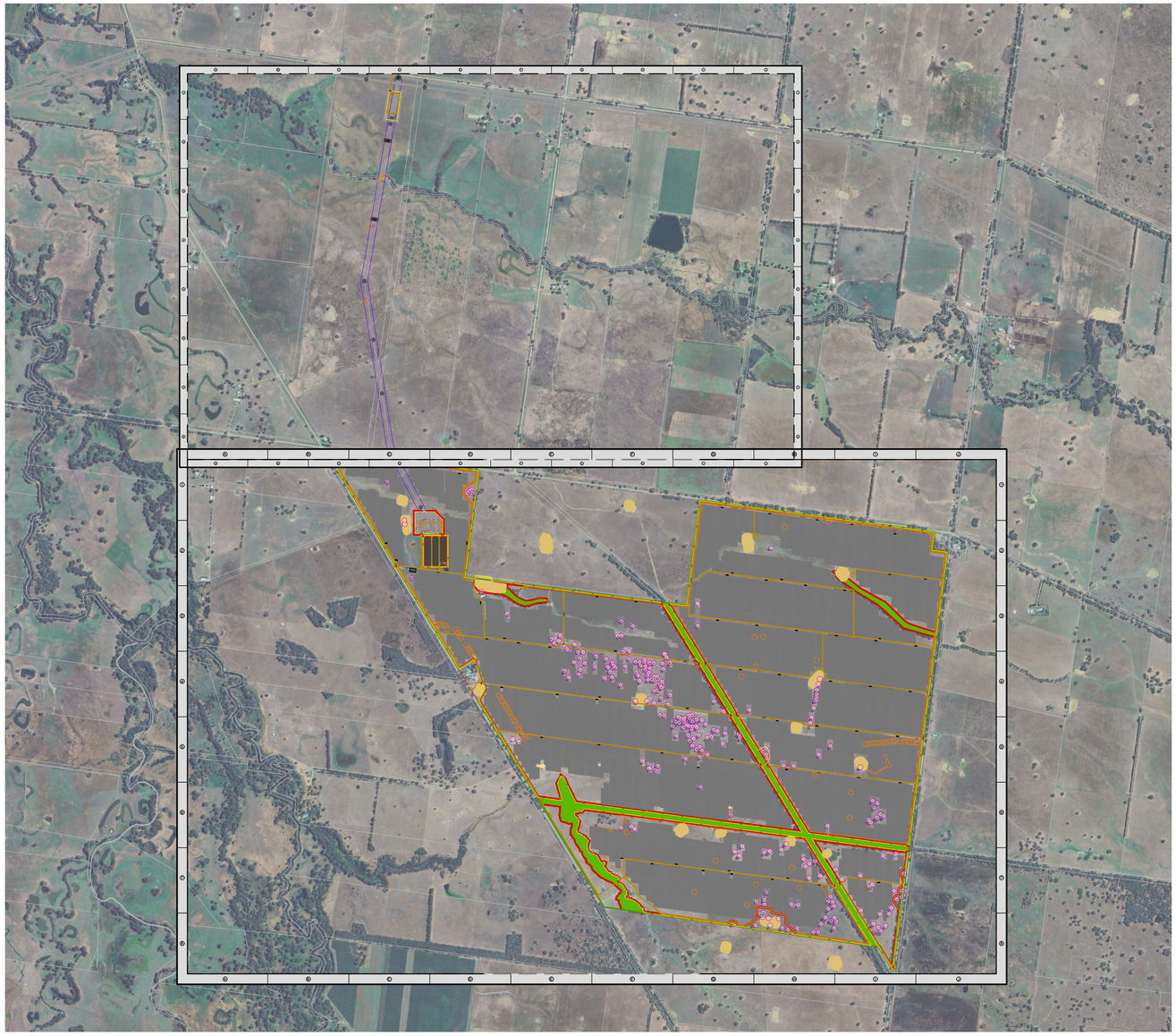
MEADOW CREEK SOLAR FARM
DETAIL SITE PLAN



GENERAL NOTES

1. DESIGN IS CONCEPT ONLY. NOT FOR CONSTRUCTION.
2. CONCEPT DESIGN WILL COMPLY WITH THE CFA DESIGN GUIDELINES AND MODEL REQUIREMENTS RENEWABLE ENERGY FACILITIES V4 (2023).
3. OPERATION OF THE FACILITY TO ENSURE ADHERENCE TO FIRE DANGER PERIODS, HIGH FIRE DANGER AND TOTAL FIRE BAN DAYS.
4. BESS & PV SYSTEM AND ASSOCIATED EQUIPMENT SHALL HAVE SET-BACK FROM SECURITY FENCE OF MINIMUM 10M.

BESS LAYOUT AND DESIGN

5. REFER TO MEADOW CREEK SOLAR FARM BESS GENERAL ARRANGEMENT DRAWING SOLAR PANEL BANK LAYOUT AND DESIGN
6. ACCESS OF A MINIMUM SIX (6) METRE SEPARATION BETWEEN SOLAR PANEL BANKS AS PER CFA GUIDELINES.
7. UNBROKEN SOLAR PANEL BANK AREAS TO BE UNDER 25HA AS PER CFA GUIDELINES.
8. PV MODULES TO INCLUDE ANTI-REFLECTIVE COATING (AR); LOWIRON/HIGH TRANSMISSION (LFE/HT) PV GLASS OR EQUIVALENT; AND ANODISED PV FRAMES OR EQUIVALENT.
9. SOLAR PANEL BANK AREAS TO HAVE GRASS/VEGETATION MAINTAINED TO 100MM UNDER THE ARRAY INSTALLATION OR NON-COMBUSTIBLE MULCH SUCH AS STONE. VEGETATION MANAGEMENT CAN BE ACHIEVED THROUGH GRAZED PADDOCKS.
10. NO EXTERNAL LIGHTING IS PROPOSED.

FIRE BREAKS

11. DESIGN ADHERES TO CFA REQUIREMENTS FOR FIRE BREAKS. FIRE BREAKS TO BE ESTABLISHED AND MAINTAINED IN LINE WITH THE FOLLOWING:

a. AROUND THE PERIMETER OF THE FACILITY, COMMENCING FROM THE BOUNDARY OF THE FACILITY OR FROM THE VEGETATION SCREENING INSIDE THE PROPERTY BOUNDARY.

b. AROUND THE PERIMETER OF CONTROL ROOMS, ELECTRICITY COMPOUNDS, SUBSTATIONS AND ALL OTHER BUILDINGS ON-SITE.

c. BE A MINIMUM OF 10M, AND AT LEAST THE DISTANCE WHERE RADIANT HEAT FLUX (OUTPUT) FROM THE VEGETATION DOES NOT CREATE THE POTENTIAL FOR IGNITION OF ON-SITE INFRASTRUCTURE.

d. FIRE BREAK TO BE VEGETATION FREE AT ALL TIMES AND TO BE NON-COMBUSTIBLE, CONSTRUCTED USING EITHER MINERAL EARTH OR NON-COMBUSTIBLE MULCH SUCH AS CRUSHED ROCK.

e. FIRE BREAK TO BE FREE OF OBSTRUCTIONS AT ALL TIMES. NO PLANT OR EQUIPMENT OF ANY KIND IS TO BE STORED IN FIRE BREAKS.

VEGETATION MANAGEMENT AND LANDSCAPING

21. THERE IS TO BE NO LONG GRASS OR LEAF LITTER IN AREAS WHERE PLANT AND HEAVY EQUIPMENT WILL BE WORKING.
22. SOLAR PANEL BANKS ARE TO HAVE GRASS/VEGETATION MAINTAINED TO 100MM UNDER THE ARRAY INSTALLATION OR NON-COMBUSTIBLE MULCH SUCH AS STONE. VEGETATION MANAGEMENT CAN BE ACHIEVED THROUGH GRAZED PADDOCKS.
23. GRASS TO BE MAINTAINED BELOW 100 MM IN HEIGHT DURING DECLARED FIRE DANGER PERIODS.

EMERGENCY SERVICE ACCESS

24. ACCESS ROADS ARE TO BE OF ALL-WEATHER CONSTRUCTION AND CAPABLE OF ACCOMMODATING A VEHICLE OF 15 TONNES. ACCESS ROADS TO COMPLY WITH CFA REQUIREMENTS & PLANNING PERMIT.
25. CONSTRUCTED ROADS TO BE A MINIMUM OF 4M IN WIDTH WITH A 4M VERTICAL CLEARANCE FOR THE WIDTH OF THE FORMED ROADS.
26. PASSING BAYS TO BE INCORPORATED EVERY 600M AND AT LEAST 20M IN LENGTH, WITH A MINIMUM OF 6M IN WIDTH. WHERE ROADS ARE LESS THAN 600M LONG, AT LEAST ONE PASSING BAY IS TO BE INCORPORATED.
27. THE AVERAGE GRADE MUST BE NO MORE THAN 1 IN 7 (14.4% OR 8.1°) WITH A MAXIMUM OF NO MORE THAN 1 IN 5 (20% OR 11.3°) FOR NO MORE THAN 50M.
28. DIPS IN THE ROAD MUST HAVE NO MORE THAN 1 IN 8 (12.5% OR 7.1°) ENTRY AND EXIT ANGLE.
29. ACCESS ROADS AND HARDSTANDS TO BE KEPT CLEAR AT ALL TIMES.

FENCING

30. BLACK PVC COATED CHAIN WIRE SECURITY FENCING TO BE 2.2M WITH 300MM OF BARBED (OR EQUIVALENT WIRE) FOR A TOTAL MAXIMUM HEIGHT OF 2.5M, IN ACCORDANCE WITH PLANNING PERMIT.
31. GATES TO BE INSTALLED AT APPROPRIATE INTERVALS TO ALLOW ACCESS FOR LANDSCAPING MAINTENANCE ACTIVITIES INSIDE THE SITE.

WATER SUPPLY

32. FOR THIS FACILITY, WITH A BATTERY ENERGY STORAGE SYSTEM AND WITH NO RETICULATED WATER AVAILABLE, THE FIRE PROTECTION SYSTEM MUST INCLUDE A FIRE WATER SUPPLY IN STATIC WATER STORAGE TANKS, WHERE THE STATIC WATER TANKS ARE TO (SIGNAGE TO COMPLY WITH CFA GUIDELINES):

a. COMPLY WITH AS 2419.1. AUSTRALIAN STANDARD FIRE HYDRANT INSTALLATIONS.

b. SHALL BE OF NOT LESS THAN 288,000L EFFECTIVE CAPACITY, OR AS PER THE PROVISIONS FOR OPEN YARD PROTECTION OF AS 2419.1-2005 FLOWING FOR A PERIOD OF NO LESS THAN FOUR HOURS AT 20L/S, WHICHEVER IS THE GREATER.

c. THE QUANTITY OF STATIC FIRE WATER STORAGE IS TO BE CALCULATED FROM THE NUMBER OF HYDRANTS REQUIRED TO FLOW FROM AS 2419.1-2005, TABLE 3.3.

d. FIRE HYDRANTS MUST BE PROVIDED AND LOCATED SO THAT EVERY PART OF THE BATTERY ENERGY STORAGE SYSTEM IS WITHIN REACH OF A 10M HOSE STREAM ISSUING FROM A NOZZLE AT THE END OF A 60M LENGTH OF HOSE CONNECTED TO A FIRE HYDRANT OUTLET.

e. THE FIRE WATER SUPPLY MUST BE LOCATED AT VEHICLE ENTRANCES TO THE FACILITY, AT LEAST 10M FROM ANY INFRASTRUCTURE (ELECTRICAL SUBSTATIONS, INVERTERS, BATTERY ENERGY STORAGE SYSTEMS, BUILDINGS).

f. THE FIRE WATER SUPPLY MUST BE REASONABLY ADJACENT TO THE BATTERY ENERGY STORAGE SYSTEM AND SHALL BE ACCESSIBLE WITHOUT UNDUE DANGER IN AN EMERGENCY. (E.G., FIRE WATER TANKS ARE TO BE LOCATED CLOSER TO THE SITE ENTRANCE THAN THE BATTERY ENERGY STORAGE SYSTEM.

g. STATIC WATER TANK SHALL BE AN ABOVE-GROUND WATER TANK CONSTRUCTED OF CONCRETE OR STEEL.

h. THE STATIC WATER STORAGE TANK(S) MUST BE CAPABLE OF BEING COMPLETELY REFILLED AUTOMATICALLY OR MANUALLY WITHIN 24 HOURS.

i. HARDSTAND AND ACCESS ROAD TO BE KEPT CLEAR AT ALL TIMES.

j. THE HARD-SUCTION POINT MUST BE PROVIDED, WITH A 150MM FULL BORE ISOLATION VALVE EQUIPPED WITH A STORZ CONNECTION, SIZED TO COMPLY WITH THE REQUIRED SUCTION HYDRAULIC PERFORMANCE. ADAPTERS THAT MAY BE REQUIRED TO MATCH THE CONNECTION ARE 125MM, 100MM, 90MM, 75MM, 65MM STORZ TREE ADAPTERS WITH A MATCHING BLANK END CAP TO BE PROVIDED.

k. THE HARD SUCTION POINT MUST BE POSITIONED WITHIN FOUR (4) METRES TO A HARDSTAND AREA AND PROVIDE A CLEAR ACCESS FOR EMERGENCY SERVICES PERSONNEL.

l. ALL-WEATHER ROAD ACCESS AND HARDSTAND SHALL BE PROVIDED TO THE HARD-SUCTION POINT. THE HARDSTAND SHALL BE MAINTAINED TO A MINIMUM OF 15 TONNES GVM, 8M LONG AND 6M WIDE OR TO THE SATISFACTION OF THE RELEVANT FIRE AUTHORITY.

m. THE HARD-SUCTION POINT MUST BE PROTECTED FROM MECHANICAL DAMAGE WHERE NECESSARY.

n. AN EXTERNAL WATER LEVEL INDICATOR MUST BE PROVIDED TO THE TANK AND BE VISIBLE FROM THE HARDSTAND AREA.

CAR PARKING

33. A CAR PARKING AREA IS LOCATED WITHIN PROXIMITY TO THE ENTRANCE TO THE SITE WITH A TOTAL CAPACITY OF SEVEN (7) VEHICLES. DIMENSIONS TO BE CONFIRMED WITH ROAD DESIGNER TO BE IN ACCORDANCE WITH CAR PARKING DESIGN GUIDELINES CLAUSE 52.06.

HYBRID SOLAR FARM & AC-COUPLED BESS SPECIFICATIONS	
GRID TRANSFER LIMIT	250 MWac
SITE AREA (ha)	566.1 ha
SOLAR FARM	
SOLAR PV DC CAPACITY	332 MWp
SOLAR PV AC CAPACITY	285.60 MVA
INVERTER NAME / CAPACITY	SMA SC4200-UP / 4.2 MVA
TOTAL QUANTITY SOLAR INVERTERS	68
TRANSFORMER CAPACITY	4.4 MVA @ 25°C (0.63/33kV)
TOTAL SOLAR TRANSFORMERS	68
PV MODULE TYPE	592.752 x YINGLI YL615CF78 N-TYPE BI-FACIAL
PV MODULE CAPACITY	615 Wp
PV MODULE DIMENSIONS	2,465 x 1,134mm x 30mm
MODULES PER STRING	24
PV FRAMEWORK	SINGLE AXIS TRACKER
TRACKING RANGE	+/- -60° to 60° EAST-WEST/ BACK TRACKING
PITCH	5m
BATTERY ENERGY STORAGE SYSTEM	
BESS DC ENERGY CAPACITY @ RATED POWER	Up to 1000mWh [BOL]
BESS NAME / MAXIMUM RATED POWER	ENERGY VAULT 296 MW [tbc]
INVERTER NAME / CAPACITY	SMA SC3600-UP-XT / 3.6 MVA
TOTAL QUANTITY BESS INVERTERS	98
TRANSFORMER CAPACITY	3.62 MVA @ 25°C (0.63/33kV)
TOTAL BESS TRANSFORMERS	98

GENERAL LEGEND

- DEVELOPMENT BOUNDARY
- BOUNDARY FENCE
- OVERHEAD CABLE 220kV
- INTERNAL ROADS 4M
- EXTERNAL VEGETATION BUFFER 5M
- ECOLOGICAL VEGETATION CORRIDOR
- FIRE SAFETY BUFFER 10M
- DAMS RETAINED
- EASEMENT
- CULTURAL SENSITIVITY AREA
- PASSING BAYS
- TRANSMISSION LINE TOWERS
- GATES
- CULVERT
- SOLAR INVERTER
- VEGETATION - REMOVED
- VEGETATION - RETAINED
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- SOLAR TRACKERS (7172)
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URBIS

PROJECT
MEADOW CREEK SOLAR FARM

1033 OXLEY-MEADOW CREEK RD, MEADOW CREEK
VICTORIA, AUSTRALIA

Level 10, 477 Collins Street | Melbourne VIC 3000 AUSTRALIA | +61 3 8663 4888 | URBIS Ltd | ABN 50 105 256 228

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E	FOR REVIEW	AF	JM	29.08.2024
D	FOR REVIEW	AF	JM	14.08.2024
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.	FOR REVIEW - DRAFT	AF	JM	28.02.2024

PROJECT DIRECTOR: JON MILLS

CLIENT
MEADOW CREEK SOLAR FARM

ISSUE
FOR REVIEW

PROJECT NO.
P0050228

SCALE

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COVER SHEET
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DRAWING NO.
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REVISION
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BESS DC ENERGY CAPACITY @ RATED POWER	Up to 1000mWh [BOL]
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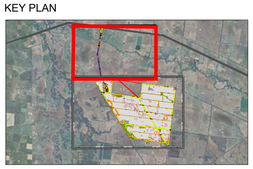
PROJECT

MEADOW CREEK SOLAR FARM

1033 OXLEY-MEADOW CREEK RD, MEADOW CREEK
VICTORIA, AUSTRALIA

ADVERTISED PLAN

KEY PLAN



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PROJECT DIRECTOR: JON MILLS

CLIENT
MEADOW CREEK SOLAR FARM

ISSUE
FOR REVIEW

PROJECT NO.
P0050228

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DETAIL PLAN 01
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REVISION
E

HYBRID SOLAR FARM & AC-COUPLED BESS SPECIFICATIONS	
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DOCKER-CARBOOR ROAD
OXLEY-MEADOW CREEK ROAD
SHEEP STATION CREEK
ALLANS LANE
KING RIVER
NEW MEADOW CREEK SOLAR 33/220kV COLLECTOR SUBSTATION
NEW MEADOW CREEK SOLAR BATTERY ENERGY STORAGE SYSTEM (BESS)
SMA SUNNY CENTRAL 3600-UP-XT INVERTER & MEDIUM VOLTAGE POWER STATION 33kV/0.63kV
BESS AREA BUNDED
ENERGY VAULT 3.6 MWA / 4 MWh (1165-1466 VDC) BATTERY CONTAINERS (2 x BATTERY CONTAINERS PER INVERTER)
AMENITIES
BESS SITE OFFICE
BESS CONTROL HOUSE
CAR PARKING
FIRE WATER RUNOFF RETENTION TANK
SECURITY GATES
P1 - PRIMARY SITE ACCESS GATE
576,000L STATIC WATER TANK & HARDSTAND AREA
CAR PARKING
TEMPORARY CONSTRUCTION LAYDOWN AREA
SMA SUNNY CENTRAL 4200-UP INVERTER & MEDIUM VOLTAGE POWER STATION 33kV/0.63kV TYP.
45,000L STATIC WATER TANK & HARDSTAND AREA
E1 - EMERGENCY SITE ACCESS GATE
E1 - EMERGENCY SITE ACCESS GATES
WILDLIFE CORRIDOR
CULVERT
DAM

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KEY PLAN

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PROJECT DIRECTOR: JON MILLS

CLIENT
MEADOW CREEK SOLAR FARM

DRAWING TITLE
DETAIL PLAN 02
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PROJECT NO.
P0050228

SCALE
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NORTH

DRAWING NO.
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REVISION
E