

# Parkes PV power plant

# Traffic Management

# Plan

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Shaping a **Better Life**

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# 1 INTRODUCTION

## 1.1 Purpose

Bouygues Constructions Australia Pty Ltd (BYCA) has established this Traffic Management Plan (TMP) as a part of its Integrated Management System.

The Traffic Management Plan (TMP) addresses the overarching vehicle movement planning requirements in accordance with the contract, relevant standards and Management Procedures. This plan will ensure vehicular and pedestrian traffic is not exposed to any additional hazards as a result of construction works and associated construction traffic. It will also ensure that construction workers are not exposed to hazards associated with construction traffic and public vehicular traffic.

The objectives of the Traffic Management Plan are:

- Ensuring construction activities do not interfere with other operations on the site
- Ensuring construction traffic complies with contract requirements
- Ensure that traffic management complies with local and state road authority requirements
- Ensuring construction traffic management considers local road peak-hour volume and road works
- Ensuring the safety of construction works and all other road users

## 1.2 Document Responsibilities

This Traffic Management Plan (TMP) must be in place and operational prior to commencement of construction work.

The project dedicated Construction Manager in conjunction with the Project Director, will ensure that the plan is monitored, reviewed, maintained and updated as necessary and kept up to date during the course of the project.

One hardcopy of the TMP and associated plans will be maintained by the Construction Manager (document controlled revision) for the duration of the contract.

## 1.3 Document Amendment and Distribution

This document shall be reviewed as follows:

- As requested by Management Review
- When there is a change of method and/or technology that may affect the accuracy of this document; or
- When there has been a significant event to which this document was relevant; or
- As a result of a Non Conformance resulting from an audit

Document amendments and distribution will be conducted as per detailed in the *PL-CO-01 Project Management Plan* and the *PL-QA-02 Records Management Plan*.

New and amended documentation issued after the initial approval and distribution of this plan to controlled copy holders shall be identified in the [FS-QA-RG-06 Document Control Register](#). Revision details shall be recorded in the Section 1.3.1 *Revision Status* of this plan.

All changes to documents shall be reviewed and approved by the same function that performed the original review and approval and as per the cover of this plan, unless specifically designated otherwise.

### 1.3.1 Revision Status

Revision	Revision Date	Issued Date	Nature of modification
0	08/04/2016	08/04/2016	Issued to client and council
1	10/02/2017	21/03/2017	Review prior major works start
2			
3			
4			
5			
6			
7			

### 1.4 Discipline Specific Plans

The TMP is to be read in conjunction with the below mentioned Management Plans.

- |   |   |
|---|---|
| PL-CO-01 Project Management Plan                    | PL-HR-03 Industrial Relations Management Plan |
| PL-CO-02 Project Execution Plan                     | PL-HS-01 Safety Management Plan               |
| PL-CO-03 Pre-Launch Management Plan                 | PL-HS-03 Office Emergency Management Plan     |
| PL-CO-04 Risk Management Plan                       | PL-EV-01 Environmental Management Plan        |
| PL-CO-05 Emergency Management Plan                  | PL-EV-02 Flora and Fauna Management Plan      |
| PL-CO-06 Training Management Plan                   | PL-EV-03 Weed Management Plan                 |
| PL-CO-07 BYCA Objectives and Targets                | PL-EV-04 Soil and Water Management Plan       |
| PL-CO-08 Contract Management Plan                   | PL-EV-05 Air Quality Plan                     |
| PL-CO-09 Cost Control Management Plan               | PL-EV-06 Noise and Vibration Management Plan  |
| PL-CO-10 Stakeholder Management Plan                | PL-EV-07 Cultural Heritage Plan               |
| PL-CO-11 Construction Methodology Plan              | PL-EV-08 Waste and Energy Management Plan     |
| PL-CO-12 Site Management Plan                       | PL-EV-09 Fire Management Plan                 |
| PL-CO-13 Site Establishment Management Plan         | PL-EV-10 Visual Amenity Management Plan       |
| PL-CO-15 Commissioning and Handover Management Plan | PL-QA-01 Quality Management Plan              |
| PL-HR-01 Resources Management Plan                  | PL-QA-02 Records Management Plan              |
| PL-HR-02 Aboriginal Participation Plan              | PL-DE-01 Design Management Plan               |
|   | PL-PC-01 Procurement Management Plan          |

## 2 PROJECT DESCRIPTION

### 2.1 Project Overview

Parkes PV Solar plant will be located approximately 10km NW of Parkes NSW, within the Parkes Shire Council Local Government Area. The site is accessed from the north via Condobolin Road and Pat Meredith Drive. The PV plant will be connected to the existing Transgrid substation, located on Pat Meredith Drive to the North of the site.



Figure 1 : Pat Meredith Drive (access road for the project)



Figure 2 : Site location in red from Parkes

The construction will last approximately 8 months and the plant will be operated for a duration of 20 years. This document covers the construction stage.

### 3 DEFINITIONS

BYCA	<b>Bouygues Construction Australia Pty Ltd.</b>
<b>Site Compound</b>	The area within the Site where the Site Offices are located
<b>Public Traffic</b>	Pedestrians, cyclists and vehicular traffic within public roads, footpaths, tracks and other access ways accessible to the public.
<b>Construction Traffic</b>	Movement of vehicular, plant and workers within the site construction area.  Movement of construction plant, vehicles, delivery trucks and pedestrians at roads located adjacent to or within the vicinity of the construction site's main entry / exit points.
<b>Works</b>	The total Scope of Works as defined in the Contract.

### 3.1 Responsibilities and Authorities

The Project Team responsibilities and authorities, please refer to [FS-CO-RR-03 BYCA Project Responsibilities & Authorities](#).

## 4 SPECIFIC PROJECT ISSUES AND RISKS

### 4.1 Issues

In relation to traffic management, the following project specific issues must be considered:

Table 1—Issues

Issue	Impact	Management Strategy
Large amount of trucks coming to site	Disturbance of local community	Find the transport route causing the least disturbance and have the suppliers following it by placing signs along the road.  Have traffic diversion at crossing where disturbance is anticipated.
Heavy traffic on remote unsealed road	Possible damage of local roads	Ensure that maximum axel loads are respected
Heavy traffic within work area	Accident risk	Proper traffic signage within work area

### 4.2 Risks

Risks associated with the construction methodology for the project must be documented in the *Project Risk Register*, *Project HS Risk Assessment* and the *Project Environmental Risk Assessment* in accordance with the [PL-CO-04 Risk Management Plan](#) and the [PR-CO-03 Risk Management Procedure](#).

## 5 TRAFFIC MANAGEMENT AND CONTROL

BYCA is responsible for the management of all traffic in connection with its activities and the construction works conducted on the site. BYCA will provide all traffic management, safety warnings and signage including such persons as necessary to direct traffic, as required by AS 1742:2009 – Manual of uniform traffic control devices.

BYCA will:

- Ensure traffic management controls are established, maintained and monitored to underpin the safety of workers, other personnel and the general public
- Establish traffic management controls in consultation with relevant stakeholders
- Ensure traffic management controls comply with regulatory and legislative requirements
- Ensure traffic management controls comply with the contract
- Ensure traffic management controls maintain the flow of traffic within the site and on surrounding public roads



- Reinststate any areas affected by the temporary construction access requirements to their original condition

The primary drivers for determining the traffic management controls during the construction period are:

- Safety of personnel, the general public and construction workers
- Minimising impact (if any) on operations
- Contractual requirements (including site access)
- Road traffic authority and local government requirements
- OHS requirements in relation to the movement of all vehicular traffic and pedestrians either within or adjacent to sites
- Environmental management requirements
- The impact construction traffic has on the local community in the surrounding area, and
- The need to meet construction requirements (including any schedule and cost constraints)

BYCA has developed a Traffic Control Layout (Appendix 21 - Traffic Control Layout) and will finalise this Layout in consultation with stakeholders during Site establishment. The Traffic Control Layout will include specific traffic management controls to mitigate risks; and will be finalised to meet Road Traffic Authority requirements.

A Traffic Control Plan in accordance with the local and/or state traffic authority will be developed and submitted by suitably qualified personnel for approval (if required).

Traffic Control Plans will be implemented, audited and inspected in accordance with section: Inspection and Auditing of Traffic Control Plans (TCPs).

When approved, traffic management controls will be communicated to appropriate stakeholders.

### **5.1 Route to and from site**

Most traffic will arrive to site from Parkes, towards the West on Henry Parkes Way. Delivery trucks will come from Sydney, passing through Parkes center. See transport route below

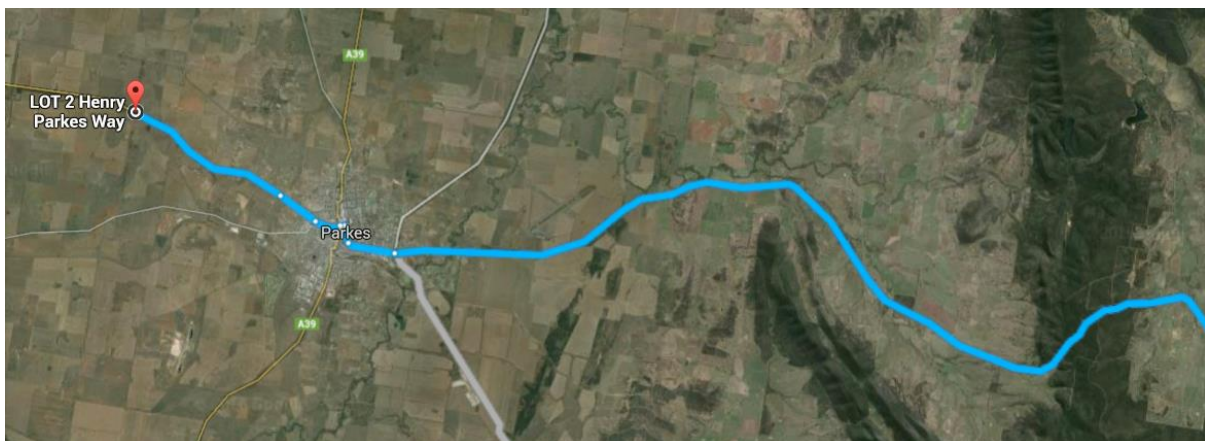


Figure 3 : Route from Sydney to Parkes PV Plant

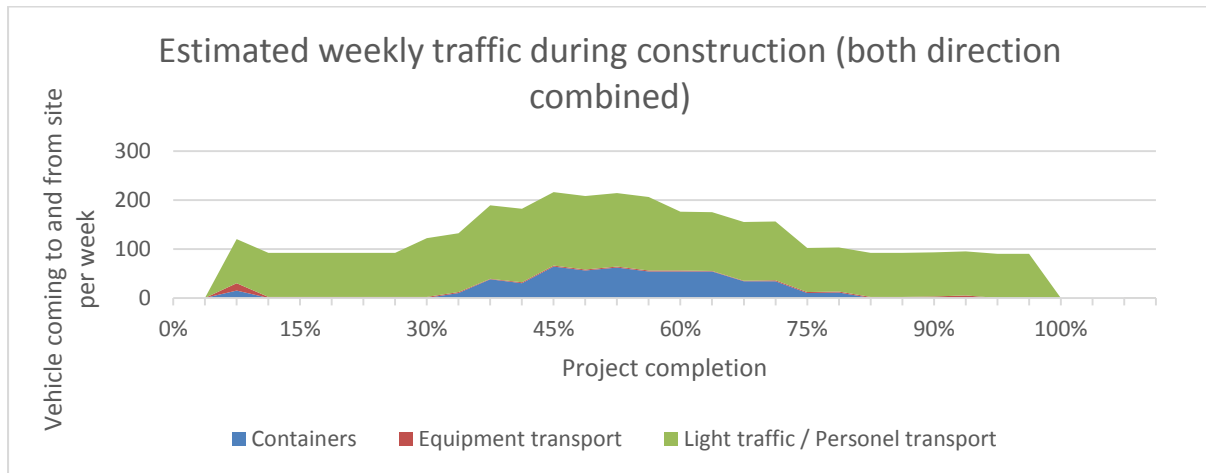
### **5.2 Traffic generated by the construction**

During the construction of the solar power plant, it is estimated that around 600 40ft containers will be transported in and out from site. Added to those are waste traffic, equipment, temporary installations and workforce transport to site. All goods will be transported by one, maximum two



companies from the closest port. BYCA will then have a clearer view of the traffic created and will be able to enforce more effectively the Traffic Control Plan.

The graph below is an estimation of the traffic created by the worksite. By using this graph as a base for discussion, the local authorities and communities will have an objective picture of the impact construction traffic will have. Following those consultations, a series of actions will be decided and implemented.

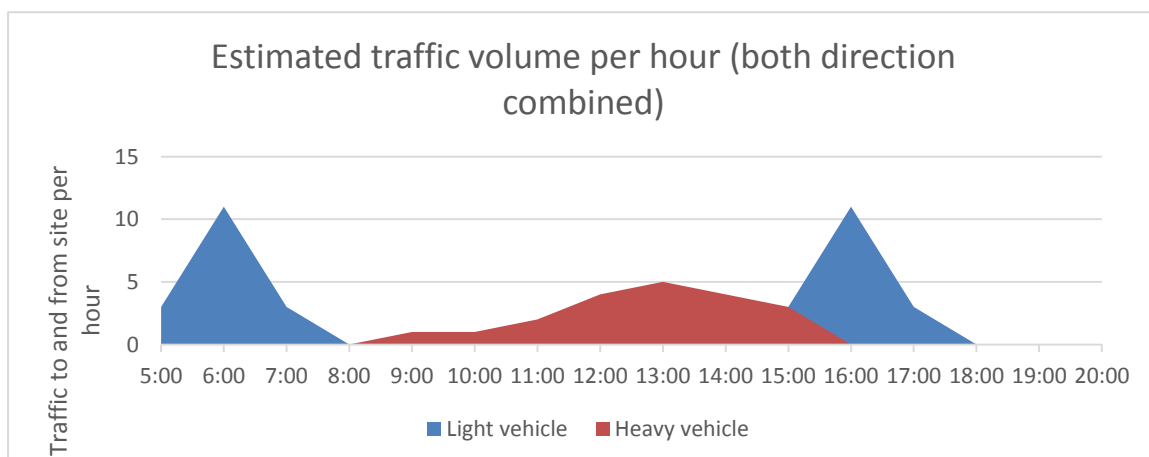


Note that each vehicle coming to site generates traffic in each direction.

At maximum, the traffic generated by the project will be 60 semi-trailers per week. In case double trailers can be used, the number of container trucks will be halved.

All heavy transport will be done during the weekdays and daytime. The Light traffic will be concentrated at the beginning and end of the day 6-7am and 4-5pm. The container transport will be concentrated between 11am and 3pm as most of the containers will be transported from the Sydney port.

The maximum traffic generated will approximately follow this daily curve



### 5.3 Impact on existing traffic

The traffic has been measured in August 2014 at the western exit of Parkes, on Henry Parkes Way, where most of the traffic generated by the project will pass through.



Figure 4 : Location of traffic measurement

The total traffic peak is the following:

	Weekday – All vehicles	Weekday – Heavy vehicle
Am Peak	09:00	11:00
Max traffic (both direction)	108	22
Pm peak	16:00	14:00
Max traffic (both direction)	110	24

We see that the traffic generated by the site could increase the traffic during the afternoon peak by 10%, from 110 vehicles per hour to 125 vehicles (both direction). It is not anticipated that it would cause any traffic jam.

The heavy traffic caused by the site would happen throughout the day, and would in most part match the curve of the existing heavy traffic. The heavy traffic would then peak at 30 trucks/hour instead of 24. It is not anticipated to have any traffic impact at this stage.

As part of our ongoing agenda we will organise initial community meeting which we plan to do in March in order to present the traffic flow for the site.

We have looked the route of the railway line and the school bus route, and also the school time table and we cannot foresee any reason why it could be impacted by our construction traffic.

#### 5.4 **Modification and signage of existing road**

The only intersection where action is judged necessary is the intersection turning south from Henry Parkes Way to the site:



Figure 5 : Intersection identified as critical

Please refer to the Appendix 1 to see the actions to secure this intersection.

## 5.5 Public roads

To minimize the impact on the roads used by our vehicles, we propose to follow a series of measures that include the following:

- Any significant deposit of dirt and other materials caused by construction traffic and other operations (in relation to the works) will be promptly removed from existing public roadways
- Suitable precautions are taken to ensure no rock is dislodged onto any roadway from construction vehicles
- Construction plant and equipment do not park on or within the pavement or shoulders of any existing trafficked roadway
- Construction vehicles (when loaded) comply with the mass, loading and access requirements of the road traffic authority
- Construction traffic will cause the least possible obstruction to public and other traffic
- Directional signage will be installed (in consultation Road Traffic Authority) to direct construction traffic, and warn other motorists of construction traffic. This signage is positioned in accordance with the approved Traffic Control Plans.
- A Vehicle Movement Strategy shall be developed to reduce the impact on local roads arising from additional construction traffic (e.g. steel and concrete delivery vehicles). The Vehicle Movement Strategy will implement measures to minimise the impact through restricting the direction of flow and/or time of day movements.
- BYCA will comply with any client or Road Traffic Authority signage requirements for traffic control. Where construction work is to be undertaken either on or adjacent to a public roadway that is open to traffic, the work must be undertaken in accordance with all regulatory and legislative requirements that govern the movement of vehicles and pedestrians on any public roadway.
- BYCA will put in place a protocol for the repair of any roads identified in the dilapidation surveys to have been damaged.
  - With regards to any emergency repairs required, we would contact the relevant Authority and will ensure the road is safe.
    - For Henry Parkes Way: RMS and Parkes Shire Council.
    - For Pat Meredith Drive: Parkes Shire Council.
  - The repair plan will be agreed upon and implemented swiftly.

## 5.6 *Within the Worksite*

All employees, subcontractors, suppliers and any other persons connected with the project must adhere to all such Statutory Requirements and comply with all lawful directions. Any breach of such requirements may result in disciplinary action of the persons concerned.

The maximum speed limits within the Worksite are:

- 40 kph on formed roads
- 20 kph during foggy/dusty conditions with headlights on
- 10 kph when passing pedestrians

BYCA shall obtain any necessary approvals for the transport of any earthworks and road building materials; this includes regular consultation with stakeholders to coordinate deliveries in advance.

BYCA must manage access to and from the site by all employees, subcontractors, suppliers and any other persons connected with its activities and the works; and all occupants within the worksite and through each area of the site. BYCA shall provide for safe and continuous operation of normal pedestrian and vehicular traffic along all roads, pedestrian paths and vehicular access to the worksite and must provide and maintain all necessary watchmen, lights, barriers, notices and signs.

BYCA will not unnecessarily obstruct any side road, branch track, drain or watercourse and will not break down or remove any fences or gates without prior notification to the client. If unavoidable, BYCA will remove such obstruction or repair such breakage as soon as possible, or as directed by the Client.

BYCA will construct the internal roads following the design developed in the interest of an all-weather roadway.

A Vehicle and Traffic Management Procedures briefing will be included in the FS-CO-CT-07 Project Site Induction. This will be developed in consultation with the stakeholders.

## 5.7 *Pedestrian Traffic*

BYCA may encounter pedestrian traffic at and near to the site. BYCA will ensure that sites are appropriately isolated and secured from unauthorised entry; and that the Site is appropriately sign-posted and controlled.

## 5.8 *Site Construction Traffic*

Traffic within the Site will be managed in accordance with PL-CO-12 Site Management Plan. The Sites Layout Plans will indicate site access and egress points and detail any required separation of construction plant and personnel. These plans will be communicated during Tool Box Meetings and/or Daily Pre-start Meetings.

The Site Layout Plan will incorporate details of parking arrangements for the site construction workers, speed limits within the construction works or through access roads established for vehicular and plant construction traffic.

The Sites' Layout Plan will detail traffic management controls that are appropriate within each site.

If required BYCA will establish a Site Office and Designated Parking Area in accordance with the PL-CO-12 Site Management Plan.

Traffic controls shall be regularly reviewed for effectiveness and will be amended to maintain or improve safe work environment. Traffic management controls established for sites will be inspected

at **weekly intervals** to verify that a safe work environment is being maintained. Records of inspections shall be maintained.

## 5.9 Access Roads and Site Movement

Unless sign-posted otherwise, load limits on public roads adjoining the sites apply within them.

If required BYCA shall request approval from the client in writing **at least seven (7) days** prior to any over-dimensional load, or load in excess of load limits entering the site, or using the roads within the site.

All workers must travel to and from the site via the nominated access roads.

## 5.10 Parking

BYCA will provide sufficient parking on site for all vehicles, and no parking will occur on the public road network in the vicinity of the site.

Workers and supervision will be transported mainly by minibuses from accommodation to the jobsite, thus minimizing the impact of traffic and parking onto the residential areas.

# 6 MONITORING, MEASUREMENT AND REVIEW

The purpose of Monitoring and Measurement is to ensure that all construction works, including subcontracted activities, are being performed in accordance with the contract requirements, statutory requirement and in a controlled and safe environment. Ongoing monitoring and audit of Traffic Management procedures and the worksite implementation of traffic control shall be conducted.

Audits of the Traffic Control measures under differing operating conditions are to be carried out including during overcast and rainy weather, at night or at any other restrictive times where conditions may change in accordance with the requirements of AS1742.3.

Results of audits, inspections and improvements are to be reported in the reporting cycle of the contract to enable assessment of the adequacy of the implementation of the Traffic Control within contract performance and system review meetings.

A dilapidation survey will be undertaken on the access road of the site prior and after construction.

## 6.1 Inspection and Auditing of Traffic Control Plans (TCPs)

Regular Site Inspections by designated supervisory and field staff of worksite protection are to be arranged on a **daily or increased frequency** depending on the complexity of traffic control on the site.

Site Inspections will be carried and the following Traffic Management Forms completed:

- FS-HS-AT-11 Traffic Control Daily Checklist
- FS-HS-AT-12 Traffic Control Weekly Checklist

A daily record of the inspections should be kept. This should include:

When traffic controls were erected

- When changes to controls occurred and why the changes were undertaken
- Any significant incidents or observations associated with the traffic controls and their impacts on road users or adjacent properties

- Where significant changes to the work or traffic environment or adverse impacts are observed, the controls should be reviewed as a matter of urgency.

The monitoring program should generally incorporate inspections:

- Before the start of work activities on site
- During the hours of work
- Closing down at the end of the shift period

The inspection program shall be adjusted to suit changing circumstances and/or risk environment such as during times of increased traffic flows or speeds, contra-flow arrangements or when changed controls are introduced.

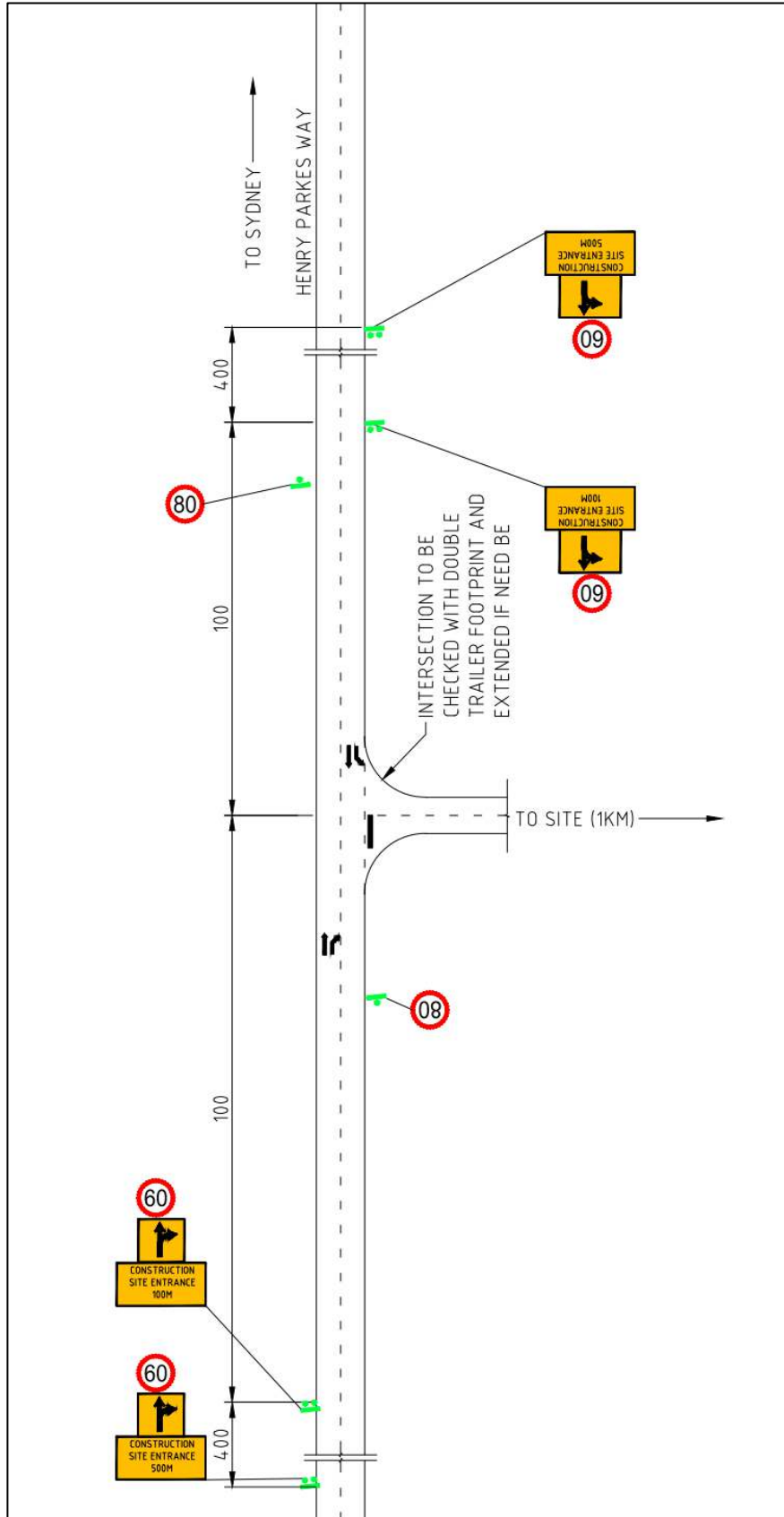
The FS-QA-AT-08 Traffic Control Audit Tool shall be used to perform Audits of the implemented Traffic Management features following setup in accordance with the TCP and prior to the TCP being put into service.

BYCA will put in place a protocol for undertaking dilapidation surveys to assess the:

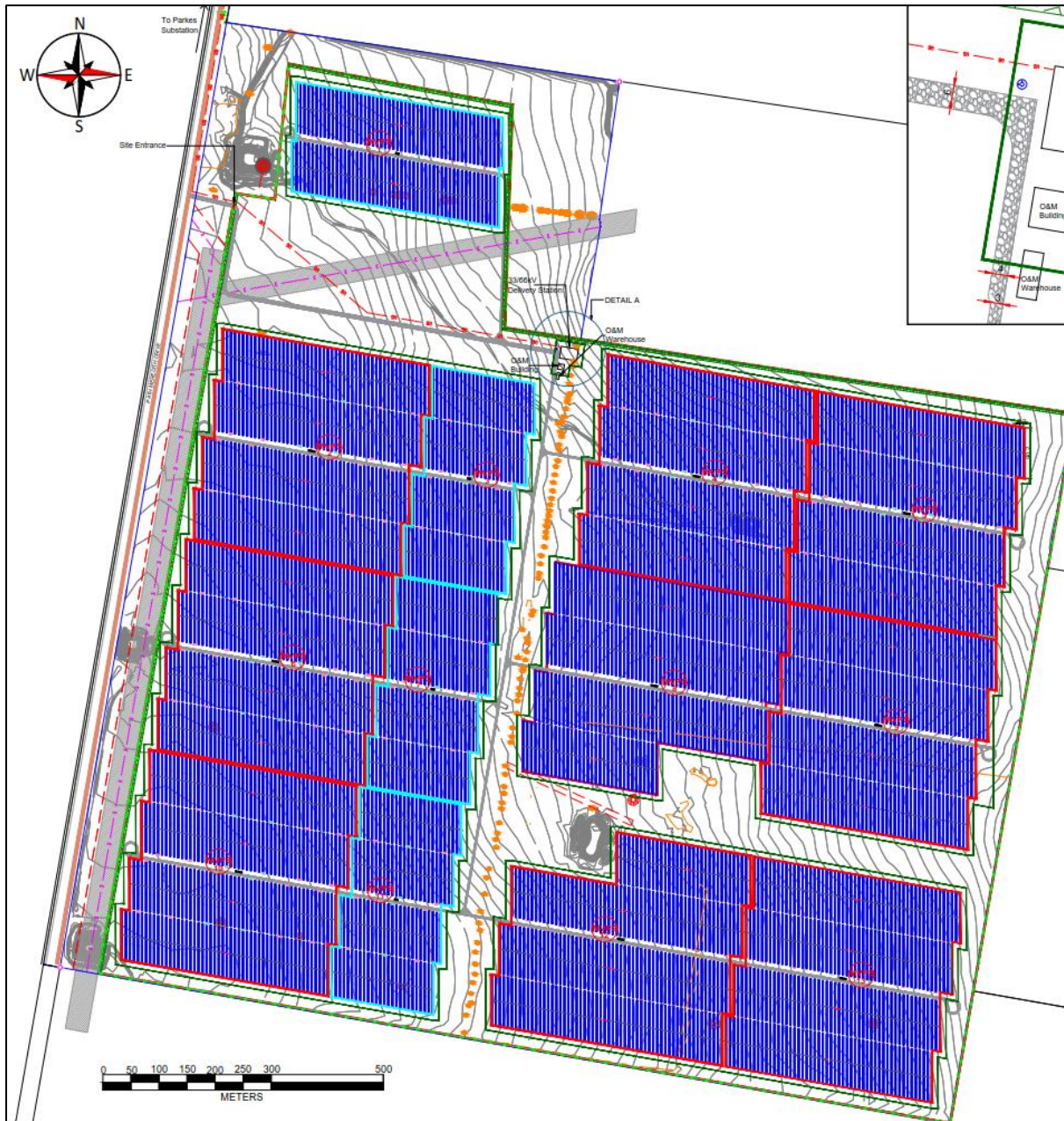
- existing condition of the transport route/s prior to construction, upgrading or decommissioning activities; and
- condition of the transport route/s following construction, upgrading or decommissioning activities.



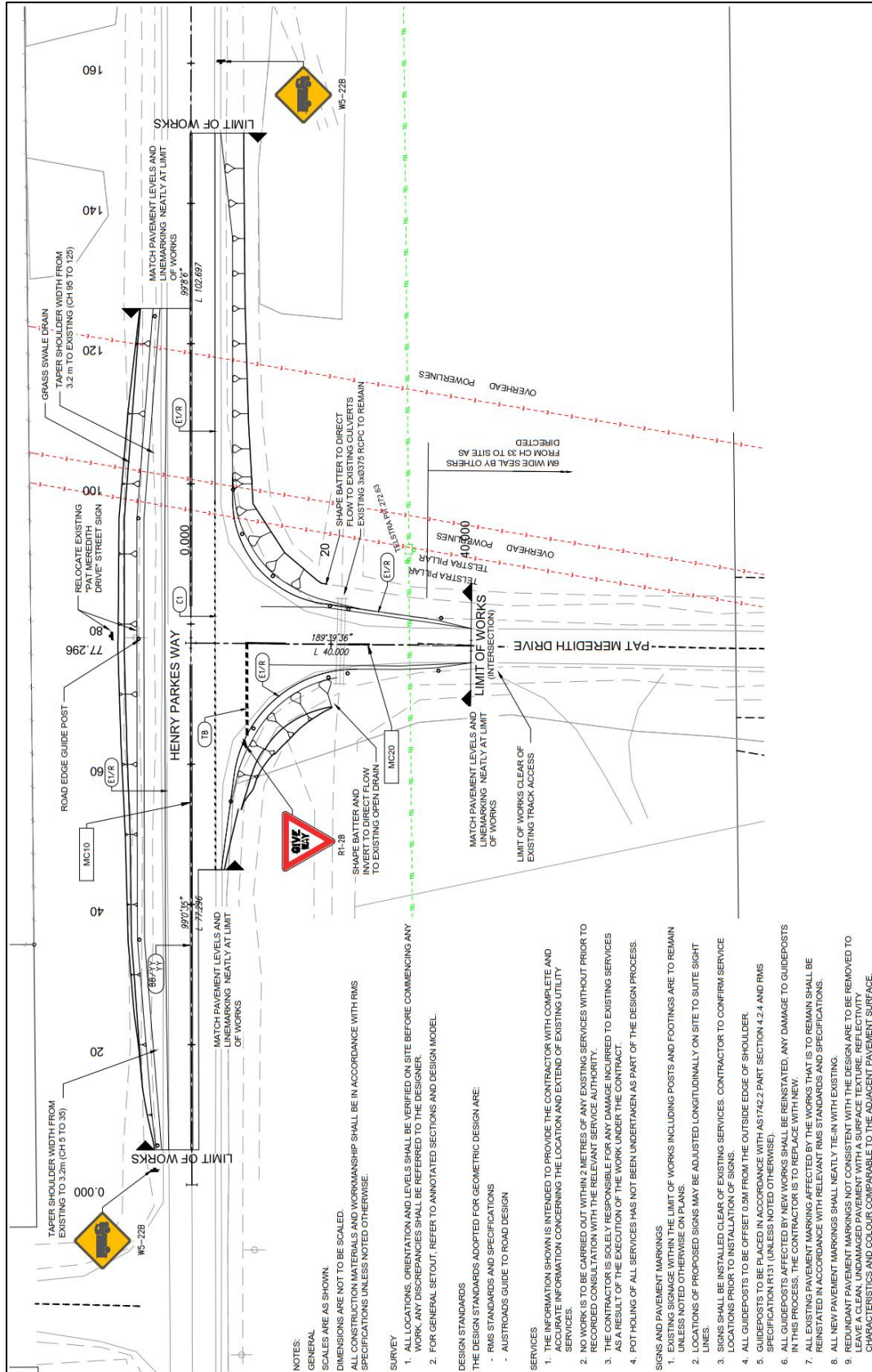
**Appendix 1 Traffic Control Layout**



**Appendix 2**      **General Layout of Parkes Solar Farm**



**Appendix 3 General Layout of Intersection between Henry Parkes Way and Pat Meredith Drive**



- NOTES:**
- GENERAL**
- SCALES ARE AS SHOWN.
- DIMENSIONS ARE NOT TO BE SCALED.
- ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH RMS SPECIFICATIONS UNLESS NOTED OTHERWISE.
- SURVEY**
1. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES SHALL BE REFERRED TO THE DESIGNER.
  2. FOR GENERAL SETOUT, REFER TO ANNOTATED SECTIONS AND DESIGN MODEL.
- DESIGN STANDARDS**
- THE DESIGN STANDARDS ADOPTED FOR GEOMETRIC DESIGN ARE:
- RMS STANDARDS AND SPECIFICATIONS
  - AUSTRROADS GUIDE TO ROAD DESIGN
- SERVICES**
1. THE INFORMATION SHOWN IS INTENDED TO PROVIDE THE CONTRACTOR WITH COMPLETE AND ACCURATE INFORMATION CONCERNING THE LOCATION AND EXTENT OF EXISTING UTILITY SERVICES.
  2. NO WORK IS TO BE CARRIED OUT WITHIN 2 METRES OF ANY EXISTING SERVICES WITHOUT PRIOR TO RECORDED CONSULTATION WITH THE RELEVANT SERVICE AUTHORITY.
  3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGE INCURRED TO EXISTING SERVICES AS A RESULT OF THE EXECUTION OF THE WORK UNDER THE CONTRACT.
  4. POT HOLLING OF ALL SERVICES HAS NOT BEEN UNDERTAKEN AS PART OF THE DESIGN PROCESS.
- SIGNS AND PAVEMENT MARKINGS**
1. EXISTING SIGNAGE WITHIN THE LIMIT OF WORKS INCLUDING POSTS AND FOOTINGS ARE TO REMAIN UNLESS NOTED OTHERWISE ON PLANS.
  2. LOCATIONS OF PROPOSED SIGNS MAY BE ADJUSTED LONGITUDINALLY ON SITE TO SUITE SIGHT LINES.
  3. SIGNS SHALL BE INSTALLED CLEAR OF EXISTING SERVICES. CONTRACTOR TO CONFIRM SERVICE LOCATIONS PRIOR TO INSTALLATION OF SIGNS.
  4. ALL GUIDEPOSTS TO BE OFFSET 0.5M FROM THE OUTSIDE EDGE OF SHOULDER.
  5. GUIDEPOSTS TO BE PLACED IN ACCORDANCE WITH AS1742.2 PART SECTION 4.2.4 AND RMS SPECIFICATION RT131 (UNLESS NOTED OTHERWISE).
  6. ALL GUIDEPOSTS AFFECTED BY NEW WORKS SHALL BE REINSTATED. ANY DAMAGE TO GUIDEPOSTS IN THIS PROCESS, THE CONTRACTOR IS TO REPLACE WITH NEW.
  7. EXISTING PAVEMENT MARKING AFFECTED BY THE WORKS IS TO REMAIN SHALL BE REPAIRED TO CONFORM WITH RELEVANT RMS STANDARDS AND SPECIFICATIONS.
  8. ALL NEW PAVEMENT MARKINGS SHALL BE NEATLY TIED IN WITH EXISTING.
  9. REDUNDANT PAVEMENT MARKINGS NOT CONSISTENT WITH THE DESIGN ARE TO BE REMOVED TO MAINTAIN A CONSISTENT AND UNIFORM APPEARANCE TO THE ADJACENT PAVEMENT SURFACE. CHARACTERISTICS AND COLOUR COMPARABLE TO THE ADJACENT PAVEMENT SURFACE.