6.2 Precinct Plan for Powranna Road

The Powranna Rd Precinct is currently used by a range of uses including stock sales yards, grain and potatoes storage, drag racing and environmental management. The precinct is strategically located along the Midlands Hwy and intended to become Tasmania's primary stock sales centre.

The Powranna Rd precinct is to develop as a **rural services centre** with the purpose to accommodate:

- Stockyards, and
- Storage and potentially packaging of agricultural produce.

Other intended uses include:

- Environmental management within the Environmental Management Zone, and
- The existing dragway within the Recreation Zone. Good accessibility by road is important for this precinct, and the existing highway turn-off is effective.

Rural services centre overlay, zoning and uses

The Rural Resource Zone allows for existing and intended uses in the precinct. The current extent of the Rural Resource Zone should be maintained. However, some of the discretionary uses for the Rural Resource Zone potentially conflict with existing uses and intended uses. These include:

- Bulky goods sales, unless agricultural supplies
- Educational and occasional care, unless linked to agricultural research and education
- Equipment and machinery sales and hire, unless for agricultural purposes
- Extractive industries
- General retail and hire
- Hotel industry
- Motor racing facility (i.e. if not in Recreation Zone)
- Residential
- Research and development, unless linked to agricultural research and education
- Tourist operation
- Vehicle fuels sales and service, and
- Visitor accommodation.

For all discretionary uses, it should be demonstrated they align with the purpose of the precinct and do not adversely impact on existing uses. For example, a truck wash facility would be seen as a use that aligns with the purpose of the precinct and supports existing uses of the site.

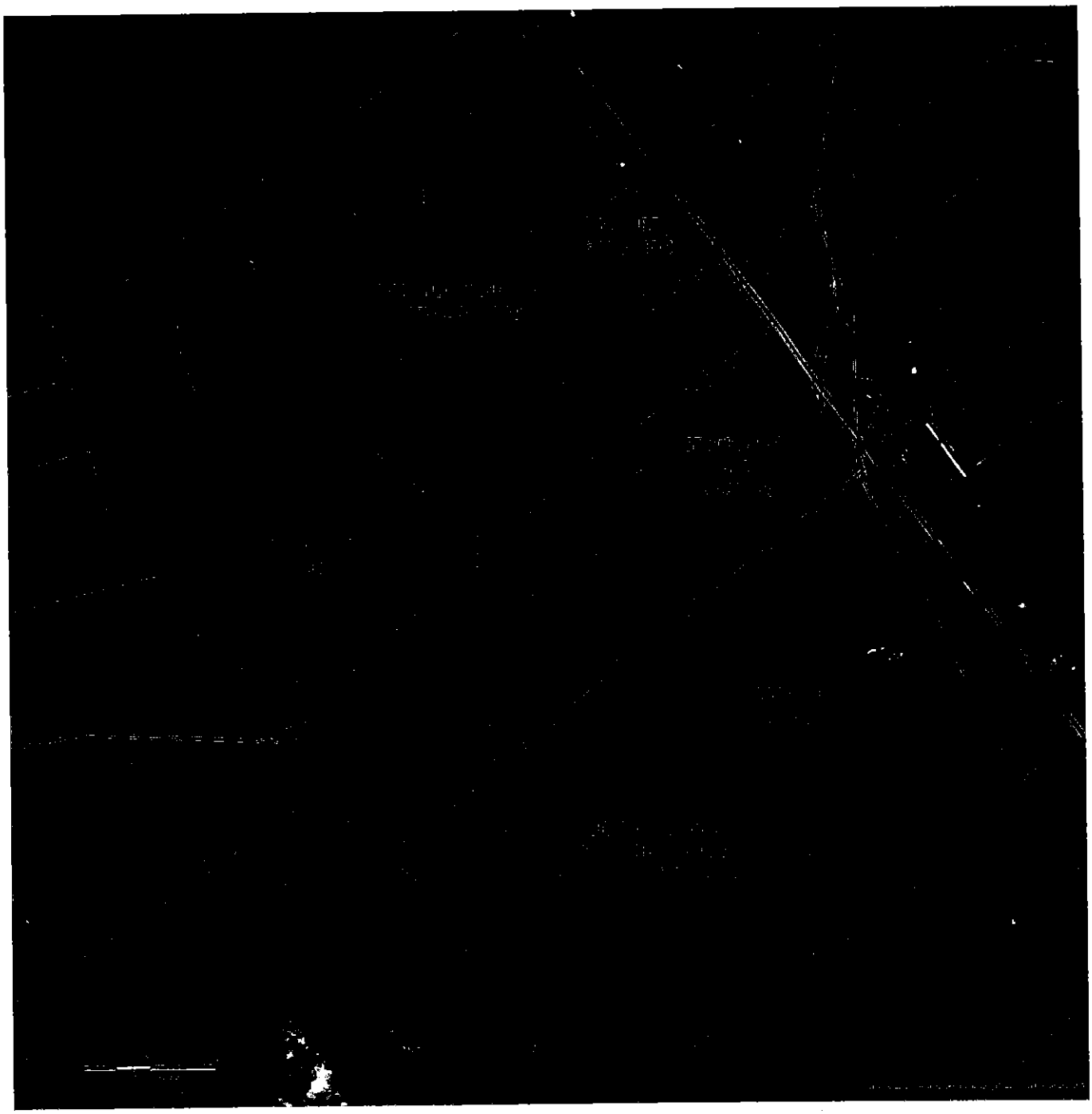
The land Zoned Utilities and Environmental Management allow for the existing and intended uses and should be maintained.

The land zoned Recreation allows for its current use. Should this use ever vacate the site, it should be considered for rezoning to Rural Resource Zone to better align with the purpose of the precinct.

Appropriate separation distances should be maintained around to prevent encroachment from non-compatible uses, such as residential. A buffer around the precinct will accommodate existing and future intended uses of the precinct.

A **rural services centre overlay** will effectively manage the intended uses for the precinct.

FIGURE 8 POWRANNA ROAD PRECINCT PLAN MAP[13]



[13] The initial objective was to provide a potential road and lot layout and service provision. While the strategic intent of the precincts and their components have been established it would be untimely to provide further detail as this is more appropriately determined depending on the nature of the development opportunities that arise.

7 SUMMARY OVERVIEW OF RECOMMENDATIONS

The following recommendations are made (please refer to sections 5 and 6 for more detail):

A. For Northern Midlands Council to participate in coordinated and targeted advocacy by stakeholders to address regionally and State significant issues the industry is facing,
B. For Northern Midlands Council to undertake a feasibility study to identify the optimal location(s) and viability for rural industries precincts in the Northern Midlands. Precincts ensure an efficient use of infrastructure and services, and may provide value chain and logistics benefits for rural industries in these precincts,
C. For Northern Midlands Council to communicate with local investors in agriculture to better understand their needs, and where possible (within the roles and responsibilities of Council) to enable investment in the local area,
D. For Northern Midlands Council to explore opportunities to support the availability of affordable housing solutions for casual and seasonal workers,
E. For Northern Midlands Council to support initiatives to better coordinate demand and supply of casual labour,
F. For Northern Midlands Council to support and enable farmers and producers to convene and where applicable collaborate on common issues, such as reliable power supply at the Burlington Rd precinct,
G. For Northern Midlands Council to establish the feasibility of an upgrade of Burlington Rd to better meet current and future traffic demands, and
H. For Northern Midlands Council to apply proposed precinct plans for the Powranna Rd and Burlington Rd precincts to enable development and intended uses for the precincts.

APPENDIX

Workshop 1, precinct land owners and operators. Minutes, 25 September, 2pm

Ellen Witte (Facilitator, SGS); Michael Salhani (Chair of NMC Economic Development Committee); James Cornish (Roberts Ltd); Rob Calvert (Elders Rural Services); Freyr Colvin (Bejo Tasmania); Elizabeth Clark (land owner); Russell Fyfe (Cosway Project Services); Bob Reid (TasGobal Seeds); Robert Dent (TasGlobal Seeds); John Talbot (Tasmanian Quality Meats); Kevin Chilman (Petuna Aquaculture); Peter Davey (Cressy Transport); Dee Alty (Longford Local District Committee); Kate Sutherland (Burlington Berries); Stewart Sutherland (Burlington Berries).

Discussion – Site specific issues

What are the current constraints and issues at Powranna Road?

There are several rough areas on the road and the access needs attention where Burlington meets Powranna Road.

Roberts Ltd is currently in discussion with Council regarding a proposed truck wash in the area. Believes there is sufficient ground to manage the waste water from the wash area (sufficient space for settlement ponds). There is sufficient water through pipeline from South Esk.

All of the operators present indicate to be heavily investing and expanding operations. Investments include: truck wash, grain storage (high speed capacity), seed testing, seed testing farm, processing capacity at TQM and Petuna (doubling), storage at Berry farm.

What are the current constraints and issues at Burlington Road?

Bejo Tasmania requires a casual labour base which can be a challenge due to costing and the viability to train and then not have the staff return. Staffing is also an issue for Burlington Berries and the lack of affordable local accommodation to house the labourers. Approximately 20-30 homes or modular housing (such as cabins) would assist in this area. Generally casual labourers are happy to pay $100 per week for accommodation.

Burlington Road's current road surface is an issue. Resurfacing and widening of the road would be beneficial as there is a large amount of trucks and heavy traffic on the road.

Security is currently an issue for TasGlobal Seeds. The public access area is clearly marked but not taken heed to. Petty vandalism is also an issue.

For Burlington Berries the distance to Devonport can be a hindrance by being away from the freight port. Sudden power outages in the area are also an issue as the company requires a full generator back up.

Kate Sutherland suggested that a box making plant in the municipality would be beneficial due to the high costs related to transport packaging associated with going to and from Devonport (John suggested a possible alternative supplier).

There is the general concern that the biosecurity control at the Launceston Airport is too relaxed. With only 2 dogs in Tasmania it does not seem enough to service the needs to actively control the absence of fruit fly in the state.

PLAN 1

PLANNING APPLICATION P15-157
'WILLIAMWOOD' (ACCESSED FROM AUBURN ROAD), 109 AUBURN ROAD, ROSS

ATTACHMENTS

A Application & plans

B Additional Information request

C Additional Information response

D Responses from referral agencies

E Representation, applicant's response, further information provided by representor

F Planning scheme assessment

G. Visual Assessment.

A.

1-406

PLANNING APPLICATION

Proposal

Description of proposal:

CHANGE OF USE OF SITE TO RESOURCE PROCESSING AND CONSTRUCTION OF A SHED AND WEIGH BRIDGE. (GRAIN STORAGE / PROCESSING).

(attach additional sheets if necessary)

Site address: "WILLIAMWOOD", (OFF AUBURN ROAD), 109 AUBURN ROAD, ROSS, 7209

ID no: 7570639 *and/or Council's property no:*

and/or

Area of land: ha/m² *and/or CT no:* C.T. 120818-1

Estimated cost of project $40,000.00 *(include cost of landscaping, car parks etc for commercial/industrial uses)*

Are there any existing buildings on this property? (Yes) / No

If yes – main building is used as WILLIAMWOOD IS A LARGE FARM TITLE WHICH CONTAINS NUMEROUS BUILDINGS.

Is any signage required? NO

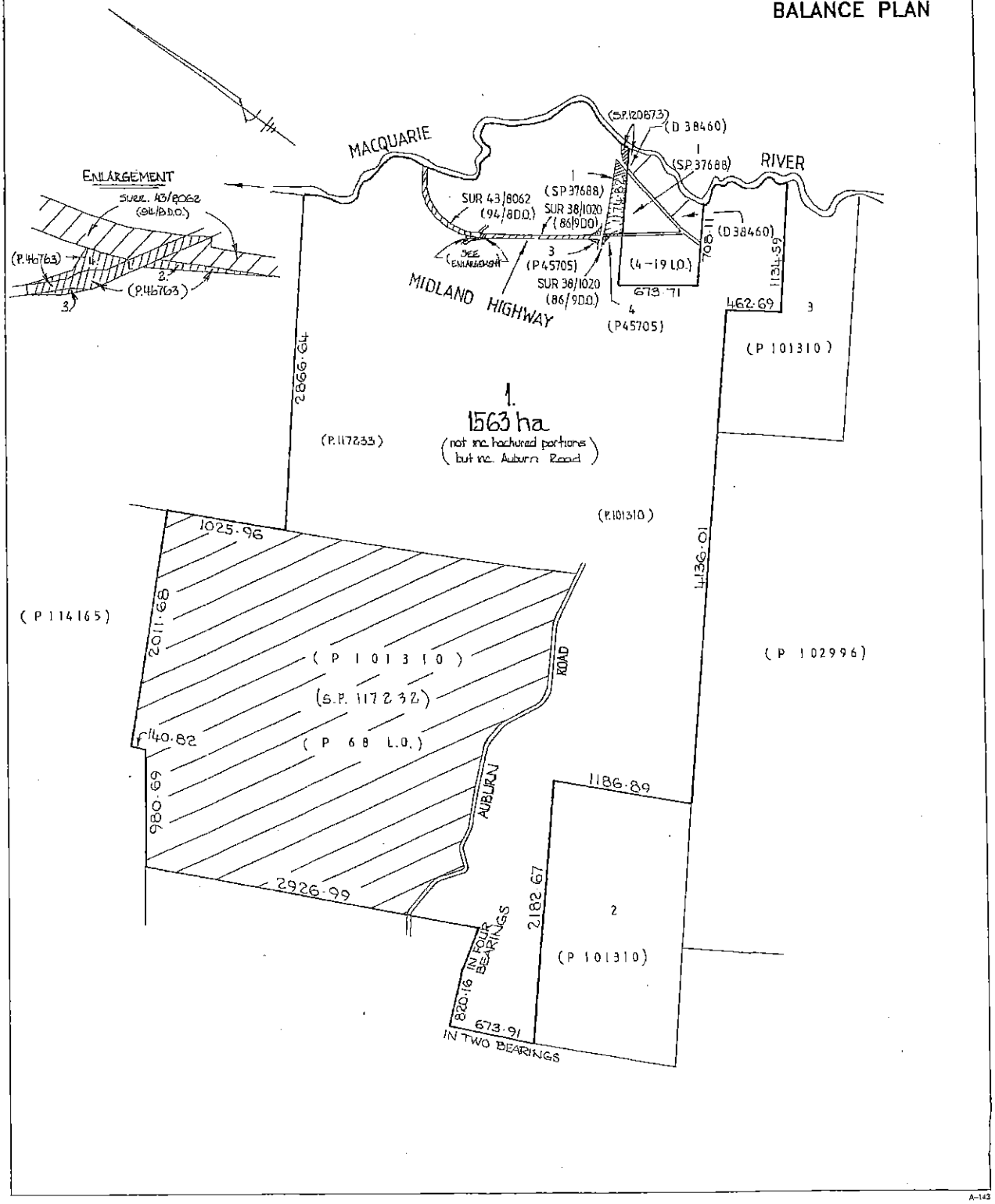
(if yes, provide details)

EXHIBITED

OWNER ROBERT OLIVER MORRIS JESSICA ANNE MORRIS FOLIO REFERENCE C.T. VOL 101310 FOL 1 GRANTEE PART OF 6180 ACRES, GRANTED TO WILLIAM HILL.	**PLAN OF TITLE** LOCATION LAND DISTRICT OF SOMERSET PARISH OF ELDON FIRST SURVEY PLAN No. ~~P. 68 L.O.~~ P. 38459 COMPILED BY COHEN & ASSOCIATES PTY. LTD LAUNCESTON SCALE 1: 30,000 LENGTHS IN METRES	REGISTERED NUMBER **P 120818** APPROVED 8 - JAN 1996 Recorder of Titles

MAPSHEET MUNICIPAL CODE No. (56) 123	LAST UPI No 1230164	LAST PLAN No. ~~P 101310~~ P.117233	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

BALANCE PLAN



A-143

WOOLCOTT SURVEYS

EAST COAST SURVEYING

June 3, 2015

Paul Godier
The Planning Department
Northern Midlands Council
P.O. 156
Longford, TAS
7301

Dear Paul,

RE: Application for Resource processing Facility Auburn Road, Ross

I refer to our various conversations and emails regarding the new site for the XLD Grain Processing facility at Ross.

Please find attached a new application for the new site on the Williamwood side of the Midland Highway off Auburn Road. The application includes the following:

- Proposal Site Plan.
- Bushfire Assessment Report and Certificate
- Planning Report
- Traffic Impact Assessment
- Copy of Subject Titles

I am advised to also write seeking exemption from the General Manager in regard to planning fees for this development. In doing so I am advised to point out that by not taking the last proposal and its refusal of permission to appeal a considerable amount of money has been saved on behalf of Council.

I understand this matter will be considered – but with XLD paying the advertising fees only.

If this is in agreement then can you please create an invoice for the Advertising fees and email me the invoice direct to colin.smith@woolcottsurveys.com.au so I can forward to our client for direct payment to Council. The invoice should be made out to:

XLD Grain
C-o Woolcott Surveys
P.O. Box 593, Mowbray Heights
TAS, 7248

WOOLCOTT SURVEYS
Ph: (03) 6332 3760 F: (03) 6332 3764
10 Goodman Court, Invermay, TAS, 7248
PO Box 593, Mowbray Heights, TAS, 7248
Email: admin@woolcottsurveys.com.au

EAST COAST SURVEYING
Ph: (03) 6376 1972
Avery House Level 1
48 Cecilia Street, St Helens, TAS, 7216
PO Box 430, St Helens, TAS, 7216
Email: admin@ecosurv.com.au

ABN 15 808 360 064

WOOLCOTT SURVEYS

EAST COAST SURVEYING
CONSULTING SURVEYORS & LAND PLANNERS

Please advise if you have any questions.

Yours Truly,

Colin Smith
Director
Woolcott Surveys

WOOLCOTT SURVEYS
Ph: (03) 6332 3760 F: (03) 6332 3764
10 Goodman Court, Invermay, TAS, 7248
PO Box 593, Mowbray Heights, TAS, 7248
Email: admin@woolcottsurveys.com.au

EAST COAST SURVEYING
Ph: (03) 6376 1972
Avery House Level 1
48 Cecilia Street, St Helens, TAS, 7216
PO Box 430, St Helens, TAS, 7216
Email: admin@ecosurv.com.au

ABN 15 808 360 064

WOOLCOTT SURVEYS

NORTHERN MIDLANDS INTERIM PLANNING SCHEME 2013

DEVELOPMENT APPLICATION
109 AUBURN ROAD, ROSS

Change of Use of Site to Resource Processing and Erection of Buildings

For

XLD GRAIN

June 2015

Contents

1. Proposal

It is proposed to use the subject site for the collection and distribution of grain (in bags); erection of an office amenity block and installation of a weighbridge.

This is a new site on the west of the Midland Highway – away from the Ross Township.

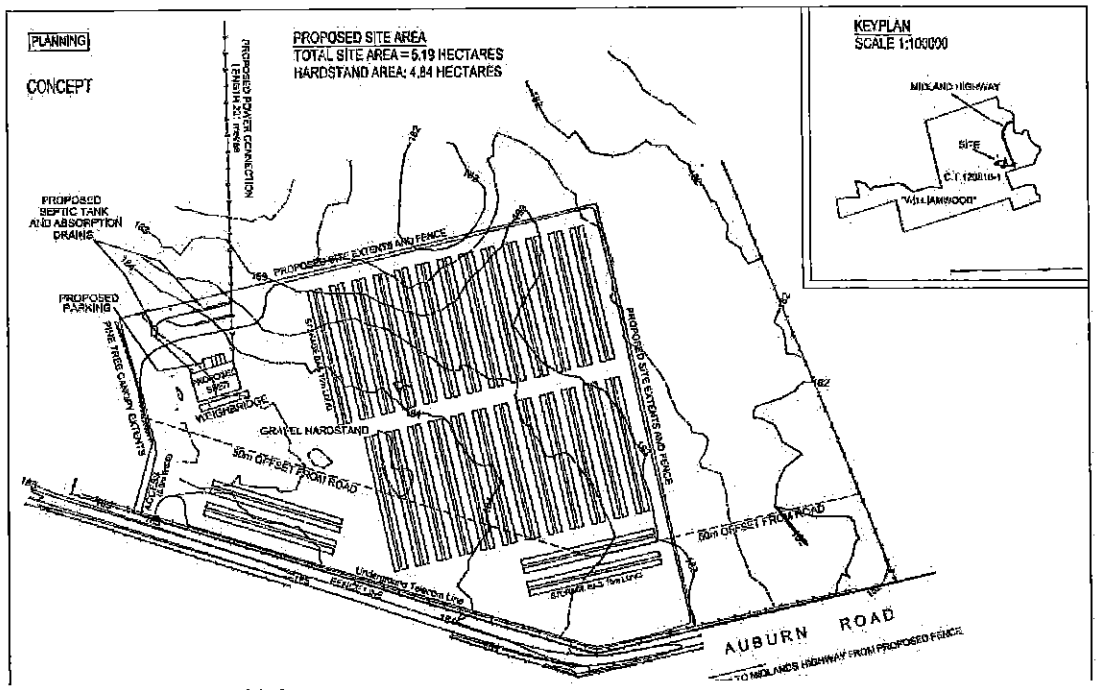


Figure 1 – Proposal Plan

The subject site is part of the very large agricultural holding of "Williamwood" located south of the Ross Township. Williamwood management has changed following the introduction of the Midland Irrigation Scheme. The objective of Williamwood management (and other significant properties in this area) is to capitalise on the benefits of irrigation – focussing efforts on grain production.

Increased grain production aligns with the growth of the dairy sector. The end user of the grain to be grown around Ross will be the southern dairy farms around Cambridge. But with the possible dairy expansion predicted in the NE this site becomes strategic for not only the collection of grain – but also the distribution of the product in the winter months.

This site is also important in regard to reducing transport costs for primary product – making the industry sustainable in the long term.

It should be noted that had the product been solely from Williamwood then this would have been a No Permit required development. It is only because some of the product will come from properties other than Williamwood that this matter has to be considered under the Planning Scheme.

2. Subject Land

2.1 Location

The subject site is located at 'WILLIAMWOOD' - 109 AUBURN RD ROSS TAS 7209.

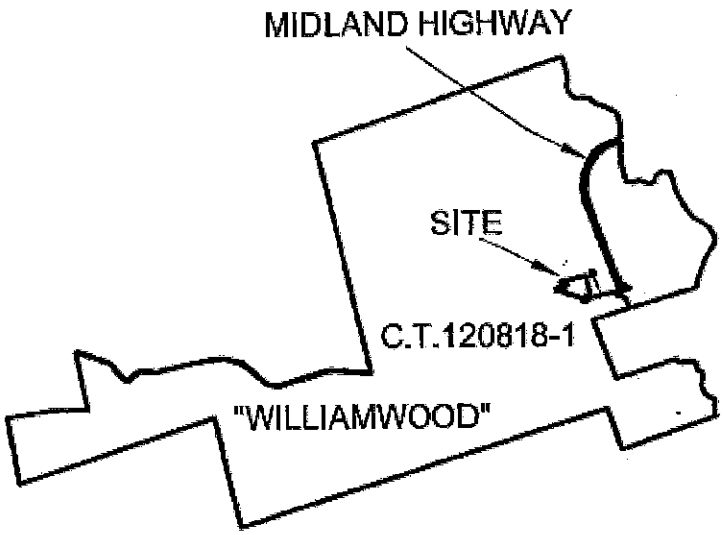


Figure 2. Location Map – source Woolcott Surveys

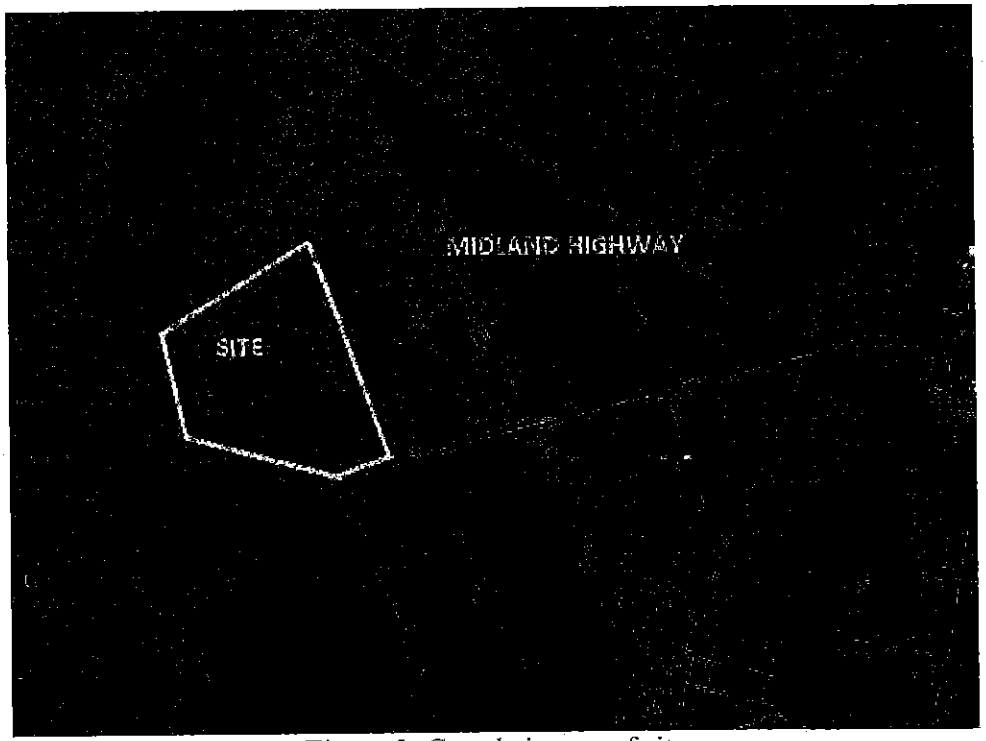


Figure 3. Google image of site

2.2 Title Reference

Title Details (Full copies of Title in **Annexure 1**)

Property Address	'WILLIAMWOOD' - 109 AUBURN RD ROSS TAS 7209
Property ID	7570639
Title Reference	120818/1

2.3 Land Area

The land area is Approx 5.19ha.

3. Existing Conditions

3.1 Use of site and surrounding lands

The site is currently used for grazing purposes. It is a site which sits between two pivot irrigators and their respective spray circles. To the south is Auburn Road. To the east is the Midland Highway – some 226m away. To the south, west and north is land within the title of Williamswood.

Special or significant features of the subject land

The features which are significant to this site are:

- *The Midland Highway*
- *The surrounding agricultural land – under irrigation*

3.3 Availability and Capacity of Infrastructure

Access to the site will be from Auburn Road. The new use will require a new access in the approx. location below.

Water supply for domestic use and firefighting will be via roof filled tanks.

Proposal Plans are attached at **Annexure 2**

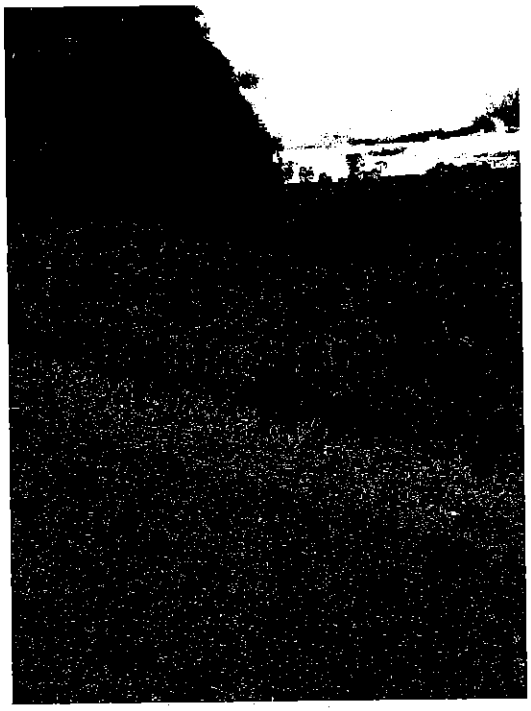


Figure 4. Access from Auburn Road

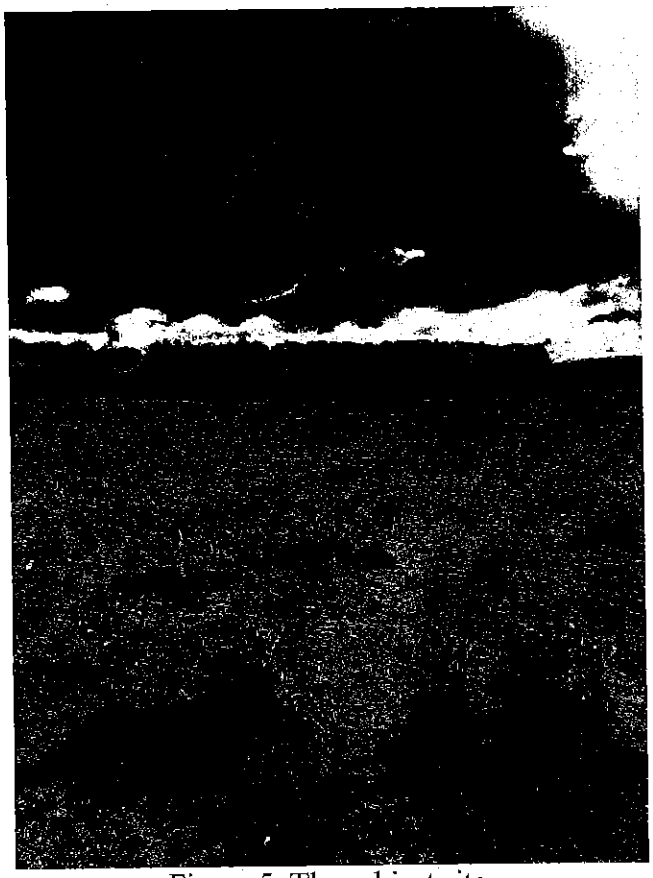


Figure 5. The subject site.

4. Planning Controls

4.1 Existing zoning of the subject land and surrounding land

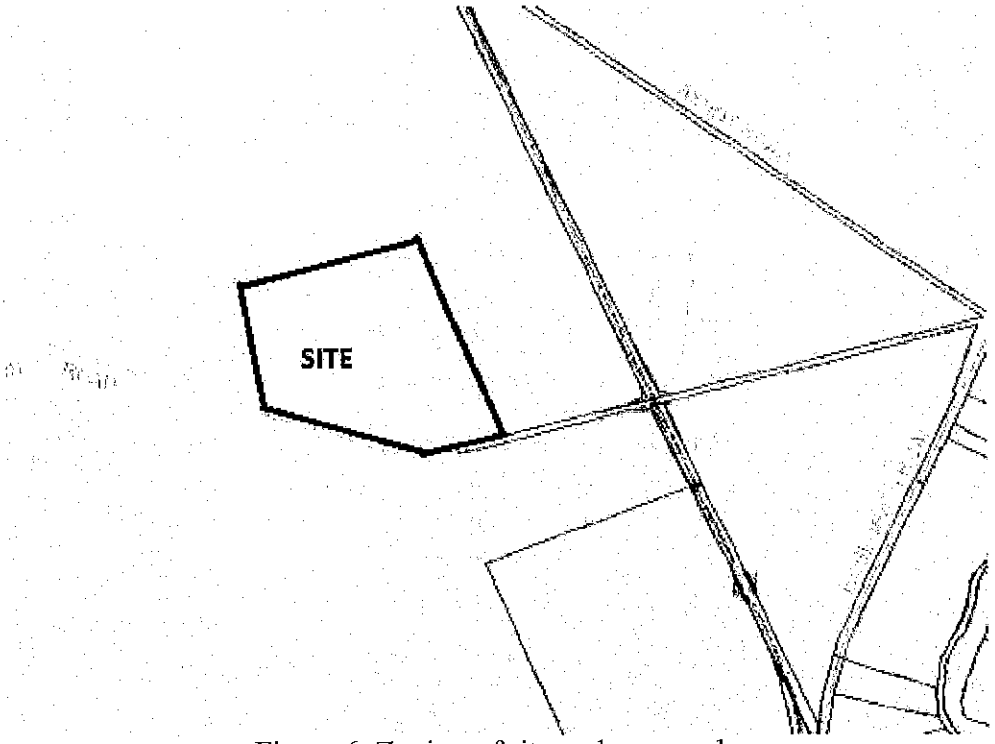


Figure 6. Zoning of site and surrounds

The subject site and the surrounding lands are zoned Rural Resource use (pink).

4.2 Special controls and effect on subject and surrounding land

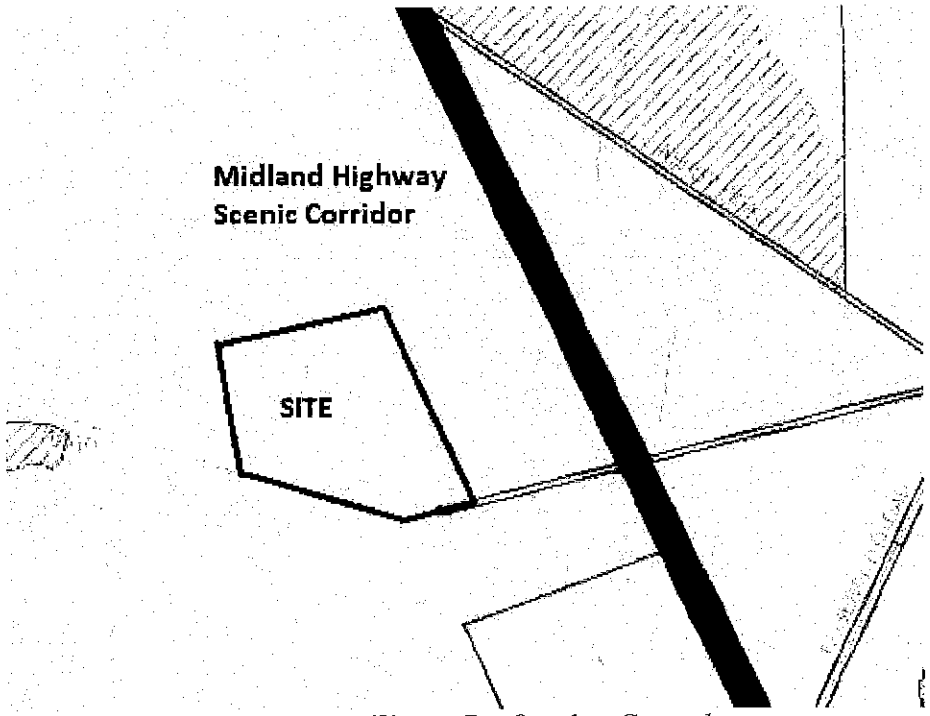


Figure 7 – Overlay Controls

There are no overlay controls covering this site. The closest matter to consider is the Scenic Tourist Corridor which is applied to the Midland Highway – some 226m to the east of the site.

4.3 Planning Matters

The land is under the jurisdiction of the Northern Midlands Council. The relevant planning instrument is the Northern Midlands Interim Planning Scheme 2013.

4.4 Planning Definitions

Within the Planning Scheme there are a series of definitions into which use and development must fit. If there is no definition which describes the use or development the principle of "best fit" applies. In this instance the definition which describes the development is:

Resource Processing

Legal Advice has been taken to confirm this use definition. This advice has been accepted by the Northern Midlands Council.

5. Northern Midlands Interim Planning Scheme 2013

This section details how the proposed development complies with the zone requirements of the Northern Midlands Interim Planning Scheme 2013. The following section numbering is the same as found in the Northern Midlands Interim Planning Scheme 2013.

26 Rural Resource Zone

26.1 Zone Purpose

26.1.1 Zone Purpose Statements

26.1.1.1 To provide for the sustainable use or development of resources for agriculture, aquaculture, forestry, mining and other primary industries, including opportunities for resource processing.

26.1.1.2 To provide for other use or development that does not constrain or conflict with resource development uses.

26.1.1.3 To provide for economic development that is compatible with primary industry, environmental and landscape values.

26.1.1.4 To provide for tourism-related use and development where the sustainable development of rural resources will not be compromised.

It will be demonstrated that the proposed development aligns well with the purpose of the zone – providing a balance between a limited level of development and a mechanism for enhancing agricultural production in line with the State's irrigation policy.

26.1.2 Local Area Objectives

a) Primary Industries:
Resources for primary industries make a significant contribution to the rural economy and primary industry uses are to be protected for long-term sustainability.

The prime and non-prime agricultural land resource provides for variable and diverse agricultural and primary industry production which will be protected through individual consideration of the local context.

Processing and services can augment the productivity of primary industries in a locality and are supported where they are related to primary industry uses and the long-term sustainability of the resource is not unduly compromised.

The proposal fits well with the Local Area Objectives.

26.2 Use Table

Within the zone use table new Recourse Processing is a discretionary use

26.3 Use Standards

26.3.1 Discretionary Uses if not a single dwelling

The use is discretionary and this clause does apply

Objective To ensure that discretionary uses do not adversely impact upon the occupiers of adjoining and nearby residential uses.	
Compliance Measure	**Comment**
P1 The use must not cause or be likely to cause an environmental nuisance through emissions including noise, smoke, odour, dust and illumination.	The development is discretionary and therefore relies on P1 for compliance. The development will not cause or likely to cause nuisance through emissions, etc. This is a very passive development with little off-site effects.
A2 Operating hours for commercial vehicles for discretionary uses must be between 6.00am and 10.00pm.	The hours specified within the Acceptable solution relate well to the hours of operation of the development.

26.3.2 Dwellings

The use is not a dwelling therefore this clause does not apply

26.3.3 Irrigation Districts

Objective To ensure that land within irrigation districts proclaimed under Part 9 of the Water Management Act 1999 is not converted to uses that will compromise the utilisation of water resources.	
Compliance Measure	**Comment**
A1 Non-agricultural uses are not located within an irrigation district proclaimed under Part 9 of the Water Management Act 1999.	In effect this is an agricultural use making good use of the benefits of irrigation areas. This is a small area of land between two pivot irrigators – the shape of the land means that joining the two irrigation circles to maximise the use of the land is not possible.

26.4 Development Standards

26.4.1 Building Location and Appearance

Objective To ensure that the: a) ability to conduct extractive industries and resource development will not be constrained by conflict with sensitive uses; and b) development of buildings is unobtrusive and complements the character of the landscape.	
Compliance Measure	**Comment**
A1 Building height must not exceed: a) 8m for dwellings; or b) 12m for other purposes.	The buildings do not exceed 12m in height. Overall the buildings are 5.5m in height.
A2 Buildings must be set back a minimum of: a) 50m where a non-sensitive use or extension to existing sensitive use buildings is proposed; or b) 200m where a sensitive use is proposed; or c) the same as existing for replacement of an existing dwelling.	Complies – the buildings are set back a minimum of 50 from all boundaries.

26.4.2 Subdivision

No subdivision is required as a result of this proposal.

Part E Codes

Within the Planning Scheme are a series of Codes which need consideration. Only those relevant to the development will be discussed.

E1.0 Bushfire Code

A Bushfire Assessment Report and certificate this is attached in **Annexure 3**. The relevant clauses are discussed below:

E1.6.3.1 Pre-existing lots: Provision of hazard management areas for habitable buildings

Objective: Hazard management areas, as appropriate, for new habitable buildings on pre-existing lots: - provide sufficient separation from bushfire-prone vegetation, taking into consideration the nature and scale of the hazard; - reduce the radiant heat levels, direct flame attack and ember attack likely to be experienced at the site of habitable buildings in the event of a bushfire; - provide an area which offers protection to fire fighters and occupants exposed to bushfire while defending property; and - are maintained in a minimum fuel condition.	
Compliance Measure	**Comment**
P1. There must be, in relation to habitable buildings, hazard management areas that provide adequate separation from the bushfire-prone vegetation. In determining the dimension of hazard management areas, it must be demonstrated that the nature of the hazard has been considered, including: (i) vegetation type, structure and flammability; (ii) other potential forms of fuel and ignition sources; (iii) slope; (iv) any fire shielding structures or Features and that the dimensions, given the nature of the construction, provide adequate protection for the building and to fire fighters and occupants defending property from bushfire.	Adequate separation between buildings will be provided. The report on bushfire management which accompanies this application details the matters considered.
A2 If hazard management areas in relation to a habitable building are to be on land external to the lot where the building is located, the application must be accompanied by the written consent of the owner of that land to enter into a Part 5 agreement that will be registered on the title of the neighbouring property providing for the affected land to be managed in accordance with a bushfire hazard management plan certified by the TFS or an accredited person.	The hazard management areas do not rely on lands outside the subject title.
E1.6.3.2 Pre-existing lots: Private access	
Objective: Private access on pre-existing lots: - allows safe access to and from the road network for occupants, fire fighters, and emergency service personnel; - provides access to ensure that fire fighting equipment can reach all parts of habitable buildings; - is designed and constructed to allow for fire fighting vehicles to be manoeuvred; and - provides access to water supply points, including hardstand areas for fire fighting vehicles.	
Compliance Measure	**Comment**
A1. It must be demonstrated in one of the following ways that private access	An accredited person has signed off that the proposed private access provides safe access to

provides safe access to habitable buildings: (a) the TFS or an accredited person certifies that, having regard to the objective, there is an insufficient increase in risk from bushfire to warrant specific measures for private access for the purposes of fire fighting; or (b) plans showing private access to habitable buildings are included in a bushfire hazard management plan certified by the TFS or an accredited person as being consistent with the objective; or (c) plans demonstrate that private access will be provided to within 30m of the furthest part of a habitable building measured as a hose lay.	habitable buildings
A2 Private access to all static water supply points must be provided: (a) as included in a bushfire hazard management plan certified by the TFS or an accredited person as being in accordance with the objective of the standard; or (b) to a hardstand area within 3m of the static water supply point.	An accredited person has signed off that the private access to static water meets the objective of the standard.
A3 Construction of private access, if required to provide access to habitable buildings and static water supply points, must as appropriate to the circumstances meet the requirements of Table E3 as follows: (a) single lane private access roads less than 6m carriageway width must have 20m long passing bays of 6m carriageway width, not more than 100m apart; (b) a private access road longer than 100m must be provided with a driveway encircling the building or a hammerhead "T" or "Y" turning head 4m wide and 8m long, or a trafficable circular turning area of 10m radius; (c) culverts and bridges must be designed for a minimum vehicle load of 20 tonnes; (d) vegetation must be cleared for a height of 4m, above the carriageway, and 2m each side of the carriageway.	The proposed access will meet the required standard
E1.6.3.3 Pre-existing lots: Provision of water supply for fire fighting purposes	
Objective: Adequate, accessible and reliable water supply for fire fighting purposes on pre-existing lots is available to allow for the protection of life and property from the risks associated with bushfire.	
Compliance Measure	**Comment**
A1. It must be demonstrated in one of the	Provision of water tanks for fire fighting purposes

following ways that access to a water supply for fire fighting purposes is provided: (a) the TFS or an accredited person certifies that, having regard to the objective, there is an insufficient increase in risk from bushfire to warrant any specific water supply measures; or (b) a bushfire hazard management plan certified by the TFS or an accredited person demonstrates that the provision of the water supply is consistent with the objective; or (c) all external parts of habitable buildings that are at ground level, are within reach of a 120m long hose (measured as a hose lay) connected to a fire hydrant with a minimum flow rate of 600 litres per minute and minimum pressure of 200kPa; or (d) a minimum static water supply of 10 000 litres per habitable building is provided and that connections for fire fighting purposes are included.	will be in accordance with the standard.

E4.0 Road and Railway Assets Code

The proposal complies with this Code as use is being made of an existing access point. Discussions have been held with Dept. of State Growth (Roads section) in regard to any upgrades required at the intersection of Auburn Road and the Midland Highway.

As this section of Highway is scheduled for a major upgrade in the next two to three years there is some support for a more innovative approach to heavy vehicles generated by this development turning right off the Highway. State Growth will investigate bringing forward proposed intersection treatment at Roseneath Road to cater for this proposal.

A Traffic Impact Assessment has been prepared for this proposal and is submitted as an attachment to this report (**Annexure 4**).

E4.6.1 Use and road or rail infrastructure

Objective To ensure that the safety and efficiency of road and rail infrastructure is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.	
Compliance Measure	**Comment**
A1 Sensitive use on or within 50m of a category 1 or 2 road, in an area subject to a speed limit of more than	Not applicable – this is not a sensitive use.

60km/h, a railway or future road or railway, must not result in an increase to the annual average daily traffic (AADT) movements to or from the site by more than 10%.	
A2 For roads with a speed limit of 60km/h or less the use must not generate more than a total of 40 vehicle entry and exit movements per day	Not applicable
A3 For roads with a speed limit of more than 60km/h the use must not increase the annual average daily traffic (AADT) movements at the existing access or junction by more than 10%.	A Traffic Impact Statement is attached with this application
A4 Use serviced by a side road from a deficient junction (refer E4 Table 2) is not to create an increase to the annual average daily traffic (AADT) movements on the side road at the deficient junction by more than 10%.	There are no deficient junctions in the area of the subject site.

E4.7.1 Development on and adjacent to Existing and Future Arterial Roads and Railways

Objective To ensure that development on or adjacent to category 1 or 2 roads (outside 60km/h), railways and future roads and railways is managed to: a) ensure the safe and efficient operation of roads and railways; and b) allow for future road and rail widening, realignment and upgrading; and c) avoid undesirable interaction between roads and railways and other use or development.	
Compliance Measure	**Comment**
A1 The following must be at least 50m from a railway, a future road or railway, and a category 1 or 2 road in an area subject to a speed limit of more than 60km/h: a) new road works, buildings, additions and extensions, earthworks and landscaping works; and b) building envelopes on new lots; and c) outdoor sitting, entertainment and children's play areas	Complies – the development will be more than 50m from a railway, a future road or railway and a Category 1 and 2 road subject to more than 60km/h

E4.7.2 Management of Road Accesses and Junctions

Objective To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.

Compliance Measure	Comment
A1 For roads with a speed limit of 60km/h or less the development must include only one access providing both entry and exit, or two accesses providing separate entry and exit.	N/a in this instance
P2 For limited access roads and roads with a speed limit of more than 60km/h: a) access to a category 1 road or limited access road must only be via an existing access or junction or the development must provide a significant social and economic benefit to the State or region; and b) any increase in use of an existing access or junction or development of a new access or junction to a limited access road or a category 1, 2 or 3 road must be dependent on the site for its unique resources, characteristics or locational attributes and an alternate site or access to a category 4 or 5 road is not practicable; and c) an access or junction which is increased in use or is a new access or junction must be designed and located to maintain an adequate level of safety and efficiency for all road users.	A new aces on to Auburn Road is proposed. The access point selected has good sightlines and the road alignment does not interfere with forward visibility due to crests or bends. Auburn Road is a Category 5 Road and as a result a new access is an acceptable outcome provided it is constructed in a safe manner. Access to this site is needed to capitalise on the strategic location of this rural type industry. The new access will be designed to acceptable standards of safety.
A3 Accesses must not be located closer than 6m from an intersection, nor within 6m of a break in a median strip.	Complies – the access will be outside the 6m distance from an intersection.

E4.7.3 Management of Rail Level Crossings

Not relevant in this instance

E4.7.4 Sight Distance at Accesses, Junctions and Level Crossings

Objective To ensure that use and development involving or adjacent to accesses, junctions and level crossings allows sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.	
Compliance Measure	**Comment**
A1 Sight distances at a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E4.7.4; and b) rail level crossings must comply	Sight distances from the access to Auburn road will be provided to comply with this Clause.

with AS1742.7 Manual of uniform traffic control devices - Railway crossings, Standards Association of Australia; or c) If the access is a temporary access, the written consent of the relevant authority has been obtained.	

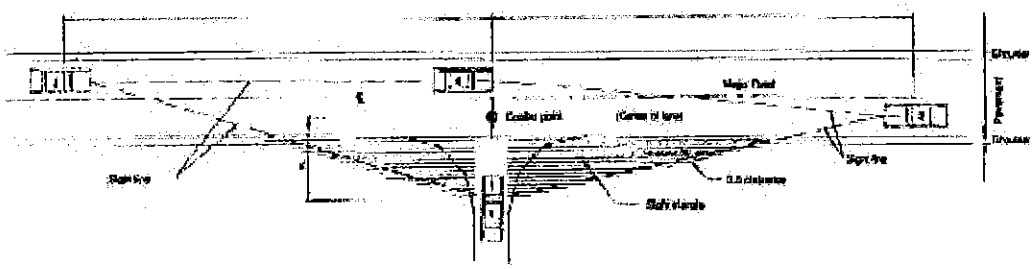


Figure E4.7.4 Sight Lines for Accesses and Junctions
X is the distance of the driver from the conflict point. For category 1, 2 and 3 roads X = 7m minimum and for other roads X = 5m minimum.

E6.0 Car Parking and Sustainable Transport Code

E6.6.1 Car Parking Numbers

Objective To ensure that an appropriate level of car parking is provided to service use.	
Compliance Measure	**Comment**
A1 The number of car parking spaces must not be less than the requirements of: a) Table E6.1; or b) a parking precinct plan contained in Table E6.6: Precinct Parking Plans (except for dwellings in the General Residential Zone).	The specified car parking requirement is 2 spaces per 3 employees. There will be 4 persons employed on site the parking provision on site will be 4.

E6.7.1 Construction of Car Parking Spaces and Access Strips

Objective To ensure that car parking spaces and access strips are constructed to an appropriate standard.	
Compliance Measure	**Comment**
P1 All car parking, access strips manoeuvring and circulation spaces must be readily identifiable and constructed to ensure that they are useable in all weather conditions.	All car parking, access strips manoeuvring and circulation spaces will be constructed for all weather use.

All other matters do not apply in this instance.

E7 Scenic Management Code

E7.2 Application of this Code

E7.2.1 This code applies to use or development of land within the scenic management – tourist road corridor and local scenic management areas.

As the site is some 226m from the Scenic tourist Corridor this Code has no application in this instance.

E9 Water Quality Code

E9.2.1 This code applies to use or development of land:
a) within 50 metres of a wetland or watercourse; or
b) within a Water catchment area – inner or outer buffer.

As the development is outside the 50m from a wetland or watercourse or a water catchment area this Code does not apply.

6. Strategic Planning

6.1 State Policies

The following State Policies are currently in force:

- Tasmanian State Coastal Policy 1986;
- State Policy on Water Quality and Management1997;
- State Policy on the Protection of Agricultural Land 2009;
- National Environment Protection Council (Ambient Air Quality) Measure;
- National Environment Protection Council (Assessment of Site Contamination) Measure 1999;
- National Environment Protection Council (Movement of Controlled Wastes between States and Territories) Measure;
- National Environment Protection Council (National Pollutant Inventory) Measure; and
- National Environment Protection Council (Used Packaging Materials) Measure.

The proposed development is not known to conflict with or contravene any of the above State Policies.

7. Summary

This proposed development in the main conforms to all the necessary requirements of the Northern Midlands Interim Planning Scheme 2013. Any discretion sought is fair and reasonable given the size of the site.

Annexure 1 – Certificate of Title

OWNER ROBERT OLIVER MORRIS
JESSICA ANNE MORRIS

FOLIO REFERENCE
C.T. VOL 101310 FOL 1

GRANTEE
PART OF 6180 ACRES, GRANTED TO WILLIAM HILL.

PLAN OF TITLE

LOCATION
LAND DISTRICT OF SOMERSET
PARISH OF ELDON

FIRST SURVEY PLAN No. ~~P.68 L.O.~~ P. 38459

COMPILED BY COHEN & ASSOCIATES PTY. LTD LAUNCESTON

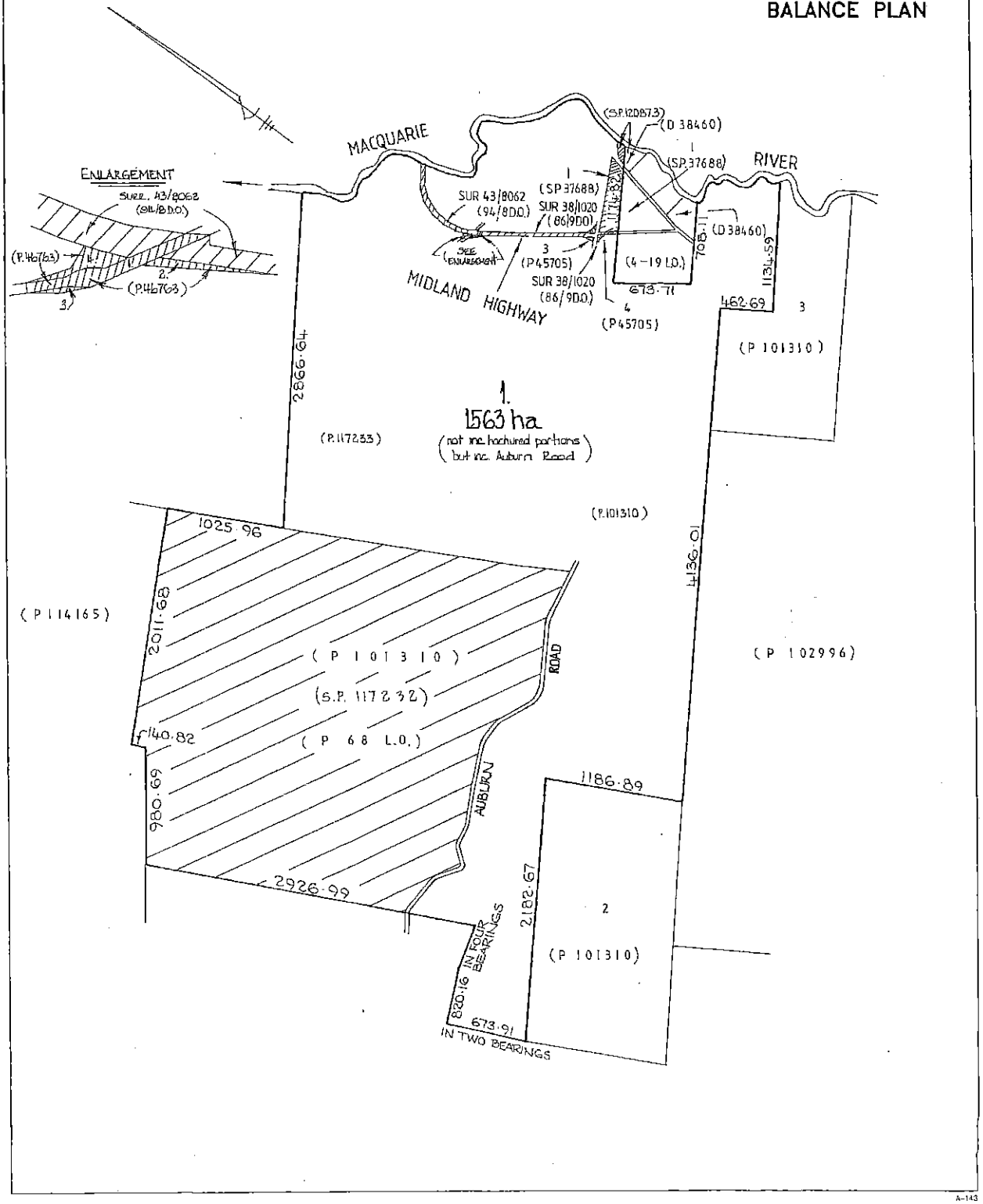
SCALE 1: 30,000 LENGTHS IN METRES

REGISTERED NUMBER
P 120818

APPROVED 8 - JAN 1996
Recorder of Titles

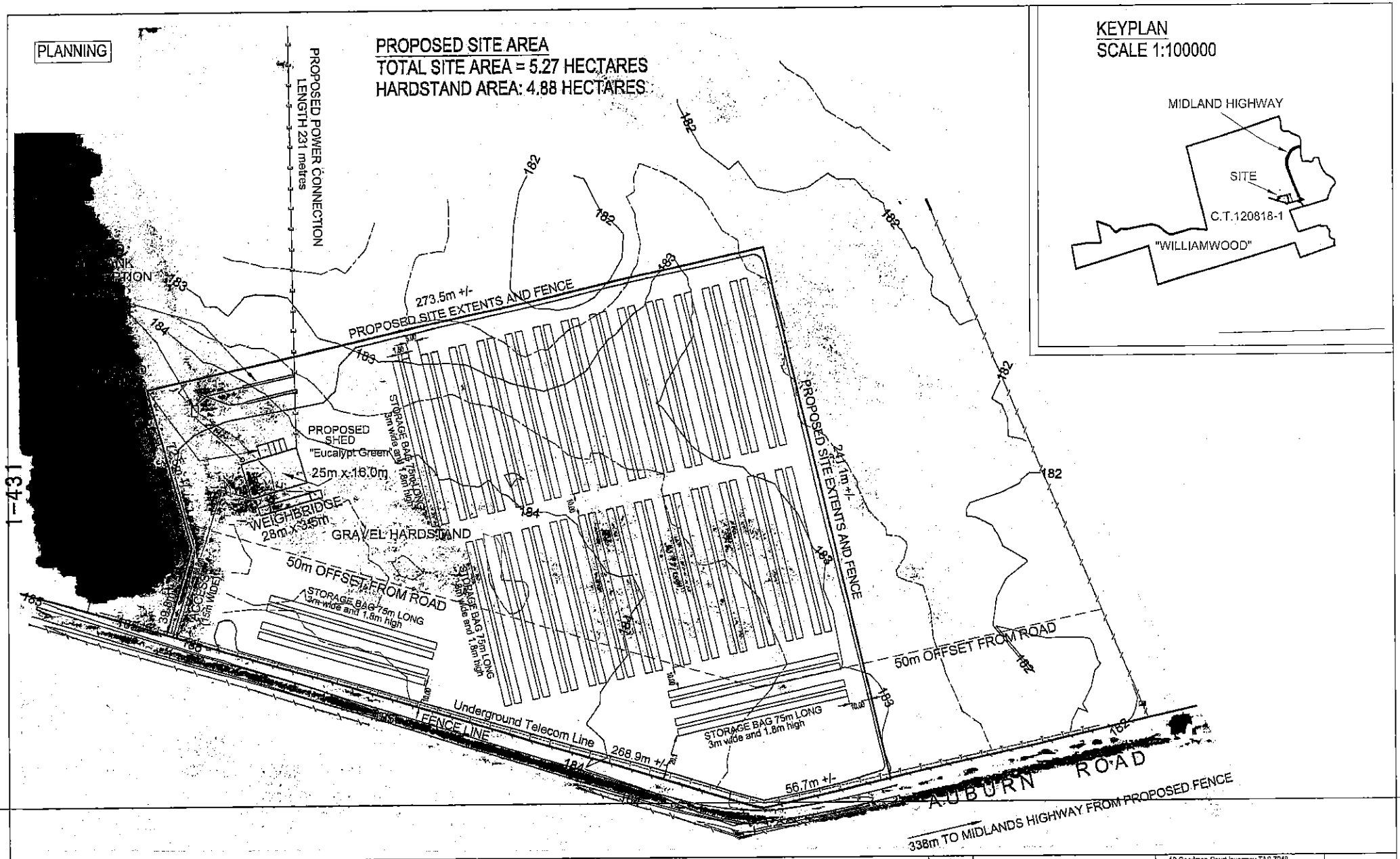
MAPSHEET MUNICIPAL CODE No. (56) 123	LAST UPI No 1230164	LAST PLAN No. ~~P101310~~ P.117233	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

BALANCE PLAN



A-143

Annexure 2 – Proposal Plan



NOTES:
1. HORIZONTAL DATUM IS PLANE MEASURES BASED ON MGA94 AT SPM9406 AND TRANSFER TO SITE TBM STAR #1
E 539040.255
N 5348627.050
RL 183.680
2. VERTICAL DATUM IS AHD83.
3. CONTOUR INTERVAL IS 0.5m.

PROPOSED GRAIN STORAGE SITE
WILLIAMWOOD OFF AUBURN ROAD
CLIENT: XLD GRAIN
OWNER: DONALD CHARLES BOOTH, LUCINDA MARY HOPTON BOOTH
C.T. 38460-8, C.T.38460-9, C.T.38460-10

N

WOOLCOTT SURVEYS
10 Goodman Court Invermay TAS 7248
PO Box 593 Mowbray Heights TAS 7248
Phone (03) 6332 3760
Fax (03) 6332 3764
Email: admin@woolcottsurveys.com.au

Job Number 2014-133

Drawn	File name	Date	Scale	Edition	Sheet
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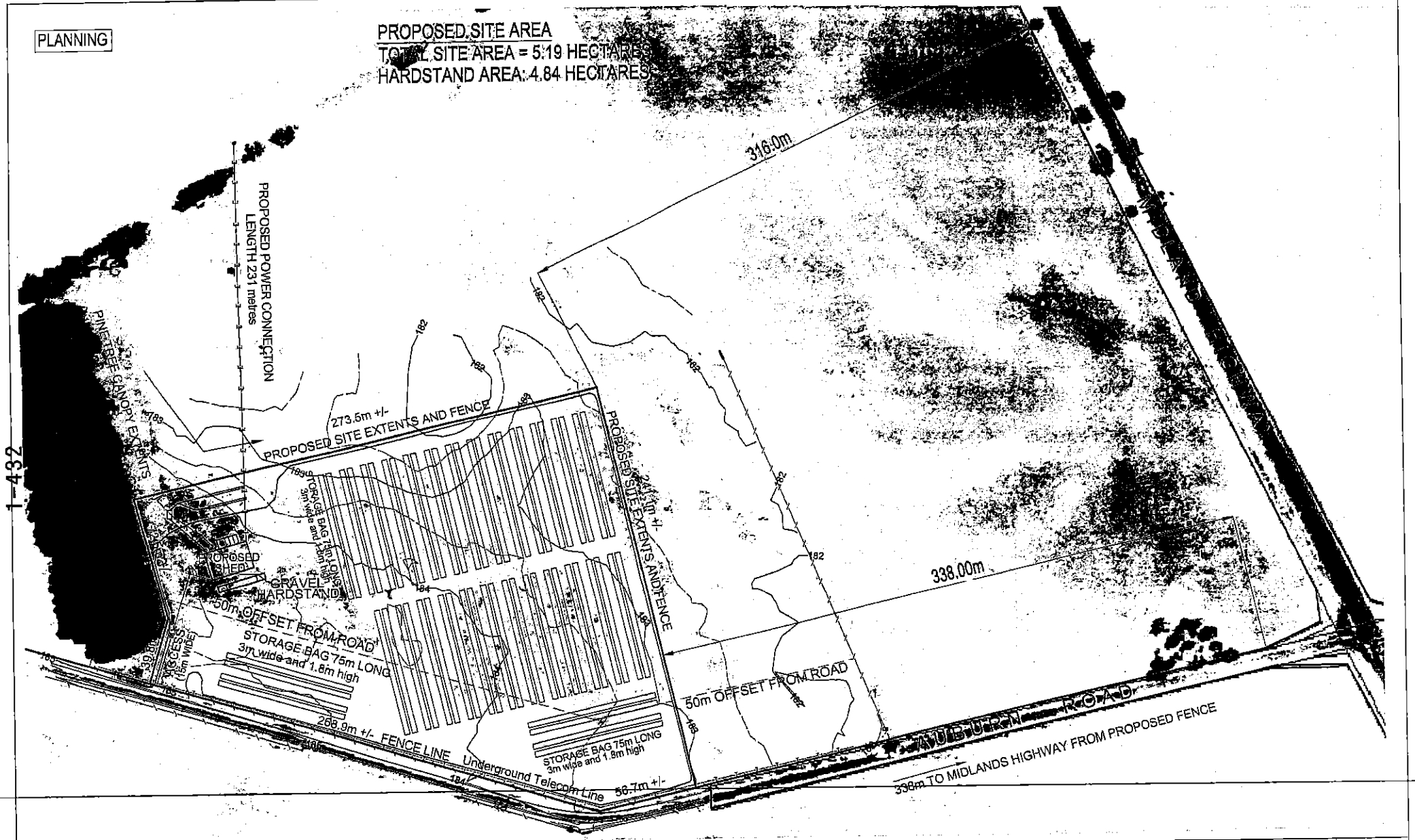
PLANNING



NOTES:
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E 539040.255
N 5346827.050
RL 183.680
2. VERTICAL DATUM IS AHD83.
3. CONTOUR INTERVAL IS 0.5m.

PROPOSED GRAIN STORAGE SITE
WILLIAMWOOD OFF AUBURN ROAD
CLIENT: XLD GRAIN
OWNER: DONALD CHARLES BOOTH, LUCINDA MARY HOPTON BOOTH
C.T. 38460-8, C.T.38460-9, C.T.38460-10

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WOOLCOTT SURVEYS
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Job Number 2014-133

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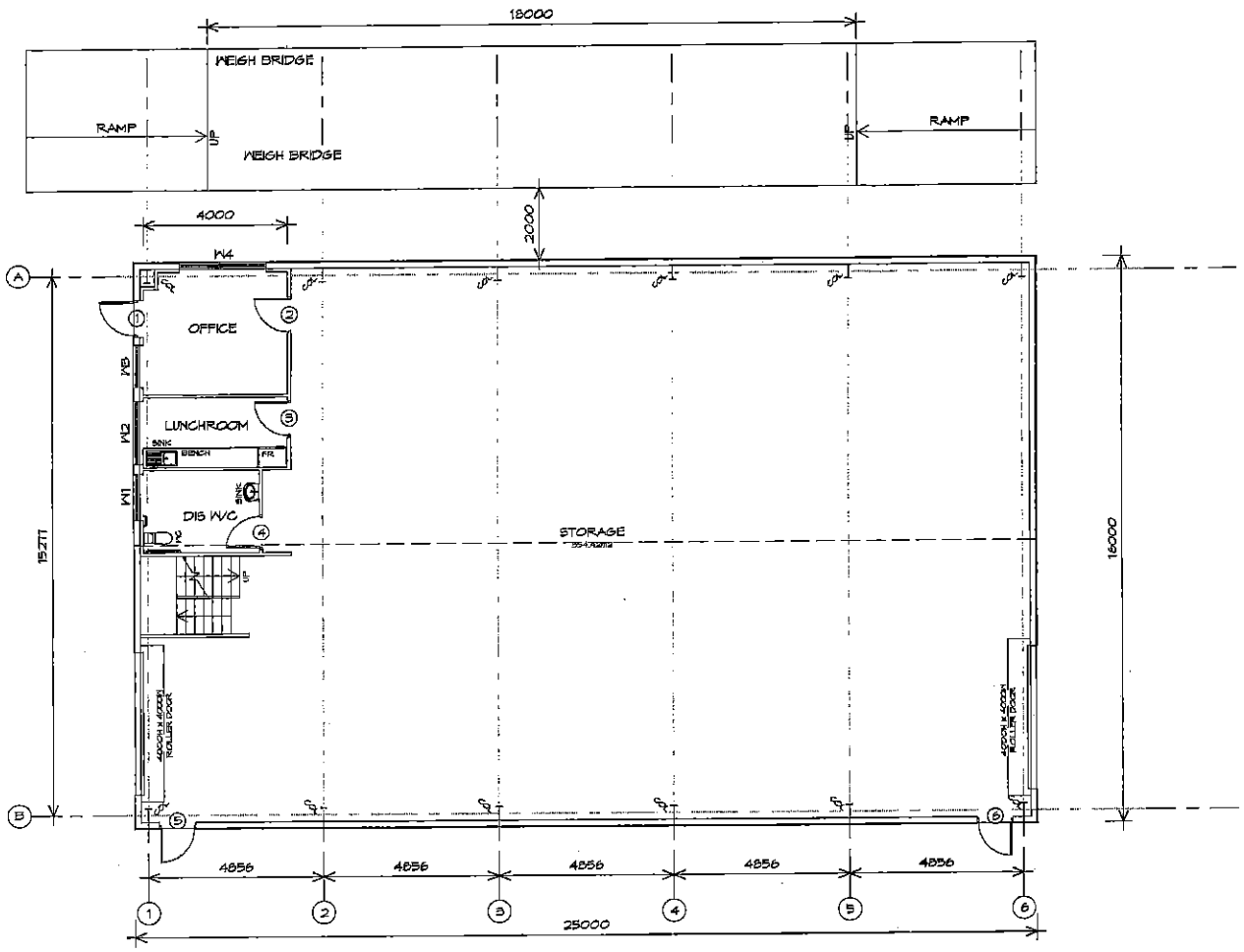

1-433

LEGEND

- (F) EXHAUST FAN-VENT TO OUTSIDE AIR.
- 240v SMOKE ALARM
- CSD CAVITY SLIDING DOOR
- S/D SLIDING DOOR
- FW FLOOR WASTE
- S/L SIDELIGHT
- COL COLUMN
- NEW WALLS

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

FLOOR PLAN

1 : 100

FLOOR AREA 402.56 m2 (43.27 SQUARES)

GROUND FLOOR DOOR SCHEDULE		
MARK	WIDTH	TYPE
1	920	GLAZED EXTERNAL DOOR
2	920	INTERNAL TIMBER DOOR
3	920	INTERNAL TIMBER DOOR
4	920	INTERNAL TIMBER DOOR
5	920	GLAZED EXTERNAL DOOR
6	920	GLAZED EXTERNAL DOOR

GROUND FLOOR WINDOW SCHEDULE				
MARK	HEIGHT	WIDTH	TYPE	REMARKS
W1	900	1210	AWNING WINDOW	
W2	900	1810	AWNING WINDOW	
W3	900	1210	AWNING WINDOW	
W4	900	2410	AWNING WINDOW	

ALUMINIUM AWNING WINDOWS ??? GLAZING COMPLETE WITH FLY SCREENS TO SUIT ??? BAL RATING.
ALL WINDOW MEASUREMENTS TO BE VERIFIED ON SITE PRIOR TO ORDERING

PRIME DESIGN
BUILDING DESIGN & DRAFTING
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10 Goodman Court, Invermay TAS 7248
Accredited Building Practitioner
Frank Geskus-No CC246A

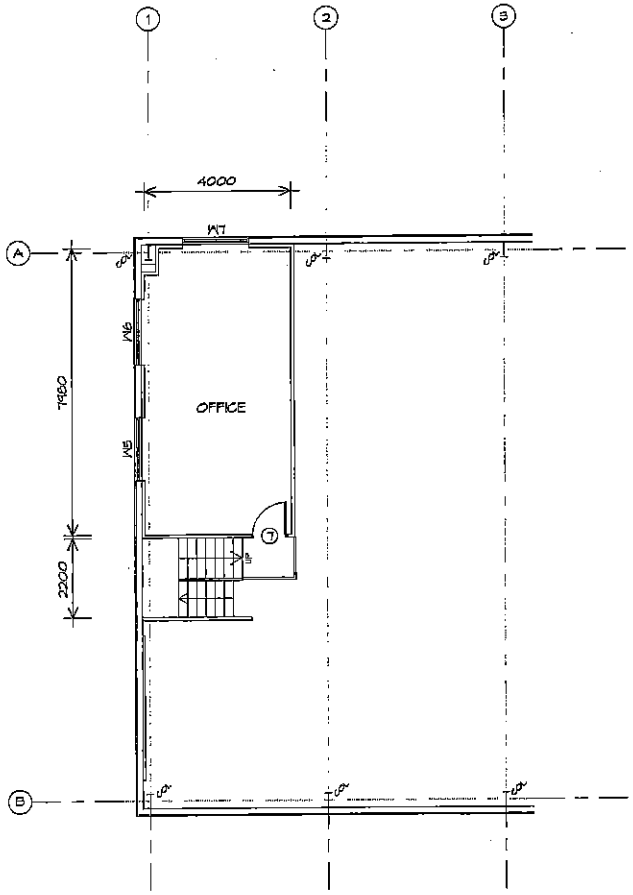
Project:
PROPOSED NEW SHED
AUBURN ROAD,
ROSS

Client name:
XLD GRAIN

Drawing:
FLOOR PLAN

Drafted by:	Approved By:
B.S.L	F.G.S.
Date:	Scale:
19/12/2014	1 : 100/A2
Project/Drawing No:	Revision:
PD14284 -03	03

1-434



FIRST FLOOR PLAN

1 : 100

LEGEND

- (F) EXHAUST FAN-VENT TO OUTSIDE AIR.
- 240V SMOKE ALARM
- CSD CAVITY SLIDING DOOR
- SD SLIDING DOOR
- FW FLOOR WASTE
- SL SIDELIGHT
- COL COLUMN
- NEW WALLS

FIRST FLOOR DOOR SCHEDULE		
MARK	WIDTH	TYPE
7	920	INTERNAL TIMBER DOOR

FIRST FLOOR WINDOW SCHEDULE				
MARK	HEIGHT	WIDTH	TYPE	REMARKS
W5	900	1810	AWNING WINDOW	
W6	900	1810	AWNING WINDOW	
W7	900	1810	AWNING WINDOW	

ALUMINIUM AWNING WINDOWS ??? GLAZING COMPLETE WITH FLY SCREENS TO SUIT ??? BAL RATING.
ALL WINDOW MEASUREMENTS TO BE VERIFIED ON SITE PRIOR TO ORDERING

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Frank Geskus-No CC245A

Project:
PROPOSED NEW SHED
AUBURN ROAD,
ROSS

Client name:
XLD GRAIN

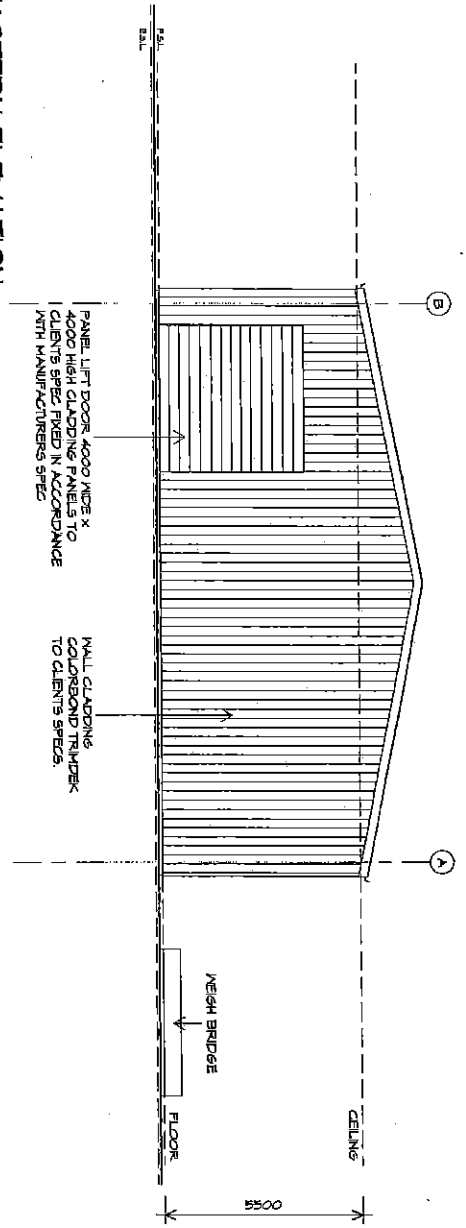
Drawing:
FIRST FLOOR PLAN

Drafted by:	Approved By:
B.S.L	F.G.G.
Date:	Scale:
19/12/2014	1 : 100/A2
Project/Drawing No:	Revision:
PD14284 -04	03

bda BUILDING DESIGNERS AUSTRALIA TAS

EASTERN ELEVATION

1:100



NORTHERN ELEVATION

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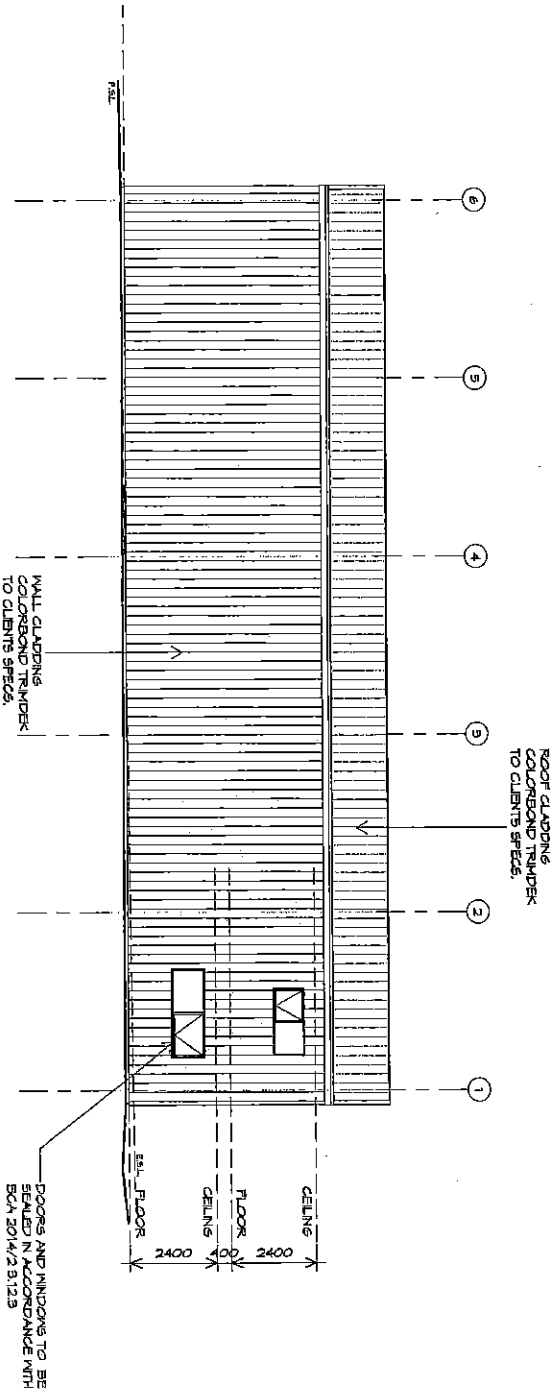

PRIME DESIGN

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Project:
PROPOSED NEW SHED
AUBURN ROAD,
ROSS

Client name:
XLD GRAIN

Drawing:
ELEVATIONS

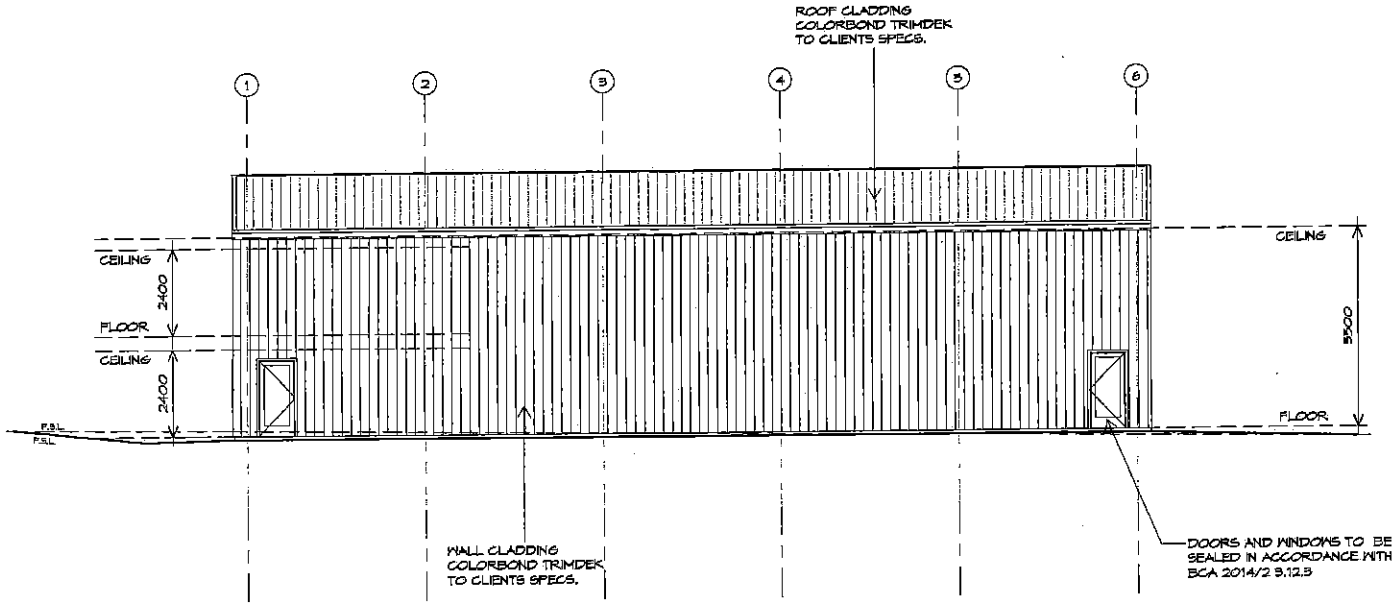
Drafted by: Author
Approved By: Approver
Date: 19/12/2014
Scale: 1:100/A2
Project/Drawing No: PD14284-05
Revision: 03

BUILDING DESIGNERS AUSTRALIA TAS

PLANNING

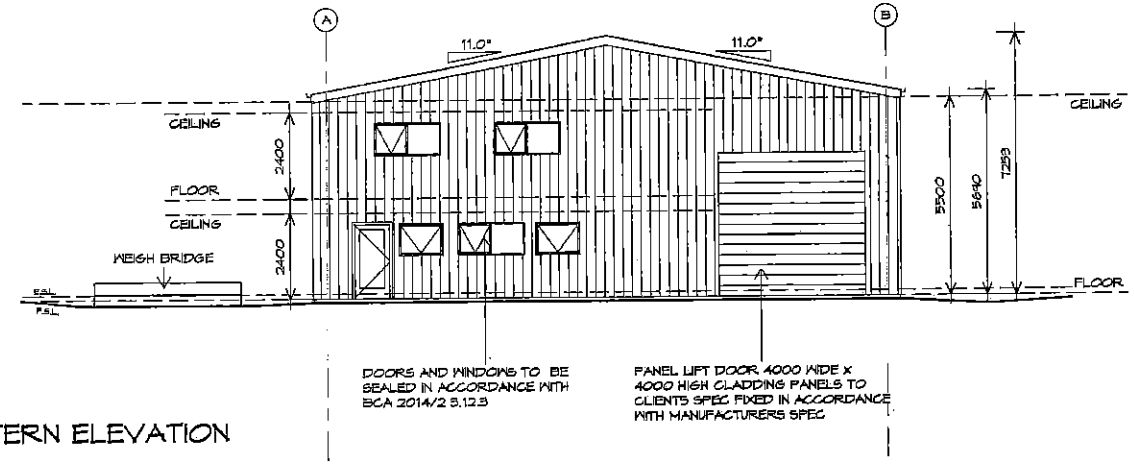
NOTE: DO NOT SCALE OFF DRAWINGS

1-436



SOUTHERN ELEVATION

1 : 100



WESTERN ELEVATION

1 : 100

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Accredited Building Practitioner
Frank Geskus-No CC246A

Project:
PROPOSED NEW SHED
AUBURN ROAD,
ROSS

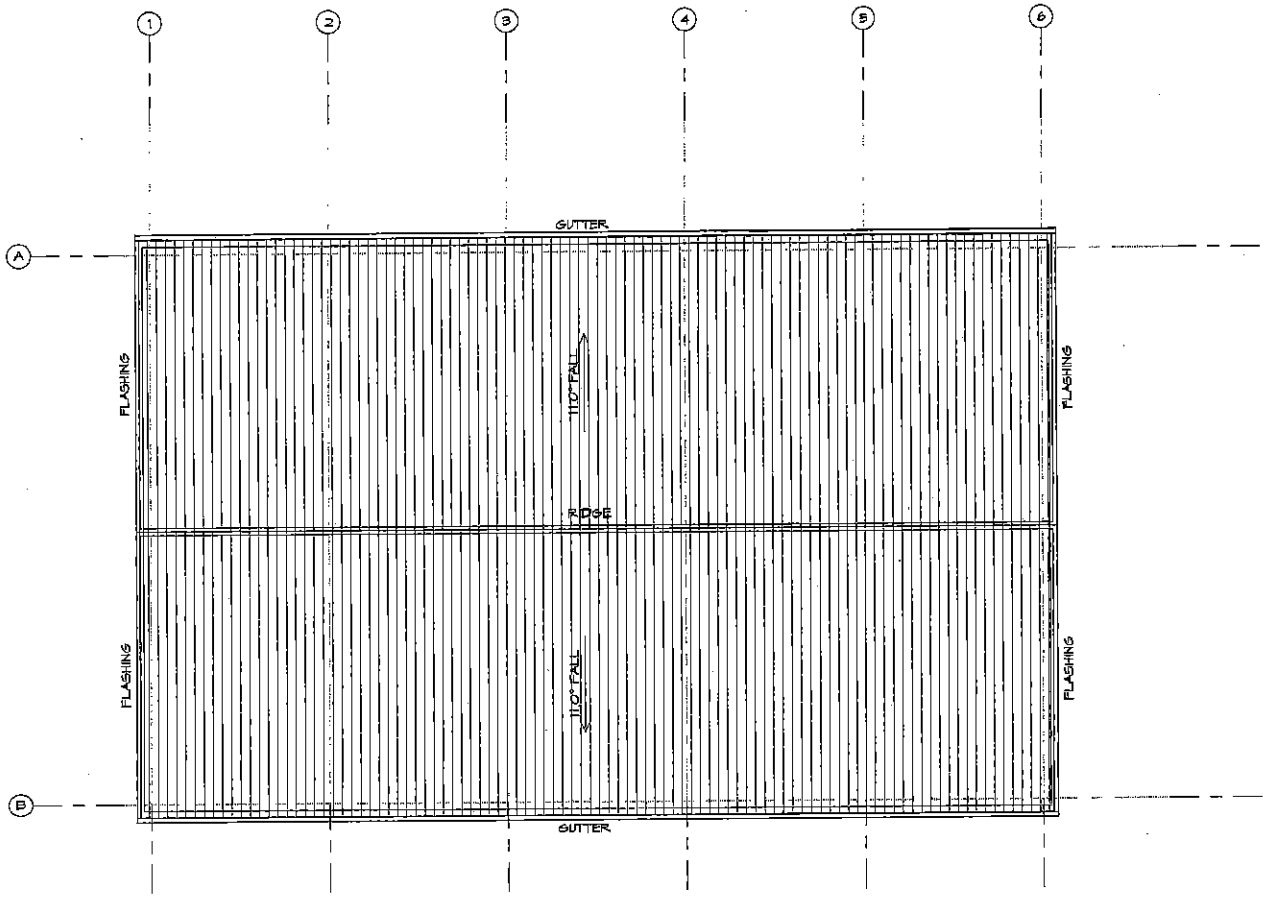
Client name:
XLD GRAIN

Drawing:
ELEVATIONS

Drafted by:	Approved By:
Author	Approver
Date:	Scale:
19/12/2014	1 : 100/A2
Project/Drawing No:	Revision:
PD14284 -06	03

bda BUILDING DESIGNERS AUSTRALIA (TAS)

1-437



ROOF PLAN
1 : 100

ROOF PLUMBING NOTES:

GUTTER INSTALLATION
TO BE IN ACCORDANCE WITH BCA 2014 PART 3.5.2.4, WITH FALL NO LESS THAN 1:100 FOR BOX GUTTERS 1:500 FOR EAVES GUTTER

UNLESS FIXED TO METAL FASCIA EAVES GUTTER TO BE FIXED @ 1200 CRS MAX.

VALLEY GUTTERS ON A ROOF WITH A PITCH:
A) MORE THAT 12.5° DEGREES - MUST HAVE A WIDTH OF NOT LESS THAN 400mm AND ROOF OVERHANG OF NOT LESS THAN 150mm EACH SIDE OFVALLEY GUTTER.
B) LESS THAN 12.5° DEGREES, MUST BE DESIGNED AS A BOX GUTTER.

LAP GUTTERS 75mm IN THE DIRECTION OF FLOW, RIVET & SEAL WITH AN APPROVED SILICONE SEALANT.

DOWNPIPE POSITIONS SHOWN ON THIS PLAN ARE NOMINAL ONLY.
EXACT LOCATION & NUMBER OF D.P'S REQUIRED ARE TO BE IN ACCORDANCE WITH BCA CLAUSE 3.5.2.5 REQUIREMENTS.
SPACING BETWEEN DOWNPIPES MUST NOT BE MORE THAN 12m & WITHIN 1.2m FROM A VALLEY GUTTER.

METAL SHEETING ROOF TO BE INSTALLED IN ACCORDANCE WITH BCA 2014 3.5.1.3.
REFER TO TABLE 3.5.3.1a FOR ACCEPTABLE CORROSION PROTECTION FOR SHEET ROOFING,
REFER TO TABLE 3.5.1.2 FOR ACCEPTABILITY OF CONTACT BETWEEN DIFFERENT ROOFING MATERIALS.
REFER TO BCA 2014 3.5.1.3. FOR FIXING, SHEET LAYING SEQUENCE, FASTENER FREQUENCY FOR TRANVERSE FLASHINGS AND CAPPINGS, ANTI CAPILLARY BREAKS, FLASHING DETAILS, ROOF PENETRATION FLASHING DETAILS.

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS

PRIME DESIGN
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Accredited Building Practitioner
Frank Geskus-No CC246A

Project:
PROPOSED NEW SHED
AUBURN ROAD,
ROSS

Client Name:
XLD GRAIN

Drawing:
ROOF PLAN

Drafted by:	Approved By:
B.S.L.	F.G.G.
Date:	Scale:
19/12/2014	1 : 100/A2
Project/Drawing No:	Revision:
PD14284 -07	03

bda BUILDING DESIGNERS AUSTRALIA TAS

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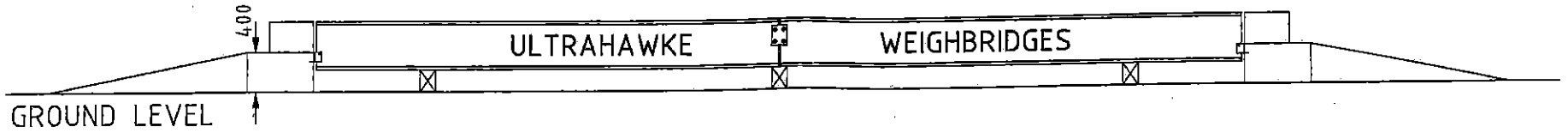
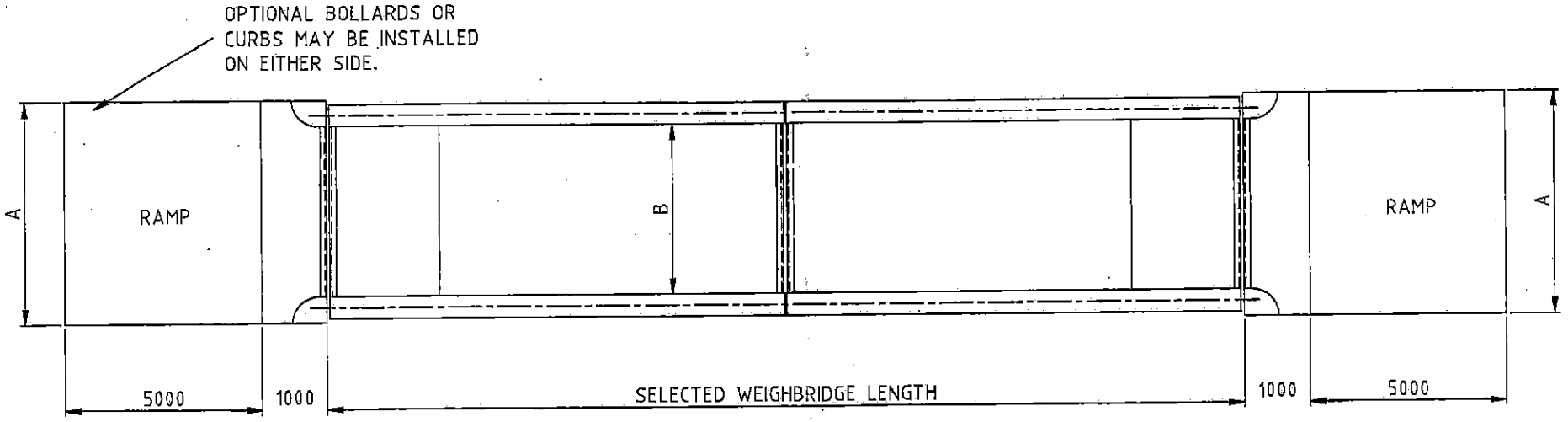




1498

WEIGHBRIDGE WIDTH	DIMENSION 'A'	DIMENSION 'B'
3.0m	3500mm	3000mm
3.5m	4000mm	3500mm

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION PURPOSES

REV.	DESCRIPTION	DATE	APP.
A	RAMP WAS 4m LONG, 3.2m & 3.7m WIDE	16.6.05	

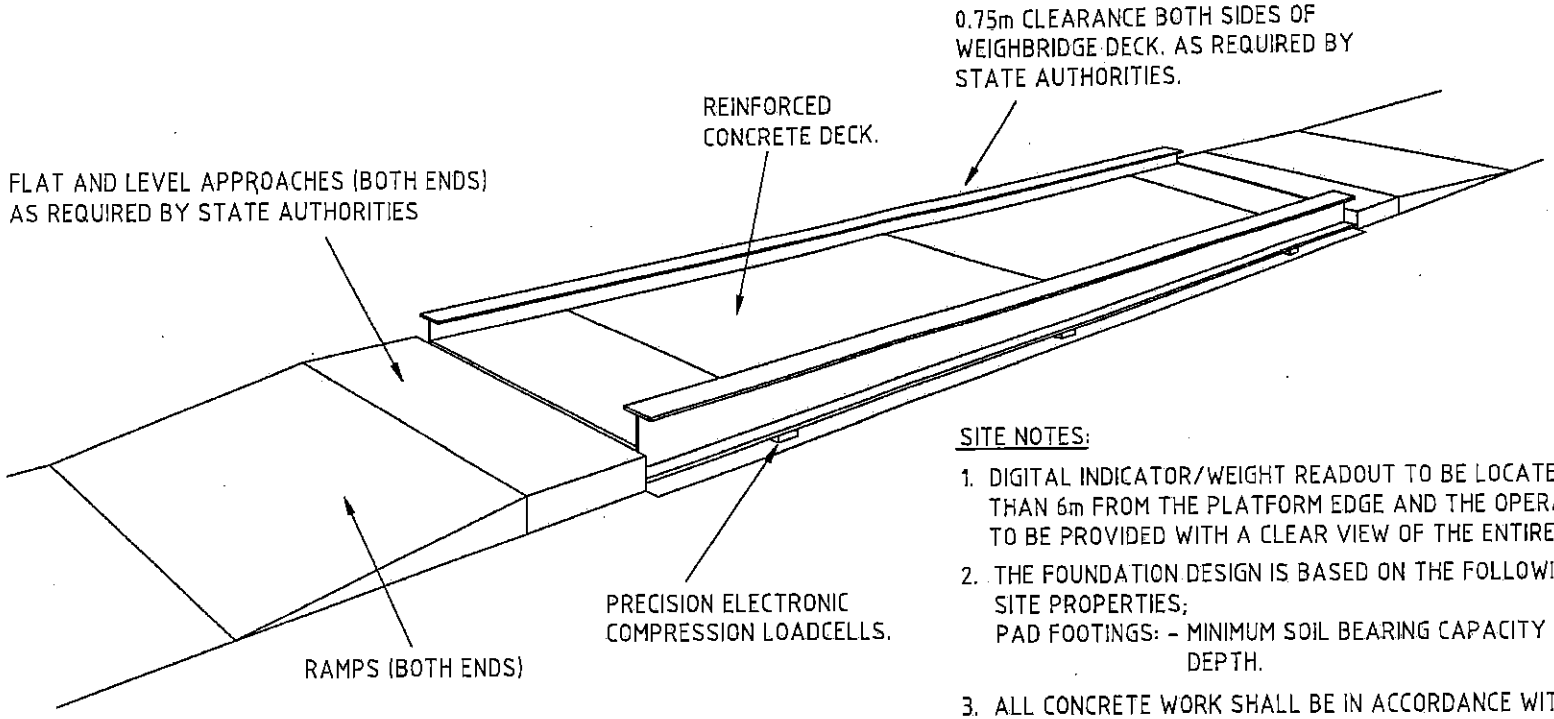
ultrahawke
Scales and Systems
Unit 2/9 Production Drive, Campbellfield, Victoria, 3061
Telephone (03) 9357 7470, Facsimile (03) 9357 7450
A.B.N. 97 004 659 358

DR. BY: A.R	DATE: 16.06.2005	
CH. BY: S.K	DATE: 17.06.2005	
APP. BY: S.K	DATE: 17.06.2005	
SCALE: N.T.S.		

TITLE:
ABOVE GROUND - RAMPED
6 LOADCELL
ELECTRONIC WEIGHBRIDGE
GENERAL LAYOUT

DRAWING No.
A3-9630/1
6 CELL
REV. No. A
SHEET 1 OF 1

THIS DRAWING SHOULD NOT BE SCALED - IF IN DOUBT ASK.



1-439

SITE NOTES:

1. DIGITAL INDICATOR/WEIGHT READOUT TO BE LOCATED NOT MORE THAN 6m FROM THE PLATFORM EDGE AND THE OPERATOR IS TO BE PROVIDED WITH A CLEAR VIEW OF THE ENTIRE PLATFORM.
2. THE FOUNDATION DESIGN IS BASED ON THE FOLLOWING GEOTECHNICAL SITE PROPERTIES;
   PAD FOOTINGS: - MINIMUM SOIL BEARING CAPACITY OF 160kPa AT 500mm DEPTH.
3. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.S.3600, MINIMUM STRENGTH TO BE 32MPa AT 28 DAYS.
4. REINFORCEMENT TO A.S.1302, 1303, AND 1304.
5. DESIGN AND SITE WORK MUST BE APPROVED, AUTHORIZED AND SUPERVISED BY CUSTOMER'S QUALIFIED CIVIL ENGINEER.
6. MAXIMUM LOADINGS: 9000kg PER SINGLE AXLE, 17000kg PER TANDEM AXLE WITH SPACINGS BETWEEN 1.3m AND 2.8m, AND 3m (MAXIMUM) BETWEEN INSIDE OF ADJACENT TANDEMS, 21000kg PER TRI-AXLE BOGIE WITH AXLE CENTRES OF 1.3m
7. IT IS THE CUSTOMERS/SITE OWNERS RESPONSIBILITY TO PROVIDE SUCH ITEMS AS PLATFORMS, STEPS, GUARD RAILS, SIGNAGE ETC. THAT MAY BE REQUIRED TO SATISFY THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT.

REV.	DESCRIPTION	DATE	APP.
G	SIDE CLEARANCE CHANGED TO 0.75m WAS 1m	16.11.11	SIMON
F	MAXIMUM LOADING CHANGED	21.04.09	SIMON
E	RAMP ALTERED&CONCRETE STRENGTH CHANGE TO 32Mpa	29.07.08	SIMON
D	REDRAWN ON CAD	23.10.02	AR

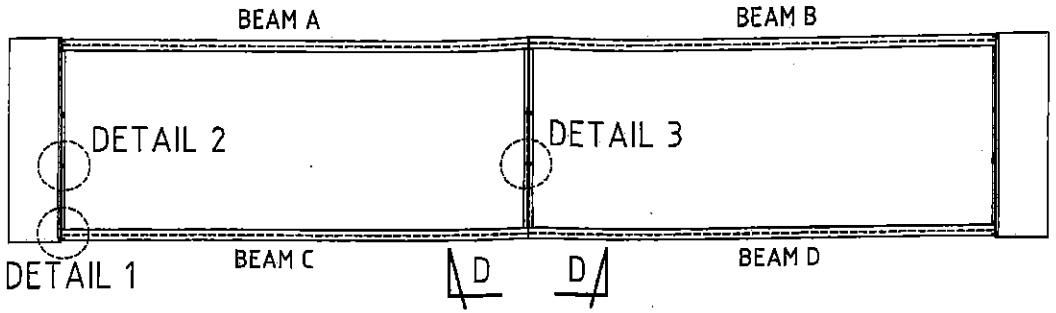
ultrahawke
Scales and Systems
Unit 2/9 Production Drive , Campbellfield, Victoria, 3061
Telephone (03) 9357 7470 , Facsimile (03) 9357 7450
A.B.N. 97 004 659 358

DR. BY: AR	DATE: 23.10.2002	
CH. BY: SK	DATE: 21.04.2009	
APP. BY: SK	DATE: 21.04.2009	
SCALE: N.T.S.		

TITLE:
ABOVE GROUND - RAMPED ELECTRONIC WEIGHBRIDGE
GENERAL LAYOUT

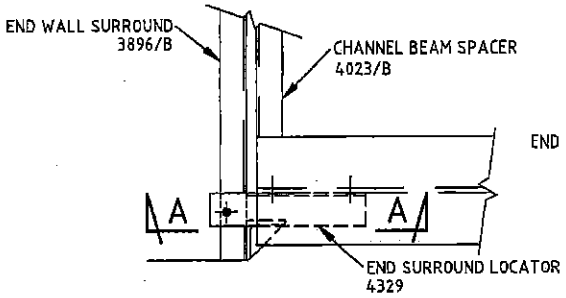
DRAWING No.
A3-9630/1
REV. No. G
SHEET 1 OF 1

THIS DRAWING SHOULD NOT BE SCALED - IF IN DOUBT ASK.

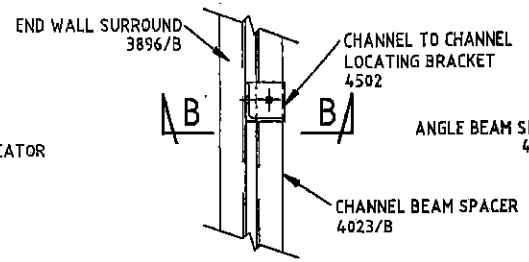


PLAN OF WEIGHBRIDGE STEELWORK

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION PURPOSES



DETAIL 1



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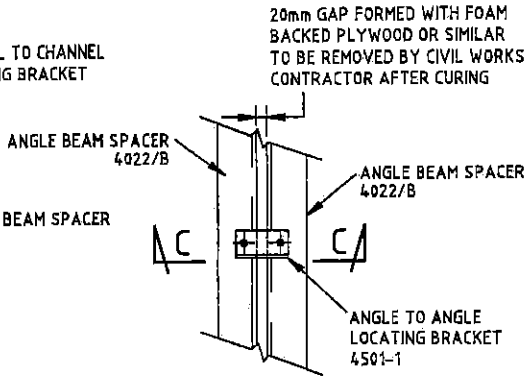
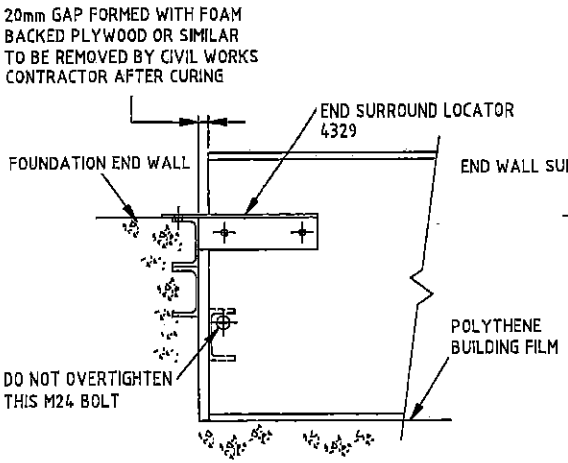
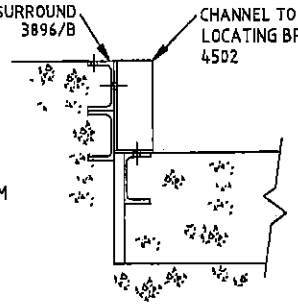


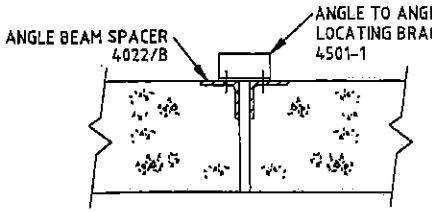
DETAIL 3



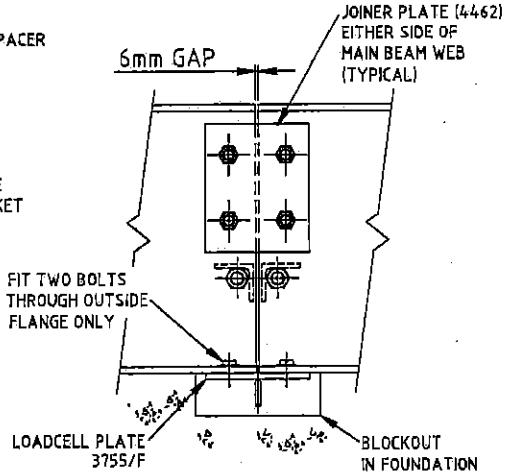
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

1-440

REV.	DESCRIPTION	DATE	APP.
A	ADD PART NUMBER EACH ITEM	07.06.12	SIMON

ultrahawke
Scales and Systems
Unit 2/9 Production Drive , Campbellfield, Victoria, 3061
Telephone (03) 9357 7470 , Facsimile (03) 9357 7450
A.B.N. 97 004 659 358

DR. BY: SIMON	DATE: 21.07.2008	
CH. BY: S.K	DATE: 21.07.2008	
APP. BY: S.K	DATE: 21.07.2008	
SCALE: NTS		

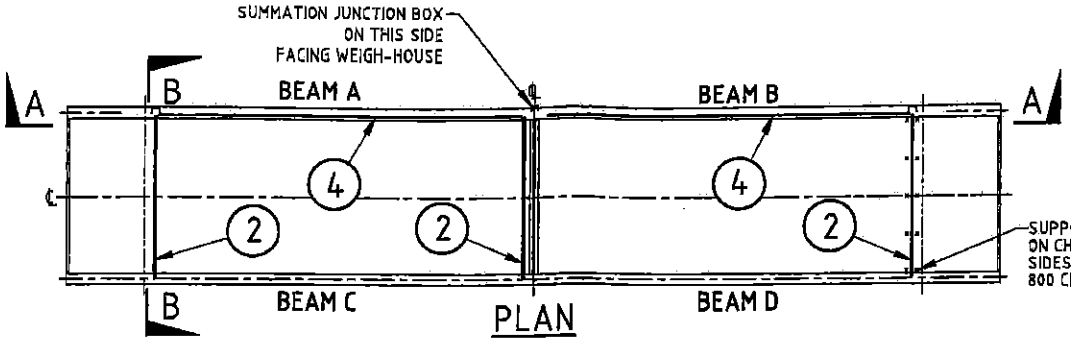
TITLE:
ABOVE GROUND WEIGHBRIDGE
6 LOADCELL TYPE
STEELWORK ASSEMBLY

DRAWING No.
A3-4500-2

REV. No. A

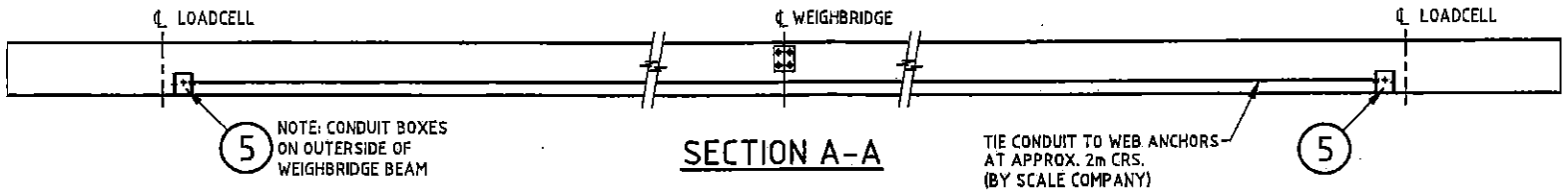
SHEET 1 OF 1

THIS DRAWING SHOULD NOT BE SCALED – IF IN DOUBT ASK.



PLAN

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION PURPOSES



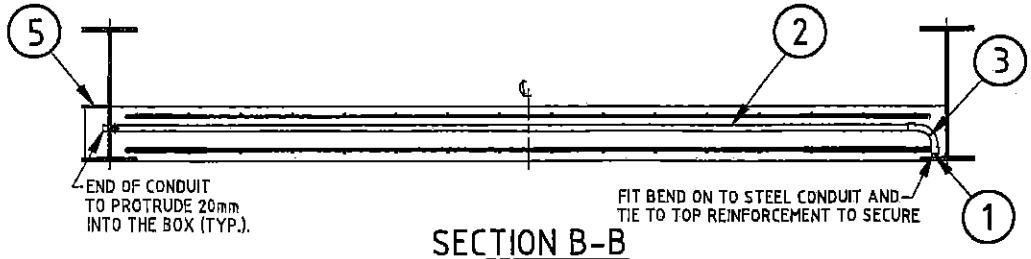
SECTION A-A

TABLE 1.

WEIGHBRIDGE LENGTH	ϕ25mm CONDUIT LENGTHS
15m	2 x 6.5m
18m	2 x 7m
20m	2 x 8m
24m	2 x 9.3m

TABLE 2.

WEIGHBRIDGE WIDTH	ϕ25mm CONDUIT LENGTHS
3.0m	3 x 3.13m
3.5m	3 x 3.63m



SECTION B-B

ITEMS SUPPLIED BY SCALE COMPANY			
5	2	CONDUIT BOX	KL082015
4	AS REQ'D	ϕ25mm PVC CONDUIT (REFER TABLE 1)	9025
3	3	ϕ25mm PVC 90° BEND	247/25
2	AS REQ'D	ϕ25mm PVC CONDUIT (REFER TABLE 2)	9025
1	4	ϕ25mm STEEL CONDUIT x 50mm LONG	9025
ITEM	REQ'D	MATERIAL/DESCRIPTION	PART No.

REV.	DESCRIPTION	DATE	APP.
C	GENERAL REVISION	6.5.09	SIMON
B	NEW JUNCTIONBOX ADDED	15.7.08	SIMON
A	TWO TABLES ADDED	2.6.00	AR

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Scales and Systems
Unit 2/9 Production Drive , Campbellfield, Victoria, 3061
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A.B.N. 97 004 859 358

DR. BY: AR	DATE: 02.06.2000	
CH. BY: S.K	DATE: 07.05.2009	
APP. BY: S.K	DATE: 07.05.2009	
SCALE: 1:100, 1:50, 1:20		

TITLE:
ABOVE GROUND WEIGHBRIDGE
6 LOADCELL
BEAM AND CONDUIT ARRANGEMENT

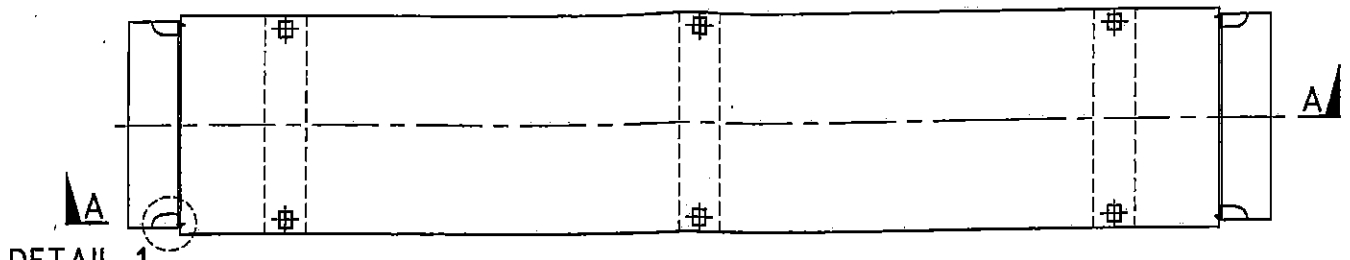
DRAWING No.
A3-4485-2

REV. No. C

SHEET 1 OF 1

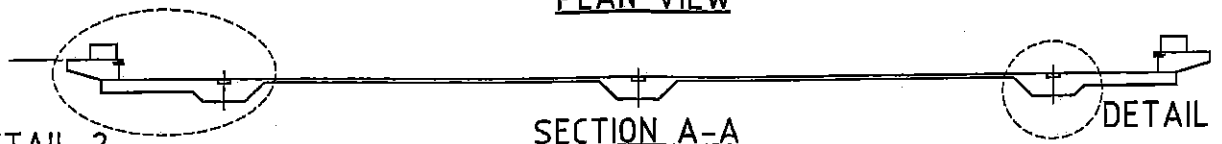
1441

THIS DRAWING SHOULD NOT BE SCALED - IF IN DOUBT ASK.



DETAIL 1

PLAN VIEW

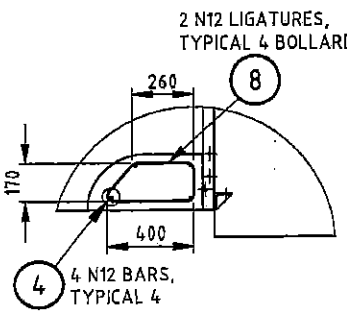


DETAIL 2

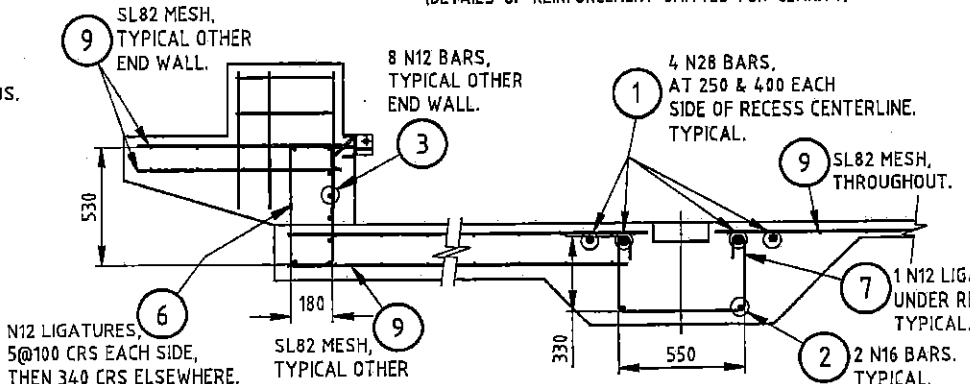
DETAIL 3

SECTION A-A

(DETAILS OF REINFORCEMENT OMITTED FOR CLARITY)



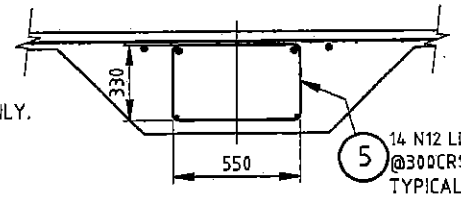
DETAIL 1.



DETAIL 2.

PRELIMINARY DRAWING

NOT TO BE USED FOR CONSTRUCTION PURPOSES



DETAIL 3.

1442

NOTES:
1. REINFORCEMENT TO AS 1302, 1303, 1304.
2. REINFORCEMNT COVER
   40mm TOP COVER
   60mm BOTTOM COVER
   60mm EDGE COVER

ITEM	QTY.	DESCRIPTION / MATERIAL	PART NO.
9	10	SL82, 6m x 2.4m SHEET	
8	8	N12 x 1.05 LN BENT AS SHOWN	
7	6	N12 x 1.43 LN BENT AS SHOWN	
6	36	N12 x 1.52 LN BENT AS SHOWN	
5	42	N12 x 1.88 LN BENT AS SHOWN	
4	16	N12 x 0.6 LN	
3	16	N12 x 3.88 LN	
2	6	N16 x 4.12 LN	
1	12	N28 x 4.12 LN	

CALCS197.11A

REV.	DESCRIPTION	DATE	APP.
B	REDRAWN TO NEW DESIGN	09.09.08	

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Unit 2/9 Production Drive, Campbellfield, Victoria, 3061
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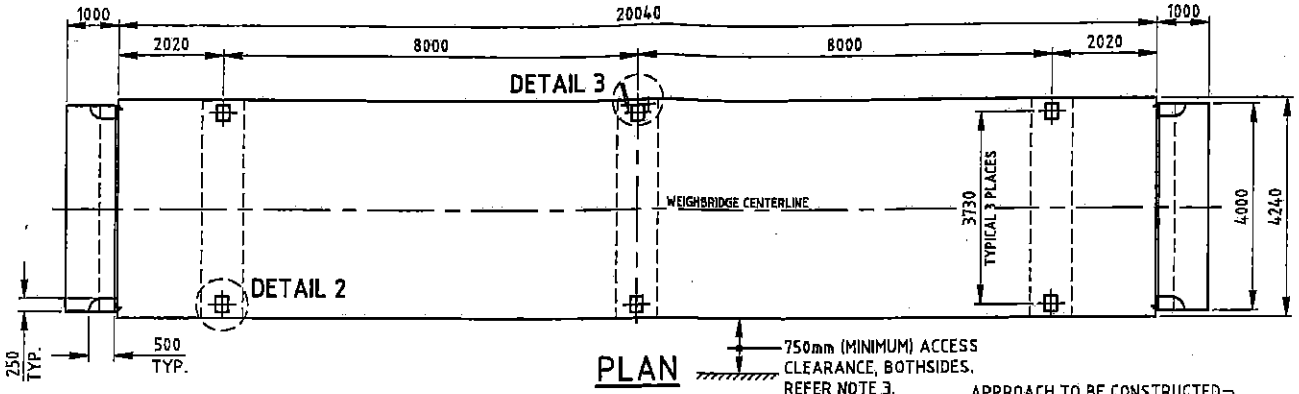
A.B.N. 97 004 659 358

DR. BY: SIMON DATE: 09.09.2008
CH. BY: S.K DATE: 01.03.2010
APP. BY: S.K DATE: 01.03.2010
SCALE: 1:100, 1:20

TITLE:
20m x 3.5m LOW PROFILE ELECTRONIC WEIGHBRIDGE
FOUNDATION REINFORCEMENT AND PLACEMENT

DRAWING No.
A3-4313/B
20m x 3.5m
REV. No. B
SHEET 2 OF 2

THIS DRAWING SHOULD NOT BE SCALED – IF IN DOUBT ASK.

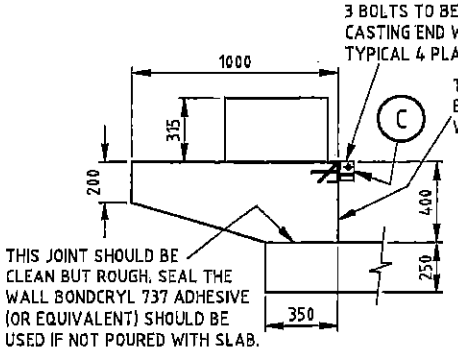


PLAN

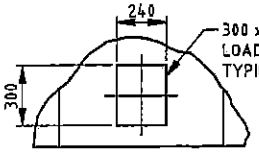
TYPICAL ELEVATION

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION PURPOSES

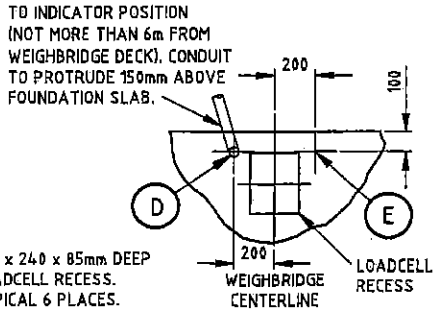
1-443



DETAIL 1



DETAIL 2



DETAIL 3

NOTES:

1. (A) SITE MUST BE APPROVED & SITE WORK SUPERVISED BY CLIENTS CIVIL ENGINEER.
   (B) FOUNDATION DESIGN TO SUIT STABLE SOIL CONDITIONS (CLASS M), WITH A MINIMUM ALLOWABLE BEARING PRESSURE OF 160kPa.
2. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.S.3600, MINIMUM CONCRETE STRENGTH SHALL BE 32MPa AT 28 DAYS.
3. IF USED FOR TRADE WEIGHING - LOCATION, APPROACH LENGTH & ACCESS CLEARANCE MUST BE APPROVED BY CONSUMER AFFAIRS/ WEIGHTS AND MEASURES AUTHORITIES.
4. GROUND ROD MUST BE LOCATED AS SHOWN ON PLAN. INSTALL ROD 1.75m INTO MOIST EARTH MAKING SURE IT PROTRUDES 50mm ABOVE FOUNDATION SLAB LEVEL.
5. THE TOP SURFACE OF THE SLAB WILL BE USED AS FORM WORK FOR CASTING THE DECK. THEREFORE, IT MUST BE FLAT AND HORIZONTAL WHEN CHECKED WITH AN AUTOMATIC LEVEL. THE HIGHEST POINT IS TO BE WITHIN 5mm OF THE LOWEST POINT.

ITEMS SUPPLIED BY PIT CONTRACTOR			
E	1	COPPER CLAD GROUND RODS x 1.8m LONG (MIN.)	
D	AS REQ'D	ϕ50 CONDUIT, L.S. 90° BENDS, DRAW WIRE & CAPS	
C	2	END WALL SURROUND SUPPLIED WITH WEIGHBRIDGE	3896/B-3.5m
B	AS REQ'D	REINFORCEMENT, REFER DWG. A3-4313/B/20mx3.5m - SHEET 2	
A	18m³	APPROX. OF CONCRETE	
ITEM	QTY.	DESCRIPTION / MATERIAL	PART NO.

CAL:CS107.11A

REV.	DESCRIPTION	DATE	APP.
F	SIDE CLEARANCE CHANGED TO 0.75m WAS 1m	18.01.12	
E	REDRAWN TO NEWDESIGN	9.9.08	

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Scales and Systems
Unit 2/9 Production Drive, Campbellfield, Victoria, 3061
Telephone (03) 9357 7470, Facsimile (03) 9357 7450
A.B.N. 97 004 659 358

DR. BY: SIMON	DATE: 09.09.2008
CH. BY: S.K	DATE: 18.01.2012
APP. BY: S.K	DATE: 18.01.2012
SCALE: 1:100, 1:20	

TITLE:
20m x 3.5m LOW PROFILE
ELECTRONIC WEIGHBRIDGE

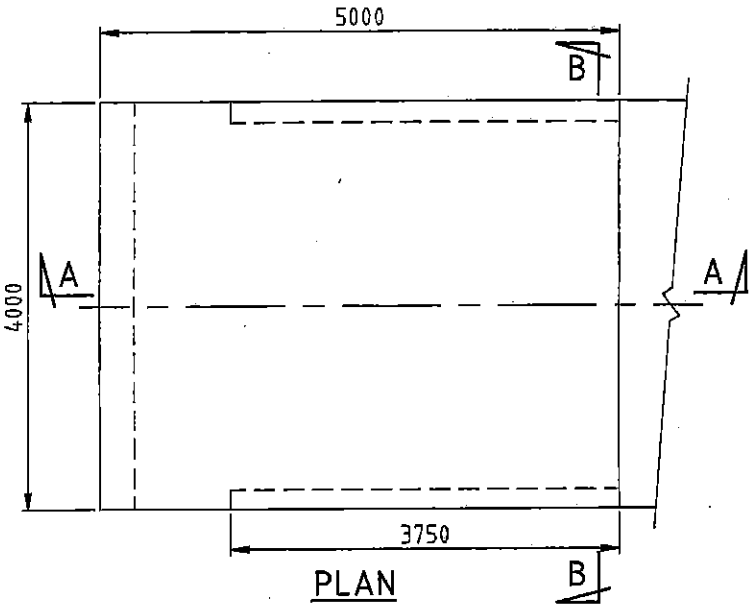
FOUNDATION DETAILS

DRAWING No.
A3-4313/B
20m x 3.5m

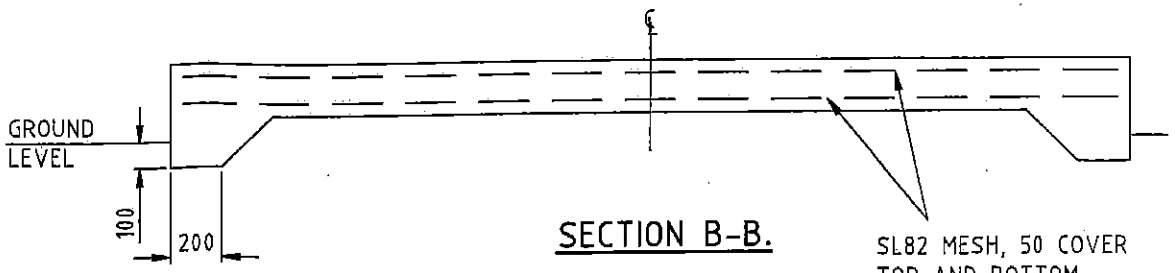
REV. No. F

SHEET 1 OF 2

THIS DRAWING SHOULD NOT BE SCALED - IF IN DOUBT ASK.



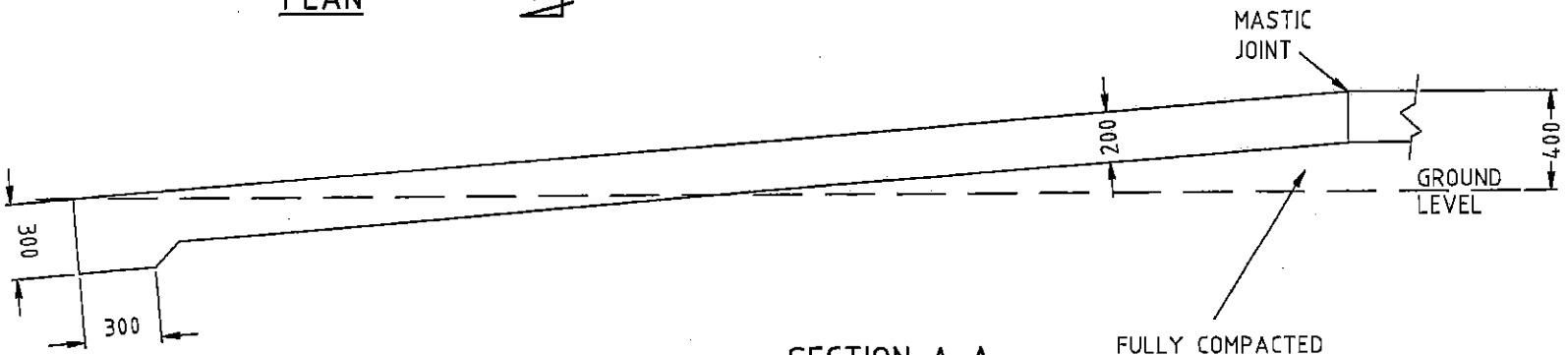
PLAN



SECTION B-B.

SL82 MESH, 50 COVER TOP AND BOTTOM. THROUGHOUT.

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION PURPOSES



SECTION A-A.

FULLY COMPACTED INFILL OR MASS CONCRETE.

1444

ITEM	REQ'D	MATERIAL/DESCRIPTION	PART No.
2	AS REQ'D	REINFORCEMENT (SL82 MESH)	
1	4.5m³	APPROX. OF CONCRETE. Fc = 32MPa.	

REV.	DESCRIPTION	DATE	APP.
E	CONCRETE STRENGTH CHANGE TO 32Mpa	16.07.08	
D	WIDTH WAS 3700mm, LENGTH WAS 4800mm	16.6.05	
C	REDRAWN	28.8.01	

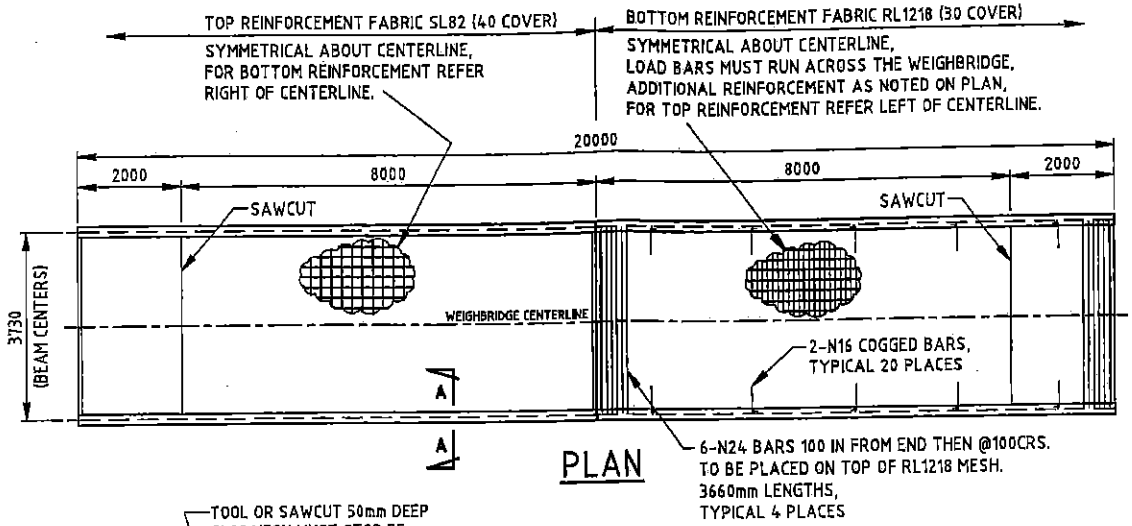
ultrahawke
Scales and Systems
Unit 2/9 Production Drive, Campbellfield, Victoria, 3061
Telephone (03) 9357 7470, Facsimile (03) 9357 7480
A.B.N. 97 004 659 358

DR. BY: ANTE DATE: 28.08.2001
CH. BY: SK DATE: 16.07.2008
APP. BY: SK DATE: 16.07.2008
SCALE: 1:50, 1:20

TITLE:
3.5m WIDE
ELECTRONIC WEIGHBRIDGE
RAMP DETAILS

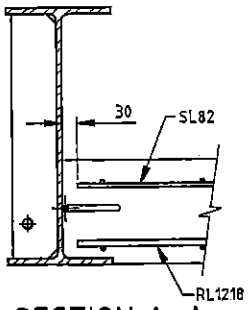
DRAWING No. A3-4268/3.5m
REV. No. E
SHEET 1 OF 1

THIS DRAWING SHOULD NOT BE SCALED – IF IN DOUBT ASK.

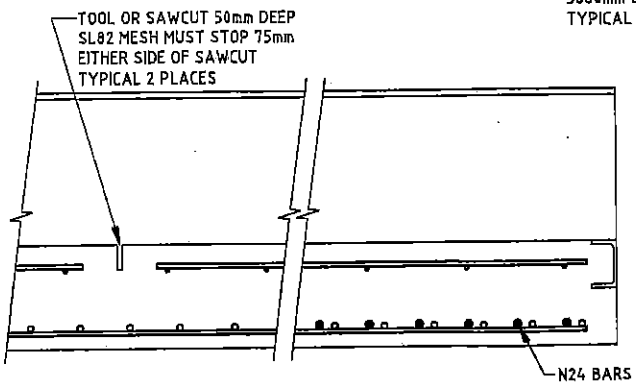


PLAN

PRELIMINARY DRAWING
NOT TO BE USED FOR CONSTRUCTION PURPOSES



SECTION A-A

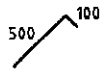


SAWCUT DETAILS

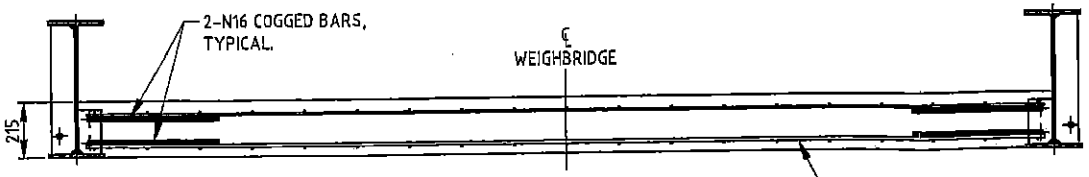
REINFORCEMENT QUANTITIES

MESH : SL82 - 6 SHEETS
RL1218 - 6 SHEETS
(6m x 2.4m SHEETS)

BAR: 24 OFF N24 BARS AT 3660mm LENGTHS
40 OFF N16 COGGED BARS AS SHOWN



NOTES:
1. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH AS3600. MINIMUM CONCRETE CONCRETE STRENGTH SHALL BE 32MPa AT 28 DAYS.
2. REINFORCEMENT SHALL BE DONE TO AS1302, 1303, 1304.
3. (A) FOR DRAINAGE PURPOSES SCREED CONCRETE TO 1:100 TRANSVERSELY AND LONGITUDINALLY, AND BE FLUSH WITH TOP OF CHANNELS AND ANGLES.
   (B) CONCRETE TO BE LIGHTLY BROOM FINISHED (ie NON SKID SURFACE), AND ALL EDGES OF CONCRETE AGAINST STEEL WORK TO BE TROWELED WITH RADIUS EDGING TOOL.
4. FOR STEEL WORK ASSEMBLY DETAILS REFER DRAWING A3-4500-2.
5. FOR CONDUIT LAYOUT DETAILS REFER DRAWING A3-4485-2.



TYPICAL CROSS SECTION

ITEM	QTY.	DESCRIPTION / MATERIAL	PART NO.
2	AS REQ'D	REINFORCEMENT, REFER TABLE	
1	16.5m³	APPROX. OF CONCRETE Fc' = 32 MPa	

CALCS107.12

REV.	DESCRIPTION	DATE	APP.
E	N24 1200 LN BARS REPLACED BY N24 3660 LN BARS	29.11.11	
D	N24 BARS REARRANGED	04.12.08	
C	REDRAWN TO NEW DESIGN	09.09.08	

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Unit 2/9 Production Drive , Campbellfield, Victoria, 3061
Telephone (03) 9357 7470 , Facsimile (03) 9357 7450
A.B.N. 97 004 659 358

DR. BY: SIMON DATE: 09.09.2008
CH. BY: S.K DATE: 29.11.2011
APP. BY: S.K DATE: 29.11.2011
SCALE: 1:100, 1:20, 1:5

TITLE:
20m x 3.5m LOW PROFILE ELECTRONIC WEIGHBRIDGE
CONCRETE DECK DETAILS

DRAWING No.
A3-4033/B
20m x 3.5m
REV. No. E
SHEET 1 OF 1

1-445

Annexure 3 – Bushfire Report and Certificate

Tasmania Fire Service

Approved Form of a Bushfire Hazard Management Plan

Chief Officer's requirements for a Bushfire Hazard Management Plan for compliance or exemption			
Version:	*1*	*Issue Date:*	*7 February 2014*
Purpose	To provide an approved form for a Bushfire Hazard Management Plan in accordance with: Section 60A of the *Fire Service Act 1979* - ***bushfire hazard management plan*** *means a plan showing means of protection from bushfires in a form approved in writing by the Chief Officer.* *Section* 3 *Land Use Planning and Approvals Act 1993* ***bushfire hazard management plan*** means a plan showing means of protection from bushfires in a form approved in writing by the Chief Officer; ***Chief Officer*** means the person appointed as Chief Officer under section 10 of the *Fire Service Act 1979*;		
Declaration	A Bushfire Hazard Management Plan (BHMP) is in a form approved by the Chief Officer if: 1. The BHMP is consistent with a Bushfire Report that has been prepared taking into consideration such of the matters identified in Schedule 1 as are applicable to the purpose of the BHMP; and 2. The BHMP contains a map, plan or schedule identifying the specific measures required to provide a tolerable level of risk from bushfire for the purpose or activity described in the BHMP having regard to the considerations in Schedule 2; and 3. The BHMP is consistent with all applicable Bushfire Hazard Management Advisory Notes issued by the Chief Officer.		
	Mike Brown AFSM Chief Officer Tasmania Fire Service		

Schedule 1 - Bushfire Report

A Bushfire Report is an investigation and assessment of bushfire risk to establish the level of bushfire threat, vulnerability, options for mitigation measures, and the residual risk if such measures are applied on the land for the purpose or activity described in the assessment.

A Bushfire Report must include:

a) A description of the characteristics of the land and of adjacent land;

b) A description of the use or development that may be threatened by a bushfire on the site or on adjacent land; and

c) Whether the use or development on the site is likely to cause or contribute to the occurrence or intensification of bushfire on the site or on adjacent land; and

d) Whether the use or development on the site, and any associated use or development, can achieve and maintain a tolerable level of residual risk for the occupants and assets on the site and on adjacent land having regard for –

   i. The nature, intensity and duration of the use;

   ii. The type, form and duration of any development;

   iii. A Bushfire Attack Level assessment to define the exposure to a use or development; and

   iv. The nature of any bushfire hazard mitigation measures required on the site and/or on adjacent land.

Schedule 2 - Bushfire Hazard Management Plan

A BHMP is a document containing a map, plan or specification and must:-

a) Identify the site to which the BHMP applies by address, Property Identifier (PID), and reference to a Certificate of Title under the *Land Titles Act 1980;*

b) Identify the certifying Bushfire Hazard Practitioner, Accreditation Number, and Scope of Accreditation.

c) Identify the proposed activity to which the BHMP applies by reference to any plans, specifications or other documents that are applicable for the purpose of describing the proposed use or development;

d) Indicate the bushfire hazard management and protection measures required to be implemented by the Bushfire Report;

e) If intended to be applied for the purpose of satisfying a regulatory requirement, identify the regulation by its statutory citation and indicate the applicable provisions for which the BHMP applies; and

f) Have, as a schedule, the Bushfire Report that details specific bushfire hazard management and bushfire mitigation measures required to achieve a tolerable level of residual risk for the proposed activity and any building or development on the site, including:

   i) Measures to achieve compliance with any mandatory land use planning requirement in a planning process required under the *Land Use Planning and Approvals Act 1993 (Attachment 1)*;

   ii) Measures to achieve compliance with any mandatory outcome for a building or work undertaken in accordance with the *Building Act 2000* and the Building Regulations 2004 (Form 55).

Attachment 1: Certificate of Compliance to the Bushfire-prone Area Code under Planning Directive No 5

Code E1 – Bushfire-prone Areas Code

Certificate under s51(2)(d) *Land Use Planning and Approvals Act 1993*

Office Use
Date Received
Permit Application No
PID

1. Land to which certificate applies[1]	
Name of planning scheme or instrument: Northern Midlands Interim Planning Scheme 2013(The Scheme)	

Use or Development Site Street Address 109 Auburn Road, Ross	Certificate of Title / PID 120818/1
Land that is not the Use or Development Site relied upon for bushfire hazard management or protection Street Address	Certificate of Title / PID

2. **Proposed Use or Development** *(provide a description in the space below)* Changes of Use and erect a building	

- ☐ Vulnerable Use
- ☐ Hazardous Use
- ☐ Subdivision
- ☐ New Habitable Building on a lot on a plan of subdivision approved in accordance with Bushfire-prone Areas Code.
- X New habitable on a lot on a pre-existing plan of subdivision
- ☐ Extension to an existing habitable building
- ☐ Habitable Building for a Vulnerable Use

[1] If the certificate relates to bushfire management or protection measures that rely on land that is not in the same lot as the site for the use or development described, the details of all of the applicable land must be provided.

3. Documents relied upon[2]

	Document or certificate description:
X	***Description of Use or Development[3] (Proposal or Land Use Permit Application)*** ***Documents, Plans and/or Specifications*** *Title: proposed New Shed and Change of USe* *Author: Woolcott Surveys 2015* *Date*: 2015
X	***Bushfire Report[4]*** *Title: BUSHFIRE ASSESSMENT* *Auburn Road, Ross* *Author: Ian Abernethy* *Date* May 2015
☐	***Bushfire Hazard Management Plan[5]*** *Title:* *Author:* *Date*
☐	***Other documents*** *Title:* *Author:* *Date*:

[2] List each document that is provided or relied upon to describe the use or development, or to assess and manage risk from bushfire, including its title, author, date, and version.

[3] Identify the use or development to which the certificate applies by reference to the documents, plans, and specifications to be provided with the permit application to describe the form and location of the proposed use or development. For habitable buildings, a reference to a nominated plan indicating location within the site and the form of development is required.

[4] If there is more than one Bushfire Report, each document must be identified by reference to its title, author, date and version.

[5] If there is more than one Bushfire Hazard Management Plan, each document must be identified by reference to its title, author, date and version

4. Nature of Certificate[6]

	Applicable Standard	Assessment Criteria	Compliance Test: Certificate of Insufficient Increase in Risk		Compliance Test: Certified Bushfire Hazard Management Plan		Reference to applicable Bushfire Risk Assessment or Bushfire Hazard Management Plan[7]
X	**E1.4 – Use or development exempt from this code**						
	E1.4. **(identify which exemption applies)**		No specific measures required because the use or development is consistent with the objective for each of the applicable standards identified in this Certificate	X	Not Applicable		There is no identifiable increase in risk of bushfire as a result of this development.
❑	**E1.5.1 - *Vulnerable Use***						
	E1.5.1.1 – location on bushfire-prone land	A2	Not Applicable		Tolerable level of risk and provision for evacuation	❑	
❑	**E1.5.2 - *Hazardous Use***						
	E1.5.2.1 – location on bushfire-prone land	A2	Not Applicable		Tolerable level of risk from exposure to dangerous substances, ignition potential, and contribution to intensify fire	❑	
❑	***E1.6.1 - Subdivision***						
	E1.6.1.1 - Hazard Management Area	A1	No specific measure for hazard management	❑	Provision for hazard management areas in accordance with BAL 19 Table 2.4.4 AS3959	❑	
	E1.6.1.2 - Public Access	A1	No specific public access measure for fire fighting	❑	Layout of roads and access is consistent with objective	❑	
	E1.6.1.3 - Water Supply	A1 Reticulated water	No specific water supply for fight fighting	❑	Not Applicable		

1–452

[6] The certificate must indicate by placing a ✓ in the corresponding ❑ for each applicable standard and the corresponding compliance test within each standard that is relied upon to demonstrate compliance to Code E1

[7] Identify the Bushfire Risk Assessment report or Bushfire Hazard Management Plan that is relied upon to satisfy the compliance test

		supply					
		A2 Non-reticulated water supply	No specific water supply measure for fight fighting	❑	Water supply is consistent with objective	❑	

❑	**E1.6.2 - *Habitable Building on lot on a plan of subdivision approved in accordance with Code***						
	E1.6.2.1 - Hazard Management Area	A1	No specific measure for hazard management	❑	Provision for hazard management areas in accordance with BAL 19 Table 2.4.4 AS3959 and managed consistent with objective	❑	
	E1.6.2.2 – Private Access	A1	No specific private access for fire fighting	❑	Private access is consistent with objective	❑	
		A2	Not Applicable		Private access to static water supply is consistent with objective	❑	
	E1.6.2.3 - Water Supply	A1	No specific water supply measure for fight fighting	❑	Water supply is consistent with objective	❑	

❑	**E1.6.3 - *Habitable Building* (pre-existing lot)**						
	E1.6.3.1 - Hazard Management Area	A1	No specific measure for hazard management	❑	Provision for hazard management is consistent with objective; or	❑	
					Provision for hazard management areas in accordance with BAL 29 Table 2.4.4 AS3959 and managed consistent with objective	❑ ❑	
	E1.6.3.2 - Private Access	A1	No specific private access measure for fire fighting	❑	Private access is consistent with objective	❑	
		A2	Not applicable		Private access to static water supply is consistent with objective	❑	
	E1.6.3.3 - Water Supply	A1	No specific water supply measure for fight fighting	❑	Water supply is consistent with objective	❑	

1–453

❑	**E1.6.4 - *Extension to Habitable Building***						
	E1.6.4.1 – hazard management	A1	No specific hazard management measure	❑	Provision for hazard management is consistent with objective; or	❑	
					Provision for hazard management areas in accordance with BAL 12.5 Table 2.4.4 AS3959 and managed consistent with objective	❑ ❑	

❑	**E1.6.5 – *Habitable Building for Vulnerable Use***						
	E1.6.5.1 – hazard management	A1	No specific measure for hazard management	❑	Bushfire hazard management consistent with objective; or Provision for hazard management areas in accordance with BAL 12.5 Table 2.4.4 AS3959 and managed consistent with objective	❑	

1–454

5. Bushfire Hazard Practitioner – Accredited Person

Name	Ian Abernethy	Phone No:	0417233732
Address:	Level 4/113 Cimitiere St Launceston	Fax No:	
		Email address:	iabernethy@pittsh.com.au
Fire Service Act 1979 Accreditation No:	BFP- 124	Scope:	

6. Certification

I, *Ian Abernethy* *certify that in accordance with the authority given under the Part 4A of the Fire Service Act 1979 –*

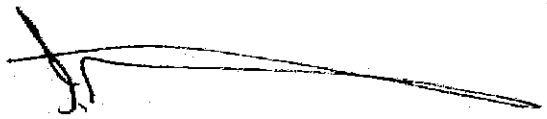
The use or development described in this certificate is exempt from application of Code E1 – Bushfire-Prone Areas in accordance with Clause E1.4(a) because there is an insufficient increase in risk to warrant specific measures for bushfire hazard management and/or bushfire protection in order to be consistent with the objective for all of the applicable standards identified in Section 4 of this Certificate	X

or

There is an insufficient increase in risk to warrant specific measures for bushfire hazard management and/or bushfire protection in order for the use or development described to be consistent with the objective for each of the applicable standards identified in Section 4 of this Certificate.	❑

and/or

The Bushfire Hazard Management Plan/s identified in Section 4 of this certificate is/are in accordance with the Chief Officer's requirements and can deliver an outcome for the use or development described that is consistent with the objective and the relevant compliance test for each of the applicable standards identified in Section 4 of this Certificate	❑



Signed

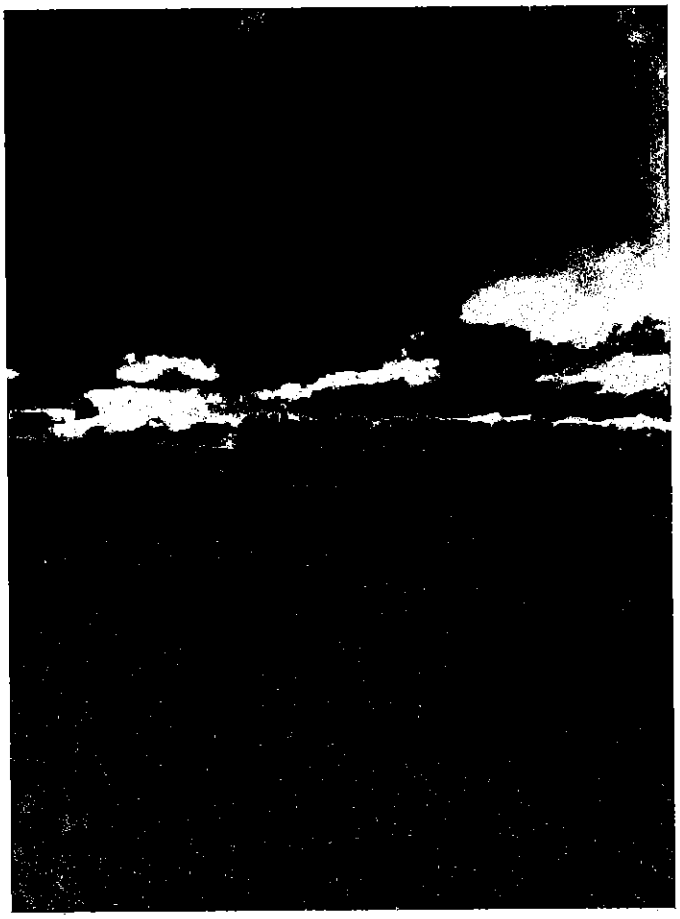
Date 19 May 2015

Bushfire Assessment Report

AUBURN ROAD, ROSS

For XLD Grain

Prepared by



IAN ABERNETHY

MAY 2015

PROPOSAL

It is proposed to use the subject site for the collection and distribution of grain (in bags); erection of an office amenity block and installation of a weighbridge.

This is a new site on the west of the Midland Highway – away from the Ross Township.

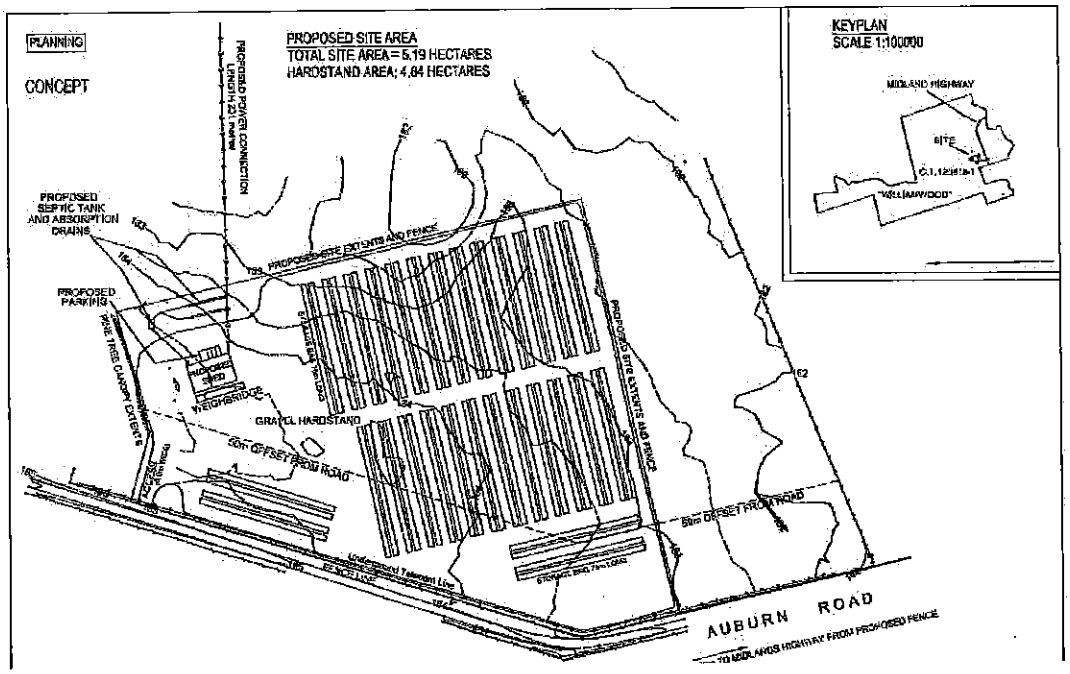


Figure 1 – Proposal Plan

TITLE

Property Address	'WILLIAMWOOD' - 109 AUBURN RD ROSS TAS 7209
Property ID	7570639
Title Reference	120818/1

LAND USE PLANNING

The land use control document covering this site is the Northern Midland Interim Planning Scheme 2013. The site is zoned Rural Resource use under the Planning Scheme.

CURRENT USES IN AREA

The site is currently used for grazing purposes. It is a site which sits between two pivot irrigators and their respective spray circles. To the south is Auburn Road. To the east is the Midland Highway – some 226m away. To the south, west and north is land within the title of Williamswood

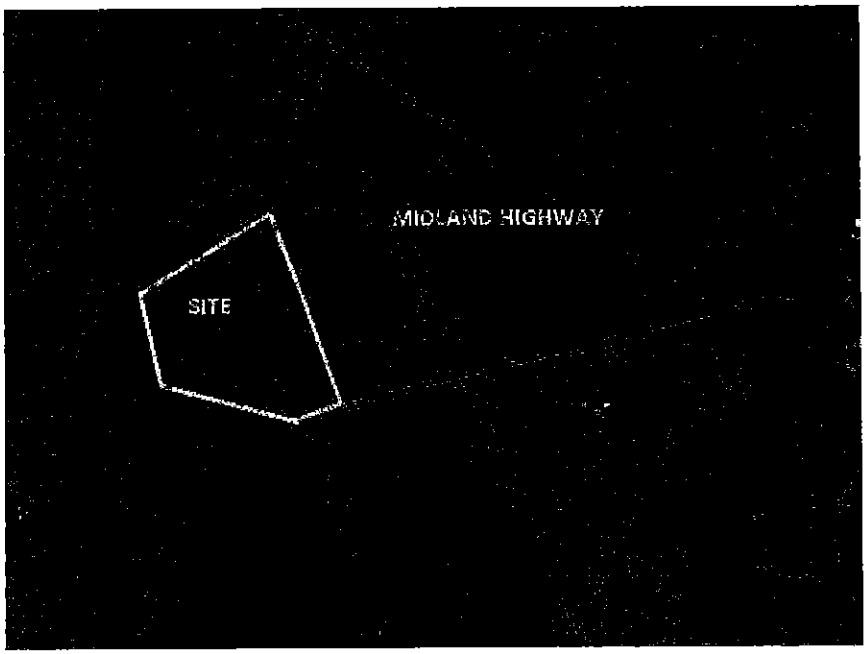


Figure 2 – Site location

CRITICAL THREAT AREAS

The critical threat area comes from grassland (grazing and cropping) which surrounds the site. Given the management of this land falling under the same ownership the risk is low. It should also be noted that at the height of the fire season (summer) the surrounding land will be subject to irrigation practices – reducing the risk even further.

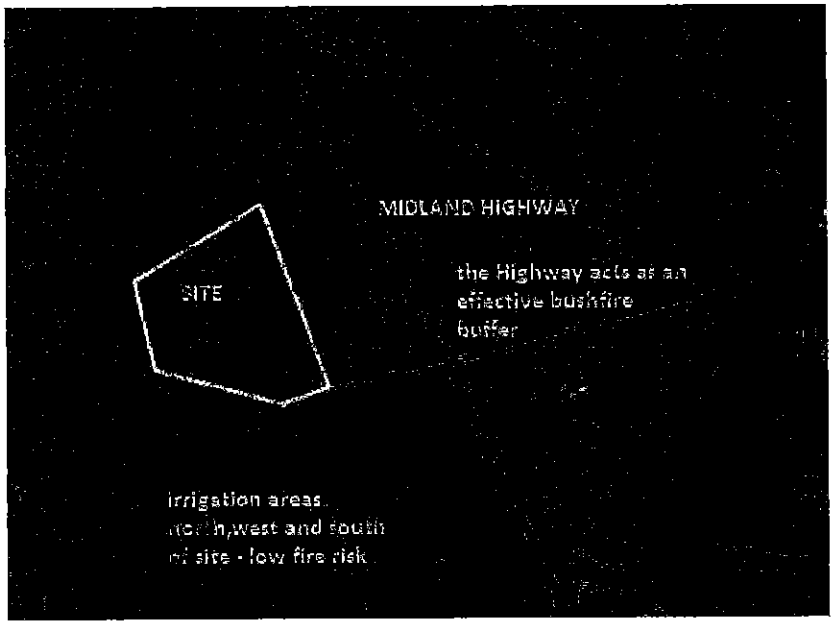


Figure 3 – Risk Area

ENVIRONMENTAL MATTERS

Reference to Tas VEG 3 classifies the vegetation on the site and surrounding lots as agricultural land

There are no threatened flora or fauna on this site or within 500m of the site.

ACCESS

Access to the site will be from Auburn Road a fully formed sealed public road. Auburn Road is an 8.5m wide sealed carriageway set within a 20m wide road reserve with access off the Midland Highway. Within the site all accessways will be crushed rock giving two wheel drive, all weather access.

WATER

The site will be serviced by a water tank system for both domestic (low use) and firefighting purposes. Rainwater will be collected from the roof of the shed and stored in tanks for domestic and firefighting purpose. At least two 10,000 litre water storage tanks will be located on site specifically for fire fighting purposes.

SLOPE

The site is generally flat – with maybe a slight decline to the Highway.

POWER LINES

There are no overhead powerlines impacting on this site.

VEGETATION

The site is surrounded on all sides by grasslands managed as farmland – on three sides under irrigation.

FIRE PATH (LIKELY)

The prevailing wind impacting on this site comes from the west - slightly uphill to the site and across irrigation land.

ASSESSMENT OF RISK

The effective bushfire risk is graphically illustrated below. There is an on-going opportunity to use the hardstanding area within the site as a barrier for bushfire prevention.

The assessment of risk is presented in a table form below:-

	North	South	East	West
Vegetation	Grassland	Grassland	Grassland	Grassland
Slope	Flat	Flat	Flat	Flat
Distance	Nil	Nil	Nil	Nil

Table 1 – Bushfire Risk Assessment

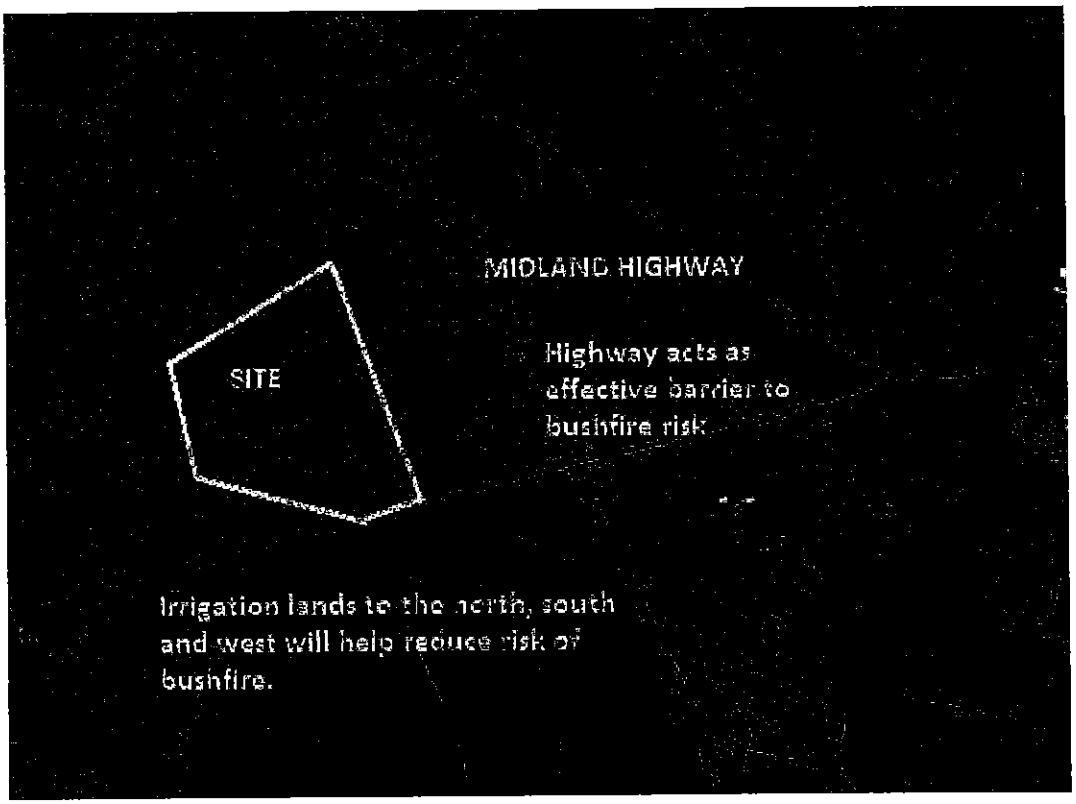


Figure 3 - Plan of bushfire risk assessment

CONSEQUENCE

Given the proposal to include water tanks on site for firefighting purposes, the extensive irrigated areas around the site, the current private/public access arrangements and the extent of hardstanding around the proposed building the consequence of any bushfire in this area would be low.

CONCLUSIONS

As a result of the low risk and other factors outlined above the proposal can be classed as Exempt from the Bushfire Code – the development as proposed presents an insufficient increase in risk to warrant specific measures for bushfire hazard management.

RECOMMENDATIONS

No specific recommendations are required.

REFERENCES

Northern Midlands Interim Planning Scheme 2013.

Standards Australia. (2009). AS 3959-2009 Construction of Buildings in Bushfire Prone Areas.

Guidelines for development in Bushfire Prone Areas in Tasmania - 2005

Building Code of Australia (Tasmanian Section)

PREPARED BY

IAN ABERNETHY – 19 may 2015

BFP 124

Annexure 4 – Traffic Impact Assessment

RK CONSULTING ENGINEERS

TRAFFIC IMPACT ASSESSMENT

AUBURN ROAD, ROSS

Prepared on behalf of XLD Grain

Prepared By:

Risden Knightley BE (Civil), MIEAust, CPEng NPR, CC 2539X

PO Box 128, Prospect 7250

Mobile: 0400 642469 Fax: 6343 1668 Email: rjkmail@netspace.net.au

TABLE OF CONTENTS

1. Introduction

XLD Grain is proposing to establish a grain receival, processing and distribution site on Auburn Road near the township of Ross. This complex will receive grains produced within a 150 kilometre radius and process them on site, for forwarding to processing customers within Tasmania and on the mainland.

As part of the development application documentation, a Traffic Impact Assessment is required to accompany the planning application. This report, prepared by Risden Knightley, an experienced traffic engineer, is provided for that purpose.

Preparation of the report has included a site visit, together with discussions with the applicant's representatives, Northern Midland Council Officers and Roads Section Officers of Department of State Growth.

2. The Site

The site is a large rural lot of some 5.19 hectares located on the northern side of Auburn Road, as indicated below.

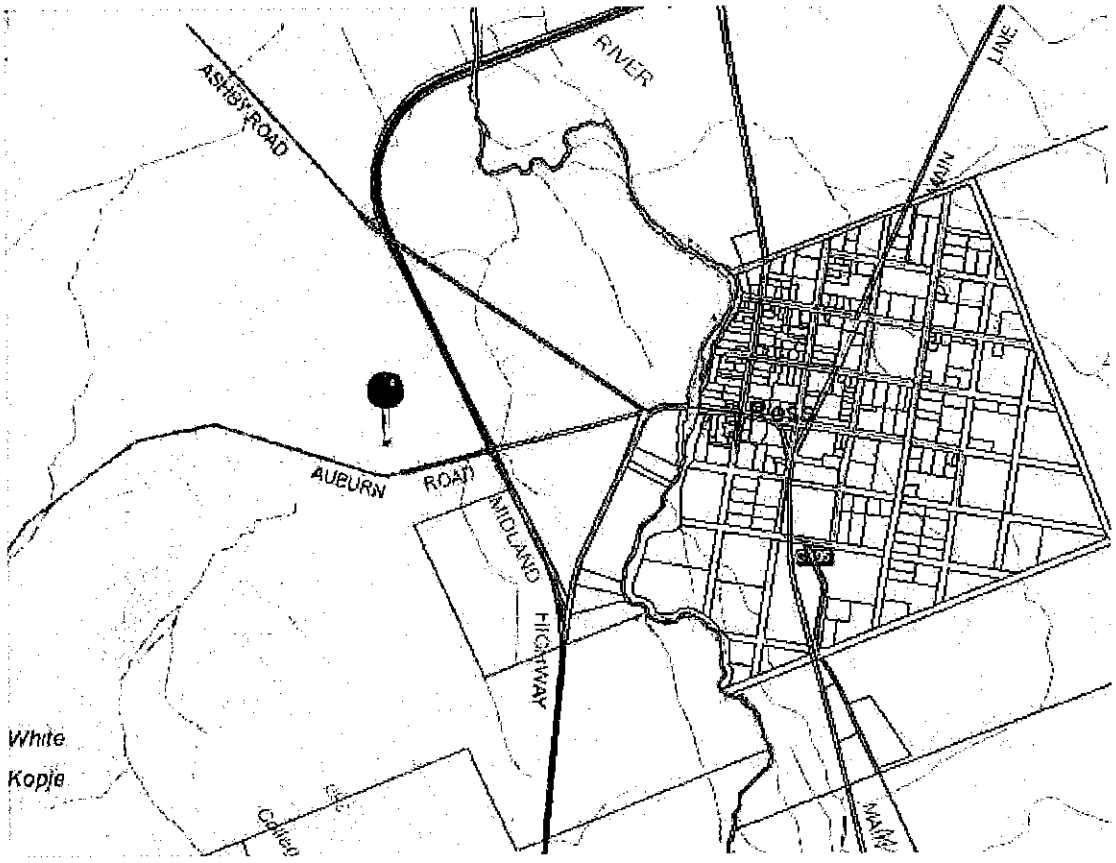
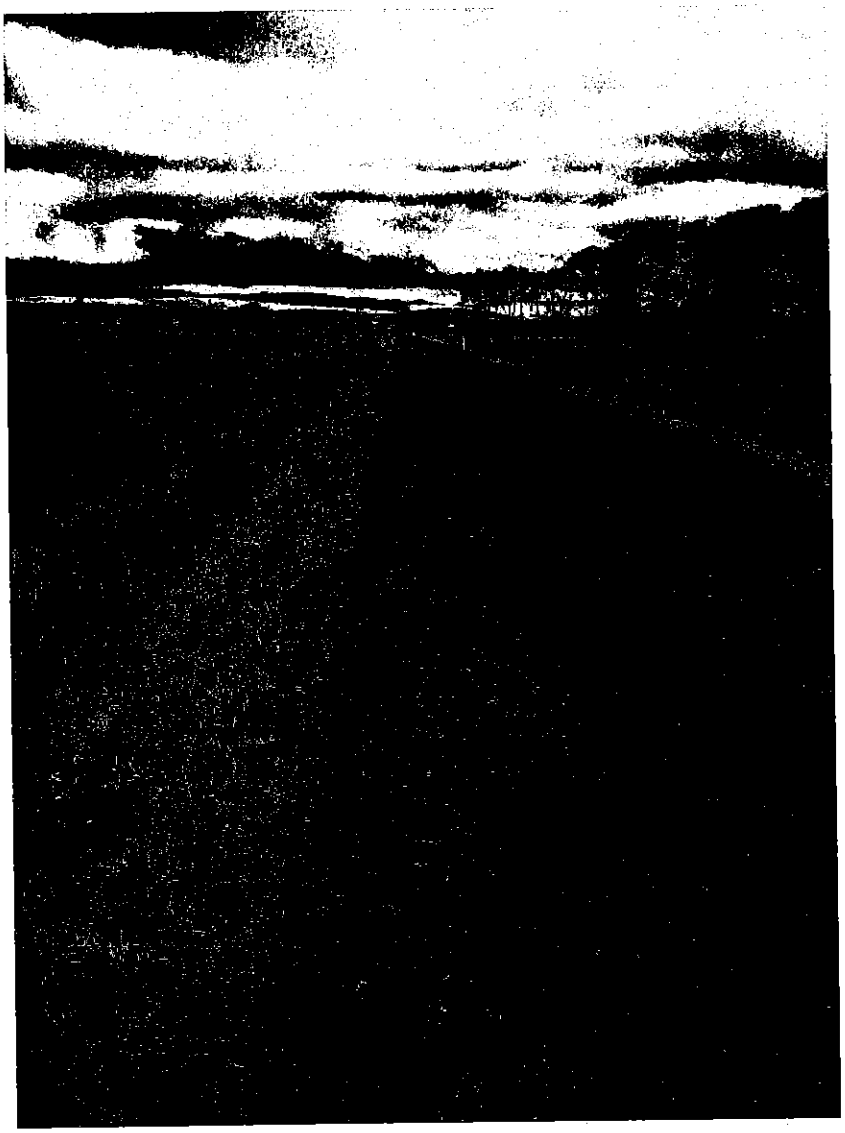


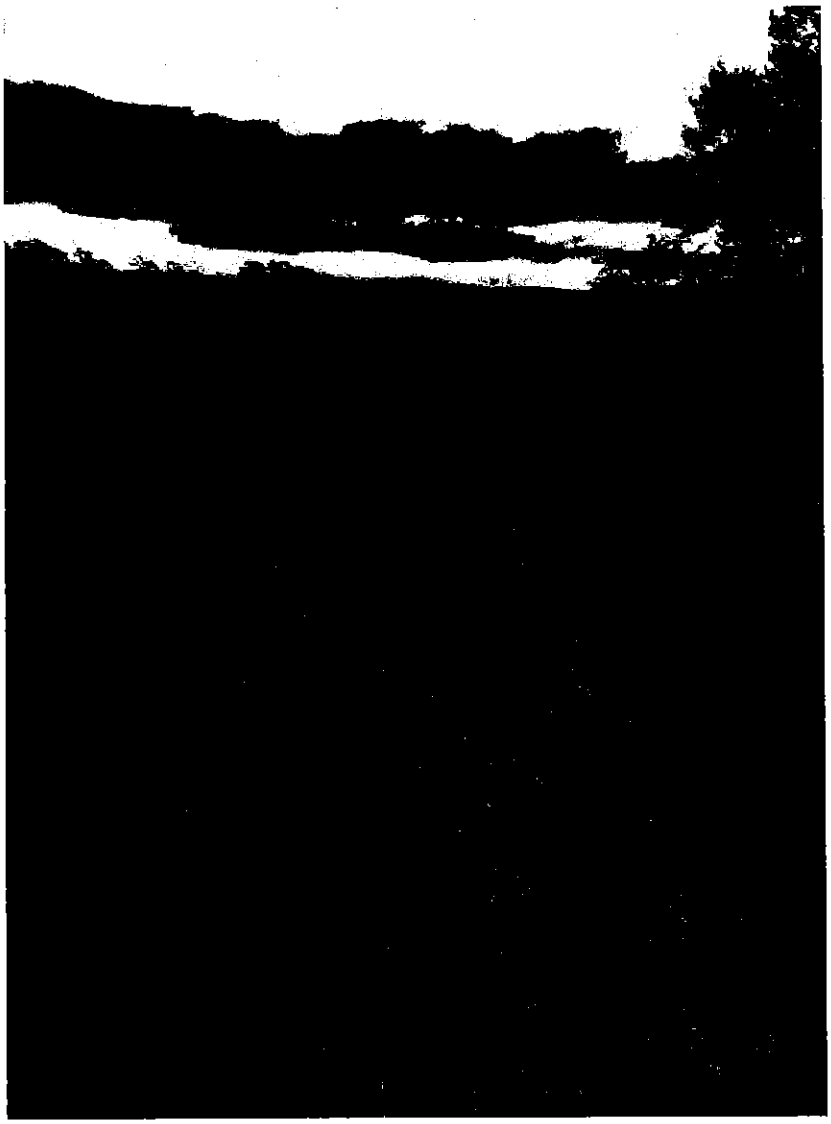
Figure 2.1 – List Identification of Site

Currently no development has taken place on the proposed site however as part of the application, one large shed and weigh scale for grain receival and processing are proposed together with the establishment of large grain bags for the storage of grain seeds.

Access to the site is by a new crossover some 10 metres wide and set back 15 metres from the front boundary, connecting to Auburn Road, from an entrance at the south western corner of the lot (*Refer to Appendix A*). The driveway access within the road reserve is to be widened to some 15 metres to provide for the swept path of negotiating trucks. The throat width at edge of seal will then be some 19 metres. The driveway length from the edge of seal to gateway will be some 25 metres. Sight distance at Auburn Road is in excess of 250 metres to the west and in excess of 250 metres to the east from the proposed driveway.



Photograph 1 - View to left, back to Midland Highway



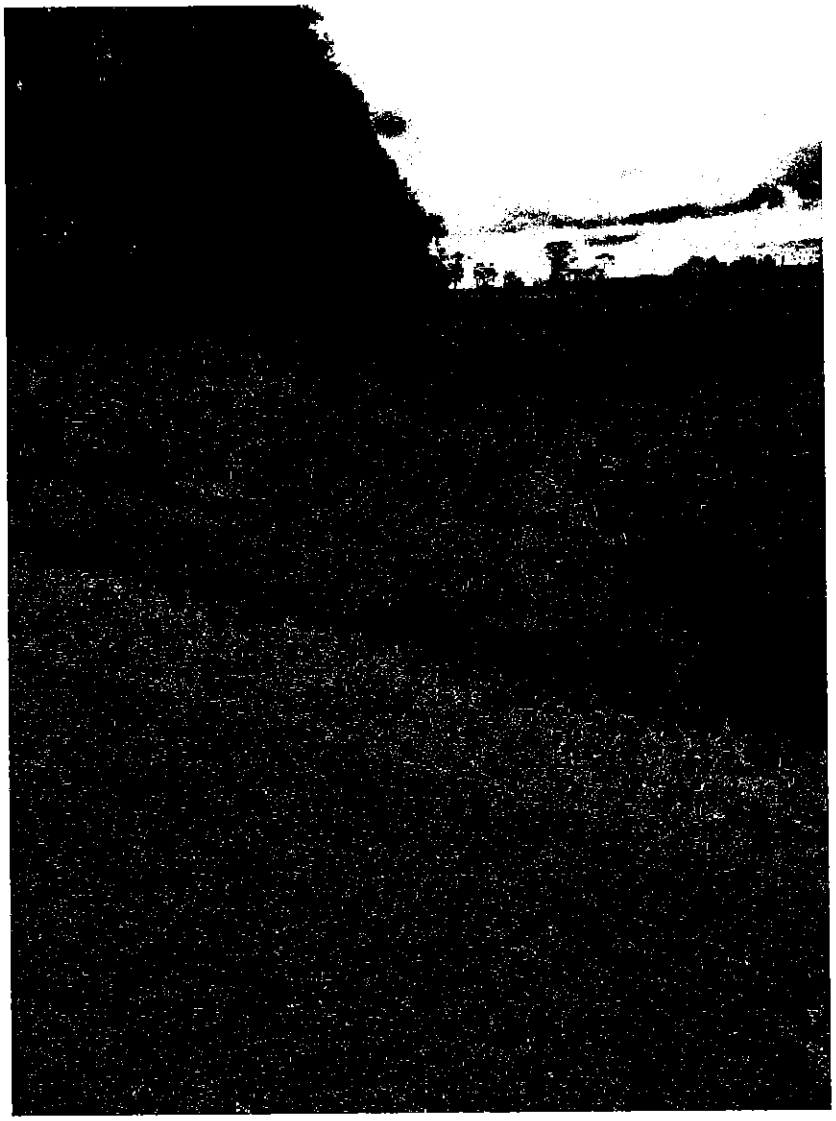
Photograph 2 - View to right

3. Auburn Road

This road is considered a local rural road (Category 5 classification) linking rural communities to the Midland Highway.

The road is constructed, in the vicinity of the site, with a sealed pavement some 5 metres wide, grass verges and edge drains some 2 metres from edge of shoulder at frontage. 100 km/hr speed limit is in place past the site. To the east of the proposed site access (approximately 500 metres) is the intersection between Auburn Road and the Midland Highway. This intersection is well signposted and line marked.

The Department of State Growth, crash history unit, was contacted regarding any recorded statistics in the last five years. Email response was received that no crash history was evident at the proposed site.



Photograph 3 – Access Location

4. Traffic Data

Auburn Road

The indicative weekday traffic volume for Auburn Road is some 100 to 150 vehicles, with peak hours at 10% distributed 70/30 from west to east for the morning and evening peak hours respectively.

Traffic growth at the typical regional growth rate of 1.25% suggests a plus 20 year average weekday value of some 160 vehicles.

Site

Information for the site indicates weekday use at some 30 movements in and out daily during peak grain harvesting season, i.e. total two-way volume at 60 vehicles, with some 100% of heavy traffic vehicle movements to / from the east (direct from Midland Highway). Traffic movements for this site are limited by the amount of grain that can be processed within the 24 hour period.

5. Assessment

Assessment in accordance with section E4.0 of the Road and Railway Assets Code indicates:

E4.6.1 P3 c The assessed site traffic movements, being some 60 per day, is greater than 10% of the passing traffic. As such a new access will be required. This access will be constructed to Tasmanian Council Standard Drawing TSD Ro3 V1 which provides safe and efficiency access onto Auburn Road. Site distance at the access point is noted to be well in excess of SISD requirements of 250 metres as per TSD RFO1 V1 – meets acceptable solution.

E4.7.1 The site access is more than 50 metres from the Midland Highway, a Category 1 Road – complies.

E4.7.2 P2 c The site access is a new access entering onto a Category 5 road. The new access affords in excess of 250 metres each way and will be constructed to Tasmanian Council Standard Drawing TSD Ro3 V1 – meets acceptable solution.

E4.7.3 Not applicable.

E4.7.4 The available sight distances are considered to comply with table E4.7.4 – complies.

Assessment of the Auburn Road traffic service allowing for a weekday through volume of 160 vehicles and 30 movements to / from the site indicates:

i) Morning peak hour (15 vehicles)
11 vehicles toward Midland Highway, 4 vehicles heading west on Auburn Road
ii) Worst case 27 exiting site vehicles as left turn.

Allowing for truck classified vehicles with 8 second gap time and 4 second move up time, the average delay to exiting vehicles is some 3.5 seconds, i.e. ideal traffic service conditions.

6. Car Parking

The site area and developed standing areas are considered suitable for parking requirements with the nearest workshop, office and parking area some 50 metres from Auburn Road, i.e. all activities associated with the site uses should be contained within the site and relatively remote from Auburn Road.

7. Communication with Local Government/State Growth

Discussions were held with the Department of State Growth regarding the impact of larger traffic on the intersection of Midland Highway and Auburn Road. Department of State Growth confirmed that the intersection will be upgraded in the next year as part of its funding process. This upgrade is designed to accommodate the traffic movements of this development occurring and other heavy vehicle usages along Auburn Road.

Further to this, discussions were held with Northern Midlands Council. It was confirmed that the design was sound as long as the access was suitably designed to accommodate turning movements.

8. Conclusion

A traffic impact assessment for a grain processing and storage facility at Auburn Road, Ross including the new crossover, indicates the proposal complies with section E4.0 of the Interim Planning Scheme. The site development is relatively remote from Auburn Road such that site activities and parking needs should not be detrimental to other traffic using Auburn Road.

R Knightley

May 2015

B.

Our ref: 400200.01; P15-157; Woolcott Surveys (obo XLD Grain)
Enquiries: Paul Godier

NORTHERN MIDLANDS COUNCIL

5 June 2015

E-MAILED 5.6.15

Woolcott Surveys (obo XLD Grain)
via email: colin.smith@woolcottsurveys.com.au ✓

Dear Mr Smith

Planning Application P15-157 - Information Required
Resource processing (grain processing & distribution facility) at 'Williamwood' (accessed from Auburn Road), 109 Auburn Road, Ross

I refer to the abovementioned application, which has been reviewed by Council's Planning Officers. The following information is required to allow consideration of your application under the *Northern Midlands Interim Planning Scheme 2013*:

- Full site plan to show dimensions of site area and distances from Midland Highway and Auburn Road.
- Part site plan to show dimensions of grain bags, distances between the bags, dimensions of shed and weighbridge, dimensions of storage site, distances from Midland Highway and Auburn Road.
- A description of how the grain storage facility will operate.
- Advice of proposed shed colour.

Therefore, in accordance with Section 54 of the *Land Use Planning and Approvals Act* 1993, the statutory period for processing the application will not recommence until the requested information has been supplied to the satisfaction of the Planning Authority. It is a requirement of the Planning Authority that all correspondence, if emailed, is sent to Planning@nmc.tas.gov.au and referenced with the planning application number P15-157. If you have any queries, please contact Council's Planning Section on 6397 7301, or e-mail Planning@nmc.tas.gov.au.

Yours sincerely

Jan Cunningham
PLANNING ADMINISTRATION OFFICER

Copy: C & L Booth, via email: charles.booth@sfg.com.au ✓
Note: Due to privacy laws, Council officers only hold discussions with applicants (eg when an applicant is acting as the owner's agent, all enquiries must be directed through the applicant).

C.

WOOLCOTT SURVEYS

EAST COAST SURVEYING

Our Ref: 2014-133

Your Reference: P15-157

5/06/2015

The Planning Department
Northern Midlands Council
P.O. Box 156
LONGFORD TAS 7301

To Whom It May Concern,

RESOURCE PROCESSING (GRAIN PROCESSING & DISTRIBUTION SITE) & TITLE CONSOLIDATION AT 'WILLIAMWOOD', 109 AUBURN ROAD,

In response to your letter dated 5th of June 2015 we offer an explanation of how the Grain Storage Facility will operate.

The development is for a grain processing, testing and storage facility involving erection of a shed "Eucalypt Green" in colour, weighbridge, new access and Hardstand area for storage of grain silo bags.

The shed will contain a grain bagging facility, grain drying area, laboratory testing facility and a small office and amenities area for 2 proposed office staff. In addition a 60 horse power tractor and grain auger will be stored in the shed when not in use. The weighbridge will handle in-coming and out-going vehicle weighs.

The grain will be grown on large agricultural properties in and around the Ross area a portion of which will come from the Williamwood property.

Onsite the grain will be tested in the Laboratory in a quite extension process. The grains are tested for their qualities and suitability for various uses. As an example Barley is tested and depending on its qualities may be used for use in beer or if of a lower quality simply used as animal feed. The grains are then segregated and packaged according to their qualities and end use. As mentioned this will include a ~~Bagging Plant inside the proposed shed. The grain will be tested again for its qualities~~ before being sent to the end user.

WOOLCOTT SURVEYS
Ph: (03) 6332 3760 F: (03) 6332 3764
10 Goodman Court, Invermay, TAS, 7248
PO Box 593, Mowbray Heights, TAS, 7248
Email: admin@woolcottsurveys.com.au

EAST COAST SURVEYING
Ph: (03) 6376 1972
Avery House Level 1
48 Cecilia Street, St Helens, TAS, 7216
PO Box 430, St Helens, TAS, 7216
Email: admin@ecosurv.com.au

ABN 15 892 360 064

WOOLCOTT SURVEYS

EAST COAST SURVEYING

The qualities of the grain that are tested include but are limited to:

- Germination qualities.
- Protein Levels.
- Gluten content.

Grain will also be dried inside the shed area should it arrive onsite with a moisture level too high. This is another test which will be performed on the grain prior to storage.

The grain will enter the site in the back of a truck where it will be weighed. Samples will be taken to determine moisture content. The grain will also be tested for quality and suitability for various uses. Depending on the outcome of the tests the grain will either go into the shed to dry or into large white silo bags to be stored in the open air onsite. If placed into bags, bags will be stored alongside other bags in rows in the open air until such time as orders require the grain to be taken to from the site. The grain could remain in bags for around 4-6 months. When ready to leave the site, the grain will then be re-tested, and if required, repacked into bags ready to leave the site. The bags or loose grain will leave the site in the back of a truck, weighed on the site, then delivered to the end user.

Bird and Wildlife Control

We enclose a separate document which describes XLD Grains Site Management Protocols. The site will be fenced so livestock from surrounding paddocks and wildlife do not interfere with the Silo bags or gain access to the site. It is not in XLD Grains interest to have wildlife or livestock entering the Grain Facility Site and interfering with the Grain Silo Bags and should this take place appropriate measures and actions will be taken in line with general Rural Agricultural Practices and state regulations.

Chemicals to be used Onsite

a) For weed control – Normal use of Roundup in doses that are recommended by the manufacturer in accordance with local regulations. This is accepted Agricultural Practice.
b) For grain weevil control- Normal use of Phosphine Tablets that are used in confined storages. Ie, in silo bags or the storage shed NOT in the open air. This also is accepted Agricultural Practise.

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ABN 15 808 350 064

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Dust and Noise

In the height of harvest season the maximum amount of vehicles attending the site each day will be 30. Considering the hours of operation in summer this will be slightly over two per hour.

A single 60 Horse Power tractor and grain auger during harvest will be used onsite. The Machinery will be stored inside the shed. Noise would be the equivalent to the normal Agricultural Activities which would occur onsite should the land be used for a no permit required Agricultural Use such as cropping.

A gravel hardstand is proposed and the use will not generate large amounts of dust, any more than a no permit required use such as cropping which takes place on the Neighbouring paddocks.

Please contact us if you have any queries.

Yours faithfully
Woolcott Surveys

Colin Smith
Director
Registered Land Surveyor

Enc

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ABN 15 808 350 064

XLD Grain Site Management Protocol

Updated January 2015

1 Background

XLD Grain operates a temporary (6 months of the year) grain storage facility at the Carrick grain site. XLD Grain receives grain from Tasmanian farmers during the harvest period and out-turns grain from the site thereafter.

This protocol aims to minimise damage to the silo bags at the XLD Grain Carrick Site, in order to protect the grain stored within them. Appropriate control of bird life and rodents in the area is also an important environmental and safety consideration.

Birds and rodents are capable of perforating the bags and obtaining grain for feed as a result and whilst not the main enemy of the feedmill or the farming community, they are the primary pest for grain storage.

2 Spillage

The nature of grain handling means that grain will spill to the ground from time-to-time during the normal operations of the business. When spillages occur, grain that can be cleanly shovelled and stored will be at the next available opportunity, grain that is contaminated with rock and not fit for resale will be shovelled and either; bagged in 40kg bags, transferred to skip waste on-site or buried. Any remaining surface grain will be covered by fine road gravel, keeping exposed grain on the site to a bare minimum.

3 Monitoring

In accordance with the site management protocols, weekly inspections of the site will be conducted. During these inspections all bags will be inspected for damage, including minor damage that may lead to the leakage of grain from the bag to the ground. Such damage will be immediately repaired and documented in the weekly inspection report. During weekly inspections, a bird and rodent count will also be conducted, documenting the number and types of species on site at that time. This will allow better assessment of behavioural habits and assist in ongoing control.

4 3rd Party Pest Control

XLD Grain will, from time-to-time, seek 3rd party assistance in the execution of the bird and rodent control protocols. This may include; Morris Pest Control (already under contract) and ornithologists.

XLDGRAIN 1-479

DATE:

XLD GRAIN SILO BAG WEEKLY INSPECTION FORM

☐ SITE SECURE

☐ NO EVIDENCE OF FLOODING

☐ FENCES IN TACT

☐ FIRE BREAK IN TACT

☐ WEEDS UNDER CONTROL

☐ IF NO, SPRAY APPLIED

☐ RODENT AND BIRDS UNDER CONTROL

☐ COMMENTS

☐ BIRD COUNT

SPECIES	COUNT

☐ BAGS INSPECTED

SILO BAG #	DAMAGE	PERFORATIONS	SEALS	MOISTURE INGRESS
1				
2				
3				
4				
5				
6				
7				
6				
7				
8				
9				
10				

X _____

NAME:

☐ *FORM EMAILED TO lachie@xldgrain.com.au*

D.

REFERRAL OF DEVELOPMENT APPLICATION P15-157
to Works & Infrastructure Department

Property no: 400200.01
Date: 05-Jun-2015
Applicant: Woolcott Surveys (obo XLD Grain)
Proposal: Resource processing (grain processing & distribution facility)
Location: 'Williamwood' (accessed from Auburn Road), 109 Auburn Road, ROSS

Please inspect the property and advise regarding stormwater/drainage, traffic/access, and any other engineering concerns.

Stormwater:

Is the property connected to Council's stormwater services?	*N/A*
If so, where is the current connection/s?	*N/A*
Can all lots access stormwater services?	*N/A*
If so, are any works required?	*No*
Stormwater works required:	
To the satisfaction of Council's plumbing inspector	
Is there kerb and gutter at the front of the property?	*No*
Are any kerb-and-gutter works required?	*No*

Road Access:

Does the property have access to a made road?	*Yes*
If so, is the existing access suitable?	*Yes*
Does the new lot/s have access to a made road?	*Yes*
If so, are any works required?	*No*
Is off-street parking available/provided?	*Yes*
Road / access works required:	
Works to be in accordance with Standard Drawing TSD-R05, a hotmix sealed access from the edge of the road to the property boundary	
Is a sealed internal driveway required?	*Planning issue*
Is a vehicular crossing application form required?	*Yes*
Extra information required regarding driveway approach and departure angles	*No*
Are any road works required:	*No*
Additional Comments:	An Engineer's design **is not** required.

Engineer's comment:
Council services for this subdivision can be addressed by standard conditions.

Works & Infrastructure Department conditions – access & stormwater

W.1 Stormwater
All stormwater run-off shall be contained within the site. The applicant shall provide detailed stormwater design plans for approval by Council's Plumbing inspector.

[redacted]

a) An indented truck access shall be constructed to the property in accordance with Council standard drawing TSD-R05.

b) The access shall be sealed for a minimum distance of 14m in accordance with Standard Drawing TSD-R05
c) Prior to the commencement of any access works, a vehicular crossing application form shall be completed and approved by Council prior to commencement of any works.

W.5 Works in road reserve

No works shall be undertaken within the public road reserve, including crossovers, driveways or kerb and guttering, without prior approval for the works by the Works & Infrastructure Manager. Twenty-four hours (24) notice shall to be given to the Works & Infrastructure Department to inspect works within road reserve and before placement of concrete or seal. Failure to do so may result in rejection of the vehicular access or other works and its reconstruction.

W.8 Pollutants

a) The developer/property owner shall be responsible for ensuring pollutants such as mud, silt or chemicals are not released from the site.
b) Prior to the commencement of the development works the developer/property owner must install all necessary silt fences and cut-off drains to prevent soil, gravel and other debris from escaping the site. No material or debris is to be transported onto the road reserve (including the naturestrip footpath and road pavement). Any material that is deposited on the road reserve shall be removed by the applicant. Should Council be required to clean or carry out works on any of their infrastructure as a result of pollutants being released from the site the cost of these works may be charged to the developer/property owner.

Jonathon Galbraith (Works & Infrastructure Officer)
Date: 10/6/15

1-482

E.

SOMERCOTES
EST. 1823

June 22 2015

The General Manager

Northern Midlands Council

PO Box 156

Longford Tas 7301

By email : planning@nmc.tas.gov.au

Dear Sir

RE: Development Application P15-157 Williamwood Resource processing

As an adjoining property owner I wish to lodge our objection to this proposed change of use as detailed in the above planning application.

Settled in 1823, Somercotes is a family owned and operated business, having been in the family continuously for 6 generations. The business historically was a mixed enterprise farm with cropping, wool and livestock. 2013 marked the 190th anniversary of the settling of Somercotes.

In 2000 the business diversified into stone fruit and established 5 hectares of cherries. This decision was based on extensive research and to capitalise on not just Tasmania's but the specific region's (Ross) growing conditions with respect to rain and nuisance factors. Cherries have been picked and sold at Somercotes since 2004. As a stand-alone orchard in a non-traditional growing area there is not a need to net the orchard because of the lack of rain in the growing season and the minimal bird pressure.

Subsequent to the orchard development was a significant expenditure on land preparation, overhead frost protection, construction of a new 55mL dam, the sinking of bores, vermin and deer proof fencing, full fertigation and irrigation and the erection of wind curtains.

P.O. Box 5
Ross, Tasmania 7209
phone: 61 3 6381 5231
facsimile: 61 3 6381 5356
email: somercotes@bigpond.com
www.somercotes.com

Somercotes Holdings Pty Ltd
abn 44 009 481 887

Tourism has also been an integral part of farm life for the last twenty years, with converted cottage accommodation, meeting rooms and conference options a draw card for the tourism and business markets, along with a farm shop selling fresh cherries and some value added products made with cherries from our orchard.

In early 2012 Somercotes recognised the need to take control of the value chain and remove the reliance on large scale packing sheds and manage directly our already established brand, and to take control of all the sales and distribution channels across the entire 3 month fruiting period.

As a result Somercotes established a processing and pack shed on the farm. This significant investment of over $300,000 has enabled the business to achieve the quality and guaranteed supply of its own fruit.

Somercotes had continued to invest in capital to expand the orchard with an additional 3400 trees planted in 2010. In 2013 as a result of the Tasmanian Economic Development Plan identifying horticulture as a priority sector Somercotes was recognised as a successful recipient of the resultant Vineyard and Orchard Expansion Programme to plant an additional 20,000 trees over 12 hectares. This programme will be fully completed by December 2015 at a cost of $400,000.

Somercotes has also invested capital in the Midlands Irrigation Scheme to secure water rights as a drought and risk mitigation policy of the business.

Over the last 15 years Somercotes had developed a solid and sound reputation from its diversification into cherries which has taken considerable capital outlay. We have fully audited Quality Assurance programmes in the orchard and the Pack shed and are export certified.

We currently pick and pack approximately 100 tonnes of cherries, employ over 50 casual seasonal staff which equates to 6 full time equivalent jobs in addition to the 2 permanent full time positions. This is expected to reach 300 tonnes when current plantings are in production. We currently supply fresh fruit to local, national and international markets including China, Hong Kong, Singapore, Thailand, Indonesia and Taiwan.

In the context of the proposed planning application, Council must assess the application against various performance tests of its planning scheme. As the application is for a discretionary, non-primary industry use in the Rural Resource Zone, it must be appraised against performance criteria P1.1 of Clause 26.3.1. The visual impact of the site which would be that it would contain 5 hectares of white plastic storage bags which would unequivocally have a detrimental effect to the rural landscape of the surrounding. It is considered that the proposal would therefore contravene the local area objective provided at Clause 26.1.2-b . Recognising the closeness of the facility to the village of Ross and the importance of the Heritage Highway as a tourist route, it is obvious that the proposal would have an unreasonably adverse visual impact upon non-primary industry uses in the area such as tourism.

The application must also be appraised against performance criteria provided at P4 b), in that it must demonstrate that primary industry uses will not be unreasonably confined or restrained from conducting normal operations. In the context of the proposal there is substantial documented evidence stating that grain facilities offer extreme bird pressure. (Refer to Annexure A : CSIRO Bird Management in grain storage facilities 2003). The fundamental problem with large scale grain storage facilities such as that proposed is the concentration of a huge quantity of produce in a single location. As a consequence both a range of pest species and large pest bird populations are likely to be attracted to site. This would be further compounded by regular spillage of grain, which with these factors combined, can lead to the establishment of a resident pest population. This can in turn have adverse impacts upon endemic bird species in the area through virtue of competition for resources, territory, etc.

Pest birds of concern to orchards of particular focus within our Integrated Pest Management plan include, but are not limited to, sparrows, starlings, and mynahs. The above mentioned report cites pigeons, starlings, mynahs and sparrows as dominant pest species in grain storage facilities.

The storage of grains in the proposed low cost, short term, white coloured bags also means the bags can be easily attacked by vermin and pest birds. Annexure B: Grain Research and Development Corporation (GRDC) publication titled Grain Storage Facilities lists in Table 1 that the disadvantage of bags are that they are "_prone to attack by mice, birds, foxes etc_".

Annexure C is a GRDC publication that refers to areas in Queensland where bags have stopped being used as birds quickly learn to puncture the bags to gain access to the grain. The article further states that silo bags have a short term (less than three months) effectiveness.

The proposed development application is completely devoid of any detail relating to the high risk, short term usage of bags and does not cite any issues consistent with what appears to be a common problem within this industry of bird pests in grain storage.

Further to this point I would also refer council to Annexure D: Northern Midlands Council Planning application P12-199 from 2012. This planning application is from XLD Grain (from their previous business site). This application does make reference to a bird control programme however it notes extensive concerns and evidence from the Launceston Airport about XLD Grains capacity to follow protocols and the lack of durability of the storage system and resulting implications that bird management has in air traffic control and the resulting relocation of the applicants business.

This proposed resource processing site at Williamwood is not free from conflict with the orchard at Somercotes and on historical evidence of previous trading of the applicant there is no doubt the proposed resource processing facility would add to increased bird pest population and result in adverse environmental and economic impacts.

Somercotes currently spends annually an estimated $5000 on activities in our buildings and orchard to minimise or eliminate pest bird activity in line with our current bird pressure. Any increased activity will lead to these costs rising significantly in a bid to contain the extreme bird pressure that is highly likely to be attracted to such a storage facility and only located 2 kms from our orchard. (Refer to Annexure E: Locale Map)

Furthermore any increased bird pressure would need to be mitigated through netting. Adequate netting for such purpose typically costs an estimated $100,000 per hectare. Costs to net the current productive orchard area would amount to approximately $800,000 and would jeopardise the viability of the planned expansion of the additional 12 hectares of orchard, which could result in a further $1.2m having to be spent to bird proof the entire orchard proposed to be 20 hectares in total area.

Our normal operations are such that we do not require netting and the financial impost would unreasonably confine our business if we were required to net for birds and would further restrain any further expansion. With such an impact how can the application possibly demonstrate compliance with performance criteria P4(b)?

The application must also be appraised the performance criteria provided at P5, in that it must demonstrate that the visual appearance of the use is consistent with the local area having regard to various criterion including (i) visibility from public roads, (ii) visual impacts of storage of materials or equipment , and (iii) the desired future character statements of the Rural Resource Zone. The proposed plan shows 58 storage bags on a five hectare site that are each 3m wide, 75m long and 1.8m high, all set back 226 metres from the Midland Highway. The storage bags are white, will be highly visible from the public roads and the visual impact would surely be considered significant given it is on 5 hectares and also inconsistent with the character on the local area. The visual impact of the proposed change of use will clearly not integrate with the surrounding rural landscape and is at odds with the desired future character statement as found in clause 26.1.3 of the planning scheme which states *"visual impacts are to be minimised such that the effect is not obtrusive".*

The long term sustainability of the existing primary industry operations of the orchard at Somercotes will be severely compromised if the development of the proposed grain storage facility proposed at Williamwood is approved, particularly in consideration of the abovementioned matters.

Consideration must be given to the current land use within the local context and local area objectives that have been developed by the council to protect this resource. It is considered that the development fails to demonstrate compliance with performance criteria in the use standards of the Rural Resource Zone, and should therefore be refused by the Council.

Yours Sincerely

Julie Bingley.

Julie Bingley

Somercotes
PO Box 5
Ross TAS 7209

23/6/15.

ANNEXURE A

From: E.J. Wright, M.C. Webb and E. Highley, ed., Stored grain in Australia 2003.
Proceedings of the Australian Postharvest Technical Conference, Canberra,
25–27 June 2003. CSIRO Stored Grain Research Laboratory, Canberra.

Bird management in grain storage facilities

Peter McCarthy
Globe Australia Pty Ltd, 87 Allingham Street, Condell Park, NSW 2200

Abstract. Throughout history, grain storers have struggled with the impact of unwanted organisms on grain, storage facilities and finished food products. Bird pests — native and exotic — are one such group of organisms. Pest birds can affect grain and food and grain facilities and processing in several ways. These include physical damage, grain contamination, occupational health and safety risks such as spread of disease, respiratory problems and other illnesses, and finally damage to buildings, machinery and vehicles.

There are a number of simple concepts that must be recognised in order to manage bird populations. These relate to the behavioural characteristics of individual and flocking pest birds. 'Bird pressure' is a methodology by which the behaviour and commitment of birds to a site can be understood. The level of pressure on a site is classified and appropriate mitigation techniques are applied. Techniques that can be used to manage populations include physical exclusion devices and deterrents to minimise or eliminate bird–grain interaction.

Introduction

Increasingly, exotic and native pest birds are inflicting high levels of pressure on the supply chain of the grain industry. The increasing demands for, and implementation of, food safety requirements under the guidelines of hazard analysis and critical control points (HACCP) and other auditing programs will see the need for increased awareness and management programs to control pest bird populations throughout Australia. Pest bird species also have a significant impact on the occupational health and safety (OH&S) of staff and visitors at sites where they are present. Instances where disease and illnesses have been transmitted directly or indirectly to humans are well documented.

Bird species that affect grain-storage facilities are predominately the same pest species that have been found to cause problems in domestic and commercial structures in urban areas. The dominant bird pest species include pigeons, starlings, mynahs and sparrows. There are, however, significant differences between rural and urban situations. One major variation is the nature of the physical structures involved, and it is these that determine the most appropriate mitigation methods. In the urban setting, bird control is focused around domestic homes, retail centres, major buildings, factories and food processing and manufacturing facilities. In the grain storage area, structures requiring attention include manufacturing facilities, silos, trucks, machinery and open fields. An additional problem with grain facilities is the huge quantity of produce in a single location and the great variety of food stored there. In consequence, both a range of species and large pest bird populations are likely to be attracted to a site, resulting in huge problems.

As well as pigeons, starlings, mynahs and sparrows, native cockatoo species present one of the greatest challenges to stored grain protection. In the natural environment, cockatoos spend much of their time foraging. In grain areas, however, cockatoos are able to consume their daily requirement of food very quickly. Consequently, not only do they eat and spoil the grain, but also they have free time during which to inflict physical damage to structures with their strong hooked beak and generally engage in nuisance behaviour.

The differences in structures, species and problems that are encountered between and within rural and urban areas mean that there is a great need for a structured methodology to deal with the problem of pest bird control. Without such a methodology, there is a risk that mistakes and flawed approaches will be repeated, that valuable commodities will be lost, and that adequate control of potential disease will not occur.

Bird pressure methodology

'Bird pressure' is an extensively applied and proven methodology for controlling pest birds in an urban setting. In most cases, the approach has been successful in both problem identification and the presentation of mitigation options. The basis of bird pressure relies firstly on the observation of bird behaviour. The best approach to mitigating pest bird problems that is then determined is based heavily upon the level of commitment that the individual, small group or flock has to the site. The level of commit-

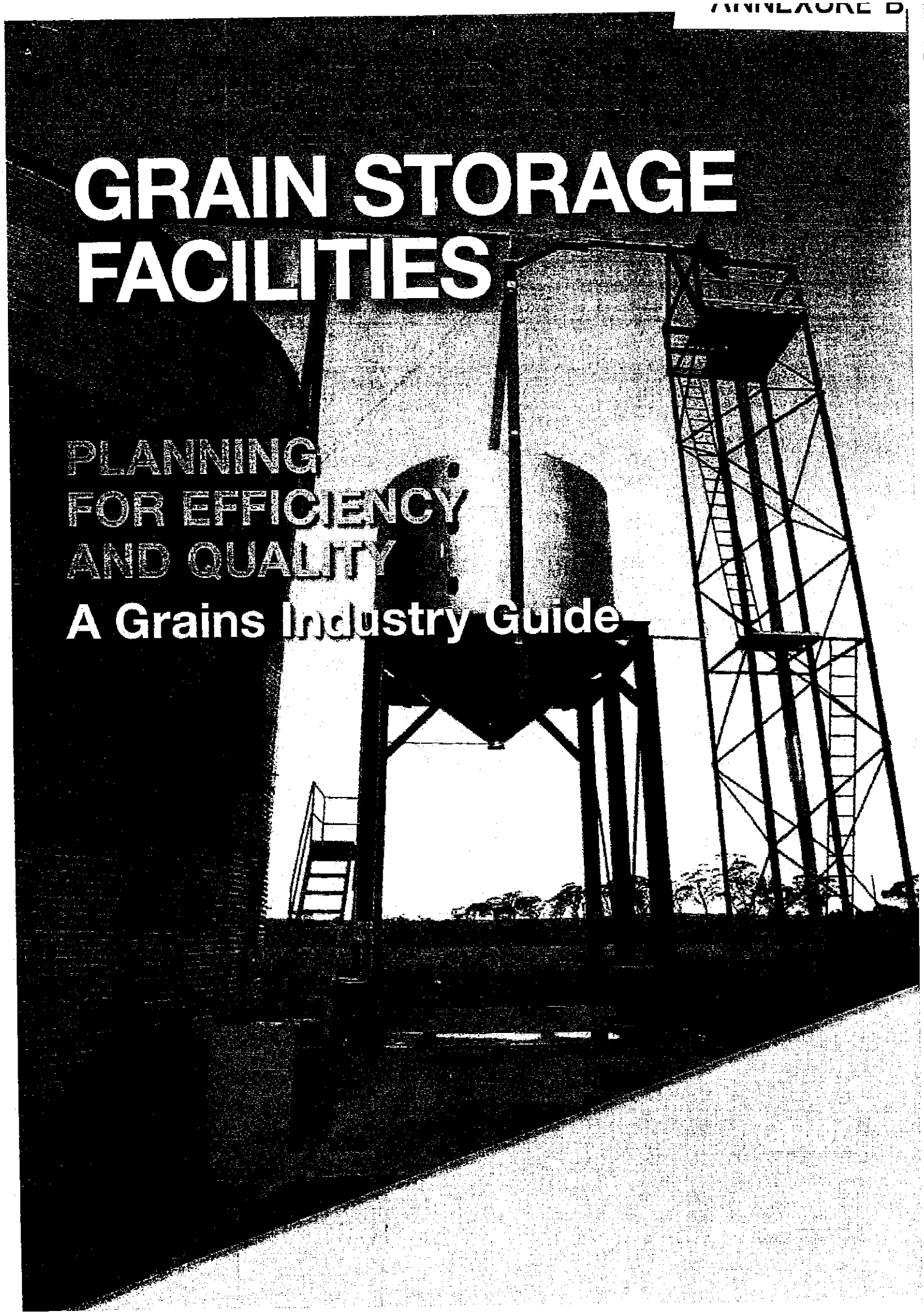
ment to a site is very important, because it is largely this factor that will determine the birds' ability and desire to reclaim their former territory once a management system has been put in place. Bird pressure is a classification of the site and, in most cases, a grain storage facility offers extreme bird pressure. Classic situations of extreme bird pressure in grain-storage facilities include:

- buildings that offer overnight shelter
- buildings that offer relatively easy access to birds during some or all of the day and night
- beam type structures with platforms, struts and channels on which birds can nest and roost
- abundant food and water sources that are difficult to eliminate, clean or control
- machinery and other structures that offer warmth during cold evenings
- building roof tops and silos where birds can congregate to gain warmth from the sun in early morning and late afternoon, when emerging or heading to roosting sites, respectively
- elevated and protected areas to congregate waiting for food opportunities to occur.

When a facility offers a population of birds all the basic needs required, such as food, water and shelter, the flock size can grow rapidly. If left unchecked in a suitable climate, a pair of birds of a highly fecund species such as sparrows can give rise to a population of 2000 within 12–18 months.

Once the bird pressure has been determined, there is a host of control methods that can be applied. These include one or other, or combinations of, exclusion, physical deterrents, and acoustic, ultrasonic and scare devices. Other approaches include population reduction methods such as trapping, shooting, poisoning (avicides), irritants and taste deterrents. No single method is able to offer a suitable result. When used in combination, however, a series of methods may form a highly successful management program. Such a program is likely to incorporate requirements for facility operators to increase housekeeping regimes, make alterations so that there is reduced bird access to food, make regular observation of bird population size and behaviour, and remain constantly vigilant.

Additional information on pest bird mitigation devices can be found at <www.globeaustralia.com.au>.

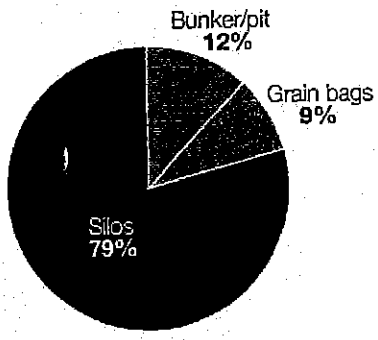


GRAIN STORAGE FACILITIES

PLANNING FOR EFFICIENCY AND QUALITY

A Grains Industry Guide

On-farm grain storage by type



SOURCE: KONDININ GROUP NAS 2011

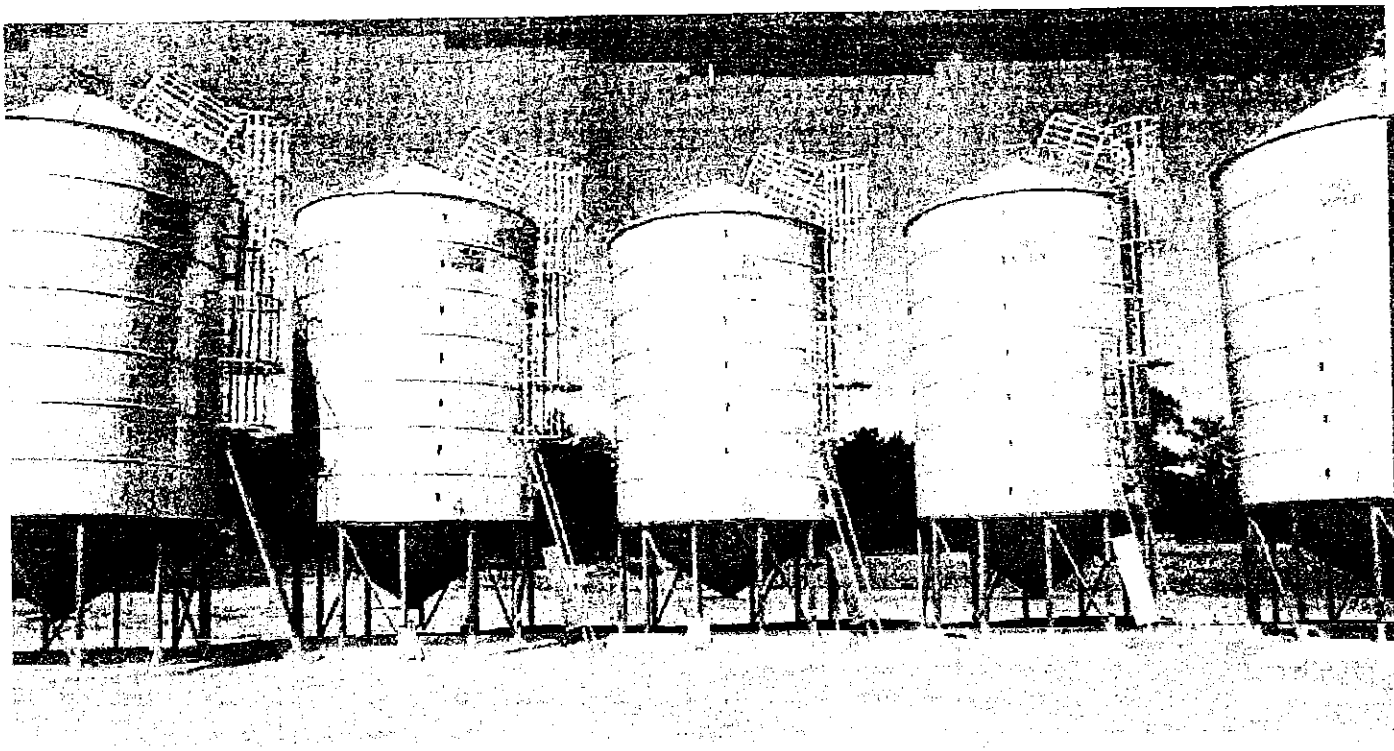
Typical grain bulk densities per cubic metre

GRAIN	BULK DENSITY (T/M³)*
Wheat	0.80
Canola	0.67
Barley	0.68
Triticale	0.62
Sorghum	0.73
Maize	0.72
Lupins	0.80
Mung beans	0.75
Sunflower seed	0.42
Cotton seed	0.40

* NOTE: Vary according to moisture content and variety.

SOURCE: KONDININ GROUP

See pages 2 and 4 for more information.



GRAIN STORAGE FACILITIES: A Grains Industry Guide

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GRDC
Grains Research & Development Corporation
Stored Grain Project

OVERVIEW AND INTRODUCTION

Grain storage systems come in a range of shapes and sizes to meet farm requirements and careful planning is needed to optimise an on-farm grain storage facility investment.

According to the option selected, on-farm grain storage systems can provide a short-term or long-term storage facility. Depending on the goal of on-farm storage, whether it be access to improved markets or simply to maximise harvest efficiency, there are a number of options available.

Harvest is the ideal time to plan future grain storage system requirements, as it can help identify issues and opportunities for future harvest operations that may otherwise be forgotten once next year's crop cycle gets underway.

STORAGE OPTIONS APLENTY

Costs and storage flexibility can vary between grain storage options as can longevity of the investment. Table 1 identifies the major on-farm grain storage options, their advantages and disadvantages.

Silos are the most common method of storing grain in Australia, constituting 79% of all on-farm grain storage facilities nationally (see Figure 1).

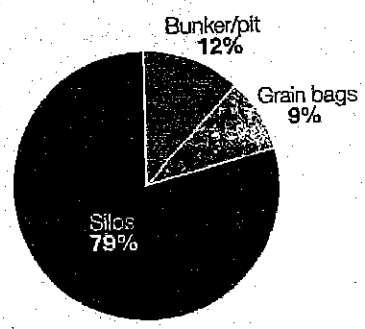
Silos come in a variety of configurations, including flat-bottom or cone base, and both are available as gas-tight sealable or non-sealed, aerated and non-aerated.

The balance of on-farm grain storage facilities can be split between grain storage bags (9 per cent) and bunkers or sheds (12 per cent).

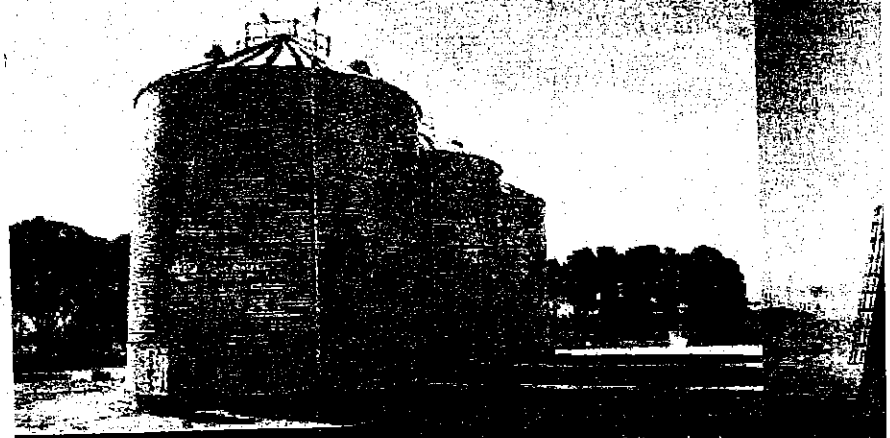
Grain-storage bags are increasing in popularity as a short-term storage solution to assist harvest logistics. With careful management growers can also use silo bags to provide short-term marketing opportunities.

For similar storage time-frames to grain storage bags, and where options are limited, growers can also use sheds to temporarily store grain during harvest — provided they have been well prepared.

FIGURE 1 ON-FARM GRAIN STORAGE



SOURCE: KONDININ GROUP NAS 2011

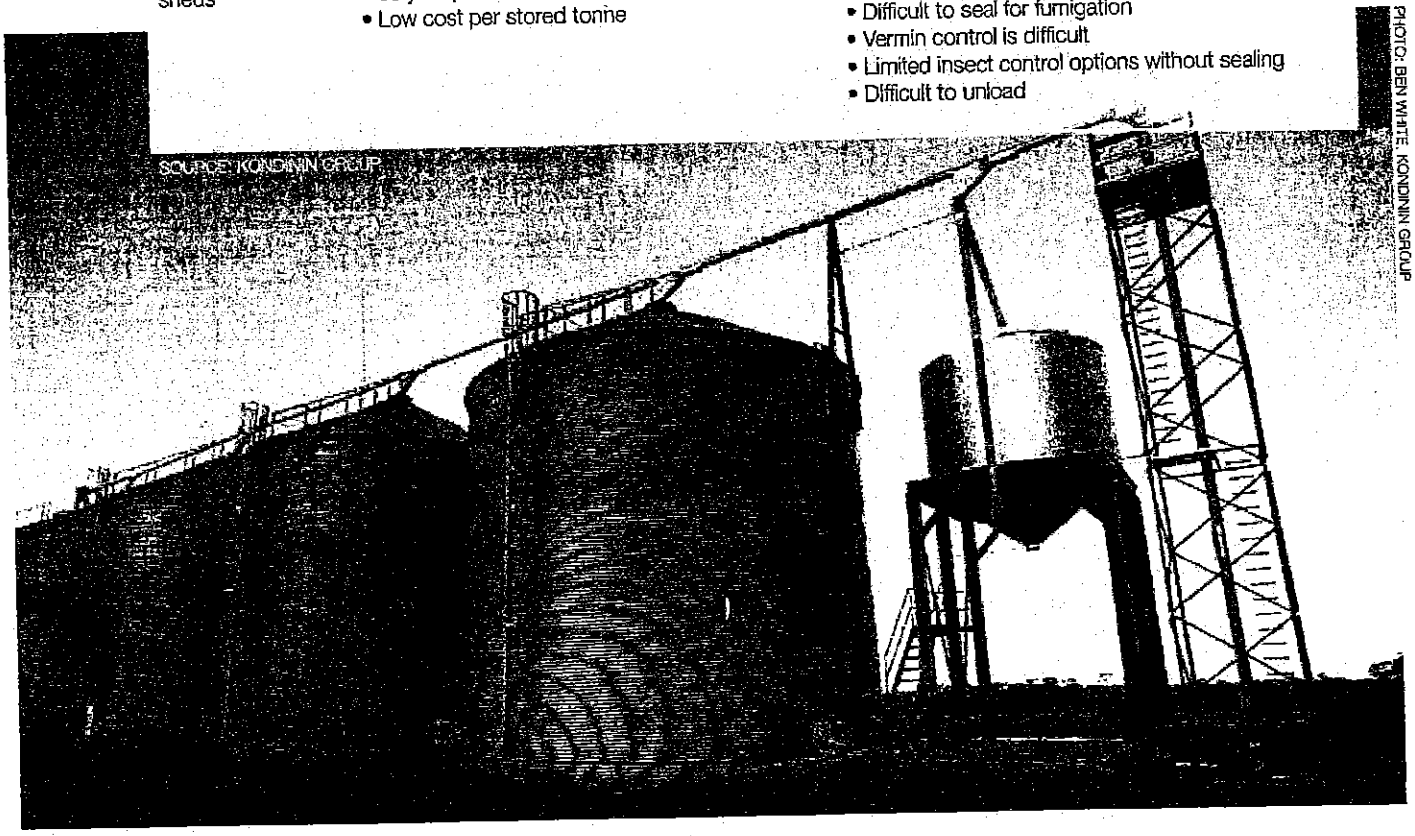


PHOTOS: BEN WHITE, KONDININ GROUP

Short-term solution: *Grain bags (top) are increasingly providing short-term on-farm grain storage solutions, but flat-bottom and cone-base silos (centre) are still the most common on-farm grain storage option.*

TABLE 1 ADVANTAGES AND DISADVANTAGES OF GRAIN STORAGE OPTIONS

STORAGE TYPE	ADVANTAGES	DISADVANTAGES
Gas-tight sealable silo	• Gas-tight sealable status allows phosphine and controlled atmosphere options to control insects • Easily aerated with fans • Fabricated on-site or off-site and transported • Capacity from 15 tonnes up to 3000 tonnes • Up to 25 year plus service life • Simple in-loading and out-loading • Easily administered hygiene (cone base particularly) • Can be used multiple times in-season	• Requires foundation to be constructed • Relatively high initial investment required • Seals must be regularly maintained • Access requires safety equipment and infrastructure • Requires an annual test to check gas-tight sealingw
Non-sealed silo	• Easily aerated with fans • 7–10% cheaper than sealed silos • Capacity from 15 tonnes up to 3000 tonnes • Up to 25 year plus service life • Can be used multiple times in-season	• Requires foundation to be constructed • Silo cannot be used for fumigation — see phosphine label • Insect control options limited to protectants in eastern states and dryacide in WA. • Access requires safety equipment and infrastructure
Grain storage bags	• Low initial cost • Can be laid on a prepared pad in the paddock • Provide harvest logistics support • Can provide segregation options • Are all ground operated • Can accommodate high-yielding seasons	• Requires purchase or lease of loader and unloader • Increased risk of damage beyond short-term storage (typically three months) • Limited insect control options, fumigation only possible under specific protocols • Requires regular inspection and maintenance which needs to be budgeted for • Aeration of grain in bags currently limited to research trials only • Must be fenced off • Prone to attack by mice, birds, foxes etc • Limited wet weather access if stored in paddock • Need to dispose of bag after use • Single-use only
Grain storage sheds	• Can be used for dual purposes • 30 year plus service life • Low cost per stored tonne	• Aeration systems require specific design • Risk of contamination from dual purpose use • Difficult to seal for fumigation • Vermin control is difficult • Limited insect control options without sealing • Difficult to unload



SOURCE: KONDININ GROUP

PHOTO: BEN WHITE, KONDININ GROUP

BENEFITS AND PITFALLS OF VARIOUS STORAGE TYPES

Silos

Silos: fumigation options

A gas-tight sealable silo will ensure phosphine, or other fumigants and controlled atmospheres, are maintained at a sufficient concentration to kill insects through their complete life cycle of eggs, larvae, pupae and adult.

Be aware of cunning marketing terminology such as 'fumigatable silos'. Although such a silo might be capable of sealing with modifications, a gas-tight sealable silo needs to be tested onsite to meet Australian Standard (AS 2628-2010) after installation.

Gas-tight sealable silos also can be used for alternative methods of insect control including controlled atmospheres of inert gasses, such as carbon dioxide or nitrogen.

Current costs of using these gases (between $5 and $12/tonne to treat stored grain compared with $0.30 per tonne using phosphine) carbon dioxide and nitrogen atmospheres will arguably be used solely by niche growers, such as organic growers, until gas is less expensive.

There is significant work being carried out in lower-cost nitrogen gas generation and if buying a silo, ensure it is gas-tight for future proofing of the investment.

Silos: sizes and construction

Silos can be transported fully constructed and ready to stand, or can be built onsite. While intra-state variations apply, transportable silos are typically limited to 140 tonnes capacity due to road transport regulation limitations. Most smaller, 50–70t, cone-bottom silos are prefabricated and transported.

Cone-bottom silos are easier to clean than flat-bottom silos due to their self-emptying design, but are limited to capacities less than 300t. Some growers require gas-tight storage facilities of greater capacity and increasing silo capacity requires quality materials and design.

Silos can be built onsite and are available in sizes up to 3000t. The increased surface area of a larger silo requires more sheet metal joins, providing more opportunity for gas to escape.

The only way to ensure larger silos are gas-tight is to buy a reputable brand, designed and constructed to be gas-tight under Australian conditions

Typically, increased construction quality comes at a higher price, but the longevity of the structure should pay for itself over time and provide the assurance of total insect control allowing growers access to any market.

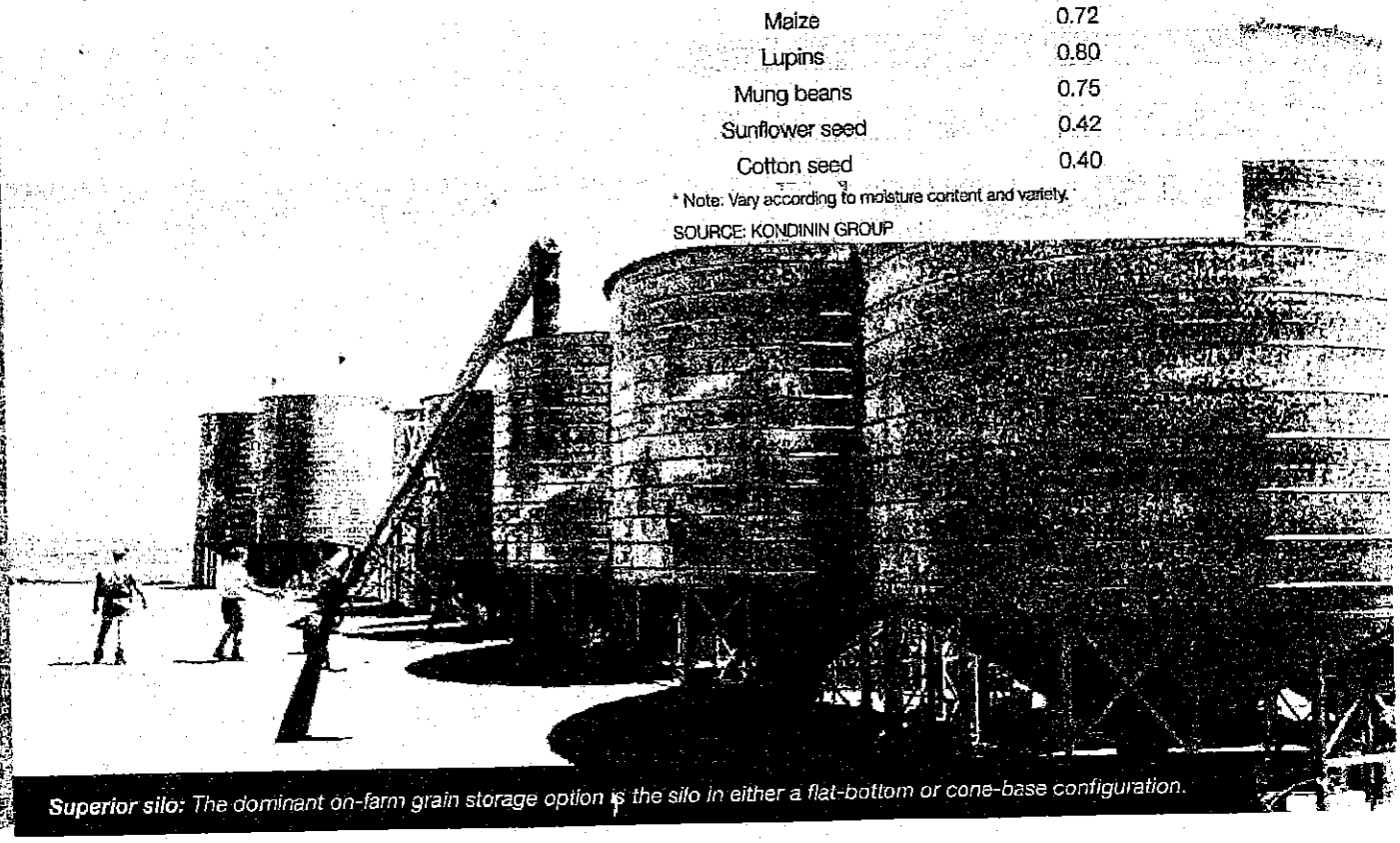
Capacity is commonly quoted in tonnes, in most cases referring to wheat. But capacity can also be quoted as cubic metres (m^3). To determine tonnage capacity, multiply the cubic capacity by the volumetric density of the grain (see Table 2 for typical grain bulk densities).

TABLE 2 TYPICAL GRAIN BULK DENSITIES PER CUBIC METRE

GRAIN	BULK DENSITY (T/M³)
Wheat	0.80
Canola	0.67
Barley	0.68
Triticale	0.62
Sorghum	0.73
Maize	0.72
Lupins	0.80
Mung beans	0.75
Sunflower seed	0.42
Cotton seed	0.40

* Note: Vary according to moisture content and variety.

SOURCE: KONDININ GROUP



Superior silo: *The dominant on-farm grain storage option is the silo in either a flat-bottom or cone-base configuration.*

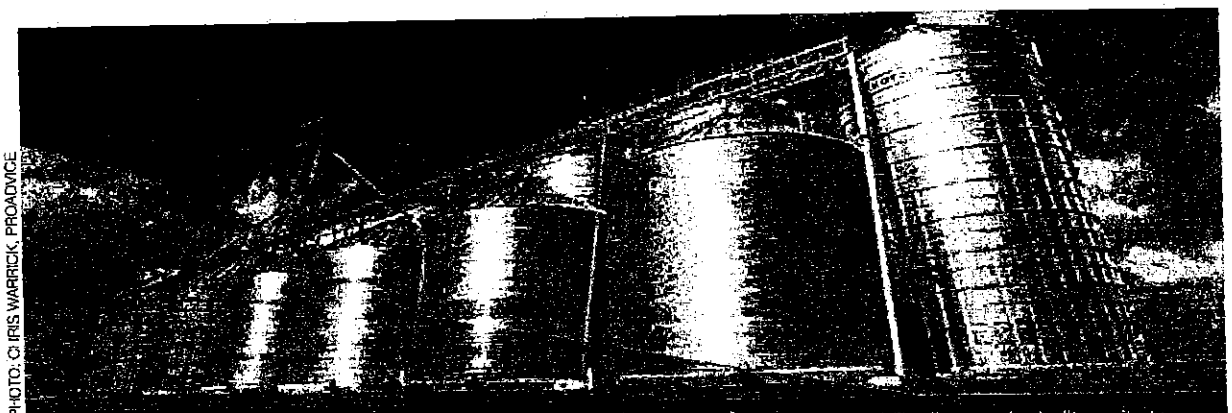
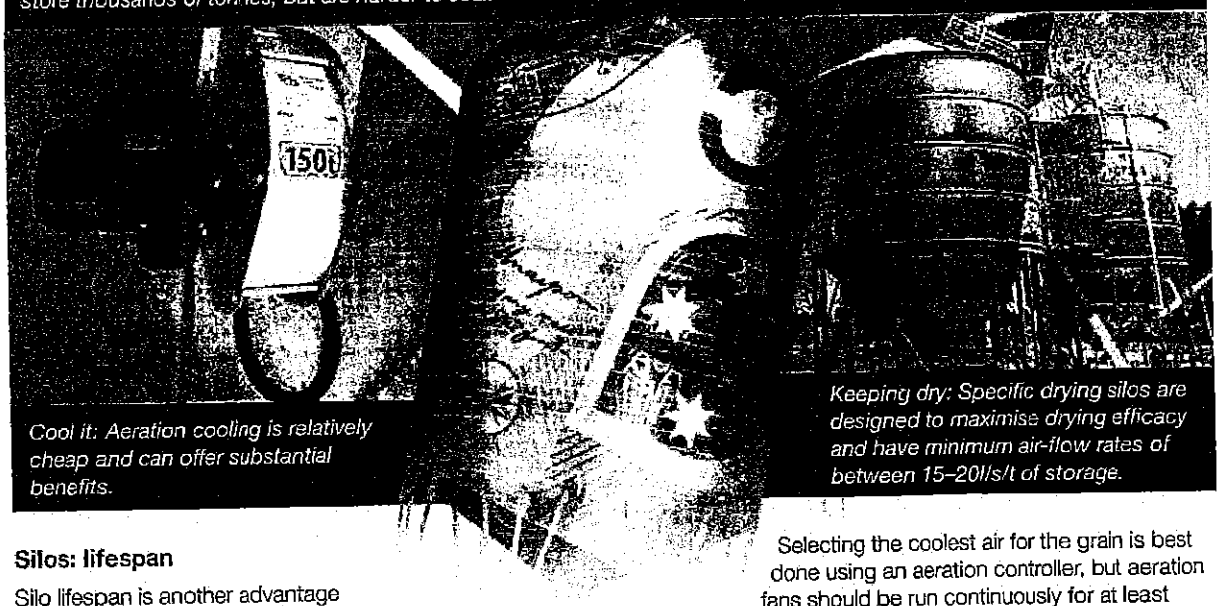


PHOTO: © IRIS WARRICK, PROADVICE

Built to capacity: *Transportable prefabricated silos are available up to 140t capacity, while silos can be built onsite to store thousands of tonnes, but are harder to seal.*



Cool it: Aeration cooling is relatively cheap and can offer substantial benefits.

Keeping dry: Specific drying silos are designed to maximise drying efficacy and have minimum air-flow rates of between 15–20l/s/t of storage.

Silos: lifespan

Silo lifespan is another advantage delivered through investment in gas-tight sealable silo storage infrastructure.

A well-built, aerated, quality gas-tight sealable silo constructed to meet the Australian standard (AS 2628-2010) with a thorough maintenance regime could be expected to provide around 25 years of serviceable life before major repairs may be required.

Silos: aeration

While some preliminary research has been carried out using other grain-storage methods, silos permit simple administration of aeration after harvest to cool grain.

Aeration cooling of grain in-storage creates uniform moisture conditions and slows or stops insect pest life cycles.

Depending on the temperature reductions achieved; this can deliver significantly-reduced insect numbers.

For older, unsealed silos, consider retro-fitting aeration as the first option.

Aeration cooling requires airflows of at least 2-3 litres of air, per second, per tonne. For example, a 100t silo will require 200-300 litres per second (l/s) of air to cool the grain effectively.

Aeration fans also require well-designed perforated ducts or a plenum to assist in dispersing airflow evenly throughout the silo.

Selecting the coolest air for the grain is best done using an aeration controller, but aeration fans should be run continuously for at least three days for smaller silos (less than 100t) and up to a week for large silos (over 100t) as soon as grain covers the aeration ducting. This initial process removes the harvest heat and equalises grain moisture.

After initial harvest heat has been removed, the controller can be switched on to continue the cooling process.

Silos: aeration drying

Specific drying silos are designed to maximise drying efficacy and have minimum air-flow rates of between 15–20 litres per second per tonne (l/s/t) of storage.

Specially-designed drying silos often have a truncated, or secondary, base cone to assist in the efficiency and efficacy of drying stored grain.

Drying with ambient air requires a relative humidity well below that of the equilibrium relative humidity of the grain. Drying silos often allow the addition of heat at the air intake to improve the moisture removal capacity of the air flowing through the grain.

Silos: capital investment

As a permanent infrastructure fixture on a farm, silos are initially one of the most expensive options of grain storage at around $100 to $140/tonne for transportable sealed silos. To this can be added foundation requirements, which can vary between $2500 for a 70t transportable silo to considerably more for a flat-bottom silo with aeration ducting incorporated into the floor.

PHOTOS: BEN WHITE, KONDININ GROUP

Larger silos built onsite typically have an outlay cost of about $80 per tonne of stored grain. But looking at this investment over the life of the storage can see this figure drop significantly to being one of the cheapest forms of on-farm grain storage.

Silos: safety

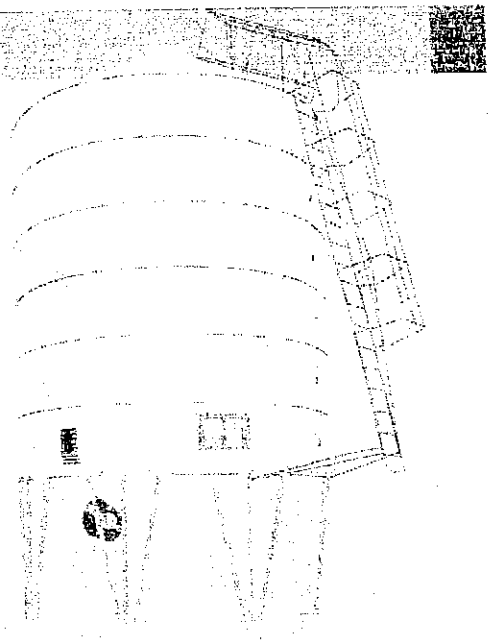
Working at heights can be dangerous without the appropriate safety precautions. In the case of silos, this can mean working up to 16m off the ground.

A climb to the top is required for regular inspection through the top hatch if grain is stored for more than a month.

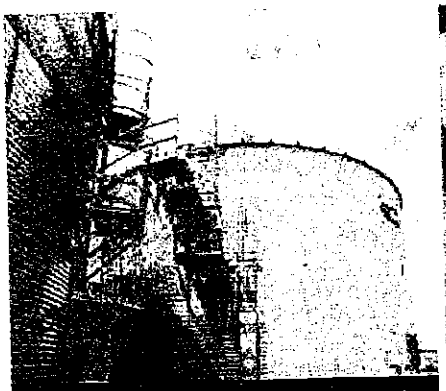
Silo designs now incorporate ground-operated lids, caged ladders, platforms and top rails to minimise the risk of operators falling.

Facilities for harness attachments, which should be worn by all operators climbing silos, are also fitted.

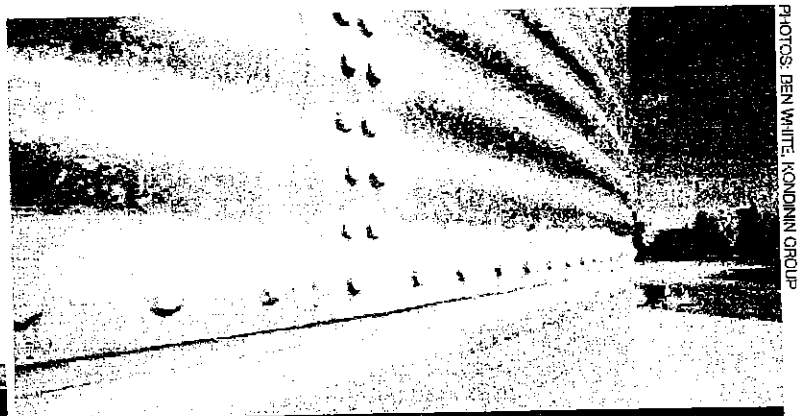
SILO BUYER'S CHECKLIST



- ✓ Aerated, gas-tight sealable silos should always be the preferred option.
- ✓ Ask the manufacturer to provide a guaranteed pressure test in accordance with AS2628-2010 on-site after construction or delivery. Pressure testing a storage when full of grain is also important.
- ✓ Ensure a pressure relief valve capable of handling the maximum air-flow in and out of the silo due to ambient temperature variations is fitted.
- ✓ A silo aeration fan can be used with care to pressurise a sealable silo to carry out the annual pressure test for leaks. A tyre valve or a larger fitting may also be installed to determine the volume of air required for the test.
- ✓ Seal mechanisms on inlets and outlets should be simple to operate and provide even seal pressure.
- ✓ Seal rubbers should be quality high-density EPDM (ethylene-propylene-diene-monomer) rubber, maintain a strong memory and be UV resistant.
- ✓ Look for ground-operated lids that provide an even seal on the silo inlet. High-quality ground-opening lids will provide a gas-tight seal, but some will still require a climb to the top of the silo to lock down the lid for fumigation.
- ✓ Aeration cooling fans are a must-have accessory for a new silo and provide significant benefits for stored grain. Buy these with the silo or as an aftermarket accessory and specify airflow rates of at least 2–3l/s for every tonne of grain storage capacity of the silo.
- ✓ Aeration drying silos are an option, but are typically shaped to maximise drying efficiency. Drying fans need to deliver between 15 and 20l/s for every tonne of grain storage capacity of the silo and additional sealable venting in the roof should be fitted.
- ✓ Outlet access for unloading should be simple to operate and permit ample auger access.
- ✓ Look for a sturdy base and frame on elevated cone base silos with quality weldments. Galvanised tubing has a heavier coating than galvanised rolled hollow section (RHS) but is more difficult to shape and weld joins.
- ✓ Ensure wall sections incorporate a positive seal between sheets and sealed riveting where rivets are exposed.
- ✓ Always consider access and safety features, including roof rails, ladder lockouts, platforms and ladder cages. It can be argued that a ladder should always be fitted, as inspection of the grain in the top of the silo should be carried out regularly.
- ✓ A quality outside finish will provide a superior life. White paint reduces heating of grain in storage. It comes at a cost premium but is superior to zincalume finishes over time.
- ✓ A chalk-board patch painted on the silo base can be useful for recording grain and treatment details, including variety, protein and moisture content, fill date and fumigation details.
- ✓ Check silo design inside and outside for ease of cleaning. Check walls and aeration ducting including the floor for grain trap points.
- ✓ Consider grain segregation requirements when determining silo size. Smaller silos allow better segregation.
- ✓ Ensure adequate venting is fitted to the roof of silos with aeration fans to permit adequate air-flow without restriction. These vents should be easy to clean. Check seals and lock down if it is a sealable silo.



Safety first: *Caged and platformed access ladders improve safety when climbing the silo to inspect stored grain.*



PHOTOS: BEN WHITE, KONDININ GROUP

Sealing afterthought: *Retro-sealing silos is often less than the cost of a new silo but ongoing maintenance costs also need to be considered.*

Silos: retro-sealing

To meet the requirements of fumigation and utilising existing silo infrastructure, some growers have invested in retro-sealing older silos.

In most instances these silos are high capacity (> 500t), flat-bottomed silos.

Retro-sealing specialists use an array of rubber, specialised rubberised cements and silicon compounds to seal sheet joins, bolts, rivets, lids and openings on older silos.

These are typically sprayed on with an air-operated gun with coarse flows to handle the heavy product viscosity.

The interface between the pad and the bottom sheet of the silo and the top sheet meeting the roof should be given special attention as they are commonly points of limited seal integrity.

Customised sealing plates can also be fabricated for doors, vents and openings. Oil-filled pressure-relief valves will also be fitted.

The cost of retro-sealing an older style silo can be significant, often totalling as much as 50 per cent of the cost of a new sealed unit. Ensure the retro-seal contractor includes a guarantee that when completed the silo will meet the Australian Standard for sealed silos AS2628.

After sealing, consider ongoing maintenance costs. Check coating integrity annualy and patch as required to maintain an effective seal. Particular vigilance is needed around the storage base, and where the walls meet the lid, as expansion and contraction of the metal can damage the retro-seal finish.

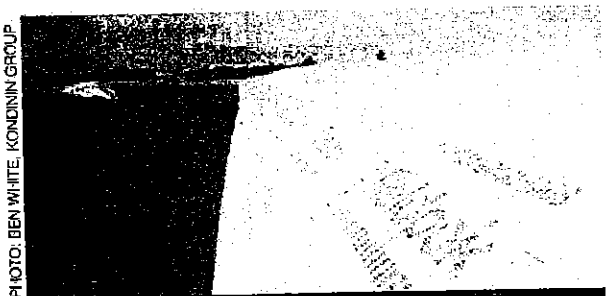


PHOTO: BEN WHITE, KONDININ GROUP

Be prepared: *Grain storage bags can provide a useful tool to improve harvest logistics but must be placed on a carefully prepared pad and be fenced off from livestock and wildlife.*

Grain-storage bags

As a relatively new on-farm grain storage option, silo bags have been widely used in Australia since the early 2000s, although they have been used overseas for much longer. As with most things new, numerous disasters, mostly due to operator error and lack of inspection vigilance, have earned grain bags a bad name.

They can provide useful short-term storage (less than three months) and a logistics management tool during harvest. They must be installed on a well-prepared site away from bird habitats, including trees and water sources.

Grain-storage bags: capacity

Typical storage capacity is around 240 tonnes, but other sizes including 200t and 150t bags are also available.

Take care when buying bags. Quality of bag materials varies and using bags for grain storage that have been designed for silage storage is not recommended.

Grain-storage bags: using them successfully

Successful use of grain bags as an on-farm grain storage option requires a carefully-prepared pad.

Anecdotally, an elevated, well-drained pad provides optimal results where no stubble (which can harbour vermin) or rocks can tear the grain storage bags as they are being filled and unloaded.

Fill rates are typically 3–4 tonnes per minute. Always fill bags up-the-slope and ensure brake settings on the filler are set to ensure the appropriate stretch of the bag is achieved.

While typically a 10 per cent stretch, this can be adjusted down for hot weather conditions or up for cool ambient weather.

When full, regularly and vigilantly check the bags for cuts, nicks and holes and patch these with silicon or bag sticky tape available from the bag supplier.

Grain-storage bags: costs

The two pieces of equipment required for loading and unloading grain storage bags can cost around $27,000 each. This equipment can be hired, although having your own can reduce the pressure of having to get grain in and out of the bags within a specified timeframe as demand for this hire equipment is high at the peak of harvest.

The bags themselves are single-use and cost around $5 per tonne stored, or $1C00 plus for a 240t bag.

Consider site-preparation, including any earthworks and fencing requirements, time and labour costs for maintenance when calculating the comparative costs of using grain bags.

Grain-storage bags: useable lifespan

Grain-storage bags are best used for short-term storage only. While longer-term storages are possible, three months is regarded as a maximum storage period. Beyond this, there is considerable risk of grain losses and spoilage in many of Australia's grain production regions.

Grain-storage bags: pest and insect control

Fumigation with phosphine in bags has been recently proven in Australia as an option if the correct method of application and venting is followed.

Alternatively, fumigation of grain-storage bags can also be performed using gases like ProFume. But this is only available for use by licensed fumigators and the cost is generally considerably higher than phosphine.

In addition to insects, vermin including mice and birds can attack grain bags.

Outside baiting, reducing habitat provision and food sources (including regular checking and patching of bags where required) is the best way to reduce vermin risk.

Grain storage bags: access

One often-overlooked aspect of using grain-storage bags in the paddock is their accessibility after harvest.

Unless the bags are placed on, or near, an all-weather access road, they can be difficult to unload if wet weather conditions prevail post-harvest.

The pad site needs to be large enough for trucks and machinery for bag unloading and allow access in wet conditions.

Sheds and bunkers

Bunkers are commonly used by bulk handling companies, but require careful site preparation, labour for handling large tarp covers and machinery to move grain on and off the grain stack.

Effective treatment of insect infestation is difficult in sheds and bunkers. For on-farm storage, grain bags may be a more suitable short-term alternative.

Sheds can provide dual-purpose functionality for storage of other products including fertiliser and machinery. But the risk of grain contamination requires a focus on impeccable hygiene practices.

As a permanent infrastructure investment, sheds can be continually used and have a retained value on-farm with a service life expected to exceed 30 years.

Specialist grain-storage sheds can be constructed to make filling and unloading simpler. Aeration and sealing methods for fumigations are best considered in the early shed design phase.

Sheds are most useful as a short-term storage solution to assist harvest logistics. They can be a useful component

PHOTO: BEN WHITE, KONDININ GROUP

Dual-purpose: *Grain storage sheds can provide dual functionality but hygiene is imperative to avoid contamination.*

of an on-farm grain storage system that incorporates other gas-tight sealable grain storage facilities

Sheds: costs

Cost of grain storage in sheds varies widely depending on footing and slab requirements as determined by soil type. Method of construction and alternative uses can also vary the cost of construction.

Sheds: aeration

Aerating grain stored in a shed is difficult due to the open design of most shed structures. But customised ducting and air manifolds can be designed by grain aeration specialists to aerate grain stacked in a shed.

Sheds: pest and insect control

Given the open nature of most sheds on-farm, pest and insect control presents some challenges. Fumigation with gas-proof sheeting placed over the stack is difficult.

Bulk handlers, including CBH in Western Australia, have invested heavily in sealing gas-tight bulk storage sheds to permit fumigation.

On-farm, sheds are also prone to spoilage by mice and birds.

Sheds: loading and unloading

One of the biggest drawbacks of sheds used for grain storage is the ease of getting grain in and out.

Using an auger or belt conveyor to fill the shed from the truck is common practice.

For out-loading, some operators opt for bulk-handling buckets on front-end-loaders or tele-handlers to fill direct into trucks.

Some grain trade operators use this approach to minimised grain damage when handling grains prone to splitting, such as lentils.

Sump load points are occasionally used, with a lowered section of the floor utilising gravity to assist in sweeping grain into a loading point.

Grain vacuums can also be used to out-load grain from sheds.

Regardless of the out-loading options, inevitably, a final clean is performed with a broom and grain shovel, which can take time if hygiene is to be maintained.

ON-FARM GRAIN STORAGE FACILITY CONSIDERATIONS

Depending on budget and expectations, investing in and planning a grain-storage facility requires a range of considerations, regardless of the storage type.

Access for in-loading and out-loading

Continuous loop roads around the grain-storage facility requiring minimal, or no, reversing are ideal and can dramatically improve loading and out-loading rates as well as minimising damage to equipment through accidental collision.

Dedicate an ample-sized pad to permit auger or grain conveyor access and ease of shifting grain loads.

Where steeper slopes exist, some growers have terraced the slope with a retaining wall, to allow them to reduce the lift height (and auger size) for loading the silo.

Where retaining walls exceed 1m in height, consider guard rails and access steps.

Proximity to resources (power sources — electricity and fuel)

Whether the facility is to be powered for aeration, i.e. using petrol or electricity, consider the proximity to these resources, particularly if the facility will be built in stages as each stage becomes affordable.

Connection to mains power can be expensive depending on the distance to the line. Some large drying fans also require three-phase power which requires a specific pole transformer.

With augers, machinery and tipping trucks in use around the facility, placing power underground is expensive, but can significantly improve safety.

It is worth considering fuel sources and fuel lines for dryer installations, or future dryer installations, when planning the facility layout and constructing the pad.

Health and safety considerations

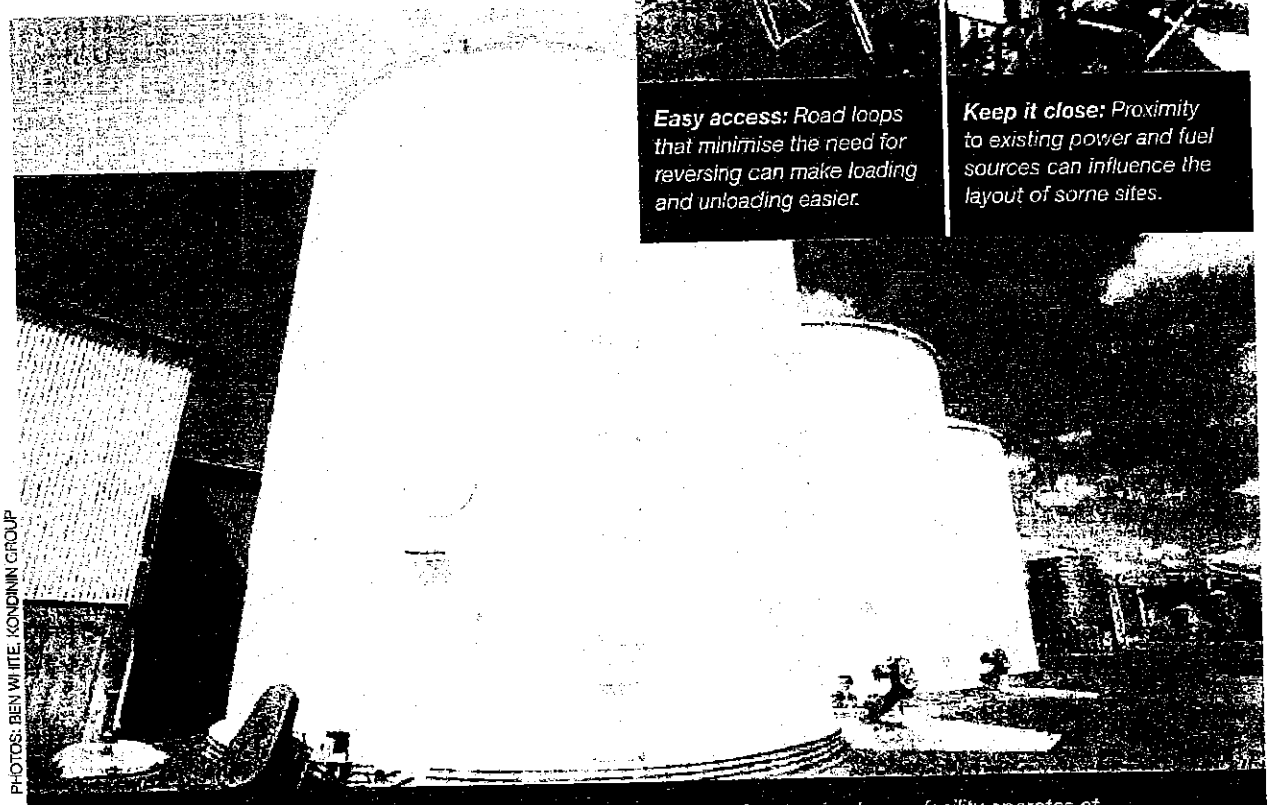
Operational safety considerations should be key to the facility design.

Allow plenty of space for auger transport and movement around the facility.

Ensure overhead power-lines are located nowhere near the pad where augers, conveyors or trucks might be operating — ideally locate power underground.

Easy access: *Road loops that minimise the need for reversing can make loading and unloading easier.*

Keep it close: *Proximity to existing power and fuel sources can influence the layout of some sites.*



PHOTOS: BEN WHITE, KONDININ GROUP

Planning improves performance: *Careful planning can ensure your on-farm grain storage facility operates at maximum efficiency.*

Pads should be flat, hard-packed stands that allow tipping trucks to elevate without risk of toppling over sideways.

Minimise any slopes and ensure they are of a constant grade.

Position drainage lines and holes away from high-traffic areas to reduce the risk of equipment falling through while maximising drainage effectiveness.

Electrical switch boards should incorporate residual current devices (RCDs) to prevent electrical shock if, for example, an electrical cable was accidentally cut.

A qualified technician is required to carry out any 240-volt electrical work. They will ensure the components are safe to use in areas where combustible dusts are present.

Road access

The ability to get trucks in and around the grain-storage facility is paramount to its success.

Sealed or hard, all-weather roads to the site from a main road are essential for year-round out-loading, which will ensure grain sale contracts are met in a timely manner and can deliver marketing advantages.

Proximity to trees and insect or bird havens

Avoid locating storage facilities near trees, haystacks and haysheds.

All are havens for insects and birds, making migration from nature to the grain stored in the facility easier.

Similarly, water sources are attractions for vermin and birds. Avoid water sources when selecting a site for a grain storage facility.

Proximity to harvest locations

One of the most important considerations of facility placement and layout is harvest logistics. While placing silos close to a house or existing infrastructure is most common, it may not be the most efficient placement from a logistics perspective.

More often than not, storage facilities are located according to proximity to power and facilities, so a balance between ease of accessing services and optimising harvest logistics has to be struck.

Determining storage capacity requirements

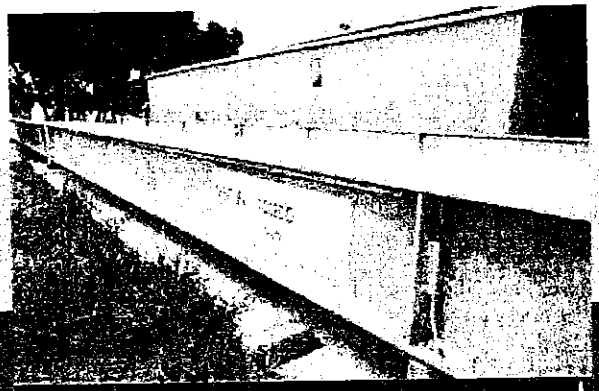
Calculating 'adequate storage capacity' can involve an enormous range of variables.

Consider what would be the 'ultimate' in on-farm storage capacity for the farm and then plan a series of stages to achieve this ultimate goal.

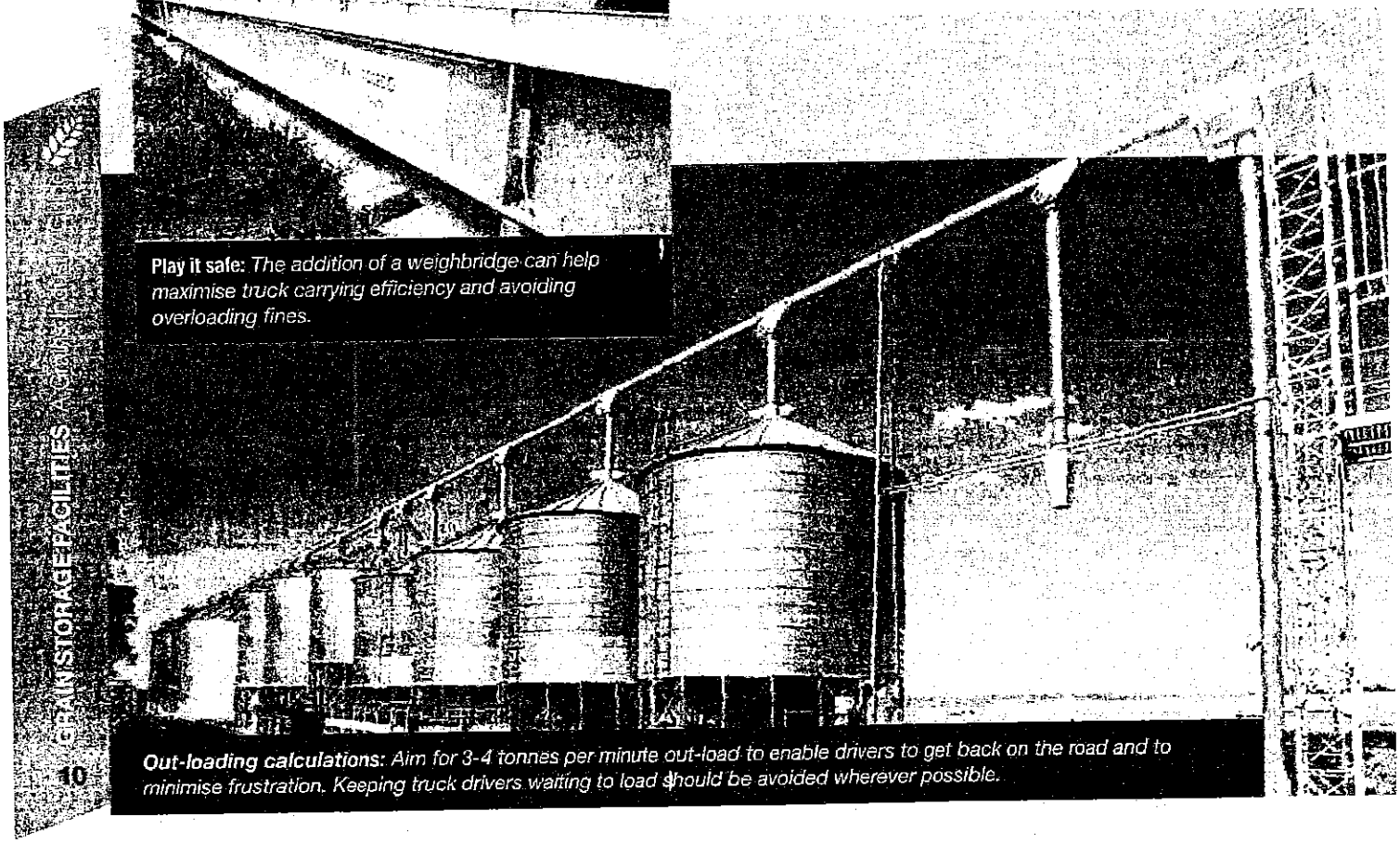
For some growers, ultimate storage capacity is 100 per cent of their harvest, while others will always use an external bulk handling system to some extent.

This is likely to vary between State bulk handling operators, dominant crop types, target markets and distance from the farm to bulk handlers.

As an initial step, aim for a reasonable proportion of the total harvest and plan to expand the facility from there.



Play it safe: *The addition of a weighbridge can help maximise truck carrying efficiency and avoiding overloading fines.*



Out-loading calculations: *Aim for 3-4 tonnes per minute out-load to enable drivers to get back on the road and to minimise frustration. Keeping truck drivers waiting to load should be avoided wherever possible.*