ADVERTISED PLAN

onemilegrid

890 Taylors Road, Dandenong South

Transport Impact Assessment

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20 May 2022

onemilegrid

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1 INTRODUCTION

onemile**grid** has been requested by Ricardo Energy, Environment & Planning to undertake a Transport Impact Assessment of the proposed soil processing facility at 890 Taylors Road, Dandenong South.

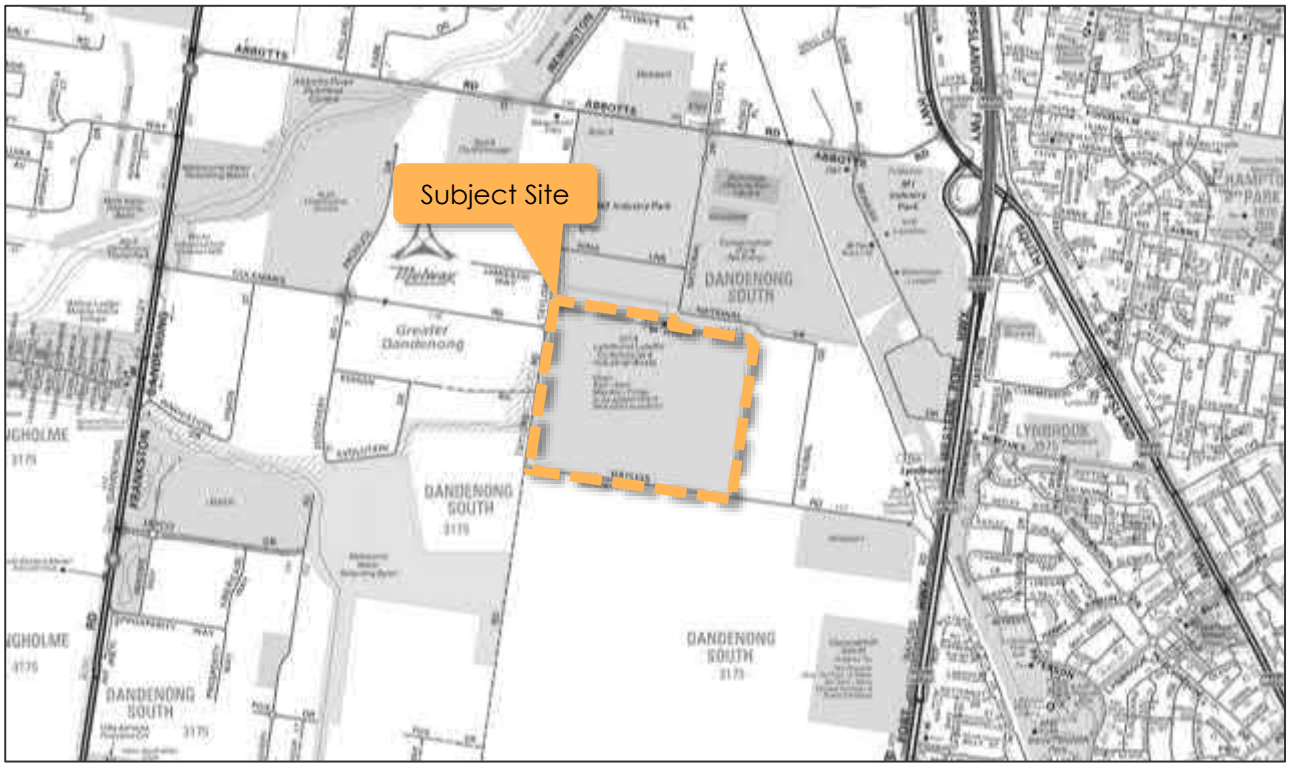
As part of this assessment the subject site has been inspected with due consideration of the development proposal, traffic data has been sourced and relevant background reports have been reviewed.

2 EXISTING CONDITIONS

2.1 Site Location

The subject site is located at the north-east corner of Taylors Road and Bayliss Road, addressed at 890 Taylors Road, Dandenong South, as shown in Figure 1.

Figure 1 Site Location



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The site is currently occupied by a landfill site operated by SUEZ. Vehicle access to the site is provided via a two-way crossover to Taylors Road and a two-way gravel crossover to Bayliss Road. However, access is gained solely from Taylors Road.

Land use in the immediate vicinity of the site is generally industrial in nature, and includes some green wedge land to the north and south.

An aerial view of the subject site in the context of its surrounds is provided in Figure 2.

Figure 2 Site Context (25 April 2022)

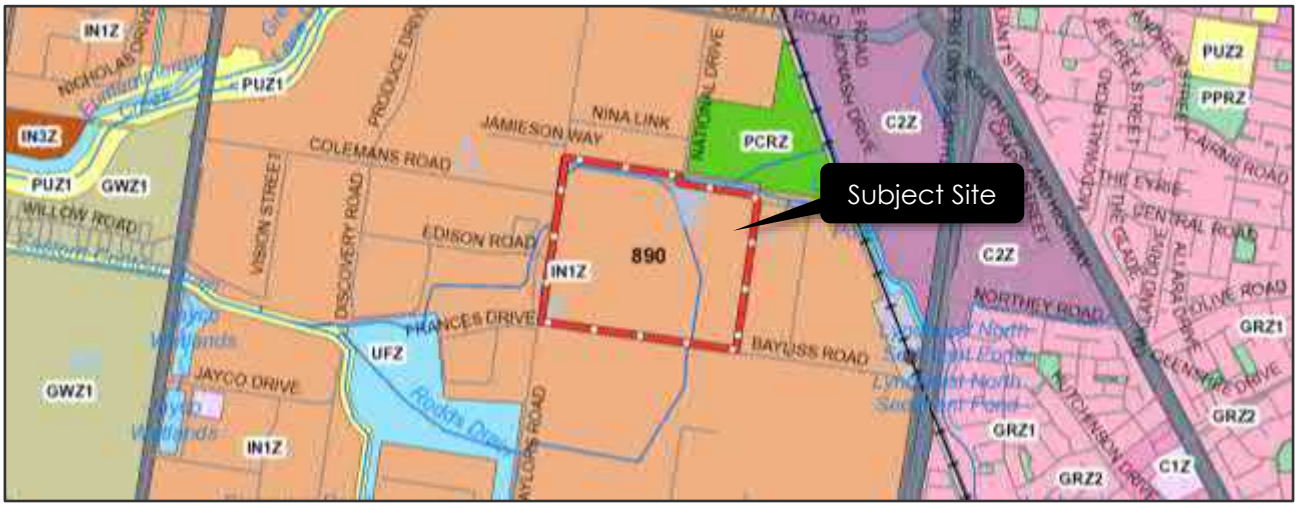
Copyright Nearmap

2.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located mostly within an Industrial 1 Zone of the Greater Dandenong Planning Scheme, with a small section at the north of the site located within an Urban Floodway Zone.

The site is also subject to a Development Plan Overlay and a Land Subject to Inundation Overlay.

Figure 3 Planning Scheme Zones



2.3 Road Network

2.3.1 Taylors Road

Taylors Road is a local road generally aligned north-south, running between Abbotts Road in the north and terminates to the south of Edison Road. It is noted that Taylors Road is currently under construction further to the south and being extended further south. Adjacent to the site, Taylors Road generally provides a single traffic lane in each direction with kerbside parking on both sides.

A 60km/h speed limit applies to Taylors Road in the vicinity of the site.

2.3.2 Colemans Road

Colemans Road is a local road generally aligned east-west, running between Taylors Road in the east and Frankston-Dandenong Road (Dandenong Valley Highway) in the west.

Colemans Road provides a single traffic lane and kerbside parking lane in each direction adjacent the site. A shared path is provided on the northern side of the road. Kerbside parking in the vicinity is generally provided as unrestricted.

A 60km/h speed limit applies to Colemans Road in the vicinity of the site.

2.4 Traffic Volumes

Traffic volume surveys were undertaken by Trans Traffic Survey on behalf of **one**mile**grid** on Friday 29th April 2022, between 6:00am and 10:00am, and between 3:00pm and 6:30pm at the following intersections:

- Taylors Road / Site Access;
- Taylors Road / Abbotts Road; and
- Taylors Road / Colemans Road.

The peak hour results of the surveys for each intersection are shown in Figure 4 to Figure 6.

Figure 4 Existing Traffic Volumes – Taylors Road / Site Access

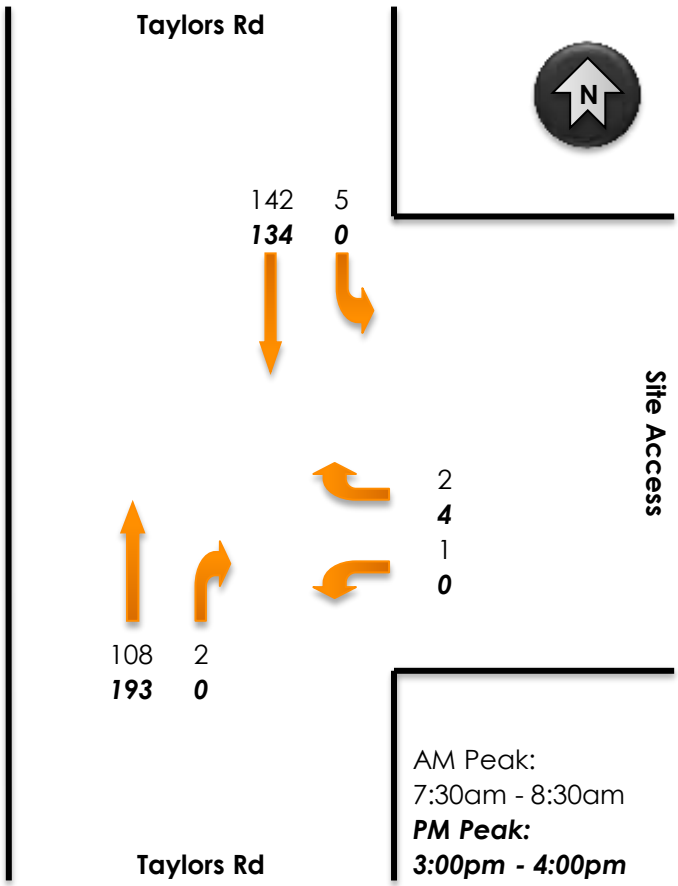


Figure 5 Existing Traffic Volumes – Taylors Road / Abbotts Road

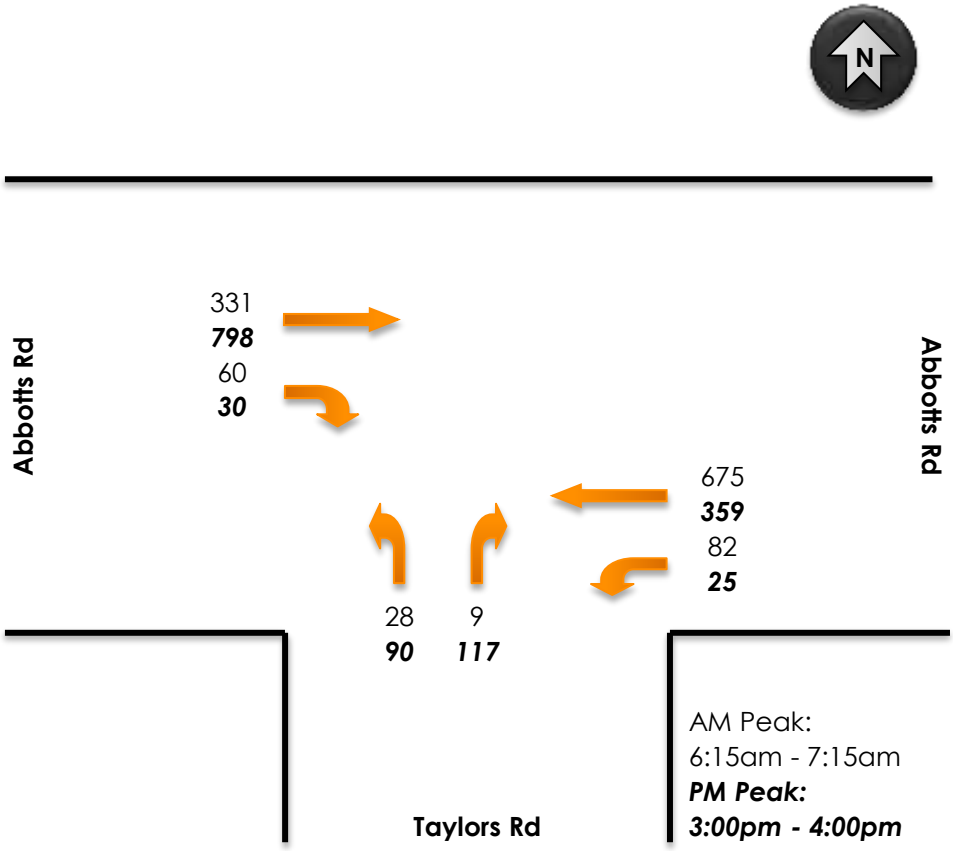
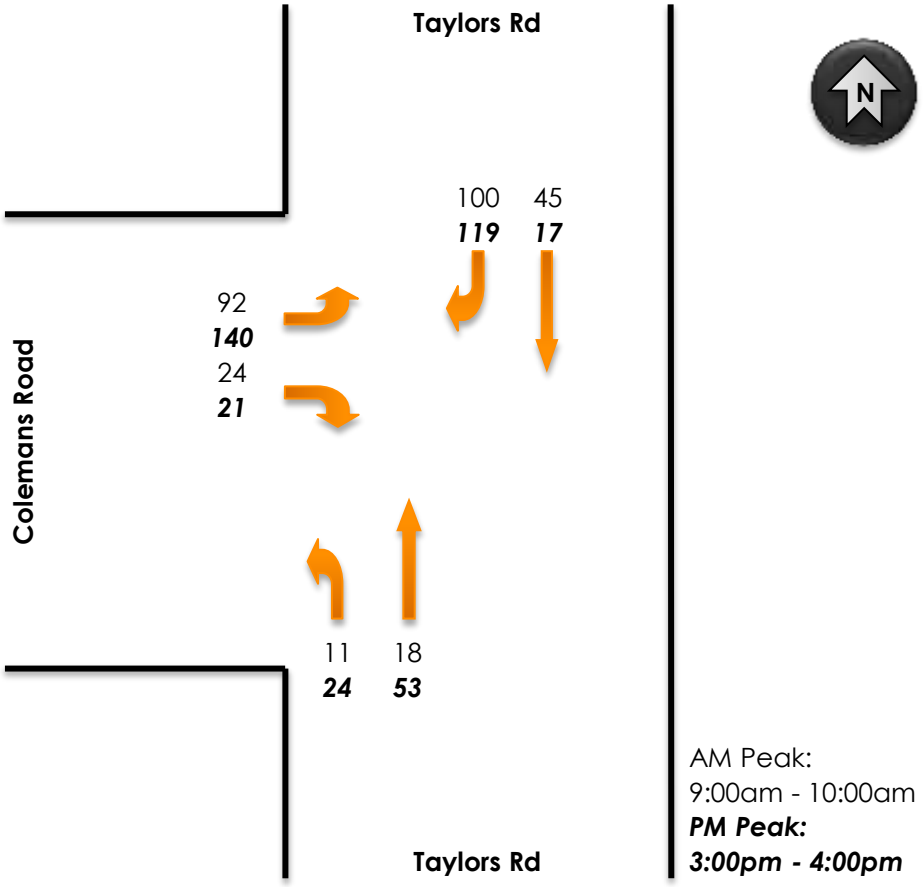


Figure 6 Existing Traffic Volumes – Taylors Road / Colemans Road



2.5 Public Transport

The full public transport provision in the vicinity of the site is shown in Figure 7. It is shown that the site is currently serviced by the 890 bus (Dandenong Station – Lynbrook Station) which operates via Abbotts Road to the north and the 901 SmartBus (Frankston – Melbourne Airport) which operates via Dandenong-Frankston Road to the west.

Figure 7 Public Transport Provision

2.6 Dandenong South Industrial Area Extension Structure Plan

The City of Greater Dandenong has prepared a structure plan for the Dandenong South Industrial Area Extension, dated January 2009.

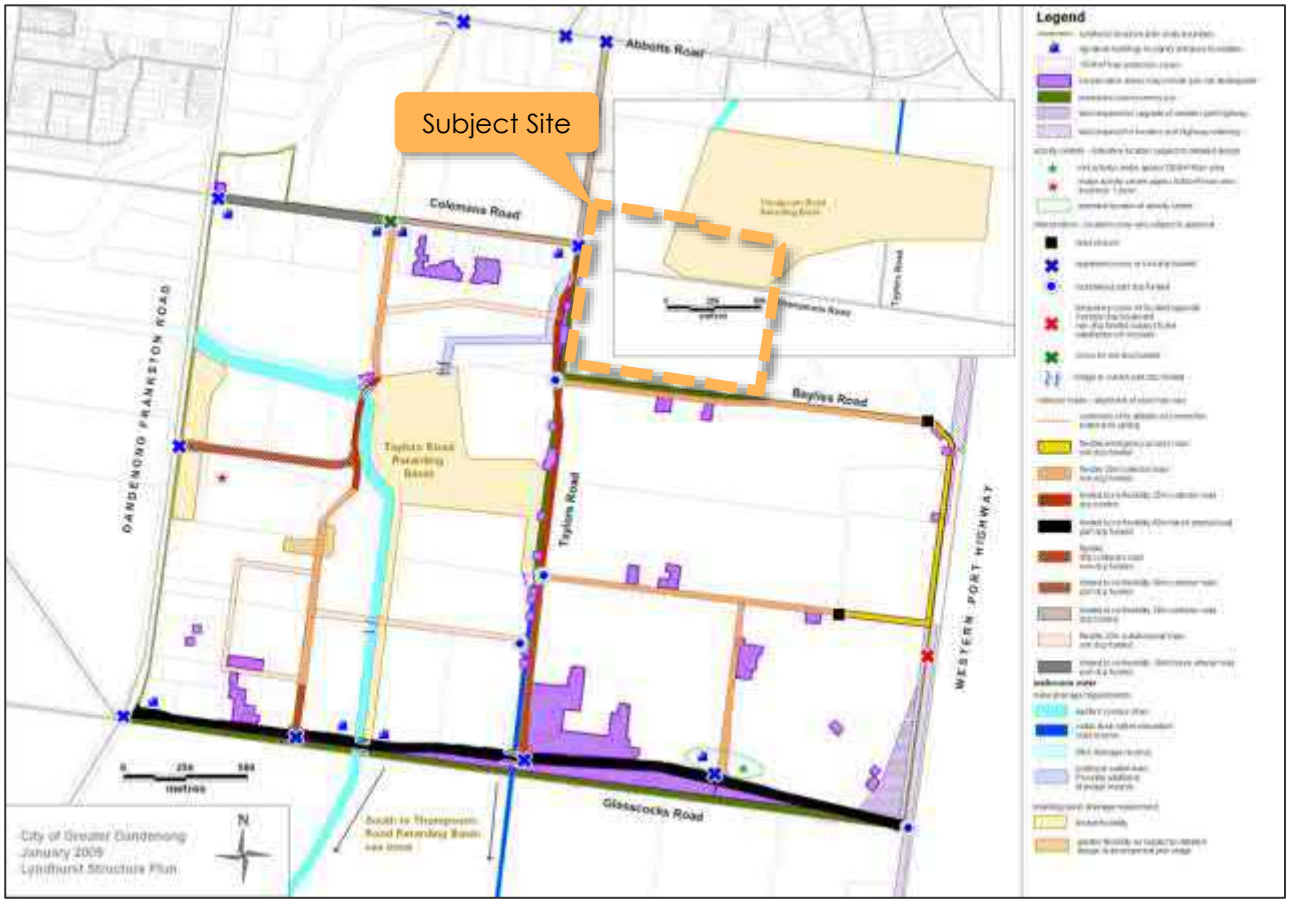
The vision for the Lyndhurst and Keysborough extensions to the Dandenong South industrial area is as follows:

The development of industrial estates which are designed and developed to host a cluster of "new economy" industry, including manufacturing, wholesaling, logistics and transport and storage businesses. The estates will incorporate the principles of:

- *High quality urban design and landscaping.*
- *Environmentally sensitive subdivision and building design based on environmental sustainability.*
- *Facilitation, development and management of effective and sustainable transport networks within the study area and its integration into the regional transportation system.*

The subject site is adjacent to the Lyndhurst site of the Dandenong South Industrial Area Extension Structure Plan, with abuttals to the south and west with the precinct boundaries, as shown in Figure 8.

Figure 8 Lyndhurst Site Area Structure Plan



In relation to the site, the plan identifies Taylors Road as a "*limited to no flexibility 25m collector road DCP funded*" and Bayliss Road as a "*flexible 25m collector road non DCP funded*".

The structure plan also identifies that the Colemans Road and Abbotts Road intersections with Taylors Road will be signalised as DCP funded projects.

2.7 Abbotts Road Upgrade

Greater Dandenong Council has commenced works along Abbotts Road to the north of the site providing important upgrades to the network, including:

- Widening of Abbotts Rd to two lanes in each direction;
- Provisions of a new pedestrian path; and
- Signalisation at the Taylors Road (stage 1) and National Drive intersections (stage 2).

The upgrades have commenced with project completion anticipated for March 2023.

3 DEVELOPMENT PROPOSAL

It is proposed to expand the existing Materials Recycling Facility on the subject site to include a soil washing facility.

The soil washing facility is proposed across a total area of 5.30 hectares including a soil washing plant and significant area for treated and untreated soil stockpiles.

The area of the site used for the soil washing plant is approximately 4,200 m², including plant and amenities.

The facility will receive bulk incoming soil products via truck, which will be dumped onto the untreated stockpiles. Trucks will then retrieve treated soil from treated stockpiles and exit the site.

Access to the facility is provided a fully directional access to Taylors Road.

Based on information provided by the operator, it is understood that the facility will operate 24 hours, 7 days a week with 2 x 12 hour shifts. Staff are anticipated to work on a 4 days on, 4 days off roster. A maximum of 10 staff are anticipated to be on-site at any given time.

The facility is anticipated to receive up to 5 loads per hour, generating a maximum of 10 truck movements per hour.

4 DESIGN ASSESSMENT

4.1 Greater Dandenong Planning Scheme – Clause 52.06

onemile**grid** has undertaken an assessment of the car parking layout and access for the proposed development with due consideration of the Design Standards detailed within Clause 52.06-9 of the Planning Scheme. A review of those relevant Design Standards is provided in the following section.

4.1.1 Design Standard 1: Accessways

A summary of the assessment for Design Standard 1 is provided in Table 1.

Table 1 Clause 52.06-9 Design Assessment – Design Standard 1

Requirement	*Comments*
Be at least 3 metres wide.	Satisfied
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.	Satisfied – changes of direction are between accessways of more than 4.2m wide
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre.	N/a – private car park
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres.	N/a – No overhead obstructions
If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	Satisfied – sufficient area is provided on site for manoeuvring to allow for forward exit from the site for all vehicles
Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3.	Satisfied
Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	Satisfied
If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway.	N/a – does not connect to a Transport Zone

4.1.2 Design Standard 2: Car Parking Spaces

All car spaces on-site should be provided with dimensions in accordance with Design Standard 2 of Clause 52.06.

Typical parking spaces are provided with a width of 2.6 metres, length of 4.9 metres and accessed via an aisle no less than 6.4 metres wide.

Accessible bays should be provided with a length of 5.4 metres and a width of 2.4 metres, and an adjacent shared area of the same dimensions, in accordance with the Australian Standard for Off-Street Parking for People with Disabilities AS2890.6.

5 LOADING

Clause 65 (Decision Guidelines) of the Greater Dandenong Planning Scheme identifies that "*Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate: The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*"

The proposed warehouse development provides significant area for loading and unloading, specifically designed for the proposed use, and therefore appropriate for the proposed development.

Additionally, Ricardo has prepared swept path diagrams demonstrating trucks up to a 19 m semi-trailer can undertake ingress and egress in a forward direction. The swept paths are attached in Appendix A.

6 BICYCLE PARKING

The bicycle parking requirements for the subject site are identified in Clause 52.34 of the Greater Dandenong Planning Scheme, which specifies the following requirements for Industry uses, which the Materials Recycling use is nested within.

Table 2 Clause 52.34 – Bicycle Parking Requirements

Component	No/Area	Requirement	Total
Industry	53,000 m^2	1 space per 1,000m^2 for employees	53
Total		**Employees**	**53**

Based on the above, the development generates a requirement to provide 53 bicycle parking spaces.

Noting that the development is anticipated to have large storage areas for soil and a low number of staff, the above requirement is considered to be excessive. Should a staff member ride to work, there is sufficient storage within the on-site amenities to securely store a bicycle if required.

Based on the above it is considered that there is no requirement to provide on site bicycle parking.

7 CAR PARKING

7.1 Statutory Car Parking Requirements

7.1.1 Car Parking Requirements – Clause 52.06

The car parking requirements for the subject site are identified in Clause 52.06 of the Greater Dandenong Planning Scheme. Furthermore, Clause 52.06 also specifies that:

'Where an existing use is increased by the measure specified in Column C of Table 1 for that use, the car parking requirement only applies to the increase, provided the existing number of car parking spaces currently being provided in connection with the existing use is not reduced'

The car parking requirements for the proposed soil washing plant are identified below.

Table 3 Clause 52.06 – Car Parking Requirements

Use	No/Area	Rate	Car Parking Measure	Total
Materials Recycling	53,000 m²	10	per cent of site area	5,300 m²
Total				**5,300 m²**

Based on the above calculations, a total of 5,300 m² is required to be allocated to car parking for the proposed development.

Information provided by the operator indicates that the development may have up to 10 staff on-site at a given time.

It is recommended at least 10 parking spaces are provided for the development to accommodate staff parking demands.

7.2 Accessible Car Parking

The Building Code of Australia (BCA) specifies the minimum requirements for provision of accessible car parking.

The proposed recycling facility, classified as a Class 8 building, requires provision of one accessible car spaces for every 100 car parking spaces or part thereof.

Based on the above, the BCA is likely to require at least one accessible car space on-site.

It is recommended that one accessible parking space and associated shared area are provided on-site.

8 TRAFFIC

8.1 Traffic Generation

The operator for the proposed recycling facility has provided information in relation to the incoming and outgoing truck movements expected to be generated by the proposed facility.

The development is anticipated to generate traffic associated with deliveries from trucks up to a truck and dog trailer and traffic generated by staff.

The development is anticipated to generate an average of 10 truck movements per hour, associated with deliveries from up to 5 trucks.

It is anticipated that peak traffic generation associated with staff movements will occur during the staff change over period with up to half of the space turning over. The changeover is anticipated to generate up to 10 movements associated with the arrival and departure of staff.

It is expected that staff and truck movements will not occur at the same time. However, for the purposes of conservative assessment the development is anticipated to generate a maximum of 20 movements during both the AM and PM peak hours associated with staff and truck arrivals/departures.

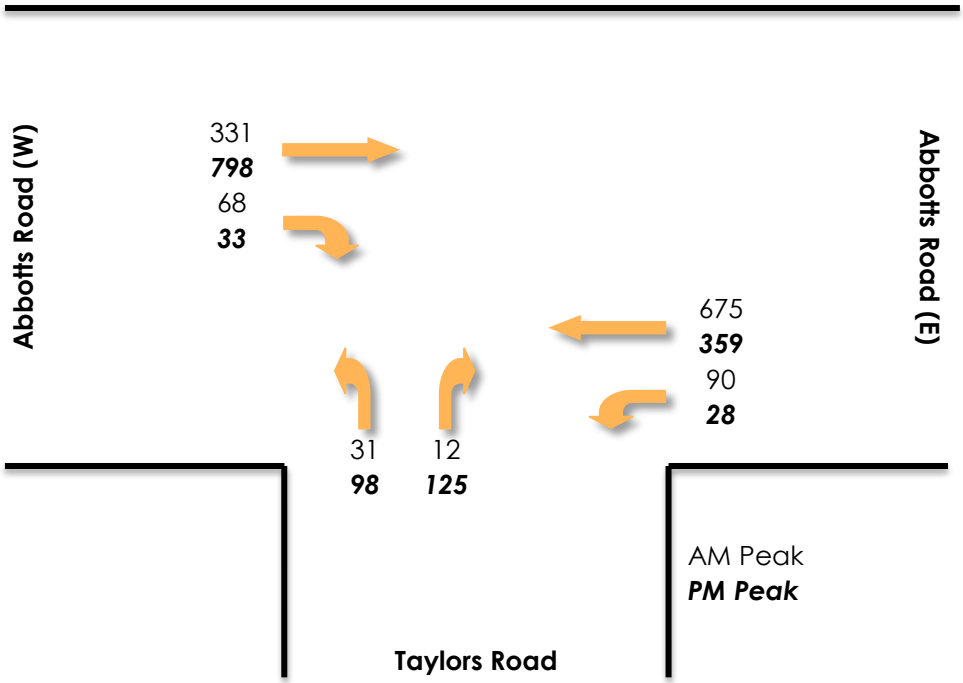
The anticipated peak hour traffic generation of 20 movements is equivalent to 1 vehicle movement every 3 minutes and is considered low in traffic engineering terms.

It is anticipated that during the AM and PM peak hours, movements will be evenly split between inbound and outbound movements. Staff movements are expected to be inbound during the AM peak and outbound during the PM peak.

For the purposes of a conservative assessment all traffic is expects to arrive/depart via the Abbotts Road / Taylors Road intersection. Furthermore, traffic is anticipated to be distributed evenly to the east and west along Abbotts Road.

Based on the above, the resultant future traffic volumes at the Abbotts Road/Taylors Road intersection are shown in Figure 9.

Figure 9 Resultant Post Development Traffic Volumes – Abbotts Road/Taylors Road



8.2 Traffic Impact

To assess the operation of the upgraded intersection, the post development traffic volumes have been input into SIDRA Intersection, a traffic modelling software package.

The SIDRA Intersection software package has been developed to provide information on the capacity of an intersection with regard to a number of parameters. Those parameters considered relevant are, Degree of Saturation (DoS), 95th Percentile Queue, and Average Delay as described below.

Table 4 SIDRA Intersection Parameters

Parameter	Description
Degree of Saturation (DoS)	The DoS represents the ratio of the traffic volume making a particular movement compared to the maximum capacity for that particular movement. The value of the DoS has a corresponding rating depending on the ratio as shown below.

Degree of Saturation	Rating
Up to 0.60	Excellent
0.61 – 0.70	Very Good
0.71 – 0.80	Good
0.81 – 0.90	Fair
0.91 – 1.00	Poor
Above 1.00	Very Poor

It is noted that whilst the range of 0.91 – 1.00 is rated as 'poor', it is acceptable for critical movements at an intersection to be operating within this range during high peak periods, reflecting actual conditions in a significant number of suburban signalised intersections.

Average Delay (seconds)	Average delay is the time delay that can be expected for all vehicles undertaking a particular movement in seconds.
95th Percentile (95%ile) Queue	95%ile queue represents the maximum queue length in metres that can be expected in 95% of observed queue lengths in the peak hour

The results of the analysis are provided in Table 5 and Table 6.

Table 5 Abbotts Road / Taylor Road – AM Peak Hour

Approach	DoS	Avg. Delay (sec)	Queue (m)
Taylors Road	0.128	37.9	8.7
Abbotts Road (E)	0.314	9.9	55.4
Abbotts Road (W)	0.296	9.1	21.4

Table 6 Abbotts Road / Taylors Road – PM Peak Hour

Approach	DoS	Avg. Delay (sec)	Queue (m)
Taylors Road	0.333	32.2	36.8
Abbotts Road (E)	0.209	14.9	34.8
Abbotts Road (W)	0.345	9.5	60.8

As shown above the intersection is expected to operate under excellent conditions during both the morning and afternoon peak hours after the delivery of the signals is complete and the subject site is developed.

In view of the foregoing, the development is anticipated to have a negligible impact on the surrounding road network and the proposed arrangement is considered satisfactory.

9 CONCLUSIONS

It is proposed to develop the subject site for the purposes of soil processing facility.

Considering the analysis presented above, it is concluded that:

- The proposed access design is considered appropriate;
- The proposed provision of no bicycle parking is appropriate for the proposed development;
- It is recommended that the development provides at least 10 car parking spaces to accommodate the anticipated staff parking demand;
- The proposed development is expected to have a negligible impact on the surrounding road network.

Appendix A Swept Path Diagrams

Turning Movements Plan - 19m Semi Trailer

31365 - SUEZ Taylors Road Landfill Soil Washing Facility

ADVERTISED PLAN

0m 20 40 60

Scale 1:1000 @ A3

N

Figure 003

Project Number	31365
Revision	A
Date	19/May/2022

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Turning Movements Plan - Truck & Trailer

31365 - SUEZ Taylors Road Landfill Soil Washing Facility

ADVERTISED PLAN

0m 20 40 60

Scale 1:1000 @ A3

N

Figure 004

Project Number	31365
Revision	A
Date	19/May/2022

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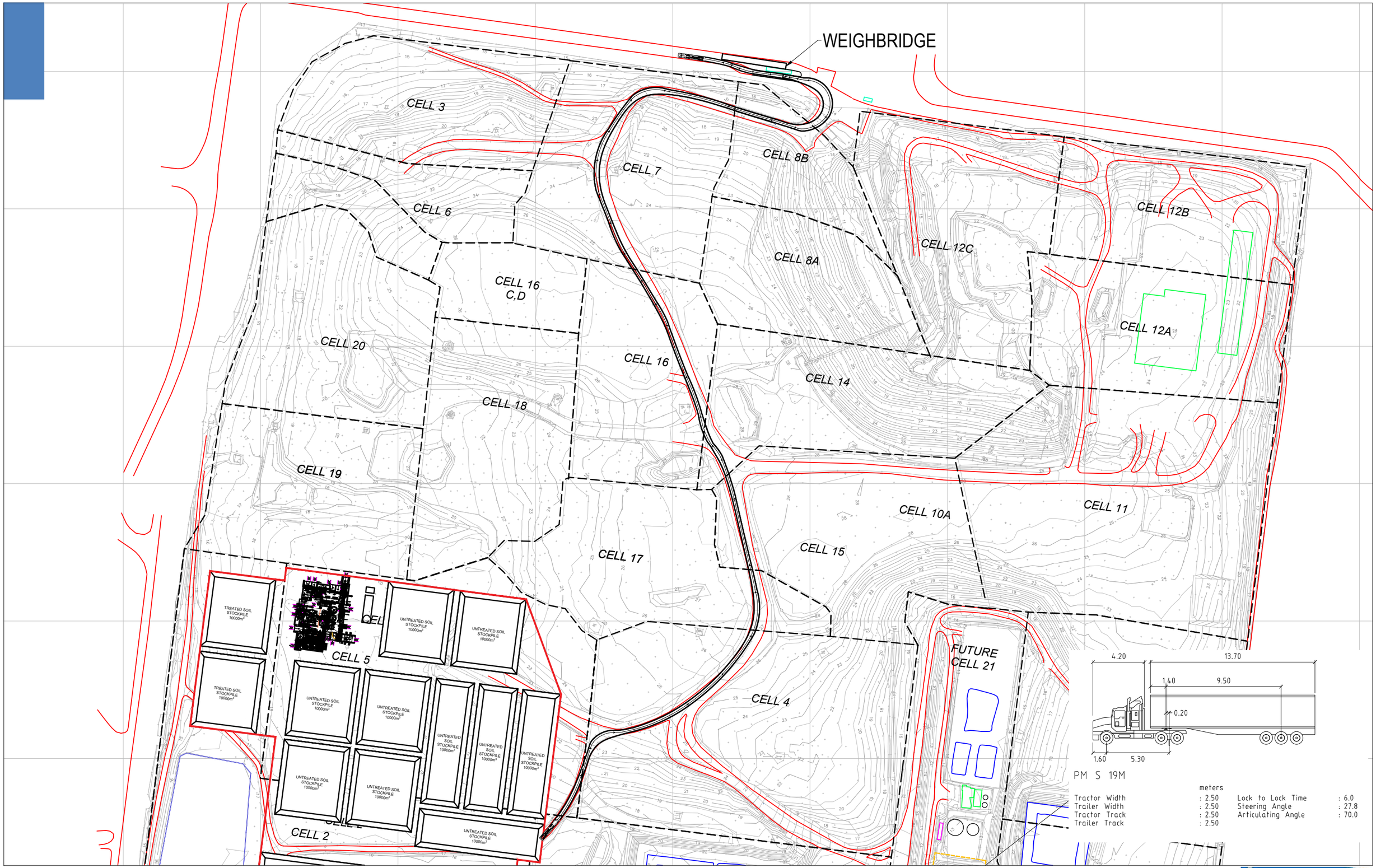

Turning Movements Plan - 19m Semi Tailer

31186 - SUEZ Strategic Waste Project

ADVERTISED PLAN

0m 50 100 150

Scale 1:2500 @ A3

N

Figure 005

Project Number	31186
Revision	A
Date	19/May/2022

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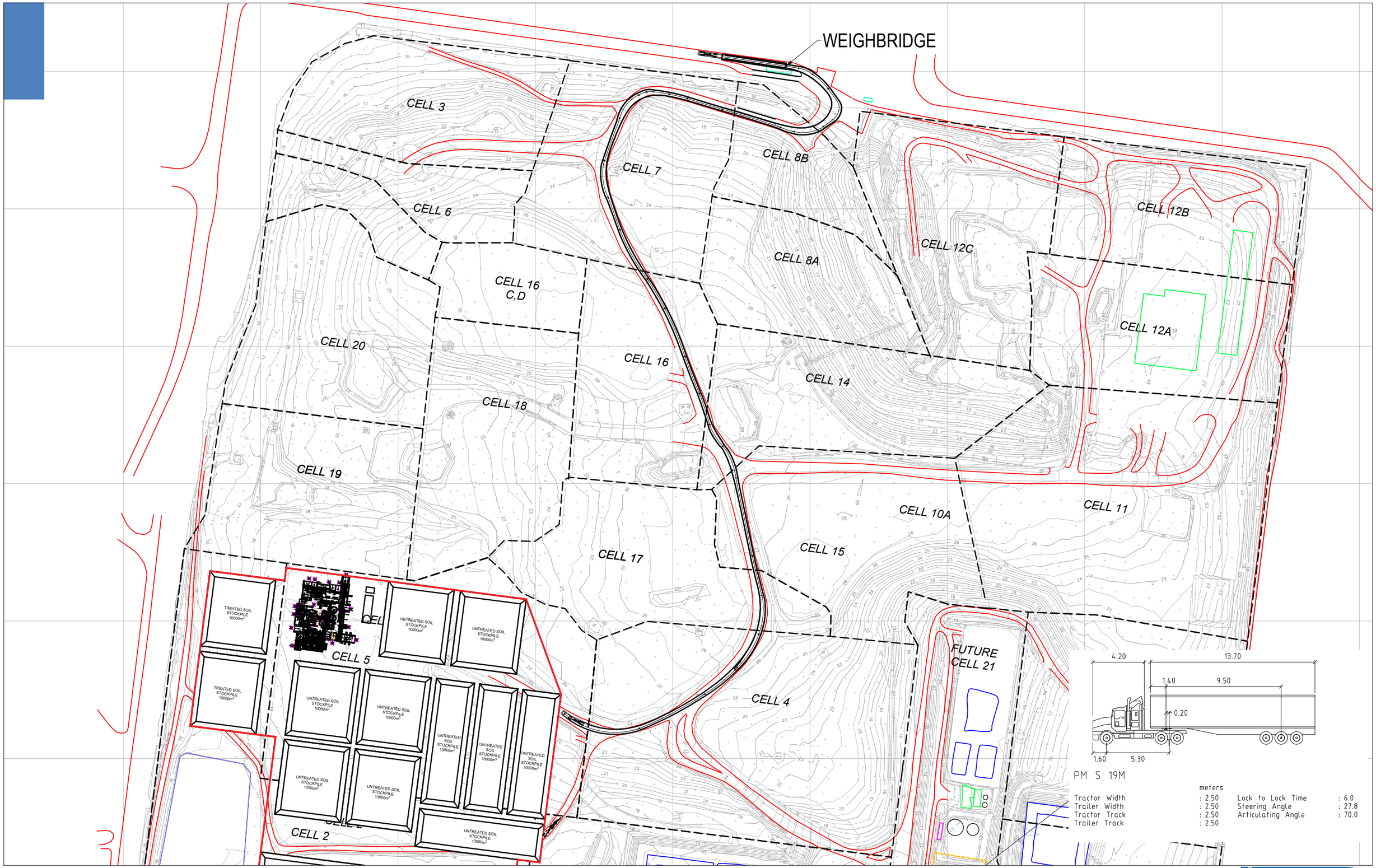

Turning Movements Plan - 19m Semi Trailer

31186 - SUEZ Strategic Waste Project

ADVERTISED PLAN

0m 50 100 150

Scale 1:2500 @ A3

N

Figure 006

Project Number	31186
Revision	A
Date	19/May/2022

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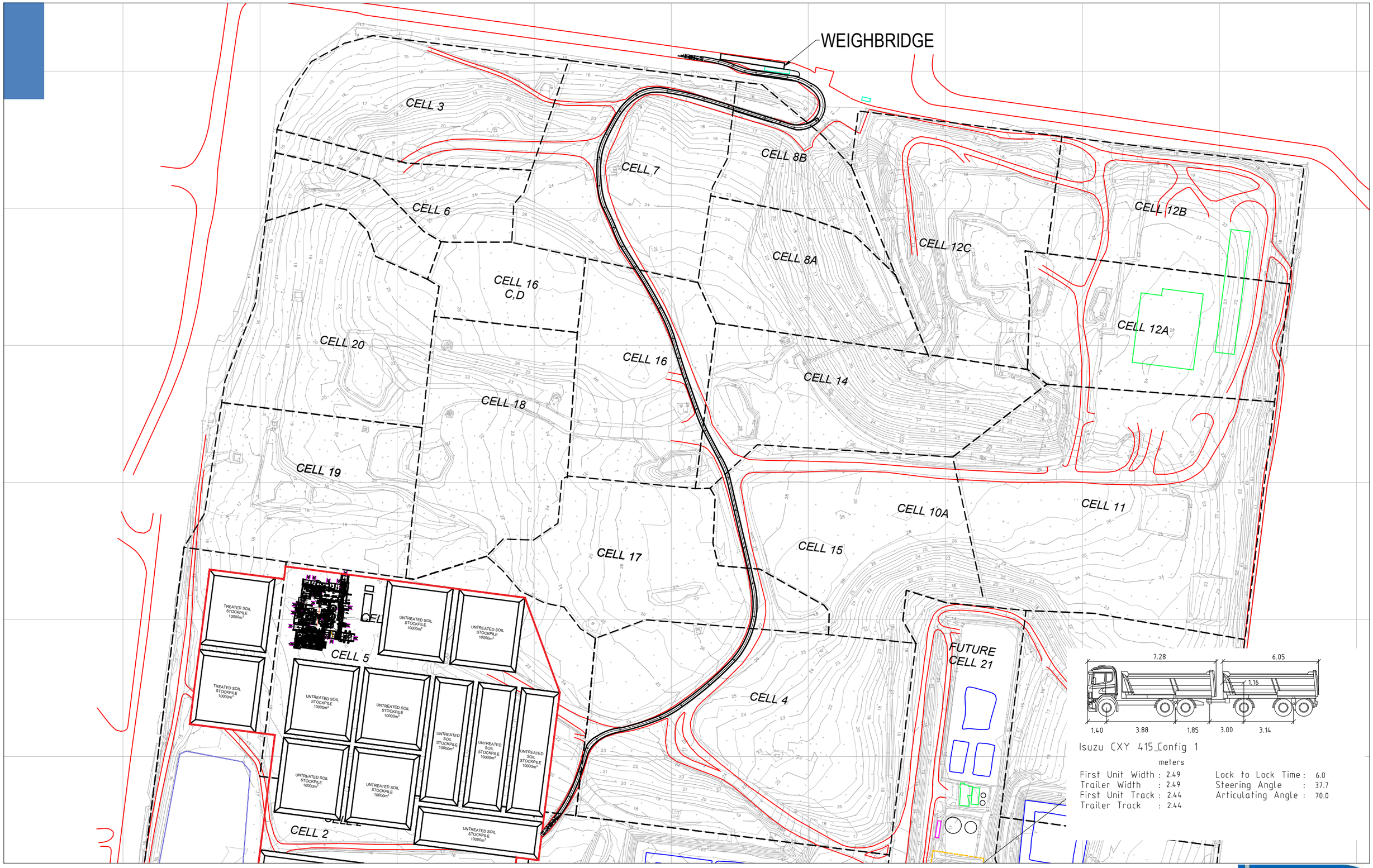

Turning Movements Plan - Truck & Trailer

31186 - SUEZ Strategic Waste Project

ADVERTISED PLAN

0m 50 100 150

Scale 1:2500 @ A3

N

Figure 007

Project Number	31186
Revision	A
Date	19/May/2022

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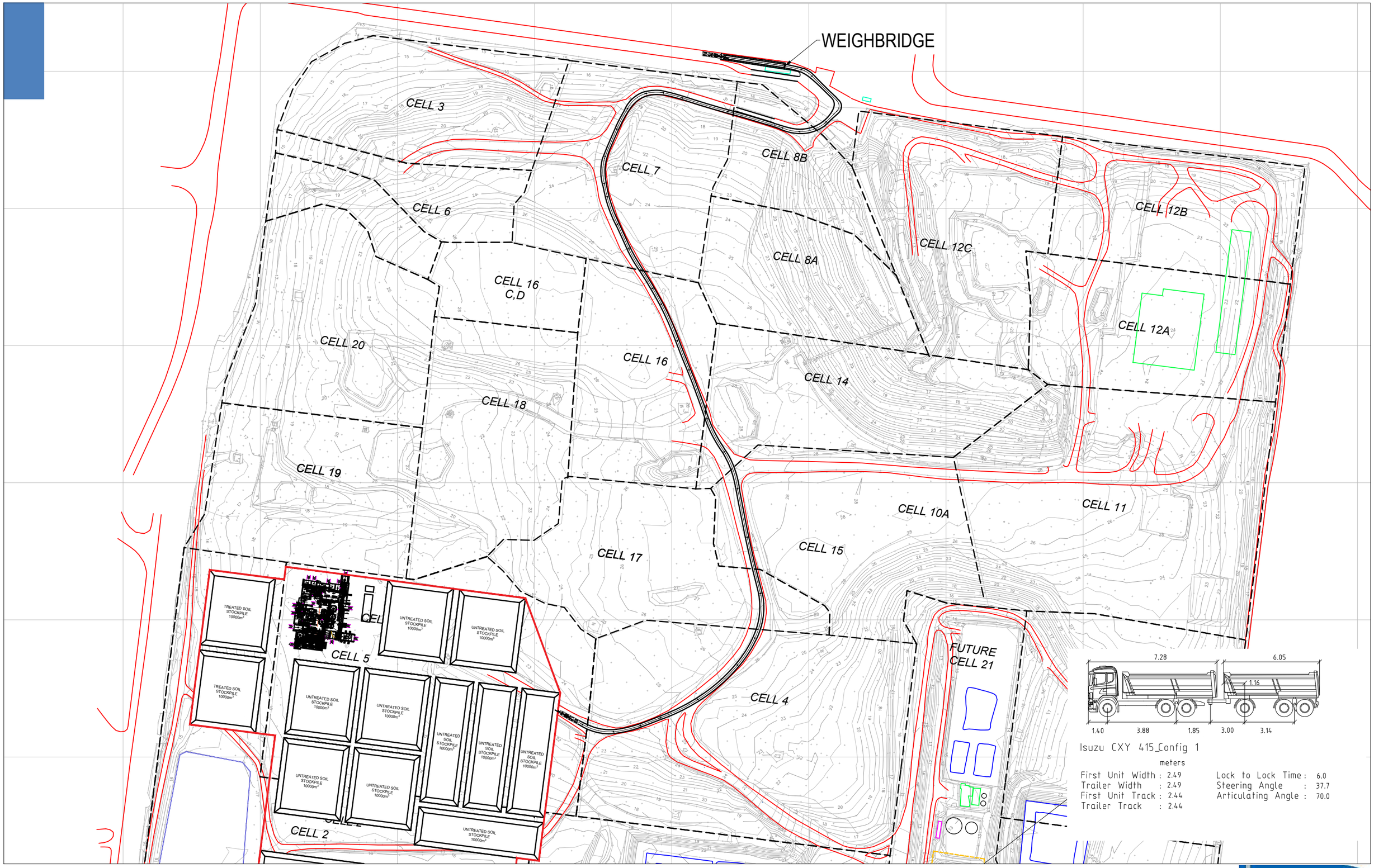

Turning Movements Plan - Truck & Trailer

31186 - SUEZ Strategic Waste Project

ADVERTISED PLAN

0m 50 100 150

Scale 1:2500 @ A3

N

Figure 008

Project Number	31186
Revision	A
Date	19/May/2022

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