Mitigation measures
Noise & Vibration	Minor noise and vibration will occur during the reshaping works however these works will be temporary & and reshaping works have been complete.	Mitigation measures implemented as prescribed in the Noise and Vibration Management Plan.
Aboriginal Heritage	The area has already been disturbed whereby the potential impact to Aboriginal heritage is expected to be nil.	Mitigation measures implemented as prescribed in the Heritage Management Plan.
Non-Aboriginal Heritage	The area has already been disturbed whereby the potential impact to non-Aboriginal heritage is expected to be nil.	Mitigation measures implemented as prescribed in the Heritage Management Plan.
Flora & Fauna	No additional clearing required to complete the final shape, whereby the impact to flora and fauna is expected to be nil.	Mitigation measures implemented as prescribed in the Flora and Fauna Management Plan.

Water & Soil Management	Existing controls maintained throughout the reshaping until the site is stabilised to prevent any sediment from entering the farm dam which exists between the two mounds. Areas have been rectified.	Mitigation measures implemented as prescribed in the Soil Erosion and Water Management Plan.
Landscape & Visual Design	No further clearing required and the final shape was supported by the general consensus of residences within line of sight, whereby potential impact to visual amenity is expected to be minimal.	The landscape design plan has been implemented as per Appendix A.
Air Quality	Minor dust generation may occur during the reshaping works, however this is temporary and is expected have a negligible impact once completed. Works have been completed.	Mitigation measures implemented as prescribed in the Air Quality Management Plan.
Waste	Waste generation is expected to be minimal during construction. The proposal reduces waste material (unsuitable surplus) by reusing it to achieve a beneficial use (future development).	Mitigation measures implemented as prescribed in the waste, reuse, recycle and energy management plan.

There is unanimous support for the retention of the surplus material in this location from residents, with all 10 residents consulted agreeing to the permanent placement of material at this location.

Two residents did not support the original proposal on the grounds that they opposed a possible future dwelling being built on the land on the northern side. However, the northern mound has subsequently been removed from the proposal and the original landform reinstated to its original state. The retention of minor filling of the southern area (refer Figure 2.1) of the site to provide a level building pad is proposed.

Appendix A includes the regraded design and cross sections, which indicate the varying heights of the level pad/area. The shape and regrading of the site has been assessed through the Roads and Maritime/Joint Venture design change request (DCR) process through a series of reviews.

The area was already disturbed resulting from the area being previously utilised as a banana farm and subsequently as a temporary stockpile site. No further clearing was required to create the agricultural terraces, and approximately 60,300m³ of material is proposed to be retained in this location. Table 2.1.2 summarises the potential environmental impacts and associated mitigation measures associated with SPW3.

Table 2.1.2 SPW 3 potential environmental impacts and mitigation measures

Environmental aspect	Potential impact	Mitigation measures
Noise & Vibration	Minor noise and vibration will occur during the reshaping works however these works will be temporary. Reshaping works have been completed.	Mitigation measures prescribed in the Noise and Vibration Management Plan implemented.
Aboriginal Heritage	The area has already been disturbed whereby the potential impact to Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Non-Aboriginal Heritage	The area has already been disturbed whereby the potential impact to non-Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Flora & Fauna	No additional clearing required to complete the final shape, whereby the impact to flora and fauna is expected to be nil.	Mitigation measures prescribed in the Flora and Fauna Management Plan implemented.
Water & Soil Management	Existing controls maintained throughout the reshaping until the site is stabilised. Areas have been stabilised.	Mitigation measures prescribed in the Soil Erosion and Water Management Plan implemented.
Landscape & Visual Design	No further clearing required to complete the final shape.	The landscape design plan has been implemented as per Appendix A.
Air Quality	Minor dust generation may occur during the reshaping works, however this is temporary and is expected have a negligible impact once completed. Works complete.	Mitigation measures prescribed in the Air Quality Management Plan implemented.
Waste	Waste generation is expected to be minimal during construction. The proposal reduces waste material (unsuitable surplus) by reusing it to achieve a beneficial use (future agricultural purposes).	Mitigation measures prescribed in the waste, reuse, recycle and energy management plan implemented.



Temporary stockpile condition (photo 1) and proposed permanent shape (photo 2) at SPW3

2.1.3 Reuse Location 3: 10 Gaudrons Road, Sapphire Beach (SPW4)

The property, 10 Gaudrons Road, Sapphire Beach, is currently owned by Roads and Maritime, and was the site of a temporary stockpile that was utilised throughout construction of the S2W project. This site was previously assessed as part of the temporary stockpile submission to DP&I in November 2010 – Site SPW4 (approved 6 January 2011) as part of the Ministers Condition of Approval 2.34 Ancillary Facilities.

As the property is expected to be sold following project completion, the project is proposing to permanently retain suitable (ENM) material in this location that provides a level area and an open channel that will increase the value of the land due to an improved landform that will reduce the duration that the block will be inundated by water. The design of the level area has been incorporated into the existing landform and approximately 1,268m³ of material is proposed to be utilised in this location. Table 2.1.3 summarises the potential environmental impacts and associated mitigation measures associated with SPW4.

Table 2.1.3 SPW 4 potential environmental impacts and mitigation measures

Environmental aspect	Potential impact	Mitigation measures
Noise & Vibration	Minor noise and vibration will occur during the reshaping works however these works will be temporary. These works have been completed.	Mitigation measures prescribed in the Noise and Vibration Management Plan implemented.
Aboriginal Heritage	The area has already been disturbed whereby the potential impact to Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Non-Aboriginal Heritage	The area has already been disturbed whereby the potential impact to non-Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Flora & Fauna	No additional clearing was required to complete the final shape, whereby the impact to flora and fauna is expected to be nil.	Mitigation measures prescribed in the Flora and Fauna Management Plan implemented.

Water & Soil Management	Existing controls maintained throughout the reshaping until the site is stabilised. These works have been completed.	Mitigation measures prescribed in the Soil Erosion and Water Management Plan implemented.
Landscape & Visual Design	No further clearing was required and the final shape was supported by all residents within line of sight, whereby potential impact to visual amenity is expected to be minimal.	The landscape design plan has been implemented as per Appendix A.
Air Quality	Minor dust generation may occur during the reshaping works, however this is temporary and is expected have a negligible impact once completed.	Mitigation measures prescribed in the Air Quality Management Plan implemented.
Waste	Waste generation is expected to be minimal during construction. The proposal reduces waste material (unsuitable surplus) by reusing it to achieve a beneficial use (property development).	Mitigation measures prescribed in the waste, reuse, recycle and energy management plan implemented.



Figure 2.3 – Reuse Location 3: 10 Gaudrons Rd, Sapphire Beach (SPW4)



Current condition at SPW4

2.1.4 Reuse Location 4: 16 Sugarmill Road, Sapphire Beach (SPW6)

The property, 16 Sugarmill Road, Sapphire Beach, is currently owned by Roads and Maritime, and was the site of a temporary stockpile that was utilised throughout construction of the S2W project. This site was previously assessed as part of the temporary stockpile submission to DP&I in November 2010 – *Site SPW6* (approved 6 January 2011) as part of the Ministers Condition of Approval 2.34 Ancillary Facilities.

As the property is expected to be sold following project completion, the project is proposing to retain suitable (ENM) material in this location to provide a level pad that will increase the value of the land due to an improved landform. The design of the level pad has been incorporated into the existing landform. Table 2.1.4 summarises the potential environmental impacts and associated mitigation measures associated with SPW6.

Table 2.1.4 SPW 6 potential environmental impacts and mitigation measures

Environmental aspect	Potential impact	Mitigation measures
Noise & Vibration	Minor noise and vibration will occur during the reshaping works however these works will be temporary. Reshaping works have been completed.	Mitigation measures prescribed in the Noise and Vibration Management Plan implemented.
Aboriginal Heritage	The area has already been disturbed whereby the potential impact to Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Non-Aboriginal Heritage	The area has already been disturbed whereby the potential impact to non-Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.

Flora & Fauna	No additional clearing required to complete the final shape, whereby the impact to flora and fauna is expected to be nil.	Mitigation measures prescribed in the Flora and Fauna Management Plan implemented.
Water & Soil Management	Existing controls maintained throughout the reshaping until the site is stabilised. Areas have been stabilised.	Mitigation measures prescribed in the Soil Erosion and Water Management Plan implemented.
Landscape & Visual Design	No further clearing required and the final shape was supported by the one resident within line of sight, whereby potential impact to visual amenity is expected to be minimal.	The landscape design plan has been implemented as per Appendix A.
Air Quality	Minor dust generation may occur during the reshaping works, however this is temporary and is expected to have a negligible impact once completed. Works have been completed.	Mitigation measures prescribed in the Air Quality Management Plan implemented.
Waste	Waste generation is expected to be minimal during construction. The proposal reduces waste material (unsuitable surplus) by reusing it to achieve a beneficial use (property development).	Mitigation measures prescribed in the waste, reuse, recycle and energy management plan implemented.

The one resident with line of sight to this reuse location agreed to the permanent placement of excess material on this site (refer Appendix C).

The area was already disturbed resulting from the area being previously utilised as a cleared pasture and subsequently as a temporary stockpile site. No further clearing was required to create a level pad, and approximately 4,219m³ of material is proposed to be retained in this location.

The proposed pad is located above the 8.45m 100 year ARI flood level. The mound will result in no significant impact to the local drainage and the 100 year ARI flood level.



Figure 2.4 – Reuse Location 4: 16 Sugarmill Road SPW6



Temporary stockpile condition (photo 1) and proposed permanent shape (photo 2) at SPW6

2.1.5 Reuse Location 5: 1225 Pacific Highway, Moonee Beach (SPW7)

The property, 1225 Pacific Highway Moonee Beach, is currently owned by Roads and Maritime, and was the site of a temporary stockpile that was utilised throughout construction of the S2W project. This site was previously assessed as part of the temporary stockpile submission to DP&I in November 2010 – *Site SPW7* (approved 6 January 2011) as part of the Ministers Condition of Approval 2.34 Ancillary Facilities.

As the property is expected to be sold following project completion, the project are proposing to retain suitable (ENM) material in this location to provide a landscape mound site that will increase the value of the land due to an improved landform.

The area was already disturbed resulting from the area being previously cleared for grazing activities and subsequently as a temporary stockpile site. No further clearing was required to create the landscaped mound, and approximately 16,084m³ of material is proposed to be retained in this location. Table 2.1.5 summarises the potential environmental impacts and associated mitigation measures associated with SPW7.

The proposed mound will have no significant impact to the local drainage and 100 year ARI flood levels.

Table 2.1.5 SPW 7 potential environmental impacts and mitigation measures

Environmental aspect	Potential impact	Mitigation measures
Noise & Vibration	Minor noise and vibration will occur during the reshaping works however these works will be temporary. Reshaping works have been completed.	Mitigation measures prescribed in the Noise and Vibration Management Plan implemented.
Aboriginal Heritage	The area has already been disturbed whereby the potential impact to Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Non-Aboriginal Heritage	The area has already been disturbed whereby the potential impact to non-Aboriginal heritage is expected to be nil.	Mitigation measures prescribed in the Heritage Management Plan implemented.
Flora & Fauna	No additional clearing required to complete the final shape, whereby the impact to flora and fauna is expected to be nil.	Mitigation measures prescribed in the Flora and Fauna Management Plan implemented.
Water & Soil Management	Existing controls maintained throughout the reshaping until the site is stabilised. Area has been restabilised.	Mitigation measures prescribed in the Soil Erosion and Water Management Plan implemented.
Landscape & Visual Design	No further clearing required and the final shape was supported by all residences within line of sight, whereby potential impact to visual amenity is expected to be minimal.	The landscape design plan has been implemented as per Appendix A.
Air Quality	Minor dust generation may occur during the reshaping works, however this is temporary and is expected have a negligible impact once completed. Works have been completed.	Mitigation measures prescribed in the Air Quality Management Plan implemented.
Waste	Waste generation is expected to be minimal during construction. The proposal reduces waste material (unsuitable surplus) by reusing it to achieve a beneficial use (property development).	Mitigation measures prescribed in the waste, reuse, recycle and energy management plan implemented.

Three residents with line of sight were consulted about the permanent placement of excess material at this location. All three residents supported the proposal (refer Appendix C).

Appendix A contains cross sections and the landscape design of the mound. The final shape and regrading of the site has been assessed through the Roads and Maritime/Joint Venture DCR process through a series of reviews.



Figure 2.5 – Reuse Location 5: 1225 Pacific Highway SPW7



Temporary stockpile condition (photo 1) and proposed permanent shape (photo 2) at SPW7

2.2 Description of Works

The purpose of this Environmental Review is to evaluate if any of the proposed applications pose an unacceptable risk/s to the environment.

The project has identified five sites where it is proposed to permanently retain unsuitable material that provide a beneficial reuse,

No additional clearing was required to access each location.

The works were undertaken during approved standard construction working hours, consistent with the EPL and Project Approval.

An Erosion and Sediment Control Plan has been developed for each location, and erosion and sediment controls installed prior to works commencing. The stockpiles will be maintained until stabilised and revegetated, and the erosion and sediment controls removed.

2.3 Site Establishment

A series of onsite operational processes have been followed to ensure the relevant conditions and requirements are adhered to.

In summary, these consist of –

1. Delineation of reuse area boundary using flagging tape or pegs
2. Establish erosion and sediment controls
3. Placement and compaction of ENM reuse material as engineered fill
4. Following compaction shape and rehabilitate each area as per landscape design
5. Removal of erosion and sediment controls once surface stabilisation confirmed

A checklist has been established and implemented for the reshaping of the material, listing the above requirements and any post-use requirements, required by Roads and Maritime. The checklist has been managed by the LFHJV Environmental Coordinator / Engineer and saved on the records system for future reference or will be made available upon request.

2.4 Reuse specifications

The regrading of the spoil material on Roads and Maritime land adjacent to the S2W Upgrade has been undertaken in accordance with:

- Coffs Harbour City Council (CHCC) Development Specification Design, 0011 Development and Subdivision of Land; and
- *AS 3798 – Guidelines on earthworks for commercial and residential developments* Minimum Level 1 geotechnical inspection and testing
- *AS 2870 – Residential slabs and footings – construction (as required)*.

Where required, the works have been supervised by a geotechnical investigation and testing authority (GITA) representative meeting the requirements of Cl 8.4 of AS 3798. At the completion of the works a works as executed (WAE) plan will be prepared showing the as-constructed surface profile and fill depths and will include all test reports. Where required, the WAE information is to also include a report prepared by the GITA as per the requirements of Cl 8.2 of AS 3798 and a site classification in accordance with AS2870.

In accordance with the Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption Under Part 6, Clause 51 and 51A, all material utilised in accordance with this material reuse strategy has been tested in accordance with the EPA Excavated Natural Material Exemption October 2012 prior to works commencing,.

Documentation demonstrating that the material has been tested in accordance with and meets the *Excavated Natural Material Exemption October 2012* specifications has been obtained and provided to Roads and Maritime and EPA and is included as Appendix F.

Each site will be included in the Landscaping Maintenance Period unless otherwise disposed of by Roads and Maritime prior to the end of the Landscaping Maintenance Period.

3 Need and Options Considered

3.1 Need

Resulting from the project's cut and fill operations it has become apparent that there is excess material remaining once the project has been completed.

A total volume of 861,160m³ of unsuitable material has been produced over the duration of the project. The placement of this extremely high volume of material has been a significant challenge to the project team in consideration of the project constraints including shortage of beneficial spoil re-uses sites, tight road corridor, sensitive environment and extreme rainfall. The LFHJV aims to beneficially re-use as much unsuitable material as far as practicable and to date, approximately 484,118m³ of unsuitable material has been beneficially re-used for landscaping / noise mounds, flattening batters and lime stabilisation (Refer to Table 3.2). A further 377,042m³ of unsuitable material requires placement in permanent locations.

3.2 Beneficial Reuses to Date

Table 3.2 below summarises the beneficial re-use opportunities of surplus unsuitable material implemented by the S2W project to date.

Table 3.2: Summary of Beneficial Reuses to Date

Site Identification	Background	Proposal	Re-Use Benefit	Quantity Material (m ³)
Fill 7 East	Batter widening	Widening of Fill 7 East within road reserve	Placement of surplus unsuitable material in available footprint within road reserve.	23,000
Cut 8 West	Landscape mound in gore area.	Landscape mound located in gore area, between western Moonee Interchange ramps within road reserve.	Aesthetic and acoustic screening for residents west of interchange.	8,930

Cut 18/Fill 18 East	Landscape mound and rehabilitation of temporary construction basin.	Landscape mound on eastern side of Cut 18 / Fill 18.	Aesthetic screening and noise reduction benefits.	29,690
Cut 21 borrow	Rehabilitation of borrow area	Re-use of unsuitable material to rehabilitate Cut 21 borrow and create house pad for future sale by Roads and Maritime property division.	Borrow rehabilitation and house pad	24,000
Cut 21 East	Landscape mound	Landscape mound on eastern side of Cut 21	Aesthetic screening and noise reduction benefits.	2,500
Cut 22 West	Landscape mound	Landscape mound on western side of Cut 22	Aesthetic screening including reduction of headlight glare and noise reduction benefits.	4,500
Fill 23 West	Noise mound	Noise mound replacing 200m of concrete noise wall	Acoustic benefits and beneficial reuse reducing demand on resources (concrete wall).	13,300
Fill 24 West	Landscape mound	Landscape mound on western side of Fill 24	Aesthetic screening and noise reduction benefits.	15,000
Cut 35 borrow	Rehabilitation of borrow area	Re-use of unsuitable material to rehabilitate Cut 35 borrow and create suitable landform for future sale by Roads and Maritime property division.	Borrow rehabilitation	145,000
Hoys Road, Moonee	Landscape Mound	Landscape mound on western side of Hoys road, Moonee	Aesthetic screening and noise reduction benefits.	10,698
North	Private	Earthworks for use in	Earthworks for	50,000

Sapphire Development	Development approved by DP&I	approved development	use in approved development	
Emerald Seniors Development	Private Development approved by CHCC	Earthworks for use in approved development	Earthworks for use in approved development	40,000
Coffs Harbour City Council landfill day cover	CHCC Englands Road landfill	Provision of surplus unsuitable to CHCC for beneficial re-use as day cover.	Day cover material required by CHCC to run municipal landfill.	15,000
Gun Club Emerald Beach	Private Development approved by CHCC	Earthworks for use in approved development	Earthworks for use in approved development.	2,500
Lime Stabilisation	Lime drying of wet material	Use of lime stabilisation where feasible to dry wet material for re-use in highway embankment.	Highway construction	100,000
TOTAL VOLUME BENEFICIALLY RE-USED TO DATE				484,118

While a huge effort has been applied to identify and utilise beneficial re-use opportunities for surplus unsuitable material totalling 484,118m³ to date, there remains a need to identify solutions for the remaining 377,042m³ of unsuitable material.

3.3 Proposed Solution

The solution for the balance of 377,042m³ of unsuitable material comprises two primary components:

1. Proposed beneficial uses 1 to 5; and
2. Cut 29 Borrow Rehabilitation and Other

3.3.1 Proposed Beneficial Reuses 1 to 5

Proposed Beneficial Re-uses 1 to 5 are fully detailed in Section 2 and comprise the purpose of this Environmental Review. The total volume of beneficial re-uses 1 to 5 is 83,107m³ (refer to Table 2.1). Therefore if these opportunities are realised the remaining volume of unsuitable material to be managed is 377,042 – 83,107 = 293,935m³. This volume is addressed below in Section 3.3.2.

As noted in Section 1.4 this Environmental Review will be provided to the Department of Planning and Infrastructure for determination of a modification application to facilitate the permanent retention of material at beneficial re-use locations 1 to 5, following consultation with agencies in accordance with Section 4.2.

3.3.2 Cut 29 Borrow Rehabilitation and Other Re-use Opportunities

Cut 29 borrow area was developed in order to source the required concrete aggregates to construct the main line concrete pavements required by the Sapphire to Woolgoolga project specification. The rehabilitation of the extraction area along with some other re-use opportunities within the road reserve described in Table 3.3 provided sufficient capacity to re-use the remaining 293,935m³ of unsuitable material.

The Cut 29 borrow area has no more capacity to receive unsuitable material and all available opportunities within the road reserve have been utilised.

Table 3.3: Alternate re-use opportunities to minimise risks at Cut 29.

Site Identification	Background	Proposal	Re-Use Benefit	Quantity of Material (m ³)
Fill 8 West	Landscape mound	Landscape mound western side of Fill 8 on the northwest side of Cunningham's Creek.	Headlight screening and acoustic benefit for residences to the west.	11,000
Cut 10 - Hoys to Bucca Road	Batter widening	Widening batter Hoys Road	Batter widening within road reserve.	7,000
Cut 13 West	Landscape mounds	Landscape mounds west of Fiddaman Road interchange.	Areas available in gore and toe of western interchange.	4,000
Woolgoolga Creek Road west	Landscape mound	Landscape mound on redundant section of Woolgoolga Creek Road western abutment following opening of grade separated bridge.	Rehabilitation of old road pavement and revegetation with native species.	2,000
TOTAL VOLUME AVAILABLE WITHIN ROAD RESERVE				24,000

3.4 Rejected Solutions

For completeness, Table 3.4 below describes some of the potential beneficial re-use options which were investigated throughout the duration of the project. While several had positive benefits such as acoustic screening or beneficial re-use on other projects these additional opportunities were rejected for the reasons stated including unacceptable flora and fauna impacts associated with required clearing within the road reserve prior to enabling reuse and aesthetic impacts. The identified constraints led to rejection of these proposals due to unacceptable environmental impact, incompatibility with reuse requirements or lack of approvals for third party re-use.

Table 3.4: Rejected unsuitable material solutions.

Site Identification	Background	Proposal	Reason for rejection	Potential Quantity of Material (m ³)
CH 10600 to CH 10800 east	Potential location within road reserve east of south bound carriageway.	Clearing of 1 Ha of native vegetation to establish permanent landscape mound with acoustic benefits for proposed subdivision east of alignment.	Required clearing of a significant stand of 1.05ha of native forest including 16 potential hollow bearing trees. Medium term aesthetic impact associated with removal of a remnant stand of vegetation between the highway alignment and cleared agricultural land.	30,000
CH 30400 to CH 30600 east	Potential location within road reserve.	Clearing of 0.3 Ha of native vegetation between Little Arrawarra Creek and Embankment Road.	0.3 Ha clearing of native vegetation, aesthetic impacts and habitat connectivity.	5,000
CH 30600 to CH 30800 east	Potential location within road reserve of new alignment and old alignment.	Landscape and noise mound north of Embankment Road.	Conflict with power lines, aesthetic impacts.	10,000
Reuse on future Roads and Maritime projects	Re-use on future highway upgrades.	Re-use on future projects such as the Woolgoolga to Glenugie upgrade.	This option was also considered however due to the unsuitable nature of the material, it cannot be used in order to achieve the R44 Earthworks specification.	-

Private developments	A potential option being investigated is a private subdivision development north of Cunningham's Creek, Moonee Beach which is currently lodged with DP&I for determination under Part 3A of the EPAA 1979.	Note this subdivision is not approved and it is likely that approval may not be obtained by the developer with sufficient time for this opportunity to be pursued further. S2W will continue to liaise with the developer.	No suitable approved private development (e.g. Council or DP&I approved subdivision) have been identified in the area for potential reuse of the unsuitable material.	-
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3.5 Summary

Section 3 provides a comprehensive analysis of the need and options considered with respect to the proposed five (5) beneficial re-use opportunities described in Section 2. In summary:

- The total volume of unsuitable material requiring management and solution on the Sapphire to Woolgoolga Project is 861,160m³
- To date 484,118m³ has been beneficially re-used as detailed in Section 3.2
- This left a volume of 377,042m³.
- Of this 293,935m³ has been beneficially re-used to rehabilitate Cut 29 borrow along with a series of small re-use opportunities identified within the road reserve as detailed in Table 3.3 at locations previously disturbed by construction.
- This environmental review has been prepared to assess the proposed beneficial re-use of 83,107m³ of unsuitable material as described in Section 2 on Roads and Maritime owned land immediately adjacent to the road reserve

The five (5) beneficial re-use opportunities described in Section 2, accounting for 83,107m³ of material, is the basis of this environmental review and forms an integral part of the overall project unsuitable strategy as detailed in Section 3.

As noted in Section 1.4, Roads and Maritime will submit this environmental review to the Department of Planning and Environment with a request to modify the conditions of approval to facilitate the nominated five beneficial re-use opportunities described in Section 2.

4 Consultation

4.1 Community

In consultation with Roads and Maritime, it was determined that residents who had line of sight to the proposed permanent placement sites needed to be consulted in regards to the proposed permanent placement of excess material on Roads and Maritime residual land that already had been used for temporary stockpiling. A ground-truthing exercise also was undertaken to confirm stakeholders.

Table 4.1: Summary of results of consultation

Reuse location	Stakeholder	Support? Y / N	Responses to objections
Reuse Location 1 Roads and Maritime-owned land: 817 – 817a Pacific Highway, Korora (Lot 50 DP 847756)	Stakeholder 1	Y	
	Stakeholder 2	Y	The potential impact cited on views from a future dwelling is pre-existing and, at the natural ground level of the land, will still occur. The northern mound has subsequently been removed from the proposal and the original landform reinstated therefore support for the proposal has changed.
	Stakeholder 3	Y	
	Stakeholder 4	Y	
	Stakeholder 5	Y	
	Stakeholder 6	Y	
	Stakeholder 7		Overseas
	Stakeholder 8	Y	
	Stakeholder 9	N	The potential impact cited on views from a future dwelling is pre-existing and, at the natural ground level of the land, will still occur. The northern mound has subsequently been removed from the proposal and the original landform reinstated therefore support for the proposal has changed.
	Stakeholder 10	Y	
			All of residents in favour of stockpile. Individual comments addressed in Appendix C.

Reuse Location 2 Roads and Maritime-owned land: 18c The Mountain Way, Sapphire Beach (Lot 4 DP 249773)	Stakeholder 11	N. Further consultation was undertaken by RMS however the objection is still current.	The potential impact cited on views to the coastline is unsubstantiated with survey assessment showing that reshaped material will sit at least 14.5 metres below the views of the nearest property to the coastline. (Refer Appendix C).
	Stakeholder 12	N. Further consultation was undertaken by RMS and they have agreed with the current proposal.	The potential impact cited on views to the coastline is unsubstantiated with survey assessment showing that reshaped material will sit at least 14.5 metres below the views of the nearest property to the coastline. (Refer Appendix C).
	Stakeholder 13	Not necessarily opposed.	
	Stakeholder 14	Y	
			Individual comments addressed in Appendix C.
Reuse Location 3 Roads and Maritime-owned land: 10 Gaudrons Road, Sapphire Beach (Lot 22 DP 1030498).	Stakeholder 15	Y	
Reuse Location 4 Roads and Maritime-owned land: 16 Sugarmill Road, Sapphire Beach (Lot 11 DP 243972).	Stakeholder 16	Y	Resident in favour of stockpile. Individual comments addressed in Appendix C.
Reuse Location 5 Roads and Maritime-owned land: 1225 Pacific Highway, Moonee Beach (Lot 4 DP 599177)	Stakeholder 17	Y	
	Stakeholder 18	Y	
	Stakeholder 19	Y	
			All residents in favour of stockpile. Individual comments addressed in Appendix C.

The consultation with the stakeholders occurred in June and July 2013 and further consultation was undertaken in early 2014. The response to their submissions about the proposed permanent placement of material at the subject sites is provided in Appendix C. Appendix E provides a map indicating the residents consulted which is to be read in conjunction with Table 4.2.

For the residents concerned about view loss, Table 4.2 considers the views from these properties including photo's current views.

Table 4.2 View loss analysis

Stockpile	Issues	View Considerations
SPW1 (south)	No objections were lodged based on the information supplied.	Retention of ocean views is the prime consideration for all residents spoken to. Based on the proposed elevation of the southern stockpile all residents were comfortable with the proposal given their current elevation. Access to this portion of the total property is off the southern end of the newly constructed Hunter Close and is considered the principal potential home/building site.
SPW3	One property owner immediately to the south west objected to the stockpile based on potential loss of views	<ul style="list-style-type: none"> • A cross sectional view analysis was produced from each of the two properties using the “first glimpse” waterline at the beach as the minimum reference point. This vertical separation can then be used to assess the likelihood of future development impacting on the principal ocean view for each property. • The view separation for one property (P3A) ranges from a minimum of 14.5m to a maximum of 33m. • It is worth noting that the land on which SPW3 sits already has a house on it and under current LGA guidelines could not have another dwelling built on it whilst the other remained. • Whilst the potential to demolish and rebuild on the property may be possible the specification for remediation of the stockpile is to only re-compact the final three metres to enable its compliance with the current zoning for agricultural usage and not residential.



Photo 3 – Current property views at SPW3 (P3A)

4.2 Environmental Agencies

The proposal of the permanent placement of the material at the subject sites has been raised at the October, November and December 2012 and January, July and August 2013 ERG meetings. All proposed locations have been inspected during ERG inspections. This Environmental Review has been issued to the EPA for their comment and review. Comments and responses are provided in Appendix B.

Final review and endorsement will be sought from the Department of Planning and Environment through a request for modification to the approval.

4.3 Roads and Maritime Property Division

The project is liaising with Roads and Maritime property division in regard to their requirements for each specific Roads and Maritime owned property. Roads and Maritime property division, similarly to the agencies, requires that the type of material placed is ENM. Roads and Maritime property division also has input into the design of each area to ensure their long term viability, reduced maintenance, lessened risk of environmental harm, maximum community benefit, and maximum saleable value.

5 Environmental Review and Management

An assessment of the proposed works has been undertaken to determine the additional environmental impacts compared to those of the Approved Project. The proposed works have been assessed using the topics/issues discussed in the Project EA.

5.1 Environmental Risk Assessment

Construction hazards and risks considered as part of the Project EA include hazardous materials handling and storage (e.g. fuel). The reuse of material in these applications are deemed minor in this regard and will not result in a change which would influence the hazards and risks related to the Project. As such, the works will result in negligible additional hazard and/or risk.

5.2 Traffic, transport and economics

The reuse of material occurs at five locations adjoining the project alignment.

Fortunately, the material reused at each location was already located nearby. A small amount of material (e.g. topsoil) was transported at times however this was limited..

Due to the limited number of trucks, an effort to limit the distance that material was transported, and utilisation of the project alignment, there was minimal disturbance generated from construction traffic movement.

5.3 Noise and Vibration

Any potential noise and vibration impacts associated with the earthworks for beneficial reuse have been managed in accordance with the approved Construction Noise and Vibration Management Plan.

The amenity mound will provide noise advantages by increasing the attenuation between Highway traffic and landowners' properties at SPW6.

5.4 Aboriginal Heritage

There are no identified Aboriginal heritage areas affected by the proposed works. Due to the previous disturbance in each location and as each location was previously assessed prior to construction, risks of impact to heritage items are considered negligible.

5.5 Non-Aboriginal Heritage

There are no identified non-Aboriginal heritage items within the proposed locations.

5.6 Planning and Land Use

The general pattern of land use in the study area is controlled mainly through zoning provisions in the Coffs Harbour *Local Environmental Plan 2013* (LEP). The current zoning in the vicinity of the beneficial reuses are:

- Rural zone: RU2 Rural Landscape
- Residential zones: R5 Large Lot Residential
- Residential zones: 2A Low Density Residential

Each of the proposed beneficial reuses has been developed in line with the LEP land-use zoning for each lot.

Each site has been identified on the Coffs Harbour LEP 2013 maps, which is attached in Appendix D.

5.7 Agriculture

The proposed beneficial reuses will not have any significant effect on agricultural enterprise.

Following liaison with Roads and Maritime property section, property improvements at reuse location 2: 18c The Mountain Way, Sapphire Beach are expected to result in positive agriculture outcomes for potential high productivity horticultural activities.

5.8 Socio-economic analysis

The proposed works are designed so that excess material from the cut/fill operations can be reused resulting in a benefit to the surrounding area and residual property value. The improved property outcomes include screening, noise attenuation, aesthetics and amenity provided by the works. Changes to visual amenity associated with landform changes are considered with incorporation into the landscape plan.

5.9 Flora and Fauna

Flora and fauna impacts are negligible as the footprint has not changed and subsequently no vegetation is required for removal.

5.10 Hydrology, water and soil management

All project works must adhere to the provisions of Section 120 of the PoEO Act and water quality monitoring will be in accordance with the project EPL monitoring requirements.

The sites were managed in accordance with progressive erosion and sediment control plans and the project SWMP. All sites are all located above 100 year ARI flood level and are outside the Coffs Harbour City Council Flooding Extents.

Sections 2.1.1 to 2.1.5 provide additional information relating to overland flow paths for each site.

5.11 Landscape, visual and urban design

Each proposed site has undergone a thorough landscape and visual assessment undertaken by landscape architects TRACT (refer Appendix A), which has been reviewed by Roads and Maritime and the Joint Venture. The landscape assessment as summarised in Section 2.1 and 2.2 describes the visual impacts in further detail.

Residents and landowners have been consulted regarding the visual aspects of the proposal as detailed in Section 4.

5.12 Air Quality

The proposed works will result in negligible additional air quality impacts due to the nature of the works and the limited duration of ground disturbance and soil exposure during construction. Each area was immediately stabilised subsequent to construction.

To manage any potential dust generated during the transportation of the material between different stockpiling locations, the *S2W Construction Air Quality Management Plan* was followed which includes the implementation of best management practice air quality mitigation measures.

5.13 Waste

In accordance with the *Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption Under Part 6, Clause 51 and 51A*, all material utilised in accordance with this material reuse strategy was tested in accordance with the EPA *Excavated Natural Material Exemption October 2012* prior to works commencing.

An analytical data and compliance validation review of the unsuitable material was undertaken in relation with Table 2 of the ENM exemption 2012. This determined that all sites generally complied with the relevant concentrations levels for ENM Exemption, except for Reuse Location 2, Mountain Way.

Initial sampling undertaken at Mountain Way showed arsenic was present in 5 initial samples at concentrations exceeding the absolute maximum concentration (ranging from 43 mg/kg to 117mg/kg) listed in Table 3 of the ENM Exemption. The exceedances were in samples from the base of the test pits and boreholes and considered that these samples may have included natural soils from beneath the placed material.

Subsequent sampling at Mountain Way in the vicinity of the locations with elevated results focused on fill / interface layer and indicated samples assessed to be in fill showed no exceedances of the absolute maximum criteria. However, samples assessed to be in a fill / mixing layer showed elevated arsenic concentrations (ranging from 53 to 150 mg/kg) exceeding the absolute maximum concentration in three (3) samples and four (4) samples (ranging from 65 to 120 mg/kg) of the assessed interface exceeded the absolute maximum concentration.

Based on results of subsequent additional investigations, elevated arsenic concentrations were only identified in the mixing and interface layers at the base of the fill and are likely to be sourced from arsenic contamination at the surface of the

residual soils, consistent with the behaviour of arsenic residues on former banana lands.

5.14 .Contaminated Land

The review of data exceedances of the absolute maximum concentrations in the ENM Exemption 2012 indicates the total concentrations measured are predominantly significantly below the current amended NEPM ASC (1999 as amended 2013) health criteria for the most sensitive residential land use (HIL-A). Overall, the analytical results show little evidence of significant contamination and the relatively low concentrations of contaminants indicate the results are likely to be consistent with natural background levels in the area of the S2W project.

Phase 2 contamination assessment undertaken in 2008 prior to commencement of construction supports the further investigation in relation to elevated residual arsenic levels. Initial investigations identified that sampling was undertaken on Property 66. Property 66 was later used as Mountain Way Stockpile (Reuse Location 2, SPW3). The results show arsenic levels at this location ranging up to 96mg/kg and with 5 of the 16 samples recording above the absolute maximum criteria.

The Phase 2 Contamination Assessment Sapphire to Woolgoolga Pacific Highway Upgrade considered the soil material at the four banana plantation sites to be suitable for beneficial reuse on the site during construction.

6 Matter of National Environmental Significance

The environmental assessment provisions of the *Environment Protection and Biodiversity Conservation Act 1999* require the following matters of national environmental significance and impacts on Commonwealth land be considered for the proposed design refinements (refer *Table 6.1*).

Table 6.1 Matters of National Environmental Significance

Factor	Impact / Comment
Any impact on a World Heritage property?	There are no World Heritage properties that will be impacted by the proposed beneficial reuses.
Any impact on a National Heritage place?	There are no National heritage places that will be impacted by the proposed beneficial reuses.
Any impact on a wetland of international importance?	There are no wetlands of international importance that will be impacted by the proposed beneficial reuses.
Any impact on a listed threatened species or communities?	These areas are previously approved temporary stockpile areas and cleared/ heavily disturbed. They were selected as stockpile sites on past disturbance history. There are no impacts to flora or fauna. Revegetation will result in a positive for the environment.
Any impacts on listed migratory species?	No migratory species were identified or known in the proposed beneficial reuse locations.
Any impact on a Commonwealth marine area?	The proposed beneficial reuses will not impact on a Commonwealth marine area.
Does the proposal involve a nuclear action (including uranium mining)?	The proposed beneficial reuses do not involve a nuclear action.
Additionally, any impact (direct or indirect) on Commonwealth land?	The proposed beneficial reuses will not impact (direct or indirect) on Commonwealth land.

7 General Environmental Management

In addition to the specific management measures and controls prescribed above, the following general environmental management have been implemented.

1. Once the beneficial reuse locations have been shaped and completed, the exposed surface has been treated with native grass seed/hydro mulched as per the TRACT landscape plan.. Material suitable for revegetation has been used in the upper profiles (topsoil). The final surface will be as per the Landscape Plans provided in Appendix A. An inspection has been undertaken by Roads and Maritime upon completion of placement.
2. Establishment of the mounds was undertaken in accordance with the LFHJV *Progressive Erosion and Sediment Control Plan* (prepared by Soil Conservation Service) and the *Construction Soil Erosion and Water Management Plan*.
3. All project personnel, including subcontractors, underwent the project site induction. Similarly, work crews were toolboxed and trained on their environmental responsibilities and accountabilities as per the project's Environmental Management System, whereby all works will be undertaken in accordance with the projects approved Construction Environmental Management Plan (CEMP).

8 Conclusion

The environmental review undertaken for the proposed reuse of material has confirmed that the activity will have a negligible to low environmental impact.

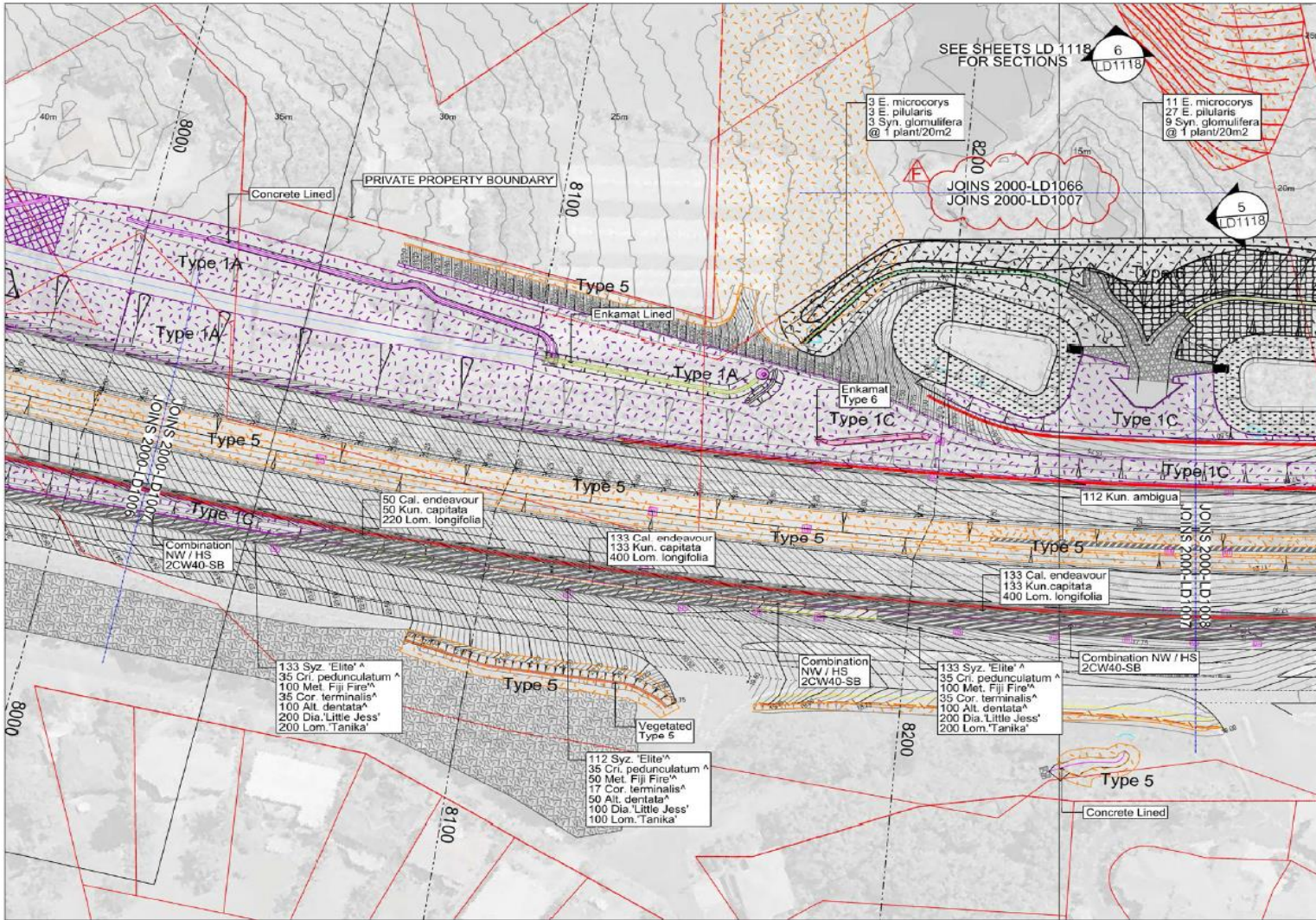
The five sites proposed in Section 2 have been selected based on their past disturbance history and low environmental and socio-economic impact. Subsequently, it is considered that with the implementation of the safeguards provided in the CEMP and the additional mitigation measures identified in this document, that the proposed permanent retention of unsuitable material will not result in any significant adverse impacts to the environment or the community.

The project consider that the proposed regrading and establishment of the proposed beneficial reuses on Roads and Maritime residual land adjacent to the corridor has a number of advantages, including superior outcome on the waste hierarchy, landscape aesthetics, noise reduction, reducing disturbance of other lands, reducing greenhouse impacts and safety risks by preventing the need for long distance transport on the road network and improving the value of residual properties for potential future redevelopment.

Appendix A

Reuse Landscape Design Plans

SPW1 817-817A Pacific Highway, Korora



- ### LEGEND
- GENERAL**
- △ △ △ Batter slopes
 - 1700 Chainage
 - Safety Barriers
 - Retaining Wall
 - Fauna Fence
 - RTA Boundary
 - Clearing Line
 - Signage
- SEEDING**
- Refer to seed mixes below for mix type.
- HYDROMULCH**
To sloped 1v:4h or flatter 100mm ameliorated topsoil over 200mm cultivated subgrade.
 - DIRECT DRILL**
To slopes 1v:4h or flatter 100mm ameliorated topsoil over 200mm cultivated subgrade.
 - ENKAMAT**-To slopes steeper than 1v:2h Refer detail 3 & 4 S2W-DRG-20-2000-1118
 - VEGETATED CHANNELS**
Hydroseed/organic fibre matting to drainage lines 50mm topsoil over scarified subgrade
 - BASIN MIX**
Hydroseed over 50mm topsoil over scarified subgrade
- SEED MIXES**
- Refer to Specification R178 for full details of seed mixes.
- Type 1 - Blackbutt
 - Type 2 - Grey Gum / Grey Ironbark
 - Type 3 - Swamp Oak
 - Type 4 - Swamp Sclerophyll
 - Type 5 - Grassland
 - Type 6 - Creepline/Basin
- GARDEN BEDS**
- Preparation: 75mm Mulch over 160 topsoil over 200 cultivated subgrade
- INDIVIDUAL PLANTING**
- To be along rippline where slope flatter than 1v:3h
Mulch rings to be applied to all individual trees.
- BUSH REGENERATION**
- Removal and control of weeds and planting of canopy/shrub species tubestock at 1/2 per m²
- TURF**
- 100mm ameliorated topsoil over 200 cultivated subgrade
- TREE PLANTING @ 1/20m² In Seeded Area**
- SCOUR PROTECTION**
- Habitat / Hollow tree to be retained
 - Threatened Fauna
- CONTOURS**
- Existing Contours at 1m Intervals
 - Proposed Contours at 0.5m Intervals
- NOTES:**
- Refer to Schedules for plant quantities and sizes

CHECK PRINT
FOR CONSTRUCTION

150 mm ON ORIGNAL

DRAWING FILE LOCATION / NAME

REV	DATE	DESCRIPTION	APPO	Lot No
A	23/02/12	FOR CONSTRUCTION	ME	140A
B	18/04/12	ENKAMAT AMENDED	ME	140A
C	29/01/13	RESHAPED DESIGN ADDED	ME	140A
D	03/07/13	PLANTING AMENDED	ME	140A
E	05/03/14	SPOOL MARKING DELETED	ME	140A
F	13/03/14	DRAWING REF NO. REVISED	ME	140A

DESIGN MODEL: Fully used for documentation of this drawing.

SCALE Units - m

0 10 20 30

CONTRACTOR: LEIGHTON, Fulton Hogan

DESIGNER: AECOM, SMEC

PROJECT DOCUMENT NUMBER: S2W-DRG-20-2000-LD1007 F

HIGHWAY: 10

ZONE: 2000

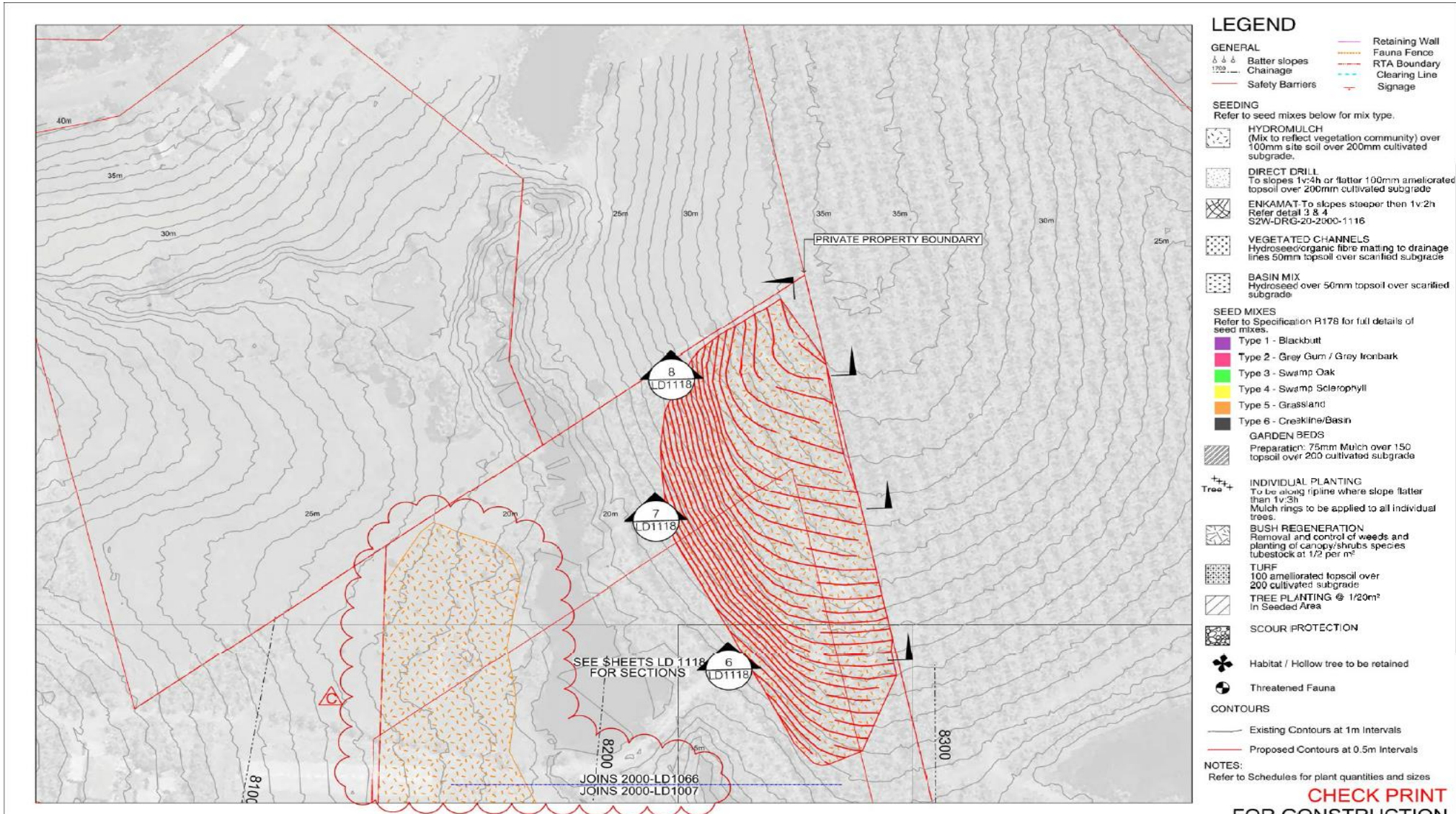
CITY OF COFFS HARBOUR

LANDSCAPE DESIGN

LANDSCAPE CONSTRUCTION PLAN

0010.110RC4207

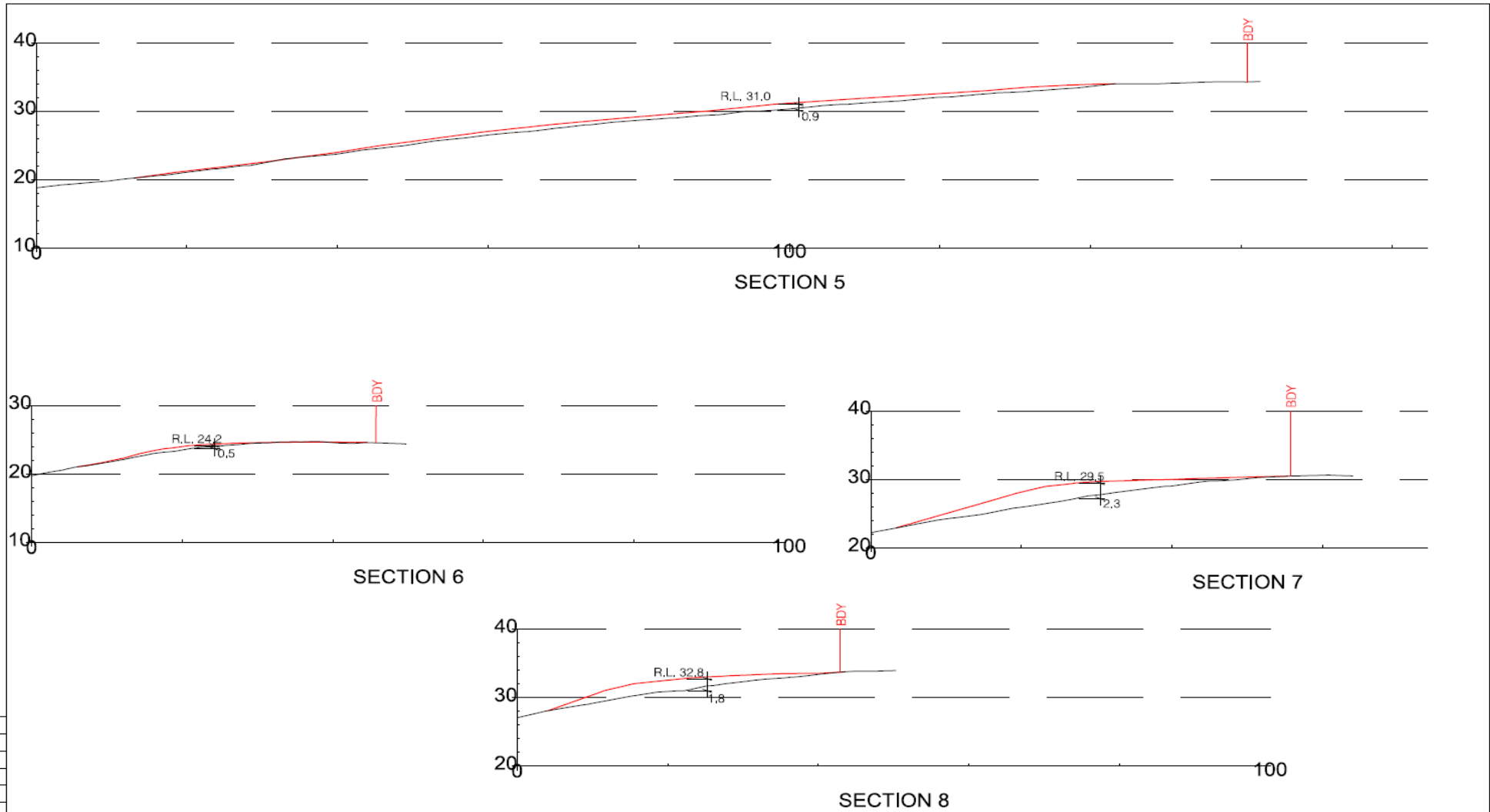
FOR CONSTRUCTION SHEET 7



- ### LEGEND
- GENERAL**
- Batter slopes
 - Chainage
 - Safety Barriers
 - Retaining Wall
 - Fauna Fence
 - RTA Boundary
 - Clearing Line
 - Signage
- SEEDING**
Refer to seed mixes below for mix type.
- HYDROMULCH**
 (Mix to reflect vegetation community) over 100mm site soil over 200mm cultivated subgrade.
 - DIRECT DRILL**
 To slopes 1v:4h or flatter 100mm ameliorated topsoil over 200mm cultivated subgrade
 - ENKAMAT** To slopes steeper than 1v:2h Refer detail 3 & 4 S2W-DRG-20-2000-1116
 - VEGETATED CHANNELS**
 Hydroseed/organic fibre matting to drainage lines 50mm topsoil over scarified subgrade
 - BASIN MIX**
 Hydroseed over 50mm topsoil over scarified subgrade
- SEED MIXES**
Refer to Specification R178 for full details of seed mixes.
- Type 1 - Blackbutt
 - Type 2 - Grey Gum / Grey Ironbark
 - Type 3 - Swamp Oak
 - Type 4 - Swamp Sclerophyll
 - Type 5 - Grassland
 - Type 6 - Creekline/Basin
- GARDEN BEDS**
- Preparation: 75mm Mulch over 150 topsoil over 200 cultivated subgrade
- INDIVIDUAL PLANTING**
To be along ripeline where slope flatter than 1v:3h
Mulch rings to be applied to all individual trees.
- TREE**
- BUSH REGENERATION**
Removal and control of weeds and planting of canopy/shrubs species tubestock at 1/2 per m²
- TURF**
 100 ameliorated topsoil over 200 cultivated subgrade
 - TREE PLANTING** @ 1/20m² in Seeded Area
- SCOUR PROTECTION**
- Habitat / Hollow tree to be retained
 - Threatened Fauna
- CONTOURS**
- Existing Contours at 1m Intervals
 - Proposed Contours at 0.5m Intervals
- NOTES:**
Refer to Schedules for plant quantities and sizes

**CHECK PRINT
FOR CONSTRUCTION**

DRAWING FILE LOCATION / NAME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING		PROJECT DOCUMENT NUMBER S2W-DRG-20-2000-LD1066		REVISED C																				
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B	10/12/13	EXISTING CONTOURS ADDED	ME	140A																						
C	13/03/14	SPOIL MOUND DELETED	ME	140A																						
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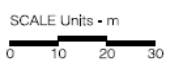


FOR CONSTRUCTION

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 2. 100mm ON ORIGINAL
 3. 100mm ON ORIGINAL



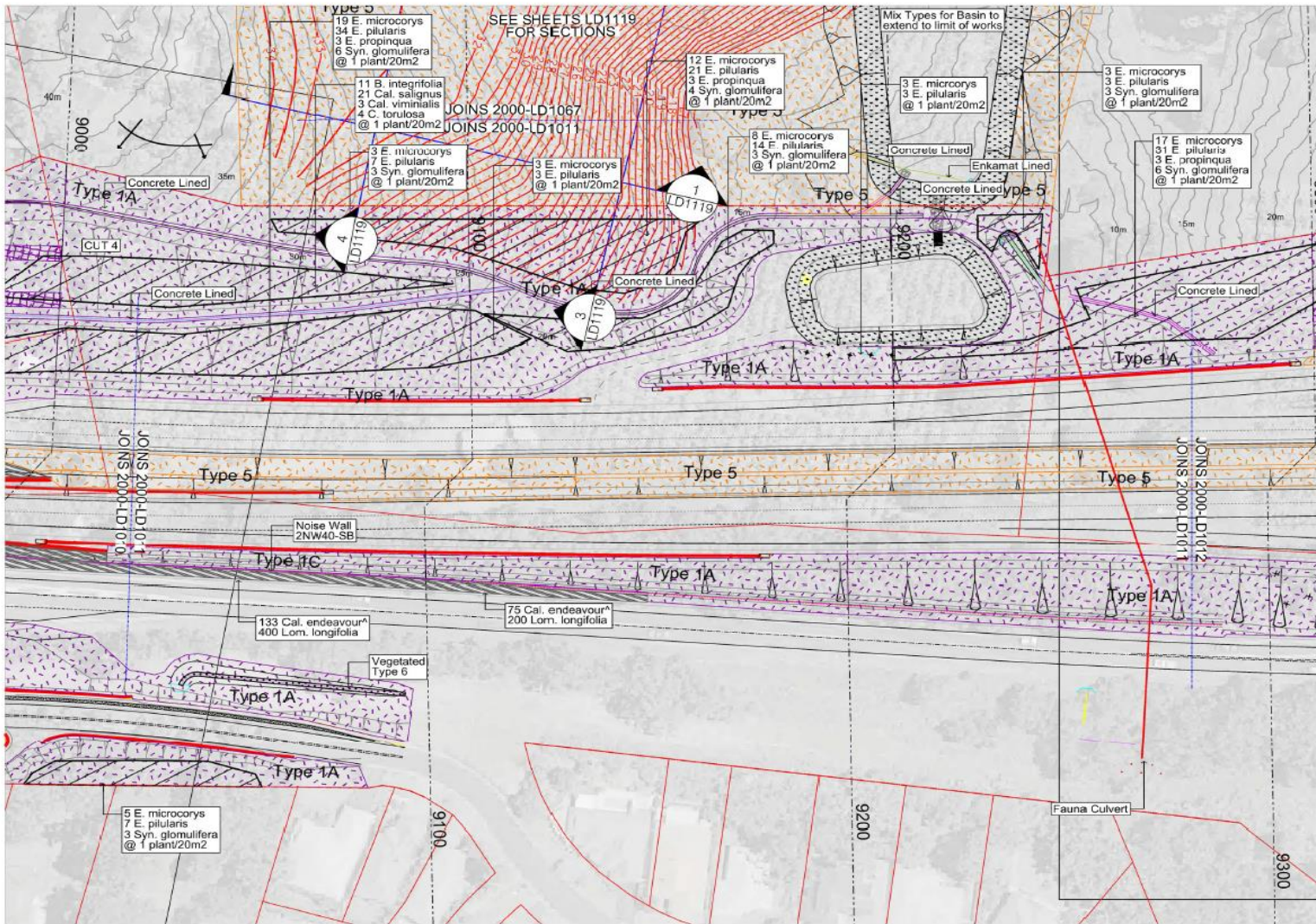
CONTRACTOR
LEIGHTON
 Fulton Hogan

DESIGNER
AECOM **SMEC**

LEIGHTON **FH**
Fulton Hogan

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		CITY	COFFS HARBOUR
		LANDSCAPE DESIGN	
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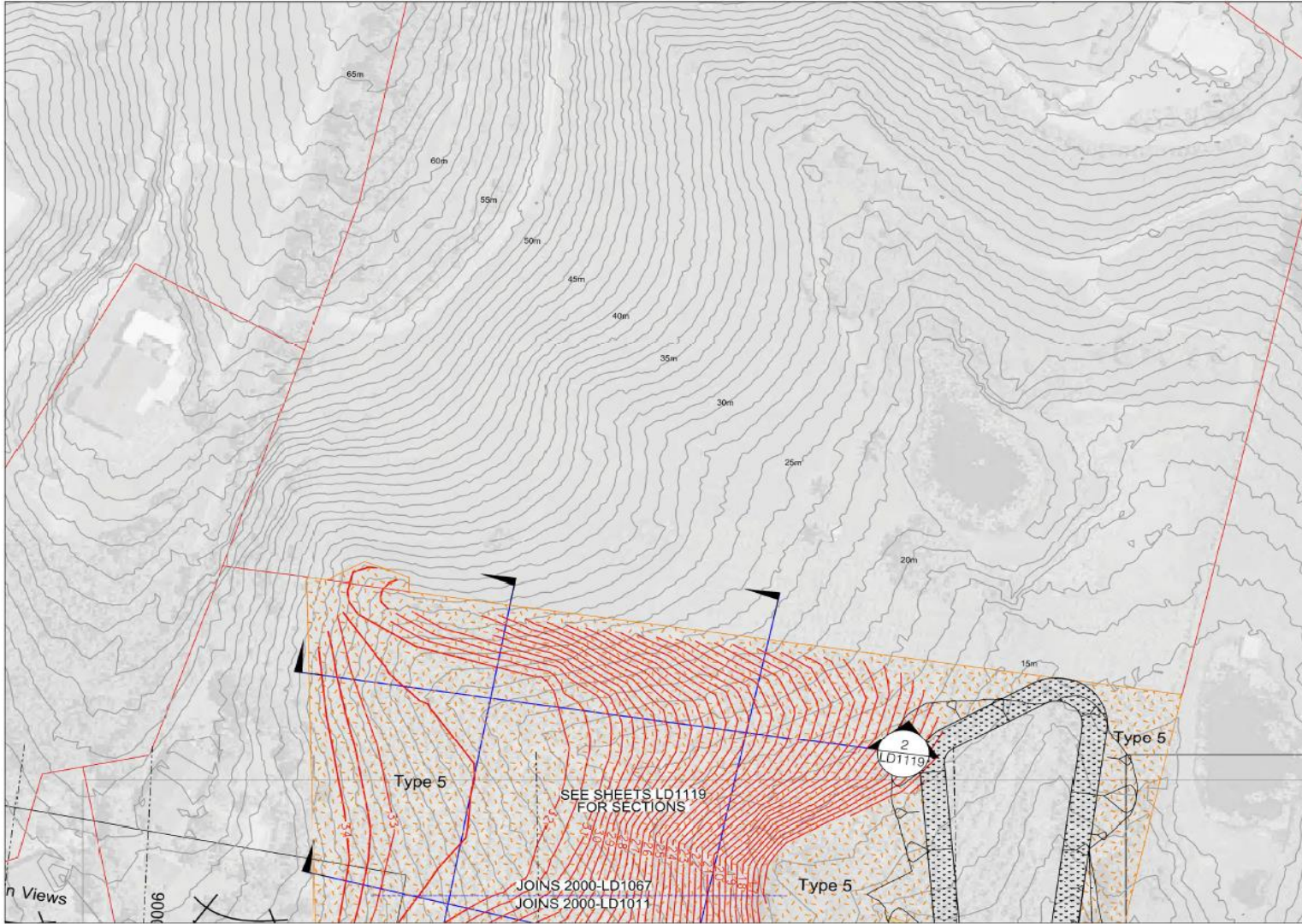
SPW 3 18C Mountain Way, Sapphire Beach



- ### LEGEND
- GENERAL**
- Retaining Wall
 - Fauna Fence
 - RTA Boundary
 - Clearing Line
 - Signage
 - Batter slopes
 - Chainage
 - Safety Barriers
- SEEDING**
Refer to seed mixes below for mix type.
- HYDROMULCH**
(Mix to reflect vegetation community) over 100mm site soil over 200mm cultivated subgrade
 - DIRECT DRILL**
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 - ENKAMAT**-To slopes steeper than 1v:2h
Refer detail 3 & 4
S2W-DRG-20-2000-1116
 - VEGETATED CHANNELS**
Hydroseed/organic fibre matting to drainage lines 50mm topsoil over scarified subgrade
 - BASIN MIX**
Hydroseed over 50mm topsoil over scarified subgrade
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Refer to Specification R178 for full details of seed mixes.
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 - Type 5 - Grassland
 - Type 6 - Creekline/Basin
- GARDEN BEDS**
Preparation: 75mm Mulch over 150 topsoil over 200 cultivated subgrade
- INDIVIDUAL PLANTING**
To be along rippline where slope flatter than 1v:3h
Mulch rings to be applied to all individual trees.
- BUSH REGENERATION**
Removal and control of weeds and planting of canopy/shrubs species tubestock at 1/2 per m²
- TURF**
100 ameliorated topsoil over 200 cultivated subgrade
- TREE PLANTING @ 1/20m² in Seeded Area**
- SCOUR PROTECTION**
- Habitat / Hollow tree to be retained
 - Threatened Fauna
- CONTOURS**
- Existing Contours at 1m Intervals
 - Proposed Contours at 0.5m Intervals
- NOTES:**
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CHECK PRINT FOR CONSTRUCTION

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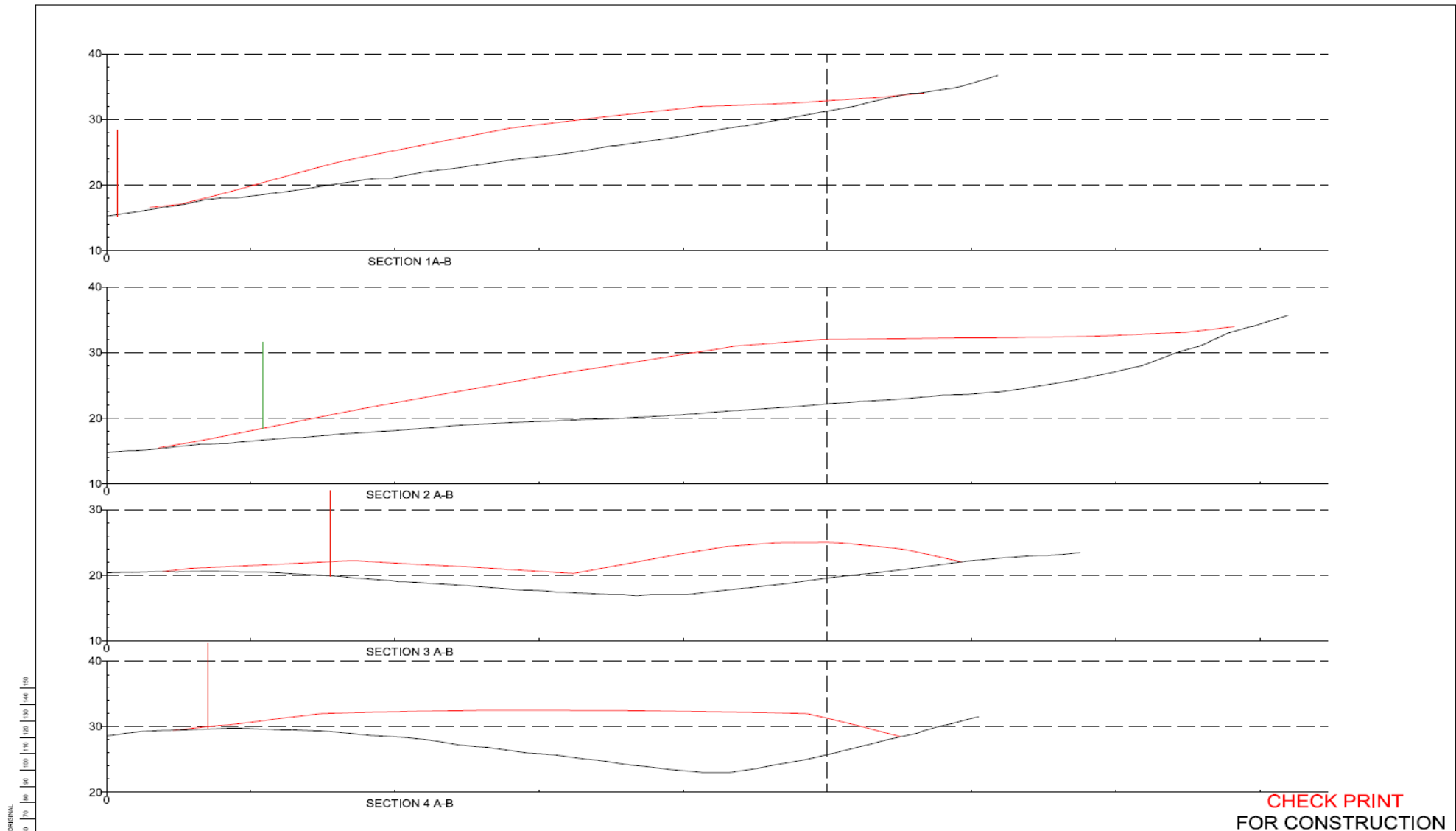
- ### LEGEND
- GENERAL**
- △ & △ Chainage
 - 1702 Safety Barriers
 - Retaining Wall
 - Fauna Fence
 - RTA Boundary
 - Clearing Line
 - Signage
- SEEDING**
Refer to seed mixes below for mix type.
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Refer detail 3 & 4
SZW-DRG-20-200-1116
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 - Proposed Contours at 0.5m Intervals

NOTES:
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**CHECK PRINT
FOR CONSTRUCTION**

150 mm ON ORIGINAL

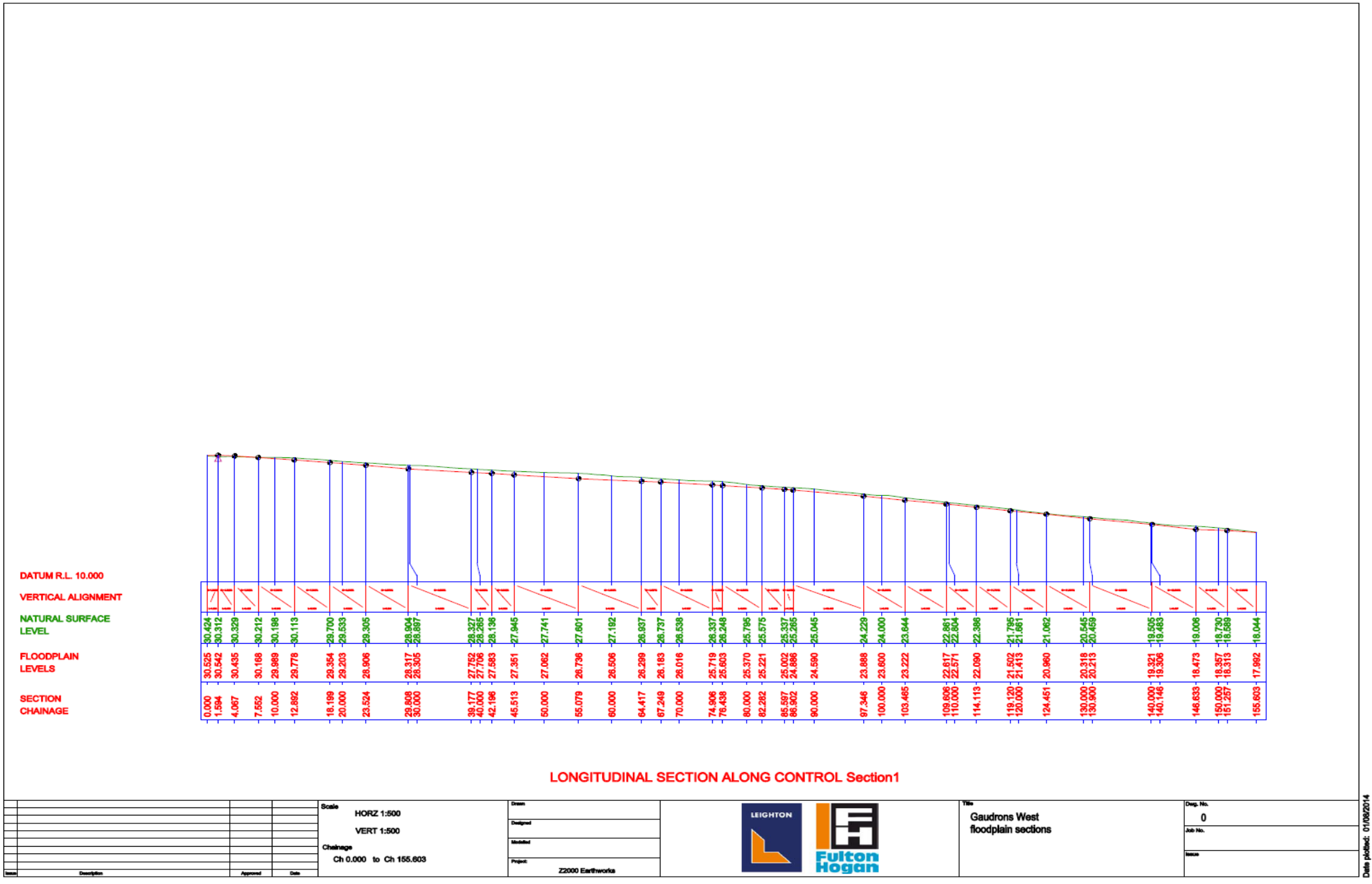
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**CHECK PRINT
FOR CONSTRUCTION**

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SPW 4 10 Gaudrons Road, Sapphire Beach



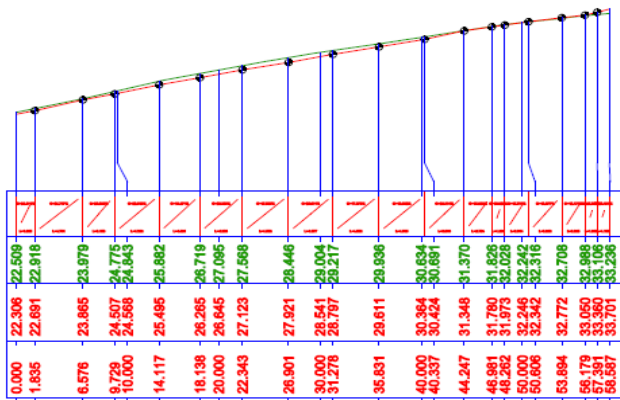
DATUM R.L. 14.000

VERTICAL ALIGNMENT

NATURAL SURFACE LEVEL

FLOODPLAIN LEVELS

SECTION CHAINAGE



LONGITUDINAL SECTION ALONG CONTROL Section2

Issue	Description	Approved	Date

Scale
 HORZ 1:500
 VERT 1:500
 Chainage
 Ch 0.000 to Ch 58.587

Drawn
 Designed
 Modified
 Project
 Z2000 Earthworks

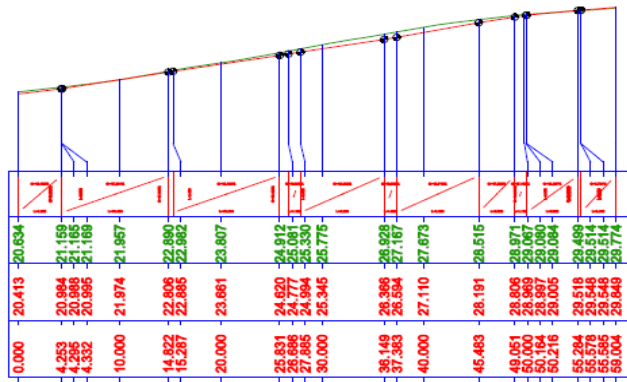


Title
 Gaudrons West floodplain sections

Draw. No.
 1
 Job No.
 Issue

Date plotted: 01/09/2014

DATUM R.L. 12.000
 VERTICAL ALIGNMENT
 NATURAL SURFACE LEVEL
 FLOODPLAIN LEVELS
 SECTION CHAINAGE



LONGITUDINAL SECTION ALONG CONTROL Section3

Name	Description	Approved	Date

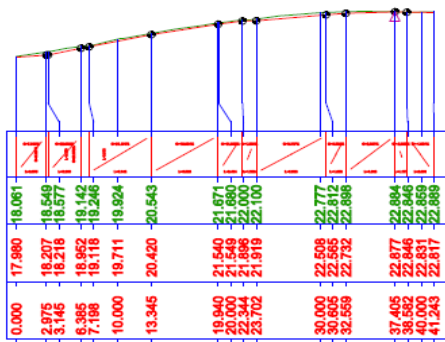
Scale	HORZ 1:500 VERT 1:500
Chainage	Ch 0.000 to Ch 59.004
Drawn	
Designed	
Method	
Project	Z2000 Earthworks



Title	Gaudrons West floodplain sections
Dwg. No.	2
Job No.	
Issue	

Date plotted: 01/08/2014

DATUM R.L. 10.000
 VERTICAL ALIGNMENT
 NATURAL SURFACE LEVEL
 FLOODPLAIN LEVELS
 SECTION CHAINAGE



LONGITUDINAL SECTION ALONG CONTROL Section4

Name	Description	Approved	Date

Scale
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 VERT 1:500
 Chainage
 Ch 0.000 to Ch 41.243

Drawn
 Designed
 Modified
 Project
 Z2000 Earthworks

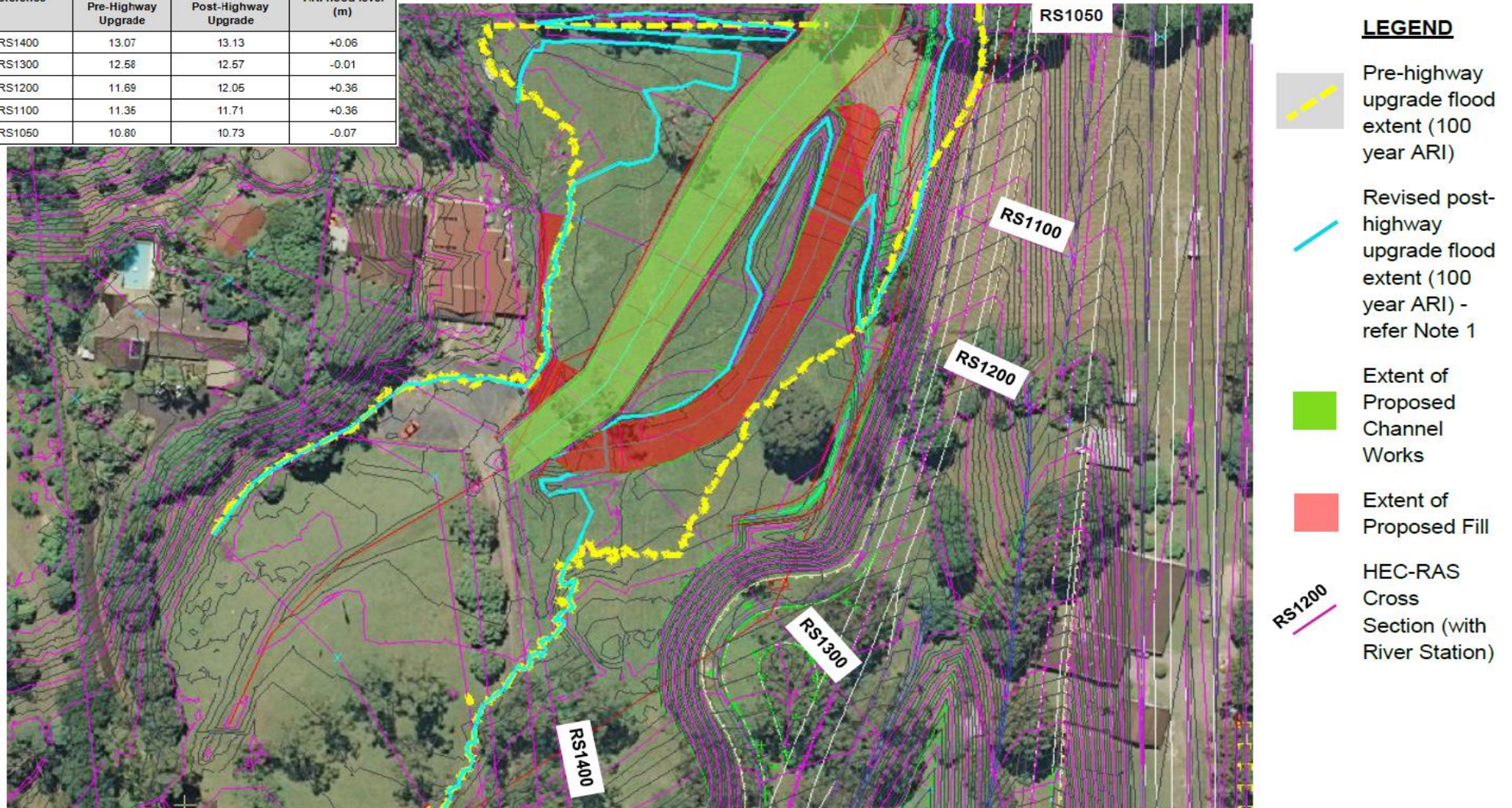


Title
 Gaudrons West
 floodplain sections

Draw. No.
 3
 Job No.
 Issue

Date plotted: 01/08/2014

HEC-RAS River Station (RS) Reference	Peak 100 year ARI flood level (m AHD)		Difference in peak 100 year ARI flood level (m)
	Pre-Highway Upgrade	Post-Highway Upgrade	
RS1400	13.07	13.13	+0.06
RS1300	12.58	12.57	-0.01
RS1200	11.69	12.05	+0.36
RS1100	11.35	11.71	+0.36
RS1050	10.80	10.73	-0.07

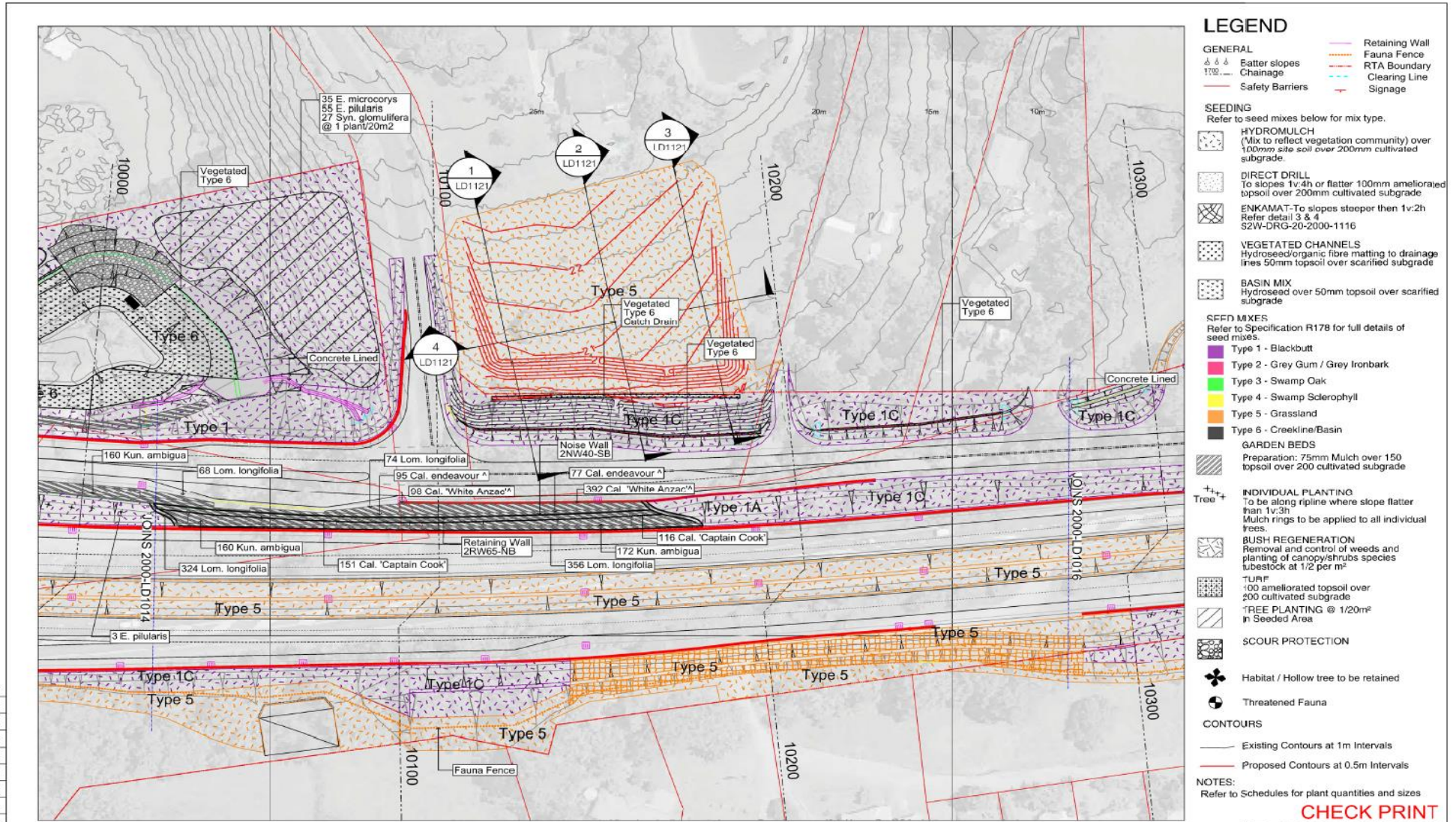


Notes

1. Revised post-highway upgrade scenario based on current site stockpile arrangement (at 29 May 2014) with proposed channel works and filling as shown above.

Figure 1
Overview of Proposed Works and Impact on Flood Extents

SPW6 16 Sugarmill Road, Sapphire Beach

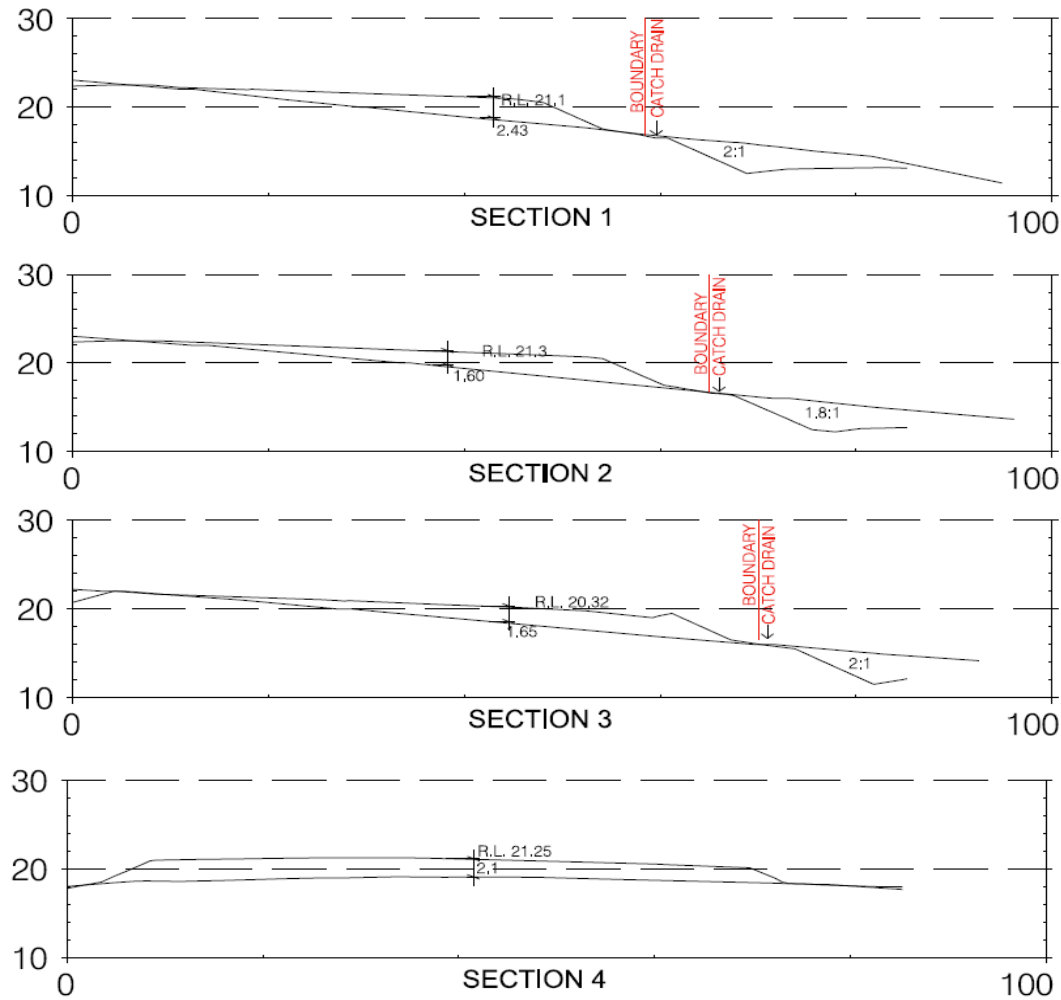


- ### LEGEND
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 - Fauna Fence
 - Chainage
 - RTA Boundary
 - Safety Barriers
 - Clearing Line
 - Signage
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Refer to seed mixes below for mix type.
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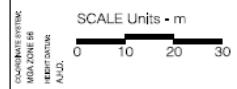
100 mm ON ORIGINAL



FOR CONSTRUCTION

REV	DATE	DESCRIPTION	APPD	Lot No.
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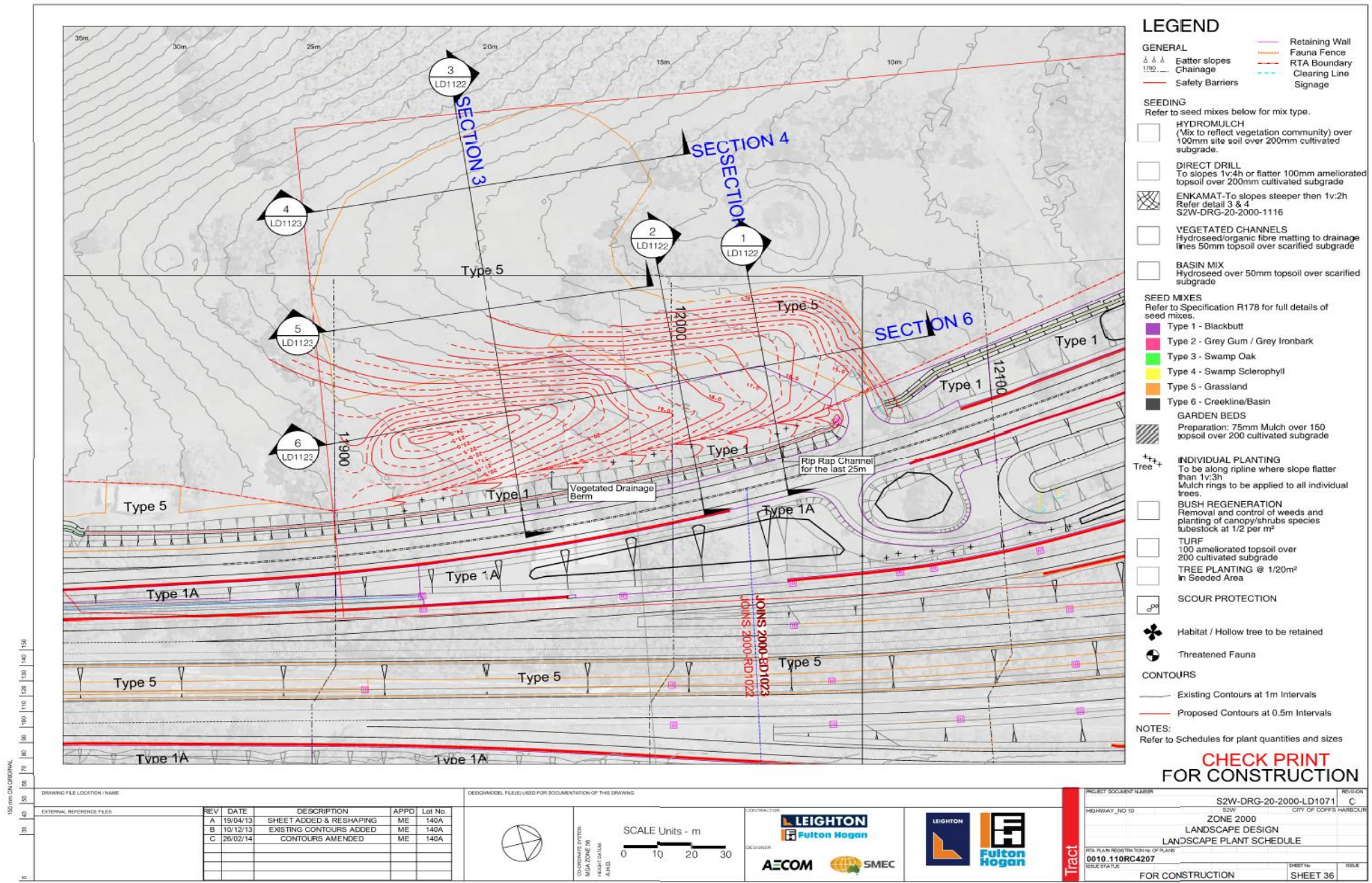


CONTRACTOR: **LEIGHTON** **Fulton Hogan**

DESIGNER: **AECOM** **SMEC**

PROJECT DOCUMENT NUMBER	S2W-DRG-20-2000-LD1121	REVISION	A
HIGHWAY NO 10	S2W	CITY OF COFFS HARBOUR	
	ZONE 2000		
	LANDSCAPE DESIGN		
	DETAILS		
RTA PLAN REGISTRATION NO OF PLANS			
0010.110RC4207			
ISSUE STYLE	FOR CONSTRUCTION	SHEET NO	SHEET 11

SPW7 1225 Pacific Highway, Moonee Beach



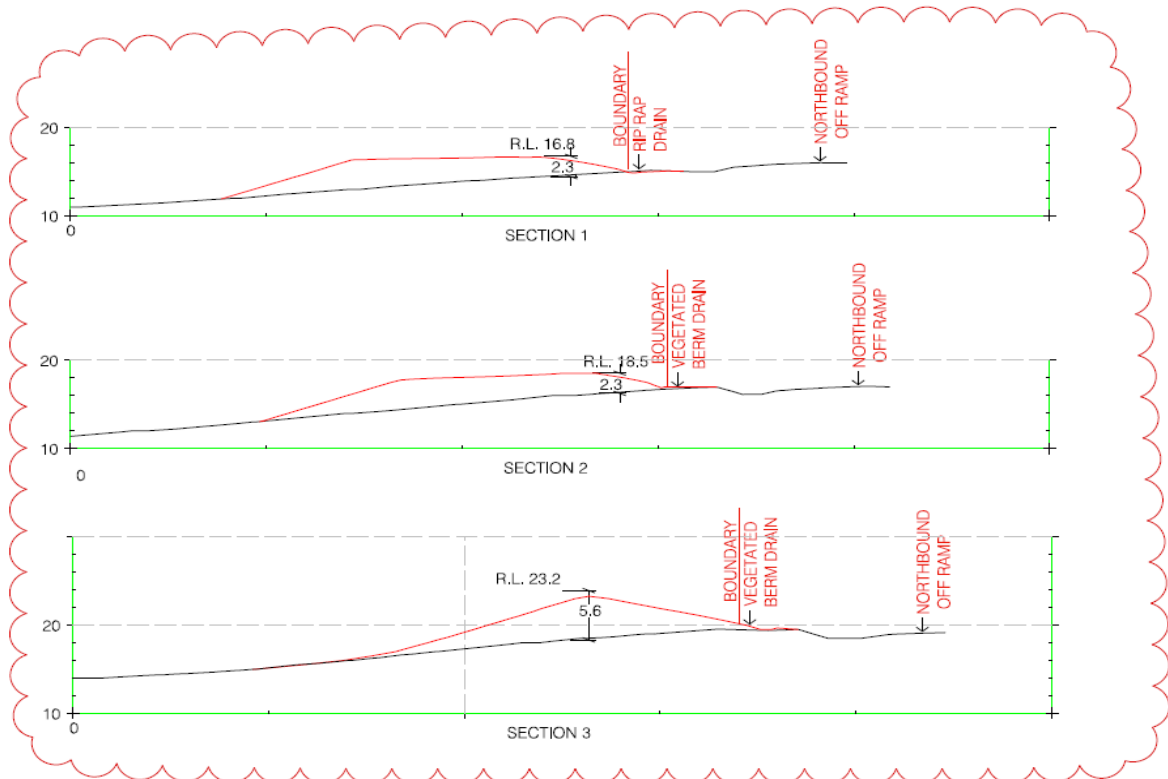
LEGEND

- GENERAL**
- △ △ △ Batter slopes
 - 1702 Chainage
 - Safety Barriers
 - Retaining Wall
 - Fauna Fence
 - RTA Boundary
 - Clearing Line
 - Signage
- SEEDING**
Refer to seed mixes below for mix type.
- HYDROMULCH
(Mix to reflect vegetation community) over 100mm site soil over 200mm cultivated subgrade.
 - DIRECT DRILL
To slopes 1v:4h or flatter 100mm ameliorated topsoil over 200mm cultivated subgrade
 - ▨ ENKAMAT-To slopes steeper than 1v:2h
Refer detail 3 & 4
S2W-DRG-20-2000-1116
 - VEGETATED CHANNELS
Hydroseed/organic fibre matting to drainage lines 50mm topsoil over scarified subgrade
 - BASIN MIX
Hydroseed over 50mm topsoil over scarified subgrade
- SEED MIXES**
Refer to Specification R178 for full details of seed mixes.
- Type 1 - Blackbutt
 - Type 2 - Grey Gum / Grey Ironbark
 - Type 3 - Swamp Oak
 - Type 4 - Swamp Sclerophyll
 - Type 5 - Grassland
 - Type 6 - Creepline/Basin
- GARDEN BEDS**
Preparation: 75mm Mulch over 150 topsoil over 200 cultivated subgrade
- Tree+
+ Individual PLANTING
To be along ripline where slope flatter than 1v:3h
Mulch rings to be applied to all individual trees.
- BUSH REGENERATION
Removal and control of weeds and planting of canopy/shrubs species tubestock at 1/2 per m²
 - TURF
100 ameliorated topsoil over 200 cultivated subgrade
 - TREE PLANTING @ 1/20m²
In Seeded Area
 - SCOUR PROTECTION
 - ⊕ Habitat / Hollow tree to be retained
 - ⊙ Threatened Fauna
- CONTOURS**
- Existing Contours at 1m Intervals
 - Proposed Contours at 0.5m Intervals
- NOTES:**
Refer to Schedules for plant quantities and sizes

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DRAWING FILE LOCATION / NAME		DESIGN/MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING		PROJECT DOCUMENT NUMBER		REVISION																					
EXTERNAL REFERENCE FILES		<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>APPD</th> <th>Lot No.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>19/04/13</td> <td>SHEET ADDED & RESHAPING</td> <td>ME</td> <td>140A</td> </tr> <tr> <td>B</td> <td>10/12/13</td> <td>EXISTING CONTOURS ADDED</td> <td>ME</td> <td>140A</td> </tr> <tr> <td>C</td> <td>26/02/14</td> <td>CONTOURS AMENDED</td> <td>ME</td> <td>140A</td> </tr> </tbody> </table>		REV	DATE	DESCRIPTION	APPD	Lot No.	A	19/04/13	SHEET ADDED & RESHAPING	ME	140A	B	10/12/13	EXISTING CONTOURS ADDED	ME	140A	C	26/02/14	CONTOURS AMENDED	ME	140A	S2W-DRG-20-2000-LD1071 SWW CITY OF COFFS HARBOUR		C	
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C	26/02/14	CONTOURS AMENDED	ME	140A																							
		SCALE Units - m 		HIGHWAY_NO 10 ZONE 2000 LANDSCAPE DESIGN LANDSCAPE PLANT SCHEDULE																							
		CONTRACTOR LEIGHTON Fulton Hogan		DESIGNER AECOM SMEC		TRACT 0010.110RC4207 FOR CONSTRUCTION																					
		DESIGNER AECOM SMEC		LEIGHTON Fulton Hogan		SHEET No SHEET 36																					

150 mm ON ORIGINAL



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FOR CONSTRUCTION**

REV	DATE	DESCRIPTION	APPD	Lot No.
A	19/04/13	SHEET ADDED & RESHAPING	ME	140A
B	20/03/14	RESHAPING	ME	140A

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

SCALE Units - m

CONTRACTOR

DESIGNER

PROJECT DOCUMENT NUMBER	S2W-DRG-20-2000-LD1122	REVISION	B
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ZONE 2000 LANDSCAPE DESIGN DETAILS			
RTA PLAN REGISTRATION NO OF PLAN	0010.110RC4207	SHEET NO	SHEET 12
ISSUE STATUS	FOR CONSTRUCTION	ISSUE	

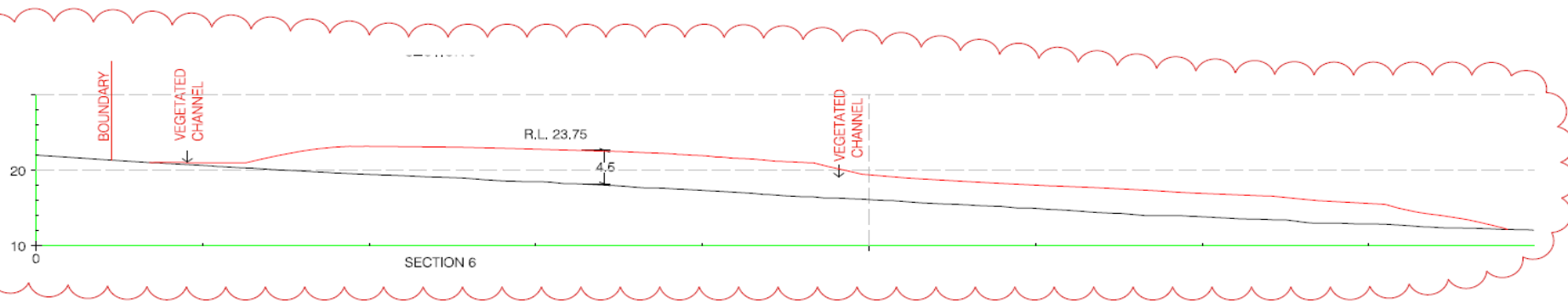
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SECTION 4

SECTION 5

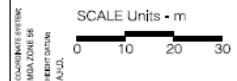
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		B	20/03/14	RESHAPING	ME	140A	LANDSCAPE DESIGN	
							DETAILS	
						SITE PLAN REGISTRATION NO. OF PLANS 0010.110RC4207		
						SHEET STATUS FOR CONSTRUCTION		SHEET No. SHEET 13



CONTRACTOR
LEIGHTON
Fulton Hogan

DESIGNER
AECOM **SMC**

LEIGHTON **F**

Fulton Hogan

Tract

Appendix B Agency Comments

Reference	Review Comment	JV Response
EPA comments received 22 October 2013	The EPA understands that there will be no additional clear required to finalise the 5 proposed permanent stockpile locations identified in Table 2.1 on page 8;	Correct, no additional clearing required.
	The EPA understands that suitable erosion and sediment (ERSED) controls will be maintained or established prior to final placement and/or shaping works being undertaken at each of the locations;	Correct, site specific ERSED plans will be developing in conjunction with Soil Conservation Service and implemented in advance of shaping works.
	The EPA understands that erosion and sediment control plans will be developed for all 5 locations, and these locations will be stabilised and that permanent groundcover will be established before ERSED controls are removed;	Correct, site specific ERSED plans will be developing in conjunction with Soil Conservation Service and implemented in advance of shaping works. Controls will be maintained until 70% surface stabilisation with vegetative cover is achieved.
	The EPA highlights the requirement to ensure that waste including construction wastes such as geo-fabric, concrete, barrier fencing, sediment fence, poly pipe, fencing materials are not included in the permanently stockpiled material which is understood to be Excavated Natural Material (ENM), and will be tested in accordance with the Australian Standard 1141 (or equivalent) to comply with the with the EPA Excavated Natural Material Exemption 2008;	Noted, all construction waste will be excluded from the proposed beneficial re-use areas – except for verified ENM material. Toolbox talks and surveillance will be implemented to ensure compliance.

EPA comments received 22 October 2013	The EPA also seeks confirmation that the sampling demonstrates that the material meet the ENM exemption;	LFHJV will provide EPA with records demonstrating the material meets the ENM exemption.
	The EPA notes that comments provided in submissions by residents consulted during the development of the Environmental Review raised a number of concerns about potential dust nuisance and the generation of noise and vibration during the conduct of works at each of the identified locations. The EPA notes that the Leighton Fulton Hogan Joint Venture have committed to manage the works in accordance with the Environment Protection Licence (No. 13278) and the approved Construction Environment Management Plan.	As per the commitments in Sections 5, 6 and 7 above the works will be undertaken in accordance with: <ul style="list-style-type: none"> the CEMP and associated sub plans including the <i>Construction Air Quality Management Plan</i> and <i>Construction Noise and Vibration Management Plan</i>; and EPL 13278 for the Sapphire to Woolgoolga Pacific Highway Upgrade
Department of Planning 18 January 2014	Ensure effect on private properties has been managed and increased flows considered for drainage lines.	Sections 2.1.1 to 2.1.5 include information relating to drainage and flows for each mound.
Department of Planning 3 December 2013	Table 2.1 should include a column which describes the pre-existing condition of each site.	Table 2.1 includes states the pre-existing & current condition of each site.
	Table 2.1 fails to demonstrate how the re-use of this material would be beneficial. A more detailed table should be provided (or a new table provided in section 5) which summaries the environmental constraints and	Table 2.1 includes the beneficial reuse of each site.

	opportunities before determining whether the use will be 'beneficial'.											
	Section 2.1.5 states that the existing dwelling house was demolished as part of the S2W project. Does a dwelling entitlement still exist on this site?	The property will maintain a dwelling 'entitlement'. However, a dwelling being constructed is subject to Council's approval (current LEP, Development approval conditions etc).										
	Section 5 provides only a very brief overall assessment of the environmental impacts. This section should assess and consider any potential impacts for each site individually.	Tables 2.1.1 to 2.1.5 detail the potential environmental impacts for each site.										
	Section 5 states that only additional impacts are assessed in this section. A new subheading should be provided which describes those impacts that are not considered 'additional'.	The proposal is a modification, whereby Section 5 states ' <i>An assessment of the proposed works has been undertaken to determine the environmental impacts compared to those of the Approved Project.</i> <i>The proposed works have been assessed using the topics/issues discussed in the Project EA.</i> '										
	Section 5 should include a discussion on flooding. If these sites are not flood affected this should be stated.	Sections 2.1.1 to 2.1.5 provide additional details on flooding and drainage of each mound.										
	Section 5.6 should be expanded. (i) Which sites are in which zones?.	<table border="1"> <thead> <tr> <th>Site identification</th> <th>Residue area (approx)</th> <th>Zoning (CHCC LEP 2013)</th> <th>Minimum lot size (CHCC LEP 2013)</th> <th>Dwelling Entitlement*</th> </tr> </thead> <tbody> <tr> <td>Reuse Location 1 RMS-owned land: 817 – 817a Pacific Highway, Korora (Lot 50 DP 847756)</td> <td>2.44Ha</td> <td>R5 Large Lot Residential</td> <td>1Ha</td> <td>Yes</td> </tr> </tbody> </table>	Site identification	Residue area (approx)	Zoning (CHCC LEP 2013)	Minimum lot size (CHCC LEP 2013)	Dwelling Entitlement*	Reuse Location 1 RMS-owned land: 817 – 817a Pacific Highway, Korora (Lot 50 DP 847756)	2.44Ha	R5 Large Lot Residential	1Ha	Yes
Site identification	Residue area (approx)	Zoning (CHCC LEP 2013)	Minimum lot size (CHCC LEP 2013)	Dwelling Entitlement*								
Reuse Location 1 RMS-owned land: 817 – 817a Pacific Highway, Korora (Lot 50 DP 847756)	2.44Ha	R5 Large Lot Residential	1Ha	Yes								

		<p>Reuse Location 2 RMS-owned land: 18c The Mountain Way, Sapphire Beach (Lot 4 DP 249773)</p>	2.5Ha	RU2 Rural Landscape	40Ha	Yes
		<p>Reuse Location 3 RMS-owned land: 10 Gaudrons Road, Sapphire Beach (Lot 122 DP 1211466)</p>	2.07Ha	RU2 Rural Landscape	40Ha	Yes
		<p>Reuse Location 4 RMS-owned land: 16 Sugarmill Road, Sapphire Beach (Lot 11 DP 243972)</p>	1.83Ha	RU2 Rural Landscape	40Ha	Yes
		<p>Reuse Location 5 RMS-owned land: 1225 Pacific Highway, Moonee Beach (Lot 4 DP 599177)</p>	3.67Ha	RU2 Rural Landscape	40Ha	Yes
		* Subject to development consent from CHCC				
	(ii) What are the lot sizes of each parcel to be eventually sold?	A final boundary for the properties has not yet been determined; therefore actual residual areas are not available. Approximate areas are shown in the table above.				
	(iii) Are dwelling houses permissible in these zones (given the lot sizes)?	The zoning classifications for each of the properties within this strategy are shown in the above table. Each property will maintain a dwelling 'entitlement'. However, a dwelling being constructed is subject to Council's approval (current LEP, Development approval conditions etc).				
	(iv) A printout from the Coffs Harbor LEP 2000 maps showing each site should be provided	Appendix D illustrates the locality of each overlaid onto Council's LEP maps				

	For the residents concerned about view loss, a view loss analysis should be provided (including photographs). This should include a comparison of views from the residences before and after the proposed contouring together with a discussion on the type and nature of the views currently enjoyed.	Section 4 includes a view loss analysis in Table 3, including photographs.
	The plans/sections in Appendix A should be clearly labelled with their respective site numbers.	Appendix A identifies each stockpile.
	A plan showing the before and after contours for each site should be provided.	Appendix A illustrates the before (gray) and after (red) contours for each stockpile site.
	A copy of the notification letter/package to residents should be provided, together with a map indicating the residents consulted. How long were residents given to respond to the notification letter?	Appendix E includes a consultation map. Appendix C also includes the notification letters issued to residents. Residents were given one month to respond to the notification letter, which is detailed in Appendix C.
	Photographs and/or photomontages of each site should be provided.	Sections 2.1.1 to 2.1.5 and Section 4 includes photographs of each site.

Appendix C

Response to Submissions

Response to submissions

1. Purpose of this report

This report identifies the issues raised in community submissions received in response to consultation regarding the proposed permanent placement of excess material on residual land owned by Roads and Maritime Services (Roads and Maritime) and provides responses to those issues (sections 3.2-3.6).

2. Consultation process

In consultation with Roads and Maritime, it was determined that residents who had line of sight to the proposed permanent placement sites needed to be consulted in regards to the permanent placement of excess material on Roads and Maritime residual land that already had been used for temporary stockpiling.

These residents were identified from aerial photographs. They also were identified by a ground-truthing exercise undertaken at the proposed sites to determine those residences that could be seen.

The ground-truthing exercise identified a number of new additional residences that were not identified from the aerial photography due to the date the photography occurred.

As a result of the above, it was determined that consultation needed to occur with 21 residents.

Draft letters and a feedback form (refer below) regarding the permanent placement of excess material were sent to Roads and Maritime for approval along with aerial photographs marked up to show the stockpile locations and affected stakeholders, a spreadsheet setting out the timeframes for the consultation process and information regarding the proposed permanent stockpiles which included cross sections from various perspectives, contour intervals marked up on aerials and the proposed landscaping plans.

The letter set out the:

- Location of the proposed stockpiles.
- The size of the proposed stockpile in cubic metres.
- The proposed future use by Roads and Maritime of the residual land on which the stockpiles will be located.
- The environmental benefits of permanently placing the excess material on Roads and Maritime residual land.

Following approval of the information by Roads and Maritime, the stakeholders were contacted and meetings arranged at their residences. At the meetings, the existing temporary stockpiles were visually identified for the residents. The proposal to permanently place the excess material was explained in detail including the various perspectives shown on the cross sections, the aerials with the contour intervals marked up and the proposed landscaping plans. Roads and Maritime' intentions for the future use of the residual land also was explained.

Two copies of the letter and feedback form were taken to these meetings. It was explained that the feedback form on the back of the letters should be filled in identically by the resident so that one could be returned to the Leighton Fulton Hogan Joint Venture and the other retained for their records. The residents also were

provided with a Reply Paid envelope in which to send their completed feedback form back. They also were provided with the project's free call phone number and the project's email address if they needed further information. Residents were given a total of one (1) month to respond to the notification letter.

The process for approval of the permanent placement of excess material also was explained and the residents were advised that they would be notified of the outcome.

In some cases, residents having difficulty understanding the contour levels asked for the placement of a visual indicator (survey pegs) to show the final level of the proposed excess material (Reuse Location 2: 18c The Mountain Way, Sapphire Beach) and at one temporary stockpile location (Reuse Location 1: 817 – 817a Pacific Highway, Korora), minor works were undertaken to reshape the material to provide a better visual indication of the proposed final formation.

In these instances, subsequent meetings were held with some of the residents after the initial meeting following this work.

3. Consideration of submissions

3.1 Response to submissions

A total of 21 residents with line of sight were consulted about the proposed permanent placement of excess material. One resident was overseas. Several subsequent attempts to contact this resident have been unsuccessful.

The relevant proposed permanent placement sites are set out in sections 3.2-3.7 and chainages provided. The submissions received and responses to the issues are also set out in sections 3.2-3.7

3.2 Reuse Location 1: 817 – 817a Pacific Highway, Korora.

This proposed permanent placement site required consultation with 10 residents with line of sight. Initially, eight of the 10 residents supported the permanent placement of material at this site with two residents providing feedback that they did not agree with the proposal. However, it is noted since the original proposal the proposed reuse northern proposal has been removed and the southern option does not interrupt current views. With the removal of the northern proposal, the two residents not agreeing with the proposal were re-consulted and now all 10 residents are supporting the proposal.

Issue:

Current height of the excess material to be reduced/flattened.

Response:

All residents were provided with the various perspectives shown on the cross sections and the aerials with the contour intervals marked up and these were discussed with them. Some flattening of the material also was undertaken at Reuse Location 1: 817 – 817a Pacific Highway, Korora following the initial meetings to provide a better visual indication of the proposed final formation. Subsequent meetings were held with some of the residents after the initial meeting following this work.

Issue:

Can the excess material be used to fill a gully on the southern side?

Response:

No. This would impact on the natural water flows through the gully and result in sedimentation flowing into watercourses.

Issue:

Have concerns about noise deflection from the proposed sound wall on the eastern side of the new road and would hope regeneration on the western side will include plantings of suitable density and height to counteract the problem of sound bouncing back up the hill.

It would be beneficial to use this as a bund along the western edge of the new highway as the start of a noise barrier.

Response:

All residents were provided with the proposed landscaping plans which showed hydroseeded grass. The plantings are not intended to act as a sound barrier but rather to suit the proposed future use of the land including potential future development. In regards to noise, following the project's opening, Roads and Maritime undertakes post-operational noise monitoring generally six to 12 months afterwards. If further noise mitigation measures are required, these are undertaken where reasonable and feasible.

Issue:

We would prefer no housing development – just tidy up and plant grass and native shrubs.

Response:

The letter and discussion with all residents advised that the material will be reshaped to suit future land use including potential development.

Issue:

Do not want any impact on our current view. The land could potentially be built on and therefore can affect my views.

Response:

Noted. However, the potential to have a dwelling built on the land is pre-existing and, at the natural ground level of the Roads and Maritime residual land, the views of these residents would still be impacted by a dwelling.

Issue:

The stockpile looks to be contaminated with concrete, steel, tree stumps and asbestos along with soil that is not arable for agricultural use.

Response:

The letter and discussion with all residents advised that the material will be reshaped to suit future land use including potential development. It is noted that there is no longer a proposal to utilise this land as a future development.

In regards to the nature of the excess material, the material is excavated natural material (ENM) sourced from the Sapphire to Woolgoolga alignment with some vegetation from the clearing phase of the project and minor construction waste, mostly associated with redundant erosion and sedimentation controls. If the proposal to permanently place excess material on the site is approved, laboratory tests will be carried out to confirm the material is ENM and the results passed on to Roads and Maritime.

3.3 Reuse Location 2: 18c The Mountain Way, Sapphire Beach

This proposed permanent placement site required consultation with four residents with line of sight. One of the four residents supported the permanent placement of material at this site. Another resident provided feedback that they were not necessarily opposed. Two residents provided feedback that they did not agree with the proposal. However after further consultation by RMS one of the two residents not agreeing with the proposal now agrees with the proposal.

Issue:

There is the potential for the site not being kept maintained and trees overtaking the site.

Response:

This issue is in relation to interrupting coastal views which was raised by four respondents. The landscape treatment for the proposed re-shaped material will involve be hydroseeded grass. Survey assessment shows that the excess material will not interrupt the valued coastal views of the nearest property with line of sight to the proposed reshaped material. From this nearest property, the reshaped material will be located between 19.3 metres to 33 metres below their northerly views to the coastline. The reshaped material to the southerly views from this property will be between 14.5 metres to 18 metres below their views to the coastline. The greater risk to uninterrupted coastal views are trees that could naturally revegetate at the top roadside elevation of the Roads and Maritime owned residual land rather than the re-shaped material metres below.

Issue:

Have you considered offering to put fill into the valley on the adjacent property and so have a much shallower slope all the way.

Response:

To place material on the adjacent property would require a DA and a Section 143 sign-off. Placing permanent material into the valley would interrupt a natural watercourse and so would not be considered by the project.

Issue:

When a section of our land for upgrade purposes was acquired by Roads and Maritime, we signed off on that acquisition with no knowledge of the intention to construct a mound of any sort let alone one of the proportion that exists now.

Response:

When the acquisition occurred, the intention to temporarily place excess material on Roads and Maritime residual land was not proposed. Consultation with adjacent residents took place in late 2010.

Issue:

We have been advised that this stockpile contains approximately 95,000 cubic metres and more is currently being added on a daily basis.

Response:

It is unknown where this advice has come from. The residents were advised by letter and during the one-on-one consultations with them that it was proposed to permanently place about 44,000 cubic metres of excess material at the above location. They were advised that the current excess material will be reduced by a minimum of at least 6.5 metres in height and the material reshaped for beneficial re-use to create terraced landform for agricultural purposes.

No further excess material has been placed on the Roads and Maritime residual land since late June 2013 because access to the site has not been available due to the construction activities happening in the vicinity including paving. Nonetheless, there is no intention to increase the amount of proposed excess material to be placed other than what the residents have been consulted about.

Issue:

Ourselves and other affected residents have never been consulted on the intentions and proportions this mound would achieve.

Response:

In correspondence and on-site meetings with residents regarding the material, they were advised that until the project worked out its 'cut to fill' requirements, it was unclear how much of the material would be removed. They were also advised that should it become necessary to leave some of the excess material at this location, there would be a formal approval process which included the current consultation with the property owners who may potentially be affected.

3.4 Reuse Location 3: 10 Gaudrons Road, Sapphire Beach

This proposed permanent placement site required consultation with one resident on the western side of the upgraded highway with line of sight.

The one resident agreed to the permanent placement of excess material on the site.

Issue:

There were no issues raised by the one resident.

Response:

As there was no issues raised and they agreed with the permanent placement of excess material there was no further correspondence undertaken by RMS and LFHJV.

3.5 Reuse Location 4: 16 Sugarmill Road, Sapphire Beach

This proposed permanent placement site required consultation with one resident on the western side of the upgraded highway with line of sight. An approved noise barrier on the eastern side of the upgraded highway precluded consultation with residents in this vicinity.

The one resident agreed to the permanent placement of excess material on the site.

Issue:

The resident stated a preference for Roads and Maritime not to build on the land for privacy reasons. The resident also stated they had a drainage problem with the Roads and Maritime residual land and also wanted weeds on the fence line cleared to have a boundary fence erected.

Response:

Both the letter to the resident and one-on-one discussion made it clear that Roads and Maritime's intended future use of the land was potential development. There is already an existing residence nearby on the other property adjacent to the stakeholder. The one-on-one discussion with the resident also made it clear that the proposal for potential development will likely solve the existing issues of drainage, weeds and a boundary fence being installed which was acknowledged in the discussion.

3.6 Reuse Location 5: 1225 Pacific Highway, Moonee Beach

This proposed permanent placement site required consultation with three residents with line of sight. The three residents supported the permanent placement of material at this site.

Issue:

Two residents raised the need for landscaping, with one resident raising the need for some re-shaping to achieve a gentler gradient and also to have the first option to purchase the land as a housing block.

Response:

The proposed landscaping plans were detailed in discussions with the residents and the plans left with the residents. The landscaping treatment for the site is hydroseeded grass.

The residents were also provided with the various perspectives shown on the cross sections and the aerials with the contour intervals marked up and these were discussed with them.

In regards to a first option to purchase, Roads and Maritime cannot enter into such an agreement. If Roads and Maritime proceeds with the proposed future use as a housing block, it is required to market the property on the open housing market.

Appendix D

Coffs Harbour LEP 2013



**Coffs Harbour
Local Environmental
Plan 2013**

**Land Zoning Map -
Sheet LZN_005D**

Zone

- B1 Neighbourhood Centre
- B2 Local Centre
- B3 Commercial Core
- B4 Mixed Use
- B5 Business Development
- B6 Enterprise Corridor
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- I1 General Industrial
- I3 Heavy Industrial
- I4 Working Waterfront
- R1 General Residential
- R2 Low Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU1 Rural Landscape
- RU2 Forestry
- SP1 Special Activities
- SP2 Infrastructure
- SP3 Tourist
- W1 Natural Waterways
- W3 Working Waterways
- W2 Recreational Waterways
- DM Deferred Matter

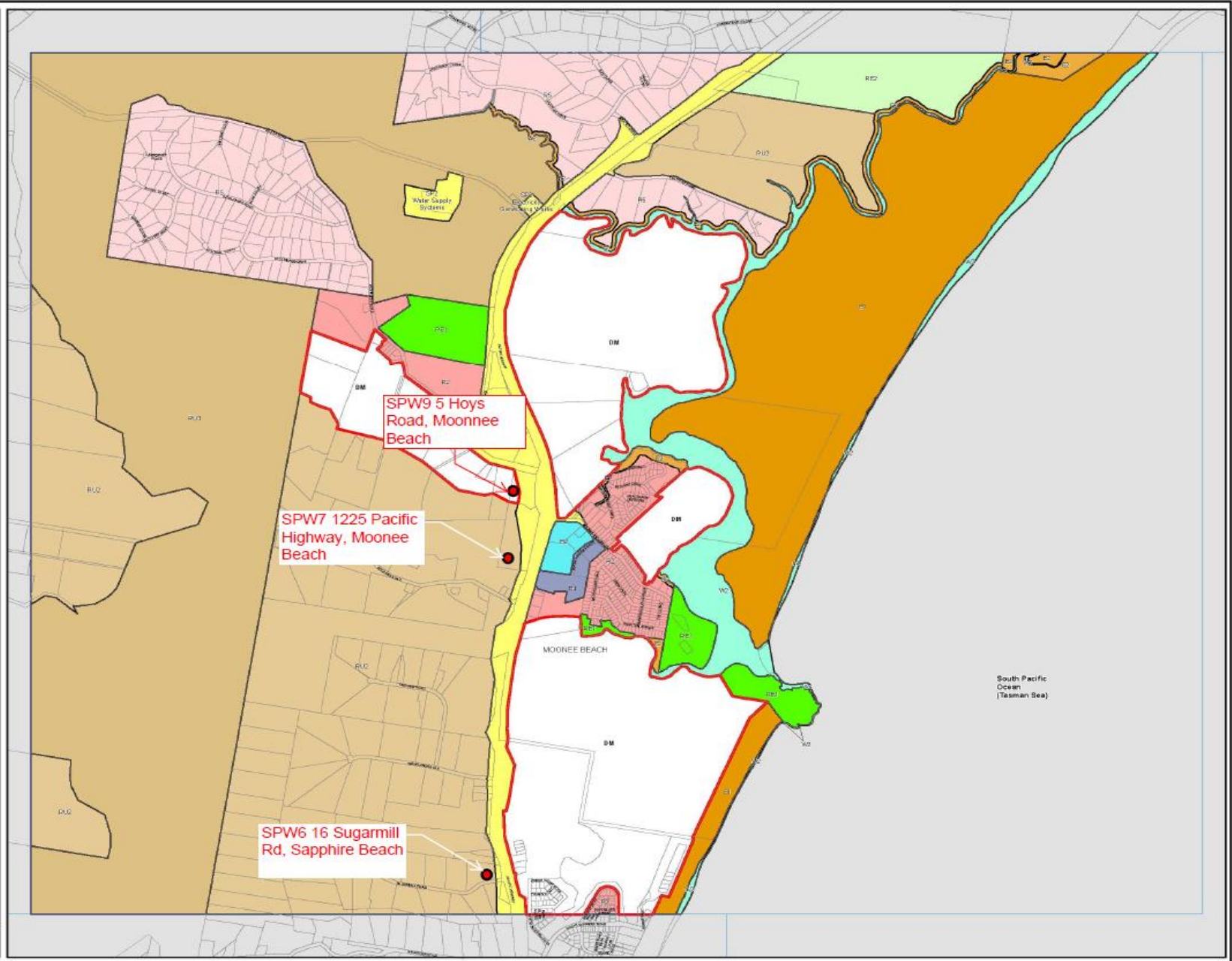
Cadastral

- Base Data 1990 © Land and Property Information
- Addendum Data 8/03/2013
- © Coffs Harbour City Council



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MGA Zone 58
Scale: 1:20,000 @ A3

Map identification number: 1000_COM_LZN_005D_02_20130306





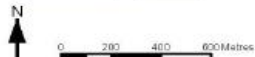
**Coffs Harbour
Local Environmental
Plan 2013**

**Land Zoning Map -
Sheet LZN_005C**

Zone

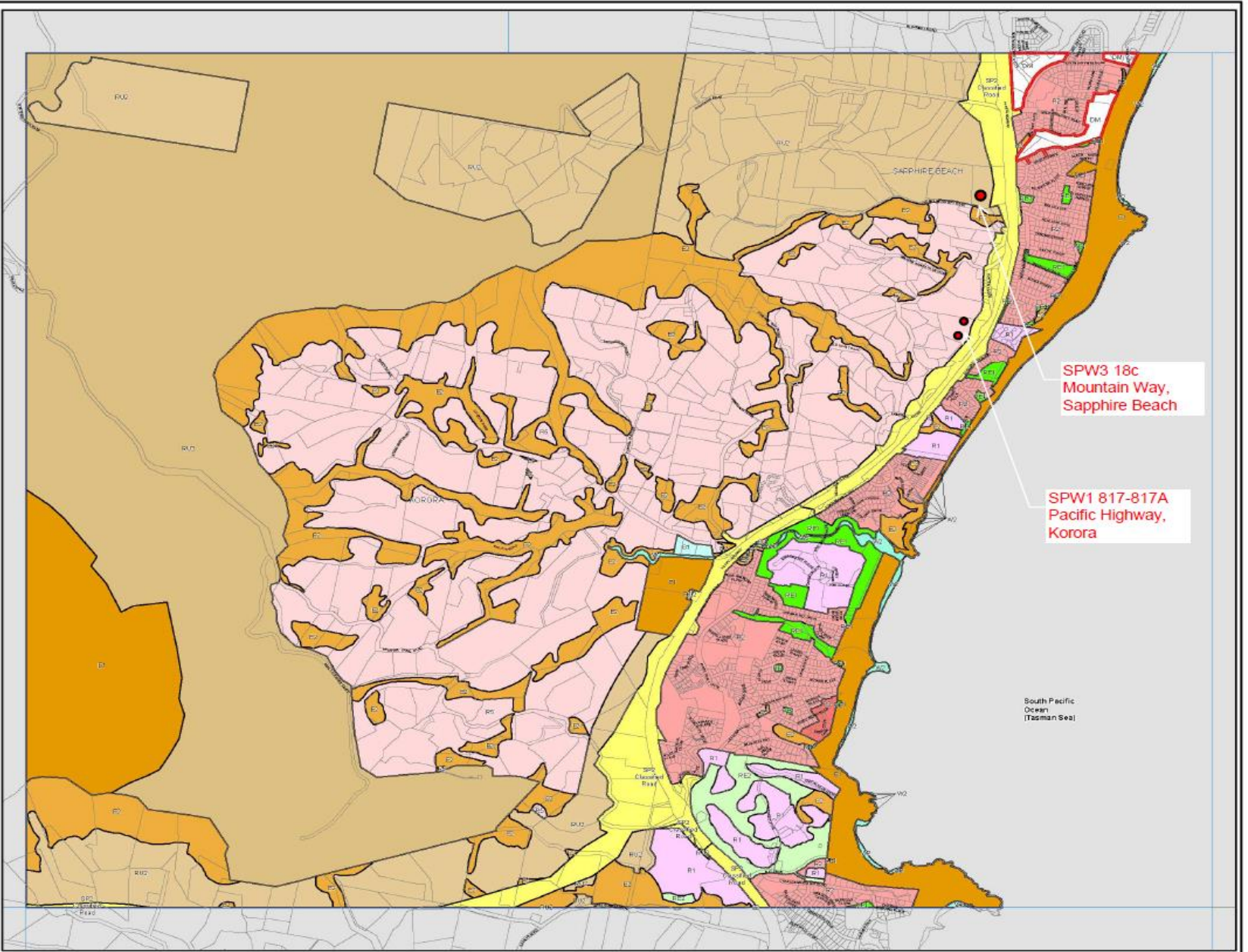
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- B2 Local Centre
- B3 Commercial Core
- B4 Mixed Use
- B5 Business Development
- BB Enterprise Corridor
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- I1 General Industrial
- I5 Heavy Industrial
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- R1 General Residential
- R2 Low Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU1 Rural Landscape
- RU3 Forestry
- SP1 Special Activities
- SP2 Infrastructure
- SP3 Tourist
- W1 Natural Waterways
- W3 Working Waterways
- W2 Recreational Waterways
- DM Deferred Matter

Cadastral
 Base Data 1990 © Land and Property Information
 Addendum Data 6/03/2013
 © Coffs Harbour City Council



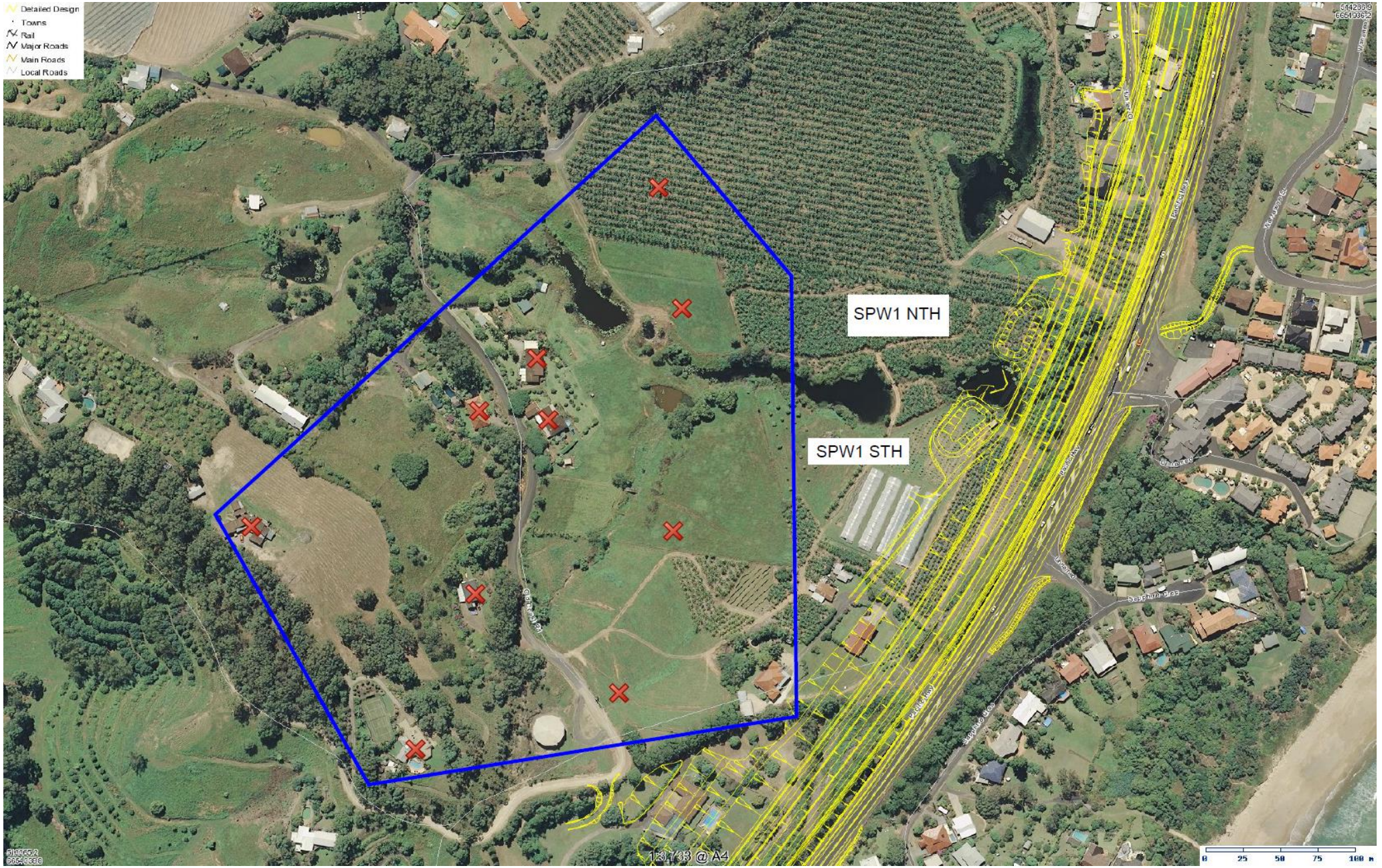
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Map identification number: 1000_CoM_LZN_005C_00_20130501



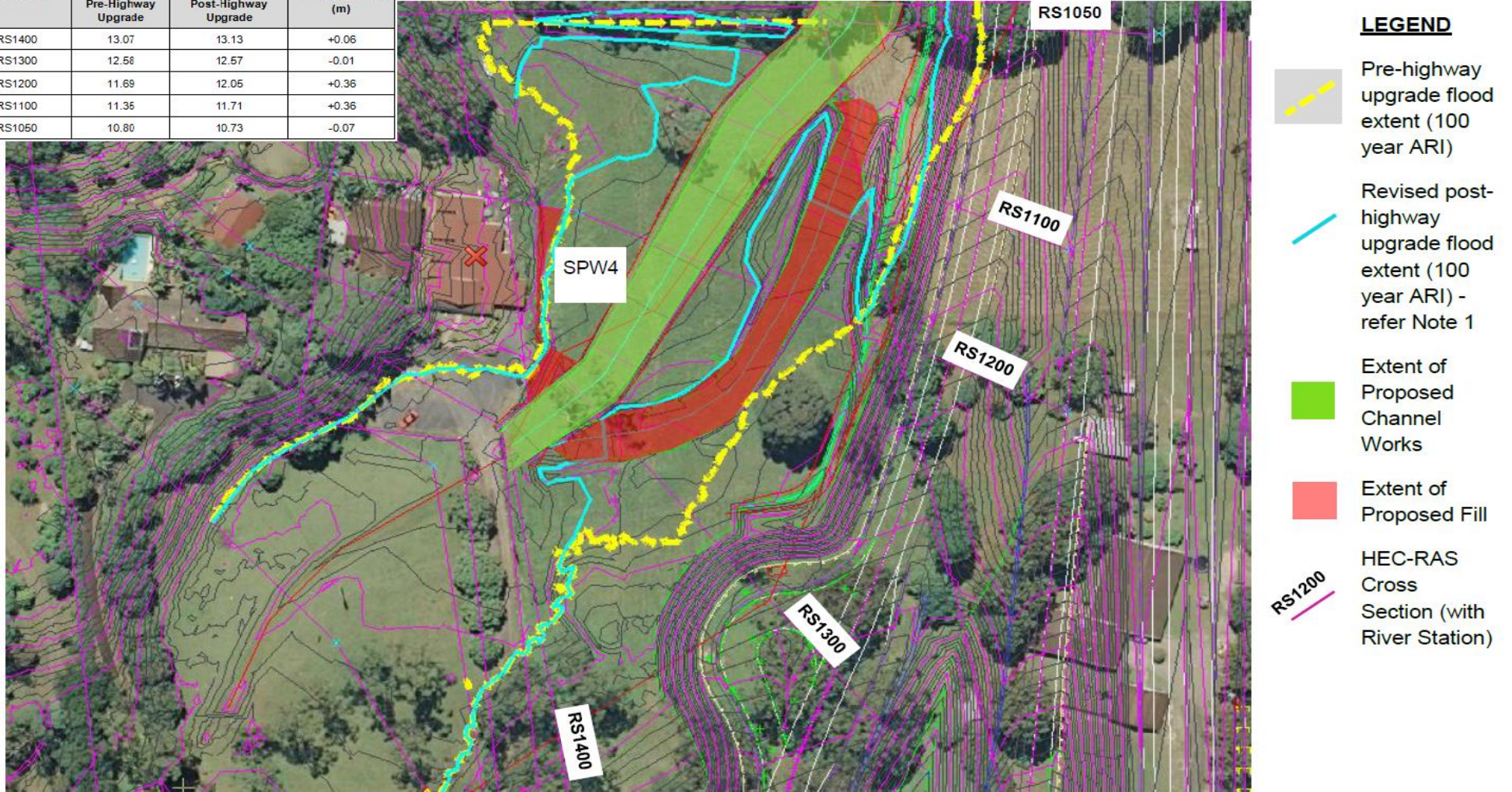
Appendix E

Resident consultation map








Location of Residents Consulted for Reuse Location 1

HEC-RAS River Station (RS) Reference	Peak 100 year ARI flood level (m AHD)		Difference in peak 100 year ARI flood level (m)
	Pre-Highway Upgrade	Post-Highway Upgrade	
RS1400	13.07	13.13	+0.06
RS1300	12.56	12.57	-0.01
RS1200	11.69	12.05	+0.36
RS1100	11.36	11.71	+0.36
RS1050	10.80	10.73	-0.07



LEGEND

-  Pre-highway upgrade flood extent (100 year ARI)
-  Revised post-highway upgrade flood extent (100 year ARI) - refer Note 1
-  Extent of Proposed Channel Works
-  Extent of Proposed Fill
-  HEC-RAS Cross Section (with River Station)

Notes

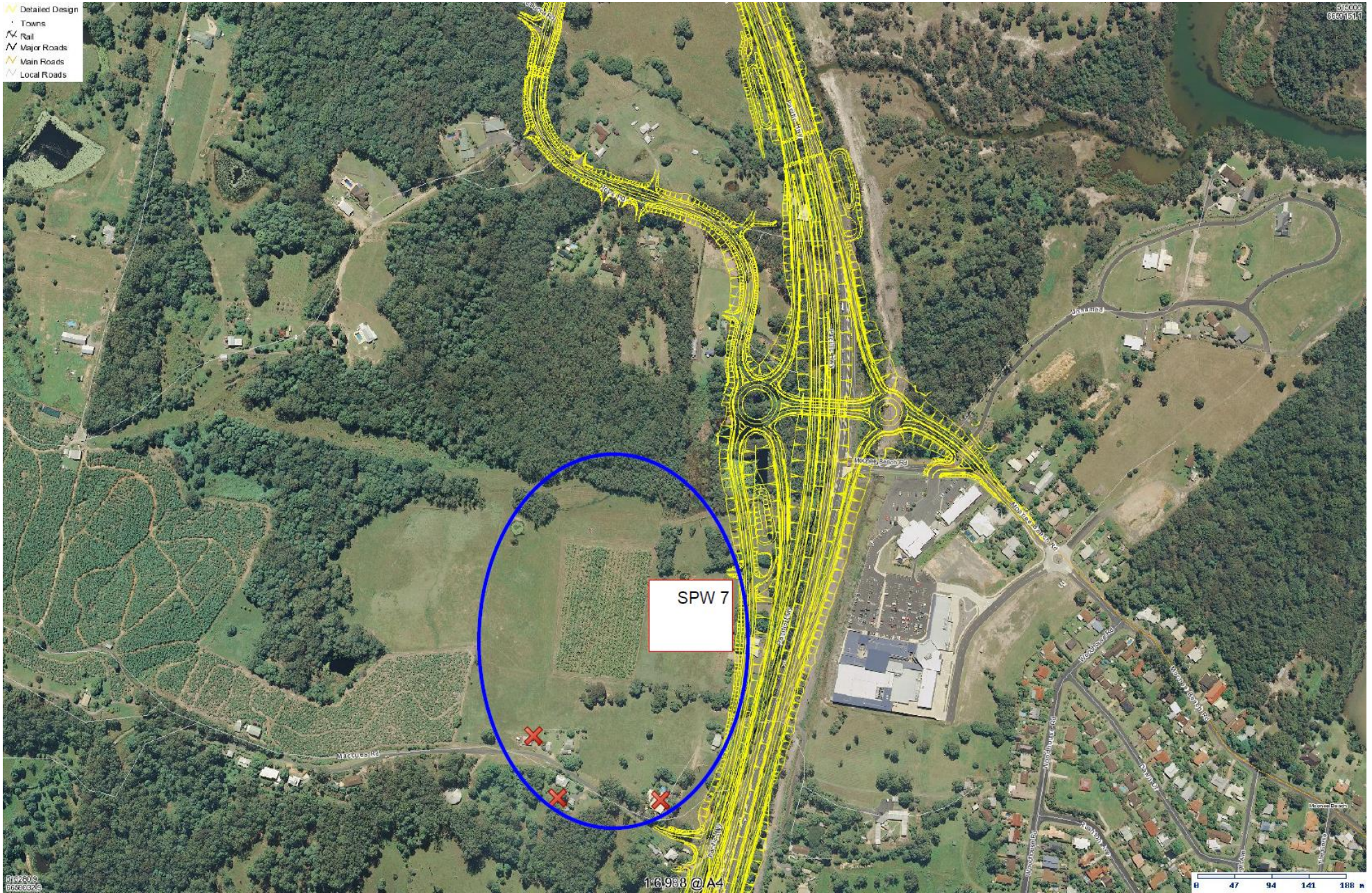
1. Revised post-highway upgrade scenario based on current site stockpile arrangement (at 29 May 2014) with proposed channel works and filling as shown above.

Figure 1
Overview of Proposed Works and Impact on Flood Extents

Location of Resident consulted west of Reuse Location 3



Location of Resident consulted north of Reuse Location 4



Location of Residents consulted for Reuse Location 5

Appendix F
ENM Analytical Data Opinion and Compliance
Validation Report and Test Results