Flat Rocks Wind Farm

Construction Management Plan

Enel Green Power Australia Pty Ltd

14 July 2022

The Power of Commitment

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1. Introduction

1.1 Project Overview

The Flat Rocks Wind Farm (FRWF) project is located approximately 260 km southeast of Perth, 30 km east of Kojonup. The proposed project consists of 18 x 4.2 MW turbines for a total installed capacity of 75.6 MW. Turbine components will be transported to site from Port of Bunbury, approximately 230 km by road.

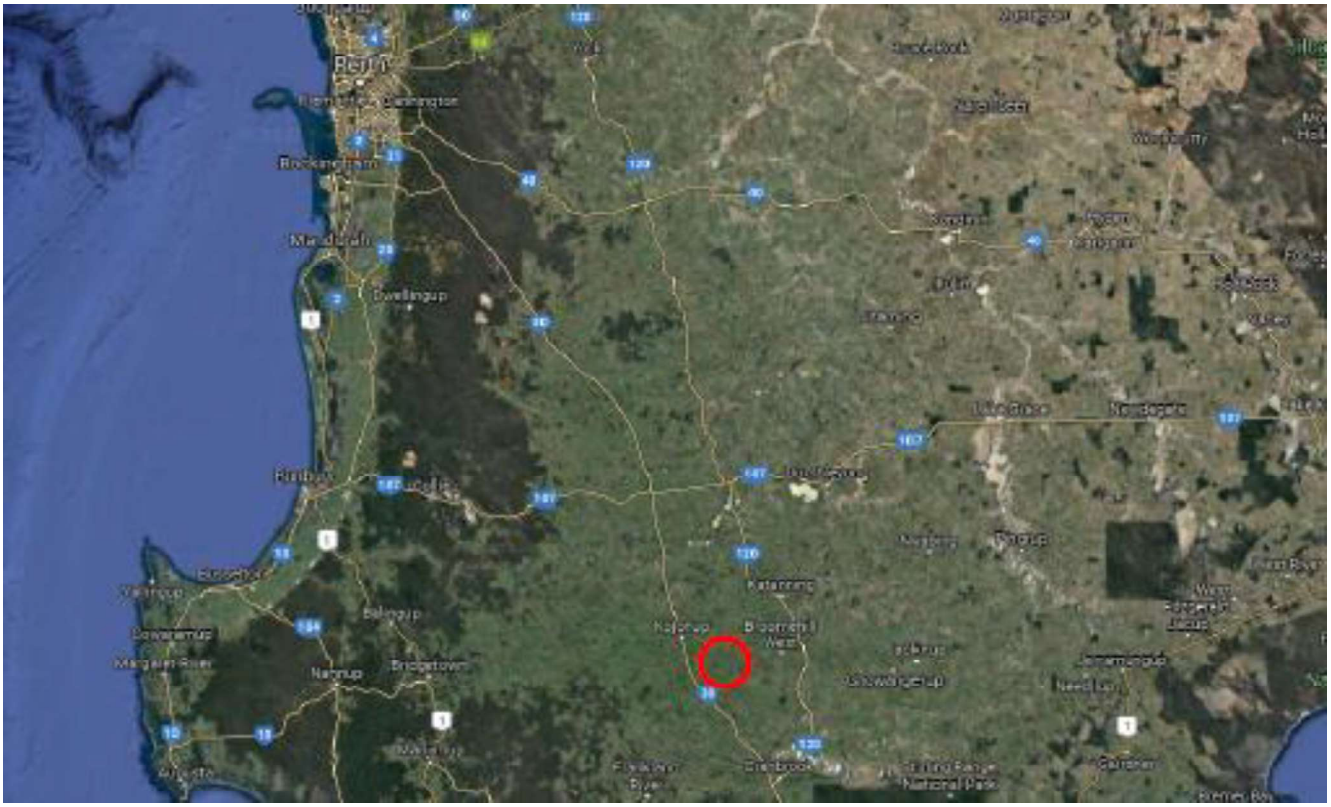


Figure 1 Location of Flat Rocks Wind Farm - Western Australia

ENEL Green Power (EGP) will be developing FRWF at the site mentioned above. FRWF will be connected to the Western Power network also known as the South West Interconnected Network (SWIN). There is an existing 132 kV Western Power Transmission line that is adjacent to the proposed wind farm substation location, seen in Figure 2. Western Power will provide a teed connection from this line into the Wind Farm substation.

EGP is intending to deliver this project through splitting up the work packages in 4 different contracts being:

1. IWC: Interconnection Works Contract with Western Power
2. OEM: Turbine Supply, Install and Commission contract with Vestas
3. EBoP: Electrical Balance of Plant contract with RJE Global
4. CBoP: Civil Balance of Plant contract with West Force

EGP will utilise an in-house project team with support from EGP's international resources and will utilise the owners engineer for support in the design review, support in compliance review, support in interface management, support in construction inspections and support in commissioning & handover activities.

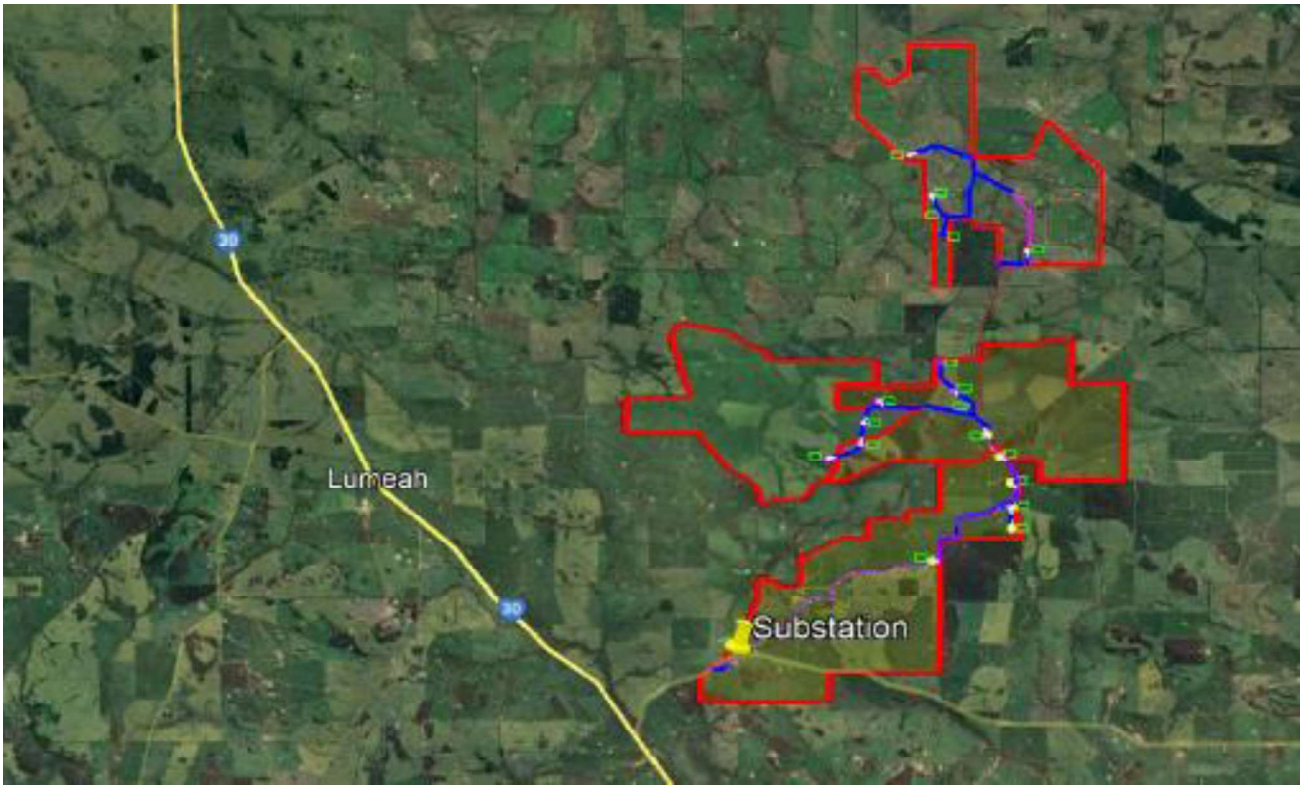


Figure 2 Flat Rocks Project Area

1.2 Purpose of this plan

This Construction Management Plan (CMP) covers the first phase of the FRWF project which is planned to include 18 wind turbines totalling 75.6 MW. The construction period is anticipated to last approximately 18 months.

The purpose of the CMP is to satisfy the Development Approval Condition 18 of the Shire of Kojonup (date of determination 28 September 2021) and Development Approval Condition 18 of the Shire of Broomhill-Tambellup (date of notice 22 May 2017).

The details of the CMP required for Development Approval are referenced in Table 1

Table 1 Details of Construction Management Plan requirements for Development Approval

Development Approval Requirement	Section Reference
The Construction Management Plan must include the following detail:	
a. The location of temporary access / egress points and temporary service roads;	Page 5, Section 3.1
b. The location of crane hardstand areas;	Page 8, Section 3.3
c. Temporary buildings;	Page 9, Section 3.5
d. Temporary car parking areas;	Page 10, Section 3.6
e. The location of the concrete batching plant, water tanks and any construction compounds and materials storage / laydown areas;	Page 10, Section 3.7
f. The location and extent of excavation required for the purpose of laying cabling;	Page 11, Section 3.9.2
g. A timetable for the removal of temporary development after completion of the construction phase;	Page 13, Section 4
h. The management of dust and other construction impacts;	Page 14, Section 5.1
i. The management of weed infestations.	Page 14, Section 5.2

1.3 Scope and limitations

This report: has been prepared by GHD for Enel Green Power Australia Pty Ltd and may only be used and relied on by Enel Green Power Australia Pty Ltd for the purpose agreed between GHD and Enel Green Power Australia Pty Ltd as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Enel Green Power Australia Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

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

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

GHD has prepared this report on the basis of information provided by Enel Green Power Australia Pty Ltd and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Accessibility of documents

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

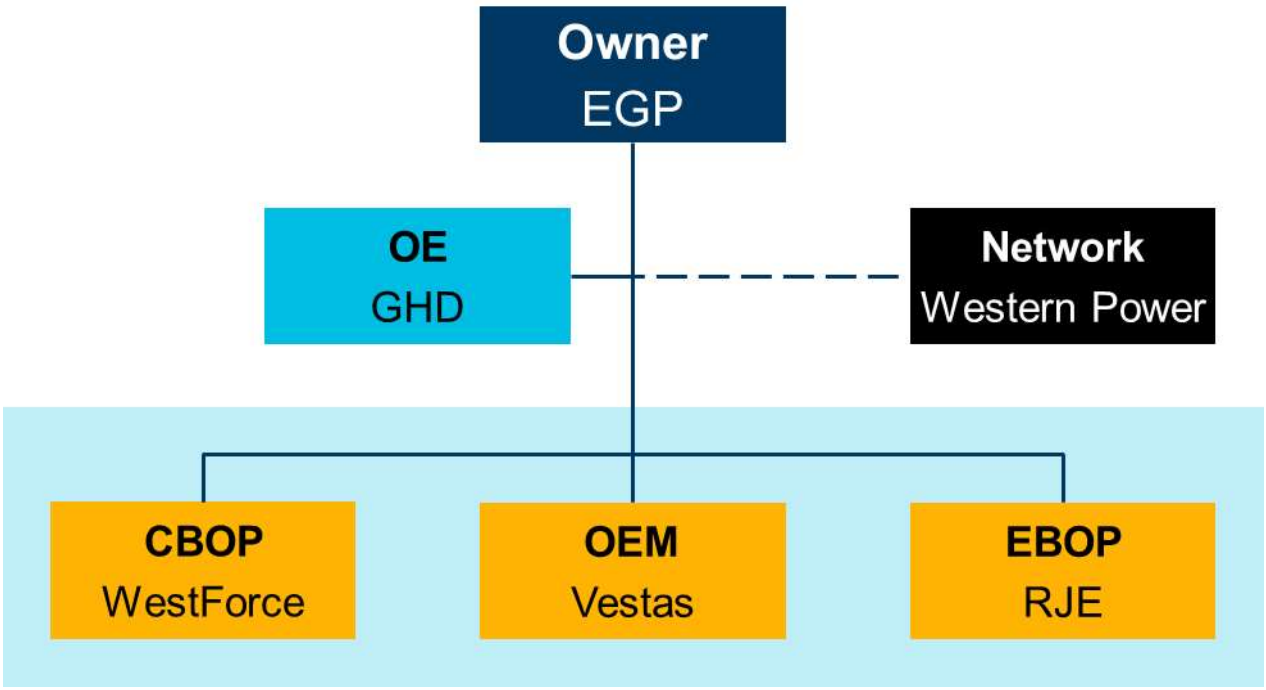
1.4 Definitions and Abbreviations

Table 2 Definitions and Abbreviations

Definition / Abbreviation	Description
BOP	Balance of Plant
CBOP	Civil Balance of Plant
CMP	Construction Management Plan
CEMP	Construction Environmental Management Plan
COD	Commercial Operation Date
DA	Development Approval
DTMR	Department Of Transport and Main Roads
EGP	Enel Green Power Australia Pty Ltd
EBOP	Electrical Balance of Plant
EPC	Engineering Procurement and Construction
FRWF	Flat Rocks Wind Farm
HV	High Voltage
IC	Independent Certifier
IWC	Interconnection Works Contract
MV	Medium Voltage
NSP	Network Service Provider
OE	Owner's Engineer
OEM	Original Equipment Manufacturer
WFC	WestForce Construction
WP	Western Power
WTG	Wind Turbine Generator

2. Project Organisation

The FRWF organisational structure is shown in the following chart:



2.1 Key Personnel and Contact Details

Table 3 Key Personnel and Contact Details

Name	Position	Contact	Email
Gabriele Mallarini	Project Execution Manager	+61 412 294 411	Gabriele.mallarini@enel.com
Tomas Gibbs	Project Manager	+61 455 210 249	tomas.gibbsrasquin@enel.com
Lionel Zhou	Project Engineer	+61 439 131 835	lionel.zhou@enel.com
John Price	EGP Site Manager	+61 427 940 771	TBC
Darryl Byatt	EGP HSEQ Site Rep	+61 401 724 458	TBC

2.2 Work Hours

Construction work will be carried out between 6 am and 6 pm Monday to Sunday with out-of-hours work to be conducted under an approved Noise Management Plan.

Night works will be required primarily for erection of turbines and wind turbine foundation pours or as required for critical construction work.

These hours are subject to change based on the time of year, progress and EGP requirements.

3. Project Description

3.1 Site Access

3.1.1 Roads/Access Track Upgrades

Temporary access roads will be constructed within the project development area. Access gates will be provided at all entry points from public roads to temporary access roads.

There are a total of five access gates to public roads:

- Tambellup West Road – To Substation and Permanent Operations and Maintenance Building
- Warrenup Road – Access to WTG08, 09, 10, 11, 16
- Warrenup Road, North of O'Neill Road – Access to Temporary Site Facilities and WTG01, 02, 03, 04, 05, 06, 07, 55
- Warranup Road, near Ngopitchup Road – Access to WTG18
- Nookanellup Road – Access to WTG13, 14, 15, 17

Temporary access roads are shown in Figure 3, with project access gates shown in Appendix A – Development Layout Plan, submitted to the council(s) under Condition 17.

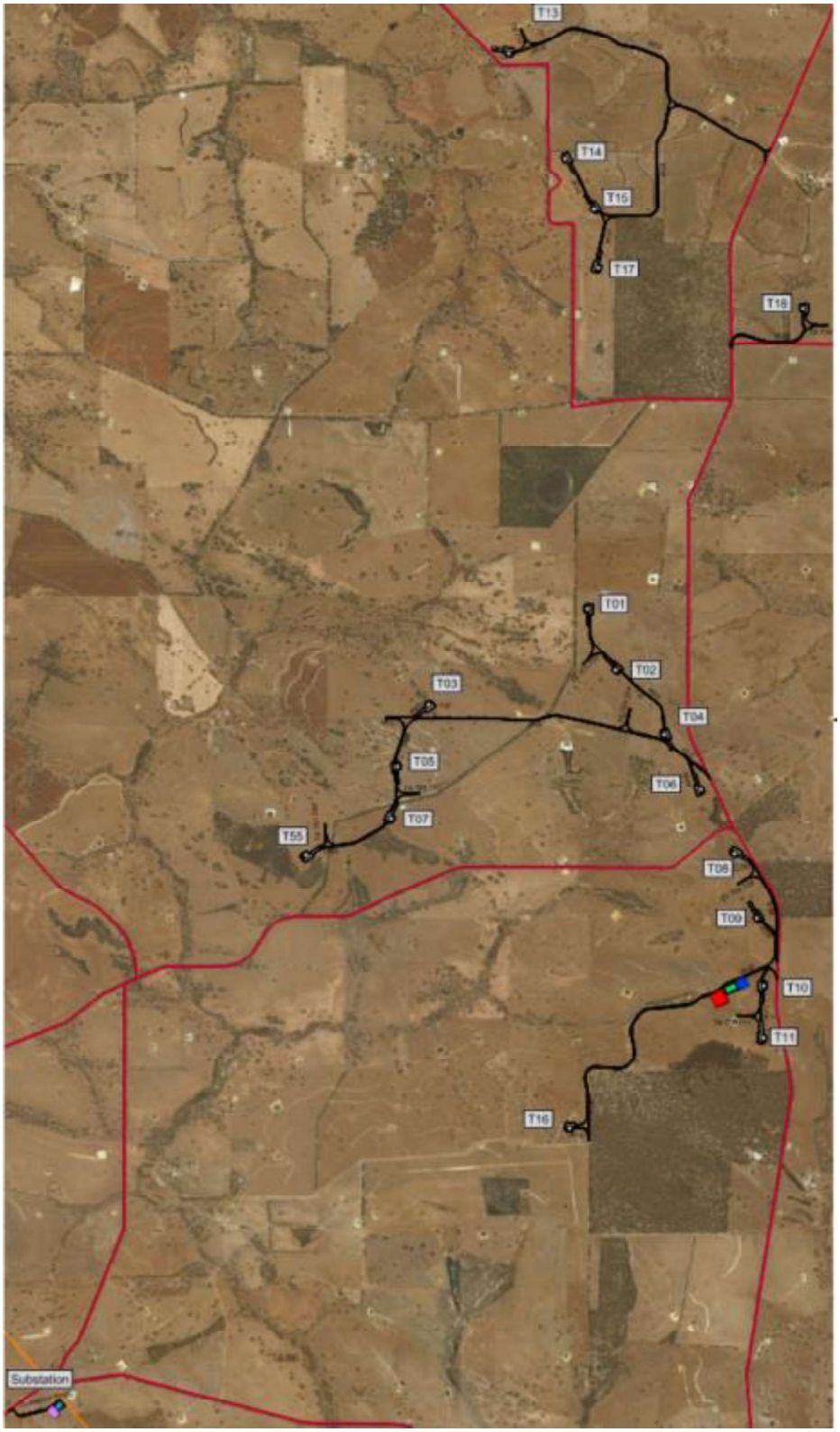


Figure 3 *Temporary roads and access tracks*

3.2 Turbines

Stage 1 of the Project involves the supply and installation of 18 units of Vestas V150 4.2 MW turbines. Turbine details are included below:

Table 4 Project wind turbine characteristics

	Details
Number of turbines - Stage 1	18
Number of turbines - Stage 2	24
Rated capacity	4.2 MW
Tip height	200 m
Hub heights	125 m
Rotor diameter	150 m
Blade length	73.7 m

The locations of the Stage 1 turbines are included in Figure 4 below. Refer to Development Plan submission as per DA Condition #17 for latest version.

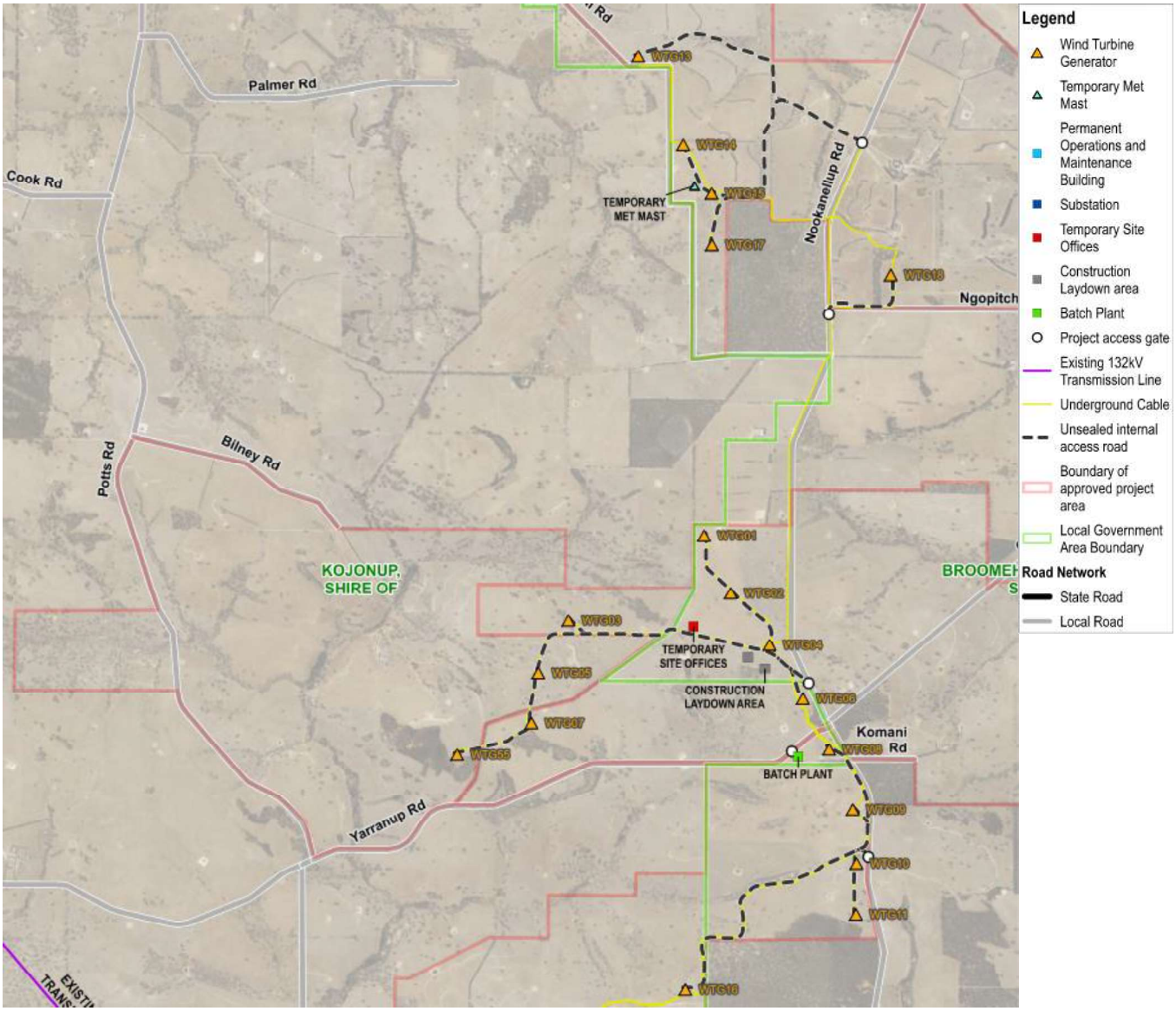


Figure 4 Turbine Layout

3.3 Hardstanding

There will be one crane hardstand adjacent to each WTG shown in Figure 4. Typical hardstand detail has been included in Figure 5 for information.

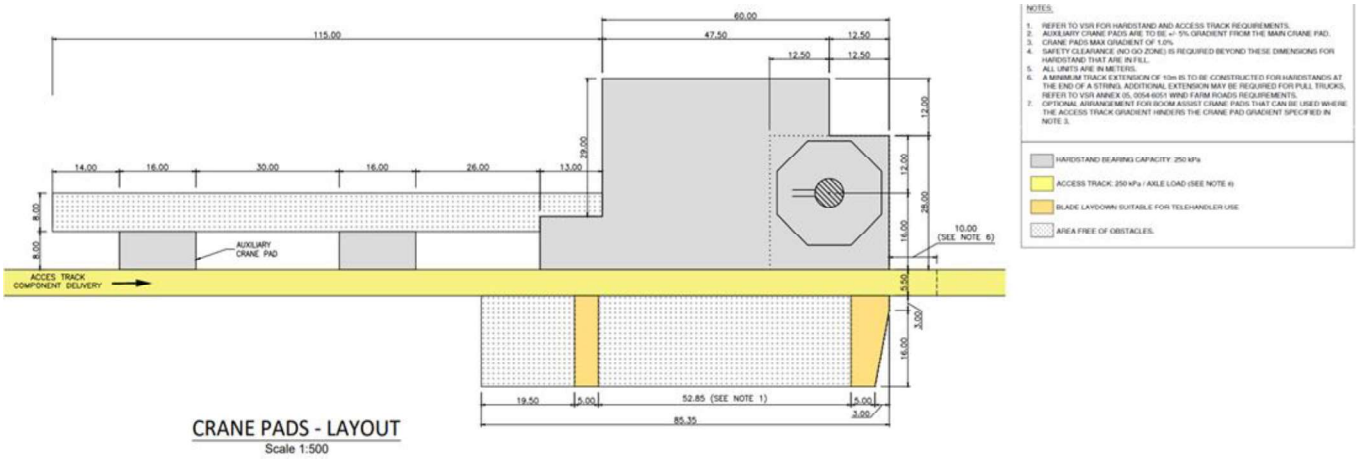


Figure 5 Typical crane hardstand and laydown

The access track will be built first, follow by the hardstand area. The turbine footing will be excavated, and once concrete has been poured, and backfilled the hardstand area will be finalised.

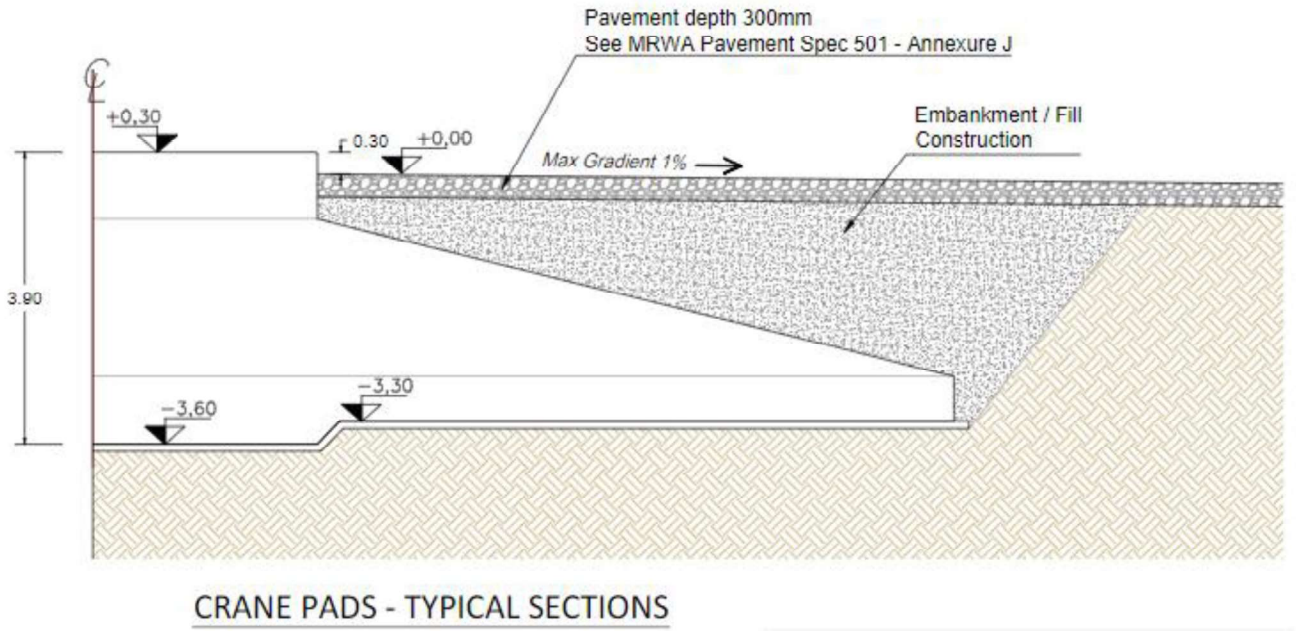


Figure 6 Typical crane paving section

3.4 Lifting Operations

All turbine component lifting operations will be subject to the preparation, review and approval of a lifting study. The details below are indicative only:

- Preassembly Crane: LTM1750- 3 Tower Sections (Base, Mid 1, Mid 2)
- Main Crane: LG1750SX- 2 Tower sections (Mid3, Top), Nacelle, Hub & Blades.
- Crane studies will include the planning information as below:
  - Route that transport will take to position the load for lifting;
  - Initial lifting position of the load, including radius. Lifting radius must be accurately determined.

- Final placement position of the load, including radius. Lifting radius must be accurately determined;
- Location of the crane(s) including tail swing limits;
- Route that crane(s) will take, if walking with the load, as well as associated matting requirements;
- Any utilities located within the work zone. Underground utilities – piping, ducts, etc., must be accurately located;
- Space necessary to assemble the crane; and
- Planning must include load transportation considerations, e.g., how to get the load close enough to the crane

3.5 Temporary Buildings & Worker Accommodation

Temporary buildings including site offices, crib room, toilets and skip bins will be established by Westforce (WFC). The temporary buildings will be located on site access road IR-C between WTG03 and WTG04 and will be accessed via Warrengup Road. Refer to Figure 7 – Laydown & Site Facilities.

No worker accommodation will be constructed within the project development area for FRWF Stage 1.

The construction contractors will mobilise site containers for tools and minor equipment storage and chemical cupboards and bunds for chemical management. Potable water and other pantry facilities will be made available at the crib room.

Site Facilities include:

- Office buildings for Contractors and Principal;
- Crib Rooms, first aid room, toilets; and
- Laydown Area which may include storage containers, workshop dome, fuel farm, and a geotech lab.

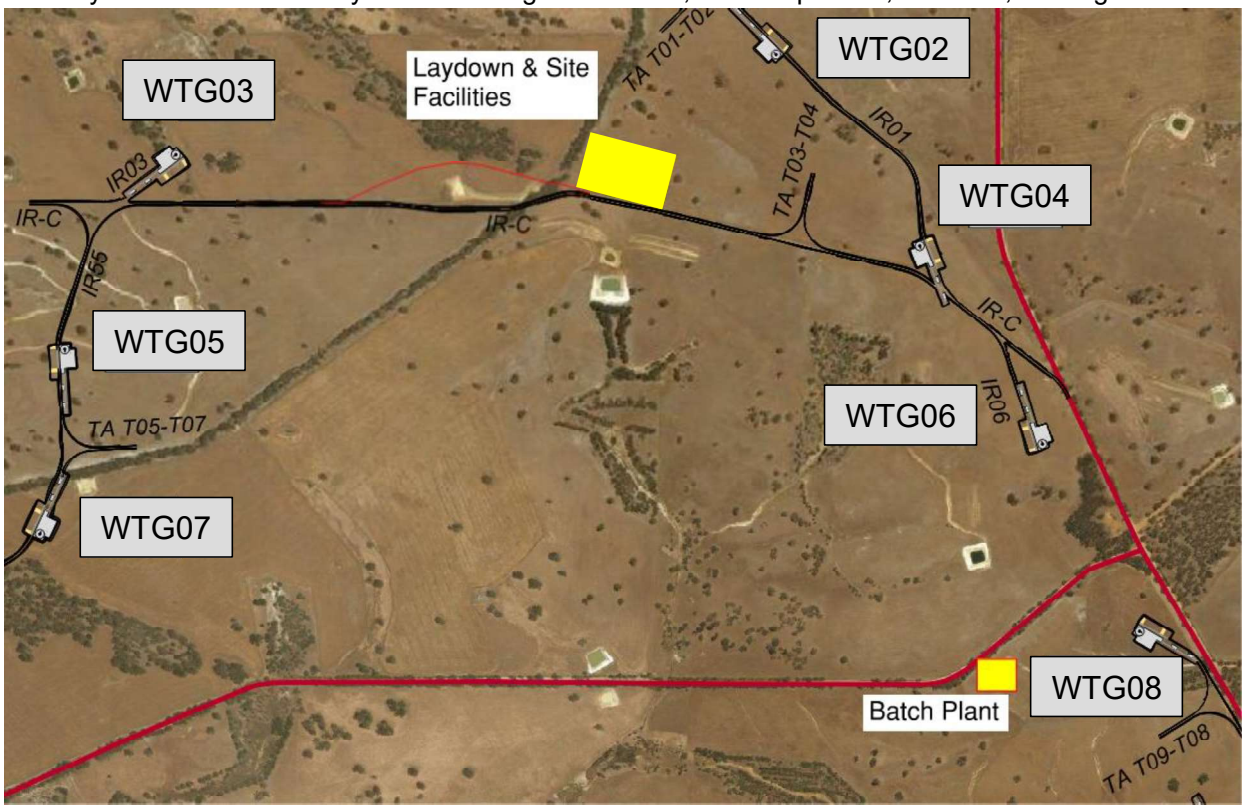


Figure 7 Location of Site Facilities and Batch Plant

Temporary buildings will also be provided at the substation / O&M including a site office with crib and toilets to facilitate the construction period.

3.6 Temporary Car Parking Areas

Temporary car parking areas will be provided for light and heavy vehicles in the following locations:

- Site Facilities
- Concrete Batching Plant
- O&M Building

Temporary parking for concrete trucks will be provided at the Concrete Batching Plant.

Proposed car parking bays are included in Appendix B – Site Facilities Layout and Appendix C – Concrete Batching Plant.

3.7 Site Facilities and Laydown

3.7.1 Concrete Batching Plant

A concrete batching plant will be located near WTG08 and will be accessed via Yarranup Road. The Batch Plant area layout can be found in Appendix C and will include:

- Access via Yarranup Rd, and WTG16 access road.
- Material storage areas,
- 2 x batch plants,
- Turkey nest water storage,
- Offices and crib rooms,
- Light vehicle and trucks parking
- Water tank and fuel tank.

The Concrete Batch Plant will be demobilised and removed upon completion of the Civil package (Estimated mid 2023)

3.7.2 Water Tanks

Water tanks will be located at the Concrete Batching Plant, indicated in Appendix C. The batch plant will use potable water which will be taken from Water Corporation Standpipes once quantities have been confirmed and agreed with Water Corporation. This water will then be stored in 3 tanks / bladders with each tank holding 200 kL of water.

For earthworks purposes, natural water will be used from landowners' dams following their approval.

3.7.3 Material Storage and Laydown Areas

Storage and laydown areas are utilised for receipt, temporary storage and assembly of construction supplies and equipment. Material storage and laydown areas are depicted in Appendix B at the Site Facilities. Additional storage and laydown areas will be provided on site access road IR-C between WTG03 and WTG04 (as per Figure 7) and Temporary laydown and car parking will also be included at the Substation.

The material storage and laydown areas will cater for all main construction contractors.

3.8 Substation/Switchyard

The Stage 1 substation is located to the South of the Project Development Area accessed from Tambellup West Road. Accompanying the Substation will be an Operation and Maintenance Building.

The substation is situated next to the existing 132 kV transmission line and is depicted in Appendix A – Development Layout Plan

3.9 Transmission Lines and Underground Cabling

3.9.1 Overhead Lines

There is an existing 132 kV Western Power Transmission line that is adjacent to the proposed wind farm substation location, seen in Figure 2. Western Power intends to provide a teed connection from this line into the Wind Farm substation.

No additional overhead lines will be constructed within the project development area for Stage 1.

3.9.2 Underground Cabling

Underground cabling traverses between WTGs and the substation. There are three collector systems with associated underground cabling which feed into the substation. Trenching will be required along the lengths of the cable routes indicated in Appendix A – Development Layout Plan.

Typical cable trench details are included in Appendix D.

3.10 Met Masts

There will be three temporary meteorological masts installed as part of the FRWF1 project. The masts will be 125 m tall and will include sensors such as wind speed, wind direction and ambient temperature.

Two temporary met masts will be constructed at the sites of WTG14 and WTG15 and will be removed during construction of the turbine foundations. The third met mast will be constructed between WTG14 and WTG15 and will be removed as part of the construction demobilisation process prior to COD.

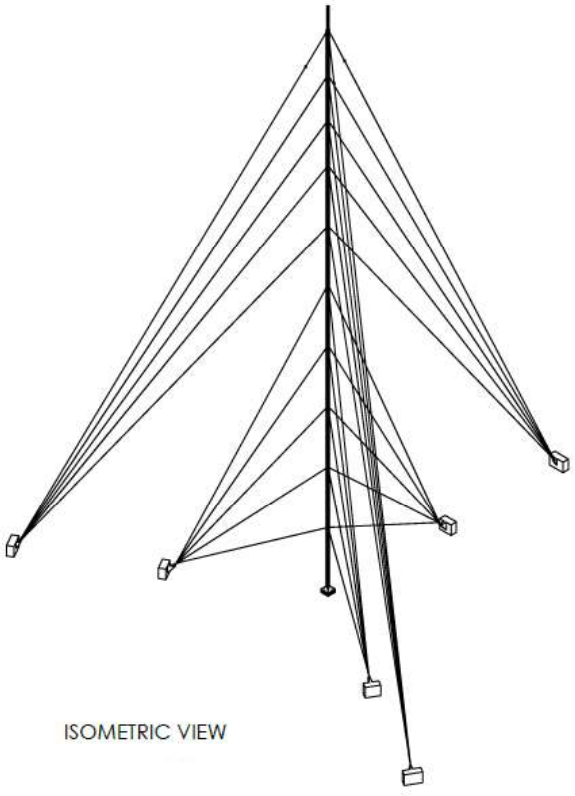


Figure 8 Typical Met Mast isometric view

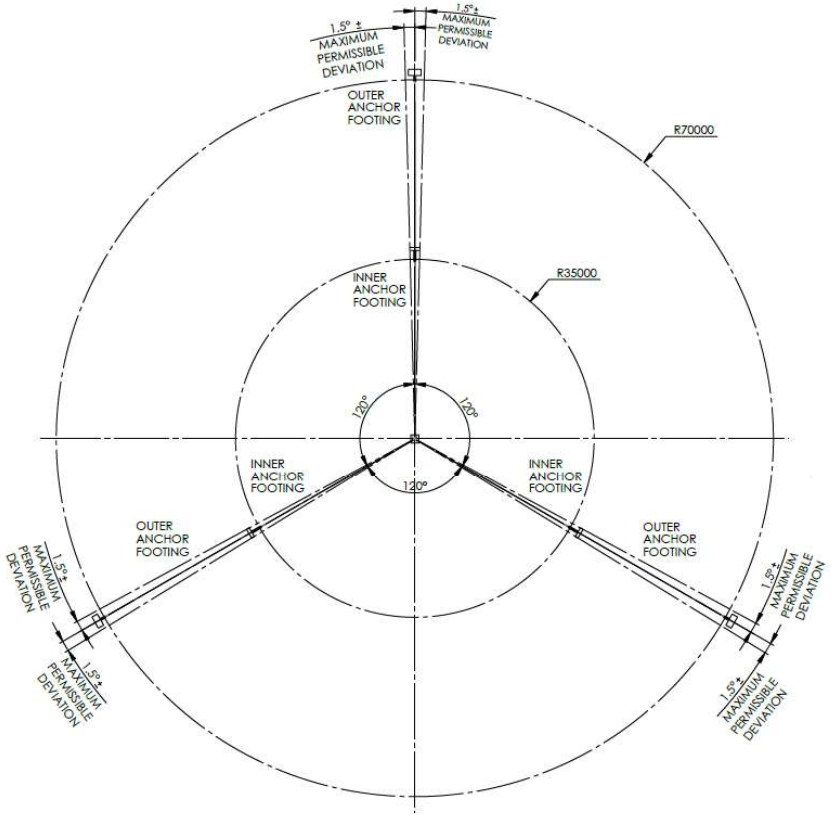


Figure 9 ***Typical Met Mast footing layout***

4. Construction Sequencing

A construction timetable has been included in the following table for FRWF Stage 1

Table 5 Construction Sequencing

Construction Works Breakdown	Anticipated Commencement	Anticipated Completion
Site Establishment and Temporary Facilities	August 2022	September 2022
Internal roads and Hardstands	September 2022	March 2023
Turbine Foundations	December 2022	March 2023
Cable Reticulation	November 2022	June 2023
Substation and Switchyards	December 2022	July 2023
Removal of Batch Plant (after concrete works)		July 2023
Wind Turbine Erection	March 2023	August 2023
Wind Turbine Mechanical Completion	June 2023	October 2023
Removal of Temporary Buildings		February 2024

5. Environmental Impacts and Mitigation

5.1 Dust and Other Construction Impacts

Management of dust and other construction impacts will be managed by each construction contractor internally through their respective Environmental Management Plans and associated environmental processes.

The purpose of each construction contractors Environmental Management Plan is to ensure that all identified, as well as potential environmental impacts that could reasonably be expected to occur during the construction works, fall within acceptable and agreed limits.

Each construction contractor will manage dust through trailer mounted water carts that can be either placed in a stationary position or connected to heavy/light vehicles if required. The trailer mounted water cart will be used as regularly as required to suppress dust and improve air quality. Resources will be made available to ensure this function is carried out appropriately

5.2 Management of Weed Infestations

Management of weed infestations will be managed by each construction contractor internally through their respective Environmental Management Plans and associated environmental processes, with oversight from EGP.

Construction contractors will utilise Weed and Seed checklists, prior to entry and prior to leaving the site. Weed and seed checklists will also be completed prior to any ground engaging equipment (ie, grader, bulldozer, excavator) entering a new landowner boundary for any excavations / trenching works and prior to leaving.

The checklists will be used to track weed and seed compliance and managed internally by individual contractors to the satisfaction of EGP.

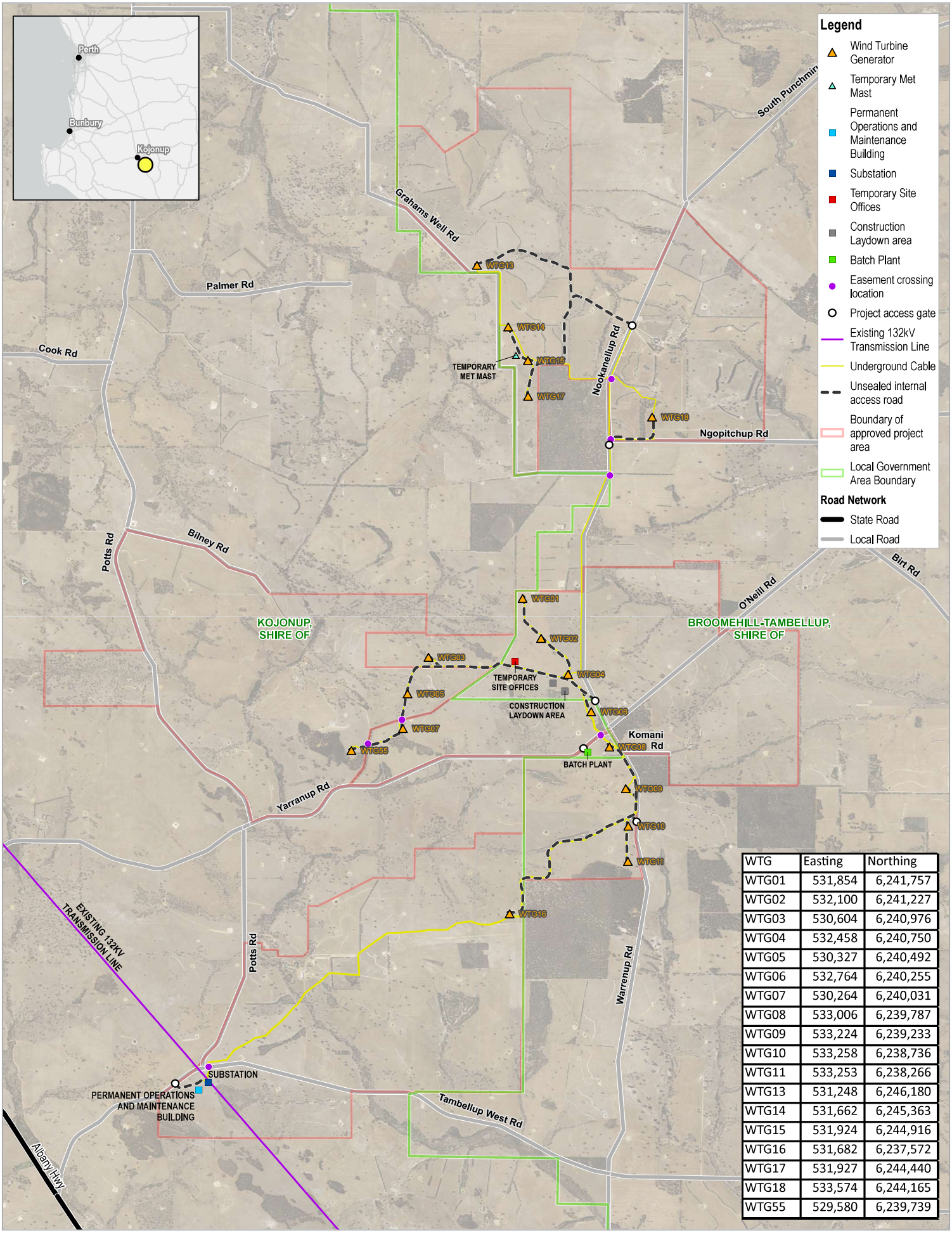
Whilst on the site construction contractors will ensure that no motor vehicles leave site laden with any material unless it is loaded in a manner that will prevent the discharge or dropping of any of the material.

Contractors will ensure that the wheels, tracks and body of all plant and equipment is clean prior to site entry so that they are weed and seed free, this shall be verified utilising weed and seed checklists. If non-compliances are detected, the plant and equipment shall also be washed prior to leaving the site.

Appendices

Appendix A

Development Layout Plan



WTG	Easting	Northing
WTG01	531,854	6,241,757
WTG02	532,100	6,241,227
WTG03	530,604	6,240,976
WTG04	532,458	6,240,750
WTG05	530,327	6,240,492
WTG06	532,764	6,240,255
WTG07	530,264	6,240,031
WTG08	533,006	6,239,787
WTG09	533,224	6,239,233
WTG10	533,258	6,238,736
WTG11	533,253	6,238,266
WTG13	531,248	6,246,180
WTG14	531,662	6,245,363
WTG15	531,924	6,244,916
WTG16	531,682	6,237,572
WTG17	531,927	6,244,440
WTG18	533,574	6,244,165
WTG55	529,580	6,239,739

REVISIONS	REV	BY	DATE	DESCRIPTION	CKD	APP
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	1	AK	07.07.2022	REISSUED FOR USE	MM	RS
	2	AK	14.07.2022	REISSUED FOR USE	MM	RS

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Kilometres
N
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

GHD

ENEL
Flat Rocks Wind Farm Stage One

12574907-00000-MD-LAD-001
Project Layout

Project No. 12574907
Revision No. 2
Date 14/07/2022

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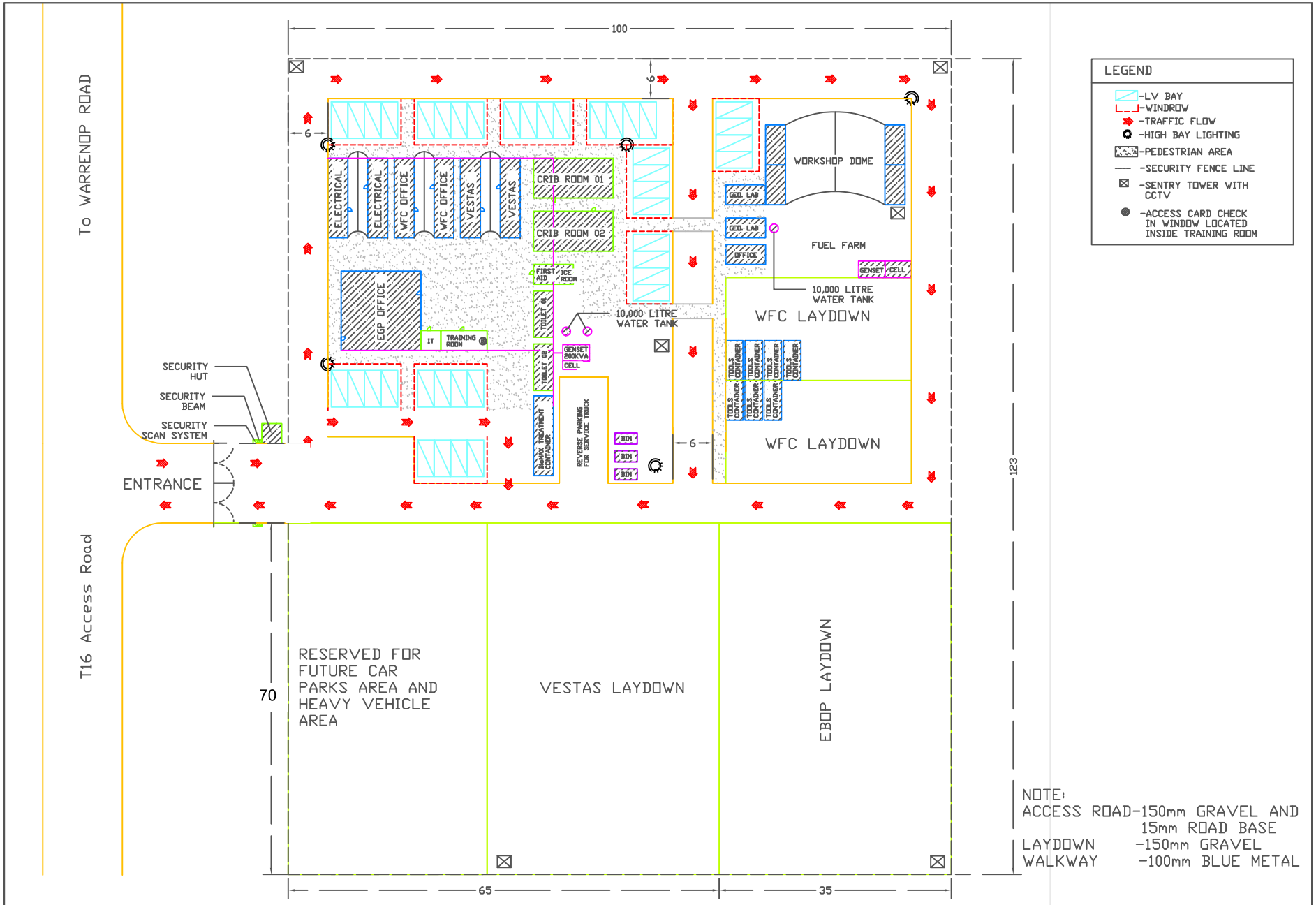
Print date: 14 Jul 2022 - 14:43

Data source: Light Gray Base: Esri, HERE, Garmin, FAO, NOAA, USGS. Created by: akang

Appendix B

Site Facilities Layout



Rev.	DESCRIPTION	PREP.	DATE
A	ISSUED FOR TENDER INFORMATION.	MW	16/02/2022

WESTFORCE CONSTRUCTION

enel

WESTFORCE CONSTRUCTION & ENEL ENERGY

PROJECT: FLAT ROCK WIND FARM

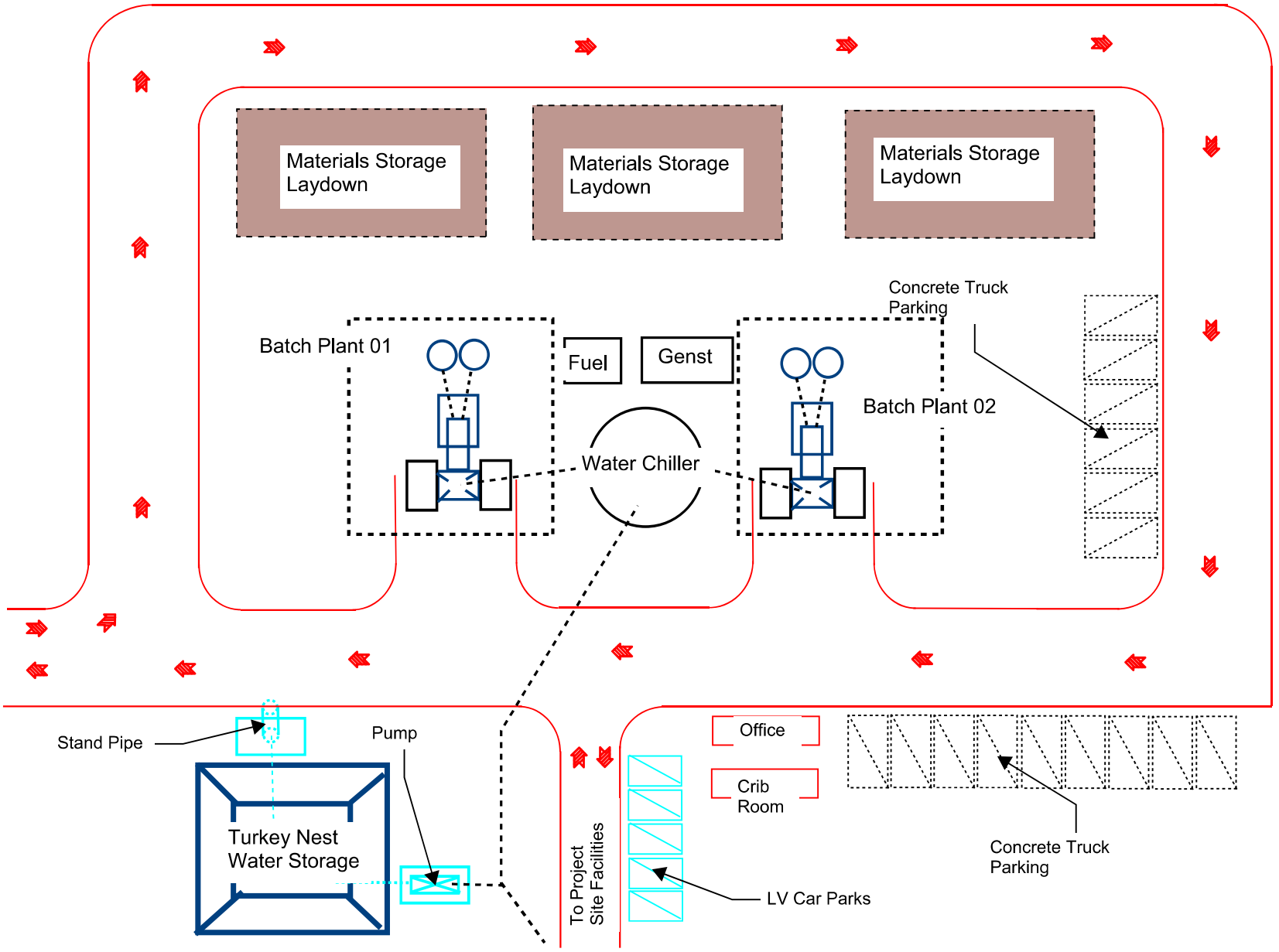
DRAWING No. WF2448A-GA-0001

DWG TITLE:
GENERAL ARRANGEMENT
SITE LAYOUT AND FACILITIES ARRANGEMENT

Rev. A

Appendix C

Concrete Batching Plant Layout



Rev.	DESCRIPTION	PREP.	DATE
A	ISSUED FOR TENDER INFORMATION.	MW	16/02/2022

WESTFORCE CONSTRUCTION

enel

WESTFORCE CONSTRUCTION & ENEL ENERGY

PROJECT: FLAT ROCK WIND FARM

DRAWING No. WF2448A-GA-0004

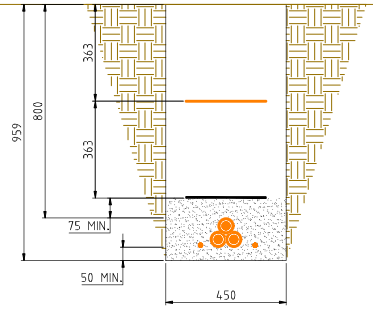
DWG TITLE:
GENERAL ARRANGEMENT
Batch Plant Arrangement

Rev. A

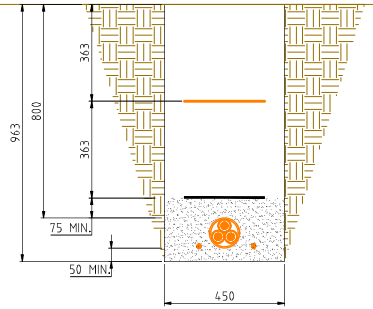
Appendix D

Typical Trench Detail

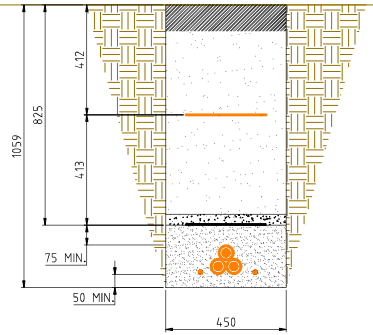
TRENCH DETAIL 3x1C CABLE



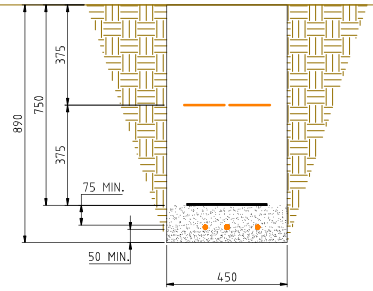
TRENCH DETAIL 1x3C CABLE



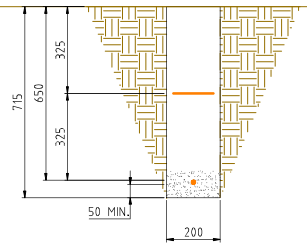
ROAD CROSSING DETAIL 3x1C CABLE



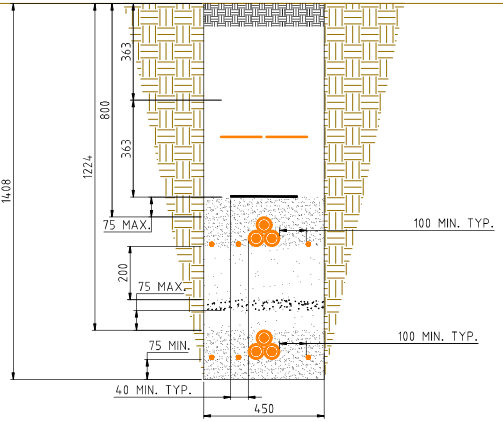
TRENCH DETAIL MET MAST



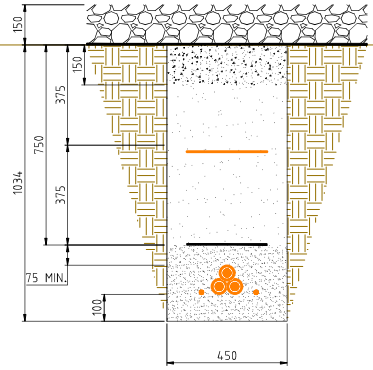
TRENCH DETAIL EARTH CABLE



TRENCH DETAIL 3x1C CABLE CROSS OVER



CREEK CROSSING DETAIL



REFERENCE DRAWINGS

DRAWING NUMBER	DRAWING TITLE
1949-125-0001	33kV RETICULATION CABLE ALIGNMENT

REVISIONS & APPROVALS

REV	DATE	DESCRIPTION	DRN.	CHK'D.	C.E.	CLIENT
A	08.06.22	PRELIMINARY	MC	JM		

SCALE 1:10

APPROVALS

		DATE
DRAWN	MC	08.06.22
CHECKED	JM	08.06.22
DESIGNED		
RJE C.E.		
CLIENT C.E.		
CLIENT P.E.		
CLIENT M.E.		
	APPROVED	DATE

PRELIMINARY

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SIZE A1

FLAT ROCK WIND FARM
33kV RETICULATION
TRENCH CROSS SECTIONS
LAYOUT

PROJECT No. 1949

DRAWING No. 1949-125-1101

REV. A

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