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# BRAIDWOOD SALEYARDS ASSESSMENT

AUGUST 2024

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# EXECUTIVE SUMMARY

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## BACKGROUND

Braidwood Saleyards, owned by Queanbeyan-Palerang Regional Council (Council), is currently a low-volume saleyards facility located in Braidwood, New South Wales. The saleyards have experienced an extended period of minimal managerial oversight, and there are concerns the facility may require urgent workplace health and safety matters to be addressed as a priority.

## PURPOSE & APPROACH

Council commissioned AEC, in partnership with StruXi, to undertake an assessment of the saleyard facilities, in order to develop an understanding of the current condition of the facility and identify issues that need addressing to elevate the saleyards to the required operational standard.

To deliver the assessment, AEC and StruXi:

- Conducted a site inspection at the Braidwood Saleyards to assess the current condition of the facility, observe operations on a typical saleday, and engage with stakeholders.
- Undertook an assessment of the saleyards, based on the site inspection, to identify existing issues that need addressing. The assessment focused on human safety, animal welfare, and traffic management.
- Provided facility amendment recommendations to Council based on the findings of the assessment, indicating a broad order of priority of the amendments required.
- Sourced information from local suppliers on the unit rates of goods and services to develop a high-level cost estimate for the recommended amendments.

## KEY FINDINGS

### Facility Assessment

- **Yard Condition:** The yards are old and showing age. Construction of the yards is typical of a facility constructed in the 1950s to 1960s, with train rails used for the posts and timber rails bolted to the posts. The posts appear to be holding up well, however, the timber rails are heavily degraded. The yards primarily contain unimproved dirt floors. The site becomes sodden in rainy conditions and yard surfaces are prone to becoming very waterlogged.
- **Human Safety:** It is necessary, due to the design of the yards, that the buyers are in the cattle lanes as the sale progresses, increasing the risk of injury if livestock break loose. Yard gates are too short to close off lanes safely. Lighting levels across the yards are not uniform and are unlikely to provide a safe working environment for the drafting of cattle at night. Access paths outside the yards are largely unformed.
- **Animal Welfare:** The flow of cattle through the yards is orderly and generally does not require excessive handler intervention. Inadequate lighting at night complicates handling. A number of potential hazards were identified, including in relation to the limitations of the old timber rail pens and the heavy and slippery conditions inside the yards when wet.
- **Traffic Management:** Heavy vehicles manoeuvre on the public road, which poses safety concerns. These vehicles often struggle to access the loading ramps due to restricted manoeuvring space. Carpark areas are informal, with access via a gravel roadway shared with heavy vehicles. There are no formalised pathways connecting pedestrians to the buildings.

### Recommended Facility Amendments

Higher priority recommended facility amendments are identified to include:

- Progressive replacement of timber rails to the yards (considered the highest priority)
- Provision of gates to yard lanes that cannot open beyond 90 degrees
- New loading ramp and formalised concrete crossover manoeuvring area for heavy vehicle access
- Provision of security cameras
- Installation of isolating valves to the pens' water reticulation system
- Installation of vehicle barriers around the perimeter of existing sediment tanks
- Improvements to truck wash drainage and filtration.

Other recommended amendments are identified to include:

- Replacement of failed half round drains with grassed swale drains and sediment traps
- Sealing of the existing road shoulder to facilitate holding bays for large vehicles
- Provision of accessible ablution and sanitary facilities
- Formalisation of the carpark layout
- Installation of roofing infrastructure
- Installation of rainwater collection and storage facilities.

### Opinion of Probable Cost

The cost of the identified recommended amendments (both high priority and other) to the Braidwood Saleyards was estimated at approximately **\$2.2 million**, excluding wider context works. This includes minor demolition works (required to accommodate new works), site works, and pens/ corals/ yards upgrades.

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# 1. INTRODUCTION

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## 1.1 BACKGROUND

Braidwood Saleyards, owned by Queanbeyan-Palerang Regional Council (Council), is currently a low-volume saleyards facility located in Braidwood, New South Wales. The saleyards have experienced an extended period of minimal managerial oversight, and there are concerns the facility may require urgent workplace health and safety matters to be addressed as a priority.

## 1.2 PURPOSE & APPROACH

Council commissioned AEC, in partnership with StruXi, to undertake an assessment of the saleyard facilities, in order to develop an understanding of the current condition of the facility and identify issues that need addressing to elevate the saleyards to the required operational standard.

To deliver the assessment, AEC and StruXi:

- Conducted a site inspection at the Braidwood Saleyards to assess the current condition of the facility, observe operations on a typical sale day, and engage with stakeholders.
- Undertook an assessment of the saleyards, based on the site inspection, to identify existing issues that need addressing. The assessment focused on human safety, animal welfare, and traffic management.
- Provided facility amendment recommendations to Council based on the findings of the assessment, indicating a broad order of priority of the amendments required.
- Sourced information from local suppliers on the unit rates of goods and services to develop a high-level cost estimate for the recommended amendments.

## 2. FACILITY CONTEXT

Context surrounding the Braidwood Saleyards is detailed below, including an overview of the current facility, general observations of the facility in operation, and commentary from stakeholders (StruXi, unpublished a).

### 2.1 OVERVIEW

Braidwood Saleyards is a facility located in Braidwood, New South Wales, situated in the south-west quadrant of the intersection of Saleyards Lane and Gillamatong Lane. Originally constructed by the Tallaganda Shire, the facility is estimated to be at least 60 years old. It is currently owned by Queanbeyan-Palerang Regional Council. A truck wash facility also owned by Council is located approximately 500 metres north of the saleyards, along Sandholes Road.

**Figure 2.1. Braidwood Saleyards**



Source: StruXi (unpublished a).

### 2.2 GENERAL OBSERVATIONS

A site inspection of the saleyards was conducted on Friday 7 June 2024. Throughout the inspection, continuous rain and wind were present. This highlighted several areas available for improvement.

#### 2.2.1 Lighting

On the evening of arrival, the main lights were out, and the yard management required the use of two mobile light towers to facilitate load-in and drafting activities – an unsatisfactory outcome. It was advised that both the shorted lighting circuitry would be repaired the following week, and the existing incandescent flood lights were to be replaced with LED fixtures. Further to this immediate fix, the overall lighting levels across the yards were not uniform and would be unlikely to provide an adequate, safe working environment for the drafting of cattle at night.

#### 2.2.2 Drainage

The site, in general, was sodden. In numerous places, the yards were holding over 100 millimetres of water in the pens, and the surfaces of the yards and lanes were very waterlogged.

Water that escaped the site ran in sheet flow across the yards to the lowest side and was discharged to the street kerb and channel along Saleyards Lane. There are three kerb inlets along this side of the road that intercept the flow of water for capture in underground detention tanks, where the liquid is then pumped out and dumped elsewhere.

The tanks are reported to have a non-trafficable lid, but are located in a position where vehicles could potentially traverse/ drive over them.

Cut-off drains are installed on the high side of the yards, but their discharge points were not clearly visible.

### 2.2.3 Surface Finishes

The yards appear to contain generally unimproved dirt floors. Some of the lanes and the area around the scale is concrete. The car park is generally unformed, with a small amount of gravel placed in the main driving direction. The weather on the day of inspection clearly demonstrated this to be problematic.

## 2.3 STAKEHOLDER COMMENTARY

### 2.3.1 User Observations

Discussions with users of the facility (including buyers, sellers and agents) at the site inspection elucidated the following observations and considerations:

- **Roofing:** Suggestions for a full roof over the entire facility, with priority areas for cover identified as the scale, crush, and loading ramp.
- **Lighting:** Requests for greater coverage and uniformity.
- **Ablutions:** Considered rudimentary and in need of an upgrade.
- **Unloading:** Potential to present issues when conducted in the centre of the yards.
- **Flooring:** Suggestions for concrete or a compacted gravel base to the lanes.
- **Transport Options:** Conflicting views were received. One perspective indicated transport options and buyer interest are limited due to the isolated location, while another perspective indicated buyers were coming to Braidwood for quality cattle (with any additional transport costs incurred by suppliers offset by greater returns).
- **Lots:** Vendors are generally delivering smaller lots.

### 2.3.2 Management Observations

Follow up discussions with the manager and overseer of the saleyards (together with Council representatives) conducted after the site inspection elucidated the following additional observations and considerations:

- **Security:** Unauthorised access has not previously presented any known issues other than a recent appearance of graffiti. Despite this, secure access to the site should be considered. Fixed security cameras would provide a deterrent to access, as well as evidence in the event of an accident or misdemeanour. Staff are also aware of regular use of the ablation facilities outside of sale days.
- **Ablutions:** There is a shower on site (not observed during the site inspection). It could be upgraded, made more obvious, and made available for access after-hours with provision of a driver's key or code.
- **Accessibility:** There are no facilities for disabled persons. Provision of such facilities should be considered.
- **Induction:** The induction of persons engaged on the site should be re-established.
- **Agents:** An agents' agreement should be implemented.
- **Signage:** All general, directional and warning signage should be upgraded and replaced.
- **Water Reticulation:** There is no current ability to isolate/ facilitate the maintenance of water reticulation systems (including troughs) without taking the whole site offline.

## 3. FACILITY ASSESSMENT

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A detailed assessment of the Braidwood Saleyards is provided below, informed by the site inspection (StruXi, unpublished a). The assessment primarily considered issues areas such as human safety, animal welfare and traffic management.

### 3.1 YARD CONDITION

The yards are old and showing age. The construction of the yards is typical of a facility constructed in the 1950s to 1960s, with train rails used for the posts and timber rails bolted to the posts. The posts appear to be holding up well, however, the timber rails are heavily degraded although still generally structurally sound. With that said, a pen of animals broke through two internal fences post-sale during the site inspection. Staff estimate breakouts of this nature occur three to four times per year.

Some of the yards have been upgraded to galvanised post and DuraGal cattle rails, and these appear to be in good condition. There are areas where the fence heights have been raised and post spacings amended to facilitate wedging gates. The older layout doesn't allow the gates to close across lanes, which presents both a handling and safety issue.

### 3.2 HUMAN SAFETY

#### 3.2.1 Workers

Elevated walkways appeared to be in good condition and fit for purpose. Rail heights appeared appropriate and toe rails are in place. It was observed that the closure at the end of a couple of catwalks is simply a chain that was left open at the time of observation.

It is necessary by the design of the yards that the buyers are in the cattle lanes as the sale progresses. In the event of cattle breaking loose while buyers are present, the possibility of injury is significant.

#### 3.2.2 Contractors

The presence of contractors was not obvious during the site inspection. Truck drivers could be included within this subset of persons engaged. A number of issues pertaining to the drivers was raised:

- Lack of access to lighting controls.
- Lack of shower and change facilities (although subsequently advised that there is a shower on site).
- Loading in and out requires heavy vehicles to manoeuvre in the roadway. This is not such an issue for load-in as the vehicles are generally smaller, however, loading out with a B-Double can take significant time to dock due to the narrow road and restricted access.

#### 3.2.3 Agents

Agents appear generally satisfied with the facility, noting the weather on the day of the site inspection was not conducive to happiness and the sale took longer than expected. Agents noted the following:

- Yard gates are too short to close off lanes safely.
- The surfaces around weigh scales are uneven and are a trip hazard.

#### 3.2.4 Visitors

Unsurprisingly, there were a limited number of visitors on the day of the site inspection. The facilities, although rudimentary, are generally fit for purpose. Facilities comprise of the carpark, scale house/ office, canteen, as well as the yards themselves.

### 3.2.5 Accessibility

There is a concrete ramp providing access to the canteen, however, this is the extent of all-abilities access provided on site. The buildings are connected by an unformed carpark and general grassed areas. There is no access to the selling pens or the catwalks.

## 3.3 ANIMAL WELFARE

### 3.3.1 Handling

Animals appeared to be well contained and managed (excluding the breakouts). Ramps, pens, lanes and draft areas appeared to be appropriate and in fair to good condition. The flow of cattle through the yards appeared orderly and did not require excessive handler intervention. Inadequate lighting at night made handling more difficult.

### 3.3.2 Pens

The pens are clearly aged. Pens that are to be retained for use need to be progressively upgraded to steel rails, ensuring that current design standards are met. Pen and lane floors needed cleaning at the time of inspection, with multiple recent special sales followed by bad weather hampering this from being done.

### 3.3.3 Surfaces

The surfaces are generally dirt floors. It has been advised there is a solid gravel base to the lanes and yards.

### 3.3.4 Hazards

The following potential hazards were identified:

- Generally, access paths outside of the yards are unformed. The timber rail pens are aged, and demonstrated their limited strength on the day of the site inspection when a pen of animals broke through two internal fences.
- Heavy vehicles use the public road to manoeuvre.
- There is no restriction to access by any person while the yards are unsupervised.
- Heavy and slippery conditions in the yards create an obvious operational hazard.
- The sediment collection tanks adjacent to the road reserve have no barriers to prevent vehicles from parking on them.

## 3.4 TRAFFIC MANAGEMENT

### 3.4.1 Access and Egress

Light vehicles access the site via Gillamatong Lane, while heavy vehicles use Saleyards Lane.

Carpark areas are informal. Parking areas were nearly full for what was supposed to be a small sale on the day of the site inspection, with approximately 400 head sold compared to a reported capacity of 4,000 head and a recent large sale of almost 3,000 head. The parking area has no formation and no surface finish, which will generally suffice given the low frequency of sales.

Cattle delivery is generally made with smaller body trucks, while it is frequent for a B-Double to be the collection vehicle. Access to the car park is via a gravel roadway. Heavy vehicle access and manoeuvring generally use this roadway, which is not an ideal safety outcome.

### 3.4.2 Pedestrian Management

General pedestrian movement is restricted to the light vehicle parking area and the grassed area immediately adjacent to the office and canteen buildings. There are no formalised pathways connecting the buildings. The parking area formation is also uneven, exasperating safety issues for pedestrians when wet.

### 3.4.3 Loading Facilities

It was advised that loading ramps 3 and 4 are the ones predominantly used, with loading ramps 1 and 2 possibly surplus to needs. As noted previously, access to lighting control and ablutions outside of staffed hours should be considered.

### 3.4.4 Current Vehicle Movements

Light vehicles generally manage acceptably, despite the lack of formality. Heavy vehicles have difficulty manoeuvring onto the loading ramps due to the restricted manoeuvring areas. Smaller rigid trucks dominate the load-in vehicle fleet, while the load-out observed a B-Double accessing the ramps.

## 3.5 TRUCK WASH FACILITY

The truck wash facility is located approximately 500 metres north of the saleyards, along Sandholes Road. Access to the truck wash requires drivers to reverse into position for wash, presenting manoeuvring difficulties.

Disposal of waste is an ongoing issue as waste cannot be pumped to sewers. Currently, arrangements need to be made for the collection and further disposal of generated waste at the wash. Bunding at the site is also damaged, allowing effluent to escape into the road reserve.

## 4. RECOMMENDED FACILITY AMENDMENTS

Recommendations for necessary amendments to the Braidwood Saleyards, based on the findings of the facility assessment, are outlined below (StruXi, unpublished b). These have been listed generally in order of priority. Facility planning documents in line with these recommendations have been provided in **Appendix A**.

- **Yard Upgrades:** The progressive replacement of timber rails to the yards is considered the highest priority. The initial works should be concentrated around the perimeter of the yards to secure animals within the facility, followed by the progressive replacement of internal fences. Current facilities feature hinged dividing fences for easy cleaning and variable-size holding pens. Also, current standards include gates to lanes that cannot open beyond 90 degrees to protect workers. If this were to be implemented, some operational processes may need to change.
- **Facility Scale:** A slight overall reduction in the scale of the facility to reduce capital and maintenance costs. A new and improved loading ramp would require a loss of 28 selling pens (about 20% of the current total).
- **Lighting:** It has been assumed that the current lighting works will result in satisfactory overall lighting for the facility. It is understood the existing incandescent lighting is being replaced with LED technology, meaning there should be some spare capacity to allow additional lighting without requiring electrical infrastructure upgrades.
- **Security Cameras:** The provision of security cameras to provide after-hours monitoring is a low-cost item that would reduce Council's exposure to risk and can be immediately undertaken.
- **General Maintenance:** Further general maintenance works that would be beneficial include the installation of isolating valves to the pens' water reticulation system, allowing the pens to be partially taken offline for maintenance.
- **Sediment Collection Tanks:** The existing sediment tanks are located in an area vulnerable to vehicular access, where vehicles could potentially drive over them. This could collapse the lids, causing significant damage and potentially putting life at risk. A short-term priority should be to install vehicle barriers around the perimeter of the tanks.
- **Drainage:** The existing failed half round drains could be replaced with grassed swale drains with sediment traps installed.
- **Loading Arrangements:** The current load-out arrangements are inadequate, marked by inefficiency and inconvenience. There is a significant risk of complaints or accidents if large trucks continue to manoeuvre across public roads, which could have a serious detrimental impact on the future of the saleyard operations. A formalised, concrete crossover and manoeuvring area to access the proposed load-out ramp is proposed.
- **Loading Ramps:** The provision of a new load-out ramp is proposed to replace existing ramps 1 and 2, purpose-built to suit rear access B-Double vehicles. This solution would allow for the safe queuing of up to two additional vehicles on the shoulder of Saleyards Lane, significantly reducing the time and effort required to load and eliminating the risk of collision on the public road.
- **Heavy Vehicle Management:** To facilitate the swept path of a B-Double, two of the existing yards would be lost. There is land available in the south-west of the site to replace this yard area.
- **Holding Bay:** The existing road shoulder could be improved or sealed, and line marked as holding bays for large vehicles waiting to load.
- **Heavy Vehicle Access:** The proposed new load-out ramp would require new lanes for access. Real estate is available for use to facilitate this access and further enhance loading operations.
- **Truck Wash:** Improvements to the drainage and filtration of the truck wash facility are required to prevent the flow of effluent into the road reserve. This includes rectification works to the bunding on site.

- **Accessible Ablution Facilities:** There are no ablution facilities that would be considered accessible<sup>1</sup>, and this is something that Council should consider providing. A formalised accessible carpark, concrete paths from the carpark to each of the buildings on site, and the provision of accessible sanitary facilities would represent the minimum generally expected of a local government facility. A location suitable for a toilet and shower block was identified on the site master plan that would make a shower and change rooms available for drivers and yard workers, while also satisfying accessibility issues.
- **Carpark Layout:** Formalise the carpark layout for greater efficiency of parking. It is estimated approximately 64 light vehicle spaces can be provided at approximately 6 metres x 3 metres, with a 6.5 metre aisle. This is significantly in excess of the Australian Standard for off-street parking and is intended to cater for unmarked spaces catering for larger than standard vehicles (i.e. predominantly larger 4WD utes and similar passenger vehicles). Given the low frequency of use, the parking area should not require a bitumen or concrete pavement, a maintained gravel surface should suffice. Limited bulk earthworks could be carried out to create more formal parking areas that do not exceed 5% crossfall. This would significantly reduce the possibility of slips/ trips/ falls in the parking area, significantly increase the achieved parking capacity of the area and reduce the overall possibility of vehicle-vehicle and/ or vehicle-pedestrian incidents.
- **Roofing:** Undoubtedly a full roof over the facility would be welcomed, however, the financial reality is that with the current turnover through the yards, this is not a likely outcome. A roof that would cover the open space between the scale house and the canteen, the scales, the forcing area and the load-in area is proposed. This would provide inclement weather cover and dry working conditions to most of the activity areas during a sale day. The proposed roof area is approximately 1,150 square metres and could also be used for solar generation to offset facility usage.
- **Rainwater Collection and Storage:** Assuming that at some stage a roof is constructed over part of the yards, the rainwater collected could and should be stored for cleaning, animal watering and dust suppression. A location north of the existing pens would appear to be convenient. Any overflow would be considered clean and could be directed to the street stormwater system. It would be ideal to consider the implementation of a silt trap to divert water from the carpark so as to decrease the load on the silt tanks that already exist. The existing plastic half round drains that are in place along the eastern boundary are damaged/ popped out and not performing their intended purpose. Until such time as the proposed drive through B-Double bay be implemented, a more suitable drainage solution should be implemented. The solution may be as simple as a grassed swale with a series of silt fences.

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<sup>1</sup> The shower advised to be on site by management post the site inspection was not observed during the site inspection. A single male pan and urinal was observed, and it is assumed there is also a single female pan on site.

## 5. OPINION OF PROBABLE COST

An estimate of the cost of the recommended amendments to the Braidwood Saleyards is provided below (StruXi, unpublished c). The estimate is not a guaranteed sum, and is based on limited development of scope with reference to historical rates derived from recent projects. The total cost has been estimated at approximately \$2.2 million, excluding wider context works. A detailed breakdown of the cost estimate is provided in **Appendix B**.

**Table 5.1. Opinion of Probable Cost**

Item	Cost
Demolition & Works to Existing	\$69,689
Wider Context Works	<i>Excluded</i>
Site Works	\$1,555,269
Pens/ Corals/ Yards	\$526,829
<b>Total</b>	<b>\$2,151,787</b>

Source: StruXi (unpublished c).

## 6. NEXT STEPS

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Following this report, it is recommended that Council:

- 1 Conduct a thorough risk assessment of the entire facility, informed by this report.
- 2 Commission a cost-benefit analysis and options assessment to understand the wider context of the facility, including a market analysis and the various economic and social impacts of different options for the future of the facility.

## REFERENCES

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StruXi (unpublished a). *Conditions Report*. Sent to AEC via email.

StruXi (unpublished b). *Recommendations*. Sent to AEC via email.

StruXi (unpublished c). *Opinion of Probable Cost*. Sent to AEC via email.

StruXi (unpublished d). *Proposed Site Plan*. Sent to AEC via email.

StruXi (unpublished e). *Amenities Floor Plan*. Sent to AEC via email.

StruXi (unpublished f). *Truckwash Location Plan*. Sent to AEC via email.

### Figure A.1. Proposed Site Plan

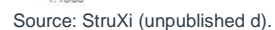
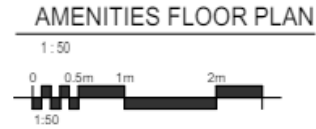
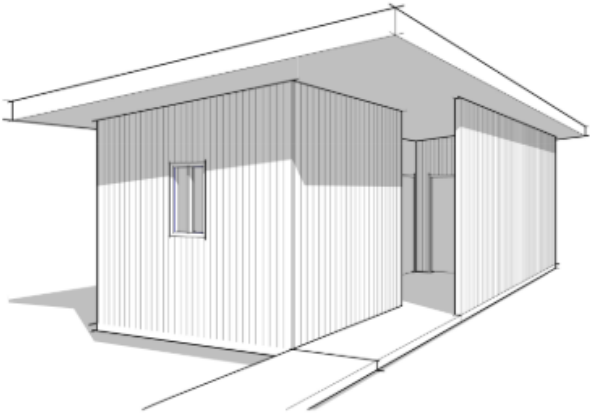
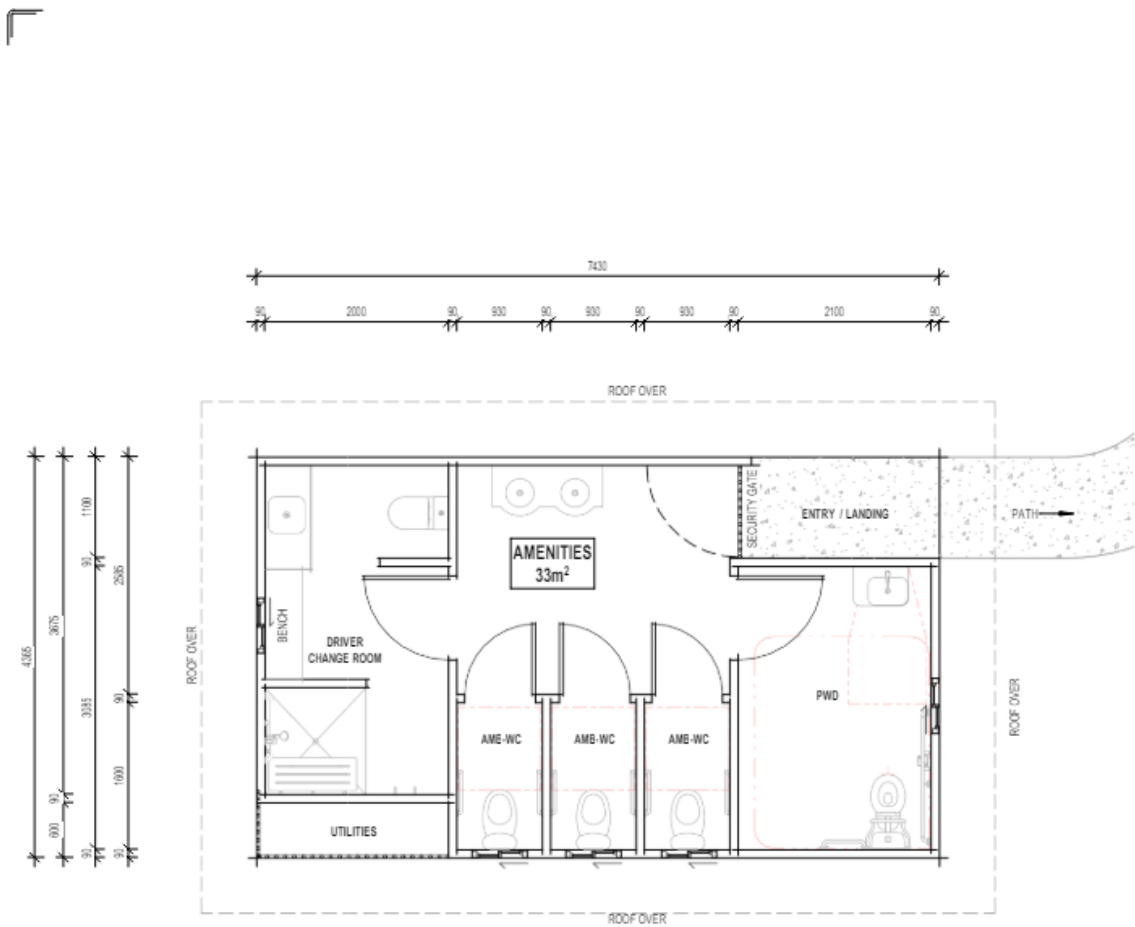


Figure A.2. Amenities Floor Plan



AMENITIES 3D VIEW

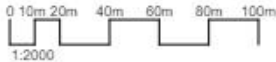
Source: StruXi (unpublished e).

Figure A.3. Truck Wash Location Plan



TRUCKWASH LOCATION PLAN

1 : 2000



Source: StruXi (unpublished f).

## APPENDIX B: COST ESTIMATE BREAKDOWN

**Table B.1. Detailed Breakdown of Cost Estimate**

Item	Quantity	Rate	Cost (\$)
<b>Demolition &amp; Works to Existing</b>			
Remove existing site surface/ vegetation	4,258 m <sup>2</sup>	\$13	\$55,354
Remove existing loading ramp	1	Item	\$8,000
Preliminaries	1	10%	\$6,335
<b>Total</b>	-	-	<b>\$69,689</b>
<b>Wider Context Works</b>			
Saleyards Lane shoulder widened for B-Double queueing	195 m <sup>2</sup>	-	<i>Excluded</i>
Line marking allowance	-	-	<i>Excluded</i>
<b>Total</b>	-	-	<b><i>Excluded</i></b>
<b>Site Works</b>			
Internal heavy vehicle access road to be constructed of high strength concrete with new crossovers	2,040 m <sup>2</sup>	\$220	\$448,800
Light vehicle parking – site grading & gravel hardstand	2,518 m <sup>2</sup>	\$55	\$138,490
Footpath from light vehicle parking to admin office	60 m <sup>2</sup>	\$165	\$9,900
Vehicle barrier fence to existing sediment tank area (metal panel)	69 m	\$200	\$13,800
New loadout ramp – rear load	1	Item	\$30,000
Truck wash improvements to drainage & filtration	1	Item	\$50,000
New amenities block – lightweight on concrete slab	33 m <sup>2</sup>	\$4,950	\$163,350
Roof over saleyards (incl. electricity & drainage)	989 m <sup>2</sup>	\$315	\$311,535
Provision for turf/ soft landscaping	22 m <sup>2</sup>	\$533	\$11,726
Water tanks (incl. stormwater pipe from roof)	150 kL	-	\$46,280
Solar panels	120 kW	\$1,500	\$180,000
New wayfinding signage required to entrance and directional signage at the new entrance directing traffic to new entry location	1	Item	\$10,000
Preliminaries (10%)	1	10%	\$141,388
<b>Total</b>	-	-	<b>\$1,555,269</b>
<b>Pens/ Corals/ Yards</b>			
New holding yards – 5 rail cattle rail fencing	176 m	\$262	\$46,112
Existing saleyards – 5 rail cattle rail fencing	1222 m	\$262	\$320,164
Existing saleyards (perimeter fencing only) – 5 rail cattle rail fencing	332 m	\$262	\$86,984
Existing holding yards – 5 rail cattle rail fencing	98 m	\$262	\$25,676
Preliminaries (10%)	1	10%	\$47,893
<b>Total</b>	-	-	<b>\$526,829</b>
<b>Grand Total</b>	-	-	<b>\$2,151,787</b>

Source: StruXi (unpublished c).

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OUTCOME DRIVEN

