



Truck Wash Facilities for Livestock Transshipping Hubs

Basis of Design Report

ACIL Allen

July 11, 2024

→ The Power of Commitment



| Project name | | SA Biosecurity Truck Wash Facilities for Livestock Transshipping Hubs Project Plan for Contra | | | | | |
|-----------------------|-----------------|---|-----------------|------------------|---------------------------|------------------|-------------|
| Document title | | Truck Wash Facilities for Livestock Transshipping Hubs Basis of Design Report | | | | | |
| Project number | | 12623531 | | | | | |
| File name | | 12623531-REP-Basis of Design.docx | | | | | |
| Status Code | Revision | Author | Reviewer | | Approved for issue | | |
| | | | Name | Signature | Name | Signature | Date |
| S3 | A | L. Matthews | D. Nowland | | W. Biggs | | 21/02/24 |
| S3 | B | S Thompson | W. Biggs | | W Biggs | | 20/06/24 |
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1. Introduction

1.1 Project background

Demands for wash facilities including truck wash and disposal of waste across South Australia are expected to increase due to an emphasis on biosecurity obligations and environmental regulatory requirements for livestock transportation.

Livestock SA have contracted ACIL Allen to complete a business case to inform a potential future investment model for consideration for PIRSA. GHD have been contracted by ACIL Allen to complete a technical analysis of the truck wash facilities for input into the business case.

This document has been prepared by GHD on behalf of ACIL Allen to present the design and cost estimate for South Australian truck wash facilities.

1.2 Purpose of this report

The document presents the minimum functional requirements, technical parameters, and criteria to undertake the concept engineering of the South Australian truck wash facility designs.

1.3 Scope and limitations

This report: has been prepared by GHD for ACIL Allen and may only be used and relied on by ACIL Allen for the purpose agreed between GHD and ACIL Allen as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than ACIL Allen arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring after the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer Section 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

1.4 Assumptions

The assumptions on which this document is founded are listed below:

- The largest truck to use is a B-triple truck.
- The base design will suit a single trailer being washed at any one time.
- All sites will have an existing water supply and an existing power supply.

Other assumptions are listed throughout the document.

1.5 Table of abbreviations

Table 1.1 Table of abbreviations

| Abbreviation/Acronym | Definition |
|----------------------|---|
| SA | South Australia |
| AS | Australian Standards |
| NZS | New Zealand Standards |
| BoD | Basis of Design |
| PIRSA | Department of Primary Industries and Regions, South Australia |
| TBC | To Be Confirmed |
| WHS | Work, Health & Safety |
| CAPEX | Capital Expenditure |
| NHVR | National Heavy Vehicle Regulator |
| MLA | Meat & Livestock Australia |
| ALRTA | Australian Livestock & Rural Transporters Association |
| TNSW | Transport for NSW |
| DSA | Dome Shelter Australia |
| EAD | Emergency Animal Diseases |

1.6 Engineering Guidelines and Standards

Table 1.2 Engineering Guidelines and Standards

| Standard |
|---|
| Work Health and Safety Act 2011 |
| Occupational Safety and Health Act 1984 |
| Environmental Protection Act 1986 |
| Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 |
| AS/NZS 3500.2:2003 Plumbing and Drainage |
| Austrroads guide to road design |
| AS/NZS 1170 Structural design actions |
| AS 3000 Electrical Installation |
| AS 3600 Concrete Structures 2009 |
| AS1170.2:2021 Structural Design Actions |
| AS1926.1-2012 Version Pool Fencing |

1.7 Reference documents

Table 1.3 Reference documents

| Source | Description |
|---|--|
| ACIL Allen | SA livestock truck wash business case reference group papers 05/12/2023 |
| National Heavy Vehicle Regulator (NHVR) | General mass and dimension limits |
| Meat & Livestock Australia (MLA) | Cattle weights hit all-time highs - Article 17/02/2022 |
| Australian Livestock & Rural Transporters Association (ALRTA) | Livestock Transport Guide |
| Transport for NSW (TNSW) | Truck washes – Information guide |
| P&S-Evaluation | Pitt & Sherry – Smithton Truck Wash Facility – Truck Wash Evaluation R1 – 18/09/2023 |
| P&S-Tech | Pitt & Sherry – Smithton Truck Wash Facility – Preliminary Business Case and Technical Review 21/02/2022 |
| GHD-Desktop | Desktop research using publicly available data |
| AS1170.2:2021 | Structural Design Actions |
| AS1926.1-2012 Version | Pool Fencing |
| SafeWork SA | Essentials for safe management of: Electrical work and equipment |

2. Design Intent

2.1 General outline

This project involves the potential future investment model of livestock truck wash facilities in SA. The intent of the truck wash facilities is to improve livestock biosecurity and minimize environmental risks such as EAD outbreaks from effluent waste and disposal across transportation zones in SA. Facilities will vary in capacity and capability to meet the growing demands of the livestock industry in SA.

Truck wash facilities should be located near existing trade waste facilities as it eliminates the need to build a new trade waste facility as part of the design. Additionally, ACIL Allen should consider the risks and costs associated with building new and closing old facilities. The facility demands calculations have been made for the existing facilities only as the number and location of facilities in SA lies within ACIL Allen’s business case. Truck wash drivers will wash the waste from a path with an elevated deck on either side of the truck.

Table 2.1 General outline

| Item | Description | Source |
|--------------------|---|--------------------------------|
| Biosecurity | Facility to contain and dispose of livestock truck effluent and waste under non-EAD operating conditions. | ACIL Allen |
| Livestock | Cattle, sheep, and goats (Note: No pigs) . | ACIL Allen |
| Truck type / size | Up to a B-triple heavy vehicle (No greater than 25 m length and 2.5 m width, 4.6 m height for a single trailer). In a B-triple built to carry cattle or sheep (four decks of sheep, Two decks of cattle). | NHVR |
| Washing process | The basic design will be designed such that only one trailer will be washed down at a time before moving onto the next to reduce waiting times for other trucks. | GHD-Desktop |
| Days in service | 365 days pa. | TNSW |
| Hours of operation | 12 hours/day (assumed generally daytime operation). | TNSW |
| Cleaning method | Hand-held hose-down by truck operator with supplied hose reel. | TNSW |
| Accessibility | All weather conditions. | TNSW |
| Wash time | Assumed 90 minutes to wash truck based on discussion with livestock transporters | Livestock transport discussion |
| Demand | GHD will assume 90% utilization of the truck wash facility with the maximum number of trailers per day 11 trailers per wash bay. | GHD-Desktop |

2.2 Location

ACIL Allen is responsible for identifying the appropriate locations required for the truck wash facilities. GHD has assumed that the locations of the truck wash facilities will have a power supply and water supply.

Truck wash facilities will be strategically located in accordance with criteria in Table 2.2 below:

Table 2.2 *Location intent*

| Item | Description | Source |
|-----------------------|--|---------------|
| Convenience | Close to major roads with high livestock transportation use. | TNSW |
| Land considerations | Avoid any impacts on construction and operational costs. Entry and exit points important consideration to reduce vehicle incidents. | TNSW |
| Environmental impacts | Must not be in environmentally sensitive areas. Must not be in location that could risk public health. | TNSW |

2.3 Facility trailer demand estimation

Table 2.3 shows the livestock infrastructure and wash facility locations as sources from ACIL Allen.

Table 2.3 Livestock infrastructure and wash facility locations

| Biosecurity Zone | Livestock (' 000) | | Feedlots | Saleyards | Processors | Truck wash facilities | | | |
|---------------------|--------------------|-------|---------------------------|--|-----------------------------|---|---------------------------------|--|---------------------------------|
| | Cattle | Sheep | | | | | | | |
| Lower Southeast | 4,180 | 3,584 | Meningie | Mount Gambier Millicent | | <u>Mount Gambier</u> (Saleyard) <u>Millicent</u> (Saleyard) | Council Council | \$0.78/min \$0.91/min | Livestock |
| Mid-Southeast | | | Tungali | Naracoorte Bordertown Keith | Naracoorte Bordertown | <u>Naracoorte</u> (Saleyard) <u>Bordertown</u> (Saleyard) <u>Keith</u> (Saleyard) | Council Council? Council? | \$1.00/min \$0.74/min \$0.74/min | Livestock + others Livestock |
| Upper Southeast | | | Tintnara | - | | | | | |
| Murray-Mallee | 1,652 | 1,289 | Burra Sedan Thornby | Murray Bridge Pinnaroo | Murray Bridge | <u>Murray Bridge</u> (Processor) | TFI | ? | Livestock |
| Adelaide Fleurieu | 927 | 847 | | Mount Compass Mount Pleasant Strathalbyn | Lobethal Strathalbyn | Mount Compass | Private | ? | Livestock + others? |
| Kangaroo Island | | | | - | - | - | - | - | - |
| Barossa Lower North | 764 | 553 | Dublin Clare | Dublin | Two Wells | <u>Dublin</u> (Saleyard) | Livestock Markets | ? | Livestock |
| Yorke - Mid North | 329 | 268 | | Jamestown Crystal Brook | | <u>Jamestown</u> | Private | \$0.82/min | Livestock |
| Northern Pastoral | 1,359 | 1,348 | - | - | - | - | - | - | - |
| Eyre Peninsula | 1,805 | 1,698 | - | - | - | - | - | - | - |

The trailers per day estimations were based on the following data and assumptions:

- Decks on truck: Sheep - 4, Cattle - 2 (Source: ALRTA).
- Average mass: Sheep– 25.2 kg, Cattle – 315.6 kg (Source: MLA, determines below sheep loaded area per head values).
- Loaded area per head: Sheep– 0.18 m^2/h , Cattle – 0.90 m^2/h (Source: ALRTA, values interpolated).
- Total loading length: Sheep – 18 m, Cattle – 18.8 m, both have 2.4 m width (Source: NHVR).
- Pen area per truck: Sheep – 172.8 m^2 , Cattle – 90.24 m^2 .
- Head per truck: Sheep – 960, Cattle– 100.
- Trailers per truck: Sheep – 3, Cattle – 2 (Source: ALRTA).
- Head per trailer: Sheep – 320, Cattle – 50.
- Jamestown – 4,603,000 sheep pa and 235,000 cattle pa, Dublin – 1,400,000 sheep pa and 185,000 cattle pa, four other truck wash facilities – 896,000 sheep pa and 142,250 cattle pa.
- Jamestown – 19,072 trailers pa, Dublin – 8,065 trailers pa, four other truck wash facilities – 5,637 trailers pa.
- Total trailers per day: Jamestown – 52, Dublin – 22, 4 others – 15.
- Minimum number of bays: Jamestown – 3, Dublin – 1, 4 others – 1.

GHD would recommend increasing the number of bays to the minimum bays to reduce any delays to truck wash drivers.

3. Basis of Design

The truck wash facilities are designed to operate in various locations. GHD have identified a basic design that meets the minimum requirements for a truck wash facility. A reuse of water design was also developed for truck wash facilities within an area that is located within in an area with minimal water supply options.

Further optional elements of a truck wash were identified and were included as an additional cost estimate option.

The following section outlines the basis of design GHD employed to develop the concept design and order of magnitude cost estimate for a truck wash facility.

3.1 Assumptions

The basic truck wash design facility is based on the following assumptions:

- The location will have connection to a power and water supply.
- The area will require basic site preparation i.e. clearing and grubbing of relatively vast bush areas.
- The largest truck to use the facility is a B triple, the basic design of the truck wash design allows for a single trailer to be washed at one time.

3.2 Scope

The scope of works for the basic truck wash design is as follows:

- Truck wash concrete pad
- Spray containment.
- Water supply tank and wash water system
- Truck cleaning access
- Effluent dump point
- Effluent waste and wastewater drainage
- Sump pit and effluent treatment/ disposal
- Effluent pond
- Amenities – single toilet and shower facility

The scope of work for the reuse water truck wash design includes the scope for the basic truck wash design and the following:

- Water treatment plant for water reuse

Additional elements for the truck wash design include the following:

- Additional wash bay and subsequently increased wash bay capacity
- Slanted roof over the wash bay
- Extended concrete wash slab to suit the entire length of a B-triple.
- Additional Amenities (2 showers, 2 toilets)

3.3 Design Criteria

GHD used the design criteria outlined with 3.3 to create a concept design of the truck wash facility and subsequently the order of magnitude cost estimate.

Table 3.1 Design Criteria based on a single wash bay

| Criteria | Description |
|--|--|
| Wash Bay | |
| Number of bays | Single Truck wash bay for a single trailer Effluent dump bay/point |
| Segregation between bays | The bays require segregation and a means of splash containment. |
| Safety / fencing | Safety fencing is required around the sum area. Not less than 1.2 m in accordance with AS1926. |
| Lighting | Work areas shall meet a minimum of 160 lux for low risk works. Lighting shall be erected on each side of the wash-down bay at a minimum height of 6.1 m. |
| Truck entry and parking bay dimensions | The trucks are required to enter and exit the bay without reversing. The orientation of the bay shall be such that the wastewater runs to the left-hand side of the truck. The wash facility shall be suited for a B-triple truck |
| Wash bay dimensions | The truck wash bay shall have the dimensions to suit a B-triple largest trailer with the following approximate dimensions: <ul style="list-style-type: none"> - Width – 2.6 m - Length – 15 m - Height – 4.6 m The wash bay shall allow a minimum of 1 m clearance of any structures on either side of the truck. |
| Elevated Platform | An elevated platform on either side of the wash bay shall be designed to access the top of the truck for cleaning requirements. The platform shall have stairs at either end for access or shall be a minimum of 0.75 m in width. |
| Drainage | Drains must be installed in accordance with requirements of local government and Health Act 1911. |
| Wash Down System | |
| Operation time | 1 hour to clean a single trailer |
| Wash down water rate | 100 L/min using a 1 ¼ inch tap fitting |
| Water supply tank | The water supply tank will be connected to a water supply source and have 4 hours of storage capacity |
| Disinfection Chemicals | The wash down facility shall be capable of holding 3 chemical/disinfection types |
| Hoses | The hose layout shall allow the operator to clean the entire truck trailer. Including the inside of the truck. |
| Effluent/waste disposal | |
| Solids collection | Dive in sump |
| Wastewater characteristics | Fluid rate – 100 L/min Suspended Solids – 300 mg/L |
| Oil water separator capacity | 100 l/min |

| | |
|--|---|
| Oil Water requirement | The waste stream has a maximum hydrocarbon level of 30 ppm. |
| *Evaporation rate | 3000 mm/year |
| *Average rainfall | 250 mm / year |
| Effluent Pond Capacity Basic Design | 2000 m ³ of storage per year (based on 90% truck wash utilization) |
| Water Reuse Treatment Plant | |
| Treatment Plant | The treatment plant required to treat the wastewater to a standard that it can be reused within the truck wash facility |
| Waste composition characteristics | faecal matter BOD - less than 300 mg/l Suspended solids – 300 mg/L Hydrocarbons – less than 30 ppm |

*Note that the evaporation and rainfall estimates are an estimate only of the average across the whole state of South Australia.

4. Design

The following section outlines a high-level concept design of a truck wash that was used to develop an order of magnitude cost estimate. The design is based on the criteria outlined within Section Table 3.1.

Figure 4.1 shows an overview of the truck wash design. For the full drawings of the truck wash design see Appendix A.

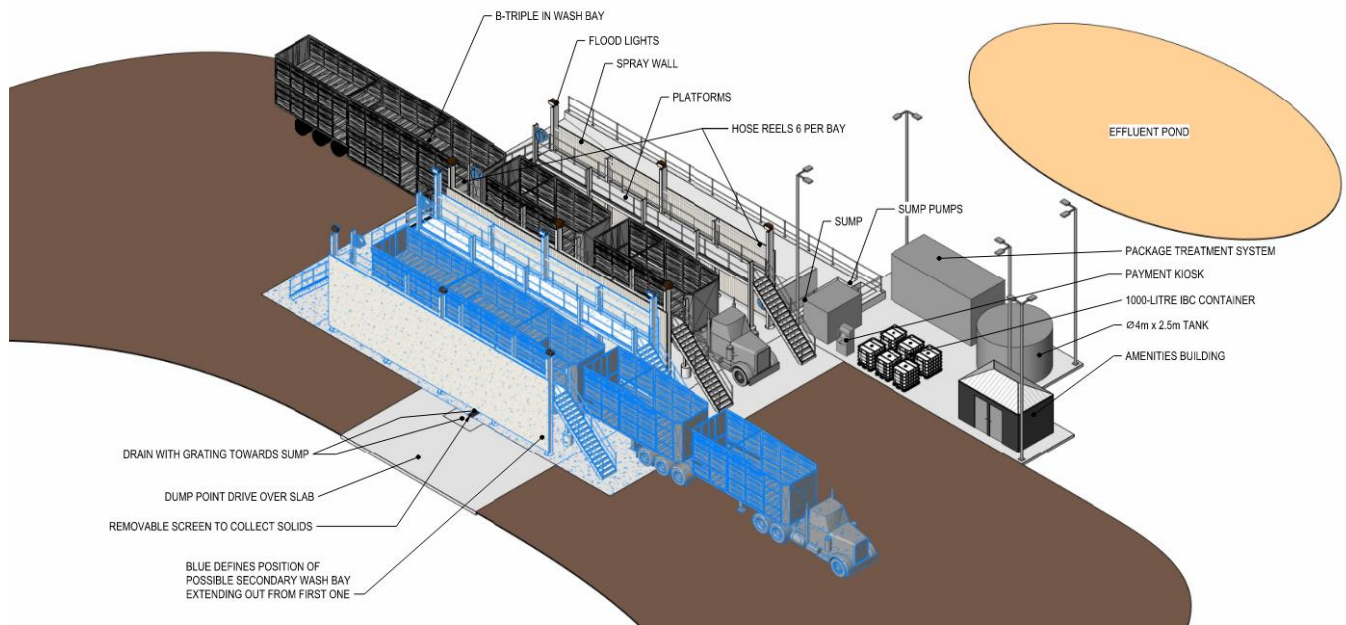


Figure 4.1 Truck Wash Bay design

4.1 Basic Design

4.1.1 Wash Bay

4.1.1.1 Wash Pad

The wash pad was designed to suit a single trailer of a B triple as outlined within Table 3.1. The dimensions of the wash pad are as follows:

- Length: 16 m
- Width: 8.7 m
- Concrete Thickness: 350 mm

The wash pad will fall towards the drainage system and sump with a 2-3% gradient.

Concrete aprons either side of the wash bay will fall (2-3% gradient) towards the wash bay slab. The apron will be the same width as the wash bay and 4 m in length.

4.1.1.2 Effluent dump point

A dump point will be located next to the wash bay and allow operators to dump effluent tanks without requiring use of the wash bay.

The effluent dump slab will be sloped (2-3% gradient) such that all the effluent waste will drain into the collection point drain. The drain point will contain a grated cover.

The effluent dump pad is designed as the following dimensions:

- Length: 10 m
- Width: 8.7 m
- Concrete thickness: 350 mm

4.1.1.3 Drainage

The drain from the effluent dump point will drain underneath the wash bay slab and into the sump.

The wash bay slab will fall towards the drain that runs from the effluent dump point to the sump. The drain runs the entire length of the wash bay and will be 300 mm in width. The drain will contain a grating cover.

4.1.1.4 Spray containment walls.

On both sides of the wash bay a 5 m high x 16 m long walls will be constructed to contain water spray. These walls will be made of colorbond type fencing.

4.1.1.5 Elevated Platform

Along the spray containment walls, elevated platforms will be erected to allow access to the top of the truck for washing requirements. The platform will be 3.5 m in height. The platforms will contain handrails on both sides and will be 750 mm wide. Stairs at both ends of the platforms will allow access to the platforms.

4.1.2 Wash System

4.1.2.1 Payment Kiosk

A payment kiosk shall be located at the entrance to the truck wash facility. The payment kiosk will allow operators to select and pay for the 'wash type.'

The wash type will include three optional disinfection/detergent fluids to be dosed to the water supply to meet the washing requirements.

4.1.2.2 Water Supply

It is assumed that the truck wash bays will have a connection to a potable water supply.

A poly water storage tank shall be the source for the vehicle wash and will be capable of holding 4 hours of a water supply. (30,000L).

A 30,000 L round poly water storage tank shall be the source for the vehicle wash. The tank shall receive water from the existing water supply.

The wash down water will be at 100L/min using a 1 ¼ inch tap fitting.

Where the site contains a recycling water treatment facility, the water storage tank will be supplied with recycled water from the system and will be topped up with a local water supply when required.

4.1.2.3 Handheld hose

There will be 8 hoses per bay for washing the trucks, 1 at each corner of the wash bay on the ground level and upper platform level. The flow rate from the hose shall be 2 l/s and a pump based on a tap fitting of 1 ¼ inch. It is assumed that only one hose will be used at any time within the wash bay.

The hoses will be 40 m in length to ensure full reach around each side of the truck.

No hoses will be located at the dump point area to stop operators from washing the truck out at the dump slab.

4.1.2.4 Disinfection/detergent supply

A total of 3 disinfection/detergent fluids have been allowed. The fluids will be stored in 1000 L IBC containers. Two containers for each fluid have been allowed.

The hoses shall have a disinfection/detergent supply that when required will be pumped to mix in with the water. The detergent/disinfected fluid shall have a flow rate of 0.2 L/s.

4.1.2.5 Pumps

Pumps shall be provided for transferring water to and from the water tank.

The pump for the water tank to the handheld hose should supply water on demand. The flow rate of this pump shall be no less than 2 l/s.

Dosing pumps (1 for each fluid) shall be provided to pump the disinfection/detergent fluids into the handheld hose water stream. The flow rate for these pumps shall be no less than 0.2 L/s. The pumps will connect to the IBC container for each fluid.

4.1.3 Effluent Treatment

4.1.3.1 Sump

All the effluent waste and wastewater will drain into the sump.

The sump pit will have the following dimensions:

- Length: 6.25 m
- Width: 6.1 m
- Depth: 2.5 m

The sump will contain an over and under weir to collect solids and oils from the waste respectively as shown within Figure 4.2. The over weir will be 1.8 m high, and solids will collect at the bottom to be removed. The under weir shall sit 0.5 m above the sump floor to allow clean water to drain into the clean water chamber of the sump. Oil will sit on top of the water.

The sump will be a drive-in sump to collect solids trapped from the over weir. The sump is 6.1 m wide to allow a front-end loader to drive down and collect the solids.

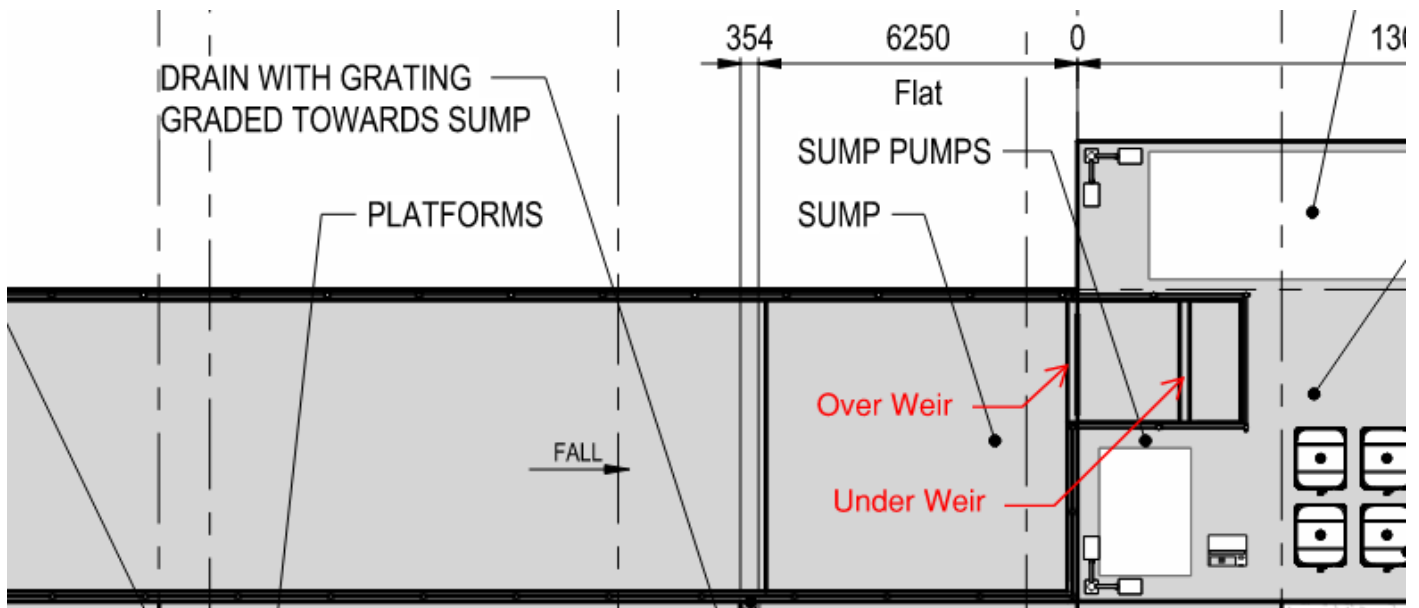


Figure 4.2 Sump layout showing the under and over weir

The sump area will have a 1.5 m fencing for safety around the perimeter not including the entrance to allow access for the front-end loader.

4.1.3.2 Sump pump

A sump pump will then pump the remaining wastewater to an effluent pond for disposal. The sump pump will have a capacity of pumping at 100 L/min to the effluent pond via a pipeline. The length of the pipeline will be dependent on the location of the effluent pond from the wash bay facility. The pipe will be a HDPE 90 SDR 17.

4.1.3.3 Effluent pond

The effluent pond will have a surface area of 750 m² and a maximum depth of 3 m. It is noted that this is the maximum effluent pond required based on a 90% truck wash utilization and a 12-hour operation. The size of the effluent pond can be decreased for truck washes that are not being used as frequently.

In high rain events a tanker will be required to collect the wastewater and dispose of it accordingly.

4.1.3.4 Solids disposal

Sludges and solids will be disposed of from the drive-in sump area via a front-end loader. The solids will be disposed of in deep pits or stockpiled for later disposal at earth fill refuse tips.

4.2 Treatment System for water reuse

A water reuse system is an option to add within an area of high droughts.

The truck wash design for the treatment system will include all the same design as outlined within the Basic design Section 4.1. However, the effluent pond storage area can be significantly decreased.

4.2.1 Recycle Treatment System

A higher level of treatment is required to reuse the water for the truck wash process than for irrigation purposes due to the possible contact with humans.

After the effluent waste has gone through the pre-treatment requirements as outlined within Section 4.1.3 **Error! Reference source not found.** the waste will need to be further treated to be reused for the truck wash. Further treatment shall include:

- Inlet screen (100m³/day) for collection of solids
- Oil water separator.
- Ultra filtration followed by a UV and hypo dosing recirculation tank to meet the recycled water guidelines.

The water would be treated constantly over a 24 hr period.

Some of the water will need to be disposed of either to the effluent pond or to sewerage if available due to the accumulation of salts.

4.3 Addition of Bay

The addition of a bay to the wash facility will include additional elements outlined within Section 4.1.1. The bay requires additional hoses outlined within doubling the capacity of the water wash down system, the sump and effluent treatment system as well as the effluent pond and or recycle treatment system.

4.4 Optional Extras

In addition to the design outlined within section 4.1 the wash bay may have the following optional additional elements.

4.4.1 Wash Bay Roof

A roof will cover the wash bay and the sump to eliminate the rainwater entering the wastewater. The roof will also provide protection from the elements for the operators. The roof will be slanted to minimize pooling of rainwater. The roof will be held up via steel columns and will be a colorbond type roofing with steel bracing.

4.4.2 Extension of truck wash

GHD have designed an option to extend the wash bay such that entire B-triple truck can be washed without the need for the operator to move the truck forward to wash each trailer individually.

The wash bay slab will have the following dimensions:

- Length:
- Width:
- Concrete thickness:

Concrete aprons either side of the wash bay will fall (2-3% gradient) towards the wash bay slab. The apron will be the same width as the wash bay and 4 m in length.

4.4.3 Additional Amenities

The base design includes a single shower and toilet facility. GHD have added an additional cost for an extra shower and toilet within the amenities.

5. Cost estimate

5.1 CAPEX Estimate

An order of magnitude CAPEX cost estimates was developed and was based on the scope outlined within Section 4.1.

Table 5.1. outlines the cost estimates for the basic wash bay design and the reuse of water design.

Table 5.1 Wash Bay cost estimates

| | Number of wash bays | Total Cost (\$AUD) |
|--|---------------------|--------------------|
| Basic Design (Waste to effluent Pond) | 1 | 900,000 |
| | 2 | 1,650,000 |
| | 3 | 2,350,000 |
| Reuse of Water Design – Water treatment system for water reuse | 1 | 1,300,000 |
| | 2 | 2,200,000 |
| | 3 | 3,000,000 |

Optional extra elements within the wash bay are outlined within Table 5.2. This is an additional cost to basic design or reuse water design cost outlined within Table 5.1.

Table 5.2 Optional Extras

| | Total Cost (\$AUD) |
|---|--------------------|
| Addition of 2 showers to existing amenities | 20,000 |
| Roof (per bay) | 75,000 |
| Extension of truck wash (per bay) | 270,000 |

A basic amenities (2 toilets) is included within the cost estimates of Table 5.1. If amenities are not required at a truck wash facility the costs outlined within Table 5.1 can be reduced by \$50,000 AUD as outlined within Table 5.3.

Table 5.3 Amenities (note that amenities are included within the basic wash bay of table 4.1).

| | Total Cost (\$AUD) |
|-------------------------------|--------------------|
| Amenities (Two toilet stalls) | 50,000 |

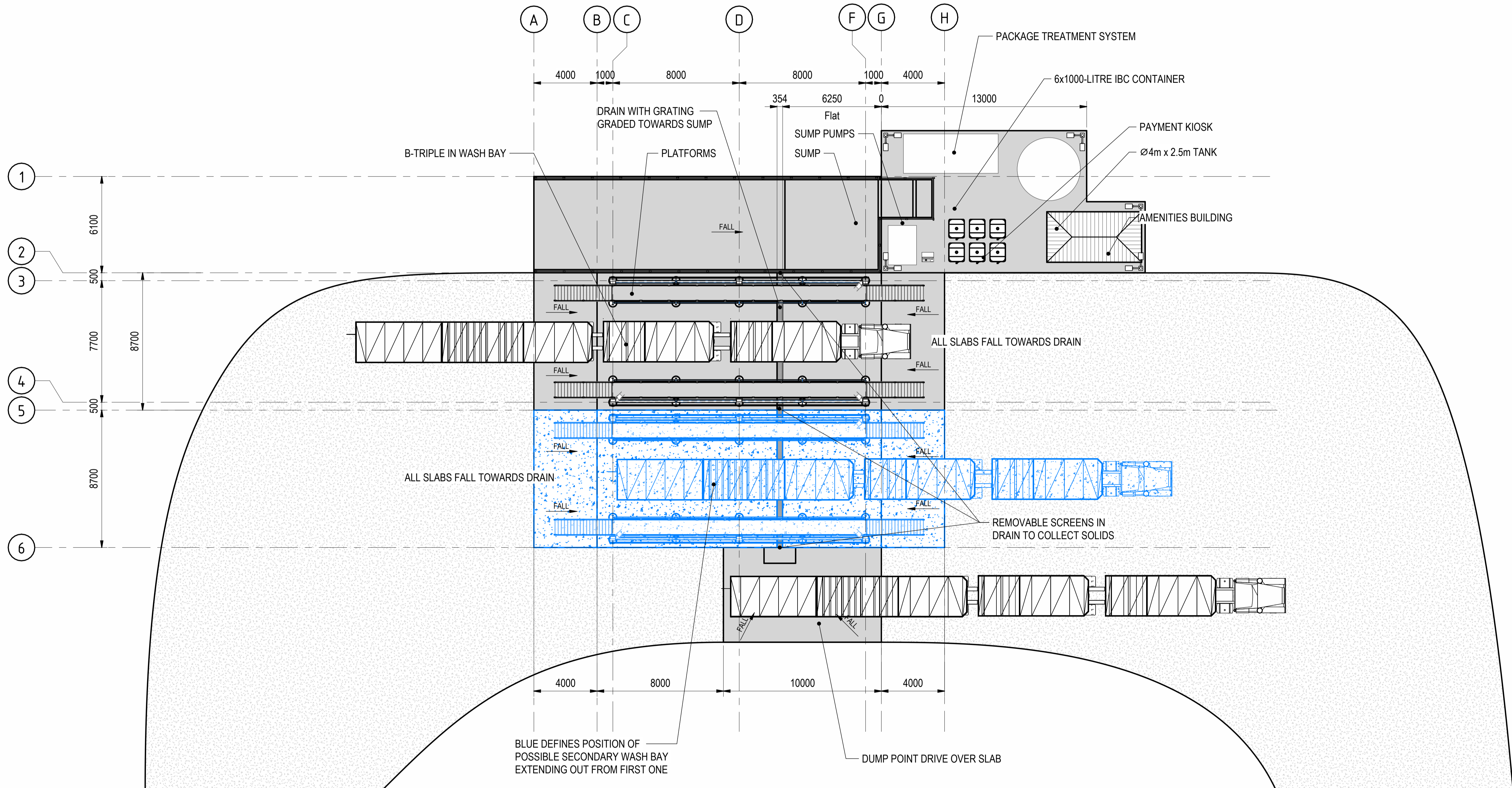
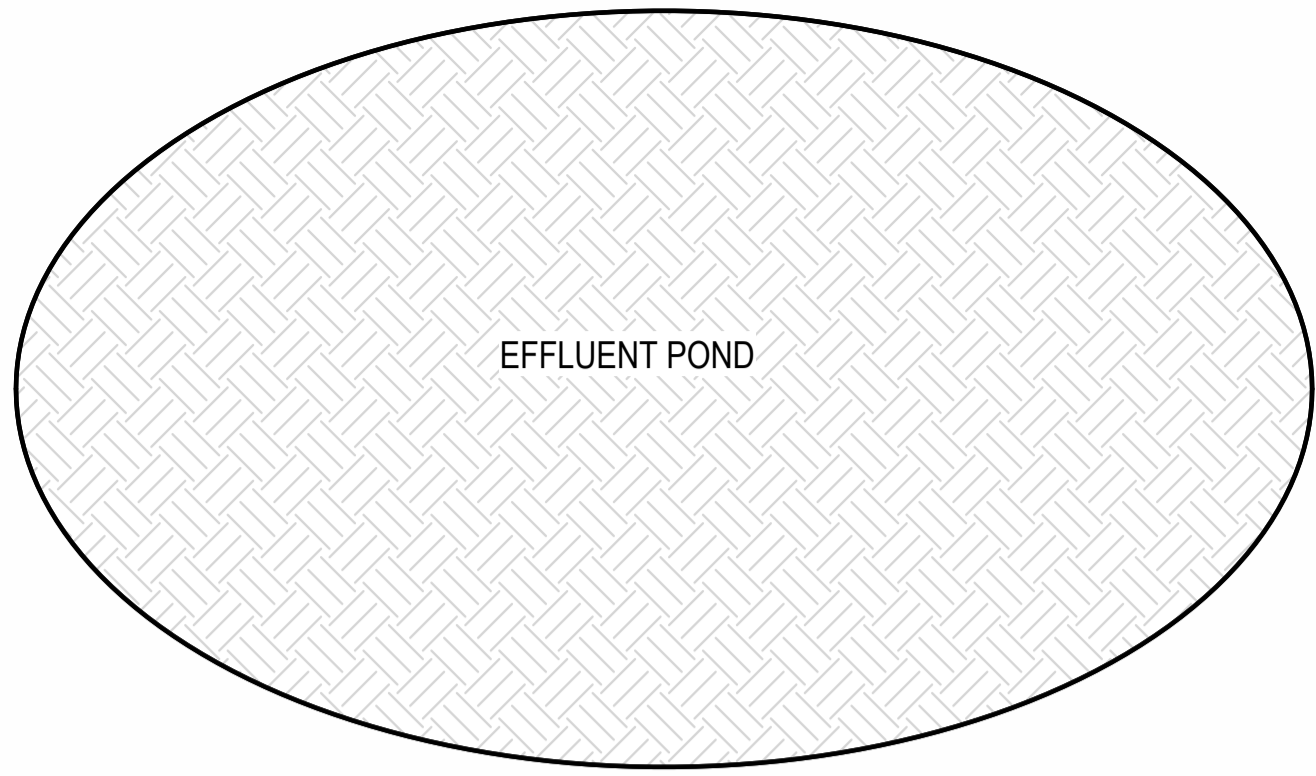
Appendices

Appendix A

Drawings

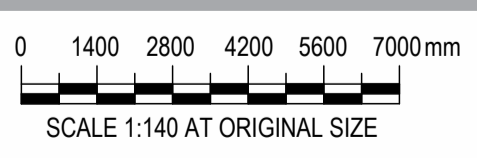
12570301-1894-S-0002 - Single trailer wash bay

12570301-1894-S-0004 – Multiple trailer wash bay



SLAB PLAN
SCALE 1 : 140

| | | | | | |
|------------------------------|------------------|----------------|------------|----------|--------|
| 0 | 1400 | 2800 | 4200 | 5600 | 7000mm |
| SCALE 1:140 AT ORIGINAL SIZE | | | | | |
| Rev | Description | Checked | Approved | Date | |
| A | ISSUED FOR STUDY | | | 29.04.24 | |
| Author | A. CONWAY | Drafting Check | | | |
| Designer | D. NOWLAND | Design Check | D. NOWLAND | | |



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Client **ACIL ALLEN**
Project **SA BIOSECURITY TRUCK WASH FACILITIES FOR LIVESTOCK TRANSHIPPING HUBS PROJECT**
Plan for CONTRA

Drawing Title **BIOSECURITY TRUCK WASH VEHICLE EQUIPMENT TRUCK WASH BAY BUILDING LAYOUT**

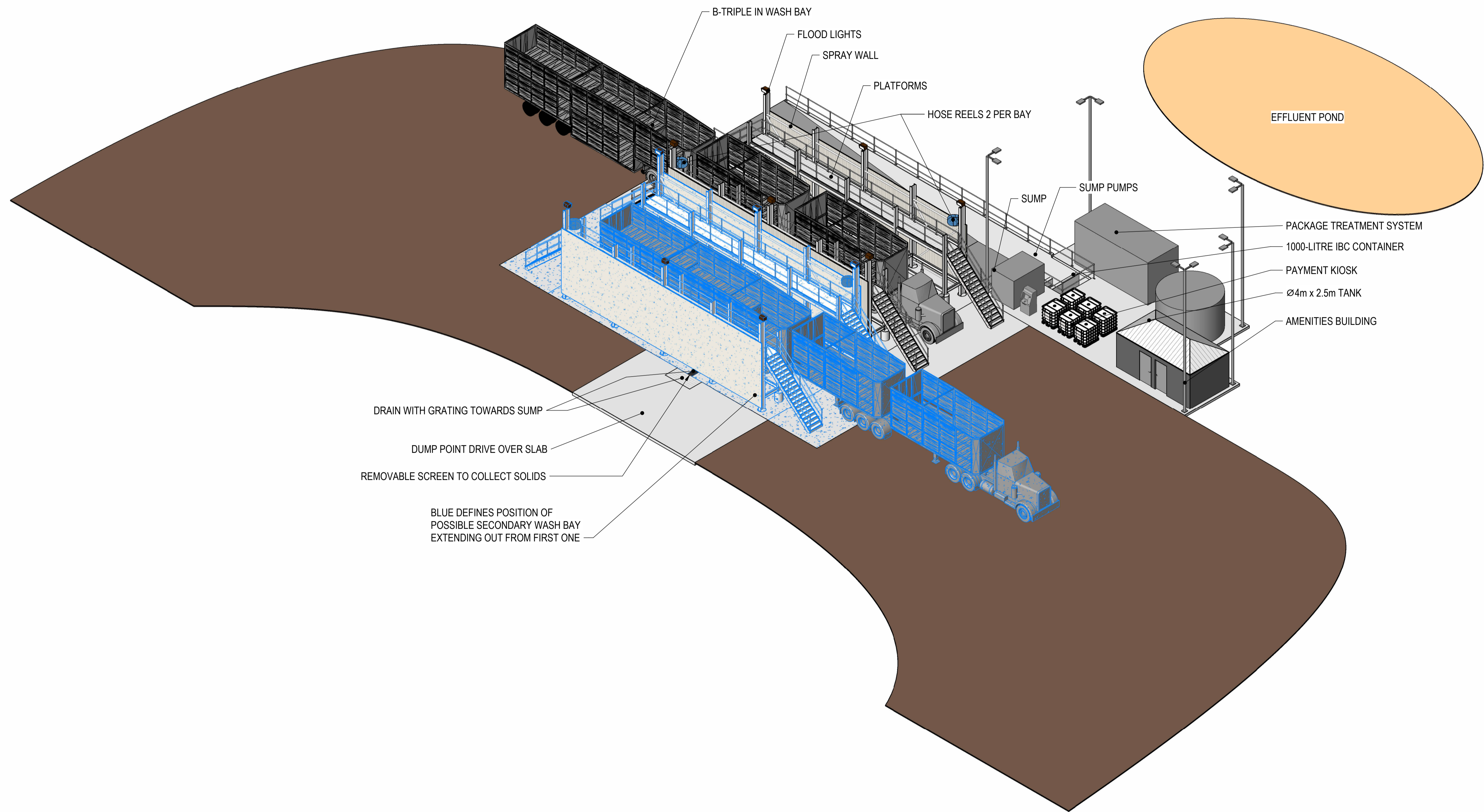
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Project No. **12570301**

Status **ISSUED FOR STUDY**

Drawing No. **12570301-1894-S-0001**

Size **A1**
Rev **A**



DRAIN WITH GRATING TOWARDS SUMP

DUMP POINT DRIVE OVER SLAB

REMOVABLE SCREEN TO COLLECT SOLIDS

BLUE DEFINES POSITION OF POSSIBLE SECONDARY WASH BAY EXTENDING OUT FROM FIRST ONE

PICTORIAL VIEW

| Rev | Description | Checked | Approved | Date |
|-----|------------------|---------|----------|----------|
| A | ISSUED FOR STUDY | | | 29.04.24 |

Author: A. CONWAY Drafting Check: -
 Designer: D. NOWLAND Design Check: D. NOWLAND

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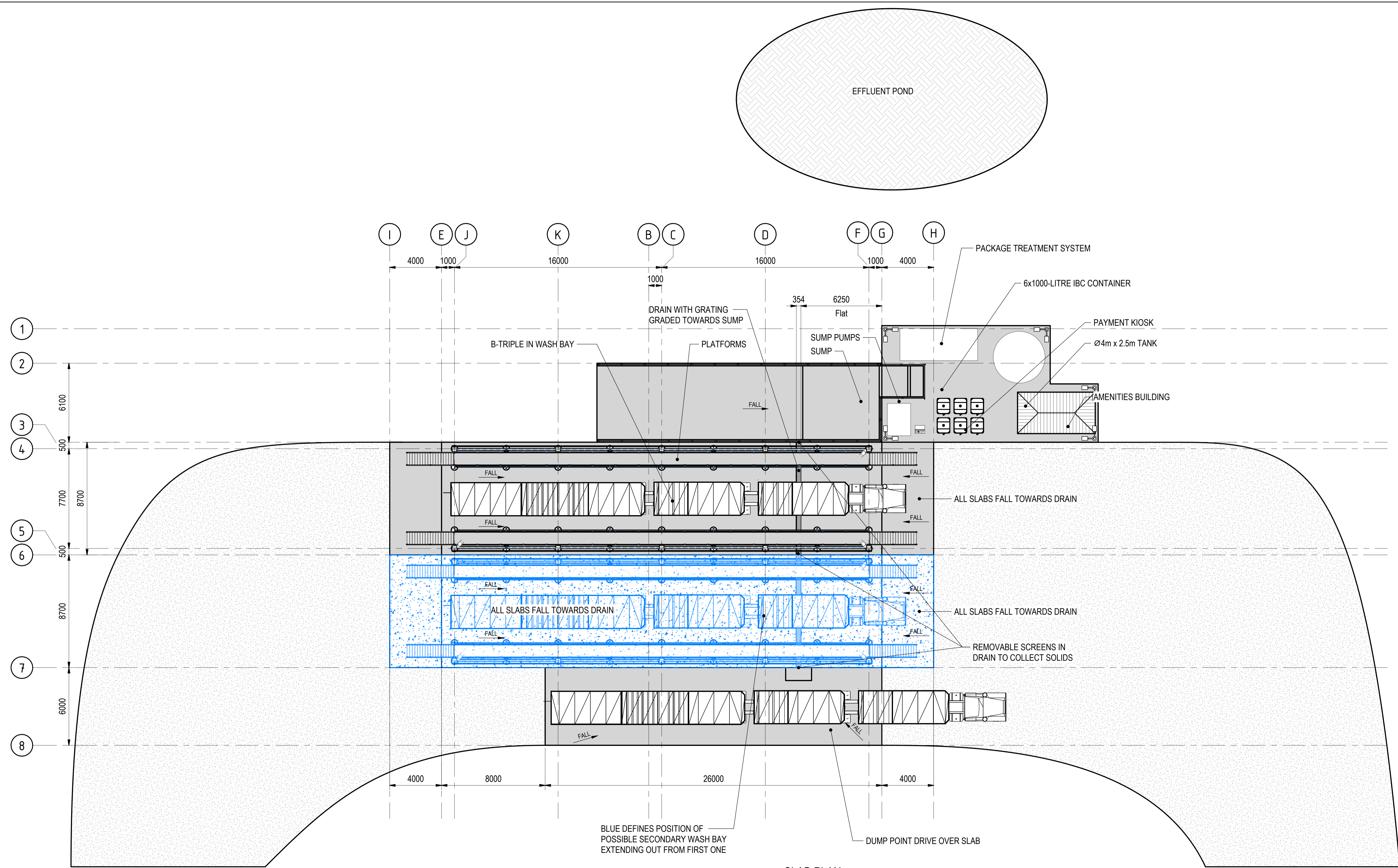
Drawing Title: **BIOSECURITY TRUCK WASH VEHICLE EQUIPMENT TRUCK WASH BAY PICTORIAL VIEW**

Project No.: **12570301**

Status: **ISSUED FOR STUDY**

Drawing No.: **12570301-1894-S-0002**

Size: **A1**
 Rev: **A**



SLAB PLAN
SCALE 1:140

| | | | | | |
|------------------------------|------------------|----------------|------------|----------|--------|
| 0 | 1400 | 2800 | 4200 | 5600 | 7000mm |
| SCALE 1:140 AT ORIGINAL SIZE | | | | | |
| Rev | Description | Checked | Approved | Date | |
| A | ISSUED FOR STUDY | | | 29.04.24 | |
| Author | A. CONWAY | Drafting Check | - | | |
| Designer | D. NOWLAND | Design Check | D. NOWLAND | | |

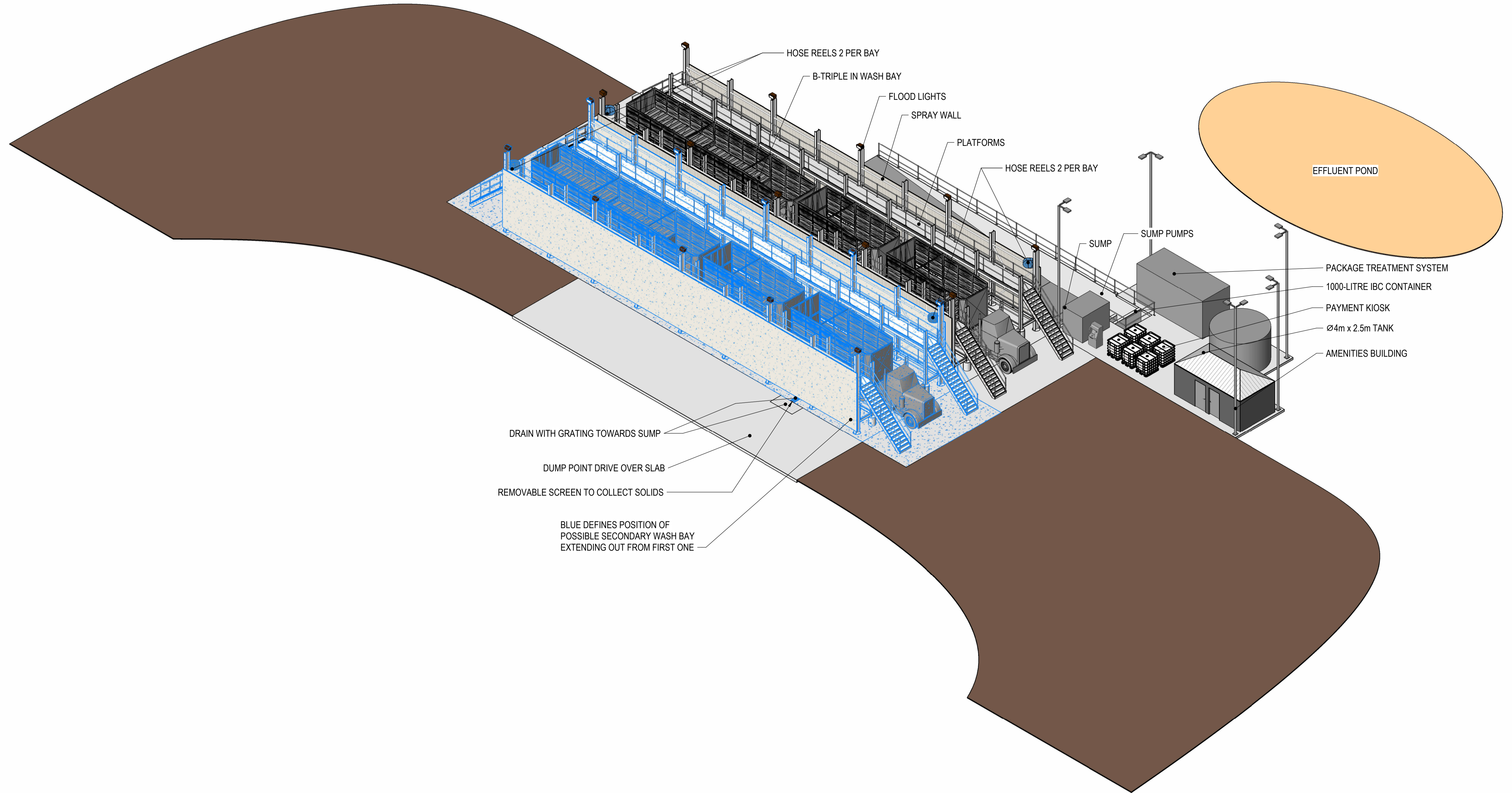
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Project No. **12570301**
Status **ISSUED FOR STUDY**

Drawing Title **BIOSECURITY TRUCK WASH VEHICLE EQUIPMENT TRUCK WASH BAY EXTENDED BUILDING LAYOUT**
Drawing No. **12570301-1894-S-0003**
Rev **A**

Size **A1**



DRAIN WITH GRATING TOWARDS SUMP

DUMP POINT DRIVE OVER SLAB

REMOVABLE SCREEN TO COLLECT SOLIDS

BLUE DEFINES POSITION OF POSSIBLE SECONDARY WASH BAY EXTENDING OUT FROM FIRST ONE

PICTORIAL VIEW

| Rev | Description | Checked | Approved | Date |
|-----|------------------|---------|----------|----------|
| A | ISSUED FOR STUDY | | | 29.04.24 |

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Drawing Title: **BIOSECURITY TRUCK WASH VEHICLE EQUIPMENT TRUCK WASH BAY EXTENDED PICTORIAL VIEW**

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