

**APPLICATION PURSUANT TO SECTION 75W  
OF THE ENVIRONMENTAL PLANNING  
AND ASSESSMENT ACT 1979**

**SHOALHAVEN STARCHES**

**PROPOSED MODIFICATION  
TO BOLONG ROAD SERVICES CROSSING  
PROPOSED UNDERBORE PIPEWORK/CONDUITS  
TO REPLACE  
APPROVED OVERHEAD TRANSFER BRIDGE CROSSING**

**RELATING TO PROJECT APPROVAL MP06\_0228  
SHOALHAVEN STARCHES EXPANSION PROJECT**

Prepared for

**Shoalhaven Starches Pty Ltd**

June 2016



Prepared by:

*COWMAN STODDART PTY LTD*

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Ref. 16/36

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**COWMAN STODDART PTY LTD**

**CERTIFICATION OF ENVIRONMENTAL ASSESSMENT**  
PREPARED PURSUANT TO PART 3A OF THE *ENVIRONMENTAL PLANNING*  
*AND ASSESSMENT ACT 1979*

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**ENVIRONMENTAL ASSESSMENT  
PREPARED BY**

Name: S. D. Richardson

Qualifications: M. Appl. Sc., B.T.P., Grad. Dip. Env. Mgt,  
CPP, MPIA

Address: Cowman Stoddart Pty Ltd  
31 Kinghorne Street  
NOWRA NSW 2541

in respect of

---

**PROJECT TO WHICH PART 3A APPLIES**

Proponent Name: Shoalhaven Starches Pty Ltd

Proponent Address: Bolong Road, Bomaderry

Land to be developed: Address Bolong Road, Bomaderry

Lot No., DP/MPS, Vol/Fol etc.

Project Development: Shoalhaven Starches Expansion Project (MP 06\_0228)

Proposed modifications to Project Approval (MP06\_0228);  
proposed modification to Bolong Road services crossing.  
Proposed underbore pipework/conduits to replace the  
approved overhead transfer bridge crossing.

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**Environmental Assessment**

An Environmental Assessment is attached

---

**Certification**

I certify that I have prepared this environmental  
assessment and to the best of our knowledge

- It has been prepared in accordance with Section 75W of the *Environmental Planning and Assessment Act 1979*,
- The information contained in the Environmental Assessment is neither false nor misleading.

Signature:



Name:

S. D. Richardson

Date:

29<sup>th</sup> June 2016

# CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.0</b>	<b>THE SITE AND SURROUNDING LOCALITY .....</b>	<b>3</b>
<b>3.0</b>	<b>BACKGROUND.....</b>	<b>8</b>
3.1	PROJECT APPROVAL MP 06_0228.....	8
<b>4.0</b>	<b>STATUTORY SITUATION.....</b>	<b>10</b>
4.1	PART 3A OF THE EP&A ACT .....	10
4.2	SECTION 75W AND MODIFICATION PROPOSALS.....	12
4.3	PROTECTION OF THE ENVIRONMENT OPERATIONS ACT.....	13
4.4	LOCAL PLANNING PROVISIONS.....	13
<b>5.0</b>	<b>THE MODIFICATION PROPOSAL .....</b>	<b>29</b>
5.1	MP06_0228 – THE APPROVED DEVELOPMENT .....	29
5.2	THE MODIFICATION PROPOSAL .....	29
5.2.1	Proposed Modified Bolong Road Service Crossing .....	29
5.2.2	Construction Methodology .....	31
<b>6.0</b>	<b>CONSULTATION .....</b>	<b>41</b>
<b>7.0</b>	<b>RISK ASSESSMENT OF POTENTIAL ENVIRONMENTAL IMPACTS.....</b>	<b>45</b>
<b>8.0</b>	<b>KEY ISSUES .....</b>	<b>52</b>
8.1	HAZARDS .....	52
8.2	RIPARIAN ISSUES .....	52
8.3	WATER AND SOILS .....	53
8.4	VISUAL IMPACTS.....	53
8.5	TRAFFIC ISSUES.....	56
8.6	IMPACTS ON OTHER SERVICES .....	57
<b>9.0</b>	<b>STATEMENT OF ADDITIONAL COMMITMENTS.....</b>	<b>59</b>
9.1	RIPARIAN ISSUES .....	59
9.2	WATER AND SOILS .....	59
9.3	ROAD ASSET .....	60
<b>10.0</b>	<b>CONCLUSION.....</b>	<b>61</b>

## FIGURES

<b>Figure 1</b>	View of Location of Proposed Bolong Road Services Crossing
<b>Figure 2</b>	Location Plan
<b>Figure 3</b>	Site Locality Plan
<b>Figure 4</b>	Zoning provisions applying under Shoalhaven LEP 2014
<b>Figure 5</b>	Installing Augers and Steel Enveloper and Pushing Out Pilot Rods using Auger Boring Method
<b>Figure 6</b>	Elevation Detail of Approved Pedestrian Bridge
<b>Figure 7</b>	Plan of Potholing undertake to Locate Services

## ANNEXURES

<b>Annexure 1</b>	Director-General's Requirements (DGRs) for the preparation of this EA and Consultation Responses from other Agencies
<b>Annexure 2</b>	Plans of Proposal
<b>Annexure 3</b>	Geotechnical advice prepared by Coffey Geoscience
<b>Annexure 4</b>	Survey Service Locations and Levels prepared by Allen Price & Scarratts Surveyors

## **EXECUTIVE SUMMARY**

Shoalhaven Starches is a member of the Manildra Group of companies. The Manildra Group is a wholly Australian owned business and the largest processor of wheat in Australia. It manufactures a wide range of wheat based products for food and industrial markets both locally and internationally.

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including: starch, gluten, glucose and ethanol.

In 2009 the Minister for Planning issued Project Approval for an application made by Shoalhaven Starches to increase its ethanol production capacity to meet the expected increase in demand for ethanol arising from the abovementioned ethanol mandate by upgrading the existing ethanol plant located at the Shoalhaven Starches Plant at Bomaderry. This Shoalhaven Starches Expansion Project (SSEP) Approval enabled Shoalhaven Starches to increase its ethanol production in a staged manner at its Bomaderry Plant from the previously approved level of 126 million litres per year to 300 million litres per year subject to certain conditions.

Following the Minister's determination Shoalhaven Starches have been implementing and commissioning works in accordance with this approval. The commissioning of components of the approved development provided the Company with an opportunity to review and identify several operational, efficiency and process improvements.

The original Project Approval issued by the Minister in 2009 included the establishment of a new Packing Plant on the northern side of Bolong Road. In order to direct dried product and to provide services such as power to the new Packing Plant from the factory site on the southern side of Bolong Road, the Project Approval provided for an overhead transfer bridge crossing that would cross from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289.

Shoalhaven Starches have subsequently submitted another Modification Application (Mod. No. 9) which in part seeks to relocate the proposed overhead bridge so that it commences on the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7).

This modified proposed crossing of Bolong Road would align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2

DP 538289. From this point a pipework would connect the bridge, and its associated pipework to the proposed modified packing plant silos.

Shoalhaven Starches are now proposing to underbore Bolong Road and provide four (4) separate 600 mm diameter pipes or conduits under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipes to connect the two sites **instead** of the approved overhead transfer bridge crossing.

Underboring Bolong Road and placing the conduits underground will have three basic advantages compared to the original overhead transfer bridge proposal:

- It will be cheaper, easier and quicker to construct;
- It will minimise the potential for the infrastructure across the road from being damaged by traffic; and
- It will be less visually intrusive.

Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). The current Mod. 9 modification application has been designed in effect as an enlargement of the existing packing plant footprint. As a result construction will be able to commence on the packing plant under the current approval in a staged manner. Simultaneously construction work has also commenced on the relocated Starch Dryer (Mod. 7) on the south side of Bolong Road. Shoalhaven Starches want to be able to stage construction to enable the dryer to be connected to the packing plant, via the underbore crossing. This requires a timely determination of this crossing modification.

It is for this reason that Starches are seeking a separate “minor” modification application to modify the crossing approach to the underbore pipework crossing proposal, so that it does not get delayed with the current Mod. 9 which involves a larger scope of works and which will involve a more detailed assessment process compared to one that deals specifically with the crossing issue. This approach has been outlined to the Department; and the Department have agreed with this approach.

The modifications involving these processes will not result in any increase in the capacity of the plant or production capability above that which has been approved for the site.

The application is made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979.

The preparation of this Environmental Assessment has been undertaken following consultation with relevant Government agencies, including:

- The Department of Planning and Infrastructure;
- Shoalhaven City Council;
- Telstra;
- Jemena/Actew/AGL.
- NBN

This Environmental Assessment has been prepared to address issues detailed in requirements issued by the Director-General of the Department of Planning and Infrastructure (**Annexure 1**).

The EA is supported by expert assessments addressing:

Following an assessment of the key issues associated with this proposal, this Environmental Assessment concludes that the proposal is suitable for the site and this locality. The Environmental Assessment includes a Statement of Additional Commitments outlining additional environmental management, mitigation and monitoring measures that should be implemented to minimise potential impacts associated with the proposal.

The Minister's approval is sought for the modification application.



## **1.0 INTRODUCTION**

Shoalhaven Starches is a member of the Manildra Group of companies. The Manildra Group is a wholly Australian owned business and the largest processor of wheat in Australia. It manufactures a wide range of wheat based products for food and industrial markets both locally and internationally.

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including: starch, gluten, glucose and ethanol.

In 2009 the Minister for Planning issued Project Approval for Shoalhaven Starches to enable the Company to increase its ethanol production capacity to meet the expected increase in demand for ethanol arising from the abovementioned ethanol mandate by upgrading the existing ethanol plant, located at the Shoalhaven Starches Plant at Bomaderry. Subject to certain conditions this Project Approval enabled Shoalhaven Starches to increase its production in a staged manner at its Bomaderry Plant from the previously approved level of 126 million litres per year to 300 million litres per year. The Project Approval included the following alterations and additions:

- The provision of an additional product dryer;
- Additional equipment and storage vessels for the ethanol plant including fermenters, additional cooling towers and molecular sieves;
- Upgrades to the Stillage Recovery Plant, including additional DDGS Dryers, Decaners. Chemical storage and evaporators;
- The installation of a DDGS Pellet Plant; and
- The establishment of a new packing plant, container loading area and rail spur line on the northern side of Bolong Road (It is this component of the approved development that is the subject of this Modification Application).

The original Project Approval issued by the Minister in 2009 included the establishment of a new Packing Plant on the northern side of Bolong Road. In order to direct dried product and services to the new Packing Plant from the factory site on the southern side of Bolong Road, the Project Approval provided for an overhead transfer bridge crossing that would cross from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289.

Shoalhaven Starches have subsequently submitted another Modification Application (Mod. No. 9) which in part seeks to relocate the proposed overhead bridge so that it commences on

the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7).

The proposed modified bridge crossing of Bolong Road as part of Mod. 9 application would align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2 DP 538289. From this point a pipework will connect the bridge, and its associated pipework to the proposed modified packing plant silos.

Shoalhaven Starches now however propose to underbore Bolong Road and provide four (4) separate 600 mm diameter pipes or conduits under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites **instead** of the approved bridge crossing.

Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). The current Mod. 9 modification application has been designed in effect as an enlargement of the existing packing plant footprint. As a result construction will be able to commence on the packing plant under the current approval in a staged manner. Simultaneously construction work has also commenced on the relocated Starch Dryer (Mod. 7) on the south side of Bolong Road. Shoalhaven Starches want to be able to stage construction to enable the dryer to be connected to the packing plant, via the underbore crossing. This requires a timely determination of the crossing modification.

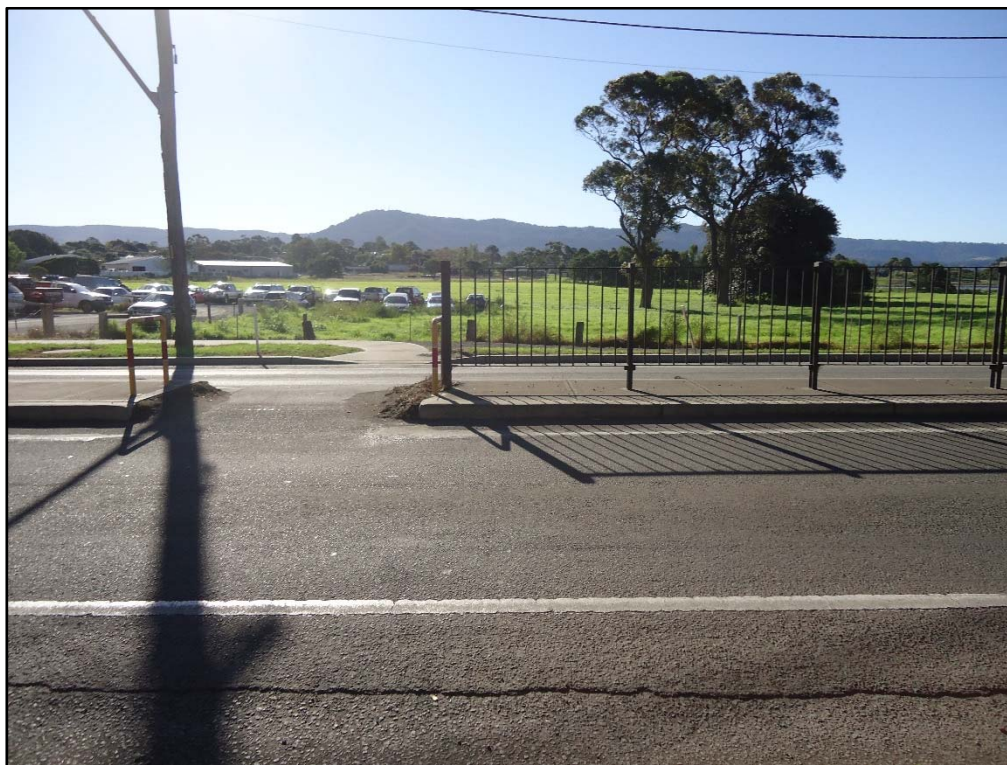
It is for this reason that Starches are seeking approval for a separate "minor" modification application to modify the bridge crossing to the underbore pipework crossing proposal, so that it does not get delayed. The current Mod. 9 application involves a larger scope of works and will involve a more detailed assessment process compared to one that deals specifically with the crossing issue. This approach has been outlined to the Department; and the Department have agreed with this approach.

The modifications to these processes will not increase the capacity of the plant or production capability.

The application is made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979.

## 2.0 THE SITE AND SURROUNDING LOCALITY

The Shoalhaven Starches factory site (SS site) is situated on various allotments of land located along Bolong Road, Bomaderry within the City of Shoalhaven. The factory site is located on the south side of Bolong Road on the northern bank of the Shoalhaven River. The location of the proposed underbore crossing is shown in **Plate 1**.



**Plate 1:** View of the location of the proposed underbore pipeline.

The Project Approval issued by the Minister related to the following parcels of land (**Table 1**):

**Table 1**  
**Shoalhaven Starches Property**

<i>Lot</i>	<i>Deposited Plan (DP) / FP.</i>
<b>FACTORY</b>	
1	838753
A	334511
B	334511
B	376494
62	1078788
201	1062668
1	385145
241	1130535

**Table 1 (continued)**

<i>Lot</i>	<i>Deposited Plan (DP) / FP.</i>
<b>PACKING PLANT</b>	
<b>16</b>	<b>1121337</b>
<b>2</b>	<b>538289</b>
<b>WASTEWATER TREATMENT PLANT &amp; ENVIRONMENTAL FARM</b>	
4	610696
	131008
1	842231
2	842231
3	235705
1	235705
2	235705
Part 2	854837
4	1109510
22	811233
164	4469
2	854764
210	6131
211	6131
PT 212	6131
213	6131
214	6131
248	6131
2	955009
42	751268
63	751268
PT 2	854837
3	1109510
2	1109510
1	1109510
2	833181
<b>OVERHEAD BRIDGE – BOLONG ROAD RESERVE</b>	
2	538289
<b>FIRE SERVICES</b>	
241	1130535

The location the proposed services crossing of Bolong Road is shown in **Figure 1**.



**Figure 1: View of location of proposed Bolong Road services crossing.**

As outlined in Section 1.0 above it was proposed to realign the overhead bridge / gantry that crosses Bolong Road from that which was originally approved. The original overhead gantry bridge crossed from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289. The modified proposal (Mod. 9) seeks to relocate the proposed overhead bridge so that it commences on the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7).

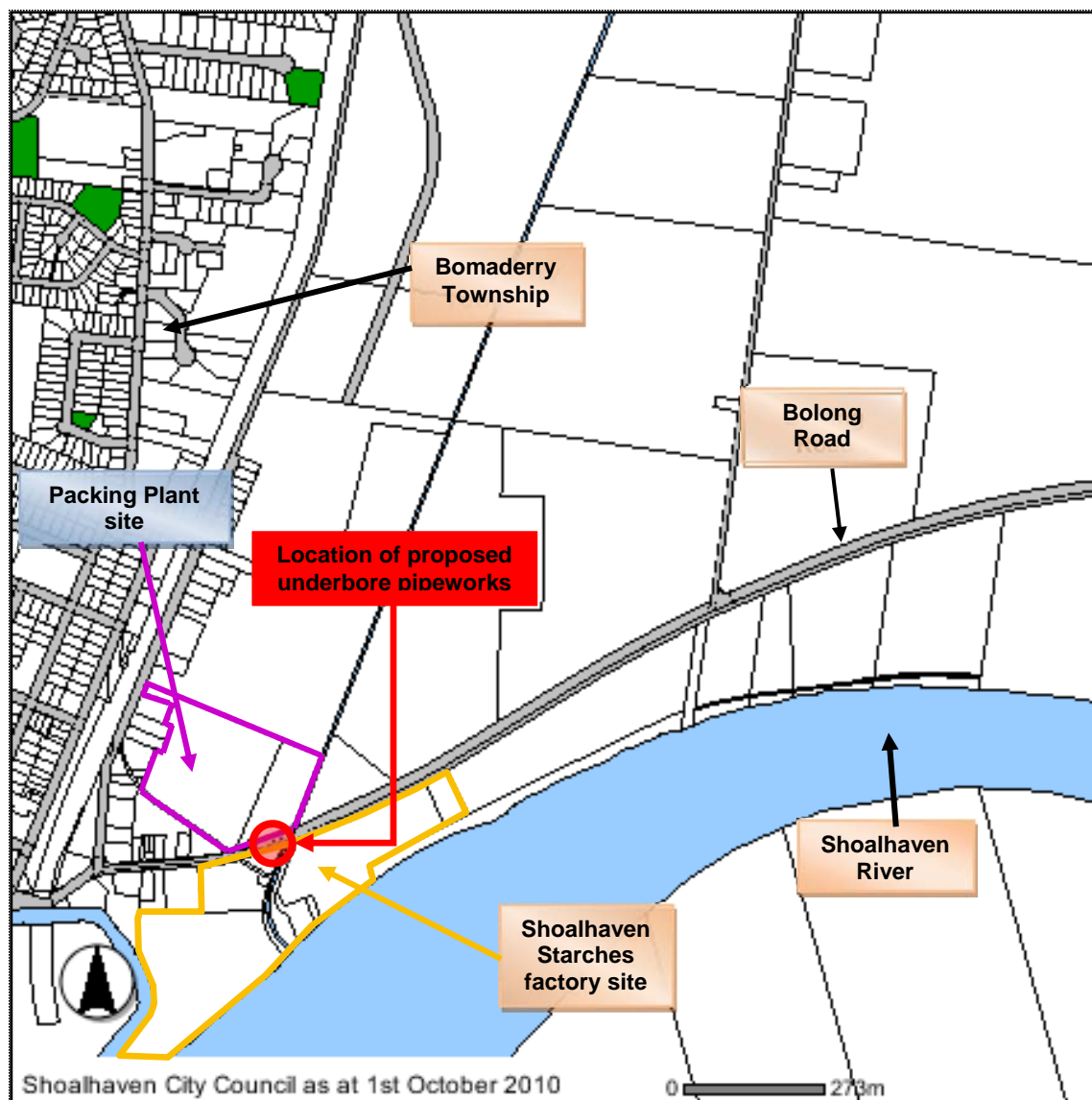
Shoalhaven Starches are now propose to underbore Bolong Road and provide four (4) separate pipes or conduits under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites instead of the approved bridge crossing. **Figure 1** identifies the location of the proposed underbore pipework.

The proposed works will specifically involve Lot 21 DP 1000265 located on the south side of Bolong Road; and Lot 2 DP 538289 located on the northern side of Bolong Road.

**Figure 2** is a site locality plan depicting the location of the packing plant site on the northern side of Bolong Road as well as the Shoalhaven Starches factory site on the southern side of

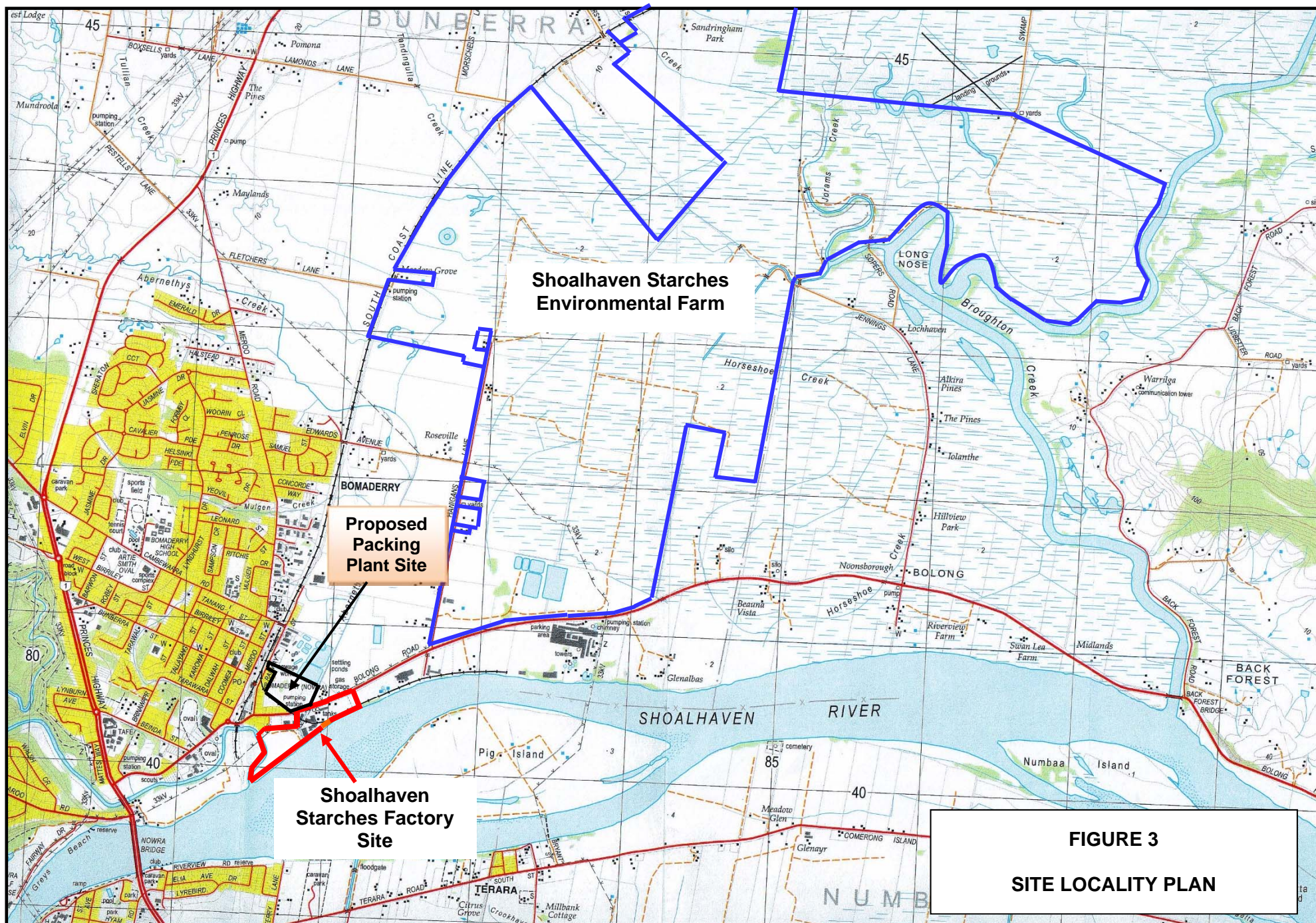
Bolong Road and the location of the proposed modified Bolong Road underbore pipework crossing.

**Figure 3** is a site locality plan depicting the location of the Shoalhaven Starches factory site and Environmental Farm as well as the surrounding locality



**Figure 2: Location plan.**







## **3.0 BACKGROUND**

### **3.1 PROJECT APPROVAL MP 06\_0228**

On the 28<sup>th</sup> January 2009 the then Minister for Planning issued Project Approval MP 06\_0228 for the Shoalhaven Starches Expansion Project (SSEP).

The primary objective of the Shoalhaven Starches Expansion Project is to increase the Company's ethanol production capacity to meet the then expected increase in demand for ethanol primarily, arising from the NSW Government's mandate to increase ethanol content by volume in petrol in NSW from 2% to 6% from October 2011, by upgrading the existing ethanol plant.

The approval will, subject to certain conditions, enable Shoalhaven Starches to increase ethanol production in a staged manner at its Bomaderry Plant from 126 million litres per year to 300 million litres per year.

To accomplish the increase in ethanol production, the Project Approval enables Shoalhaven Starches to upgrade plant and increase throughput of raw materials, principally comprising flour and grain.

The following additions and alterations have been approved to the existing factory site as part of this Project Approval:

- the provision of an additional dryer for the starch/gluten plant;
- additional equipment and storage vessels for the ethanol plant including 3 additional fermenters, additional cooling towers and molecular sieves;
- upgrades to the Stillage Recovery Plant including 6 additional Dried Distillers Grains Syrup (DDGS) dryers; 10 decanters; chemical storage and two evaporators. The proposal includes the installation of a DDGS Pelletiser Plant within this part of the site; and,
- the establishment of a new packing plant, container loading area and a rail spur line. The establishment of this facility on the northern side of Bolong Road will require the provision of an overhead bridge structure to allow product and safe pedestrian movement across Bolong Road.

It is this component of the SSEP that is the subject of this modification application.

In addition, as part of the Project Approval, Shoalhaven Starches will undertake comprehensive odour reduction measures for both the existing factory site and the works associated with the Expansion Project. In 2006, the Land and Environment Court required Shoalhaven Starches to engage a suitably qualified person to conduct a comprehensive



environmental audit of the factory and Environmental Farm. This environmental audit was undertaken GHD Pty Ltd. The audit report includes a number of recommendations for the implementation of works to the existing site, some of which require development approval. These works were included within this Project Approval.

The Project Approval enables a staged implementation of the expansion project. Up to 200 million litres of ethanol will be able to be produced at the Bomaderry Plant and eventually increased up to 300 million litres.

The Project Approval also enables the biological treatment of waste waters from the factory site and the re-use of over half the treated waste water within the factory processes, with the remainder irrigated onto the Company's Environmental Farm.

## **4.0 STATUTORY SITUATION**

### **4.1 PART 3A OF THE EP&A ACT**

The introduction of Part 3A to the Environmental Planning & Assessment Act 1979, and the introduction of *State Environmental Planning Policy (Major Development)* in 2005, brought about a change in the regime concerning the assessment of state significant development. Part 3A initially targeted the streamlining of the assessment of projects deemed to be of state significance, including critical infrastructure projects.

Following the 2011 election, the NSW Government implemented measures seeking to change the planning legislative and policy regime applicable to projects previously subject to Part 3A.

The NSW Parliament subsequently passed amendments to the *Environmental Planning & Assessment Act 1979* (the EP&A Act). These amendments created an alternative assessment system which allowed the NSW Government to assess and determine projects which are of State significance.

The amended EP&A Act established two separate assessment frameworks for either State Significant Infrastructure (SSI) or State Significant Development (SSD). Projects that fall under these two categories will be assessed by the Department of Planning and Infrastructure (the 'Department').

The Act also introduced a number of changes to the operation and make-up of the Planning Assessment Commission (PAC) and Joint Regional Planning Panels (Regional Panels), seeking to provide additional transparency and greater local government input.

Supporting regulations and an associated new State Environmental Planning Policy (SEPP) were introduced and came into effect from the 1<sup>st</sup> October 2011. These supporting provisions provided additional detail with respect to the classes and thresholds for development to be considered as State Significant.

This SEPP was called *State Environmental Planning Policy (State and Regional Development) 2011* and is known as the "State and Regional Development SEPP". This SEPP approximately halves the number of proposals dealt with by the State when compared with the former Part 3A system.

The *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) has also been amended to update a number of procedural and administrative arrangements.

The approved Shoalhaven Starches Expansion Project is termed a *Transitional Part 3A Project* under the amended EP&A legislation.

These circumstances are clarified in Planning Circular PS 11-021 issued by the Department of Planning & Infrastructure on the 30<sup>th</sup> September 2011. This Circular confirmed that Part 3A continues to apply to certain projects subject to transitional provisions identified in Schedule 6A of the Act.

Schedule 6A of the *EP&A Act* makes provisions for such projects. Essentially a *Transitional Part 3A Project* includes:

- (a) *an approved project (whether approved before or after the repeal of Part 3A),*
- (b) *a project for which environmental assessment requirements were notified or adopted before the repeal of Part 3A,*
- (c) *a project that is the subject of a Part 3A project application and that the regulations declare to be a transitional Part 3A project.*

As the Shoalhaven Starches Expansion Project was approved on the 28<sup>th</sup> January 2009 this project is considered a *Transitional 3A Project* for the purposes of this legislation.

Clause 3 of Schedule 6A provides for the continuation of Part 3A and Transitional Part 3A projects. Essentially it states that Part 3A continues to apply to and in respect of *Transitional Part 3A* projects.

Clause 3 reads:

**3 Continuation of Part 3A – transitional Part 3A projects**

- (1) *Part 3A continues to apply to and in respect of a transitional Part 3A project.*
- (2) *For that purpose:*
  - (a) *any State environmental planning policy or other instrument made under Part 3A, as in force on the repeal of that Part and as amended after that repeal, continues to apply to and in respect of a transitional Part 3A project, and*
  - (b) *declarations, orders, directions, determinations or other decisions with respect to a transitional Part 3A project continue to have effect and may continue to be made under Part 3A (including for the purpose of the application or continued application of Part 4 or 5 or other provisions of this Act in relation to the project).*
- (3) *The regulations may modify provisions of Part 3A (and the instruments or decisions referred to in subclause (2)) as they apply to a transitional Part 3A project.*
- (4) *The declaration of development as a project under Part 3A (or as a critical infrastructure project) is revoked if the development is not, or ceases to be, a transitional Part 3A project.*

- (5) *A transitional Part 3A project is not State significant development or State significant infrastructure.*
- (6) *This clause is subject to the other provisions of this Schedule.*

Given these circumstances Part 3A will continue to apply for the proposed Shoalhaven Starches Expansion Project.

Part 3A continues to apply to the Shoalhaven Starches Expansion Project. State Environmental Planning Policy (Major Projects) continues to support Part 3A of the Act.

Section 75W of the Environmental Planning & Assessment Act makes provision for the modification of Major Projects to which Part 3A applied and continues to apply.

## **4.2 SECTION 75W AND MODIFICATION PROPOSALS**

Section 75W of the EPA Act relates to modifications to approvals issued by the Minister for Planning and states:

### **75W Modification of Minister's approval**

- (1) *In this section:*

**Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.

**modification of approval** means changing the terms of a Minister's approval, including:

- (a) *revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
  - (b) *changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
- (2) *The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
  - (3) *The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
  - (4) *The Minister may modify the approval (with or without conditions) or disapprove of the modification.*
  - (5) *The proponent of a project to which section 75K applies who is dissatisfied with the determination of a request under this section with respect to the project (or with the failure of the Minister to determine the request within 40 days after it is made) may, within the time prescribed by the regulations, appeal to the Court. The Court may determine any such appeal.*

- (6) *Subsection (5) does not apply to a request to modify:*
- (a) *an approval granted by or as directed by the Court on appeal, or*
  - (b) *a determination made by the Minister under Division 3 in connection with the approval of a concept plan.*
- (7) *This section does not limit the circumstances in which the Minister may modify a determination made by the Minister under Division 3 in connection with the approval of a concept plan.*

This application is made pursuant to Section 75W of the EPA Act.

#### **4.3 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT**

The existing Shoalhaven Starches factory site and Environmental Farm has an Environmental Protection Licence (EPL) under the Protection of the Environment Operations Act 1997 (POEO Act) (EPL No. 883). The licence imposes requirements in terms of:

- discharges to air, water and land;
- irrigation controls;
- management of irrigation;
- maintenance of irrigation reticulation;
- odour control.

The proposed modification will need to meet the terms/provisions of this licence.

#### **4.4 LOCAL PLANNING PROVISIONS**

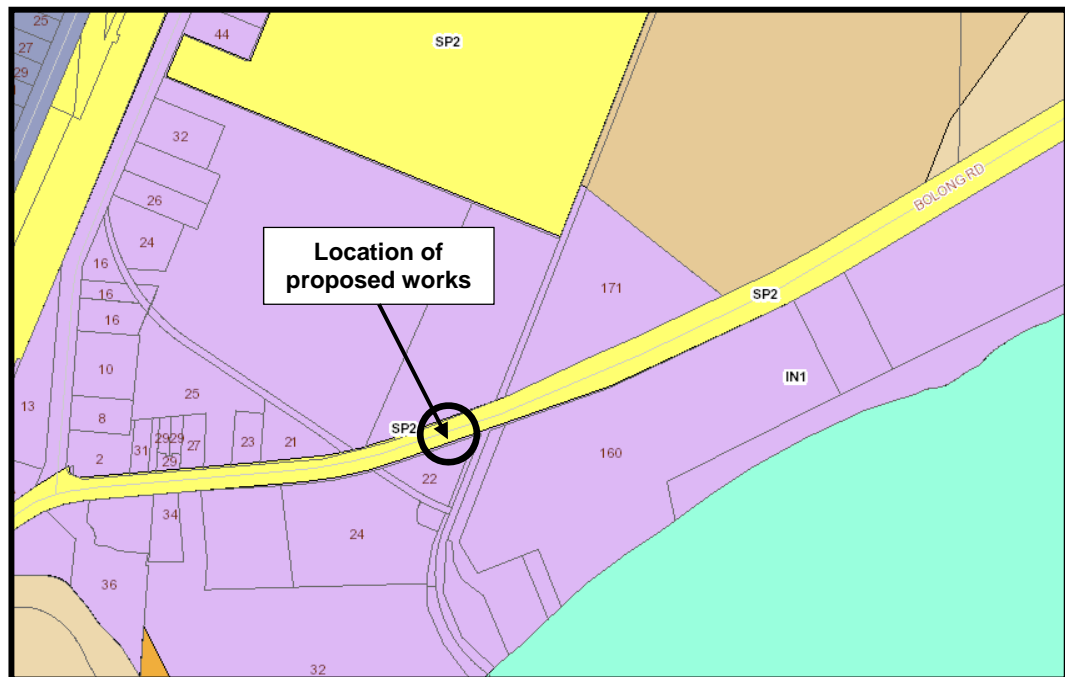
##### ***Shoalhaven Local Environmental Plan (SLEP) 2014***

The works associated with the initial excavation work for laying the pipework will occur within Lot 2 DP 538289 on the northern side of Bolong Road and Lot 21 DP 1000265 on the south side of Bolong Road which are both zoned IN1 (General Industrial) zone under the provisions of SLEP 2014 (refer **Figure 4**). The objectives of the IN1 zone are:

- *To provide a wide range of industrial and warehouse land uses.*
- *To encourage employment opportunities.*
- *To minimise any adverse effect of industry on other land uses.*
- *To support and protect industrial land for industrial uses.*
- *To allow a diversity of activities that do not significantly conflict with the operation of existing or proposed development.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.*

It is our view that the proposal is consistent with these objectives as the proposal involves associated and ancillary to an industrial activity.

Industry is a permissible use within this zone. The proposal is permissible subject to Council's consent (see **Table 2** below).



**Figure 4: Zoning provisions applying under Shoalhaven LEP 2014.**

**Table 2**

**Land Use Permissibility – IN1 Zone (Shoalhaven LEP 2014)**

<b>Permitted without consent</b>	Nil.
<b>Permitted with consent</b>	Bulky goods premises; Depots; Freight transport facilities; <b>General industries</b> ; Industrial training facilities; Kiosks; Light industries; Markets; Neighbourhood shops; Roads; Take away food and drink premises; Timber yards; Warehouse or distribution centres
<b>Prohibited</b>	Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Correctional centres; Crematoria; Eco-tourist facilities; Educational establishments; Environmental facilities; Exhibition villages; Extractive industries; Farm buildings; Forestry; Function centres; Health services facilities; Highway service centres; Home-based childcare; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Mooring pens; Moorings; Office premises; Open cut mining; Places of public worship; Registered clubs; Residential accommodation; Respite day care centres; Restricted premises; Retail premises; Sex services premises; Tourist and visitor accommodation; Water recreation structures; Wharf or boating facilities.

Surface works associated with this proposal will be limited to the IN1 zoned land located on the northern and southern sides of Bolong Road. The pipework is proposed to be underbored under Bolong Road. Bolong Road itself is zoned SP2 Infrastructure under the Shoalhaven LEP 2014. The objectives of the SP2 zone are:

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

**Table 3** below outlines the permissible land uses within the SP2 zone.

**Table 3**  
**Land Use Permissibility within the SP2 zone**

<b>Permitted without consent</b>	Nil.
<b>Permitted with consent</b>	Roads; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose
<b>Prohibited</b>	Any development not specified in item 2 or 3

The SLEP 2014 also has a number of specific provisions that apply to the land. The implications that these provisions have in relation to this proposal are discussed in **Table 4** below:

**Table 4**  
**Shoalhaven LEP 2014 Provisions**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
4.3 <i>Height of Buildings</i>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <p>(a) <i>to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,</i></p> <p>(b) <i>to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,</i></p> <p>(c) <i>to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.</i></p> <p>(2) <i>The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.</i></p> <p>(2A) <i>If the Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres.</i></p>	The proposed works do not involve the construction of any structures above ground level. The provisions of this clause are therefore not applicable.

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
5.5 <i>Development within the coastal zone</i>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <p>(a) <i>to provide for the protection of the coastal environment of the State for the benefit of both present and future generations through promoting the principles of ecologically sustainable development,</i></p> <p>(b) <i>to implement the principles in the NSW Coastal Policy, and in particular to:</i></p> <p>(i) <i>protect, enhance, maintain and restore the coastal environment, its associated ecosystems, ecological processes and biological diversity and its water quality, and</i></p> <p>(ii) <i>protect and preserve the natural, cultural, recreational and economic attributes of the NSW coast, and</i></p> <p>(iii) <i>provide opportunities for pedestrian public access to and along the coastal foreshore, and</i></p> <p>(iv) <i>recognise and accommodate coastal processes and climate change, and</i></p> <p>(v) <i>protect amenity and scenic quality, and</i></p> <p>(vi) <i>protect and preserve rock platforms, beach environments and beach amenity, and</i></p> <p>(vii) <i>protect and preserve native coastal vegetation, and</i></p> <p>(viii) <i>protect and preserve the marine environment, and</i></p> <p>(ix) <i>ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and</i></p> <p>(x) <i>ensure that decisions in relation to new development consider the broader and cumulative impacts on the catchment, and</i></p> <p>(xi) <i>protect Aboriginal cultural places, values and customs, and</i></p> <p>(xii) <i>protect and preserve items of heritage, archaeological or historical significance</i></p> <p>(2) <i>Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority has considered:</i></p>	<p>The subject land is located within the coastal zone.</p> <p>The proposal is not considered to adversely affect the coastal zone based on the following:</p> <ul style="list-style-type: none"> <li>• The proposal does not affect or impinge on public access to or along the coastal foreshore.</li> <li>• The proposed development is situated adjacent to existing industrial development and is considered to be suitable development given its type, location and design. The development is also consistent with the zoning objectives for the land.</li> <li>• The development will not lead to overshadowing of foreshore areas. The site distant from the Shoalhaven River.</li> <li>• The scenic qualities of the area will not diminish. Visual impact is further addressed in Section 8.5 of this EA.</li> <li>• The proposal will not lead to adverse impacts on threatened fauna and flora.</li> </ul>



**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
5.5 continued	<p>(a) existing public access to and along the coastal foreshore for pedestrians (including persons with a disability) with a view to:</p> <p>(i) maintaining existing public access and, where possible, improving that access, and</p> <p>(ii) identifying opportunities for new public access, and</p> <p>(b) the suitability of the proposed development, its relationship with the surrounding area and its impact on the natural scenic quality, taking into account:</p> <p>(i) the type of the proposed development and any associated land uses or activities (including compatibility of any land-based and water-based coastal activities), and</p> <p>(ii) the location, and</p> <p>(iii) the bulk, scale, size and overall built form design of any building or work involved, and</p> <p>(c) the impact of the proposed development on the amenity of the coastal foreshore including:</p> <p>(i) any significant overshadowing of the coastal foreshore, and</p> <p>(ii) any loss of views from a public place to the coastal foreshore, and</p> <p>(d) how the visual amenity and scenic qualities of the coast, including coastal headlands, can be protected, and</p> <p>(e) how biodiversity and ecosystems, including:</p> <p>(i) native coastal vegetation and existing wildlife corridors, and</p> <p>(ii) rock platforms, and</p> <p>(iii) water quality of coastal waterbodies, and</p> <p>(iv) native fauna and native flora, and their habitats, can be conserved, and</p> <p>(f) the cumulative impacts of the proposed development and other development on the coastal catchment.</p> <p>(3) Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority is satisfied that:</p>	

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
5.5 continued	<p>(a) <i>the proposed development will not impede or diminish, where practicable, the physical, land-based right of access of the public to or along the coastal foreshore, and</i></p> <p>(b) <i>if effluent from the development is disposed of by a non-reticulated system, it will not have a negative effect on the water quality of the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</i></p> <p>(c) <i>the proposed development will not discharge untreated stormwater into the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</i></p> <p>(d) <i>the proposed development will not:</i></p> <p style="margin-left: 40px;">(i) <i>be significantly affected by coastal hazards, or</i></p> <p style="margin-left: 40px;">(ii) <i>have a significant impact on coastal hazards, or</i></p> <p style="margin-left: 40px;">(iii) <i>increase the risk of coastal hazards in relation to any other land.</i></p>	
5.10 Heritage Conservation	<p>(1) <i>The objectives of this clause are:</i></p> <p style="margin-left: 40px;">(a) <i>to conserve the environmental heritage of Shoalhaven; and</i></p> <p style="margin-left: 40px;">(b) <i>to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views; and</i></p> <p style="margin-left: 40px;">(c) <i>to conserve archaeological sites; and</i></p> <p style="margin-left: 40px;">(d) <i>to conserve Aboriginal objects and Aboriginal places of heritage significance.</i></p> <p>(2) <i>Development consent is required for any of the following:</i></p> <p style="margin-left: 40px;">(a) <i>demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):</i></p> <p style="margin-left: 80px;">(i) <i>a heritage item,</i></p> <p style="margin-left: 80px;">(ii) <i>an Aboriginal object</i></p> <p style="margin-left: 80px;">(iii) <i>a building, work, relic or tree within a heritage conservation area,</i></p> <p style="margin-left: 40px;">(b) <i>altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,</i></p>	<p>There are no heritage items within the subject land. And the subject site is not located within a heritage conservation area.</p> <p>An aboriginal archaeological assessment previously undertaken on this site indicated that:</p> <p style="margin-left: 40px;"><i>the potential for any Aboriginal heritage evidence to survive is virtually negligible.</i></p> <p>In view of the minimal extent of the proposed impacts, and the register searches, field survey and consultation with the Aboriginal community conducted to date, along with the extensive impacts from current infrastructure further heritage assessment is not considered to be warranted.</p>

**Table 4 (continued)**

SLEP 2014 Clause	Provisions	Comments										
5.10 continued	<p>(c) <i>disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,</i></p> <p>(d) <i>disturbing or excavating an Aboriginal place of heritage significance,</i></p> <p>(e) <i>erecting a building on land:</i></p> <p style="padding-left: 20px;">(i) <i>on which a heritage item is located or that is within a heritage conservation area;</i></p> <p style="padding-left: 20px;">(ii) <i>on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,</i></p> <p>(f) <i>subdividing land:</i></p> <p style="padding-left: 20px;">(i) <i>on which a heritage item is located or that is within a heritage conservation area, or</i></p> <p style="padding-left: 20px;">(ii) <i>on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.</i></p>											
7.1 Acid sulphate soils	<p>(1) <i>The objective of this clause is to ensure that development does not disturb, expose or drain acid sulphate soils and cause environmental damage.</i></p> <p>(2) <i>Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulphate Soils Map as being of the class specified for those works, except as provided by this clause.</i></p> <table><tr><th>Class of Land</th><th>Works</th></tr><tr><td>1</td><td><i>Any works.</i></td></tr><tr><td>2</td><td><i>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</i></td></tr><tr><td>3</td><td><i>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</i></td></tr><tr><td>4</td><td><i>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</i></td></tr></table>	Class of Land	Works	1	<i>Any works.</i>	2	<i>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</i>	3	<i>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</i>	4	<i>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</i>	<p>Mapping supporting the SLEP 2013 identifies the subject land as being affected by Class 3 and 4.</p> <p>This EA that supported by the SSEP included an assessment of the presence of acid sulphate soils and how such soils may be managed in context with this proposal. This earlier assessment recommended that an Acid Sulphate Soil Management Plan (ASSMP) be prepared for the packing plant site and areas within this site where soil disturbance are likely to intersect with acid sulphate soils. This proposal will involve excavation works, and works that may intersection with ASS. Under these circumstances this previous recommendation would continue to apply to this proposal. Such an ASSMP should be undertaken prior to construction works commencing on the site.</p>
Class of Land	Works											
1	<i>Any works.</i>											
2	<i>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</i>											
3	<i>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</i>											
4	<i>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</i>											

SLEP 2014 Clause	Provisions	Comments		
7.1 continued	<table><tr><td>5</td><td>Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.</td></tr></table> <p>(3) Development consent must not be granted under this clause for the carrying out of works unless an acid sulphate soils management plan has been prepared for the proposed works in accordance with the Acid Sulphate Soils Manual and has been provided to the consent authority.</p> <p>(4) Despite subclause (2), development consent is not required under this clause for the carrying out of works if:</p> <p>(a) a preliminary assessment of the proposed works prepared in accordance with the Acid Sulphate Soils Manual indicates that an acid sulphate soils management plan is not required for the works, and</p> <p>(b) the preliminary assessment has been provided to the consent authority and the consent authority has confirmed the assessment by notice in writing to the person proposing to carry out the works.</p> <p>(5) Despite subclause (2), development consent is not required under this clause for the carrying out of any of the following works by a public authority (including ancillary work such as excavation, construction of access ways or the supply of power):</p> <p>(a) emergency work, being the repair of the works of the public authority required to be carried out urgently because the works have been damaged, have ceased to function or pose a risk to the environment or to public health and safety,</p> <p>(b) routine management work, being the periodic inspection, cleaning, repair or replacement of the works of the public authority (other than work that involves the disturbance of more than 1 tonne of soil).</p> <p>(c) minor work, being work that costs less than \$20,000 (other than drainage work).</p> <p>(6) Despite subclause (2), development consent is not required under this clause to carry out any works if:</p> <p>(a) the works involve the disturbance of less than 1 tonne of soil, and</p> <p>(b) the works are not likely to lower the watertable.</p>	5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.	
5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.			

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.3 Flood Planning	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> <li>(a) <i>to minimise the flood risk to life and property associated with the use of land,</i></li> <li>(b) <i>to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,</i></li> <li>(c) <i>to avoid significant adverse impacts on flood behaviour and the environment.</i></li> </ul> <p>(2) <i>This clause applies to:</i></p> <ul style="list-style-type: none"> <li>(a) <i>land identified as "Flood Planning Area" on the Flood Planning Area Map, and</i></li> <li>(b) <i>other land at or below the flood planning level.</i></li> </ul> <p>(3) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</i></p> <ul style="list-style-type: none"> <li>(a) <i>is compatible with the flood hazard of the land, and</i></li> <li>(b) <i>will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and</i></li> <li>(c) <i>incorporates appropriate measures to manage risk to life from flood, and</i></li> <li>(d) <i>will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and</i></li> <li>(e) <i>is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding, and</i></li> <li>(f) <i>will not affect the safe occupation or evacuation of the land.</i></li> </ul> <p>(4) <i>A word or expression used in this clause has the same meaning as it has in the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005, unless it is otherwise defined in this clause.</i></p> <p>(5) <i>In this clause:</i>  <b>flood planning level</b> <i>means the level of a 1:100 ARI (average recurrent interval) flood event plus 0.5 metre freeboard.</i></p>	<p>The <i>Flood Planning Area Map</i> that accompanies the SLEP 2014 identifies the subject land as being flood prone land. The proposal works involve the under boring of an underground pipeline only. Such works are not expected to be affected by flooding or result in impacts on flood behaviour in the locality.</p>

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.4 Coastal Risk Planning	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> <li>(a) <i>to avoid significant adverse impacts from coastal hazards,</i></li> <li>(b) <i>to ensure uses of land identified as coastal risk are compatible with the risks presented by coastal hazards,</i></li> <li>(c) <i>to enable the evacuation of land identified as coastal risk in an emergency,</i></li> <li>(d) <i>to avoid development that increases the severity of coastal hazards.</i></li> </ul> <p>(2) <i>This clause applies to the land identified as “Coastal Risk Planning Area” on the Coastal Risk Planning Map.</i></p> <p>(3) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</i></p> <ul style="list-style-type: none"> <li>(a) <i>will avoid, minimise or mitigate exposure to coastal processes, and</i></li> <li>(b) <i>is not likely to cause detrimental increases in coastal risks to other development or properties, and</i></li> <li>(c) <i>is not likely to alter coastal processes and the impacts of coastal hazards to the detriment of the environment, and</i></li> <li>(d) <i>incorporates appropriate measures to manage risk to life from coastal risks, and</i></li> <li>(e) <i>is likely to avoid or minimise adverse effects from the impact of coastal processes and the exposure to coastal hazards, and</i></li> <li>(f) <i>provides for the relocation, modification or removal of the development to adapt to the impact of coastal processes and coastal hazards, and</i></li> <li>(g) <i>has regard to the impacts of sea level rise.</i></li> </ul> <p>(4) <i>A word or expression used in this clause has the same meaning as it has in the NSW Coastal Planning Guideline: Adapting to Sea Level Rise (ISBN 978-1-74263-035-9) published by the NSW Government in August 2010, unless it is otherwise defined in this clause.</i></p> <p>(5) <i>In this clause:</i>  <b>coastal hazard</b> <i>has the same meaning as in the Coastal Protection Act 1979.</i></p>	<p>The <i>Coastal Risk Planning Map</i> that accompanies the SLEP 2014 does <u>not</u> identify the subject land as a “Coastal Risk Planning Area”.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p>

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.5 Terrestrial Biodiversity	<p>(1) <i>The objective of this clause is to maintain terrestrial biodiversity, by:</i></p> <ul style="list-style-type: none"> <li>(a) <i>protecting native flora and fauna,</i></li> <li>(b) <i>protecting the ecological processes necessary for their continued existence, and</i></li> <li>(c) <i>encouraging the recovery of native flora and fauna, and their habitats.</i></li> </ul> <p>(2) <i>This clause applies to land:</i></p> <ul style="list-style-type: none"> <li>(a) <i>identified as “Biodiversity—habitat corridor” or “Biodiversity—significant vegetation” on the Terrestrial Biodiversity Map, and</i></li> <li>(b) <i>situated within 40m of the bank (measured horizontally from the top of the bank) of a natural waterbody.</i></li> </ul> <p>(3) <i>Before determining a development application for development on land to which this clause applies, the consent authority must consider:</i></p> <ul style="list-style-type: none"> <li>(a) <i>whether the development is likely to have:</i> <ul style="list-style-type: none"> <li>(i) <i>any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and</i></li> <li>(ii) <i>any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and</i></li> <li>(iii) <i>any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and</i></li> <li>(iv) <i>any adverse impact on the habitat elements providing connectivity on the land, and</i></li> </ul> </li> <li>(b) <i>any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</i></li> </ul> <p>(4) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</i></p> <ul style="list-style-type: none"> <li>(a) <i>the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</i></li> <li>(b) <i>if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or</i></li> </ul>	<p>The Terrestrial Biodiversity Map that accompanies the SLEP 2014 does <u>not</u> identify the subject land as including areas of Biodiversity - habitat corridor and/or Biodiversity - significant vegetation.</p>

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.5 continued	<p>(c) if that impact cannot be minimised– the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause:</p> <p><b>bank</b> means the limit of the bed of a natural waterbody.</p> <p><b>bed</b>, of a natural waterbody, means the whole of the soil of the channel in which the waterbody flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the waterbody at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	
7.6 Riparian land and watercourses	<p>(1) The objective of this clause is to protect and maintain the following:</p> <p>(a) water quality within watercourses,</p> <p>(b) the stability of the bed and banks of watercourses,</p> <p>(c) aquatic and riparian habitats,</p> <p>(d) ecological processes within watercourses and riparian areas.</p> <p>(2) This clause applies to all of the following:</p> <p>(a) land identified as “Riparian Land” on the Riparian Lands and Watercourses Map,</p> <p>(b) land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map,</p> <p>(c) all land that is within 50 metres of the top of the bank of each watercourse on land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:</p> <p>(a) whether or not the development is likely to have any adverse impact on the following:</p> <p>(i) the water quality and flows within the watercourse,</p> <p>(ii) aquatic and riparian species, habitats and ecosystems of the watercourse,</p> <p>(iii) the stability of the bed and banks of the watercourse,</p>	<p>The Riparian Lands and Watercourses Map that accompanies the SLEP 2014 identify a category 2 watercourse, (Abernethy's Creek) located to the east of the proposed works.</p> <p>As detailed in Section 6.2 of this EA, prior to preparing this EA we have consulted with DPI Water in relation to this proposal.</p>



**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.6 continued	<p>(iv) the free passage of fish and other aquatic organisms within or along the watercourse,</p> <p>(v) any future rehabilitation of the watercourse and its riparian areas, and</p> <p>(b) whether or not the development is likely to increase water extraction from the watercourse, and</p> <p>(c) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</p> <p>(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause:</p> <p><b>bank</b> means the limit of the bed of a watercourse.</p> <p><b>bed</b>, of a watercourse, means the whole of the soil of the channel in which the watercourse flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the watercourse at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	
7.7 Landslide risk and other land degradation	<p>(1) The objective of this clause is to maintain soil resources and the diversity and stability of landscapes, including protecting land:</p> <p>(a) comprising steep slopes, and</p> <p>(b) susceptible to other forms of land degradation.</p> <p>(2) This clause applies to the following land:</p> <p>(a) land with a slope in excess of 20% (1:5), as measured from the contours of a 1:25,000 topographical map, and</p> <p>(b) land identified as “Sensitive Area” on the Natural Resource Sensitivity – Land Map.</p>	<p><i>Natural Resource Sensitivity - Land Mapping</i> supporting the SLEP 2014 identifies the subject site as a Sensitive Area.</p> <p>This EA that supported the original SSEP was supported by a Geotechnical Assessment carried out by Coffey Geotechnics. This assessment included recommendations for the development of this site.</p>

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.7 continued	<p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider any potential adverse impact, either from, or as a result of, the development in relation to:</p> <p>(a) the geotechnical stability of the site, and</p> <p>(b) the probability of increased erosion or other land degradation processes.</p> <p>(4) Before granting consent to development on land to which this clause applies, the consent authority must be satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised – the development will be managed to mitigate that impact.</p> <p>(5) In this clause, topographical map means the most current edition of a topographical map, produced by Land and Property Information, a division of the Department of Finance and Services, that identifies the Council's local government area and boundary.</p>	<p>These recommendations will also apply to the proposed modified development.</p>
7.8 Scenic protection	<p>(1) The objective of this clause is to protect the natural environmental and scenic amenity of land that is of high scenic value.</p> <p>(2) This clause applies to land identified as "Scenic Protection" on the Scenic Protection Area Map.</p> <p>(3) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must:</p> <p>(a) consider the visual impact of the development when viewed from a public place and be satisfied that the development will involve the taking of measures that will minimise any detrimental visual impact, and</p> <p>(b) consider the number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site, and</p> <p>(c) consider the siting of the proposed buildings.</p>	<p>The subject land is <u>not</u> identified as being within a "Scenic Protection" area by Scenic Protection Area Mapping that accompanies the SLEP 2014.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p>

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.9 HMAS Albatross airspace operations	<p>(1) <i>The objectives of this clause are as follows:</i></p> <p>(a) <i>to provide for the effective and on-going operation of the HMAS Albatross Military Airfield by ensuring that such operation is not compromised by proposed development that penetrates the Limitation or Operations Surface for that airport,</i></p> <p>(b) <i>to protect the community from undue risk from that operation.</i></p> <p>(2) <i>If a development application is received and the consent authority is satisfied that the proposed development will penetrate the Limitation or Operations Surface, the consent authority must not grant development consent unless it has consulted with the relevant Commonwealth body about the application.</i></p> <p>(3) <i>The consent authority may grant development consent for the development if the relevant Commonwealth body advises that:</i></p> <p>(a) <i>the development will penetrate the Limitation or Operations Surface but it has no objection to its construction, or</i></p> <p>(b) <i>the development will not penetrate the Limitation or Operations Surface.</i></p> <p>(4) <i>The consent authority must not grant development consent for the development if the relevant Commonwealth body advises that the development will penetrate the Limitation or Operations Surface and should not be carried out.</i></p> <p>(5) <i>In this clause:</i></p> <p><b>Limitation or Operations Surface</b> <i>means the Obstacle Limitation Surface or the Procedures for Air Navigation Services Operations Surface as shown on the Obstacle Limitation Surface Map or the Procedures for Air Navigation Services Operations Surface Map for the HMAS Albatross Military Airfield.</i></p> <p><b>relevant Commonwealth body</b> <i>means the body, under Commonwealth legislation, that is responsible for development approvals for development that penetrates the Limitation or Operations Surface for the HMAS Albatross Military Airfield.</i></p>	<p>The site is situated within 30 km of HMAS Albatross Military Airfield and does not involve any works above ground level of significant height. Under these circumstances there is no need to liaise with the Department of Defence in relation to this Modification Proposal.</p>

**Table 4 (continued)**

<b>SLEP 2014 Clause</b>	<b>Provisions</b>	<b>Comments</b>
7.15 Development in the vicinity of extractive industries and sewerage treatment plants	<p>(1) <i>The objective of this clause is to protect the operational environment of certain industries operating on the land to which this clause applies.</i></p> <p>(2) <i>This clause applies to land identified as “Extractive Industry” and “Sewage Treatment Plant” on the Buffers Map.</i></p> <p>(3) <i>Development consent must not be granted to the carrying out of development on land to which this clause applies unless the consent authority has:</i></p> <p style="padding-left: 40px;">(a) <i>made an assessment of the impact of noise, odour and other emissions from any industry carried out on that land, and</i></p> <p style="padding-left: 40px;">(b) <i>considered the potential impact of noise, odour and other emissions associated with that industry on any activities that will be associated with the development, and</i></p> <p style="padding-left: 40px;">(c) <i>considered any opportunities to relocate the development outside that land, and</i></p> <p style="padding-left: 40px;">(d) <i>has considered whether the development would adversely affect the operational environment of that industry.</i></p>	<p>The Buffers Map that accompanies the SLEP 2014 identifies that the subject land is located within the vicinity of a sewerage treatment plant. The modification proposal seeks to underbore a pipeline for servicing the Shoalhaven Starches sites either side of Bolong Road. It is not expected that such an activity would impact on the operations of the Sewerage Treatment Works located on land further to the north of the approved Packing Plant.</p>

## **5.0 THE MODIFICATION PROPOSAL**

### **5.1 MP06\_0228 – THE APPROVED DEVELOPMENT**

In 2009 the Minister for Planning issued Project Approval for Shoalhaven Starches to enable the Company to increase its ethanol production capacity to meet the expected increase in demand for ethanol arising from the NSW Government's ethanol mandate by upgrading the existing ethanol plant, located at the Shoalhaven Starches Plant at Bomaderry.

Project Approval MP06\_0228 was granted by the Minister for Planning on the 28<sup>th</sup> January 2009 for the Shoalhaven Starches Expansion Project (SSEP). This approval also encapsulated previous approvals for the site into one overall approval for the site.

The SSEP is a 'transitional Part 3A Project' for the purposes of Schedule 6A of the Environmental Planning & Assessment Act.

The SSEP sought to increase ethanol production at the Bomaderry plant in a staged manner from 126 million litres per year to 300 million litres per year.

To accomplish the increase in ethanol production, this project required a series of plant upgrades and increase in throughput of raw materials, principally flour and grain. The Project included the following alterations and additions:

- The provision of an additional product dryer;
- Additional equipment and storage vessels for the ethanol plant including additional fermenters, additional cooling towers and molecular sieves,
- Upgrades to the Stillage Recovery Plant, including additional DDGS Dryers, Decanters, chemical storage and evaporators. This proposal also included the installation of a DDGS Pellet Plant.
- The establishment of a new packing plant, container loading area and rail spur line on the northern side of Bolong road.

### **5.2 THE MODIFICATION PROPOSAL**

#### **5.2.1 Proposed Modified Bolong Road Service Crossing**

The original Project Approval issued by the Minister in 2009 included the establishment of a new Packing Plant on the northern side of Bolong Road. In order to direct dried product to the new Packing Plant from the factory site on the southern side of Bolong Road, the Project Approval provided for an overhead gantry bridge that would cross from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289.

Shoalhaven Starches have subsequently submitted another Modification Application (Mod. No. 9) which in part seeks to relocate the proposed overhead bridge so that it commences on the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7).

The proposed crossing of Bolong Road would align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2 DP 538289. From this point a pipework will connect the bridge, and its associated pipework to the proposed modified packing plant silos.

Shoalhaven Starches now propose to underbore Bolong Road and provide four (4) separate 600 mm pipes or conduits under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites **instead** of the approved bridge crossing.

The pipes or conduits will not carry any material or utility themselves. Rather pipes or cables will be inserted through the proposed conduits which in turn will carry services or products.

Underboring Bolong Road and placing the conduits underground will have three advantages compared to the overhead transfer bridge proposal:

- It will be cheaper, easier and quicker to construct;
- It will minimise the potential for the infrastructure across the road from being damaged by traffic; and
- It will be less visually intrusive.

Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). The current Mod. 9 modification application has been designed in effect as an enlargement of the existing packing plant footprint. As a result construction will be able to commence on the packing plant under the current approval in a staged manner. Simultaneously construction work has also commenced on the relocated Starch Dryer (Mod. 7) on the south side of Bolong Road. Shoalhaven Starches want to be able to stage construction to enable the dryer to be connected to the packing plant, via the underbore crossing. This requires a timely determination of the crossing modification.

It is for this reason that Starches are seeking a separate “minor” modification application to modify the bridge crossing to the underbore crossing proposal, so that it does not get delayed with the current Mod. 9 which involves a larger scope of works and which will involve a more delayed assessment process compared to one that deals specifically with the crossing issue. This approach has been outlined to the Department; and the Department have agreed with this approach.

Plan and elevation details of the proposed modification are attached to this submission as **Annexure 2**.

### **5.2.2 Construction Methodology**

#### ***Anticipated Commencement and Duration of Construction***

Shoalhaven Starches anticipate that construction will commence late 2016 (September/October) dependent upon receipt of all appropriate approvals. Construction works are anticipated to occur over a period of four month. Construction works will occur over 7 days/week and generally between the hours of 7:00 am to 5:00 pm.

#### ***Pre-Construction***

The successful contractor will consult with The Manildra Group to determine constructible final pipeline levels and pits. It may be necessary for UEA personnel to visit site to ensure the design suits the topography and access constraints, etc. A second survey check by The Manildra Group may be required to confirm the level of the proposed route is still similar to the survey supplied at tender stage.

#### ***Programme***

The construction schedule will be maintained by UEA and approved by The Manildra Group. The Project Manager will provide updates as required either in weekly meetings or via email.

**Table 5**  
**Proposed Materials and Equipment**

<b><i>Material / Equipment</i></b>	<b><i>Details</i></b>
Augers and Enveloper Product Pipe	Sized to suit product pipe. As required by Design Long Section.
Jointing	As per manufacturer's instructions.
Crane Truck and crane	Iveco
GBM	Akkerman GBM 240A
Thrust Borer	McLaughlin Uncle Mole 800 36/42c

### ***General Requirements for Construction of Bore Pits and Drilling Operation***

- Working hours will be as per site allowances.
- The site compound measures approximately 10 m long and 20 m wide in the direction of the bore.
- All weather access and crane pad are required at the Launch Pit and Receipt Pit for the duration of the works.
- Launch Pit – 10.5 m x 4 m (offset 1.8 left of centre in direction of bore) and will be 0.76 m below centre of pipe.
- Receipt Pit – 2.0 m x 2.0 m and 0.5 m below centre of pipe.
- Spoil will be raised from the pit using the crane truck/excavator and a bin and stored beside the pit for later removal.

### ***Risk and Contingency***

#### **Over-break and ground influence**

The GBM pilot tube is 100mm in diameter and works by displacing and packing soft ground. The rods remain in situ to support this ground until they are replaced by the steel enveloper pipe which pushes them out into the receipt pit. The enveloper pipe is welded into a continuous length which provides a structural element to support the bore at all times.

The lead pipe has a cutting shoe welded on and the Cutting Swivel Head (see **Plate 2** below) on the lead auger is situated on the outside edge of the lead pipe. This combined with the excavation rate of the augers being matched to the advance rate of the steel pipes eliminates over excavation at the head which ensures the bore is not left unsupported at any time.



**Plate 2:** Lead pipe with cutting swivel head connected to pilot tubes.



*Harder than expected ground*

Head is retractable and tooling can be changed to suit conditions.

*Softer than expected ground and running sand*

The head can be retracted back into the sleeve to help pack the ground hard against the face as the sleeve advances. This controls the amount of material removed and the operator matches his advance rate to the excavation rate and prevents over excavation and sand running freely down the auger. If an area of very soft ground is unexpectedly encountered the pipe and augers can be thrust quickly forward to prevent over excavation. In areas of high water content and running sands, clays can be reversed along the augers packing up the face and allowing work to be suspended (end of shift or week end) without fear of loss of ground and flooding of the pit during this time.

*Bulk water ingress (ground water or surface bodies)*

An alternative method of hammering the case through these sections can be employed or this risk can be engineered out wherever possible by providing more cover (lowering the bore level) and digging through more substantial layers/ground pre-treatment.

*Angular deflection and out of positional tolerance*

The GBM system ensures straight and accurate pipe placement within mm tolerances. The head can be pulled back and steered if it is forced off line. If an unacceptable deflection is experienced due to latent ground conditions the pilot tubes can be retracted and a new drive started beside the original. This saves very costly removal of augers with enveloper pipe and backfilling of the bore due to a deflection or blockage.

*Protection of existing services*

These services will be positively identified and checked for depth to top and bottom of services, eg. some services may be laid directly over others and their position may not be apparent by excavating from the surface down to the shallowest service. The services will be marked by conduit with a level to the top of each service.

*Treatment at conflict locations and zone of influence*

Where services are within min clearances of new pipe design level steel plates can be inserted on line to ensure protection of the service. For water mains and weaker structures a concrete block can be poured on either side, prior to boring, to help support the pipe the pipe can also be encased by an additional steel pipe and this cast into concrete to give uniform support.

### Avoidance of inground structures

Where known or suspected structures may clash with the design alignment a test pilot can be made to verify clearance. The pilot can be offset to outside the proposed pipe alignment on one or either side, top or bottom to prove clearance to the structures rather than excavating a full sized bore that would have to be abandoned.

### Equipment failure

All equipment is preventively maintained and checked each day prior to start-up. The operators are experienced with the equipment and constantly check for operational problems. If a part does fail the equipment has been purposely manufactured using off the shelf parts allowing the equipment to be fixed on-site in a matter of hours. Basic equipment is purposely run so that it is easily fixed and many of the components are manufactured by in-house boiler makers with more specialised spares kept in stock by suppliers.

### **Site Setup**

#### Project office

Not required for these works. A “Portaloo” will be supplied to the drill site.

#### Mobilisation and establishment

ATF security fencing, shoring and dewatering will be installed as necessary prior to excavation. Before excavation, a surveyor will be required to mark-up centre line and the grade and check rails after installation.

GBM machine, power pack, excavator, steel casing pipe and augers will be transported to site on a flat bed, tri-axel twin steer crane truck.

#### Locate Existing Services

Obtain utility clearances and to carry out on site location with relevant service providers to identify existing underground services along the proposed route.

#### Launch Pit Layout

All pits will be engineered as work areas and not a confined space. Safe access will be maintained by ladder installed to Australian safety standards and fall protection used for depths over 6 m. Secondary/emergency access will be maintained by crane truck or davit arm and winch and rescue harness.

The GBM power unit sits topside and away from the immediate work area. Hydraulic hoses run between the power unit and the GBM. The power unit has a control pendant

allowing the operator in the drill pit to control the power pack and monitor vital engine functions. Also on the topside are the mixing tanks, where drill fluid and water are mixed together and sent to the pilot shaft to lubricate around the pilot rods. This reduces the force required to thrust and rotate during installation. Refer **Plates 3** and **4**.



**Plate 3:** Launch Pit set up.



**Plate 4:** Launch Pit in operation.

*Survey and set-up for pilot and boring*

Survey is required for line and level at either end of the drill and target pits. The line is transferred into the pit using plumb bob set in oil and levels using a dumpy level (refer **Plate 5**).

The rails are set to the line and grade of the bore design and then the GBM is lowered into the Drill pit by crane or excavator



**Plate 5:** Setting the GBM using plumb bobs to project design line.

***Installation Works***

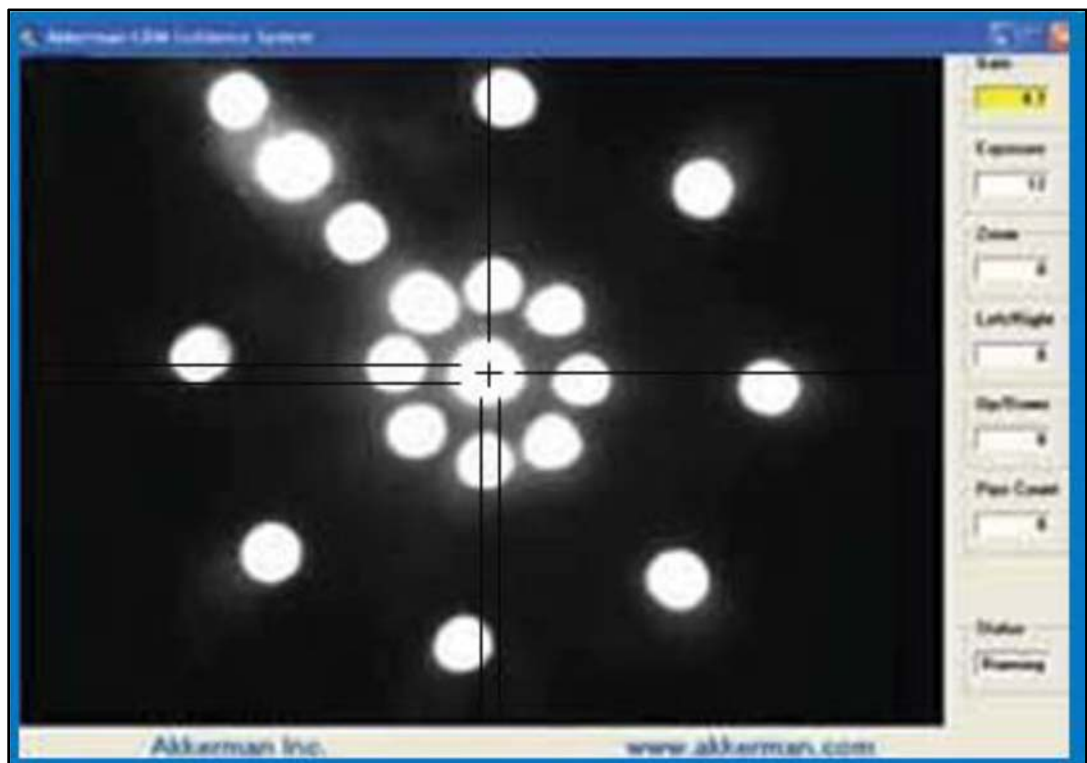
*Precise installation of pilot tubes*

The pilot tubes are inserted through the ground from the Launch Pit to the Receipt Pit. On the leading end of the pilot tube is the steering head with an angled tip (refer **Plate 6**). In the steering head is a battery powered LED illuminated target that is visible to the operator by means of a theodolite, camera and monitor (refer **Plate 7**). The theodolite is set on line and grade and is positioned to view the target through the bore of the pilot tube with cross hairs of the theodolite visible on the monitor along with the illuminated target. The operator rotates the steering head as needed to steer and maintain the desired line and grade.





**Plate 6:** Angled tip on steering head.



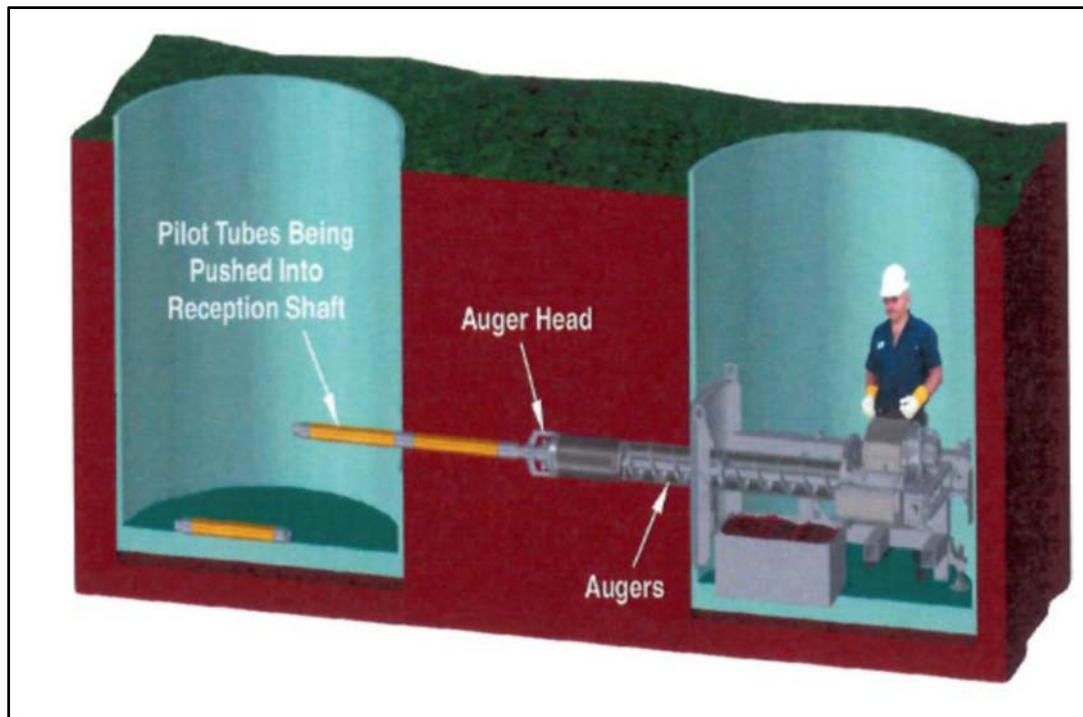
**Plate 7:** Guidance system screen.

### Lubrication

Lubrication can be used to ensure ease of installation of the product pipe. This will be either a polymer or bentonite mix pumped from the adaptor between the auger and tubes and the lead product pipe.

### Advancing augers and steel enveloper along pilot path

Once the pilot is complete, the end of the pilot tube is fitted with bearing swivel joint to connect to a splitter head which is fitted to the lead steel enveloper case. The splitter head is sized to overcut the outside diameter of the steel enveloper pipe surrounding the steel pipe to avoid jamming the casing or later as it is inserted. Different types of cutting head tooling are available to work in various ground conditions. Refer **Figure 5** and **Plate 8**.



**Figure 5: Installing augers and steel enveloper and pushing out pilot rods using auger boring method.**



**Plate 8:** Installing augers and steel enveloper with auger boring machine.

### Spoil Removal

The augers return the excavated material to the drill pit and the material is then removed from the pit either in bins and crane truck or by excavator. The spoil is placed at least the same distance from the pit as its depth to avoid loading the pit walls. The spoil is removed by the contractor from this point. The spoil can also be vacuum excavated and carted away if there is not enough room to store material onsite.

### Continuation of Bore to Target Pit

Once each auger and section of tube is buried, the machine is disconnected from the auger and walked back along the rail. The next auger and tube is then lowered into place and welded and the process continued until enough augers and tube is installed to break through into the target pit. With the addition of each section of auger and tube in the drill pit, a section of pilot tube is removed from the target pit. This process ensures the enveloper pipe is installed on line and grade and the cut tunnel is cautiously supported.

### ***Installation and Grouting of Product Pipe***

The product pipe is encased with timber or metal spacers to centralise it on insertion into the enveloper pipe. The product pipe is pushed into the enveloper by the thrust borer or excavator from the Launch Pit until fully inserted.

A 100 mm flexible feeder tube is inserted at 2 o'clock and a 100 mm flexible breather at 12 o'clock on the upstream end of the annulus between product and enveloper pipe. The annular space is blocked at each end with filling foam or mortar, sand bagging and backfill if required. Grout is gravity fed into the annular space until visible at the breather. Grout quantities are checked against the theoretic annular volume.

### ***Demobilisation***

- All equipment will be cleaned down prior to leaving site.
- Final restoration of the area will be carried out at the completion of the connection works.



## **6.0 CONSULTATION**

The preparation of this Environmental Assessment has been undertaken following consultation with relevant Government agencies, including:

- Department of Planning and Infrastructure;
- Shoalhaven City Council;
- NSW Office of Water.

Given the location of the proposed Bolong Road crossing point distant from adjoining private property owners, it was considered that there are no neighbours that are likely to be affected by this modification proposal.

In addition consultation has also been undertaken with service providers and agencies that have services located along this section of Bolong Road including:

- Telstra;
- ActewAGL;
- Shoalhaven Water (Shoalhaven City Council);
- National Broadband Network.

### ***Department of Planning & Environment***

The Department of Planning & Environment's requirements for this EA are included in **Annexure 1** to this EA. In summary the Department's requirements outlined the following with respect to this proposal.

*For the modification involving under bore pipework, can you please provide:*

- *A general environmental risk analysis to identify potential environmental impacts (construction and operation), proposed mitigation measures and any residual impacts after mitigation.*
- *An appropriately detailed impact assessment of any key environmental impacts identified through the risk analysis. This should also consider any changes to hazards and risks.*

*Given the limited scope of works, I would expect your assessment to be clear and concise. There is no need to provide a description of existing site processes or background to approvals, unless they are specifically relevant to this mod.*

*Please provide a clear description of what works are involved and a summarised list of mitigation measures that would be implemented. I will also need to understand what, if any disruption there would be to road users and other services (electricity, gas, etc). The application should clearly explain the timing and duration of the works. You will also need to consult with relevant parties and document the*

*discussions, i.e. Council (which I see you have started consultation) and other infrastructure providers or neighbours that may be affected.*

### **Shoalhaven City Council**

Shoalhaven City Council's response dated 16<sup>th</sup> May 2016 are included in **Annexure 1** to this EA. In summary Council state the following:

*Council's Road Assets Unit has no objection to this proposal, however the following conditions must be complied with by the proponent and to the satisfaction of Council:*

- *Approval of any Service Provider for works within proximity of their services where required (such as Shoalhaven Water, electricity, telecommunication, gas etc.).*
- *Protection of all services where required.*
- *Disposal of excess material.*
- *Restoration of disturbed areas compliant with Shoalhaven City Council requirements.*
- *Bonding of any repair works to Shoalhaven City Council infrastructure.*
- *Ensure all excavations are backfilled and compacted.*
- *To ensure less damage to road pavement.*
- *To ensure safe traffic movements during operation.*
- *Registration of all new underground pipes details with Dial Before U Dig.*
- *Section 138 approval must be obtained by relevant*

### **NSW Office of Water**

The NSW office of Water's comments in relation to this modification proposal are included within **Annexure 1**. In summary the NSW Office's comments are as follows:

*I have quickly looked over your email and I can advise that your proposed modification all sounds reasonable to me.*

*I wouldn't anticipate any significant issues but you might just confirm/outline:*

- *that the proposed modification/undertaking of works will not impact on the stability of Abernethy's Creek.*
- *potential for intercepting groundwater by the "launch" and "receipt" pits which are 3.6m and 4.8m deep respectively and if any need for dewatering during construction + volumes & duration.*

### **Service Provider Consultation**

#### **Telstra**

Telstra written response dated 13<sup>th</sup> May 2016 is included in **Annexure 1** to this EA. In summary Telstra indicate:

- That they can confirm Telstra assets are located within the area of the proposal.
- They suggest that contact be made with “Dial Before You Dig” for a detailed site plan and engage a Telstra Accredited Plant Locator to determine the exact location of the asset.
- Once the precise location of the asset has been established, it may be necessary to either arrange for the asset to be relocated or re-align the proposal to ensure they are no longer impacted.

Jemena / Actew/AGL

Jemena's written response dated 19<sup>th</sup> May 2016 is also included in **Annexure 1** and states:

*“As per our discussion and your note of this morning I can confirm that Actew/AGL owns and operates a 160 mm polyethylene natural gas main located on the northern side of Bolong Road. The operating pressure of this gas main 201 kPa.*

*To assist in the planning and design of the underbore together with the proposed bridge crossing, it is recommended to undertake potholing to determine the depth. A Dial before You Dig (1100.com.au) submission is required (contact details 1300 665 380) for a Actew/AGL representative to attend the site and mark the position of the pipeline. When this exercise has been completed a suitable backfill material and appropriate restorations (as applicable) to the footpath will be required.*

*From a design perspective the RL of the gas main can be interpolated into the design RL's in order to determine the level of separation. As a minimum requirement a half metre separation would be appreciated between the invert of the gas main to the obvert of the underbore. Also confirmation is required to any bridge support structures that may need to be installed in Bolong Road.*

*When available could the plans be submitted to this office for review with formal acceptance to be given to the design.”*

A written response has also been received from ZNX (a copy of which is also included in **Annexure 1**) who undertake maintenance of the gas main which states:

*“We talked the other day regarding the “Proposed Under Bore and pipework, Bolong Road Bomaderry – Services Crossing – Proposed Modification to Approved Packing Plant, Shoalhaven Starches Expansion Project, Shoalhaven Starches, Bolong Road, Bomaderry”.*

*Prior to any works being undertaken the contractor will be required to do a DBYD enquiry where the information and mandatory controls to mitigate the risk to the gas main will be provided. Initially this will be, mandatory standby for all initial excavations and potholing, this includes hydro-vac, from the initial potholing ZNX will confirm any further controls that will be required to further mitigate the risk of your works on the gas asset.*

*I have reviewed our documentation and recent works on the gas main that is in the vicinity of your works. ZNX recently under-bored the creek to the north of your works and the reconnection of the existing main to the newly under-bored pipe is immediately above your proposed directional bore. This is information only as the controls that would be expected from ZNX will not change.”*

**NBN Co**

The Engineering Network and Deployment section of the NBN Network have advised:

*I have had our internal team look into this location and **NBN** currently don't have any assets in the proposed location.*

***NBN** are planned to construct a trench in the impacted area but there's currently no timeframe on when this will happen.*

## **7.0 RISK ASSESSMENT OF POTENTIAL ENVIRONMENTAL IMPACTS**

The purpose of this section of the EA is to provide a risk assessment of the potential environmental impacts associated with the project. This section (refer **Table 6**) compares the potential impacts from the proposed modification against the approved project. The comparison uses the key environmental impacts assessed in the EA and summarises the relative change in environmental impacts associated with the proposed modification.

Following the risk assessment (see **Table 6** below) of the potential environmental impacts of the proposed modification, the key issues for assessment (and including that identified by the DGRs for this project) are:

- hazards;
- riparian issues including riparian corridors and streambank stability;
- groundwater impacts;
- visual impact;
- traffic and pedestrian movement impacts;
- impacts on other services.

**Table 6**  
**Risk Assessment**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Air Quality (including Odour Assessment)	One of the primary issues that was addressed in the original EA for the Shoalhaven Starches Expansion Project concerned the need for a comprehensive odour assessment and reduction as part of the project. The method by which services and product was transferred across Bolong Road however was not a matter that arose as a specific issue of concern in terms of air quality impacts. The modification of the services crossing from a bridge to under-ground pipework is not expected to raise any issues in terms of air quality impacts arising from the overall project.		Not a key issue.
Greenhouse Gas Emissions	The proposed modifications to delete the proposed overbridge crossing to underground pipework will have no impact in terms of greenhouse gas emissions emitted from the site.	No additional management or mitigation measures proposed.	Not a key issue.
Wastewater Treatment	The proposed modifications will not result in any change to the amount of wastewater generated from the site nor that will require treatment. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue.
Effluent Irrigation and Storage	The proposed modifications will not result in any change to the amount of wastewater generated from the site and that will require to be irrigated onto the Company's Environmental Farm. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue.
Water & Soils	Following consultation the NSW Office of Water have sought comment as to the potential for intercepting groundwater by the "launch" and "receipt" pits which are 3.6 m and 4.8 m deep, respectively, and if any need for dewatering during construction + volumes & duration.	Based on the available borehole information, according to Coffey's groundwater inflows could be encountered at depths below 2.3 m (CBH510) to 3.5 m (CBH511). Due to	This issue is addressed in Section 8.3 of the EA.

**Table 6 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
	<p>In addition to the above, mapping supporting the SLEP identifies the land as potentially being affected by acid sulphate soils (ASS).</p> <p>Coffey's have previously undertaken geotechnical assessments for projects in relation to this project, and have provided comments in relation to the potential impacts of the development on the stability of the banks of Abernethy's Creek.</p> <p>In relation to ASS the EA that supported the SSEP included an assessment of ASS and how such soils may be managed. This previous assessment recommended that an ASS Management Plan be prepared where soil disturbance was likely to intercept with ASS. As this proposal will involve excavation works it is our view that an ASSMP should be undertaken prior to construction work commencing.</p>	<p>potential fluctuation of groundwater levels in the area noting its close proximity to Abernethy's Creek, inflows could be encountered at a shallower depth than previously observed during our geotechnical investigation.</p> <p>During their previous geotechnical investigations, groundwater monitoring wells were not installed. As such, there is no available information to derive an estimate of the potential volume of water that could flow into the pits during excavation and construction works.</p> <p>Coffey recommend that an adequate dewatering system be allowed for during excavation and construction works. A nominal pump capacity required for the dewatering works will need to be provided by the contractor based on their experience on similar environments. Coffey note that properly installed interlocking sheet piles will assist in managing water inflows during excavation and construction.</p>	
Noise	<p>Shoalhaven Starches are licensed under the POEO Act (Environment Protection Licence No. 883) which sets noise limits for the operation of the overall factory complex. Noise goals have been designed for the site to ensure existing noise levels are not increased by additional plant.</p> <p>Noise control recommendations approved as part of the Project Approval will be sufficient for the proposal.</p>	No additional management or mitigation measures proposed.	Not a key issue.

**Table 6 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Transport and Traffic	Issue raised by the NSW Department of Planning & Environment in relation to this modification proposal include the potential that the proposal will have to create disruptions to road users and how pedestrian movements across Bolong Road will be managed, if the pipe bridge is no longer required	No additional management or mitigation measures proposed	This issue has been identified by the SEARs and is addressed in the EA. Traffic impacts are addressed in Section 8.6 of this EA.
Hazards	<p><i>The DoPE have sought specific advice in relation to this following:</i></p> <ol style="list-style-type: none"> <li><i>1. It is understood that the dry starch was intended to be pneumatically conveyed in MOD 9 via a new pipeline over Bolong Road. In Mod 10, three underground pipelines will be installed to cross the Bolong road to connect the existing facility and the new packing plant, instead of one overhead pipeline. Is the dry starch to be transferred between the two plants pneumatically still? When you say pneumatic transfer, do you mean by using a blower to blow it to the new packing plant?</i></li> <li><i>2. If the dry starch are to be transfer by blower, please clarify would the transfer create static charges within the pipeline and potentially become an ignition source? Is there any potential of dust explosion within these underground pipeline?</i></li> </ol>	No additional management or mitigation measures proposed	This issue is further addressed in Section 8.1 of this EA.
Riverbank Stability and Riparian Management	<p>Following consultation the NSW Office of Water have sought advice as to whether the proposed modification/undertaking of works will not impact on the stability of Abernethy's Creek.</p> <p>Coffey Geosciences have previously undertaken geotechnical assessments for projects in relation to this project, and have provided comments in relation to this matter.</p>	Coffey's recommend that the excavation be supported by temporary braced sheet piling to be undertaken prior to commencing any excavations. Preliminary assessments indicate that the proposed sheet piles should penetrate 2 m to 3 m below the base of excavation into the underlying very stiff clay or approximately 7 m	This issue is addressed in Section 8.2 of this EA



**Table 6 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
		to 8 m depth (toe of sheet pile). Temporary struts at nominal spacing of 1.5 m will need to be provided in the upper portion of the sheet pile.	
Contamination	<p>The EA for the SSEP project included a site contamination assessment undertaken by Coffey Geosciences. Soil sampling and analysis undertaken from the Packing Plant site identified petroleum hydrocarbon and fragments of Asbestos Containing Material within the central western part of the Packing Plant site which appeared to contain fill materials and ramping west towards neighbouring properties. This assessment concluded that this part of the site required further assessment and remediation / management with respect to the identified contamination.</p> <p>The location of the detected asbestos &amp; petroleum hydrocarbons (borehole CTP28) is not situated within proximity of the works associated with this modification proposal.</p> <p>The modification to the method for services and product transfer to cross Bolong Road will therefore not impact on the area of identified by Coffey's as potentially contaminated.</p>	No additional management or mitigation measures proposed.	Not a key issue.
Flooding	<p>The land associated with this Modification Proposal is identified by Shoalhaven City Council's Floodplain Management Study and Plan to be partly High and partly Low Hazard Flood Storage. The works associated with this revised Modification Proposal are to be sited largely within that area identified a High Hazard Flood Storage.</p> <p>The proposal will involve the deletion of the approved bridge structure and its replacement with underground pipe works. Such works are not expected to introduce any additional flooding risks or impacts.</p>	No additional management or mitigation measures proposed.	Not a key issue.

**Table 6 (continued)**

<b>Issue</b>	<b>Relative Change in Environmental Impact</b>	<b>Additional Management or Mitigation Measures Required</b>	<b>Significance of Issue with this Modification Proposal</b>
Waste Management	The proposed will not alter the level of waste that is required to be managed on site. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed.	Not a key issue.
Visual Impact	Under the current Project Approval it is proposed to construct an overhead transfer bridge crossing of Bolong Road to enable services and product to be transferred to the approved Packing Plant on the northern side of Bolong Road from the factory of the southern side of the road. The bridge structure would extend across the road and have a height above ground level of 11.08 m.  This Modification Application will replace this overhead bridge structure with underground pipework beneath Bolong Road. Such a modification proposal will have beneficial impacts to the scenery along Bolong Road.	No additional management or mitigation measures proposed.	Visual impacts are addressed in Section 8.4 of this EA.
Flora and Fauna	The proposed will all be located within cleared areas which is devoid of vegetation. The original Flora and Fauna Assessment carried out by Kevin Mills & Associates that supported the SSEP project did not identify any specific ecological constraints with this part of the site. The proposed modifications will not require any additional vegetation to be disturbed.  No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed	Not a key issue.
Heritage and Archaeological Issues	The original Aboriginal Archaeological Assessment that supported the EA prepared by South East Archaeology did not identify any constraints with respect to this part of the site or this project. The proposed modifications will have no additional impact in terms of indigenous or non-indigenous heritage. No change in environmental impacts from that originally identified in EA.	No additional management or mitigation measures proposed	Not a key issue.

Following the above risk assessment of the potential environmental impacts of the proposed modification the key issues for assessment (and including that identified by the DGRs for this project) are:

- Hazards;
- Riparian issues including riparian corridors and streambank stability;
- Water and soils;
- Visual impact;
- Traffic issues; and
- Impacts to services.

## **8.0 KEY ISSUES**

### **8.1 HAZARDS**

Following consultation with the Department of Planning & Environment, the Department have requested that the following be addressed:

1. *It is understood that the dry starch was intended to be pneumatically conveyed in Mod 9 via a new pipeline over Bolong Road. In Mod 10, three underground pipelines will be installed to cross the Bolong road to connect the existing facility and the new packing plant, instead of one overhead pipeline. Is the dry starch to be transferred between the two plants pneumatically still? When you say pneumatic transfer, do you mean by using a blower to blow it to the new packing plant?*
2. *If the dry starch are to be transfer by blower, please clarify would the transfer create static charges within the pipeline and potentially become an ignition source? Is there any potential of dust explosion within these underground pipeline?*

In response to these matters Shoalhaven Starches advise the following:

*This is still the case – we use a lean phase transfer system. i.e a blower to blow the starch to the new packing site. The fuel to air mix in the pipe is such that the conditions are above the UEL (upper explosion limit) for starch. The atmosphere in the pipe, as the product is conveyed, has too much starch to explode. This was referenced in our HAZOP*

*There is the potential for static to build up in the pipe, which is why we follow rigorous earthing practices to ensure this cannot propagate a spark to the product stream.*

*The only source of ignition might be the blower, but we have a spark arrestor to mitigate this risk.*

### **8.2 RIPARIAN ISSUES**

Following consultation, the Department of Primary Industries - Water have requested that the proposed works not impact on the stability of Abernethy's Creek.

Coffey Geosciences have previously provided geotechnical advice in relation to the SSEP as well as subsequent modification applications including the most recent Mod. 9 proposal involving modifications to the approved Packing Plant proposal. The Mod. 9 application included a proposal to re-align the bridge crossing the subject of this current modification application. Coffeys have been engaged by Shoalhaven Starches to respond to the issues as raised by the Department of Primary Industries - Water. A copy of Coffey's advice in connection with this matter is included as **Annexure 1** to this EA.

With respect to this issue Coffey's state:

### Stability of Abernethy's Creek

*Due to the proximity of the proposed pits to Abernethy's Creek, the proposed depth of excavation, and the likely material type encountered and exposed, we recommend that the excavation be supported by temporary braced sheet piling to be undertaken prior to commencing any excavations. Preliminary assessments indicate that the proposed sheet piles should penetrate 2m to 3m below the base of excavation into the underlying very stiff clay or approximately 7m to 8m depth (toe of sheet pile). Temporary struts at nominal spacing of 1.5m will need to be provided in the upper portion of the sheet pile.*

*Provided each pit is independently supported by shoring there should be no effect on the stability of the banks of Abernethy's Creek.*

## **8.3 WATER AND SOILS**

Following consultation, the Department of Primary Industries - Water have requested that:

*The potential for intercepting groundwater by the "launch" and "receipt" pits which are 3.6m and 4.8m deep respectively and if any need for dewatering during construction + volumes & duration.*

In addition to the above riparian issues, Coffey's have also been instructed by Shoalhaven Starches to provide advice in connection with this aspect of the current Modification Application.

With respect to this issue Coffey's state:

*Based on the available borehole information, groundwater inflows could be encountered at depths below 2.3m (CBH510) to 3.5m (CBH511). Due to potential fluctuation of groundwater levels in the area noting its close proximity to Abernethy's Creek, inflows could be encountered at a shallower depth than previously observed during our geotechnical investigation.*

*During our previous geotechnical investigations, groundwater monitoring wells were not installed. As such, there is no available information to derive an estimate of the potential volume of water that could flow into the pits during excavation and construction works.*

*We recommend that an adequate dewatering system be allowed for during excavation and construction works. A nominal pump capacity required for the dewatering works will need to be provided by the contractor based on their experience on similar environments. We note that properly installed interlocking sheet piles will assist in managing water inflows during excavation and construction.*

## **8.4 VISUAL IMPACTS**

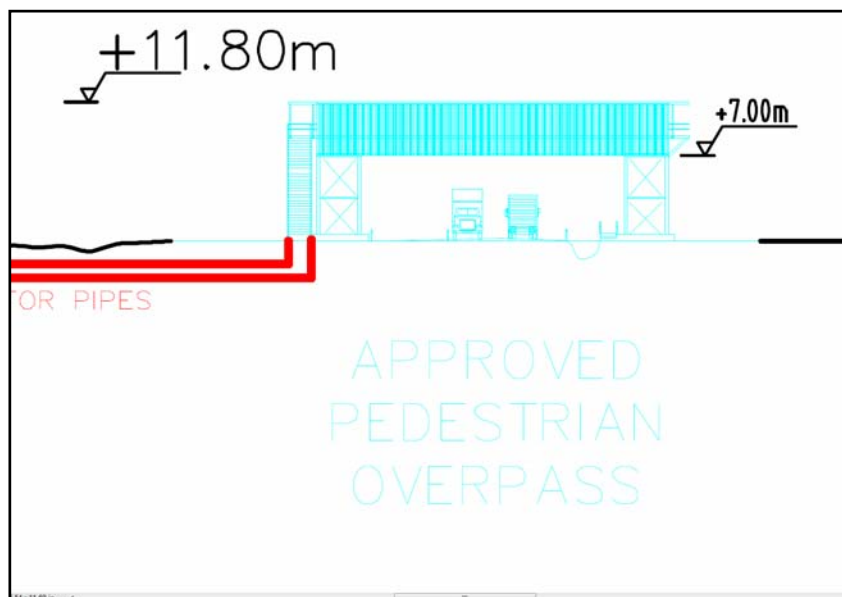
The Shoalhaven Starches factory site is situated on Bolong Road, the gateway to Bomaderry, within an area currently containing a mixture of rural and industrial land uses. These different land uses contrast with each other and result in a mixed visual character.

The rural areas, much of which comprises the Shoalhaven Starches Environmental Farm, are generally flat to gently undulating and planted with pasture grasses. These areas have a typical rural/agricultural character, common throughout the region. To the north and forming a background to the rural landscape are the timbered slopes of the Cambewarra escarpment.

The Shoalhaven Starches factory complex is characterised by typical industrial structures with an overall bulk and scale that dominates the surrounding locality. The site, despite being partially screened by vegetation along Bolong Road, the Shoalhaven River and Abernethy's Creek visually dominates the locality. The development is particularly exposed to view along Bolong Road. This view reveals some of the internal structures within the site including recovery and storage tanks, car park, fermentation tanks and the Ethanol Plant. Overall the appearance of the site is typical of an industrial facility of this nature.

Under Project Approval MP 06\_0228 it was proposed to construct an Overhead Transfer Bridge crossing of Bolong Road to enable services and product to be transferred to the approved Packing Plant on the northern side of Bolong Road from the factory of the southern side of the road.

The bridge structure would extend across the road and have a height above ground level of 11.08 m. **Figure 6** is an extract from elevation details supporting the recent Mod. 9 Modification Application showing the proposed bridge crossing:



**Figure 6: Elevation Detail of Approved Pedestrian Bridge**

A report on the SSEP was previously considered by the Shoalhaven City Council on 27 May, 2008 in relation to the Overhead Transfer Bridge crossing of Bolong Road. Council resolved that Council supported “in principle” to the concept of constructing an Overhead Transfer Bridge System over Bolong Road for the purposes of lodging a Part 3A Major Project Development Application with the Department of Planning for approval subject to:

*Shoalhaven Starches agrees to address the exterior appearance of the proposed service/pedestrian bridge and other matters raised in consultation with Shoalhaven City Council.*

- a) *The Company agreeing to redesign the exterior elements of the proposed structure to improve its architectural and visual qualities commensurate with a standard appropriate for the gateway to Bomaderry and the larger urban area of Nowra: and;*
- b) *The other issues raised in the Report of the General Manager – Development & Environmental Services being addressed by Shoalhaven Starches following further discussions with Council.*

The following is an outline of some of the main issues raised by Shoalhaven City Council in relation to the original bridge crossing proposal:

- *Potential adverse visual impact and whether a more modern and improved design is warranted for one of the main tourist entrances to the Nowra/Bomaderry urban area. With appropriate architectural design, the structure could possibly become a positive visual element or feature.*
- *Potential hazards from an overhead structure above the roadway. This would require Council and the RTA to be satisfied that the support columns of the OTBS are appropriately protected and the supports are located on Manildra land and no non-frangible structures are located within the “clear zone” requirements for Bolong Road without protection to safe standards (note in accordance with current standards the clear zone requirements could be in the order of some 6-7m when considering 85%ile operational speeds in the area and current traffic volumes). Refer above.*
- *Height and clearance – as the minimum height clearance to the road pavement is proposed to be 7 metres, there should not be any problems with the bridge acting as an obstruction to public road usage. However, the final determinate of this issue will be the RTA. The overall height of the OTBS is proposed to be 11.6 metres.*

It is now no longer proposed to proceed with the Overhead Transfer Bridge crossing. The above concerns previously raised by Council will now no longer apply. In particular the undergrounding of the pipework associated with the services and dried product transfer will ensure these works are not visible and will not be as visually prominent within the landscape compared to the original bridge structure. Under these circumstances it is considered the modified proposal in this instance will have a beneficial impact on the scenic amenity of this locality.

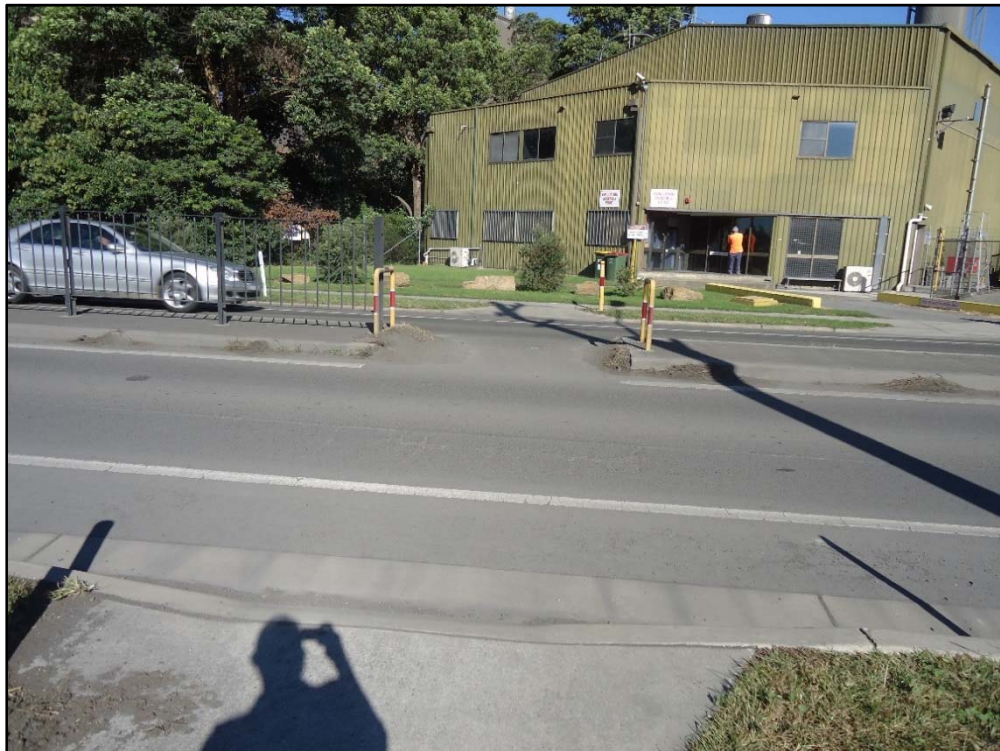
## 8.5 TRAFFIC ISSUES

Following consultation with the Department of Planning & Environment in relation to this modification proposal the Department have requested that the following be addressed:

- *Can you please advise how pedestrian movements across Bolong Road will be managed, if the pipe bridge is no longer required?*
- *I will also need to understand what, if any disruption there would be to road users and other services (electricity, gas, etc)*

### ***Pedestrian Movements***

Following the Project Approval MP 06\_228 significant upgrading works have been undertaken along the Bolong Road frontage of the development site in accordance with the requirements imposed by the Project Approval. This included the construction of a pedestrian refuge (pursuant to condition 30 Schedule 3 of the Project Approval) located centrally within the Bolong Road reserve adjacent to the location of the proposed underground pipework (**Plate 9**). This refuge is already used by Shoalhaven Starches staff to cross Bolong Road. It is envisaged that pedestrians would continue to cross using the existing pedestrian refuge.



**Plate 9:** View of existing pedestrian refuge within Bolong Road.



### ***Traffic Impacts***

The purpose of undertaking the under boring of Bolong Road as proposed is to enable the laying of pipework between the two sides of Bolong Road in a manner whereby there will be no disruption to road users of Bolong Road.

All works associated with this modification proposal will occur entirely within the confines of Shoalhaven Starches lands either side of Bolong Road. There will be no need to undertake works within the road reserve that would necessitate the closing or disruption of traffic along Bolong Road

## **8.6 IMPACTS ON OTHER SERVICES**

The location of the proposed underbore of Bolong Road already currently contains a number of services including:

- Sewer and water mains and road reserve (Shoalhaven City Council);
- Optic Fibre (Telstra);
- Gas main (ActewAGL);
- NBN Co.

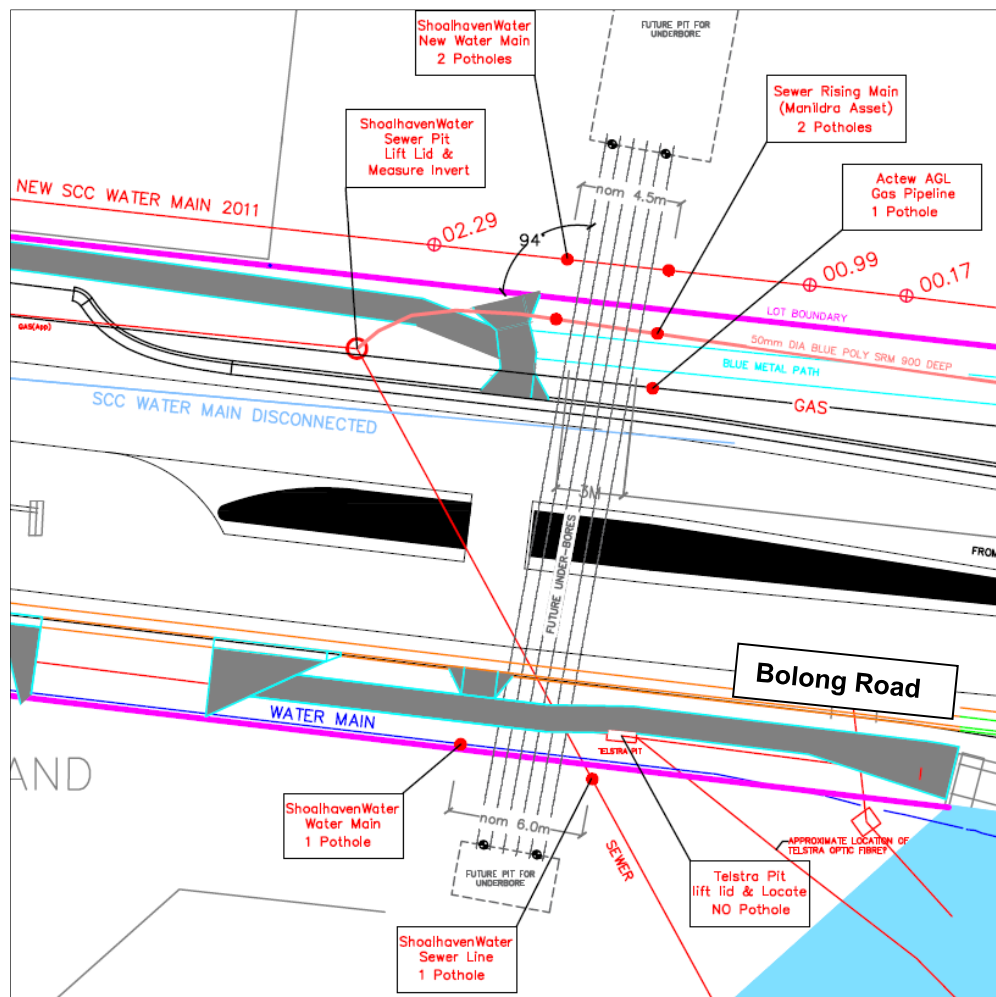
During the preparation of this EA consultation has been undertaken with each of the agencies responsible for services situated beneath Bolong Road. The response from these government agencies is discussed in Section 6.0 of this EA.

To ascertain the exact location of the above services and to ensure there will no conflict with the proposed underbore of Bolong Road, Shoalhaven Starches have engaged Suresearch Pty Ltd to undertake a series of potholes to identify the exact location of existing services.

A Section 138 approval under the Roads Act 1993 was obtained for this activity. Prior to the commencement of potholing a Dilapidation report outlining the state of the road, footpath and frontage of Bolong Road in the vicinity of the proposed potholing was provided to Shoalhaven City Council.

The potholing procedure was undertaken on Friday 27<sup>th</sup> May 2016. A total of seven (7) potholes were dug as outlined in **Figure 7** below. **Figure 7** is a plan detailing the potholing undertaken by Suresearch.

Where possible, pit lids were lifted and pits examined to locate the services in preference of undertaking more potholes. Permission was obtained for this activity from the appropriate agencies



**Figure 7: Plan of Potholing undertaken to Locate Services.**

These preliminary in-ground investigations have been completed. Shoalhaven Starches have also verified “Dial before You Dig” data as far as possible by potholing relevant sections. **Annexure 4** includes a survey plan detailing the results of Shoalhaven Starches investigations.

It should also be noted that Shoalhaven Starches preferred contractor (UEA) have significant experience in underboring and have confirmed that they are the preferred supplier to organisations such as Ausgrid, ActewAGL, Endeavour Energy, TfNSW and Sydney Water as well as serving local government and major civil contractors throughout Australia.

## **9.0 STATEMENT OF ADDITIONAL COMMITMENTS**

Section 8.0 of the EA for the Shoalhaven Starches Expansion Project prepared by our firm provides a Statement of Commitments agreed to by Shoalhaven Starches Pty Ltd outlining environmental management, mitigation and monitoring measures to be implemented to minimise potential impacts associated with the Shoalhaven Expansion Project and having regard to the findings of the EA.

The only additional commitments arising from this modification proposal include the following:

### **9.1 RIPARIAN ISSUES**

**Table 7** outlines additional management measures to incorporate into this specific project.

**Table 7**  
**Riparian Issues**

<i><b>Riparian Issues</b></i>
Due to the proximity of the proposed pits to Abernethy's Creek, the proposed depth of excavation, and the likely material type encountered and exposed, Shoalhaven Starches commit to ensuring that the excavation will be supported by temporary braced sheet piling to be undertaken prior to commencing any excavations as recommended by Coffey's. Preliminary assessments indicate that the proposed sheet piles should penetrate 2 m to 3 m below the base of excavation into the underlying very stiff clay or approximately 7 m to 8 m depth (toe of sheet pile). Temporary struts at nominal spacing of 1.5 m will need to be provided in the upper portion of the sheet pile.

### **9.2 WATER AND SOILS**

**Table 8** outlines additional management measures to incorporate into this specific project.

**Table 8**  
**Water and Soils**

<i><b>Water and Soils</b></i>
<u><i>Groundwater</i></u> Based on the available borehole information, Coffeys indicate that groundwater inflows could be encountered at depths below 2.3 m (CBH510) to 3.5 m (CBH511). Due to potential fluctuation of groundwater levels in the area noting its close proximity to Abernethy's Creek, inflows could be encountered at a shallower depth than previously observed during our geotechnical investigation.  During their previous geotechnical investigations, groundwater monitoring wells were not installed. As such, there is no available information to derive an estimate of the potential volume of water that could flow into the pits during excavation and construction works.  Coffeys recommend that an adequate dewatering system be allowed for during excavation and construction works. A nominal pump capacity required for the dewatering works will need to be provided by the contractor based on their experience on similar environments. Shoalhaven Starches commit to implementing Coffey's recommendations in this regard. We note that properly installed interlocking sheet piles will assist in managing water inflows during excavation and construction.

**Table 8 (continued)**

<b>Water and Soils</b>
<p><u><b>Acid Sulphate Soils</b></u></p> <p>The location of the proposed works is situated within an area of potential ASS. As the proposal will involve excavation works, Shoalhaven Starches commit to preparing an ASS Management Plan for the works associated with the Modification Application prior to construction works commencing.</p>

### 9.3 ROAD ASSET

**Table 9** outlines additional management measures to incorporate into this specific project.

**Table 9**

**Road Asset**

<b>Road Asset</b>
<p>Shoalhaven Starches commits to the following conditions as required by Shoalhaven City Councils' Road Assets Unit:</p> <ul style="list-style-type: none"> <li>• Approval of any Service Provider for works within proximity of their services where required (such as Shoalhaven Water, electricity, telecommunication, gas etc.).</li> <li>• Protection of all services where required.</li> <li>• Disposal of excess material.</li> <li>• Restoration of disturbed areas compliant with Shoalhaven City Council requirements.</li> <li>• Bonding of any repair works to Shoalhaven City Council infrastructure.</li> <li>• Ensure all excavations are backfilled and compacted.</li> <li>• To ensure less damage to road pavement.</li> <li>• To ensure safe traffic movements during operation.</li> <li>• Registration of all new underground pipes details with Dial Before U Dig.</li> <li>• Section 138 approval must be obtained by relevant.</li> </ul>

## **10.0 CONCLUSION**

The SSEP was approved in January 2009 by the then Minister for Planning under Part 3A of the Environmental Planning & Assessment Act. This application is made pursuant to Section 75W of the Environmental Planning & Assessment Act 1979 and seeks to modify the Project Approval by removing the proposed overhead transfer bridge crossing of Bolong Road entirely and replacing it with underbore pipe work consisting of three underground pipes connecting the northern and southern sides of Shoalhaven Starches site across Bolong Road.

The original Project Approval issued by the Minister in 2009 included the establishment of a new Packing Plant on the northern side of Bolong Road. In order to direct dried product to the new Packing Plant from the factory site on the southern side of Bolong Road, the Project Approval provided for an overhead gantry bridge that would cross from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289.

Shoalhaven Starches have subsequently submitted another Modification Application (Mod. No. 9) which in part seeks to relocate the proposed overhead bridge so that it commences on the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7).

This proposed modified crossing of Bolong Road would align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2 DP 538289. From this point a pipework will connect the bridge, and its associated pipework to the proposed modified packing plant silos.

Shoalhaven Starches now propose under this current Modification Application to underbore Bolong Road and provide four (4) separate pipes or conduits under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites **instead** of the approved bridge crossing.

Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). The current Mod. 9 modification application has been designed in effect as an enlargement of the existing packing plant footprint. As a result construction will be able to commence on the packing plant under the current approval in a staged manner. Simultaneously construction work has also commenced on the relocated Starch Dryer (Mod 7) on the south side of Bolong Road. Shoalhaven Starches want

to be able to stage construction to enable the dryer to be connected to the packing plant, via the underbore crossing. This requires a timely determination of the crossing modification.

It is for this reason that Starches are seeking a separate “minor” modification application to modify the bridge crossing to the underbore crossing proposal, so that it does not get delayed with the current Mod. 9 which involves a larger scope of works and which will involve a more delayed assessment process compared to one that deals specifically with the crossing issue. This approach has been outlined to the Department; and the Department have agreed with this approach.

The modified proposal will not result in any increase in production from the site over that which has been the subject of past approvals. The proposal will not involve any change in the amount of raw products that will be utilised; nor will it involve any changes in the amount of waste waters that will need to be treated and disposed.

Following a comparison of the modified proposal to that originally approved having regard to the key issues originally identified associated with this Project, this Environmental Assessment concludes that the proposal is suitable for the site and this locality and consistent with the objects of the Environmental Planning & Assessment Act.

The Minister’s approval of this proposed modification to Project Approval MP 06\_0228 is sought.

## **ANNEXURE 1**

**Director-General Requirements (DGRs)  
for the preparation of this EA  
and  
Consultation Responses  
from other Agencies**

## Stephen Richardson

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**From:** Deana.Burn@planning.nsw.gov.au  
**Sent:** Thursday, 28 April 2016 3:53 PM  
**To:** Stephen Richardson  
**Cc:** 'Brian Hanley'; 'Mike Richardson'; 'Aaron Ticehurst'; 'John Studdert'; Chris.Ritchie@planning.nsw.gov.au  
**Subject:** RE: Proposed Modification to Bridge Crossing to provide Under bore Pipework, Bolong Road Shoalhaven Starches Expansion Project, MP 06\_0228

Hi Stephen

For the modification involving under bore pipework, can you please provide:

- A general environmental risk analysis to identify potential environmental impacts (construction and operation), proposed mitigation measures and any residual impacts after mitigation.
- An appropriately detailed impact assessment of any key environmental impacts identified through the risk analysis. This should also consider any changes to hazards and risks.

Given the limited scope of works, I would expect your assessment to be clear and concise. There is no need to provide a description of existing site processes or background to approvals, unless they are specifically relevant to this mod.

Please provide a clear description of what works are involved and a summarised list of mitigation measures that would be implemented. I will also need to understand what, if any disruption there would be to road users and other services (electricity, gas, etc). The application should clearly explain the timing and duration of the works. You will also need to consult with relevant parties and document the discussions, i.e. Council (which I see you have started consultation) and other infrastructure providers or neighbours that may be affected.

Please keep submitted documentation concise and relevant to the Mod only. Please lodge the application online and send me an email when you have lodged it.

Regards  
Deana.

---

**From:** Stephen Richardson [mailto:Steve@cowmanstoddart.com.au]  
**Sent:** Tuesday, 26 April 2016 3:16 PM  
**To:** Deana Burn  
**Cc:** 'Brian Hanley'; Mike Richardson; Aaron Ticehurst; 'John Studdert'; Chris Ritchie  
**Subject:** Proposed Modification to Bridge Crossing to provide Under bore Pipework, Bolong Road Shoalhaven Starches Expansion Project, MP 06\_0228

Dear Deana,

I understand that you have had a telephone discussion with Brian Hanley from Shoalhaven Starches this afternoon in connection with the above matter. I also refer to my earlier email to you attached to which was land owners consent for the proposed modification to the alignment of the bridge crossing that forms part of Mod 9 application to the above project approval.

As you are aware the original overhead gantry bridge crossed from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289. The current modified proposal that has been submitted to the Department (Mod 9) seeks to relocate the proposed overhead bridge so that it commences on the western side of



Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it will be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7). The proposed crossing of Bolong Road will align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2 DP 538289. From this point a pipework will connect the bridge, and its associated pipework to the proposed modified packing plant silos. The land owners consent that I emailed to you this morning concerned this aspect of the Modification Application.

As outlined in your telephone discussion with Brian today however, Shoalhaven Starches are now going to propose to make a separate modification application which will involve under boring Bolong Road and the provision of three separate pipes under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites **instead** of the approved bridge crossing. Plans showing this alternative proposal are attached and titled **Figure 2 – Under bore crossing proposal**. It is considered that this proposal will also have a significant reduced visual impact along Bolong Road compared to the approved Bridge Crossing.

As outlined in your discussion with Brian, Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). The current Mod 9 modification application has been designed in effect as an enlargement of the existing packing plant footprint. As a result construction will be able to commence on the packing plant under the current approval in a staged manner. Simultaneously construction work has also commenced on the relocated Starch Dryer (Mod 7) on the south side of Bolong Road. Shoalhaven Starches want to be able to stage construction to enable the dryer to be connected to the packing plant, via the under bore crossing. This requires a timely determination of the crossing modification. It is for this reason that Starches will be seeking to make a separate "minor" modification application to modify the bridge crossing to the under bore crossing proposal, so that it does not get delayed with the current Mod 9 which involves a larger scope of works and which will involve a more delayed assessment process compared to one that deals specifically with the crossing issue.

Attached to this email is a landowners consent from Shoalhaven City Council providing consent to the lodgement of a modification application for this alternative under bore approach.

I understand that you will be discussing this alternative approach with Chris Ritchie on his return to the office tomorrow. The above and attached information is supplied for the purposes of your discussion with Chris.

Regards

Stephen Richardson  
Cowman Stoddart Pty Ltd  
PO BOX 738 NOWRA NSW 2541  
T 02 4423 6198  
T 02 4423 6199  
F 02 4423 1569  
[www.cowmanstoddart.com.au](http://www.cowmanstoddart.com.au)  
[steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

## Stephen Richardson

---

**From:** David Zerafa <david.zerafa@dpi.nsw.gov.au>  
**Sent:** Wednesday, 11 May 2016 2:08 PM  
**To:** Stephen Richardson  
**Subject:** Re: FW: Proposed Modification to Approved Packing Plant, Shoalhaven Starches Expansion Project

Hi Stephen,

I heard the message you left on my voicemail. No need to call you back.

I have quickly looked over your email and I can advise that your proposed modification all sounds reasonable to me.

I wouldn't anticipate any significant issues but you might just confirm/outline:

- that the proposed modification/undertaking of works will not impact on the stability of Abernethys Creek.
- potential for intercepting groundwater by the "launch" and "receipt" pits which are 3.6m and 4.8m deep respectively and if any need for dewatering during construction + volumes & duration.

Regards David

David Zerafa  
Senior Water Regulation Officer  
Department of Primary Industries - Water

NSW Government Offices  
5 O'Keefe Avenue, Nowra  
PO Box 309 Nowra 2541  
Phone (02) 4428 9142  
Fax (02) 4421 2172  
Mobile 0427 663187  
Email:[david.zerafa@dpi.nsw.gov.au](mailto:david.zerafa@dpi.nsw.gov.au)

On 11 May 2016 at 10:24, Stephen Richardson <[Steve@cowmanstoddart.com.au](mailto:Steve@cowmanstoddart.com.au)> wrote:

Dear David,

I refer to previous consultation between yourself, Shoalhaven Starches and myself in connection with the above modification application involving the packing plant site on the northern side of Bolong Road (Mod 9). This modification application (Mod 9) has been submitted to the Department of Planning & Environment.

As you are aware the original Project Approval made provision for an overhead gantry bridge that crossed from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289.

The current modified proposal that has been submitted to the Department (Mod 9) seeks to relocate the proposed overhead bridge so that it commences on the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7). The proposed crossing of Bolong Road

would align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2 DP 538289. From this point pipework would connect the bridge, and its associated pipework to the proposed modified packing plant silos.

Shoalhaven Starches are now going to propose to make a separate modification application (Mod 10) which will involve under boring Bolong Road and the provision of three separate pipes under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites instead of the approved and proposed modified bridge crossing (as shown in Mod 9). Plans showing this alternative proposal are attached. It is considered that this proposal will have a significant reduced visual impact along Bolong Road compared to the approved Bridge Crossing. Furthermore the works associated with this further modification are to be located slightly further away from Abernethy's Creek compared to the original Mod 9 proposal.

Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). The current Mod 9 modification application that has been submitted to the Department of Planning has been designed in effect as an enlargement of the existing packing plant footprint. As a result construction will be able to commence on the packing plant under the current approval in a staged manner. Simultaneously construction work has also commenced on the relocated Starch Dryer (Mod 7) on the south side of Bolong Road. Shoalhaven Starches want to be able to stage construction to enable the dryer to be connected to the packing plant, via the under bore crossing. This requires a timely determination of the crossing modification. It is for this reason that Starches are seeking to make a separate "minor" modification application to modify the bridge crossing to the under bore crossing proposal, so that it does not get delayed with the current Mod 9 which involves a larger scope of works and which will involve a more delayed assessment process compared to one that deals specifically with the crossing issue.

In light of our previous consultation with the packing plant modification (Mod ) with you, and given the proximity of the works to Abernethy's Creek (although set back further to that proposed in Mod 9), I thought it prudent to raise this further modification proposal with you to ascertain if you will have any issues or concerns that you would want to be addressed as part of this modification application.

I would appreciate it if you do have any comments to make that you could supply your comments as soon as possible.

If you require any further information or clarification in connection with this matter please do not hesitate to contact me.

Regards

Stephen Richardson

Cowman Stoddart Pty Ltd

PO BOX 738 NOWRA NSW 2541

T 02 4423 6198

T 02 4423 6199

F 02 4423 1569

[www.cowmanstoddart.com.au](http://www.cowmanstoddart.com.au)

[steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

Cowman Stoddart Pty Ltd  
PO Box 738  
NOWRA NSW 2541

By email only: [steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

Dear Mr Richardson

### **Shoalhaven Starches Expansion Project**

I am writing with regard to your email dated 18 April 2016 and advise the following.

1. Proposed under bore pipework crossing Bolong Road (as part of the current Consent Modification Application – Mod 9):

Council's Road Assets Unit has no objection to this proposal, however the following conditions must be complied with by the proponent and to the satisfaction of Council:

- Approval of any Service Provider for works within proximity of their services where required (such as Shoalhaven Water, electricity, telecommunication, gas etc.).
- Protection of all services where required.
- Disposal of excess material.
- Restoration of disturbed areas compliant with Shoalhaven City Council requirements.
- Bonding of any repair works to Shoalhaven City Council infrastructure.
- Ensure all excavations are backfilled and compacted.
- To ensure less damage to road pavement.
- To ensure safe traffic movements during operation.
- Registration of all new underground pipes details with Dial Before U Dig.
- Section 138 approval must be obtained by relevant road authority, prior to the commencement of any work within the road reserve.

## 2. Proposed preliminary investigation works within Bolong Road - road reserve:

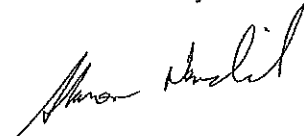
Prior to undertaking any works within an existing road reserve, the contractor must obtain the consent of Council under Section 138 of the Roads Act, 1993. The following details must be submitted to Council to obtain the s.138 consent:

- Detailed Construction Management Plan regarding preliminary investigation works mentioned on Stephen Richardson - Cowman Stoddart Pty Ltd email dated 18th April 2016.
- Where required, detailed approved engineering drawings of the proposed works within the road reserve,
- Details of timing and length of works.
- Traffic Control Plan (TCP) to provide protection for those within and adjacent to the work site, including the vehicular and pedestrian public. The TCP must comply with the current RMS's manual Traffic Control at Work Sites. Warning and protective devices shall comply with the provisions of AS 1742.3 – 2002 Traffic Control Devices for Works on Roads. The plan must be prepared, signed and certified by a person holding the appropriate RMS accreditation, a copy of which is to be submitted with the plan.
- Insurance details - Copy of contractors Public Liability Insurance for a minimum of \$20,000,000.
- Name and contact information of the person/company appointed to supervise the construction.
- Where the Traffic Control/Management Plan requires a reduction of the speed limit, a 'Direction to Restrict' shall be obtained from the RMS - Traffic Operations Unit for RMS roads or Council for other roads and submitted with the section 138 application.
- Given the subject works will be undertaking within the Bolong Street road reserve, concurrence from RMS will be required.

Conditions of reinstatement of any damaged or removed assets would apply. Temporary or permanent arrangements, if necessary, should be detailed by the proponent to maintain the functionality of any road or traffic facilities during the works.

If you need further information about this matter, please contact Simon Heung, Planning & Development Group on (02) 4429 3529. Please quote Council's reference 1564E (D16/136636).

Yours faithfully



**Sharon Neradil**  
**Senior Administration Coordinator - C&CS**  
16/05/2016

Cc - Naif Ahmed, Asset & Works Group

## Stephen Richardson

---

**From:** Kenny D'Cruz <kennydcruz@nbnco.com.au>  
**Sent:** Monday, 30 May 2016 11:28 AM  
**To:** Stephen Richardson  
**Cc:** Relocation Works  
**Subject:** ARNSW14150 - nbn Impact - Bolong Road Bomaderry

Hi Stephen,

I have had our internal team look into this location and **nbn** currently don't have any assets in the proposed location.

**nbn** are planned to construct a trench in the impacted area but there's currently no timeframe on when this will happen.

Please give me a ring if you would like to discuss this further.

Thanks,

**Kenny D'Cruz**  
**Account Manager Commercial Infrastructure | NDS&E**  
**Network Engineering and Deployment**  
P +61 2 8918 8319 | M 0408 179 066 | E [kennydcruz@nbnco.com.au](mailto:kennydcruz@nbnco.com.au)  
111 Pacific Highway, North Sydney NSW 2060



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PLEASE CONSIDER OUR ENVIRONMENT BEFORE PRINTING

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**From:** Stephen Richardson [<mailto:Steve@cowmanstoddart.com.au>]  
**Sent:** Friday, 13 May 2016 12:23 PM  
**To:** Relocation Works  
**Cc:** Brian Hanley; Mike Richardson; Aaron Ticehurst; John Studdert  
**Subject:** Proposed Under Bore and pipework, Bolong Road Bomaderry - Services Crossing - Proposed Modification to Approved Packing Plant, Shoalhaven Starches Expansion Project, Shoalhaven Starches. Bolong Road, Bomaderry

**To whom it may concern**

Dear Sir / Madam,

Our firm has been engaged by Shoalhaven Starches located at Bolong Road Bomaderry to assist them in preparing an application that seeks to modify their Project Approval from the NSW Department of Planning to enable them to under bore Bolong Road to install three pipes across Bolong Road to direct services and product from the existing factory site located on the south side of Bolong Road to a new Packing Plant that is being constructed on the north side of Bolong Road.

The original Project Approval for this project issued by the NSW Department of Planning & Environment made provision for an overhead gantry bridge that crossed from the existing factory site on the south side of Bolong Road (Lot B DP 334511), directly across Bolong Road (and diagonally across Abernethy's Creek) onto the north side of Bolong Road onto Lot 2 DP 538289.

A further modified proposal has been recently submitted to the Department (Mod 9) seeking to relocate the proposed overhead bridge so that it commences on the western side of Abernethy's Creek on Lot 21 DP 1000265 (the site of the present interim Packing Plant site). From this location it would be able to service the existing factory site by pipework extending back across Abernethy's Creek as well as the proposed modified Starches Dryer No. 5 that is proposed to be relocated to this side of Abernethy's Creek (Mod. No. 7). The proposed crossing of Bolong Road would align parallel with Abernethy's Creek and extend to a point in a similar position as the approved overhead bridge on Lot 2 DP 538289. From this point pipework would connect the bridge, and its associated pipework to the proposed modified packing plant silos.

Shoalhaven Starches are now however proposing to make a separate modification application (Mod 10) which will involve under boring Bolong Road and the provision of three separate pipes under Bolong Road to connect the modified packing plant on the northern side of Bolong Road to the existing factory site on the southern side of Bolong Road to allow for services and product pipework to connect the two sites instead of the approved and proposed modified bridge crossing (as shown in Mod 9). Plans showing this alternative proposal are attached.

Shoalhaven Starches are already in the process of commencing construction of the approved packing plant (in accordance with its existing approval). Simultaneously construction work has also commenced on a relocated Starch Dryer (Mod 7) on the south side of Bolong Road. Shoalhaven Starches want to be able to stage construction to enable the dryer to be connected to the packing plant, via the under bore crossing. This requires a timely determination of the crossing modification. It is for this reason that Starches are seeking to make a separate "minor" modification application to modify the bridge crossing to the under bore crossing proposal, so that it does not get delayed with the current Mod 9 which involves a larger scope of works and which will involve a more delayed assessment process compared to one that deals specifically with the crossing issue.

In preparing the Environmental Assessment for this most recent modification application the NSW Department of Planning have requested that Shoalhaven Starches consult with those agencies and parties that may have services within the vicinity of the proposed works to ascertain any requirements that those agencies or parties may have with respect to these works. This is the purposes of this email.

I would appreciate it if you do have any comments to make that you could supply your comments as soon as possible.

If you require any further information or clarification in connection with this matter please do not hesitate to contact me.

Regards

Stephen Richardson  
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[www.cowmanstoddart.com.au](http://www.cowmanstoddart.com.au)  
[steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

## Stephen Richardson

---

**From:** James Maldon <James.Maldon@jemena.com.au>  
**Sent:** Thursday, 19 May 2016 1:10 PM  
**To:** Stephen Richardson  
**Cc:** ACTEWAGL-ed gaykema; Ana Dijanosic; David Murray  
**Subject:** Proposed Under bore, Bolong Road, Bomaderry

Stephen,  
As per our discussion and your note of this morning I can confirm that Actew/AGL owns and operates a 160mm polyethylene natural gas main located on the northern side of Bolong Road. The operating pressure of this gas main 210kPa.

To assist in the planning and design of the underbore together with the proposed bridge crossing, it is recommended to undertake potholing to determine the depth. A Dial Before You Dig ([1100.com.au](http://1100.com.au)) submission is required (contact details 1300 665 380) for a Actew/ AGL representative to attend the site and mark the position of the pipeline. When this exercise has been completed a suitable backfill material and appropriate restorations (as applicable) to the footpath will be required.

From a design perspective the RL of the gas main can be interpolated into the design RL's in order to determine the level of separation. As a minimum requirement a half metre separation would be appreciated between the invert of the gas main to the obvert of the underbore. Also confirmation is required to any bridge support structures that may need to be installed in Bolong Road.

When available could the plans be submitted to this office for review with formal acceptance to be given to the design.

Should you require further information please do not hesitate in contacting me.

Regards

**James Maldon**  
Lands Coordinator, Transmission Vic/NSW  
**Jemena**  
PO Box 287, Unanderra NSW 2526  
(02) 42610517 | 0402 060 389  
[James.maldon@jemena.com.au](mailto:James.maldon@jemena.com.au) |  
[www.jemena.com.au](http://www.jemena.com.au)  
[www.gonaturalgas.com.au](http://www.gonaturalgas.com.au)

 **Natural Gas**

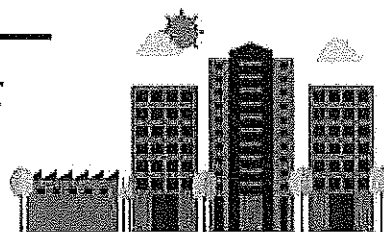
  
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**From:** Stephen Richardson [<mailto:Steve@cowmanstoddart.com.au>]  
**Sent:** Thursday, 19 May 2016 10:03 AM  
**To:** James Maldon  
**Subject:** FW: Proposed Under bore, Bolong Road, Bomaderry

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**From:** Stephen Richardson  
**Sent:** Thursday, 19 May 2016 10:02 AM  
**To:** Mike Richardson <[Mike.Richardson@manildra.com.au](mailto:Mike.Richardson@manildra.com.au)>



Cc: 'james.maoldon@jemena.com.au' <james.maoldon@jemena.com.au>; 'Gaykema, Ed' <Ed.Gaykema@actewagl.com.au>; Brian Hanley <brian.hanley@manildra.com.au>; Aaron Ticehurst <aaron.ticehurst@manildra.com.au>; 'John Studdert' <John.Studdert@manildra.com.au>  
**Subject:** Proposed Under bore, Bolong Road, Bomaderry

Dear Mike,

I have just spoken with James Maldon from Jemena with respect to the above project.

James confirmed that they have a 160 mm polyethylene pipeline along the northern side of Bolong Road. I explained that Shoalhaven Starches were about to engage "Suresearch" to undertake potholing exploration of services within the vicinity of the proposed works to identify location of existing services.

It would be prudent for you to contact James to discuss the proposal in more detail and your anticipated timeframes for undertaking the explorative work. His contact details are as follows:

James Maldon  
Phone: 0402 060 389  
Email: [james.maldon@jemena.com.au](mailto:james.maldon@jemena.com.au)

Regards

Stephen Richardson  
Cowman Stoddart Pty Ltd  
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F 02 4423 1569  
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\*\*\*\*\*

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\*\*\*\*\*

## Stephen Richardson

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**From:** Christopher Lamb <Chris.Lamb@zinfragroup.com.au>  
**Sent:** Friday, 20 May 2016 8:24 AM  
**To:** Stephen Richardson  
**Cc:** ACTEWAGL-ed gaykema; Bradley Dean; Andrew Keogh (andrewk@carmine.com.au); Mark Maguire; Nathan Keen; Greg Wenham  
**Subject:** Proposed Under Bore and pipework, Bolong Road Bomaderry - Services Crossing - Proposed Modification to Approved Packing Plant, Shoalhaven Starches Expansion Project, Shoalhaven Starches. Bolong Road, Bomaderry

Morning Stephen,

We talked the other day regarding the "Proposed Under Bore and pipework, Bolong Road Bomaderry - Services Crossing - Proposed Modification to Approved Packing Plant, Shoalhaven Starches Expansion Project, Shoalhaven Starches. Bolong Road, Bomaderry"

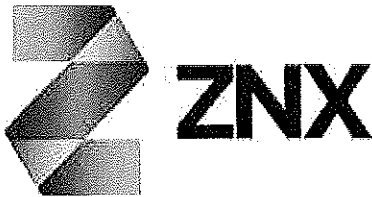
Prior to any works being undertaken the contractor will be required to do a DBYD enquiry where the information and mandatory controls to mitigate the risk to the gas main will be provided. Initially this will be, mandatory stand-by for all initial excavations and potholing, this includes hydro-vac, from the initial potholing ZNX will confirm any further controls that will be required to further mitigate the risk of your works on the gas asset.

I have reviewed our documentation and recent works on the gas main that is in the vicinity of your works. ZNX recently under-bored the creek to the north of your works and the reconnection of the existing main to the newly under-bored pipe is immediately above your proposed directional bore. This is information only as the controls that would be expected from ZNX will not change.

Kind Regards

*Chris Lamb*

Maintenance Manager  
M: 0402 060 484  
E: [chris.lamb@znx.com.au](mailto:chris.lamb@znx.com.au)



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## Telstra Plan Services

Date **13/05/2016**

Level 18, 275 George Street  
Brisbane, QLD 4000

Your Ref: -  
Our Ref: SF178006-1

Postal Address:  
Locked Bag 3820  
Brisbane, QLD 4000

Stephen Richardson  
[steve@cowmanstoddart.com.au](mailto:steve@cowmanstoddart.com.au)

Email: [F0501488@team.telstra.com](mailto:F0501488@team.telstra.com)

Dear Stephen,

### **Re: Proposed Under Bore and pipework – Bolong Road Bomaderry.**

Thank you for your communication dated **13/05/16** in relation to the address specified above.

The purpose of this letter is to notify you that Telstra's plant records indicate that there are **Telstra assets** located within the area of the proposal. We note that our plant records merely indicate the approximate location of the Telstra assets and may not be up to date. These records should not be relied upon by you as they may not depict a true and accurate reflection of the exact location of the assets.

We suggest that you contact Dial Before You Dig for a detailed site plan and engage a Telstra Accredited Plant Locator (APL) to determine the exact location of the asset. To obtain a list of Telstra Accredited Plant Locators (APL) please phone 1100 or visit [www.1100.com.au](http://www.1100.com.au).

Once the precise location of the Telstra assets has been established, you can either arrange for the Telstra assets to be relocated or re-align your proposal to ensure they are no longer impacted.

Telstra's Asset Relocation team can be engaged to obtain a quote to relocate the assets from the location in question. The relocation of the assets are carried at the cost of the disturber. Please phone 1800 810 443 or email [F1102490@team.telstra.com](mailto:F1102490@team.telstra.com) to arrange for an asset relocation.

Alternatively, once your proposal has been re-aligned to eliminate any impact to Telstra's assets, please contact [F0501488@team.telstra.com](mailto:F0501488@team.telstra.com) for a re-evaluation of your proposal so that Telstra can be assured that its assets will not be affected by your development.

As these assets comprise an essential component of the Telstra network, we take this opportunity to highlight Telstra's rights and requirements to ensure that they are understood. The following is stated for your information:

- (1) As you may be aware, Telstra's existing facilities are grandfathered under the *Telecommunications Act 1997* (Cth). Schedule 3 of the *Telecommunications Act* enables such facilities to legally occupy land in perpetuity for the duration of that facilities' use.
- (2) Part 1 of Schedule 3 of the *Telecommunications Act 1997* (Cth) authorises a carrier to enter land and exercise any of the following powers:

- inspect the land
- install a facility
- maintain a facility

In the case of installation and planned maintenance a notification will be afforded and such work will generally proceed during business hours. However, from time to time, certain activities need to be carried out without delay in order to protect the integrity of the network. Such activities may require access without notice and at any time of the day or night.

(3) If you subdivide the land at any time in the future it may become necessary, in the opinion of Telstra to remove, or alter the position of a facility. In these circumstances the carrier may enter the land and do anything necessary or desirable for that purpose. Under clause 53 of Schedule 3 to the Telecommunications Act, the person who proposes to subdivide the land is liable to pay the carrier the reasonable cost of anything reasonably done by the carrier in this regard.

(4) There is a requirement that all access to Telstra's network is facilitated by Telstra, via the normal channels available to all customers Australia wide. Tampering with, or interfering with telecommunications infrastructure or a facility owned or operated by a carrier (being Telstra) is an offence under the *Criminal Code Act 1995* (Cth). Heavy penalties may apply for breach of this prohibition, and any damages suffered, or costs incurred, by Telstra as a result of any such interference may be claimed against you. This means that you are not permitted to interfere with, repair or relocate Telstra's infrastructure, either personally or through a contractor without approval and authorisation from Telstra.

(5) Individuals owe Telstra a duty of care that must be observed when working in the vicinity of Telstra's communication plant or assets. If Telstra's facilities are damaged as a result of any property development or any interference with such facilities, the person will be liable in tort (negligence) for any loss or damage (including consequential loss) suffered by Telstra and/or any member of the public. Telstra will not hesitate to take action to recover such loss or damage caused by such interference to Telstra's Network.

Telstra would also appreciate due confirmation in the event that the applicant contemplates divesting its interest or control of this land, that the information contained here is passed on to the prospective owners.

If you have any questions regarding the information in this letter, please do not hesitate to contact myself at [F0501488@team.telstra.com](mailto:F0501488@team.telstra.com).

Yours sincerely,

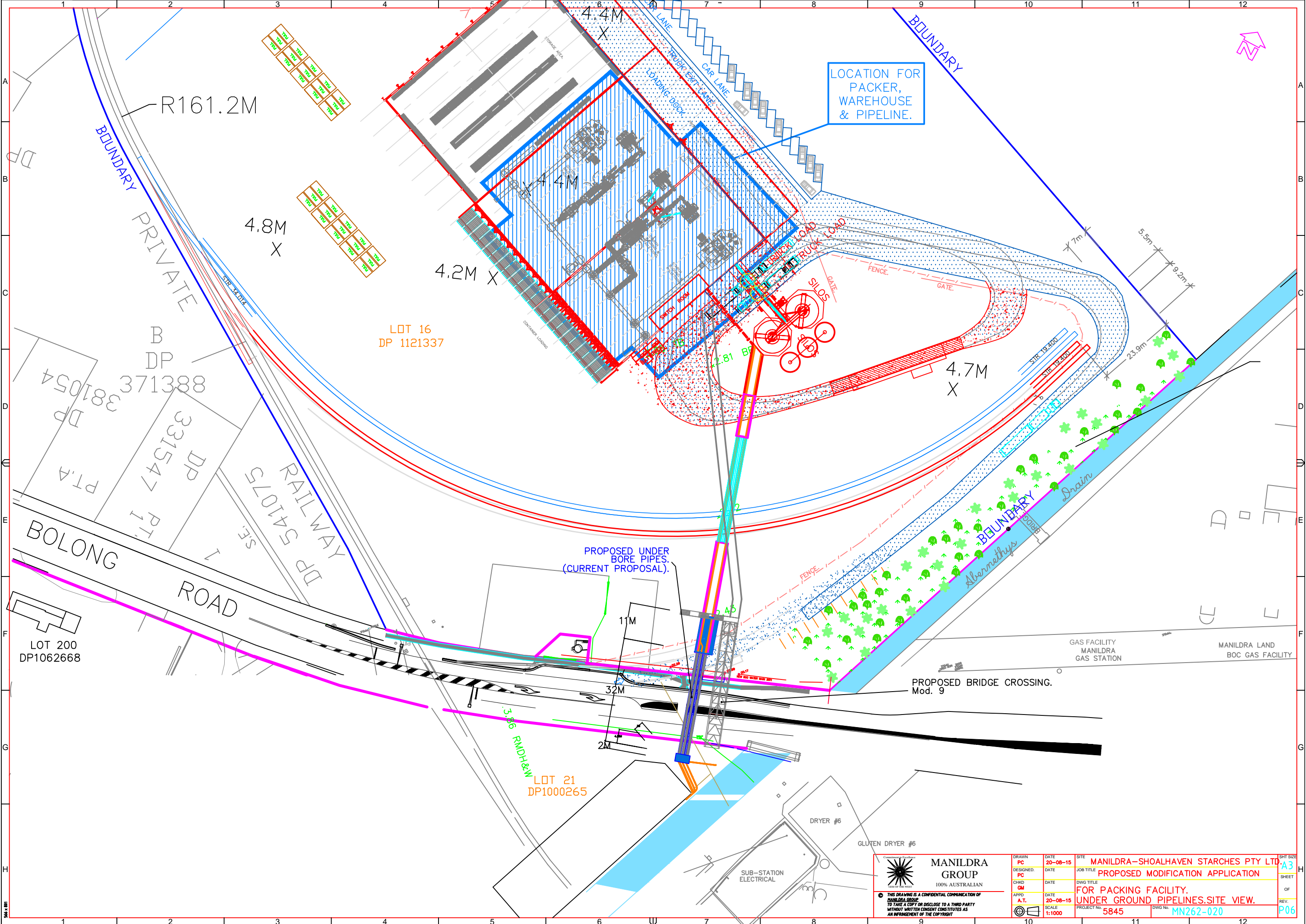


**Lachlan Smith**

Telstra Telstra Plan Services

## **ANNEXURE 2**


### **Plans of Proposal**



LOCATION FOR  
PACKER,  
WAREHOUSE  
& PIPELINE.

PROPOSED UNDER  
BORE PIPES.  
(CURRENT PROPOSAL).

PROPOSED BRIDGE CROSSING.  
Mod. 9



**MANILDRA GROUP**  
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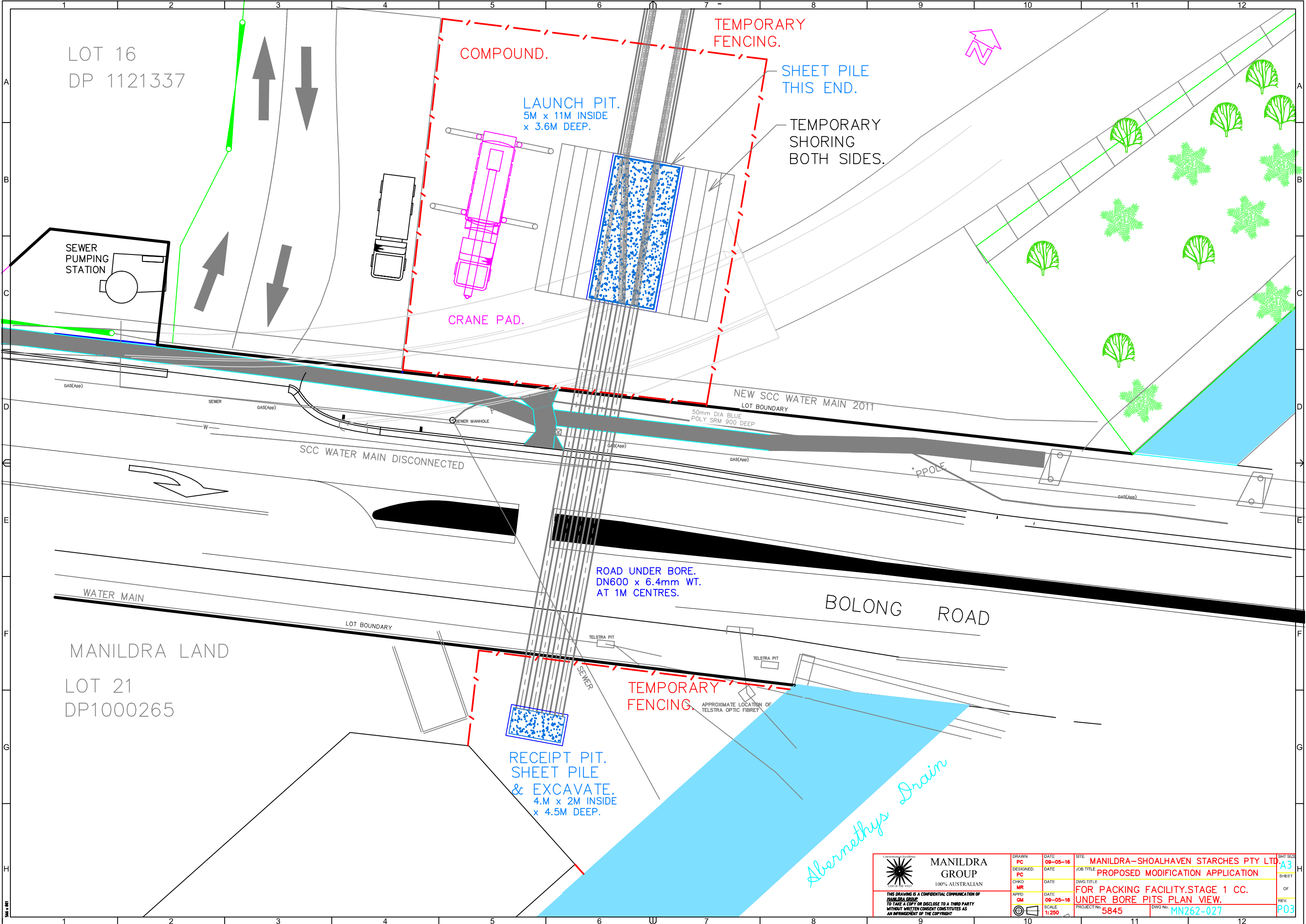
DRAWN PC	DATE 20-08-15	SITE MANILDRA-SHOALHAVEN STARCHES PTY LTD
DESIGNED PC	DATE	JOB TITLE PROPOSED MODIFICATION APPLICATION
CHECKED GM	DATE	DWG TITLE FOR PACKING FACILITY.
APPROVED A.T.	DATE 20-08-15	UNDER GROUND PIPELINES.SITE VIEW.
SCALE 1:1000		PROJECT No. 5845
		DWG No. MN262-020

SHEET  
P06

OF  
A3

REV.





LOT 16  
DP 1121337

MANILDRA LAND

LOT 21  
DP1000265

COMPOUND.  
TEMPORARY FENCING.

LAUNCH PIT.  
5M x 11M INSIDE  
x 3.6M DEEP.

CRANE PAD.

SHEET PILE  
THIS END.

TEMPORARY  
SHORING  
BOTH SIDES.

NEW SCC WATER MAIN 2011  
LOT BOUNDARY

SCC WATER MAIN DISCONNECTED


ROAD UNDER BORE.  
DN600 x 6.4mm WT.  
AT 1M CENTRES.

BOLONG ROAD

TEMPORARY FENCING.

RECEIPT PIT.  
SHEET PILE  
& EXCAVATE.  
4.M x 2M INSIDE  
x 4.5M DEEP.

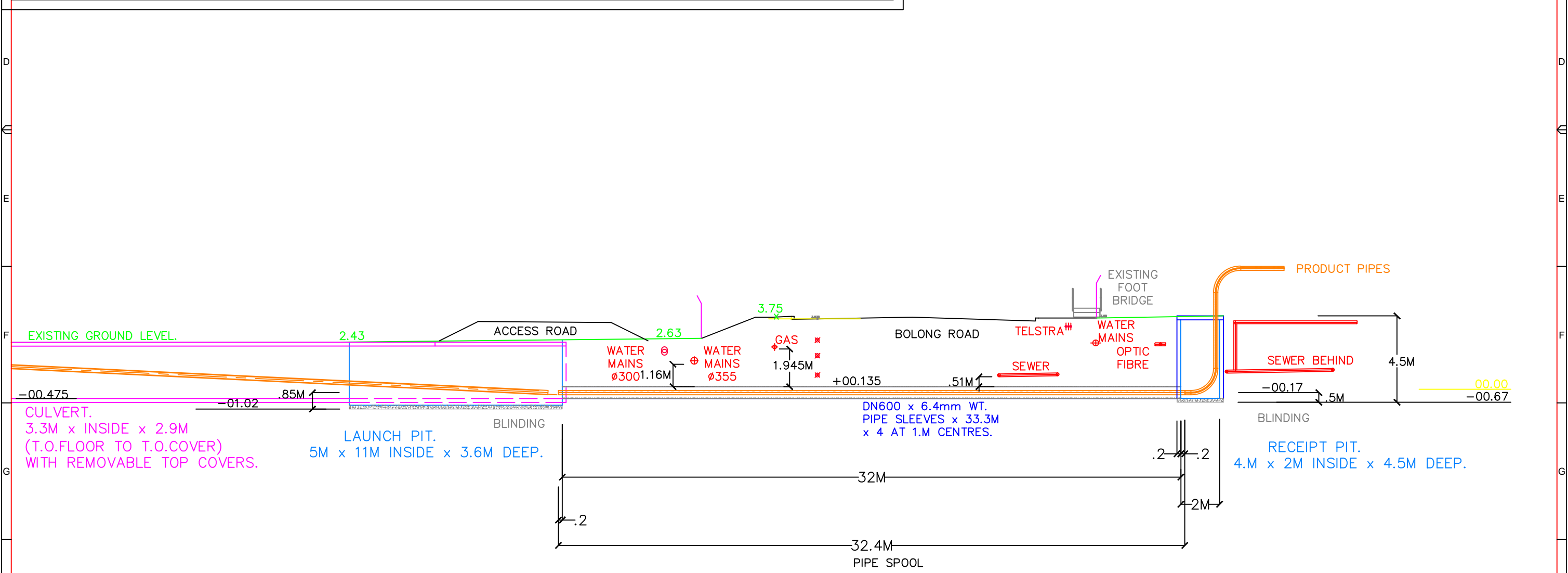
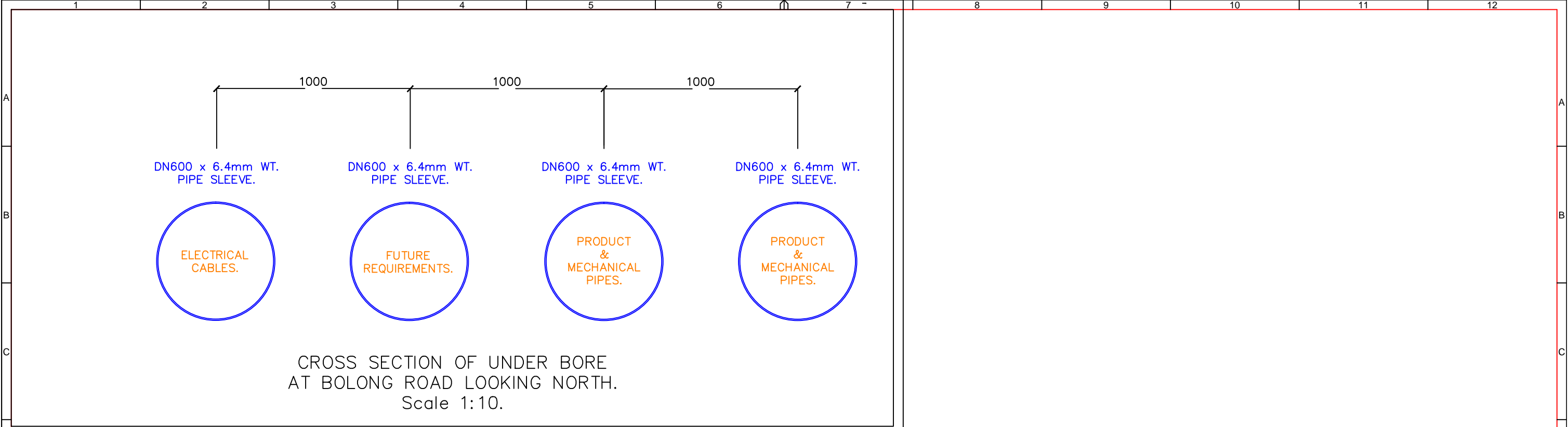
Abermethys Drain




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DRAWN PC	DATE 09-05-16	SITE MANILDRA-SHOALHAVEN STARCHES PTY LTD.	SHT SIZE A3
DESIGNED PC	DATE	JOB TITLE PROPOSED MODIFICATION APPLICATION	SHEET OF
CHKD MR	DATE	DWG TITLE FOR PACKING FACILITY.STAGE 1 CC.	REV.
APPD GM	DATE 09-05-16	UNDER BORE PITS PLAN VIEW.	
SCALE 1:250	PROJECT No. 5845	DWG No. MN262-027	P03



WESTERN ELEVATION.  
CROSS SECTION  
THROUGH BOLONG ROAD.

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	DESIGNED PC	DATE	JOB TITLE PROPOSED MODIFICATION APPLICATION	SHEET
	CHECKED MR	DATE	DWG TITLE FOR PACKING FACILITY, STAGE 1 CC.	OF
	APPROVED GM	DATE 20-08-15	PROJECT No. 5845	REV. P07
	SCALE 1:200(UNO)	DWG No. MN262-029		



## **ANNEXURE 3**

**Geotechnical Advice**

**prepared by**

**Coffey Geoscience**

## Stephen Richardson

---

**From:** Jon Thompson <Jon.Thompson@coffey.com>  
**Sent:** Tuesday, 17 May 2016 9:58 AM  
**To:** Mike Richardson; Dominic Trani  
**Cc:** Greg Murphy; Simon Punnett; Stephen Richardson; Aaron Ticehurst; John Studdert; Brian Hanley  
**Subject:** RE: Culvert options

GEOTWOLL003845AA-AF

### **Response to Comments from the Department of Primary Industries - Water**

Manildra Group  
Attention: Mike Richardson

Mike,

#### Introduction

As part of Manildra's Packing Facility project, it is understood that Manildra is proposing to underbore Bolong Rd with 3 x 600mm diameter steel conduits which will be used as access channels for the different utilities required to run and support the Packing Facility. The work will require excavation of trenches either side of Bolong Road to enable access for the boring gear. The trench on the north side of Bolong Rd will be 1m long by 4m wide and about 3.6m deep and the pit on the south side will be 2m long x 4m wide and 4.8m deep.

In relation to Manildra's submission to NSW Planning seeking approval to the proposed underboring works, the following questions/concerns from the Department of Primary Industry – Water had been raised:

1. That the proposed modification/undertaking of works will not impact on the stability of Abernethy's Creek; and
2. Potential for intercepting groundwater by the "launch" and "receipt" pits which are 3.6m and 4.8m deep, respectively, and if any need for dewatering during construction + volumes & duration.

This report is not intended to provide detailed advice on the method of shoring support and dewatering details, but rather to assess the likely effect of the excavations on the stability of Abernethy's Creek.

#### Available information

Relevant existing geotechnical information has been used to develop the below responses. Please find attached Figure 1 showing general location of boreholes CBH510 and CBH511. On the northern side of Bolong Road, it appears that the CBH510 is about 30m away from the underbore pit. On the southern side of Bolong Road, it appears that CBH511 is approximately within the footprint of the proposed pit. Judging from CB510, and assuming the surface RL of this borehole is not significantly different from the surface RL of the general vicinity of the proposed northern pit, it is likely that the material within the excavation may include soft to firm silty clay or loose clayey sand to a depth of 3.6m. Based on CBH511, and assuming the surface RL of this borehole is not significantly different from the surface RL of the general vicinity of the proposed southern pit it is likely that the material within the excavation site may include soft to stiff silty clay or loose silty sand to a depth of 4.8m.

#### Stability of Abernethy's Creek

Due to the proximity of the proposed pits to Abernethy's Creek, the proposed depth of excavation, and the likely material type encountered and exposed, we recommend that the excavation be supported by temporary braced sheet piling to be undertaken prior to commencing any excavations. Preliminary assessments indicate that the proposed sheet piles should penetrate 2m to 3m below the base of excavation into the underlying very stiff clay or approximately 7m to 8m depth (toe of sheet pile). Temporary struts at nominal spacing of 1.5m will need to be provided in the upper portion of the sheet pile.

Provided each pit is independently supported by shoring there should be no effect on the stability of The banks of Abernethy's Creek.

#### Water Seepage into pits during Construction

Based on the available borehole information, groundwater inflows could be encountered at depths below 2.3m (CBH510) to 3.5m (CBH511). Due to potential fluctuation of groundwater levels in the area noting its close proximity to Abernethy's Creek, inflows could be encountered at a shallower depth than previously observed during our geotechnical investigation.

During our previous geotechnical investigations, groundwater monitoring wells were not installed. As such, there is no available information to derive an estimate of the potential volume of water that could flow into the pits during excavation and construction works.

We recommend that an adequate dewatering system be allowed for during excavation and construction works. A nominal pump capacity required for the dewatering works will need to be provided by the contractor based on their experience on similar environments. We note that properly installed interlocking sheet piles will assist in managing water inflows during excavation and construction.

For and on behalf of Coffey

Jon Thompson  
Principal Geotechnical Engineer

118 Auburn Street  
Wollongong NSW 2500, Australia

t: +61 2 42011411  
f: +61 2 42011401  
m: +61 403 242428

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**From:** Mike Richardson [mailto:Mike.Richardson@manildra.com.au]

**Sent:** Thursday, 12 May 2016 5:33 PM

**To:** Dominic Trani

**Cc:** Greg Murphy; Simon Punnett; Stephen Richardson; Aaron Ticehurst; John Studdert; Brian Hanley; Jon Thompson

**Subject:** FW: Culvert options

Hi Dominic,

We have been asked to respond to the following questions from Dept of Primary Industry – Water in relation to our submission to NSW Planning seeking approval to under bore Bolong Rd with 3 x 600mm conduits.

This work relates to my queries to you about borehole data in the area of the launch pit and receiving pit (see attached drawing).

DPI ask us to confirm/outline:

- that the proposed modification/undertaking of works will not impact on the stability of Abernethy's Creek.
- potential for intercepting groundwater by the "launch" and "receipt" pits which are 3.6m and 4.8m deep respectively and if any need for dewatering during construction + volumes & duration.

Can Coffey offer advice in relation to the proposed pits and the questions asked based on Coffey report 03845AA-AB rev1 which includes bore logs CBH510 and CBH511 in the vicinity of the pits?

Attached is the under-bore methodology that shows how that work will be done. The under-bore contractor asks for Manildra to provide pits either side but of course we can't form headwalls until the under-bores are completed.

How quickly might Coffey be able to reply?

Regards,

**Mike Richardson**

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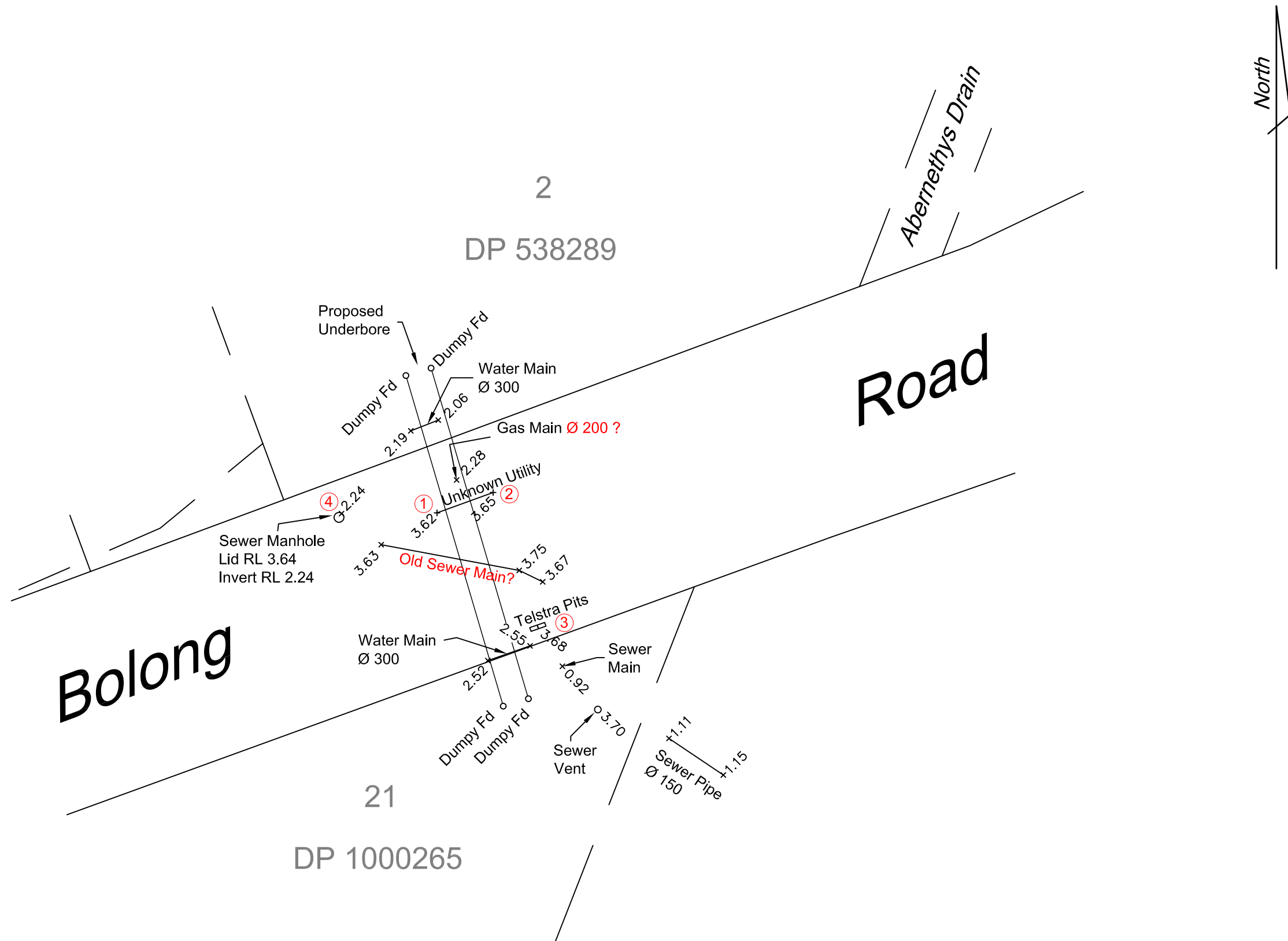
## **ANNEXURE 4**


**Survey Services Locations and Levels**

**prepared by**

**Allen Price & Scarratts Surveyors**

M:\Projects\20000\25000s\25003-300\Drawings\2500-300-204 Services Locations & Levels.dwg



REV	DESCRIPTION	BY	DATE	 <b>allen price &amp; scarratts</b> land and development consultants Head Office: 75 Plunkett Street, Nowra NSW 2541 Kiama Branch: 5/125 Terralong Street, Kiama NSW 2533 phone:(02) 4421 6544 fax:(02) 4422 1821 consultants@allenprice.com.au www.allenprice.com.au	SKETCH PLAN SHOWING SERVICES LOCATIONS AND LEVELS AT BOLONG ROAD FOR MANILDRA		RATIO: <b>1:400</b> (AT A3 ORIGINAL)		DATE OF PLAN: <b>27.05.2016</b>	
							DRAWING NUMBER <b>25003-300-204</b>		SHEET <b>1</b> OF <b>1</b>	