

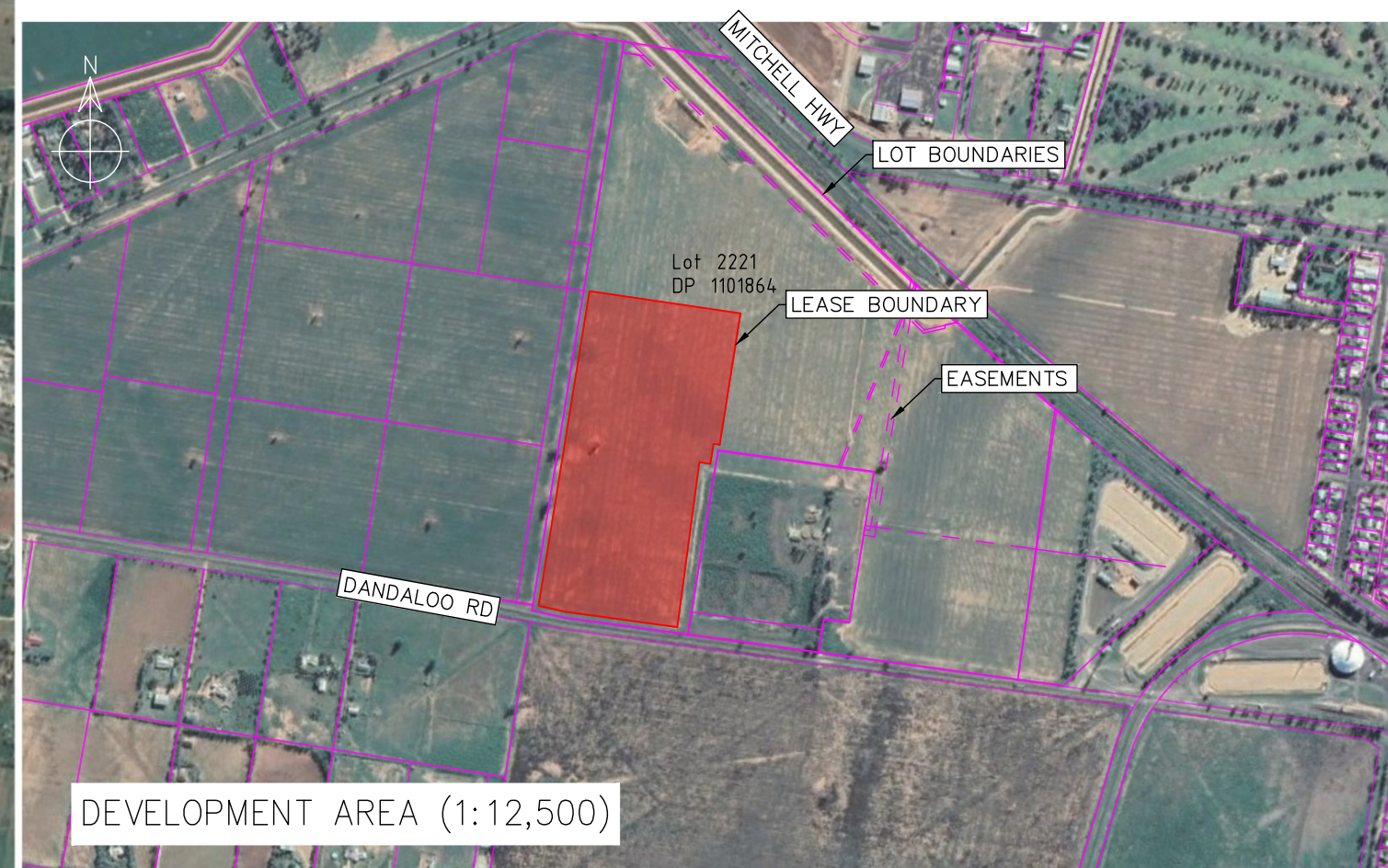


ADDRESS
LOT 2221, DP1101864
1570 DANDALOO ROAD,
NARROMINE,
NSW 2821

COORDINATES
-32.230257°, 148.221808°



NSW STATE MAP



DEVELOPMENT AREA (1:12,500)

REFERENCES							
	C	29.01.2021	TITLE BLOCK UPDATE	JM	JM	SS	JM
	B	22.12.2020	MINOR REVISION	JM	JM	SS	JM
	A	18.12.2020	FIRST ISSUE	JM	JM	SS	JM
	REV.	DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APP.

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TITLE	PROVIDENCE ASSET GROUP
	NARROMINE WEST SOLAR FARM
	LOCATION DETAIL

DWG No. 10080-G-GAD-01-1

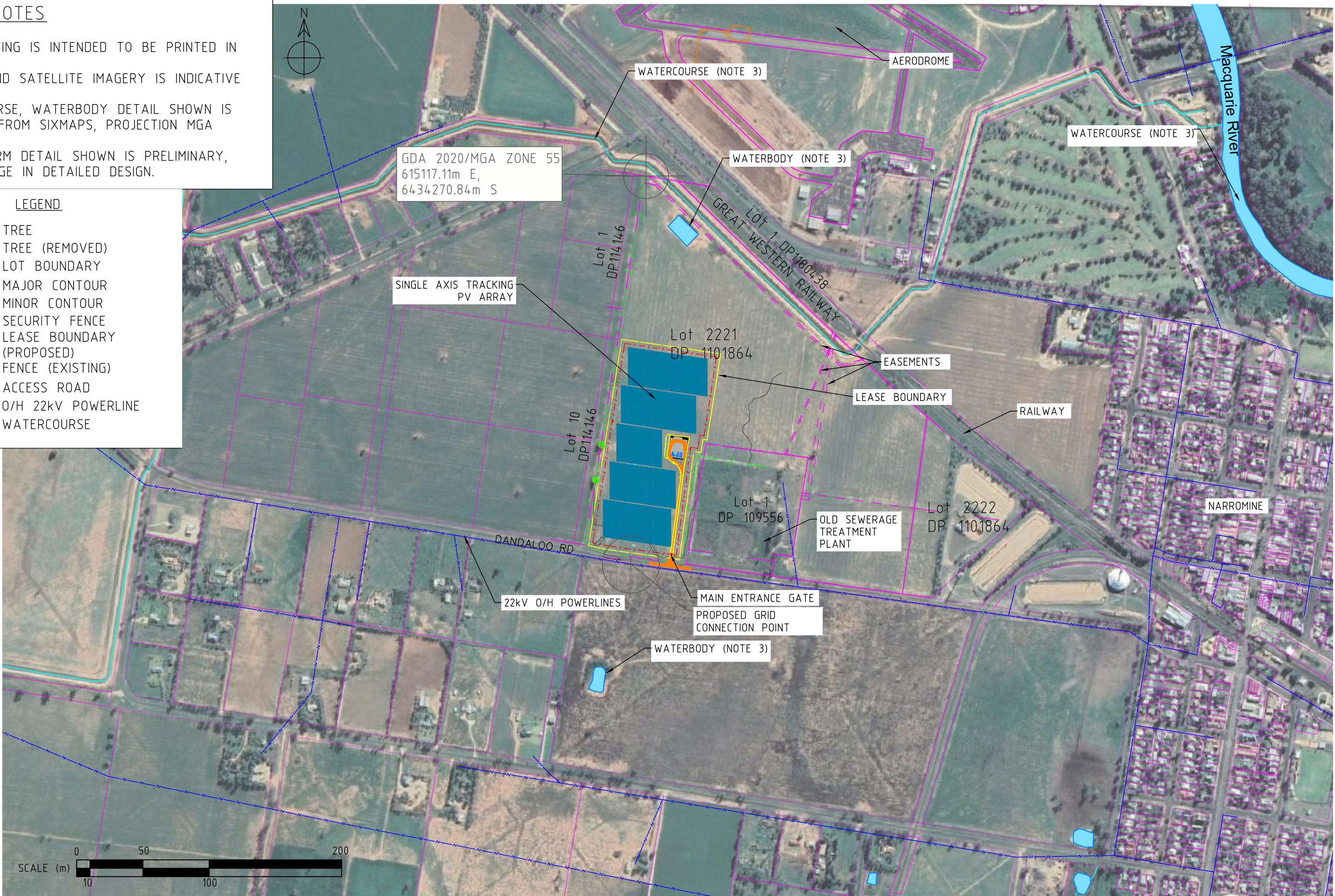
SCALE	AS SHOWN
REVISION	C
PAPER SIZE	A3

GENERAL NOTES

1. THIS DRAWING IS INTENDED TO BE PRINTED IN COLOUR.
2. BACKGROUND SATELLITE IMAGERY IS INDICATIVE ONLY.
3. WATERCOURSE, WATERBODY DETAIL SHOWN IS OBTAINED FROM SIXMAPS, PROJECTION MGA ZONE 56.
4. SOLAR FARM DETAIL SHOWN IS PRELIMINARY, MAY CHANGE IN DETAILED DESIGN.

LEGEND

- TREE
- TREE (REMOVED)
- LOT BOUNDARY
- 400 MAJOR CONTOUR
- MINOR CONTOUR
- SECURITY FENCE
- LEASE BOUNDARY (PROPOSED)
- FENCE (EXISTING)
- ACCESS ROAD
- O/H 22kV POWERLINE
- WATERCOURSE



REFERENCES		REVISIONS					
C	29.01.2021	STORMWATER DETAIL, TITLE BLOCK	JM	JM	SS	JM	
B	21.12.2020	REVISED LAYOUT & MINOR REVISIONS	JM	JM	SS	JM	
A	18.12.2020	FIRST ISSUE	JM	JM	SS	JM	
REV	DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.	

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TITLE	
PROVIDENCE ASSET GROUP	
NARROMINE WEST SOLAR FARM	
GENERAL ARRANGEMENT	
OVERVIEW	
DWG No.	10080-G-GAD-02-1

LEGEND

- TREE
- TREE (REMOVED)
- LOT BOUNDARY
- 400 MAJOR CONTOUR
- MINOR CONTOUR
- SECURITY FENCE
- FENCE (EXISTING)
- LEASE BOUNDARY (PROPOSED)
- PV TABLE
- O/H 22kV POWERLINE
- WATERCOURSE

SYSTEM SUMMARY

ELECTRICAL CONFIGURATION:
TOTAL PV PLANT CAPACITY (DC): 6.667 Mwp
TOTAL INVERTER CAPACITY (AC): 4.95MVA
PV PLANT MAXIMUM EXPORT CAPACITY (AC): 4.95MW
DC:AC RATIO: 1.347
STRINGS OF 28 PV MODULES.
220/221 PV STRINGS PER INVERTER.
441 PV STRINGS TOTAL.

PV MODULES:
MFR: LONGI SOLAR
MODEL: LR5-72HPH-540M
NAMEPLATE: 540Wp
QUANTITY: 12.348 MODULES

INVERTERS:
MFR: SUNGROW
MODEL: SG2475HV-MV
NAMEPLATE: 2475kVA
QUANTITY: 2

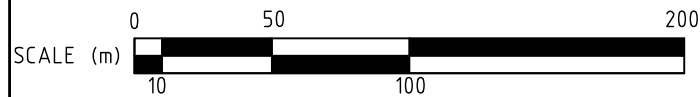
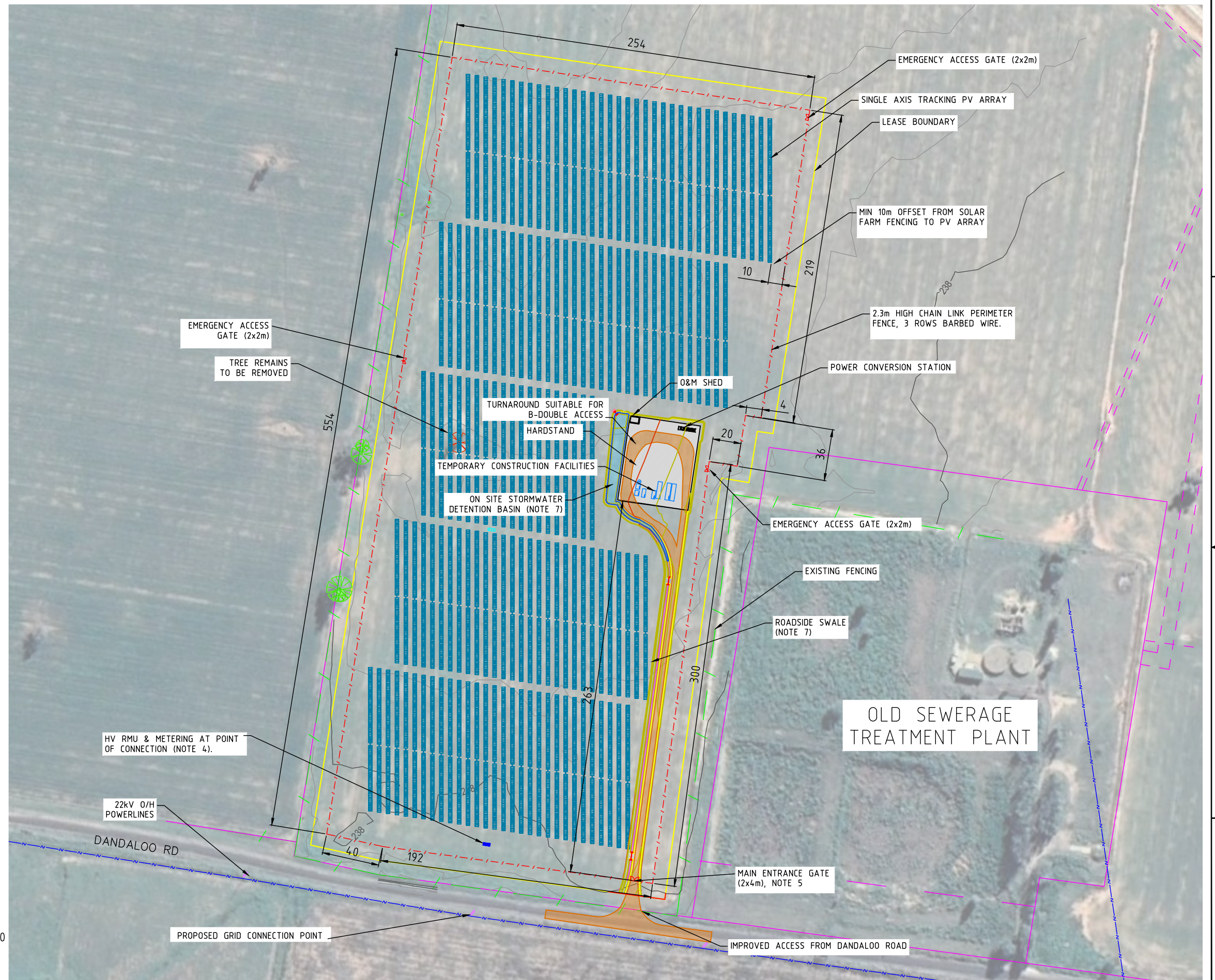
MV POWER STATION:
MFR: SUNGROW
MODEL: SG4950HV-MV
QUANTITY: 1

TRACKER ARRAY:
TYPE: GROUND MOUNT SINGLE AXIS TRACKING
CONFIGURATION: INDEPENDENT TYPE
RANGE OF MOTION: $\pm 60^\circ$
PITCH: 6.25m
GCR: 36.096%
QUANTITY: 147 TABLES

FENCED AREA: 133,143 m²
LEASE AREA: 149,801 m²

GENERAL NOTES:

- SITE ACCESS VIA DANDALOO ROAD.
- DETAIL SHOWN IS PRELIMINARY, MAY CHANGE IN DETAILED DESIGN.
- CLEARANCE BETWEEN SOLAR TRACKER ARRAY & SITE SECURITY FENCE TYPICALLY 10m
- HV RMU & METERING (LOCATION AND TYPE TO BE DETERMINED, IS SUBJECT TO ESSENTIAL ENERGY FEEDBACK).
- FOR SECURITY GATE DETAILS REFER TO DRAWING 10080-C-DET-02-1.
- WATERCOURSE, WATERBODY DETAIL FROM SIXMAPS, MGA ZONE 55 PROJECTION
- REFER TO CIVIL DETAIL DRAWING 10080-C-DET-01-1.



REFERENCES

REVISIONS

REV	DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.
C	2021.01.29	STORMWATER DETAIL, TITLE BLOCK	JM	JM	SS	JM
B	2020.12.22	REVISED LAYOUT & MINOR REVISIONS	JM	JM	SS	JM
A	2020.11.18	FIRST ISSUE	JM	JM	SS	JM

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TITLE
PROVIDENCE ASSET GROUP
NARROMINE WEST SOLAR FARM
GENERAL ARRANGEMENT
SYSTEM DETAIL
DWG No. 10080-G-GAD-02-2

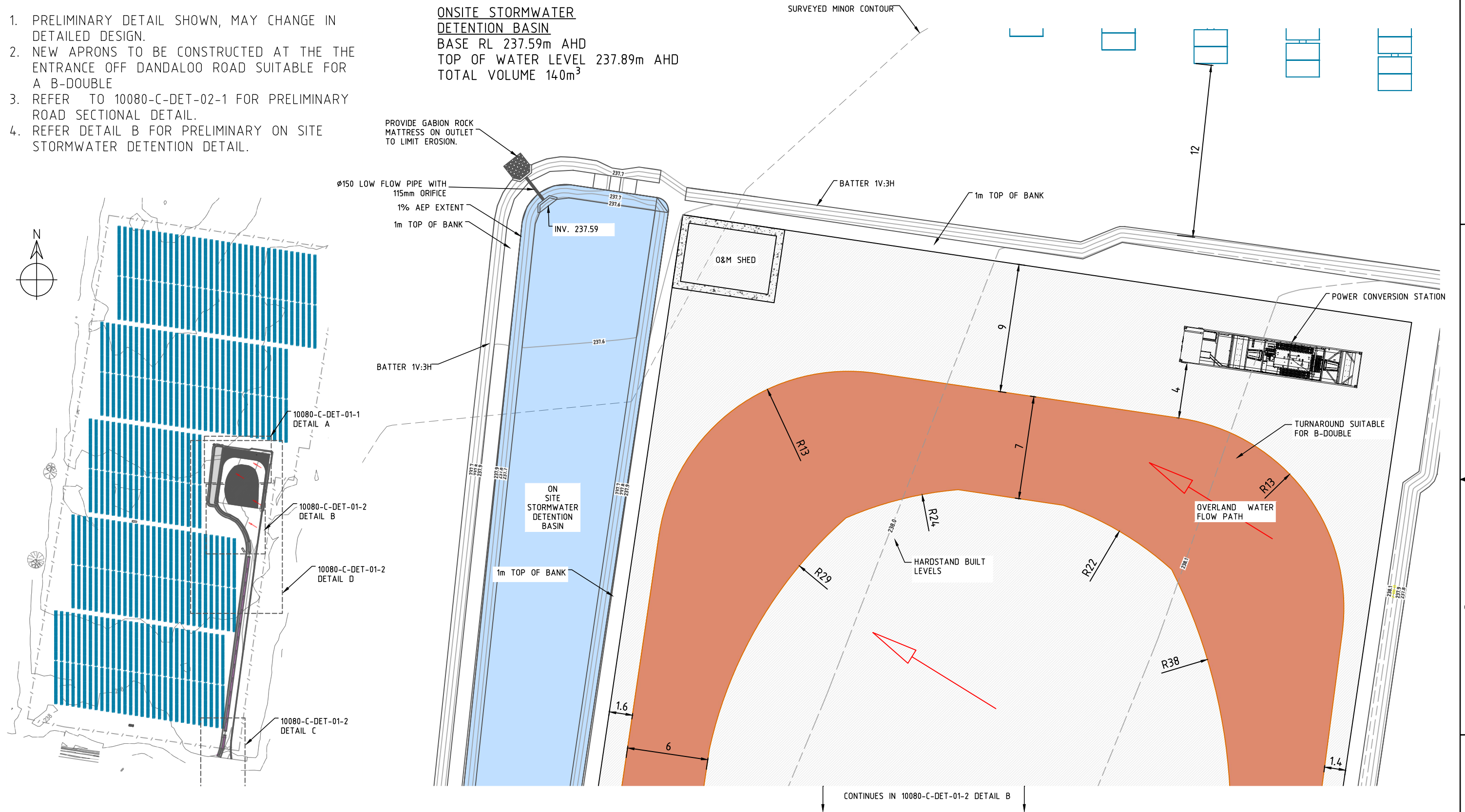
SCALE
1:2750
REVISION
C
PAPER SIZE
A3

GENERAL NOTES

1. PRELIMINARY DETAIL SHOWN, MAY CHANGE IN DETAILED DESIGN.
2. NEW APRONS TO BE CONSTRUCTED AT THE THE ENTRANCE OFF DANDALOO ROAD SUITABLE FOR A B-DOUBLE
3. REFER TO 10080-C-DET-02-1 FOR PRELIMINARY ROAD SECTIONAL DETAIL.
4. REFER DETAIL B FOR PRELIMINARY ON SITE STORMWATER DETENTION DETAIL.

ONSITE STORMWATER
DETENTION BASIN

BASE RL 237.59m AHD
TOP OF WATER LEVEL 237.89m AHD
TOTAL VOLUME 140m³



PLAN VIEW (1:4000)

DETAIL A: HARDSTAND AREA (1:250)



REFERENCES							
	A	2021.02.04	FIRST ISSUE	JM	JM	SS	JM
	REV.	DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.

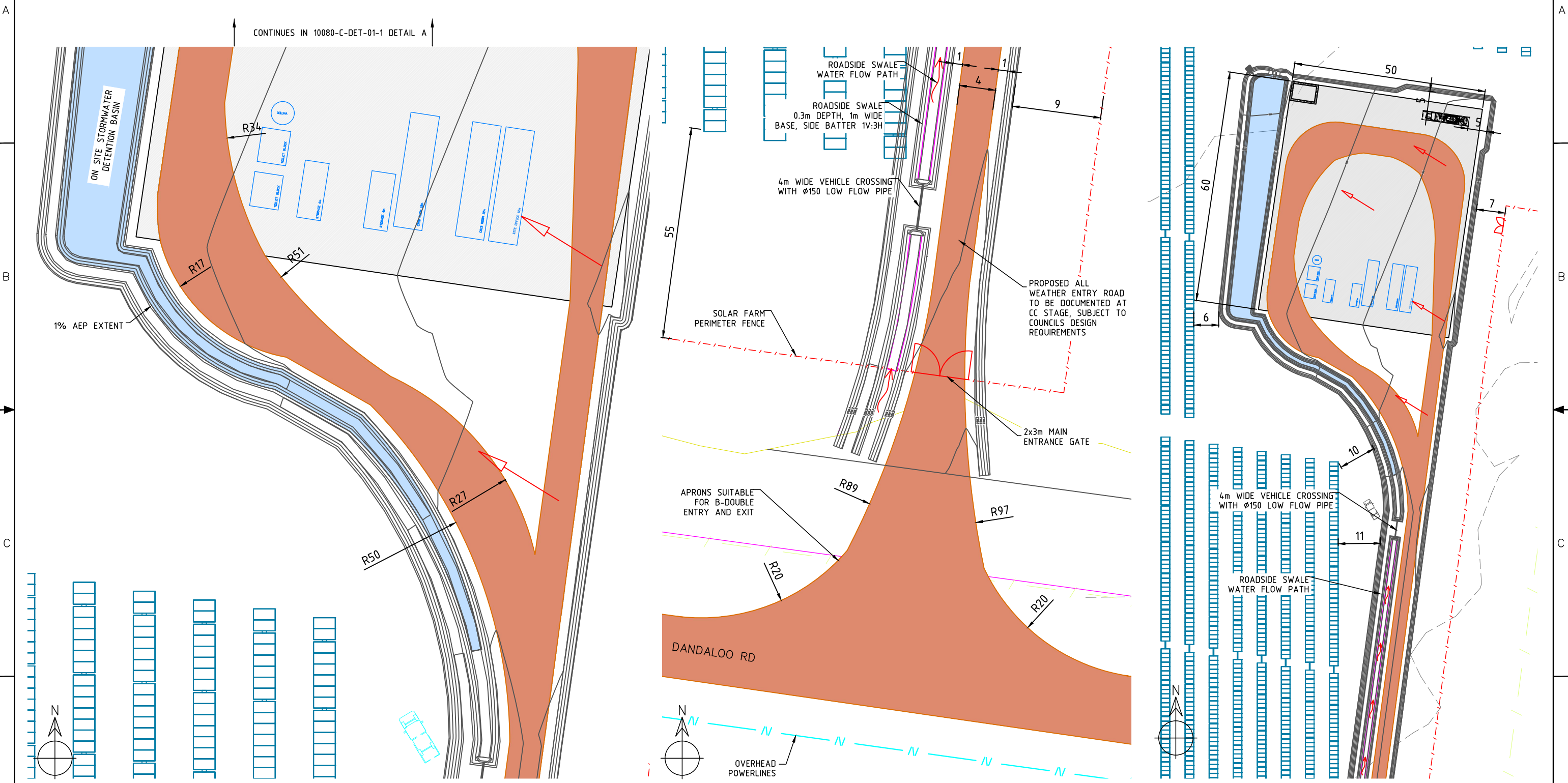
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TITLE
PROVIDENCE ASSET GROUP
NARROMINE WEST SOLAR FARM
CIVIL DETAIL
SHEET 1
DWG No. 10080-C-DET-01-1

SCALE	AS SHOWN
REVISION	A
PAPER SIZE	A3

GENERAL NOTES

- 1. REFER TO DRAWING 10080-C-DET-01-1.
- 2. PRELIMINARY DETAIL SHOWN, MAY CHANGE IN DETAILED DESIGN.



DETAIL B: MAIN ENTRANCE AREA (1:400)

DETAIL C: MAIN ENTRANCE AREA (1:400)

DETAIL D: HARDSTAND AREA (1:1000)



REFERENCES		REVISIONS					
A	2021.02.04	FIRST ISSUE		JM	JM	SS	JM
REV	DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.	

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TITLE		SCALE
PROVIDENCE ASSET GROUP		AS SHOWN
NARROMINE WEST SOLAR FARM		REVISION
CIVIL DETAIL		A
SHEET 2		PAPER SIZE
DWG No. 10080-C-DET-01-2		A3

A

- B



B



D

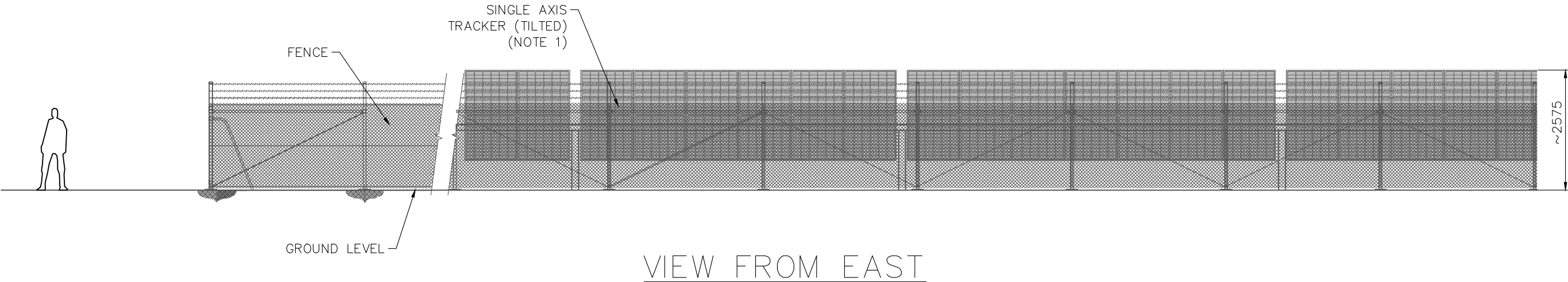
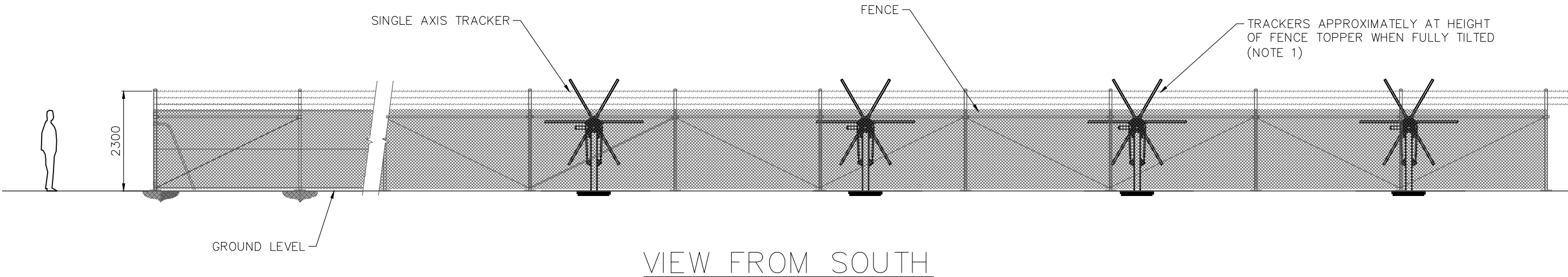


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SCALE
AS SHOWN
REVISION
B
PAPER SIZE
A3

GENERAL NOTES

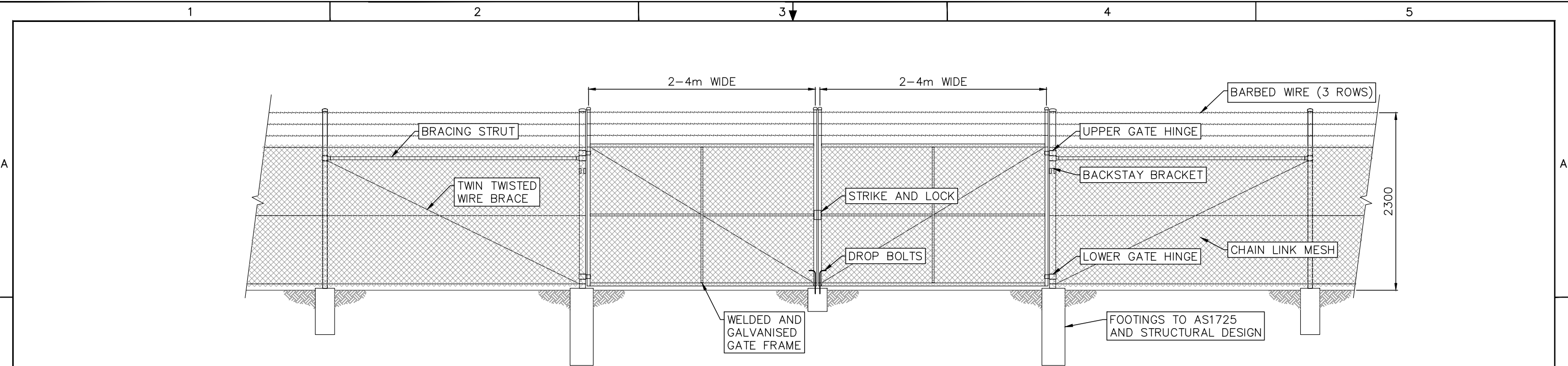
- 1. NB DETAIL PRESENTED IS PARALLEL PROJECTION. PV TRACKERS WILL BE 1-MODULE-IN PORTRAIT SINGLE AXIS TRACKING TYPE, AND WILL BE POSITIONED SUFFICIENTLY FAR FROM THE FENCELINE AS TO APPEAR SMALLER THAN AS SHOWN.
- 2. PRELIMINARY EQUIPMENT SELECTION:
PV MODULE: LONGI LR5-72HPH-540M
TRACKING SYSTEM: NEXTRACKER NX HORIZON
DETAIL PRESENTED IS BASED UPON EQUIPMENT SELECTION, MAY CHANGE DURING DETAILED DESIGN.
- 3. GROUND LEVEL SIMPLIFIED TO CONSTANT ELEVATION, GROUND LEVEL VARIES ACROSS SITE.
- 4. REFER TO 10080-C-DET-02-1 FOR FENCING DETAIL.
- 5. LANDSCAPING EXTERNAL TO FENCE NOT SHOWN.



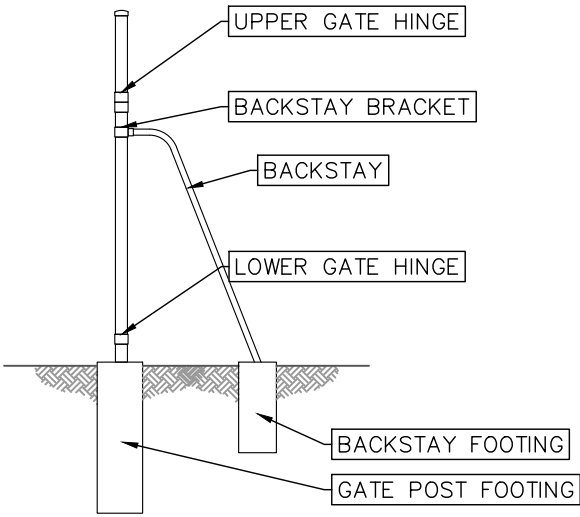
REV. DATE		DESCRIPTION		DRWN.	DESIGNED	CHKD.	APPR.
B	29.01.2021	TITLE BLOCK UPDATE		JM	JM	SS	JM
A	04.01.2021	FIRST ISSUE		JM	JM	SS	JM

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TITLE PROVIDENCE ASSET GROUP NARROMINE WEST SOLAR FARM SITE ELEVATION DETAIL		SCALE DNS
		REVISION B
		PAPER SIZE A3
DWG No.	10080-G-DET-01-1	



TYPICAL FENCE & GATE ELEVATION



TYPICAL BACKSTAY ELEVATION

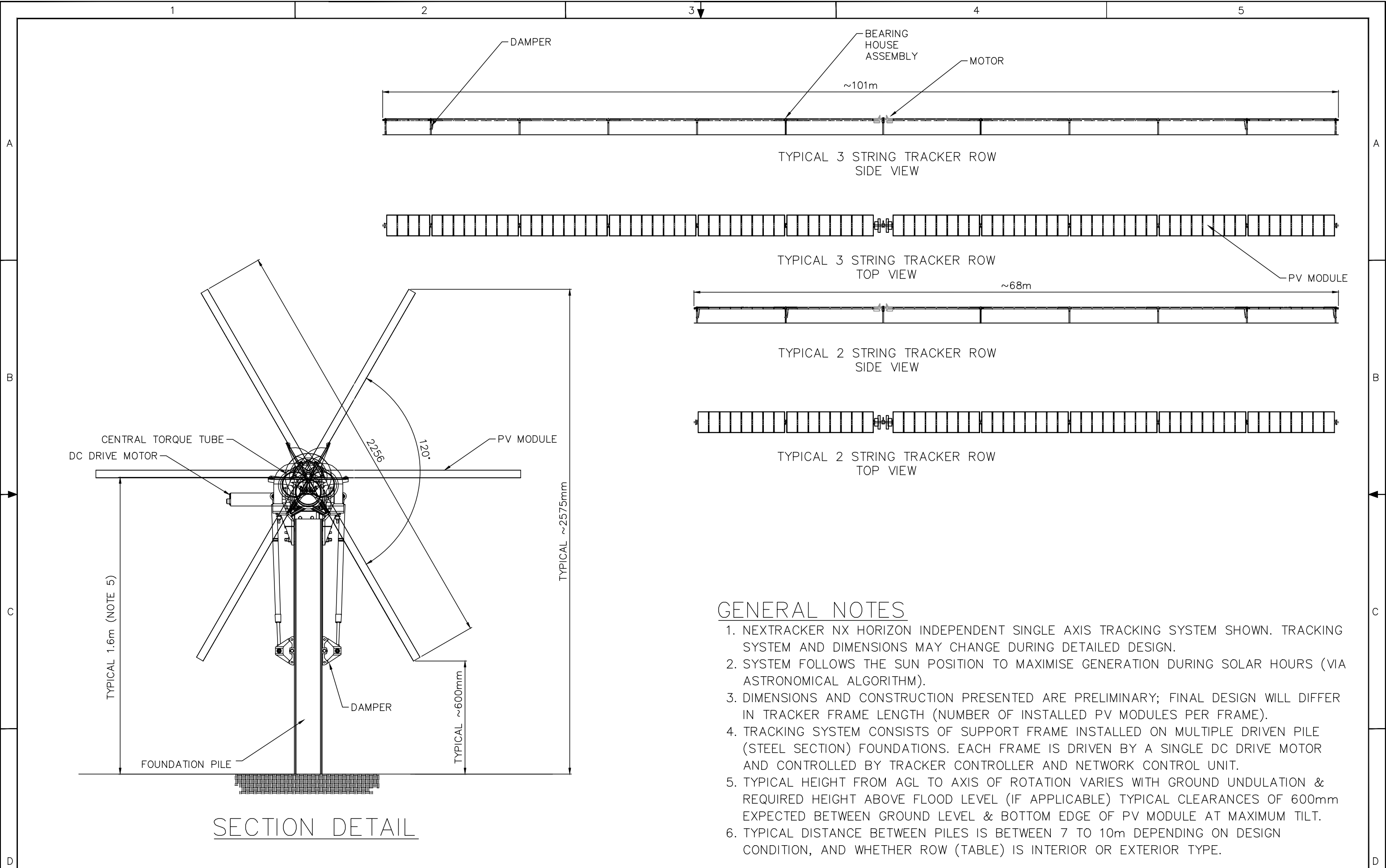
GENERAL NOTES

1. SOLAR FARM PERIMETER FENCE TO BE GALVANISED CHAIN LINK MESH FENCE WITH 3 ROWS BARBED WIRE.
2. NOMINAL MESH HEIGHT TO BE 1800mm.
3. NOMINAL OVERALL HEIGHT TO BE 2300mm +/- 100mm.
4. ALL FENCING COMPONENTS AND FOOTINGS TO COMPLY WITH AS 1725.
5. GATE WIDTH AS PER GA LAYOUT DRAWINGS.
6. BRACING STRUT AND WIRE BRACE REQUIRED AT ENDS, CORNERS AND GATES. DIAGONAL BRACE STRUT MAY ALSO BE USED IN LIEU OF BRACE & WIRE.
7. INTERMEDIATE BRACED PANEL CONSISTING OF TWIN TWISTED WIRE BRACE ON BOTH DIAGONALS REQUIRED AT MAX. 150m INTERVALS.
8. PERSONNEL ACCESS GATES REQUIRE BRACING STRUTS ON BOTH SIDES.
9. FOOTING DESIGN TO BE CONFIRMED DURING DETAILED DESIGN.
10. FENCE GENERALLY NOT REQUIRED TO BE EARTHED UNLESS IN CLOSE PROXIMITY TO ELECTRICAL COMPONENTS OR AS REQUIRED WITHIN UTILITY EASEMENTS OR SIMILAR. TO BE DETERMINED DURING DETAILED DESIGN.

REV. DATE		DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.
B	29.01.2021	TITLE BLOCK UPDATE	JM	JM	SS	JM
	04.01.2021	FIRST ISSUE	JM	JM	SS	JM

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TITLE		SCALE
PROVIDENCE ASSET GROUP		DNS
NARROMINE WEST SOLAR FARM		REVISION
SECURITY FENCE DETAIL		B
TYPICAL		PAPER SIZE
DWG No. 10080-C-DET-02-1		A3



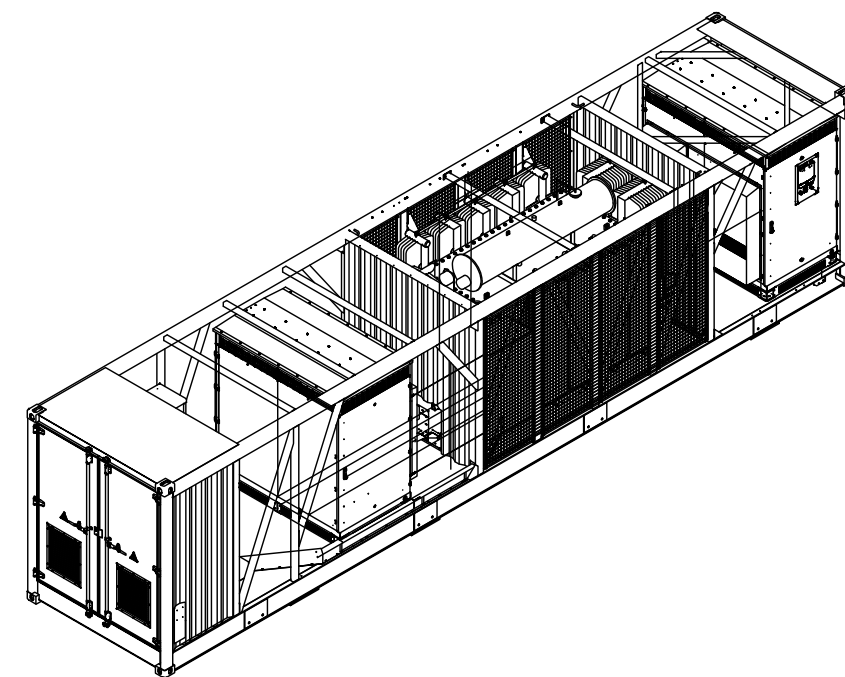
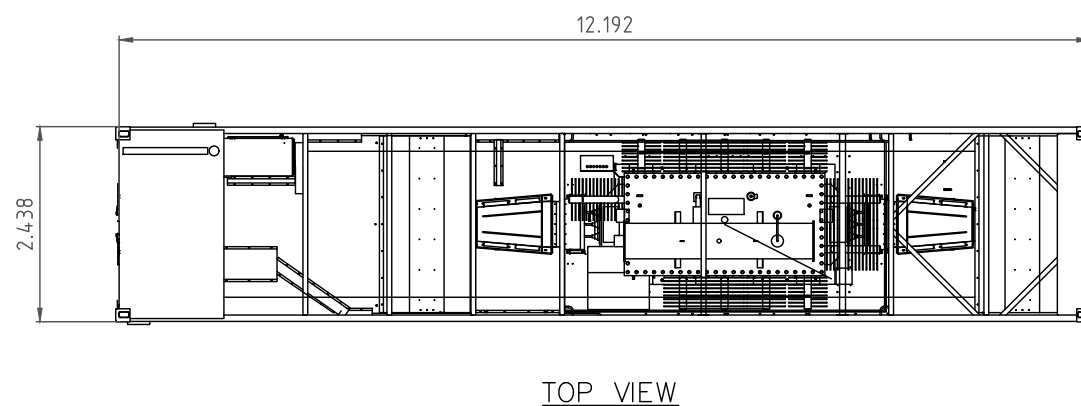
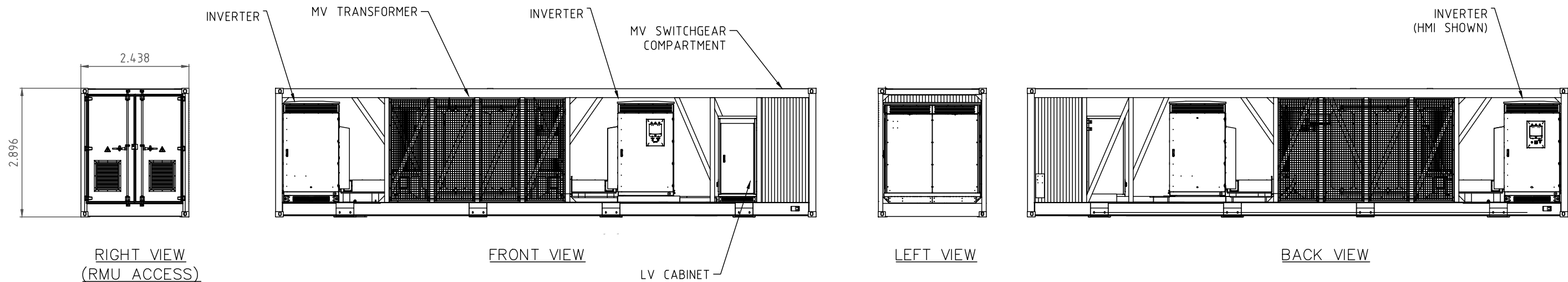
GENERAL NOTES

1. NEXTRACKER NX HORIZON INDEPENDENT SINGLE AXIS TRACKING SYSTEM SHOWN. TRACKING SYSTEM AND DIMENSIONS MAY CHANGE DURING DETAILED DESIGN.
2. SYSTEM FOLLOWS THE SUN POSITION TO MAXIMISE GENERATION DURING SOLAR HOURS (VIA ASTRONOMICAL ALGORITHM).
3. DIMENSIONS AND CONSTRUCTION PRESENTED ARE PRELIMINARY; FINAL DESIGN WILL DIFFER IN TRACKER FRAME LENGTH (NUMBER OF INSTALLED PV MODULES PER FRAME).
4. TRACKING SYSTEM CONSISTS OF SUPPORT FRAME INSTALLED ON MULTIPLE DRIVEN PILE (STEEL SECTION) FOUNDATIONS. EACH FRAME IS DRIVEN BY A SINGLE DC DRIVE MOTOR AND CONTROLLED BY TRACKER CONTROLLER AND NETWORK CONTROL UNIT.
5. TYPICAL HEIGHT FROM AGL TO AXIS OF ROTATION VARIES WITH GROUND UNDULATION & REQUIRED HEIGHT ABOVE FLOOD LEVEL (IF APPLICABLE) TYPICAL CLEARANCES OF 600mm EXPECTED BETWEEN GROUND LEVEL & BOTTOM EDGE OF PV MODULE AT MAXIMUM TILT.
6. TYPICAL DISTANCE BETWEEN PILES IS BETWEEN 7 TO 10m DEPENDING ON DESIGN CONDITION, AND WHETHER ROW (TABLE) IS INTERIOR OR EXTERIOR TYPE.

REV.		DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.
B		29.01.2021	TITLE BLOCK UPDATE	JM	JM	SS	JM
A		04.01.2021	FIRST ISSUE	JM	JM	SS	JM

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TITLE		SCALE
PROVIDENCE ASSET GROUP		AS SHOWN
NARROMINE WEST SOLAR FARM		REVISION
PV MOUNTING SYSTEM DETAIL		B
DWG No. 10080-E-DET-01-1		PAPER SIZE
		A3



GENERAL NOTES

1. POWER CONVERSION STATION (PCS) CONSISTS OF CENTRAL PV INVERTERS, MV TRANSFORMER, MV SWITCHGEAR AND AUXILIARY PLANT. PCS IS CONTAINERISED AND RAISED ABOVE GROUND LEVEL ON CONCRETE OR DRIVEN STEEL PILE FOOTINGS.
2. TYPICAL PILE FOOTINGS WITH SURROUND OF COMPACTED EARTH WITH ~100MM BLUE METAL TOP LAYER.
3. PCU SHOWN IS THE SUNGROW SG4950HV-MV MEDIUM VOLTAGE POWER STATION SYSTEM. THE PCS MAKE AND MANUFACTURER MAY BE SUBJECT TO CHANGE.

REFERENCES		REVISIONS					
B	29.01.2021	TITLE BLOCK UPDATE		JM	JM	SS	JM
A	04.01.2021	FIRST ISSUE		JM	JM	SS	JM
REV	DATE	DESCRIPTION		DRWN.	DESIGNED	CHKD.	APPR.

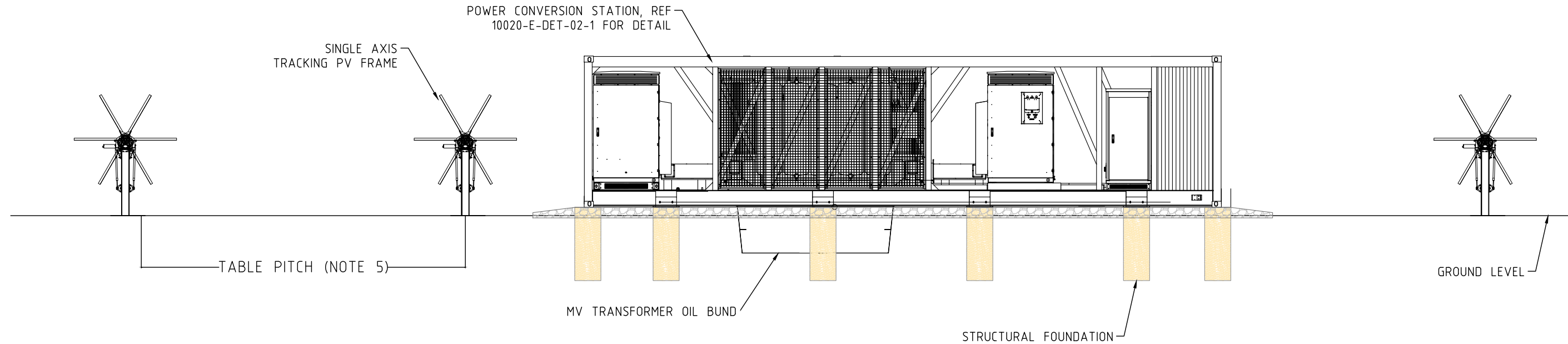
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TITLE
PROVIDENCE ASSET GROUP
NARROMINE WEST SOLAR FARM
POWER CONVERSION STATION DETAIL
SHEET 1
DWG No. 10080-E-DET-02-1

SCALE
DNS
REVISION
B
PAPER SIZE
A3

GENERAL NOTES

- 1. TYPICAL INSTALLATION DETAIL SHOWN, MAY CHANGE DURING DETAILED DESIGN.
- 2. TYPICAL INSTALLATION SHOWN; PCS RAISED ABOVE GROUND LEVEL ON CONCRETE/STRUCTURAL PILE FOUNDATIONS, WITH BLUE METAL SURROUND. FOR LOW LYING AREAS SKID REQUIRES RAISING ABOVE FLOOD LEVEL BY COMPACTED EARTH MOUND. TYPICAL 1:3 BATTER, WITH ONE SIDE MIN 1:6 FOR PEDESTRIAN ACCESS, SUBJECT TO FINAL DESIGN.
- 3. SINGLE AXIS TRACKER ASSEMBLY – FULL HEIGHT TYPICALLY 2.575m AGL, +/- 0.5m DEPENDING ON GROUND TOPOGRAPHY. TYPICALLY 1.6m AGL, +/- 0.5m WHEN IN FLAT POSITION.
- 4. MINIMUM CLEARANCE OF 600MM BETWEEN GROUND LEVEL AND PV MODULE EDGE AT MAXIMUM ROTATION TO BE MAINTAINED.
- 5. SINGLE AXIS TRACKING FRAME – TYPICAL TABLE PITCH OF 6.0 – 7.0m
- 6. COMBINER BOX TYPICALLY 1.5m +/- 0.5m HIGH.



REV	REFERENCES		

REV								
	B	29.01.2021	TITLE BLOCK UPDATE		JM	JM	SS	JM
	A	04.01.2021	FIRST ISSUE		JM	JM	SS	JM
REV.	DATE	DESCRIPTION		DRWN.	DESIGNED	CHKD.	APPR.	

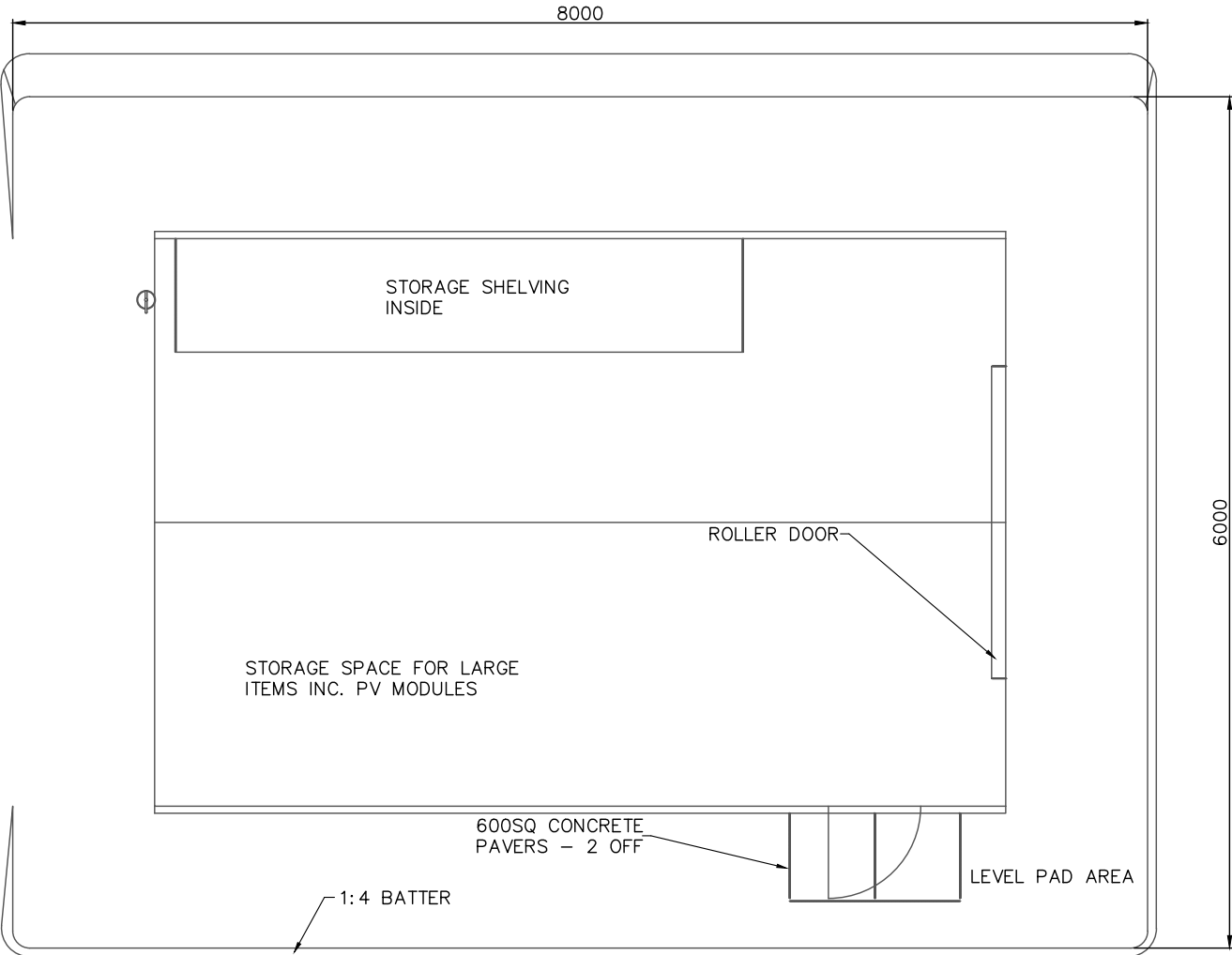
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TITLE	
PROVIDENCE ASSET GROUP	
NARROMINE WEST SOLAR FARM	
POWER CONVERSION STATION DETAIL	
SHEET 2	
DWG No.	10080-E-DET-02-2

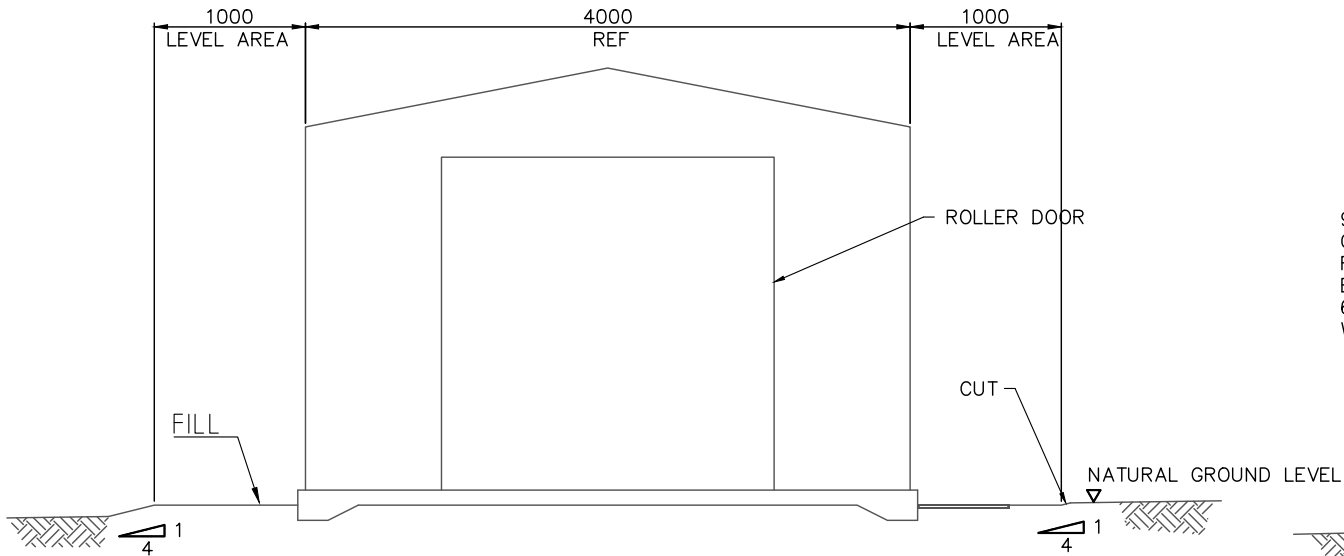
SCALE	DNS
REVISION	B
PAPER SIZE	A3

GENERAL NOTES:

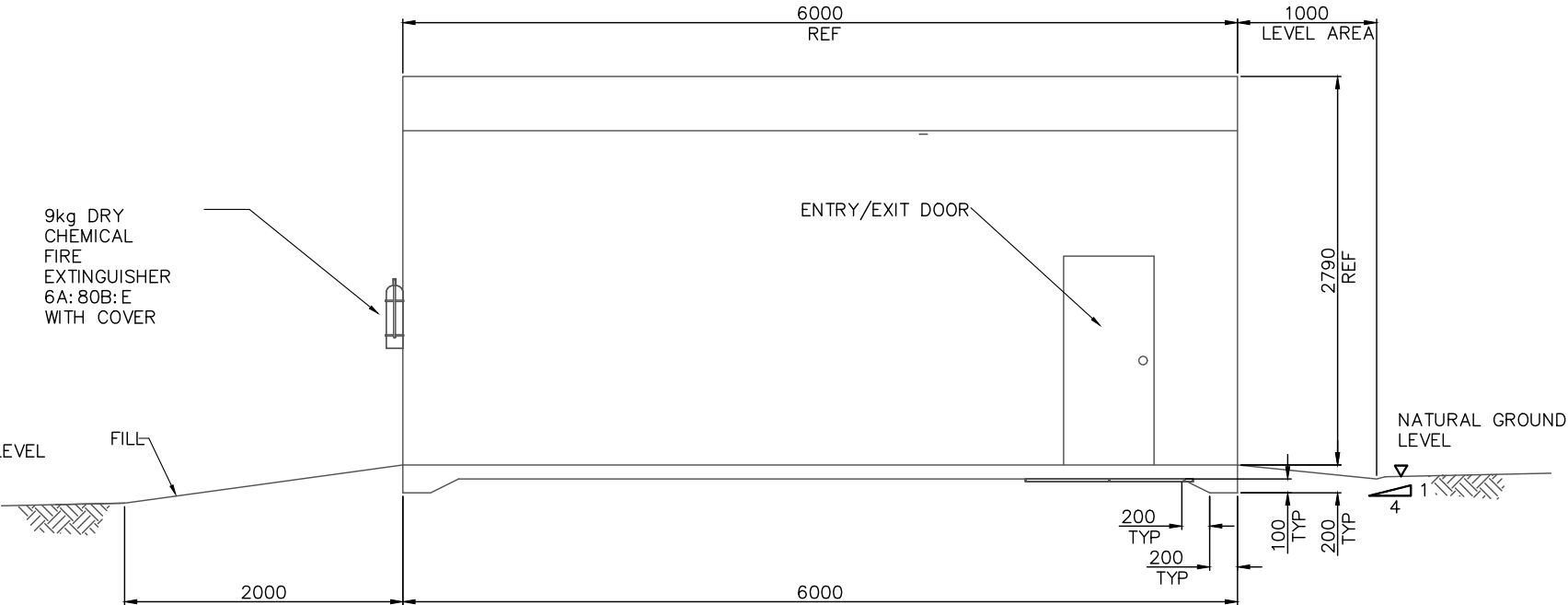
1. DIMENSIONS ARE SHOWN IN MILLIMETERS (mm)
2. SHED DESIGNED AND SUPPLIED BY (TBC).
3. WIND REGION A1, IMPORTANCE LEVEL 2
4. COMPLIES WITH PART B1 OF BUILDING CODE OF AUSTRALIA



PLAN



SIDE ELEVATION



ELEVATION



REFERENCES		REVISIONS		TITLE BLOCK			
				DRWN.	DESIGNED	CHKD.	APPR.
B	29.01.2021	TITLE BLOCK UPDATE		JM	JM	SS	JM
A	04.01.2021	FIRST ISSUE		JM	JM	SS	JM
REV.	DATE	DESCRIPTION		DRWN.	DESIGNED	CHKD.	APPR.

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TITLE		SCALE
PROVIDENCE ASSET GROUP		AS SHOWN
NARROMINE WEST SOLAR FARM		REVISION
SHED DETAIL		B
TYPICAL		PAPER SIZE
DWG No. 10080-C-DET-05-1		A3