

WGA

WALLBRIDGE GILBERT
AZTEC

Southern Launch

Whalers Way Orbital Launch Complex

**TRANSPORT AND ACCESS
IMPACT ASSESSMENT**

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WGA

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CONTENTS

1. Project Background	4
1.1 Site Locality	5
1.2 Site Details	6
1.3 General Site Overview and Capabilities	7
1.3.1 Launch Site A	8
1.3.2 Launch Site B	10
1.3.3 Infrastructure Site D	11
1.3.4 Range Control Site E	11
2. Design Objectives	12
3. Safe System Principles	14
4. Safety in Design	14
5. Road Access Network	14
5.1 Impacts on the Arterial and Local Road Network	15
5.2 Traffic and Access Arrangements Within The Site	23
5.3 Internal Access Network	29
5.3.1 Geometric Access Track Requirements	29
5.3.2 Pavements	30
5.3.3 Intersections (Junctions)	30
5.3.4 Facilities	36
6. Traffic Generation and Distribution	38
6.1 Anticipated Vehicle Types	38
6.2 Vehicle Movements during Construction	39
6.3 Vehicle Movements During Operations	42
7. Public Access Arrangements	43
8. Construction And Operational Impacts	44
8.1 Construction Traffic Impacts	44
8.2 Helicopter Operations	44
8.3 Dangerous Goods Transport	45
9. Summary	47

Appendices

Appendix A Overall Site Plan

Appendix B Site Plan (Geometric Condition Ratings)

Appendix C Locality Plan Turn Paths

Appendix D Site Plan 19m Semi Trailer Turn Paths

Appendix E CASA Helicopter Site requirements

Appendix F Dangerous Goods Transport Documents

Tables

Table 1 - Assessment Requirements.....	13
Table 2 - Rating of Existing Road Geometry Condition.....	23
Table 3 - Section V1 Condition Rating.....	24
Table 4 - Section V2 Condition Rating.....	24
Table 5 - Section V3 Condition Rating.....	25
Table 6 - Section V4 Condition Rating.....	25
Table 7 - Section V5 Condition Rating.....	26
Table 8 - Section V6 Condition Rating.....	27
Table 9 - Section V7 Condition Rating.....	28
Table 10 - Approximate Construction Equipment (Trucks).....	41
Table 11 - Trip Generation Assumptions	43

Figures

Figure 1 - Pt Lincoln to Whalers Way.....	5
Figure 2 - Area of Whalers Way to be Assessed (yellow line depicts the coastline)	6
Figure 3 - Artists Impression of the Launch Pad (A).	9
Figure 4 - Ravnet 26m B-Double Access Gazetted Routes	15
Figure 5 - Ravnet 35.0m B-Triple Access Gazetted Routes	16
Figure 6 - Yandra Terrace / Pine Freezers Road Layout	17
Figure 7 - Yandra Terrace / Pine Freezers Road – Left Turn Lane in Looking Northerly	18
Figure 8 - Yandra Terrace / Pine Freezers Road – Looking Westerly Toward Yandra Terrace (Pine Freezer Road Termination)	18
Figure 9 - Pine Freezers Road / Investigator Road (Proper Bay Road) Layout.....	19
Figure 10 - Pine Freezers Road / Investigator Road (Proper Bay Road) – Looking Easterly Toward Investigator Road.	19
Figure 11 - Pine Freezers Road / Investigator Road – Looking Southernly Down Investigator Road .	20
Figure 12 - Proper Bay Road / Fishery Bay Road Layout.....	21
Figure 13 - Proper Bay Road / Fishery Bay Road (Looking West Toward Fishery Bay Road).....	22
Figure 14 - Proper Bay Road / Fishery Bay Road (Looking South)	22
Figure 15 – Location of Junctions within the Internal Access Track Network.	32
Figure 16 – Access Track Junction Seagull Layouts “Whale Chaser Crevasse” (looking west). The junction with the minor access track Whale Chaser Crevasse provides reasonably good SISD (>106m) on both the major access track approaches.	32
Figure 17 – Access Track Junction Seagull Layout “Whale Chaser Crevasse” (looking south). The junction with the minor access track Whale Chaser Crevasse provides reasonably good ASD (>55m) on approach to the major access track.	33
Figure 18 – Access Track Junction Seagull Layout “Cape Wiles” (looking north east). SISD on approach of the junction is poor for the southbound major alignment (<106m) but reasonable for the northbound major alignment. ASD is reasonably good.....	33
Figure 19 – Access Track Junction Layout “Mathew Flinders Lookout” (west end – looking westerly). This junction has a particularly poor intersecting angle	34
Figure 20 – Access Track Junction Layout “Sink Hole Road” (west end) – looking easterly (westbound SISD is good > 106m). This intersection is currently in operational (Sink Hole Road is closed).	34
Figure 21 – Sink Hole Road Junction Looking Westerly, note faded “give way” sign (eastbound SISD is good > 106m). This intersection is currently in operational (Sink Hole Road is closed).	35
Figure 22 – SISD Requirements at Junctions and Intersections <i>from Austroads GTRDP4A “Figure 3.2”</i>	35
Figure 23 – Conceptual Layout	37

1. PROJECT BACKGROUND

The general requirement of this project is to provide launching facilities for micro to small satellites into Orbit from location(s) within South Australia for Southern Launch. This report focusses on the development of the proposed Whalers Way Orbital Launch Complex (WWOLC) at Whalers Way.

The Project Description and Proposal Plan Set contains details regarding the project.

The State Planning Commission has provided Southern Launch with the Assessment Guidelines for the preparation of the assessment Environmental Impact Statement (EIS) for the WWOLC

The Transport and Access Impact Assessment (TAIA), is contained within the EIS and will be used to evaluate current and proposed access arrangements for the site.

The TAIA Report considers and addresses the following:

- Traffic impacts on the arterial and local road networks to an extent which encompasses Port Lincoln.
- The traffic and access impact for the construction period as well as any ongoing operations and maintenance.
- Details of the transport vehicle sizes and movements outside of normal gazetted heavy vehicles.
- The minimisation and/or mitigation of traffic and transport impacts.

1.1 SITE LOCALITY

The site of the proposed development is located at the southern tip of the Eyre Peninsula in the area named Sleaford and is commonly known as “Whalers Way”. The land subject site is located approximately 25 kilometres southwest of Port Lincoln (Figure 1).

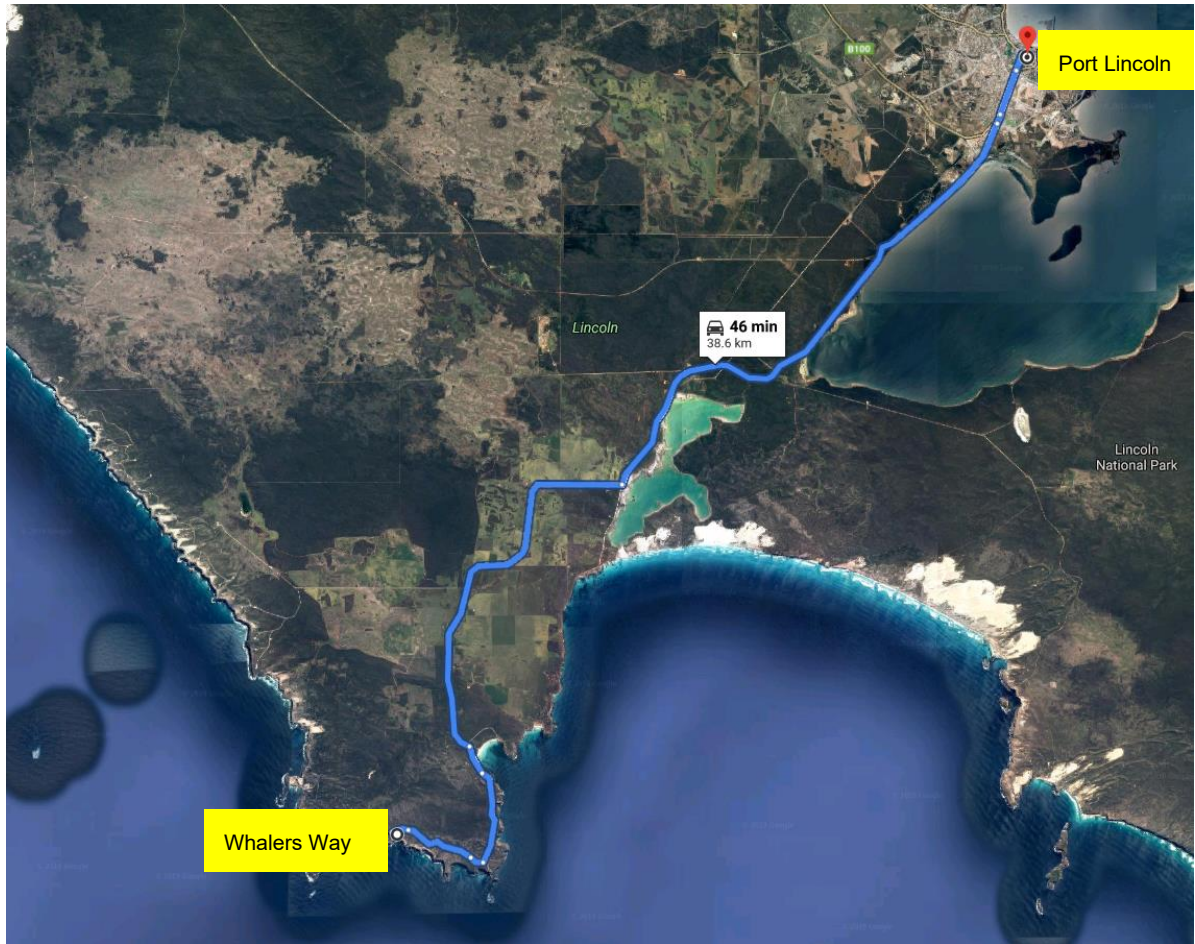


Figure 1 - Pt Lincoln to Whalers Way

1.2 SITE DETAILS

The subject allotment has an area of approximately 2,640 hectares and is accessed via Right Whale Road with the development footprint of the WWOLC contained within approximately 1,200 hectares of the allotment, located below the -34.923 degree line of latitude being the subject of the agreed lease between Southern Launch and the registered proprietor of the land (Theakstone Property Pty Ltd).

The site has access from Right Whale Road at the north eastern corner of the land. Access to the site from Port Lincoln follows Proper Bay Road, Fishery Bay Road to Right Whale Road before entering the site and private road known as Whalers Way Road (**Figure 2**).

In its current condition, the subject site is predominantly an undeveloped vegetated coastal area, which is punctuated by access roadways, open areas including car parking and picnic/camping areas together with supporting infrastructure such as tables, bins, signage, and fencing. Around the majority of the site the coastal interface is in the form of cliffs of varying heights and rocky outcrops, with a few areas also having coved beaches.

The majority of the site is covered in remnant vegetation which varies in form primarily based on the distance from the coastline and the nature of the ground conditions. Some areas appear to have been historically cleared, with varying degrees of regrowth evident in these areas. A series of access tracks exists throughout the site, of varying quality and accessibility. Some of the main tracks would be accessible to two-wheel-drive vehicles during good weather, however the majority of the lower order tracks are only accessible to four-wheel-drive vehicles, with some only being accessible in good weather conditions.

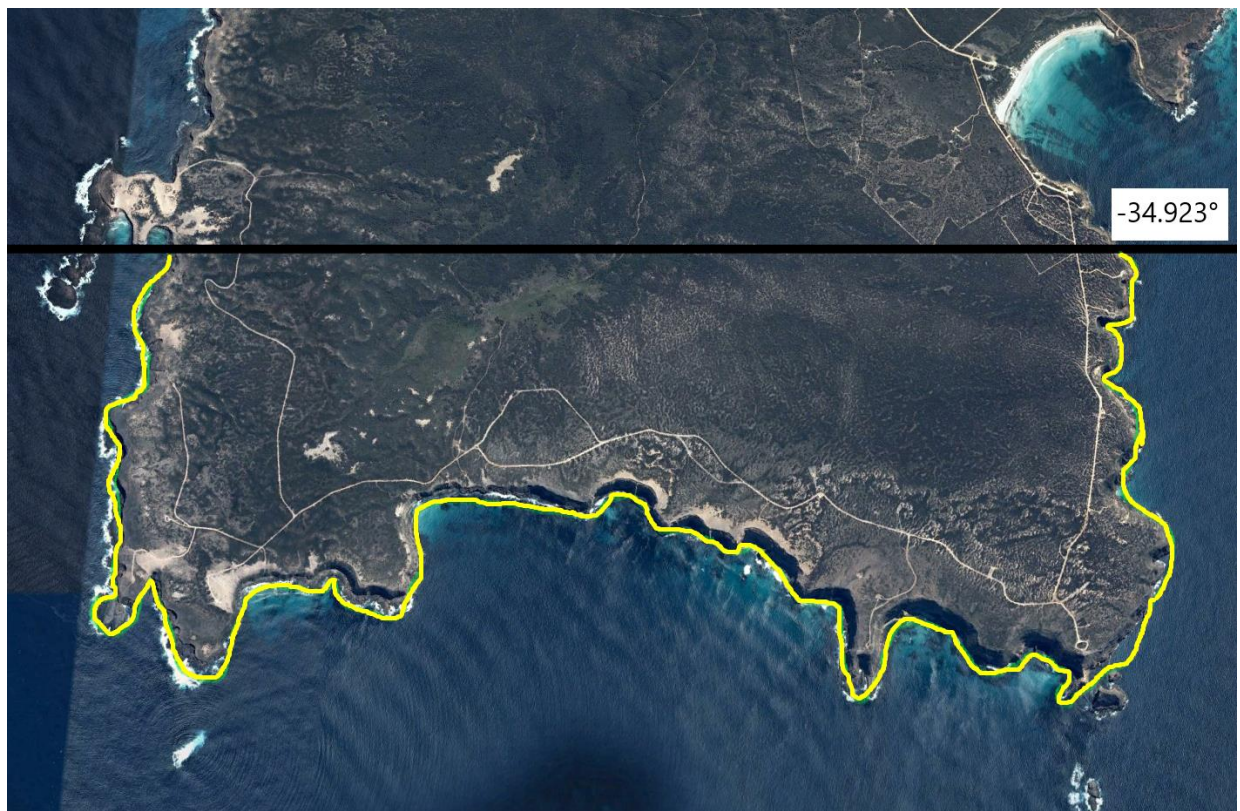


Figure 2 - Area of Whalers Way to be Assessed (yellow line depicts the coastline)

1.3 GENERAL SITE OVERVIEW AND CAPABILITIES

Southern Launch seek to establish infrastructure that will support the launch of domestic and international launch vehicles providing the safest and most cost-effective orbital launch site in the world servicing the growing demand for Polar and Sun Synchronous Orbit satellite insertion.

The current development proposal for the Launch Complex is anticipated to be undertaken in five phases across up to four locations on the subject site between 2020 and 2024.

The indicative staging is as follows:

- Stage 1 - A permanent launch pad and permanent launch support infrastructure
- Stage 2 - A second permanent launch pad and permanent launch support infrastructure
- Stage 3 - A permanent range operations centre and permanent visitor's centre
- Stage 4 - A permanent engine test stand and test support infrastructure
- Stage 5 - Non-conventional launch facilities (not part of the current application)

The components of the development are detailed as follows:

- change of use of land to introduce an additional use of an aerospace facility in the form of a launch site.
- construction of buildings and infrastructure, including but not limited to:
 - Assembly Buildings (temporary and permanent);
 - Range Control Facilities;
 - Diesel and / or Hydrogen Fuel Cell Powered Generators;
 - Helicopter Pad(s);
 - Water Tanks;
 - Water Capture and Treatment Systems;
 - Launch Pads;
 - Lightning Rods;
 - Anemometer Towers;
 - Engine test stands;
 - Propellant (Liquid, Hybrid and Solid) Storage;
 - Secure Block Houses;
 - Blast Walls;
 - Bunding (for Blast Wave Deflection);
 - Installation of Fibre Optic and Satellite Communication Systems;
 - Installation of High Voltage Power Lines.
- construction of internal access roads.
- land division in the form of a lease extending beyond five (5) years.

- visitor viewing area and interpretative facilities.
- temporary infrastructure associated with development and construction, including but not limited to:
 - temporary concrete batching plant;
 - temporary site and construction offices and facilities;
 - temporary laydown areas; and
 - temporary access tracks.

The development of the site is proposed to occur in stages as detailed within the Site Master Plan.

The proposal comprises a total of two separate launch facilities (Sites A and B) together with associated infrastructure facilities (Site D) and range control facilities (Site E) all to be constructed on the Whalers Way site.

It should be noted that there are currently investigations and planning underway for the future development of a non-conventional launch facility. However, the non-conventional launch facility (which will form a future site - Site C) do not form part of the current proposal.

1.3.1 Launch Site A

The launch facility at Site A is intended to cater for larger conventional launch vehicles of greater than 30 tonnes up to over 100 tonnes.

Site A is intended to form Stage 2 of the project, at is anticipated to be constructed in 2023 or later.

An artist's impression of the launch pad site and associated infrastructure is shown in **Figure 3**.

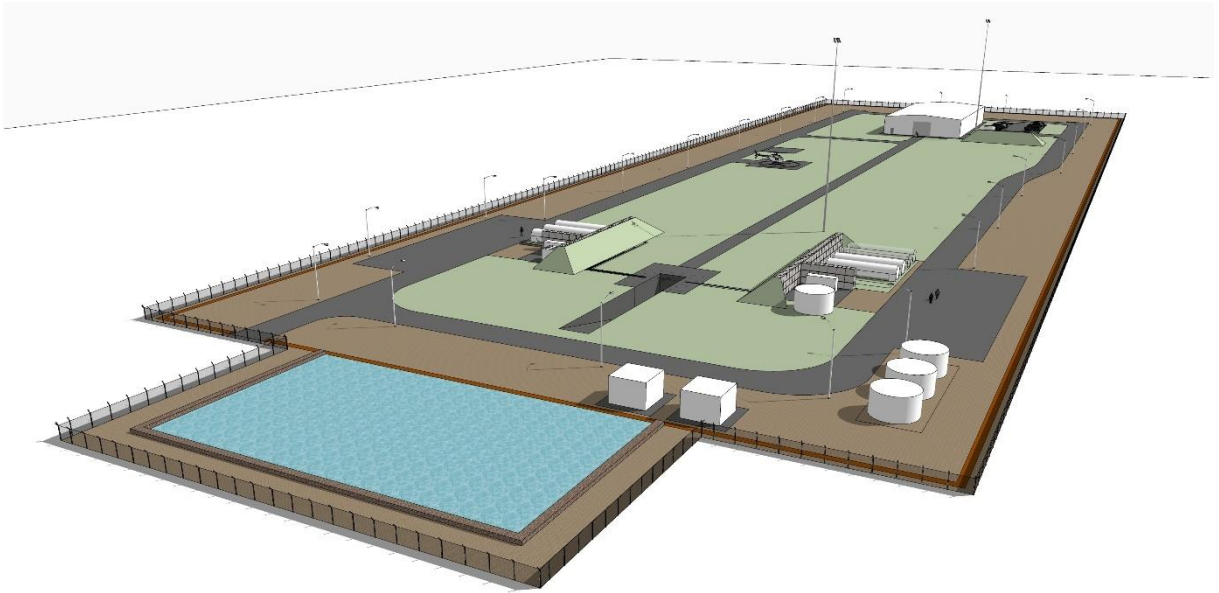
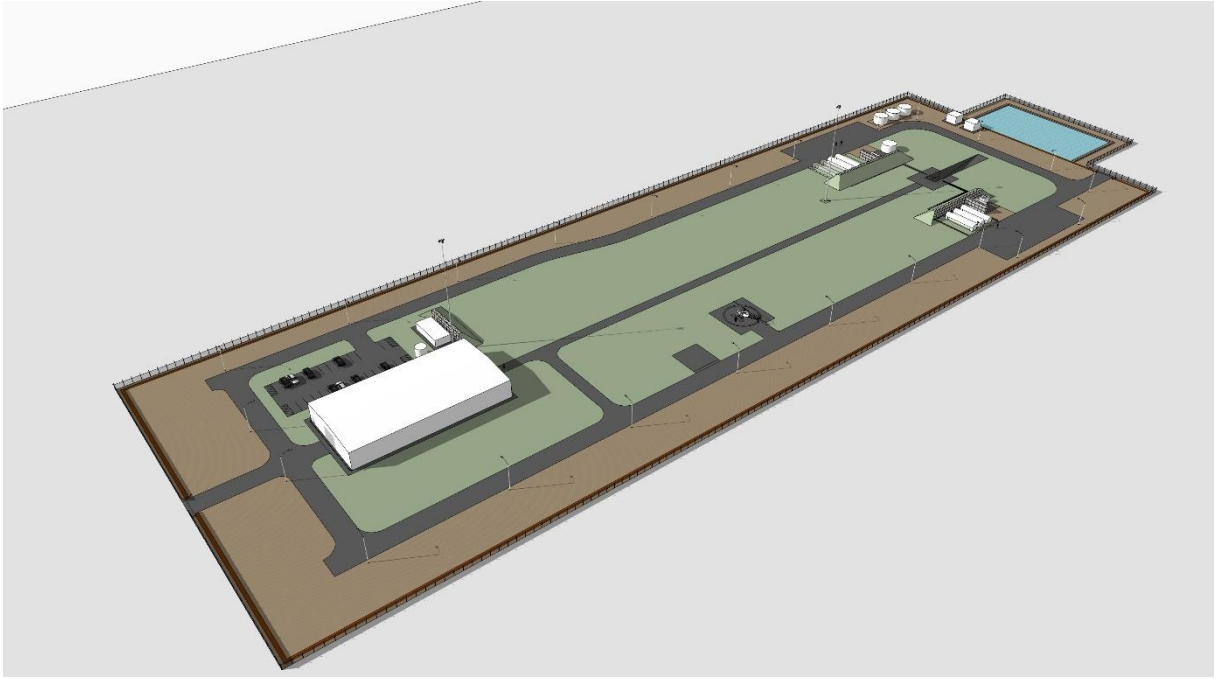


Figure 3 - Artists Impression of the Launch Pad (A).

Access Tracks for commercial vehicles are to be designed to cater for 19 metre semi-trailer vehicles. There will be very low vehicle movements in respect of heavy vehicle movements (2 commercial vehicles per day peak).

Vehicle movement generators for the launch site (A) include:

- Launch Vehicle Fuel delivery (3 per week)
- Oxidiser delivery (3 per week)
- Generator Fuel delivery (1 per week)
- Septic Tank Pump Out (1 per week)
- Launch Vehicle transport to site (1 per week)
- Crane movements (3 per week)

Two vehicle parking spaces for delivery vehicles, one adjacent to the fuel bund and one adjacent to the oxidiser bund, will be of concrete construction.

The staff parking area is to be of asphalt construction to meet the relevant standards in respect of parking dimensions and number of disabled carparks.

1.3.2 Launch Site B

The launch facility at Site A is intended to cater for larger conventional launch vehicles from micro sized (less than 10 tonnes) up to approximately 50 tonnes.

Site B is intended to form Stage 1 of the project, and is anticipated to be constructed as soon as the project receives relevant regulatory approvals.

Access Tracks for commercial vehicles are to be designed to cater for 19 metre semi-trailer vehicles. There will be very low vehicle movements in respect of heavy vehicle movements (2 commercial vehicles per day peak).

Vehicle movement generators for the launch site include:

- Launch Vehicle Fuel delivery (3 per week)
- Oxidiser delivery (3 per week)
- Generator Fuel delivery (1 per week)
- Septic Tank Pump Out (1 per week)
- Launch Vehicle transport to site (1 per week)
- Crane movements (3 per week)

Two vehicle parking spaces for delivery vehicles, one adjacent to the fuel bund and one adjacent to the oxidiser bund, will be of concrete construction.

The staff parking area is to be of asphalt construction to meet the relevant standards in respect of parking dimensions and number of disabled carparks.

1.3.3 Infrastructure Site D

Site D will initially consist of a quarry and workspace to produce engineered pavement materials. That site will be developed over time to include:

- Dam – 30 megalitre capacity
- Pump Station
- Electrical Generation or Storage Site
- Workshop
- Rocket Storage Building
- Rocket Motor Test Station

Site D is located at the low point of the catchment area for the proposed dam.

Surrounding facilities (workshop, pump station etc) need to be designed to ensure all overland flow water from the catchment reaches the dam.

1.3.4 Range Control Site E

Site E is the range control building which will oversee operations on the site. It will also have a visitor information centre and the main operations area for security and emergency services. The building will be positioned close to the entry to the site from Right Whale Road.

The building will feature bitumen carparking with spaces for staff and visitors, including disabled spaces in accordance with relevant standards. The car parking area will also feature dedicated car parking for emergency services.

The facility will provide integrated office accommodation, toilet facilities and kitchen facilities for up to 40 staff and 20 VIPs/visitors.

2. DESIGN OBJECTIVES

The State Planning Commission has provided Southern Launch with Assessment Guidelines for the preparation of the assessment EIS for the WWOLC.

The Assessment Guidelines require the preparation of a Traffic and Access Impact Assessment as a component of the PER which addresses the following:

*A **Transport and Access Impact Assessment** prepared a suitably qualified traffic and access engineer. The assessment should evaluate current and proposed access arrangements including the effect on the arterial road network and car parking, as well as vehicle interface with the local road network. The impacts on the arterial and local road networks are to be considered to an extent which encompasses Port Lincoln. Any assessment must include the traffic and access impact for the construction period as well as any ongoing operations and maintenance including details of the transport vehicle sizes and movements outside of normal gazetted heavy vehicles and how any impacts will be minimised and/or mitigated.*

The Assessment Guidelines set out in detail the technical requirements and specific issues which need to be addressed in the assessment.

The Assessment Requirements in the Assessment Guidelines for the Traffic and Access Impact Assessment are shown in **Table 1**, and all these requirements need to be comprehensive in the reporting.

Table 1 - Assessment Requirements

Assessment Requirement 14	Relevant Section within this report	The proposal requires access for the transportation of infrastructure and construction material to site and ongoing access for materials transport, workforce attendance and public viewing purposes.
14.1	5.1	Undertake a Transport Assessment that involves end-to-end supply chain (input and output) to determine transport impacts (including traffic impacts on the local and arterial road network) and measures to manage and/or mitigate the impacts during the construction and operational phases. The impacts on the arterial and local road networks are to be considered to an extent which encompasses Port Lincoln.
14.2	5.2	Describe the existing transport and access arrangements to and around the site, including access from the arterial and local road network, private roads and gated areas. Detail the road surface treatments and minimum vehicle types for each road and track (e.g. 4WD)
14.3	5.3	Describe and identify on plans, all primary and alternate access tracks (including arterial and local roads), tracks and parking proposed for the construction and operational phases.
14.4	6.1	Identify all vehicle types required to utilise the existing and any proposed access routes, specifically the heavy vehicles anticipated. Identify any road surface upgrades required as a result of the development and any heavy vehicle movements (including over-size/over-mass) that require approval through the National Heavy Vehicle Regulator.
14.5	6.2 & 6.3	Identify the anticipated construction and operational vehicle movements per day, making provision for any increases in either phase of development. Include the likely transportation of large-scale materials or componentry and method of transport (e.g. heavy vehicles, airfreight, shipping).
14.6	7.1	Document the anticipated publicly accessible areas, including roads to be utilised, parking and turnaround facilities.
14.7	7.2	Describe the right of way access easements required to facilitate public access to the site for public viewing purposes
14.8	8.1	Identify any potential effects of construction traffic including noise and dust and associated mitigation measures
14.9	8.2	Describe the location, extent, number and purpose (e.g. commercial or otherwise) of helicopter pads. Identify the potential impacts of helicopter operations with regard to the intended flight paths, downdraft below cruising height, wildlife (e.g. bird and bat strike) and noise implications
14.10	8.3	Describe the risk involved in transporting materials to the site, including any specific safety and security requirements to be implemented when travelling on roads, including the dangerous goods code requirements.

3. SAFE SYSTEM PRINCIPLES

DIT is committed to the adoption of “Safe System” principles in the design of new infrastructure. Where these principles cannot be achieved the reasons for, and justification shall be documented and approved by the client.

4. SAFETY IN DESIGN

(WHS Act Code of Practice July 2012 “Safe Design of Structures”)

DIT has the primary duty under the WHS Act to ensure, so far as is reasonably practicable, that workers and other persons are not exposed to health and safety risks arising from the design of new infrastructure. Safe design is the integration of control measures early in the design process to eliminate or, if this is not reasonably practicable, minimise risks to health and safety throughout the life of the infrastructure being designed.

Throughout the design phase the designer shall document key information about all the identified hazards and the actions taken to eliminate or minimise the risks. The final documentation shall include any remaining unusual or atypical features that have not been eliminated.

For minor projects this documentation may form part of the Design Report. For significant or complex projects, or where requested by the client or Project Manager, a Safety Report shall be prepared

5. ROAD ACCESS NETWORK

Between Port Lincoln, Whalers Way is serviced by the arterial and local road network. The route that is expected to be followed from Whalers Way consists of the following roads/network:

- Mortlock Terrace / Yandra Terrace onto Western Approach Road (Sealed Arterial Road DIT Maintained – 2200 vehicles/day 21.5% Commercial Traffic). Approximately 3km length.
- Pine Freezers Road (Sealed Connector Road, DC Lower Eyre Peninsula Maintained, traffic volume unknown). Pine Freezers Road has a rail crossing midway along its length. The rail crossing is at right angles to the road and presents no issues for 19m Semi Trailer access. Approximately 800m length.
- Investigator Road (Sealed Connector Road, DC Lower Eyre Peninsula Maintained, traffic volume unknown). Approximately 2km length.
- Proper Bay Road (Sealed Connector/Local Road, DC Lower Eyre Peninsula Maintained, traffic volume unknown). Approximately 13km length.
- Fishery Bay Road (Unsealed Local Road, DC Lower Eyre Peninsula Maintained, traffic volume unknown). Approximately 12km length.

The traffic volumes on the DC Lower Eyre Peninsula road network are unknown, but generally reduce significantly the further south the roads are located. It can be assumed that Fishery Bay Road, being unsealed is likely to have traffic volumes of less than 150 vehicles per day, therefore the additional traffic introduced by the launch facility operations will have the most impact on this section of total network.

5.1 IMPACTS ON THE ARTERIAL AND LOCAL ROAD NETWORK

The road network is available to General Mass Limit (GML) and Higher Mass Limit (HML) B-Double freight from Port Lincoln CBD through to Investigator Road.

The Ravnet route for 26m B-Double access is shown in **Figure 4**.

Yandra Terrace and Pine Freezers Road have access for up to 35m B-Triple Vehicles (GML) – refer **Figure 5**.

These roads are currently heavily used by various freight operators and the impacts on this section of the road network from the proposed Southern Launch operations are negligible considering the magnitude of heavy vehicle traffic in this commercially zoned area.

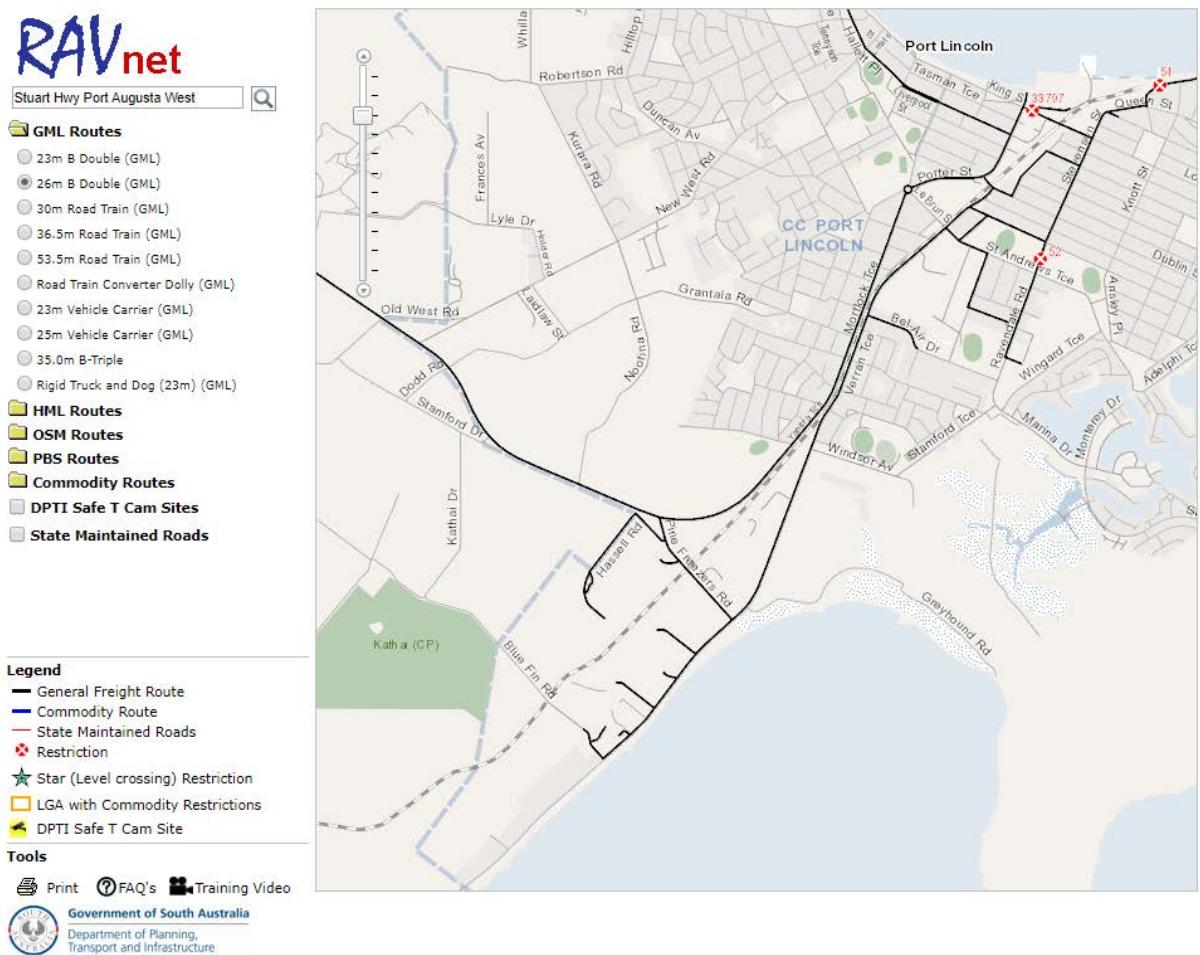


Figure 4 - Ravnet 26m B-Double Access Gazetted Routes

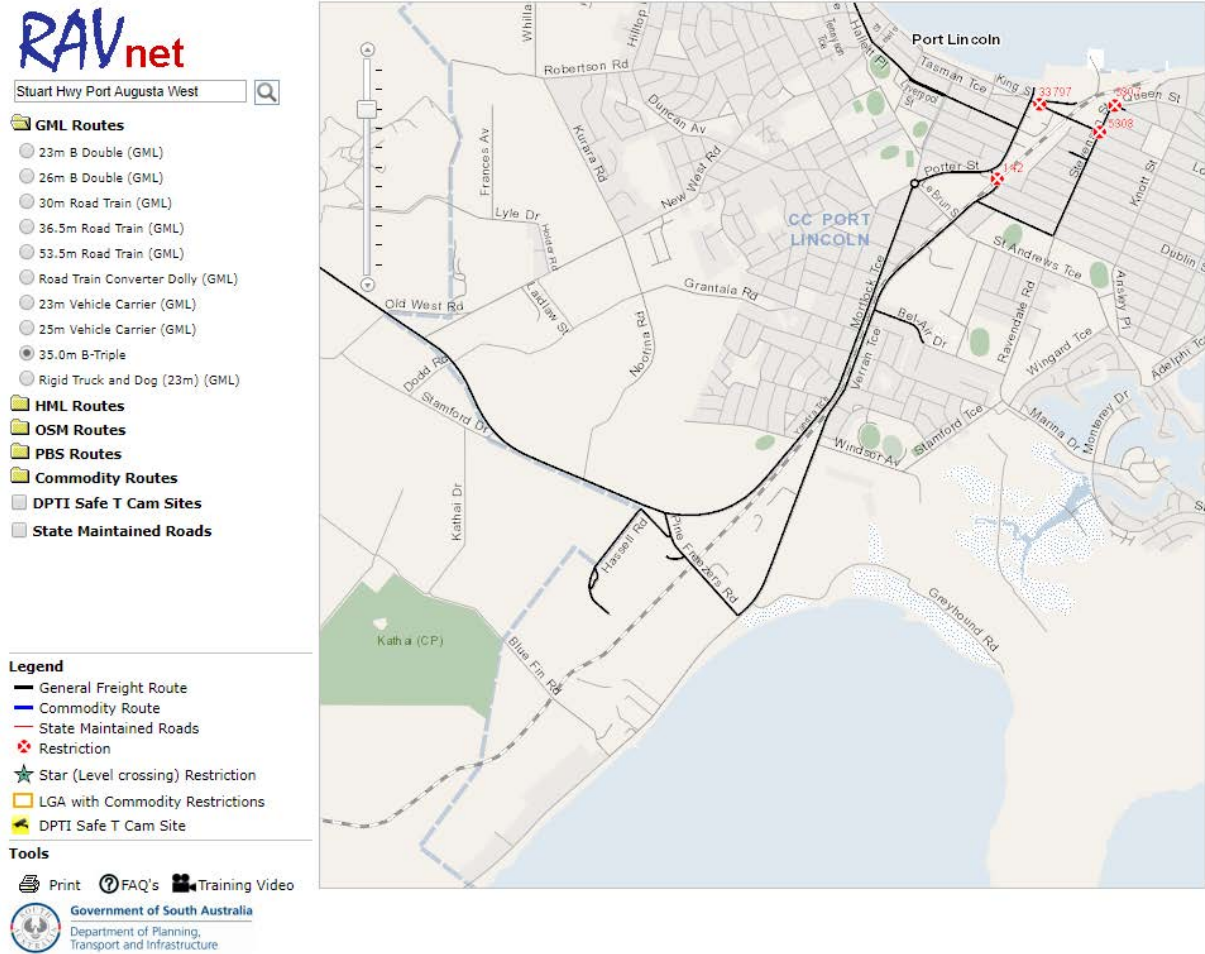


Figure 5 - Ravnet 35.0m B-Triple Access Gazetted Routes

As larger vehicles progress their way beyond Investigator Road and onto Proper Bay Road the maximum permissible freight vehicle size is a 19m GML Semi-Trailer. This restriction is continued onto Fisheries Bay Road and onto the Whalers Way site. Any vehicle larger than a 19m Semi-Trailer will require a permit to access either Proper Bay Road or Whalers Way Roads.

Trip generation is discussed in section 6.2 below. Peak launch operations are understood to generate approximately 50 vehicle trips per day of which around 8% are commercial vehicles, typical trip generation will be a lower volume.

An additional 50 vehicles per day using the sealed section of Proper Bay Road is unlikely to have any noticeable effects on pavement life or degradation. This traffic on Fishery Bay Road (if not sealed in the future) may require slightly more frequent grading operations (by Council) on this section of road to maintain the existing shape and ride/roughness (condition) of the road e.g. corrugations may develop more frequently.

The main intersections along the route are viable for up to B-Double vehicle access:

- Yandra Terrace / Pine Freezers Road – Gazetted 35.0m B-Triple vehicles witnessed using this junction. Refer **Figure 6** for layout and **Figure 7, Figure 8** for site photos). The intersection is formalised with turn lanes, lighting and kerbing. Pine Freezers Road is required to give way to Yandra Terrace. The junction has good sight lines on all approaches.

- Pine Freezers Road / Investigator Road (Proper Bay Road) – this junction has gazetted (approved) B-Double access. Refer **Figure 9** for layout and **Figure 10, Figure 10** for photos. This junction has pavement bars / line marking for traffic controls and has basic lighting. Pine Freezers Road is required to give way to Investigator Road. The junction has good sight lines on all approaches.
- Proper Bay Road / Fishery Bay Road – this junction has been constructed full width with a sealed throat area for 100m down Fishery Bay Road and has accommodated over dimensional permit vehicles for the Cathedral Rocks Wind Farm components. The junction has line marking / pavement bars and is controlled by a give way treatment with Proper Bay Road having priority. Refer **Figure 12** for junction layout and **Figure 13, Figure 14** for site photos. Auto turn has not been run on this junction – a 19m Semi Trailer vehicle will be able to manoeuvre through the junction although it may run over the pavement bars. The junction has good sight lines on all approaches.



Figure 6 - Yandra Terrace / Pine Freezers Road Layout



Figure 7 - Yandra Terrace / Pine Freezers Road – Left Turn Lane in Looking Northerly



Figure 8 - Yandra Terrace / Pine Freezers Road – Looking Westerly Toward Yandra Terrace (Pine Freezer Road Termination)



Figure 9 - Pine Freezers Road / Investigator Road (Proper Bay Road) Layout



Figure 10 - Pine Freezers Road / Investigator Road (Proper Bay Road) – Looking Easterly Toward Investigator Road.



Figure 11 - Pine Freezers Road / Investigator Road – Looking Southernly Down Investigator Road



Figure 12 - Proper Bay Road / Fishery Bay Road Layout



Figure 13 - Proper Bay Road / Fishery Bay Road (Looking West Toward Fishery Bay Road)



Figure 14 - Proper Bay Road / Fishery Bay Road (Looking South)

5.2 TRAFFIC AND ACCESS ARRANGEMENTS WITHIN THE SITE

The existing access network within the site has been generally formed through the formalisation of tracks by bulldozers and graders. No pavement has been constructed, so the access tracks are highly varying in condition of subgrade which varies between hard limestone caprock surface through to soft sand. The pavement surface and ride is highly variable and can be heavily corrugated in sections. Other areas where cap rock is present mean that the road has a very rough ride due to erosion between softer and harder areas of limestone rock.

The internal access network was subject to a site investigation on Friday 15 May 2020. The attributes that were collected during the investigation are as follows:

- Horizontal Alignment (location of curves and radius)
- Vertical Alignment (location of crests)
- Condition and type of track subgrade
- Approximate track width
- Basic Drainage considerations i.e. are additional drainage considerations likely required to formalise the access

The condition of the existing access network and various geometric attributes within the site's access tracks have been recorded in **Table 3**. The tables are broken down into various sections (V1-V7) and can be referenced to a locality map of the site contained in **Appendix A**. The condition of the existing network is provided graphically in **Appendix B**. The rating system applied is shown in **Table 2**, and the colour coding relates to graphical outputs contained in **Appendix B**.

Table 2 - Rating of Existing Road Geometry Condition

A	The existing access track geometry is considered to be a suitable alignment and condition, only requiring grading and sealing of the surface with a spray seal.
B	The existing access track geometry (and access track width) is adequate with generally only minor preparation works before bringing in a rubble basecourse and sealing the surface with a spray seal
C	The existing access track geometry requires sections of minor realignment/widening and moderate preparation works before bringing in rubble basecourse and sealing the surface with a spray seal.
D	The access track geometry requires substantial widening / realignment and major preparation works before bringing in rubble basecourse and sealing the surface with a spray seal.
E	The access track geometry in its entirety requires widening / realignment and extensive preparation works before bringing in rubble basecourse and sealing the surface with a spray seal.

Table 3 - Section V1 Condition Rating

Chainage V1	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0:00:55	Sweeping LH	@CH:100 LH R-42m	Undulating with slight decline	N/A	Rubble/Limestone	Yes	Low shrubbery on inside curve	7<W<8	C
200-400 0:00:55- 0:01:34	Straight with slight RH	N/A	Undulating with decline @CH:330	CH:330	Sandy/Limestone	N/A	N/A	6<W<7	C
400-600 0:01:34- 0:01:58	Straight	N/A	Slight decline	N/A	Sand	Yes	N/A	5<W<6	B
600-800 0:01:58- 0:02:22	Tight LH then straight	@CH:620 LH R-16m	Slight incline	CH:1000	Sand	Yes	Low shrubbery and cut out poor sight lines	4<W<5	C
800-1000 0:02:22- 0:02:58	Straight then tight LH then straight	@CH:880 LH R-25m	Slight incline	N/A	Sand	Yes	Low shrubbery and cut out poor sight lines	4<W<5	C
1000-1200 0:02:58- 0:03:36 END	Sweeping RH then straight	N/A	Undulating	N/A	Sand	Yes	Low shrubbery and cut out poor sight lines	4<W<5	C

Table 4 - Section V2 Condition Rating

Chainage V2	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0:00:30	Relatively straight	N/A	Flat then slight incline	N/A	Sandy/rubble	Yes	N/A	4<W<5	C
200-400 0:00:21- 0:00:42	Sweeping RH @ CH:380	N/A	Flat then increasing to crest	CH: 380	Sandy/rubble	Yes	Low shrubbery and cut out poor sight lines @ CH:380	4<W<5	C
400-600 0:00:42- 0:01:07	Relatively straight	N/A	Slight incline	N/A	Limestone/rubble	Yes	N/A	4<W<5	C
600-800 0:01:07- 0:01:34	Relatively straight	N/A	Steep incline @ CH: 750	CH:750	Limestone/rubble	N/A	N/A	5<W<6	C
800-1000 0:01:34- 0:02:05	Sweeping LH @CH:830	@CH:830 LH R-55m	Slight decline	N/A	Sand	N/A	Low shrubbery and cut out poor sight lines @ CH:830	4<W<5	C
1000-1200 0:02:05- 0:02:43 END	Relatively straight	NA	Slight incline	N/A	Limestone/rubble	N/A	N/A	4<W<5	D

Table 5 - Section V3 Condition Rating

Chainage V3	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0:00:00- 0:00:53	Windy but no sharp turns	N/A	Flat	N/A	Limestone/rubble	N/A	N/A	2<W<3	D
200-400 0:00:53- 0:01:29	Windy but no sharp turns	N/A	Slight incline	N/A	Sand/rubble	N/A	N/A	2<W<3	E
400-600 0:01:29- 0:02:00	Windy but no sharp turns	N/A	Slight incline	N/A	Sand	N/A	N/A	2<W<3	E
600-800 0:02:00- 0:02:21 END	Sweeping LH followed by a sharper RH @ CH:700	@CH:700 RH R-27m	Slight incline	N/A	Sand	N/A	N/A	2<W<3	E

Table 6 - Section V4 Condition Rating

Chainage V4	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0-0:01.11	Sweeping LH	@CH:50 RH R-35m	Slight incline increasing	N/A	Limestone/rubble	N/A	N/A	8<W<9	C
200-400 0:01:11- 0:01:55	Relatively straight	N/A	Steep incline	CH:250	Limestone/rubble	N/A	N/A	8<W<9	C
400-600 0:01:55- 0:02:37	Relatively straight	N/A	Slight incline	N/A	Sand/limestone/rubble	Yes	Low shrubbery and cut out poor sight lines @ CH:500	7<W<8	C
600-800 0:02:37- 0:03:14	Relatively straight	N/A	Undulating	CH:650	Sand	Yes	N/A	5<W<6	D
800-1000 0:03:14- 0:03:43	Relatively straight	N/A	Undulating then rising to a crest	CH:1000	Limestone/rubble	N/A	Low shrubbery sight lines RH @ CH:820	6<W<7	C
1000-1200 0:03:43- 0:03:41	Sweeping RH @CH:1050	N/A	Undulating then rising to a crest	CH:1200	Limestone/rubble	N/A	Low shrubbery sight lines RH @ CH:1180	6<W<7	C
1200-1530 0:03:41- 0:04:00	Sweeping LH	@CH:1400 RH R-30m	Undulating	N/A	Limestone/rubble	N/A	Low shrubbery sight lines RH @ CH:1300	6<W<7	C

Table 7 - Section V5 Condition Rating

Chainage V5	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0-0:00.38	Straight	N/A	Undulating	N/A	Limestone/rubble	Yes	N/A	6<W<7	C
200-400 00.38- 0:00.57	Straight	N/A	Undulating	N/A	Sand/Limestone	Yes	N/A	6<W<7	C
400-600 00.57- 0:01.15	Sweeping LH @CH:550	@CH:550 LH R-65m	Undulating	N/A	Limestone/rubble	Yes	Low shrubbery and cut out poor sight lines @ CH:550	7<W<8	C
600-800 01.15- 0:01.41	Straight then sharp RH @CH:950	@CH:950 LH R-20m	Undulating	N/A	Sand/limestone	Yes	Low shrubbery and cut out poor sight lines @ CH:950	7<W<8	D
800-1000 01.41- 0:02.00	Slow Sweeping LH	N/A	Undulating	N/A	Limestone/rubble	N/A	N/A	7<W<8	C
1000-1200 02.00- 0:02.21	Straight	N/A	Steep incline	CH:1400	Limestone/rubble	N/A	N/A	7<W<8	C
1200-1400 02.21- 0:02.21	Relatively Straight	N/A	Undulating	N/A	Limestone/rubble	N/A	Low shrubbery and cut out poor sight lines @ CH:1400	7<W<8	C
1400-1600 0-0:00.40	Sweeping LH then switchback RH	@CH:1450 RH R-80m	Steep incline	N/A next segment	Sandy/limestone	N/A	Low shrubbery sight lines RH @ CH:1480	8<W<9	C
1600-1800 0:00:40- 0:00:54	Straight	N/A	Steep incline	CH:300	Limestone/rubble	Yes	N/A	8<W<9	C
1800-2000 0:00:54- 0:01:26	Hard RH then switchback LH	@CH:1850 RH R-26m @CH:1920 RH R-55m	decline	CH:450	Limestone/rubble	N/A	Low shrubbery sight lines RH @ CH:1850 Low shrubbery and cut out poor sight lines @ CH:1880	8<W<9	C
2000-2200 0:01:26- 0:01:24 END	Straight	N/A	Undulating	N/A	Sandy/limestone	Yes	N/A	6<W<7	C

Table 8 - Section V6 Condition Rating

Chainage V6	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0-0:00.30	Sweeping LH @CH:00	@CH:00 LH R-30m	Crest at the start then flattening off	CH:20	Sandy/Ironstone	N/A	Low shrubbery and cut out poor sight lines @ CH:000	6<W<7	C
200-400 0:00:38-0:00:58	Sweeping RH @CH:300	N/A	Incline to slight crest	CH:300	Sandy/Ironstone	N/A	Low shrubbery sight lines RH @ CH:300	7<W<8	C
400-600 0:00:58-0:01:28	Relatively straight	N/A	Steep decline	N/A	Sandy/Ironstone	N/A	N/A	7<W<8	C
600-800 0:01:28-0:01:56	Straight	N/A	Steep decline	N/A	Sandy/limestone	N/A	N/A	8<W<9	C
800-1000 0:01:56-0:02:07	Straight	N/A	Relatively flat	N/A	Sand	N/A	N/A	7<W<8	C
1000-1200 0:02:07-0:02:33	Straight	N/A	Relatively flat	N/A	Sand	N/A	N/A	7<W<8	B
1200-1400 0:02:33-0:02:58	Sweeping LH @CH:1250	@CH:1250 LH R-30m	Relatively flat slight decline	N/A	Sandy/Limestone	N/A	N/A	7<W<8	B

Table 9 - Section V7 Condition Rating

Chainage V7	Horizontal Alignment	Radius	Vertical Alignment	Location of Crest	Sub-grade Condition/ Material	Drainage considerations	Inside Curve Sight Line	Average width	Condition
0-200 0-0:00.24	Sweeping RH @CH:20 then straight	@CH:220 RLH R-25m	Slight decline	N/A	Sandy Limestone	N/A	Low shrubbery and cut out poor sight lines @ CH:20	8<W<9	B
200-400 0:00:24-0:00:44	Straight	N/A	Slight decline	N/A	Limestone/rubble	N/A	N/A	8<W<9	B
400-600 0:00.44-0:01:02	Straight	N/A	Slight decline	N/A	Sandy Limestone	N/A	N/A	7<W<8	C
600-800 0:01:02-0:01:24	Straight	N/A	Flat then incline to crest then decline	CH:700	Sandy Limestone	N/A	N/A	6<W<7	C
800-1000 0:01:24-0:01:41	Straight	N/A	Slight decline	N/A	Sandy Limestone	N/A	N/A	5<W<6	C
1000-1200 0:01:41-0:02:02	Sweeping LH @CH:1100	@CH:1100 LH R-50m	Rising to crest @CH:1050 then decline for corner	CH:1050	Sandy Limestone	N/A	Low shrubbery and cut out poor sight lines @ CH:1100	5<W<6	C
1200-1350 0:02:02-0:02:17 END	Sweeping RH @CH:1275	@CH:1275 RH R-50m			Sandy Limestone	N/A	Low shrubbery and cut out poor sight lines @ CH:1275	6<W<7	C

5.3 INTERNAL ACCESS NETWORK

5.3.1 Geometric Access Track Requirements

To facilitate the operational aspects of the launch site and its supporting processes the following geometric requirements are proposed for the main access alignment:

- The guidelines contained within the Austroads Guide to Road Design Part 3 *Geometric Design* (AGRD3) should be used wherever possible for the design and formalisation of the proposed access track network. In addition, the ARRB Unsealed Roads Manual provides further and more specific guidance with respect to lower volume road networks and acceptable design criteria to apply to these networks.
- ARRB Unsealed Roads Manual Table 4.1 indicates that a “4B Minor Road 150-50 ADT -...roads may or may not be sealed depending on the importance and function of that road”. The road should be “all weather two-lane road formed and gravelled or single-lane sealed road with gravel shoulders, operating speed standard of 30-70km/h depending on terrain”.
- It is assumed that the traffic volumes on this access track will be <150 vehicles per day. In this instance a sealed road is not considered to be a design requirement.
- ARRB Unsealed Roads Manual Table 4.2 indicates the following geometric standards for unsealed roads:
 - two-way two-lane road should have a minimum carriageway width of 7.0m (this could be reduced to 5.5m on straight sections)
 - two-way two-lane road should have a minimum formation width of 9.0m (allows a verge/table drain width of 1m) – this could be reduced to 7.5m on straight sections
 - Maximum vertical grade of 8% for rolling terrain
 - Minimum radius curves of 100m for rolling terrain
 - Minimum stopping sight distance of 70m for rolling terrain
 - Minimum crest vertical curves of $K = 10$ for rolling terrain
 - Minimum sag vertical curves of $K = 4$ for rolling terrain
- The existing speed limit of the internal access track network is 40km/h. If this speed limit is to be retained, then the design speed will be 50km/h. At the very least, the access track network will require warning signage to highlight geometric deficiencies, as required by AS1742.2 “Traffic Control Devices for General Use”.
- A 50km/h design speed requires a safe stopping distance (SSD) of 65m on an unsealed surface (with reference to SSD formula in AGRD3 Section 5.3 with coefficient of longitudinal deceleration of $d = 0.27$). The ARRB Unsealed Road Manual requires slightly more stopping sight distance of 70m. All sections of the internal access track will need to be assessed to determine that sight lines are available equal or greater than the required SSD. Should a higher design speed be required (or if downhill section) then this will increase the SSD. Additional sight line requirements must be met at access track intersections (refer below).
- The design vehicle is a Semi Trailer (19m length), although this is considered to be a lower volume movement.
- Clearing of access track verges to provide a formation width of minimum 7.5m (relatively flat and cleared of vegetation);

- Where the access track environment is “closed” i.e. geometric conditions that limit sight lines, the formation width should increase to a minimum of 9.0m to provide for improved clearance between two-way traffic.
- Allowance for drainage systems to allow surface flows to drain away from the pavement areas, such as swales (table drain), diversion drains etc (some sections may require piped drainage system in low spots if the area is unable to drain);
- Curve widening where required to allow oncoming vehicles to pass simultaneously. Furthermore, consideration to removal of vegetation on the inside of curves may be required to provide the necessary sight lines for the design speed (further guidance available AGRD3 *Figure 5.4 (in guideline)* Line of Sight on horizontal curves);
- Turn paths for a 19m Semi Trailer at critical (tighter) curves has been attached to Appendix C. These turn paths indicate that the whilst the design vehicle can theoretically negotiate most of the curves analysed, a surface providing suitable traction and access track widening (to allow two-way passage) is generally required.
- With reference to AGRD3 *Table 8.3 (in guideline)*, (for a 60km/h speed limit) where access track grades exceed 9% consideration is required to flatten these grades (by cutting down crests and filling in sags) so that the access track network is theoretically passable for the heavy vehicles. The length of steep grade is also to be considered, it is suggested that for a 6% grade it should only be 300m in length. Access track section V6 has a very steep grade (in excess of 6%) at CH400-800 which may present grade conditions at odds with this guideline. Further analysis is required to determine if this grade requires additional treatment(s) to improve traction for heavy vehicles.
- Engineering survey will likely be required where access track design is necessitated for the more complex sections of access track network (poor horizontal or vertical geometric sections).

5.3.2 Pavements

To facilitate the operational aspects of the launch site access and its supporting processes the following pavements are proposed:

- The pavement is proposed to be granular unsealed. This pavement will require routine maintenance (grading) to keep the surface shape.
- A pavement basecourse should be provided for the entire width of the carriageway, so the access track surface is smooth and has the structural adequacy to support the proposed traffic loading. Structural pavement design is required for a range of subgrades encountered on site (soft sand through to solid limestone cap rock depending on the access track section). Indications of subgrade types are indicated in **Table 3 -Table 9**.
- The site is expected to be in operation for a 25-year operational and physical lifespan. Consequently, the access track pavements should be designed so that they provide a 25-year life.

5.3.3 Intersections (Junctions)

There are five (5) junctions (locations shown on figure 15 circled in red) within the internal access track network that need to be considered in the context of readability of the junction layout and safety of traffic negotiating the junctions. Two of the five junctions are currently not operating as intersections as “Sinkhole Road” is closed to traffic. It is understood some tracks will also be decommissioned.

The current layouts are “seagull arrangements”, where the minor access track splits into a left and right turn. They are also generally located where the main alignment is on a curve (sometimes also near to crests) and rely on “give way” signage to advise the priority of the main alignment. These give way signs and hazard signs are all extremely faded and currently do not provide much assistance in defining the requirement to give way to the main alignment - refer figure 21.

Austroroads Guide to Road Design Part 4A – “Signalised and non-signalised intersections” (AGRD04A-17) provides guidance for intersection design. The seagull treatments are not ideal in consideration that they do not provide a clear priority, and ideally, they would be redesigned to a more basic and conventional “T Junction” arrangement, where the minor access track stems into the major alignment at 90 degrees. However, it should also be taken into perspective that the volumes are very low.

AGRD04A-17 sets out requirements for minimum sight distances for intersections in Section 3. All intersections must achieve minimum approach sight distances (ASD) and safe intersection sight distances (SISD) - SISD diagrammatic representation in **Figure 22**.

The following (SISD) sight lines are to be followed from the guideline for a 50km/h design speed:

- $SISD = V \times DT / 3.6 + V^2 / (254 \times 0.36)$
- Reaction Time, $RT = 2.0$ sec (note $DT = RT + 3.0$ seconds)
- Coefficient of deceleration, $d = 0.27$ (braking on unsealed surfaces)
- Longitudinal grade, $a = 0\%$ (this may vary depending on the site).
- $SISD (50km/h) = 50 \times (2+3) / 3.6 + 50^2 / (254 \times 0.27) = 106m$

Approach Sight Distance (ASD) is the sight distance available on the minor leg approach to the major alignment. **ASD for a 50km/h design speed is 55m** ($R_T = 2.0$ sec) according to *Table 3.1 Guideline* from AGRD4A.

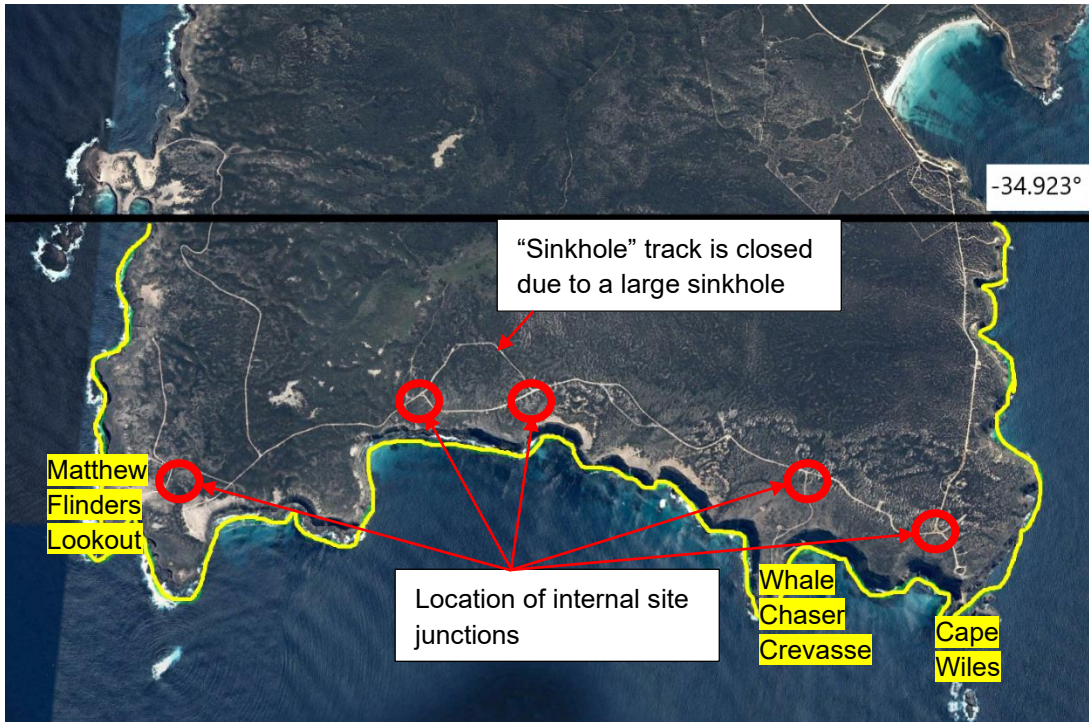


Figure 15 – Location of Junctions within the Internal Access Track Network.



Figure 16 – Access Track Junction Seagull Layouts “Whale Chaser Crevasse” (looking west). The junction with the minor access track Whale Chaser Crevasse provides reasonably good SISD (>106m) on both the major access track approaches.



Figure 17 – Access Track Junction Seagull Layout “Whale Chaser Crevasse” (looking south). The junction with the minor access track Whale Chaser Crevasse provides reasonably good ASD (>55m) on approach to the major access track.



Figure 18 – Access Track Junction Seagull Layout “Cape Wiles” (looking north east). SISD on approach of the junction is poor for the southbound major alignment (<106m) but reasonable for the northbound major alignment. ASD is reasonably good.



Figure 19 – Access Track Junction Layout “Mathew Flinders Lookout” (west end – looking westerly). This junction has a particularly poor intersecting angle



Figure 20 – Access Track Junction Layout “Sink Hole Road” (west end) – looking easterly (westbound SISD is good > 106m). This intersection is currently in operational (Sink Hole Road is closed).



Figure 21 – Sink Hole Road Junction Looking Westerly, note faded “give way” sign (eastbound SISD is good > 106m). This intersection is currently in operational (Sink Hole Road is closed).

Figure 3.2: Safe intersection sight distance (SISD)

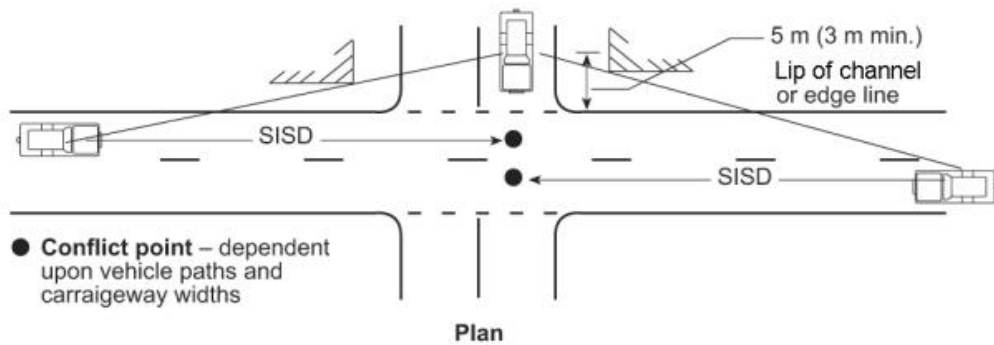


Figure 22 – SISD Requirements at Junctions and Intersections from Austroads GTRDP4A “Figure 3.2”

Additional road engineering is required to determine the conceptual geometric design and pavement design requirements.

Supplementary access tracks are to be provided for emergency services vehicles. It is considered that these access tracks would be informal “bush tracks” that will be formed through simply grading/bulldozing a defined pathway (subject to environmental approvals) and is intended to be accessed by 4WD CFS trucks only.

5.3.4 Facilities

The launch pad(s) consists of a facility that incorporates all the operational aspects of the rocket. The conceptual site layout is shown in **Figure 23** below.

Car parking is required within the launch pad site and should cater for between 12-20 vehicles near the assembly building.

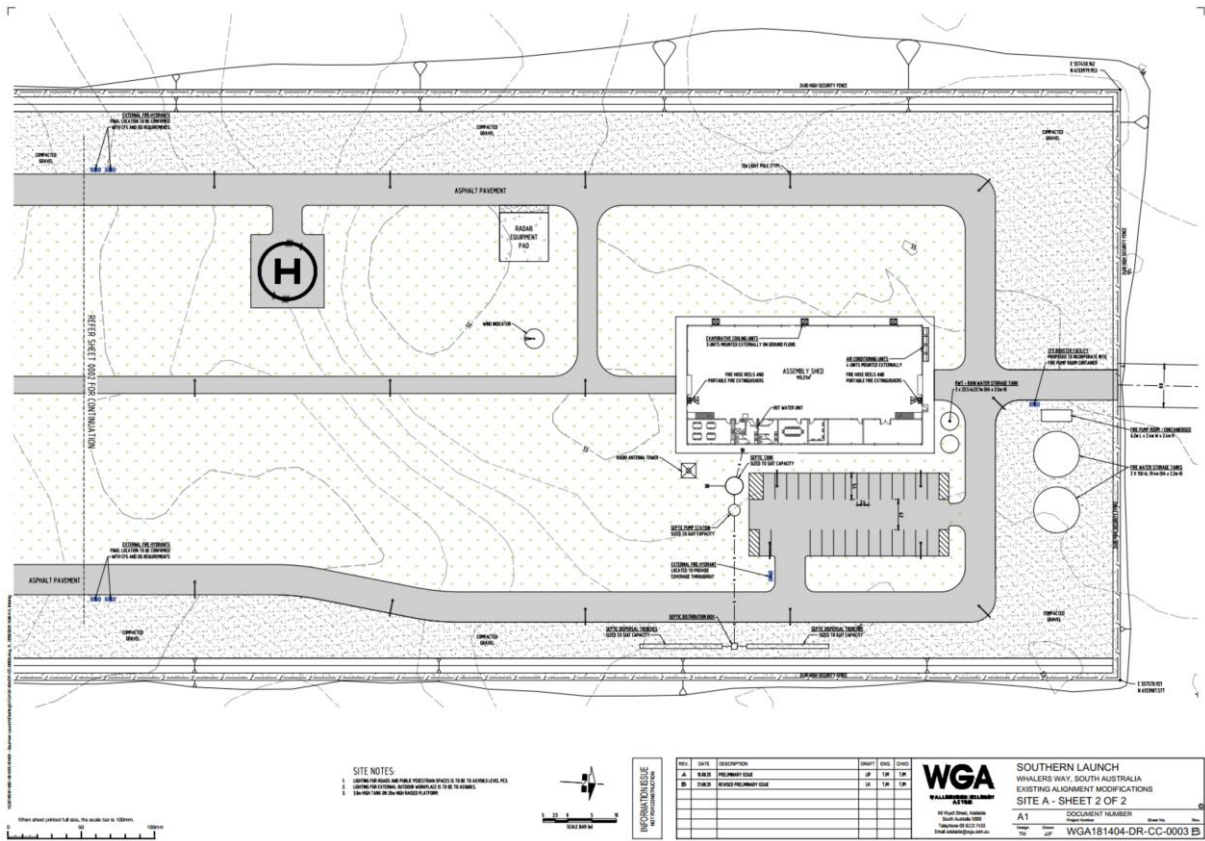
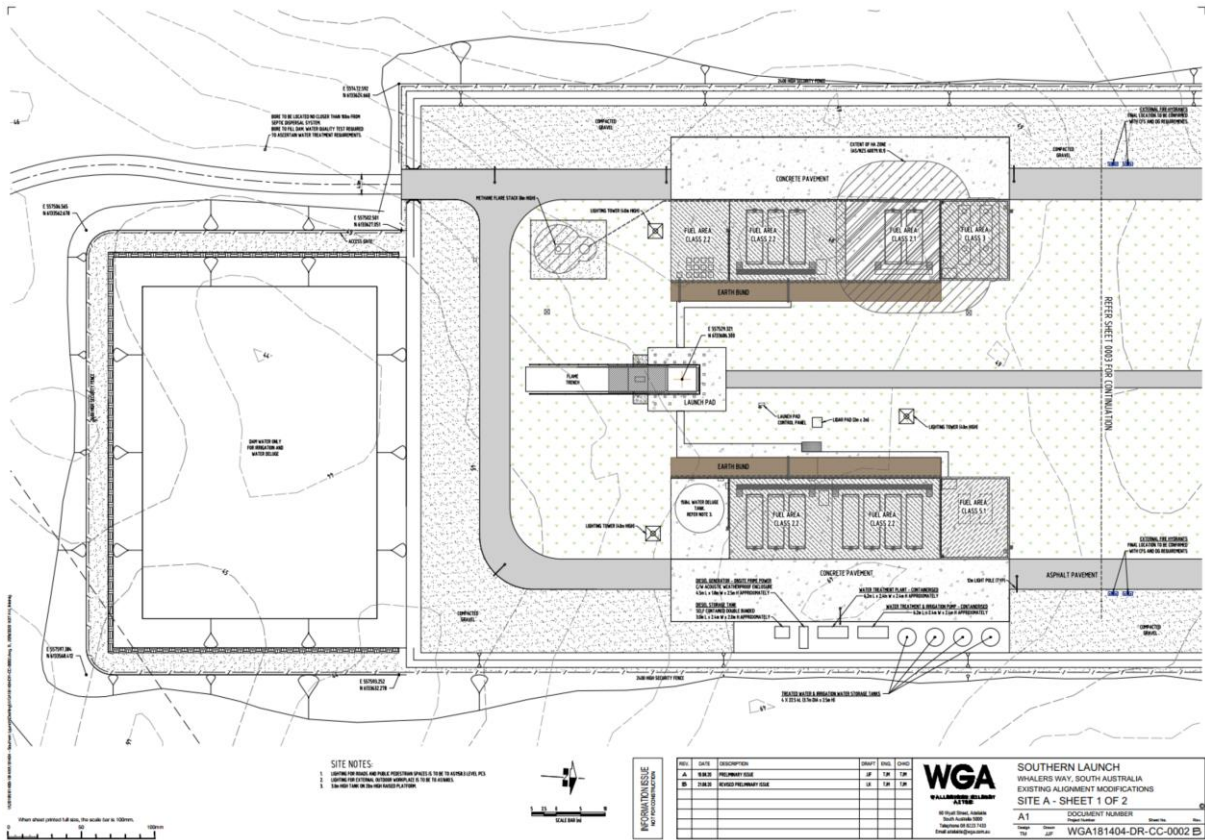


Figure 23 – Conceptual Layout

6. TRAFFIC GENERATION AND DISTRIBUTION

The Whalers Way Orbital Launch Complex will cater for launches by a variety of customers. The number of launches is anticipated to grow over time, with approximately six launches anticipated in the first year of operations, increasing to a maximum of 36 launches in year five of operations.

The facility has been uniquely designed to enable the launch sites to be used by multiple customers, who will transport their equipment and launch vehicle stages to the site before undertaking final assembly in preparation for the launch. Once the launch is complete, the customer will remove their equipment and vacate the launch site ready for occupation by the next customer.

Typically, a launch cycle will run in the order of 3-5 weeks from occupation to vacation of a launch site, however the exact timeframe will vary based on the nature of the launch vehicle and the specific requirements of an individual launch mission.

Following vacation of a launch site, routine inspections, maintenance and repair will be undertaken.

When a launch site is not occupied, the intensity of activity will typically be very low, particularly in times where no maintenance or repair work is occurring. Accordingly, the intensity of use of the site will vary throughout the course of the year, with times where there is no material activity on-site and only routine security present. At other times, when multiple launch sites are occupied, the level of activity will be more significant with larger numbers of staff on site.

Physical (track) access to the site(s) will need to be provided. This will need to be provided in a manner suitable for the delivery of rockets and their payloads, as well as other vehicles related to the operation of the facility. The durability, longevity, and nature of travel on these access track(s) is discussed in Section 6.2, **Table 10**.

6.1 ANTICIPATED VEHICLE TYPES

During operations a number of vehicles will be utilised to deliver, operate and maintain the various site infrastructure, which consists of many interrelated systems such as civil (building), mechanical (air condition, extraction and exhaust) and hydraulic (plumbing and drainage, septic, compressed air etc). The rockets themselves are largely constructed offsite, containerised and then delivered to site for final assembly.

The following vehicles would be expected to be used during operations:

- 19m Semi Trailer for rockets/launch vehicle and other component deliveries.
- Small rigid vehicle (SRV) for smaller package deliveries and septic removal.
- Forklifts to unload and move containers. Forklift activities may occur at locations around the site. Accordingly, pavements and access to buildings to be designed to accommodate this.
- 19m Semi Trailer (sealed tanker) liquid fuel deliveries (oxidiser, launch vehicle fuel, generator fuel etc).
- Maintenance Vehicles i.e. for mechanical and access track maintenance/repairs.
- Cranes.

- Passenger vehicles and 4WD vehicles.

A number of major circulation flows and accessibility requirements will need to be considered. These will include:

- Vehicular access to the site.
- Vehicular access within the site during regular operations.
- Access for emergency vehicles and others in times of need.
- The “flow” of the operational process on the site and the structures required to support it.
- Safe functional access within and around structures for activities to occur (within the Assembly Building for example, and around the Launch site)
- Accessibility to buildings for people with disabilities.
- Security requirements and the impact on circulation

6.2 VEHICLE MOVEMENTS DURING CONSTRUCTION

Construction of the various site infrastructure consists of many types of civil, mechanical and hydraulic components.

The largest civil components are the access tracks, carparks, launch pads (and flame trench), fuel bunds and general site foundation works, which are constructed from large volumes of rubble and concrete along with other building materials.

It is highly likely that the scale of the construction activity will make it economic for rubble to be generated from local “borrow pits” utilising the abundant local limestone resources. Mobile crushing plant will need to be mobilised to the (borrow pit) site, which uses various freight configurations to mobilise the plant used (conveyors, crushers, excavators etc).

Concrete may be sourced from Pt Lincoln and delivered via concrete (mixing) trucks (large rigid freight or LRV), or if viable quantities are required, batched on site (however still delivered to area of placement via concrete truck). Concrete batching plant consists of mixers, silos, batchers, conveyors and dust collectors. It is presumed in this report that a batching plant will be mobilised to an area close to the launch pad construction site.

Depending on the required volumes and outputs of both the concrete and rubble, the scale of the batching / mobile crushing plant in its various componentry may arrive in over-dimensional load configurations. These loads would only need to be delivered to the site once and removed from the site after completion of the construction activity, typically under an escort and when traffic volume is low. However, if OD loads are to access the site, they need to be assessed on the individual needs of the route and considered in greater detail in a Construction Traffic Management Plan.

Significant quantities of steel, building materials, pipework, and other building ancillary components will likely be sourced from suppliers within Port Lincoln where possible, otherwise freighted in via ship or road, and then freighted by road into the site. Generally, these deliveries will fit onto 19m semi-trailers. Once again, as detail design progresses the actual quantities will firm up and can be better catered for in the Construction Traffic Management Plan.

Rough rubble and concrete volumes, and approximate transport vehicles to distribute these materials through the site are indicated in Table 6. Only approximate truck volumes for the building construction component are estimated.

Approximate calculations indicate a total of 1400 heavy vehicles (comprised of tipper trucks with dog box and 19m semi-trailer loads) will require access to the site during construction operations (building of access tracks and launch pad infrastructure). Assuming a 120-day construction duration, this equates to 12 heavy vehicles per day (12 Heavy Veh/day) using the access track.

It would be logical to construct the access tracks prior to the construction of the launch pad buildings, to improve accessibility for building workers and heavy vehicle transportation of prefabricated building components. However, this approach will likely have an impact on the program duration.

Table 10 - Approximate Construction Equipment (Trucks)

Element	Dimension	Approximate Volume (m³)	Approximate number of Trucks required to transport from Plant to Site
Internal Access tracks (Rubble)	9680m X 8.6m	12,500 m ³ (assume 150mm base thickness)	480 Trucks (assumes 30m ³ per Tipper/Dog and 15% additional volume for loose cubic meters)
Access tracks within Site (Rubble)	2000m ²	500 m ³ (assume 250mm base thickness)	20 Trucks (assumes 30m ³ per Tipper/Dog and 15% additional volume for loose cubic meters)
Construction Miscellaneous	Assumption	NA	Allow 200 Semi Trailer Sized trucks for mobilisation of plant (eg graders, water carts, rollers), mobile plant (concrete batching plant, mobile crushing plant) and building materials deliveries. This includes cement deliveries for a batching plant, but assumes sand and aggregate can be sourced from the borrow pit. Water is assumed to be available on site.
		TOTAL	700 Heavy Vehicles (2 combinations) (500 X Tipper and Dog) (200 X 19m Semi Trailers)
		TOTAL TRIPS	Assume each truck makes a return trip via the local access track i.e. two trips per load TOTAL TRIPS = 1400 Heavy Vehicle Trips
		ASSUMED VEHICLES PER DAY	12 Heavy Vehicles per day. (Assume 6-month construction timeframe and 5 day working weeks IE 120 working days)

6.3 VEHICLE MOVEMENTS DURING OPERATIONS

Currently the land surrounding the site is accessible to tourists and tourist buses provided they have obtained a permit to access the site. Traffic volumes for the site are unavailable, however based on site observations it can be assumed that tourist volumes are relatively low, with seasonal peaks expected to coincide with warmer seasons and holiday periods. The types of vehicles are generally 4WD or SUV type passenger vehicles and volumes of < 30 vehicles per day in peak seasonal tourist times.

The proposed facility will host a mix of customers and Southern Launch team members, with numbers varying depending on operations. There are typically expected to be approximately 10-20 people on site at any one time, with peak numbers approaching 50 people. Accommodation requirements are expected to cater for 12-15 people. When there are no customers on site, there may only be 1-2 staff members on site.

It is assumed that these vehicles generate 2 trips per vehicle.

The facility is expected to generate the following types of vehicles and volumes during typical operations:

- 20 passenger cars / 4WDs entering and leaving the site IE 40 vehicle trips per day
- 4 maintenance staff cars / 4WDs / small rigid trucks entering and leaving the site IE 8 vehicle trips per day
- The equivalent of 1 semi-trailer and 3 small rigid trucks entering and leaving the sites IE 8 freight vehicles trips per day

Table 11 indicates the predicted number of trips generated within the internal access track network.

Table 11 - Trip Generation Assumptions

Vehicle Type / Function (per day)	Vehicles on site (per day)	Vehicle Trips (per day)
Launch Staff / visitors to site	20	40
Maintenance Staff	4	8
Deliveries (Heavy Vehicle)	4	8
TOTAL PASSENGER VEHICLES	24	48
TOTAL COMMERCIAL VEHICLES	4	8

The total peak vehicle trips on the access track (excluding tourist traffic) are predicted to be 56 vehicles per day with 8% commercial traffic (**56 VPD 8% CV**). Normal operations will likely be lower volumes.

A 19m Semi Trailer is the largest vehicle discussed in the briefing documentation and is expected to access the site as required.

7. PUBLIC ACCESS ARRANGEMENTS

The facility will need to be exclude the general public through security measures.

Clear safety exclusion zones and “corridors” will need to be established during launch activities.

Currently the land surrounding the site is accessible to tourists and tourist buses provided they have obtained a permit to access the site.

The nature of the development will mean that tourist and recreational access will be more limited once operations commence. Such access will not occur during the construction phase. Once operations commence, unescorted tourist and visitor access to the site will be more limited and better managed. This should result in a reduction in vehicles on the site associated with tourist and visitor access. The predicted volume of escorted tourists is up to ten 4WD / SUV type vehicles and 1 heavy vehicle (bus) per day (22 VPD 9% CV). These tourist and recreational movements will not coincide with the peak operational volumes discussed in Section 6 as they will be restricted when a launch is to take place.

8. CONSTRUCTION AND OPERATIONAL IMPACTS

Construction and operational volumes and trip generation are discussed in proceeding sections.

8.1 CONSTRUCTION TRAFFIC IMPACTS

Construction traffic will require access tracks of sufficient quality to enable efficient passage to the desired launch pad construction site. For this reason, it would be logical to construct the access tracks prior to construction of the main launch pad building infrastructure. Planning of construction operations will be critical to the overall building program. Some overlap of construction activities (construction of access tracks and launch pad “preliminary” activities) may be possible with forward planning.

During construction of the access track, the location of the borrow pit (where rubble is mined and crushed) is critical to the impact on the existing access track network. The further the borrow pit from the road construction activities, the greater the impact on the existing road network and increased maintenance efforts will be required to keep the access tracks in a reasonable state. Approximately 12 heavy vehicles/day will be expected to require access to the local road network during construction operations, not including supplementary worker vehicles (such as 4WDs) and construction equipment (rollers, graders, water carts etc).

Construction activities are likely to generate significant dust and consideration to minimising dust should be considered by the Construction Traffic Management Plan. Traffic management will also be needed during construction to ensure the awareness of the worksite, safe passage of vehicles through any work sites (to minimise work site incidents), or along the unformed access tracks (to minimise single vehicle (e.g. off road) or multiple vehicle (e.g. head on) crashes). Traffic Management for Works on Roads is defined in AS1742.3.

8.2 HELICOPTER OPERATIONS

The launch sites (A and B) shall incorporate a Helicopter Landing Site (HLS) for emergency operations. The Helipad is to be provided for emergency air lift capabilities. It is understood that each launch site would only have one Helipad.

The HLS shall be designed to suit the requirements of “CAAP 92-2(2) Guidelines for the establishment and operation of onshore Helicopter Landing Sites”. The document is provided in Appendix E for reference.

The following are the major considerations for the design and locating of the HLS:

- The approach and departure path should be in accordance with Annex 14 recommendations as shown in **Figure 3** to **Figure 8** in CAAP 92-2(2). These figures would illustrate the recommended approach where a slope exists.
- CASA recommends adopting these standards for RPT (Regular Public transport), however, some helicopters may need a greater approach and departure path depending on their performance;
- There should be a minimum of two departure and approach paths, they are to be separated by 150 degrees and may be adjusted to favour a safer flight path.

It is the responsibility of the designer of the launch pad layout to ensure that the requirements of “CAAP 92-2(2) Guidelines for the establishment and operation of onshore Helicopter Landing Sites”, and any environmental conditions are met.

8.3 DANGEROUS GOODS TRANSPORT

Hazards, including fuels, rocket motors, and other hazardous materials existing or to be brought to site, are to be clearly defined and managed through the design and implementation process.

Safework SA provides guidance and legal/regulatory requirements in respect of Transport of Dangerous Goods.

Dangerous goods classify the substances as dangerous for transport via road, rail, air or sea, emphasizing the risk and necessity for licensing and regulations.

Transporting dangerous substances is an operation that can potentially impact the environment and the surrounding community. Everyone involved in transporting dangerous goods has responsibilities to prevent and reduce damage to people, property and the environment.

In South Australia, the transport of dangerous goods is regulated through the:

- Dangerous Substances Act 1979 (SA) and
- Dangerous Substances (Dangerous Goods Transport) Regulations 2008 (SA).

The Australian Code for the Transport of Dangerous Goods by Road and Rail sets out the operational and technical requirements in the management of dangerous goods transportation.

The Code should be read in conjunction with the Regulations, which include information on licence requirements.

The Code is commissioned by the National Transport Commission (NTC) *Australian Code for the Transport of Dangerous Goods by Road and Rail (Edition 7.6, 2018)*. Rules and recommendations cover the following:

- Definition, classification, packaging, marking and labelling of substances;
- The consignment of dangerous goods for transport, including loading, stowage, load retention etc;
- The provision of transport documentation describing the goods;
- The unloading, receipt and transfer of dangerous goods;
- The transport of dangerous goods, including the use of vehicles, containers and equipment and the provision of safety equipment.

Section 13 of the Code discusses the routes for road vehicles transporting dangerous goods. The following factors are to be considered:

- Routes for road vehicles transporting dangerous goods must be preplanned whenever possible to the extent practicable;
- Routes should be selected to minimise the risk of personal injury or harm to the environment or property during the journey;

- Routes should wherever practicable avoid heavily populated or environmentally sensitive areas, congested crossings, tunnels, narrow streets, alleys, or sites where there may be, a concentration of people
- A road vehicle transporting dangerous goods must observe any requirements or restrictions on the selection of routes or times of travel which have been determined by the Competent Authority.

The relevant acts and codes are attached to Appendix F with further information available from <https://www.safework.sa.gov.au/industry/transport-and-stevedoring/transport-of-dangerous-goods>

The transportation of dangerous goods is specific upon the goods being moved. Specific licensing and approvals will need to be obtained by the carrier of the dangerous goods. It should be noted that the “Transportation of Dangerous Goods” does not cover the transport of all classes of explosives or radioactive materials.

The safe passage of “dangerous goods” deliveries to the launch site (depending on the material being transported) may be deemed to be a high-risk activity. To mitigate these risks transport will be heavily reliant on a safe and accessible access track network. Within the internal site network, the application of road design guidelines and appropriate road design, as described in this report and to be developed upon during subsequent road engineering and design, will assist the facilitation of a safe access track network.

9. SUMMARY

The State Planning Commission has provided Southern Launch with the Assessment Guidelines for the preparation of the assessment document, the EIS, for the WWOLC.

The Transport and Access Impact Assessment (TAIA), is contained within the EIS and will be used to evaluate current and proposed access arrangements for the site.

The site will require appropriate access via various transport modes to ensure the safe and efficient delivery of rockets and payloads. Appropriate site access is clearly an essential requirement to operational capability.

The WWOLC will cater for launches by a variety of customers. The number of launches is anticipated to grow over time, with approximately six launches anticipated in the first year of operations, increasing to a maximum of 36 launches in year five of operations.

The external road network will cater for the 19m Semi Trailer design vehicle. As this is a General Access Vehicle, permits are not required to negotiate the vehicle through the adjoining road network.

The internal access track network has been rated in terms of its existing geometry and will require areas of geometric realignment and road upgrades to enable the safe passage of all vehicles to the proposed launch site. Realignment of some of the intersections may be required to achieve safe sight distances. This is an important consideration for the transport of potentially dangerous goods by road freight.

It is predicted that 12 heavy vehicles per day and additional worker (light vehicle) traffic, will be required to access the site on a daily basis (weekdays only) to construct the new tracks and associated launch site infrastructure over a 6-month period.

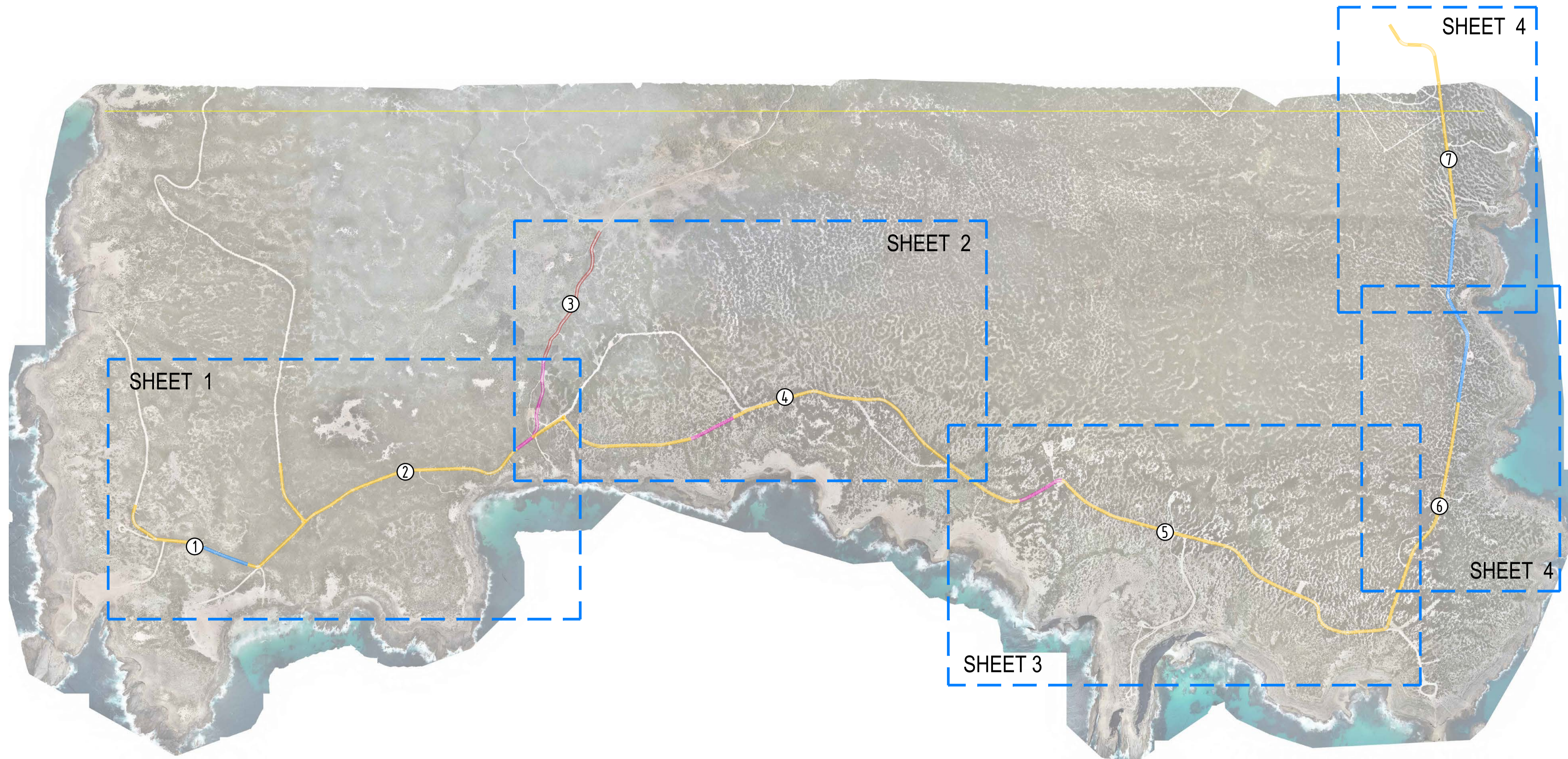
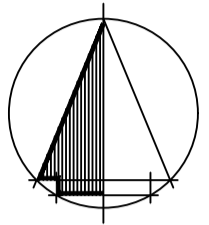
Once the launch pad is operational, total traffic (excluding tourist traffic) is expected to be approximately 56 vehicles per day with 8% of that volume being commercial vehicles.

Some additional maintenance, such as more frequent grading, will likely be required on Fishery Bay Road to cater for the additional proposed traffic volumes.

APPENDIX A

OVERALL SITE PLAN



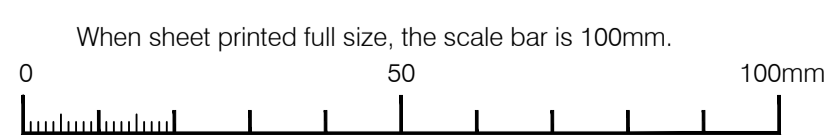


PAVEMENT TREATMENT LEGEND

- ⑥ ROUTE SECTION IDENTIFIER
- EXCELLENT CONDITION
- MODERATE CONDITION
- POOR-MODERATE CONDITION
- POOR CONDITION
- VERY POOR CONDITION

NOTE:
TRANSPORT AND ACCESS IMPACT ASSESSMENT (TAIA), Doc No. 'WGA181404-RP-TT-0001' FOR PAVEMENT ASSESSMENTS AND TREATMENTS

SITE PLAN
 SCALE 1:10,000



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WHALERS WAY
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SITE PLAN

A1 DOCUMENT NUMBER
 Project Number Sheet No. Rev.
 Design Drawn WGA181404-SK-DE-0010 A

APPENDIX B

SITE PLAN (GEOMETRIC CONDITION RATINGS)

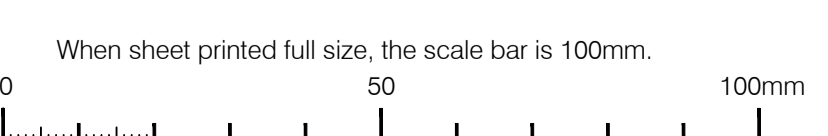




FOR CONTINUATION REFER SHEET 0012

FOR CONTINUATION REFER SHEET 0012

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PAVEMENT TREATMENT LEGEND

- ⑥ ROUTE SECTION IDENTIFIER
- EXCELLENT CONDITION
- MODERATE CONDITION
- POOR-MODERATE CONDITION
- POOR CONDITION
- VERY POOR CONDITION

NOTE:
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PLAN VIEW

SCALE 1:2,500



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FOR CONTINUATION REFER SHEET 0013

PAVEMENT TREATMENT LEGEND

- EXCELLENT CONDITION
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- POOR-MODERATE CONDITION
- POOR CONDITION
- VERY POOR CONDITION

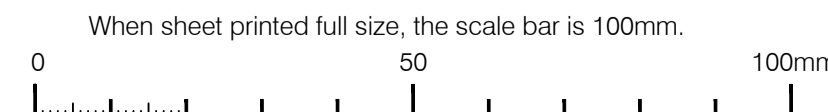
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PLAN VIEW

SCALE 1:2,500



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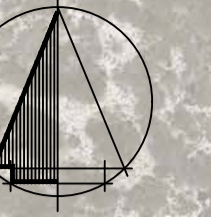
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SITE PLAN - SHEET 2

A1 DOCUMENT NUMBER
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FOR CONTINUATION REFER SHEET 0014

PAVEMENT TREATMENT LEGEND

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- VERY POOR CONDITION

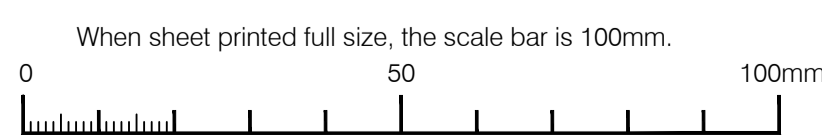
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PLAN VIEW

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WHALERS WAY
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SITE PLAN - SHEET 3

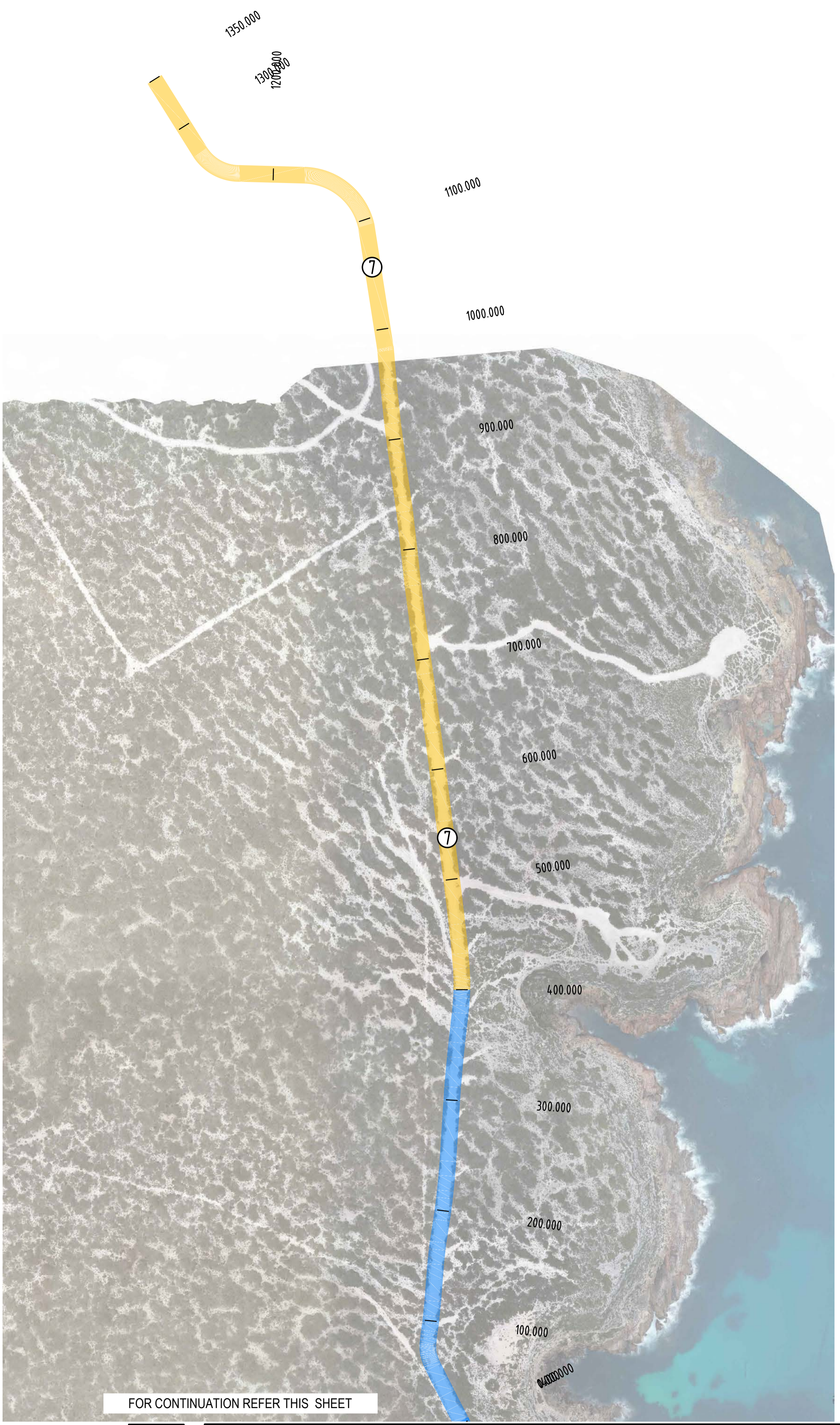
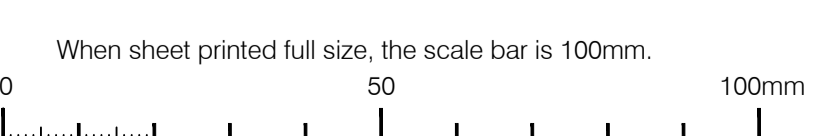
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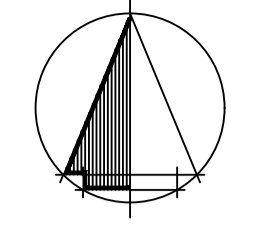
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PLAN VIEW
SCALE 1:2,500



FOR CONTINUATION REFER THIS SHEET



PAVEMENT TREATMENT LEGEND

- ⑥ ROUTE SECTION IDENTIFIER
- EXCELLENT CONDITION
- MODERATE CONDITION
- POOR-MODERATE CONDITION
- POOR CONDITION
- VERY POOR CONDITION

NOTE:
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WHALERS WAY
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SITE PLAN - SHEET 4

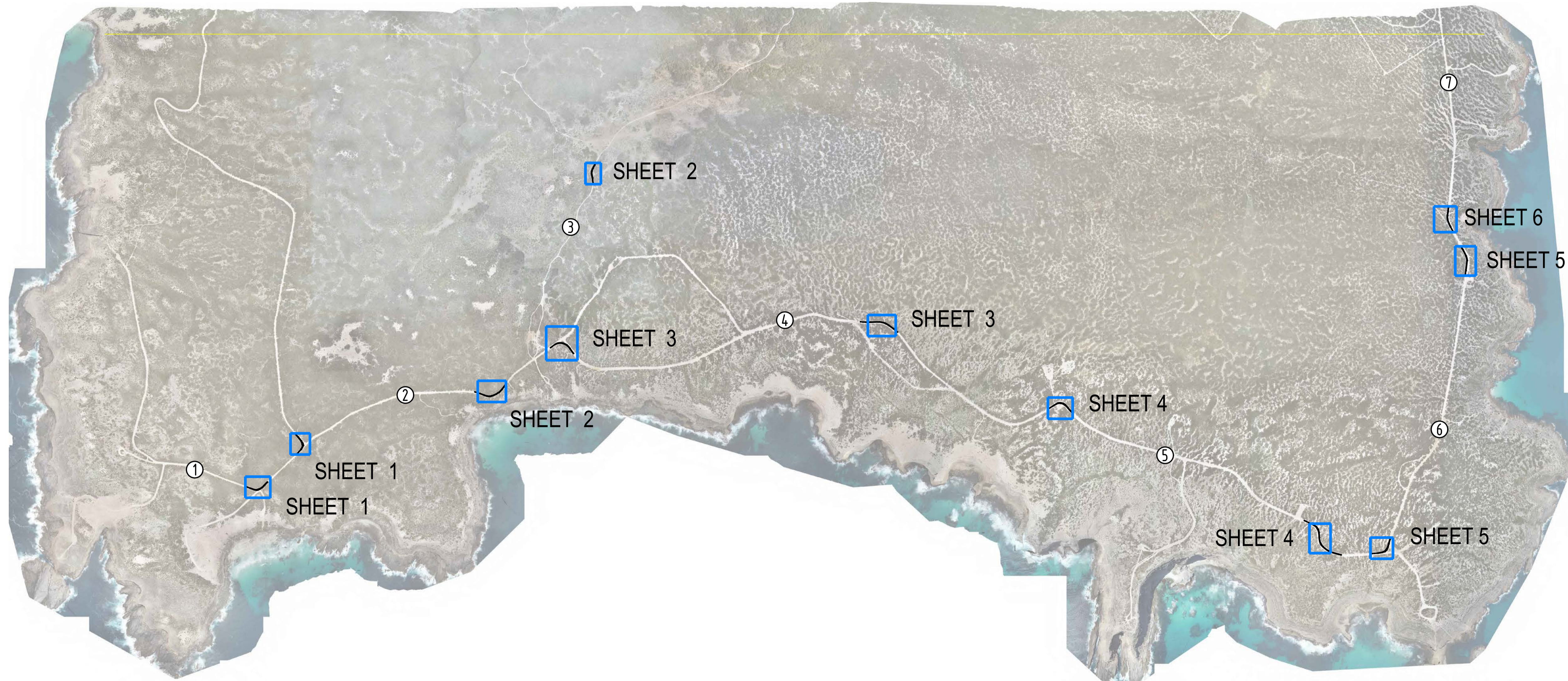
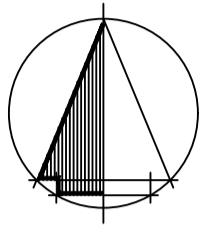
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APPENDIX C

LOCALITY PLAN TURN PATHS





LOCALITY PLAN
SCALE 1:10,000



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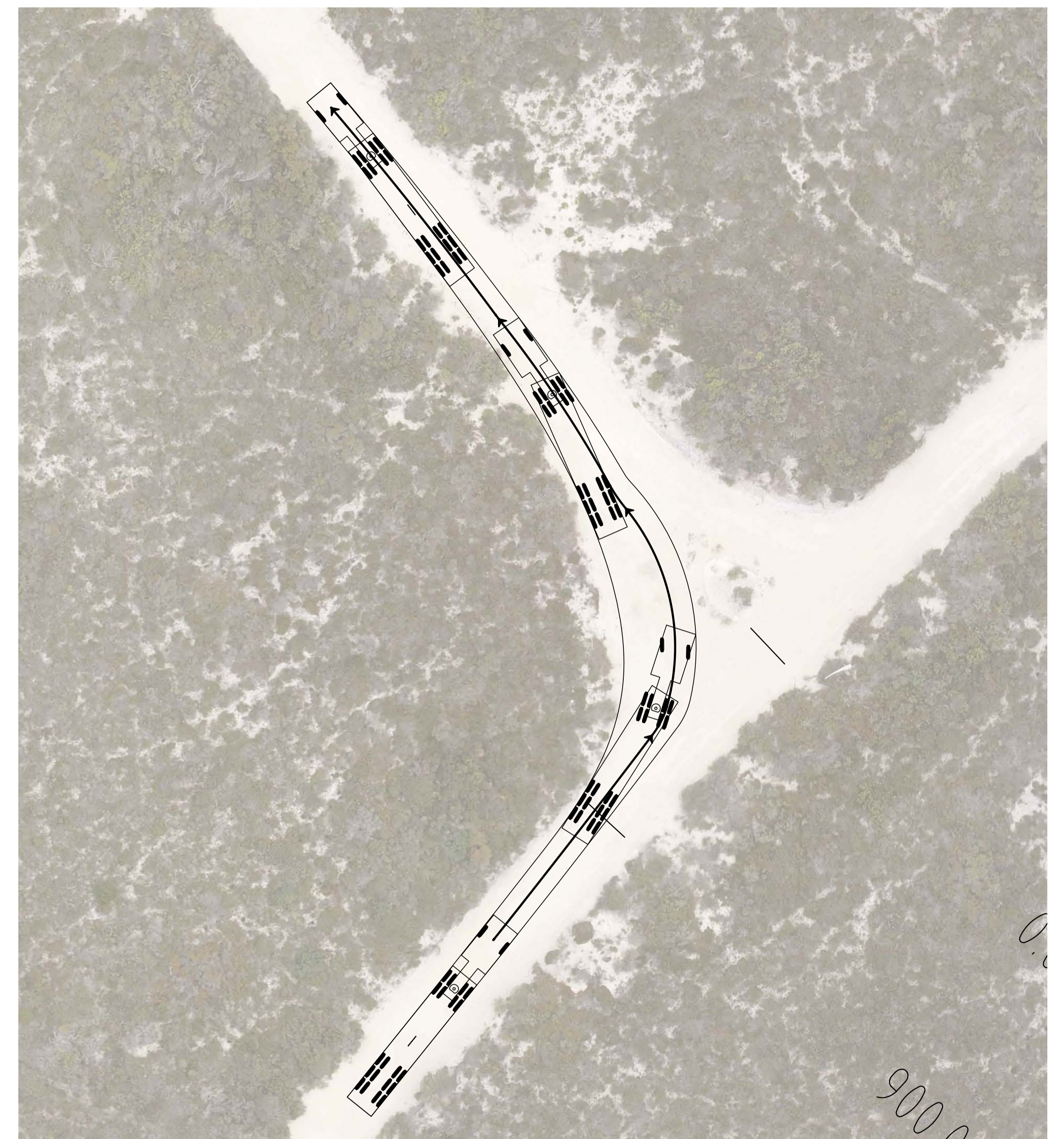
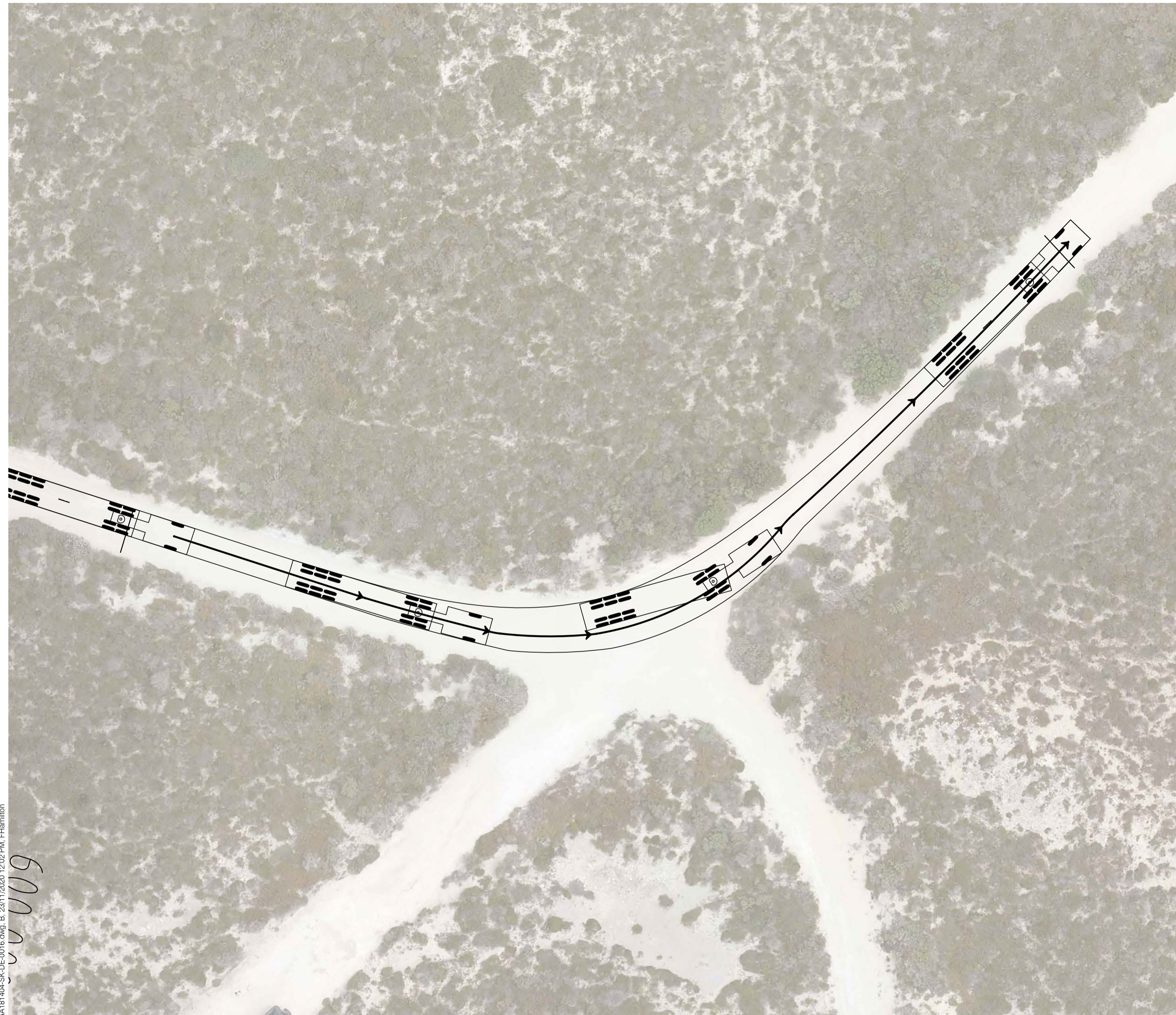
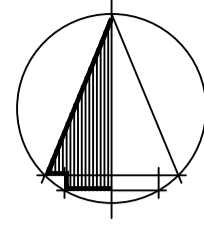
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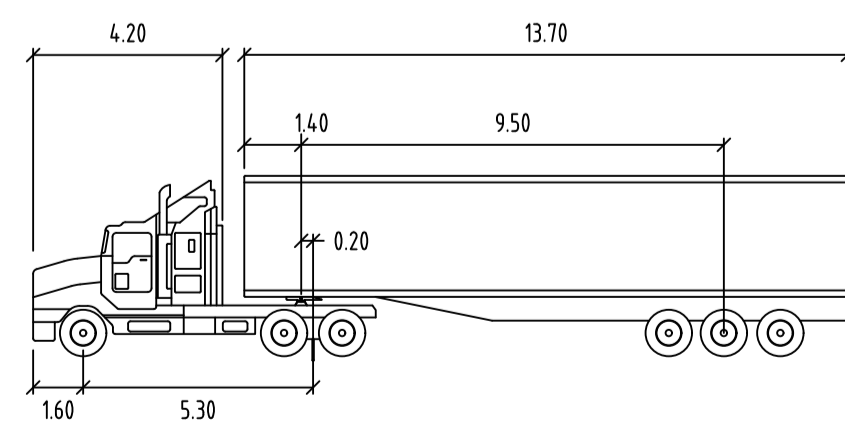
APPENDIX D

SITE PLAN 19M SEMI TRAILER TURN PATHS



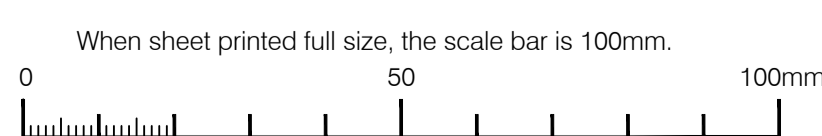


PLAN VIEW
SCALE 1:250



PM S 19M

	Tractor Width	Tractor Track	Trailer Width	Trailer Track	Lock to Lock Time	Steering Angle	Articulating Angle
meters	: 2.50	: 2.50	: 2.50	: 2.50	: 6.0	: 27.8	: 70.0



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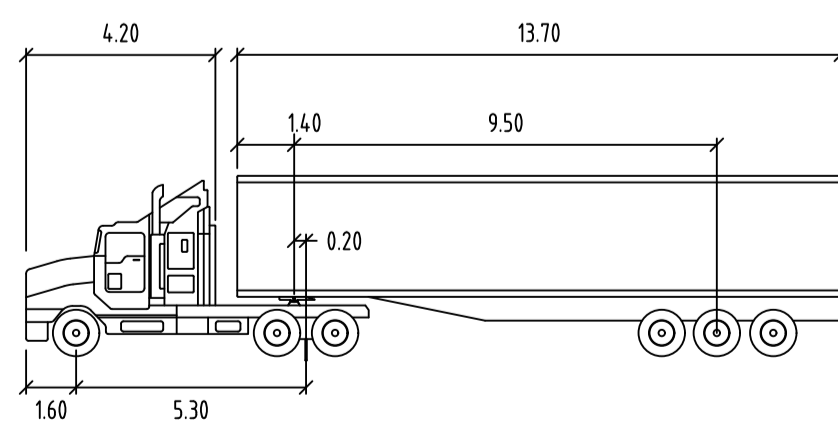
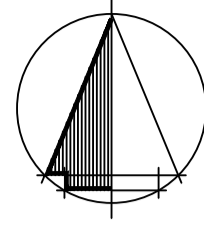
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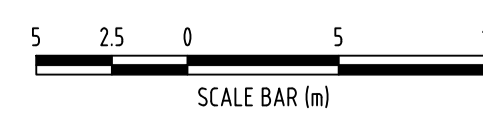
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PM S 19M

Tractor		Trailer	
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Tractor Track	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

PLAN VIEW
SCALE 1:250



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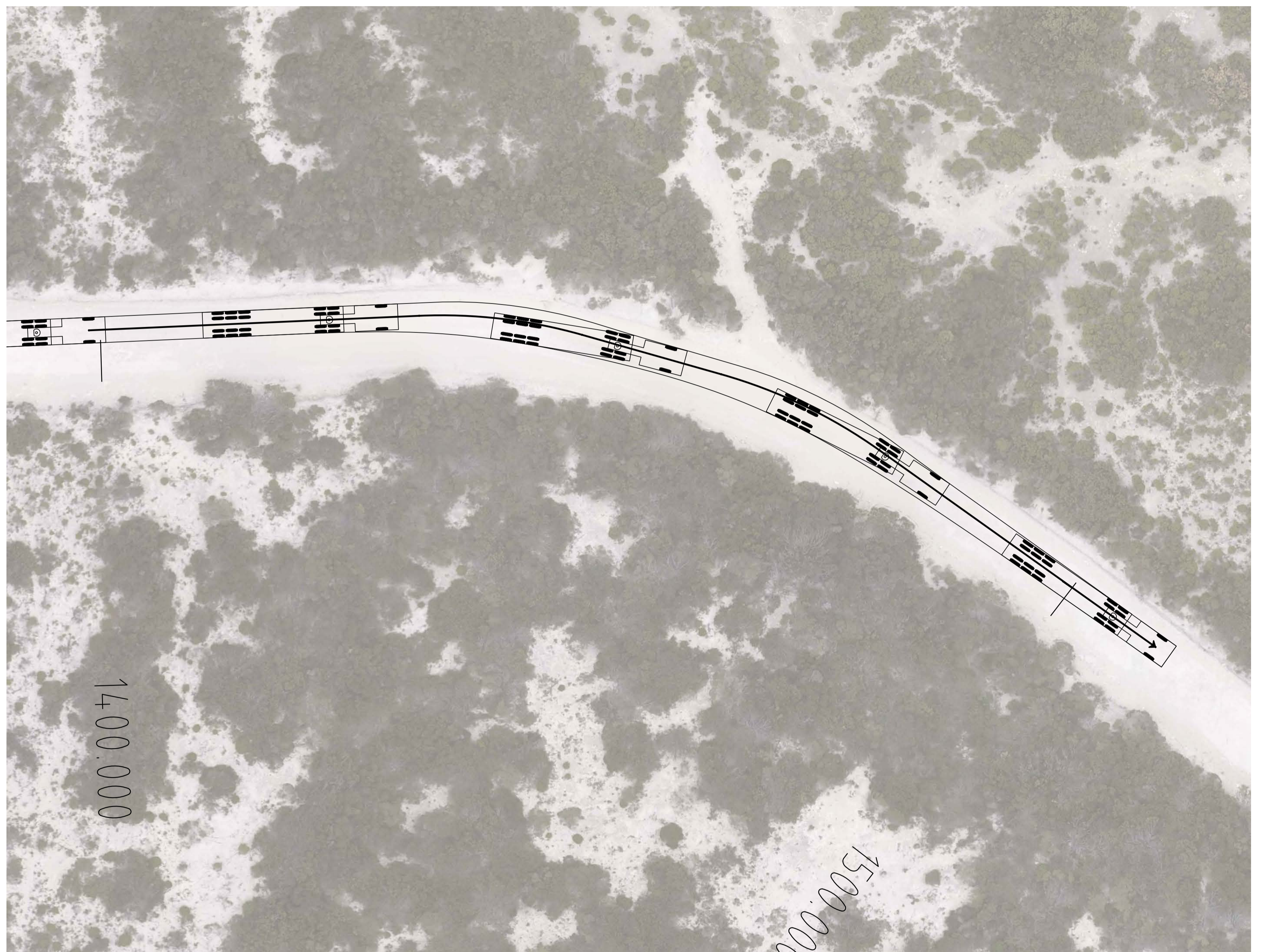
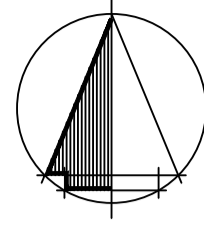
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WHALERS WAY
PAVEMENT CONDITION ASSESSMENT

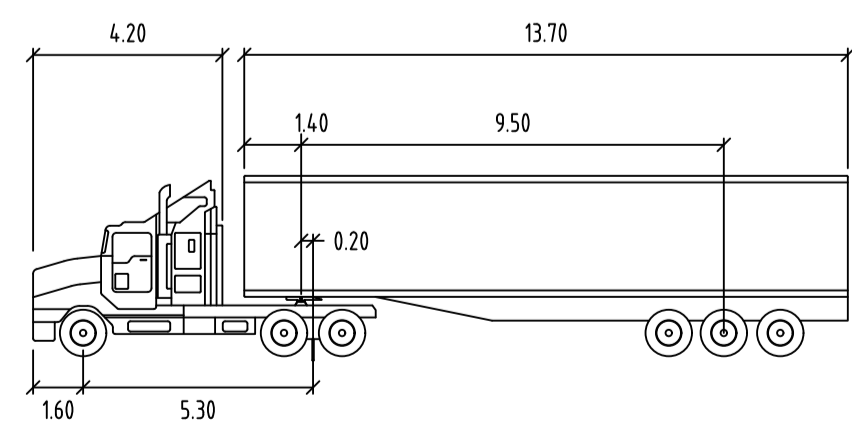
SITE PLAN TURN PATHS - SHEET 2

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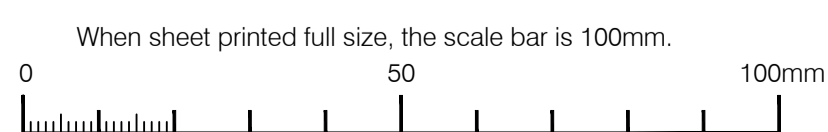


PLAN VIEW
SCALE 1:250



PM S 19M

meters	
Tractor Width	: 2.50
Trailer Width	: 2.50
Tractor Track	: 2.50
Trailer Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 27.8
Articulating Angle	: 70.0



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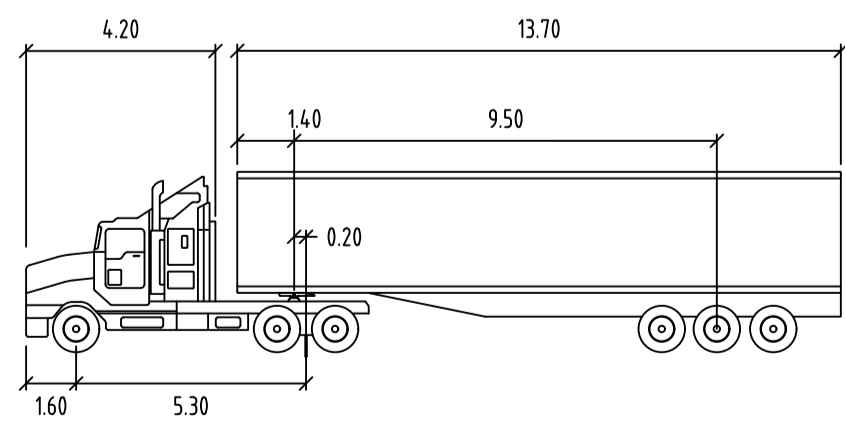
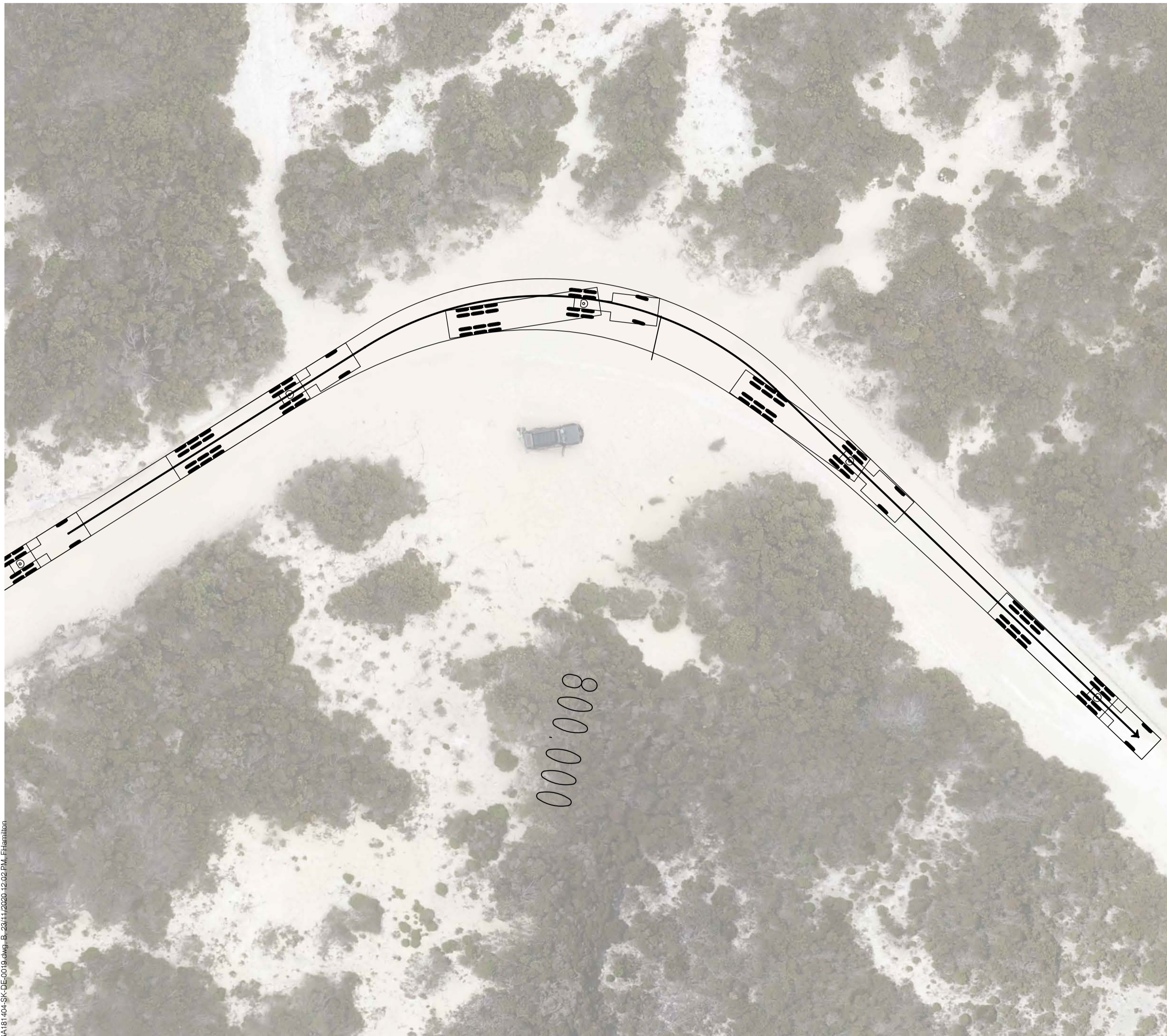
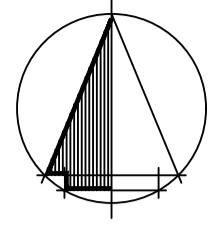
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SITE PLAN TURN PATHS - SHEET 3

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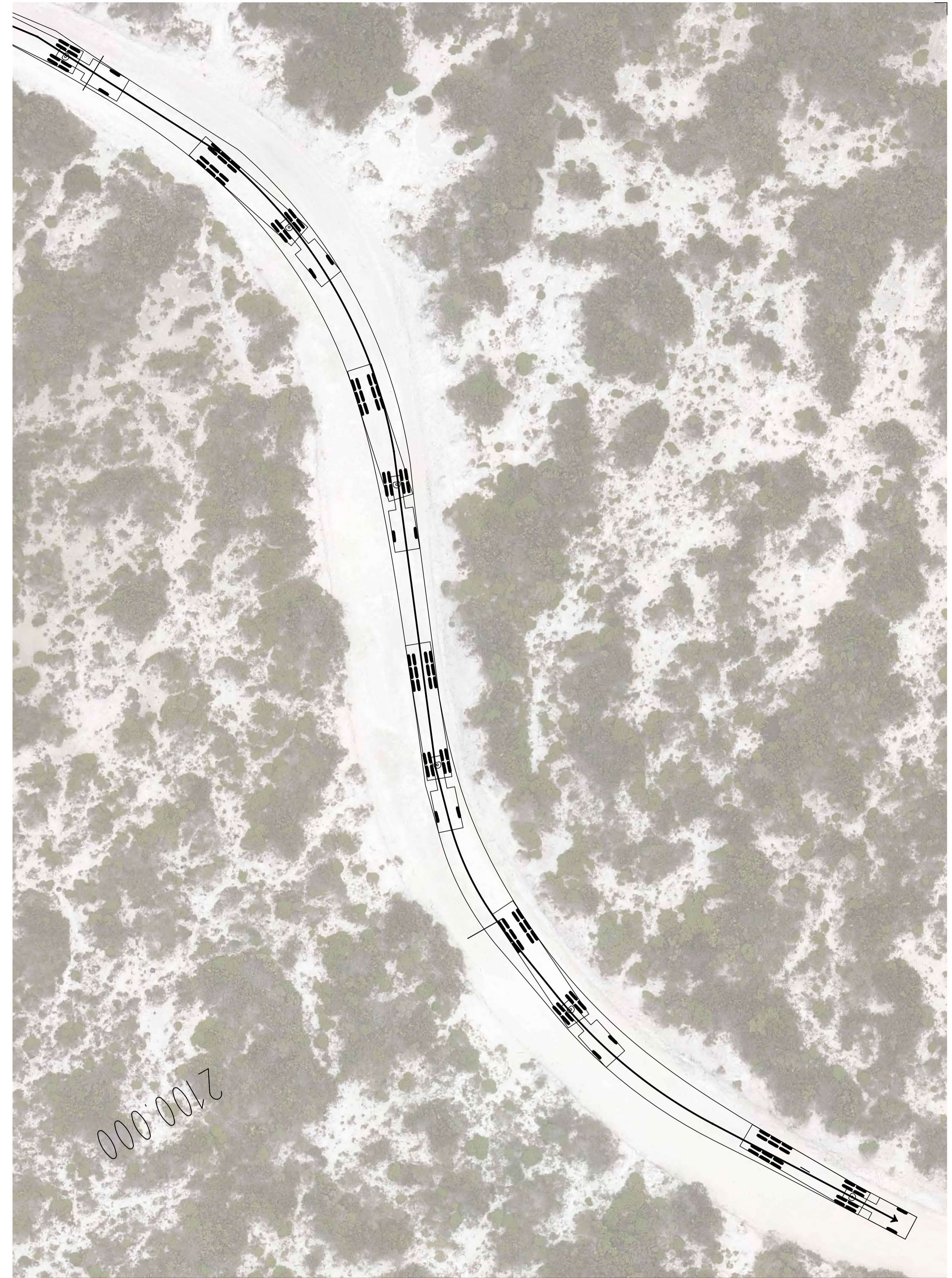
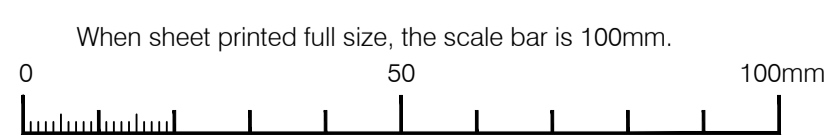
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PM S 19M

	Tractor Width	Trailer Width	Tractor Track	Trailer Track	Lock to Lock Time	Steering Angle	Articulating Angle
meters	: 2.50	: 2.50	: 2.50	: 2.50	: 6.0	: 27.8	: 70.0

PLAN VIEW
SCALE 1:250



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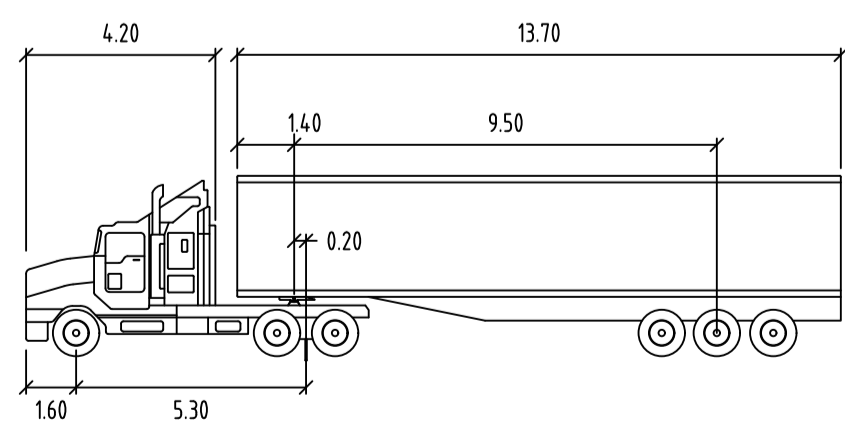
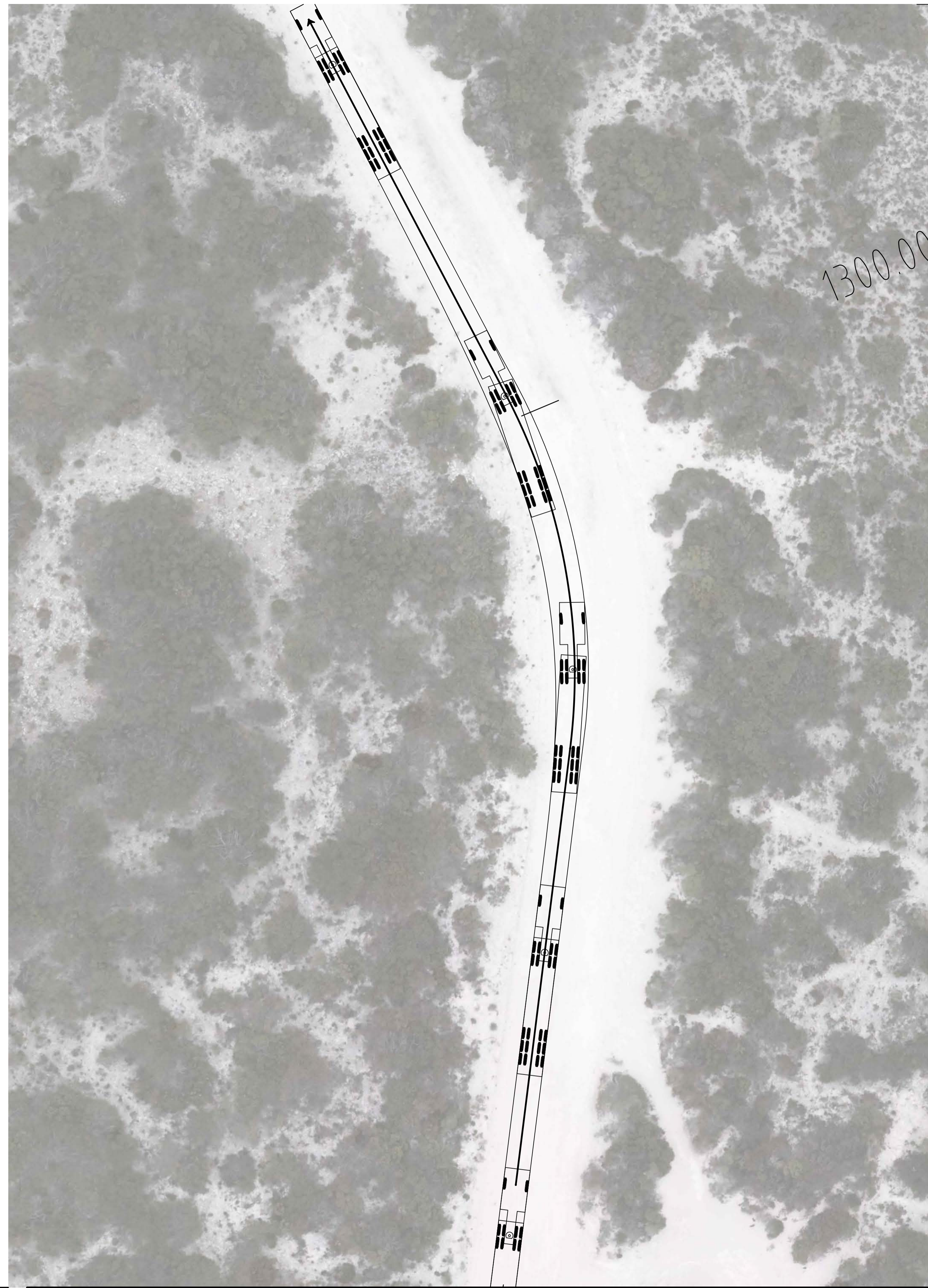
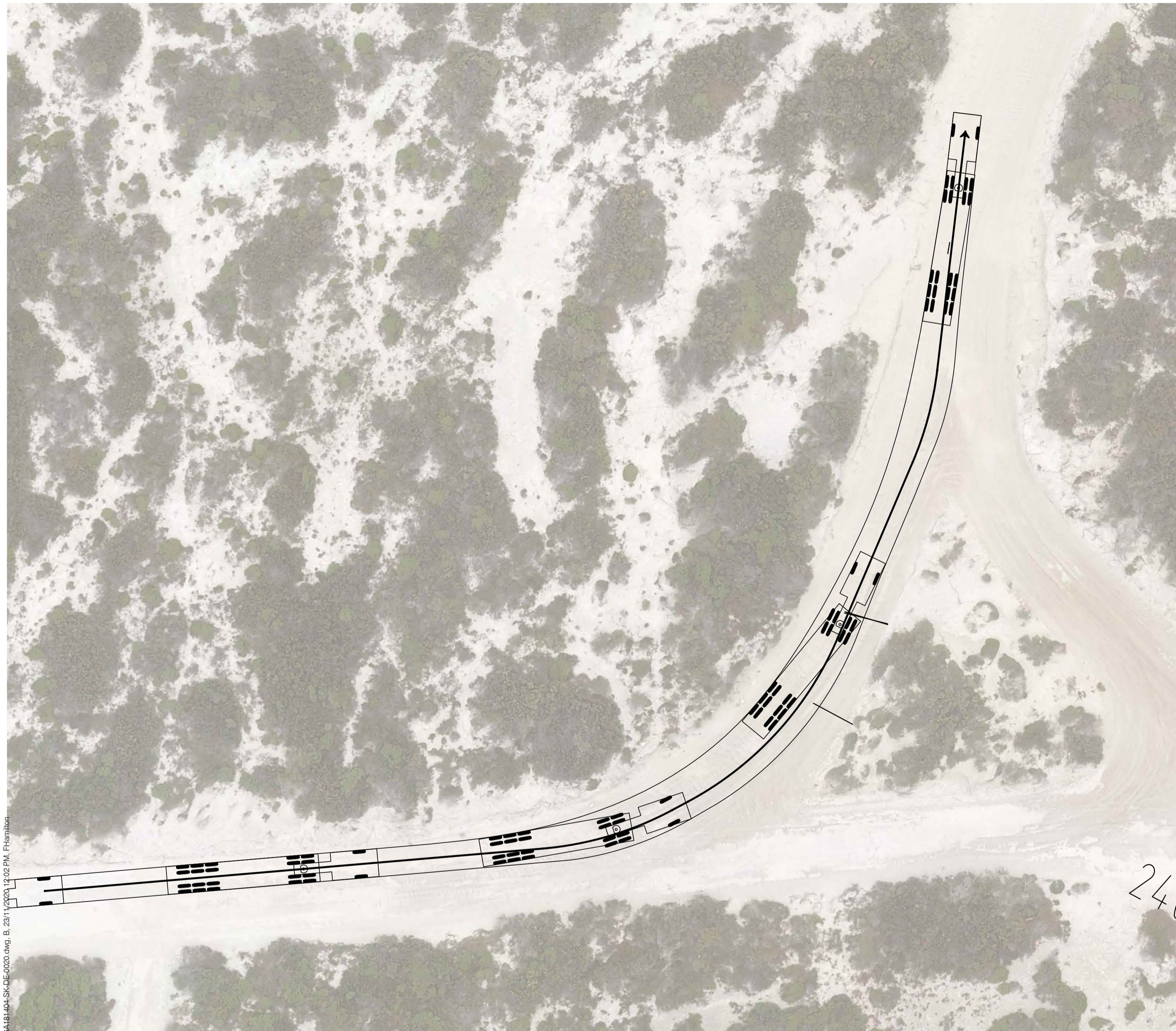
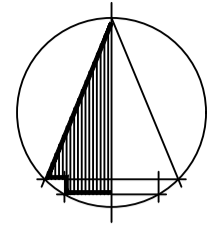
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B	23.11.20	TURN PATHS UPDATED TO 19m SEMI TRAILER	FWH	JH	

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WHALERS WAY
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SITE PLAN TURN PATHS - SHEET 4

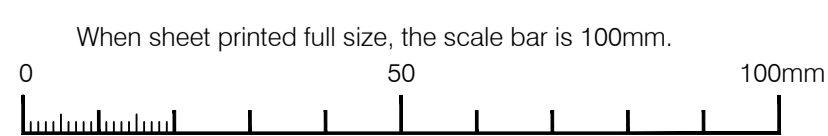
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Project Number Sheet No. Rev.
Design Drawn WGA181404-SK-DE-0019 B



PM S 19M

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Tractor Width	: 2.50				: 6.0		
Trailer Width	: 2.50					: 27.8	
Tractor Track	: 2.50						: 70.0
Trailer Track	: 2.50						

PLAN VIEW
SCALE 1:250



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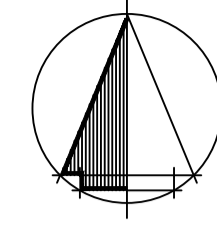
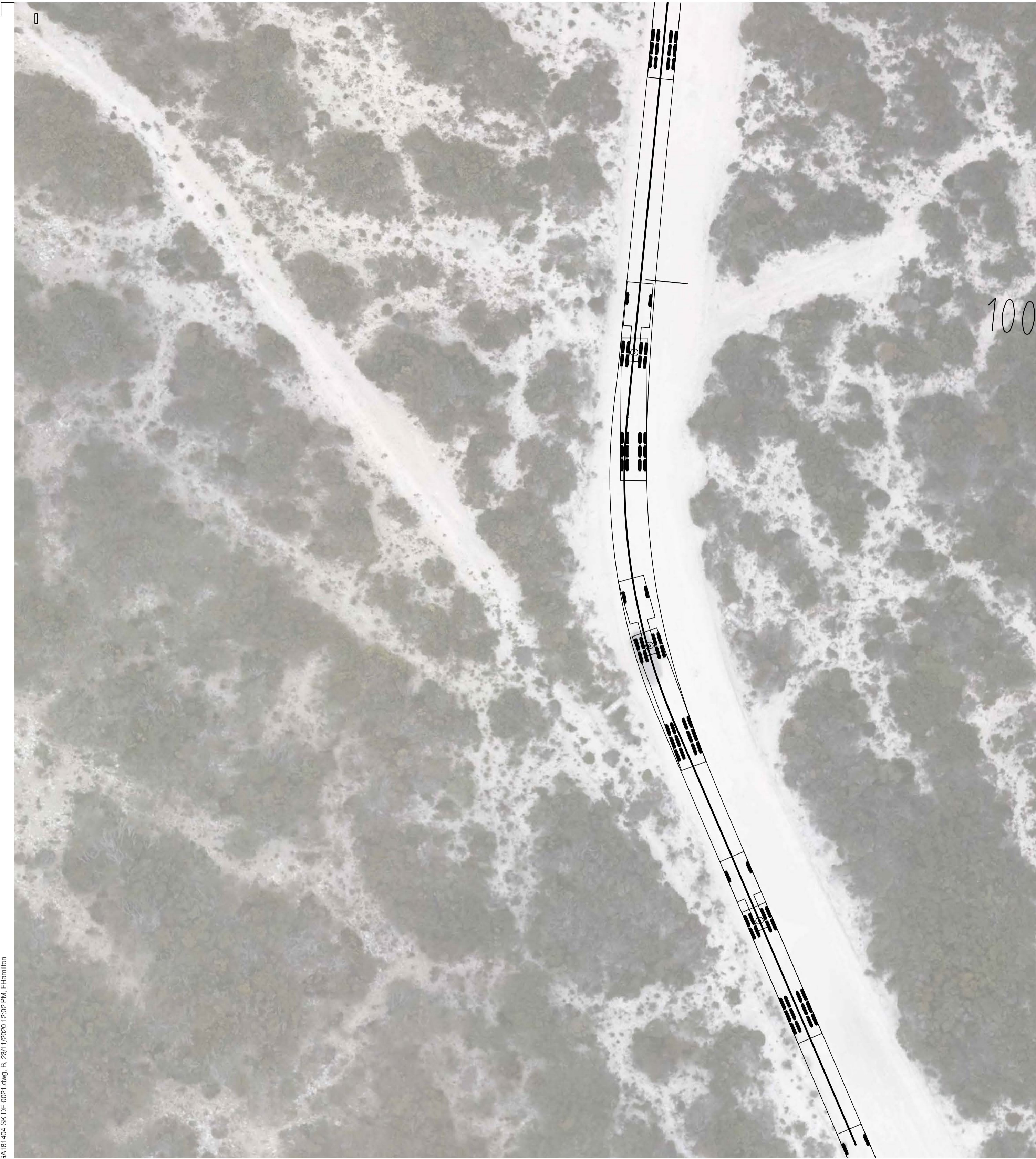
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PAVEMENT CONDITION ASSESSMENT

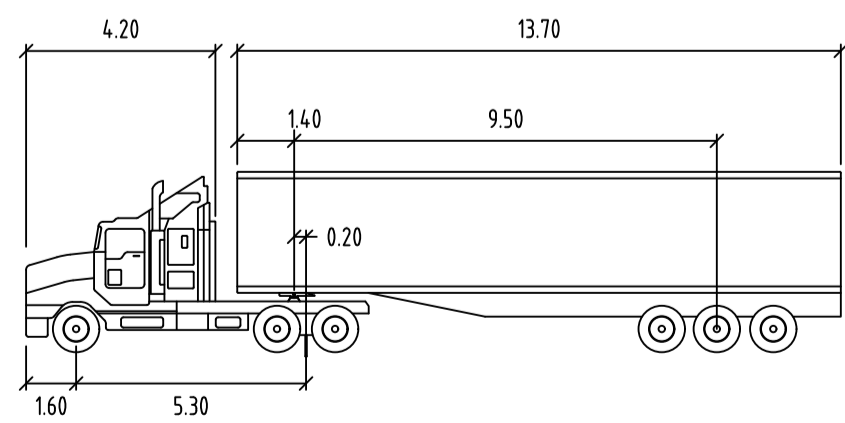
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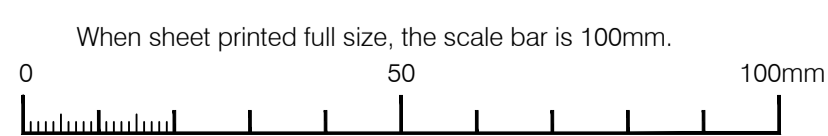
PLAN VIEW

SCALE 1:250



PM S 19M

	Tractor Width	Trailer Width	Tractor Track	Trailer Track	Lock to Lock Time	Steering Angle	Articulating Angle
meters	: 2.50	: 2.50	: 2.50	: 2.50	: 6.0	: 27.8	: 70.0



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PRELIMINARY ISSUE
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRAFT	ENG.	CHKD
A	29.05.20	PRELIMINARY ISSUE	GPB	JH	
B	23.11.20	TURN PATHS UPDATED TO 19m SEMI TRAILER	FWH	JH	

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WHALERS WAY
PAVEMENT CONDITION ASSESSMENT

SITE PLAN TURN PATHS - SHEET 6

A1 DOCUMENT NUMBER
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APPENDIX E

CASA HELICOPTER SITE REQUIREMENTS





Civil Aviation Advisory Publication

February 2014

Civil Aviation Advisory Publications (CAAPs) provide guidance, interpretation and explanation on complying with the *Civil Aviation Regulations 1988 (CAR)* or Civil Aviation Orders (CAO).

This CAAP provides advisory information to the aviation industry in support of a particular CAR or CAO. Ordinarily, the CAAP will provide additional 'how to' information not found in the source CAR, or elsewhere.

A CAAP is not intended to clarify the intent of a CAR, which must be clear from a reading of the regulation itself, nor may the CAAP contain mandatory requirements not contained in legislation.

Note: Read this advisory publication in conjunction with the appropriate regulations/orders.

Guidelines for the establishment and operation of onshore Helicopter Landing Sites

This CAAP will be of interest to:

- aerodrome and Helicopter Landing Site (HLS) designers
- current and future Air Operator's Certificate (AOC) holders authorised to conduct helicopter operations
- current and future aerodrome and HLS operators
- HLS certification agents
- helicopter pilots
- suppliers of aerodrome and HLS equipment.

Why this publication was written

These guidelines set out factors that may be used to determine the suitability of a place for the landing and taking-off of helicopters when the place does not meet the Standards and Recommended Practices (SARPs) for Heliports, as set out in Volume II of Annex 14 to the Convention on International Civil Aviation (the Chicago Convention).

Application of these guidelines will enable a take-off or landing to be completed safely, provided that the pilot in command:

- has sound piloting skills
- displays sound airmanship.

This CAAP has been re-written to:

- remove reference to the recommended criteria for off-shore resource platform and vessel-based HLS (helidecks), as that information is available now in CAAP 92-4
- assist in the transition to future operational parts to the *Civil Aviation Safety Regulations 1998 (CASR)*.

Status of this CAAP

This is the third issue of CAAP 92-2 and supersedes CAAP 92-2(1) issued in 1996. The Civil Aviation Safety Authority (CASA) has taken the opportunity to align concepts in this document with emerging terminology until HLS standards are promulgated in the Part 139 Manual of Standards (MOS).

For further information

Additional copies of this and other related CAAPs may be obtained from the CASA website. For policy advice, contact your local CASA regional office (Telephone 131 757).

Contents

1.	Relevant regulations and other references	2
2.	Acronyms	2
3.	Definitions and other expressions	3
4.	Background	5
5.	Operational Factors to consider prior to using an HLS	6
6.	Attributes of an HLS	7
7.	Recommended criteria for an HLS	8

1. Relevant regulations and other references

- Regulations 92, 92A and 93 of CAR
- Part 139 and the proposed Parts 133 and 138 of CASR
- Section 8.11, *Helicopter Areas on Aerodromes*, of the Part 139 MOS
- Aeronautical Information Publication – Aerodromes (AIP–AD)
- Volume II of Annex 14, *Heliports*, to the Chicago Convention
- International Civil Aviation Organization (ICAO) *Heliport Manual* (Doc 9261)
- CASA Policy Notice CEO PN029-2005, available online at:
<http://www.casa.gov.au/corporat/policy/notices/CEO-PN029-2005.pdf>
- Part 27 and 29 of the Federal Aviation Regulations (FAR)
- European Aviation Safety Agency (EASA) CS-27 and CS-29
- National Fire Protection Standard NFPA 418-2011

2. Acronyms

AGL	Above Ground Level
AIP	Aeronautical Information Publication
AFM	Aircraft Flight Manual
AOC	Air Operator's Certificate
CAAP	Civil Aviation Advisory Publication
CAR	Civil Aviation Regulations 1988
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations 1998
D	D-Value (see Definitions)
DLB	Dynamic Load Bearing
EASA	European Aviation Safety Agency
EMS	Emergency Medical Service
FAR	Federal Aviation Regulation
FATO	Final Approach and Take-off area
HLS	Helicopter Landing Site
ICAO	International Civil Aviation Organization
LSALT	Lowest Safe Altitude

MOS	Manual of Standards
PinS	Point-in-space instrument approach and landing procedure
OEI	One Engine Inoperative
RD	Rotor Diameter (see Definitions)
RPT	Regular Public Transport
SARPs	Standards and Recommended Practices
TD/PM	Touchdown/Positioning Marking
TLOF	Touchdown and Lift-off Area
VHF	Very High Frequency
VMC	Visual Meteorological Conditions

3. Definitions and other expressions

Note: *An expression that is defined in the Civil Aviation Act, the Civil Aviation Regulations or the AIP has, when used in this CAAP, the same meaning as it has in those publications.*

AIR TAXI – the airborne movement of a helicopter at low speeds and at heights normally associated with operations in ground effect.

APPROACH AND DEPARTURE PATH – the track of a helicopter as it approaches, or takes-off and departs from, the Final Approach and Take-Off Area (FATO) of an HLS.

BASIC HLS – a place that may be used as an aerodrome for infrequent, opportunity and short term operations, other than Regular Public Transport (RPT), by day under helicopter Visual Meteorological Conditions (VMC).

BUILDING – any elevated structure on land.

CATEGORY A – with respect to rotorcraft, means a multi-engine rotorcraft that is:

- (a) designed with engine and system isolation features specified for Category A requirements in Parts 27 and 29 of the FARs or EASA CS-27 and CS-29; and
- (b) capable of operations using take-off and landing data scheduled under a critical engine failure concept which assures adequate designated ground or water area and adequate performance capability for continued safe flight or safe rejected take-off in the event of engine failure.

D-VALUE (D) – the largest overall dimension of the helicopter when rotors are turning. This dimension will normally be measured from the most forward position of the main rotor tip path plane to the most rearward position of the tail rotor tip path plane (or the most rearward extension of the fuselage in the case of Fenestron or Notar tails).

ELEVATED HLS – An HLS on a raised structure on land with a FATO and a TLOF surface 2.5 m or higher above the ground in the immediate vicinity.

FINAL APPROACH AND TAKE-OFF AREA (FATO) – in relation to an HLS, means an area of land or water over which the final phase of the approach to a hover or landing is completed and from which the take-off manoeuvre is commenced.

FINAL APPROACH – the reduction of height and airspeed to arrive over a predetermined point above the FATO of an HLS.

GRAVITATIONAL FORCE – the acceleration due to gravity, equal to 9.81 m/s².

GROUND TAXIING – movement of a helicopter on the ground under its own power on its undercarriage wheels.

HELICOPTER VMC – Visual Meteorological Conditions in relation to helicopters, as detailed in the Aeronautical Information Publication (AIP).

HELICOPTER LANDING SITE (HLS):

- (a) an area of land or water, or an area on a structure on land, intended for use wholly or partly for the arrival or departure of helicopters; or
- (b) a helideck; or
- (c) a heliport.

HELIDECK – an area intended for use wholly or partly for the arrival or departure of helicopters on:

- (a) a ship; or
- (b) a floating or fixed off-shore structure.

HELIPORT – an area that is:

- (a) intended for use wholly or partly for the arrival or departure of helicopters, on:
 - (i) land; or
 - (ii) a building or other raised structure on land; and
- (b) meets or exceeds the heliport standards set out in Volume II of Annex 14 to the Chicago Convention.

LIFT-OFF – in relation to a helicopter, means to raise the helicopter from a position of being in contact with the surface of the HLS into the air.

MOVEMENT – a touchdown or a lift-off of a helicopter at an HLS.

ROTOR DIAMETER (RD) – the diameter of the main rotor with the engine/s running.

SUITABLE FORCED LANDING AREA –

- (a) For a flight of a rotorcraft:
 - (i) means an area of land on which the rotorcraft could make a forced landing with a reasonable expectation that there would be no injuries to persons in the rotorcraft or on the ground; and
 - (ii) for a rotorcraft mentioned in (b) below, includes an area of water mentioned in (c) below.
- (b) For paragraph (a) (ii), the 'rotorcraft' is a rotorcraft that:
 - (i) is being used to conduct a passenger transport operation; and
 - (ii) either:
 - (1) is equipped with emergency flotation equipment; or
 - (2) has a type certificate or supplemental type certificate for landing on water.
- (c) For paragraph (a) (ii), the 'area of water' is an area of water:
 - (i) in which the rotorcraft could ditch with a reasonable expectation that there would be no injuries to persons in the rotorcraft or on the water; and
 - (ii) that is:
 - (1) adjacent to an offshore installation with search and rescue capabilities
 - (2) adjacent to land
 - (3) in a location, set out in the exposition or operations manual of the operator of the rotorcraft, that has search and rescue capabilities.

SAFETY AREA – a defined area on a Secondary HLS surrounding the FATO, or other defined area, that is free of obstacles, other than those required for air navigation purposes, and intended to reduce the risk of damage to helicopters accidentally diverging from the load-bearing area primarily intended for landing or take-off.

SECONDARY HLS – a place suitable for use as an aerodrome for helicopter operations by day or night that does not conform fully to the standards for a heliport set out in Volume II of Annex 14 to the Chicago Convention.

TAKE-OFF – in relation to a stage of flight of a helicopter from an HLS, means the stage of flight where the helicopter accelerates into forward flight and commences climb at the relevant climb speed, or if not intending to climb, enters level flight for the purposes of departure from the helicopter landing site.

Note: *Dependent on the take-off technique being used, the aircraft may be positioned using a vertical or a back-up profile prior to the forward acceleration segment.*

TOUCHDOWN – means lowering the helicopter from a flight phase not in contact with the surface of the HLS into a position which is in contact with the surface of the HLS for a landing.

TOUCHDOWN AND LIFT-OFF AREA (TLOF) – a defined area on an HLS in which a helicopter may touchdown or lift-off.

4. Background

4.1 With the development of the operational parts of the CASR, Australia is moving towards a more ICAO-based set of regulations. In order to meet these requirements, it is necessary to transition operators towards these standards.¹ This CAAP provides guidance on a set of recommended standards acceptable to CASA.

4.2 Presently, paragraph 92(1)(d) of CAR states:

An aircraft shall not land at, or take-off from, any place unless...the place...is suitable for use as an aerodrome for the purposes of the landing and taking-off of aircraft; and, having regard to all the circumstances of the proposed landing or take-off (including the prevailing weather conditions), the aircraft can land at, or take-off from, the place in safety.

4.3 The Civil Aviation Act 1988 (the Act) defines an aerodrome, as:

an area of land or water (including any buildings, installations and equipment), the use of which as an aerodrome is authorised under the regulations, being such an area intended for use wholly or partly for the arrival, departure or movement of aircraft.

4.4 In the latter definition, the concept of 'authorised' means an aerodrome that is authorised by a certificate or registration under Part 139 of CASR. This concept also applies to aerodromes established under the *Air Navigation Act 1920*; a place for which a requirement of Section 20 of the Act is in force; and to places that are not aerodromes. However, despite these references HLSs are not specifically defined in the CAR.

4.5 Likewise, Part 139 of CASR and its MOS do not (at this time) apply to an HLS unless it is located on an aerodrome. However, since helicopters operate from a variety of locations, CASA publishes guidance on what constitutes a suitable HLS in the form of this CAAP. Nothing in this CAAP should deter any helicopter operators, including those carrying out Aerial Work or other

¹ This will include Performance Class requirements, which may be the subject of a future CAO and Advisory Circular.

complex operations, from operating to the higher standards prescribed in Volume II of Annex 14 to the Chicago Convention (Annex 14).

4.6 In keeping with its submissions to ICAO on this topic, CASA recommends owners and operators of an HLS who intend to develop and operate a heliport for the purposes of RPT or Charter operations refer to, and comply with, the SARPs as set out in Annex 14. This does not preclude these types of operations at non-ICAO standard Secondary HLS; however, compliance with suitable operational procedures will be needed to ensure the safety of the operations.

Note: *CASA does not expect operators of HLS that do not currently meet the recommended standards set out in this CAAP to upgrade their existing facility immediately, as operational limitations and other risk mitigations may be in place at this time which ensures safety. Nonetheless, CASA encourages operators to adopt these standards when redeveloping current sites or building new HLS.*

5. Operational Factors to consider prior to using an HLS

5.1 Helicopter pilots and operators should ensure that:

- the FATO and TLOF are clear of all objects and animals likely to be a hazard to the helicopter, other than objects essential to the helicopter operation
- no person is within 30 m of the closest point of a hovering or taxiing helicopter, other than persons who are essential to the safe conduct of the operation or the specific nature of the task and who are trained and competent in helicopter operational safety procedures

Note: *In accordance with CAO 95.7 (paragraph 3.2), pilots must ensure that neither the helicopter nor its rotor downwash constitute a hazard to other aircraft, persons or objects.*

- appropriate information from the owners and authorities is obtained to confirm the suitability of the HLS for the proposed operation
- where the performance information in an Aircraft Flight Manual (AFM) details greater or additional limitations for defined areas or the approach and departure paths (compared to those set out in these guidelines), then the greater and/or additional requirements are available for the flight.

5.2 Except in an emergency, a helicopter should not land at or take-off from an HLS unless:

- the applicable helicopter VMC exist for a flight operating under Visual Flight Rules
- the relevant instructions in the AIP (including AIP Book and ERSA) are followed for the flight
- the following criteria are met for an HLS that is located within controlled airspace:
 - two-way VHF radio communication with the relevant Air Traffic Service unit is established
 - the appropriate Air Traffic Control clearances have been received.

5.3 If a proposed HLS is to be located near a city, town or populous area (or any other area where noise or other environmental considerations make helicopter operations undesirable), the proposal may be subject to the provisions of the *Commonwealth Environment Protection (Impact of Proposals) Act 1974* and parallel State legislation.

5.4 There may be other local legislation that also applies to operations at HLSs. It is helicopter pilots and operators' responsibility to check and adhere to any local rules and regulations.

5.5 With respect to operations in multi-engine helicopters at an HLS, the AOC holder and the pilot-in-command should ensure that the operation complies with the relevant requirements of CASA

Policy notice CEO PN029-2005. The policy notice is available on the CASA website at <http://www.casa.gov.au/corporat/policy/notices/CEO-PN029-2005.pdf>.

6. Attributes of an HLS

6.1 The helicopter is one of the more versatile aircraft and can, if required under special circumstances, operate to and from a space little larger than its overall length. The smaller the site, and the less known about hazards presented by obstacles and surface conditions, the greater the risk associated with its use. The risk presented by such hazards can be reduced when:

- the size of the defined areas of the HLS are greater than the minimum required size
- the pilot-in-command has access to accurate, up-to-date information about the site, which is presented in a suitable and easily interpretable form
- visual information, cues and positional markings are present for the defined areas at the site.

Defined Areas

6.2 Defined areas are the basic building blocks of an HLS and have a set of attributes that persist even when co-located or coincidental with another defined area. In such cases, the defined area with the more limiting standard would apply.

6.3 Defined areas belong to one of four main categories:

- **FATO** – the area over which the final approach is completed and the take-off conducted
- **TLOF** – the surface over which the touchdown and lift-off is conducted
- **Stand(s)** – the area for parking and within which positioning takes place
- **Taxiways and associated taxi routes** – the surfaces and areas for ground or air taxiing.

6.3.1 A defined area on a landing site may have one or more of three basic attributes:

1. **Containment** – an attribute that affords protection to the helicopter and/or its undercarriage and permits clearance from obstacles to be established. Containment is of two types: undercarriage containment and helicopter containment. Where a defined area (such as a TLOF or taxiway) provides only undercarriage containment, it should be situated within, or co-located with, another defined area (i.e. a FATO, stand or taxi-route).
2. An additional safety/protection area:
 - **for a FATO** – a safety area surrounds the FATO and compensates for errors in manoeuvring, hovering and touchdown
 - **for a stand** – a protection area surrounds the stand and compensates for errors of manoeuvring
 - **for a taxiway** – a protection area incorporated in the taxi-route, which compensates for errors of alignment and/or manoeuvring.
3. **Surface loading capability** – this ensures adequate surface strength to permit a helicopter to touchdown, park or ground taxi without damage to the surface of the HLS or helicopter. Surface loading is either:
 - **static** – where only the mass of the helicopter is considered, although elevated heliports/helidecks may include additional factors to protect the building/structure or

- **dynamic** – where the apparent weight (i.e. a force comprised of multiples of gravitational force) of the helicopter is used. Two types of dynamic loading need to be considered:
 - o dynamic loading due to normal operations
 - o dynamic loading due to a heavy landing, determined by an ‘ultimate limit state’ test (i.e. touchdown at a rate of descent of 12 ft/s for surface-level heliports).

Note: See paragraph 1.2.1.10 and chapter 1.3.2 of the ICAO Heliport Manual; for guidance on surface loading generally and structural design elevated heliports.

In addition to surface loading, durability is also a necessary consideration for the designer. For this reason, likely traffic should be taken into consideration to ensure that the surface loading remains as specified for the life of the facility or the applicable maintenance period. With this in mind, the following section includes guidance for HLS designers when considering these concepts.

7. Recommended criteria for an HLS

7.1 Basic HLS

7.1.1 Because such HLSs are often developmental and ‘basic’ in nature, CASA recommends that helicopter operators carry out thorough risk and hazard assessments for the proposed operation and apply appropriate controls to any hazards identified during this process.

7.1.2 Any passengers, crew and operational personnel carried into such locations should be briefed on the hazards of the site and any safety procedures needed to ensure safe loading and unloading at the HLS.

7.1.3 A Basic HLS should:

- be determined, by way of the helicopter operator’s risk assessment, to be large enough to accommodate the helicopter and have additional operator-defined safety areas (or buffers) to allow the crew to conduct the proposed operation safely at the location;
- have a TLOF with suitable surface characteristic for safe operations and strong enough to withstand the dynamic loads imposed by the helicopter
- have sufficient obstacle free approach and departure gradients to provide for safe helicopter operations into and out of the site under all expected operational conditions.
- have approach and departure paths that minimise the exposure of the helicopter to meteorological phenomena which may endanger the aircraft and provide escape flight paths, if a non-normal situation arises, which maximise the potential for using suitable forced landing areas.
- only be used for day operations under helicopter VMC or better weather conditions, unless prescribed elsewhere in CASA legislation.

Note: *Dynamic load bearing capability assumes all static load limits imposed by the helicopter and any other structure or vehicle will also be met. Operators should ensure this is the case prior to using the site.*

7.2 Secondary HLS

7.2.1 Since a Secondary HLS is intended to be used for numerous types of operations (i.e. both day and night under helicopter VMC) its design should at a minimum satisfy the guidelines set out in the following sub-sections.

FATO

7.2.2 The FATO should, at minimum, be capable of *enclosing a circle*² with a diameter equal to one-and-a-half times the D-value (1.5 x D) of the largest helicopter intended to use the site, and be free of obstacles likely to interfere with the manoeuvring of the helicopter.

7.2.3 It is recommended that a safety area extend a distance of at least 0.25 x D or 3 m around the FATO, whichever is the larger, or a greater distance if considered necessary for a particular HLS.

7.2.4 The safety area around a FATO need not be a solid surface. No fixed objects should be permitted on or in the area defined as the Safety Area, except for objects not exceeding a height of 25 cm. Notwithstanding this, designers of an HLS should attempt to minimise obstacles within the FATO, TLOF and Safety Area.

7.2.5 The FATO should provide ground effect, particularly if the associated TLOF is located outside of its defined area.

7.2.6 It is essential that the FATO be capable of at least dynamic load-bearing for the helicopters being operated in performance class 1 or to category A requirements. If the FATO and TLOF are coincident (e.g. on a roof top) then it follows that the whole area should be dynamic load-bearing and provide ground effect.

7.2.7 The mean slope of a FATO should not exceed 5% for 'Category A' operations, 7% for other operations or a lesser percentage if required by the design helicopter AFM. The slope of an associated solid Safety Area should not exceed 4% up away from the FATO.

TLOF

7.2.8 The TLOF, being a cleared and stable area capable of bearing the dynamic loads which may be imposed by the helicopter on the site by a heavy landing, should, at a minimum, be an area at least 0.83 x D and may or may not be located within the FATO (see Figure 1).

7.2.9 If the TLOF is not within the FATO, it should be co-located with a stand. In this case the TLOF is also protected by the safety area of the stand.

7.2.10 Any operations from mobile platforms, such as trolleys and carts, in the TLOF should comply with these requirements. Notwithstanding this, CASA does not recommend operations to mobile platforms as this is an operator-based aircraft manoeuvring decision, and guidance on these appliances is not given in this CAAP. The use of ground handling appliances should normally be limited to pre-start and post-shutdown actions and comply with AFM requirements.

7.2.11 The TLOF should provide for adequate drainage to prevent accumulation of water on the surface, but the overall slope should not exceed the maximum slope landing capability of the helicopter. The recommended maximum slope for a TLOF is 2% in any direction.

² A FATO may be any shape provided it meets this requirement. Orthogonal shapes may provide better visual cues.



Figure 1 – Secondary HLS: A 1.5 x D FATO with additional 0.25 x D Safety Area (Total area is 2 x D). Also showing 'H', FATO perimeter and 0.5 x D Touchdown/Positioning Markings (TD/PM).

Stands

7.2.12 A helicopter Stand should be of sufficient size to contain a circle with a diameter of at least 1.2 x D, plus a 0.4 x D protection area for the largest helicopter that the stand is intended to serve (see Figure 2).

7.2.13 One directional or 'taxi-through' stands should be a minimum of 1.5 x RD for ground taxiing and 2 x RD for air taxiing, including the protection area.

7.2.14 When a helicopter stand is to be used for turning in the hover, the minimum dimension of the stand and protection area should be not less than 2 x D, and suitably larger for wheeled helicopters turning on the ground taking into account the arc, or path, of the tail rotor.

7.2.15 No fixed objects should be permitted within the stand and protection area. All moveable objects, except those essential to the operation (e.g. portable floodlights), should be removed so as not to present a hazard while the helicopter is operating.

7.2.16 If there is a need for more than one stand, locate each with its own TLOF and with its own safety area.

7.2.17 For multiple adjacent stands and related simultaneous operations, refer to the ICAO *Heliport Manual*.

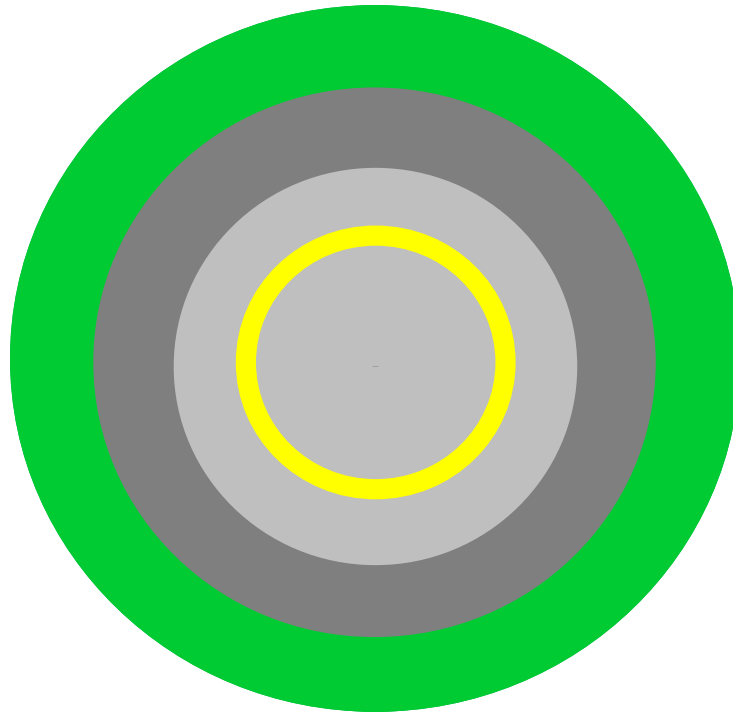


Figure 2 – Helicopter stand: A 1.2 x D stand (dark grey area) with additional 0.4 x D Protection Area (Total area is 2 x D). Also showing a 0.83 x D DLB area (light grey) and TD/PM.

Approach and departure paths

7.2.18 The approach and departure paths should be in accordance with the Annex 14 recommendations as illustrated in Figures 3 to 8³. The decision on which slope is appropriate for the HLS should be based on which is the most suitable for the performance class of the operations at the site.

7.2.19 CASA recommends application of these standards for RPT, Charter and future Air Transport operations, including emergency medical service (EMS) operations at metropolitan hospital sites. Some helicopters may however require even greater approach and departure path protection dependant on their performance capability.

A minimum of two approach and departure paths should be assigned. These should be separated by a minimum angle of 150°, and may be curved left or right to avoid obstacles or to take advantage of a more advantageous flight paths. This does not preclude one-way HLSs, provided adequate provisions are made for turning, limitations are notified to aircraft operators and any operational risks are suitably mitigated. Any curvature should comply with recommendations contained in ICAO Annex 14 Volume II.

7.2.20 The slope design categories in Figure 3 may not be restricted to a specific performance class of operation and may be applicable to more than one performance class of operation. The slope design categories depicted in Figures 3 and 4 represent recommended minimum design slope angles and not operational slopes:

- slope category “A” generally corresponds with helicopters operated in performance class 1
- slope category “B” generally corresponds with helicopters operated in performance class 3

³ These diagrams are reprinted from Annex 14 Volume II, *Heliports*, to the Convention on International Civil Aviation 4th edition, July 2013.

- slope category “C” generally corresponds with helicopters operated in performance class 2

7.2.21 Designers and HLS operators are advised that consultation with helicopter operators will help to determine the appropriate slope category to apply according to the heliport environment and the most critical helicopter type for which the heliport is intended. This is particularly true of the raised incline plane procedure outlined in Figure 8.

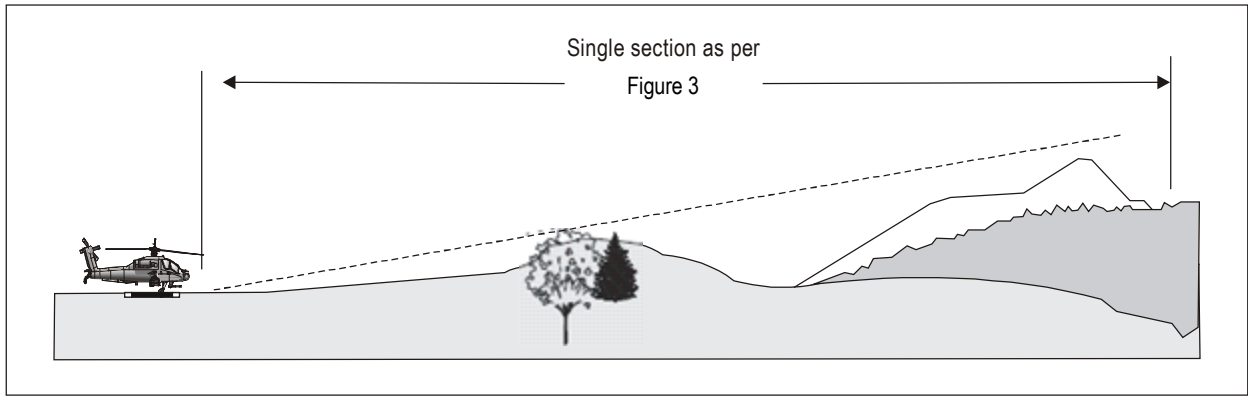
SURFACE and DIMENSIONS	SLOPE DESIGN CATEGORIES		
	A	B	C
APPROACH and TAKE-OFF CLIMB SURFACE:			
Length of inner edge	Width of safety area	Width of safety area	Width of safety area
Location of inner edge	Safety area boundary (Clearway boundary if provided)	Safety area boundary	Safety area boundary
Divergence: (1st and 2nd section)			
Day use only	10%	10%	10%
Night use	15%	15%	15%
First Section:			
Length	3 386 m	245 m	1 220 m
Slope	4.5% (1:22.2)	8% (1:12.5)	12.5% (1:8)
Outer Width	(b)	N/A	(b)
Second Section:			
Length	N/A	830 m	N/A
Slope	N/A	16% (1:6.25)	N/A
Outer Width	N/A	(b)	N/A
Total Length from inner edge (a)	3 386 m	1 075 m	1 220 m
Transitional Surface: (FATOs with a PinS approach procedure with a VSS)			
Slope	50% (1:2)	50% (1:2)	50% (1:2)
Height	45 m	45 m	45 m

Figure 3 – Recommended dimensions and slopes of obstacle limitation surfaces for secondary HLS visual FATOs

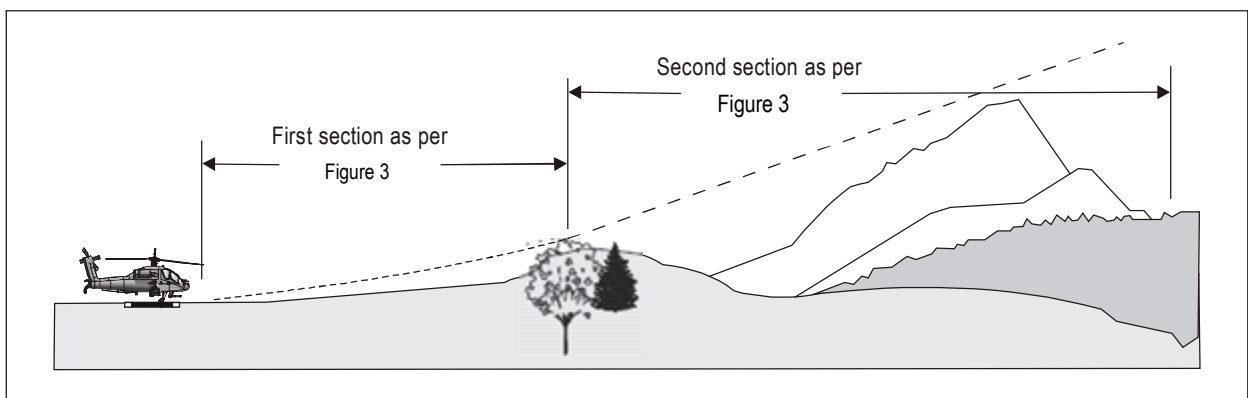
Note:

(a) The approach and take-off climb surface lengths of 3 386 m, 1 075 m and 1 220 m associated with the respective slopes, brings the helicopter to 152 m (500 ft) above FATO elevation.

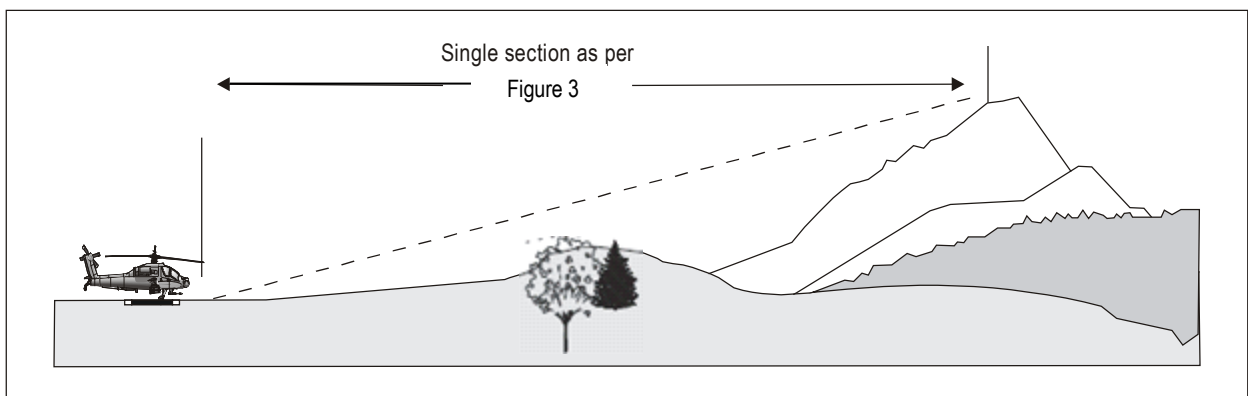
(b) Seven rotor diameters overall width for day operations or 10 rotor diameters overall width for night operations.



a) Approach and take-off climb surfaces - "A" slope profile - 4.5% design



b) Approach and take-off climb surfaces - "B" slope profile - 8% and 16% design



c) Approach and take-off climb surfaces - "C" slope profile - 12.5% design

Figure 4 – Approach and take-off climb surfaces with different slope design categories

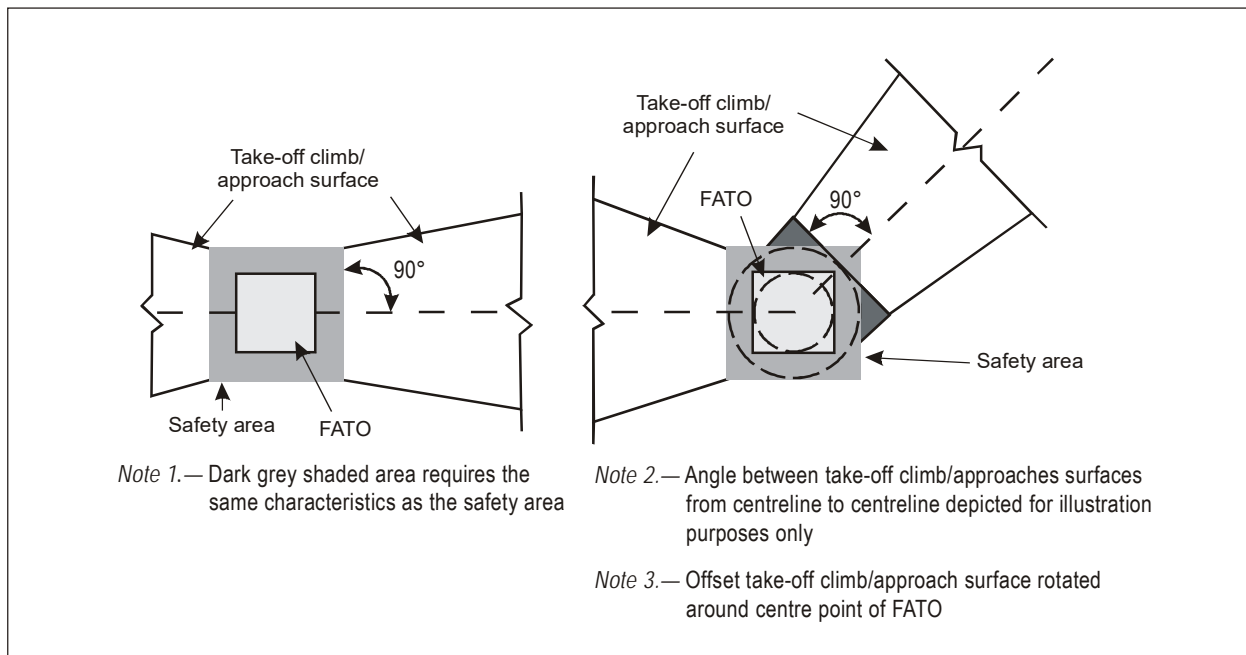


Figure 5 – Obstacle limitation surfaces — Take-off climb and approach surface

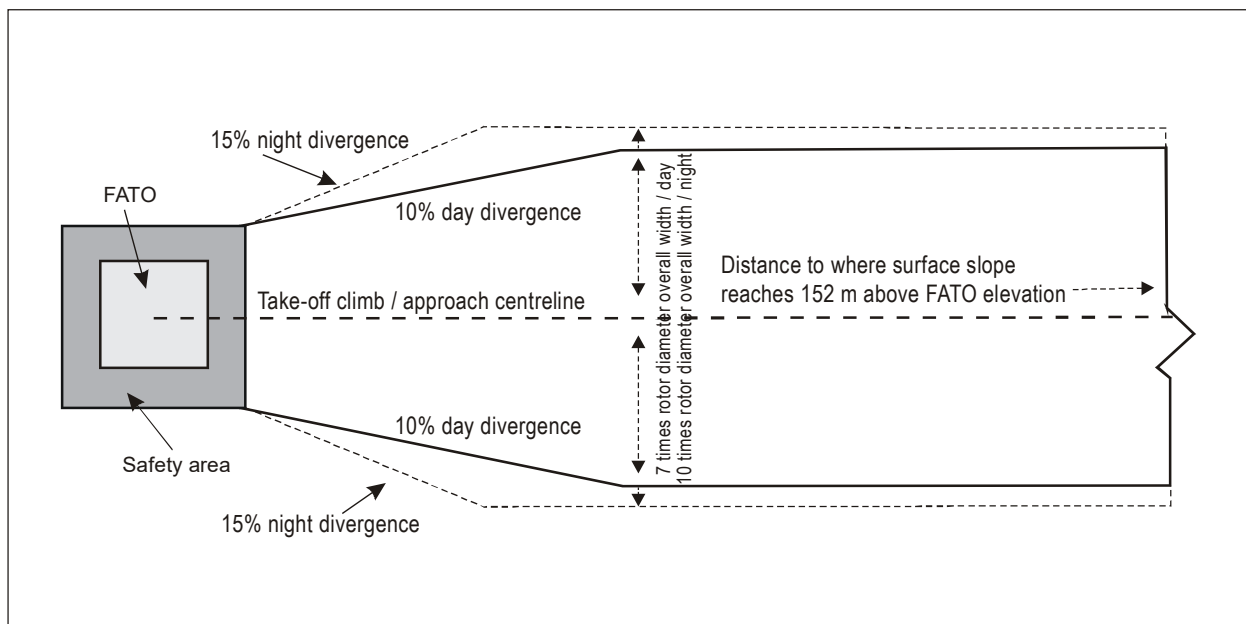


Figure 6 – Take-off climb/Approach surface width

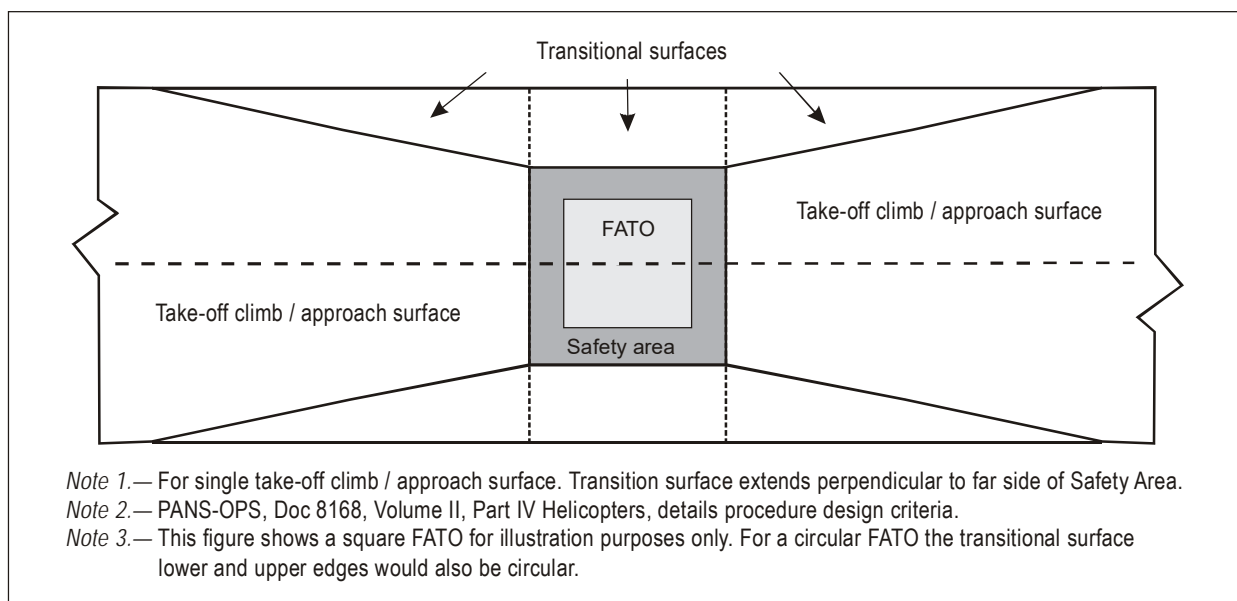


Figure 7 – Transitional surface for a FATO with a Point-in-Space (PinS) approach procedure with a VSS⁴

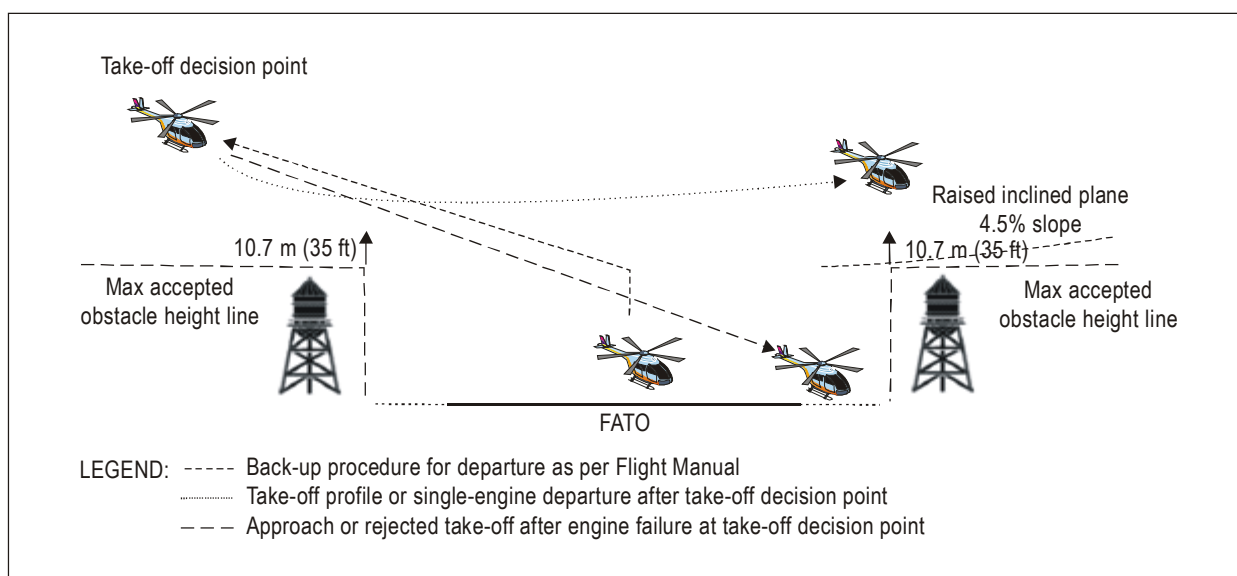


Figure 8 – Example of raised inclined plane during operations in Performance Class 1

Note 1: This example diagram does not represent any specific profile, technique or helicopter type and is intended to show a generic example. An approach profile and a back-up procedure for departure profile are depicted. Specific manufacturers operations in performance class 1 may be represented differently in the specific Helicopter Flight Manual. ICAO Annex 6, Part 3, Attachment A provides back-up procedures that may be useful for operations in performance class 1.

Note 2: The approach/landing profile may not be the reverse of the take-off profile.

⁴ A Transitional OLS is required when a PinS approach is published for the HLS

Note 3: *Additional obstacle assessment might be required in the area that a back-up procedure is intended. Helicopter performance and the Helicopter Flight Manual limitations will determine the extent of the assessment required.*

Other physical and ancillary considerations

7.2.22 An air taxiing route, with a width equal to twice the main RD of the design helicopter, should be provided where the FATO and the TLOF are not coincident.

7.2.23 The HLS should be sited with separate primary and emergency personnel access routes, with both routes located as far apart as practicable.

7.2.24 The HLS should be equipped with suitable fire protection and equipment based on the operations and the types of helicopters in use at the site. At least two fire extinguishers having specifications in accordance with Section 9 of the National Fire Protection Standard NFPA 418-2011 and any additional equipment as may be required to effectively extinguish a fire at the HLS, taking into account the types of operations and aircraft using the facility.

7.2.25 Where more than one fire extinguisher is available:

- at least one extinguisher should be positioned at each of the primary and emergency personnel access routes, preferably without creating potential obstacles to operations
- each separate TLOF or fuelling facility should be equipped with at least one standard fire extinguisher.

7.2.26 Alternative fire-fighting resources providing a similar or better level of protection may be used.⁵

7.3 Markings and indicators for Secondary HLSs

Wind Indicator

7.3.1 A Secondary HLS should be equipped with at least one wind indicator measuring 2.4 m in length and visible to the pilot during take-off, approach and landing. More than one indicator may be needed at more complex locations to ensure pilots receive full information on the wind flow over the site.

7.3.2 The wind indicator for night operations should be capable of being lit, or should meet the requirements of Section 7.7 of this CAAP.

Note: *CASA recommends the surface-level wind indicator standards outlined in Section 5.1.1 of Annex 14 Volume II as an alternative for both surface-level and elevated HLSs.*

HLS identification marking

7.3.3 An identification marking should be painted on the HLS FATO in the form of a large letter 'H', with dimensions equal to 4 x 3 x 0.75 m (height x width x stripe) and proportionately smaller for smaller facilities. The long side of the marking should be oriented to the preferred final approach paths to the HLS.

⁵ Systems in accordance with NFPA 418-2011 would meet this recommendation. Automatic foam monitors are not recommended.

FATO edge markings

7.3.4 The edge of the FATO should be marked with a 30-50 cm wide broken white stripe (or a suitable number of markers), painted to clearly delimit the FATO.

7.3.5 If the FATO is separate from the TLOF, it should be marked so it is easily identifiable to the pilot when conducting operations. The use of aiming point markings may assist in this situation (see below).

7.3.6 A runway-type FATO should be marked in accordance with the standards in Chapter 5 of Volume II of Annex 14.

Aiming point marking

7.3.7 An aiming point marking should be provided at the HLS where it is necessary to make an approach to a particular point prior to moving to the TLOF. CASA recommends that any aiming point marking should be in line with the standards outlined in Chapter 5 of Volume II of Annex 14; this may include an internal suitably-sized 'H' marking if required.

Approach and departure path(s) marking

7.3.8 Preferred approach and departure paths should be marked with suitably-sized single or double-headed yellow arrows at the perimeter of the TLOF, so as to be viewed easily by the pilot of a helicopter when over-flying or on approach to the site.

Touchdown/Positioning Marking (TD/PM)

7.3.9 A TD/PM is essential where it is necessary for a helicopter to touchdown or be accurately placed in a specific position.

7.3.10 A TD/PM provides the visual cues that permit a helicopter to be placed in a specific position and, when necessary, orientated such that, when the pilot's seat is above the marking, the undercarriage will be inside the load-bearing area and all parts of the helicopter will be clear of any obstacles by a safe margin.

7.3.11 A TD/PM should be a yellow circle and have a line width of at least 0.5 m. The inner diameter of the circle should be 0.5 x D of the largest helicopter that the HLS TLOF is intended to serve.

Note: *Further information on touchdown and positioning markings can be found in Chapter 5 of Volume II of Annex 14 and the ICAO Heliport Manual.*

Maximum operational helicopter tonnage marking

7.3.12 A maximum *operational* helicopter tonnage marking should be painted on the TLOF (if there is such a limit on the HLS) with the weight, expressed in kilograms to one decimal place, calculated by multiplying the indicator number by 1000.

7.3.13 The tonnage marking figures should be orientated so as to be readable by pilots on the preferred final approach paths to the HLS. This may involve a compromise in orientation.

7.3.14 A facility name marking may also be added, oriented as with the tonnage marking.

Note: *Further guidance on the formatting and style of HLS markings is available in CAAP 92-4.*

7.4 Night operations at Secondary HLS

7.4.1 For night operations at an RPT, Charter (or future Air Transport) capable HLS, including purpose-built EMS sites, designers should refer to Annex 14 and the ICAO *Helicopter Manual*. For other night operations, the following lighting guidelines are suggested; however, designers may apply the ICAO standard if desired.

FATO

7.4.2 The edge of the FATO should be lit by either omni-directional green lights or by a combination of markings and shielded perimeter lighting/floodlighting. The lights should be preferably flush with the level of the HLS but otherwise project no more than 25 cm above the level of the HLS. Where lights protrude above the surface of the FATO this should be noted in the HLS's operating information available to pilots. A minimum of eight equally-spaced lights should be used for square, octagonal and circular shaped FATOs, with proportionately more for larger rectangular shaped FATOs.

TD/PM

7.4.3 The TD/PM should be lit by either flush-mounted, yellow panel lights or floodlights.

Wind velocity information

7.4.4 Wind velocity information may be provided by one of the following:

- an illuminated wind direction indicator as mentioned in Section 7.3 above
- any other suitable means, such as an approved automated weather information station, or
- radio communication with an authorised weather observer located at, or in proximity to, the HLS.

Approach guidance

7.4.5 The standard approach direction(s) should be lit by point or panel lights, preferably flush to the HLS surface, depicted by yellow arrows similar in look to the painted markings. When it is considered essential that an accurate approach path be achieved due to the presence of obstacles, additional approach guidance lighting should be provided in accordance with Annex 14. Obstacle lighting should be provided where necessary, or operational limitations applied.

Air taxiing route

7.4.6 An air taxiing route should have a minimum width equal to 3 x the main RD of the helicopter and, depending on operational demands, be marked by either blue edge or green centreline lights spaced at 15 m intervals, or be suitably floodlit.

Visibility

7.4.7 All lights, except air-taxiing route lights, should be visible from a distance of at least 3 km at the prevailing Lowest Safe Altitude (LSALT) in clear conditions.

Note 1: *Neither TLOF lighting or marking is necessary to conform to the guidelines in this CAAP.*

Note 2: *Compatibility with Night Vision Devices is not necessary for lighting to conform to the guidelines in this CAAP. Operators and HLS owners who wish to allow night vision imaging system operations into a HLS should liaise with each other to ensure compatible procedures and lighting standards are considered.*

7.5 Elevated HLS

7.5.1 Elevated HLS should be designed and built in accordance with the guidance in Sections 3.2 of Annex 14 Volume II and the ICAO *Heliport Manual*. However, CASA does not recommend the construction of new elevated HLS with FATO areas less than 1 x D of the design helicopter.

Note: *Readers looking for guidance on the design and operation of off-shore resource platform, off-shore resource ship and marine HLS should read CAAP 92-4.*

Executive Manager
Standards Division

February 2014

APPENDIX F

DANGEROUS GOODS TRANSPORT DOCUMENTS

Refer:

<https://www.safework.sa.gov.au/industry/transport-and-stevedoring/transport-of-dangerous-goods>

South Australia

Dangerous Substances Act 1979

An Act to regulate the keeping, handling, transporting, conveyance, use and disposal, and the quality, of dangerous substances; and for other purposes.

Contents

Part 1—Preliminary

- 1 Short title
- 2 Interpretation
- 3 Act binds Crown
- 4 Non-derogation

Part 2—Administration

- 5 Appointment of Competent Authorities
- 6 Delegation
- 7 Appointment of authorised officers
- 8 Identification cards
- 9 Secrecy
- 10 Person acting without authority

Part 3—Dangerous substances

Division 1—General

- 11 General duty
- 12 Duty in relation to plant

Division 2—Licences to keep dangerous substances

- 13 Prescribed dangerous substance for the purposes of this Division
- 14 Offence to keep dangerous substances without a licence
- 15 Licence to keep dangerous substances
- 16 Term of licences

Division 3—Licences to convey dangerous substances

- 17 Prescribed dangerous substance for the purposes of this Division
- 18 Offence to convey dangerous substances without a licence
- 19 Licence to convey dangerous substances
- 20 Term of licences

Division 4—Licences generally

- 21 General ground for not granting or renewing licences
- 22 Surrender, suspension and cancellation of licences

Part 4—Dangerous goods—special provisions

- 23 Dangerous goods—regulations
- 24 Specific offences
- 25 Prohibiting a person from involvement in the dangerous goods transport industry
- 26 Guidelines

Part 5—Inspections etc

- 27 Powers of authorised officers
- 28 Issue of warrants
- 29 Provisions relating to seizure
- 30 Offence to hinder etc authorised officers
- 31 Self-incrimination
- 32 Offences by authorised officers etc

Part 6—Notices and emergencies

- 33 Notices
- 34 Action on default
- 35 Action in emergency situations

Part 7—Miscellaneous

- 36 Exemptions
- 37 Reviews
- 38 Evidentiary provisions
- 39 Approved codes of practice
- 40 Use of codes of practice in proceedings
- 41 Offences by bodies corporate
- 42 Continuing offences
- 43 Forfeiture of dangerous substance upon conviction
- 44 Recovery of costs from convicted person
- 45 Proceedings for offences
- 46 Cost recovery
- 48 Assistance in emergencies or accidents
- 49 Prohibitions
- 50 Regulations
- 51 Application orders and emergency orders

Legislative history

The Parliament of South Australia enacts as follows:

Part 1—Preliminary

1—Short title

This Act may be cited as the *Dangerous Substances Act 1979*.

2—Interpretation

- (1) In this Act, unless the contrary intention appears—

authorised officer means a person appointed as an authorised officer under Part 2;

Competent Authority means a person, officer or authority appointed as a Competent Authority under Part 2;

conveyance in relation to a dangerous substance means movement of the dangerous substance whether by a craft, pipeline or other means, other than by a vehicle, and **convey** has a corresponding meaning;

craft means—

- (a) an aircraft or vessel; or
- (b) any other craft brought within the ambit of this definition by the regulations;

dangerous goods means—

- (a) a substance or article declared by the regulations to be dangerous goods; or
- (b) a substance or article determined by a Competent Authority in accordance with the regulations to be dangerous goods;

dangerous situation means a situation that is creating or likely to create—

- (a) imminent risk to the health or safety of a person, or the safety of a person's property; or
- (b) imminent risk of environmental harm;

dangerous substance means—

- (a) dangerous goods; or
- (b) any other substance or article that is toxic, corrosive, flammable or otherwise dangerous and declared by the regulations to be a dangerous substance;

the Government Analyst means the person appointed by the Governor to be the Government Analyst or any person for the time being acting in that office;

plant includes—

- (a) any machine, engine, equipment, container or device;
- (b) any component, fitting, pipe or accessory used in or in connection with any machine, engine, equipment, container or device;

premises means any land or any building or structure whether fixed or moveable;

substance means a solid, liquid or gas or any mixture of solids, liquids or gases;

transport in relation to dangerous goods encompasses any form of transport of dangerous goods by vehicle and includes—

- (a) the packing, loading and unloading of the goods, and the transfer of the goods to or from a vehicle; and
- (b) the marking of packages and unit loads containing dangerous goods, and the placarding of containers and vehicles in which dangerous goods are transported; and
- (c) other matters incidental to their transport;

Tribunal means the South Australian Civil and Administrative Tribunal established under the *South Australian Civil and Administrative Tribunal Act 2013*;

unit load has the meaning assigned by regulations under this Act;

vehicle means a vehicle that is used or capable of being used to transport any substance or article on land and includes—

- (a) a trailer or caravan; and
- (b) a locomotive, carriage, wagon or other vehicle that operates on a railway track; and
- (c) anything attached to a vehicle,

but does not include a vehicle excluded from the ambit of this definition by the regulations.

- (2) The circumstances where a person may be involved in the transport of dangerous goods include—
 - (a) by importing, or arranging for the importation of, dangerous goods into Australia; and
 - (b) by marking packages and unit loads containing dangerous goods for transport, and placarding containers and vehicles in which dangerous goods are transported; and
 - (c) by consigning dangerous goods for transport; and
 - (d) by loading dangerous goods into or onto a vehicle, or into a container that is to be put on a vehicle, for transport or unloading dangerous goods that have been transported; and
 - (e) by marshalling vehicles and separating dangerous goods; and
 - (f) by undertaking, or being responsible for, otherwise than as an employee or subcontractor, the transport of dangerous goods; and
 - (g) by providing emergency information in relation to the transport of dangerous goods; and
 - (h) by driving a vehicle carrying or transporting dangerous goods; and
 - (i) by being the consignee of dangerous goods that are to be transported; and
 - (j) by being involved as a director, secretary or manager of a body corporate, or other person who takes part in the management of a body corporate, that takes part in an activity referred to above.
- (3) The regulations may provide that the *Acts Interpretation Act 1901* of the Commonwealth applies to the interpretation of a regulation or regulations, or a regulation, code, standard, rule or other document applied or adopted by the regulations, subject to any modification or exclusion prescribed by the regulations (and if a regulation is made under this subsection, then the *Acts Interpretation Act 1915* does not apply to the interpretation of the relevant regulation, code, standard, rule or other document).

3—Act binds Crown

This Act binds the Crown in right of the State and also, to the extent declared by the regulations (and so far as the legislative power of the State extends) the Crown in all its other capacities.

4—Non-derogation

- (1) The provisions of this Act are in addition to and do not derogate from the provisions of another Act.
- (2) The provisions of this Act do not limit or affect any civil remedy at law or in equity.

Part 2—Administration

5—Appointment of Competent Authorities

- (1) The Minister may, by notice in the Gazette—
 - (a) appoint a person, officer or authority as a Competent Authority under this Act;
 - (b) revoke an earlier appointment under this section.
- (2) The appointment of an officer as a Competent Authority extends to a person who may be acting in the position of that officer while the officer is absent from the duties of office.
- (3) A Competent Authority has all the powers of an authorised officer under this Act.

6—Delegation

- (1) The Minister or a Competent Authority may delegate a power or function vested in or conferred on the Minister or Competent Authority (as the case may be) under this Act—
 - (a) to a particular person; or
 - (b) to the person for the time being occupying a particular office or position.
- (2) A power or function delegated under this section may, if the instrument of delegation so provides, be further delegated.
- (3) A delegation—
 - (a) may be absolute or conditional; and
 - (b) does not derogate from the power of the delegator to act in a matter; and
 - (c) is revocable at will by the delegator.
- (4) In any legal proceedings an apparently genuine certificate, purportedly signed by the Minister or a Competent Authority, containing particulars of a delegation under this section, will, in the absence of proof to the contrary, be accepted as proof that the delegation was made in accordance with the particulars.

7—Appointment of authorised officers

- (1) The Minister may appoint persons, or classes of persons, to be authorised officers for the purposes of this Act.
- (2) An appointment under subsection (1) must be notified in the Gazette.
- (3) An appointment may be made subject to conditions specified—
 - (a) in the instrument of appointment; or
 - (b) in the Gazette.

- (4) The Minister may, at any time, revoke an appointment or vary, revoke or add a condition of appointment.
- (5) All members of the police force are authorised officers for the purposes of this Act.

8—Identification cards

- (1) An authorised officer, other than a member of the police force, must be issued with an identification card that contains the prescribed details.
- (2) An authorised officer who is not a member of the police force must carry his or her card while carrying out duties under this Act.
- (3) An authorised officer must, at the request of a person in relation to whom the authorised officer intends to exercise any powers under this Act—
 - (a) in the case of an authorised officer who is a member of the police force—produce his or her police identification card;
 - (b) in the case of an authorised officer who is not a member of the police force—produce his or her identification card under this section,for inspection by the person.
- (4) A person who ceases to be an authorised officer (other than as a member of the police force) must immediately return his or her identification card to a Competent Authority.

9—Secrecy

A person who is or has been engaged in an office or position connected with the administration of this Act must not disclose information obtained by virtue of that office or position except—

- (a) with the consent of the person from whom the information was obtained or to whom the information relates; or
- (b) in connection with the administration, operation or enforcement of this or another Act (including an Act in force in another State or a Territory that corresponds to this Act); or
- (c) for the purpose of any legal proceedings arising out of the administration, operation or enforcement of this or another Act (including an Act in force in another State or a Territory that corresponds to this Act); or
- (d) in accordance with the regulations or with guidelines approved by the Minister.

Maximum penalty: \$10 000.

10—Person acting without authority

A person must not falsely represent, by words or conduct, that the person is engaged in or associated with the administration of this Act.

Maximum penalty: \$10 000.

Part 3—Dangerous substances

Division 1—General

11—General duty

A person must, in keeping, handling, conveying, using or disposing of a dangerous substance, or in transporting dangerous goods, take such precautions and exercise such care as is reasonable in the circumstances in order to—

- (a) avoid endangering the health or safety of any person (including himself or herself), or the safety of property; and
- (b) prevent the risk of environmental harm.

Maximum penalty:

- (a) unless paragraph (b) applies—
 - (i) in the case of a body corporate—\$250 000;
 - (ii) in any other case—\$50 000 or imprisonment for 2 years, or both;
- (b) in a case involving an offence that results in death or serious injury to a person—
 - (i) in the case of a body corporate—\$500 000;
 - (ii) in any other case—\$100 000 or imprisonment for 4 years or both.

12—Duty in relation to plant

- (1) This section applies to any plant that is used, or that is reasonably expected to be used, in connection with any dangerous substance.
- (2) A person who is in charge of any plant to which this section applies must—
 - (a) take such precautions and exercise such care as is reasonable in the circumstances in order to ensure that the plant is in a safe condition whenever it is used in connection with a dangerous substance; and
 - (b) ensure that the plant is in a safe condition when it is not in use.
- (3) A person who uses any plant to which this section applies must—
 - (a) ensure that the plant is in a safe condition; and
 - (b) take such precautions and exercise such care as is reasonable in the circumstances in order to avoid endangering the health or safety of any other person, or the safety of any other person's property (whether during the use of that plant, or as a result of the use of that plant); and
 - (c) ensure that the plant is left in a safe condition after use.
- (4) A person who performs, or supervises the performance of, any work on, or in relation to, plant to which this section applies must take such precautions and exercise such care as is reasonable in the circumstances in order to avoid endangering the health or safety of any person (including himself or herself), or the safety of any other person's property (whether during the performance of that work, or as a result of the performance of that work).

- (5) A person must not misuse or damage any plant to which this section applies.
- (6) A person who contravenes or fails to comply with a provision of this section is guilty of an offence.

Maximum penalty:

In the case of a body corporate—\$250 000.

In any other case—\$50 000 or imprisonment for 2 years, or both.

Division 2—Licences to keep dangerous substances

13—Prescribed dangerous substance for the purposes of this Division

In this Division—

prescribed dangerous substance means a dangerous substance for the time being declared by regulation to be a prescribed dangerous substance for the purposes of this Division.

14—Offence to keep dangerous substances without a licence

- (1) A person must not keep a prescribed dangerous substance in any premises unless the person is the holder of a licence under this Division.

Maximum penalty:

In the case of a body corporate—\$50 000.

In any other case—\$10 000 or imprisonment for 1 year.

- (2) The regulations may—
 - (a) prescribe cases or circumstances in relation to which this Division does not apply;
 - (b) exempt (either absolutely or subject to conditions or limitations) a specified person or class of persons from the requirement to be licensed under this Division.

15—Licence to keep dangerous substances

- (1) A Competent Authority may, subject to this Act, in his or her discretion, on application in the prescribed form and payment of the prescribed fee, grant a licence to any person to keep any prescribed dangerous substance in any premises.
- (2) A licence granted under this section is subject to such conditions relating to—
 - (a) the prescribed dangerous substance that may be kept; or
 - (b) its keeping; or
 - (c) the premises in which it may be kept; or
 - (d) any other matter,as a Competent Authority may specify by notice in writing given to the holder of the licence.
- (3) A Competent Authority may, by notice in writing given to the holder of a licence under this section, add to, vary or revoke any conditions of the licence.

- (4) The holder of a licence under this section who breaches, or fails to comply with, a condition of the licence is guilty of an offence.
Maximum penalty: \$10 000.
- (5) A Competent Authority may grant a licence under this section in respect of premises notwithstanding that the premises do not comply with the regulations, provided that—
 - (a) a Competent Authority is satisfied that the keeping of the prescribed dangerous substance in the premises would not immediately endanger the health or safety of any person, or the safety of any person's property; and
 - (b) a Competent Authority in granting the licence imposes conditions designed to ensure compliance with the regulations within a specified period.

16—Term of licences

- (1) A licence granted under this Division will, subject to this Act, remain in force for such term as a Competent Authority may specify in the licence.
- (2) A Competent Authority may, subject to this Act, in his or her discretion, on application made in the prescribed manner and form and payment of the prescribed fee, renew a licence granted under this Division.
- (3) A licence renewed under this section will, subject to this Act, remain in force for such term (being not less than one year) as a Competent Authority may specify in the licence.

Division 3—Licences to convey dangerous substances

17—Prescribed dangerous substance for the purposes of this Division

In this Division—

prescribed dangerous substance means a dangerous substance for the time being declared by regulation to be a prescribed dangerous substance for the purposes of this Division.

18—Offence to convey dangerous substances without a licence

- (1) A person must not convey any prescribed dangerous substance unless the person is the holder of a licence under this Division.

Maximum penalty:

In the case of a body corporate—\$50 000.

In any other case—\$10 000 or imprisonment for 1 year.

- (2) The regulations may—
 - (a) prescribe cases or circumstances in relation to which this Division does not apply;
 - (b) exempt (either absolutely or subject to conditions or limitations) a specified person or class of persons from the requirement to be licensed under this Division.

19—Licence to convey dangerous substances

- (1) A Competent Authority may, subject to this Act, in his or her discretion, on application in the prescribed form and payment of the prescribed fee, grant a licence to any person to convey any prescribed dangerous substance.
- (2) A licence granted under this section is subject to such conditions relating to—
 - (a) the prescribed dangerous substance that may be conveyed; or
 - (b) its conveyance; or
 - (c) any other matter,as a Competent Authority may specify by notice in writing given to the holder of the licence.
- (3) A Competent Authority may, by notice in writing given to the holder of a licence under this section, add to, vary or revoke any conditions of the licence.
- (4) The holder of a licence under this section who breaches, or fails to comply with, a condition of the licence is guilty of an offence.
Maximum penalty: \$10 000.

20—Term of licences

- (1) A licence granted under this Division will, subject to this Act, remain in force for such term as a Competent Authority may specify in the licence.
- (2) A Competent Authority may, subject to this Act, in his or her discretion, on application made in the prescribed manner and form and payment of the prescribed fee, renew a licence granted under this Division.
- (3) A licence renewed under this section will, subject to this Act, remain in force for such term as a Competent Authority may specify in the licence.

Division 4—Licences generally

21—General ground for not granting or renewing licences

A Competent Authority must not grant or renew a licence under this Part if he or she is satisfied that it is not in the interests of public safety so to do.

22—Surrender, suspension and cancellation of licences

- (1) A person holding a licence under this Part may surrender the licence.
- (2) A Competent Authority may suspend, or cancel, a licence under this Part if he or she is satisfied—
 - (a) that the grant or a renewal of the licence was obtained improperly; or
 - (b) that the holder of the licence has been convicted of an offence against this Act; or
 - (c) in the case of a licence to keep a dangerous substance in any premises, that the premises do not comply with the prescribed requirements; or
 - (d) that the holder of the licence has breached, or failed to comply with, a condition of the licence.

Part 4—Dangerous goods—special provisions

23—Dangerous goods—regulations

The regulations may make provision for or in relation to any of the following matters:

- (a) the classification of dangerous goods according to class, type or category and methods for assigning dangerous goods to those classes, types or categories;
- (b) the determination by a Competent Authority of which goods are dangerous goods or dangerous goods of a particular class, type or category, or are too dangerous to be transported, or too dangerous to be transported in bulk (except under a specific authority or under another Act);
- (c) the determination by a Competent Authority of which goods are incompatible with dangerous goods;
- (d) the analysis and testing of dangerous goods;
- (e) goods too dangerous to be transported, or too dangerous to be transported in bulk (except under a specific authority or under another Act);
- (f) the identification and marking of dangerous goods, packages, unit loads or containers of dangerous goods, and vehicles used or to be used for the transport of dangerous goods;
- (g) packaging and containers used in the transport of dangerous goods;
- (h) the manufacture of vehicles and containers for use in the transport of dangerous goods;
- (i) voluntary accreditation schemes, including privileges to be accorded or sanctions to be imposed under the schemes and the cancellation or suspension of the schemes, relating to the transport of dangerous goods, or particular aspects of the transport of dangerous goods;
- (j) the mandatory accreditation of people involved in the transport of dangerous goods, or particular aspects of the transport of dangerous goods;
- (k) the licensing of—
 - (i) vehicles and drivers for the purposes of the transport of dangerous goods; and
 - (ii) people responsible for the transport of dangerous goods or for vehicles used in the transport of dangerous goods;
- (l) the loading of dangerous goods for, and the unloading of dangerous goods after, their transport;
- (m) the determination by a Competent Authority of routes along which, the areas in which, the times during which and the vehicles by which dangerous goods may or may not be transported;
- (n) procedures for the transport of dangerous goods, including, but not limited to—
 - (i) the quantities and circumstances in which dangerous goods, or particular types of dangerous goods, may be transported; and

- (ii) safety procedures and equipment;
- (o) the approval by a Competent Authority of—
 - (i) packages, containers, equipment and other items used in relation to the transport of dangerous goods; and
 - (ii) facilities for and methods of testing or using packages, containers, equipment and other items used, and processes carried out, in relation to the transport of dangerous goods;
- (p) documents required to be prepared or kept by people involved in the transport of dangerous goods and the approval by a Competent Authority of alternative documentation, and the provision of information with respect to the transport of dangerous goods;
- (q) insurance or indemnity requirements in respect of the transport of dangerous goods;
- (r) the duties and obligations of people involved in the transport of dangerous goods;
- (s) the training and qualifications required of people involved in, and the approval of training courses and qualifications relating to involvement in, the transport of dangerous goods;
- (t) obligations arising, and procedures to be followed, in the event of a dangerous situation in relation to the transport of dangerous goods;
- (u) obligations of passengers in respect of transport of dangerous goods;
- (v) the recognition of laws of other jurisdictions relating to the transport of dangerous goods and of things done under those laws, and the giving effect to those things.

24—Specific offences

- (1) A person must not transport goods that the regulations identify as being too dangerous to transport.

Maximum penalty:

In the case of a body corporate—\$250 000.

In any other case—\$50 000 or imprisonment for 2 years, or both.

- (2) A person must not use a vehicle to transport dangerous goods (other than as the driver of the vehicle) if—

- (a) the regulations require the vehicle to be licensed to transport the goods; and
- (b) the vehicle is not licensed under the regulations.

Maximum penalty:

In the case of a body corporate—\$250 000.

In any other case—\$50 000 or imprisonment for 2 years, or both.

- (3) A person must not employ, engage or permit another person to drive a vehicle transporting dangerous goods if the other person is required by the regulations to be licensed to drive the vehicle and is not so licensed.

Maximum penalty:

In the case of a body corporate—\$250 000.

In any other case—\$50 000 or imprisonment for 2 years, or both.

- (4) A person must not drive a vehicle transporting dangerous goods if—
- (a) the regulations require the vehicle to be licensed to transport the goods; and
 - (b) the vehicle is not licensed under the regulations.

Maximum penalty: \$10 000.

- (5) A person who is required by the regulations to be accredited to be involved in the transport of dangerous goods or a particular aspect of the transport of dangerous goods must not be so involved without being so accredited.

Maximum penalty:

In the case of a body corporate—\$250 000.

In any other case—\$50 000 or imprisonment for 2 years, or both.

- (6) A person must not drive a vehicle transporting dangerous goods if—
- (a) the regulations require the person to be licensed to drive the vehicle; and
 - (b) the person is not licensed under the regulations.

Maximum penalty: \$10 000.

25—Prohibiting a person from involvement in the dangerous goods transport industry

- (1) If a person is convicted of an offence involving an aspect of the transport of dangerous goods, a court may, after taking into account the matters referred to in subsection (2) and other matters considered relevant by the court, in addition to imposing any other penalty, order that the person be prohibited, for a specified period, to the extent specified by the court, from involvement in the transport of dangerous goods.
- (2) The matters to be taken into account by a court under subsection (1) are—
- (a) the person's record in the transport of goods; and
 - (b) any prior convictions of the person relating to dangerous goods; and
 - (c) the circumstances surrounding the commission of the offence for which the person is being sentenced.
- (3) A person who contravenes an order under this section is guilty of an offence.

Maximum penalty:

In the case of a body corporate—\$250 000.

In any other case—\$50 000 or imprisonment for two years, or both.

26—Guidelines

- (1) For the purposes of this section, an *approved guideline* is a guideline, code of practice or other document that is approved by the Ministerial Council for Road Transport for the purpose of providing practical guidance to people engaged in the transport of dangerous goods and that is recognised for the purposes of this section by the Minister by notice in the Gazette.
- (2) In proceedings for an offence against this Act relating to the transport of dangerous goods, it is a defence to prove that the defendant acted in accordance with the provisions of an approved guideline specifying a means of complying with the provision the defendant is alleged to have contravened.

Part 5—Inspections etc

27—Powers of authorised officers

- (1) Subject to this Part, an authorised officer may—
 - (a) enter, inspect and search any place or vehicle, and open any container or other thing, for any reasonable purpose connected with the administration, operation or enforcement of this Act;
 - (b) with the authority of a warrant issued under this Part or in circumstances in which the authorised officer reasonably believes that immediate action is required, use reasonable force to break into or open any part of, or anything in or on, any place or vehicle;
 - (c) give directions with respect to the stopping or movement of a vehicle as reasonably required in connection with the administration, operation or enforcement of this Act;
 - (d) require a vehicle to be presented for inspection at a place and time specified by the authorised officer;
 - (e) take, or require a person to take and provide, samples of any substance or thing from any place or vehicle for analysis as reasonably required in connection with the administration, operation or enforcement of this Act;
 - (f) require any person to produce any documents, including a written record that reproduces in an understandable form information stored by computer, microfilm or other process, as reasonably required in connection with the administration, operation or enforcement of this Act;
 - (g) examine, copy or take extracts from any documents or information so produced or require a person to provide a copy of any such document or information;
 - (h) take photographs, films, audio, video or other recordings as reasonably required in connection with the administration, operation or enforcement of this Act;
 - (i) examine or test any substance, sample, plant, equipment, article, vehicle or other thing for the purpose of determining whether a provision of this Act is being or has been complied with, or cause or require it to be so examined or tested, or seize it or require its production for such examination or testing;

- (j) seize and retain, or issue a seizure order in respect of, anything that the authorised officer reasonably suspects has been used in, or may constitute evidence of, a contravention of this Act;
 - (k) require a person who the authorised officer reasonably suspects has committed, is committing or is about to commit, a contravention of this Act to state the person's full name and usual place of residence and to produce evidence of the person's identity;
 - (l) require a person who the authorised officer reasonably suspects has knowledge of matters in respect of which information is reasonably required for the administration, operation or enforcement of this Act to answer questions in relation to those matters;
 - (m) require a person holding or required to hold a licence, accreditation or permit to produce it for inspection;
 - (n) give any directions reasonably required in connection with the exercise of a power conferred by any of the paragraphs above or otherwise in connection with the administration, operation or enforcement of this Act;
 - (o) exercise other prescribed powers.
- (2) If—
- (a) a person whose native language is not English is suspected of having committed an offence against this Act; and
 - (b) the person is not reasonably fluent in English,
- the following provisions apply:
- (c) the person is entitled to be assisted by an interpreter during questioning conducted by an authorised officer in the course of an investigation of the suspected offence;
 - (d) if it appears that the person may be entitled to be assisted by an interpreter, an authorised officer must not proceed with any questioning, or further questioning, as part of the investigation until the person has been informed of the right to an interpreter;
 - (e) if the person requests the assistance of an interpreter, an authorised officer must not proceed with any questioning, or further questioning, until an interpreter is present.
- (3) Subsection (2) does not apply to the extent that an authorised officer requires information necessary to deal immediately with a dangerous situation.
- (4) In the exercise of powers under this Act an authorised officer may be assisted by such persons as he or she considers necessary in the circumstances.
- (5) An authorised officer may require an occupier of a place or a person apparently in charge of a substance, plant, equipment, article, vehicle or other thing to give to the authorised officer or a person assisting the authorised officer such assistance as is reasonably required by the authorised officer for the effective exercise of powers conferred by this Act.

28—Issue of warrants

- (1) If, on the application of an authorised officer, a magistrate is satisfied that there are reasonable grounds to believe—
 - (a) that a contravention of this Act has been, is being, or is about to be, committed in or on a place or vehicle; or
 - (b) that something may be found in or on a place or vehicle that has been used in, or constitutes evidence of, a contravention of this Act; or
 - (c) that access is otherwise reasonably required to a place or vehicle in connection with the administration, operation or enforcement of this Act,the magistrate may issue a warrant in respect of the place or vehicle authorising an authorised officer, with such assistants as he or she consider necessary, to use reasonable force to break into or open any part of, or anything in or on, the place or vehicle as specified in the warrant.
- (2) An application for the issue of a warrant may be made either personally or by facsimile or telephone.
- (3) The grounds of an application for a warrant must be verified by affidavit.
- (4) An application for the issue of a warrant may not be made by facsimile or telephone unless in the opinion of the applicant a warrant is urgently required and there is insufficient time to make the application personally.
- (5) If an application for the issue of a warrant is made by facsimile, the following provisions apply:
 - (a) the application must be in a form approved by the Chief Magistrate and be accompanied (through facsimile transmission) by an affidavit made by the applicant verifying the facts referred to in the application;
 - (b) the applicant must be available to speak to the magistrate by telephone;
 - (c) the magistrate is entitled to assume, without further inquiry, that the applicant is an authorised officer and that a person who identifies himself or herself as the applicant during a telephone conversation with the magistrate is indeed the applicant;
 - (d) the magistrate may, on being satisfied that there are sufficient grounds for the issue of a warrant (relying on the application and, if the magistrate thinks it necessary to speak to the applicant, one or more telephone conversations with the applicant), make out and sign a warrant, noting on the warrant the facts on which he or she relies as grounds for the issue of the warrant;
 - (e) the warrant will be taken to have been issued, and will come into force, when signed by the magistrate;
 - (f) the magistrate must inform the applicant of the terms of the warrant (and may do this by telephone).

- (6) If an application for the issue of a warrant is made by telephone, the following provisions apply:
- (a) the applicant must inform the magistrate of his or her name and identify himself or herself as an authorised officer, and the magistrate, on receiving that information, is entitled to assume, without further inquiry, that the applicant is an authorised officer;
 - (b) the applicant must inform the magistrate of the grounds on which the issue of the warrant is sought;
 - (c) if it appears to the magistrate from the information furnished by the applicant that there are proper grounds for the issue of a warrant, the magistrate must inform the applicant of the facts on which he or she relies as grounds for the issue of the warrant, and must not proceed to issue the warrant unless the applicant undertakes to make an affidavit verifying those facts;
 - (d) if the applicant gives such an undertaking, the magistrate may then make out and sign a warrant, noting on the warrant the facts on which he or she relies as grounds for the issue of the warrant;
 - (e) the warrant will be taken to have been issued, and will come into force, when signed by the magistrate;
 - (f) the magistrate must inform the applicant of the terms of the warrant;
 - (g) the applicant must, as soon as practicable after the issue of the warrant, forward to the magistrate an affidavit verifying the facts referred to in paragraph (c).
- (7) A magistrate by whom a warrant is issued must file the warrant, or a copy of the warrant, and the affidavit (or a facsimile copy of the affidavit) verifying the grounds on which the application for the warrant was made, in the Magistrates Court.
- (8) A warrant, if not executed at the expiration of one month from the date of its issue, then expires.

29—Provisions relating to seizure

- (1) A seizure order under this Part—
- (a) must be in the form of a written notice served on the owner or person in control, or apparently in control, of the thing to which the order relates; and
 - (b) may be varied or revoked by further such written notice.
- (2) If a seizure order is issued under this Part, a person who removes or interferes with the thing to which the order relates without the approval of a Competent Authority before an order is made under subsection (3)(b) in respect of the thing or the seizure order is discharged under subsection (3)(c) is guilty of an offence.

Maximum penalty: \$5 000.

- (3) If a thing has been seized or made subject to a seizure order under this Part, the following provisions apply:
- (a) the thing must, if it has been seized, be held pending proceedings for an offence against this Act related to the thing seized, unless a Competent Authority, on application, authorises its release to the person from whom it was seized, or to a person who had legal title to it at the time of its seizure, subject to such conditions as a Competent Authority thinks fit (including conditions as to the giving of security for satisfaction of an order under paragraph (b)(ii));
 - (b) if proceedings for an offence against this Act relating to the thing are instituted within the prescribed period after its seizure or the issuing of the seizure order and the defendant is convicted or found guilty of the offence, the court may—
 - (i) order that it be forfeited to a Competent Authority and, if appropriate, that the defendant pay to the Competent Authority an amount equal to the cost to the Competent Authority of disposing of, or destroying, the thing; or
 - (ii) if it has been released pursuant to paragraph (a) or is the subject of a seizure order—order that it be forfeited to a Competent Authority or that the person to whom it was released or the defendant pay to a Competent Authority an amount equal to its market value at the time of its seizure or the issuing of the seizure order, as the court thinks fit;
 - (c) if—
 - (i) proceedings are not instituted for an offence against this Act relating to the thing within the prescribed period after its seizure or the issuing of the seizure order; or
 - (ii) proceedings have been so instituted and—
 - (A) the defendant is found not guilty of the offence; or
 - (B) the defendant is convicted or found guilty of the offence but no order for forfeiture is made under paragraph (b),then—
 - (iii) in the case of a thing seized—the person from whom the thing was seized, or any person with legal title to it, is entitled to recover from a Competent Authority (if necessary, by action in a court of competent jurisdiction) the thing itself, or if it has been damaged or destroyed, compensation of an amount equal to its market value at the time of its seizure; or
 - (iv) in the case of a thing subject to a seizure order—the order is discharged.
- (4) In subsection (3)—

the prescribed period means six months or such longer period as the Tribunal may, on application by a Competent Authority, allow.

30—Offence to hinder etc authorised officers

- (1) A person who—
- (a) hinders or obstructs an authorised officer, or a person assisting an authorised officer, in the exercise of powers conferred by this Act; or
 - (b) uses abusive, threatening or insulting language to an authorised officer, or a person assisting an authorised officer; or
 - (c) refuses or fails to comply with a requirement or direction of an authorised officer under this Part; or
 - (d) when required by an authorised officer under this Part to answer a question, refuses or fails to answer the question to the best of the person's knowledge, information and belief,

is guilty of an offence.

Maximum penalty: \$10 000.

- (2) A person who assaults an authorised officer, or a person assisting an authorised officer in the exercise of powers under this Act, is guilty of an offence.

Maximum penalty: \$10 000.

31—Self-incrimination

- (1) A person is not excused from answering a question or from producing, or providing a copy of, a document or information as required under this Part on the ground that to do so might tend to incriminate the person or make the person liable to a penalty.
- (2) However, if compliance by a natural person with a requirement to answer a question or to produce, or provide a copy of, a document or information might tend to incriminate the person or make the person liable to a penalty, then—
- (a) in the case of a person who is required to produce, or provide a copy of, a document or information—the fact of production, or provision of a copy of, the document or the information (as distinct from the contents of the document or the information); or
 - (b) in any other case—the answer given in compliance with the requirement,

is not admissible in evidence against the person in proceedings for an offence or for the imposition of a penalty (other than proceedings in respect of the making of a false or misleading statement).

32—Offences by authorised officers etc

An authorised officer, or a person assisting an authorised officer, who—

- (a) addresses offensive language to any other person; or
- (b) without lawful authority, hinders or obstructs or uses or threatens to use force in relation to any other person,

is guilty of an offence.

Maximum penalty: \$5 000.

Part 6—Notices and emergencies

33—Notices

- (1) An authorised officer may issue a notice under this section for the purposes of—
 - (a) securing compliance with a requirement imposed by or under this Act (including a requirement imposed by a condition of an accreditation, licence or permit); or
 - (b) averting, eliminating or minimising danger to the health or safety of a person or to the safety of property or to the environment that has arisen from an activity involving a dangerous substance.
- (2) A notice under this section—
 - (a) subject to subsection (3), must be in the form of a written notice served on the person to whom the notice is issued;
 - (b) must specify the person to whom it is issued (whether by name or a description sufficient to identify the person);
 - (c) must state the purpose for which the notice is issued and give details of the requirement or the danger to which it relates;
 - (d) may impose any requirement reasonably required for the purpose for which the notice is issued including one or more of the following:
 - (i) a requirement that the person discontinue, or not commence, a specified activity indefinitely or for a specified period or until further notice from a Competent Authority;
 - (ii) a requirement that the person not carry on a specified activity subject to specified conditions;
 - (iii) a requirement that the person take specified action within a specified period;
 - (e) must state that the person may seek a review of the decision to issue the notice by the Tribunal.
- (3) A notice under this section may be issued orally if the authorised officer is of the opinion that urgent action is required, but in that event, the notice will cease to have effect on the expiration of 72 hours from the time of its issuing unless confirmed by a written notice served on the person.
- (4) A Competent Authority may, by written notice served on a person to whom a notice has been issued under this section, vary or revoke the notice.
- (5) A person to whom a notice is issued under this section must comply with the notice.

Maximum penalty:

In the case of a body corporate—\$100 000.

In any other case—\$20 000 or imprisonment for 1 year.

- (6) A person must not hinder or obstruct a person complying with a notice issued under this section.

Maximum penalty: \$10 000.

34—Action on default

- (1) If the requirements of a notice under this Part are not complied with, the authorised officer who issued the notice (or, in the absence of that authorised officer, another authorised officer authorised for the purpose by a Competent Authority) may take the action required by the notice or cause that action to be taken.
- (2) In the exercise of powers under this section, an authorised officer has, in addition to any other powers of an authorised officer under this Act, power to—
- (a) enter and take possession of any place (taking such action as is reasonably necessary for the purpose); and
 - (b) seize, retain, move or destroy or otherwise dispose of a dangerous substance.
- (3) The Crown may recover the costs and expenses reasonably incurred by an authorised officer or other person exercising powers under this section from the person who failed to comply with the notice, as a debt in a court of competent jurisdiction.

35—Action in emergency situations

- (1) If an authorised officer considers on reasonable grounds that a dangerous situation exists and that immediate action is required, the authorised officer may, after giving such notice (if any) as may be reasonable in the circumstances, take action or cause action to be taken as necessary to avert, eliminate or minimise the danger or risk.
- (2) In the exercise of powers under this section, an authorised officer has, in addition to any other powers of an authorised officer under this Act, power to—
- (a) enter and take possession of any place (taking such action as is reasonably necessary for the purpose); and
 - (b) seize, retain, move or destroy or otherwise dispose of a dangerous substance.
- (3) Action may be taken or caused to be taken under this section whether or not a notice has been given to a person in relation to the danger under a preceding section.
- (4) The Crown may recover the costs and expenses reasonably incurred by an authorised officer or other person exercising powers under this section from the person who caused the dangerous situation, as a debt in a court of competent jurisdiction.

Part 7—Miscellaneous

36—Exemptions

- (1) A Competent Authority may confer exemptions from this Act or specified provisions of this Act—
- (a) on specified persons or persons of a specified class; or
 - (b) in relation to specified places, vehicles or activities, or places, vehicles or activities of a specified class.

- (2) However, a Competent Authority must not grant an exemption unless satisfied—
- (a) that compliance with the Act or the specified provisions of this Act (as the case may be) is not reasonably practicable in the circumstances; and
 - (b) that the exemption (subject to compliance with specified conditions (if any))—
 - (i) would not result in an increased risk of personal injury, property damage or environmental harm; and
 - (ii) would not cause unnecessary administrative or enforcement difficulties.
- (3) A Competent Authority should, in deciding whether to grant an exemption from a provision that operates as part of a scheme that involves the uniform application of laws on a national basis, take into account the effect that the exemption would have on the operation of that scheme.
- (4) An exemption may be granted on application or on the initiative of the Competent Authority.
- (5) An exemption may be subject to conditions determined by the Competent Authority (including a condition that the exemption will only operate for a specified period).
- (6) An exemption under this section may be granted—
- (a) by written notice to the person or persons to whom the exemption is granted; or
 - (b) by notice in the Gazette.
- (7) However, if an exemption—
- (a) may or is expressed to operate for more than six months; or
 - (b) is granted to a class of persons,
- then the Competent Authority must give notice of the exemption by notice in the Gazette (unless the exemption is granted under subsection (6)(b)).
- (8) A notice under subsection (6) or (7) must—
- (a) state the conditions (if any) to which the exemption is subject; and
 - (b) comply with any requirement prescribed by the regulations.
- (9) A Competent Authority may, if the Competent Authority considers it appropriate to do so, vary the conditions of an exemption by the addition, substitution or deletion of one or more conditions.
- (10) A Competent Authority may, after due inquiry and for good cause, revoke an exemption.
- (11) If a Competent Authority decides to take action under subsection (9) or (10), the Competent Authority must give notice in the same manner as when the exemption was granted.

- (12) A person who contravenes or fails to comply with a condition imposed under this section is guilty of an offence.

Maximum penalty:

In the case of a body corporate—\$50 000.

In any other case—\$10 000 or imprisonment for 6 months, or both.

- (13) If an exemption is granted to a person individually, the person must keep a copy of the notice of exemption in any vehicle or premises to which the exemption applies.

Maximum penalty: \$5 000.

- (14) A Competent Authority must, in prescribed circumstances, give notice to a prescribed authority of the granting of an exemption under this section.

- (15) No liability attaches to a Competent Authority (or to the Crown) by virtue of the fact that the Competent Authority has granted an exemption under this Act.

37—Reviews

- (1) If—

- (a) a person directly affected by a decision of the Competent Authority relating to a licence, accreditation or permit is dissatisfied with the decision; or
- (b) a person to whom a notice has been issued under Part 6 is dissatisfied with the decision to issue the notice; or
- (c) a person who applies for an exemption under section 36 is dissatisfied with a decision of the Competent Authority not to grant the exemption, or to impose a particular condition on an exemption,

the person may seek a review of the decision by the Tribunal under section 34 of the *South Australian Civil and Administrative Tribunal Act 2013*.

- (2) In circumstances where an application for a review of a decision may be made under the regulations, a person may seek a review of the decision by the Tribunal under section 34 of the *South Australian Civil and Administrative Tribunal Act 2013*.
- (3) However, a right to seek a review under this section operates subject to any process under the regulations that provides for reconsideration of a decision before an application for a review of the decision may be made to the Tribunal.
- (4) An application for a review must be made—
 - (a) in the case of a review of a decision to issue a notice under Part 6—within 14 days of the receipt of the notice; or
 - (b) in the case of a review under subsection (2)—within the time prescribed by the regulations; or
 - (c) in any other case—within 1 month after the applicant receives notice of the relevant decision,

(or within such longer period as the Tribunal may allow).

38—Evidentiary provisions

- (1) In proceedings for an offence against this Act, an allegation in the complaint—
 - (a) that any person named holds or held at a specified time a specified office; or

- (b) that any person named was or was not at a specified time the holder of a specified licence, accreditation or permit under this Act; or
- (c) that any specified substance is or was a dangerous substance; or
- (d) that any specified substance is or was a dangerous substance of a specified class; or
- (e) that any specified substance or article is or was a dangerous good; or
- (f) that any specified substance or article is or was a dangerous good of a specified class, type or category,

will, in the absence of proof to the contrary, be taken to be proved.

(2) In proceedings for an offence against this Act—

- (a) a licence, accreditation or permit and any conditions of a licence, accreditation or permit; or
- (b) an approval and any conditions of an approval; or
- (c) an exemption and any conditions of an exemption; or
- (d) any notice,

granted or given under this Act may be proved by the production of an apparently genuine document purporting to be a copy of the licence, accreditation, permit, approval, exemption or notice certified by a Competent Authority.

(3) In proceedings for an offence against this Act, an apparently genuine document purporting to be a certificate of the Government Analyst setting out the results of an analysis of any substance or thing, will, in the absence proof to the contrary, be accepted as proof of the matters stated therein.

39—Approved codes of practice

- (1) The Minister may approve a code of practice for the purposes of this Act.
- (2) A code of practice may be comprised of, or may incorporate, adopt or operate by reference to, a specified code or standard (with or without modification) as in force from time to time or as in force at a particular time.
- (3) The Minister may—
 - (a) approve an amendment of a code of practice; or
 - (b) revoke a code of practice.
- (4) The Minister must give notice in the Gazette of—
 - (a) the approval of a code of practice; or
 - (b) the approval of an amendment of a code of practice; or
 - (c) the revocation of a code of practice.
- (5) An approved code of practice and any approved amendment of a code of practice will come into operation on the day on which the notice of approval is published in the Gazette or on such later day as may be specified in the notice.
- (6) An approved code of practice or amendment of a code of practice is subject to disallowance by Parliament.

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- (7) Every approved code of practice or amendment must be laid before both Houses of Parliament within 14 days of notice of its approval being published in the Gazette if Parliament is in session or, if Parliament is not then in session, within 14 days after the commencement of the next session of Parliament.
 - (8) If either House of Parliament passes a resolution disallowing an approved code of practice or an amendment of a code of practice, then the code of practice or the amendment ceases to have effect.
 - (9) A resolution is not effective for the purposes of subsection (8) unless passed in pursuance of a notice of motion given within 14 sitting days (which need not all fall in the same session of Parliament) after the day on which the code of practice or amendment was laid before the House.

40—Use of codes of practice in proceedings

If in proceedings for an offence against this Act it is proved that the defendant failed to observe a provision of an approved code of practice dealing with the matter in respect of which the offence is alleged to have been committed, the defendant is, in the absence of proof to the contrary, to be taken to have failed to exercise the standard of care required by this Act.

41—Offences by bodies corporate

If a body corporate is guilty of an offence against this Act, each member of the governing body and the manager of the body corporate is guilty of an offence and liable to the same penalty as is prescribed for that offence (when committed by a natural person) unless he or she proves that he or she did not know and could not reasonably be expected to have known of the commission of that offence or that he or she exercised all due diligence to prevent the commission of that offence.

42—Continuing offences

- (1) A person convicted of an offence against any provision of this Act in respect of a continuing act or omission—
 - (a) will be liable, in addition to the penalty otherwise applicable to that offence, to a penalty for each day during which the act or omission continued of not more than the amount equal to one-tenth of the maximum penalty prescribed for that offence; and
 - (b) will, if the act or omission continues after he or she is convicted, be guilty of a further offence against that provision and liable, in addition to the penalty otherwise applicable to that further offence, to a penalty for each day during which the act or omission continued after that conviction of not more than the amount equal to one-tenth of the maximum penalty prescribed for that offence.
- (2) If an offence against a provision of this Act consists of an omission to do something that is required or directed to be done, the omission will, for the purposes of subsection (1), be taken to continue for so long as the thing required or directed to be done remains undone after the expiration of the period for compliance with the requirement or direction.

43—Forfeiture of dangerous substance upon conviction

- (1) If a person is convicted of an offence against this Act, the court may order that any dangerous substance in relation to which the offence was committed and that is the property of that person be forfeited to the Crown.
- (2) Any dangerous substance forfeited to the Crown may be disposed of in such manner as the Minister may direct and, if any dangerous substance is disposed of by way of sale, the proceeds of the sale will be paid into the Consolidated Account.

44—Recovery of costs from convicted person

If a person is convicted of an offence against this Act following action taken by an authorised officer under Part 5, the court may, on application by or on behalf of a Competent Authority, order that, in addition to any other penalty, the defendant must pay any costs that were reasonably incurred in taking that action and are directly related to the investigation of the offence (including costs for testing, transporting, storing or disposing of dangerous substances and other evidence).

45—Proceedings for offences

- (1) Proceedings for a summary offence against this Act may only be commenced by—
 - (a) an authorised officer; or
 - (b) a Competent Authority.
- (2) Proceedings for a summary offence against this Act must be commenced—
 - (a) in the case of an expiable offence—within the time limits prescribed for expiable offences by the *Summary Procedure Act 1921*;
 - (b) in any other case—within three years of the date on which the offence is alleged to have been committed or, with the authorisation of the Attorney-General, a later time within six years of that date.
- (3) A document apparently signed by the Attorney-General and stating that the Attorney-General authorises a specified extension of the period for commencing a particular prosecution is to be accepted, in the absence of proof to the contrary, as proof of the fact so stated.

46—Cost recovery

- (1) In this section—

agency or instrumentality of the Crown means any body corporate (other than a council) established for a public purpose by, or in accordance with, an Act;

council means a municipal or district council;

dangerous substance includes a mixture of a dangerous substance with any other substance;

government authority means—

- (a) a department or administrative unit of the Public Service; or
- (b) an agency or instrumentality of the Crown; or
- (c) a council;

-
- principal officer*, in relation to a government authority, means—
- (a) in the case of a department or administrative unit of the Public Service—the chief executive officer of that department or unit;
 - (b) in the case of an agency or instrumentality of the Crown—the chief executive officer of that agency or instrumentality or a person designated by the regulations as principal officer of that agency or instrumentality;
 - (c) in the case of a council—the chief executive officer of that council.
- (2) This section applies to any incident—
 - (a) constituted of or arising from (whether wholly or in part) the escape of a dangerous substance; or
 - (b) that involves the danger of the escape of a dangerous substance.
 - (3) For the purposes of this section, the escape of a dangerous substance includes—
 - (a) a discharge of the dangerous substance onto or into any land or water, or any structure or thing;
 - (b) the release of the dangerous substance into the air.
 - (4) Where a government authority incurs costs or expenses as a result of the occurrence of an incident to which this section applies, any such costs or expenses reasonably incurred by the government authority are recoverable as a debt in a court of competent jurisdiction.
 - (5) The costs or expenses may be recovered by—
 - (a) in the case of costs or expenses incurred by a council—the council;
 - (b) in the case of costs or expenses incurred by an agency or instrumentality of the Crown—that agency or instrumentality, or the Crown;
 - (c) in any other case—the Crown.
 - (6) The recovery of costs or expenses incurred by one government authority as a result of the occurrence of an incident to which this section applies (including an award or judgment in relation to those costs or expenses) does not preclude the recovery of costs and expenses incurred by another government authority as a result of the occurrence of the incident.
 - (7) The costs or expenses may be recovered (jointly or severally) from—
 - (a) the person who was the owner of the dangerous substance at the time of the incident;
 - (b) the person who was in control or possession of the dangerous substance at the time of the incident;
 - (c) the person who caused the incident.
 - (8) For the purposes of subsection (7)—
 - (a) any dangerous substance in the control or possession of an employee or agent while acting in the course of employment will be taken to be in the control or possession of the employer or principal; and

- (b) an act or omission of an employee or agent while acting in the course of employment will be taken to be the act or omission of the employer or principal,

unless it is proved that the incident is attributable to serious and wilful misconduct on the part of the employee or agent.

- (9) Costs and expenses are not recoverable against a person who establishes—
 - (a) that the incident was due to the act or default of another person, or to some cause beyond the person's control; and
 - (b) that he or she could not by the exercise of reasonable diligence have prevented the occurrence of the incident; and
 - (c) that the incident is not attributable to an act or omission of a person who was an employee or agent of his or hers at the time when the incident occurred (unless it is proved that the incident is attributable to serious and wilful misconduct on the part of the employee or agent).
- (10) This section does not exclude or derogate from any right to recover an amount in respect of costs or expenses that exists apart from this section but the Crown or a government authority is not entitled to recover, in respect of the same costs or expenses, an amount under this section and an amount in proceedings founded on rights that exist apart from this section.
- (11) For the purposes of this section, a body that forms part, or is established for the purposes, of an agency or instrumentality of the Crown is not to be regarded as itself constituting a separate agency or instrumentality.
- (12) In any proceedings under this section, a document apparently signed by the principal officer of the relevant government authority certifying as to the incurring of costs or expenses as a result of the occurrence of an incident to which this section applies, and as to the amount of those costs or expenses, constitutes proof, in the absence of proof to the contrary, of the matters so certified.

48—Assistance in emergencies or accidents

- (1) No personal liability attaches to a person for an honest act undertaken without fee, charge or other reward for the purpose of assisting or attempting to assist in a situation in which an emergency or accident involving a dangerous substance occurs or is likely to occur.
- (2) Subsection (1) does not exempt a person from liabilities against which the person is insured.
- (3) Subsection (1) does not apply—
 - (a) to a person whose act or omission was wholly or partly the cause of the occurrence or likely occurrence; or
 - (b) to an authorised officer.

49—Prohibitions

- (1) The Minister may prohibit (either absolutely or conditionally) any person—
 - (a) engaging in any or specified activities involving a dangerous substance; or

-
- (b) using a dangerous substance for a particular purpose or in a particular manner; or
 - (c) having a dangerous substance in his or her custody, possession or control.
- (2) A prohibition under this section may be varied or revoked by the Minister at any time.
 - (3) A prohibition under this section, and any variation or revocation, must be notified in the Gazette (and takes effect when the notice is published in the Gazette or at such later time as is specified in the notice).
 - (4) A person who contravenes a prohibition imposed under this section is guilty of an offence.

Maximum penalty:

In the case of a body corporate—\$50 000.

In any other case—\$10 000 or imprisonment for six months, or both.

50—Regulations

- (1) The Governor may make such regulations as are contemplated by this Act or as are necessary or expedient for the purposes of this Act.
- (2) Without limiting the generality of subsection (1) of this section, those regulations may—
 - (a) prescribe fees for licences and accreditations under this Act varying according to the activity authorised under any such licence or accreditation and the term of any such licence or accreditation; and
 - (b) regulate the keeping, handling, transport, conveyance, use and disposal of any dangerous substance; and
 - (c) prescribe standards of quality and composition in relation to any dangerous substance; and
 - (d) prohibit the sale of any dangerous substance that does not conform to any relevant prescribed standard of quality or composition; and
 - (e) prescribe standards for the siting, design, construction, ventilation, illumination, fittings, fixtures and management of premises used, or to be used, in connection with any dangerous substance; and
 - (f) prescribe standards for the design, construction, cleanliness, venting, ventilation, marking, and maintenance of any vehicle or means of conveyance, or any container or any other thing used, or to be used, in connection with any dangerous substance; and
 - (g) prohibit the keeping of any dangerous substance in any premises or containers that do not conform to any standard prescribed therefor; and
 - (h) prohibit the transport or conveyance of any dangerous substance in containers or by vehicles, pipelines or any other means that do not conform to any standard prescribed therefor; and
 - (i) regulate or prohibit any activities of specified kinds in the vicinity of any dangerous substance; and

- (j) prescribe the safety procedures to be followed and the provision, maintenance and use of safety equipment and facilities in connection with the keeping, handling, transport, conveyance, use and disposal of any dangerous substance; and
- (k) regulate, restrict or prohibit the disposal of any dangerous substance; and
- (l) prohibit the handling, transport, conveyance or use of any dangerous substance except by a person who has received the prescribed training and who is the holder of a permit; and
- (m) prohibit the manufacture, installation, repair or maintenance of any machine, equipment, container or device in or in connection with which any dangerous substance is kept or used except by a person who has received the prescribed training and who is the holder of a permit; and
- (n) provide for the grant, suspension and revocation of permits by a Competent Authority; and
- (o) prescribe fees for permits granted by a Competent Authority; and
- (p) prescribe other fees that are to be paid in respect of any thing done under this Act, or matter occurring under this Act, and provide for the recovery of fees; and
- (q) regulate the manufacture, installation, repair or maintenance of any machine, equipment, container or device in or in connection with which any dangerous substance is kept or used; and
- (r) require the reporting to a Competent Authority of accidents occurring in connection with the keeping, handling, transport, conveyance, use or disposal of any dangerous substance; and
- (s) require the keeping of records and the furnishing of returns to a Competent Authority in connection with the keeping, handling, transport, conveyance, use or disposal of any dangerous substance; and
- (t) provide for the form or content of applications or other documents under this Act, or provide for the approval by a Competent Authority of the form in which applications are to be made to the Competent Authority, or the form in which documents are to be issued by a Competent Authority, for the purposes of this Act; and
- (u) make provision with respect to administrative procedures for the purposes of this Act and the form of decisions under this Act; and
- (v) provide for registers of decisions and exemptions under this Act; and
- (w) prescribe the training and qualifications required of authorised officers and other people performing functions under this Act; and
- (x) provide that a specified provision of this Act does not apply, or applies with prescribed variations, in any circumstance or situation (or circumstance or situation of a prescribed class) specified by the regulations, subject to any condition to which the regulations are expressed to be subject; and
- (y) confer jurisdiction on the Tribunal to review decisions under the regulations; and

- (z) prescribe matters that are to be considered in proceedings for an offence against the regulations; and
 - (za) fix expiation fees, not exceeding \$1 000 in cases involving natural persons and \$5 000 in cases involving bodies corporate, for alleged offences against the regulations; and
 - (zb) prescribe fines, not exceeding \$5 000 in cases involving natural persons and \$25 000 in cases involving bodies corporate, for contravention of a regulation.
- (3) The regulations may prescribe differential fees or provide for fees to be determined according to prescribed factors.
- (4) If—
- (a) the regulations prohibit an activity unless carried on by a person who is the holder of a permit; and
 - (b) a person who is the holder of such a permit carries out that activity (as an employee or contractor) for another person (*the principal*) in the course of a trade or business carried on by the principal,
- the principal—
- (c) must ensure, so far as is reasonably practicable, that the activity is carried out—
 - (i) safely; and
 - (ii) in accordance with any requirements prescribed by the regulations; and
 - (iii) in a proper and competent manner; and
 - (d) must ensure, so far as is reasonably practicable, that any plant used, installed, repaired or maintained as part of, or for the purposes of, that activity is safe and suitable for use, and complies with any requirements prescribed by the regulations; and
 - (e) must comply with any other duty imposed by the regulations for the purposes of this provision.

Maximum penalty: \$10 000.

- (5) The regulations may apply, wholly or partially and with or without modification—
- (a) regulations in force under an Act of another State, a Territory or the Commonwealth (as in force from time to time or as in force at a particular time); or
 - (b) a code, standard, rule or other document prepared or published by a body referred to in the regulation (as in force from time to time or as in force at a particular time),

as regulations applying under this Act (and, in so applying such regulations, code, standard, rule or other document, may provide for their citation for the purposes of the law of this State).

- (6) The regulations may adopt, wholly or partially and with or without modification, a code, standard, rule or other document prepared or published by a body referred to in the regulation (as in force from time to time or as in force at a particular time).
- (7) Any regulations applying or adopting a regulation, code, standard, rule or other document may contain such incidental, supplementary or transitional provisions as appear to the Governor to be necessary.
- (8) The regulations, or a regulation, code, standard, rule or other document applied or adopted by the regulations, may—
 - (a) refer to or incorporate, wholly or partially and with or without modification, a code, standard, rule or other document prepared or published by a particular body (as in force from time to time or as in force at a particular time); and
 - (b) be of general or limited application; and
 - (c) make different provision according to the persons, things or circumstances to which they are expressed to apply; and
 - (d) provide that any matter or thing is to be determined, dispensed with, regulated or prohibited according to the discretion of the Minister, a Competent Authority, an authorised officer or any other prescribed authority.
- (9) If—
 - (a) a regulation, code, standard, rule or other document is applied or adopted by the regulations; or
 - (b) the regulations, or a regulation, code, standard, rule or other document applied or adopted by the regulations, refers to a code, standard, rule or other document prepared or published by a particular body,then—
 - (c) a copy of the regulation, code, standard, rule or other document must be kept available for inspection by members of the public, without charge and during normal office hours, at an office or offices specified by notice in the Gazette; and
 - (d) in any legal proceedings, evidence of the contents of the regulation, code, standard, rule or other document may be given by production of a document purporting to be certified by or on behalf of the Minister as a true copy of the regulation, code, standard, rule or other document.

51—Application orders and emergency orders

- (1) The Minister may, by notice in the Gazette, declare that the operation of the regulations, or of specified parts of the regulations, relating to the transport of dangerous goods—
 - (a) is suspended for a specified period; or
 - (b) is varied in a manner specified by the Minister.
- (2) An order must be consistent with the provisions relating to application orders and emergency orders in the agreements scheduled to the *National Road Transport Commission Act 1991* of the Commonwealth.

- (3) An order may have effect in relation to the whole of the State, or to a specified part of the State.
- (4) If the Ministerial Council for Road Transport terminates an order in accordance with the terms of an agreement referred to in subsection (2), the Minister must publish notice of the termination in the Gazette.

Legislative history

Notes

- Please note—References in the legislation to other legislation or instruments or to titles of bodies or offices are not automatically updated as part of the program for the revision and publication of legislation and therefore may be obsolete.
- Earlier versions of this Act (historical versions) are listed at the end of the legislative history.
- For further information relating to the Act and subordinate legislation made under the Act see the Index of South Australian Statutes or www.legislation.sa.gov.au.

Legislation repealed by principal Act

The *Dangerous Substances Act 1979* repealed the following:

Liquefied Petroleum Gas Act 1960

Inflammable Liquids Act 1961

Principal Act and amendments

New entries appear in bold.

Year	No	Title	Assent	Commencement
1979	47	<i>Dangerous Substances Act 1979</i>	22.3.1979	1.7.1981 except ss 4, 14, 17—20—1.10.1981 (<i>Gazette 4.6.1981 p1638</i>)
1980	7	<i>Dangerous Substances Act Amendment Act 1980</i>	3.4.1980	1.7.1981 (<i>Gazette 4.6.1981 p1638</i>)
1985	33	<i>Dangerous Substances Act Amendment Act 1985</i>	11.4.1985	11.4.1985
1987	17	<i>Dangerous Substances Act Amendment Act 1987</i>	9.4.1987	9.4.1987
1988	98	<i>Dangerous Substances Act Amendment Act 1988</i>	15.12.1988	1.1.1989 (<i>Gazette 22.12.1988 p2098</i>)
1991	47	<i>Dangerous Substances (Cost Recovery) Amendment Act 1991</i>	21.11.1991	21.11.1991
1992	71	<i>Statutes Amendment (Expiation of Offences) Act 1992</i>	19.11.1992	1.3.1993 (<i>Gazette 18.2.1993 p600</i>)
1992	81	<i>Dangerous Substances (Equipment and Permits) Amendment Act 1992</i>	3.12.1992	1.6.1993 (<i>Gazette 13.5.1993 p1630</i>)
1998	27	<i>Dangerous Substances (Transport of Dangerous Goods) Amendment Act 1998</i>	16.4.1998	1.9.1998 (<i>Gazette 27.8.1998 p632</i>)
2000	4	<i>District Court (Administrative and Disciplinary Division) Amendment Act 2000</i>	20.4.2000	Sch 1 (cl 7)—1.6.2000 (<i>Gazette 18.5.2000 p2554</i>)

2009	84	<i>Statutes Amendment (Public Sector Consequential Amendments) Act 2009</i>	10.12.2009	Pt 44 (s 87)—1.2.2010 (<i>Gazette</i> 28.1.2010 p320)
2012	40	<i>Work Health and Safety Act 2012</i>	15.11.2012	Sch 6 (c11 3 & 4)—1.1.2013: s 2
2019	14	<i>Statutes Amendment (SACAT) Act 2019</i>	11.7.2019	Pt 8 (ss 57 to 62)—4.5.2020 (<i>Gazette</i> 27.2.2020 p442)

Provisions amended

New entries appear in bold.

Entries that relate to provisions that have been deleted appear in italics.

Provision	How varied	Commencement
Long title	amended by 27/1998 ss 3, 25 (Sch 2)	1.9.1998
Pt 1		
<i>s 2</i>	<i>deleted by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 3</i>	<i>amended by 98/1988 s 3</i>	<i>1.1.1989</i>
	<i>deleted by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 4</i>	<i>deleted by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
s 2	s 5 redesignated as s 2 by 27/1998 s 26	1.9.1998
s 2(1)	s 2 redesignated as s 2(1) by 27/1998 s 4(g)	1.9.1998
authorised officer	inserted by 27/1998 s 4(a)	1.9.1998
<i>the Chief Inspector</i>	<i>deleted by 81/1992 s 3(a)</i>	<i>1.6.1993</i>
Competent Authority	inserted by 27/1998 s 4(a)	1.9.1998
conveyance	amended by 27/1998 s 4(b)	1.9.1998
craft	inserted by 27/1998 s 4(c)	1.9.1998
dangerous goods	inserted by 27/1998 s 4(c)	1.9.1998
dangerous situation	inserted by 27/1998 s 4(c)	1.9.1998
dangerous substance	substituted by 27/1998 s 4(c)	1.9.1998
<i>the Director</i>	<i>amended by 81/1992 s 3(b)</i>	<i>1.6.1993</i>
	<i>deleted by 27/1998 s 4(d)</i>	<i>1.9.1998</i>
<i>inspector</i>	<i>substituted by 81/1992 s 3(c)</i>	<i>1.6.1993</i>
	<i>deleted by 27/1998 s 4(e)</i>	<i>1.9.1998</i>
plant	inserted by 81/1992 s 3(c)	1.6.1993
substance	inserted by 27/1998 s 4(f)	1.9.1998
transport	inserted by 27/1998 s 4(f)	1.9.1998
Tribunal	inserted by 14/2019 s 57	4.5.2020
unit load	inserted by 27/1998 s 4(f)	1.9.1998
vehicle	substituted by 27/1998 s 4(f)	1.9.1998
s 2(2)	s 5(2) inserted by 27/1998 s 4(g)	1.9.1998
s 2(3)	s 5(3) inserted by 27/1998 s 4(g)	1.9.1998
s 3	s 6 substituted by 27/1998 s 5	1.9.1998

Dangerous Substances Act 1979—4.5.2020

Legislative history

	s 6 redesignated as s 3 by 27/1998 s 26	1.9.1998
s 4	s 7 redesignated as s 4 by 27/1998 s 26	1.9.1998
s 4(1)	s 7(1) amended by 27/1998 s 25 (Sch 2)	1.9.1998
s 4(2)	s 7(2) amended by 27/1998 s 25 (Sch 2)	1.9.1998
Pt 2	amended by 33/1985 s 2	11.4.1985
	amended by 17/1987 ss 2—4	9.4.1987
	amended by 98/1988 ss 4, 12 (Sch)	1.1.1989
	amended by 71/1992 s 3(1) (Sch)	1.3.1993
	amended by 81/1992 ss 4, 5	1.6.1993
	substituted by 27/1998 s 6	1.9.1998
Pt 3		
s 11	s 12 amended by 17/1987 s 5	9.4.1987
	s 12 amended by 98/1988 ss 5, 12 (Sch)	1.1.1989
	s 12 substituted by 27/1998 s 7	1.9.1998
	s 12 redesignated as s 11 by 27/1998 s 26	1.9.1998
s 12	s 12A inserted by 81/1992 s 6	1.6.1993
	s 12A redesignated as s 12 by 27/1998 s 26	1.9.1998
s 12(4)	s 12A(4) amended by 27/1998 s 8	1.9.1998
s 12(6)	s 12A(6) amended by 27/1998 s 25 (Sch 1 cl 1)	1.9.1998
s 14	amended by 17/1987 s 6	9.4.1987
	substituted by 98/1988 s 6	1.1.1989
s 14(1)	amended by 27/1998 s 25 (Sch 1 cl 2)	1.9.1998
s 14(2)	substituted by 40/2012 Sch 6 cl 3	1.1.2013
s 15		
s 15(1)	amended by 27/1998 ss 9(a), 25 (Sch 2)	1.9.1998
s 15(2)	<i>deleted by 98/1988 s 7(a)</i>	<i>1.1.1989</i>
s 15(2)	s 15(3) amended by 27/1998 ss 9(b), 25 (Sch 2)	1.9.1998
	s 15(3) redesignated as s 15(2) by 27/1998 s 26	1.9.1998
s 15(3)	s 15(4) amended by 27/1998 s 9(c)	1.9.1998
	s 15(4) redesignated as s 15(3) by 27/1998 s 26	1.9.1998
s 15(4)	s 15(5) inserted by 33/1985 s 3	11.4.1985
	s 15(5) substituted by 98/1988 s 7(b)	1.1.1989
	s 15(5) amended by 27/1998 s 25 (Sch 1 cl 3)	1.9.1998
	s 15(5) redesignated as s 15(4) by 27/1998 s 26	1.9.1998
s 15(5)	s 15(6) inserted by 33/1985 s 3	11.4.1985
	s 15(6) substituted by 98/1988 s 7(b)	1.1.1989
	s 15(6) amended by 27/1998 s 9(d), (e)	1.9.1998
	s 15(6) redesignated as s 15(5) by 27/1998 s 26	1.9.1998
s 16		
s 16(1)	amended by 27/1998 ss 10(a), 25 (Sch 2)	1.9.1998
s 16(2)	amended by 27/1998 ss 10(b), 25 (Sch 2)	1.9.1998
s 16(3)	amended by 27/1998 ss 10(c), 25 (Sch 2)	1.9.1998
s 18	amended by 17/1987 s 7	9.4.1987

	substituted by 98/1988 s 8	1.1.1989
s 18(1)	amended by 27/1998 s 25 (Sch 1 cl 4)	1.9.1998
s 18(2)	substituted by 40/2012 Sch 6 cl 4	1.1.2013
s 19		
s 19(1)	amended by 27/1998 ss 11(a), 25 (Sch 2)	1.9.1998
s 19(2)	amended by 27/1998 ss 11(b), 25 (Sch 2)	1.9.1998
s 19(3)	amended by 27/1998 s 11(c)	1.9.1998
s 19(4)	inserted by 98/1988 s 9	1.1.1989
	amended by 27/1998 s 25 (Sch 1 cl 5)	1.9.1998
s 20		
s 20(1)	amended by 27/1998 ss 12(a), 25 (Sch 2)	1.9.1998
s 20(2)	amended by 27/1998 ss 12(b), 25 (Sch 2)	1.9.1998
s 20(3)	amended by 27/1998 ss 12(c), 25 (Sch 2)	1.9.1998
s 21	amended by 27/1998 ss 13, 25 (Sch 2)	1.9.1998
s 22		
s 22(2)	amended by 27/1998 ss 14, 25 (Sch 2)	1.9.1998
s 23	<i>deleted by 81/1992 s 7</i>	<i>1.6.1993</i>
Pt 4	Pt 3AA inserted by 27/1998 s 15	1.9.1998
	Pt 3AA redesignated as Pt 4 by 27/1998 s 26	1.9.1998
Pt 5	Pt 3AAB inserted by 27/1998 s 15	1.9.1998
	Pt 3AAB redesignated as Pt 5 by 27/1998 s 26	1.9.1998
s 28	s 23AAF redesignated as s 28 by 27/1998 s 26	1.9.1998
s 28(5)	amended by 4/2000 s 9(1) (Sch 1 cl 7(a))	1.6.2000
s 28(7)	amended by 4/2000 s 9(1) (Sch 1 cl 7(b))	1.6.2000
s 29		
s 29(4)		
the prescribed period	amended by 14/2019 s 58	4.5.2020
Pt 6	Pt 3A inserted by 98/1988 s 10	1.1.1989
	Pt 3A amended by 81/1992 s 8	1.6.1993
	Pt 3A substituted by 27/1998 s 16	1.9.1998
	Pt 3A redesignated as Pt 6 by 27/1998 s 26	1.9.1998
s 33		
s 33(2)	amended by 14/2019 s 59	4.5.2020
Pt 7	Pt 4 redesignated as Pt 7 by 27/1998 s 26	1.9.1998
s 36	s 24 amended by 98/1988 s 11	1.1.1989
	s 24 substituted by 27/1998 s 17	1.9.1998
	s 24 redesignated as s 36 by 27/1998 s 26	1.9.1998
<i>s 37 before substitution by 14/2019</i>	<i>s 24A inserted by 81/1992 s 9</i>	<i>1.6.1993</i>
	<i>s 24A substituted by 27/1998 s 17</i>	<i>1.9.1998</i>
	<i>s 24A redesignated as s 37 by 27/1998 s 26</i>	<i>1.9.1998</i>
s 37(3)	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(c))</i>	<i>1.6.2000</i>

Dangerous Substances Act 1979—4.5.2020

Legislative history

<i>s 37(5)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(d))</i>	<i>1.6.2000</i>
<i>s 37(6)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(e))</i>	<i>1.6.2000</i>
<i>s 37(7)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(f))</i>	<i>1.6.2000</i>
<i>s 37(8)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(g))</i>	<i>1.6.2000</i>
<i>s 37(9)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(h))</i>	<i>1.6.2000</i>
<i>s 37(10)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(i))</i>	<i>1.6.2000</i>
<i>s 37(11)</i>	<i>deleted by 4/2000 s 9(1) (Sch 1 cl 7(j))</i>	<i>1.6.2000</i>
s 37	substituted by 14/2019 s 60	4.5.2020
<i>s 38</i>	<i>s 25 redesignated as s 38 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 38(1)</i>	<i>s 25(1) amended by 27/1998 ss 18(a), (b), 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 38(2)</i>	<i>s 25(2) substituted by 27/1998 s 18(c)</i>	<i>1.9.1998</i>
<i>s 38(3)</i>	<i>s 25(3) amended by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 39</i>	<i>s 25A inserted by 27/1998 s 19</i>	<i>1.9.1998</i>
	<i>s 25A redesignated as s 39 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 40</i>	<i>s 25B inserted by 27/1998 s 19</i>	<i>1.9.1998</i>
	<i>s 25B redesignated as s 40 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 41</i>	<i>s 26 amended by 17/1987 s 8</i>	<i>9.4.1987</i>
	<i>s 26 amended by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
	<i>s 26 redesignated as s 41 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 42</i>	<i>s 27 redesignated as s 42 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 42(1)</i>	<i>s 27(1) amended by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 42(2)</i>	<i>s 27(2) amended by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 43</i>	<i>s 28 redesignated as s 43 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 43(1)</i>	<i>s 28(1) amended by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 43(2)</i>	<i>s 28(2) amended by 27/1998 s 25 (Sch 2)</i>	<i>1.9.1998</i>
<i>s 44</i>	<i>s 28A inserted by 27/1998 s 20</i>	<i>1.9.1998</i>
	<i>s 28A redesignated as s 44 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 45</i>	<i>s 29 redesignated as s 45 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 45(1)</i>	<i>s 29 redesignated as s 29(1) by 81/1992 s 10</i>	<i>1.6.1993</i>
	<i>s 29(1) substituted by 27/1998 s 21(a)</i>	<i>1.9.1998</i>
<i>s 45(2)</i>	<i>s 29(2) inserted by 81/1992 s 10</i>	<i>1.6.1993</i>
	<i>s 29(2) substituted by 27/1998 s 21(a)</i>	<i>1.9.1998</i>
<i>s 45(3)</i>	<i>s 29(3) inserted by 81/1992 s 10</i>	<i>1.6.1993</i>
	<i>s 29(3) amended by 27/1998 s 21(b)</i>	<i>1.9.1998</i>
<i>s 46</i>	<i>s 29A inserted by 47/1991 s 2</i>	<i>21.11.1991</i>
	<i>s 29A redesignated as s 46 by 27/1998 s 26</i>	<i>1.9.1998</i>
<i>s 47</i>	<i>s 29B inserted by 27/1998 s 22</i>	<i>1.9.1998</i>
	<i>s 29B redesignated as s 47 by 27/1998 s 26</i>	<i>1.9.1998</i>
	<i>deleted by 84/2009 s 87</i>	<i>1.2.2010</i>
<i>ss 48 and 49</i>	<i>ss 29C and 29D inserted by 27/1998 s 22</i>	<i>1.9.1998</i>
	<i>ss 29C and 29D redesignated as ss 48 and 49 by 27/1998 s 26</i>	<i>1.9.1998</i>

s 50	s 30 redesignated as s 50 by 27/1998 s 26	1.9.1998
s 50(2)	s 30(2) amended by 7/1980 s 3	1.7.1981
	s 30(2) amended by 17/1987 s 9	9.4.1987
	s 30(2) amended by 98/1988 s 12 (Sch)	1.1.1989
	s 30(2) amended by 81/1992 s 11(a), (b)	1.6.1993
	s 30(2) amended by 27/1998 s 23(a)—(n)	1.9.1998
	amended by 14/2019 s 61	4.5.2020
s 50(3)	s 30(3) substituted by 27/1998 s 23(o)	1.9.1998
s 50(4)	s 30(4) inserted by 81/1992 s 11(c)	1.6.1993
	s 30(4) amended by 27/1998 s 25 (Sch 1 cl 6), (Sch 2)	1.9.1998
s 50(5)	s 30(5) inserted by 81/1992 s 11(c)	1.6.1993
	s 30(5) substituted by 27/1998 s 23(p)	1.9.1998
s 50(6)—(9)	s 30(6)—(9) inserted by 27/1998 s 23(p)	1.9.1998
s 51	s 31 inserted by 27/1998 s 24	1.9.1998
	s 31 redesignated as s 51 by 27/1998 s 26	1.9.1998

Transitional etc provisions associated with Act or amendments

Dangerous Substances (Transport of Dangerous Goods) Amendment Act 1998, Sch 3—Transitional provisions

1—Interpretation

In this Schedule—

the relevant day means the day on which this Act comes into operation.

2—The Director

- (1) The person designated by the principal Act as "the Director" immediately before the relevant day will be taken to have been appointed as a Competent Authority under the principal Act on the commencement of this Act.
- (2) Any power, function or duty vested in the Director under the principal Act immediately before the relevant day is exercisable by, or attaches to, a Competent Authority under the principal Act on and after the relevant day.
- (3) A reference in any instrument to the Director (as designated by the principal Act immediately before the relevant day) will be read as a reference to a Competent Authority on and after the relevant day.

3—Inspectors

- (1) The persons holding appointments as inspectors under the principal Act immediately before the relevant day continue as authorised officers under the principal Act on the commencement of this Act.
- (2) Any power, function or duty vested in an inspector under the principal Act immediately before the relevant day is exercisable by, or attaches to, an authorised officer under the principal Act on and after the relevant day.

- (3) A reference in any instrument to an inspector will be read as a reference to an authorised officer on and after the relevant day.
- (4) An identification card held by an inspector immediately before the relevant day for the purposes of the principal Act will be taken to have been issued by a Competent Authority for the purposes of the principal Act (as amended by this Act).

4—Notices

A notice given under section 23A or 23B of the principal Act before the relevant day will continue in force and effect, and may be dealt with and enforced, as if this Act had not been enacted.

5—Exemption

An exemption given under section 24 of the principal Act before the relevant day may be dealt with as if it had been given under the principal Act as amended by this Act.

6—Proceedings

Any proceedings commenced under section 23C or 24A of the principal Act before the relevant day may be continued and completed as if this Act had not been enacted.

7—Other matters

The Governor may, by regulation, make other provisions of a transitional nature consequent on the enactment of this Act.

8—Acts *Interpretation Act 1915*

The *Acts Interpretation Act 1915* applies, except to the extent of any inconsistency with the provisions of this Schedule (or a regulation made under clause 7), to the amendments effected by this Act.

Dangerous Substances (Transport of Dangerous Goods) Amendment Act 1998

26—Renumbering

When all provisions of this amending Act have been brought into operation, the sections and parts of the principal Act are to be renumbered in consecutive order (with necessary consequential changes to cross-numbering).

Statutes Amendment (SACAT) Act 2019, Pt 8

62—Transitional provisions

- (1) A right to appeal to the Administrative and Disciplinary Division of the District Court under section 37 of the principal Act in relation to a matter in existence (but not yet exercised) before the relevant day, will be exercised as if this Part had been in operation before the right arose, so that the relevant proceedings may be commenced instead before the Tribunal.
- (2) A decision or order of the Administrative and Disciplinary Division of the District Court under the principal Act in force immediately before the relevant day will, on and from the relevant day, be taken to be a decision or order of the Tribunal.

- (3) Nothing in this section affects any proceedings before the Administrative and Disciplinary Division of the District Court commenced under the principal Act before the relevant day.
- (4) In this section—
principal Act means the *Dangerous Substances Act 1979*;
relevant day means the day on which this Part comes into operation;
Tribunal means the South Australian Civil and Administrative Tribunal established under the *South Australian Civil and Administrative Tribunal Act 2013*.

Historical versions

Reprint No 1—1.7.1991

Reprint No 2—21.11.1991

Reprint No 3—1.3.1993

Reprint No 4—1.6.1993

Reprint No 5—1.9.1998

Reprint No 6—1.6.2000

1.2.2010

1.1.2013



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