



# MURRA WARRA SOLAR AND STORAGE PROJECT

Planning Permit Application

VOLUME 3  
FIGURES



## VOLUME III FIGURES CONTENTS

Figure Number	Title	Figure Number	Title
Figure 1	<b>Location Plan – 03679D2202-02</b> Page 1 - Regional Location Victoria Page 2 - District Location Plan	Figure 14	<b>Typical 33 kV Overhead Line Poles – 03679D4103-01</b>
Figure 2	<b>Solar Irradiation Map – 03679D2206-01</b>	Figure 15	<b>Typical Construction Compound – 03679D3505-01</b>
Figure 3A	<b>Site and Context Analysis - General - 03679D2101-02</b>	Figure 16	<b>Typical Metering Point – 03679D4001-01</b>
Figure 3B	<b>Site and Context Analysis - Planning Controls – 03679D2203-02</b>	Figure 17	<b>Typical Security Lighting &amp; CCTV Support Details – 03679D2207-01</b>
Figure 3C	<b>Site and Context Analysis - Native Vegetation – 03679D2204-02</b>	Figure 18	<b>Typical Stock Fence Detail – 03679D2208-01</b>
Figure 4	<b>Solar Farm Landowners – 03679D2508-01</b>		
Figure 5A	<b>Infrastructure (Fixed Tilt) – 03679D1006-01</b>		
Figure 5B	<b>Infrastructure (Single-Axis Tracker) – 03679D1007-01</b>		
Figure 6	<b>Design Response – 03679D2205-02</b>		
Figure 7	<b>Solar Grid Connection and Battery Storage – 03679D4102-02</b>		
Figure 8A	<b>Typical PV Module and Rack Detail – Piled Foundation – 03679D2210-01</b>		
Figure 8B	<b>Single Axis Tracker – 03679D2209-01</b>		
Figure 9	<b>Typical Power Conversion Unit - PCU – 03679D4002-01</b>		
Figure 10	<b>Typical Access Track – 03679D3504-01</b>		
Figure 11	<b>Typical Site Operation Buildings / Facilities / Car Park and Collector Yard – 03679D3503-01</b> Page 1 - Site Plan Page 2 - Control Room Floor Plan and Elevations Page 3 - Proposed Storage Shed		
Figure 12	<b>Energy Storage Solution – 03679D3501-03</b>		
Figure 13	<b>Energy Storage Building Elevation and Perspective – 03679D3506-01</b> Page 1 - Elevations Page 2 - Perspective		



# MURRA WARRA SOLAR FARM

## FIGURE 1

### LOCATION PLAN

CONTAINS VICMAP INFORMATION © THE STATE OF VICTORIA, DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT.

#### LEGEND

 DEVELOPMENT AREA (20171004)



INFRAS DWG	N/A	APPD DATE	13-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER **03679D2202-02**

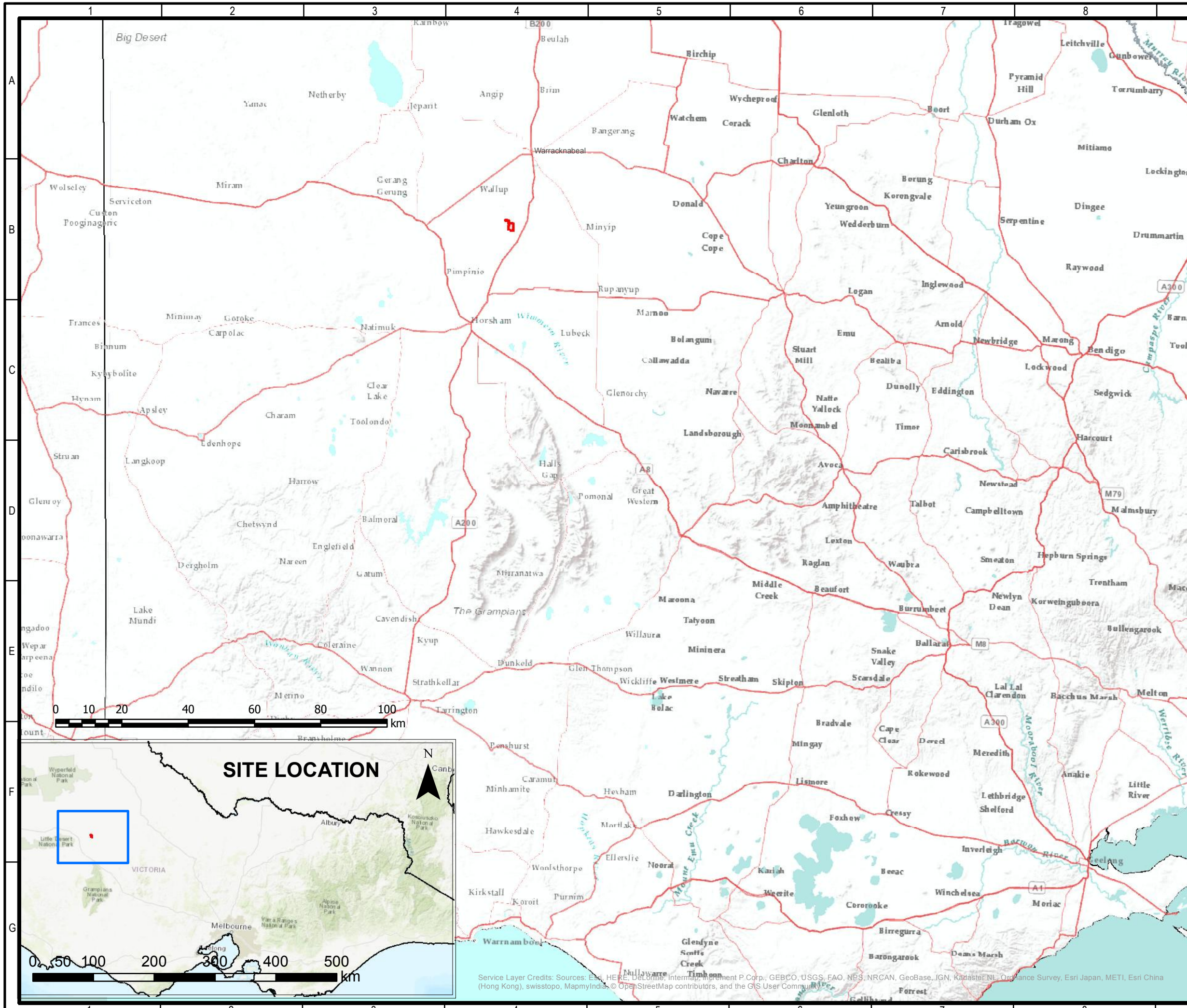
SCALE - 1:1,100,000 @ A3

COORDS GDA 1994 MGA Zone 54

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# MURRA WARRA SOLAR FARM

## FIGURE 1

### LOCATION PLAN

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#### LEGEND

-  LOCAL GOVERNMENT AREA
-  PROPOSED WIND FARM SITE BOUNDARY (20160127)
-  DEVELOPMENT AREA (20171004)

PAGE 2 OF 2



INFRAS DWG	N/A	APPD DATE	13-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

**DRAWING NUMBER**  
**03679D2202-02**

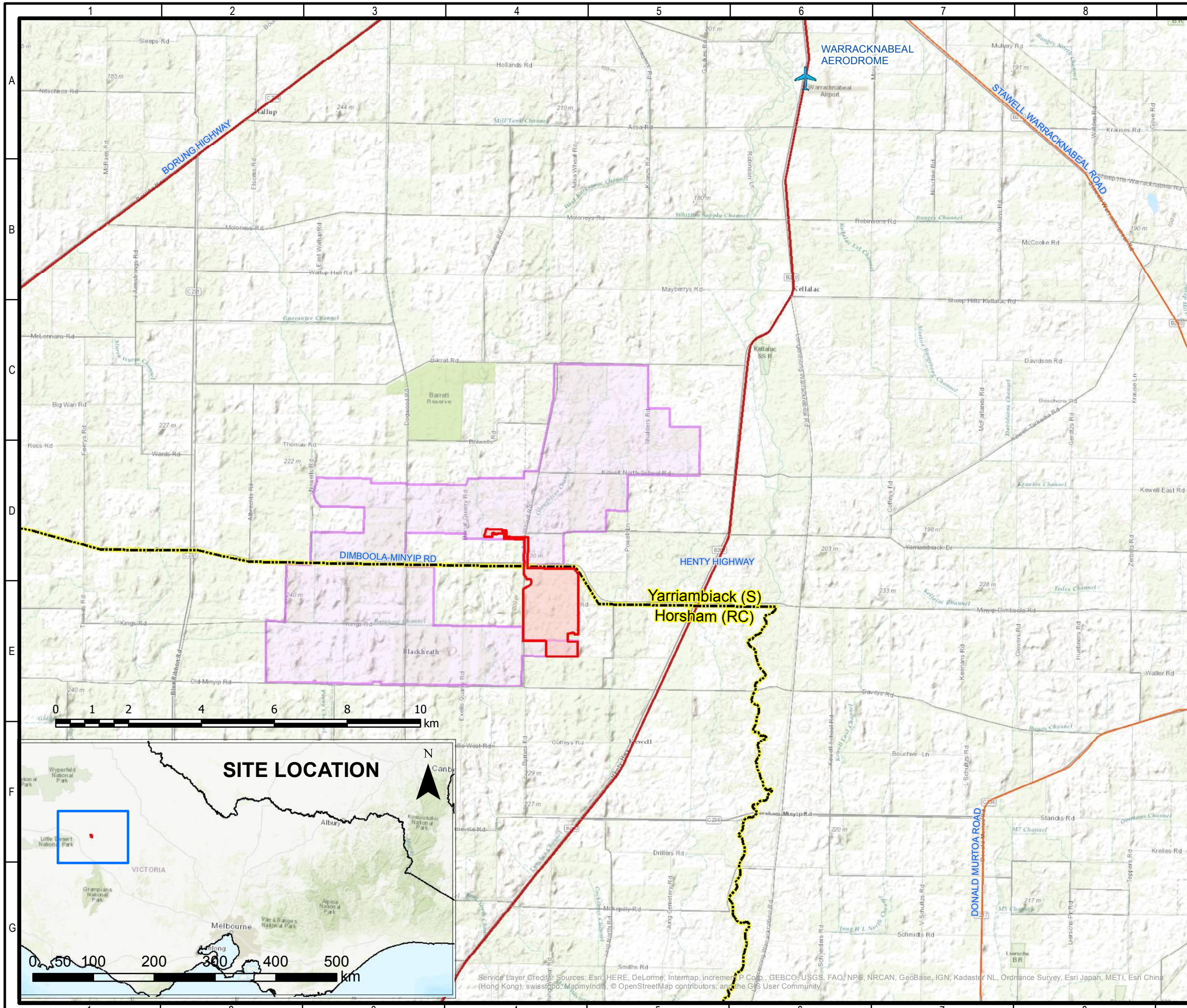
**SCALE - 1:100,000 @ A3**

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# MURRA WARRA SOLAR FARM

## FIGURE 2

### SOLAR IRRADIATION MAP

ESRI, HERE, DELORME, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

#### LEGEND

ANNUAL SOLAR EXPOSURE (BOM 1990-2011)

5km RESOLUTION

- 11 - 14
- 14 - 15 MJ/m<sup>2</sup>
- 15 - 16 MJ/m<sup>2</sup>
- 16 - 17 MJ/m<sup>2</sup>
- 17 - 18 MJ/m<sup>2</sup>
- 18 - 19 MJ/m<sup>2</sup>

SOLAR EXPOSURE DATA DERIVED FROM SATELLITE IMAGERY PROCESSED BY THE BUREAU OF METEOROLOGY FROM THE GEOSTATIONARY METEOROLOGICAL SATELLITE AND MTSAT SERIES OPERATED BY JAPAN METEOROLOGICAL AGENCY AND FROM GOES-9 OPERATED BY THE NATIONAL OCEANOGRAPHIC & ATMOSPHERIC ADMINISTRATION (NOAA) FOR THE JAPAN METEOROLOGICAL AGENCY



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LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D2206-01**

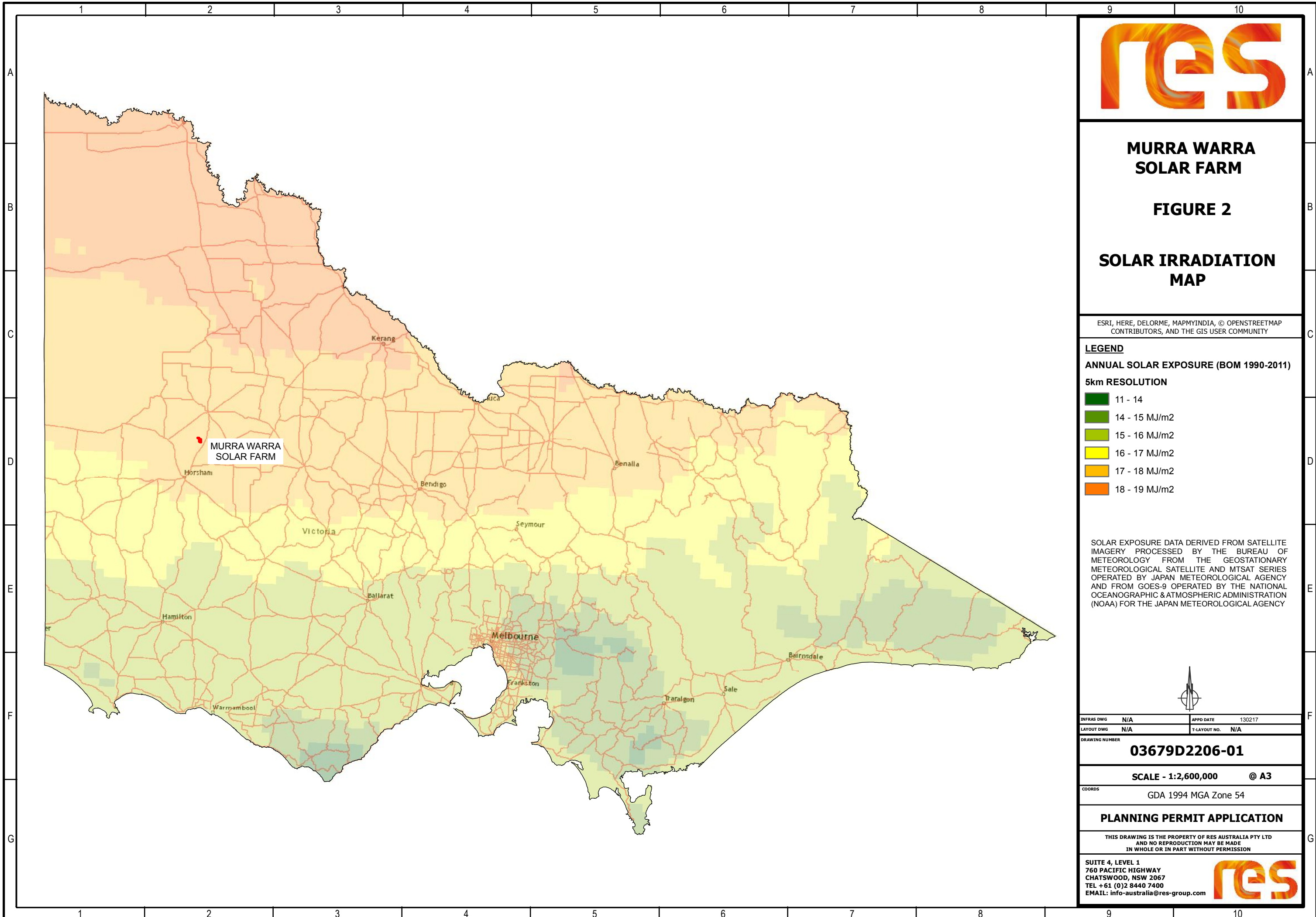
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# MURRA WARRA SOLAR FARM

## FIGURE 3A

### SITE AND CONTEXT ANALYSIS PLAN GENERAL

CONTAINS VICMAP INFORMATION © THE STATE OF VICTORIA, DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT.

#### LEGEND

- DEVELOPMENT AREA (20171004)
- HOUSE LAYOUT (DAUSwck016)**
- HOUSE (ASSOCIATED)
- HOUSE (NON ASSOCIATED)
- FORMER DWELLING, (ASSOCIATED)
- FORMER DWELLING (NON ASSOCIATED)
- SHED
- OCCUPIED
- UNOCCUPIED
- ROADS (VICMAP\_20160625)**
- HIGHWAY
- SUB ARTERIAL
- LOCAL
- 2WD; 4WD
- CONTOURS 10m (Vicmap 2015)
- 220kV TRANSMISSION LINE
- HV POWERLINES (POWERCOR)
- PROPOSED WIND FARM
- SITE BOUNDARY (20160127)
- LOCAL GOVERNMENT AREA BOUNDARY



INFRAS DWG	N/A	APPD DATE	13-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER **03679D2101-02**

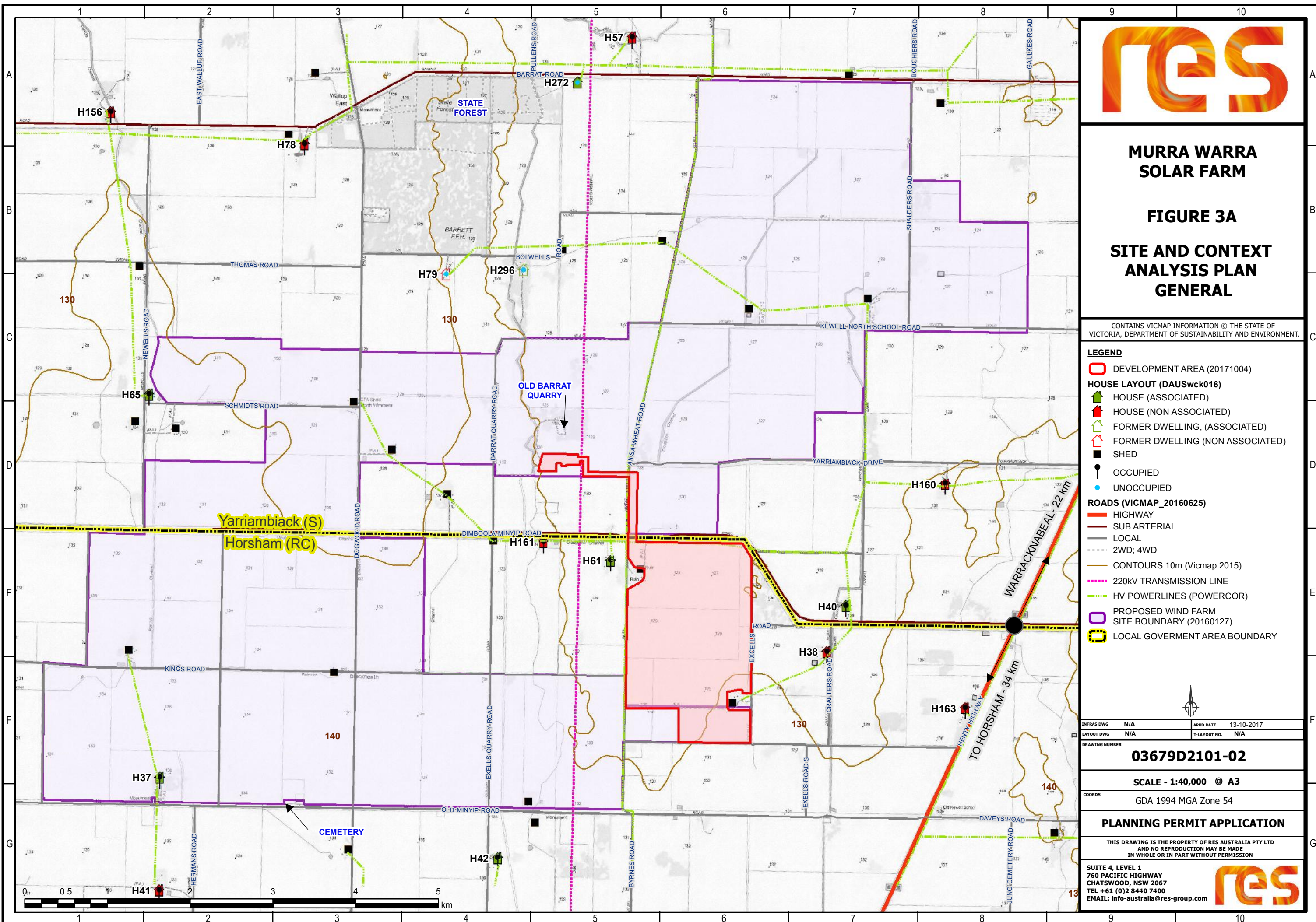
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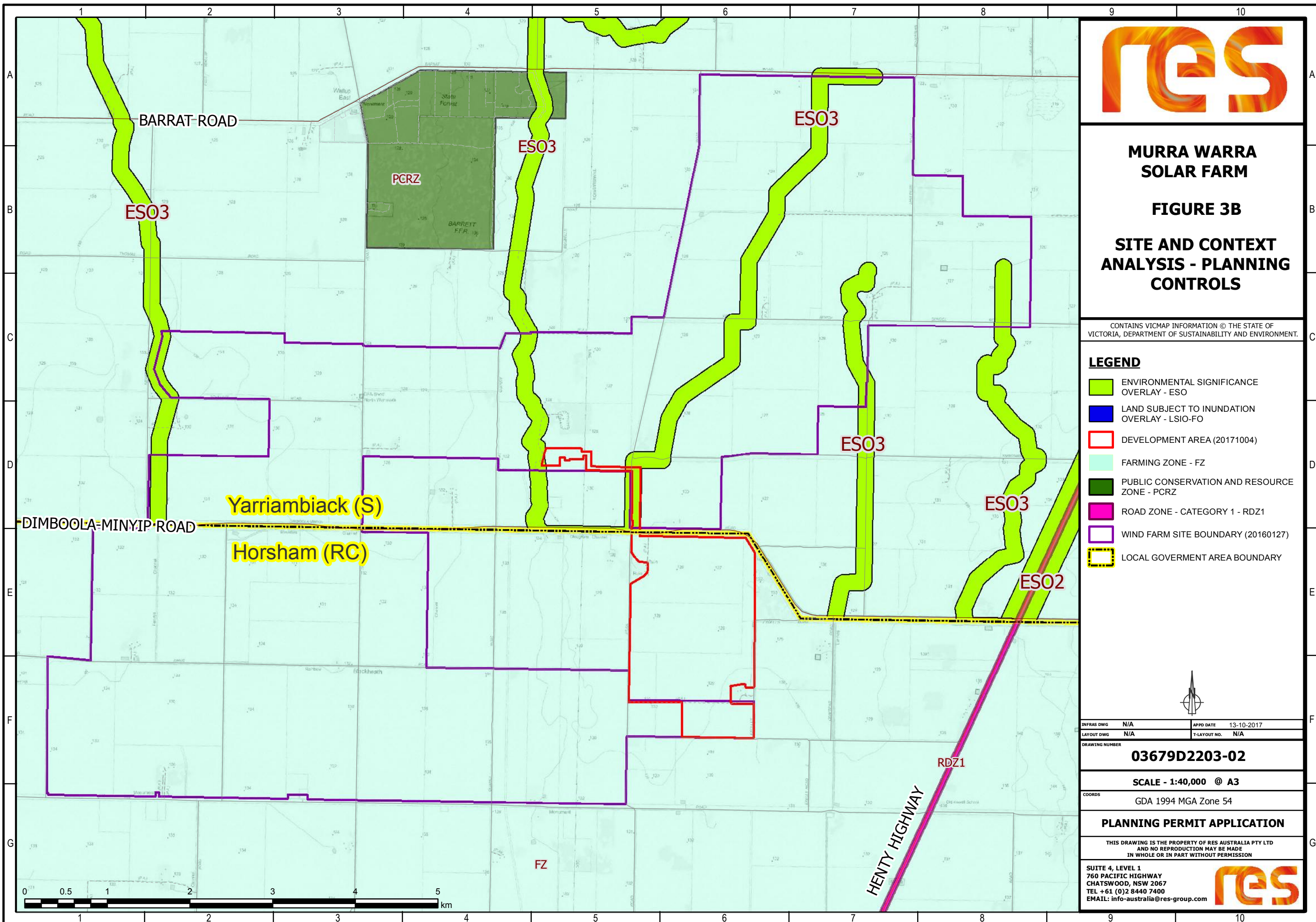
COORDS GDA 1994 MGA Zone 54

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**MURRA WARRA  
SOLAR FARM**

**FIGURE 3B**

**SITE AND CONTEXT  
ANALYSIS - PLANNING  
CONTROLS**

CONTAINS VICMAP INFORMATION © THE STATE OF VICTORIA, DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT.

- LEGEND**
- ENVIRONMENTAL SIGNIFICANCE OVERLAY - ESO
  - LAND SUBJECT TO INUNDATION OVERLAY - LSIO-FO
  - DEVELOPMENT AREA (20171004)
  - FARMING ZONE - FZ
  - PUBLIC CONSERVATION AND RESOURCE ZONE - PCRZ
  - ROAD ZONE - CATEGORY 1 - RDZ1
  - WIND FARM SITE BOUNDARY (20160127)
  - LOCAL GOVERNMENT AREA BOUNDARY



ENFRAS DWG	N/A	APPD DATE	13-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D2203-02**

SCALE - 1:40,000 @ A3

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# MURRA WARRA SOLAR FARM

## FIGURE 3C

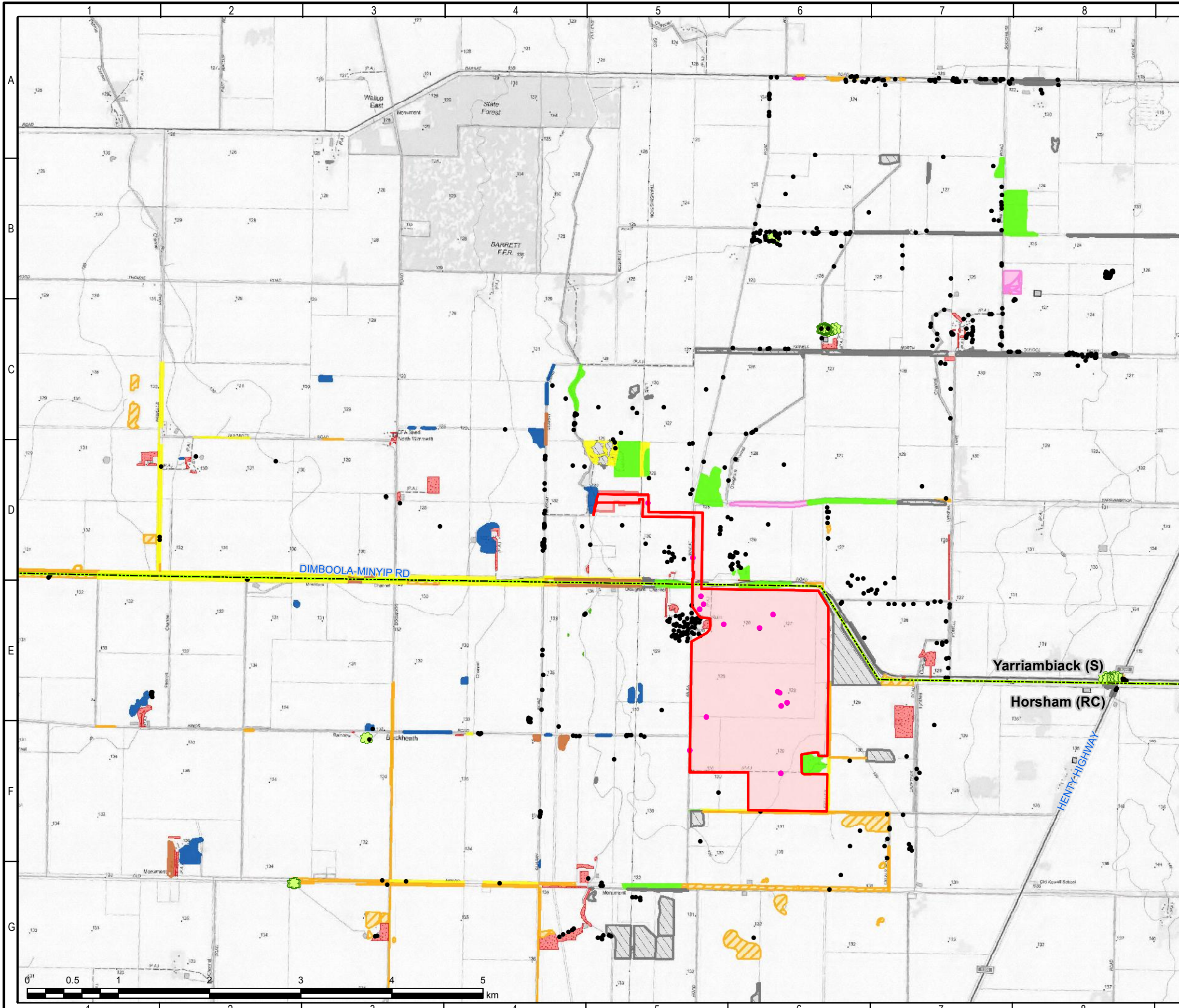
### SITE CONTEXT AND ANALYSIS - NATIVE VEGETATION

CONTAINS VICMAP INFORMATION © THE STATE OF VICTORIA, DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT.

#### LEGEND

#### ECOLOGICAL VEGETATION CLASS AND LISTING STATUS (Biosis 20140805)

- BLACK BOX LIGNUM WOODLAND - NOT LISTED
- PLAINS SAVANNAH - EPBC AND FFG
- PLAINS SAVANNAH - EPBC AND FFG LISTED - THREATENED
- PLAINS SAVANNAH, FFG LISTED - THREATENED
- PLAINS SAVANNAH, NOT LISTED
- PLAINS WOODLAND, EPBC AND FFG LISTED - THREATENED
- PLAINS WOODLAND, FFG LISTED
- PLAINS WOODLAND, NOT LISTED
- PLANTED INTRODUCED SPECIES, NOT LISTED
- PLANTED NATIVE SPECIES, NOT LISTED
- PLANTED SCATTERED TREE
- REMNANT SCATTERED TREE
- REMNANT SCATTERED TREE TO BE REMOVED
- LOCAL GOVERNMENT AREA BOUNDARY
- DEVELOPMENT AREA (20171004)



INFRAS DWG	N/A	APPD DATE	13-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER **03679D2204-02**

SCALE - 1:40,000 @ A3

COORDS GDA 1994 MGA Zone 54

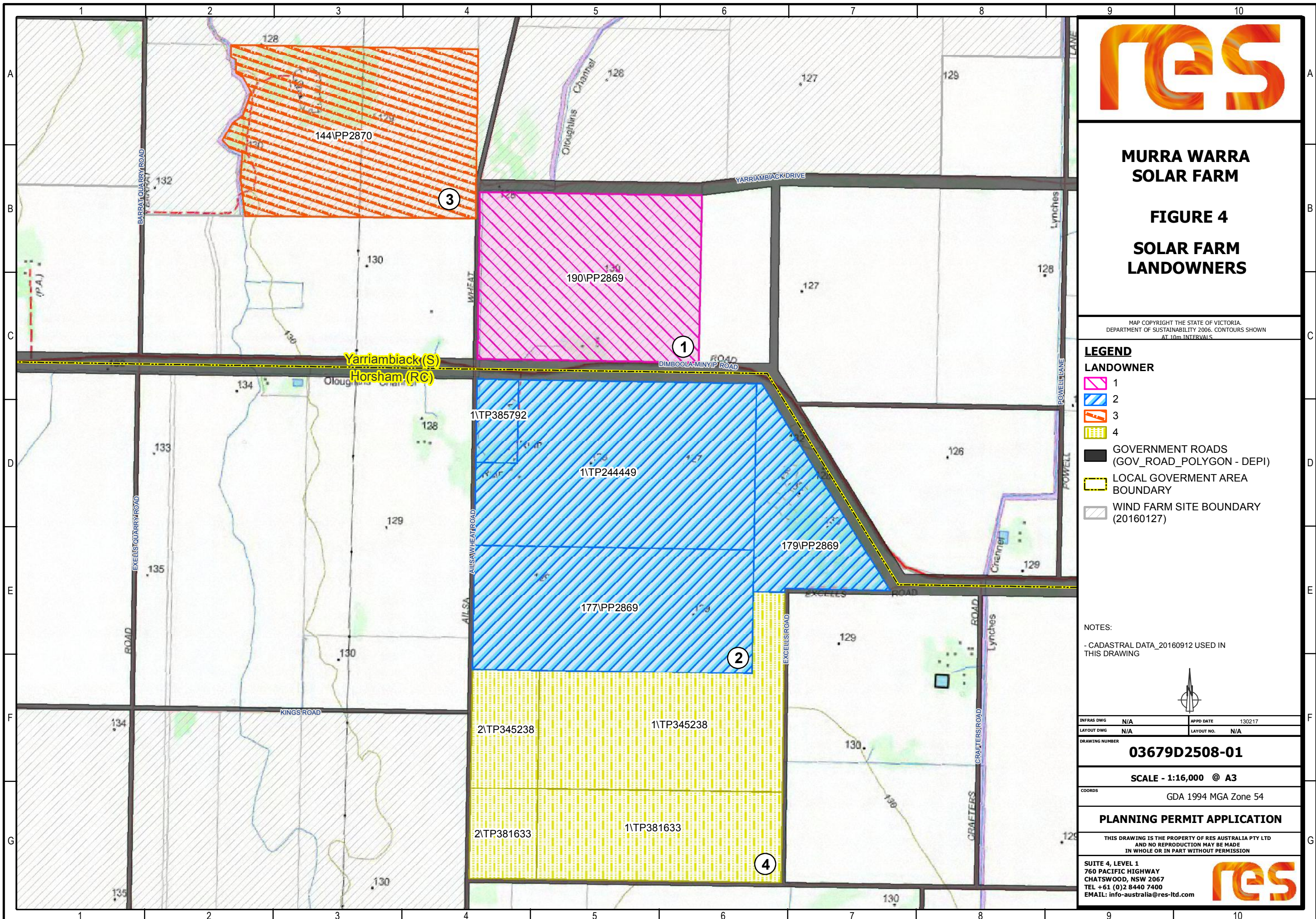
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**MURRA WARRA  
SOLAR FARM**

**FIGURE 4  
SOLAR FARM  
LANDOWNERS**

MAP COPYRIGHT THE STATE OF VICTORIA,  
DEPARTMENT OF SUSTAINABILITY 2006. CONTOURS SHOWN  
AT 10m INTERVALS.

**LEGEND**

- LANDOWNER**
- 1
  - 2
  - 3
  - 4
- GOVERNMENT ROADS  
(GOV\_ROAD\_POLYGON - DEPI)
- LOCAL GOVERNMENT AREA  
BOUNDARY
- WIND FARM SITE BOUNDARY  
(20160127)

NOTES:  
- CADASTRAL DATA\_20160912 USED IN  
THIS DRAWING



INFRAS DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D2508-01**

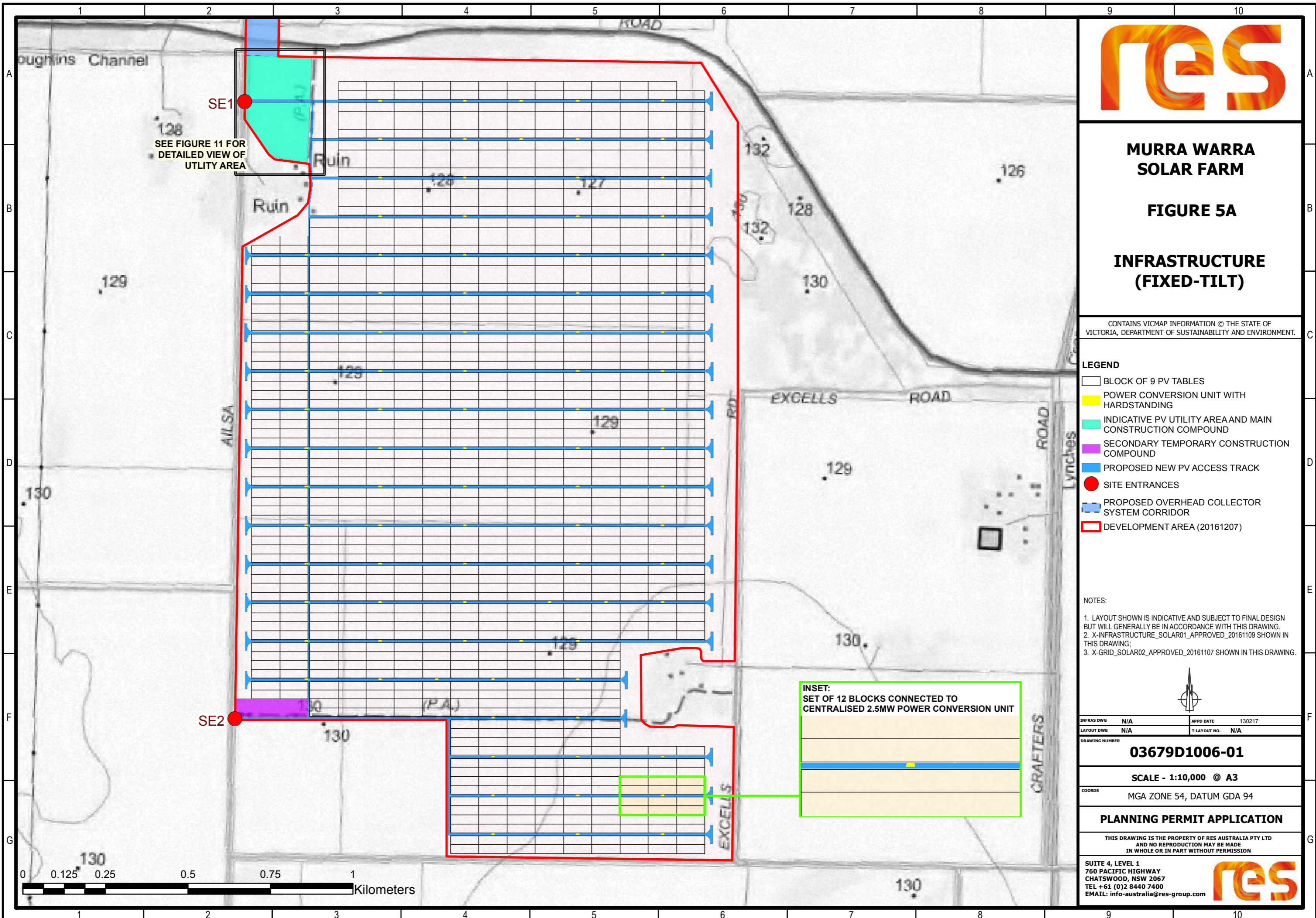
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**MURRA WARRA  
SOLAR FARM**

**FIGURE 5A**

**INFRASTRUCTURE  
(FIXED-TILT)**

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**LEGEND**

- BLOCK OF 9 PV TABLES
- POWER CONVERSION UNIT WITH HARDSTANDING
- INDICATIVE PV UTILITY AREA AND MAIN CONSTRUCTION COMPOUND
- SECONDARY TEMPORARY CONSTRUCTION COMPOUND
- PROPOSED NEW PV ACCESS TRACK
- SITE ENTRANCES
- PROPOSED OVERHEAD COLLECTOR SYSTEM CORRIDOR
- DEVELOPMENT AREA (20161207)

**NOTES:**

1. LAYOUT SHOWN IS INDICATIVE AND SUBJECT TO FINAL DESIGN BUT WILL GENERALLY BE IN ACCORDANCE WITH THIS DRAWING.
2. X-INFRASTRUCTURE\_SOLAR01\_APPROVED\_20161109 SHOWN IN THIS DRAWING;
3. X-GRID\_SOLAR02\_APPROVED\_20161107 SHOWN IN THIS DRAWING.



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LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D1006-01**

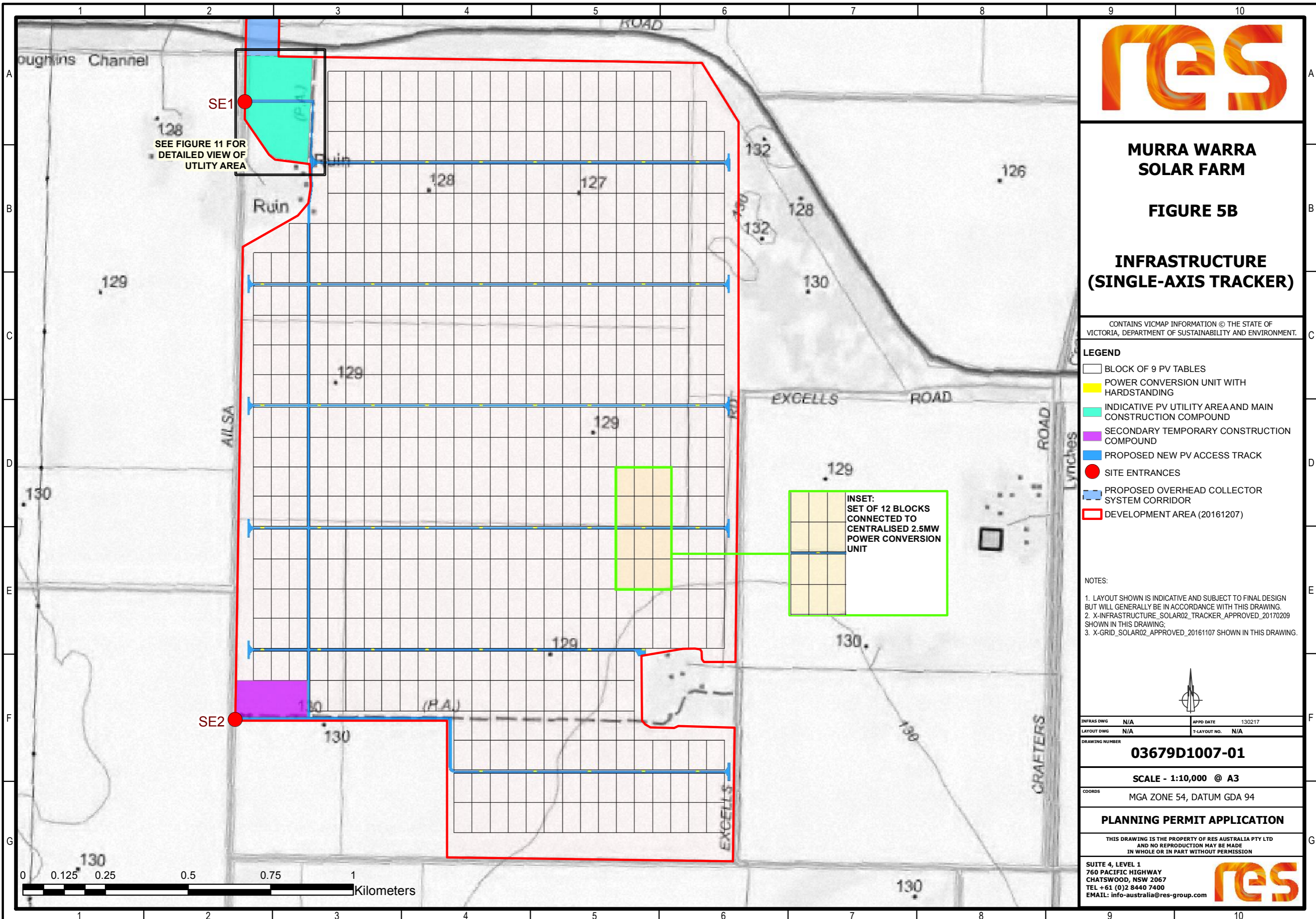
SCALE - 1:10,000 @ A3  
COORDS MGA ZONE 54, DATUM GDA 94

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**MURRA WARRA  
SOLAR FARM**

**FIGURE 5B**

**INFRASTRUCTURE  
(SINGLE-AXIS TRACKER)**

CONTAINS VICMAP INFORMATION © THE STATE OF VICTORIA, DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT.

**LEGEND**

- BLOCK OF 9 PV TABLES
- POWER CONVERSION UNIT WITH HARDSTANDING
- INDICATIVE PV UTILITY AREA AND MAIN CONSTRUCTION COMPOUND
- SECONDARY TEMPORARY CONSTRUCTION COMPOUND
- PROPOSED NEW PV ACCESS TRACK
- SITE ENTRANCES
- PROPOSED OVERHEAD COLLECTOR SYSTEM CORRIDOR
- DEVELOPMENT AREA (20161207)

**NOTES:**

1. LAYOUT SHOWN IS INDICATIVE AND SUBJECT TO FINAL DESIGN BUT WILL GENERALLY BE IN ACCORDANCE WITH THIS DRAWING.
2. X-INFRASTRUCTURE\_SOLAR02\_TRACKER\_APPROVED\_20170209 SHOWN IN THIS DRAWING;
3. X-GRID\_SOLAR02\_APPROVED\_20161107 SHOWN IN THIS DRAWING.



INFRAS DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D1007-01**

SCALE - 1:10,000 @ A3  
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# MURRA WARRA SOLAR FARM

## FIGURE 6

### DESIGN RESPONSE

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- SOLAR FARM INFRASTRUCTURE
- INDICATIVE PV UTILITY AREA AND MAIN CONSTRUCTION COMPOUND
- SECONDARY TEMPORARY CONSTRUCTION COMPOUND
- SITE ENTRANCES
- INDICATIVE BATTERY STORAGE COMPOUND
- PROPOSED METERING POINT
- PROPOSED SOLAR OVERHEAD COLLECTOR SYSTEM CORRIDOR
- INDICATIVE SOLAR & BATTERY STORAGE TEMPORARY CONSTRUCTION COMPOUND
- ACCESS TRACKS
- HOUSE LAYOUT
- HOUSE (ASSOCIATED)
- HOUSE (NON ASSOCIATED)
- FORMER DWELLING, (ASSOCIATED)
- FORMER DWELLING (NON ASSOCIATED)
- SHED
- OCCUPIED
- UNOCCUPIED
- ROADS
- HIGHWAY
- SUB
- LOCAL
- 2WD, 4WD
- 220kV TRANSMISSION LINE
- ECOLOGICAL VEGETATION CLASS AND LISTING STATUS (Biosis\_20140805)
- PLAINS SAVANNAH - EPBC AND FFG LISTED
- PLAINS SAVANNAH - EPBC AND FFG LISTED - THREATENED
- PLAINS SAVANNAH, NOT LISTED
- PLAINS WOODLAND, EPBC AND FFG LISTED - THREATENED
- PLAINS WOODLAND, FFG LISTED
- PLAINS WOODLAND, NOT LISTED
- PLANTED INTRODUCED SPECIES, NOT LISTED
- PLANTED NATIVE SPECIES, NOT LISTED
- PLANTED SCATTERED TREE
- REMNANT SCATTERED TREE TO BE REMOVED
- CONTOURS 10m (Vicmap 2015)
- WINDFARM INFRASTRUCTURE
- WIND FARM SITE BOUNDARY (20160127)
- DEVELOPMENT AREA (20161207)
- LOCAL GOVERNMENT AREA BOUNDARY

INFRAS DWG	03679D4101-02	APPD DATE	13-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	PAUSwck113

DRAWING NUMBER  
**03679D2205-02**

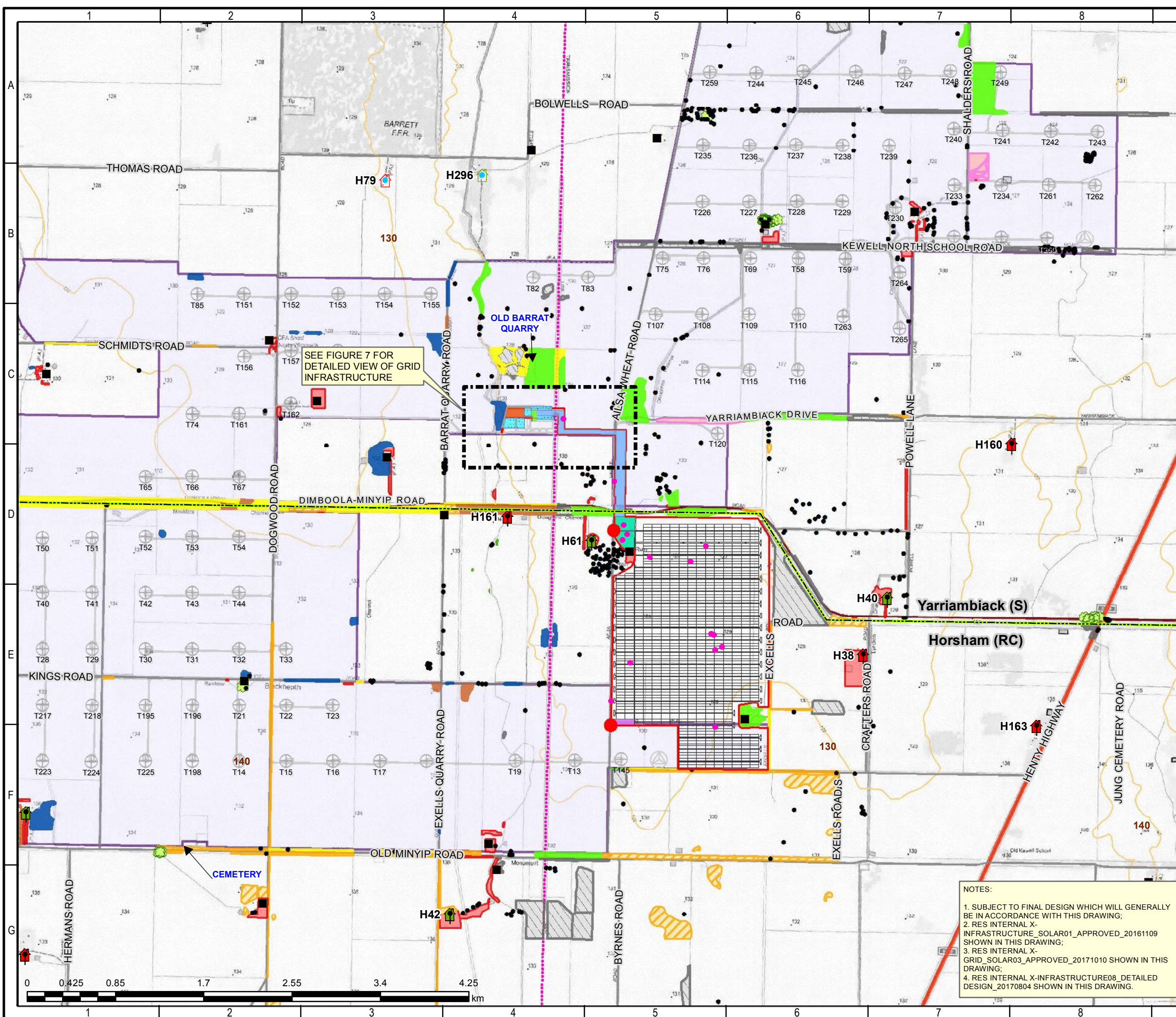
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SEE FIGURE 7 FOR DETAILED VIEW OF GRID INFRASTRUCTURE

NOTES:

- SUBJECT TO FINAL DESIGN WHICH WILL GENERALLY BE IN ACCORDANCE WITH THIS DRAWING;
- RES INTERNAL X- INFRASTRUCTURE\_SOLAR01\_APPROVED\_20161109 SHOWN IN THIS DRAWING;
- RES INTERNAL X- GRID\_SOLAR03\_APPROVED\_20171010 SHOWN IN THIS DRAWING;
- RES INTERNAL X-INFRASTRUCTURE08\_DETAILED DESIGN\_20170804 SHOWN IN THIS DRAWING.



# MURRA WARRA SOLAR FARM

## FIGURE 7 SOLAR GRID CONNECTION AND BATTERY STORAGE

MAP COPYRIGHT THE STATE OF VICTORIA,  
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### LEGEND

- ▬ PROPOSED SOLAR OVERHEAD COLLECTOR SYSTEM CORRIDOR
- ▬ INDICATIVE BATTERY STORAGE COMPOUND
- ▬ PROPOSED METERING POINT
- ▬ INDICATIVE SOLAR & BATTERY STORAGE TEMPORARY CONSTRUCTION COMPOUND
- ▬ ACCESS TRACKS
- ▬ PROPOSED WIND INFRASTRUCTURE
- POTENTIAL QUARRY AREA
- PROPOSED WIND OVERHEAD COLLECTOR SYSTEM CORRIDOR
- PROPOSED WIND FARM SITE BOUNDARY
- ▬ EXISTING 220kV POWERLINE
- EXISTING 220kV POWERLINE 40M EASEMENT
- DEVELOPMENT AREA (20171004)

### NOTES:

1. SUBJECT TO FINAL DESIGN WHICH WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING.
2. ALL DIMENSIONS SHOULD BE NOTED AS APPROXIMATE.
3. RES INTERNAL X-INFRASTRUCTURE08\_DETAILEDDESIGN\_20170804 SHOWN IN THIS DRAWING.
4. WIND OVER HEAD LINE CORRIDOR BASED ON SENERGY DRAWING REFERENCE '9116 - E - 002'.
5. RES INTERNAL X-GRID\_SOLAR03\_APPROVED\_20171010 SHOWN IN THIS DRAWING.



INFRA DWG	03679D4101-02	APPD DATE	10-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D4102-02**

SCALE - 1:10,000 @A3

COORDS MGA ZONE 54, DATUM GDA 94

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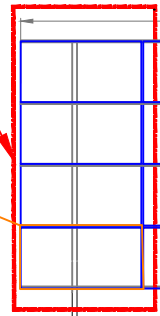


**MURRA WARRA  
SOLAR FARM**

**FIGURE 8A  
TYPICAL PV MODULE  
& RACK DETAIL - PILED  
FOUNDATION**

UP TO 6 MODULES  
IN LANDSCAPE  
MAY BE INSTALLED

PV MODULE DIMENSIONS  
APPROX 2m x 1m



TYPICAL TABLE LENGTH

MAX LENGTH VARIES

ELEVATION

VARIES

PV. MODULES SUPPORTED ON  
GALVANIZED STEEL OR ALUMINIUM  
SUPPORT STRUCTURE



SECURITY FENCE  
2m MAX HEIGHT

STRUCTURE SUPPORTED  
ON EMBEDDED PILES  
(SEE NOTE 3)

VARIES 3 - 9m

1.5m

0.6m

VARIES 9 - 15m

ELECTRICAL CONTROL CABINET

20°-30° ANGLE

GROUND CLEARANCE

TOTAL STRUCTURE AT 30°  
APPROX. HEIGHT 3.4m

SECTION A-A



NOTES

1. ALL DIMENSIONS ARE SUBJECT TO DETAILED DESIGN AND SHOULD BE NOTED AS APPROXIMATE;
2. A MINIMUM GROUND CLEARANCE OF AT LEAST 115mm IS REQUIRED AND IT WILL VARY AS REQUIRED ACCORDING TO TOPOGRAPHY;
3. THE PILE DEPTH SHALL BE DETERMINED FOLLOWING DETAILED GEOTECHNICAL SITE INVESTIGATION AND WILL TYPICALLY BE 1.5 - 1.7m. HOWEVER THE MAXIMUM DEPTH COULD BE UP TO 2.4m;
4. PV MODULES ARE SHOWN IN ELEVATION VIEW INSTALLED IN LANDSCAPE, ALTHOUGH THEY MAY BE INSTALLED IN PORTRAIT TO SUIT SITE CONDITION;
5. THE FINAL CONFIGURATION MAY BE SUBJECT TO CHANGE IN THE DETAILED DESIGN PHASE, BUT WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING.

INFRA DWG	N/A	APPD DATE	16-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D2210-02**

SCALE - N.T.S      A3

COORDS      N/A

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MURRA WARRA  
SOLAR FARM

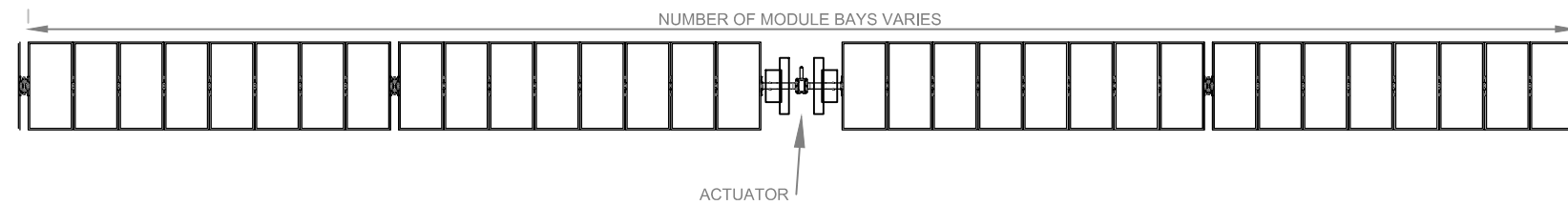
FIGURE 8B

SINGLE AXIS TRACKER

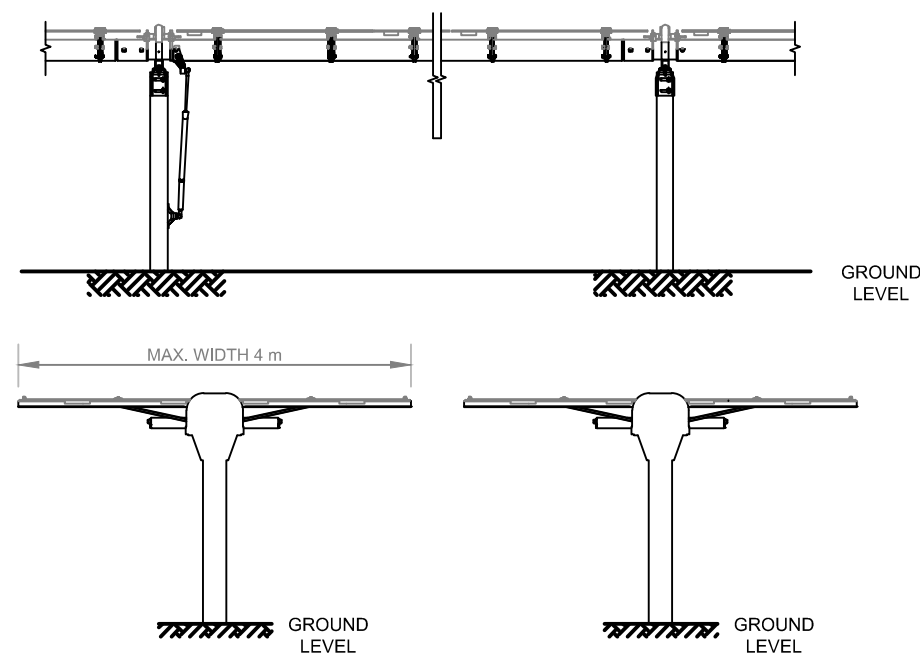
NOTES:

1. GROUND CLEARANCE WILL VARY AS REQUIRED BY TOPOGRAPHY;
2. ROW LENGTH WILL VARY DEPENDING ON ELECTRICAL DESIGN;
3. INDICATIVE ROW LENGTH COULD BE UP TO 100m;
4. PV MODULES COULD BE INSTALLED IN PORTRAIT OR LANDSCAPE. ORIENTATION WILL DEPEND ON THE MODULE TYPE;
5. THE PILE DEPTH SHALL BE DETERMINED FOLLOWING DETAILED GEOTECHNICAL SITE INVESTIGATION, TYPICALLY UP TO 2.4m. PILE HEIGHTS WILL CHANGE TO ACCOMMODATE THE GRADE, SUBJECT TO GEOTECHNICAL DESIGN;
6. ACTUATOR TYPE AND LOCATION MAY VARY;
7. THE FINAL CONFIGURATION MAY BE SUBJECT TO CHANGE IN THE DETAILED DESIGN PHASE, BUT WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
8. ALL DIMENSIONS SHOULD BE NOTED AS APPROXIMATE.
9. ACTUATOR TECHNOLOGY SUBJECT TO FINAL DESIGN.

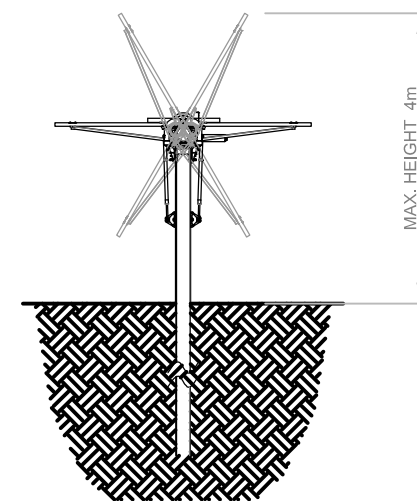
TYPICAL TRACKER ROW



TYPICAL SOLAR ARRAY TABLE  
NORTH AND EASTERN ELEVATION



TYPICAL RACKING  
MAXIMUM HEIGHT



INFRA DWG	N/A	APPD DATE	16-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D2209-02**

SCALE - N.T.S @A3

COORDS N/A

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MURRA WARRA  
SOLAR FARM

FIGURE 9  
TYPICAL POWER  
CONVERSION UNIT - PCU

- NOTES:
1. ALL DIMENSIONS ARE MAXIMUM ANTICIPATED AND SUBJECT TO DETAILED DESIGN;
  2. ROOM AND DOOR POSITIONS ARE INDICATIVE AND SUBJECT TO DETAILED DESIGN;
  3. APPROXIMATE FINISHED FLOOR LEVEL 300mm ABOVE EXISTING GROUND;
  4. SUBJECT TO FINAL DESIGN WHICH WILL GENERALLY BE IN ACCORDANCE WITH THIS DRAWING.

INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D4002-01**

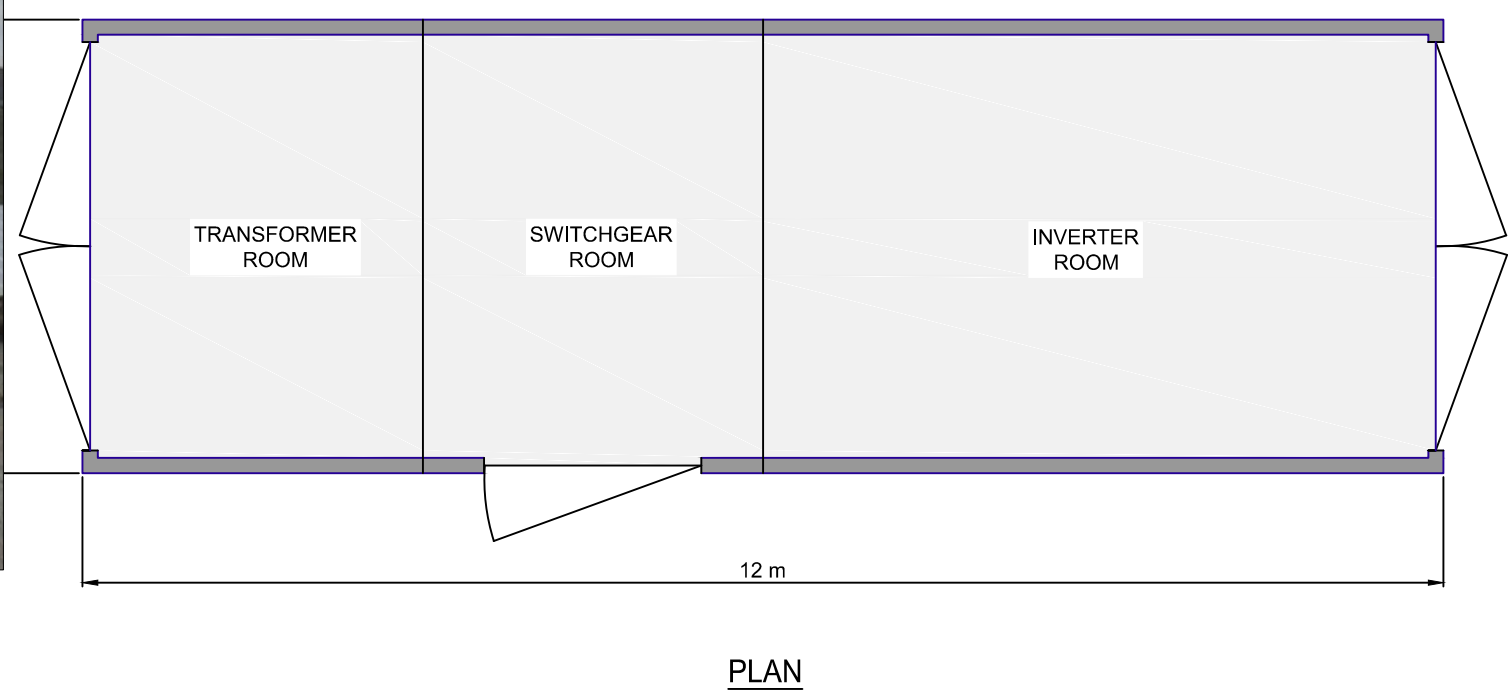
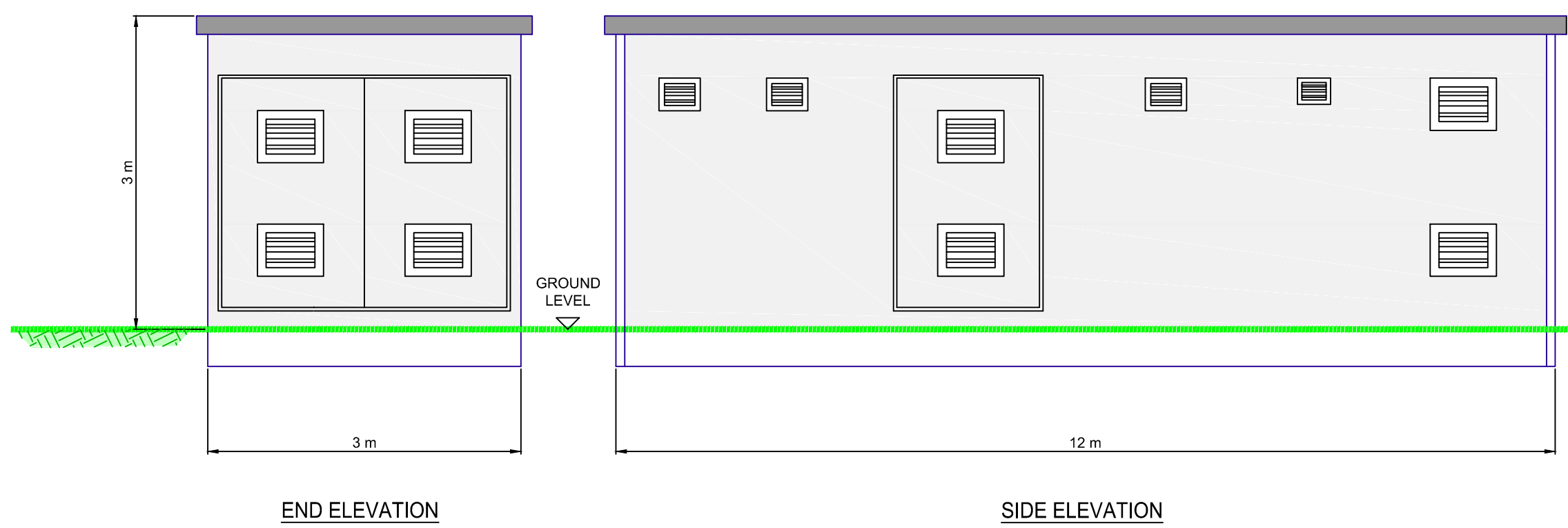
SCALE - N.T.S      A3

COORDS      N/A

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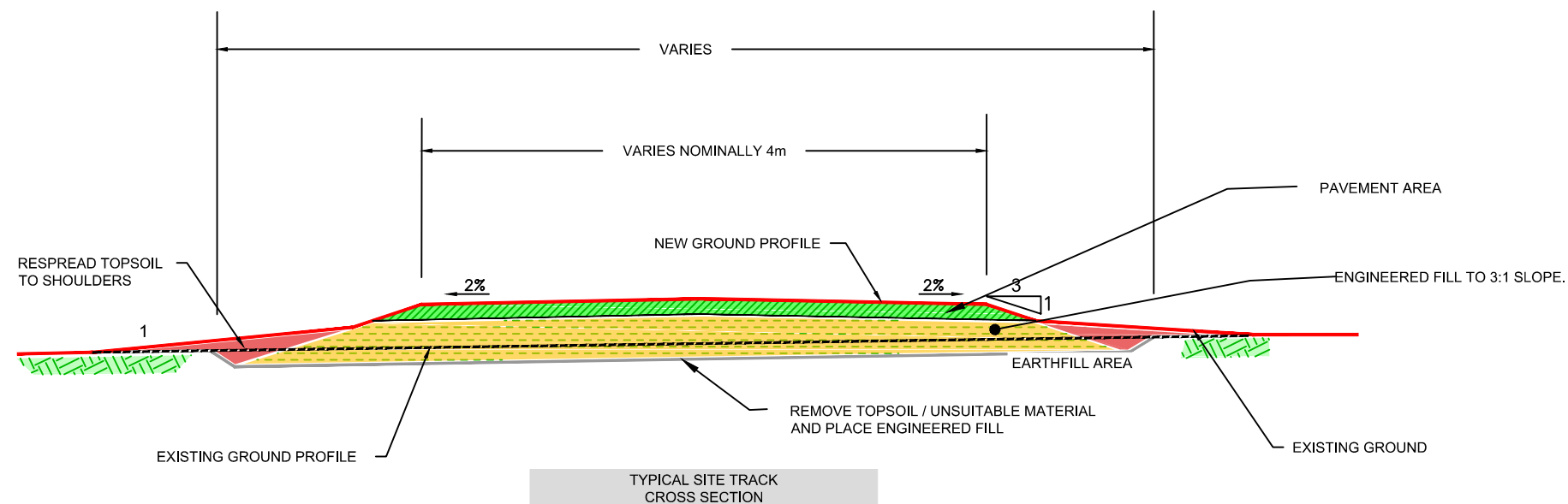
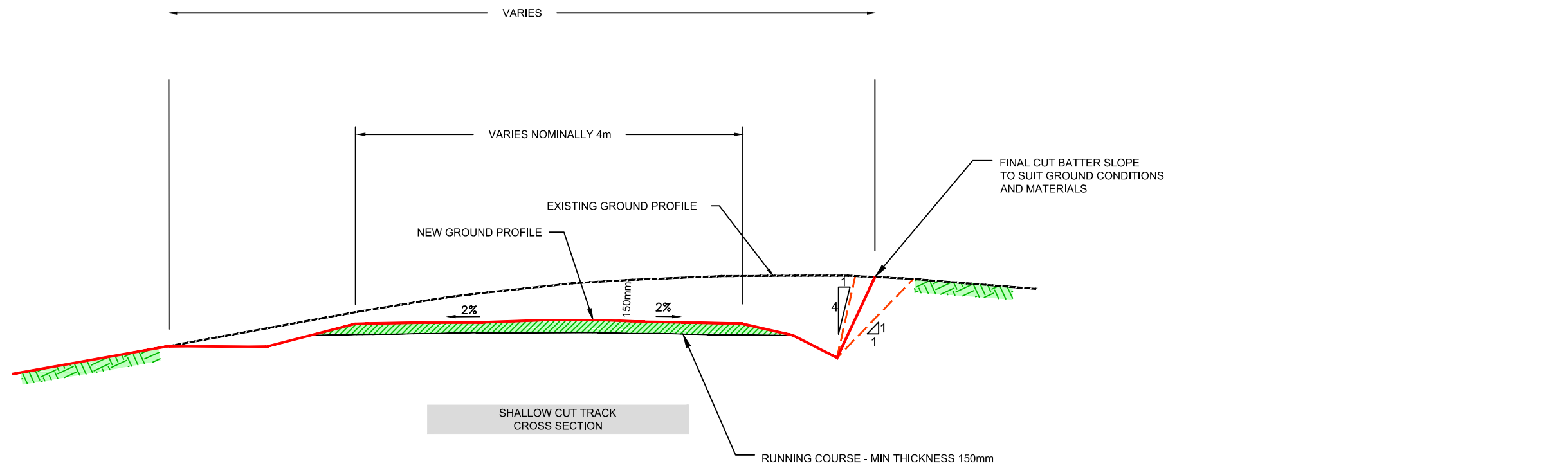




# MURRA WARRA SOLAR FARM

## FIGURE 10

### TYPICAL ACCESS TRACK



#### LEGEND

- EXISTING GROUND PROFILE
- FINISHED GROUND PROFILE
- FINISHED GROUND ALTERNATIVES
- ENGINEERED FILL
- CRUSHED STONE PAVEMENT
- EXISTING GROUND
- RESPREAD TOPSOIL

#### NOTES

GENERAL SITE ROAD DETAILS SHOWN, WHERE POSSIBLE AREAS OF FILL TO BE AVOIDED, ADDITIONAL WIDENING OF TRACK REQUIRED ON CORNERS AND PASSING BAYS TO ACCOMMODATE TRAFFIC;

ADDITIONAL TEMPORARY TRACK WIDENING MAY BE REQUIRED FOR CRANE MOVEMENTS. WIDENED ZONES TO BE REMOVED AT THE DISCRETION OF THE REGULATING AUTHORITY;

TRACK WIDTH WIDENED LOCALLY TO PROVIDE PASSING BAYS & TURNING HEADS;

ALL MEASUREMENTS ARE INDICATIVE BUT FINAL DESIGN WILL GENERALLY BE IN ACCORDANCE WITH WHAT IS SHOWN.

INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
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SCALE - N.T.S      A3

COORDS      N/A

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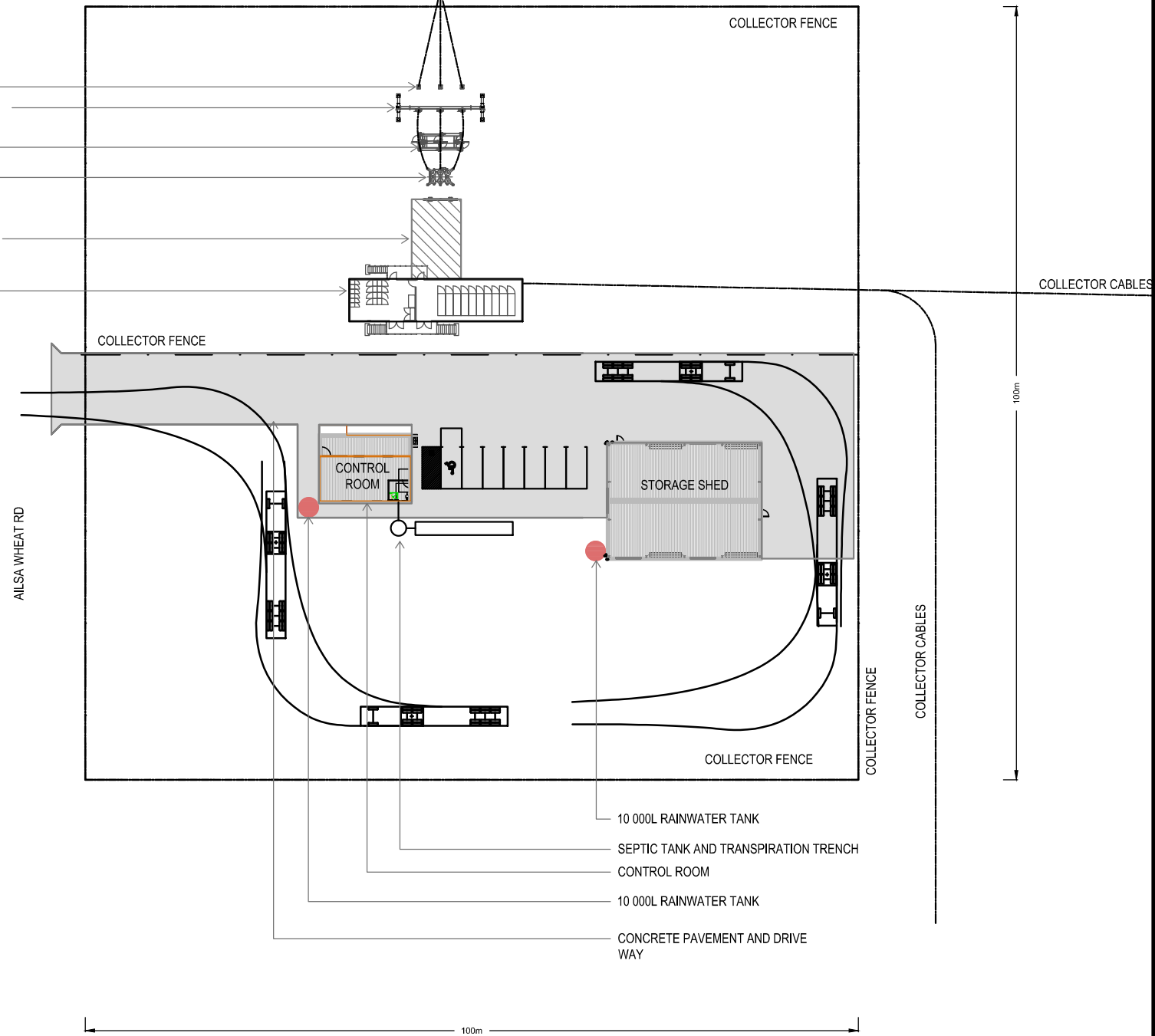


MURRA WARRA  
SOLAR FARM

FIGURE 11  
TYPICAL SITE OPERATION  
BUILDING - FACILITIES - CAR  
PARK AND COLLECTOR YARD

SITE PLAN

- SURGE ARRESTORS
- VOLTAGE TRANSFORMER
- DISCONNECTOR
- CIRCUIT BREAKER
- UNDER GROUND CABLES TO CIRCUIT BREAKER
- SWITCH ROOM



- 10 000L RAINWATER TANK
- SEPTIC TANK AND TRANSPIRATION TRENCH
- CONTROL ROOM
- 10 000L RAINWATER TANK
- CONCRETE PAVEMENT AND DRIVE WAY



COLLECTOR AREA | 10000.0 m<sup>2</sup>

BUILDING AREA (GROSS)

GROUND FLOOR	
CONTROL ROOM	72 m <sup>2</sup>
STORAGE SHED	300 m <sup>2</sup>
SWITCH ROOM	124 m <sup>2</sup>

GRAND TOTAL | 496 m<sup>2</sup>

CARPARKING SCHEDULE

TOTAL CARPARK | 7

NOTES

LAYOUTS AND DIMENSIONS ARE INDICATIVE ONLY TO SHOW GENERAL ARRANGEMENT CONCEPTS AND ALL DETAILS ARE SUBJECT TO FINAL DESIGN.

THE FINAL DESIGN WILL BE GENERALLY IN ACCORDANCE WITH WHAT IS SHOWN.

BASED ON I<sup>3</sup> DRAWINGS:

- SITE PLAN DETAILED PROJECT 16-104 DRAWINGS No. 16-104-A01-C, 16-104 - A02 - A AND 16-104-A03-B.



SHEET 1 OF 3



INFRA DWG	N/A	APPD DATE	130217
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DRAWING NUMBER  
**03679D3503-01**

SCALE - 1:750 © A3

COORDS N/A

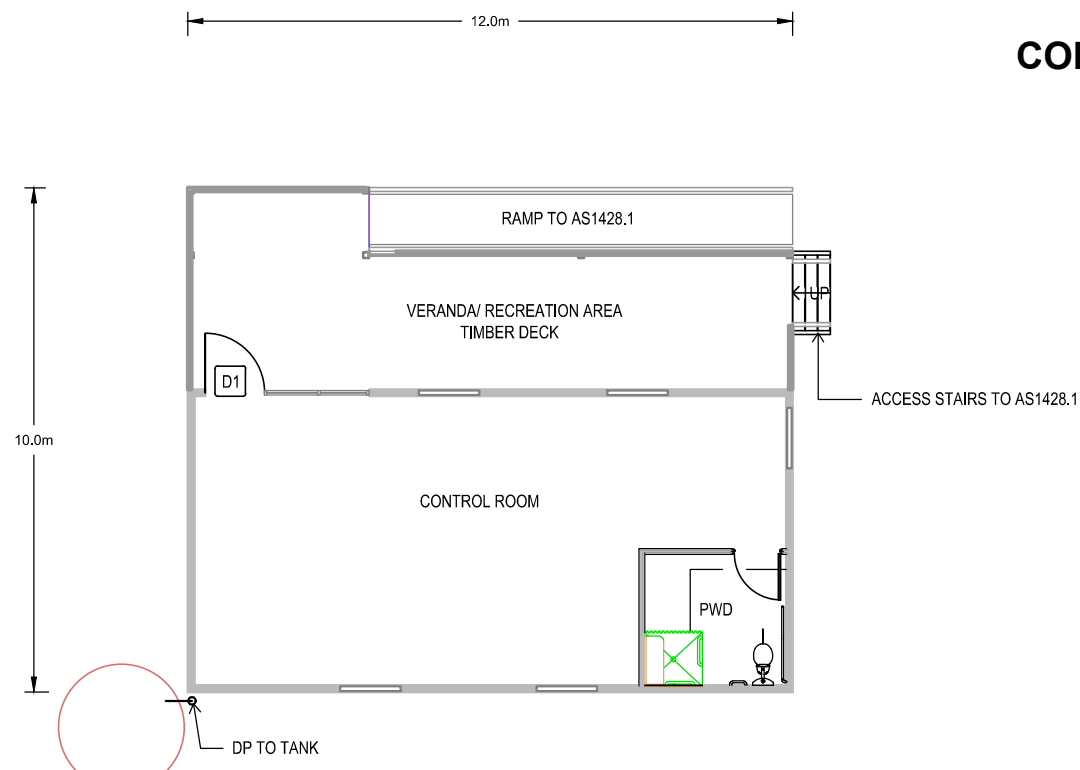
PLANNING PERMIT APPLICATION

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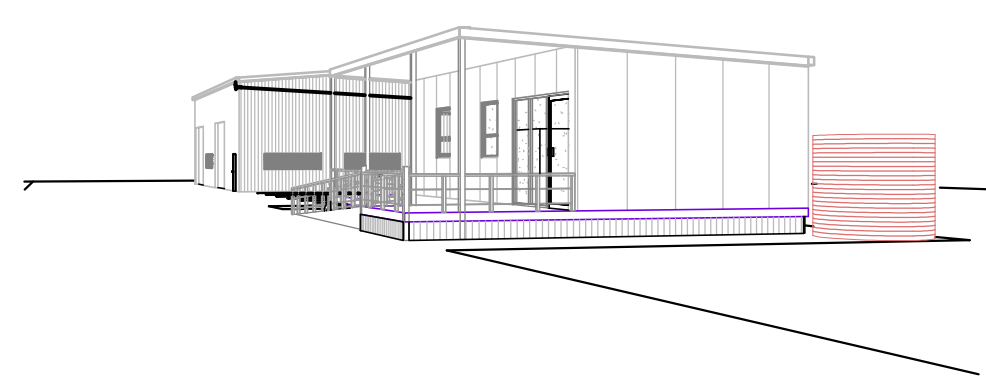
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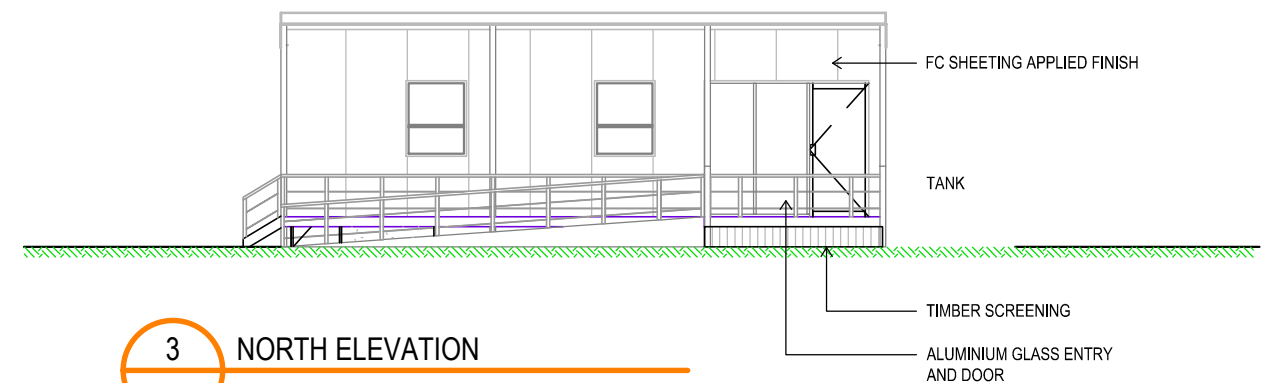
# CONTROL ROOM FLOOR PLAN AND ELEVATIONS



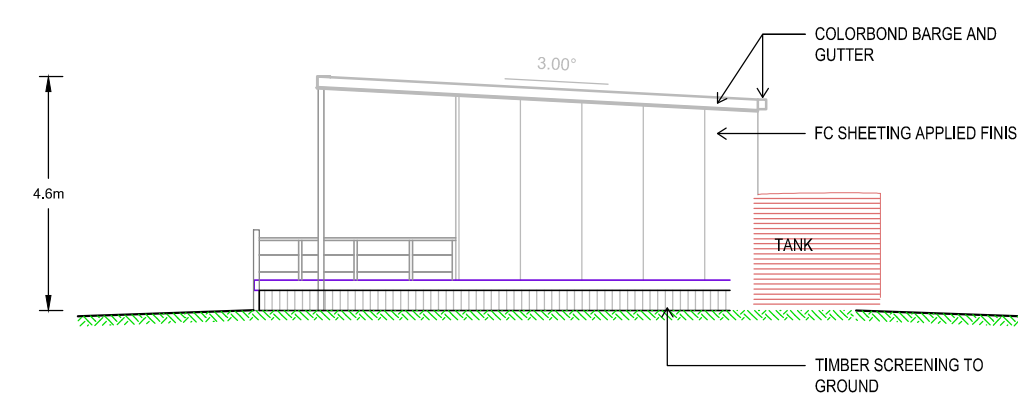
**1 PLAN**



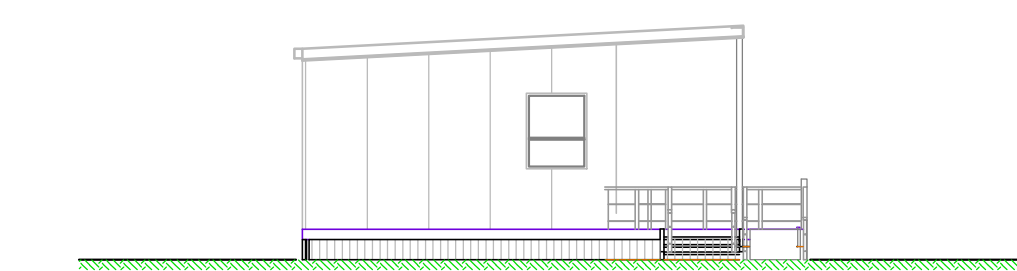
**6 PERSPECTIVE**



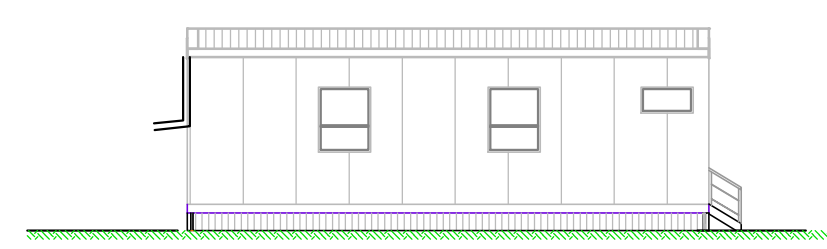
**3 NORTH ELEVATION**



**2 WEST ELEVATION**



**4 SOUTH ELEVATION**



**5 EAST ELEVATION**



## MURRA WARRA SOLAR FARM

**FIGURE 11**  
TYPICAL SITE OPERATION BUILDING - FACILITIES - CAR PARK AND COLLECTOR YARD

**NOTES**

LAYOUTS AND DIMENSIONS ARE INDICATIVE ONLY TO SHOW GENERAL ARRANGEMENT CONCEPTS AND ALL DETAILS ARE SUBJECT TO FINAL DESIGN:

THE FINAL DESIGN WILL BE GENERALLY IN ACCORDANCE WITH WHAT IS SHOWN:

BASED ON I<sup>3</sup> DRAWINGS:

'SITE PLAN DETAILED' PROJECT 16-104 DRAWINGS No. 16-104-A01-C, 16-104 - A02 - A AND 16-104-A03-B.

ROOM SCHEDULE		
NAME	FLOOR FINISH	AREA
GROUND ROOM		
CONTROL ROOM	VINYL	60 m <sup>2</sup>
PWD	VINYL	7 m <sup>2</sup>
VERANDA/ RECREATION AREA	TIMBER DECK APPLIED FINISH	36 m <sup>2</sup>
<b>GRAND TOTAL</b>		<b>103 m<sup>2</sup></b>



SHEET 2 OF 3



INFRA DWG	N/A	APPD DATE	130217
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DRAWING NUMBER **03679D3503-01**

SCALE - AS SHOWN @ A3

COORDS N/A

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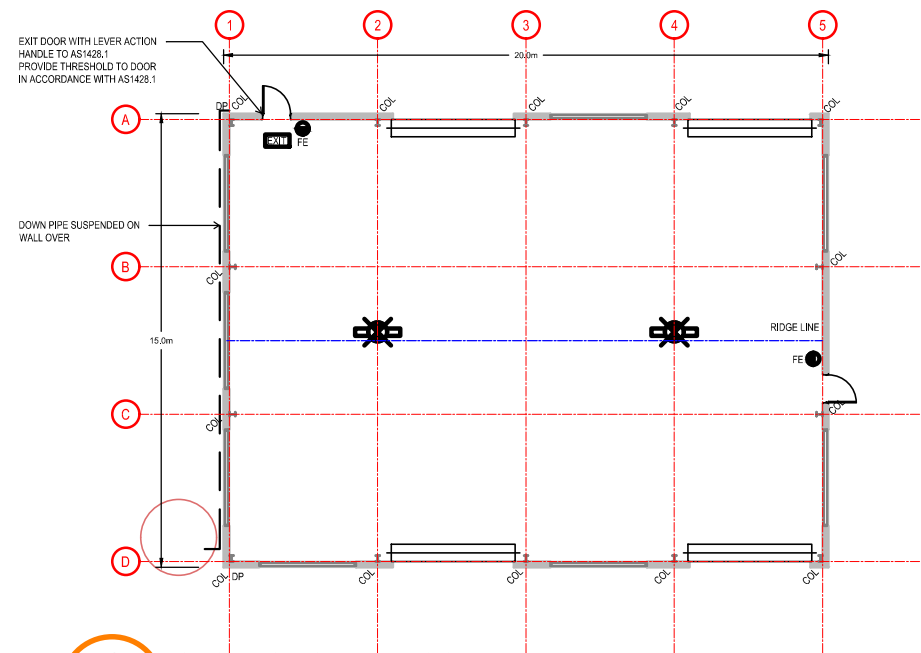
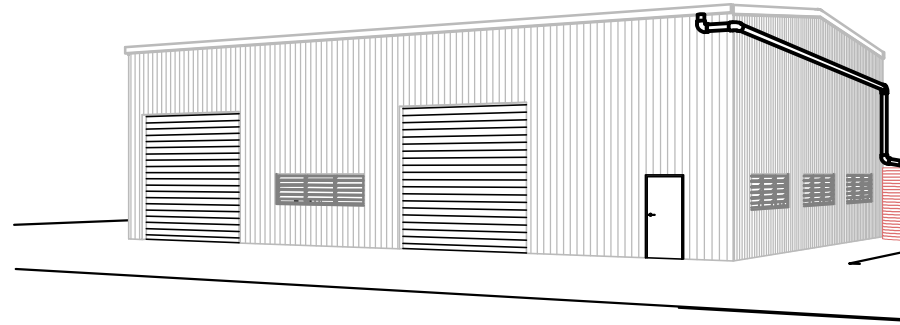




MURRA WARRA  
SOLAR FARM

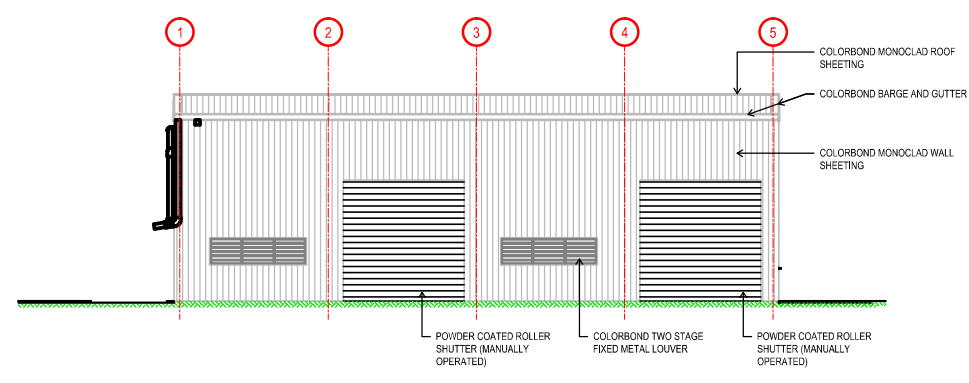
FIGURE 11  
TYPICAL SITE OPERATION  
BUILDING - FACILITIES - CAR  
PARK AND COLLECTOR YARD

PROPOSED STORAGE SHED

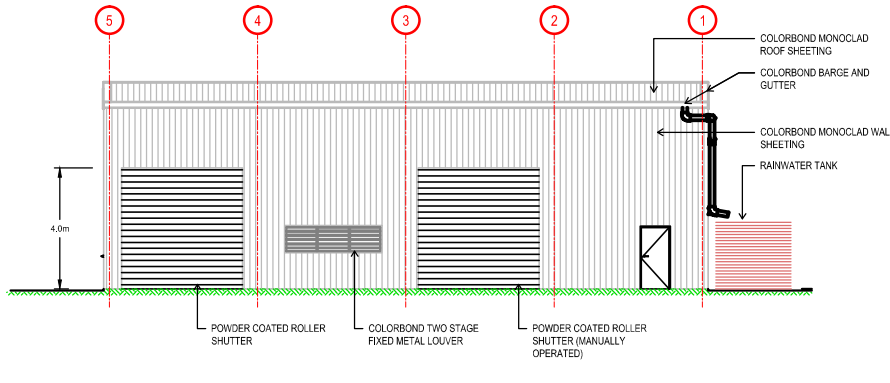


1 STORAGE SHED FLOOR PLAN

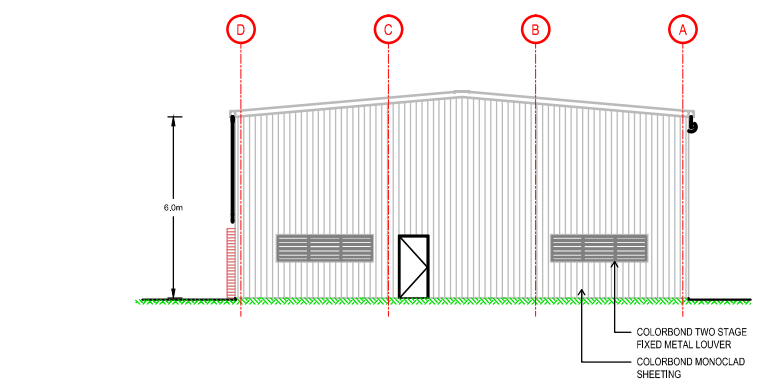
PERSPECTIVE  
3D STORAGE SHED



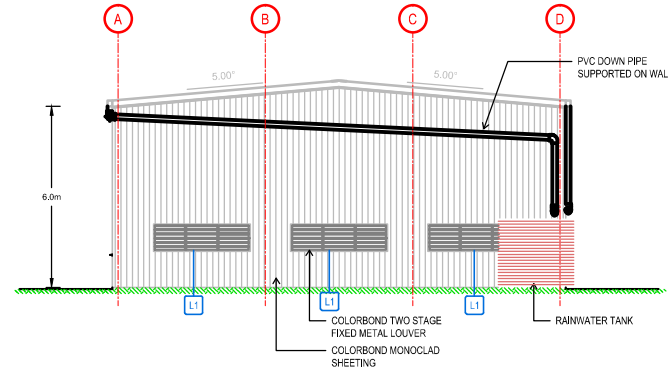
S STORAGE SHED SOUTHERN ELEVATION



N STORAGE SHED NORTH ELEVATION



E STORAGE SHED EASTERN ELEVATION



W STORAGE SHED WESTERN ELEVATION

**LEGEND - FLOOR PLAN**

- PROPOSED WALL REFER WALL SCHEDULE FOR TYPE
- CIRCULATION SPACE TO AS1428.1-2009
- MIN. 920 DOOR TO AS1428.1-2009 (MIN. 850 CLEAR)
- WALL
- CIRCULATION SPACE TO AS1428.1-2009

FHR 35m x 10mm ID FIRE HOSE REEL INSTALLED IN ACCORDANCE WITH AS2441

FE 4.5kg 4A-60(BE) DRY CHEMICAL FIRE EXTINGUISHER INSTALLED IN ACCORDANCE WITH AS2444-1990

BOLLARD REFER SLAB DETAILS FOR BOLLARD DETAILS

DP DOWNPIPE REFER STORMWATER PLAN FOR SIZE

WALL TAG, REFER WALL SCHEDULE FOR WALL TYPE, INSULATION AND FINISH

DOOR TAG, REFER DOOR SCHEDULE FOR DETAILS

WINDOW TAG, REFER WINDOW SCHEDULE FOR DETAILS

CURTAIN WALL TAG, REFER NON-STANDARD WINDOW SCHEDULE FOR DESCRIPTION, REFER ELEVATIONS AND PLAN FOR MULLION SETOUT

- NOTES:**
- ROLLER DOORS TO BE DESIGNED TO MEET PRESSURE CAPACITY REQUIREMENTS OF THE REGION
  - DISABILITY ACCESS TO COMPLY WITH AS1428.1 INCLUDING A MAXIMUM THRESHOLD OF 5mm AND CARPARK GRADES TO BE A MAXIMUM OF 1 IN 40 (2.5%) FROM DISABILITY CARPARK TO BUILDING.
  - CONCRETE TILT PANELS TO COMPLY WITH BCA CL 1.11.
  - REFER GENERAL NOTES ON 001 FOR FURTHER NOTES AND ABBREVIATIONS
  - REFER TO THE SCHEDULE OF FIXTURES AND FINISHES FOR SPECIFICATIONS

**EMERGENCY LIGHTING SCHEDULE**

SYMBOL	CO	CSO	HEIGHT	DESCRIPTION
	D50	C50	5000	STANILITE ECBT136M, MAINTAINED 36W SINGLE, BARE BATTEN
	D25	D25	2700	STANILITE ESFLD
	E2.5	E2.5	2400	STANILITE EELD 10W MAINTAINED, SINGLE SIDE

TO COMPLY WITH AS2293.1-2005 AND B.C.A. PART 4.

**NOTES**

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THE FINAL DESIGN WILL BE GENERALLY IN ACCORDANCE WITH WHAT IS SHOWN.

FINAL DESIGN WILL COMPLY WITH VICTORIAN BUILDING CODES.

BASED ON I<sup>3</sup> DRAWINGS:  
- 'SITE PLAN DETAILED' PROJECT 16-104 DRAWINGS No. 16-104-A01-C, 16-104 - A02 -A AND 16-104-A03-B.



SHEET 3 OF 3



INFRA DWG	N/A	APPD DATE	130217
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SCALE - AS SHOWN @ A3

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MURRA WARRA  
SOLAR FARM

FIGURE 12  
STORAGE BUILDING

ENERGY STORAGE  
SOLUTION

LEGEND

- STORAGE AREA
- CONTOUR (2m - LIDAR)

NOTES

1. STORAGE SITE BOUNDARY APPROXIMATE 2 Ha;
2. SUBJECT TO FINAL DESIGN WHICH WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
3. SITE TO BE ENCLOSED AROUND PERIMETER BY 2m SECURITY FENCING;
4. CAR PARK FOR UP TO SIX VEHICLES TO BE PROVIDED;
5. INFRASTRUCTURE TO CONFORM TO AUSTRALIAN STANDARDS, BCA/NCC AND LOCAL GOVERNMENT REGULATIONS;
6. THE SITE BOUNDARIES ARE ARBITRARY AND NEED TO BE INCORPORATED INTO THE OVERALL SITE LAYOUT IN DETAIL DESIGN;
7. EXISTING INFRASTRUCTURE SERVICES HAVE NOT BEEN INCORPORATED INTO THESE DRAWINGS AND THEREFORE MUST BE CONSIDERED DURING DETAILED DESIGN;
8. THE ARRANGEMENT OF THE INTERNAL BUILDING, ASSOCIATED SERVICES AND INVERTORS WILL BE FURTHER DEVELOPED IN DETAIL DESIGN.
9. ALL DIMENSIONS ARE APPROXIMATE;
10. ALL CABLING TO BE UNDERGROUND;
11. RES INTERNAL X-STORAGEBUILDING03\_ICUBED\_20171004 - ICUBED DRAWING 17-226 A01 SHOWN IN THIS DRAWING.

**i<sup>3</sup> consulting pty ltd**  
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INFRA DWG	N/A	APPD DATE	10-10-2017
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
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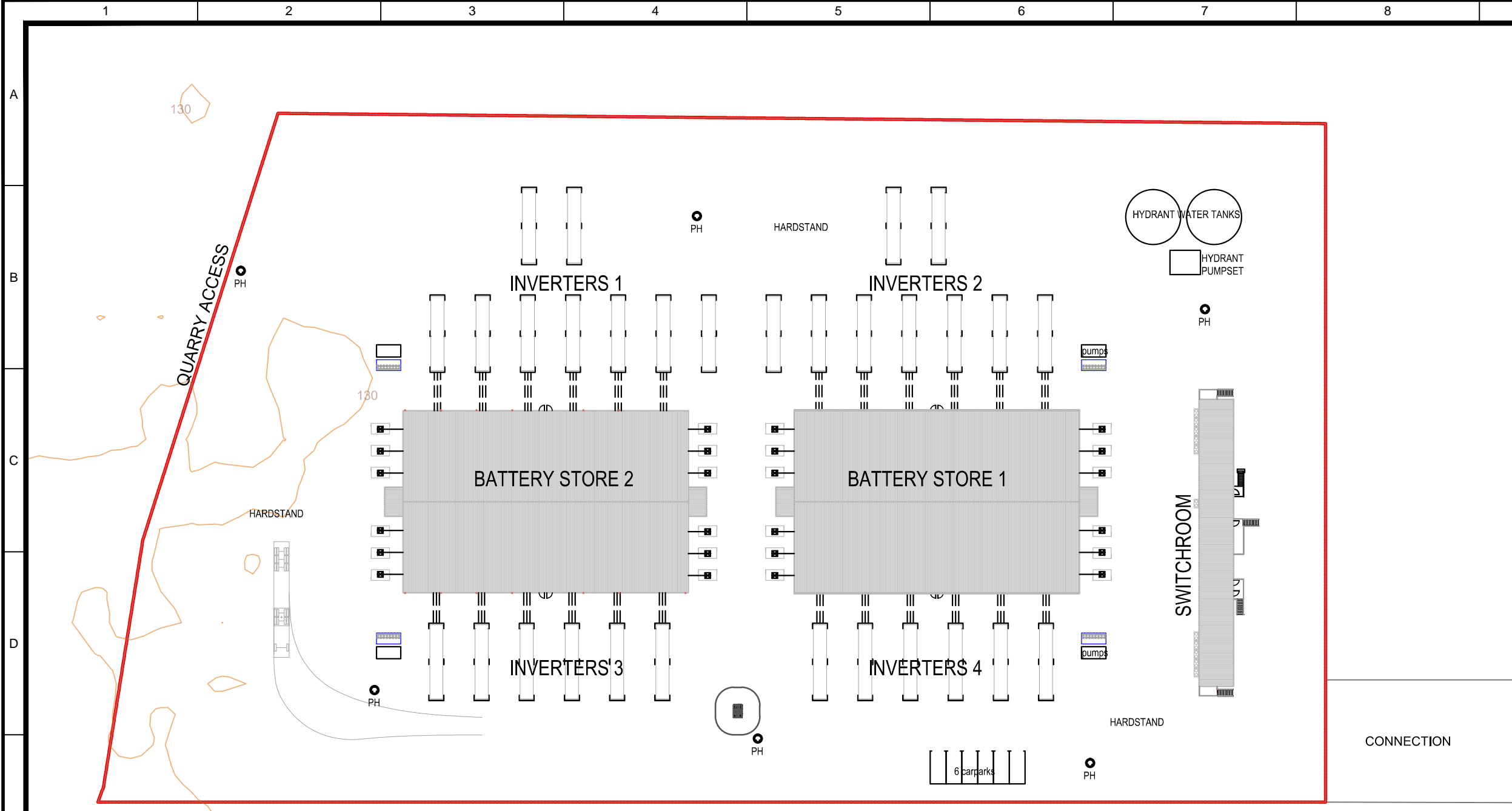
SCALE - AS SHOWN @A3

COORDS  
MGA ZONE 54, DATUM GDA 94

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**1 SITE PLAN**  
1:750

SERVICES:

1. WATER SERVICES WILL BE REQUIRED FOR THE AMENITIES IN THE SWITCHROOM.
2. FENCING IS TO BE PROVIDED AROUND THE PERIMETER OF THE BUILDING AREA.
3. HARDSTAND SUITABLE FOR DESIGN VEHICLES WILL BE PROVIDED WITHIN THE BUILDING AREA.
4. APPROPRIATE DRAINAGE WILL BE PROVIDED FOR THE RUNOFF OF WATER IN THIS AREA
5. SEWERAGE TREATMENT WILL BE PROVIDED AS NECESSARY TO MEET THE LOCAL AUTHORITY REGULATIONS AND ENVIRONMENTAL REQUIREMENTS.

SITE SCHEDULE

BUILDING SITE AREA	21051 m <sup>2</sup>
--------------------	----------------------

BUILDING AREA (GROSS)

Ground Floor	
BATTERY STORE BUILDING 1	1402 m <sup>2</sup>
BATTERY STORE BUILDING 2	1402 m <sup>2</sup>
	2803 m <sup>2</sup>
Switchroom	
SWITCHROOM	268 m <sup>2</sup>
Grand total	3071 m <sup>2</sup>

CARPARKING SCHEDULE

Total Carparks	6
----------------	---



# MURRA WARRA SOLAR FARM

## FIGURE 13 ENERGY STORAGE BUILDING ELEVATIONS

### NOTES

1. SUBJECT TO FINAL DESIGN WHICH WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
2. INFRASTRUCTURE TO CONFORM TO AUSTRALIAN STANDARDS, BCA/NCC AND LOCAL GOVERNMENT REGULATIONS;
3. THE SITE BOUNDARIES ARE ARBITRARY AND NEED TO BE INCORPORATED INTO THE OVERALL SITE LAYOUT IN DETAIL DESIGN;
4. THE ARRANGEMENT OF THE INTERNAL BUILDING, ASSOCIATED SERVICES AND INVERTORS WILL BE FURTHER DEVELOPED IN DETAIL DESIGN.
5. ALL DIMENSIONS ARE APPROXIMATE;
6. ALL CABLING TO BE UNDERGROUND;
7. ICUBED DRAWING 17-226 A03 SHOWN IN THIS DRAWING.

PAGE 1 OF 2



INFRA DWG	N/A	APPD DATE	10-10-17
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D3506-01**

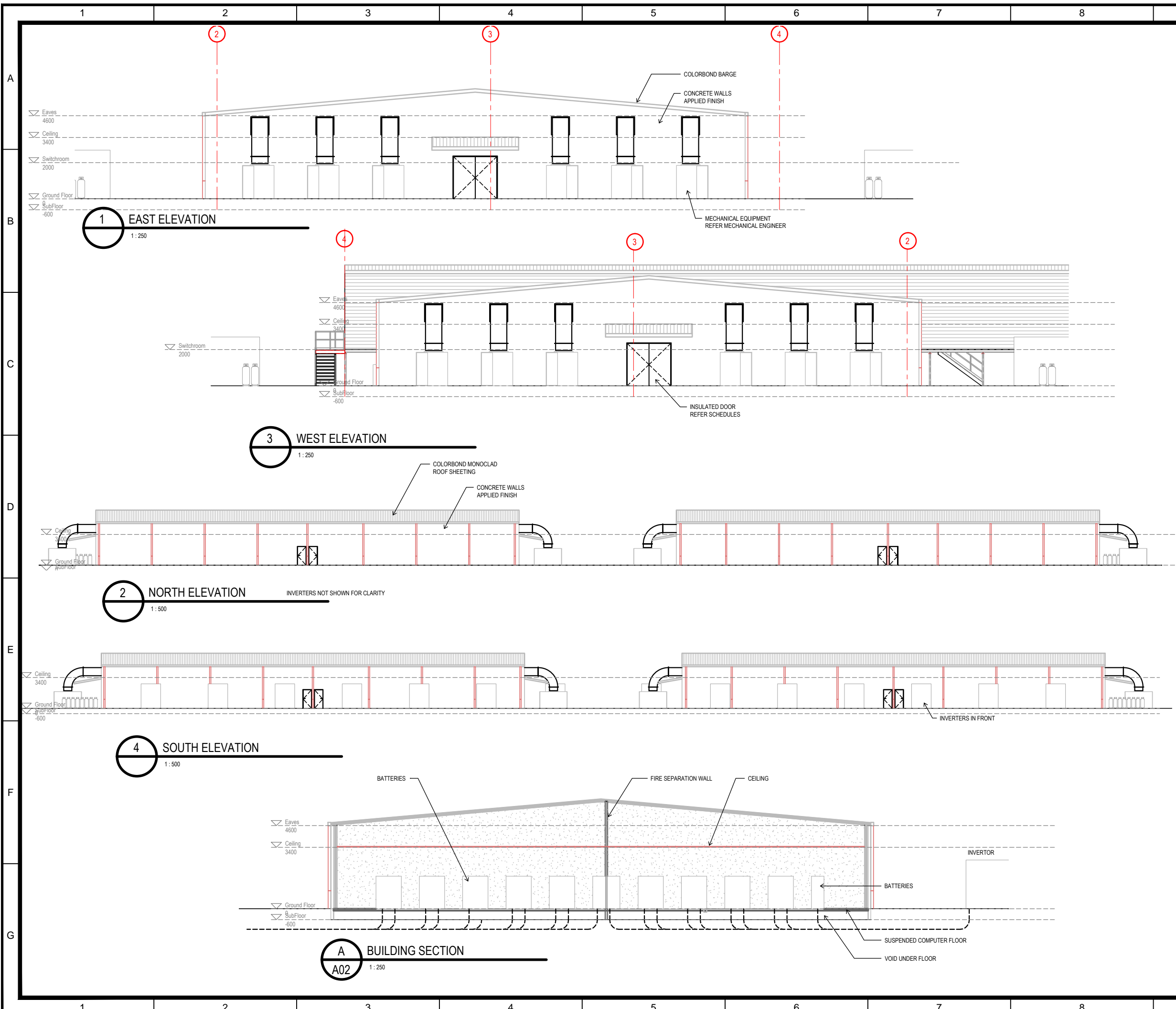
SCALE - AS SHOWN @A3

COORDS  
N/A

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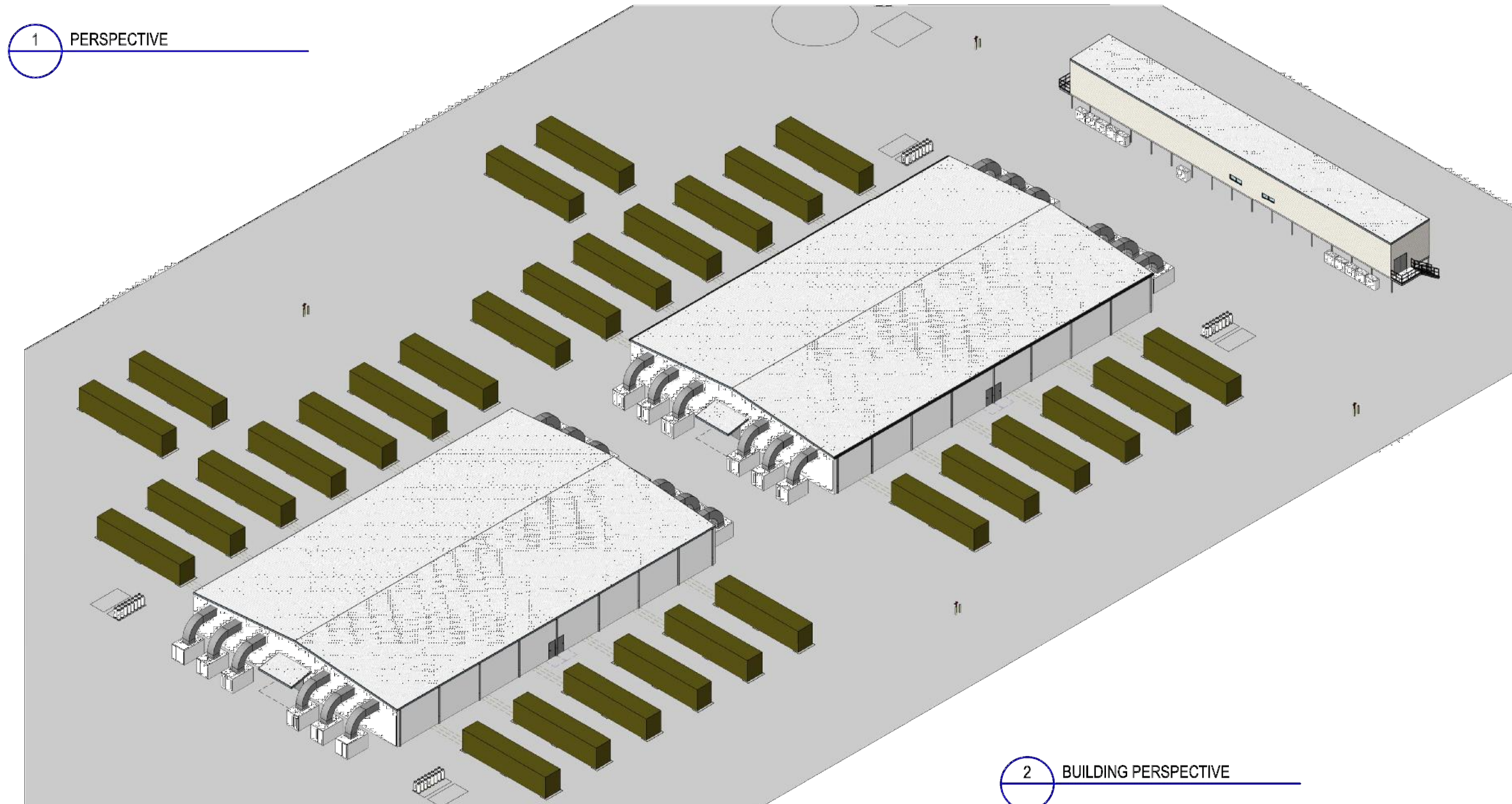
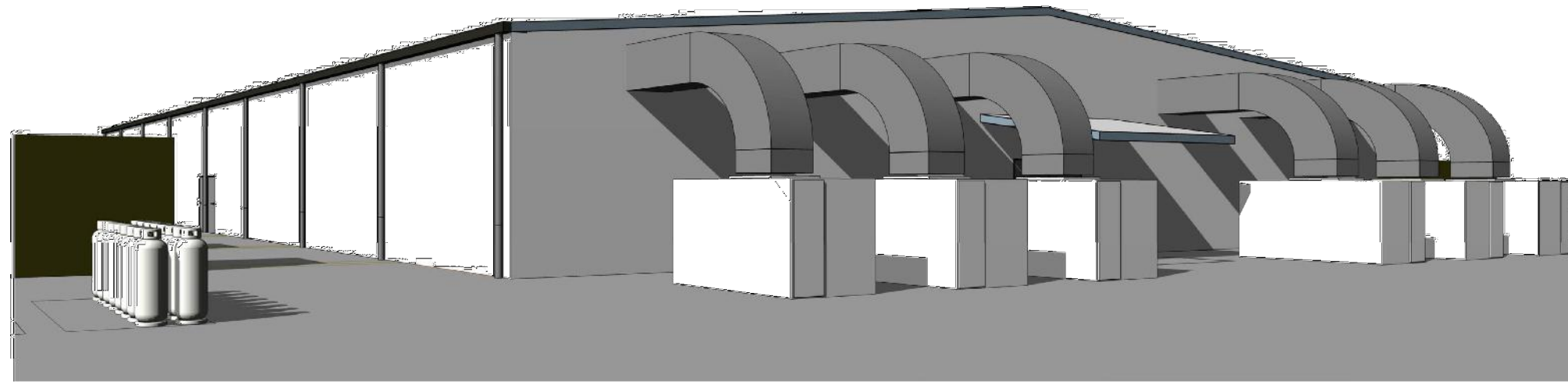
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MURRA WARRA  
SOLAR FARM

FIGURE 13  
ENERGY STORAGE  
BUILDING  
PERSPECTIVE



1 PERSPECTIVE

2 BUILDING PERSPECTIVE

NOTES

1. SUBJECT TO FINAL DESIGN WHICH WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
2. INFRASTRUCTURE TO CONFORM TO AUSTRALIAN STANDARDS, BCA/NCC AND LOCAL GOVERNMENT REGULATIONS;
3. THE SITE BOUNDARIES ARE ARBITRARY AND NEED TO BE INCORPORATED INTO THE OVERALL SITE LAYOUT IN DETAIL DESIGN;
4. THE ARRANGEMENT OF THE INTERNAL BUILDING, ASSOCIATED SERVICES AND INVERTORS WILL BE FURTHER DEVELOPED IN DETAIL DESIGN.
5. ALL DIMENSIONS ARE APPROXIMATE;
6. ALL CABLING TO BE UNDERGROUND;
7. ICUBED DRAWING 17-226 A00 SHOWN IN THIS DRAWING.

PAGE 2 OF 2



INFRA DWG	N/A	APPD DATE	10-10-17
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
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SCALE - AS SHOWN @A3

COORDS N/A

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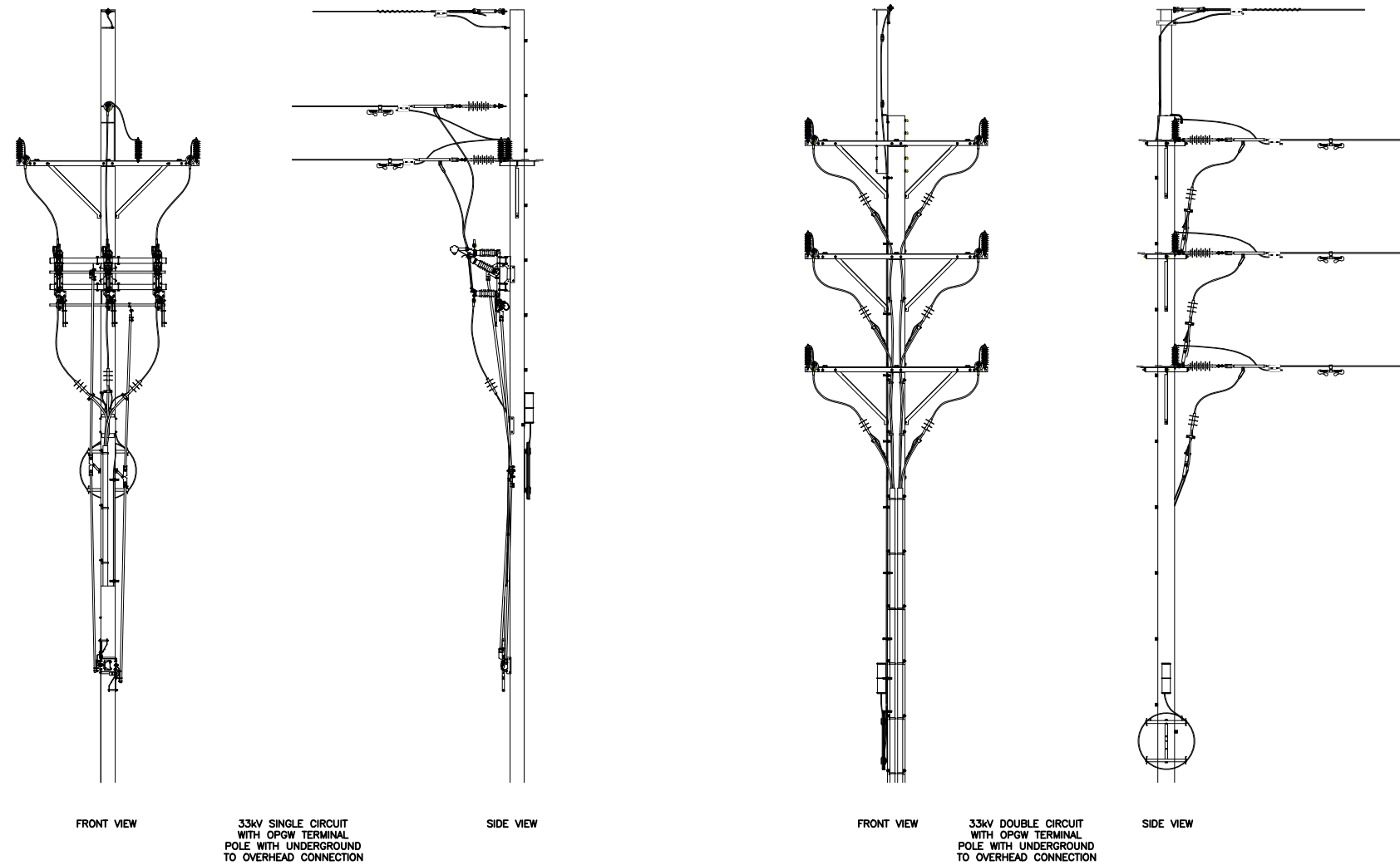
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# MURRA WARRA SOLAR FARM

## FIGURE 14 TYPICAL 33 KV OVERHEAD LINE POLES



**NOTES**

STRUCTURES MAY BE MADE OUT OF CONCRETE, STEEL OR WOOD OR A COMBINATION OF THESE MATERIALS;

POLE CONFIGURATIONS ARE INDICATIVE ONLY AND MAY CHANGE DURING DETAILED DESIGN.  
INSULATORS MAY BE PORCELAIN OR POLYMERIC;

THERE MAY BE 1 OR 2 CONDUCTORS PER PHASE;

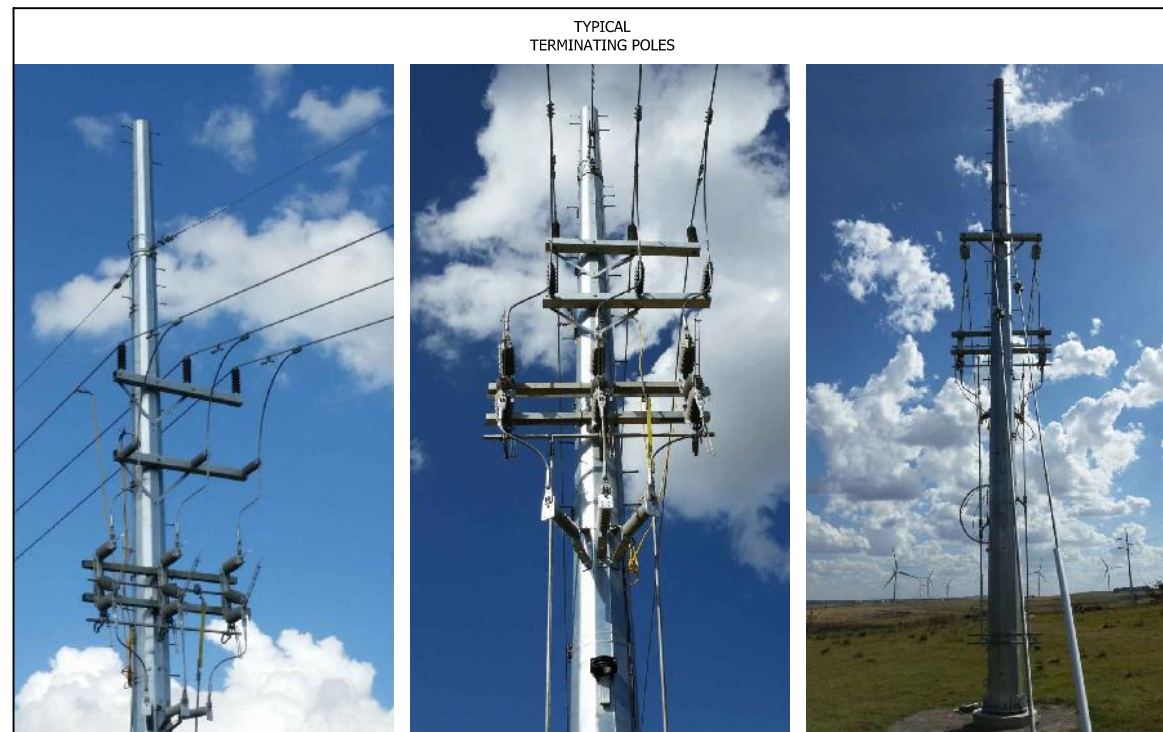
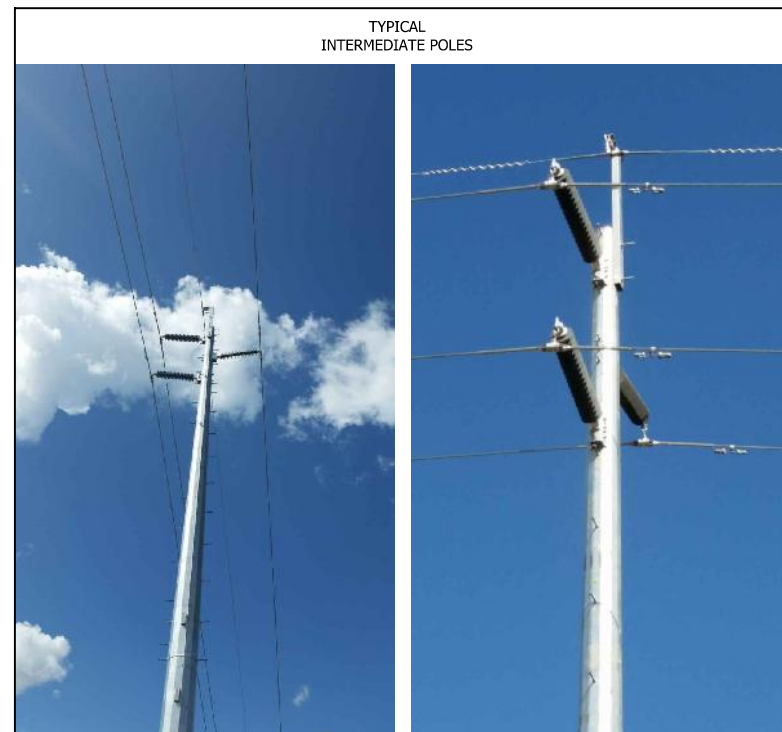
OPTICAL FIBRE GROUND WIRE (OPGW) IS SHOWN, OPGW IS AN EARTHING WIRE COMBINED WITH COMMUNICATION CABLES;

POLE HEIGHT WILL BE APPROXIMATELY 30m HEIGHT;

THE FINAL DESIGN WILL BE GENERALLY IN ACCORDANCE WITH WHAT IS SHOWN;

DOUBLE "H" TYPE POLES MAY BE A FEATURE OF FINAL DESIGN AND / OR AT A CHANGE IN DIRECTION OF THE TRANSMISSION LINE SUBJECT TO FINAL DESIGN;

BASED ON SENERGY DRAWING 9116-E-005 REV 0.



INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
**03679D4103-01**

SCALE - NTS      @A3

COORDS      N/A

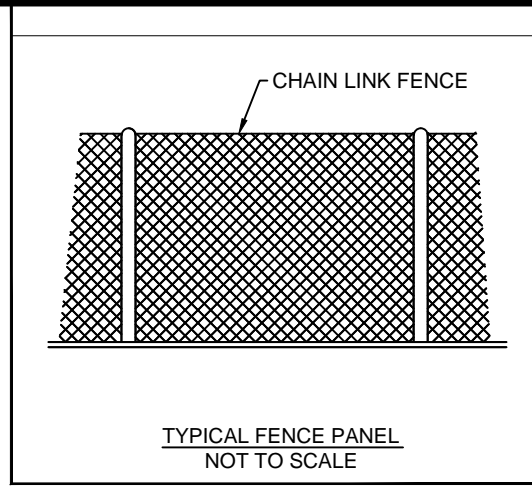
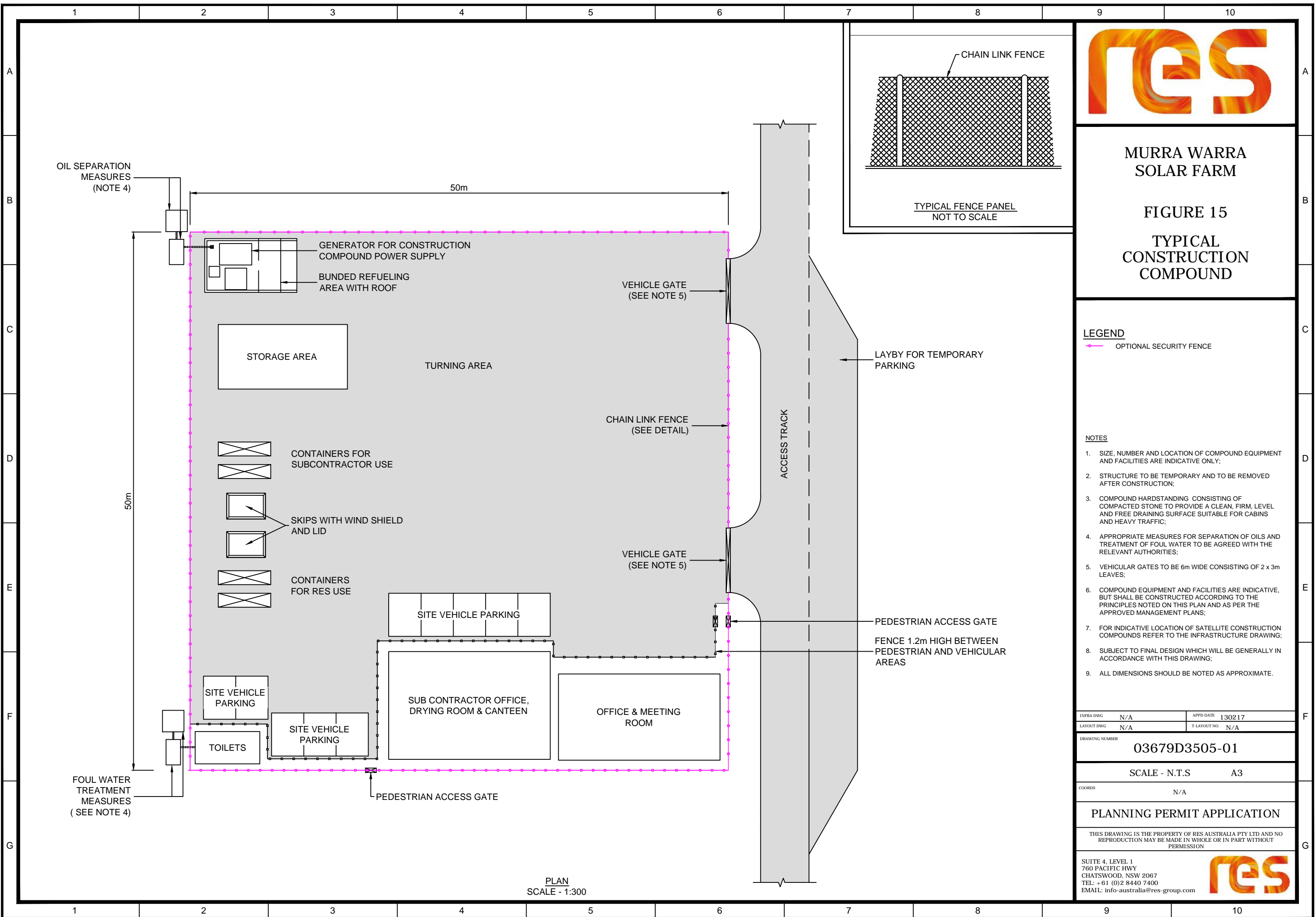
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**MURRA WARRA  
SOLAR FARM**

**FIGURE 15  
TYPICAL  
CONSTRUCTION  
COMPOUND**

**LEGEND**  
 - - - - - OPTIONAL SECURITY FENCE

- NOTES**
1. SIZE, NUMBER AND LOCATION OF COMPOUND EQUIPMENT AND FACILITIES ARE INDICATIVE ONLY;
  2. STRUCTURE TO BE TEMPORARY AND TO BE REMOVED AFTER CONSTRUCTION;
  3. COMPOUND HARDSTANDING CONSISTING OF COMPACTED STONE TO PROVIDE A CLEAN, FIRM, LEVEL AND FREE DRAINING SURFACE SUITABLE FOR CABINS AND HEAVY TRAFFIC;
  4. APPROPRIATE MEASURES FOR SEPARATION OF OILS AND TREATMENT OF FOUL WATER TO BE AGREED WITH THE RELEVANT AUTHORITIES;
  5. VEHICULAR GATES TO BE 6m WIDE CONSISTING OF 2 x 3m LEAVES;
  6. COMPOUND EQUIPMENT AND FACILITIES ARE INDICATIVE, BUT SHALL BE CONSTRUCTED ACCORDING TO THE PRINCIPLES NOTED ON THIS PLAN AND AS PER THE APPROVED MANAGEMENT PLANS;
  7. FOR INDICATIVE LOCATION OF SATELLITE CONSTRUCTION COMPOUNDS REFER TO THE INFRASTRUCTURE DRAWING;
  8. SUBJECT TO FINAL DESIGN WHICH WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
  9. ALL DIMENSIONS SHOULD BE NOTED AS APPROXIMATE.

INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

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PLAN  
SCALE - 1:300



# MURRA WARRA SOLAR FARM

## FIGURE 16 TYPICAL METERING POINT

PHOTO OF A TYPICAL REACTIVE POWER PLANT

PHOTO OF A TYPICAL SWITCHING CONTROL BUILDING



### NOTES

MORE COMPONENTS MAY BE ADDED DURING DETAILED DESIGN;  
HEIGHT OF COMPOUND WILL APPROXIMATELY 10m.

THE FINAL DESIGN WILL BE GENERALLY IN ACCORDANCE WITH  
WHAT IS SHOWN;

FACILITY LOCATED IN A SECURED COMPOUND WITH FENCING TO  
APPROX. 2.5m HEIGHT;

BASED ON SENERGY DRAWING 9116-E-003 - REV 02;

AREA OF COMPOUND 60m x 90m;

FINAL CONNECTION TO SUBSTATION TO BE UNDERGROUND.



INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

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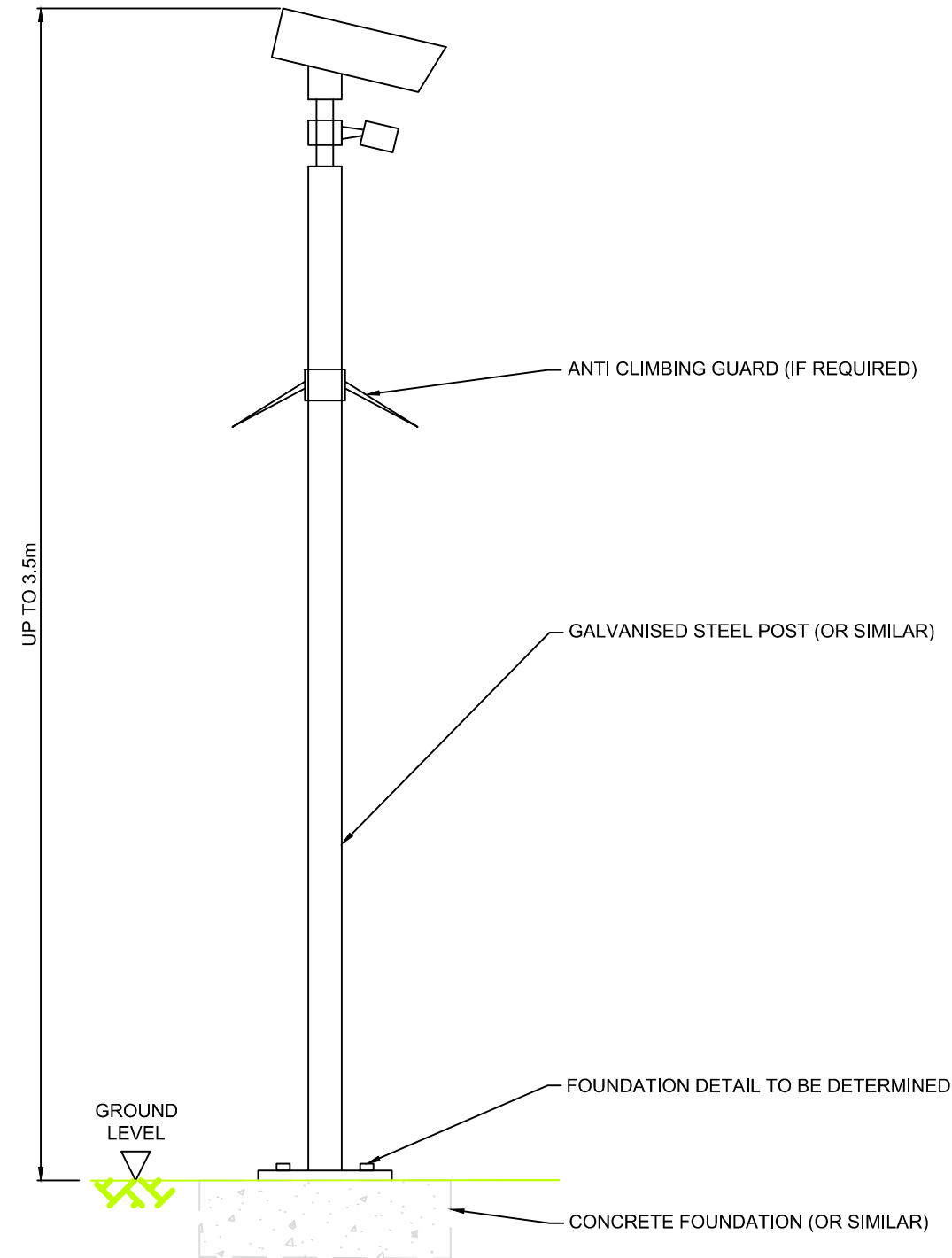


# MURRA WARRA SOLAR FARM

## FIGURE 17 TYPICAL SECURITY LIGHTING & CCTV SUPPORT DETAILS

### NOTES:

1. ALL DIMENSIONS ARE MAXIMUM ANTICIPATED AND SUBJECT TO DETAILED DESIGN;
2. SUBJECT TO FINAL DESIGN WHICH WILL GENERALLY BE IN ACCORDANCE WITH THIS DRAWING;
3. SECURITY LIGHTING MAY BE INFRARED;
4. LIGHTING AND CCTV SUPPORTS TO BE LOCATED ADJACENT TO SECURITY FENCING;
5. CAMERAS MAY BE INSTALLED WITH PAN FUNCTION;
6. TO BE INSTALLED IF REQUIRED BY INSURERS.



INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

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**03679D2207-01**

SCALE - N.T.S    A3

COORDS    N/A

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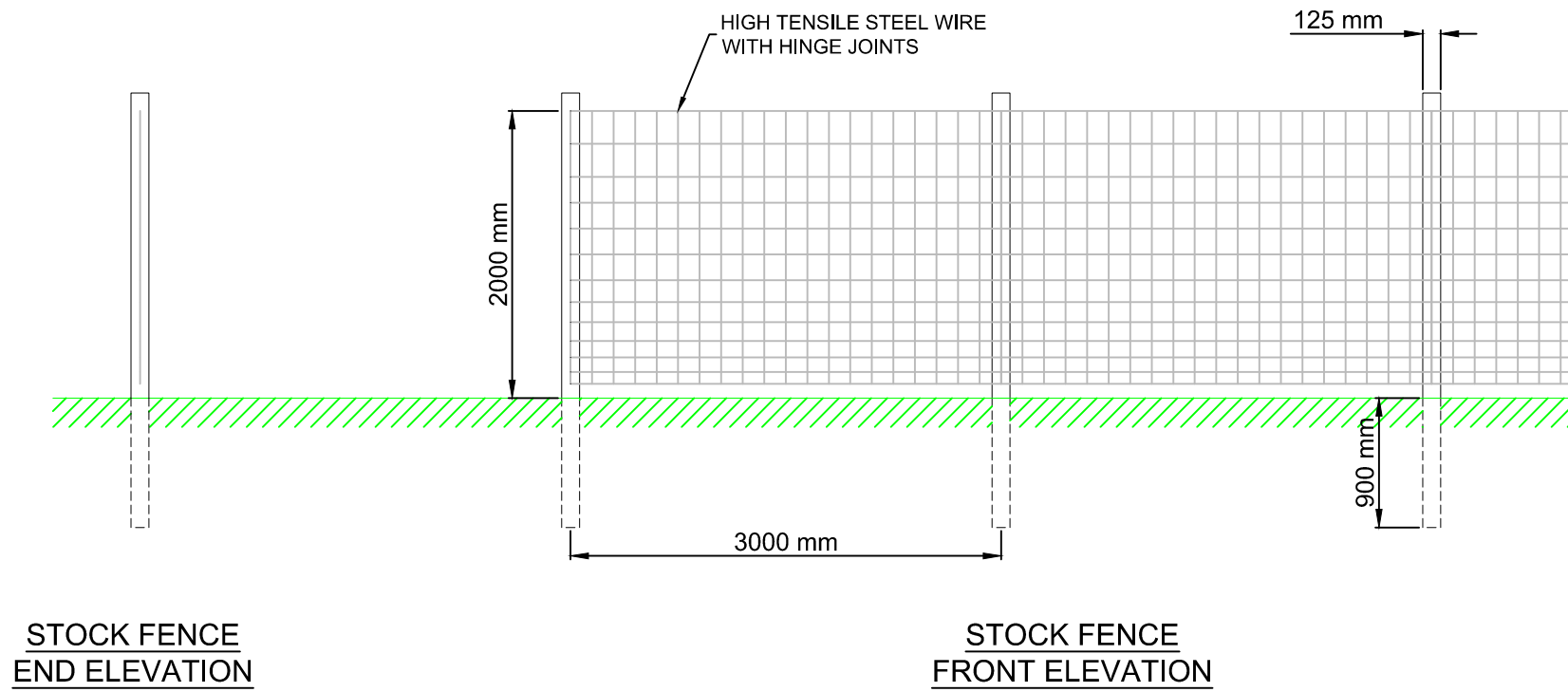
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MURRA WARRA  
SOLAR FARM

FIGURE 18  
TYPICAL STOCK  
FENCE DETAIL



NOTES:

1. SUBJECT TO FINAL DESIGN WHICH WILL BE GENERALLY IN ACCORDANCE WITH THIS DRAWING;
2. ALL DIMENSIONS SHOULD BE NOTED AS APPROXIMATE;
3. TO BE INSTALLED IF REQUIRED BY INSURERS.



INFRA DWG	N/A	APPD DATE	130217
LAYOUT DWG	N/A	T-LAYOUT NO.	N/A

DRAWING NUMBER  
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SCALE - N.T.S      A3

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