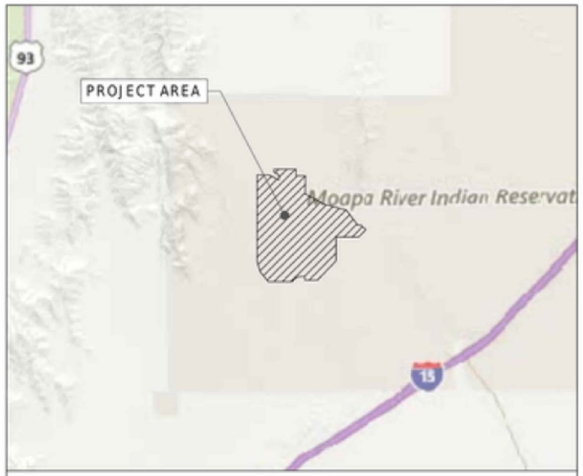
Exhibit A

STRUCTURAL DESIGN PLANS
FOR
EAGLE SHADOW MOUNTAIN SOLAR
IN CLARK COUNTY, NEVADA
SITE ENTRANCE COORDINATES: 36.542521, -114.800796



VICINITY MAP
NTS



LOCATION MAP
NTS

CLARK COUNTY, NEVADA

DRAWING INDEX			
SHEET NUMBER	SHEET TITLE	REV	REV DATE
S-000	TITLE SHEET	1	6/14/2023
S-001	CS BLOCK 203 & TRINA GENERAL NOTES	1	6/14/2023
S-002	TRINA WIDE FLANGE TRACKER AND LOAD BREAK DISCONNECT FOUNDATION	1	6/14/2023
S-003	TRINA CAB DETAILS AND FOUNDATIONS	1	6/14/2023
S-004	PCS AND PILE CAP CONNECTION	1	6/14/2023
S-005	PCS, MET, AUXILIARY RACK FOUNDATION	1	6/14/2023
S-006	CS AND JINKO TRACKER GENERAL NOTES AND FOUNDATION	1	6/14/2023
S-007	CS & JINKO CAB DETAILS AND FOUNDATIONS	1	6/14/2023

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	JAC / AD	ADT / ADT	10/16/2020
1	RECORD DRAWINGS	/	/ ADT	6/14/2023

MINUTE SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

Primoris

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET, SUITE 500
DENVER, COLORADO 80239

TITLE SHEET

PROJECT NO.	20203753.003A
ISSUE DATE	6/14/2023
CURRENT REVISION	1
DESIGNED BY	AD/JAC
DRAWN BY	AD/JAC
CHECKED BY	ADT
APPROVED BY	ADT

S-000

SHEET 1 of 8

CAD FILE: \\denver.kleinfelder.com\DENVER-DATAWORKING\20203753.002 - Eagle Shadow Mountain Design\2.0 Technical Information\2.8 Technical And CADD Figures\20203753 Eagle Shadow Mountain_20201016.dwg LAYOUT: TITLE SHEET PLOTTED: 10/16/2020 5:40 PM BY: adam.tschida

GENERAL STRUCTURAL NOTES

1. THE NOTES ON THIS SHEET ARE GENERAL AND APPLY TO THE CANADIAN SOLAR BLOCK 203 AND TRINA ARRAY FOUNDATION, MESSENGER WIRE (CAB) SYSTEM, LOAD DISCONNECT, AUXILIARY RACK, POWER CONVERSION STATION AND METEOROLOGICAL STATION. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.

2. ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT SHALL COMPLY WITH THE 2018 IBC, ASCE 7-16, SOUTHERN NEVADA AMENDMENTS TO THE 2018 IBC, AND AS ADOPTED AND AMENDED BY THE LOCAL AUTHORITY HAVING JURISDICTION; AND ALL OTHER APPLICABLE CODES, ORDINANCES AND LAWS.

3. DESIGN CRITERIA: RISK CATEGORY I
   a. ROOF / PANEL LOADS:
      0 PSF (GROUND SNOW LOAD)
      0 PSF (FLAT ROOF SNOW LOAD)
      IMPORTANCE FACTOR SNOW = 0.8
   b. WIND LOAD:
      93 MPH (3 SECOND GUST)
      WIND EXPOSURE CATEGORY = C
   c. SEISMIC LOAD:
      IMPORTANCE FACTOR SEISMIC (IE): 1.0
      MAPPED SPECTRAL RESPONSE ACCELERATIONS:
      Ss = 0.624g, S1 = 0.203g
      SITE CLASS: C
      SPECTRAL RESPONSE COEFFICIENT: SDs = 0.520g, SD1 = 0.203g
      SEISMIC DESIGN CATEGORY: D
      BASIC SEISMIC FORCE RESISTING SYSTEM: NON-BUILDING STRUCTURE
      RESPONSE MODIFICATION FACTOR R = 2.0

4. THE CONTRACTOR SHALL VERIFY THE ASSUMED CONDITIONS AS DESCRIBED HEREIN BY ACTUAL FIELD MEASUREMENTS AND INSPECTIONS PRIOR TO FABRICATION OF ANY MATERIALS AND START OF CONSTRUCTION WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER FOR CORRECTIVE MEASURES.

5. SECTIONS AND DETAILS SHOWN ARE INTENDED TO ESTABLISH THE GENERAL TYPES OF DETAILS TO BE USED THROUGHOUT. IF THE CONTRACTOR WISHES TO USE DETAILS OTHER THAN THOSE SHOWN ON THE DRAWINGS, SUCH DETAILS SHALL BE APPROVED BY ENGINEER OF RECORD, BEFORE ANY WORKS AND SHOP DRAWINGS ARE COMMENCED.

6. ENGINEER IS NOT RESPONSIBLE FOR WORK THAT ENGINEER DOES NOT REVIEW AND/OR WORK NOT COMPLETED IN ACCORDANCE WITH ENGINEER'S PLANS AND/OR INSTRUCTIONS.

COORDINATION

1. THESE PLANS SHALL BE VERIFIED WITH ELECTRICAL AND CIVIL PLANS PRIOR TO CONSTRUCTION.

2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND THEIR COMPONENT PARTS DURING ERECTION.

3. IF CONSTRUCTION IS NOT IN PROGRESS OR COMPLETED WITHIN TWO YEARS FROM ORIGINAL DATE OF ISSUE, THE DESIGN IS VOID, UNLESS UPDATED TO ACCEPTABLE CODES AND PRACTICES AT THAT TIME.

FOUNDATIONS & EARTHWORK

1. THE FOLLOWING GEOTECHNICAL INFORMATION WAS UTILIZED TO GENERATE THE BELOW RECOMMENDATIONS FOR THE FOUNDATION DESIGN.

   a. "GEOTECHNICAL EXPLORATION REPORT, EAGLE SHADOW MOUNTAIN SOLAR PROJECT, MOAPA RIVER INDIAN RESERVATION, CLARK COUNTY, NEVADA", BY KLEINFELDER, DATED JUNE 3, 2020, PROJECT NO. 20203753.001A.

   b. "PILE LOAD TESTING REPORT, EAGLE SHADOW MOUNTAIN SOLAR PROJECT, MOAPA RIVER INDIAN RESERVATION, USA" BY KLEINFELDER, DATED AUGUST 21, 2020 PROJECT NO. 20203753.001A.

DESIGN AND MODEL:

   a. LAYER 1: 0-1 FT
      a.1. ELASTIC SUBGRADE
      a.2. EFFECTIVE UNIT WEIGHT: 110 PCF
      a.3. ELASTIC SUBGRADE REACTION 400 PCI
      a.4. ULTIMATE SKIN FRICTION: 0 PSF
      a.5. ULTIMATE END BEARING: 0 PSF
   b. LAYER 2: 1-15 FT
      b.1. ELASTIC SUBGRADE
      b.2. EFFECTIVE UNIT WEIGHT: 110 PCF
      b.3. COHESION: ELASTIC SUBGRADE REACTION 400 PCI
      b.4. ULTIMATE SKIN FRICTION: 600 PSF
      b.5. ULTIMATE END BEARING: 10,000 PSF

PILE FOUNDATIONS

1. ACCURATELY LOCATE AND INSTALL PILES/SUPPORTS. WIDE FLANGE PILES SHALL BE INSTALLED AS ONE (1) CONTINUOUS MEMBER WITHOUT SPLICE.
2. DO NOT BEGIN PILE INSTALLATION UNTIL THE EARTHWORK IN THE AREA WHERE PILES ARE TO BE INSTALLED HAS BEEN COMPLETED.
3. MATERIALS
   a. SIZE AS STATED IN DRAWINGS
   b. ASTM A992 50 ksi YIELD (WIDE FLANGE PILES)
   c. GALVANIZE PER ASTM A123, MINIMUM 3 MIL GALVANIZATION THICKNESS
4. ENDS OF PILES TO BE MACHINE CUT AND SQUARE MAKING AN ANGLE OF 90 DEGREES WITH THE LONGITUDINAL AXIS OF THE PILE. CUTS SHALL BE DEBURRED TO REMOVE SHARP EDGES.
5. TOLERANCES:
   a. PILE FABRICATION TOLERANCES: CONFORM TO REQUIREMENTS OF A6 AND ASTM A992.
   b. PLACEMENT TOLERANCES PER TRACKER MANUFACTURERS REQUIREMENTS.
6. EACH PILE TO BE FREE FROM DEFECTS AND DAMAGE DUE TO CONSTRUCTION, FABRICATION, DELIVERY, INSTALLATION OR OTHER CAUSES.
   a. REPLACE DAMAGED PILES. DAMAGE INCLUDES BUT NOT NECESSARILY LIMITED TO PILES BENT, BUCKLED, CRACKED, WITH FABRICATION TOLERANCES BEYOND THOSE INDICATED ABOVE, IMPERFECTION OR DAMAGE TO CORROSION PROTECTIVE COATING, OR WITH ANY OTHER DEFECT AS DETERMINED BY ENGINEER.
   b. CORRECT ANY FOUNDATION OR OTHER CONSTRUCTION THAT HAS BEEN DAMAGED BY FOUNDATION INSTALLATION.
7. FOUNDATION INSTALLATION LOGS SHALL BE MAINTAINED DAILY BY THE INSTALLATION CONTRACTOR THAT DETAIL POST LOCATION, INSTALLATION DATE, INSTALLATION DEPTH, UNUSUAL DRIVING TIME OR ANY INSTALLATION ABNORMALITIES.
8. DRIVEN PILES SHALL BE INSTALLED USING IMPACT OR VIBRATORY EQUIPMENT. DUE TO SHALLOW BEDROCK AND CEMENTED SOIL. PREDRILLING WILL BE REQUIRED TO INSTALL PILES. PREDRILLING FOR PILES SHOULD BE PERFORMED AS INDICATED BELOW:
   a. PREDRILL THE HOLE TO DEPTH USING A 7" OR 8" DIAMETER AUGER FOR W6X7, W6X8.5, W6X9, AND W6X12 SHAPES, AND A 9" OR 10" DIAMETER AUGER FOR W6X15 OR W6X20 SHAPES NO DEEPER THAN THE REQUIRED EMBEDMENT DEPTH.
   b. BACKFILL THE EXCAVATED HOLE TO GRADE SURFACE WITH THE EXCAVATED MATERIALS, TAMPED IN THREE TO FIVE LIFTS.

CONCRETE

1. ALL CONCRETE WORK SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE FOLLOWING PUBLICATIONS:
   a. ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURA CONCRETE"
   b. ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"
   c. ACI 302.1R "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION"
   d. ACI 305R "HOT WEATHER CONCRETING"
   e. ACI 306R "COLD WEATHER CONCRETING"
   f. ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT"
2. A CONCRETE MIX DESIGN AND WITH POSSIBLE ADMIXTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
   a. CEMENT SHALL BE ASTM TYPE I/II
   b. MAXIMUM WATER CEMENT RATIO OF 0.48
   c. MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
   d. SLUMP SHALL BE 5" - 8"
   e. FINE AGGREGATE SHALL NOT BE MORE THAN 50% OF THE AGGREGATE. COURSE AGGREGATE SHALL NOT BE LARGER THAN ¾"
   f. ADMIXTURES ARE TO BE APPROVED BY OWNER'S RETAINED ENGINEER. ADMIXTURES SHALL BE CHLORIDE FREE. DO NOT USE CALCIUM CHLORIDE
3. SEE CONCRETE TESTING NOTE BELOW

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK SHALL BE IN CONFORMANCE WITH "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", AISC.
2. ALL STRUCTURAL MATERIALS SPECIFIED IN THIS DOCUMENT SHALL HAVE ADEQUATE CORROSION PROTECTION FOR THE ENVIRONMENT. STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED OR AN APPROVED EQUIVALENT SHALL BE EVALUATED BY THE ENGINEER. GALVANIZATION IN CONFORMANCE WITH ASTM A123, MINIMUM 3 MIL GALVANIZATION THICKNESS.

   a. □ EAGLE SHADOW MOUNTAIN SOLAR PROJECT□ CORROSION EVALUATION REPORT□ BY INTEGRITY SOLUTIONS FIELD SERVICES, INC. DATED 4/30/2020

3. MATERIAL STANDARDS: (UNLESS NOTED OTHERWISE)
   a. WIDE FLANGE PILES: ASTM A992
   b. PLATES AND ANGLES: ASTM A36
4. TOUCH-UP PAINT: ZINC RICH, CONTAINING A MINIMUM 93% METALLIC ZINC CONTENT.
5. ALL WELDS AND OTHER AREAS WHERE GALVANIZATION IS REMOVED FOR CONSTRUCTION SHALL BE COATED WITH 2 COATS OF ZINC RICH TOUCH UP PAINT.

REQUIRED INSPECTION AND TESTING

1. THE FOLLOWING INSPECTIONS AND TESTS SHALL BE COMPLETED. REPORTS BY THE INSPECTOR SHALL BE PROVIDED TO THE OWNER AND ENGINEER.
   a. DRIVEN STEEL WIDE FLANGE PILES
      a.1. DRIVEN STEEL PILE INSTALLATION TO BE DOCUMENTED ON INSTALLATION LOG AS DETAILED UNDER **PILE FOUNDATIONS** SECTION, ITEM 7.
      a.2. FIFTEEN RANDOMLY SELECTED POSTS THAT DON'T REQUIRE REMEDIAL ACTION WILL BE LOAD TESTED A MINIMUM OF THREE DAYS AFTER INSTALLATION. PROOF LOAD TESTS WILL BE PROVIDED TO THE ENGINEER FOR REVIEW. LOAD TESTING WILL CONSIST OF TENSION AND LATERAL TESTS ON EACH OF THE FIFTEEN PILES TO LOADS PROVIDED BELOW. TESTING SHALL BE COMPLETED:
         a.2.1. WITHIN THE FIRST TWO WEEKS OF INSTALLATION.
         a.2.2. WHEN INSTALLATION IS APPROXIMATELY 25% COMPLETE.
         a.2.3. WHEN INSTALLATION IS APPROXIMATELY 50% COMPLETE.
         a.2.4. WHEN INSTALLATION IS APPROXIMATELY 75% COMPLETE.
         a.2.5. AT END OF INSTALLATION.
      a.3. THE FREQUENCY OF TESTING FOR PILES THAT REQUIRE REMEDIAL ACTION IS PROVIDED IN THE REMEDIAL ACTION SECTION OF THIS DOCUMENT. PROOF LOAD TESTS WILL BE PROVIDED TO THE ENGINEER FOR REVIEW AND COMMENT TO DETERMINE IF ANY ACTION IS REQUIRED. LOAD TESTING WILL CONSIST OF TENSION AND LATERAL TESTS ON EACH OF THE REQUIRED PILES TO LOADS PROVIDED BELOW.
2. PROOF LOAD TESTING
   a. PROOF LOAD TESTING SHALL BE CONDUCTED IN CONFORMANCE WITH ASTM D3966 AND ASTM D3689, MODIFIED AS BE APPROPRIATE FOR PV, CAB, AND PCU PILES.
   b. PROOF LOAD TESTING SHALL BE PERFORMED AS REQUIRED IN THIS SECTION AND THE REMEDIAL ACTIONS SECTION. PROOF LOAD TESTS WILL BE PROVIDED TO ENGINEER OF RECORD FOR REVIEW.
   c. PROOF LOAD TESTING SHALL INCLUDE RECORDING DEFLECTIONS FOR LATERAL LOADS AND VERTICAL MOVEMENT FOR VERTICAL LOADS AT 25%, 50%, 75%, 100% AND 125% OF THE LOADS PROVIDED BELOW FOR EACH OF THE PILE TYPES. LATERAL DEFLECTIONS SHALL BE RECORDED 4 INCHES ABOVE THE BOTTOM OF THE PILE AND AT THE LOAD APPLICATION POINT.
   d. EQUIPMENT: LOAD CELL (DYNAMOMETER) RATED FOR A MINIMUM RANGE OF 5,000 LBS. CALIBRATION CERTIFICATE WITHIN 1 YEAR. MOVEMENTS IN A DIRECTION COLLINEAR TO THE LINE OF LOADING SHALL BE RECORDED BY DIAL GAUGES WITH A MINIMUM RESOLUTION OF 0.01 INCHES.
   e. PROCEDURE: PERFORMANCE TESTING SHALL BE CONDUCTED BY LOADING THE PILE FIRST LATERALLY AND THEN IN VERTICAL TENSION AS INDICATED BELOW. ONCE A LOAD INCREMENT HAS BEEN OBTAINED, THE LOAD SHALL BE HELD FOR THE MINIMUM OF ONE MINUTE OR LONG ENOUGH TO GET A STABLE READING, WHICHEVER IS LONGER.

LATERAL LOAD TEST:
   a. APPLY HORIZONTAL LOAD AND RECORD DEFLECTION AT 4 INCHES BELOW TOP OF PILE.
   b. LOAD TO BE 1,300 LBS FOR EXTERIOR ARRAY PV PILES
   c. LOAD TO BE 1,000 LBS FOR INTERIOR ARRAY PV PILES
   d. LOAD TO BE 1,200 LBS FOR PCS PILES
   e. LOAD TO BE 1,800 LBS FOR CAB PILES
   f. ACCEPTANCE: MAX. DEFLECTION UNDER LOAD = 3.5 INCHES AT TOP OF PILE. MAX DEFLECTION AFTER UNLOADING 0.25 INCHES AT BOTTOM OF PILE.
      MAX 1" DEFLECTON AT 4" ABOVE GRADE

PULLOUT (TENSION) LOAD TEST:
   a. APPLY VERTICAL PULLOUT LOAD AT TOP OF PILE AND RECORD ANY DISPLACEMENTS.
   b. LOAD TO BE 600 LBS FOR EXTERIOR ARRAY PV PILES
   c. LOAD TO BE 400 LBS FOR INTERIOR ARRAY PV PILES
   d. LOAD TO BE 0 LBS FOR PCS PILES
   e. LOAD TO BE 0 LBS FOR CAB PILES
   f. ACCEPTANCE: MAX. VERTICAL MOVEMENT UNDER LOAD = 1.0 INCHES.

3. CONCRETE TESTING (AUXILLARY RACK 4/S-5 AND FENCE)
   THE CONTRACTOR SHALL CONTACT THE ENGINEER'S REPRESENTATIVE FOR TESTING AT LEAST 48 HOURS BEFORE CONCRETE PLACEMENT. THE FOLLOWING TESTING SHALL BE PERFORMED:
   a. AIR ENTRAINMENT: FIRST TRUCK EACH DAY AND EVERY 50 CUBIC YARDS THEREAFTER.
   b. CONCRETE TEMPERATURE: FIRST TRUCK EACH DAY AND EVERY 50 CUBIC YARDS THEREAFTER.
   c. CONCRETE SLUMP: FIRST TRUCK EACH DAY AND EVERY 50 CUBIC YARDS THEREAFTER.
   d. COMPRESSIVE STRENGTH:
      1. ONE (1) SET OF FOUR (4) CONCRETE TEST CYLINDERS (4 OR 6 INCH DIAMETER) FOR EACH DAY OF CONCRETE PLACEMENT AND EVERY 50 CUBIC YARDS THEREAFTER.
      2. INDICATE CONCRETE PLACEMENT LOCATIONS THAT THE TEST CYLINDERS REPRESENT.
      3. TEST TWO CYLINDERS AT 7 DAYS AND TWO AT 28 DAYS FOR COMPRESSIVE STRENGTH PER ASTM C39.

REQUIRED REPORTS:

1. THE INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE ENGINEER.
2. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR AND ENGINEER FOR CORRECTION.
3. A FINAL REPORT DOCUMENTING THE REQUIRED INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.

REMEDIAL ACTIONS

1. PILES DRIVEN OUTSIDE OF LOCATION, TWIST OR PLUMBNESS TOLERANCE:
   a. WITHDRAW PILE AND REPLACE WITHIN TOLERANCE AS NOTED IN THE GENERAL NOTES "**PILE FOUNDATIONS**" SECTION 8.
   b. CONSULT ENGINEER, AS REQUIRED.

2. Over drilled piles that compacts the soil as hammering commences shall be tested in compression and tension for structural soundness according to 2c above. LATERAL DEFLECTIONS SHALL BE RECORDED 4" ABOVE THE BOTTOM OF THE PILE AND AT THE LOAD APPLICATION POINT. LATERAL LOAD TEST:. APPLY HORIZONTAL LOAD AND RECORD DEFLECTION AT 4INCHES BELOW TOP OF PILE.

3. Wide flange bearing piles may be replaced with an Ojjo Earth truss, up to one per tracker wing. No motor pile wide flange beams may be replaced with Ojjo Earth trusses.

4. All piles should attempt to achieve the design embedment. If there are occasional piles that achieve refusal with less embedment, the following criteria can be used to evaluate piles.

   Refusal is defined as no pile advancement with the pile driver operating at full power for at least 30 seconds.

   Bearing piles achieving refusal within 12 inches (1.0 feet) of design depth can be cut off up without additional testing. Bearing piles achieving refusal between 12 inches and 18 inches (1.5 feet) short of design depth can remain if the pile demonstrates acceptable performance with lateral testing. Testing shall be completed to 150% of the test load and with the procedure under "LATERAL LOAD TEST", under PROOF LOAD TESTING on Design Sheet S-001. No more than two bearing piles per tracker wing can be short of design depth and be cut off.

   Motor piles achieving refusal can have embedment shortened up to a maximum of 9 inches (0.75 feet).

   Piles cut off shall have all exposed surfaces coated with two coats of cold galvanization.

5. PILES MAY BE SPLICED WITH A FULL PENETRATION JOINT PROVIDED NOR MORE THAN 1 SPLICE PER PILE, A MINIMUM OF 2 FEET ABOVE GRADE

TABLE 1705.6 (IBC 2018)
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUSLY DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Verify excavations are extended to proper depth and have reached proper material.	---	X

TABLE 1705.7 (IBC 2018)
REQUIRED VERIFICATION AND INSPECTION OF DRIVEN DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	CONTINUOUSLY DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Verify element materials, galvanization, sizes and lengths comply with the requirements.	---	X
2. Observe driving operations and maintain complete and accurate records for each element.	---	X
3. Verify placement locations and plumbness, and document any damage to foundation element.	---	X
4. For steel elements, perform additional inspections in accordance with Section 1705.2.	---	---
5. Preinstallation verification of DTI's and skid pile caps per notes on Dwg. S-0004.	X	---
6. Fit up prior to pretension of skid pile caps per note 8 on Dwg. S-0004.	---	X

(1) PILE INSTALLATION CONTRACTOR TO MAINTAIN LOG IN CONFORMANCE WITH PILE FOUNDATIONS SECTION, ITEM 7.

ABBREVIATIONS

&	AND
@	AT
℄	CENTER LINE
ℙ	PLATE, PROPERTY LINE
APPROX	APPROXIMATE
CLR	CLEAR
DIA	DIAMETER
DIM	DIMENSION
DL	DEAD LOAD
ENGINEER	ENGINEER OF RECORD
EOR	ENGINEER OF RECORD
EQUIP	EQUIPMENT
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FT	FEET / FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GRD	GRADE
HDG	HOT DIPPED GALVANIZED
HORIZ	HORIZONTAL
HT	HEIGHT
IN	INCH
INT	INTERIOR
KIPS	KILOPOUNDS (1,000 POUNDS)
LB	POUND
LL	LIVE LOAD
MAT	MATERIAL
MAX	MAXIMUM
MIN	MINIMUM
MANUF	MANUFACTURER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PL OR (ℙ)	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCHES
RAD	RADIUS
REQD	REQUIRED
REV	REVISION
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SPEC	SPECIFICATION
SQ	SQUARE
SS	SHEET STEEL
STL	STEEL
STRUCT	STRUCTURAL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT OR (V)	VERTICAL
V.I.F	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WT	WEIGHT

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	JAC / AD	ADT / ADT	10/16/2020
1	RECORD DRAWINGS		ADT	6/14/2023

8minute SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

PSC Primoris

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET, SUITE 500
DENVER, COLORADO 80239

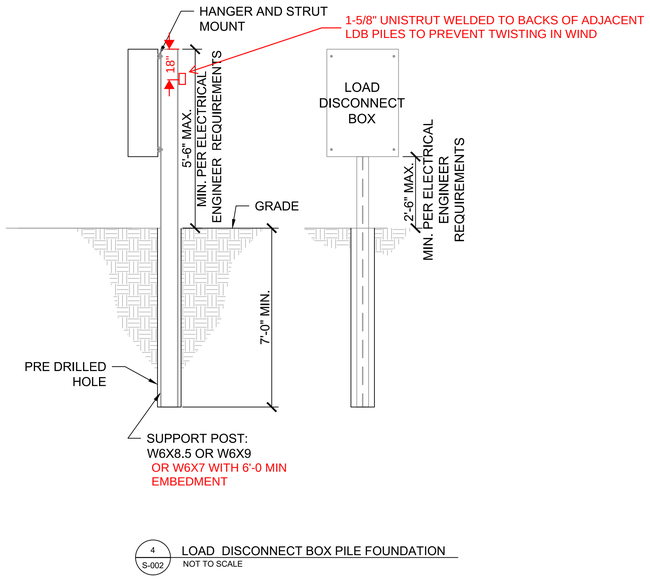
CS BLOCK 203 & TRINA
GENERAL NOTES

PROJECT NO.	20203753.003A
ISSUE DATE	6/14/2023
CURRENT REVISION	1
DESIGNED BY	AD/JAC
DRAWN BY	AD/JAC
CHECKED BY	ADT
APPROVED BY	ADT

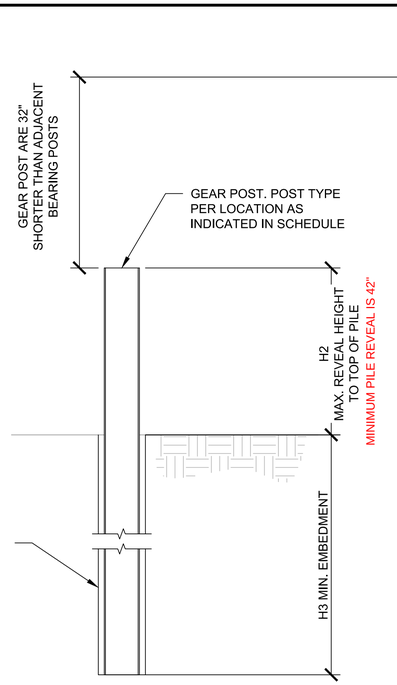
S-001

SHEET 2 of 8

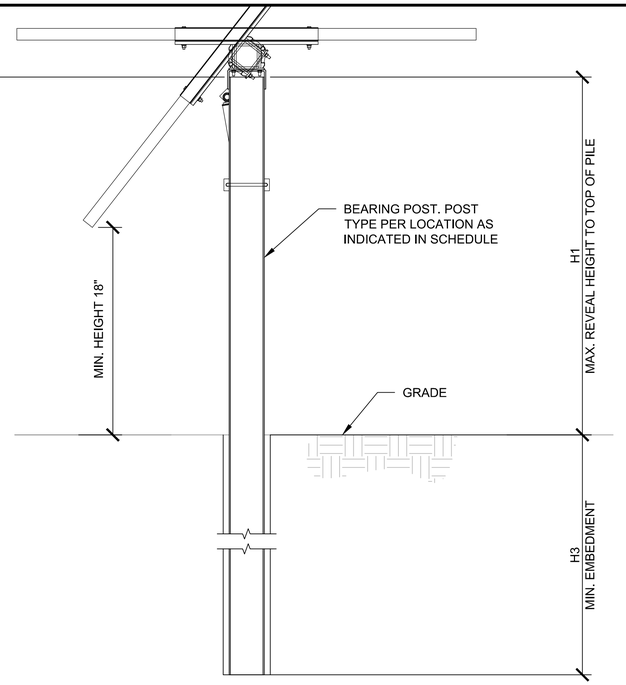
CAD FILE: \\denver.kleinfelder.com\DENVER-DATA\WORKING\20203753.002 - Eagle Shadow Mountain Design\2.0 Technical Information\2.8 Technical And CADD Figures\20203753 Eagle Shadow Mountain_20201016.dwg LAYOUT: GEN NOTES CS_FND PLOTTED: 10/16/2020 5:41 PM BY: adam.tschida



4 S-002 LOAD DISCONNECT BOX PILE FOUNDATION
NOT TO SCALE

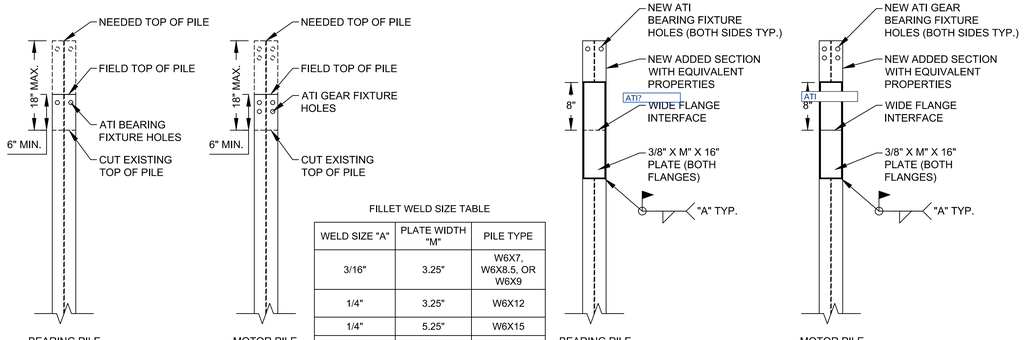


2 S-002 GEAR PILE
NOT TO SCALE



1 S-002 BEARING PILE
NOT TO SCALE

There should be no structural conflicts with using Ojjo Earth trusses to selectively replace piles in tracker rows. At this time we only suggest replacement of bearing piles, we do not recommend using an Ojjo truss to replace the motor pile. Additionally, we do not recommend replacement of more than 1 pile per wing of tracker. Adam D. Tschida, P.E.*



FILLET WELD SIZE TABLE

WELD SIZE "A"	PLATE WIDTH "M"	PILE TYPE
3/16"	3.25"	W6X7, W6X8.5, OR W6X9
1/4"	3.25"	W6X12
1/4"	5.25"	W6X15
5/16"	5.25"	W6X20

PILES MAY BE SPLICED WITH A FULL PENETRATION JOINT PROVIDED NOT MORE THAN 1 SPLICE PER PILE, A MINIMUM OF 2 FEET ABOVE GRADE

3 S-002 MITIGATION FOR OVERDRIVEN TO SHORT OR DAMAGED PILE
NOT TO SCALE

TRINA MODULE AND CANADIAN SOLAR MODULE FOR BLOCK 203 ONLY - ATI DURATRACK HZ WITH WIDE FLANGE FOUNDATIONS

FOUNDATION LOCATION	PILE TYPE	BEARING PILE MAX. ABOVE GRADE, INSTALLED PILE REVEAL (H1)	MOTOR PILE MAX. ABOVE GRADE, INSTALLED PILE REVEAL (H2)	MAX. CONSIDERED SCOUR DEPTH	MIN. INSTALLED EMBEDMENT (H3)	PREDRILL DEPTH
EXTERIOR	W6X7	5'-3"	2'-7"	0'-6"	6'-0"	6'-0"
		4'-9"	2'-1"	1'-0"	6'-6"	6'-6"
		4'-3"	1'-7"	1'-6"	7'-0"	7'-0"
	W6X8.5	6'-0"	3'-4"	0'-6"	6'-3"	6'-3"
		5'-6"	2'-10"	1'-0"	6'-9"	6'-9"
		5'-0"	2'-4"	1'-6"	7'-6"	7'-6"
	W6X9	6'-6"	3'-10"	0'-6"	6'-6"	6'-6"
		6'-0"	3'-4"	1'-0"	7'-0"	7'-0"
		5'-6"	2'-10"	1'-6"	7'-6"	7'-6"
	W6X12	8'-0"	5'-4"	0'-6"	6'-9"	6'-9"
		7'-5"	4'-9"	1'-0"	7'-6"	7'-6"
		7'-0"	4'-4"	1'-6"	8'-0"	8'-0"
INTERIOR	W6X7	6'-0"	3'-4"	0'-6"	6'-0"	6'-0"
		5'-6"	2'-10"	1'-0"	6'-6"	6'-6"
		5'-0"	2'-4"	1'-6"	7'-0"	7'-0"
	W6X8.5	7'-0"	4'-4"	0'-6"	6'-0"	6'-0"
		6'-6"	3'-10"	1'-0"	6'-9"	6'-9"
		6'-0"	3'-4"	1'-6"	7'-3"	7'-3"
	W6X9	7'-6"	4'-10"	0'-6"	6'-3"	6'-3"
		7'-0"	4'-4"	1'-0"	6'-9"	6'-9"
		6'-6"	3'-10"	1'-6"	7'-3"	7'-3"

NOTE: CONFIRM WITH CURRENT ATI REQUIREMENTS. SET SCREWS REQUIRED TO TRANSFER WEAK AXIS LOAD ON ALL BEARING COLUMNS.

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	JAC	ADT	10/16/2020
		AD	ADT	
1	RECORD DRAWINGS			6/14/2023
			ADT	

MINUTE SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

PSC Primoris

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET, SUITE 500
DENVER, COLORADO 80239

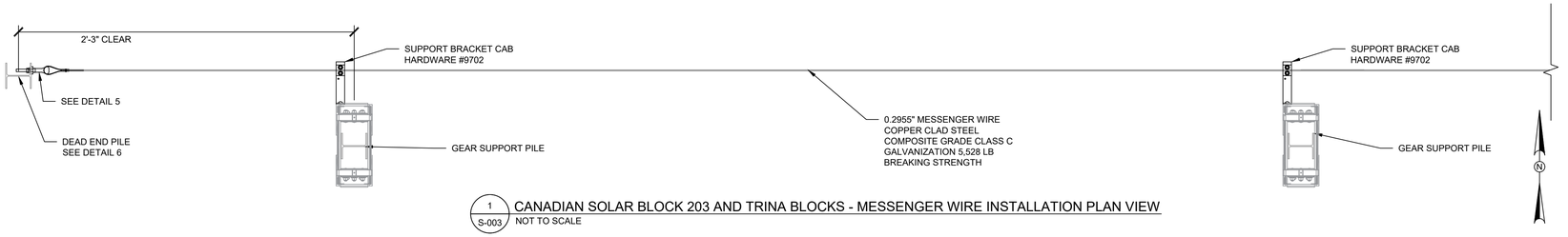
WIDE FLANGE TRACKER AND LOAD DISCONNECT FOUNDATION

PROJECT NO.	20203753.003A
ISSUE DATE	6/14/2023
CURRENT REVISION	1
DESIGNED BY	AD/JAC
DRAWN BY	AD/JAC
CHECKED BY	ADT
APPROVED BY	ADT

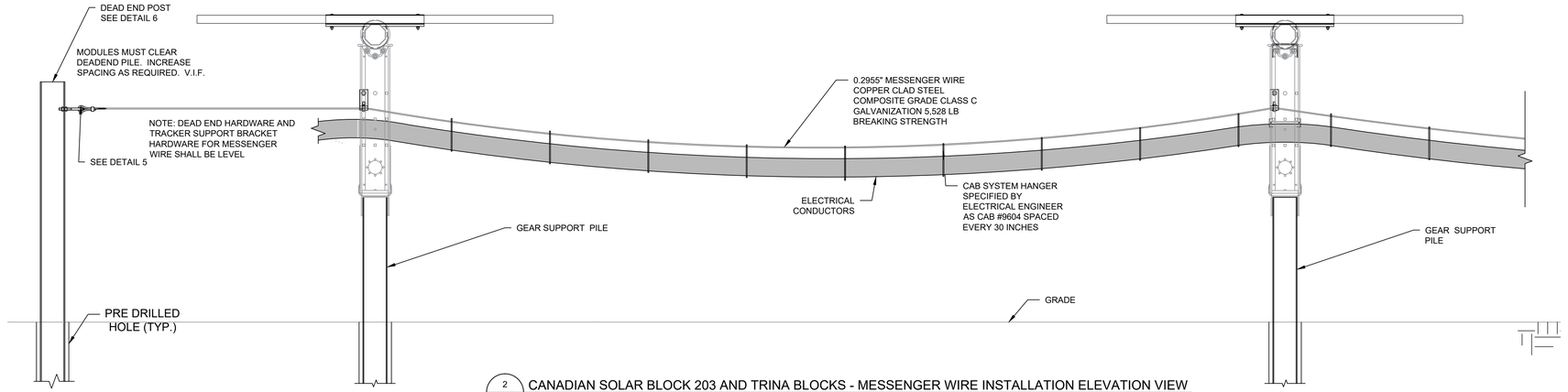
S-002

SHEET 3 of 8

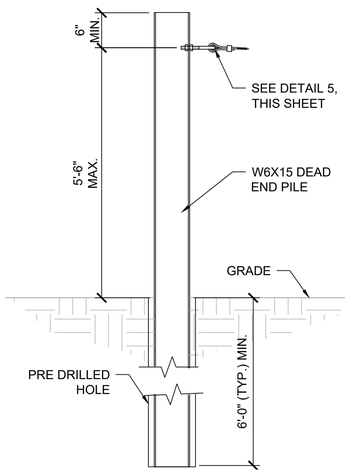
CAD FILE: \\denver.kleinfelder.com\DENVER-DATA\WORKING\20203753.002 - Eagle Shadow Mountain Design\2.0 Technical Information\2.8 Technical And CADD Figures\20203753 Eagle Shadow Mountain_20201016.dwg LAYOUT: TRINA WIDE FLANGE FND PLOTTED: 10/16/2020 5:41 PM BY: adam.tschida



1 S-003 CANADIAN SOLAR BLOCK 203 AND TRINA BLOCKS - MESSENGER WIRE INSTALLATION PLAN VIEW
NOT TO SCALE



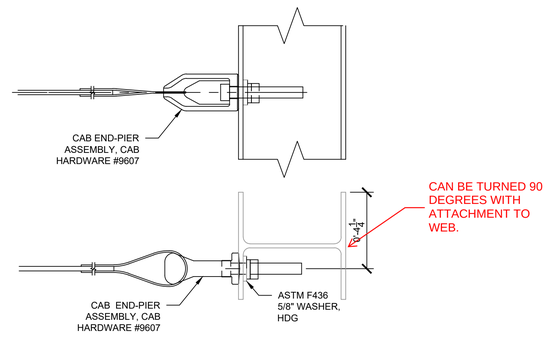
2 S-003 CANADIAN SOLAR BLOCK 203 AND TRINA BLOCKS - MESSENGER WIRE INSTALLATION ELEVATION VIEW
NOT TO SCALE



6 S-003 CAB DEAD END PILE DETAIL
NOT TO SCALE

LBDS INTERFERRING WITH CAB MAY HAVE HANGER ADDED TO THEM TO RUN CAB AROUND

DEAD ENDS MAY BE AT ENDS OF BLOCK, SHORTENING MESSENGER WIRE SPAN.



5 S-003 DEAD END PILE CONNECTION DETAIL
NOT TO SCALE

MESSENGER CABLE INSTALLATION SEQUENCE:

1. SECURE MESSENGER WIRE TO ONE DEAD END FOUNDATION (DETAIL 5).
2. LAY MESSENGER WIRE THROUGH ALL MID-SPAN BRACKETS. DO **NOT** SECURE. TENSION THE MESSENGER WIRE AND ATTACH TO SECOND DEAD END PER THE INSTALLATION SAG IN TABLE 1 AT MIDSPAN BETWEEN L-BRACKETS.
3. TIGHTEN THE RETAINER PLATES OF THE MID-SPAN BRACKETS.
4. STRING ON THE CAB HANGERS ALONG ALL SPANS. STRING ALL CONDUCTORS THROUGH THE CAB HANGERS AND RECHECK THE SAG AT ALL MIDSPANS. FINAL SAG SHOULD BE ESTIMATED PER TABLE 2.
5. DEAD LOAD SPECIFIED BY ELECTRICAL ENGINEER AS 4.7 PLF.

TABLE 1: MESSENGER WIRE STRINGING SAG CHART

		TEMPERATURE (°F)											
SAG (INCHES)	ROW-TO-ROW SPAN	10	20	30	40	50	60	70	80	90	100	110	120
	20'-0" TO 25'-0" (CCS)	1.68	2.16	2.64	3.00	3.36	3.72	4.08	4.32	4.68	4.92	5.16	5.40
	20'-0" TO 25'-0" (EHS)	2.16	2.52	2.88	3.24	3.48	3.72	4.08	4.32	4.56	4.80	5.04	5.16

NOTE: MID-SPAN SAG OF THE MESSENGER WIRE LISTED ABOVE OCCURS BEFORE ANY ELECTRICAL CABLES OR SUPPORTS ARE HUNG FROM THE MESSENGER CABLE (I.E. ONLY THE BARE EHS MESSENGER WIRE).

TABLE 2: MESSENGER WIRE MAXIMUM FINAL SAG CHART

		TEMPERATURE (°F)				
SAG (INCHES)	ROW-TO-ROW SPAN	0	30	60	90	120
	20'-0" TO 25'-0" (CCS)	7.30	7.70	8.00	8.40	8.80
	20'-0" TO 25'-0" (EHS)	7.40	7.70	8.00	8.30	8.60

NOTE: MAXIMUM SAG VALUES SHOWN ABOVE INCLUDE THE INITIAL SAG PLUS THE SAG DUE TO MAXIMUM VERTICAL FACTORED LOAD CONDITION OF 4.7 LB/FT FOR MESSENGER WIRE.

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0	CONSTRUCTION PLANS	JAC / AD	ADT / ADT	10/16/2020
1	RECORD DRAWINGS		ADT	6/14/2023

8minute SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

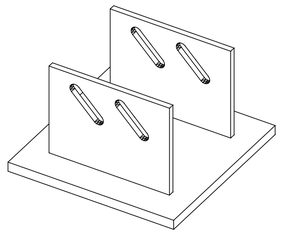
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CAB DETAILS & FOUNDATION

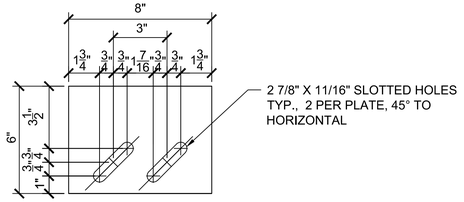
PROJECT NO.	20203753.003A
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DRAWN BY	AD/JAC
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APPROVED BY	ADT

S-003

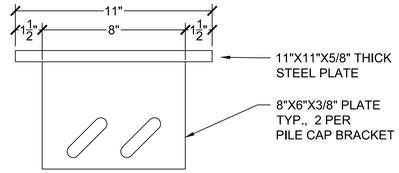
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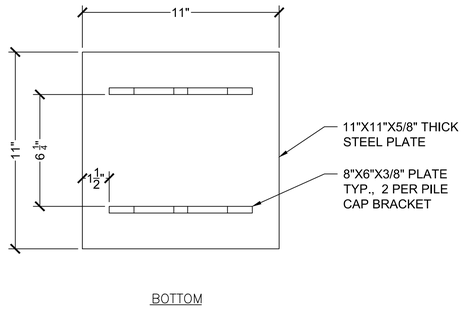


ORTHOGRAPHIC PILE CAP BRACKET

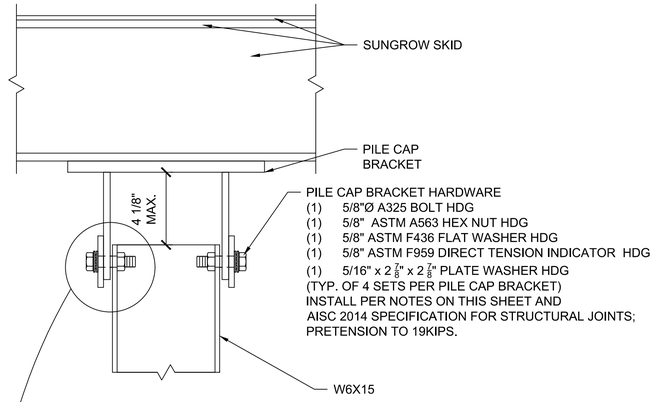


4 S-004 PILE CAP CONNECTION PLATE
NOT TO SCALE

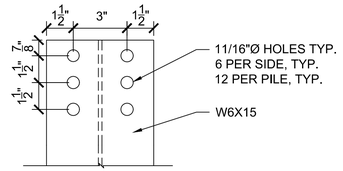




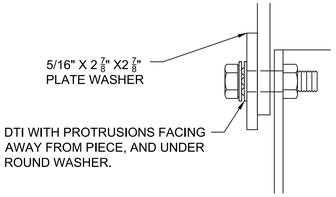
3 S-004 PILE CAP PLATE ASSEMBLY
NOT TO SCALE



1 S-004 PILE CAP BRACKET ASSEMBLY SIDE VIEW
NOT TO SCALE



2 S-004 TOP OF PILE HOLE PATTERN
NOT TO SCALE



SLIP CRITICAL CONNECTION CLASS A

PILE CAP BRACKET AND FOUNDATION NOTES:

1. BOLTS TO MEET ASTM F3125, GRADE A325, WITH MATCHING NUT.
2. ALL HARDWARE TO BE HOT DIP GALVANIZED.
3. STEEL PLATES TO BE HOT DIP GALVANIZED PER ASTM A123.
4. PILES TO BE COATED PER GENERAL NOTE: FOUNDATION, ITEM 3d.
5. BOLTS TO BE INSTALLED PER SPECIAL INSPECTION TABLE, DWG. S-001.

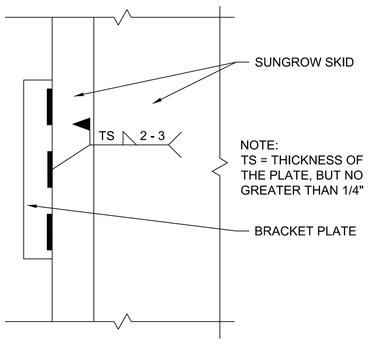
INSTALLATION OF PILE CAP:

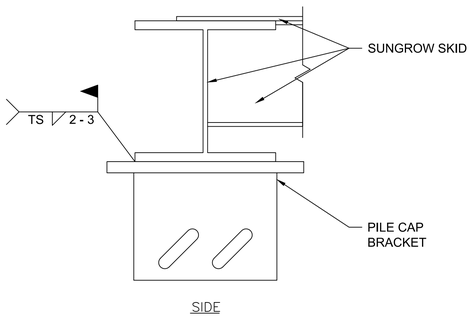
1. DETAILED INSTALLATION INSTRUCTIONS SHALL BE PREPARED BY THE DIRECT TENSION INDICATOR (DTI) MANUFACTURER AND SUBMITTED TO THE ENGINEER OF RECORD WHICH SHALL PROVIDE FOR:
   - A) THE REQUIRED CHARACTER AND FREQUENCY OF PREINSTALLATION VERIFICATION;
   - B) THE ALIGNMENT OF BOLT HOLES TO PERMIT INSERTION OF THE BOLT WITHOUT UNDUE DAMAGE TO THE THREADS;
   - C) THE PLACEMENT OF FASTENER ASSEMBLIES IN ALL TYPES AND SIZES OF HOLES, INCLUDING PLACEMENT AND ORIENTATION OF THE WASHERS;
   - D) THE SYSTEMATIC ASSEMBLY OF THE JOINT, PROGRESSING FROM THE MOST RIGID PART OF THE JOINT UNTIL THE CONNECTED PLIES ARE IN FIRM CONTACT;
   - E) THE SUBSEQUENT SYSTEMATIC PRETENSIONING OF ALL BOLTS IN THE JOINT PROGRESSING FROM THE MOST RIGID PART OF THE JOINT IN A MANNER THAT WILL MINIMIZE RELAXATION OF PREVIOUSLY PRETENSIONED BOLTS;
   - F) OBSERVATION OF THE REQUIRED PRE-INSTALLATION VERIFICATION TESTING;
   - G) SUBSEQUENT ROUTINE OBSERVATION TO ENSURE THE PROPER USE OF THE DTI.

INSTALLATION OF PILE CAP (CONT.):

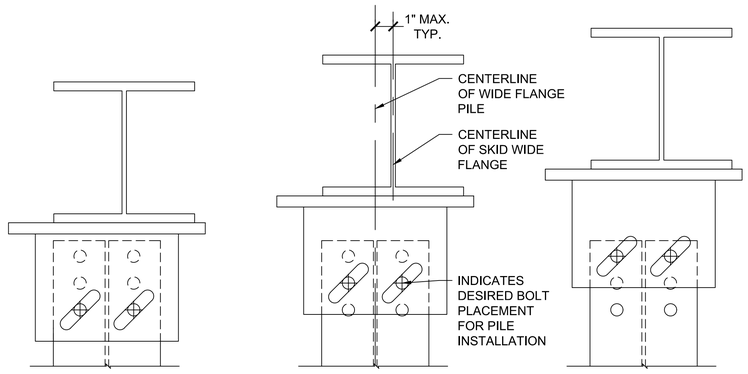
2. PRE-INSTALLATION VERIFICATION SHALL BE PERFORMED WITH INSPECTOR PRESENT ON NOT FEWER THAN THREE COMPLETE FASTENER ASSEMBLIES OF EACH COMBINATION OF DIAMETER, LENGTH, GRADE AND **LOT** TO BE USED IN THE WORK TO VERIFY THAT THE MINIMUM PRETENSION OF 20K (FOR 5/8" BOLTS) CAN BE DEVELOPED.
3. UPON SATISFACTORY PREINSTALLATION TESTING, PRODUCTION PILES OF THE SAME LOT MAY BE INSTALLED WITH A PRETENSION OF 19K. THIS IS TO BE PERFORMED BY HOLDING THE NUT STEADY AND TIGHTENING THE BOLT.
4. ALL FAYING SURFACES MUST BE PREPARED BY BRUSHING WITH A WIRE BRUSH OR BY GRIT BLASTING.
5. ALL 4 BOLTS MUST BE INSTALLED WITH WASHERS & DTI'S AS SHOWN.
6. *COMPACT* THE JOINT BY STARTING WITH THE STIFFEST BOLT SET, TIGHTEN UNTIL ALL PLIES ARE IN FIRM CONTACT, AND THEN PROCEEDING TO THE NEXT STIFFEST BOLT SET, UNTIL ALL ARE IN FIRM CONTACT. THIS IS TO BE PERFORMED BY HOLDING THE NUT STEADY AND TIGHTENING THE BOLT.
7. COMMENCE PRETENSIONING TO 19K. THE GAP SHALL NOT BE LESS THAN THE JOB INSPECTION GAP IN ACCORDANCE WITH ASTM F959 AND THE MANUFACTURER INSTRUCTIONS, OR THE DTI SHALL BE REMOVED AND REPLACED.
8. THE INSPECTOR SHALL OBSERVE THE PREINSTALLATION VERIFICATION TESTING REQUIRED. SUBSEQUENTLY, BUT PRIOR TO PRETENSIONING, IT SHALL BE ENSURED BY ROUTINE OBSERVATION THAT THE APPROPRIATE FEELER GAGE IS ACCEPTED IN AT LEAST HALF OF THE SPACES BETWEEN THE PROTRUSIONS OF THE DTI AND THAT THE PROTRUSIONS ARE PROPERLY ORIENTED AWAY FROM THE WORK. IF THE APPROPRIATE FEELER GAGE IS ACCEPTED IN FEWER THAN HALF THE SPACES, THE DTI SHALL BE REMOVED AND REPLACED. AFTER PRETENSIONING, IT SHALL BE ENSURED BY ROUTINE OBSERVATION THAT THE APPROPRIATE FEELER GAGE IS REFUSED ENTRY INTO AT LEAST HALF OF THE SPACES BETWEEN PROTRUSIONS. NO FURTHER EVIDENCE OF CONFORMITY IS REQUIRED.

9. 1/16X5.5X5.5 GALVANIZED FLAT STOCK MAY BE USED TO LEVEL THE INVERTERS.





5 S-004 SKID WELD TO BRACKET DETAIL
NOT TO SCALE



BOLT/HOLE POSITION FOR - 3/4" TO A MAXIMUM -1 1/2"" VERTICAL TOLERANCE

BOLT/HOLE POSITION FOR INSTALLATION TO LESS THAN ± 3/4" VERTICAL TOLERANCE

BOLT/HOLE POSITION FOR + 3/4" TO MAX + 2 1/4" VERTICAL TOLERANCE

7 S-004 BOLT/HOLE POSITION FOR INSTALLED PILE TOLERANCE
NOT TO SCALE

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0	CONSTRUCTION PLANS	JAC / AD	ADT / ADT	10/16/2020
1	RECORD DRAWINGS	/	/ ADT	6/14/2023

8minute SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

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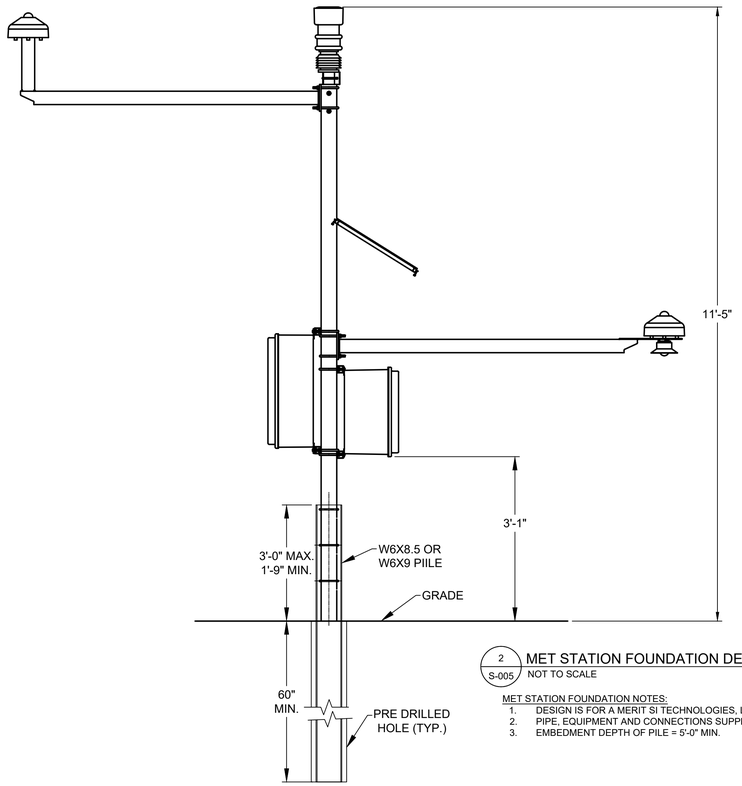
PCS & PILE CAP CONNECTION

PROJECT NO.	20203753.003A
ISSUE DATE	6/14/2023
CURRENT REVISION	1
DESIGNED BY	AD/JAC
DRAWN BY	AD/JAC
CHECKED BY	ADT
APPROVED BY	ADT

S-004

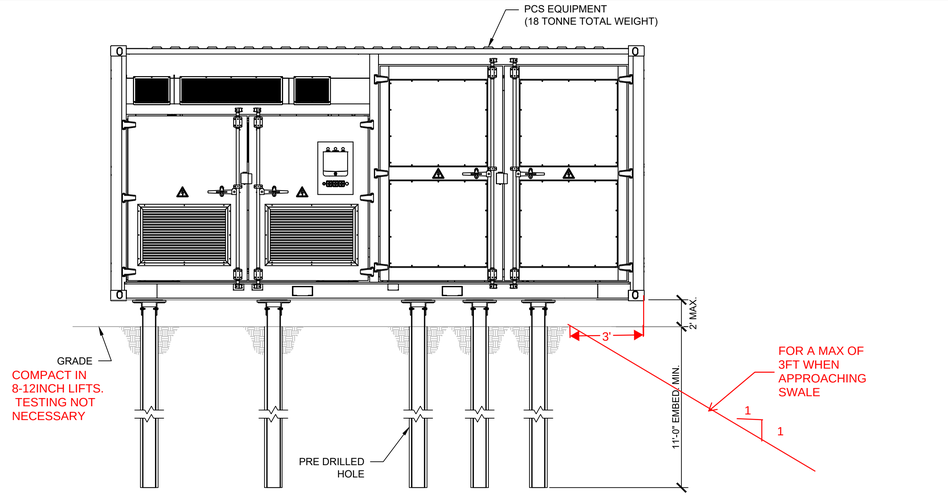
SHEET 5 of 8

CAD FILE: \\denver.kleinfelder.com\DENVER-DATA\WORKING\20203753.002 - Eagle Shadow Mountain Design\2.0 Technical Information\2.8 Technical And CADD Figures\20203753 Eagle Shadow Mountain_ 20201016.dwg LAYOUT: SKID CONN PLOTTED: 10/16/2020 5:43 PM BY: adam.tschida

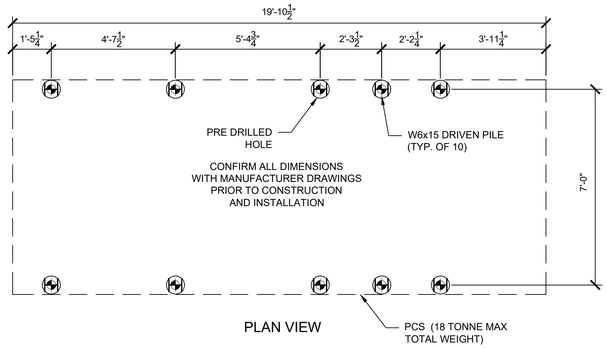


2 S-005 MET STATION FOUNDATION DETAIL - WEST ELEVATION VIEW
NOT TO SCALE

MET STATION FOUNDATION NOTES:
1. DESIGN IS FOR A MERIT SI TECHNOLOGIES, LLC, METEOROLOGICAL STATION ASSEMBLY.
2. PIPE, EQUIPMENT AND CONNECTIONS SUPPLIED BY MANUFACTURER
3. EMBEDMENT DEPTH OF PILE = 5'-0" MIN.



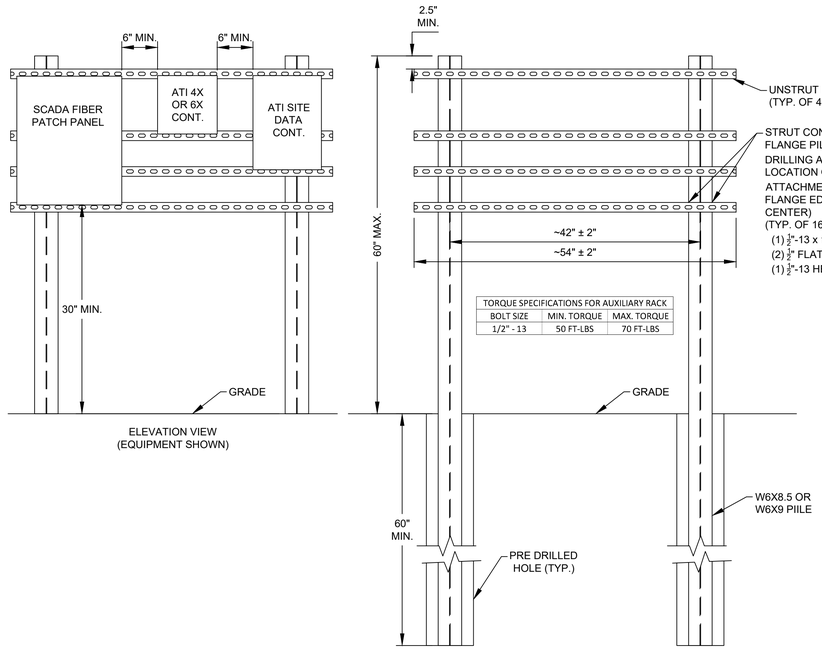
ELEVATION VIEW



PLAN VIEW

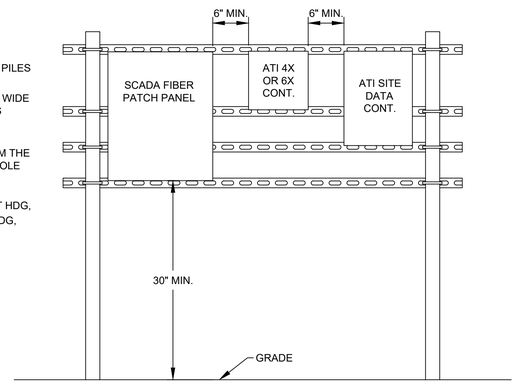
PER RFI FG-2, INVERTER PILES CAN BE ROTATED 90 DEGREES
PER RFI -A ROCK SKIRT OF 3/4" AGGREGATE IS ADDED

1 S-005 SUNGROW SG3150V-MV PCS FOUNDATION
NOT TO SCALE

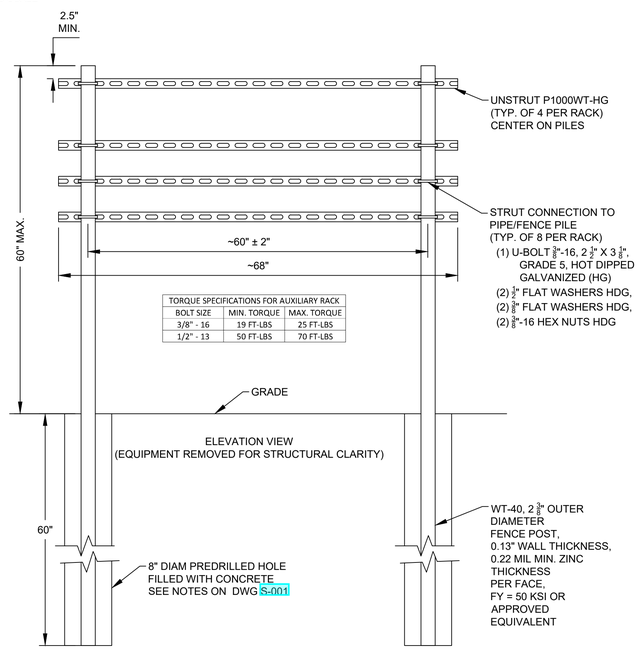


ELEVATION VIEW
(EQUIPMENT SHOWN)

3 S-005 AUXILIARY RACK - WIDE FLANGE PILE OPTION
NOT TO SCALE



NOTE: REFER TO EQUIPMENT SPECIFICATION AND INSTALLATION GUIDES FOR ADDITIONAL MOUNTING EQUIPMENT NOT SHOWN.



ELEVATION VIEW
(EQUIPMENT REMOVED FOR STRUCTURAL CLARITY)

4 S-005 AUXILIARY RACK - PIPE COLUMN OPTION
NOT TO SCALE

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EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET, SUITE 500
DENVER, COLORADO 80239

PCS AND MET FOUNDATION, & AUXILIARY RACK

PROJECT NO.	20203753.003A
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CURRENT REVISION	1
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APPROVED BY	ADT

S-005

SHEET 6 of 8

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ADDITIONAL GENERAL STRUCTURAL NOTES FOR OJJO FOUNDATIONS

1. THE NOTES ON THIS SHEET APPLY TO THE CANADIAN SOLAR (LESS BLOCK 203) AND JINKO ARRAY OJJO EARTH TRUSS FOUNDATIONS AND THE OJJO DEADEND FOR THE MESSENGER WIRE (CAB) SYSTEM. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.

OJJO EARTH TRUSS FOUNDATIONS

1. ACCURATELY LOCATE AND INSTALL EARTH TRUSS SUPPORTS. EARTH TRUSS FOUNDATIONS SHALL BE INSTALLED PER THE "OJJO EARTH TRUSS FOUNDATION SYSTEM WITH ATI DURATRACK HZ V3, INSTALLATION MANUAL, V 2020.2, SEPTEMBER 2020.
2. DO NOT BEGIN EARTH TRUSS INSTALLATION UNTIL THE EARTHWORK IN THE AREA WHERE EARTH TRUSSES ARE TO BE INSTALLED HAS BEEN COMPLETED.
3. MATERIALS
   a. SIZE PER OJJO SPECIFICATIONS
   b. MINIMUM YIELD STRENGTH OF 50 ksi, MINIMUM ULTIMATE STRENGTH OF 62 ksi (OJJO EARTH TRUSS)
   c. GALVANIZE PER ASTM A123, MINIMUM 2.5 MIL GALVANIZATION THICKNESS
4. TOLERANCES:
   a. TOP OF TRUSS CAP E-W POSITION: ± 1/2"
   b. TOP OF TRUSS CAP N-S POSITION: ± 3/8"
   b. TRUSS CAP VERTICAL: ± 1/2"
   c. TRUSS CAP TWIST: ± 3.0°
   d. TRUSS CAP PLUMB E-W: ± 3.0°
   e. TRUSS CAP PERPENDICULAR TO TORQUE TUBE N-S: ± 3.0°
5. EACH PART OF THE EARTH TRUSS TO BE FREE FROM DEFECTS AND DAMAGE DUE TO CONSTRUCTION, FABRICATION, DELIVERY, INSTALLATION OR OTHER CAUSES.
   a. REPLACE DAMAGED EARTH TRUSS. DAMAGE INCLUDES BUT NOT NECESSARILY LIMITED TO BENT, BUCKLED, AND CRACKED PARTS. IMPERFECTION OR DAMAGE TO CORROSION PROTECTIVE COATING, OR WITH ANY OTHER DEFECT AS DETERMINED BY ENGINEER. REPAIRS TO BE COMPLETED PER THE "OJJO EARTH TRUSS CORRECTION MATRIX" AND "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020".
   b. CORRECT ANY FOUNDATION OR OTHER CONSTRUCTION THAT HAS BEEN DAMAGED BY FOUNDATION INSTALLATION.
6. FOUNDATION INSTALLATION LOGS SHALL BE MAINTAINED CONSTANTLY DURING INSTALLATION. THAT INCLUDES INSTALLATION DATE, ANCHOR, INSTALLATION TIMES, TRUSS CAP HEIGHT, HYDRAULIC PRESSURE, ETC.

STRUCTURAL STEEL

1. MATERIAL STANDARDS: (UNLESS NOTED OTHERWISE)
   a. SIZE PER OJJO SPECIFICATIONS
   b. MINIMUM YIELD STRENGTH OF 50 KSI, MINIMUM ULTIMATE STRENGTH OF 62 KSI (OJJO EARTH TRUSS)
   c. GALVANIZE, MINIMUM 2.5 MIL GALVANIZATION THICKNESS
2. TOUCH-UP PAINT: ZINC RICH, CONTAINING A MINIMUM 93% METALLIC ZINC CONTENT.

REQUIRED INSPECTION AND TESTING

1. THE FOLLOWING INSPECTIONS AND TESTS SHALL BE COMPLETED. REPORTS BY THE INSPECTOR SHALL BE PROVIDED TO THE OWNER AND ENGINEER.
   a. OJJO EARTH TRUSS FOUNDATION
      a.1. OJJO EARTH TRUSS FOUNDATION INSTALLATION TO BE DOCUMENTED ON INSTALLATION LOG AS DETAILED UNDER **OJJO EARTH TRUSS FOUNDATIONS** SECTION, ITEM 6 AND "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020".
2. PROOF LOAD TESTING
   a. PROOF LOAD TESTING SHALL BE CONDUCTED IN CONFORMANCE WITH ASTM D3966 AND ASTM D3689, MODIFIED AS BE APPROPRIATE FOR OJJO EARTH TRUSS FOUNDATIONS.
   b. PROOF LOAD TESTING SHALL BE PERFORMED AS REQUIRED IN THIS SECTION AND THE REMEDIAL ACTIONS SECTION. PROOF LOAD TESTS WILL BE PROVIDED TO ENGINEER OF RECORD FOR REVIEW.
   c. PROOF LOAD TESTING SHALL INCLUDE RECORDING DEFLECTIONS FOR LATERAL LOADS AND VERTICAL MOVEMENT FOR VERTICAL LOADS AT 25%, 50%, 75%, 100% AND 125% OF THE LOADS PROVIDED BELOW FOR EACH OF THE FOUNDATION TYPES. LATERAL DEFLECTIONS SHALL BE RECORDED PER "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020".
   d. EQUIPMENT: LOAD CELL (DYNAMOMETER) RATED FOR A MINIMUM RANGE OF 5,000 LBS. CALIBRATION CERTIFICATE WITHIN 1 YEAR. MOVEMENTS IN A DIRECTION COLLINEAR TO THE LINE OF LOADING SHALL BE RECORDED BY DIAL GAUGES WITH A MINIMUM RESOLUTION OF 0.01 INCHES.
   e. PROCEDURE: PERFORMANCE TESTING SHALL BE CONDUCTED BY LOADING THE EARTH TRUSS FIRST LATERALLY AND THEN IN VERTICAL TENSION AS INDICATED BELOW AND PER THE "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020". ONCE A LOAD INCREMENT HAS BEEN OBTAINED, THE LOAD SHALL BE HELD FOR THE MINIMUM OF ONE MINUTE OR LONG ENOUGH TO GET A STABLE READING, WHICHEVER IS LONGER.
3. LATERAL LOAD TEST
   a. PRODUCTION PIERS SHALL BE RANDOMLY SELECTED AND TESTED FOR LATERAL CAPACITY TESTING UNDER DIRECTION OF RESPONSIBLE ENGINEER. APPLICATION OF LOAD AND RECORDED READINGS SHALL BE PER "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020".
   b. LATERAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D3966, AS MODIFIED HERE:
      b.1. TEST PIERS SHALL BE LOADED TO 100% OF THE DESIGN LOAD AND UNLOADED AT 0%, IN 25% INCREMENTS. LOAD INCREMENTS SHALL BE AS FOLLOWS:
         b.1.1. LOAD TO BE 1,400 LBS FOR EXTERIOR ARRAY PV EARTH TRUSS
         b.1.2. LOAD TO BE 1,200 LBS FOR INTERIOR ARRAY PV EARTH TRUSS
      b.2. EACH LOAD INCREMENT SHALL BE HELD FOR 1 MINUTE OR UNTIL MOVEMENT STABILIZES, WHICH IS LONGER.
   c. LOAD SHALL BE APPLIED USING CUSTOM PULL FIXTURE FROM OJJO, WHICH PROVIDES A PULL POINT EQUIVALENT TO THE CENTER OF ROTATION OF ARRAY TECHNOLOGIES TORQUE TUBE.
   d. ACCEPTANCE CRITERIA SHALL BE AT THE DETERMINATION OF THE RESPONSIBLE ENGINEER. DEFLECTION UNDER LOAD = 3.5 INCHES AT TOP OF FOUNDATION. MAX DEFLECTION AFTER UNLOADING 0.25 INCHES AT BOTTOM OF FOUNDATION.
   e. A PIER LOAD TEST REPORT SHALL BE PRODUCED WITH PIER ID, PIER CHARACTERISTICS, MECHANICAL PERFORMANCE DATA, AND A MAP OF PIER TEST LOCATIONS.
4. PULLOUT (TENSION) LOAD TEST:
   a. PRODUCTION PIERS SHALL BE RANDOMLY SELECTED AND TESTED FOR AXIAL CAPACITY TESTING UNDER DIRECTION OF RESPONSIBLE ENGINEER. APPLICATION OF LOAD AND RECORDED READINGS SHALL BE PER "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020"
   b. AXIAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D3689, AS MODIFIED HERE.
      b.1. TEST PIERS SHALL BE LOADED TO 125% OF THE DESIGN LOAD AND UNLOADED TO 0%. LOAD INCREMENTS SHALL BE AS FOLLOWS:
         b.1.1. LOAD TO BE 700 LBS FOR EXTERIOR ARRAY PV EARTH TRUSS
         b.1.2. LOAD TO BE 600 LBS FOR INTERIOR ARRAY PV EARTH TRUSS
      b.2. EACH LOAD INCREMENT SHALL BE HELD FOR 1 MINUTE OR UNTIL MOVEMENT STABILIZES, WHICH IS LONGER.
   c. LOAD SHALL BE APPLIED USING CUSTOM PULL FIXTURE FROM OJJO, WHICH PROVIDES A PULL POINT EQUIVALENT TO THE CETNER OF ROTATION OF ARRAY TECHNOLOGIES TORQUE TUBE.
   d. ACCEPTANCE CRITERIA SHALL BE AT THE DETERMINATION OF THE RESPONSIBLE ENGINEER. ACCEPTANCE: MAX. VERTICAL MOVEMENT UNDER LOAD SHALL BE LESS THAN = 1.0 INCHES.
   e. A PIER LOAD TEST REPORT SHALL BE PRODUCED WITH PIER ID, PIER CHARACTERISTICS, MECHANICAL PERFORMANCE DATA, AND A MAP OF PIER TEST LOCATIONS.

REQUIRED REPORTS:

1. THE INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE ENGINEER.
2. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR AND ENGINEER FOR CORRECTION.
3. A FINAL REPORT DOCUMENTING THE REQUIRED INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.

REMEDIAL ACTIONS

1. FOUNDATIONS DRIVEN OUTSIDE OF LOCATION, TWIST OR PLUMBNESS TOLERANCE:
   a. REFER TO THE "OJJO TESTING AND INSPECTION PROCEDURES, QA-2020" AND "OJJO EARTH TRUSS CORRECTION MATRIX" FOR MITIGATION.
   b. CONSULT ENGINEER, AS REQUIRED.

IN CEMENTED MATERIALS, A MINIMUM EMBEDMENT 24" MAY BE USED WITH A MINIMUM OF 20' INTO CEMENTED MATERIAL, PROVIDED LOAD TESTING PROVES STRUCTURAL VIABILITY.

ADDITIONAL HOLES MAY BE PUNCHED IN THE TRUSS CAP TO ACCOMMODATETHE OUT OF TOLERANCE TRUSS AND ALLOW FOR PROPER TORQUE TUBE ALIGNMENT

THE FOLLOWING PROCEDURE IS ALLOWED:

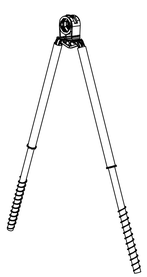
Reviewing the Screw Anchor embedment data collected by Ojjo and Primoris at the Eagle Shadow Mountain jobsite, there is a correlation between Screw Anchor Capacity and Truss Driver Machine hammering length (as seen in Figure 1 below).

Ojjo's solution to this is the following: The controls will accumulate the total distance during screw drive for which the hammer is running. In the case where the hammer turns on, then off, then on again, if the "hammer off distance" is less than 1", it will be *included* in the total hammering distance. If this "hammer off distance" is greater than 1", it will be excluded. The screw will be driven until either the total hammering distance is 18", or the total embedment is 42", whichever comes first – then will continue to drive the screw past those values in order that a pre-cut leg can be used in the truss.

Ojjo Earth Truss Correction Matrix

	Correction Procedure	Description	When to Employ Corrective Procedure
1	Remove and redrive Earth Screw	Earth Screw is unscrewed from the ground and redriven	1. Screw did not initially achieve minimum embedment. 2. Screw has a deficiency which requires replacement.
2	Realign Earth Screw	Earth Screw is gently repositioned in the soil with skidsteer or similar equipment	1. Screw is out of intended NS or EW position 2" or less.
3	Install longer Earth Screw	An Earth Screw is replaced with a longer Earth Screw	1. Screw did not have adequate capacity during initial installation. 2. Soil was disturbed and no longer has adequate capacity.
4	Install new Crimp Collar	Crimp Collar of a screw is replaced with a replacement Crimp Collar	1. Top of Earth Screw has been damaged, but threaded Anchor maintains sufficient capacity.
5	Install new Truss Cap	Truss cap is replaced with a replacmnt Truss Cap	1. Truss cap has been damaged. 2. Truss cap is substantially misaligned and requires repositioning.
6	Install new Leg	Leg(s) are replaced with replacement Leg	1. Leg has been damaged. 2. Truss cap is substantially misaligned and requires repositioning (includes Earth Truss being too short or too tall).
7	Bump Truss	Truss is gently pushed at grade, below the Crimps, in the NS direction with skidsteer or similar equipment	1. Top of Truss is misaligned in NS direction.
8	Slurry plug	Anchor location is predrilled with 3.5" hole or larger, filled with 500psi slurry, and Screw Anchor is redriven or placed in the slurry	1. Screw has been damaged. 2. Screw does not have adequate capacity. 3. Soil has been disturbed.
9	Pour in place	Dig pit around Earth Screw or in appropriate location for Earth Screw (dimensions to be communicated by EOR), fill with 500psi slurry, secure Earth Truss in place during slurry curing period.	1. Earth Screw does not have adequate capacity, but Earth Truss is in adequate condition.
10	Replace Earth Truss (above ground components only)	Earth Screws remain in place. Cut and remove Legs and Truss Cap. Position Truss Driver. Recrimp Legs and Truss Cap into final position.	1. Any above ground components of Earth Truss are damaged. 2. Positioning is misaligned in EW direction or NS direction.
11	Replace Earth Truss (above and below ground components)	Position Truss Driver. Select appropriate Earth Screw and/or prepare soil substrate per Engineer. Drive Earth Screw(s). Crimp Legs and Truss Cap into final position.	1. Soil has been disturbed. 2. Earth Truss has been damaged. 3. Earth Truss does not have adequate capacity.
12	Cut legs	Cut leg tube with circular or portable band saw, spray with cold galvinizaion spray	1. Screw not driven to match leg legnth bin. 2. Ideal leg length not available.
13	Recrimp	Leg tube is recrimped around Screw Collar or Truss Cap Collar	1. Intial crimp is found to to lack adequate capacity. 2. Crimp QC Gage cannot fit onto a crimped Leg. 3. Crimp is loose. 4. Crimp is found to have damage.
14	Contact Ojjo and EOR	Obtain written guidance from EOR and Ojjo.	1. Any condition not covered in the Truss Correction Matrix.

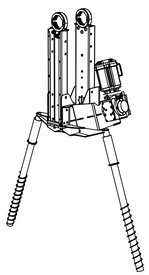
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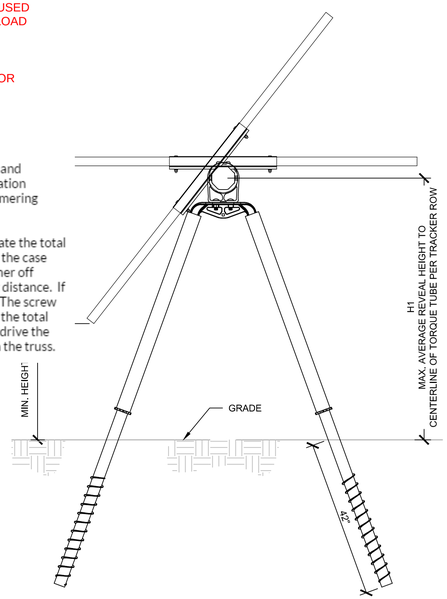
1 S-006 BEARING EARTH TRUSS - OBLIQUE VIEW
NOT TO SCALE



2 S-006 BEARING EARTH TRUSS W/DAMPER - OBLIQUE VIEW
NOT TO SCALE



3 S-006 GEAR EARTH TRUSS - OBLIQUE VIEW
NOT TO SCALE



4 S-006 BEARING OJJO EARTH TRUSS FOUNDATION ELEVATION VIEW
NOT TO SCALE

TRACKER ROW CONDITION WITH 3 INCHES OR LESS OF MAXIMUM SCOUR PER FOUNDATION
CANADIAN SOLAR MODULE (LESS BLOCK 203) AND JINKO MODULE - ATI DURATRACK HZ WITH OJJO EARTH TRUSS FOUNDATIONS

TRACKER ROW CONDITION	PILE TYPE	FOUNDATION AVERAGE REVEAL HEIGHT TO CENTER OF TORQUE TUBE (H1)*	MAXIMUM FOUNDATION NORTH-SOUTH TILT (DEGREES)
EXTERIOR	JINKO	6'-0"	9
		7'-0"	9
		8'-0"	6
	CANADIAN SOLAR	6'-0"	9
		7'-0"	9
		8'-0"	6
INTERIOR	JINKO	6'-0"	9
		7'-0"	9
		8'-0"	6
	CANADIAN SOLAR	6'-0"	9
		7'-0"	9
		8'-0"	6

NOTE: CONFIRM WITH CURRENT ATI REQUIREMENTS. SET SCREWS REQUIRED TO TRANSFER WEAK AXIS LOAD ON ALL BEARING COLUMNS.

TRACKER ROW CONDITION WITH 18 INCHES OR LESS OF MAXIMUM SCOUR PER FOUNDATION
CANADIAN SOLAR MODULE (LESS BLOCK 203) AND JINKO MODULE - ATI DURATRACK HZ WITH OJJO EARTH TRUSS FOUNDATIONS

TRACKER ROW CONDITION	PILE TYPE	FOUNDATION AVERAGE REVEAL HEIGHT TO CENTER OF TORQUE TUBE (H1)*	MAXIMUM FOUNDATION NORTH-SOUTH TILT (DEGREES)
EXTERIOR	JINKO	6'-0"	9
		7'-0"	4
		8'-0"	2
	CANADIAN SOLAR	5'-0"	9
		6'-0"	4
		7'-0"	2
		8'-0"	1
INTERIOR	JINKO	6'-0"	9
		7'-0"	4
		8'-0"	2
	CANADIAN SOLAR	5'-0"	9
		6'-0"	7
		7'-0"	4
		8'-0"	2

NOTE: CONFIRM WITH CURRENT ATI REQUIREMENTS. SET SCREWS REQUIRED TO TRANSFER WEAK AXIS LOAD ON ALL BEARING COLUMNS.

*"AVERAGE REVEAL HEIGHT" IS THE ARITHMETIC AVERAGE OF THE DESIGN HEIGHTS ABOVE GRADE FOR ALL PILES SUPPORTING AN INDIVIDUAL TRACKER.

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	JAC / JAC	ADT / ADT	10/20/2020
1	RECORD DRAWINGS		ADT	6/14/2023

8minute SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

Primoris
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET, SUITE 500
DENVER, COLORADO 80239

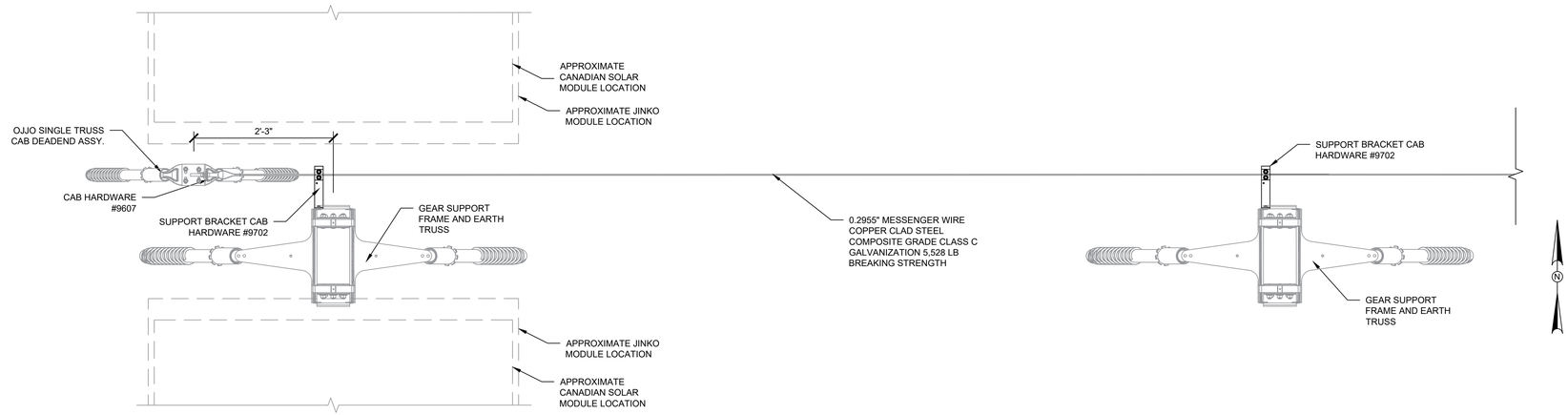
CANADIAN SOLAR AND JINKO
GENERAL NOTES AND OJJO FOUNDATION

PROJECT NO.	20203753.003A
ISSUE DATE	6/14/2023
CURRENT REVISION	1
DESIGNED BY	JAC
DRAWN BY	JAC
CHECKED BY	ADT
APPROVED BY	ADT

S-006

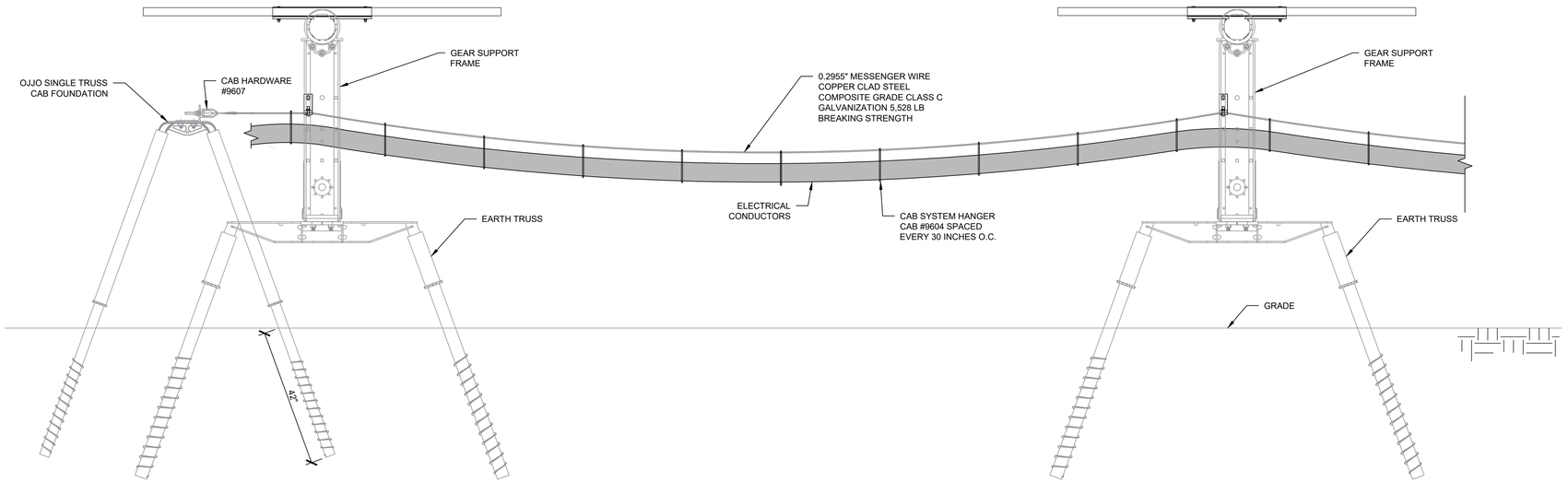
SHEET 7 of 8

CAD FILE: \\denver.kleinfelder.com\DENVER-DATA\WORKING\20\20203753.002 - Eagle Shadow Mountain Design\2.0 Technical Information\2.6 Technical And CADD Figures\20203753 Eagle Shadow Mountain; 20201020.dwg LAYOUT: CS AND JINKO FND PLOTTED: 10/20/2020 6:02 PM BY: adam.tschida



2 S-007 CANADIAN SOLAR (LESS BLOCK 203) AND JINKO MODULES - MESSENGER WIRE INSTALLATION PLAN VIEW
NOT TO SCALE

NOTE: CAB MAY RUN ACROSS ONE BLOCK OR MANY BLOCKS



1 S-007 CANADIAN SOLAR (LESS BLOCK 203) AND JINKO MODULES - MESSENGER WIRE INSTALLATION ELEVATION VIEW
NOT TO SCALE

MESSENGER CABLE INSTALLATION SEQUENCE:

1. SECURE MESSENGER WIRE TO ONE DEAD END FOUNDATION.
2. LAY MESSENGER WIRE THROUGH ALL MID-SPAN BRACKETS. DO NOT SECURE. TENSION THE MESSENGER WIRE AND ATTACH TO SECOND DEAD END PER THE INSTALLATION SAG IN TABLE 1 AT MIDSPAN BETWEEN L-BRACKETS.
3. TIGHTEN THE RETAINER PLATES OF THE MID-SPAN BRACKETS.
4. STRING ON THE CAB HANGERS ALONG ALL SPANS. STRING ALL CONDUCTORS THROUGH THE CAB HANGERS AND RECHECK THE SAG AT ALL MIDSPANS. FINAL SAG SHOULD BE ESTIMATED PER TABLE 2.
5. DEAD LOAD SPECIFIED BY ELECTRICAL ENGINEER AS 4.7 PLF.

TABLE 1: MESSENGER WIRE STRINGING SAG CHART

		TEMPERATURE (°F)											
SAG (INCHES)	ROW-TO-ROW SPAN	10	20	30	40	50	60	70	80	90	100	110	120
	20'-0" TO 25'-0" (CCS)	1.68	2.16	2.64	3.00	3.36	3.72	4.08	4.32	4.68	4.92	5.16	5.40

NOTE: MID-SPAN SAG OF THE MESSENGER WIRE LISTED ABOVE OCCURS BEFORE ANY ELECTRICAL CABLES OR SUPPORTS ARE HUNG FROM THE MESSENGER CABLE.

TABLE 2: MESSENGER WIRE MAXIMUM FINAL SAG CHART

		TEMPERATURE (°F)				
SAG (INCHES)	ROW-TO-ROW SPAN	0	30	60	90	120
	20'-0" TO 25'-0" (CCS)	7.30	7.70	8.00	8.40	8.80

NOTE: MAXIMUM SAG VALUES SHOWN ABOVE INCLUDE THE INITIAL SAG PLUS THE SAG DUE TO MAXIMUM VERTICAL FACTORED LOAD CONDITION.

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	JAC	ADT	10/20/2020
		JAC	ADT	
1	RECORD DRAWINGS			6/14/2023
			ADT	

8MINUTE SOLAR ENERGY

ORIGINAL DRAWING SIZE IS 24 x 36

EAGLE SHADOW MOUNTAIN SOLAR

MOAPA RIVER INDIAN RESERVATION
CLARK COUNTY, NEVADA

PSC Primoris

PRIMORIS RENEWABLE ENERGY
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DENVER, COLORADO 80239

CANADIAN SOLAR AND JINKO OJJO CAB DETAILS & FOUNDATION

PROJECT NO.	20203753.003A
ISSUE DATE	6/14/2023
CURRENT REVISION	1
DESIGNED BY	JAC
DRAWN BY	JAC
CHECKED BY	ADT
APPROVED BY	ADT

S-007

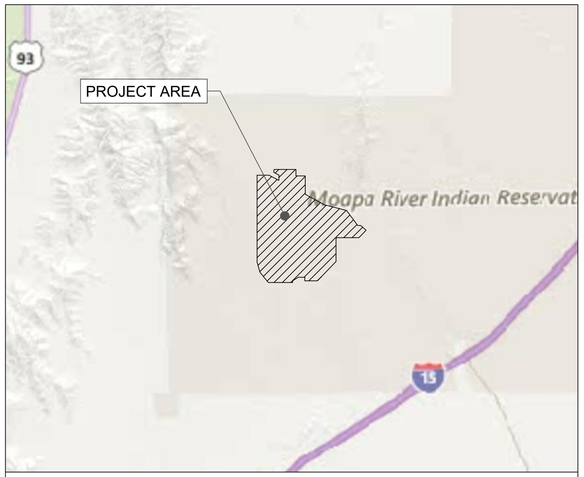
SHEET 8 of 8

CAD FILE: \\denver.kleinfelder.com\DENVER-DATA\WORKING\20203753.002 - Eagle Shadow Mountain Design\2.0 Technical Information\2.8 Technical And CADD Figures\20203753 Eagle Shadow Mountain_20201020.dwg LAYOUT: OJJO CAB FND PLOTTED: 10/20/2020 6:03 PM BY: adam.tschida

RECORD DRAWINGS
FOR
EAGLE SHADOW MOUNTAIN SOLAR

IN CLARK COUNTY, NEVADA

SITE ENTRANCE COORDINATES: 36.542373°, -114.816789°



VICINITY MAP
NTS



LOCATION MAP
NTS

CLARK COUNTY, NEVADA

DRAWING INDEX			
SHEET NUMBER	SHEET TITLE	REV	REV DATE
C000	COVER	3	06/30/2023
C001 - C002	GENERAL NOTES	2	06/30/2023
C003	OVERALL KEY MAP	3	06/30/2023
C101 - C108	DEMOLITION & SITE PREPARATION PLAN	2	06/30/2023
C201 - C208	SITE PLAN	2	06/30/2023
C301 - C307	GRADING & DRAINAGE PLAN	3	06/30/2023
C308	GRADING & DRAINAGE PLAN	2	06/30/2023
C309	TYPICAL ROADSIDE SWALE INSET	2	06/30/2023
C401	ACCESS DETAILS	2	06/30/2023
C402	EQUIPMENT DETAILS	3	06/30/2023
C403	EROSION CONTROL DETAILS	2	06/30/2023

DATUM:
ELEVATIONS SHOWN ON THE PLANS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD1988).

PERMANENT FEATURES INCLUDING SOLAR ARRAYS, ROADS, FENCE, AND UTILITIES SHOWN ON THESE RECORD DRAWINGS ARE LOCATED BASED ON THE ORIGINAL CONSTRUCTION DRAWINGS DATED 02-19-2021, AS WELL AS THE AS-BUILT DATA PROVIDED ON 01-14-2022. THE AS-BUILT TOPOGRAPHY DEPICTED IN THESE RECORD DRAWINGS WAS PROVIDED BY PRIMORIS ON 06-22-2023. APPROXIMATE EXTENTS OF CIVIL REPAIRS HAVE BEEN ADDED TO THESE RECORD DRAWINGS BASED ON THE "CIVIL REPAIRS" DOCUMENT PROVIDED BY PRIMORIS ON 06-22-2023. PROPOSED FEATURES HAVE NOT BEEN LOCATED BY A PROFESSIONAL LAND SURVEYOR.

PREPARED BY:
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PHONE: 919-755-5011
NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	REVISED INDEX	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	CGO	6/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

COVER

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris
MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C000
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Cover & Notes.dwg LAYOUT: 000 COVER PLOTTED: 6/30/2023 3:34 PM BY: matt bynum

GENERAL NOTES

1. DATUM USED FOR THE PLANS IS NAD 83 NEVADA EAST (US FEET). BOUNDARY AND TOPOGRAPHIC SURVEYS PROVIDED BY TANEY ENGINEERING AND RECEIVED ON APRIL 3, 2020.
2. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE PROJECT.
3. EXISTING UTILITIES ARE LOCATED ON PLANS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR AND THE ENGINEER BEAR NO RESPONSIBILITY FOR UTILITIES NOT SHOWN ON PLANS OR NOT IN THE LOCATION SHOWN ON THE PLANS. (CALL BEFORE YOU DIG 800-227-2600).
4. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES OR STRUCTURES NOT SHOWN ON THE DRAWINGS. CONTRACTOR TO VERIFY THE LOCATION OF UTILITIES PRIOR TO START OF CONSTRUCTION THAT ARE LOCATED BY ONE-CALL AND SHOWN ON OWNER PROVIDED CONSTRAINTS MAPPING. THE CONTRACTOR'S RESPONSIBILITIES REGARDING THE UTILITIES SHALL BE AS REQUIRED UNDER SECTION107.17 OF THE UNIFORM STANDARD SPECIFICATIONS FOR CLARK COUNTY NEVADA AND AS PROVIDED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL USE EXTREME CARE WORKING OVER OR NEAR AN EXISTING GAS MAINS.
5. INFORMATION SHOWN ON THE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES IS BASED ON DATA PROVIDED BY UTILITY OWNERS, AVAILABLE RECORDS, AND FIELD SURVEYS. THE PLANS MAY NOT SHOW ALL UTILITIES WITHIN PROJECT LIMITS, EITHER ACTIVE OR PLACED OUT-OF-SERVICE, OR THAT SAID UTILITIES ARE ACTUALLY IN THE HORIZONTAL OR VERTICAL POSITIONS SHOWN IN THE PLANS. DETERMINE THE TYPE AND LOCATION OF ALL UTILITIES TO ESTABLISH THEIR LOCATIONS AND TO AVOID DAMAGE TO UNDERGROUND UTILITIES.
6. UTILITY ADJUSTMENTS ARE TO BE PERFORMED BY THE UTILITY OWNERS UNLESS OTHERWISE NOTED.
7. WATER TRUCKS SHALL BE USED FOR DUST CONTROL, IF NECESSARY.
8. THE CONTRACTOR SHALL DISPOSE OF ALL DEBRIS IN A LEGAL MANNER UPON COMPLETION OF THE PROJECT.
9. RESTORATION OF DAMAGED STRUCTURES OR UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR, REBUILD OR RESTORE TO ITS FORMER CONDITION, ANY AND ALL PORTIONS OF EXISTING UTILITIES, STRUCTURES, EQUIPMENT, APPURTENANCES OR FACILITIES, WHICH MAY BE DISTURBED OR DAMAGED DUE TO THIS CONSTRUCTION OPERATION.
10. ALL GRADING SHALL BE IN ACCORDANCE WITH THE SPECIFICATION MANUAL AND THE SOILS REPORT PREPARED BY KLEINFELDER, DATED APRIL 30, 2020.
11. 48 HOURS PRIOR TO START OF CONSTRUCTION THE CONTRACTOR SHALL CONTACT:

NV ENERGY	PHONE 1-800-227-2600 OR 811
CENTURYLINK TELEPHONE - NEVADA	PHONE 1-800-227-2600 OR 811
SOUTHWEST GAS CORPORATION	PHONE 1-702-651-2111
LAS VEGAS VALLEY WATER DISTRICT	PHONE 1-702-870-2011

12. PROPOSED SOLAR ARRAY LAYOUT FOR THIS PROJECT IS PROVIDED BY OTHERS.
13. CONTRACTOR SHALL FIELD VERIFY SURVEY CONTROL AND DESIGN COORDINATES PRIOR TO STARTING CONSTRUCTION.
14. CONTOURS SHOWN ARE TO FINISHED GRADE OR TOP OF AGGREGATE.
15. CONTRACTOR IS RESPONSIBLE FOR SITE DRAINAGE DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES SHALL NOT ALTER NATURAL DRAINAGE PATTERNS OTHER THAN WHAT IS SHOWN ON THE PLANS, OR IN WAYS THAT WOULD CAUSE DAMAGE TO EXISTING FACILITIES OR NEIGHBORING PROPERTIES.
16. THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASE OF THE PROJECT.
17. ELECTRONIC FILES OF THESE CONSTRUCTION DRAWINGS ARE AVAILABLE UPON REQUEST BUT ARE TO BE USED AT THE CONTRACTOR'S RISK, STAMPED AND SEALED DRAWINGS MUST BE USED TO VERIFY ELECTRONIC DATA. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

REFERENCE PLANS, PERMITS AND REPORTS

CONTRACTOR SHALL BE AWARE OF THE FOLLOWING PLANS, REPORTS, AND STUDIES PREPARED FOR THIS PROJECT, AND SHALL COMPLY WITH AND REQUIREMENTS WITHIN.

DOCUMENT	PREPARER AND DATE
ESM Overlay KMZ File	By Primoris dated April 2nd, 2020
ALTA/Topo Survey, Desert Tortoise Fence, and Significant Cultural Area Boundary	By Westwood. Dated November 12th, 2019 and Received on April 3rd, 2020. File Name: MNN18001-ALTA_11-12-19_with_DT_Fence_and_Cultural_Area_Delineations. Revised topo data received on July 30, 2020.
Preliminary Geotechnical Report	By Kleinfelder – dated April 30, 2020
Preliminary Flood and Scour Analysis Report	By Westwood – dated June 2018
Constructability Requirements for EPC Based on Permits	Provided by Primoris on April 3rd, 2020
Proposed Array Layout	By FastGrid – dated October 13, 2020
Clark County Hydrological Criteria and Drainage Design Manual	By Clark County – August 12, 1999
Las Vegas Valley Construction Site BMP Guidance Manual	By Multiple Agencies – January 2009
Developer Constraints - 8 Minute Energy (8ME)	By 8ME - June 11, 2020. File Name: "325MK-C100 R6" and includes as reference, File Name: "Exhibit_I-4_ALTA_CAD"
Tortoise Fence Exhibit	By Primoris – dated January 16, 2020
Tortoise Crossing Detail	By Primoris – dated December 16, 2019
As-built Topography	Provided by Primoris on June 22, 2023
Civil Repairs Document	Provided by Primoris on June 22, 2023

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMIT OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)
- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED CHECK DAM
- PROPOSED SILT FENCE OUTLET

SAFETY

1. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND /OR ENFORCE SAFETY REGULATIONS.
2. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.

UTILITY DISCLAIMER

EXISTING UTILITY LOCATIONS SHOWN HEREIN ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION, PER ONE-CALL NOTIFICATIONS. NOREPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER AND CONTRACTOR ASSUME NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR EXISTING LOCATIONS.

KLEINFELDER
Bright People. Right Solutions.
WWW.KLEINFELDER.COM
3200 GATEWAY CENTRE BLVD., SUITE 100
MORRISVILLE, NC 27560
PHONE: 919-755-5011
NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

GENERAL NOTES

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris
8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C001
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Cover & Notes.dwg LAYOUT: 001 GENERAL NOTES PLOTTED: 6/30/2023 3:34 PM BY: matt byrum

SWPPP NOTES

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF MOAPA SOLAR ROAD IN CLARK COUNTY, AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY CODE CHAPTER 24.40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER ANY RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

DEMOLITION NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONDUCT A FORMAL 811 UTILITY LOCATE REQUEST TO PHYSICALLY MARK ANY KNOWN AND OBSERVABLE UNDERGROUND UTILITIES. CONTRACTOR SHALL PRESERVE AND PROTECT ANY UNDERGROUND UTILITIES LOCATED AND MARKED BY SAID 811 LOCATE REQUEST.
2. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT EXISTING SITE OR UTILITY ELEMENTS NOT INTENDED FOR DEMOLITION OR REMOVAL.
3. MATERIAL AND ITEMS SHOWN TO BE REMOVED AS PART OF THIS PROJECT SHALL BE DISPOSED OF OR RECYCLED AT LICENSED DISPOSAL OR RECYCLING FACILITIES COMPLYING WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
4. BACKFILL ALL DEPRESSIONS AND TRENCHES FROM DEMOLITION ACCORDING TO TRENCH BACKFILL REQUIREMENTS.
5. TORTOISE FENCE IS REQUIRED TO REMAIN FUNCTIONAL THROUGHOUT CONSTRUCTION PROCESS. PHASE DEMOLITION AND RECONSTRUCTION OF EXISTING TORTOISE FENCING AND PROPOSED PERIMETER FENCE PER NOTES ON THE DEMOLITION PLAN TO ENSURE CONTINUITY OF TORTOISE FENCE THROUGHOUT CONSTRUCTION.

EROSION CONTROL NOTES

1. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
2. FAILURE TO COMPLY WITH ANY PROVISIONS OF THE STORM WATER POLLUTION PREVENTION PLAN, RESULTING IN ENFORCEMENT MEASURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
3. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS COMPRISED OF THE EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, THE CGP PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND UPDATE THE SWPPP THROUGHOUT CONSTRUCTION.
4. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE SWPPP AND THE STATE OF NEVADA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM CONSTRUCTION GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS. THE SWPPP AND ALL OTHER RELATED DOCUMENTS MUST BE KEPT AT THE SITE DURING CONSTRUCTION.
5. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMP'S) AS REQUIRED BY THE SWPPP. THE CONTRACTOR SHALL OVERSEE THE INSPECTION & MAINTENANCE OF THE BMP'S AND EROSION PREVENTION FROM BEGINNING OF CONSTRUCTION AND UNTIL CONSTRUCTION IS COMPLETED,
6. BMP'S AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
7. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.
8. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED (E.G. WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC.) ON THE DEVELOPMENT SITE BEFORE WORK BEGINS.
9. GENERAL CONTRACTOR SHALL DENOTE ON THE EROSION CONTROL PLANS THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
10. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) MUST BE LIMITED TO A DEFINED AREA OF THE SITE AND SHALL BE CONTAINED AND PROPERLY TREATED OR DISPOSED. NO ENGINE DEGREASING IS ALLOWED ON SITE.
11. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
12. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
13. SOLID WASTE: COLLECTED SEDIMENT, ASPHALT & CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION & DEMOLITION DEBRIS & OTHER WASTE MUST BE DISPOSED OF PROPERLY & MUST COMPLY WITH NDEP DISPOSAL REQUIREMENTS.
14. HAZARDOUS MATERIALS: OIL, GASOLINE, PAINT & ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE & DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH NDEP REGULATIONS.
15. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THE EROSION CONTROL PLANS, AND IN THE SWPPP, SHALL BE INITIATED AS SOON AS PRACTICABLE AND PRIOR TO ANY SITEWORK.
16. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT FROM CONVEYANCES PRIOR TO COMPLETION OF CONSTRUCTION. SEDIMENT MUST BE STABILIZED TO PREVENT IT FROM BEING WASHED BACK INTO BASINS, CONVEYANCES, OR DRAINAGE WAYS DISCHARGING OFF-SITE OR TO SURFACE WATERS.
17. ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BMP'S AND IN ACCORDANCE WITH THE GENERAL PERMIT REQUIREMENTS. THE LOCATION OF STOCKPILE AREAS SHALL BE DETERMINED BY THE CONTRACTOR, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL NECESSARY SEDIMENT PREVENTION MEASURES SHALL BE IMPLEMENTED.
18. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS & CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB & GUTTER SYSTEMS OR CONDUITS & DITCHES.
19. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
20. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES,ETC.) TO PREVENT EROSION.
21. CONTRACTOR SHALL INITIATE SOIL STABILIZATION MEASURES IMMEDIATELY WHEN EARTH DISTURBING ACTIVITIES HAVE CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS.
22. FINAL STABILIZATION IS ACHIEVED WHEN AN ANNUAL AND/OR PERENNIAL VEGETATION COVER WITH A DENSITY OF 70% OF THE NATIVE BACKGROUND VEGETATION COVER FOR THE AREA IS IN PLACE.
23. IN ADDITION TO THE SHOWN SILT FENCE OUTLETS, INSTALL SILT FENCE OUTLETS AT LOW POINTS AS NEEDED TO MAINTAIN DRAINAGE.

CLARK COUNTY PUBLIC WORKS DEVELOPMENT REVIEW NOTES

1. ALL OFF-SITE IMPROVEMENT CONSTRUCTION SHALL CONFORM TO THE UNIFORM STANDARD SPECIFICATIONS AND STANDARD DRAWINGS CLARK COUNTY AREA NEVADA AND CLARK COUNTY SUPPLEMENT TO UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, LATEST REVISION
2. PROPER SIGNS, BARRIERS, BARRICADES AND LIGHTS SHALL BE PLACED AND MAINTAINED IN ACCORDANCE WITH THE LATEST "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS." TRAFFIC, SCHOOL, OR STREET SIGNS OF ANY KIND ARE NOT TO BE MOVED FOR ANY REASON WITHOUT FIRST COORDINATING WITH THE DEPARTMENT OF PUBLIC WORKS INSPECTOR AT (702)455-4610.
3. THIS PLAN DOES NOT AUTHORIZE CLOSURE OF ANY ROAD OR STREET.
4. NO OPEN TRENCH SHALL BE ALLOWED ACROSS ANY STREET OR WITHIN TEN (10') FEET OF ANY TRAVEL-WAY, EXCEPT WHEN WORK IS IN ACTUAL PROGRESS. AREAS COVERED BY ACCEPTABLE STEEL PLATE ARE NOT TO BE CONSTRUED AS A TRENCH. NO OPEN TRENCH IS PERMITTED IN EXCESS OF 500 FEET OR LENGTH NECESSARY TO ACCOMMODATE PIPE INSTALLATION IN A SINGLE DAY, WHICHEVER IS GREATER. ALL TRENCH CROSSINGS AND BACKFILL SHALL MEET THE STANDARD SPECIFICATION UNLESS OTHERWISE STATED.

CLARK COUNTY PUBLIC WORKS TRAFFIC NOTES

1. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR SHALL INSTALL TEMPORARY GROUND MOUNTED STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO THE EXISTING COUNTY STREETS IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.
2. ALL CONSTRUCTION SIGNING, BARRICADING AND PAVEMENT MARKINGS SHALL CONFORM TO THE NEVADA WORK ZONE TRAFFIC CONTROL HANDBOOK - 1986 AND TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - CURRENT EDITION.
3. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKINGS, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE COUNTY TRAFFIC MANAGER.

EARTHWORK ESTIMATE NOTES:

1. EARTHWORK IS AN ESTIMATE ONLY AND SHOULD BE USED FOR REFERENCE. CONTRACTOR SHALL COMPLETE A DETAILED EARTHWORK ANALYSIS FOR THE PURPOSES OF COST ESTIMATING AND CONSTRUCTION.
2. CUT AND FILL SOIL SHRINKAGE AND EXPANSION PER GEOTECHNICAL RECOMMENDATIONS HAVE NOT BEEN CONSIDERED AS A PART OF THIS EARTHWORK ESTIMATE.
3. THE EARTHWORK QUANTITIES REFERENCED HEREIN REPRESENT THE FINISHED GRADE LINES SHOWN IN THE GRADING PLAN AND DOES NOT INCLUDE ANY EARTHWORK PROPOSED BY OTHERS (SEE C-003, OVERALL KEY MAP).

CIVIL TAKEOFF QUANTITIES			
EARTHWORK ESTIMATES			
GRADED AREA	**CUT (CY)**	**FILL (CY)**	**NET (CY)**
ARRAY GRADING	16,600	24,970	-8,370
SWALE GRADING	7,540	0	7,540
TOTALS	**24,140**	**24,970**	**-830**

SITE PREPARATION

1. STRIP AND REMOVE VEGETATION AND OTHER DELETERIOUS ORGANIC MATERIAL FROM PROPOSED EQUIPMENT PADS, ROADWAYS, AND AREAS TO RECEIVE FILL. PROPERLY DISPOSE OF STOCKPILED ORGANICS OFF OF THE PROJECT PROPERTY, OR GRIND AND SPREAD ON THE SITE.
2. SUBGRADE PREPARATION FOR EQUIPMENT PADS AND SPREAD FOOTINGS IS AS FOLLOWS:
   - 2.1 SCARIFY TO A MINIMUM DEPTH OF 1 FOOT.
   - 2.2 REMOVE COBBLES OR BOULDERS LARGER THAN A NOMINAL SIZE OF 4".
   - 2.3 MOISTURE CONDITION SOILS TO WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
   - 2.4 COMPACT TO A MINIMUM OF 95% OF STANDARD PROCTOR MAXIMUM DENSITY. EXCAVATION SHALL EXTEND BEYOND IMPROVEMENTS FOR PADS OR FOOTINGS PER TABLE BELOW:

Overexcavation of Expansive Soils

Percent Expansion Under a 60 psf Surcharge	Recommended Overexcavation for Concrete Slab on Grade (feet)	Recommended Overexcavation Beneath Flexible Pavement Sections (feet)
4 – 8	2	1
8 – 12	3	2
>12	4	3

**Overexcavation beneath slab-on-grade, pavements, pavers, and exterior flatwork begins at the bottom of the structure.*

   - 2.5 PROOF ROLL WITH FULLY LOADED DUMP TRUCK OR OTHER SIMILARLY WEIGHTED PNEUMATIC TIRED EQUIPMENT.
3. SUBGRADE PREPARATION FOR NON-STRUCTURAL FILL AREAS SHALL CONSIST OF COMPACTION TO 90% OF MAXIMUM DRY DENSITY.
   - 3.1. COMPACTION TESTING:
     - 3.1.1. ROAD SUBGRADE - TEST EVERY 1,000', IF FIVE TESTS ARE WITHIN PASSING, TEST EVERY 2,500'.
     - 3.1.2. MV AND DC TRENCHES - TEST EVERY 1,000'.
     - 3.1.3. GENERAL FILL - 1 TEST PER 2,500 SY.

FILL PLACEMENT

1. PRIOR TO PLACEMENT OF FILL, REMOVE VEGETATION, DEBRIS, COBBLES AND BOULDERS LARGER THAN 12 INCHES, AND ANY OTHER DELETERIOUS MATERIALS.
2. ENGINEERED FILL - SOILS CLASSIFIED AS GW, GM, SW, SM, SC, ML, AND CL BY THE USCS ARE ACCEPTABLE FOR USE AS STRUCTURAL FILL. MOST ON-SITE SOILS ARE EXPECTED TO BE SUITABLE FOR USE AS ENGINEERED FILL IF THEY ARE FREE OF ORGANICS, DEBRIS, OR COBBLES AND BOULDERS.
3. SELECT GRANULAR FILL - GRANULAR, WELL GRADED MATERIAL WITH NO ORGANICS, A MAXIMUM PARTICLE SIZE OF 2 INCHES, AND LESS THAN 12 PERCENT PASSING THE U.S. No. 200 SIEVE.
4. FILL SHALL BE PLACED IN LIFTS OF LESS THAN 8 INCHES LOOSE DEPTH AND COMPACTED TO AT LEAST 85% OF MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM 01557.
5. TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DENSITY, EXCEPT IN AREAS NOT UNDERDRAIN BY STRUCTURE OR ROADWAYS SHALL BE COMPACTED TO 90 PERCENT RELATIVE COMPACTION.

EARTHWORK BALANCE

THE INTENTION OF THE GRADING DESIGN IS TO BALANCE THE EARTHWORK ON SITE WITHOUT THE NEED FOR IMPORT OR EXPORT. THE CONTRACTOR SHALL FIELD ADJUST CUT AND FILL AS NECESSARY TO CREATE A BALANCED SITE WITHOUT NEGATIVELY IMPACTING DRAINAGE PATTERNS OR INCREASING MAXIMUM SLOPES.

AGGREGATES

1. AGGREGATE BASE AND COARSE AGGREGATE SHALL BE MOISTENED TO WITHIN 3 PERCENT OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR MAXIMUM DENSITY. PROOF ROLL WITH FULLY LOADED DUMP TRUCK OR OTHER SIMILARLY WEIGHTED PNEUMATIC TIRED EQUIPMENT.
2. AGGREGATE GRADATION - SHALL COMPLY WITH THE GRADATION REQUIREMENTS OF CLARK COUNTY DEC TYPE II AGGREGATE.

RIP RAP

1. STONES FOR RIP RAP SHALL BE HARD, DURABLE, RESISTANT TO WEATHERING AND EROSION, AND FREE FROM SPOILS, CRACKS, AND ORGANIC MATTER.
2. SPECIFIC GRAVITY FOR RIP RAP SHALL NOT BE LESS THAN 2.45.
3. RIP RAP GRADATION SHALL BE AS SHOWN ON PLANS OR DETAILS. D50 IS THE DIMENSION OF WHICH HALF OF THE STONES ARE SMALLER.

GEOTEXTILE FABRIC

SHALL COMPLY WITH THE REQUIREMENTS OF TABLE 731.03.03 GEOTEXTILE (CLASS 2) OF SECTION 731 ENGINEERING FABRICS OF THE NEVADA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

EROSION CONTROL BLANKET

SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

ASTM D 6475: MINIMUM MASS = 8 OUNCES/SY
ASTM D 5199: MINIMUM THICKNESS = 0.25 INCHES
ASTM D 5035: MINIMUM TENSILE STRENGTH = 75 POUNDS/FOOT (BOTH DIRECTIONS)

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

GENERAL NOTES

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris
8MINUTE SOLAR ENERGY

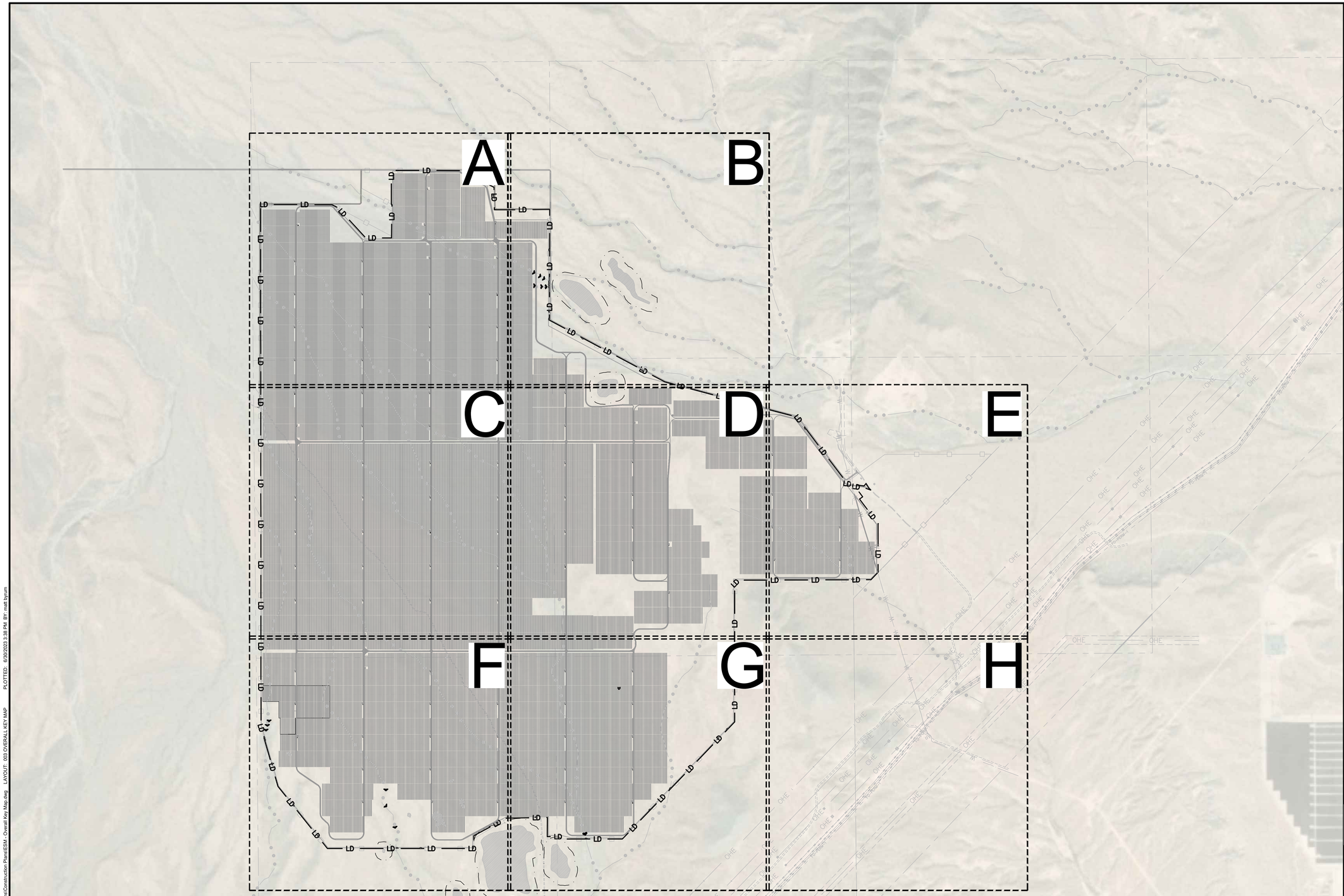
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C002
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Cover & Notes.dwg LAYOUT: 002 GENERAL NOTES PLOTTED: 6/30/2023 3:34 PM BY: matt byrum



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NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	REVISED GRADING BOUNDARIES	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

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DAVID A. SEGAL
EXP. 06-30-24
CIVIL
NO. 28794

7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 800 1600 2400

SCALE: 1" = 800' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

OVERALL KEY MAP

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris
MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

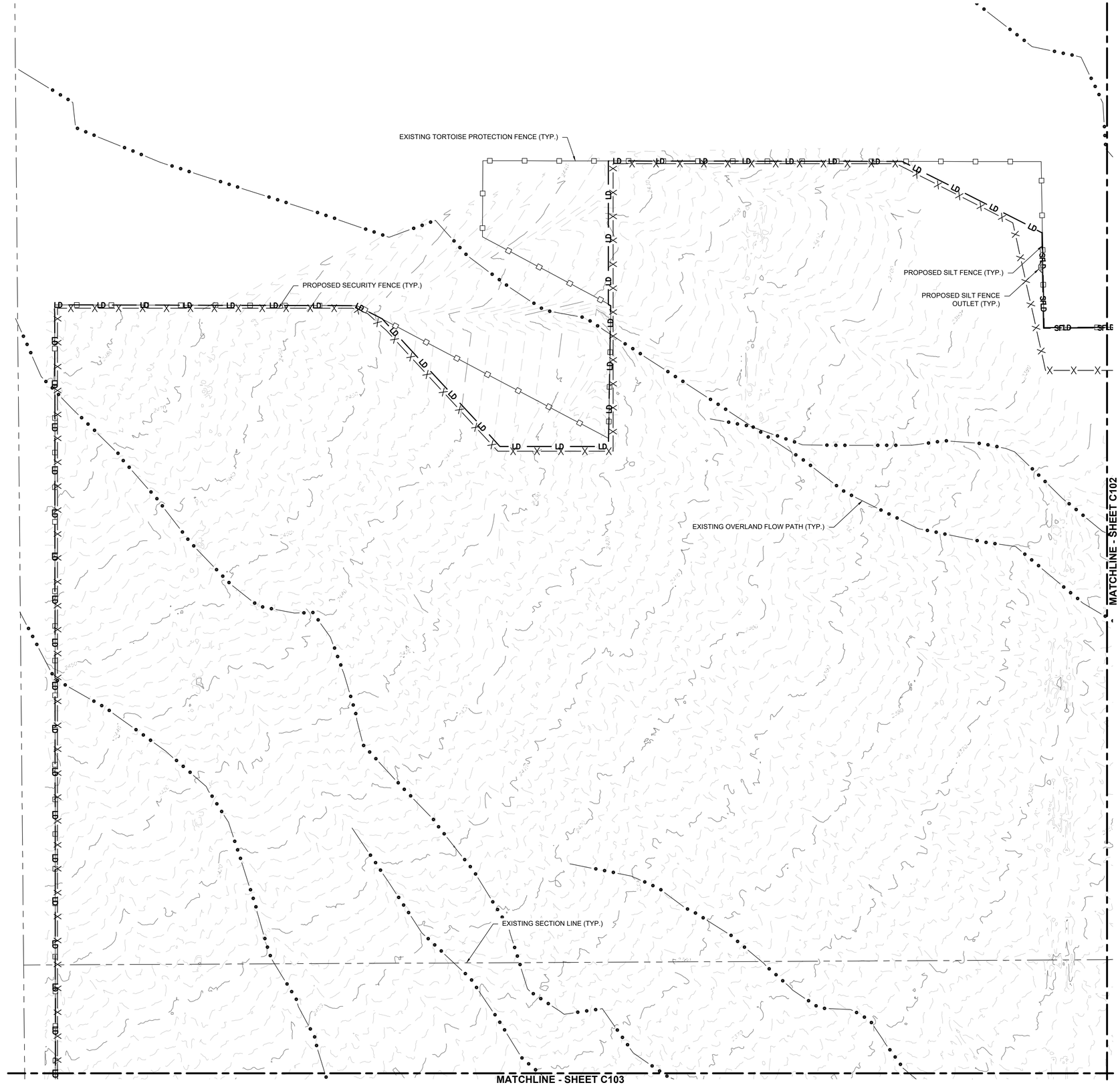
CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

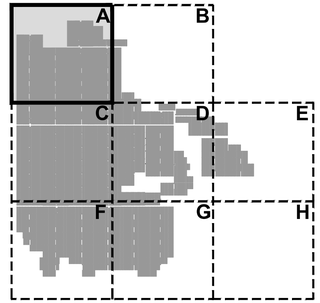
C003

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Overall Key Map.dwg LAYOUT: 003 OVERALL KEY MAP PLOTTED: 6/30/2023 3:38 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

1. THERE SHALL BE NO DEMOLITION OUTSIDE THE MARKED LIMITS OF DISTURBANCE UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
2. COORDINATE REMOVAL OF EXISTING ITEMS WITH APPLICABLE FEDERAL, STATE, COUNTY, AND/OR LOCAL AGENCIES, UTILITY COMPANIES, AND/OR LANDOWNERS.
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REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 26794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600

SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris MINUTE SOLAR ENERGY

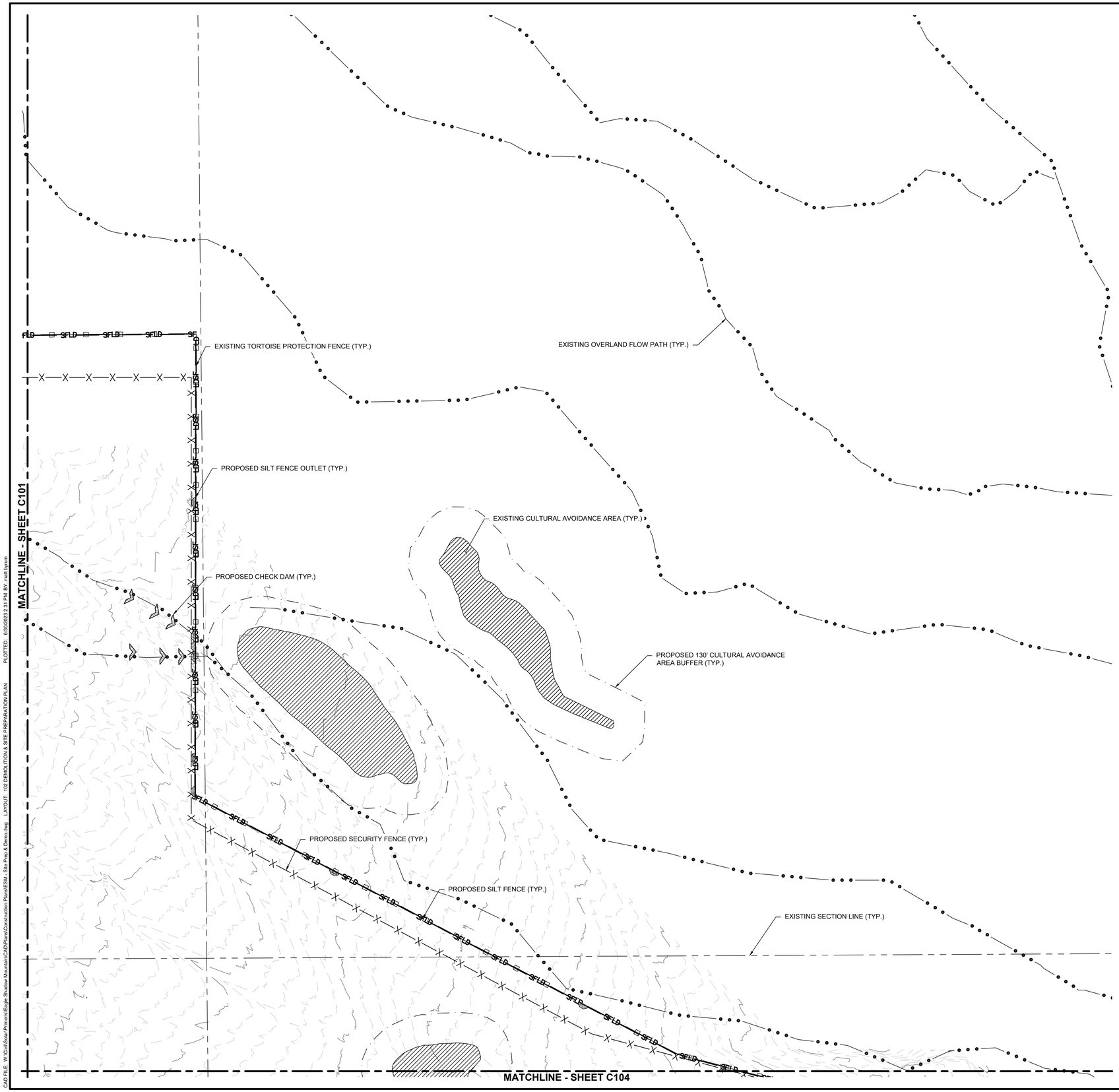
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CONSTRUCTION PLANS

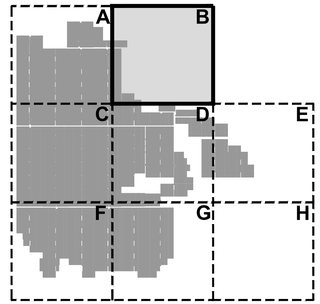
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
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DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C101
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESSM - Site Prep & Demo.dwg LAYOUT: 101 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:23 PM BY: matt tyrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

1. THERE SHALL BE NO DEMOLITION OUTSIDE THE MARKED LIMITS OF DISTURBANCE UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
2. COORDINATE REMOVAL OF EXISTING ITEMS WITH APPLICABLE FEDERAL, STATE, COUNTY, AND/OR LOCAL AGENCIES, UTILITY COMPANIES, AND/OR LANDOWNERS.
3. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

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0 1"
IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600
SCALE: 1" = 200' SCALE IN FEET
ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris · 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
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CHECKED BY	AML
APPROVED BY	DS

C102
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CADPlans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 102 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:31 PM BY: matt byrum

MATCHLINE - SHEET C101

PROPOSED TORTOISE CROSSING; SEE PRIMORIS TORTOISE FENCE EXHIBIT (C-501) AND TORTOISE CROSSING DETAIL (C-503)

EXISTING TORTOISE PROTECTION FENCE (TYP.)

PROPOSED SECURITY FENCE (TYP.)

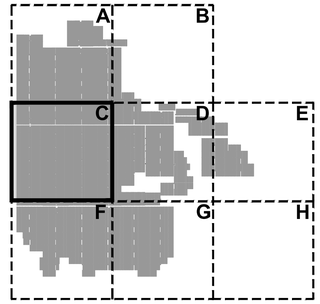
EXISTING OVERLAND FLOW PATH (TYP.)

EXISTING ROAD TO BE REMOVED

MATCHLINE - SHEET C104

MATCHLINE - SHEET C106

KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

1. THERE SHALL BE NO DEMOLITION OUTSIDE THE MARKED LIMITS OF DISTURBANCE UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
2. COORDINATE REMOVAL OF EXISTING ITEMS WITH APPLICABLE FEDERAL, STATE, COUNTY, AND/OR LOCAL AGENCIES, UTILITY COMPANIES, AND/OR LANDOWNERS.
3. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

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REVISIONS

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		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

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PROFESSIONAL ENGINEER STATE OF NEVADA — DAVID A. SEGAL — EXP. 06-30-24 — CIVIL — No. 28794

7/5/23

SCALE VERIFICATION

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0 — 1"

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0 200 400 600

SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris — 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
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CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
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CHECKED BY	AML
APPROVED BY	DS

C103
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 103 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:32 PM BY: matt.tyrum

MATCHLINE - SHEET C102

EXISTING CULTURAL AVOIDANCE AREA (TYP.)

PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER (TYP.)

EXISTING TORTOISE PROTECTION FENCE (TYP.)

EXISTING OVERLAND FLOW PATH (TYP.)

PROPOSED SECURITY FENCE (TYP.)

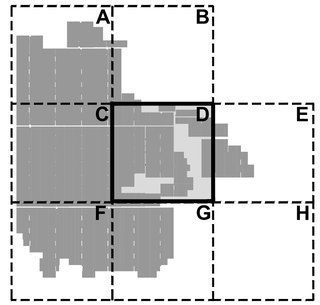
PROPOSED SILT FENCE (TYP.)

MATCHLINE - SHEET C103

MATCHLINE - SHEET C105

MATCHLINE - SHEET C107

KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE (X)
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

1. THERE SHALL BE NO DEMOLITION OUTSIDE THE MARKED LIMITS OF DISTURBANCE UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
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REVISIONS

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0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

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DAVID A. SESAR
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

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0 200 400 600

SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris | 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

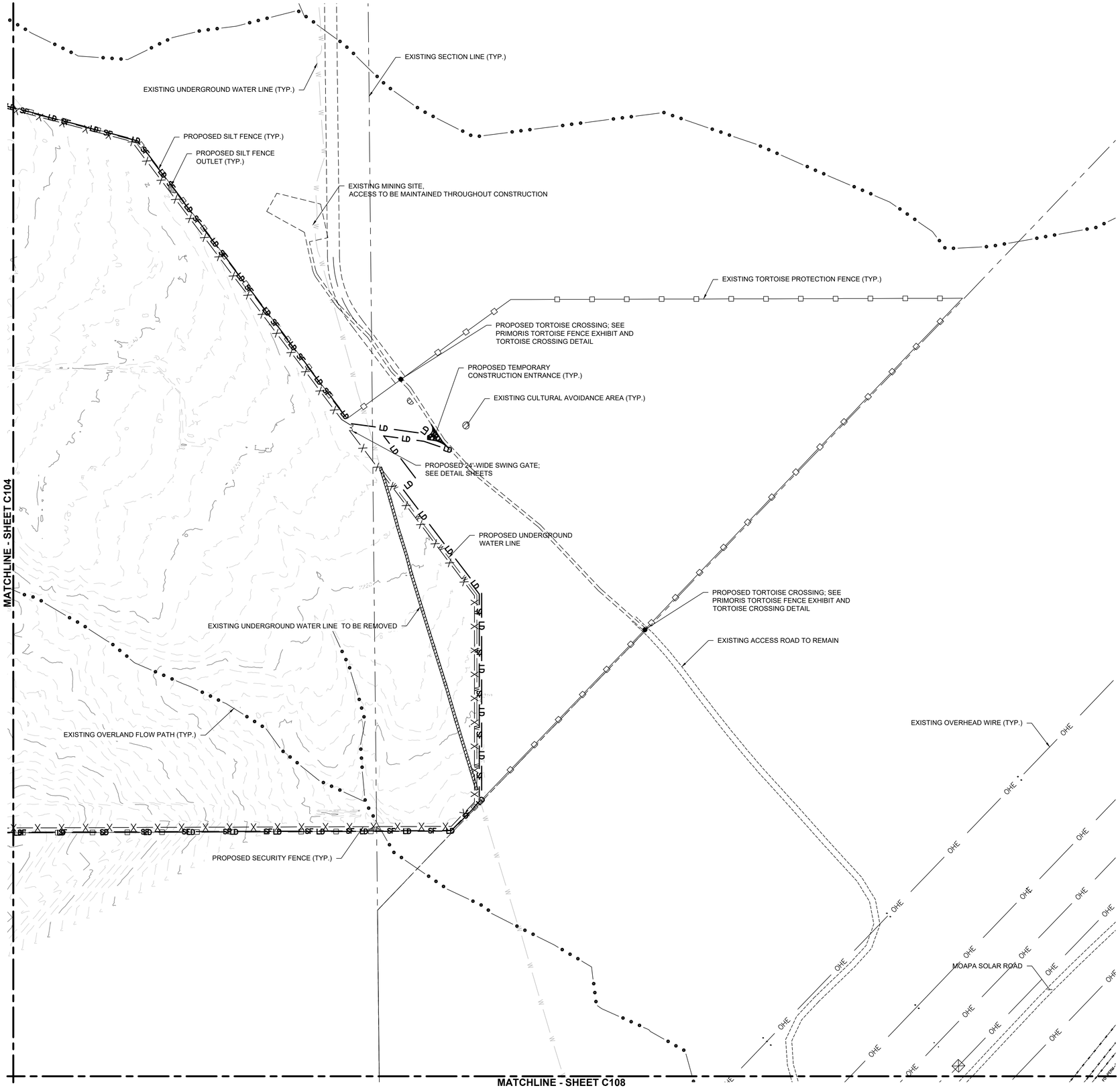
CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

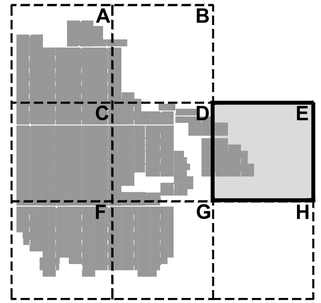
C104

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 104 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:33 PM BY: matt.byrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
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- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

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REVISIONS

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		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600

SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

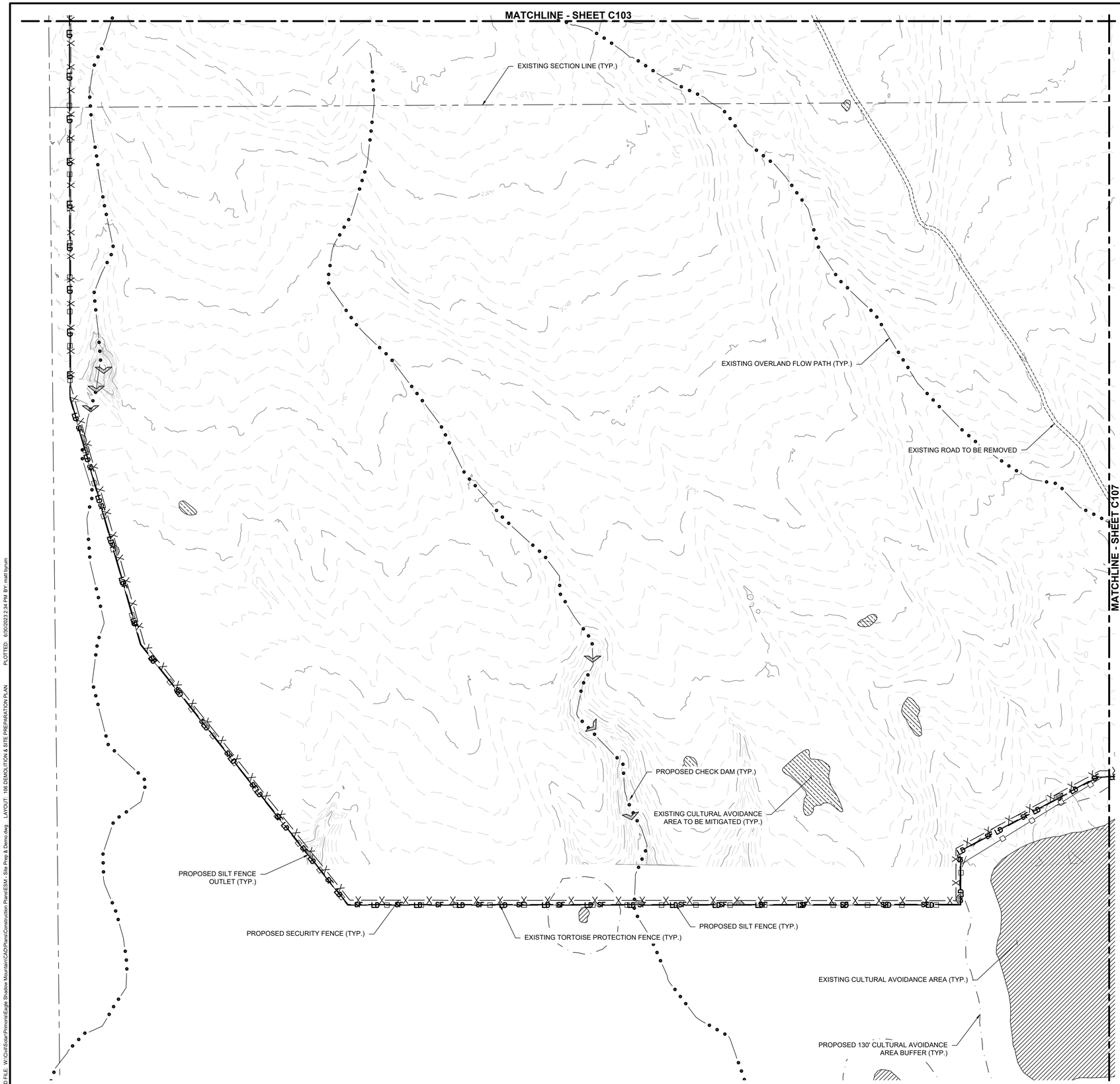
Primoris 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
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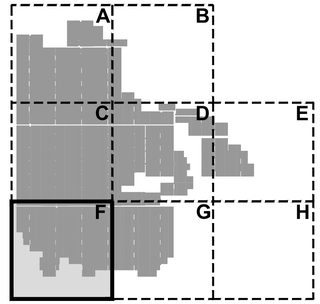
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	C105
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CADD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 105 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:33 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

1. THERE SHALL BE NO DEMOLITION OUTSIDE THE MARKED LIMITS OF DISTURBANCE UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.
2. COORDINATE REMOVAL OF EXISTING ITEMS WITH APPLICABLE FEDERAL, STATE, COUNTY, AND/OR LOCAL AGENCIES, UTILITY COMPANIES, AND/OR LANDOWNERS.
3. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1"
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0 200 400 600
SCALE: 1" = 200' SCALE IN FEET
ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
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CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	C106
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 106 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:34 PM BY: matt byrum

MATCHLINE - SHEET C104

MATCHLINE - SHEET C106

MATCHLINE - SHEET C108

EXISTING SECTION LINE (TYP.)

EXISTING OVERLAND FLOW PATH (TYP.)

EXISTING ROAD TO BE REMOVED

PROPOSED CHECK DAM (TYP.)

PROPOSED SILT FENCE OUTLET (TYP.)

EXISTING CULTURAL AVOIDANCE AREA (TYP.)

PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER (TYP.)

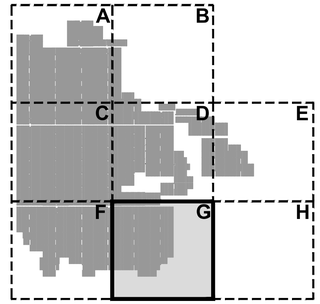
PROPOSED SECURITY FENCE (TYP.)

EXISTING TORTOISE PROTECTION FENCE (TYP.)

PROPOSED SILT FENCE (TYP.)

EXISTING OVERHEAD WIRE (TYP.)

KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING WATER LINE TO BE REMOVED
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMITS OF DISTURBANCE (LD)
- PROPOSED SECURITY FENCE (X)
- PROPOSED SILT FENCE (SF)
- PROPOSED WATER LINE (W)

NOTES

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	MCB / MCB	CGO / AGB	10/16/2020
1	CONFORMED TO RECORD DRAWINGS	MCB / MCB	AML / AML	01/20/2022
2	REVISED RECORD DRAWINGS	MCB / MCB	AML / DS	06/30/2023

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAR
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

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SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris | 8minute SOLAR ENERGY

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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C107

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 10' DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:35 PM BY: matt byrum

MATCHLINE - SHEET C105

MATCHLINE - SHEET C107

EXISTING SECTION LINE (TYP.)

EXISTING UNDERGROUND WATER LINE (TYP.)

EXISTING OVERLAND FLOW PATH (TYP.)

MOAPA SOLAR ROAD

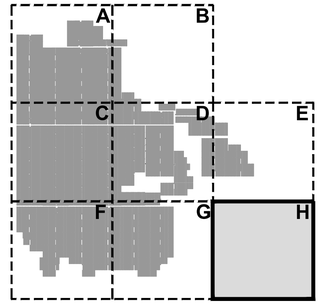
EXISTING 150' OVERHEAD UTILITY EASEMENT (TYP.)

EXISTING OVERHEAD WIRE (TYP.)

EXISTING UNDERGROUND GAS LINE (TYP.)

EXISTING UNDERGROUND FIBER OPTIC LINE (TYP.)

KEY MAP



LEGEND

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- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
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REVISIONS

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		DWN	APP	
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		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

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EXP. 06-30-24
CIVIL
No. 28794
7/5/23

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ORIGINAL DRAWING SIZE IS 24 x 36

DEMOLITION & SITE PREPARATION PLAN

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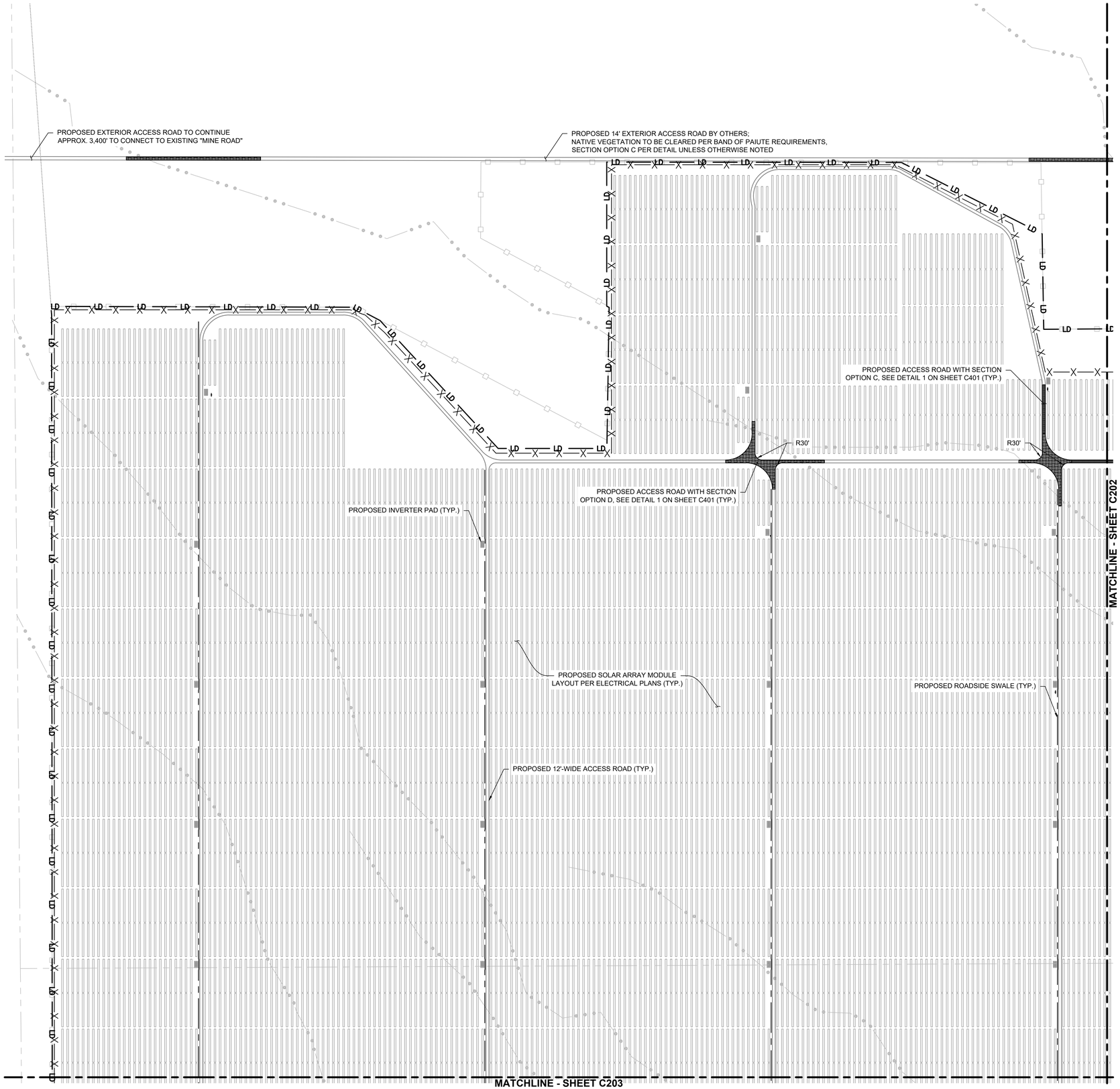
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	

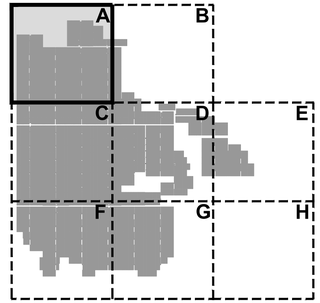
C108

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 108 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:28 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC LINE
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- EXISTING OVERLAND FLOW PATH
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- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED SECURITY FENCE
- PROPOSED WATER LINE
- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

1. ALL PERMANENT SITE ACCESS ROADS ARE 110' INTERIOR RADII UNLESS OTHERWISE NOTED.

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
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7/5/23

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SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

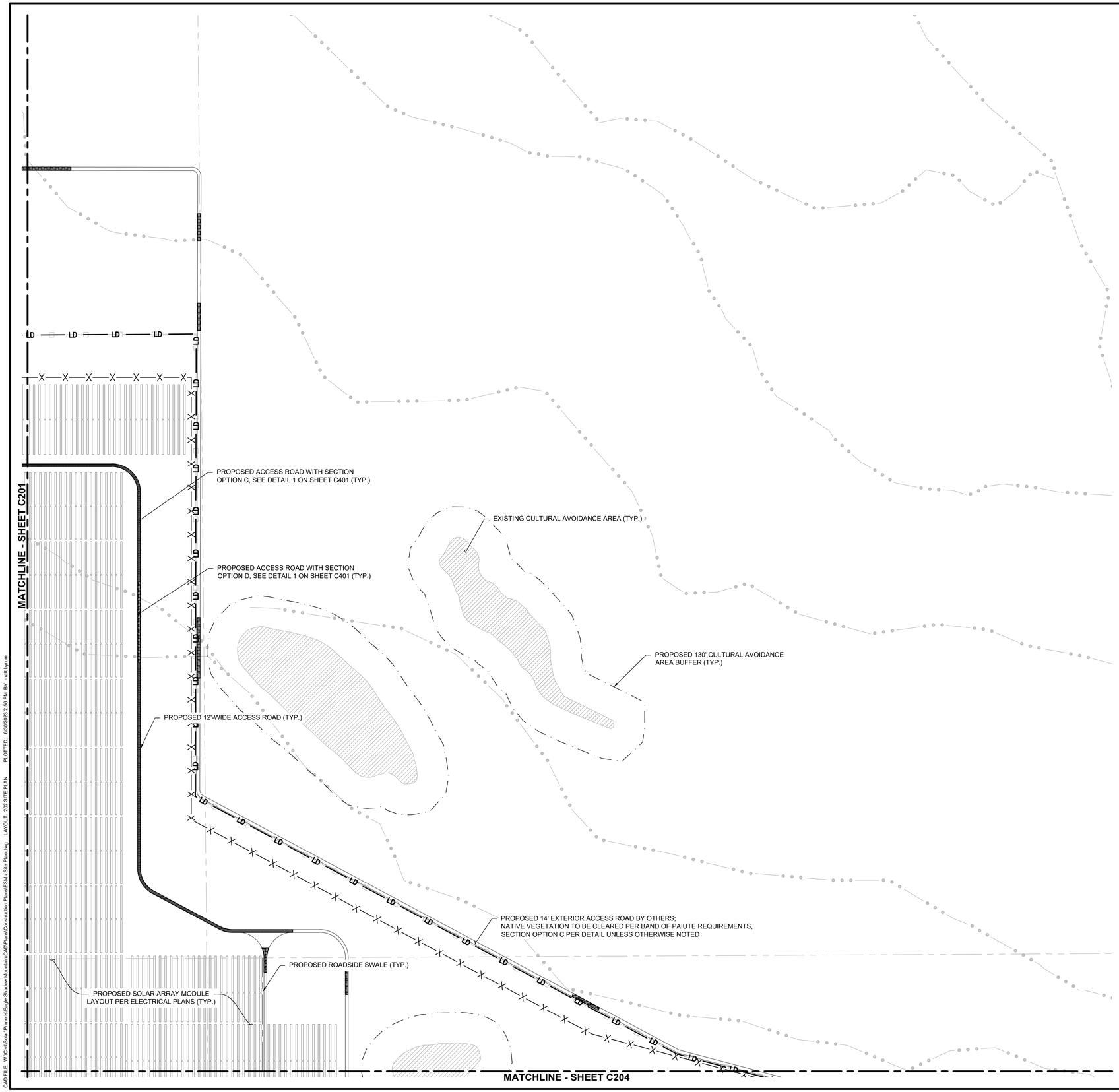
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CONSTRUCTION PLANS

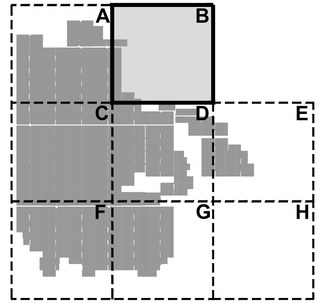
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C201
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 201 SITE PLAN PLOTTED: 6/30/2022 2:55 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE
- EXISTING GAS LINE
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- EXISTING WATER LINE
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- PROPOSED SECURITY FENCE
- PROPOSED WATER LINE
- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

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DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

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ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris MINUTE SOLAR ENERGY

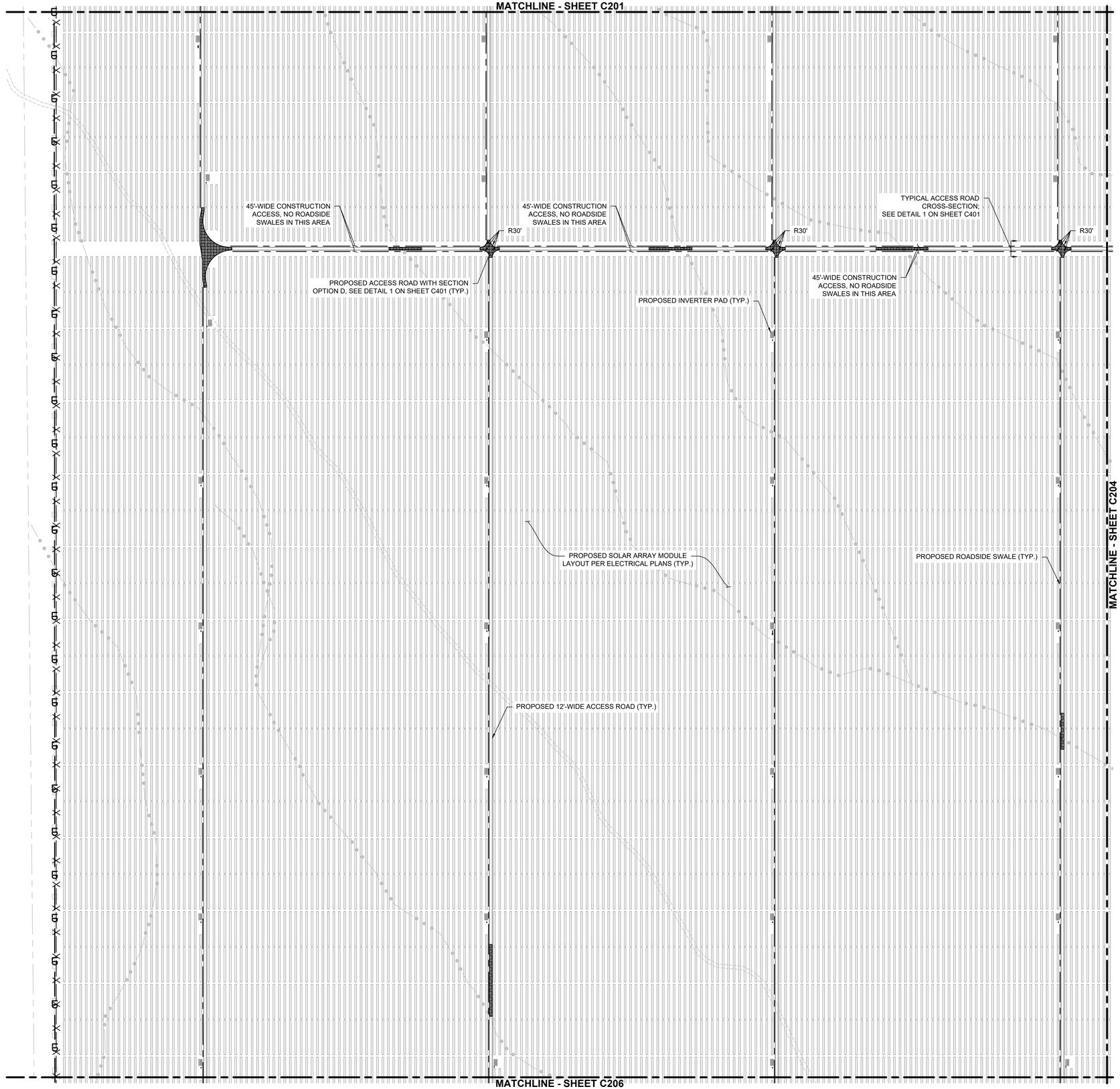
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DENVER, CO 80239

CONSTRUCTION PLANS

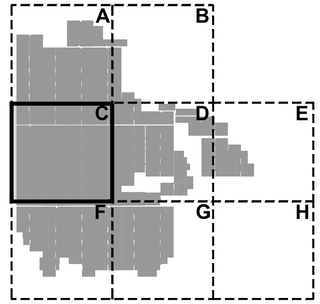
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C202
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 202 SITE PLAN PLOTTED: 6/30/2023 2:56 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
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- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	MCB / MCB	CGO / AGB	10/16/2020
1	CONFORMED TO RECORD DRAWINGS	MCB / MCB	AML / AML	01/20/2022
2	REVISED RECORD DRAWINGS	MCB / MCB	AML / DS	06/30/2023

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EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

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SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris · 8MINUTE SOLAR ENERGY

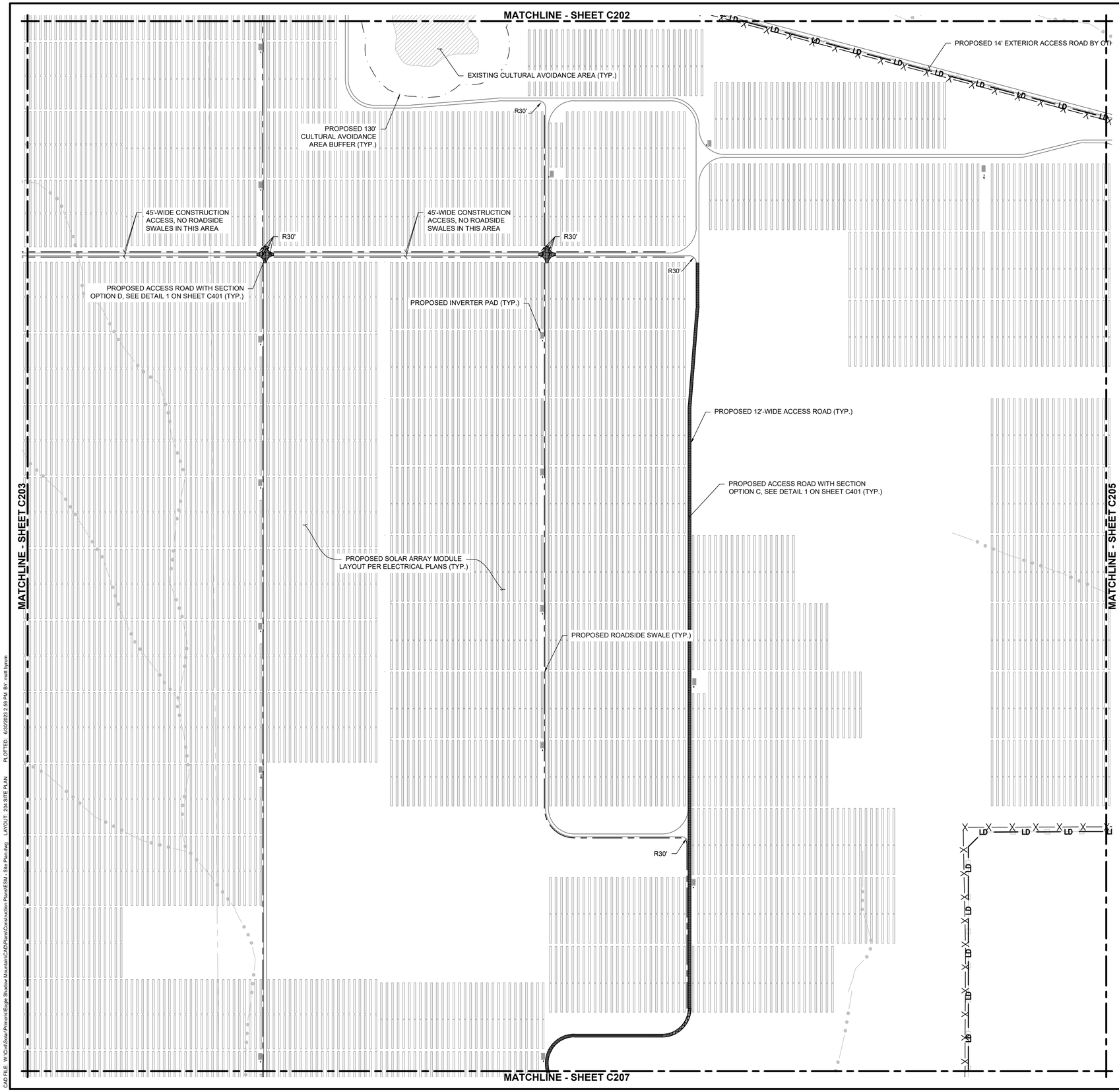
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

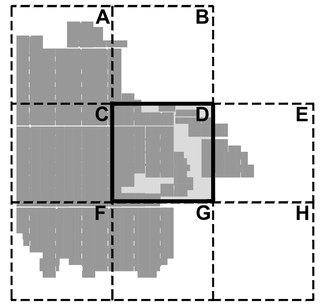
PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	

C203
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 203 SITE PLAN PLOTTED: 6/30/2023 2:57 PM BY: matt.tyrum



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
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- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

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REVISIONS

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2	REVISED RECORD DRAWINGS	MCB / MCB	AML / DS	06/30/2023

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600

SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris
8MINUTE SOLAR ENERGY

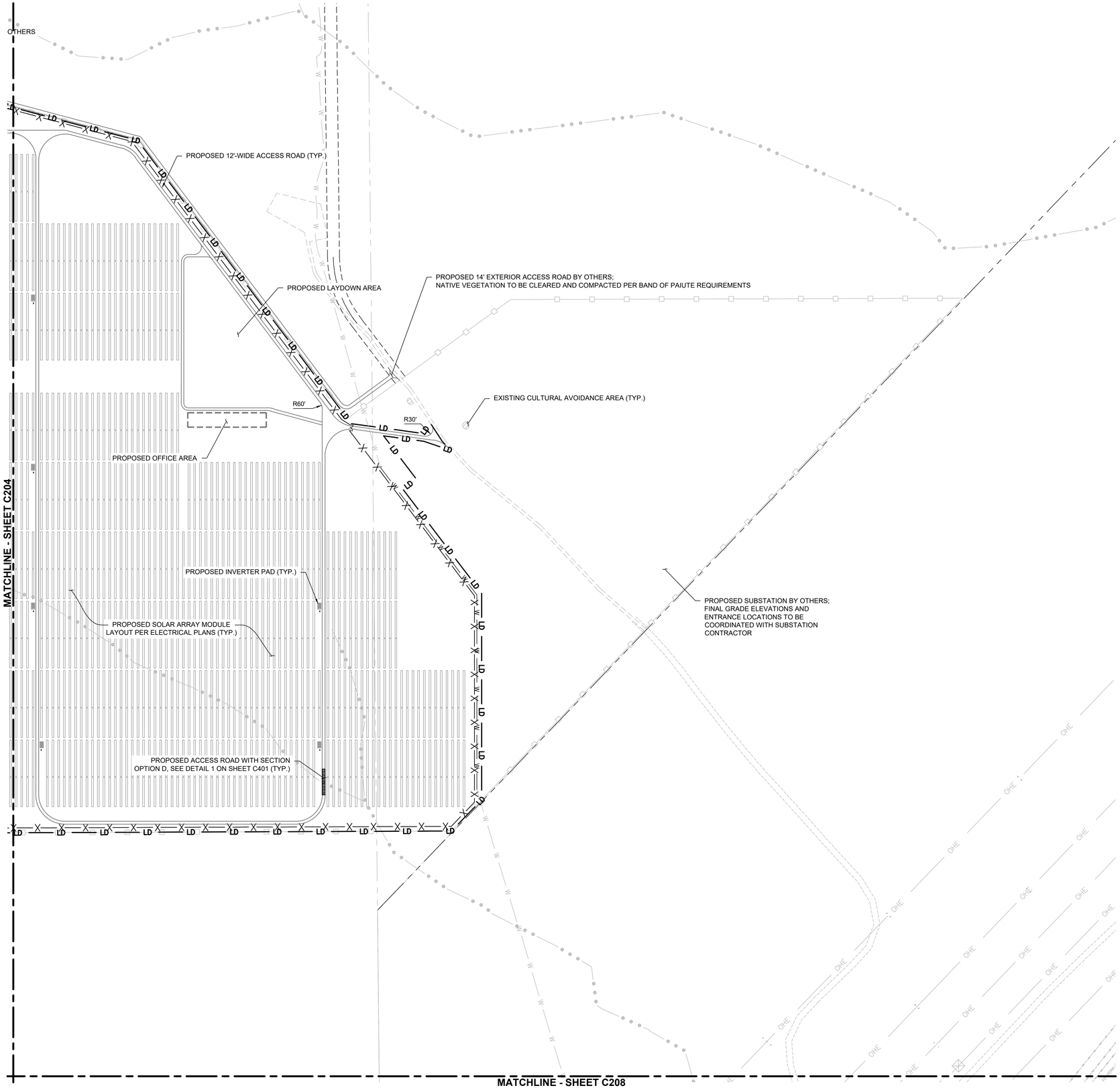
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

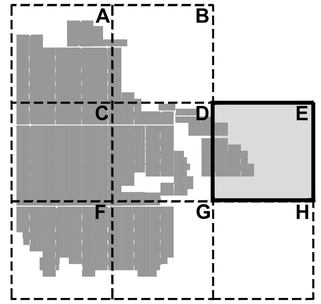
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C204
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 204 SITE PLAN PLOTTED: 6/30/2023 2:49 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC LINE
- EXISTING WATER LINE
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED SECURITY FENCE
- PROPOSED WATER LINE
- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

1. ALL PERMANENT SITE ACCESS ROADS ARE 110' INTERIOR RADII UNLESS OTHERWISE NOTED.

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NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
DAVID A. REGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

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SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C205
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 205 SITE PLAN PLOTTED: 6/30/2023 3:00 PM BY: matt byrum

MATCHLINE - SHEET C203

PROPOSED ACCESS ROAD WITH SECTION OPTION C, SEE DETAIL 1 ON SHEET C401 (TYP.)

R30'

45'-WIDE CONSTRUCTION ACCESS, NO ROADSIDE SWALES IN THIS AREA

PROPOSED ACCESS ROAD WITH SECTION OPTION D, SEE DETAIL 1 ON SHEET C401 (TYP.)

PROPOSED 12'-WIDE ACCESS ROAD (TYP.)

PROPOSED ROADSIDE SWALE (TYP.)

PROPOSED SOLAR ARRAY MODULE LAYOUT PER ELECTRICAL PLANS (TYP.)

PROPOSED INVERTER PAD (TYP.)

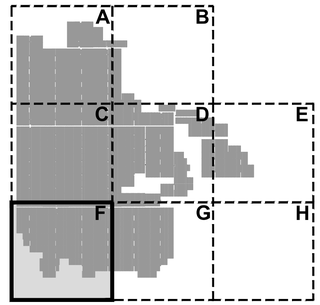
MATCHLINE - SHEET C207

EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED (TYP.)

EXISTING CULTURAL AVOIDANCE AREA (TYP.)

PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER (TYP.)

KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
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NOTES

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REVISIONS

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1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
NO. 28794
7/5/23

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SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

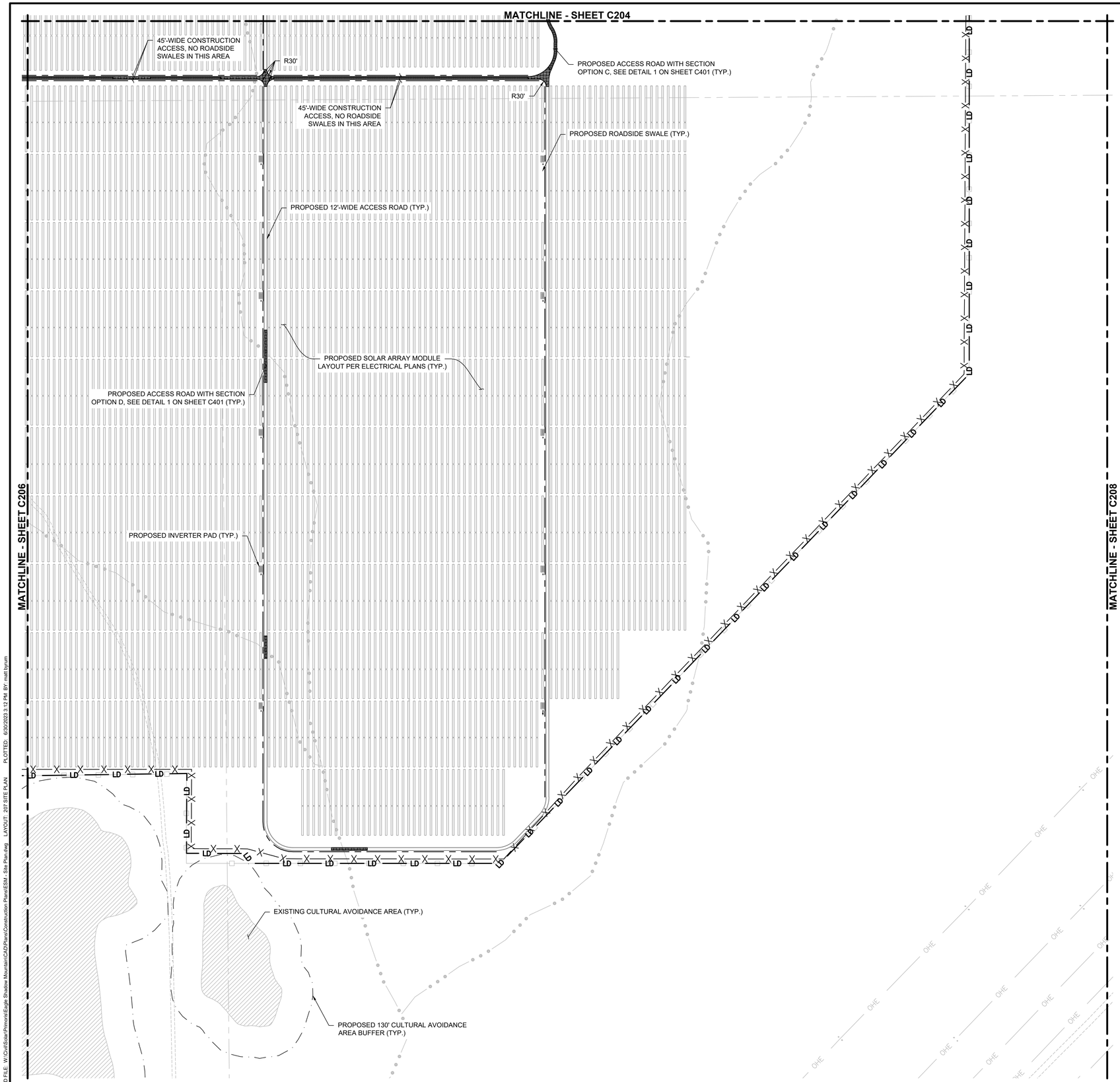
CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

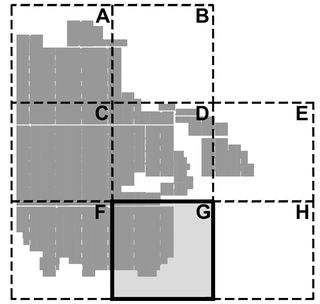
C206

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 206 SITE PLAN PLOTTED: 6/30/2023 3:01 PM BY: matt bynum



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE
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- PROPOSED WATER LINE
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- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 18794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

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IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

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ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris | 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
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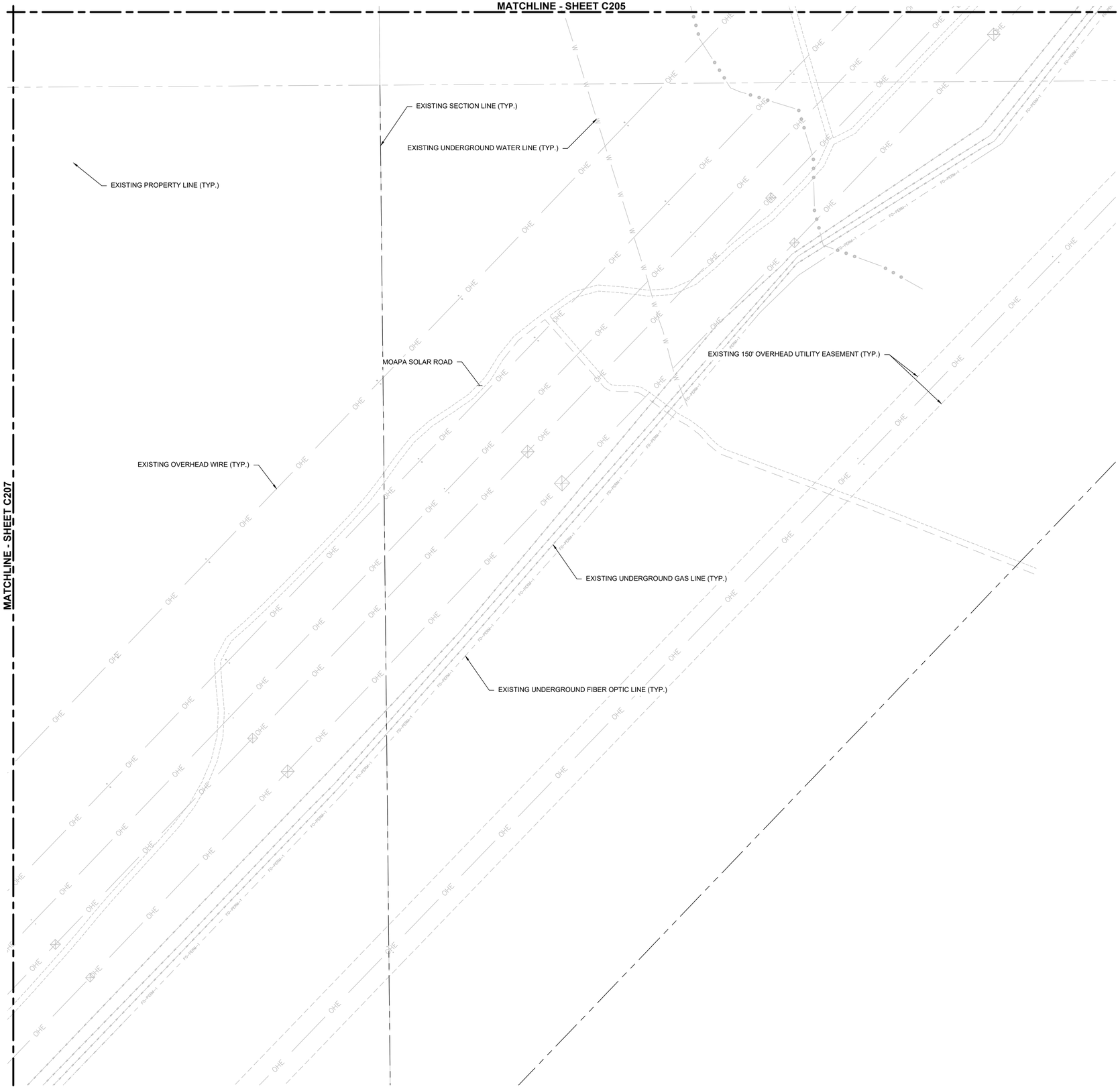
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	C207
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	SHEET NUMBER

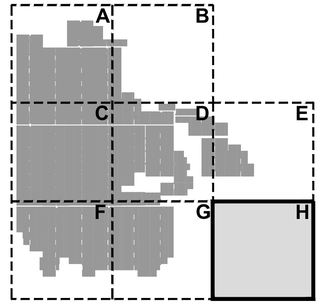
CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 207 SITE PLAN PLOTTED: 6/30/2023 3:12 PM BY: matt bynum

MATCHLINE - SHEET C205

MATCHLINE - SHEET C207



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE
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- PROPOSED ROADSIDE SWALE CENTERLINE

NOTES

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REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	MCB / MCB	CGO / AGB	10/16/2020
1	CONFORMED TO RECORD DRAWINGS	MCB / MCB	AML / AML	01/20/2022
2	REVISED RECORD DRAWINGS	MCB / MCB	AML / DS	06/30/2023

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. REGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

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ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris · 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

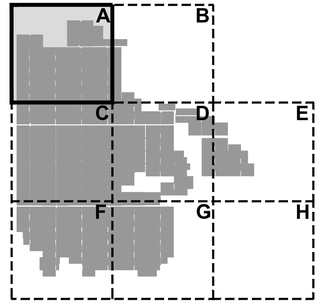
C208

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Plan.dwg LAYOUT: 2d8 PLOTTED: 6/30/2023 3:03 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMIT OF DISTURBANCE (LD)
- PROPOSED MAJOR CONTOUR (2440)
- PROPOSED MINOR CONTOUR
- PROPOSED SECURITY FENCE
- PROPOSED WATER LINE (W)
- PROPOSED SILT FENCE (SF)
- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED CONSTRUCTION ENTRANCE

NOTES

1. PROPOSED ACCESS ROADS WILL MATCH EXISTING GRADES AND SHOULD BE CONSTRUCTED PER DETAIL 1 ON SHEET C401.
2. PROPOSED SWALES TO MAINTAIN FLOW LINE AT 1' BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.
3. PROPOSED SWALES TO BE CONSTRUCTED WITH 3:1 SIDE SLOPES, SEE DETAIL 2 ON SHEET C401.
4. TORTOISE FENCE IS CONTINUOUS FOR ENTIRE LENGTH, INCLUDING ACROSS SILT FENCE OUTLETS.
5. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	REVISED ARRAY GRADING	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

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GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris MINUTE SOLAR ENERGY

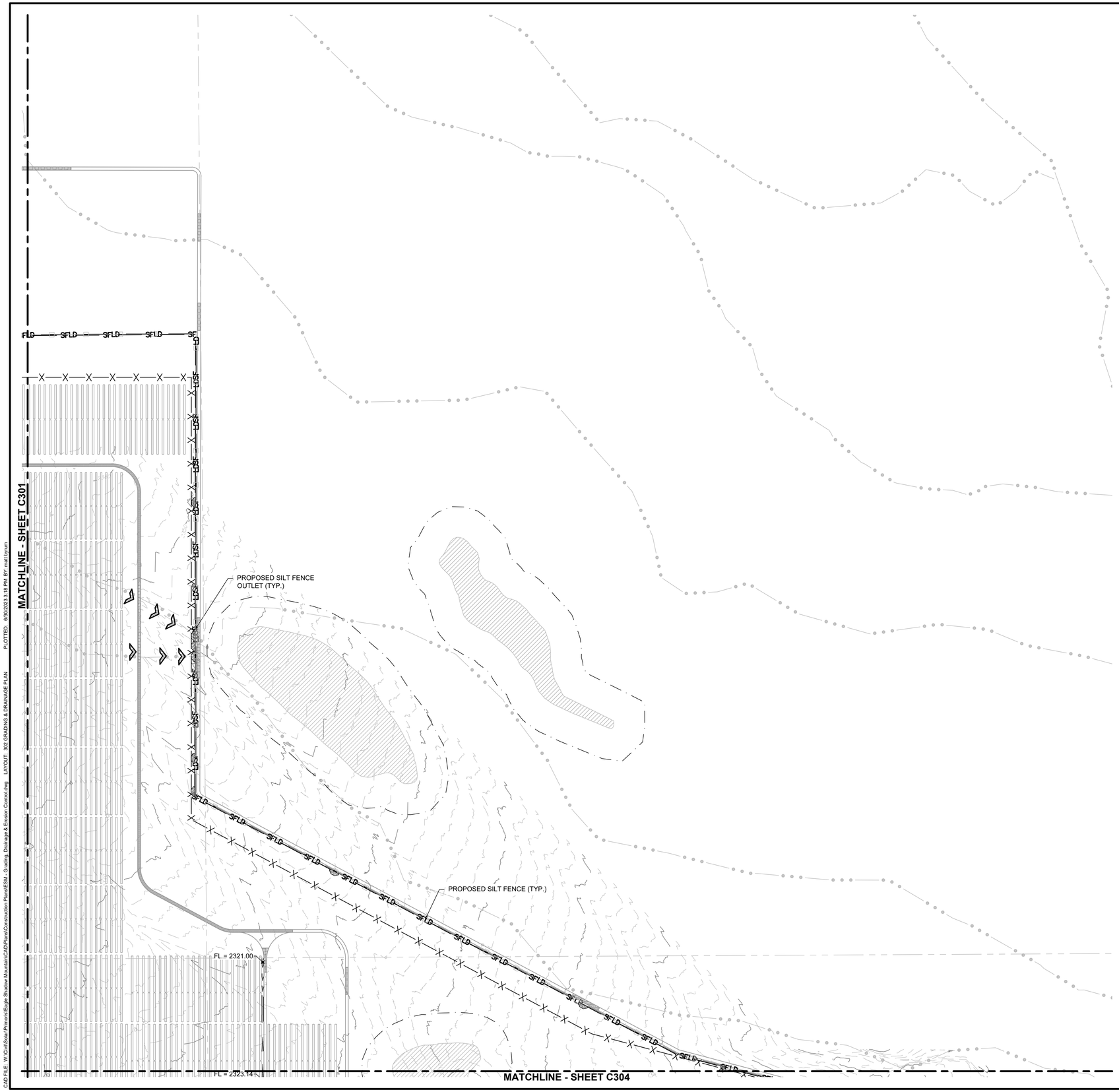
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4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

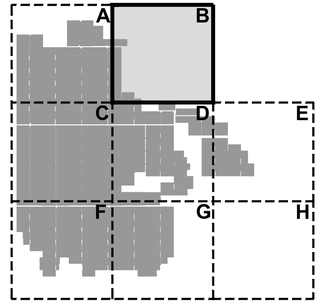
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C301
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 301 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:17 PM BY: matt.byrum



KEY MAP



LEGEND

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- EXISTING MINOR CONTOUR LINE (2444)
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- PROPOSED WATER LINE (W)
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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	REVISED ARRAY GRADING	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER STATE OF NEVADA — DAVID A. SEGAL — EXP. 06-30-24 — CIVIL — No. 28794 — 7/5/23

SCALE VERIFICATION

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GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

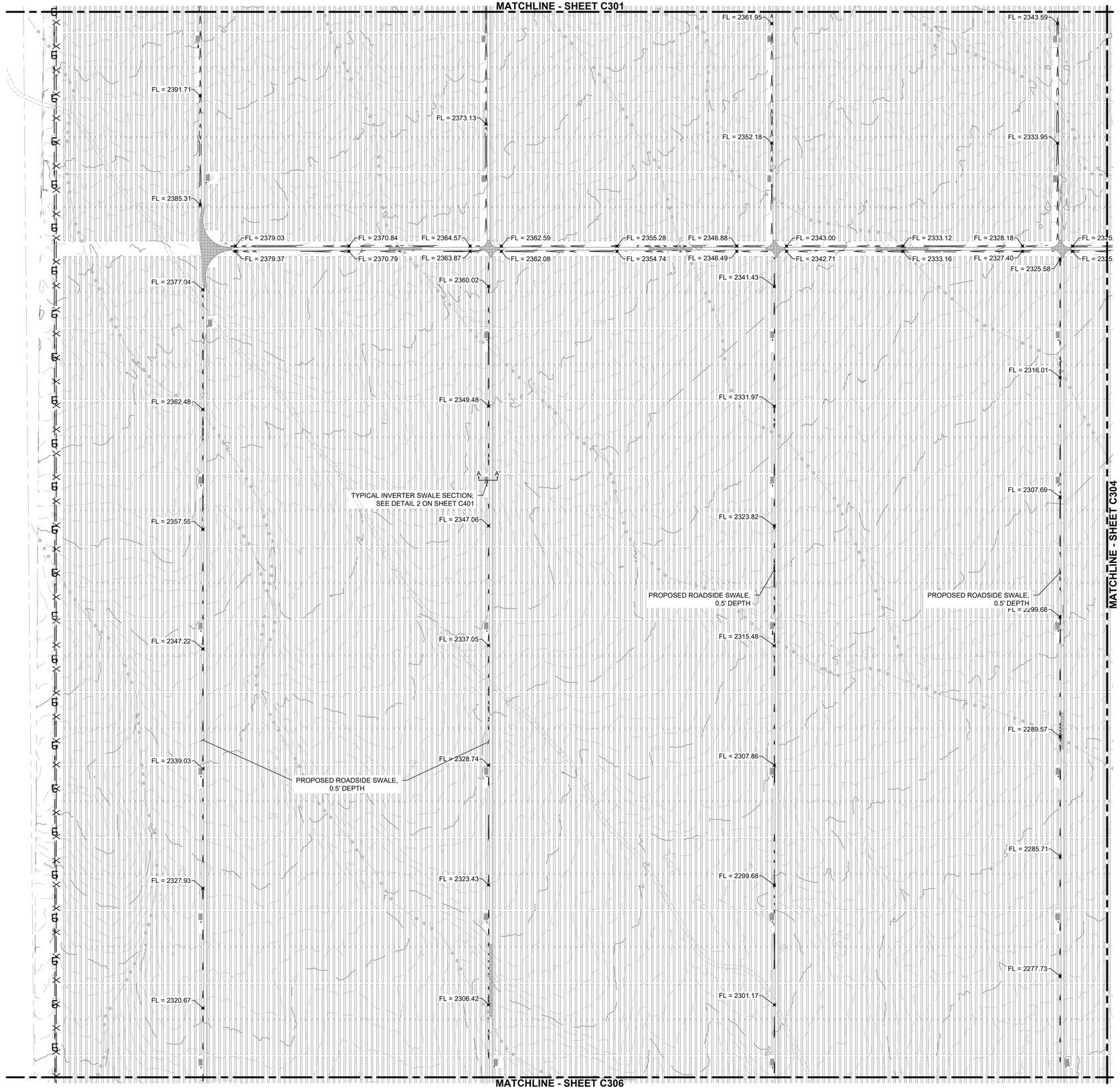
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

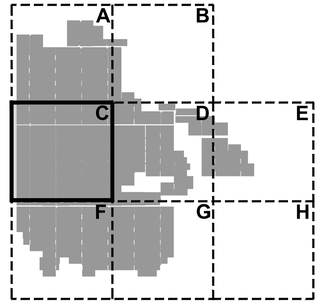
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
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DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C302
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 302 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:18 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
- EXISTING FIBER OPTIC LINE (FO-PERM-1)
- EXISTING WATER LINE (W)
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMIT OF DISTURBANCE (LD)
- PROPOSED MAJOR CONTOUR (2440)
- PROPOSED MINOR CONTOUR
- PROPOSED SECURITY FENCE
- PROPOSED WATER LINE (W)
- PROPOSED SILT FENCE (SF)
- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED CONSTRUCTION ENTRANCE

NOTES

1. PROPOSED ACCESS ROADS WILL MATCH EXISTING GRADES AND SHOULD BE CONSTRUCTED PER DETAIL 1 ON SHEET C401.
2. PROPOSED SWALES TO MAINTAIN FLOW LINE AT 1' BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.
3. PROPOSED SWALES TO BE CONSTRUCTED WITH 3:1 SIDE SLOPES, SEE DETAIL 2 ON SHEET C401.
4. TORTOISE FENCE IS CONTINUOUS FOR ENTIRE LENGTH, INCLUDING ACROSS SILT FENCE OUTLETS.
5. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

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NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	REVISED ARRAY GRADING	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600
SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

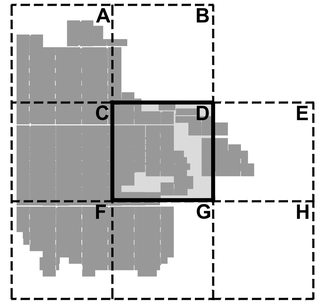
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C303
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 303 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:19 PM BY: matt byrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
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- EXISTING CULTURAL AVOIDANCE AREA
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- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMIT OF DISTURBANCE (LD)
- PROPOSED MAJOR CONTOUR (2440)
- PROPOSED MINOR CONTOUR
- PROPOSED SECURITY FENCE
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- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED CONSTRUCTION ENTRANCE

NOTES

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3. PROPOSED SWALES TO BE CONSTRUCTED WITH 3:1 SIDE SLOPES, SEE DETAIL 2 ON SHEET C401.
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5. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
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		MCB	AGB	
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		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. FEGAN
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 — 1"

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ORIGINAL DRAWING SIZE IS 24 x 36

GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

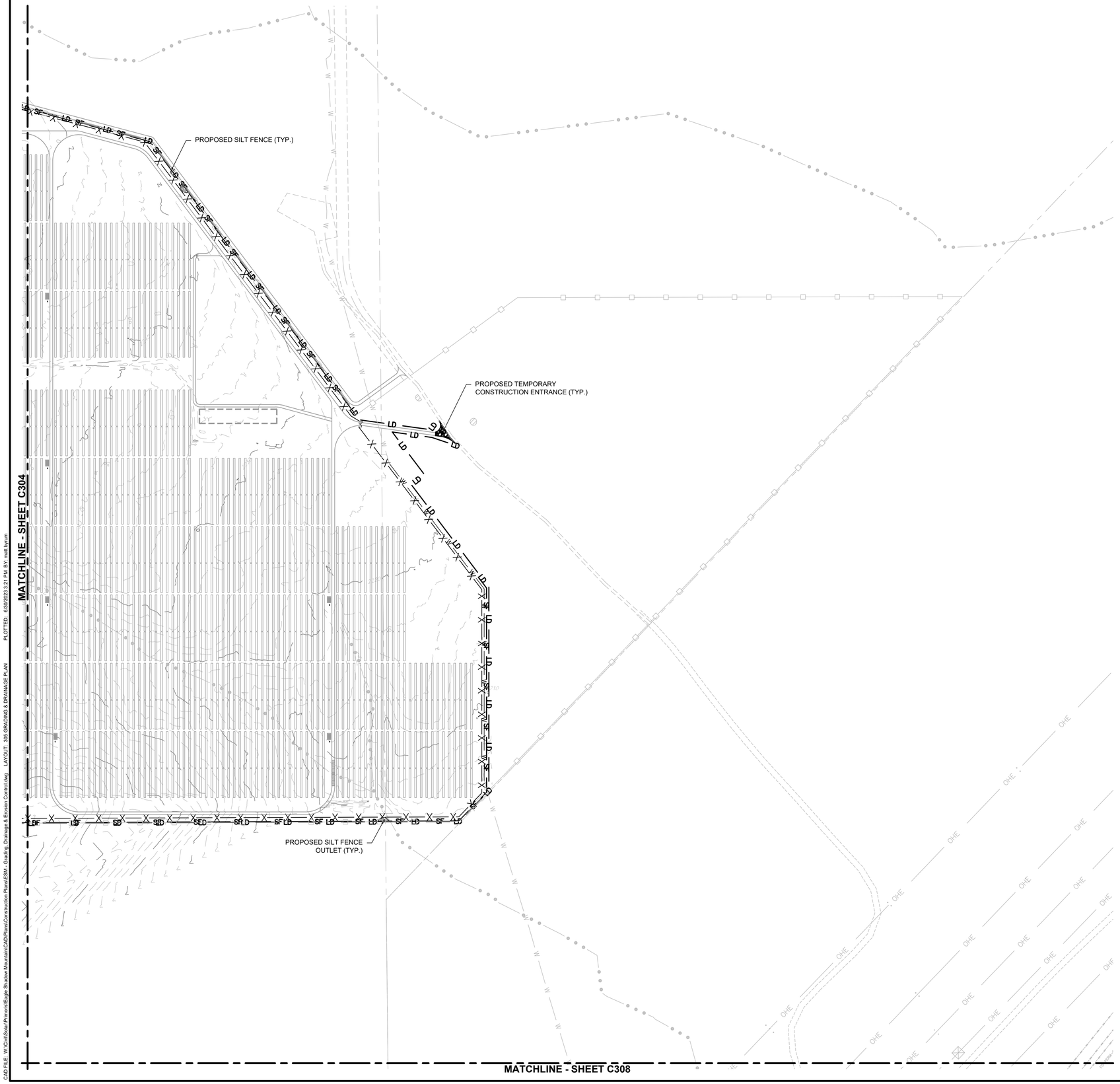
PSC Primoris | 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

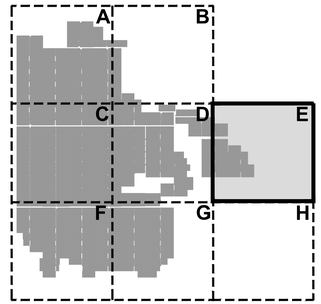
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	C304
	SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 304 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:20 PM BY: matt byrum



KEY MAP



LEGEND

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- EXISTING MINOR CONTOUR LINE (2444)
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- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED CONSTRUCTION ENTRANCE

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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	ADDED ARRAY GRADING BOUNDARY	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1"
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0 200 400 600
SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C305
SHEET NUMBER

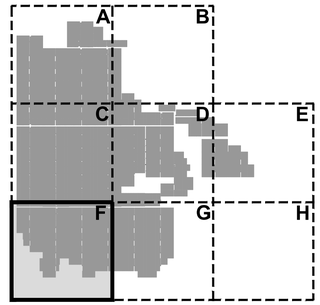
CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 305 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:21 PM BY: matt byrum

MATCHLINE - SHEET C303

FL = 2308.78
FL = 2308.26
FL = 2307.20
FL = 2306.64
FL = 2306.25
FL = 2307.61
FL = 2307.46
FL = 2306.45
FL = 2305.88
FL = 2291.00
FL = 2291.82
FL = 2287.00
FL = 2286.59
FL = 2288.83
FL = 2288.14
FL = 2284.97
FL = 2285.31
FL = 2269.90
FL = 2269.62
FL = 2303.74
FL = 2299.53
FL = 2278.74
FL = 2266.62
FL = 2295.89
FL = 2261.78
FL = 2288.76
TYPICAL INVERTER SWALE SECTION; SEE DETAIL 2 ON SHEET C401
FL = 2276.99
FL = 2282.07
FL = 2255.22
FL = 2279.27
FL = 2270.14
FL = 2272.41
FL = 2247.02
FL = 2269.80
FL = 2265.40
FL = 2266.70
FL = 2239.27
FL = 2261.28
FL = 2259.33
FL = 2259.00
FL = 2256.05
FL = 2238.92
FL = 2251.64
FL = 2250.33
FL = 2253.85
FL = 2249.40
FL = 2249.00
PROPOSED SILT FENCE OUTLET (TYP.)
PROPOSED SILT FENCE (TYP.)

MATCHLINE - SHEET C307

KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
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- EXISTING GAS LINE (GAS)
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- PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER
- EXISTING CULTURAL AVOIDANCE AREA TO BE MITIGATED
- PROPOSED LIMIT OF DISTURBANCE (LD)
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- PROPOSED ACCESS ROAD
- PROPOSED ACCESS ROAD, SECTION OPTION C
- PROPOSED ACCESS ROAD, SECTION OPTION D
- PROPOSED CONSTRUCTION ENTRANCE

NOTES

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2. PROPOSED SWALES TO MAINTAIN FLOW LINE AT 1' BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.
3. PROPOSED SWALES TO BE CONSTRUCTED WITH 3:1 SIDE SLOPES, SEE DETAIL 2 ON SHEET C401.
4. TORTOISE FENCE IS CONTINUOUS FOR ENTIRE LENGTH, INCLUDING ACROSS SILT FENCE OUTLETS.
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REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	ADDED ARRAY GRADING BOUNDARY	MCB	MDI	02/19/2021
		MCB	AGB	
2	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600
SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

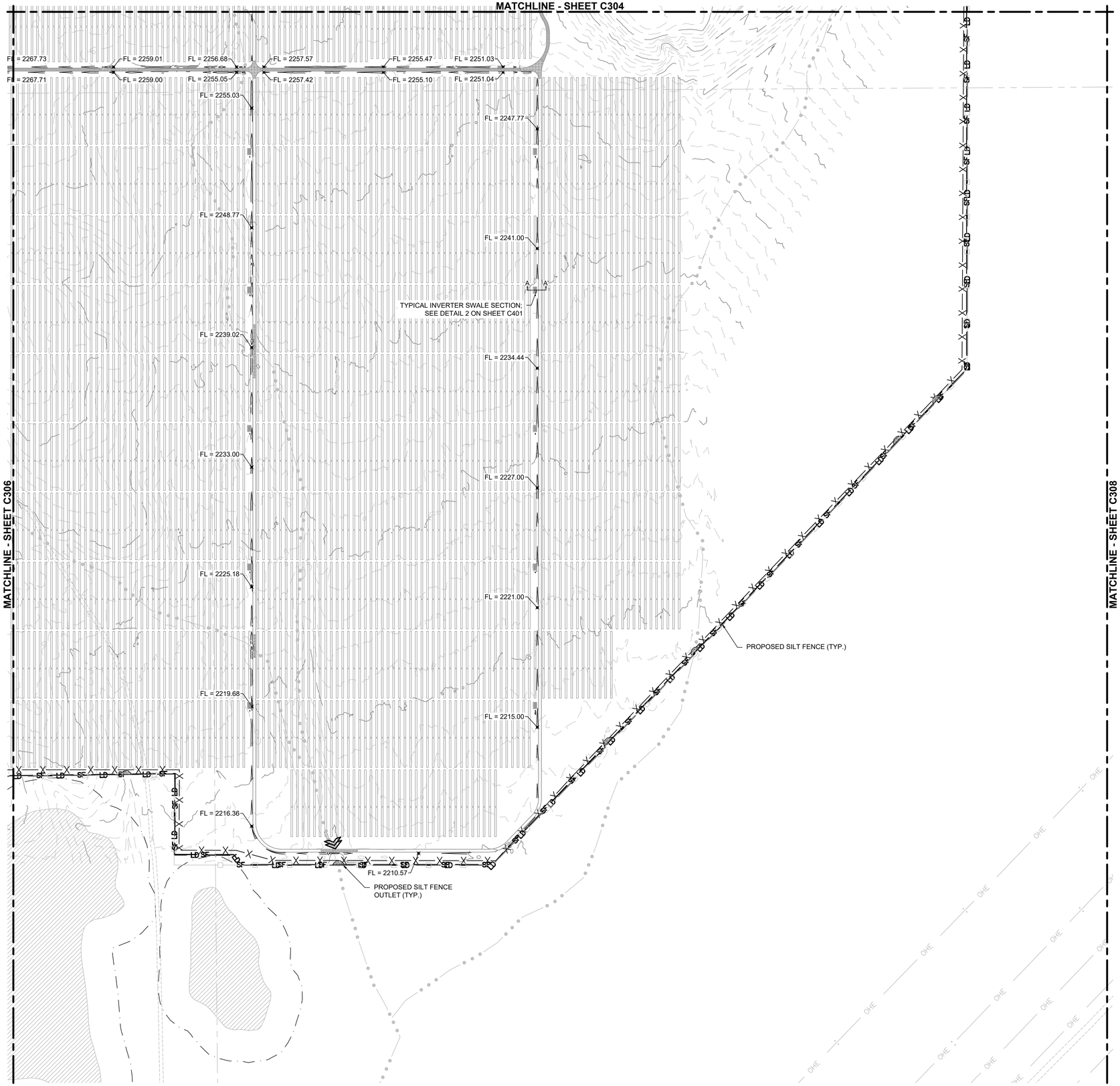
PSC Primoris | 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

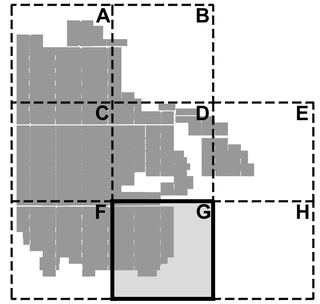
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	C306
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 306 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:22 PM BY: matt.tyrum



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
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NOTES

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REVISIONS

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		MCB	AGB	
1	ADDED ARRAY GRADING BOUNDARY	MCB	MDI	02/19/2021
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		MCB	AML	
3	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 20794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING
0 1"
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GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris
8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	C307
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 307 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:23 PM BY: matt.tyrum

MATCHLINE - SHEET C305

EXISTING SECTION LINE (TYP.)

EXISTING UNDERGROUND WATER LINE (TYP.)

EXISTING PROPERTY LINE (TYP.)

MOAPA SOLAR ROAD

EXISTING 150' OVERHEAD UTILITY EASEMENT (TYP.)

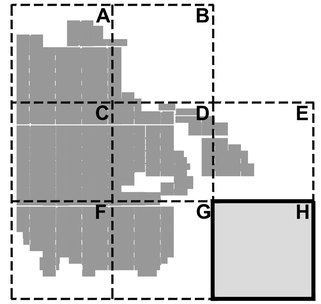
EXISTING OVERHEAD WIRE (TYP.)

EXISTING UNDERGROUND GAS LINE (TYP.)

EXISTING UNDERGROUND FIBER OPTIC LINE (TYP.)

MATCHLINE - SHEET C307

KEY MAP



LEGEND

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4. TORTOISE FENCE IS CONTINUOUS FOR ENTIRE LENGTH, INCLUDING ACROSS SILT FENCE OUTLETS.
5. EXISTING CONTOURS SHOWN ARE BASED ON THE AS-BUILT TOPOGRAPHY DATA PROVIDED BY PRIMORIS ON 06/22/2023.

USA NORTH 811 Call 811 Before You Dig

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NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
		MCB	AGB	
1	CONFORMED TO RECORD DRAWINGS	MCB	AML	01/20/2022
		MCB	AML	
2	REVISED RECORD DRAWINGS	MCB	AML	06/30/2023
		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 — 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 200 400 600

SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

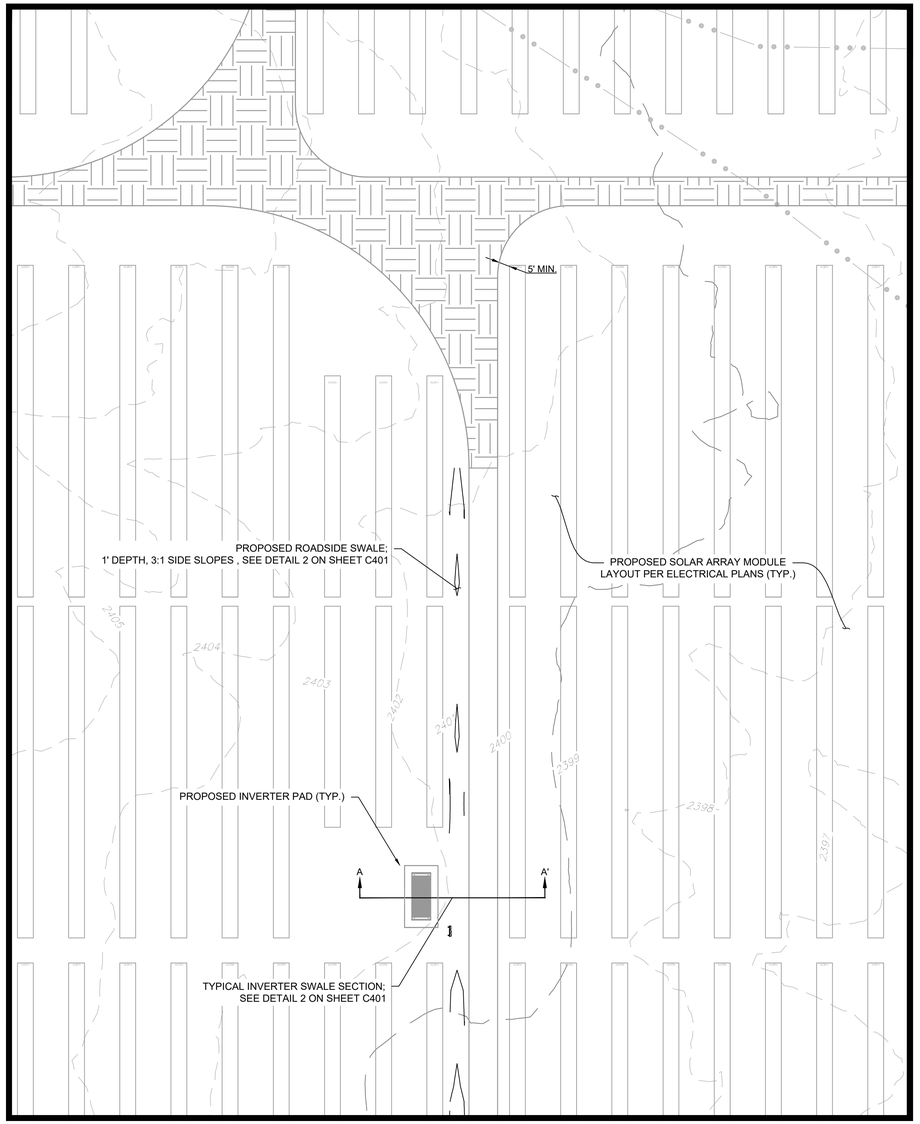
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	

C308

SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 308 GRADING & DRAINAGE PLAN PLOTTED: 6/30/2023 3:29 PM BY: matt byrum



INSET A
TYPICAL N-S ROADSIDE SWALE

0 30 60 90

SCALE: 1" = 30' SCALE IN FEET

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		MCB	DS	

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 28794
7/5/23

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0 1"

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TYPICAL ROADSIDE SWALE INSET

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

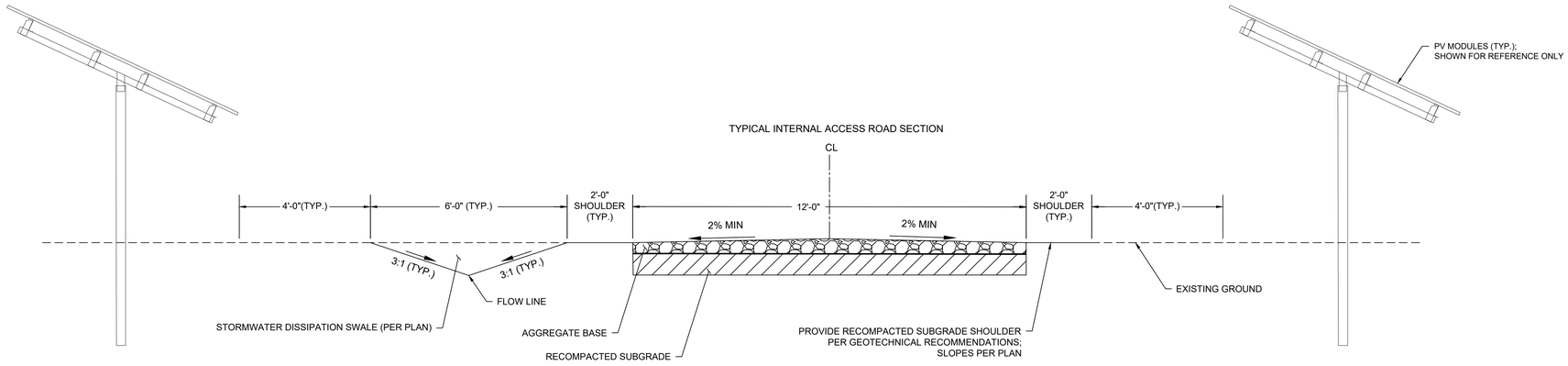
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PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	C309

SHEET NUMBER

USA NORTH 811 Call 811 Before You Dig

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Grading, Drainage & Erosion Control.dwg LAYOUT: 309 TYPICAL ROADSIDE SWALE INSET PLOTTED: 6/30/2023 3:27 PM BY: matt byrum



INTERNAL GRAVEL ACCESS ROAD SECTION				
SECTION OPTION *	A	B	C	D
AGGREGATE BASE COURSE THICKNESS (INCHES)	3-6	0	0	8
CALICHE - SOURCED ONSITE (INCHES)	0	3-6	0	0
SCARIFIED AND RECOMPACTED SUBGRADE (INCHES)	12	12	12	12

*CONTRACTOR TO SELECT APPROPRIATE ACCESS ROAD SECTION AND CONFIRM WITH PROJECT GEOTECHNICAL ENGINEER.

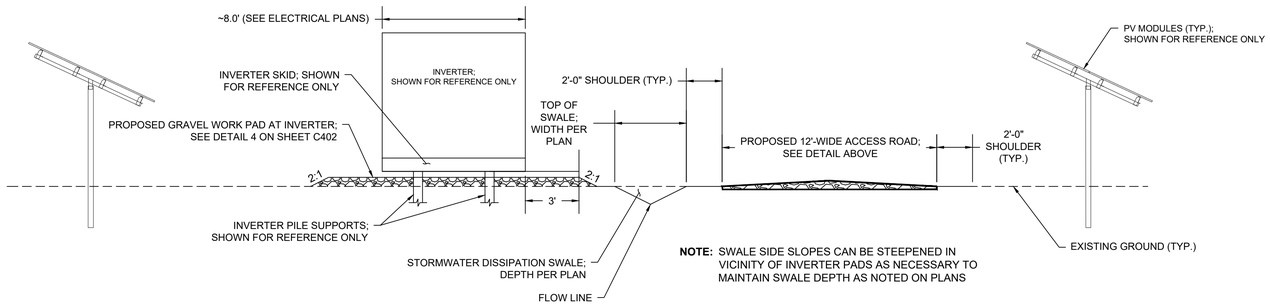
NOTE: IF 3 INCH MINIMUM SECTION THICKNESS USED, THEN ADDITIONAL MAINTENANCE WILL BE REQUIRED OVER THE LIFE OF THE PROJECT.

NOTES:

1. ACCESS ROADS SHALL BE CONSTRUCTED PER FINAL GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
2. SUBGRADE SOILS BENEATH PAVEMENTS SHALL BE SCARIFIED, AND RECOMPACTED TO A MINIMUM DEPTH OF 12 INCHES, OR TO UNCOVERED SOILS, WHICHEVER IS SHALLOWER.
3. EXPOSED AREAS WHICH WILL RECEIVE FILL, ONCE PROPERLY CLEARED AND BENCHED WHERE NECESSARY, SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 10 INCHES, MOISTURE CONDITIONED, AND COMPACTED.
4. PROPOSED SHOULDERS TO BE COMPACTED PER GEOTECHNICAL RECOMMENDATIONS.
5. SWALE ORIENTATION ABOVE NOT INDICATIVE OF ALL PROPOSED ROAD AND SWALE LAYOUTS. SWALES TO ACCOMPANY ROADS PER PLAN.

1 ACCESS ROAD SECTION

NOT TO SCALE



2 TYPICAL SWALE SECTION AT INVERTER LOCATIONS

NOT TO SCALE

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ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 29794
7/5/23

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ORIGINAL DRAWING SIZE IS 24 x 36

ACCESS DETAILS

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

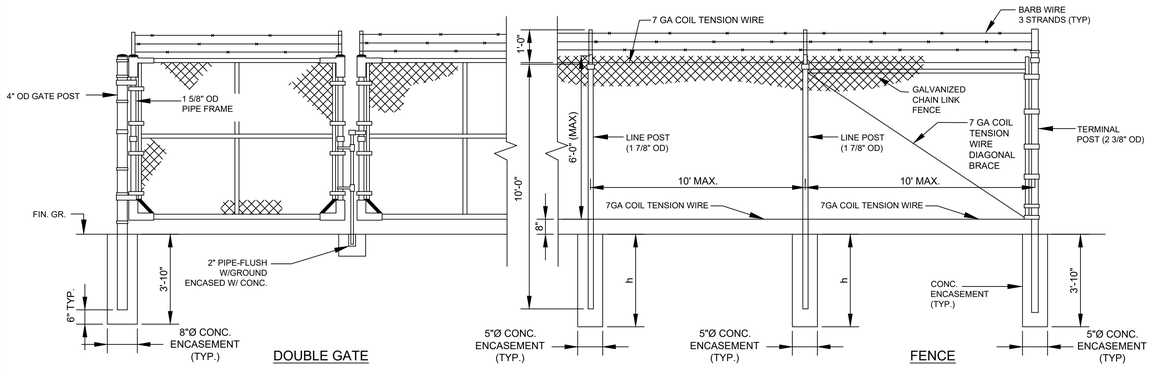
PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

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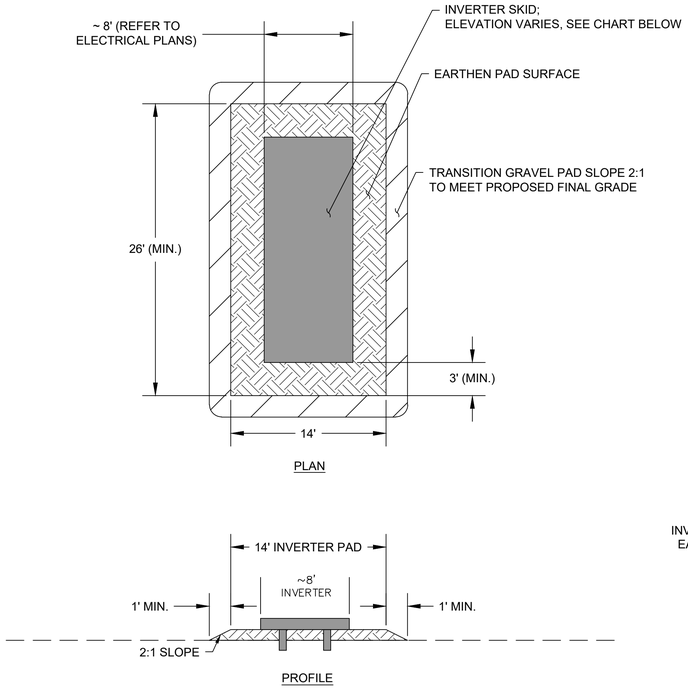
C401
SHEET NUMBER

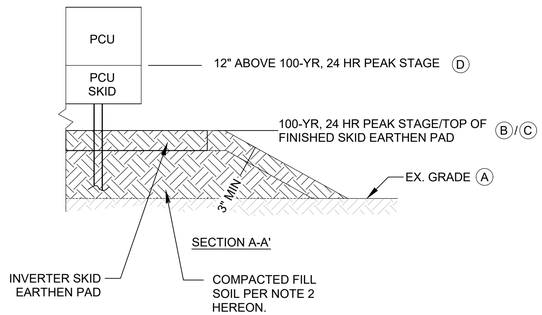
CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Details.dwg LAYOUT: 401 ACCESS DETAILS PLOTTED: 6/30/2023 3:40 PM BY: matt byrum



NOTES:
- 2" MESH FABRIC SHALL BE 1.2 OZ./FT^2 (2 MILS) GALVANIZED MIN.
- PER THE "EAGLE SHADOW MOUNTAIN CORROSION EVALUATION REPORT" BY ISFS, A 2 MIL ZINC COATING IS ESTIMATED TO LAST FOR A PROJECT DESIGN LIFE OF 40+ YEARS.
- 4" OD GATE POSTS TO BE WHEATLAND TUBE WT-40 PER ASTM F1043, GROUP 1C.
- 2 3/8" OD TERMINAL POSTS TO BE WHEATLAND TUBE WT-40 PER ASTM F1043, GROUP 1C.
- 1 7/8" OD LINE POSTS TO BE WHEATLAND TUBE WT-40 PER ASTM F1043, GROUP 1C.
- ALL OTHER POSTS TO BE SCHEDULE 40 UNLESS OTHERWISE NOTED.
- FOR 9 GA MESH FABRIC, h = 3'-10"
- FOR 11 GA MESH FABRIC, h = 3'-7"
- REFER TO STRUCTURAL PLANS, SHEET S-001, FOR CONCRETE SPECIFICATIONS.

3 SECURITY FENCE AND GATE DETAIL
NO SCALE





NOTE:

1. TOP OF EARTHEN PAD TO BE SET AT 100-YR, 24-HR STORM EVENT PEAK STAGE. BOTTOM OF PCU ELECTRICAL EQUIPMENT TO BE SET 12" ABOVE THE 100-YR, 24 HR STORM EVENT PEAK STAGE PER ELECTRICAL PLANS.
2. COMPACTED FILL SOIL BENEATH THE PROPOSED INVERTED SKID PAD SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE SOIL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557) USING THE VIBRATORY DRUM ROLLER PER GEOTECHNICAL RECOMMENDATIONS, OR CLUM (FLOWABLE FILL) MAY BE USED. CONTRACTOR TO SUBMIT FLOWABLE FILL MIX DESIGN TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO PLACEMENT.

4 TYPICAL INVERTER SKID
NOT TO SCALE

INVERTER PAD ELEVATIONS

	INVERTER PAD NAME	(A) EXISTING ELEVATION (FT. NAVD)	(B) INVERTER PAD FINISHED ELEVATION (FT. NAVD)	(C) 100-YEAR, 24-HOUR PEAK STAGE (FT. NAVD)	(D) INVERTER PCU BOTTOM ELEVATION (FT. NAVD)
TRINA	PCS-104	2333.39	2333.64	2333.47	2334.47
	PCS-105	2344.07	2344.32	2344.15	2345.15
	PCS-106	2351.52	2351.77	2351.71	2352.71
	PCS-107	2356.48	2356.74	2356.74	2357.74
	PCS-201	2364.41	2364.66	2364.47	2365.47
	PCS-202	2369.45	2369.70	2369.53	2370.53
	PCS-203	2377.40	2377.65	2377.58	2378.58
	PCS-204	2416.65	2416.90	2416.73	2417.73
	PCS-205	2408.57	2408.82	2408.64	2409.64
	PCS-206	2402.09	2402.34	2402.19	2403.19
	PCS-207	2393.97	2394.22	2394.16	2395.16
	PCS-301	2350.00	2350.27	2350.27	2351.27
	PCS-302	2363.12	2363.37	2363.21	2364.21
	PCS-303	2374.19	2374.82	2374.82	2375.82
	PCS-304	2386.00	2386.37	2386.37	2387.37
	PCS-401	2371.00	2371.25	2371.21	2372.21
	PCS-402	2384.04	2384.29	2384.09	2385.09
	PCS-403	2395.43	2395.68	2395.51	2396.51
	PCS-404	2410.57	2410.82	2410.64	2411.64
	PCS-405	2420.54	2420.79	2420.68	2421.68
	PCS-406	2430.00	2430.47	2430.47	2431.47
	PCS-501	2387.71	2387.96	2387.81	2388.81
	PCS-502	2400.37	2400.62	2400.45	2401.45
	PCS-503	2414.00	2414.25	2414.10	2415.10
	PCS-504	2424.14	2424.68	2424.68	2425.68
	PCS-505	2441.99	2442.24	2442.13	2443.13
	PCS-506	2456.03	2456.28	2456.23	2457.23
	PCS-507	2466.17	2466.42	2466.42	2467.42
CSI	PCS-305	2338.43	2338.68	2338.58	2339.58
	PCS-306	2328.28	2328.53	2328.39	2329.39
	PCS-307	2317.56	2319.14	2319.14	2320.14
	PCS-407	2356.22	2357.18	2357.18	2358.18
	PCS-701	2311.51	2311.76	2311.67	2312.67
	PCS-702	2301.98	2302.29	2302.29	2303.29
	PCS-703	2295.17	2295.42	2295.33	2296.33
	PCS-704	2288.89	2289.14	2288.94	2289.94
	PCS-705	2320.32	2320.57	2320.56	2321.56
	PCS-706	2310.38	2310.63	2310.62	2311.62
	PCS-707	2301.11	2301.36	2301.2	2302.2
	PCS-801	2262.43	2263.12	2263.12	2264.12
	PCS-802	2271.83	2272.72	2272.72	2273.72
	PCS-803	2283.15	2283.4	2283.27	2284.27
	PCS-804	2292.82	2293.07	2292.93	2293.93
	PCS-805	2299.03	2299.28	2299.08	2300.08
	PCS-806	2302.05	2302.3	2302.12	2303.12
	PCS-807	2309.45	2309.7	2309.53	2310.53
	PCS-901	2308.67	2308.92	2308.73	2309.73
	PCS-902	2322.7	2322.95	2322.75	2323.75
	PCS-903	2329.43	2329.68	2329.57	2330.57
	PCS-904	2339.68	2339.93	2339.79	2340.79
	PCS-905	2346.29	2346.54	2346.38	2347.38
	PCS-1001	2317.42	2317.69	2317.69	2318.69
	PCS-1002	2327.61	2327.86	2327.76	2328.76
	PCS-1003	2339.67	2339.92	2339.72	2340.72
	PCS-1004	2349.78	2350.03	2349.91	2350.91
	PCS-1005	2359.34	2359.88	2359.88	2360.88
	PCS-1006	2371.99	2372.24	2372.1	2373.1
OMNI	PCS-101	2307	2307.25	2307.09	2308.09
	PCS-102	2324.17	2324.44	2324.44	2325.44
	PCS-103	2318.21	2318.5	2318.5	2319.5
	PCS-601	2306.39	2306.64	2306.55	2307.55
	PCS-602	2302.46	2302.71	2302.71	2303.71
	PCS-603	2299.5	2299.78	2299.78	2300.78
	PCS-604	2292.94	2293.19	2293.17	2294.17
	PCS-605	2297.48	2297.73	2297.56	2298.56
	PCS-606	2286.34	2286.59	2286.46	2287.46
	PCS-607	2258.98	2259.64	2259.64	2260.64
	PCS-906	2303.31	2303.56	2303.43	2304.43
	PCS-907	2293.54	2293.79	2293.61	2294.61
	PCS-1007	2302.51	2302.76	2302.58	2303.58
	PCS-1008	2291.37	2291.62	2291.47	2292.47
	PCS-1101	2247.65	2247.9	2247.77	2248.77
	PCS-1102	2239.72	2240.14	2240.14	2241.14
	PCS-1103	2232.14	2232.61	2232.61	2233.61
	PCS-1104	2224.26	2224.78	2224.78	2225.78
	PCS-1105	2217.53	2217.9	2217.9	2218.9
	PCS-1106	2222.09	2222.59	2222.59	2223.59
	PCS-1107	2229.74	2231.1	2231.1	2232.1
	PCS-1108	2237.12	2238.02	2238.02	2239.02
	PCS-1201	2253.93	2254.23	2254.23	2255.23
	PCS-1202	2245.43	2246.35	2246.35	2247.35
	PCS-1203	2265.49	2265.74	2265.71	2266.71
	PCS-1204	2263.55	2263.8	2263.61	2264.61
	PCS-1205	2256.44	2256.69	2256.49	2257.49
	PCS-1206	2243.04	2243.29	2243.23	2244.23
	PCS-1207	2240.69	2240.94	2240.74	2241.74
	PCS-1208	2259.52	2259.77	2259.57	2260.57
	PCS-1301	2279.6	2281.21	2281.21	2282.21
	PCS-1302	2279.23	2279.48	2279.31	2280.31
	PCS-1303	2271.89	2272.22	2272.22	2273.22
	PCS-1304	2265.49	2265.74	2265.56	2266.56
	PCS-1305	2257.38	2257.95	2257.95	2258.95
	PCS-1306	2269.92	2270.17	2269.98	2270.98
	PCS-1307	2277.22	2277.47	2277.28	2278.28
	PCS-1308	2280.06	2280.41	2280.41	2281.41
	PCS-1401	2219.94	2220.19	2220.01	2221.01
	PCS-1402	2213.12	2213.37	2213.17	2214.17
	PCS-1403	2241.32	2241.57	2241.39	2242.39
	PCS-1404	2228.97	2229.83	2229.83	2230.83
	PCS-1405	2241.07	2241.37	2241.37	2242.37
	PCS-1406	2247.6	2247.85	2247.72	2248.72
	PCS-1407	2262.2	2262.45	2262.29	2263.29
	PCS-1408	2282.58	2282.83	2282.64	2283.64

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CLARK COUNTY, NEVADA

PSC Primoris
8MINUTE SOLAR ENERGY

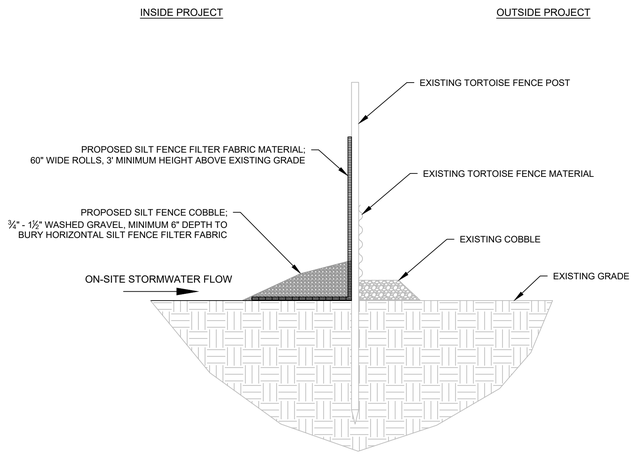
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CONSTRUCTION PLANS

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APPROVED BY	DS

C402
SHEET NUMBER

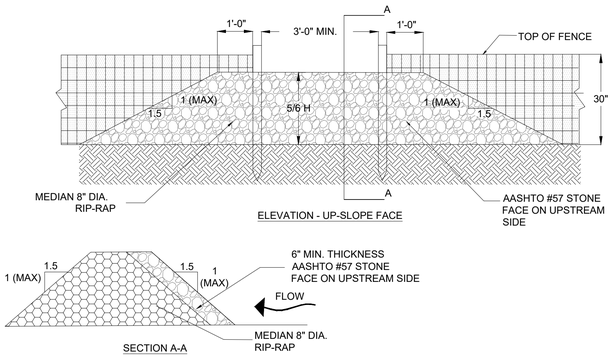
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NOTES:

1. SILT FENCE TO BE INSTALLED ON EXISTING TORTOISE FENCE POSTS. MODIFY SILT FENCE DIMENSIONS AS NEEDED TO ACCOMMODATE TORTOISE FENCE MATERIALS.
2. USE STAPLES OR WIRE RINGS TO ATTACH SILT FENCE FILTER FABRIC TO TORTOISE FENCE POST.
3. SEDIMENT TO BE REMOVED WHEN ACCUMULATIONS REACH ⅓ HEIGHT OF SILT FENCE.

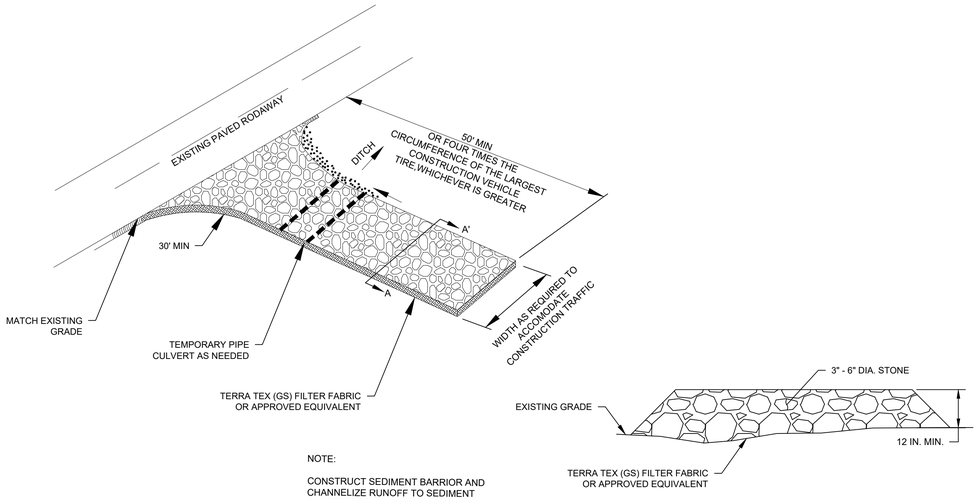
7 SILT FENCE ON EXISTING TORTOISE FENCE
NO SCALE



NOTES:

1. WASHED STONE (#57) TO BE REMOVED AND REPLACED ONCE IT BECOMES CLOGGED WITH SEDIMENT.
2. SEDIMENT TO BE REMOVED WHEN ACCUMULATIONS REACH ⅓ HEIGHT OF SILT FENCE
3. THE KEY TO FUNCTIONAL SILT FENCE OUTLETS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

8 SILT FENCE OUTLET
NOT TO SCALE

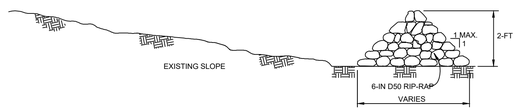


NOTE:

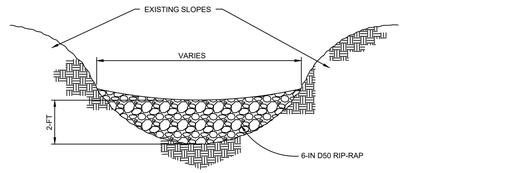
CONSTRUCT SEDIMENT BARRIOR AND CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE.

SECTION A-A'
NO SCALE

9 STABILIZED CONSTRUCTION ENTRANCE
NO SCALE



SIDE VIEW



FRONT VIEW

CONSTRUCTION NOTES:

WIDTH DETERMINED BY EXISTING TOPOGRAPHY, SPACING AS SHOWN ON PLANS OR AS DIRECTED

MAINTENANCE:

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS, INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

10 CHECK DAM
NO SCALE

KLEINFELDER
Bright People. Right Solutions.
WWW.KLEINFELDER.COM
3200 GATEWAY CENTRE BLVD., SUITE 100
MORRISVILLE, NC 27560
PHONE: 919-755-5011
NV LICENSE # C4310-1980

REVISIONS

REV	DESCRIPTION	DSN / DWN	CHK / APP	DATE
0	CONSTRUCTION PLANS	MCB / MCB	CGO / AGB	10/16/2020
1	CONFORMED TO RECORD DRAWINGS	MCB / MCB	AML / AML	01/20/2022
2	REVISED RECORD DRAWINGS	MCB / MCB	AML / DS	06/30/2023

ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER-STATE OF NEVADA
DAVID A. SEGAL
EXP. 06-30-24
CIVIL
No. 29794
7/5/23

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 — 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ORIGINAL DRAWING SIZE IS 24 x 36

EROSION CONTROL DETAILS

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris | 8MINUTE SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C403
SHEET NUMBER

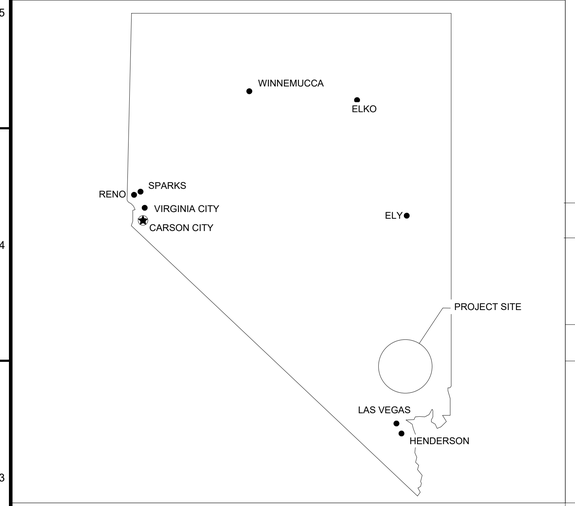
CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Details.dwg LAYOUT: 403 EROSION CONTROL DETAILS PLOTTED: 6/30/2023 3:40 PM BY: matt.bynum

EAGLE SHADOW MOUNTAIN
PV SOLAR POWER GENERATION FACILITY

I-15 CRYSTAL, NV CLARK COUNTY 36.542373°, -114.816789°

PV SOLAR - 382.66MWDC , 300.00MWAC

PROJECT LOCATION



PROJECT TEAM:

ELECTRICAL ENGINEER
FASTGRID ENERGY
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MAIL: ERIC.LOOS@FASTGRID.COM

OWNER
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SAN FRANCISCO, CA 94108
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EMAIL:

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CONTACT:KYLE CRAGIN
EMAIL: KCRAGIN@PRIM.COM

LOCAL UTILITY
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EMAIL: CONTRACTMANAGEMENT@NVENERGY.COM

CIVIL ENGINEER
KLIENFELDER
1801 CALIFORNIA STREET, SUITE 1100
DENVER, CO 80202
CONTACT:AUTUMN MCCLENDON-LONG
EMAIL:AMLONG@KLEINFELDER.COM

LOCAL AHJ
MOAPA BAND OF PAIUTE INDIANS

GENERAL NOTES:

1. SYSTEM TO BE DESIGNED AND INSTALLED TO LOCAL JURISDICTION AND UTILITY REQUIREMENTS.

PROJECT SCOPE:

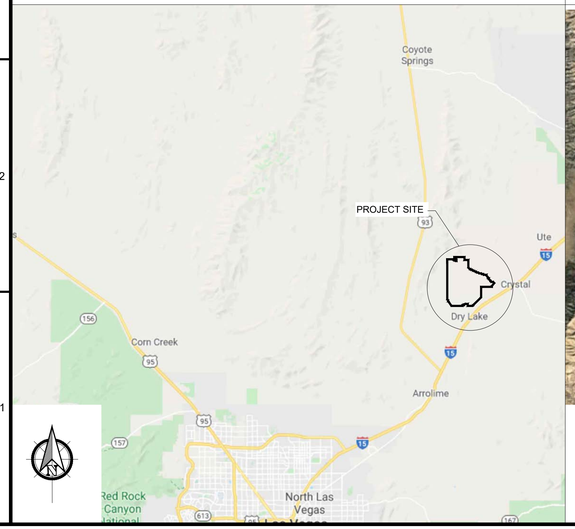
INSTALLATION OF UTILITY SCALE PV SYSTEM. INCLUDING MODULES, INVERTERS, STEP-UP XFMR'S, TRACKERS & SCADA. SUBSTATION NOT IN CONTRACT. INSTALLATION TO MEET OR EXCEED CODE

National Electrical Code, 2017 edition
International Building Code, 2018 edition
International Fire Code, 2018 edition
Local Amendments

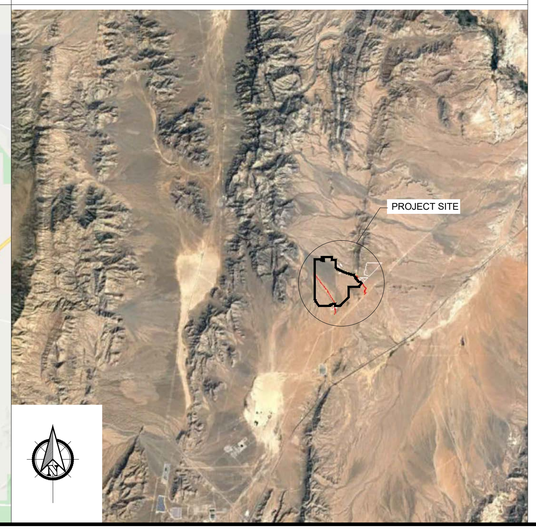
EXCLUDING SUBSTATION.

811 Know what's below. Call before you dig.

STREET MAP:



AERIAL VIEW:



SHEET INDEX

Sheet Number	Sheet Title
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E-001	ELECTRICAL NOTES
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E-003	SYMBOLS AND ABBREVIATIONS
E-004	LABELS & MARKINGS
E-005	BLOCK SCHEDULE
E-010	OVERALL SITE PLAN
E-011	MODULE ALLOCATION PLAN
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E-216	DC SLD - ARRAY TYPE F (JINKO)
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E-218	DC SLD - ARRAY TYPE H (JINKO)
E-219	DC SLD - ARRAY TYPE I (JINKO)
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E-223	DC SLD - ARRAY TYPE M (JINKO)
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E-410	DC PLAN - ARRAY TYPE J (JINKO
E-411	DC PLAN - ARRAY TYPE K (JINKO)
E-412	DC PLAN - ARRAY TYPE L (JINKO)
E-413	DC PLAN - ARRAY TYPE M (JINKO)
E-414	DC PLAN - ARRAY TYPE N (JINKO)
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E-417	DC PLAN - ARRAY TYPE Q (JINKO)
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E-909	EQUIP SPECS - FIBER OPTIC

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020

PROJECT #: 190067.03

DRAWN BY: TLR

CHECKED BY: EL

SHEET NAME:
ELECTRICAL COVER

SHEET #: E-000

REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023

PLOT BY: Brady Burgason

SAVED BY: brady.burgason

LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-000 ELECTRICAL COVER

SECTION 16010 - GENERAL PROVISIONS - ELECTRICAL

A. THE WORK INCLUDED SHALL CONSIST OF FURNISHING LABOR AND MATERIALS NECESSARY FOR THE COMPLETE INSTALLATION OF LIGHTING, POWER, AND PHOTOVOLTAIC SYSTEMS SHOWN ON THE DRAWINGS. ALL WORK SHALL BE COMPLETE AND LEFT IN OPERATING CONDITION AT COMPLETION OF CONTRACT.

B. INCLUDE MINOR ITEMS THAT ARE OBVIOUSLY AND REASONABLY NECESSARY TO COMPLETE THE INSTALLATION AND USUALLY INCLUDED IN SIMILAR WORK. SUCH ITEMS INCLUDE BOLTS, NUTS, ANCHORS, BRACKETS, SLEEVES, AND MINOR OFFSETS IN CONDUIT, JUNCTION BOXES, ETC. BECAUSE OF UNFORESEEN OBSTRUCTIONS.

C. SOME EQUIPMENT AND MATERIALS PROVIDED UNDER OTHER DIVISIONS MAY REQUIRE COMPOSITE WORK CREWS BECAUSE OF TRADE JURISDICTION. IT IS THE CONTRACTOR'S OR SUBCONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONTRACT DOCUMENTS TO DETERMINE WHERE THESE COMPOSITE CREWS ARE REQUIRED.

D. ALL TEMPORARY AND PERMANENT PERMITS AND LICENSES REQUIRED IN CONNECTION WITH THIS DIVISION'S WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IN RESPONSIBLE CHARGE.

E. INSTALLATION SHALL MEET OR EXCEED CURRENT APPLICABLE CODES, ORDINANCES AND REGULATIONS IN EFFECT AT THE SITE. IF A CONTRACTOR OR SUBCONTRACTOR OBSERVES THAT THE CONTRACT DOCUMENTS ARE AT VARIANCE WITH GOVERNING CODES AND REGULATIONS, CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING, WHO WILL RESPOND TO SUCH VARIANCES IN WRITING. IF THE CONTRACTOR PERFORMS WORK KNOWING IT IS NOT COMPLIANT WITH APPLICABLE CODES, AND DOES NOT NOTIFY THE ENGINEER, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND BEAR ALL COSTS ATTRIBUTABLE TO CORRECTING THE NON-COMPLYING WORK.

F. THE REFERENCE TO CODES AND STANDARDS SHALL NOT PERMIT A LOWER GRADE OF CONSTRUCTION WHERE CONTRACT DOCUMENTS CALL FOR WORKMANSHIP AND/OR MATERIALS IN EXCESS OF THOSE REFERENCES.

G. WHERE THE TERMS "PROVIDE" OR "SHALL BE" ARE USED IN THIS DIVISION OR ON THE DRAWINGS, THEY SHALL BE TAKEN TO MEAN "THE CONTRACTOR SHALL FURNISH AND INSTALL".

H. IF EQUIPMENT OR MATERIALS OTHER THAN THOSE SPECIFIED IN THE DESIGN OF THIS PROJECT ARE PROPOSED TO BE USED ON THIS PROJECT, THE CONTRACTOR AND SUPPLIER SHALL CHECK IT FOR DIMENSIONAL DIFFERENCES, ELECTRICAL REQUIREMENTS AND ANY OTHER POTENTIAL VARIANCES. THIS COMPARISON SHALL BE MADE FOR MANUFACTURERS SPECIFIED AS WELL AS THOSE PROPOSED PRIOR TO REQUESTING APPROVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA COSTS INCURRED AS A RESULT OF SUBSTITUTIONS, INCLUDING THOSE OF OTHER CONTRACTORS, SUCH AS MIGHT BE DUE TO (BUT NOT LIMITED TO) DIFFERENT ELECTRICAL, MECHANICAL AND ARCHITECTURAL REQUIREMENTS.

I. SHOP DRAWINGS:

1. CAREFULLY EXAMINE ALL SHOP DRAWINGS NOTING CAPACITY, ARRANGEMENT AND PHYSICAL DIMENSIONS AND MARK THE DRAWINGS AS BEING REVIEWED AND APPROVED PRIOR TO SUBMITTING TO THE ENGINEER. WHERE CATALOG DATA IS SUBMITTED WHICH INCLUDES ITEMS WHICH DO NOT APPLY TO THIS PROJECT, THOSE ITEMS SHALL BE CLEARLY MARKED OUT OR RELEVANT ITEMS CLEARLY NOTED. ANY DEVIATIONS FROM THE DOCUMENTS SHALL BE SO NOTED BY THE CONTRACTOR OR EQUIPMENT SUPPLIER. THE INTENT AND REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS SHALL BE ADHERED TO AT ALL TIMES AND ARE NOT WAIVED OR SUPERSEDED IN ANY WAY BY THE SHOP DRAWING SUBMITTAL OR REVIEW.

2. SUBMIT A MINIMUM (1) ELECTRONIC COPY OF SHOP DRAWINGS FOR REVIEW AND APPROVAL. CONTRACTOR SHALL RETAIN A FINAL APPROVED COPY FOR INCORPORATION IN THE OPERATION AND MAINTENANCE MANUALS.

3. IF RETURNED SHOP DRAWINGS ARE MARKED "NO EXCEPTIONS TAKEN", NO ADDITIONAL SUBMITTAL IS REQUIRED. IF THE SHOP DRAWING IS MARKED "MAKE CORRECTIONS NOTED", THE CHANGES NOTED ON THE SHOP DRAWINGS ARE TO BE INCORPORATED, WITH NO FURTHER RESUBMITTAL REQUIRED. IF MARKED "REVISE AND RESUBMIT", CHANGES NOTED ON THE SHOP DRAWINGS ARE TO BE MADE AND THE DRAWINGS RESUBMITTED FOR REVIEW. IF MARKED "REJECTED", THE EQUIPMENT SUBMITTED IS UNACCEPTABLE AND DIFFERENT EQUIPMENT OR MATERIALS NEED TO BE SUBMITTED.

J. NO ASBESTOS OR PCB CONTAINING MATERIALS OF ANY TYPE SHALL BE USED ON THIS PROJECT EXCEPT IN CASES WHERE ACCEPTABLE SUBSTITUTIONS HAVE NOT BEEN FOUND FOR ASBESTOS MATERIALS AS IN HIGH TEMPERATURE APPLICATIONS.

K. CONSULT THE CONTRACT DRAWINGS AND SPECIFICATIONS OF ALL OTHER DIVISIONS AND OTHER TRADES FOR CORRELATING INFORMATION AND LAYOUT WORK SO THAT IT WILL NOT INTERFERE WITH OTHER TRADES. VERIFY ALL DIMENSIONS AND CONDITIONS. IF CONFLICTS OCCUR SUCH THAT RESOLUTION IS NOT POSSIBLE BY THE AFFECTED TRADES ON THE JOB, THE ENGINEER SHALL BE NOTIFIED AND A RESOLUTION WILL BE WORKED OUT.

L. ELECTRICAL EQUIPMENT ENCLOSURES (SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, RELAY CABINETS, SYSTEMS RACKS/CABINETS, COMBINER BOXES, ETC.) SHALL BE VACUUMED AND WIPED CLEAN PRIOR TO ENERGIZING.

M. INSTALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, INSTRUCTIONS, AND CURRENT N.E.C.A. STANDARDS.

N. INSTALL EQUIPMENT AND MATERIALS TO PROVIDE REQUIRED ACCESS FOR SERVICING AND MAINTENANCE. COORDINATE FINAL EQUIPMENT LOCATION WITH REQUIRED ACCESS PANELS AND DOORS. ALLOW AMPLE SPACE FOR REMOVAL OF ALL PARTS THAT REQUIRE REPLACEMENT OR SERVICING.

O. RECORD DRAWINGS: AS WORK PROGRESSES, IN A NEAT AND LEGIBLE MANNER, RECORD ALL CHANGES OR DEVIATIONS FROM THE CONTRACT DRAWINGS. SUBMIT RECORD DRAWINGS TO ENGINEER FOR REVIEW AT COMPLETION OF WORK. THE RECORD DRAWINGS WILL BECOME PART OF THE OPERATION AND MAINTENANCE MANUAL PACKAGE SUBMITTED TO THE OWNER AFTER THE COMPLETION OF THE PROJECT.

SECTION 16050 - BASIC MATERIALS AND METHODS

A. ALL MATERIALS SHALL BE NEW, AS SPECIFIED OR APPROVED, AND IN ORIGINAL PACKAGING. CATALOG NUMBERS SPECIFIED SHALL BE VERIFIED WITH VENDORS PRIOR TO ORDERING MATERIAL.

B. ALL MATERIALS SHALL BE LISTED BY A NRTL (I.E. UL, ETL, ETC.) AND HAVE AN ASSOCIATED LABEL UNLESS SPECIAL FABRICATION OF MATERIAL IS REQUIRED. SPECIAL FABRICATED MATERIAL SHALL BE FABRICATED USING LISTED COMPONENTS AND PROCEDURES.

C. WHERE THE WORD "PROVIDE" IS USED, IT SHALL REQUIRE THE CONTRACTOR TO FURNISH AND INSTALL MATERIAL COMPLETE TO A WORKABLE SYSTEM.

D. ALL WORK SHALL BE TESTED IN ACCORDANCE WITH INDUSTRY ACCEPTED STANDARDS. BEFORE TESTING, A THOROUGH VISUAL INSPECTION SHALL BE MADE TO DETECT CONNECTION PROBLEMS, DAMAGED COMPONENTS, POOR WORKMANSHIP, INAPPROPRIATE OVERCURRENT PROTECTION, DEBRIS, ETC. TESTING APPARATUS SHALL BE CERTIFIED OR DEMONSTRATED TO BE ACCURATE WITHIN REASONABLE LIMITS. COMPETENT PERSONNEL FAMILIAR WITH THE TEST EQUIPMENT SHALL PERFORM ALL TESTS. IF TESTING PROCEDURES EMPLOYED ARE NOT SATISFACTORY TO THE ENGINEER, OUTSIDE TESTING WILL BE DONE AT THE CONTRACTOR'S EXPENSE.

E. CONTRACTOR TO IDENTIFY ALL ELECTRICAL EQUIPMENT WITH ENGRAVED 1/4" WHITE LETTERS ON BLACK PVC OR ACRYLIC PLATES UNLESS NOTED OTHERWISE NOTED. INSCRIPTIONS SHALL INDICATE THE NAME, VOLTAGE AND PHASE.

F. ALL LOW VOLTAGE CABLES SHALL BE BUNDLED AND LABELED AS TO THEIR FUNCTION WITHIN TERMINAL CABINETS, WIREWAYS AND CABLE TRAYS.

G. BRANCH CIRCUITRY SHALL MATCH CIRCUIT NUMBERS AS SHOWN ON THE DRAWINGS AND AS SCHEDULED. ANY REQUIRED DEVIATION SHALL BE INDICATED ON THE AS-BUILT DRAWINGS.

H. ALL OPENING INTO EQUIPMENT SHALL BE SEALED WITH GALVANIZED STEEL PLATES OR SCREENS TO PREVENT ENTRY OF INSECTS AND RODENTS.

SECTION 16110 - RACEWAYS

A. CONSTRUCTION SHALL BE AS PER UNDERWRITER'S LABORATORIES STANDARD UL 870 FOR WIREWAYS, AUXILIARY GUTTERS AND ASSOCIATED FITTINGS.

B. WIREWAYS SHALL BE PAINTED STEEL WITH HINGED REMOVABLE COVER, WHICH CAN BE USED AS EITHER A HINGED COVER OR SCREW COVER. SHALL BE FABRICATED SUCH THAT THE ENTIRE LENGTH OF WIREWAY AND FITTINGS PERMIT LAY-IN WIRING APPLICATION. CROSS SECTIONAL AREA SHALL BE 6" X 6" MINIMUM UNLESS OTHERWISE NOTED. RAINTIGHT WIREWAY SHALL BE NEMA 3/IP54 CONSTRUCTION WITH GASKETS AND A CORROSION RESISTANT FINISH.

C. WHERE REQUIRED, PROVIDE CABLE STRAIN RELIEF, GROUNDING CONNECTORS, EXPANSION FITTINGS.

D. SCHEDULE 40 PVC SHALL BE USED FOR ALL RACEWAYS WHERE NOT RESTRICTED BY THIS SECTION OR SPECIFICALLY NOTED OTHERWISE.

E. PVC CONDUIT USED ABOVE GRADE SHALL BE UV RESISTANT TYPE SCHEDULE 80.

F. FLEXIBLE LIQUID TIGHT CONDUIT SHALL BE USED ON ALL MOTOR, MOVING, AND VIBRATING EQUIPMENT CONNECTIONS. USE MINIMUM 1/2" SIZE WITH GROUNDING TYPE FITTINGS AND PROVIDE GROUNDING CONDUCTOR.

G. CONDUIT SHALL NOT BE MOUNTED ON MECHANICAL OR OTHER EQUIPMENT WHICH VIBRATES EXCEPT AT CONNECTION POINTS.

H. INSTALLATIONS OF UNDERGROUND WIRING SHALL BE IN TRENCH, DUCT OR CONDUIT OR BY PLOWING IN PLACE AS SPECIFIED ON PLANS.

I. UNDERGROUND RACEWAYS OR DIRECT BURIAL CABLES SHALL BE INSTALLED TO MEET THE MIN FOLLOWING REQUIREMENTS UNLESS OTHERWISE NOTED:

1. SPACING BETWEEN EXTERIOR SURFACES OF UNDERGROUND CONDUITS/CABLES SHALL BE NOT LESS THAN THE FOLLOWING:
   - A. 2 INCHES BETWEEN COMMUNICATIONS (COPPER) CONDUITS/CABLES
   - B. 2 INCHES BETWEEN AC CONDUITS/CABLES OPERATING AT NOT OVER 1000 VOLTS
   - C. 6 INCHES BETWEEN A COMMUNICATIONS CONDUIT/CABLE AND ANY POWER CONDUIT/CABLE (AC OR DC NOT OVER 1000V) IN THE SAME TRENCH
   - D. 6 INCHES BETWEEN AC CONDUITS/CABLES OPERATING AT OVER 1000 VOLTS UNLESS NOTED OTHERWISE IN A TRIPLEX CONFIGURATION.
   - E. 6 INCHES BETWEEN AC POWER CONDUITS/CABLES AND DC POWER CONDUITS/CABLES.
   - F. 6 INCHES BETWEEN ARMORED FIBER OPTIC CABLE OR IN METALLIC CONDUIT AND POWER CONDUITS/CABLES (AC OR DC)
2. WHERE CROSSING PERPENDICULAR, SPACING BETWEEN EXTERIOR SURFACE OF UNDERGROUND CONDUITS/CABLES SHALL BE NOT LESS THAN THE FOLLOWING:
   - A. 6 INCHES BETWEEN AC AND DC POWER CONDUITS/CABLES OPERATING AT ANY VOLTAGE.
   - B. 12 INCHES BETWEEN CONDUITS/CABLES CONTAINING AC AND DC POWER CONDUITS OPERATING AT ANY VOLTAGE AND COMMUNICATIONS (COPPER) CONDUITS/CABLES.

J. ALL PLOWING OF UNDERGROUND RACEWAYS OR WIRING SPECIFIED SHALL BE ACCOMPLISHED USING EQUIPMENT AND CONSTRUCTION METHODS MEETING THE FOLLOWING CRITERIA:

1. PLOWING SHALL NOT CAUSE EXCESSIVE BENDING OF CABLES OR DUCTS. CARE SHOULD BE TAKEN NOT TO EXCEED BENDING RADIUS OF CABLES OR DUCTS ALLOWED BY NEC.
2. THE PLOW MUST BE PROVIDED WITH MEANS TO ASSURE POSITIVE HOLD DOWN OF THE PLOW BLADE TO PROVIDE PROPER DEPTH AT ALL TIMES.
3. WHEN SEVERAL CABLES OR DUCTS ARE INSTALLED IN A SINGLE OPERATION, THE PLOW SHALL HAVE FEEDS FOR EACH CABLE OR DUCT TO PROVIDE SPECIFIED SEPARATION.
4. IF AN UNDERGROUND OBSTRUCTION IS ENCOUNTERED, THE PLOW SHALL BE LIFTED OUT OF THE GROUND AND THE OBSTRUCTION REMOVED BY HAND DIGGING. CARE MUST BE TAKEN THAT THE CABLE HAS NO BENDS SHARPER THAN THE BENDING RADIUS ALLOWED BY NEC AND IS NOT SUBJECT TO EXCESSIVE TENSION AND/OR ANY DAMAGE. ANY NECESSARY BACKFILL SHALL BE COMPACTED PER COMPACTION REQUIREMENTS IN CIVIL DRAWINGS.
5. AFTER INSTALLATION OF CABLE OR DUCT BY PLOWING, THE DISTURBED EARTH SHALL BE LEVELED AND COMPACTED PER COMPACTION REQUIREMENTS IN CIVIL DRAWINGS.
6. END OF CABLE SHALL BE TAPED AND DUCT SEALED OR CAPPED IMMEDIATELY AFTER CUTTING TO PREVENT MOISTURE ENTERING THE CABLE.

K. UNDERGROUND CONDUIT SHALL BE INSTALLED TO ALLOW DRAINAGE INTO HANDHOLES A MINIMUM OF 4 INCHES PER 100 FEET OF HORIZONTAL RUN.

L. WHEN NON-METALLIC CONDUIT REQUIRES FIELD BENDING, UTILIZE A HOT-BENDING APPLIANCE. USE OF TORCHES TO BEND CONDUIT IS UNACCEPTABLE. WHERE CONDUITS TERMINATE IN HANDHOLES/VAULTS OR IN PAD MOUNTED EQUIPMENT, TERMINATE CONDUITS A MINIMUM OF 4 INCHES ABOVE BEDDING OR SLAB. WHERE ROUTED THROUGH SLABS, PROVIDE SLEEVES TO ALLOW SETTLING/HEAVING OF SLAB.

M. WHERE HDPE INNERDUCT IS USED, SCHEDULE 80 PVC CONDUIT SHALL BE USED FOR TRANSITIONS TO ABOVE GRADE.

SECTION 16120 - WIRING AND CABLE

A. AUXILIARY POWER CONDUCTORS (REFER TO FEEDER AND CONDUCTOR SCHEDULES ELSEWHERE IN THE DRAWINGS FOR SPECIFICATIONS):

1. DESCRIPTION: SINGLE CONDUCTOR INSULATED WIRE.
2. CONDUCTOR: 98% COMMERCIALLY PURE COPPER CONDUCTORS OR AA-8000 SERIES ALUMINUM ALLOY COMPACT STRANDED CONDUCTORS
3. INSULATION VOLTAGE RATING: 600 VOLTS.
4. INSULATION: ANSI/NFPA 70, 90° C TYPE THHN-2, THWN-2, XHHW-2, RHW-2, USE-2, AND PV.

B. APPROVED DIRECT BURIAL CABLE ASSEMBLY SHALL BE USED ONLY WHERE APPROVED.

C. USE SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE 4 AWG AND LARGER.

D. NEATLY TRIM AND LACE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.

E. CLEAN CONDUCTOR SURFACES BEFORE INSTALLING LUGS AND CONNECTORS.

F. MAKE SPLICES, TAPS AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITH NO PERCEPTIBLE TEMPERATURE RISE. SPLICES ARE NOT ALLOWED, UNLESS APPROVED BY PROJECT OWNER.

G. PARALLEL 3-PHASE FEEDER RUNS IN CONDUIT SHALL HAVE ALL THREE PHASE CONDUCTORS (INCLUDING NEUTRAL AND GROUND WHERE REQUIRED) INSTALLED IN EACH CONDUIT. GROUPING A SINGLE PHASE (OR TWO PHASES) IN A SINGLE CONDUIT IS NOT PERMITTED.

H. IDENTIFICATION

1. CONTROL WIRING SHALL BE MARKED AT BOTH ENDS AS TO ITS FUNCTION.
2. SPARE CONDUCTORS SHALL BE IDENTIFIED AS SUCH.

SECTION 16125 - MEDIUM VOLTAGE CABLES

A. CABLES FOR THE 34.5 KV SYSTEM SHALL BE AS INDICATED ON SHEETS E-200 THROUGH E-206 AND THE E-900 SERIES.

B. CABLE SHALL HAVE ASTM B-609 ALUMINUM CONDUCTORS WITH CLASS B STRANDING IN ACCORDANCE WITH ASTM B-231, MOISTURE BLOCKED STRANDS, AN EXTRUDED SEMI-CONDUCTING SHIELD LAYER (40 MIL MIN.) OVER THE CONDUCTOR FOR STRESS CONTROL, DIRECT-BURIAL XLPE INSULATION (345 MILS MIN.), A CONCENTRIC COPPER NEUTRAL, AND MOISTURE/CHEMICAL/OIL/FLAME RESISTANT PVC JACKET.

C. COMPLETE INSTALLATION SHALL BE PER NATIONAL ELECTRICAL CODE ARTICLES 310 AND 328. DO NOT EXCEED MANUFACTURER'S PUBLISHED MAXIMUM PULLING TENSION OR SIDEWALL PRESSURE. PROVIDE SUFFICIENT SLACK IN CABLE, GROUND AND DRAIN WIRES TO PERMIT ELBOW CONNECTORS TO BE MOVED TO THEIR RESPECTIVE PARKING STANDS.

D. ALL CABLES SHALL BE LABELED AT EACH END AT AN ACCESSIBLE LOCATION FOR VIEWING. LABEL SHALL INDICATE CIRCUIT, PHASE, AND DESTINATION/ORIGINATION. LABELS SHALL BE CABLE ID TAGS WITH WHITE LETTERING AND SECURED WITH ADHESIVE APPLIED TO ITSELF OR CABLE JACKET.

E. SPLICES AND TERMINATIONS SHALL BE MADE BY AN QUALIFIED JOURNEYMAN. NO SPLICES SHALL BE ALLOWED UNLESS SPECIFICALLY NOTED.

F. ARRANGE PHASES AT TERMINATION POINTS, A-B-C FROM LEFT TO RIGHT OR TOP TO BOTTOM AS VIEWED FROM THE FRONT.

G. TEST ALL CABLES ACCORDING TO IEEE STANDARD 400. EACH POWER CABLE OVER 5000V SHALL BE GIVEN A CONTINUITY AND A DIRECT CURRENT HIGH POTENTIAL TEST OR VLF TEST AFTER INSTALLATION AND AFTER TERMINATIONS HAVING BEEN MADE, BUT BEFORE CONNECTIONS HAVE BEEN MADE TO BUSSES OR APPARATUS. ALL SINGLE CONDUCTOR CABLES SHALL BE TESTED BETWEEN CONDUCTORS AND GROUND WITH METALLIC SHIELD AND THE OTHER TWO CONDUCTORS GROUNDED TO THE SAME GROUND. EACH CONDUCTOR SHALL BE SUCCESSIVELY TESTED IN THE SAME MANNER. DIRECT CURRENT VOLTAGES SHALL BE APPLIED WITH NEGATIVE POLARITY TO THE CABLE CONDUCTOR.

NO CABLE SHALL BE PERMANENTLY ENERGIZED UNTIL A COPY OF ITS TEST RECORD IS APPROVED IN WRITING BY PRE.

H. IN ADDITION TO ANY TESTING SPECIFIED HEREIN, PERFORM TESTING CONSISTENT WITH THE REQUIREMENTS OF THE APPLICABLE CODES, NETA ACCEPTANCE TESTING CRITERIA, AND THE MANUFACTURERS' CURRENT QUALITY ASSURANCE PROGRAM.

I. DIRECT BURIAL WIRING TO MEET SPACING REQUIREMENTS UNDER SECTION 16110/I.

CARRIAGE RETURN SECTION 16130 - BOXES

A. PULL AND JUNCTION BOXES SHALL BE CODE GAUGE, GASKETED, PAINTED, GALVANIZED STEEL, PVC, OR FIBERGLASS. COVERS SHALL BE SECURED WITH SCREWS.

B. OUTLET BOXES SHALL BE CAST MALLEABLE IRON WITH THREADED HUBS OR PVC AND BE OF HIGH CONDUCTIVE METAL TO MAINTAIN MAXIMUM ELECTRIC CONTINUITY.

C. ALL OUTLETS SHALL BE EQUIPPED WITH OUTLET BOXES APPROVED FOR THE USE.

D. COVERS OR PLATES FOR BOXES SHALL CONFORM SUBSTANTIALLY TO THE OUTLET OF THE BOXES WITH NO PROJECTING EDGES OR CORNERS.

E. CONDUIT FITTINGS ("LB", "C", "LL", "LR", "T") OR TYPES APPROVED FOR THE LOCATION MAY BE EMPLOYED AS REQUIRED TO FACILITATE PULLING IN CONDUCTORS.

F. PROVIDE PULL AND JUNCTION BOXES TO FACILITATE PULLING OR SPLICING OF CONDUCTORS.

G. MOUNT BOXES TO ALLOW FOR MAXIMUM FLEXIBILITY.

H. INSTALL GROUNDING BUSHINGS WITH BONDING CONDUCTOR ON ALL METALLIC FEEDER CONDUITS ENTERING BOX. GROUND BUSHINGS AND BONDING CONDUCTORS ARE NOT REQUIRED ON BRANCH CIRCUIT CONDUITS.

SECTION 16340 - MEDIUM VOLTAGE SECTIONALIZING CABINETS

A. SECTIONALIZING CABINETS SHALL BE DESIGNED FOR BURIAL WITH THE JUNCTION MODULES MOUNTED ABOVE THE GROUND LINE. PEDESTALS SHALL BE IN COMPLETE CONFORMANCE WITH ANSI C57.12.28, PAD-MOUNTED EQUIPMENT ENCLOSURE INTEGRITY STANDARD.

B. SECTIONALIZING CABINETS SHALL BE MANUFACTURED BY NORDIC, COOPER, HUBBELL, G&W, POWER DESIGN INC., HIGHLINE, FEDERAL PACIFIC, HOFFMAN, OR S&C (OR EQUAL).

C. ENLOSURE SHALL BE 3/16" NOMINAL THICKNESS FIRE RESISTANT, LAMINATE, FIBERGLASS, WITH MUNSELL GREEN GEL COAT FINISH OR SHALL BE 12 GAUGE GALVANIZED STEEL, WITH MUNSELL GREEN POLYESTER POWDER COAT FINISH. ENCLOSURE ACCESS DOORS SHALL UTILIZE STAINLESS STEEL HINGES AND SHALL HAVE PROVISIONS FOR PADLOCKING. DOORS SHALL HAVE PROVISIONS FOR SECURING IN THE OPEN POSITION.

D. PROVIDE JUNCTION PANELS WITH WELLS TO ACCOMMODATE THE SIZE AND QUANTITY OF LOAD BREAK ELBOWS INDICATED ON DRAWINGS.

E. PROVIDE GROUND BAR IN UNIT FOR BONDING OF GROUND CONDUCTORS AND CONCENTRIC NEUTRALS.

F. PROVIDE FIBERGLASS GROUND SLEEVE EXTENDING 36" BELOW CABINET INSTALLED ON A 6" PEA ROCK BASE TO ALLOW DRAINAGE OR LOCAL AVAILABLE.

SECTION 16440 - DISCONNECT SWITCHES

A. ALL DISCONNECT SWITCHES SHALL BE NEMA HEAVY DUTY TYPE H.D., HORSEPOWER RATED, AND U.L. LISTED. DISCONNECTS SHALL BE EATON, GE, SQUARE D, OR SIEMENS (OR EQUAL).

B. PROVIDE AUXILIARY DISCONNECT CONTACTS FOR CONTROL CIRCUITS WHEN SUPPLIED FROM AN INDEPENDENT SOURCE.

C. SWITCH INTERIOR - ALL SWITCHES SHALL HAVE SWITCH BLADES WHICH ARE FULLY VISIBLE IN THE OFF POSITION WHEN THE DOOR IS OPEN. SWITCHES SHALL BE OF DEAD-FRONT CONSTRUCTION WITH PERMANENTLY ATTACHED ARC SUPPRESSORS HINGED OR OTHERWISE ATTACHED TO PERMIT EASY ACCESS TO LINE-SIDE LUGS WITHOUT REMOVAL OF THE ARC SUPPRESSOR. LUGS SHALL BE UL LISTED FOR COPPER AND/OR ALUMINUM CABLES AND FRONT REMOVABLE. ALL CURRENT CARRYING PARTS SHALL BE PLATED BY ELECTROLYTIC PROCESSES.

D. SWITCH MECHANISM - SWITCHES SHALL HAVE A QUICK-MAKE AND QUICK-BREAK OPERATING HANDLE AND MECHANISM WHICH SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER. SWITCHES SHALL HAVE A DUAL COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF THE SWITCH DOOR IN THE ON POSITION OR CLOSING OF THE SWITCH MECHANISM WITH THE DOOR OPEN. SWITCHES SHALL PROVISIONS FOR LOCKING THE SWITCH IN BOTH THE ON AND THE OFF POSITIONS BY PADLOCK.

E. ENCLOSURES SHALL BE NEMA 3R ENCLOSURES OTHERWISE SPECIFIED. RAINTIGHT COVERS SHALL BE SECURABLE IN THE OPEN POSITION. ENCLOSURES SHALL BE CODE GAUGE (UL 98) GALVANIZED STEEL (NEMA 3R). THEY SHALL BE TREATED WITH A RUST-INHIBITING PHOSPHATE AND FINISHED IN GRAY BAKED ENAMEL.

F. INSTALL DISCONNECT SWITCHES IN AN ACCESSIBLE LOCATION AS CONVENIENT AS POSSIBLE TO EQUIPMENT SERVED.

G. SWITCHES SHALL BE RATED FOR THE VOLTAGE AND SYSTEM TYPE THEY ARE USED FOR.

SECTION 16450 - GROUNDING

A. PROVIDE COMPLETE GROUNDING SYSTEMS AS DESCRIBED HEREIN AND AS SHOWN ON THE DRAWINGS.

B. ALL GROUNDING COMPONENTS SHALL BE LISTED FOR THE PURPOSE THEY ARE INSTALLED FOR. COMPONENTS SHALL BE MANUFACTURED BY AMPACT, BURNDY, ITT BLACKBURN, ILSCO, LYNCOLE OR PANDUIT (OR EQUAL).

C. ALL METALLIC CONDUITS, SUPPORTS, CABINETS, NON-CURRENT CARRYING PARTS OF EQUIPMENT, AND METALLIC STRUCTURES SHALL BE SOLIDLY GROUNDED TO FORM A CONTINUOUS PERMANENT AND EFFECTIVE GROUNDED SYSTEM.

D. ALL WIREWAYS, METAL ENCLOSURES, CABLE TRAYS AND SIMILAR PARTS OF THE ELECTRICAL INSTALLATION DESCRIBED HEREIN SHALL BE GROUNDED.

E. ALL GROUNDING ELECTRODE CONNECTIONS SHALL BE IRREVERSIBLE CRIMP TYPE. CONNECTIONS MADE BELOW GRADE SHALL BE IRREVERSIBLE CRIMP TYPE.

F. BOLTED CONNECTIONS TO GROUND BUS BARS SHALL BE MADE USING A (2) EYELET IRREVERSIBLE CRIMP CONNECTOR ON THE GROUND CONDUCTOR.

G. CONNECTIONS TO THE PV MODULES SHALL BE INSTALLED SUCH THAT REMOVAL OF A MODULE FROM THE STRING DOES NOT INTERRUPT THE GROUNDED CONDUCTOR TO ANOTHER STRING. SETS OF MODULES CONNECTED IN SERIES RATED AT 50 VOLTS OR MORE WITH OR WITHOUT BLOCKING DIODES, AND HAVING A SINGLE OVERCURRENT DEVICE SHALL BE CONSIDERED A STRING.

H. THE TRUE RESISTANCE TO EARTH OF THE INSTALLED GROUNDING SYSTEM SHALL BE EQUAL TO, OR LESS THAN 25 OHMS. THE RESISTANCE TO EARTH OF THE COMPLETE GROUNDING SYSTEM SHALL BE MEASURED WITH AN EARTH RESISTANCE TESTER DESIGNED FOR THAT PURPOSE AT EACH GROUND CONNECTION TO INSURE CONTINUITY OF GROUNDING SYSTEM.

SECTION 16475 - FUSES

A. DC FUSES FOR PV STRING CIRCUITS SHALL BE CLASS GPV TYPE AS MANUFACTURED BY BUSSMAN, MERSEN, OR LITTELFUSE.

B. DC FUSES FOR PV FEEDERS SHALL BE CLASS J OR GPV TYPE AS MANUFACTURED BY BUSSMAN, MERSEN, OR LITTELFUSE.

C. FUSES IN SWITCHBOARD, 601A AND LARGER SHALL BE CLASS L TYPE AND BE BUSSMAN CLASS L, LIMITRON KTU (OR HI CAP KRP-C), CEFCO CLASS L, CLL, FERRAZ SHAWMUT CLASS L, AMP TRAP A4BY, OR LITTELFUSE CLASS L, KLP-C.

D. FUSES FOR FEEDER CIRCUITS 600A AND LESS SHALL BE CLASS RK1 AND BE BUSSMAN LOW PEAK LPN-RK (250V) OR LPS-RK (600V); CEFCO LO-IP LON-RK (250V) OR LOS-RK (600V); FERRAZ SHAWMUT AMP-TRAP II A2D-R (250V) OR A6D-R (600 V); OR LITTELFUSE LITTLE PEAK LLN-RK (250V) OR LLS-RK (600V).

E. FOR IN-LINE FUSES AND WEATHERPROOF ASSEMBLY, PROVIDE BUSSMAN TRON TYPE HEB FUSE HOLDER AND TYPE KTK FUSE WITH 1A0513 BOOT OR EQUAL.

F. FOR PROTECTION OF CONTROL CIRCUIT TRANSFORMERS, PROVIDE BUSSMAN TYPE FNQ TIME DELAY FUSES OR EQUAL.

G. INSTALL FUSES TO ALLOW VIEWING OF "BLOWN-FUSE" INDICATORS THROUGH VIEWING WINDOWS IN GEAR, WHERE PROVIDED.

H. PROVIDE LABEL INSIDE EACH SWITCH AND MOTOR STARTER COVER STATING TYPE OF FUSE REQUIRED FOR REPLACEMENT.

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: EricLoos
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-001 ELECTRICAL NOTES

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: TLR
CHECKED BY: EL

SHEET NAME:
ELECTRICAL NOTES

SHEET #: E-001
REV #: 4

RECORD DRAWING

ELECTRICAL SYMBOLOGY

- MOTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- BREAKER
- GANG-OPERATED AIRBREAK SWITCH
- TRANSFORMER
- SURGE ARRESTOR
- N-L — NON-LOAD BREAK ELBOW
- L — LOAD BREAK ELBOW
- 52 — DRAW OUT MEDIUM VOLTAGE CIRCUIT BREAKER
- FI — FAULT INDICATOR, TEST POINT RESET, SEL OR EQUIVALENT
- 3-PHASE: GROUNDED WYE
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA
- HH — HANDHOLE
- SEC — SECTIONALIZER/SPLICER CABINET
- MTR — POWER METER
- 12 — PV MODULE SERIES STRING
- INVERTER
- TRACKER MOTOR
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- ELECTRICAL DISTRIBUTION POLE
- TRACKER MOTOR JUNCTION BOX
- COMBINER BOX

EQUIPMENT TAG:

XXX###

- EQUIPMENT ID (POWER BLOCK NUMBER + SEQUENTIAL NUMBER)
- EQUIPMENT ABBREVIATION

EQUIPMENT ABBREVIATIONS

INV	INVERTER
CMB	COMBINER PANEL
SEC	SECTIONALIZER CABINET
SS	SUBSTATION
PCS	POWER CONVERSION STATION

PANELBOARD TAG:

PNL.X.###

- PCS EQUIPMENT ID
- H: 277/480V; L:120/240V
- PANELBOARD

WIRE TAG:

AA-BBB-CC

- UNIQUE SEQUENTIAL NUMBER
- POWER BLOCK NUMBER
- WIRE ABBREVIATIONS PREFIX (SEE NOTE)

NOTE: WIRE ABBREVIATIONS
DF = DC FEEDER

CABLE TAG:

##-XX-###.###

- DOWNSTREAM EQUIPMENT ID
- UPSTREAM EQUIPMENT ID
- CABLE ABBREVIATION
- POWER BLOCK NUMBER (1-14)

CABLE ABBREVIATIONS

MV	INVERTER
FO	COMBINER PANEL

APPROVED WIRE COLOR CODING: AC CONDUCTORS

	277/480V	120/240V
PHASE A	BROWN	BLACK
PHASE B	ORANGE	RED
PHASE C	YELLOW	BLUE
GROUNDED CONDUCTOR	GREY	WHITE
GROUNDING CONDUCTOR	GREEN OR BARE	GREEN or BARE
GROUNDING ELECTRODE CONDUCTOR	GREEN W/ ORANGE	GREEN W/ ORANGE

APPROVED WIRE COLOR CODING: DC CONDUCTORS

UNGROUNDED CONDUCTOR	(+) FROM MODULE: RED WIRE
FUNCTIONALLY GROUNDED CONDUCTOR	(-) FROM MODULE: BLACK WIRE
GROUNDING CONDUCTOR	GREEN OR BARE

PLAN WIRE LEGEND

- 120V — 120V CIRCUIT
- 208V — 208V CIRCUIT
- 480V — 480V CIRCUIT
- CAT5 — CATEGORY 5 CABLING
- DW — DC WHIP
- FO — FIBER OPTIC
- LV — LOW VOLTAGE
- DF — DC FEEDER
- ACF — AC FEEDER
- G4A — GROUNDING TO #4AWG
- G4 — GROUND WIRE (AS SPECIFIED)
- EGC — EQUIPMENT GROUNDING CONDUCTOR
- INST — INSTRUMENT

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: TLR
CHECKED BY: EL

SHEET NAME:
SYMBOLS AND TAGS

SHEET #: E-002
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-002 SYMBOLS AND TAGS

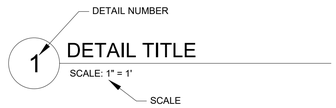
GENERAL SYMBOLOGY

NORTH ARROW

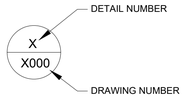
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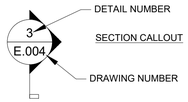
1 OR MV CONDUCTOR ID

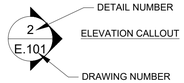
DETAIL TITLE



DETAIL CALLOUT







ABBREVIATIONS

°C	DEGREES CELCIUS
°F	DEGREES FAHRENHEIT
%	PERCENTAGE
%Z	PERCENT IMPENDANCE
A,AMP	AMPERAGE
A/E	ARCHITECT/ENGINEER
ABAN	ABANDON
ABC	AGGREGATE BASE COURSE
AC	ALTERNATING CURRENT
ACC	ASPHALTIC CONCRETE PAVEMENT
ADDL	ADDITIONAL
ADJ	ADJUSTABLE/ADJACENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AGGR	AGGREGATE
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
ALIG	ALIGNMENT
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APRX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GUAGE
BITUM	BITUMINOUS
BKR	BREAKER
BL	BASE LINE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BOC	BACK OF CURB
BRD	BOARD
C	CONDUIT
C&G	CURB AND GUTTER
CAB	CABINET
CB	CIRCUIT BREAKER
CCB	CONCRETE BLOCK
CCS	COPPER CLAD STEEL
CCTV	CLOSED CIRCUIT TELEVISION
CE	CONCRETE EDGE
CF	CUBIC FOOT/FEET
CIP	CAST-IN-PLACE
CL	CENTERLINE
CLR	CLEAR, CLEARANCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY RE UNIT
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONTR	CONTRACTOR
CTR	CENTER
CTRL	CONTROL
CU	COPPER
DC	DIRECT CURRENT
DEMO	DEMOLITION
DIA	DIAMETER
DISC	DISCONNECT
DTL	DETAIL
DWG	DRAWING
EA	EACH
EL	ELEVATION
ELEC	ELECTRIC/ELECTRICAL
EMT	ELECTRICAL METAL TUBING
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EPC	ENGINEERING PROCUREMENT CONSTRUCTION
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EXC	EXCAVATION
EXIST	EXISTING
EXP	EXPULSION (e.g. BAY-O-NET)
F	FUSE
FBO	FURNISHED BY OTHERS
FG	FINISHED GRADE
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE/CURB
FT	FEET/FOOT
FUT	FUTURE
G, GND	GROUND
GCR	GROUND CONVERAGE RATIO
GEN	GENERAL
GFI	GROUND FAULT INTERRUPTER
GR	GRADE
GVL	GRAVEL
HORIZ	HORIZONTAL
HP	HORSE POWER
HT	HEIGHT
HV	HIGH VOLTAGE
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IMC	INTERMEDIATE METALLIC CONDUIT
IMP	CURRENT, MAXIMUM POWER
IN	INCH
INV	INVERT
ISC	CURRENT, SHORT CIRCUIT
JB	JUNCTION BOX (J-BOX)
kcmil	THOUSAND CIRCULAR MILS
KO	KNOCKOUT
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LATL	LATERAL
LBS	POUNDS
LP	LOWPOINT
LT	LIGHT
LTG	LIGHTING
LV	LOW VOLTAGE
MA	MILLIAMPERE
MATL	MATERIAL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCOV	MAXIMUM CONTINUOUS OPERATING VOLTAGE
MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUG ONLY
MON	MONUMENT
MPPT	MAXIMUM POWER POINT TRACKER
MTD	MOUNTED
MV	MEDIUM VOLTAGE
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
PB	PUSHBUTTON
PCC	PORTLAND CONCRETE PAVEMENT
PCS	POWER CONVERSION STATION
PF	POWER FACTOR
PH, Ø	PHASE
PL	PROPERTY LINE
PNL	PANEL
POI	POINT OF INTERCONNECTION
PRCLF	PRIMARY CURRENT LIMITING FUSE
PROP	PROPERTY/PROPOSED
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
QTY	QUANTITY
R	RADIUS
R&R	REMOVE AND REPLACE
R&S	REMOVE AND SALVAGE
RCPT	RECEPTACLE
REF	REFERENCE
REQD	REQUIRED
RET	RETAINING
REV	REVISION
RGH	ROUGH
RM	ROOM
SAN	SANITARY
SCHED	SCHEDULE
SD	STORM DRAIN
SEC	SECTIONALIZER
SHT	SHEET
SL	SLOPE
SOG	SLAB ON GRADE
SPD	SURGE PROTECTOR DEVICE
SPEC	SPECIFICATION
SQ	SQUARE
SQ FT	SQUARE FEET
SS	SUBSTATION
STA	STATION
STD	STANDARD
SW	SWITCH
SWBD	SWITCHBOARD
SY	SQUARE YARD
SYS	SYSTEM
T&B	TOP AND BOTTOM
TBD	TO BE DETERMINED
TEL	TELEPHONE
TOB	TOP OF BERM
TOC	TOP OF CURB
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB/TOE OF SLOPE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
UV	ULTRAVIOLET
V	VOLT
VDC	VOLTS DC
VMP	VOLTAGE, MAXIMUM POWER
VOC	VOLTAGE, OPEN CIRCUIT
VA	VOLT AMPERE
W	WATT
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER
XSECT	RE CROSS SECTION

EQUIPMENT CODES

AAT	AMBIENT AIR TEMPERATURE SENSOR
ANE	ANEMOMETER
ATS	AUTOMATIC TRANSFER SWITCH
BAT	BATTERY
BUS	BUS CONDUCTOR
CBK	CIRCUIT BREAKER
CBL	CABLE
CHGR	BATTERY CHARGER
CLM	CELLULAR MODEM
CMB	COMBINER BOX
CMT	CHECK METER
CNT	CONDUIT
CPC	CAPACITOR BANK
CT	CURRENT TRANSFORMER
DAM	DATA ACQUISITION MODULE
DAS	DATA ACQUISITION SYSTEM
DCI	COMBINER INPUT AT INVERTER
DCA	DISCONNECT - AC
DCD	DISCONNECT - DC
DCF	DISCONNECT - FUSED
DCH	DISCONNECT - HIGH VOLTAGE
DCM	DISCONNECT - MEDIUM VOLTAGE
GND	GROUND CONDUCTOR
GSW	GANG-OPERATED SWITCH
HPY	HORIZONTAL PYRANOMETER
INS	INSULATOR
I	INVERTER
JBM	JUNCTION BOX - MEDIUM VOLTAGE
JMP	JUMPER CONDUCTOR
LAR	LIGHTNING ARRESTOR
LBD	LOAD BREAK DISCONNECT
MBR	MAIN BREAKER
MET	METERING STATION
MPNL	METER PANEL
MTR	METER
NDS	NIGHTTIME DISCONNECT SWITCH
OHC	OVERHEAD CONDUCTOR
PAP	PLANE OF ARRAY PYRANOMETER
PCS	POWER CONVERSION STATION
PEN	ROOF PENETRATION
PIL	SUPPORT PILE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLS	POLE - STEEL
PLW	POLE - WOOD
PNL	POWER PANEL
RCB	RECOMBINER BOX
RCT	REACTOR
REL	RELAY
RMT	REVENUE METER
RTU	RTU
SA	SURGE ARRESTOR
SC	SEPARABLE CONNECTOR
STL	STRUCTURAL STEEL
SWF	SWITCH - FUSED
SWG	MEDIUM VOLTAGE SWITCHGEAR
TB	TAP BOX
TC	TRACKER CONTROLLER
TFH	TRANSFORMER - MAIN STEP-UP
TFM	TRANSFORMER - INVERTER STEP-UP
TFS	TRANSFORMER - STATION SERVICE
THS	THERMAL SENSOR
TM	TRACKER MOTOR
TT	TORQUE TUBE
UCT	UNDERGROUND CABLE TERMINATION
VT	VOLTAGE TRANSFORMER
WS	WEATHER STATION
WSS	WIND STOW SWITCHES
WVA	WEATHER VANE

MATERIALS IN PLAN/SECTION

RIPRAP (PLAN AND/OR SECTION)

CONCRETE (PLAN AND/OR SECTION)

GRANULAR FILL (SECTION)

UNDISTURBED EARTH (SECTION)

COMPACTED EARTH (SECTION)

SAND (SECTION)

CLEAN BACKFILL (FILL TYPE #1)

CLEAN BACKFILL (FILL TYPE #2)

NOTES

1. THIS IS A STANDARD SYMBOLOGY AND ABBREVIATION SHEET. ALL SYMBOLS AND ABBREVIATIONS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. THESE SYMBOLS AND ABBREVIATIONS APPLY TO THE ENTIRE SET OF ELECTRICAL (E-XXX) DRAWINGS.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020

PROJECT #: 190067.03

DRAWN BY: TLR

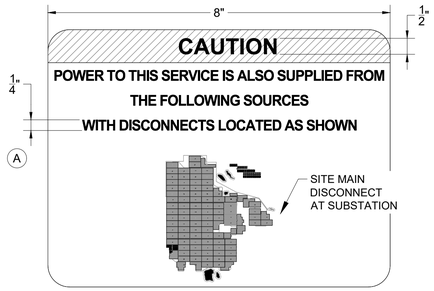
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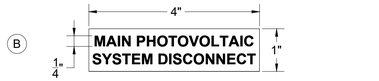
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SYMBOLS AND ABBREVIATIONS

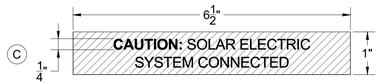
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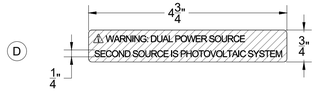
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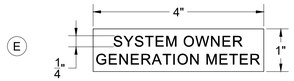
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-003 SYMBOLS AND ABBREVIATIONS

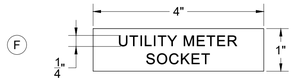


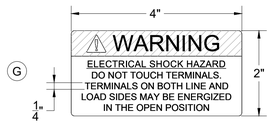


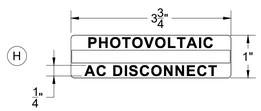




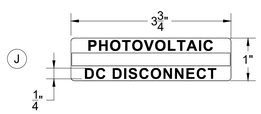


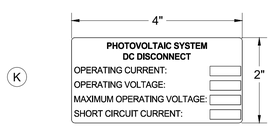


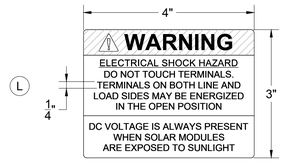


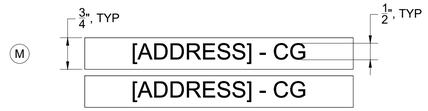


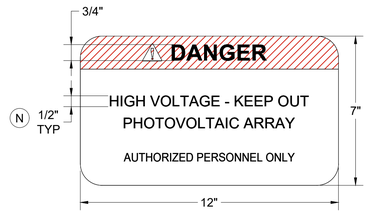


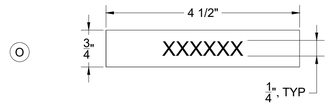


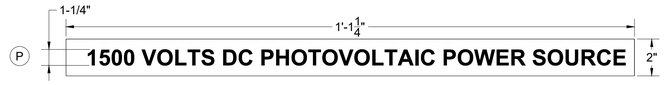


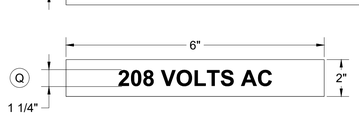




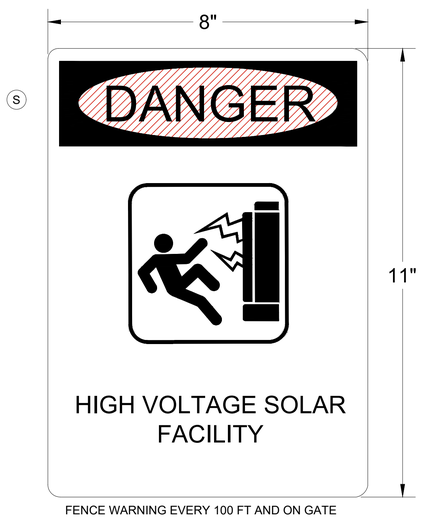












FENCE WARNING EVERY 100 FT AND ON GATE

LABELS AND MARKINGS LEGEND:

(A) CAUTION LABEL FOR THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC DISCONNECTING MEANS. THIS PLACARD SHALL BE APPLIED TO THE MAIN SERVICE DISCONNECTING MEANS AT THE SUBSTATION POCC. CUSTOM LABEL WITH WHITE BACKGROUND AND BLACK LETTERS. SHOW LOCATION OF ALL PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS ON SITE PLAN.

(B) LABEL FOR UTILITY MAIN AC DISCONNECT. APPLIED TO SERVICE DISCONNECTING MEANS AND PHOTOVOLTAIC DISCONNECTING MEANS AT SUBSTATION. LABEL WITH RED BACKGROUND AND WHITE LETTERS.

(C) CAUTION LABEL FOR PHOTOVOLTAIC SYSTEM CONNECTED. APPLIED TO ALL PHOTOVOLTAIC DISCONNECTING MEANS AND PRODUCTION METERS. APPLY TO SUBSTATION MAIN SERVICE DISCONNECT, FEEDER BREAKERS, UTILITY PRODUCTION METER AND CUSTOMER METER. LABEL WITH YELLOW BACKGROUND AND BLACK LETTERS.

(D) WARNING LABEL FOR DUAL POWER SOURCE PRESENT. APPLY TO UTILITY PRODUCTION METER, CUSTOMER METER AND PULL BOXES.

(E) SYSTEM OWNER'S GENERATION METER LABEL. LABEL WITH RED BACKGROUND AND WHITE LETTERS.

(F) LABEL FOR REQUIRED UTILITY (PRODUCTION) METER SOCKET. LABEL WITH RED BACKGROUND AND WHITE LETTERS.

(G) WARNING LABEL FOR DISCONNECTING MEANS WHERE BOTH SIDES MAY BE ENERGIZED IN THE OPEN POSITION. APPLY TO MAIN SERVICE DISCONNECT, ALL AC PHOTOVOLTAIC DISCONNECTS, AND PULL BOXES.

(H) LABEL FOR AC DISCONNECT IDENTIFICATION. LOCATED AT INVERTER STATIONS. LABEL WITH RED BACKGROUND AND WHITE LETTERS. LABEL WITH WHITE STRIPE ALONG CENTER.

(I) LABEL FOR AC DISCONNECT INFORMATION. LOCATED AT INVERTER STATIONS. LABEL WITH RED BACKGROUND AND WHITE LETTERS. THE INFORMATION BOXES SHALL HAVE A WHITE BACKGROUND WITH BLACK LETTERS.

(J) LABEL FOR DC DISCONNECT IDENTIFICATION. APPLY TO ALL COMBINER BOXES AND RE-COMBINERS. LABEL WITH RED BACKGROUND AND WHITE LETTERS. LABEL WITH WHITE STRIPE ALONG CENTER.

(K) LABEL FOR DC DISCONNECT INFORMATION. APPLY TO ALL COMBINER BOXES AND RE-COMBINERS. LABEL WITH RED BACKGROUND AND WHITE LETTERS. THE INFORMATION BOXES SHALL HAVE A WHITE BACKGROUND WITH BLACK LETTERS.

(L) WARNING LABEL FOR DC DISCONNECTS. APPLY TO ALL COMBINER BOXES AND RE-COMBINERS.

(M) LABEL FOR BUILDING ADDRESS; ONE PER SYSTEM METER AND ONE TO BE PLACED OUTSIDE OF POCC LOCATION

(N) DANGER LABEL FOR CHAIN LINK SECURITY FENCE; SPACED EVERY 150 FEET AROUND PERIMETER OF ARRAY

(O) GENERIC EQUIPMENT LABEL. SEE SHEET E-002.

(P) CONDUIT RUN FROM COMBINER TO INVERTER. (AS NEEDED)

(Q) CONDUIT RUN FROM PANELBOARD TO STEP-UP TRANSFORMER. COORDINATE WITH TRANSFORMER STATION MANUFACTURER. (AS NEEDED)

(R) ARC FLASH WARNING LABEL SHALL BE PLACED ON ALL EQUIPMENT AS REQUIRED BY NEC 110.16 INCLUDING, BUT NOT LIMITED TO, COMBINER BOXES, DISCONNECTS, INVERTERS, PANEL BOARDS AND SWITCHBOARDS. TOTAL QUANTITY TO BE DETERMINED BY CONTRACTOR.

(S) FENCE WARNING SIGN. PROVIDE EVERY 100 LINEAL FEET OF FENCE AND ON GATES. MOUNT AT 3'-6" AFG.

GENERAL NOTES

1. SOLAR MODULES ARE SUPPLIED FROM THE MANUFACTURER WITH MARKINGS PRE-APPLIED TO MEET THE REQUIREMENTS OF THE NEC.
2. INVERTERS ARE SUPPLIED FROM THE MANUFACTURER WITH THE APPROPRIATE LABELS AND MARKINGS TO MEET THE REQUIREMENTS OF THE NEC.
3. THE LABELING, MARKING, IDENTIFICATION, AND GROUPING REQUIREMENTS OF THE 2014 EDITION OF THE NEVADA ELECTRIC CODE SHALL BE APPLICABLE TO THIS PHOTOVOLTAIC PROJECT.
4. IN ADDITION TO NEC-REQUIRED LABELING, ALL MAJOR ELECTRICAL EQUIPMENT SHALL BE IDENTIFIED PER SPECIFICATIONS IN THIS PLAN SET. LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.
5. INTERCONNECTION EQUIPMENT AND MATERIALS, INCLUDING SHARED EQUIPMENT WITH THE UTILITY, SHALL BE LABELED PER UTILITY SPECIFICATIONS.
6. ALL WARNING, CAUTION AND/OR DANGER LABELS TO COMPLY WITH ANSI Z535.4-2011 STANDARD FOR PROPER TEXT SIZE, DESIGN, ETC.
7. LABELS TO BE MADE OF WEATHER RESISTANT VINYL, PVC OR ENGRAVED PHENOLIC PLACARDS WITH UV STABLE INK AND/OR MATERIALS. LABELS TO PROVIDE PROPER ADHESION TO OUTDOOR EQUIPMENT ENCLOSURES. EXCEPTION: FOR LABEL "L" , "P" AND "T". LABEL "N" SHOULD BE MADE ON ALUMINUM BACKING. SEE LEGEND FOR REQUIREMENTS.
8. BELOW IS A LIST OF MAJOR SECTIONS OF ARTICLE 690 OF THE NEC WHICH OUTLINE PV LABELING AND MARKING. THIS LIST, NOR THE EXAMPLES SHOWN ON THIS SHEET, SHOULD NOT BE CONSIDERED EXHAUSTIVE. CONTRACTOR IS REQUIRED TO UNDERSTAND THE NEC LABELING REQUIREMENTS AND APPLY THESE REQUIREMENTS TO PROJECT AS REQUIRED.

   NEC 690.13(B)
   DISCONCECTING MEANS IDENTIFICATION.

   NEC 690.15
   EQUIPMENT ENERGIZED BY MORE THAN ONE SOURCE.

   NEC 690.17(E)
   WHEN BOTH TERMINALS OF A DISCONNECTING MEANS MAY BE ENERGIZED.

   NEC 690.31(G)(3)
   MARKING AND LABELING REQUIRED.

   NEC 690.31(G)(4)
   MARKING AND LABELING METHODS AND LOCATIONS.

   NEC 690.35(F)
   PHOTOVOLTAIC POWER SOURCE LABELED AT J-BOXES, COMBINER BOXES, DEVICES.

   NEC 690.53
   LABEL FOR DC PV POWER SOURCE AT PV DISCONNECTING MEANS.

   NEC 690.54
   LABEL FOR INTERACTIVE SYSTEM POINTS OF INTERCONNECTION WITH OTHER SOURCES.

   NEC 690.56(B)
   FACILITIES WITH UTILITY SERVICE AND PV SYSTEMS.

   NEC 690.64
   POINTS OF CONNECTION SHALL BE IN ACCORDANCE WITH NEC 705.12.

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: LR
CHECKED BY: EL

SHEET NAME:
LABELS & MARKINGS

SHEET #: E-004
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*.DWG\E-004 LABELS_MARKINGS

BLOCK SCHEDULE FEEDER SCHEDULE - EAGLE SHADOW MOUNTAIN

BLOCK ID	ARRAY TYPE	MODULE MAKE	MODULE MODEL	MODULE POWER (W)	MODS /STRING	# OF STRINGS	# OF MODULES	DC SIZE (MWp)	AC SIZE (MW)	DC/AC RATIO	2-STRING TABLES	3-STRING TABLES	# OF COMBINERS
MV CIRCUIT #1													
PCS101	G	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	3	97	16
PCS102	J	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
PCS103	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS104	A	TRINA	TSM-DEG15MC.20(II)-410	410	28	309	8652	3.750	3.15	1.190	0	109	16
			TSM-DEG15MC.20(II)-405	405		6	168						
			TSM-DEG15MC.20(II)-400	400		12	336						
PCS105	A	TRINA	TSM-DEG15MC.20(II)-400	400	28	327	9156	3.662	3.15	1.163	0	109	16
PCS106	A	TRINA	TSM-DEG15MC.20(II)-400	400	28	327	9156	3.662	3.15	1.163	0	109	16
PCS107	A	TRINA	TSM-DEG15MC.20(II)-400	400	28	327	9156	3.662	3.15	1.163	0	109	16
					CIRCUIT TOTALS	**2199**	**60681**	**25.72**	**22.05**	**1.167**	**3**	**731**	**112**
MV CIRCUIT #2													
PCS201	A	TRINA	TSM-DEG15MC.20(II)-400	400	28	327	9156	3.662	3.15	1.163	0	109	16
PCS202	D	TRINA	TSM-DEG15MC.20(II)-410	410	28	327	9156	3.754	3.15	1.192	3	107	16
PCS203	U	CANADIAN	CS3W-430MB-AG	430	28	314	8792	3.781	3.15	1.200	1	104	16
PCS204	B	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	3	107	16
PCS205	E	TRINA	TSM-DEG15MC.20(II)-400	400	28	327	9156	3.662	3.15	1.163	3	107	16
PCS206	D	TRINA	TSM-DEG15MC.20(II)-410	410	28	327	9156	3.754	3.15	1.192	3	107	16
PCS207	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
					CIRCUIT TOTALS	**2276**	**63728**	**26.03**	**22.05**	**1.180**	**13**	**750**	**112**
MV CIRCUIT #3													
PCS301	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS302	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS303	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS304	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS305	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS306	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS307	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
					CIRCUIT TOTALS	**2241**	**62748**	**26.20**	**22.05**	**1.188**	**3**	**745**	**112**
MV CIRCUIT #4													
PCS401	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS402	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS403	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS404	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS405	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS406	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS407	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
					CIRCUIT TOTALS	**2273**	**63644**	**26.08**	**22.05**	**1.183**	**1**	**757**	**112**
MV CIRCUIT #5													
PCS501	C	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	3	107	16
PCS502	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS503	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS504	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS505	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS506	A	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	0	109	16
PCS507	B	TRINA	TSM-DEG15MC.20(II)-405	405	28	327	9156	3.708	3.15	1.177	3	107	16
					CIRCUIT TOTALS	**2289**	**64092**	**25.96**	**22.05**	**1.177**	**6**	**759**	**112**
MV CIRCUIT #6													
PCS601	X	JINKO	JM460M-7RL3-TV	460	27	315	8505	3.912	3.15	1.242	0	105	18
PCS602	X	JINKO	JM460M-7RL3-TV	460	27	315	8505	3.912	3.15	1.242	0	105	18
PCS603	X	JINKO	JM460M-7RL3-TV	460	27	315	8505	3.912	3.15	1.242	0	105	18
PCS604	N	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	3	97	16
PCS605	X	JINKO	JM460M-7RL3-TV	460	27	315	8505	3.912	3.15	1.242	0	105	18
PCS606	O	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
PCS607	P	JINKO	JM455M-7RL3-TV	455	27	327	8829	4.017	3.15	1.275	0	109	18
					CIRCUIT TOTALS	**2181**	**58887**	**26.96**	**22.05**	**1.223**	**3**	**725**	**122**
MV CIRCUIT #7													
PCS701	W	CANADIAN	CS3W-435MB-AG	435	28	281	7868	3.423	3.15	1.087	1	93	14
PCS702	W	CANADIAN	CS3W-435MB-AG	435	28	281	7868	3.423	3.15	1.087	1	93	14
PCS703	W	CANADIAN	CS3W-440MB-AG	440	28	281	7868	3.462	3.15	1.099	1	93	14
PCS704	V	CANADIAN	CS3W-430MB-AG	430	28	293	8204	3.564	3.15	1.132	1	98	15
			CS3W-435MB-AG	435		3	84						
PCS705	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS706	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS707	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
					CIRCUIT TOTALS	**2072**	**58016**	**25.24**	**22.05**	**1.144**	**7**	**686**	**105**
MV CIRCUIT #8													
PCS801	W	CANADIAN	CS3W-440MB-AG	440	28	281	7868	3.462	3.15	1.099	1	93	14
PCS802	T	CANADIAN	CS3W-430MB-AG	430	28	310	8680	3.732	3.15	1.185	2	102	16
PCS803	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS804	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS805	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS806	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS807	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
					CIRCUIT TOTALS	**2146**	**60088**	**26.13**	**22.05**	**1.185**	**8**	**710**	**110**
MV CIRCUIT #9													
PCS901	T	CANADIAN	CS3W-430MB-AG	430	28	309	8652	3.733	3.15	1.185	2	102	16
			CS3W-435MB-AG	435		1	28						
PCS902	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS903	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
PCS904	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
PCS905	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
PCS906	G	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	3	97	16
PCS907	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
					CIRCUIT TOTALS	**2148**	**59550**	**26.35**	**22.05**	**1.195**	**9**	**710**	**112**

BLOCK SCHEDULE FEEDER SCHEDULE - EAGLE SHADOW MOUNTAIN

BLOCK ID	ARRAY TYPE	MODULE MAKE	MODULE MODEL	MODULE POWER (W)	MODS /STRING	# OF STRINGS	# OF MODULES	DC SIZE (MWp)	AC SIZE (MW)	DC/AC RATIO	2-STRING TABLES	3-STRING TABLES	# OF COMBINERS
MV CIRCUIT #10													
PCS1001	R	CANADIAN	CS3W-435MB-AG	435	28	311	8708	3.788	3.15	1.203	1	103	16
PCS1002	R	CANADIAN	CS3W-440MB-AG	440	28	285	7980	3.835	3.15	1.218	1	103	16
			CS3W-445MB-AG	445		26	728						
PCS1003	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
PCS1004	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
PCS1005	R	CANADIAN	CS3W-440MB-AG	440	28	311	8708	3.832	3.15	1.216	1	103	16
PCS1006	S	CANADIAN	CS3W-435MB-AG	435	28	310	8680	3.776	3.15	1.199	2	102	16
PCS1007	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1008	Z	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
					CIRCUIT TOTALS	**2459**	**68258**	**30.27**	**25.20**	**1.201**	**7**	**815**	**128**
MV CIRCUIT #11													
PCS1101	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1102	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1103	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1104	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1105	M	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
PCS1106	F	JINKO	JM455M-7RL3-TV	455	27	222	5994	3.659	3.15	1.162	0	99	16
			JM460M-7RL3-TV	460	27	75	2025						
PCS1107	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1108	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
					CIRCUIT TOTALS	**2376**	**64152**	**29.44**	**25.20**	**1.168**	**0**	**792**	**128**
MV CIRCUIT #12													
PCS1201	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1202	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1203	G	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	3	97	16
PCS1204	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1205	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1206	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1207	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1208	H	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
					CIRCUIT TOTALS	**2376**	**64152**	**29.43**	**25.20**	**1.168**	**3**	**790**	**128**
MV CIRCUIT #13													
PCS1301	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1302	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1303	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1304	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1305	I	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1306	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1307	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1308	Q	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
					CIRCUIT TOTALS	**2376**	**64152**	**29.47**	**25.20**	**1.169**	**0**	**792**	**128**
MV CIRCUIT #14													
PCS1401	J	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
PCS1402	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1403	Y	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
PCS1404	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1405	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1406	F	JINKO	JM460M-7RL3-TV	460	27	297	8019	3.689	3.15	1.171	0	99	16
PCS1407	L	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
PCS1408	K	JINKO	JM455M-7RL3-TV	455	27	297	8019	3.649	3.15	1.158	0	99	16
					CIRCUIT TOTALS	**2376**	**64152**	**29.35**	**25.20**	**1.165**	**0**	**792**	**128**

SITE TOTALS	# OF STRINGS	# OF MODULES	DC SIZE (MWp)	AC SIZE (MW)	DC/AC RATIO	2-STRING TABLES	3-STRING TABLES	# OF COMBINERS
	31788	**876300**	**382.63**	**324.45**	**1.179**	**63**	**10554**	**1649**

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

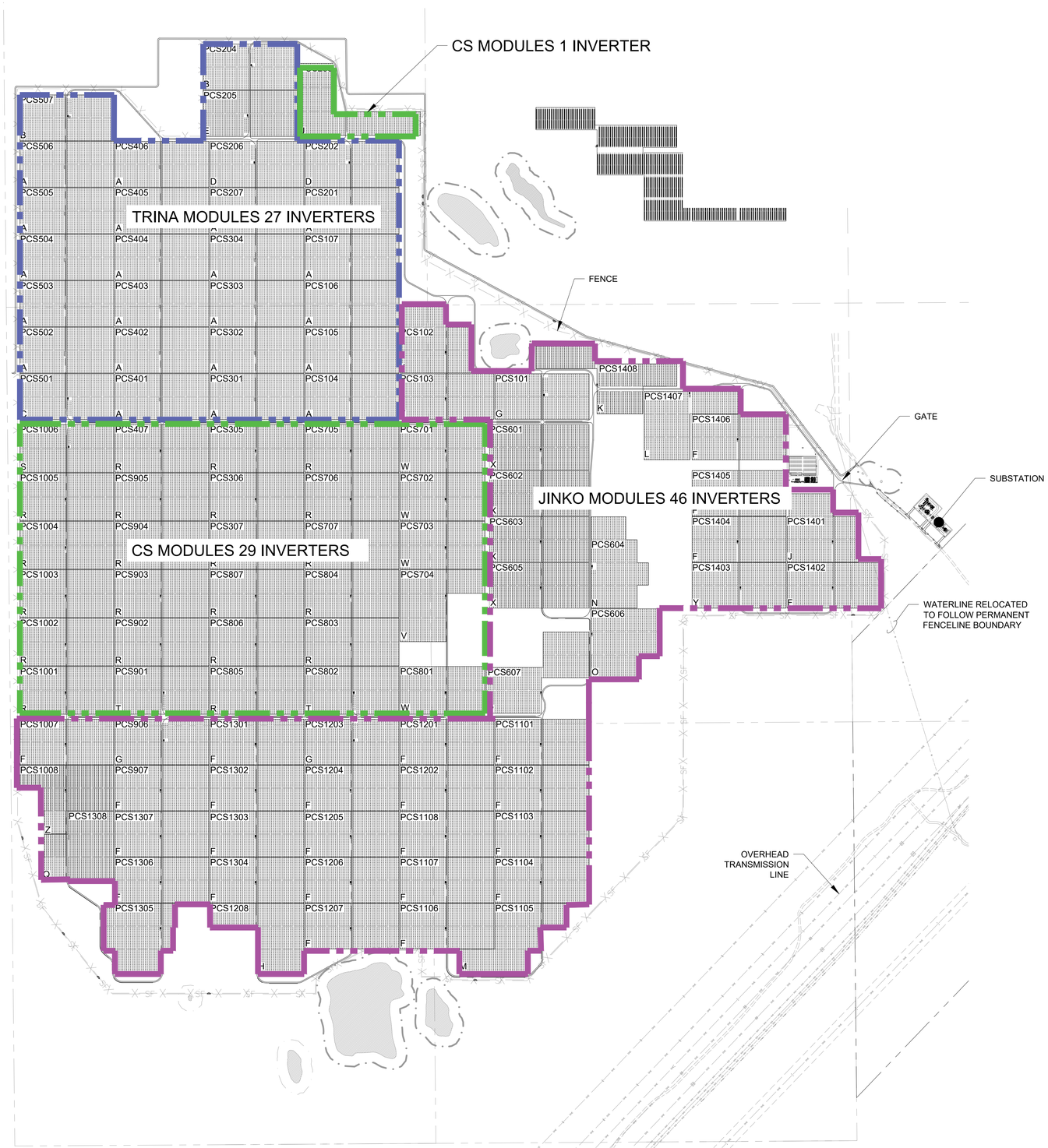
SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
BLOCK SCHEDULE

SHEET #: E-005
REV #: 4

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*.DWG\E-005 BLOCK SCHEDULE



ARRAY SUMMARY								
SYSTEM SIZE GROSS (kW AC)	324,450							
SYSTEM SIZE NET (kW AC)*	300,000							
OVER BUILD %	8.15%							
SYSTEM SIZE (kW DC)	382,661							
POI VOLTAGE (kV AC)	230							
SYSTEM VOLTAGE (VDC)	1,500							
DC/AC RATIO	1.179							
INVERTER SPEC #	SUNGROW SG3150U-MV							
INVERTER TOTAL QUANTITY	103							
MODULE TYPE	BIFACIAL							
MODULE SPEC	TRINA			JINKO		CANADIAN SOLAR		
MODULE LENGTH (m)	2.024			2.205		2.131		
MODULE WIDTH (m)	1.002			1.032		1.048		
PITCH (m)	6.5379			7.2024		6.9342		
GROUND COVER RATIO	30.96%			30.60%		30.73%		
MODULES PER STRING	28			27		28		
MODULE WATTAGE (w)	400	405	410	455	460	430	435	440
# OF MODULES	45,780	174,216	27,216	113,076	258,552	34,440	137,620	85,400
# OF STRINGS	1,635	6,222	972	4,188	9,576	1,230	4,915	3,050
TOTAL # OF STRINGS	31,788							
TOTAL # OF MODULES	876,300							
RACKING TYPE	SAT- ATI DURATRACK HZ V3							
AZIMUTH (deg)	180							
RACKING ROTATION (deg)	+/- 52							
SITE LATITUDE	36.542373							
SITE LONGITUDE	-144.816789							
T(HIGH): 43°C T(LOW): -5.7°C	DESIGN ELEVATION: 2300 FT.							

*PLANT CONTROLLER LIMIT TO 300MW

OVERALL SITE PLAN
SCALE: 1"=600'

600' 300' 0 600' 1200' 1800'

SCALE: 1"=600'

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
OVERALL SITE PLAN

SHEET #: E-010
REV #: 4

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-010 OVERALL SITE PLAN

MODULE UTILIZATION SUMMARY

MFR	MODEL	MODULE QTY (DELIVERED)	MW QTY (DELIVERED)	MODULE QTY (PER LAYOUT)	MW QTY (PER LAYOUT)	SPARE MODULE QTY	SPARE MW QTY	REQUIRED 0.5% SPARE MODULE QTY *	REMAINING SPARE MODULES	REMAINING SPARE MW
TRINA	TSM-DEG15MC.20(II)-400	46,585	18.63	45,780	18.31					
TRINA	TSM-DEG15MC.20(II)-405	174,860	70.82	174,216	70.56	1,498	0.60	1244	1,498	0.603
TRINA	TSM-DEG15MC.20(II)-410	27,265	11.18	27,216	11.16					
CANADIAN	CS3W-430MB-AG	34,980	15.04	34,440	14.81					
CANADIAN	CS3W-435MB-AG	138,567	60.28	137,620	59.86	1,524	0.66	1295	1,524	0.660
CANADIAN	CS3W-440MB-AG	85,437	37.59	85,400	37.58					
JINKO	JM455M-7RL3-TV	114,480	52.09	113,076	51.45	2,052	0.94	1868	2,052	0.937
JINKO	JM460M-7RL3-TV	259,200	119.23	258,552	118.93					
	TOTALS	**881374**	**384.86**	**876300**	**382.66**	**5074**	**2.20**	**4407**	**5074**	**2.200**
*SPARE QTY IS TAKEN AS A PERCENT OF THE QUANTITY OF DELIVERED MODULES					**MW AS DESIGNED PLUS REMAINING SPARE**					**384.862**

NOTES:

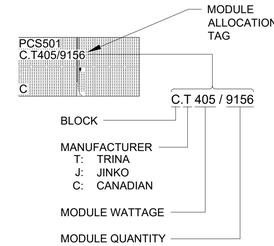
1. CHRONOLOGICAL ORDER IS BASED ON "Build Sequence Rev 1.pdf" RECEIVED 15 JULY 2020.

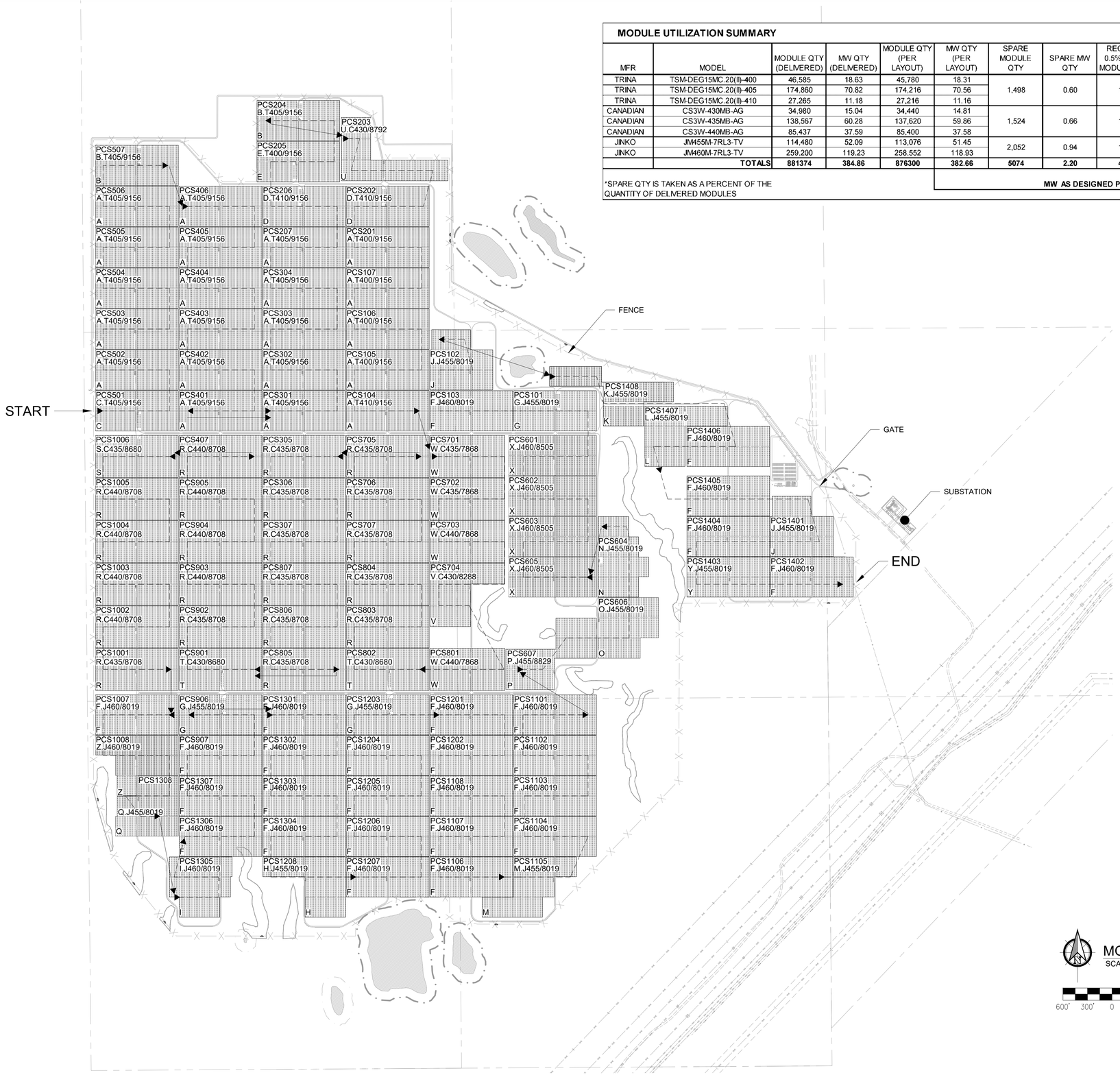
LEGEND:

LINEWORK AND ARROWS INDICATE CHRONOLOGICAL ORDER OF CONSTRUCTION BLOCKS

SOLID LINEWORK AND ARROW INDICATES 'JUMP' TO NEXT CONSTRUCTION BLOCK

MODULE ALLOCATION TAG:





MODULE ALLOCATION PLAN
SCALE: 1"=600'

600' 300' 0 600' 1200' 1800'

SCALE: 1"=600'

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

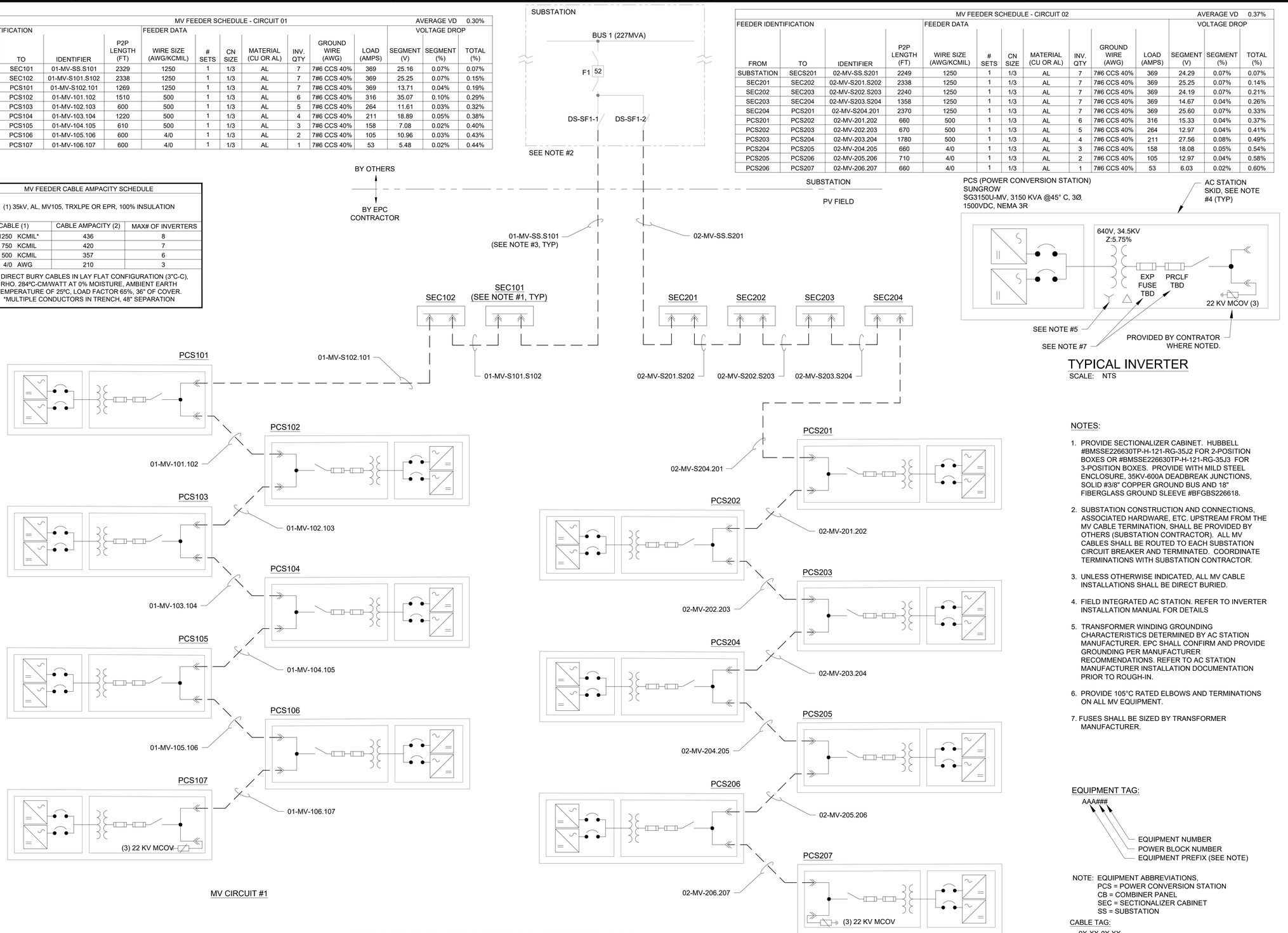
SHEET NAME:
MODULE ALLOCATION PLAN

SHEET #: E-011
REV #: 4

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-011 OVERALL MODULE DISTRIBUTION PLAN

MV FEEDER SCHEDULE - CIRCUIT 01											AVERAGE VD	0.30%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC101	01-MV-SS.S101	2329	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.16	0.07%	0.07%
SEC101	SEC102	01-MV-S101.S102	2338	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.25	0.07%	0.15%
SEC102	PCS101	01-MV-S102.101	1269	1250	1	1/3	AL	7	7#6 CCS 40%	369	13.71	0.04%	0.19%
PCS101	PCS102	01-MV-101.102	1510	500	1	1/3	AL	6	7#6 CCS 40%	316	35.07	0.10%	0.29%
PCS102	PCS103	01-MV-102.103	600	500	1	1/3	AL	5	7#6 CCS 40%	264	11.61	0.03%	0.32%
PCS103	PCS104	01-MV-103.104	1220	500	1	1/3	AL	4	7#6 CCS 40%	211	18.89	0.05%	0.38%
PCS104	PCS105	01-MV-104.105	610	500	1	1/3	AL	3	7#6 CCS 40%	158	7.08	0.02%	0.40%
PCS105	PCS106	01-MV-105.106	600	4/0	1	1/3	AL	2	7#6 CCS 40%	105	10.96	0.03%	0.43%
PCS106	PCS107	01-MV-106.107	600	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.48	0.02%	0.44%

MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3°C-C), RHO. 284ºC-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25ºC, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		



MVAC SINGLE LINE DIAGRAM - CIRCUITS 1 & 2

SCALE: NOT TO SCALE

MV FEEDER SCHEDULE - CIRCUIT 02											AVERAGE VD	0.37%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SECS201	02-MV-SS.S201	2249	1250	1	1/3	AL	7	7#6 CCS 40%	369	24.29	0.07%	0.07%
SEC201	SEC202	02-MV-S201.S202	2338	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.25	0.07%	0.14%
SEC202	SEC203	02-MV-S202.S203	2240	1250	1	1/3	AL	7	7#6 CCS 40%	369	24.19	0.07%	0.21%
SEC203	SEC204	02-MV-S203.S204	1358	1250	1	1/3	AL	7	7#6 CCS 40%	369	14.67	0.04%	0.26%
SEC204	PCS201	02-MV-S204.201	2370	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.60	0.07%	0.33%
PCS201	PCS202	02-MV-201.202	660	500	1	1/3	AL	6	7#6 CCS 40%	316	15.33	0.04%	0.37%
PCS202	PCS203	02-MV-202.203	670	500	1	1/3	AL	5	7#6 CCS 40%	264	12.97	0.04%	0.41%
PCS203	PCS204	02-MV-203.204	1780	500	1	1/3	AL	4	7#6 CCS 40%	211	27.56	0.08%	0.49%
PCS204	PCS205	02-MV-204.205	660	4/0	1	1/3	AL	3	7#6 CCS 40%	158	18.08	0.05%	0.54%
PCS205	PCS206	02-MV-205.206	710	4/0	1	1/3	AL	2	7#6 CCS 40%	105	12.97	0.04%	0.58%
PCS206	PCS207	02-MV-206.207	660	4/0	1	1/3	AL	1	7#6 CCS 40%	53	6.03	0.02%	0.60%

TYPICAL INVERTER

SCALE: NTS

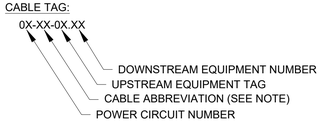
NOTES:

1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION CONSTRUCTION AND CONNECTIONS, ASSOCIATED HARDWARE, ETC. UPSTREAM FROM THE MV CABLE TERMINATION, SHALL BE PROVIDED BY OTHERS (SUBSTATION CONTRACTOR). ALL MV CABLES SHALL BE ROUTED TO EACH SUBSTATION CIRCUIT BREAKER AND TERMINATED. COORDINATE TERMINATIONS WITH SUBSTATION CONTRACTOR.
3. UNLESS OTHERWISE INDICATED, ALL MV CABLE INSTALLATIONS SHALL BE DIRECT BURIED.
4. FIELD INTEGRATED AC STATION. REFER TO INVERTER INSTALLATION MANUAL FOR DETAILS
5. TRANSFORMER WINDING GROUNDING CHARACTERISTICS DETERMINED BY AC STATION MANUFACTURER. EPC SHALL CONFIRM AND PROVIDE GROUNDING PER MANUFACTURER RECOMMENDATIONS. REFER TO AC STATION MANUFACTURER INSTALLATION DOCUMENTATION PRIOR TO ROUGH-IN.
6. PROVIDE 105°C RATED ELBOWS AND TERMINATIONS ON ALL MV EQUIPMENT.
7. FUSES SHALL BE SIZED BY TRANSFORMER MANUFACTURER.

EQUIPMENT TAG:

NOTE: EQUIPMENT ABBREVIATIONS,
PCS = POWER CONVERSION STATION
CB = COMBINER PANEL
SEC = SECTIONALIZER CABINET
SS = SUBSTATION

CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

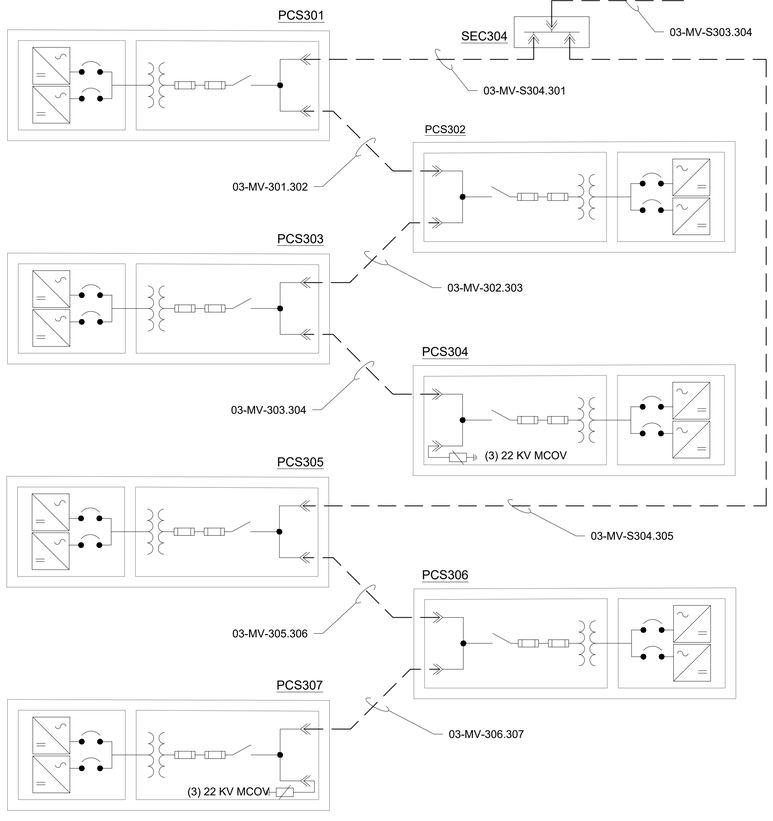
SHEET NAME:
MVAC SLD - CKT 1 & 2

SHEET #: E-200
REV #: 4

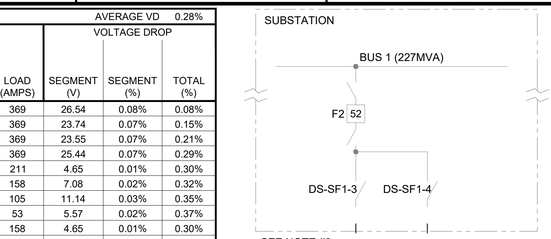
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*.DWG\E-206 MVAC SLD - CKT 1 & 2

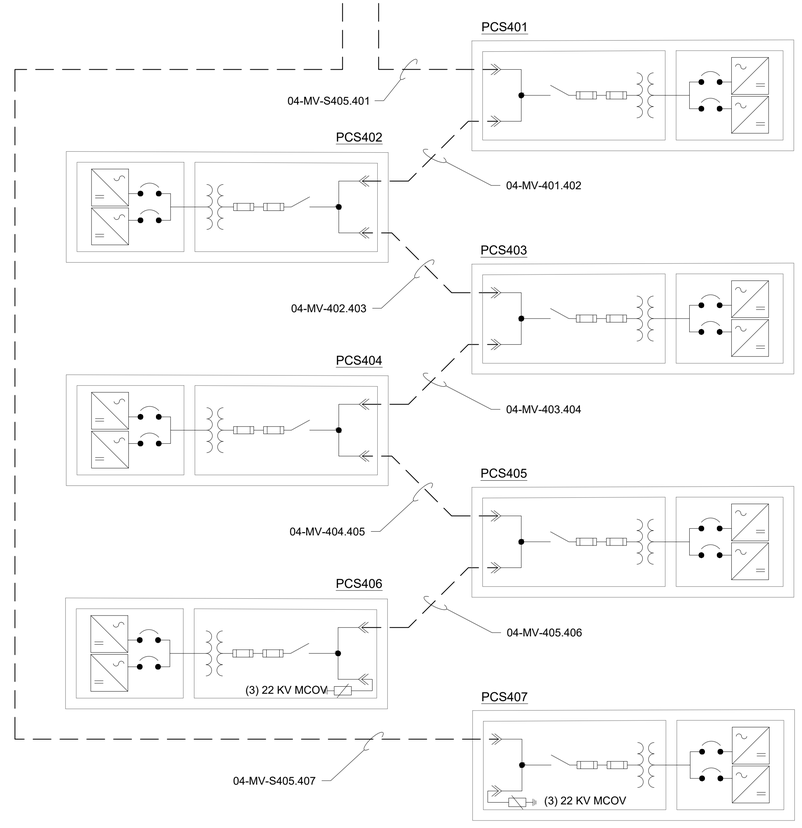
MV FEEDER SCHEDULE - CIRCUIT 03											AVERAGE VD	0.28%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC301	03-MV-SS.S301	2457	1250	1	1/3	AL	7	7#6 CCS 40%	369	26.54	0.08%	0.08%
SEC301	SEC302	03-MV-S301.S302	2198	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.74	0.07%	0.15%
SEC302	SEC303	03-MV-S302.S303	2180	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.55	0.07%	0.21%
SEC303	SEC304	03-MV-S303.S304	2355	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.44	0.07%	0.29%
SEC304	PCS301	03-MV-S304.301	300	500	1	1/3	AL	4	7#6 CCS 40%	211	4.65	0.01%	0.30%
PCS301	PCS302	03-MV-301.302	610	500	1	1/3	AL	3	7#6 CCS 40%	158	7.08	0.02%	0.32%
PCS302	PCS303	03-MV-302.303	610	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.14	0.03%	0.35%
PCS303	PCS304	03-MV-303.304	610	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.57	0.02%	0.37%
SEC304	PCS305	03-MV-S304.305	400	500	1	1/3	AL	3	7#6 CCS 40%	158	4.65	0.01%	0.30%
PCS305	PCS306	03-MV-305.306	630	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.50	0.03%	0.33%
PCS306	PCS307	03-MV-306.307	630	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.75	0.02%	0.35%

MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3°C-C), RHO. 284°C-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25°C, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		



MV CIRCUIT #3





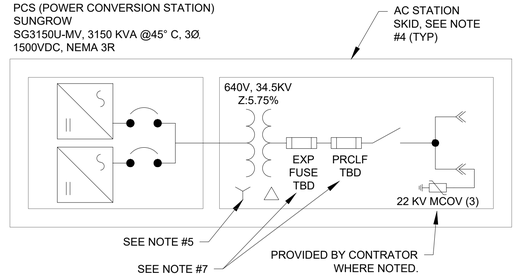
MV CIRCUIT #4

MVAC SINGLE LINE DIAGRAM - CIRCUITS 3 & 4

SCALE: NOT TO SCALE

MV FEEDER SCHEDULE - CIRCUIT 04											AVERAGE VD	0.32%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC401	04-MV-SS.S401	2452	1250	1	1/3	AL	7	7#6 CCS 40%	369	26.48	0.08%	0.08%
SEC401	SEC402	04-MV-S401.S402	2198	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.74	0.07%	0.15%
SEC402	SEC403	04-MV-S402.S403	2340	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.28	0.07%	0.22%
SEC403	SEC404	04-MV-S403.S404	2268	1250	1	1/3	AL	7	7#6 CCS 40%	369	24.50	0.07%	0.29%
SEC404	SEC405	04-MV-S404.S405	1138	1250	1	1/3	AL	7	7#6 CCS 40%	369	12.29	0.04%	0.33%
SEC405	PCS401	04-MV-S405.401	335	1250	1	1/3	AL	7	7#6 CCS 40%	369	3.62	0.01%	0.34%
PCS401	PCS402	04-MV-401.402	610	750	1	1/3	AL	6	7#6 CCS 40%	316	9.42	0.03%	0.36%
PCS402	PCS403	04-MV-402.403	610	500	1	1/3	AL	5	7#6 CCS 40%	264	11.81	0.03%	0.40%
PCS403	PCS404	04-MV-403.404	610	500	1	1/3	AL	4	7#6 CCS 40%	211	9.45	0.03%	0.42%
PCS404	PCS405	04-MV-404.405	610	4/0	1	1/3	AL	3	7#6 CCS 40%	158	16.71	0.05%	0.47%
PCS405	PCS406	04-MV-405.406	610	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.14	0.03%	0.51%
SEC405	PCS407	04-MV-S405.407	350	4/0	1	1/3	AL	1	7#6 CCS 40%	53	3.20	0.01%	0.33%

PCS (POWER CONVERSION STATION)
SUNGROW
SG3150U-MV, 3150 KVA @45° C, 3Ø.
1500VDC, NEMA 3R



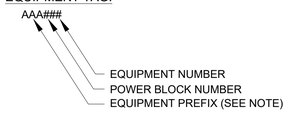
TYPICAL INVERTER

SCALE: NTS

NOTES:

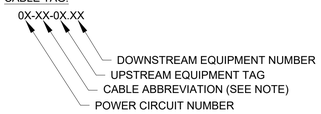
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
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5. TRANSFORMER WINDING GROUNDING CHARACTERISTICS DETERMINED BY AC STATION MANUFACTURER. EPC SHALL CONFIRM AND PROVIDE GROUNDING PER MANUFACTURER RECOMMENDATIONS. REFER TO AC STATION MANUFACTURER INSTALLATION DOCUMENTATION PRIOR TO ROUGH-IN.
6. PROVIDE 105°C RATED ELBOWS AND TERMINATIONS ON ALL MV EQUIPMENT.
7. FUSES SHALL BE SIZED BY TRANSFORMER MANUFACTURER.

EQUIPMENT TAG:



NOTE: EQUIPMENT ABBREVIATIONS,
PCS = POWER CONVERSION STATION
CB = COMBINER PANEL
SEC = SECTIONALIZER CABINET
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CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

RECORD DRAWING

FastGrid

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

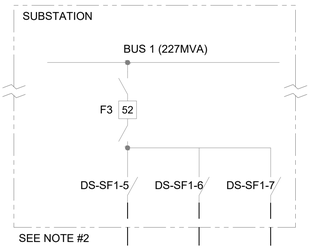
SHEET NAME:
MVAC SLD - CKT 3 & 4

SHEET #: E-201
REV #: 4

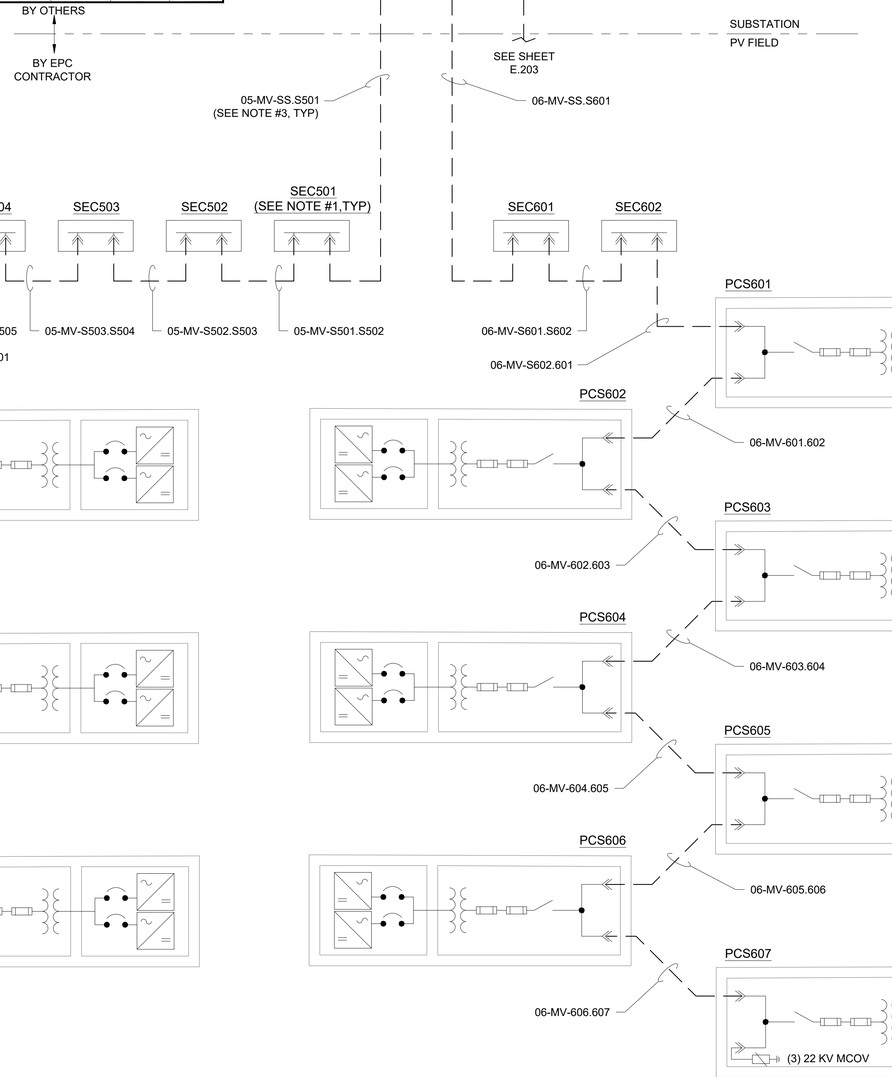
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-206 MVAC SLD - CKT 13 & 14

MV FEEDER SCHEDULE - CIRCUIT 05											AVERAGE VD	0.37%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC501	05-MV-SS.S501	2444	1250	1	1/3	AL	7	#4/0 CU	369	26.40	0.08%	0.08%
SEC501	SEC502	05-MV-S501.S502	2198	1250	1	1/3	AL	7	#4/0 CU	369	23.74	0.07%	0.15%
SEC502	SEC503	05-MV-S502.S503	2164	1250	1	1/3	AL	7	#4/0 CU	369	23.37	0.07%	0.21%
SEC503	SEC504	05-MV-S503.S504	2330	1250	1	1/3	AL	7	#4/0 CU	369	25.17	0.07%	0.29%
SEC504	SEC505	05-MV-S504.S505	2365	1250	1	1/3	AL	7	#4/0 CU	369	25.55	0.07%	0.36%
SEC505	PCS501	05-MV-S504.501	345	1250	1	1/3	AL	7	#4/0 CU	369	3.73	0.01%	0.37%
PCS501	PCS502	05-MV-501.502	610	500	1	1/3	AL	6	#4/0 CU	316	14.17	0.04%	0.41%
PCS502	PCS503	05-MV-502.503	610	500	1	1/3	AL	5	#4/0 CU	264	11.81	0.03%	0.45%
PCS503	PCS504	05-MV-503.504	610	500	1	1/3	AL	4	#4/0 CU	211	9.45	0.03%	0.47%
PCS504	PCS505	05-MV-504.505	610	4/0	1	1/3	AL	3	#4/0 CU	158	16.71	0.05%	0.52%
PCS505	PCS506	05-MV-505.506	610	4/0	1	1/3	AL	2	#4/0 CU	105	11.14	0.03%	0.55%
PCS506	PCS507	05-MV-506.507	650	4/0	1	1/3	AL	1	#4/0 CU	53	5.93	0.02%	0.57%

MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3"C-C), RHO. 284ºC-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25ºC, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		

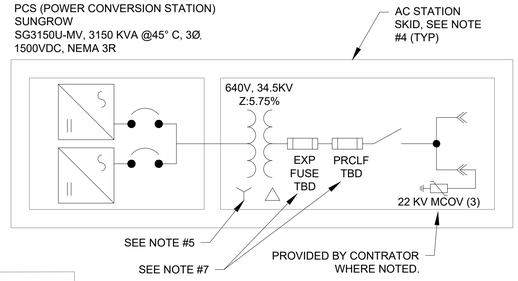


MV FEEDER SCHEDULE - CIRCUIT 06											AVERAGE VD	0.27%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC601	06-MV-SS.S601	2440	1250	1	1/3	AL	7	7#6 CCS 40%	369	26.36	0.08%	0.08%
SEC601	SEC602	06-MV-S601.S602	2198	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.74	0.07%	0.15%
SEC602	PCS601	06-MV-S602.601	1270	1250	1	1/3	AL	7	7#6 CCS 40%	369	13.72	0.04%	0.18%
PCS601	PCS602	06-MV-601.602	600	500	1	1/3	AL	6	7#6 CCS 40%	316	13.94	0.04%	0.23%
PCS602	PCS603	06-MV-602.603	600	500	1	1/3	AL	5	7#6 CCS 40%	264	11.61	0.03%	0.26%
PCS603	PCS604	06-MV-603.604	980	500	1	1/3	AL	4	7#6 CCS 40%	211	15.18	0.04%	0.30%
PCS604	PCS605	06-MV-604.605	890	4/0	1	1/3	AL	3	7#6 CCS 40%	158	24.38	0.07%	0.37%
PCS605	PCS606	06-MV-605.606	1020	4/0	1	1/3	AL	2	7#6 CCS 40%	105	18.63	0.05%	0.43%
PCS606	PCS607	06-MV-606.607	1270	4/0	1	1/3	AL	1	#4/0 CU	53	11.60	0.03%	0.46%



MVAC SINGLE LINE DIAGRAM - CIRCUITS 5 & 6

SCALE: NOT TO SCALE



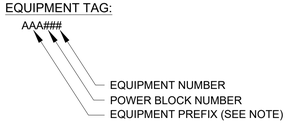
TYPICAL INVERTER

SCALE: NTS

NOTES:

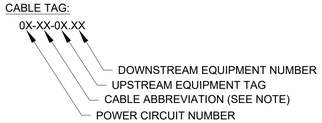
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
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EQUIPMENT TAG:



NOTE: EQUIPMENT ABBREVIATIONS,
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CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
MVAC SLD - CKT 5 & 6

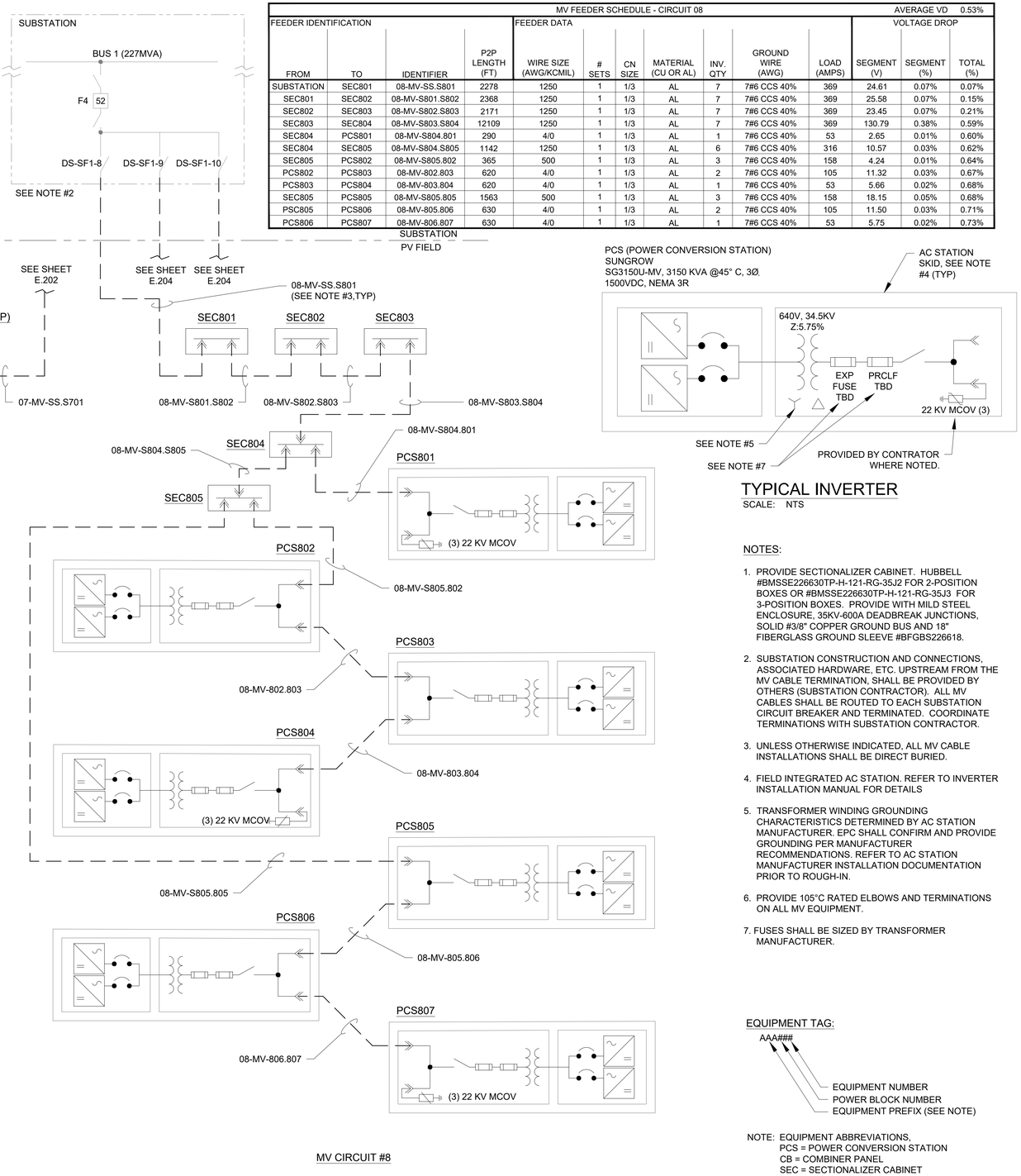
SHEET #: E-202
REV #: 4

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-206 MVAC SLD - CKT 13 & 14

MV FEEDER SCHEDULE - CIRCUIT 07											AVERAGE VD	0.88%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC701	07-MV-SS.S701	23004	1250	1	1/3	AL	7	7#6 CCS 40%	369	248.47	0.72%	0.72%
SEC701	SEC702	07-MV-S701.S702	2198	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.74	0.07%	0.79%
SEC702	SEC703	07-MV-S702.S703	2109	1250	1	1/3	AL	7	7#6 CCS 40%	369	22.78	0.07%	0.86%
SEC703	PCS701	07-MV-S703.701	370	500	1	1/3	AL	4	7#6 CCS 40%	211	5.73	0.02%	0.87%
PCS701	PCS702	07-MV-701.702	620	500	1	1/3	AL	3	7#6 CCS 40%	158	7.20	0.02%	0.89%
PCS702	PCS703	07-MV-702.703	620	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.32	0.03%	0.93%
PCS703	PCS704	07-MV-703.704	620	4/0	1	1/3	AL	1	#4/0 CU	53	5.66	0.02%	0.94%
SEC703	PCS705	07-MV-S703.705	1570	500	1	1/3	AL	3	7#6 CCS 40%	158	18.23	0.05%	0.91%
PCS705	PCS706	07-MV-705.706	620	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.32	0.03%	0.94%
PCS706	PCS707	07-MV-706.707	620	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.66	0.02%	0.96%

MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3°C-C), RHO. 284°C-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25°C, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		

MV FEEDER SCHEDULE - CIRCUIT 08											AVERAGE VD	0.53%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC801	08-MV-SS.S801	2278	1250	1	1/3	AL	7	7#6 CCS 40%	369	24.61	0.07%	0.07%
SEC801	SEC802	08-MV-S801.S802	2368	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.58	0.07%	0.15%
SEC802	SEC803	08-MV-S802.S803	2171	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.45	0.07%	0.21%
SEC803	SEC804	08-MV-S803.S804	12109	1250	1	1/3	AL	7	7#6 CCS 40%	369	130.79	0.38%	0.59%
SEC804	PCS801	08-MV-S804.801	290	4/0	1	1/3	AL	1	7#6 CCS 40%	53	2.65	0.01%	0.60%
SEC804	SEC805	08-MV-S804.S805	1142	1250	1	1/3	AL	6	7#6 CCS 40%	316	10.57	0.03%	0.62%
SEC805	PCS802	08-MV-S805.802	365	500	1	1/3	AL	3	7#6 CCS 40%	158	4.24	0.01%	0.64%
PCS802	PCS803	08-MV-802.803	620	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.32	0.03%	0.67%
PCS803	PCS804	08-MV-803.804	620	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.66	0.02%	0.68%
SEC805	PCS805	08-MV-S805.805	1563	500	1	1/3	AL	3	7#6 CCS 40%	158	18.15	0.05%	0.68%
PSC805	PCS806	08-MV-805.806	630	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.50	0.03%	0.71%
PCS806	PCS807	08-MV-806.807	630	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.75	0.02%	0.73%



MVAC SINGLE LINE DIAGRAM - CIRCUITS 7 & 8

SCALE: NOT TO SCALE

TYPICAL INVERTER

SCALE: NTS

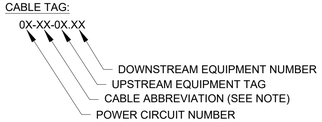
NOTES:

1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION CONSTRUCTION AND CONNECTIONS, ASSOCIATED HARDWARE, ETC. UPSTREAM FROM THE MV CABLE TERMINATION, SHALL BE PROVIDED BY OTHERS (SUBSTATION CONTRACTOR). ALL MV CABLES SHALL BE ROUTED TO EACH SUBSTATION CIRCUIT BREAKER AND TERMINATED. COORDINATE TERMINATIONS WITH SUBSTATION CONTRACTOR.
3. UNLESS OTHERWISE INDICATED, ALL MV CABLE INSTALLATIONS SHALL BE DIRECT BURIED.
4. FIELD INTEGRATED AC STATION. REFER TO INVERTER INSTALLATION MANUAL FOR DETAILS
5. TRANSFORMER WINDING GROUNDING CHARACTERISTICS DETERMINED BY AC STATION MANUFACTURER. EPC SHALL CONFIRM AND PROVIDE GROUNDING PER MANUFACTURER RECOMMENDATIONS. REFER TO AC STATION MANUFACTURER INSTALLATION DOCUMENTATION PRIOR TO ROUGH-IN.
6. PROVIDE 105°C RATED ELBOWS AND TERMINATIONS ON ALL MV EQUIPMENT.
7. FUSES SHALL BE SIZED BY TRANSFORMER MANUFACTURER.

EQUIPMENT TAG:

NOTE: EQUIPMENT ABBREVIATIONS,
PCS = POWER CONVERSION STATION
CB = COMBINER PANEL
SEC = SECTIONALIZER CABINET
SS = SUBSTATION

CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
MVAC SLD - CKT 7 & 8

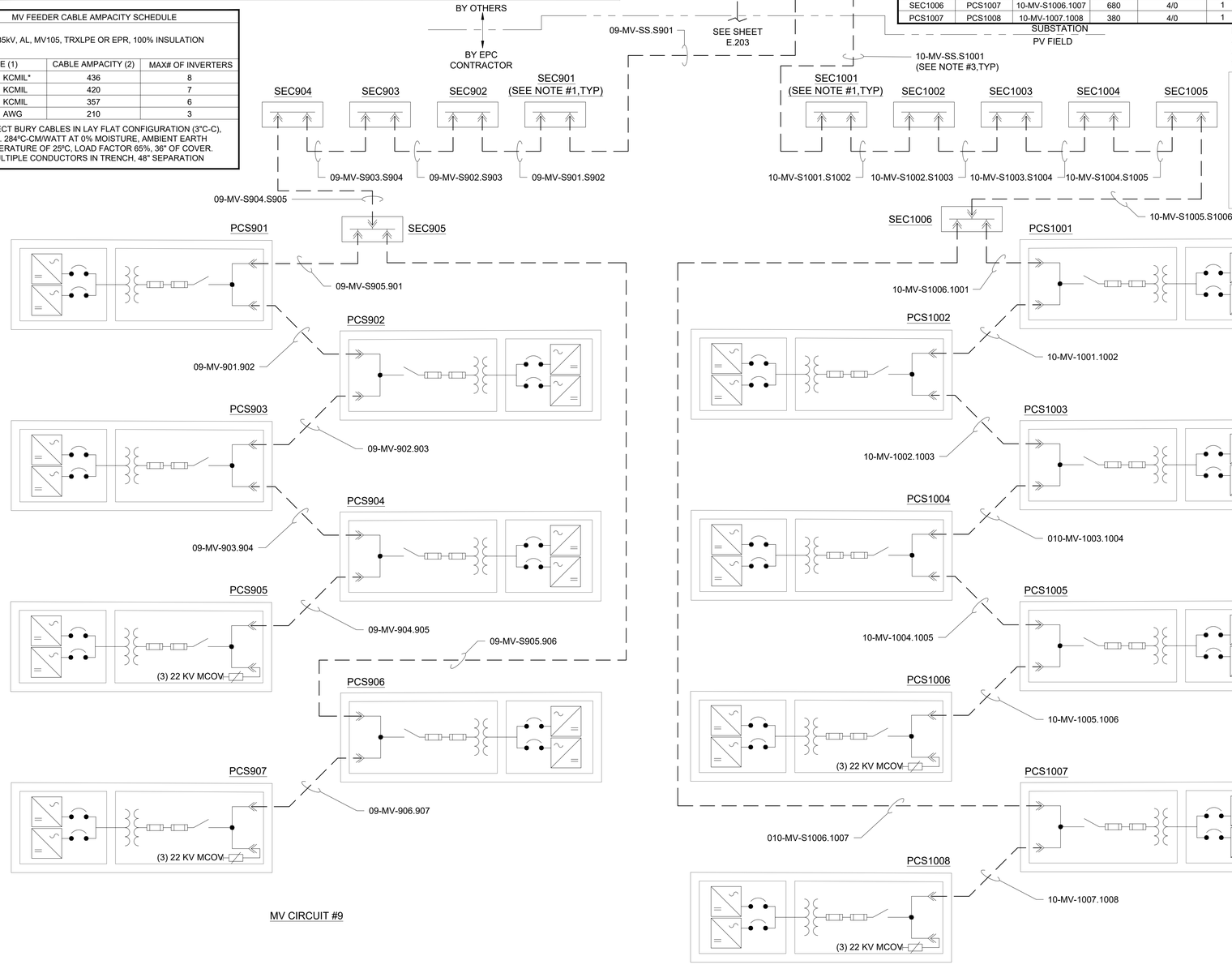
SHEET #: E-203
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*.DWG\E-206 MVAC SLD - CKT 13 & 14

MV FEEDER SCHEDULE - CIRCUIT 09												AVERAGE VD	0.34%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC901	09-MV-SS.S901	2294	1250	1	1/3	AL	7	7#6 CCS 40%	369	24.78	0.07%	0.07%
SEC901	SEC902	09-MV-S901.S902	2357	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.46	0.07%	0.15%
SEC902	SEC903	09-MV-S902.S903	2183	1250	1	1/3	AL	7	7#6 CCS 40%	369	23.58	0.07%	0.21%
SEC903	SEC904	09-MV-S903.S904	2333	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.20	0.07%	0.29%
SEC904	SEC905	09-MV-S904.S905	2370	1250	1	1/3	AL	7	7#6 CCS 40%	369	25.60	0.07%	0.36%
SEC905	PCS901	09-MV-S905.901	430	750	1	1/3	AL	5	7#6 CCS 40%	264	5.54	0.02%	0.38%
PCS901	PCS902	09-MV-901.902	620	500	1	1/3	AL	4	7#6 CCS 40%	211	9.60	0.03%	0.41%
PCS902	PCS903	09-MV-902.903	620	4/0	1	1/3	AL	3	7#6 CCS 40%	158	16.98	0.05%	0.45%
PCS903	PCS904	09-MV-903.904	620	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.32	0.03%	0.49%
PCS904	PCS905	09-MV-904.905	620	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.66	0.02%	0.50%
PCS905	PCS906	09-MV-S905.906	400	4/0	1	1/3	AL	2	7#6 CCS 40%	105	7.30	0.02%	0.38%
PCS906	PCS907	09-MV-906.907	650	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.93	0.02%	0.40%

MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3"C-C), RHO. 284°C-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25ºC, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		



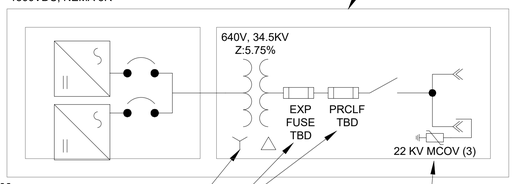
MVAC SINGLE LINE DIAGRAM - CIRCUITS 9 & 10

SCALE: NOT TO SCALE

MV FEEDER SCHEDULE - CIRCUIT 10												AVERAGE VD	0.43%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC1001	10-MV-SS.S1001	2301	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.40	0.08%	0.08%
SEC1001	SEC1002	10-MV-S1001.S1002	2346	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.96	0.08%	0.17%
SEC1002	SEC1003	10-MV-S1002.S1003	2194	1250	1	1/3	AL	8	7#6 CCS 40%	422	27.08	0.08%	0.24%
SEC1003	SEC1004	10-MV-S1003.S1004	2328	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.74	0.08%	0.33%
SEC1004	SEC1005	10-MV-S1004.S1005	2360	1250	1	1/3	AL	8	7#6 CCS 40%	422	29.13	0.08%	0.41%
SEC1005	SEC1006	10-MV-S1005.S1006	1357	1250	1	1/3	AL	8	7#6 CCS 40%	422	16.75	0.05%	0.46%
SEC1006	PCS1001	10-MV-S1006.1001	310	750	1	1/3	AL	6	7#6 CCS 40%	316	4.79	0.01%	0.47%
PCS1001	PCS1002	10-MV-1001.1002	630	500	1	1/3	AL	5	7#6 CCS 40%	264	12.19	0.04%	0.51%
PCS1002	PCS1003	10-MV-1002.1003	630	500	1	1/3	AL	4	7#6 CCS 40%	211	9.76	0.03%	0.54%
PCS1003	PCS1004	10-MV-1003.1004	630	4/0	1	1/3	AL	3	7#6 CCS 40%	158	17.26	0.05%	0.59%
PCS1004	PCS1005	10-MV-1004.1005	630	4/0	1	1/3	AL	2	7#6 CCS 40%	105	11.50	0.03%	0.62%
PCS1005	PCS1006	10-MV-1005.1006	630	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.75	0.02%	0.64%
SEC1006	PCS1007	10-MV-S1006.1007	680	4/0	1	1/3	AL	2	7#6 CCS 40%	105	12.42	0.04%	0.50%
PCS1007	PCS1008	10-MV-1007.1008	380	4/0	1	1/3	AL	1	7#6 CCS 40%	53	3.47	0.01%	0.51%

PCS (POWER CONVERSION STATION)
SUNGROW
SG3150U-MV, 3150 KVA @45° C, 3Ø.
1500VDC, NEMA 3R

AC STATION SKID, SEE NOTE #4 (TYP)



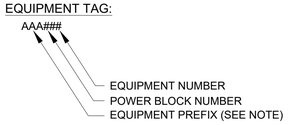
TYPICAL INVERTER

SCALE: NTS

NOTES:

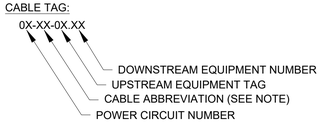
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION CONSTRUCTION AND CONNECTIONS, ASSOCIATED HARDWARE, ETC. UPSTREAM FROM THE MV CABLE TERMINATION, SHALL BE PROVIDED BY OTHERS (SUBSTATION CONTRACTOR). ALL MV CABLES SHALL BE ROUTED TO EACH SUBSTATION CIRCUIT BREAKER AND TERMINATED. COORDINATE TERMINATIONS WITH SUBSTATION CONTRACTOR.
3. UNLESS OTHERWISE INDICATED, ALL MV CABLE INSTALLATIONS SHALL BE DIRECT BURIED.
4. FIELD INTEGRATED AC STATION. REFER TO INVERTER INSTALLATION MANUAL FOR DETAILS
5. TRANSFORMER WINDING GROUNDING CHARACTERISTICS DETERMINED BY AC STATION MANUFACTURER. EPC SHALL CONFIRM AND PROVIDE GROUNDING PER MANUFACTURER RECOMMENDATIONS. REFER TO AC STATION MANUFACTURER INSTALLATION DOCUMENTATION PRIOR TO ROUGH-IN.
6. PROVIDE 105°C RATED ELBOWS AND TERMINATIONS ON ALL MV EQUIPMENT.
7. FUSES SHALL BE SIZED BY TRANSFORMER MANUFACTURER.

EQUIPMENT TAG:



NOTE: EQUIPMENT ABBREVIATIONS,
PCS = POWER CONVERSION STATION
CB = COMBINER PANEL
SEC = SECTIONALIZER CABINET
SS = SUBSTATION

CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

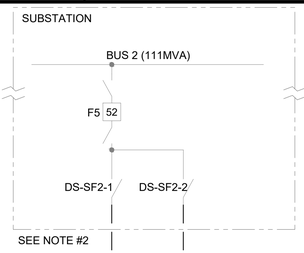
SHEET NAME:
MVAC SLD - CKT 9 & 10

SHEET #: E-204
REV #: 4

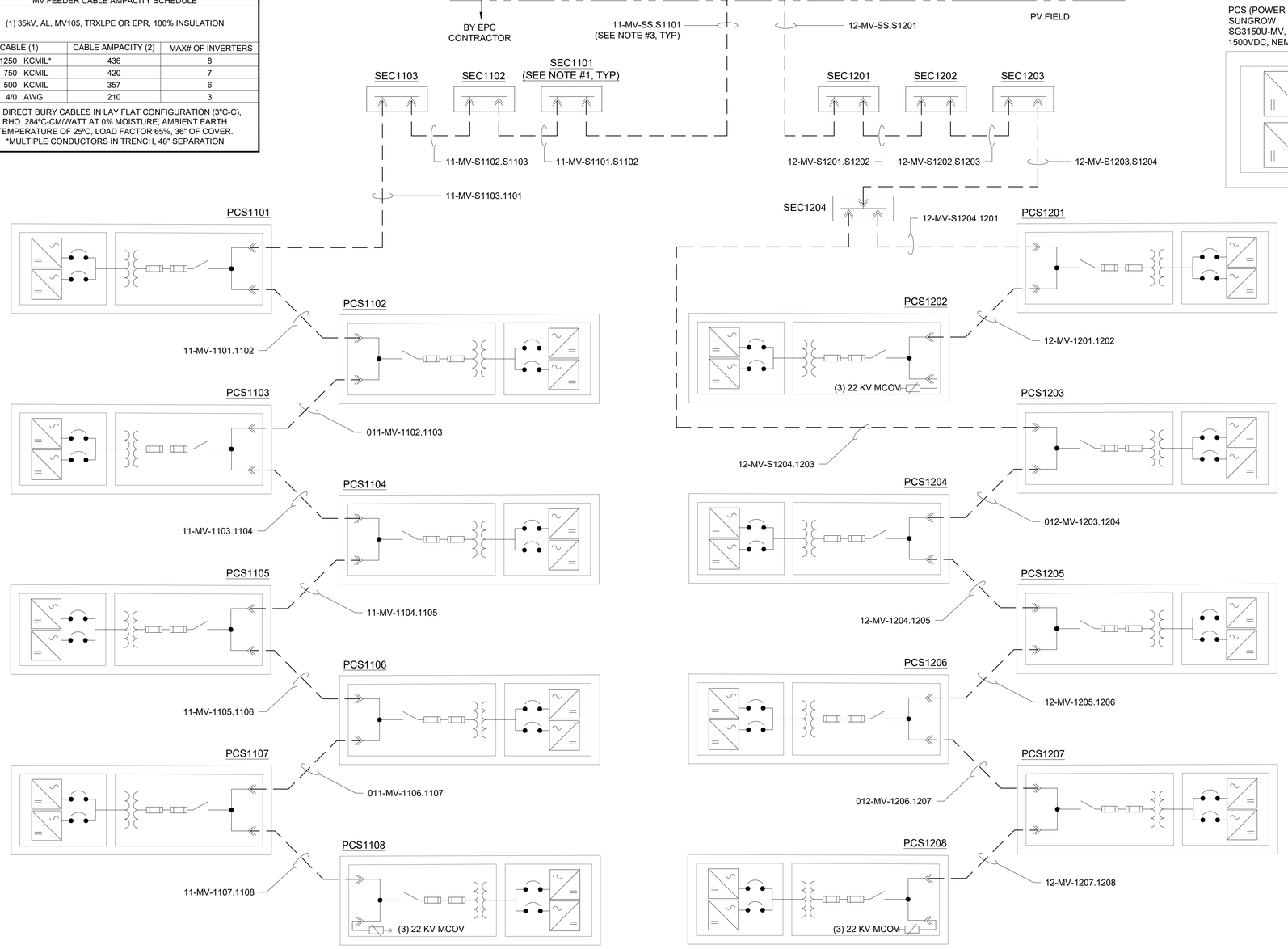
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING\DWG\E-206 MVAC SLD - CKT 13 & 14

MV FEEDER SCHEDULE - CIRCUIT 11											AVERAGE VD	0.33%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC1101	11-MV-SS.S1101	2285	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.21	0.08%	0.08%
SEC1101	SEC1102	11-MV-S1101.S1102	2335	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.82	0.08%	0.17%
SEC1102	SEC1103	11-MV-S1102.S1103	2205	1250	1	1/3	AL	8	7#6 CCS 40%	422	27.22	0.08%	0.24%
SEC1103	PCS1101	11-MV-S1103.1101	390	1250	1	1/3	AL	8	7#6 CCS 40%	422	4.81	0.01%	0.26%
PCS1101	PCS1102	11-MV-1101.1102	600	750	1	1/3	AL	7	7#6 CCS 40%	369	10.81	0.03%	0.29%
PCS1102	PCS1103	11-MV-1102.1103	600	500	1	1/3	AL	6	7#6 CCS 40%	316	13.94	0.04%	0.33%
PCS1103	PCS1104	11-MV-1103.1104	600	500	1	1/3	AL	5	7#6 CCS 40%	264	11.61	0.03%	0.36%
PCS1104	PCS1105	11-MV-1104.1105	600	500	1	1/3	AL	4	7#6 CCS 40%	211	9.29	0.03%	0.39%
PCS1105	PCS1106	11-MV-1105.1106	1205	4/0	1	1/3	AL	3	7#6 CCS 40%	158	33.01	0.10%	0.49%
PCS1106	PCS1107	11-MV-1106.1107	600	4/0	1	1/3	AL	2	7#6 CCS 40%	105	10.96	0.03%	0.52%
PCS1107	PCS1108	11-MV-1107.1108	600	4/0	1	1/3	AL	1	7#6 CCS 40%	53	5.48	0.02%	0.53%

MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3"C-C), RHO. 284ºC-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25ºC, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		



MV FEEDER SCHEDULE - CIRCUIT 12											AVERAGE VD	0.34%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP	
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC1201	12-MV-SS.S1201	2292	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.29	0.08%	0.08%
SEC1201	SEC1202	12-MV-S1201.S1202	2324	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.69	0.08%	0.17%
SEC1202	SEC1203	12-MV-S1202.S1203	2216	1250	1	1/3	AL	8	7#6 CCS 40%	422	27.36	0.08%	0.24%
SEC1203	SEC1204	12-MV-S1203.S1204	1175	1250	1	1/3	AL	8	7#6 CCS 40%	422	14.50	0.04%	0.29%
SEC1204	PCS1201	12-MV-S1204.1201	390	4/0	1	1/3	AL	2	7#6 CCS 40%	105	7.12	0.02%	0.31%
PCS1201	PCS1202	12-MV-1201.1202	350	4/0	1	1/3	AL	1	7#6 CCS 40%	53	3.20	0.01%	0.32%
SEC1204	PCS1203	12-MV-S1204.1203	1570	1250	1	1/3	AL	6	7#6 CCS 40%	316	14.54	0.04%	0.35%
PCS1203	PCS1204	12-MV-1203.1204	650	500	1	1/3	AL	5	7#6 CCS 40%	264	12.58	0.04%	0.39%
PCS1204	PCS1205	12-MV-1204.1205	600	500	1	1/3	AL	4	7#6 CCS 40%	211	9.29	0.03%	0.41%
PCS1205	PCS1206	12-MV-1205.1206	600	4/0	1	1/3	AL	3	7#6 CCS 40%	158	16.43	0.05%	0.46%
PCS1206	PCS1207	12-MV-1206.1207	600	4/0	1	1/3	AL	2	7#6 CCS 40%	105	10.96	0.03%	0.49%
PCS1207	PCS1208	12-MV-1207.1208	1170	4/0	1	1/3	AL	1	7#6 CCS 40%	53	10.68	0.03%	0.52%

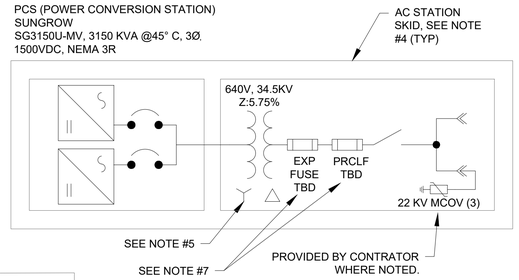


MV CIRCUIT #11

MV CIRCUIT #12

MVAC SINGLE LINE DIAGRAM - CIRCUITS 11 & 12

SCALE: NOT TO SCALE



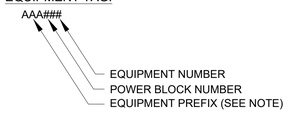
TYPICAL INVERTER

SCALE: NTS

NOTES:

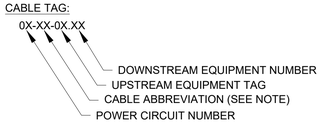
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION CONSTRUCTION AND CONNECTIONS, ASSOCIATED HARDWARE, ETC. UPSTREAM FROM THE MV CABLE TERMINATION, SHALL BE PROVIDED BY OTHERS (SUBSTATION CONTRACTOR). ALL MV CABLES SHALL BE ROUTED TO EACH SUBSTATION CIRCUIT BREAKER AND TERMINATED. COORDINATE TERMINATIONS WITH SUBSTATION CONTRACTOR.
3. UNLESS OTHERWISE INDICATED, ALL MV CABLE INSTALLATIONS SHALL BE DIRECT BURIED.
4. FIELD INTEGRATED AC STATION. REFER TO INVERTER INSTALLATION MANUAL FOR DETAILS
5. TRANSFORMER WINDING GROUNDING CHARACTERISTICS DETERMINED BY AC STATION MANUFACTURER. EPC SHALL CONFIRM AND PROVIDE GROUNDING PER MANUFACTURER RECOMMENDATIONS. REFER TO AC STATION MANUFACTURER INSTALLATION DOCUMENTATION PRIOR TO ROUGH-IN.
6. PROVIDE 105°C RATED ELBOWS AND TERMINATIONS ON ALL MV EQUIPMENT.
7. FUSES SHALL BE SIZED BY TRANSFORMER MANUFACTURER.

EQUIPMENT TAG:



NOTE: EQUIPMENT ABBREVIATIONS,
PCS = POWER CONVERSION STATION
CB = COMBINER PANEL
SEC = SECTIONALIZER CABINET
SS = SUBSTATION

CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020

PROJECT #: 190067.03

DRAWN BY: GL

CHECKED BY: EL

SHEET NAME:
MVAC SLD - CKT 11 & 12

SHEET #: E-205

REV #: 4

PLOT DATE: Thursday, June 08, 2023

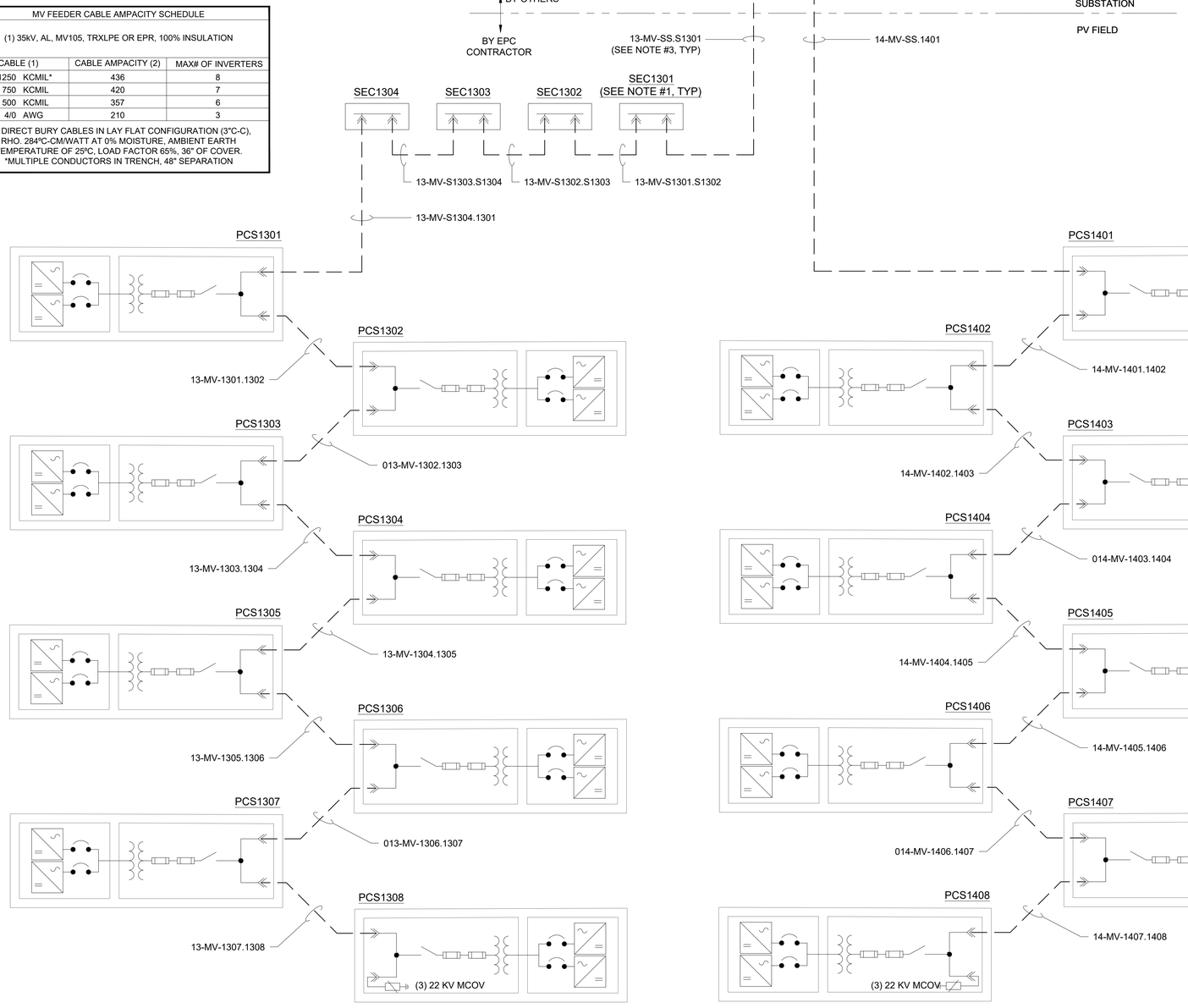
PLOT BY: Brady Burgason

SAVED BY: brady.burgason

LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-206 MVAC SLD - CKT 13 & 14

MV FEEDER SCHEDULE - CIRCUIT 13												AVERAGE VD	0.43%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC1301	13-MV-SS.S1301	2293	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.31	0.08%	0.08%
SEC1301	SEC1302	13-MV-S1301.S1302	2313	1250	1	1/3	AL	8	7#6 CCS 40%	422	28.55	0.08%	0.16%
SEC1302	SEC1303	13-MV-S1302.S1303	2227	1250	1	1/3	AL	8	7#6 CCS 40%	422	27.49	0.08%	0.24%
SEC1303	SEC1304	13-MV-S1303.S1304	2350	1250	1	1/3	AL	8	7#6 CCS 40%	422	29.01	0.08%	0.33%
SEC1304	PCS1301	13-MV-S1304.1301	1625	1250	1	1/3	AL	8	7#6 CCS 40%	422	20.06	0.06%	0.39%
PCS1301	PCS1302	13-MV-1301.1302	600	750	1	1/3	AL	7	7#6 CCS 40%	369	10.81	0.03%	0.42%
PCS1302	PCS1303	13-MV-1302.1303	600	500	1	1/3	AL	6	7#6 CCS 40%	316	13.94	0.04%	0.46%
PCS1303	PCS1304	13-MV-1303.1304	600	500	1	1/3	AL	5	7#6 CCS 40%	264	11.61	0.03%	0.49%
PCS1304	PCS1305	13-MV-1304.1305	1795	500	1	1/3	AL	4	7#6 CCS 40%	211	27.80	0.08%	0.57%
PCS1305	PCS1306	13-MV-1305.1306	600	4/0	1	1/3	AL	3	7#6 CCS 40%	158	16.43	0.05%	0.62%
PCS1306	PCS1307	13-MV-1306.1307	600	4/0	1	1/3	AL	2	7#6 CCS 40%	105	10.96	0.03%	0.65%
PCS1307	PCS1308	13-MV-1307.1308	1180	4/0	1	1/3	AL	1	7#6 CCS 40%	53	10.77	0.03%	0.68%

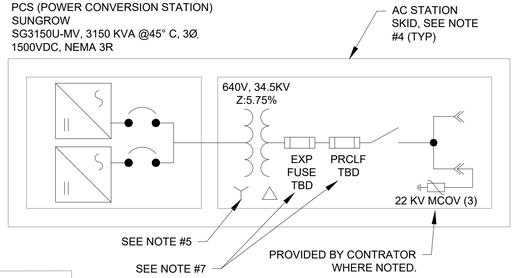
MV FEEDER CABLE AMPACITY SCHEDULE		
(1) 35kV, AL, MV105, TRXLPE OR EPR, 100% INSULATION		
CABLE (1)	CABLE AMPACITY (2)	MAX# OF INVERTERS
1250 KCMIL*	436	8
750 KCMIL	420	7
500 KCMIL	357	6
4/0 AWG	210	3
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3°C-C), RHO. 284°C-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25ºC, LOAD FACTOR 65%, 36" OF COVER. *MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION		



MVAC SINGLE LINE DIAGRAM - CIRCUITS 13 & 14

SCALE: NOT TO SCALE

MV FEEDER SCHEDULE - CIRCUIT 14												AVERAGE VD	0.22%
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	PCS1401	14-MV-SS.1401	1480	1250	1	1/3	AL	8	7#6 CCS 40%	422	18.27	0.05%	0.05%
PCS1401	PCS1402	14-MV-1401.1402	600	750	1	1/3	AL	7	7#6 CCS 40%	369	10.81	0.03%	0.08%
PCS1402	PCS1403	14-MV-1402.1403	1180	500	1	1/3	AL	6	7#6 CCS 40%	316	27.41	0.08%	0.16%
PCS1403	PCS1404	14-MV-1403.1404	600	500	1	1/3	AL	5	7#6 CCS 40%	264	11.61	0.03%	0.20%
PCS1404	PCS1405	14-MV-1404.1405	600	500	1	1/3	AL	4	7#6 CCS 40%	211	9.29	0.03%	0.22%
PCS1405	PCS1406	14-MV-1405.1406	720	4/0	1	1/3	AL	3	7#6 CCS 40%	158	19.72	0.06%	0.28%
PCS1406	PCS1407	14-MV-1406.1407	1290	4/0	1	1/3	AL	2	7#6 CCS 40%	105	23.56	0.07%	0.35%
PCS1407	PCS1408	14-MV-1407.1408	1210	4/0	1	1/3	AL	1	7#6 CCS 40%	53	11.05	0.03%	0.38%



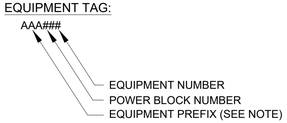
TYPICAL INVERTER

SCALE: NTS

NOTES:

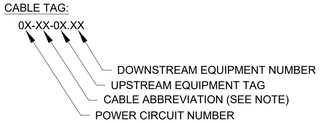
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6. PROVIDE 105°C RATED ELBOWS AND TERMINATIONS ON ALL MV EQUIPMENT.
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EQUIPMENT TAG:



NOTE: EQUIPMENT ABBREVIATIONS,
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CB = COMBINER PANEL
SEC = SECTIONALIZER CABINET
SS = SUBSTATION

CABLE TAG:



NOTE: CABLE ABBREVIATIONS,
MV = MEDIUM VOLTAGE POWER CABLE
(5KV AC TO 35KV AC)

SHEET LEGEND

- SURGE ARRESTOR
- FUSE
- SWITCH/DISCONNECT
- MV 3 POLE FUSED SWITCH/DISCONNECT
- TRANSFORMER
- 3-PHASE: UNGROUNDED WYE
- 3-PHASE: DELTA WINDING
- INVERTER
- BREAKER
- 600 A DEADBREAK ELBOW
- UNDERGROUND CABLE
- GROUND

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

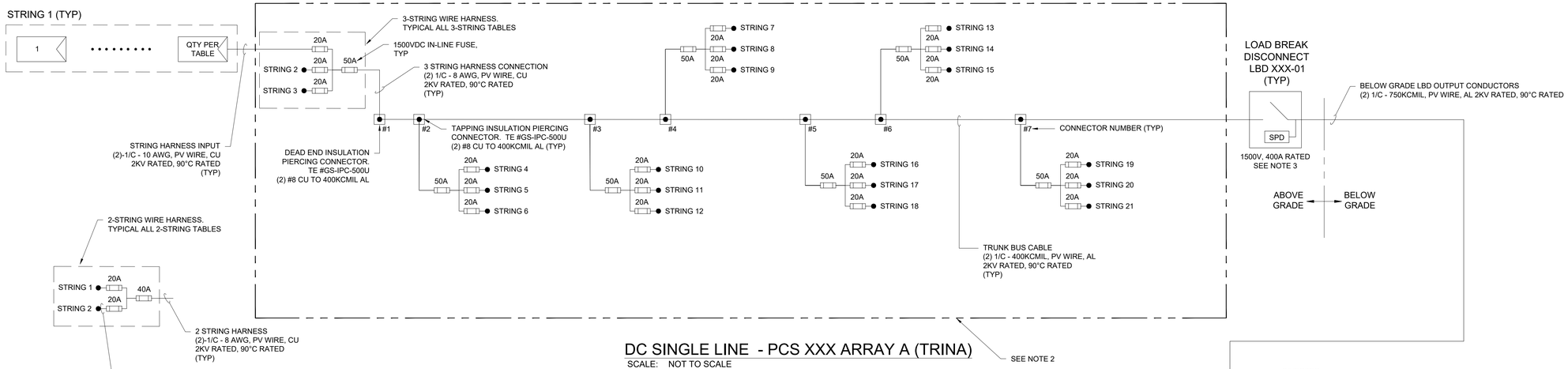
SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
MVAC SLD - CKT 13 & 14

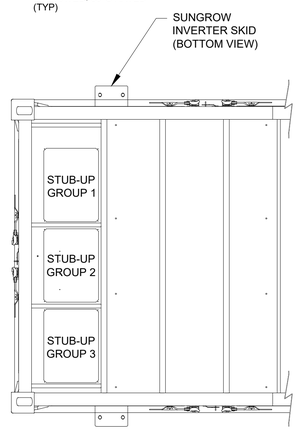
SHEET #: E-206
REV #: 4

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K1_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-206 MVAC SLD - CKT 13 & 14



DC SINGLE LINE - PCS XXX ARRAY A (TRINA)

SCALE: NOT TO SCALE



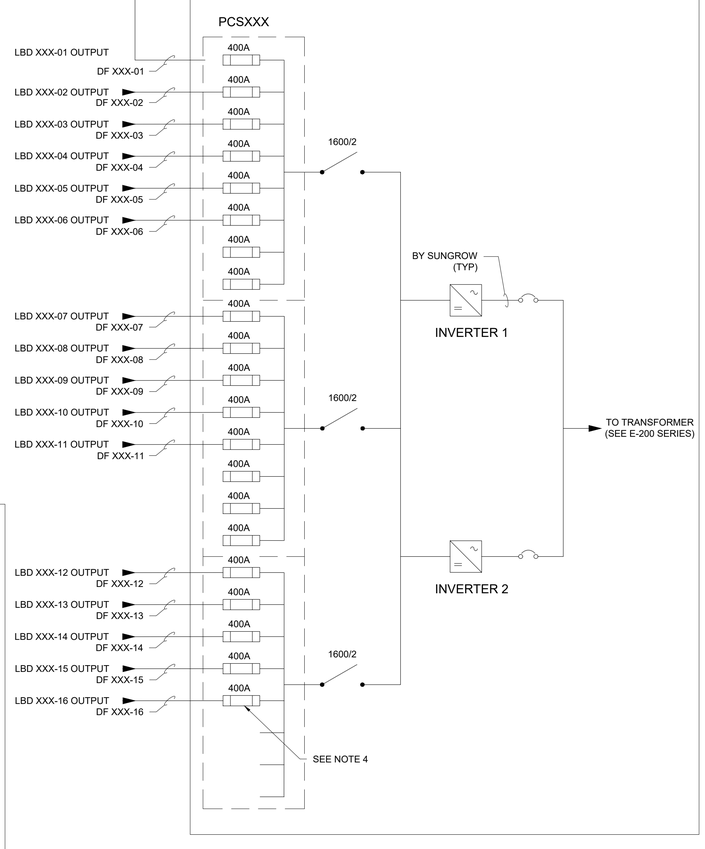
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y [2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	MODULE CLASS MAXIMUM VALUES [2.iv] POWER (W) 440	MAX ISC (A) 13.84	MAX IMP (A) 13.05	WORST CASE STRING VMP 1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	Trina
MODEL	TSM-DEG15MC.20(II)-410
POWER	410 W
Vmpp(V)	41.40 V
Impp(A)	9.91 A
Voc (V)	49.30 V
Isc (A)	10.41 A
Voc TEMP COEFFICIENT	-0.0025
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	11,480 W
Voc (STC)	1,380.40 V
Voc (MIN TEMP)*	1,434 V
Vmpp (STC)	1,159.20 V
Vmpp (MAX TEMP)	1,107.04 V
Impp (STC)	9.91 A
Impp Max*	11.97 A
Isc (STC)	10.41 A
Isc max PER NEC 690.8(A)(2)*	12.58 A
INVERTER	
	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY A	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
410	12.58	11.97	1107							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	170	750	AL	18	0	6	283.0	215.5	2.1	0.19%
LBD XXX-02	DF-XXX-02	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-03	DF-XXX-03	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-04	DF-XXX-04	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-05	DF-XXX-05	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-06	DF-XXX-06	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-07	DF-XXX-07	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-08	DF-XXX-08	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-09	DF-XXX-09	190	750	AL	18	0	6	283.0	215.5	2.3	0.21%
LBD XXX-10	DF-XXX-10	190	750	AL	21	0	7	330.1	251.4	2.7	0.24%
LBD XXX-11	DF-XXX-11	190	750	AL	21	0	7	330.1	251.4	2.7	0.24%
LBD XXX-12	DF-XXX-12	190	750	AL	18	0	6	283.0	215.5	2.3	0.21%
LBD XXX-13	DF-XXX-13	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-14	DF-XXX-14	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-15	DF-XXX-15	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-16	DF-XXX-16	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
				TOTALS	327			5140	3915	AVERAGE	0.25%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE ON THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

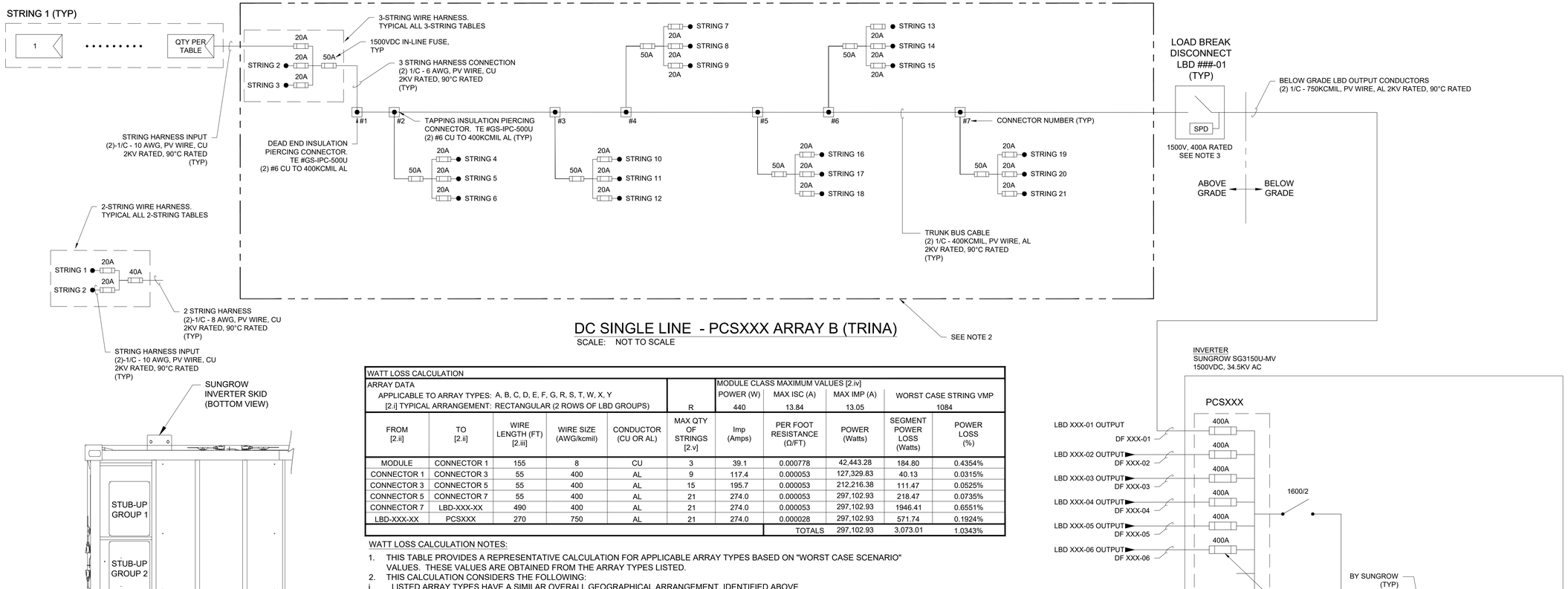
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE A (TRINA)

SHEET #: E-211
REV #: 4

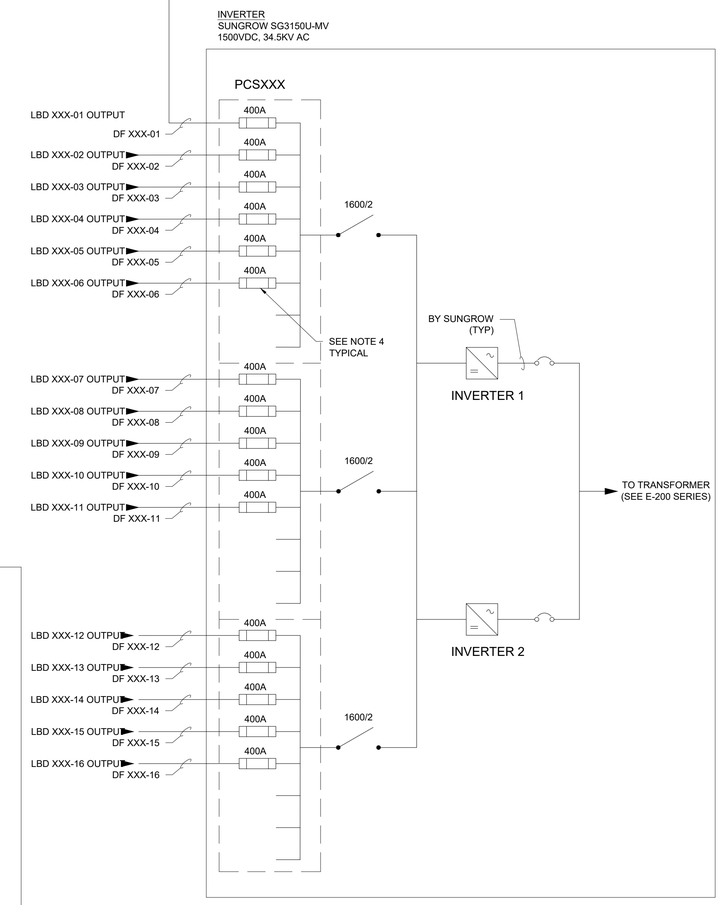
RECORD DRAWING

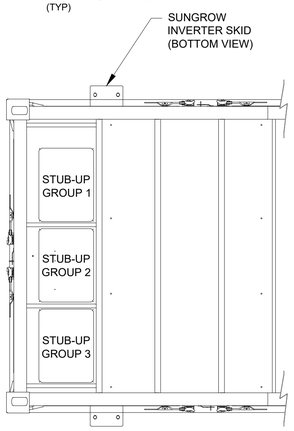
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-211 DC SLD - ARRAY TYPE A (TRINA)



DC SINGLE LINE - PCSXXX ARRAY B (TRINA)

SCALE: NOT TO SCALE





DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
								TOTALS	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	Trina
MODEL	TSM-DEG15MC.20(II)-410
POWER	410 W
Vmpp(V)	41.40 V
Impp(A)	9.91 A
Voc (V)	49.30 V
Isc (A)	10.41 A
Voc TEMP COEFFICIENT	-0.0025
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	11,480 W
Voc (STC)	1,380.40 V
Voc (MIN TEMP)*	1,434 V
Vmpp (STC)	1,159.20 V
Vmpp (MAX TEMP)	1,107.04 V
Impp (STC)	9.91 A
Impp Max*	11.97 A
Isc (STC)	10.41 A
Isc max PER NEC 690.8(A)(2)*	12.58 A
INVERTER	
	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY B	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
410	12.58	11.97	1107							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	160	750	AL	18	0	6	283.0	215.5	1.9	0.18%
LBD XXX-02	DF-XXX-02	160	750	AL	21	0	7	330.1	251.4	2.3	0.20%
LBD XXX-03	DF-XXX-03	160	750	AL	21	0	7	330.1	251.4	2.3	0.20%
LBD XXX-04	DF-XXX-04	160	750	AL	21	0	7	330.1	251.4	2.3	0.20%
LBD XXX-05	DF-XXX-05	140	750	AL	18	3	4	283.0	215.5	1.7	0.15%
LBD XXX-06	DF-XXX-06	140	750	AL	21	0	7	330.1	251.4	2.0	0.18%
LBD XXX-07	DF-XXX-07	140	750	AL	21	0	7	330.1	251.4	2.0	0.18%
LBD XXX-08	DF-XXX-08	140	750	AL	21	0	7	330.1	251.4	2.0	0.18%
LBD XXX-09	DF-XXX-09	250	750	AL	18	0	6	283.0	215.5	3.0	0.27%
LBD XXX-10	DF-XXX-10	250	750	AL	21	0	7	330.1	251.4	3.5	0.32%
LBD XXX-11	DF-XXX-11	250	750	AL	21	0	7	330.1	251.4	3.5	0.32%
LBD XXX-12	DF-XXX-12	250	750	AL	21	0	7	330.1	251.4	3.5	0.32%
LBD XXX-13	DF-XXX-13	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-14	DF-XXX-14	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-15	DF-XXX-15	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-16	DF-XXX-16	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
				TOTALS	327			5140	3915	AVERAGE	0.24%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE ON THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

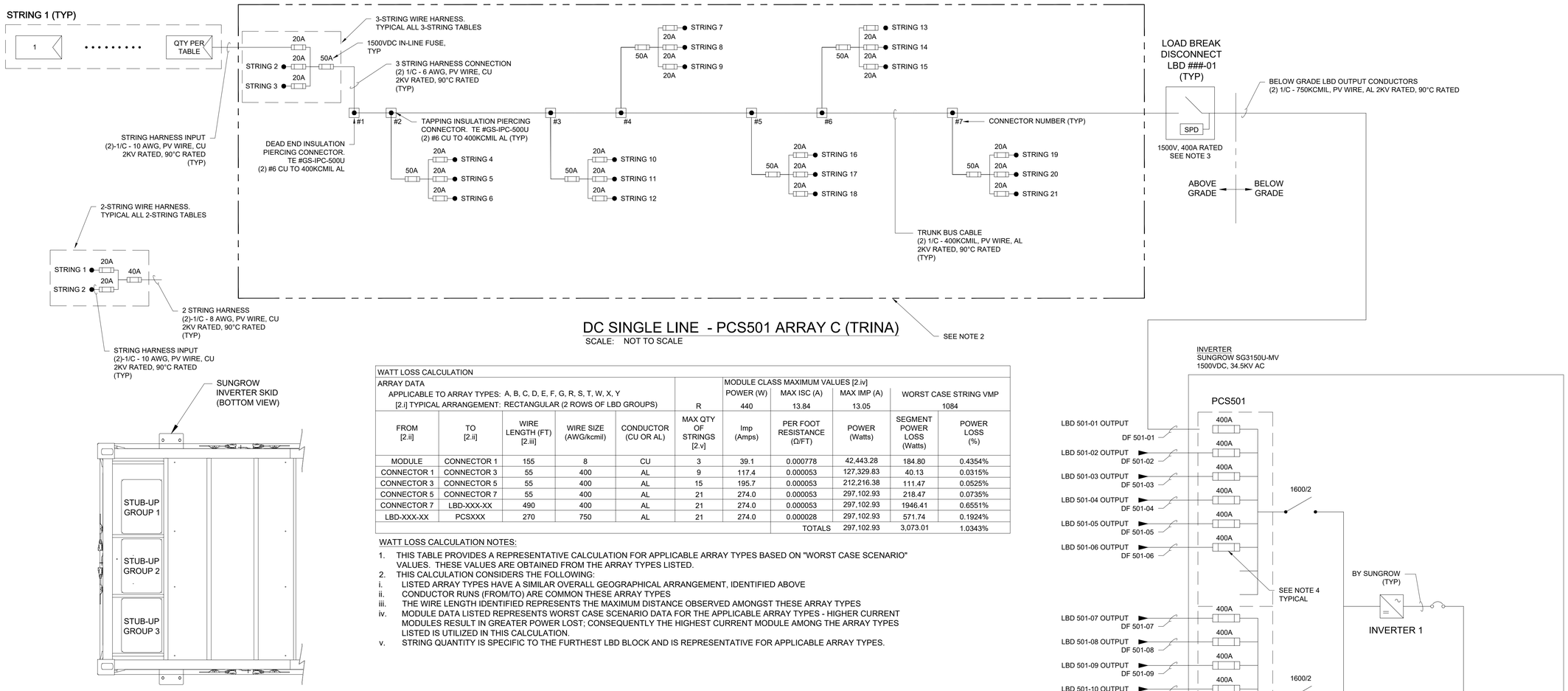
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE B (TRINA)

SHEET #: E-212
REV #: 4

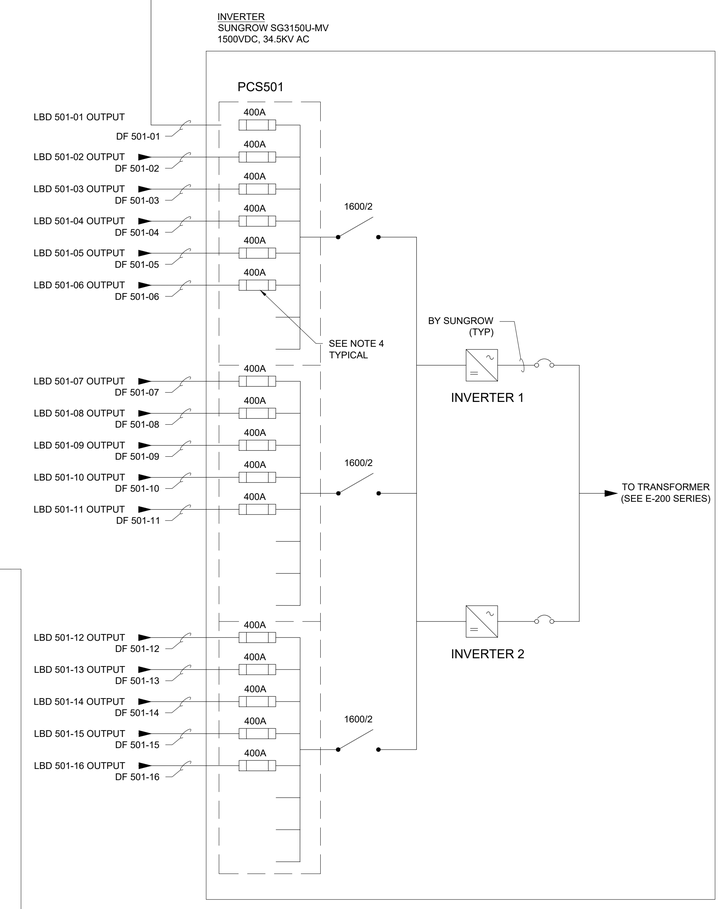
RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-212 DC SLD - ARRAY TYPE B (TRINA)



DC SINGLE LINE - PCS501 ARRAY C (TRINA)

SCALE: NOT TO SCALE



DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	Trina
MODEL	TSM-DEG15MC.20(II)-410
POWER	410 W
Vmpp(V)	41.40 V
Impp(A)	9.91 A
Voc (V)	49.30 V
Isc (A)	10.41 A
Voc TEMP COEFFICIENT	-0.0025
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	11,480 W
Voc (STC)	1,380.40 V
Voc (MIN TEMP)*	1,434 V
Vmpp (STC)	1,159.20 V
Vmpp (MAX TEMP)	1,107.04 V
Impp (STC)	9.91 A
Impp Max*	11.97 A
Isc (STC)	10.41 A
Isc max PER NEC 690.8(A)(2)*	12.58 A
INVERTER	
	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY C	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
410	12.58	11.97	1107							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	210	750	AL	18	0	6	283.0	215.5	2.6	0.23%
LBD XXX-02	DF-XXX-02	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-03	DF-XXX-03	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-04	DF-XXX-04	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-05	DF-XXX-05	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-06	DF-XXX-06	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-07	DF-XXX-07	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-08	DF-XXX-08	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-09	DF-XXX-09	210	750	AL	18	0	6	283.0	215.5	2.6	0.23%
LBD XXX-10	DF-XXX-10	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-11	DF-XXX-11	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-12	DF-XXX-12	210	750	AL	21	0	7	330.1	251.4	3.0	0.27%
LBD XXX-13	DF-XXX-13	150	750	AL	18	3	4	283.0	215.5	1.8	0.16%
LBD XXX-14	DF-XXX-14	150	750	AL	21	0	7	330.1	251.4	2.1	0.19%
LBD XXX-15	DF-XXX-15	150	750	AL	21	0	7	330.1	251.4	2.1	0.19%
LBD XXX-16	DF-XXX-16	150	750	AL	21	0	7	330.1	251.4	2.1	0.19%
				TOTALS	327			5140	3915	AVERAGE	0.23%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE ON THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

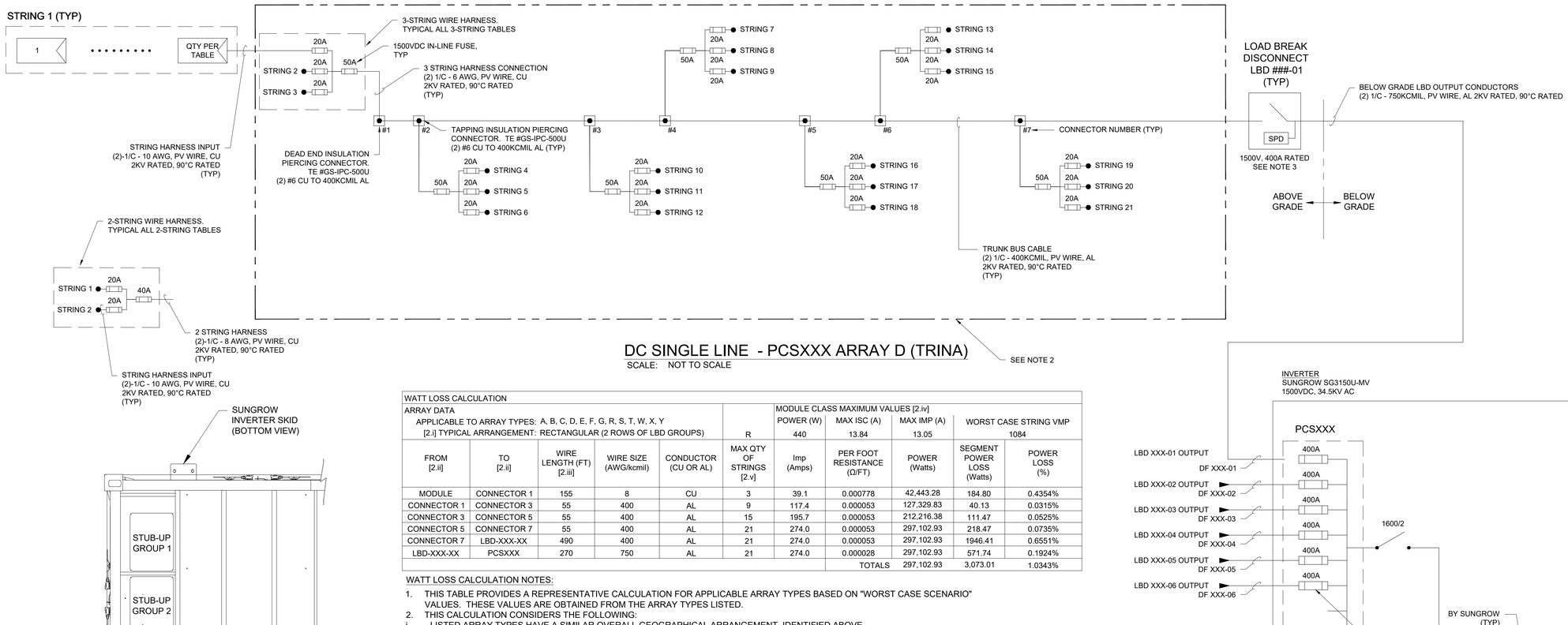
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE C (TRINA)

SHEET #: E-213
REV #: 4

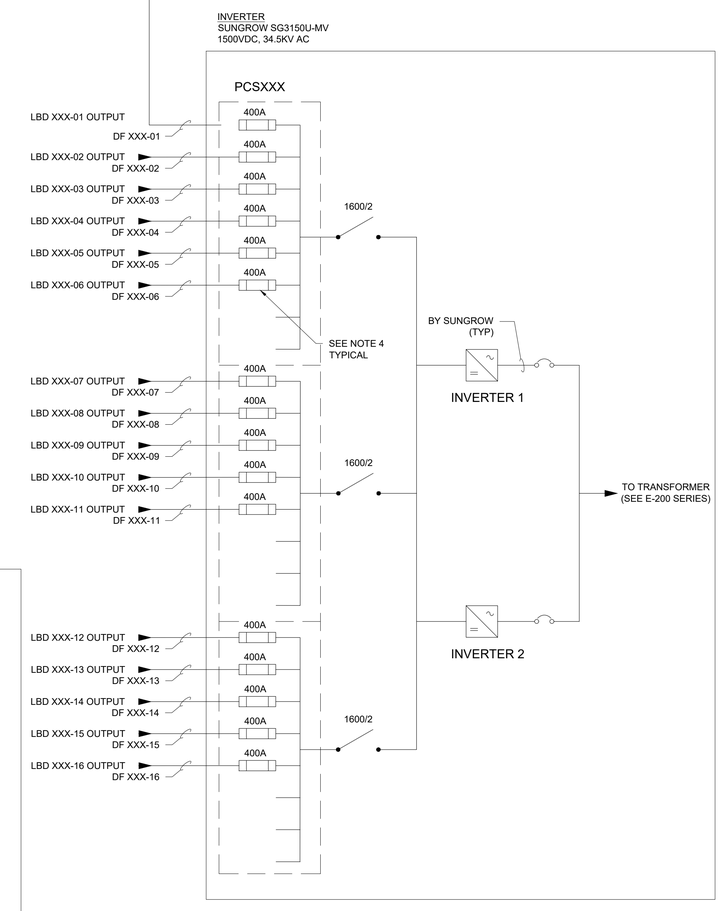
RECORD DRAWING

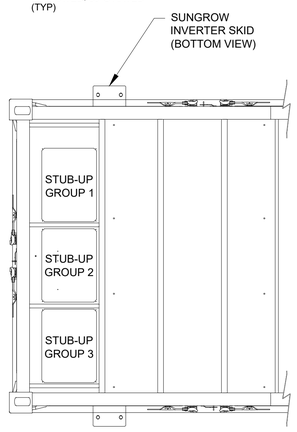
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-213 DC SLD - ARRAY TYPE C (TRINA)



DC SINGLE LINE - PCSXXX ARRAY D (TRINA)

SCALE: NOT TO SCALE





DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	Trina
MODEL	TSM-DEG15MC.20(II)-410
POWER	410 W
Vmpp(V)	41.40 V
Impp(A)	9.91 A
Voc (V)	49.30 V
Isc (A)	10.41 A
Voc TEMP COEFFICIENT	-0.0025
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 ℃
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	11,480 W
Voc (STC)	1,380.40 V
Voc (MIN TEMP)*	1,434 V
Vmpp (STC)	1,159.20 V
Vmpp (MAX TEMP)	1,107.04 V
Impp (STC)	9.91 A
Impp Max*	11.97 A
Isc (STC)	10.41 A
Isc max PER NEC 690.8(A)(2)*	12.58 A
INVERTER	
	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY D	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
410	12.58	11.97	1107							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	120	750	AL	18	0	6	283.0	215.5	1.5	0.13%
LBD XXX-02	DF-XXX-02	120	750	AL	21	0	7	330.1	251.4	1.7	0.15%
LBD XXX-03	DF-XXX-03	120	750	AL	21	0	7	330.1	251.4	1.7	0.15%
LBD XXX-04	DF-XXX-04	120	750	AL	18	3	4	283.0	215.5	1.5	0.13%
LBD XXX-05	DF-XXX-05	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-06	DF-XXX-06	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-07	DF-XXX-07	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-08	DF-XXX-08	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-09	DF-XXX-09	180	750	AL	18	0	6	283.0	215.5	2.2	0.20%
LBD XXX-10	DF-XXX-10	180	750	AL	21	0	7	330.1	251.4	2.6	0.23%
LBD XXX-11	DF-XXX-11	180	750	AL	21	0	7	330.1	251.4	2.6	0.23%
LBD XXX-12	DF-XXX-12	180	750	AL	21	0	7	330.1	251.4	2.6	0.23%
LBD XXX-13	DF-XXX-13	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-14	DF-XXX-14	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-15	DF-XXX-15	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-16	DF-XXX-16	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
				TOTALS	327			5140	3915	AVERAGE	0.24%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 ℃
MAX TEMPERATURE	43.0 ℃

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE ON THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

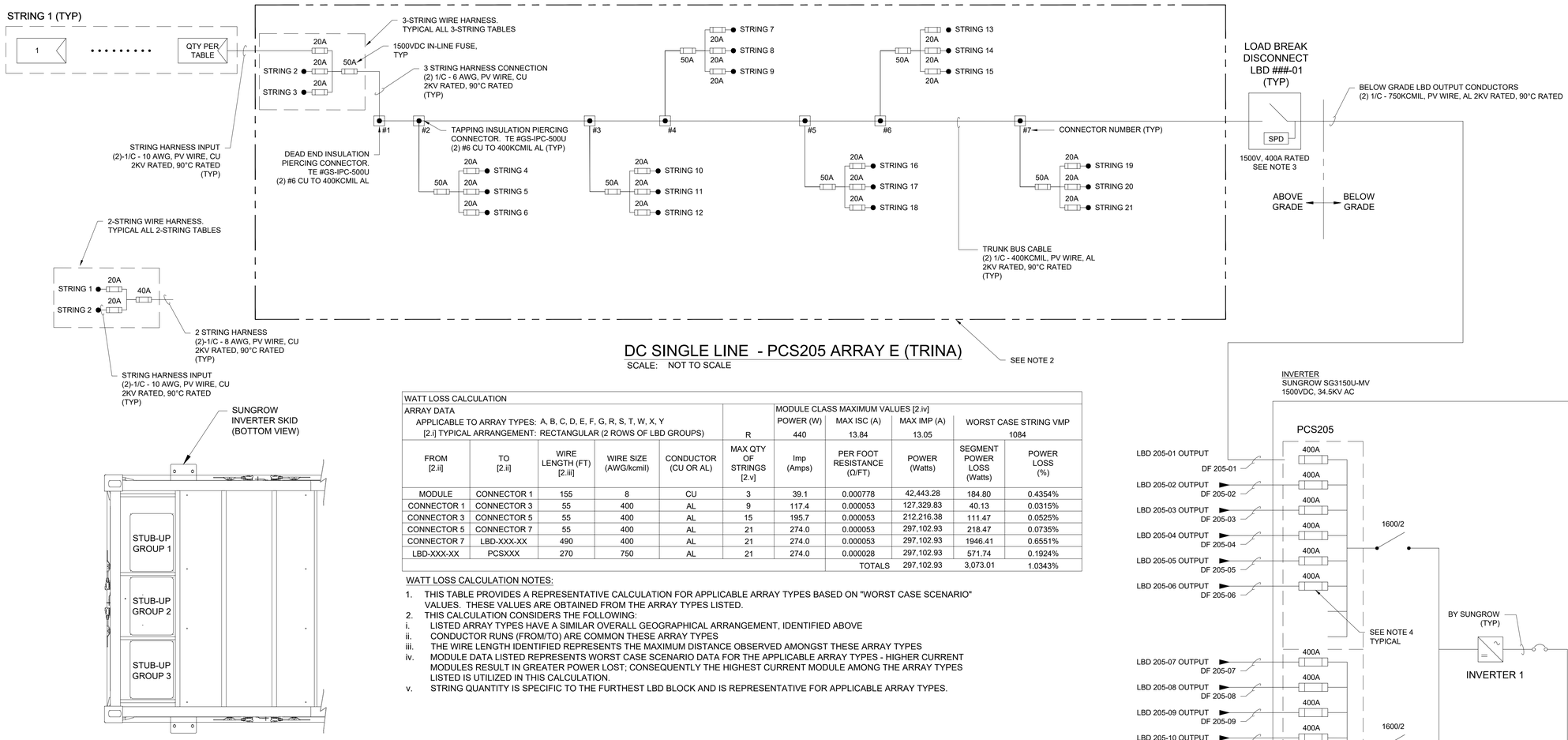
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE D (TRINA)

SHEET #: E-214
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-214 DC SLD - ARRAY TYPE D (TRINA)



DC SINGLE LINE - PCS205 ARRAY E (TRINA)

SCALE: NOT TO SCALE

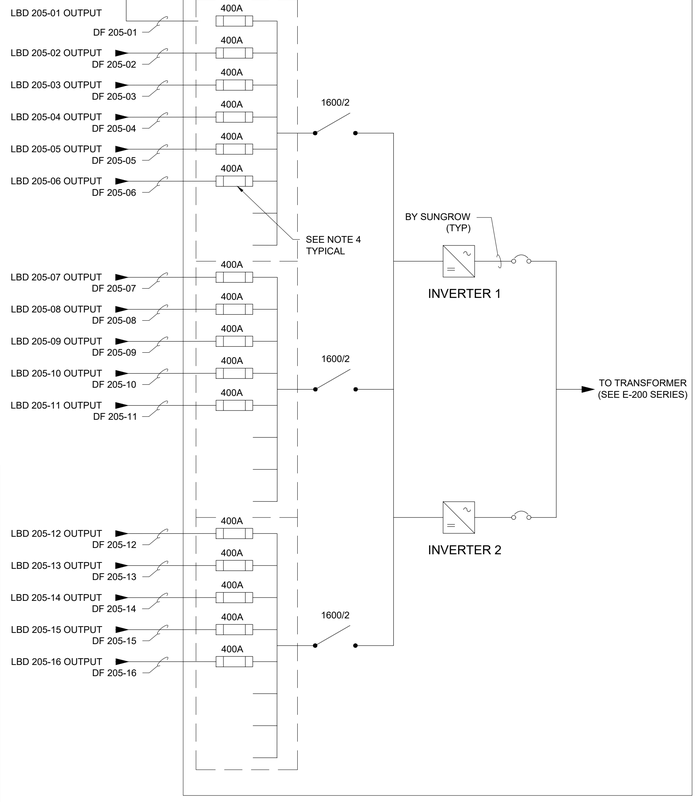
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	Trina
MODEL	TSM-DEG15MC.20(II)-410
POWER	410 W
Vmpp(V)	41.40 V
Impp(A)	9.91 A
Voc (V)	49.30 V
Isc (A)	10.41 A
Voc TEMP COEFFICIENT	-0.0025
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	11,480 W
Voc (STC)	1,380.40 V
Voc (MIN TEMP)*	1,434 V
Vmpp (STC)	1,159.20 V
Vmpp (MAX TEMP)	1,107.04 V
Impp (STC)	9.91 A
Impp Max*	11.97 A
Isc (STC)	10.41 A
Isc max PER NEC 690.8(A)(2)*	12.58 A
INVERTER	
	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY E	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
410	12.58	11.97	1107							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	170	750	AL	18	0	6	283.0	215.5	2.1	0.19%
LBD XXX-02	DF-XXX-02	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-03	DF-XXX-03	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-04	DF-XXX-04	170	750	AL	21	0	7	330.1	251.4	2.4	0.22%
LBD XXX-05	DF-XXX-05	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-06	DF-XXX-06	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-07	DF-XXX-07	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-08	DF-XXX-08	230	750	AL	21	0	7	330.1	251.4	3.3	0.29%
LBD XXX-09	DF-XXX-09	130	750	AL	18	0	6	283.0	215.5	1.6	0.14%
LBD XXX-10	DF-XXX-10	130	750	AL	21	0	7	330.1	251.4	1.8	0.17%
LBD XXX-11	DF-XXX-11	130	750	AL	21	0	7	330.1	251.4	1.8	0.17%
LBD XXX-12	DF-XXX-12	130	750	AL	18	3	4	283.0	215.5	1.6	0.14%
LBD XXX-13	DF-XXX-13	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-14	DF-XXX-14	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-15	DF-XXX-15	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
LBD XXX-16	DF-XXX-16	220	750	AL	21	0	7	330.1	251.4	3.1	0.28%
			TOTALS		327			5140	3915	AVERAGE	0.24%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

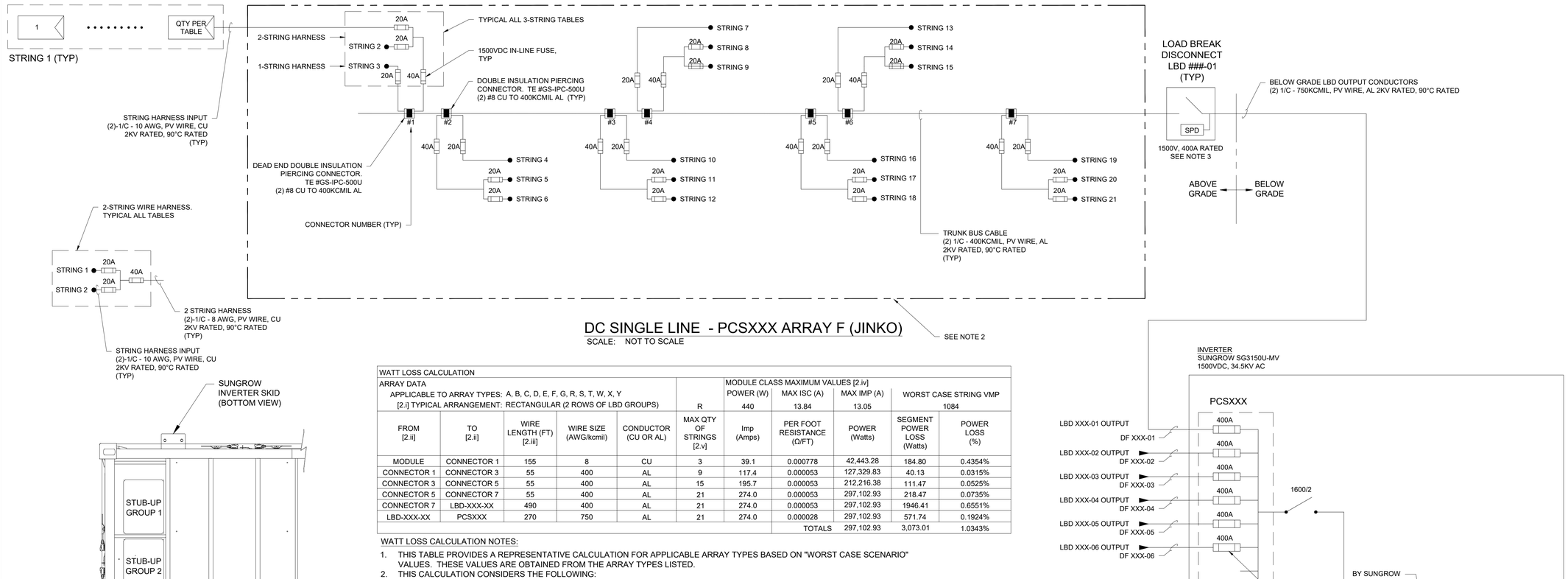
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE E (TRINA)

SHEET #: E-215
REV #: 4

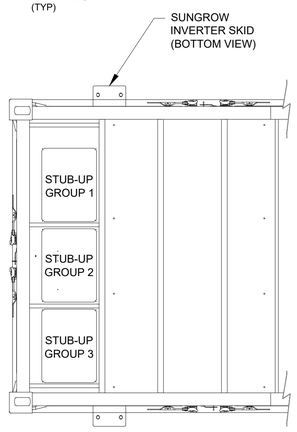
RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-215 DC SLD - ARRAY TYPE E (TRINA)



DC SINGLE LINE - PCSXXX ARRAY F (JINKO)

SCALE: NOT TO SCALE



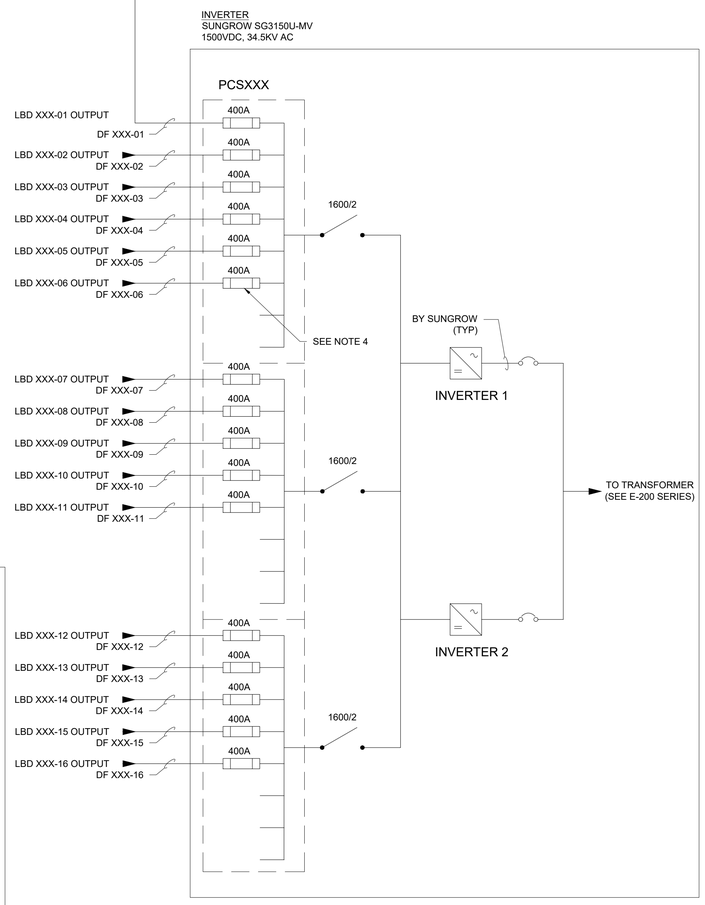
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY F	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	170	750	AL	18	0	6	309.4	235.9	2.3	0.20%
LBD XXX-02	DF-XXX-02	170	750	AL	18	0	6	309.4	235.9	2.3	0.20%
LBD XXX-03	DF-XXX-03	170	750	AL	18	0	6	309.4	235.9	2.3	0.20%
LBD XXX-04	DF-XXX-04	170	750	AL	21	0	7	360.9	275.3	2.6	0.24%
LBD XXX-05	DF-XXX-05	200	750	AL	21	0	7	360.9	275.3	3.1	0.28%
LBD XXX-06	DF-XXX-06	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-07	DF-XXX-07	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-08	DF-XXX-08	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-09	DF-XXX-09	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-10	DF-XXX-10	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-11	DF-XXX-11	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-12	DF-XXX-12	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-13	DF-XXX-13	230	750	AL	21	0	7	360.9	275.3	3.6	0.32%
LBD XXX-14	DF-XXX-14	230	750	AL	18	0	6	309.4	235.9	3.1	0.28%
LBD XXX-15	DF-XXX-15	230	750	AL	18	0	6	309.4	235.9	3.1	0.28%
LBD XXX-16	DF-XXX-16	230	750	AL	18	0	6	309.4	235.9	3.1	0.28%
				TOTALS	297			5105	3893	AVERAGE	0.25%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

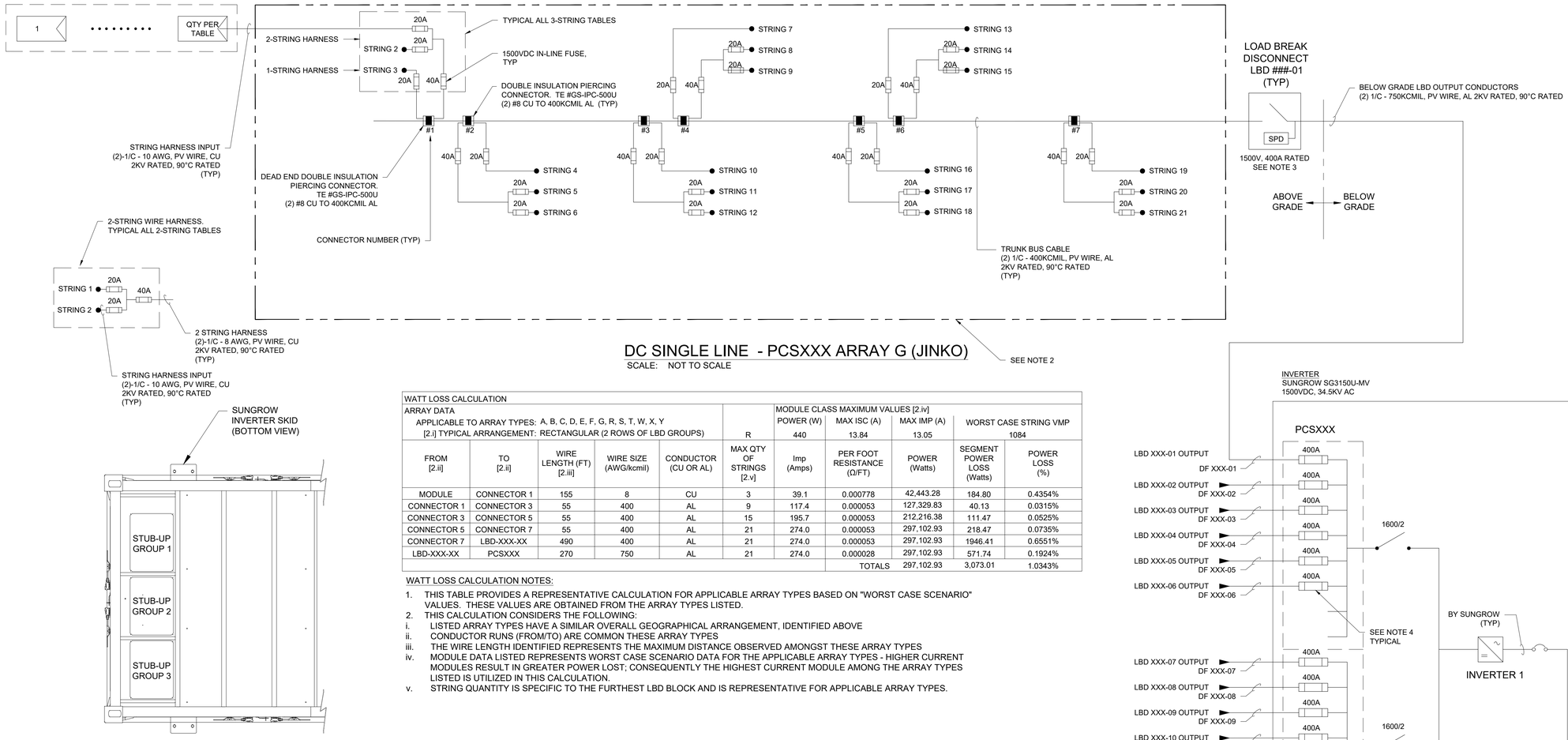
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE F (JINKO)

SHEET #: E-216
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-216 DC SLD - ARRAY TYPE F (JINKO)



DC SINGLE LINE - PCSXXX ARRAY G (JINKO)

SCALE: NOT TO SCALE

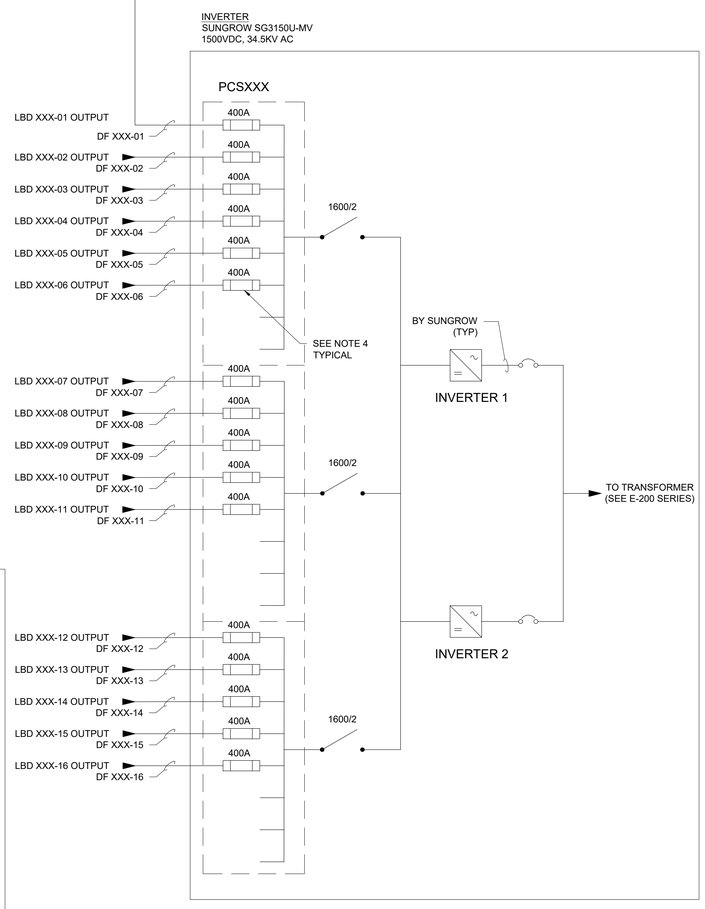
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 ℃
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY G	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-02	DF-XXX-02	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-03	DF-XXX-03	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-04	DF-XXX-04	240	750	AL	21	0	7	360.9	275.3	3.7	0.34%
LBD XXX-05	DF-XXX-05	110	750	AL	18	3	4	309.4	235.9	1.5	0.13%
LBD XXX-06	DF-XXX-06	110	750	AL	18	0	6	309.4	235.9	1.5	0.13%
LBD XXX-07	DF-XXX-07	110	750	AL	18	0	6	309.4	235.9	1.5	0.13%
LBD XXX-08	DF-XXX-08	110	750	AL	18	0	6	309.4	235.9	1.5	0.13%
LBD XXX-09	DF-XXX-09	270	750	AL	18	0	6	309.4	235.9	3.6	0.32%
LBD XXX-10	DF-XXX-10	270	750	AL	18	0	6	309.4	235.9	3.6	0.32%
LBD XXX-11	DF-XXX-11	270	750	AL	18	0	6	309.4	235.9	3.6	0.32%
LBD XXX-12	DF-XXX-12	270	750	AL	21	0	7	360.9	275.3	4.2	0.38%
LBD XXX-13	DF-XXX-13	240	750	AL	21	0	7	360.9	275.3	3.7	0.34%
LBD XXX-14	DF-XXX-14	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-15	DF-XXX-15	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-16	DF-XXX-16	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
				TOTALS	297			5105	3893	AVERAGE	0.27%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 ℃
MAX TEMPERATURE	43.0 ℃

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

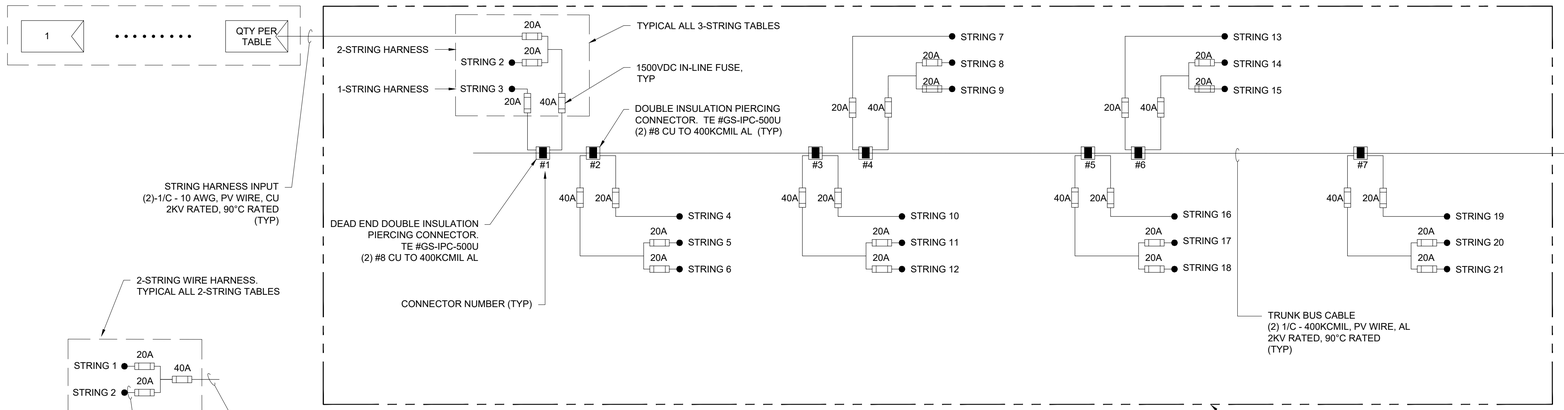
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE G (JINKO)

SHEET #: E-217
REV #: 4

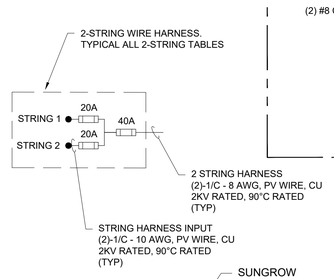
RECORD DRAWING

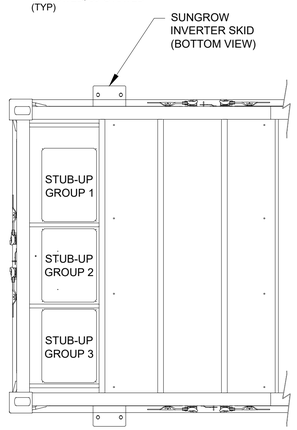
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-217 DC SLD - ARRAY TYPE G (JINKO)



DC SINGLE LINE - PCS1208 ARRAY H (JINKO)

SCALE: NOT TO SCALE





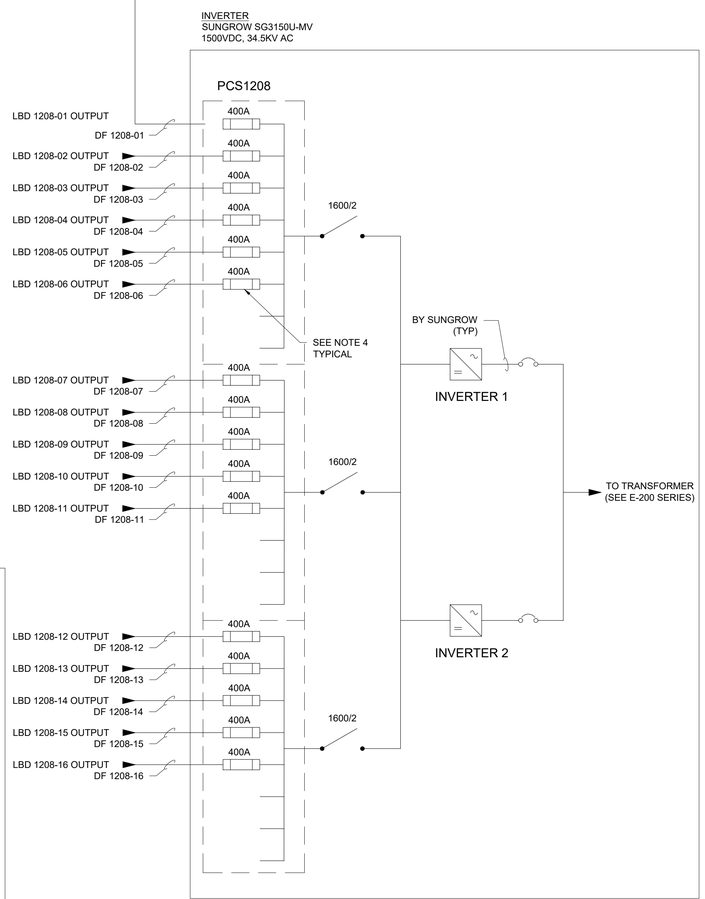
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES				
APPLICABLE TO ARRAY TYPES: H, V						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: L-SHAPED BLOCK CONFIGURATION					V	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	234.9	0.000053	254,659.66	81.72	0.0321%
CONNECTOR 6	LBD-XXX-XX	485	400	AL	18	234.9	0.000053	254,659.66	1415.42	0.5558%
LBD-XXX-XX	PCSXXX	500	750	AL	18	234.9	0.000028	254,659.66	777.87	0.3055%
							TOTALS	254,659.66	2,611.40	1.0254%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY H	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-02	DF-XXX-02	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-03	DF-XXX-03	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-04	DF-XXX-04	200	750	AL	21	0	7	360.9	275.3	3.1	0.28%
LBD XXX-05	DF-XXX-05	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-06	DF-XXX-06	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-07	DF-XXX-07	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-08	DF-XXX-08	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-09	DF-XXX-09	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-10	DF-XXX-10	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-11	DF-XXX-11	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-12	DF-XXX-12	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-13	DF-XXX-13	480	750	AL	21	0	7	360.9	275.3	7.5	0.67%
LBD XXX-14	DF-XXX-14	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
LBD XXX-15	DF-XXX-15	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
LBD XXX-16	DF-XXX-16	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
				TOTALS	297			5105	3893	AVERAGE	0.32%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

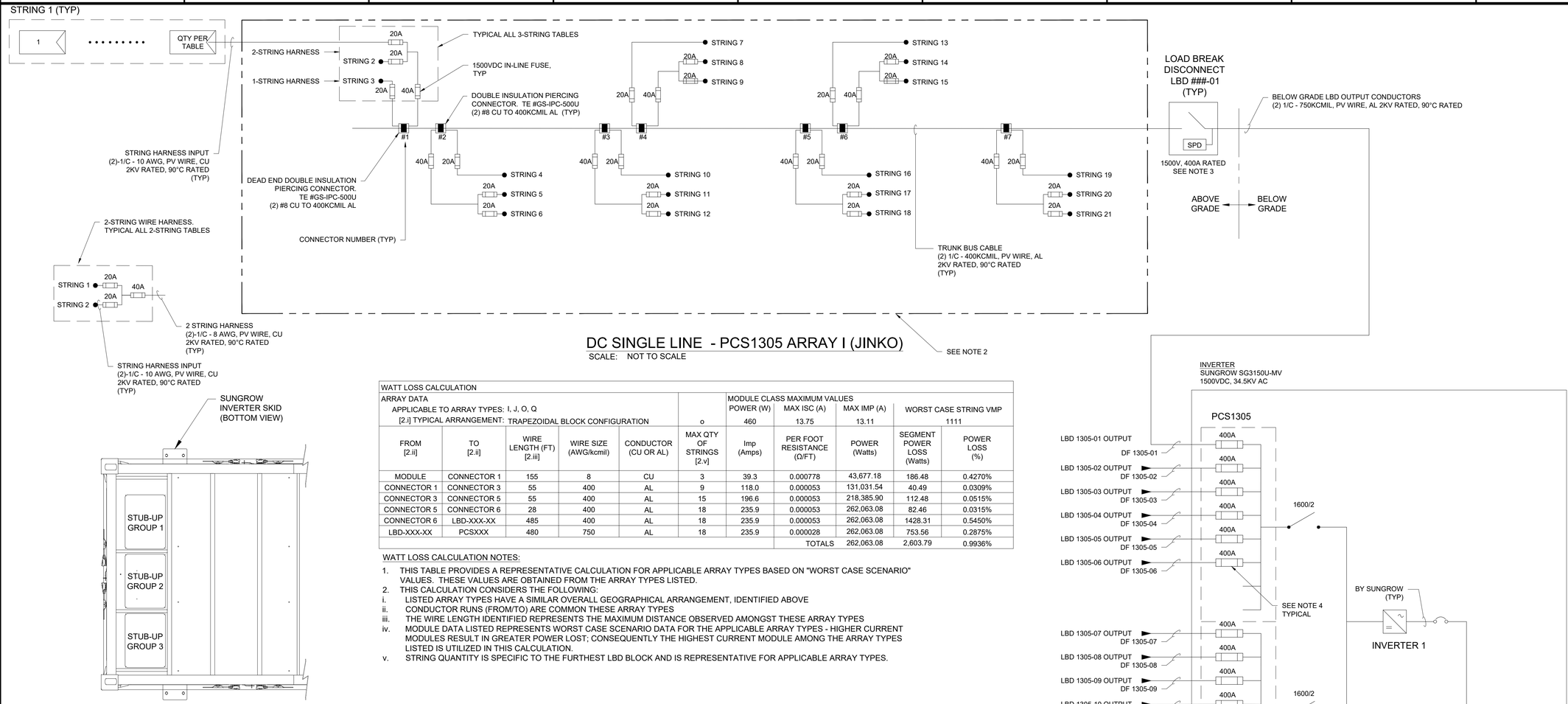
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE H (JINKO)

SHEET #: E-218
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-218 DC SLD - ARRAY TYPE H (JINKO)



DC SINGLE LINE - PCS1305 ARRAY I (JINKO)

SCALE: NOT TO SCALE

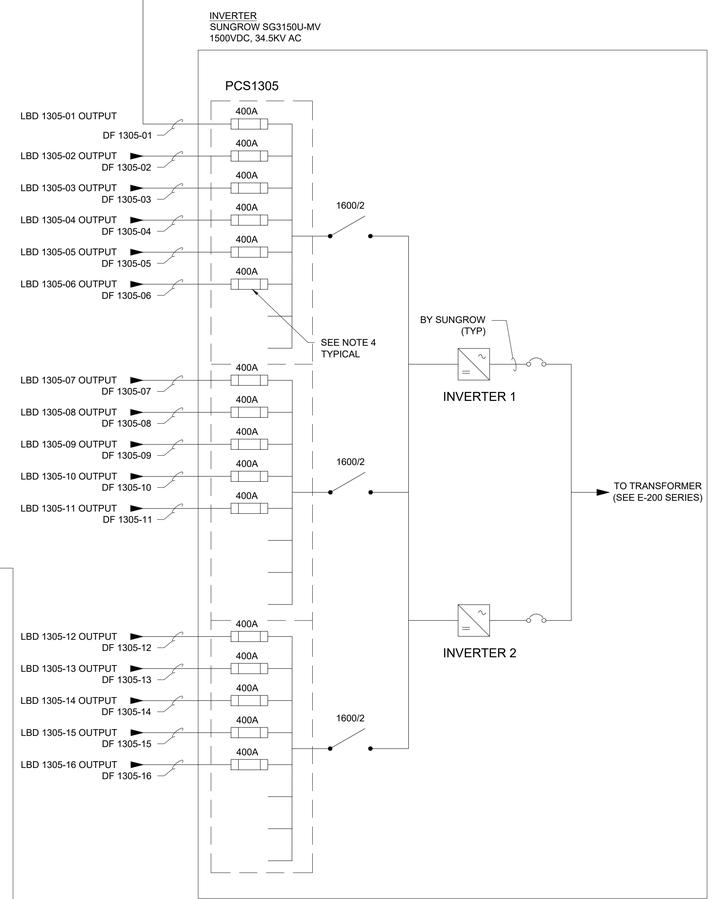
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES				
APPLICABLE TO ARRAY TYPES: I, J, O, Q						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: TRAPEZOIDAL BLOCK CONFIGURATION					o	460	13.75	13.11	1111	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	485	400	AL	18	235.9	0.000053	262,063.08	1428.31	0.5450%
LBD-XXX-XX	PCSXXX	480	750	AL	18	235.9	0.000028	262,063.08	753.56	0.2875%
							TOTALS	262,063.08	2,603.79	0.9936%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 ℃
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY I	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	300	750	AL	18	0	6	309.4	235.9	4.0	0.36%
LBD XXX-02	DF-XXX-02	300	750	AL	18	0	6	309.4	235.9	4.0	0.36%
LBD XXX-03	DF-XXX-03	300	750	AL	18	0	6	309.4	235.9	4.0	0.36%
LBD XXX-04	DF-XXX-04	300	750	AL	18	0	6	309.4	235.9	4.0	0.36%
LBD XXX-05	DF-XXX-05	170	750	AL	21	0	7	360.9	275.3	2.6	0.24%
LBD XXX-06	DF-XXX-06	210	750	AL	21	0	7	360.9	275.3	3.3	0.29%
LBD XXX-07	DF-XXX-07	610	750	AL	18	0	6	309.4	235.9	8.1	0.73%
LBD XXX-08	DF-XXX-08	610	750	AL	18	0	6	309.4	235.9	8.1	0.73%
LBD XXX-09	DF-XXX-09	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-10	DF-XXX-10	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-11	DF-XXX-11	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-12	DF-XXX-12	230	750	AL	18	0	6	309.4	235.9	3.1	0.28%
LBD XXX-13	DF-XXX-13	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
LBD XXX-14	DF-XXX-14	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
LBD XXX-15	DF-XXX-15	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
LBD XXX-16	DF-XXX-16	480	750	AL	21	0	7	360.9	275.3	7.5	0.67%
				TOTALS	297			5105	3893	AVERAGE	0.43%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 ℃
MAX TEMPERATURE	43.0 ℃

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

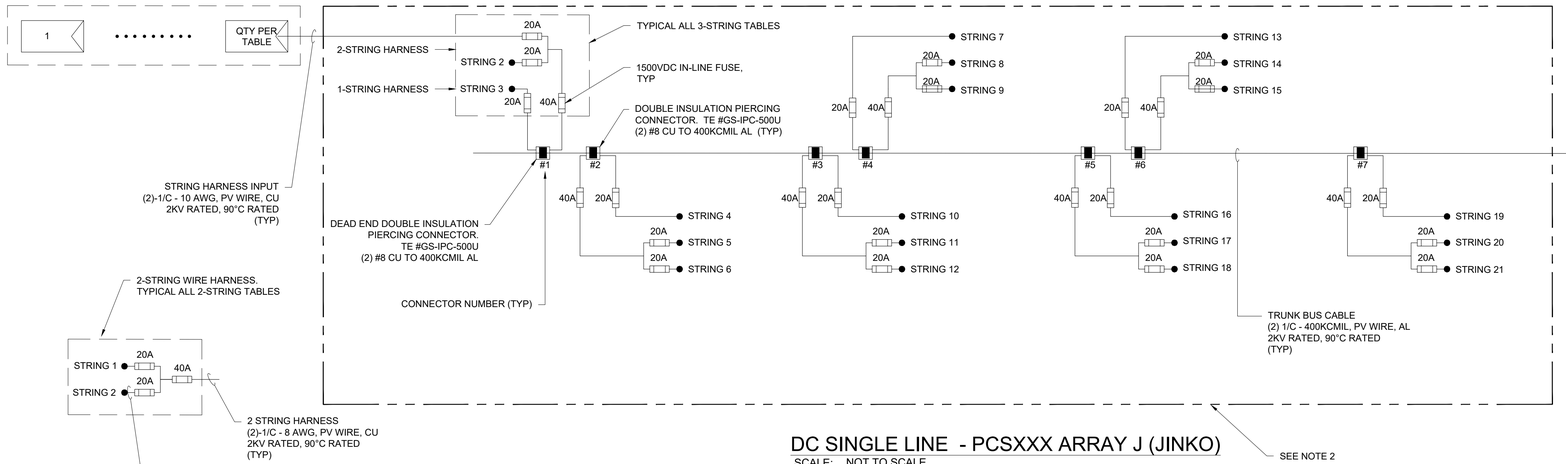
SHEET NAME:
DC SLD - ARRAY TYPE I (JINKO)

SHEET #: E-219
REV #: 4

RECORD DRAWING

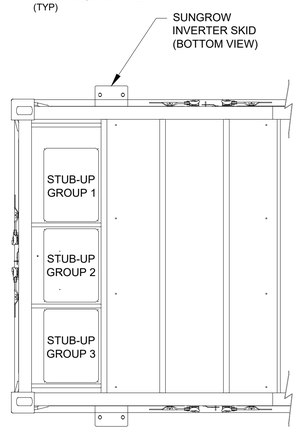
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-219 DC SLD - ARRAY TYPE I (JINKO)

STRING 1 (TYP)



DC SINGLE LINE - PCSXXX ARRAY J (JINKO)

SCALE: NOT TO SCALE



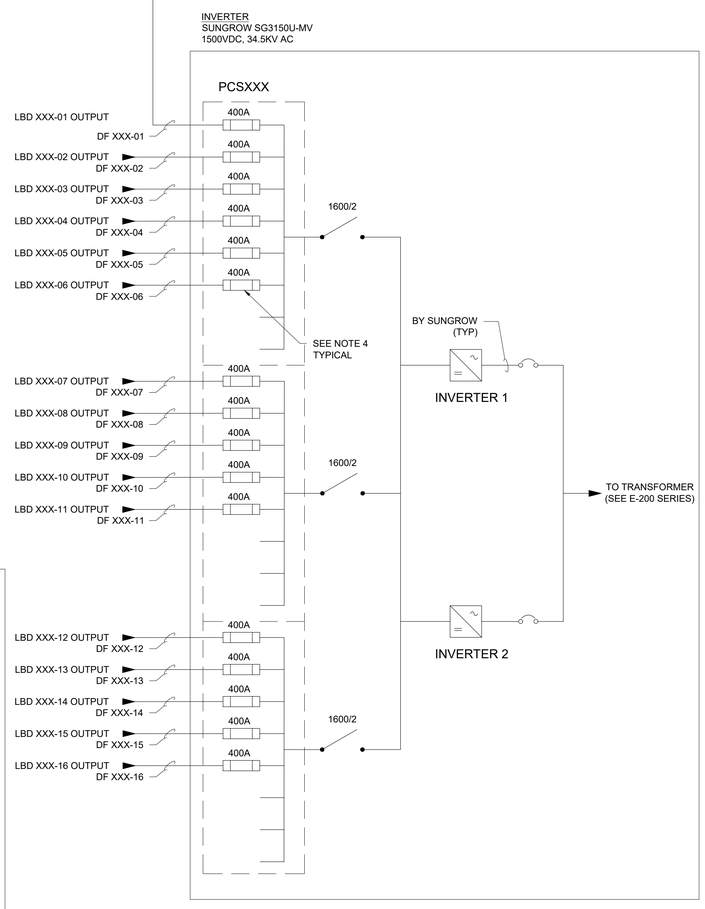
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES				
APPLICABLE TO ARRAY TYPES: I, J, O, Q						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: TRAPEZOIDAL BLOCK CONFIGURATION					o	460	13.75	13.11	1111	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	485	400	AL	18	235.9	0.000053	262,063.08	1428.31	0.5450%
LBD-XXX-XX	PCSXXX	480	750	AL	18	235.9	0.000028	262,063.08	753.56	0.2875%
							TOTALS	262,063.08	2,603.79	0.9936%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY J	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	450	750	AL	18	0	6	309.4	235.9	6.0	0.54%
LBD XXX-02	DF-XXX-02	450	750	AL	18	0	6	309.4	235.9	6.0	0.54%
LBD XXX-03	DF-XXX-03	450	750	AL	18	0	6	309.4	235.9	6.0	0.54%
LBD XXX-04	DF-XXX-04	450	750	AL	18	0	6	309.4	235.9	6.0	0.54%
LBD XXX-05	DF-XXX-05	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-06	DF-XXX-06	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-07	DF-XXX-07	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-08	DF-XXX-08	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-09	DF-XXX-09	140	750	AL	21	0	7	360.9	275.3	2.2	0.20%
LBD XXX-10	DF-XXX-10	140	750	AL	18	0	6	309.4	235.9	1.9	0.17%
LBD XXX-11	DF-XXX-11	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-12	DF-XXX-12	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-13	DF-XXX-13	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-14	DF-XXX-14	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-15	DF-XXX-15	220	750	AL	21	0	7	360.9	275.3	3.4	0.31%
LBD XXX-16	DF-XXX-16	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
				TOTALS	297			5105	3893	AVERAGE	0.31%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

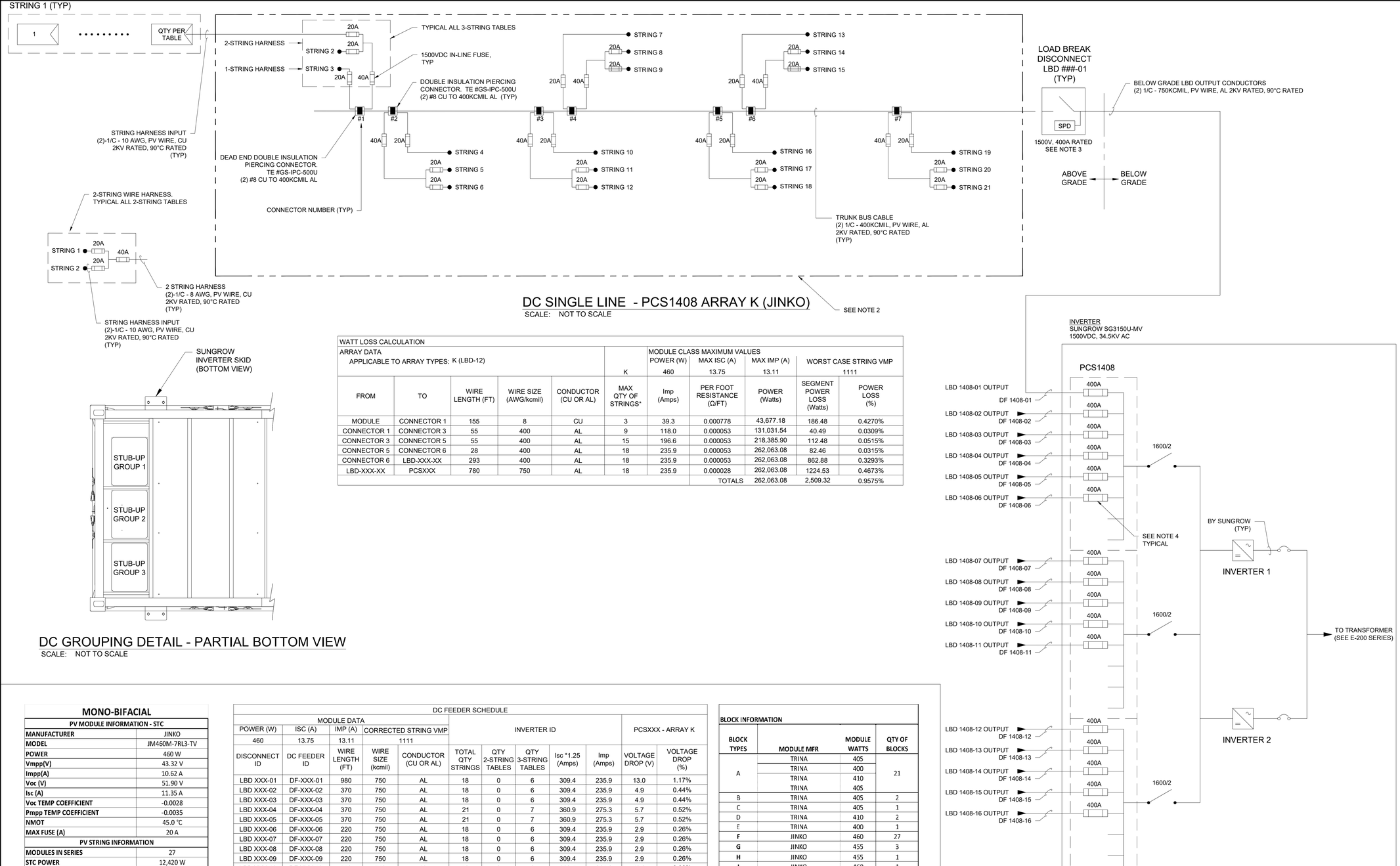
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE J (JINKO)

SHEET #: E-220
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-220 DC SLD - ARRAY TYPE J (JINKO)



DC SINGLE LINE - PCS1408 ARRAY K (JINKO)

SCALE: NOT TO SCALE

DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCLUATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: K (LBD-12)						MODULE CLASS MAXIMUM VALUES				
						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
					K	460	13.75	13.11	1111	
FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS*	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	293	400	AL	18	235.9	0.000053	262,063.08	862.88	0.3293%
LBD-XXX-XX	PCSXXX	780	750	AL	18	235.9	0.000028	262,063.08	1224.53	0.4673%
							TOTALS	262,063.08	2,509.32	0.9575%

MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY K	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	980	750	AL	18	0	6	309.4	235.9	13.0	1.17%
LBD XXX-02	DF-XXX-02	370	750	AL	18	0	6	309.4	235.9	4.9	0.44%
LBD XXX-03	DF-XXX-03	370	750	AL	18	0	6	309.4	235.9	4.9	0.44%
LBD XXX-04	DF-XXX-04	370	750	AL	21	0	7	360.9	275.3	5.7	0.52%
LBD XXX-05	DF-XXX-05	370	750	AL	21	0	7	360.9	275.3	5.7	0.52%
LBD XXX-06	DF-XXX-06	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-07	DF-XXX-07	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-08	DF-XXX-08	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-09	DF-XXX-09	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-10	DF-XXX-10	770	750	AL	18	0	6	309.4	235.9	10.2	0.92%
LBD XXX-11	DF-XXX-11	770	750	AL	18	0	6	309.4	235.9	10.2	0.92%
LBD XXX-12	DF-XXX-12	770	750	AL	18	0	6	309.4	235.9	10.2	0.92%
LBD XXX-13	DF-XXX-13	310	750	AL	21	0	7	360.9	275.3	4.8	0.43%
LBD XXX-14	DF-XXX-14	310	750	AL	18	0	6	309.4	235.9	4.1	0.37%
LBD XXX-15	DF-XXX-15	310	750	AL	18	0	6	309.4	235.9	4.1	0.37%
LBD XXX-16	DF-XXX-16	310	750	AL	18	0	6	309.4	235.9	4.1	0.37%
				TOTALS	297			5105	3893	AVERAGE	0.53%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

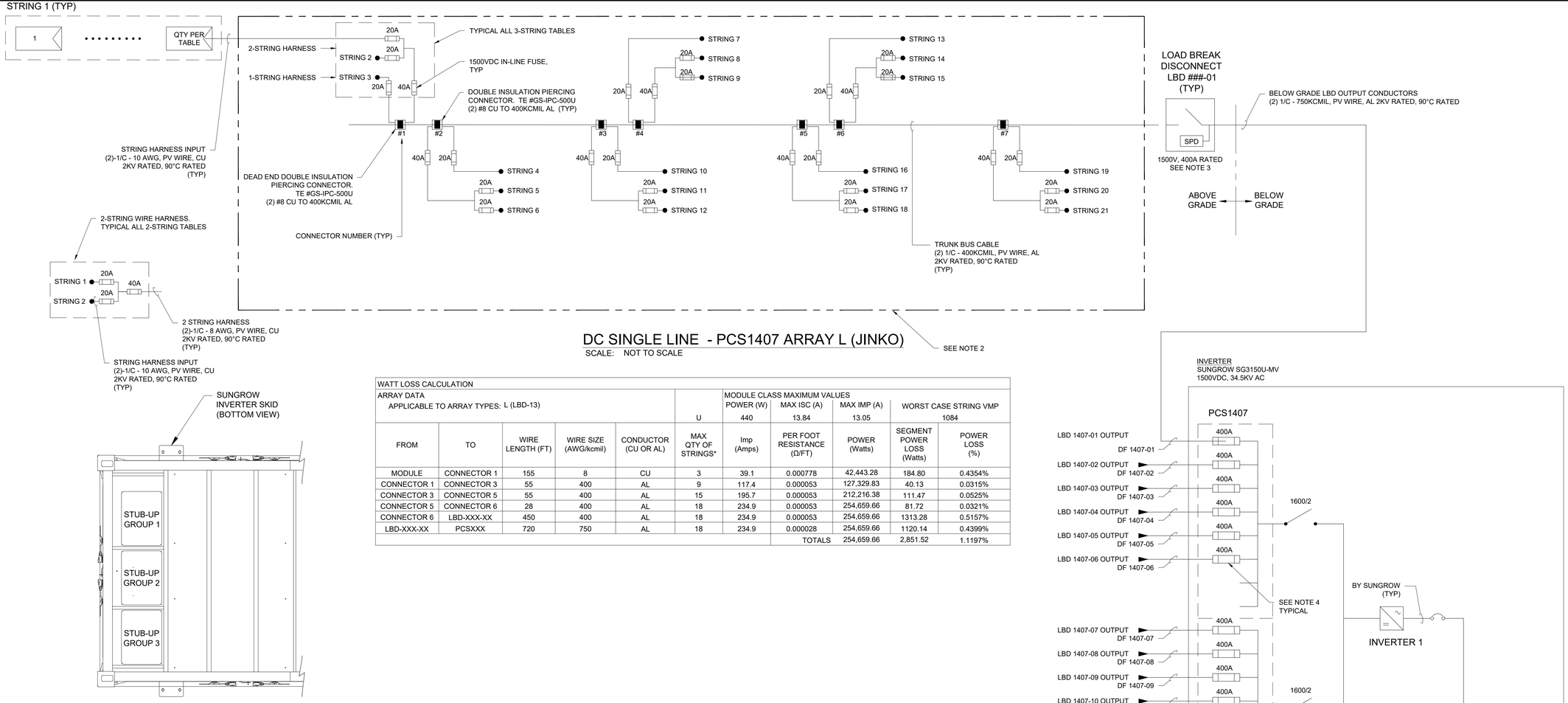
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME: DC SLD - ARRAY TYPE K (JINKO)

SHEET #: E-221
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-221 DC SLD - ARRAY TYPE K (JINKO)



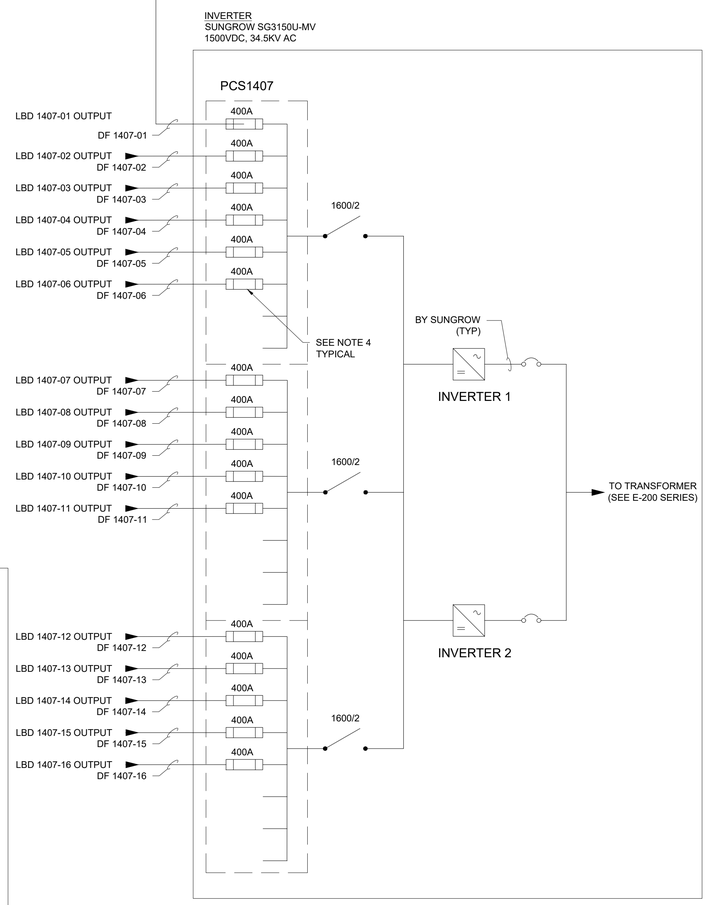
DC SINGLE LINE - PCS1407 ARRAY L (JINKO)

SCALE: NOT TO SCALE

DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: L (LBD-13)						MODULE CLASS MAXIMUM VALUES				
						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
					U	440	13.84	13.05	1084	
FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS*	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	234.9	0.000053	254,659.66	81.72	0.0321%
CONNECTOR 6	LBD-XXX-XX	450	400	AL	18	234.9	0.000053	254,659.66	1313.28	0.5157%
LBD-XXX-XX	PCSXXX	720	750	AL	18	234.9	0.000028	254,659.66	1120.14	0.4399%
							TOTALS	254,659.66	2,851.52	1.1197%



NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY L	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	260	750	AL	18	0	6	309.4	235.9	3.5	0.31%
LBD XXX-02	DF-XXX-02	260	750	AL	18	0	6	309.4	235.9	3.5	0.31%
LBD XXX-03	DF-XXX-03	260	750	AL	18	0	6	309.4	235.9	3.5	0.31%
LBD XXX-04	DF-XXX-04	260	750	AL	18	0	6	309.4	235.9	3.5	0.31%
LBD XXX-05	DF-XXX-05	270	750	AL	21	0	7	360.9	275.3	4.2	0.38%
LBD XXX-06	DF-XXX-06	270	750	AL	18	0	6	309.4	235.9	3.6	0.32%
LBD XXX-07	DF-XXX-07	270	750	AL	18	0	6	309.4	235.9	3.6	0.32%
LBD XXX-08	DF-XXX-08	270	750	AL	18	0	6	309.4	235.9	3.6	0.32%
LBD XXX-09	DF-XXX-09	430	750	AL	18	0	6	309.4	235.9	5.7	0.52%
LBD XXX-10	DF-XXX-10	430	750	AL	18	0	6	309.4	235.9	5.7	0.52%
LBD XXX-11	DF-XXX-11	430	750	AL	18	0	6	309.4	235.9	5.7	0.52%
LBD XXX-12	DF-XXX-12	430	750	AL	21	0	7	360.9	275.3	6.7	0.60%
LBD XXX-13	DF-XXX-13	720	750	AL	18	0	6	309.4	235.9	9.6	0.86%
LBD XXX-14	DF-XXX-14	720	750	AL	18	0	6	309.4	235.9	9.6	0.86%
LBD XXX-15	DF-XXX-15	720	750	AL	18	0	6	309.4	235.9	9.6	0.86%
LBD XXX-16	DF-XXX-16	720	750	AL	21	0	7	360.9	275.3	11.2	1.01%
				TOTALS	297			5105	3893	AVERAGE	0.52%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

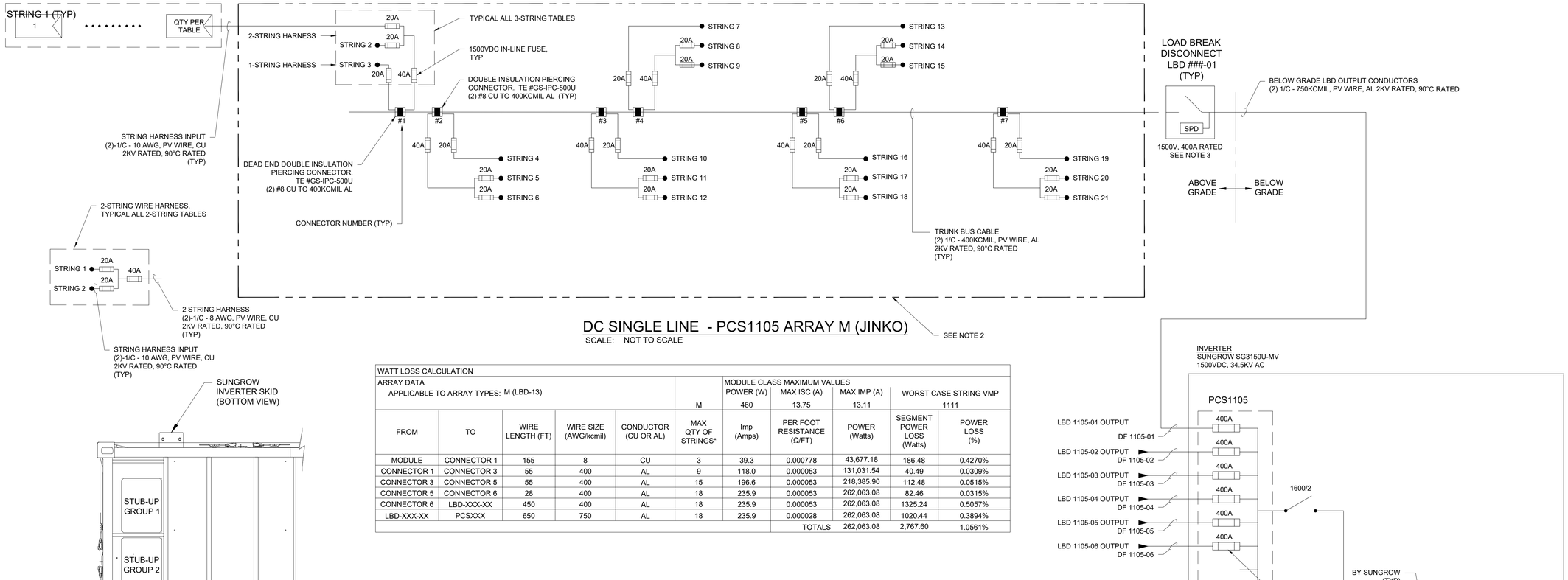
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD -ARRAY TYPE L (JINKO)

SHEET #: E-222
REV #: 4

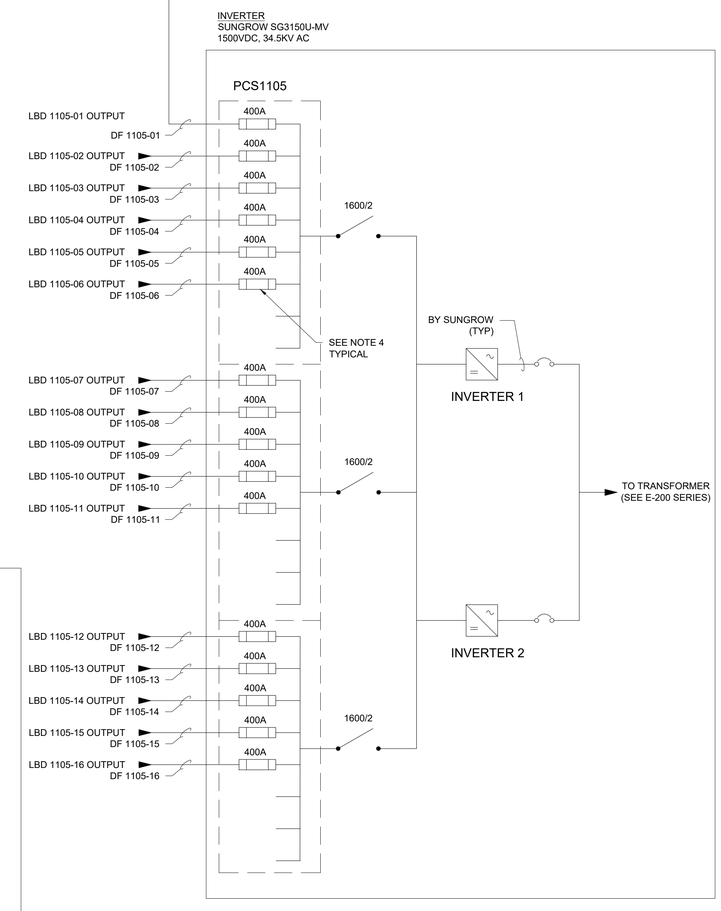
RECORD DRAWING

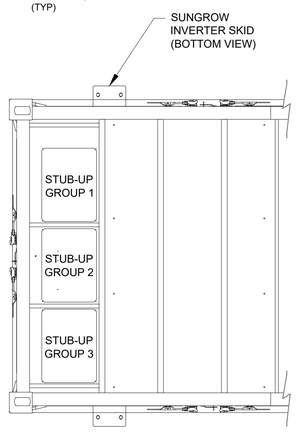
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-222 DC SLD -ARRAY TYPE L (JINKO)



DC SINGLE LINE - PCS1105 ARRAY M (JINKO)

SCALE: NOT TO SCALE





DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCLUATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: M (LBD-13)						MODULE CLASS MAXIMUM VALUES				
						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
					M	460	13.75	13.11	1111	
FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS*	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	450	400	AL	18	235.9	0.000053	262,063.08	1325.24	0.5057%
LBD-XXX-XX	PCSXXX	650	750	AL	18	235.9	0.000028	262,063.08	1020.44	0.3894%
							TOTALS	262,063.08	2,767.60	1.0561%

MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY M	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-02	DF-XXX-02	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-03	DF-XXX-03	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-04	DF-XXX-04	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-05	DF-XXX-05	200	750	AL	21	0	7	360.9	275.3	3.1	0.28%
LBD XXX-06	DF-XXX-06	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-07	DF-XXX-07	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-08	DF-XXX-08	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-09	DF-XXX-09	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-10	DF-XXX-10	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-11	DF-XXX-11	1230	750	AL	18	0	6	309.4	235.9	16.4	1.47%
LBD XXX-12	DF-XXX-12	1230	750	AL	18	0	6	309.4	235.9	16.4	1.47%
LBD XXX-13	DF-XXX-13	630	750	AL	18	0	6	309.4	235.9	8.4	0.75%
LBD XXX-14	DF-XXX-14	630	750	AL	18	0	6	309.4	235.9	8.4	0.75%
LBD XXX-15	DF-XXX-15	630	750	AL	18	0	6	309.4	235.9	8.4	0.75%
LBD XXX-16	DF-XXX-16	630	750	AL	21	0	7	360.9	275.3	9.8	0.88%
				TOTALS	297			5105	3893	AVERAGE	0.53%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

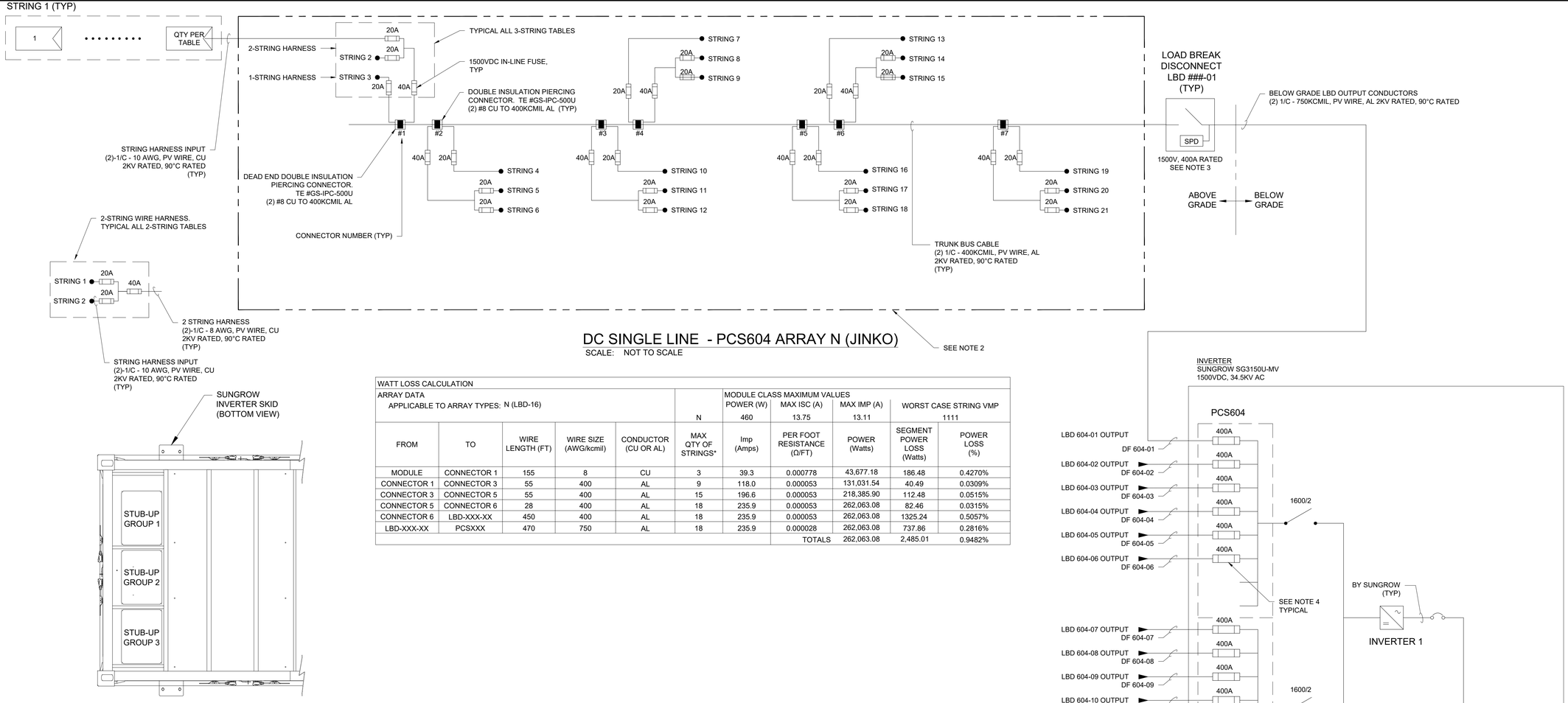
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE M (JINKO)

SHEET #: E-223
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-223 DC SLD - ARRAY TYPE M (JINKO)



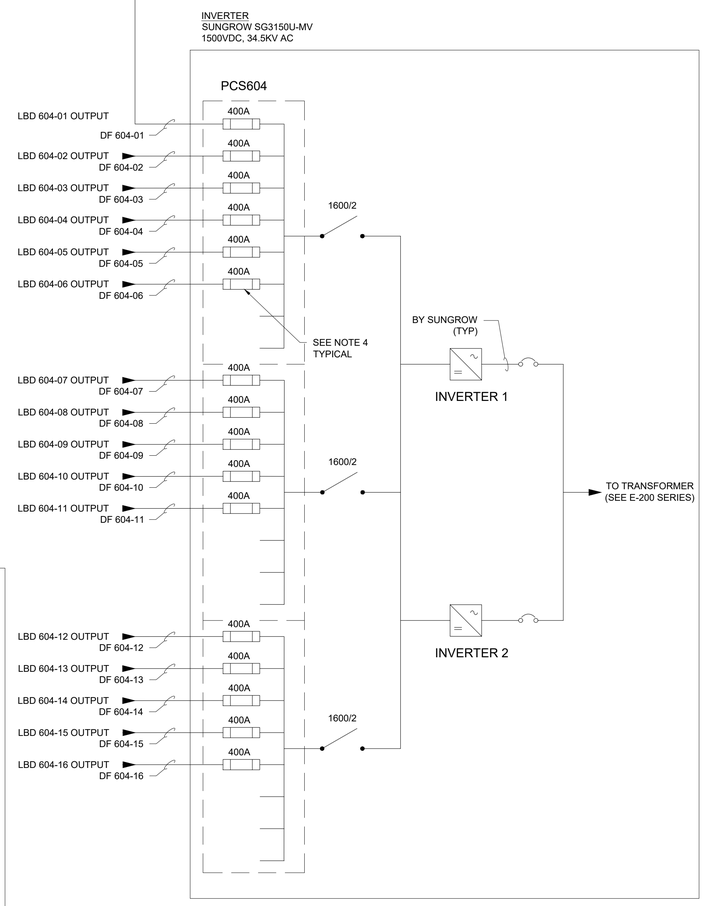
DC SINGLE LINE - PCS604 ARRAY N (JINKO)

SCALE: NOT TO SCALE

DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: N (LBD-16)					N	MODULE CLASS MAXIMUM VALUES POWER (W) 460	MAX ISC (A) 13.75	MAX IMP (A) 13.11	WORST CASE STRING VMP 1111	
FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS*	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	450	400	AL	18	235.9	0.000053	262,063.08	1325.24	0.5057%
LBD-XXX-XX	PCSXXX	470	750	AL	18	235.9	0.000028	262,063.08	737.86	0.2816%
							TOTALS	262,063.08	2,485.01	0.9482%



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY N	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	490	750	AL	21	0	7	360.9	275.3	7.6	0.68%
LBD XXX-02	DF-XXX-02	490	750	AL	18	0	6	309.4	235.9	6.5	0.59%
LBD XXX-03	DF-XXX-03	490	750	AL	18	0	6	309.4	235.9	6.5	0.59%
LBD XXX-04	DF-XXX-04	180	750	AL	21	0	7	360.9	275.3	2.8	0.25%
LBD XXX-05	DF-XXX-05	180	750	AL	18	0	6	309.4	235.9	2.4	0.22%
LBD XXX-06	DF-XXX-06	180	750	AL	18	0	6	309.4	235.9	2.4	0.22%
LBD XXX-07	DF-XXX-07	180	750	AL	18	0	6	309.4	235.9	2.4	0.22%
LBD XXX-08	DF-XXX-08	170	750	AL	18	3	4	309.4	235.9	2.3	0.20%
LBD XXX-09	DF-XXX-09	170	750	AL	18	0	6	309.4	235.9	2.3	0.20%
LBD XXX-10	DF-XXX-10	170	750	AL	18	0	6	309.4	235.9	2.3	0.20%
LBD XXX-11	DF-XXX-11	640	750	AL	18	0	6	309.4	235.9	8.5	0.77%
LBD XXX-12	DF-XXX-12	640	750	AL	18	0	6	309.4	235.9	8.5	0.77%
LBD XXX-13	DF-XXX-13	470	750	AL	21	0	7	360.9	275.3	7.3	0.66%
LBD XXX-14	DF-XXX-14	470	750	AL	18	0	6	309.4	235.9	6.3	0.56%
LBD XXX-15	DF-XXX-15	470	750	AL	18	0	6	309.4	235.9	6.3	0.56%
LBD XXX-16	DF-XXX-16	470	750	AL	18	0	6	309.4	235.9	6.3	0.56%
				TOTALS	297			5105	3893	AVERAGE	0.45%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

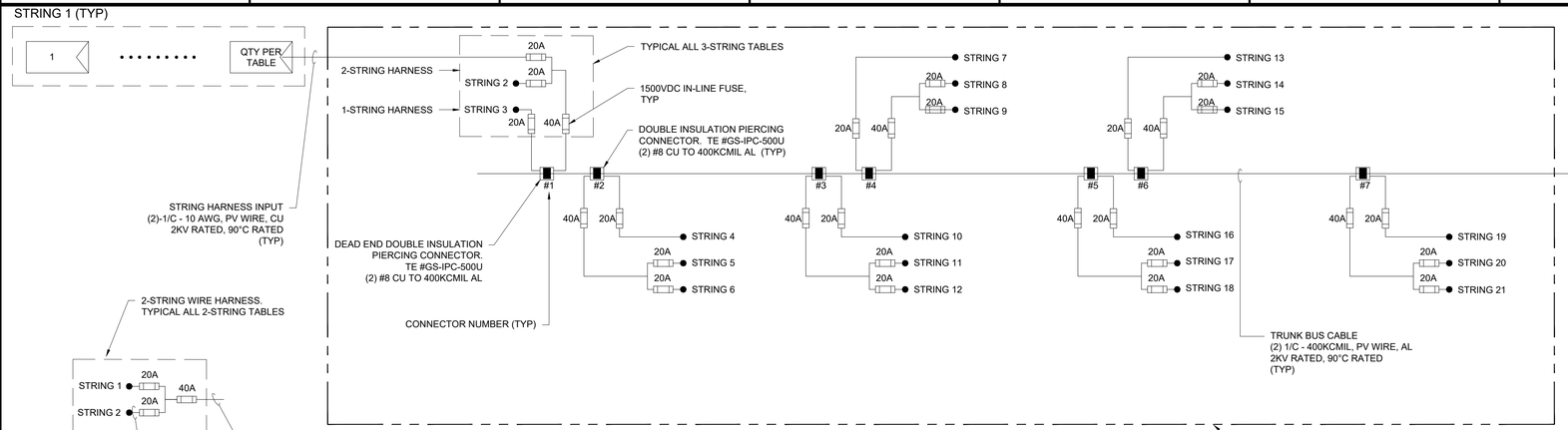
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

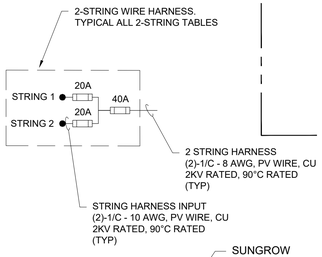
SHEET NAME:
DC SLD - ARRAY TYPE N (JINKO)

SHEET #: E-224
REV #: 4

RECORD DRAWING

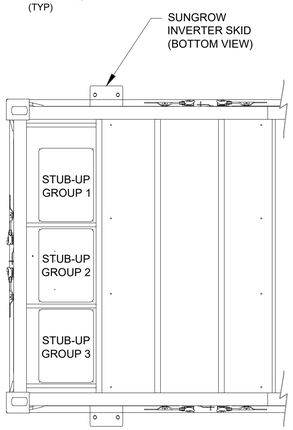
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-224 DC SLD - ARRAY TYPE N (JINKO)





DC SINGLE LINE - PCS606 ARRAY O (JINKO)

SCALE: NOT TO SCALE



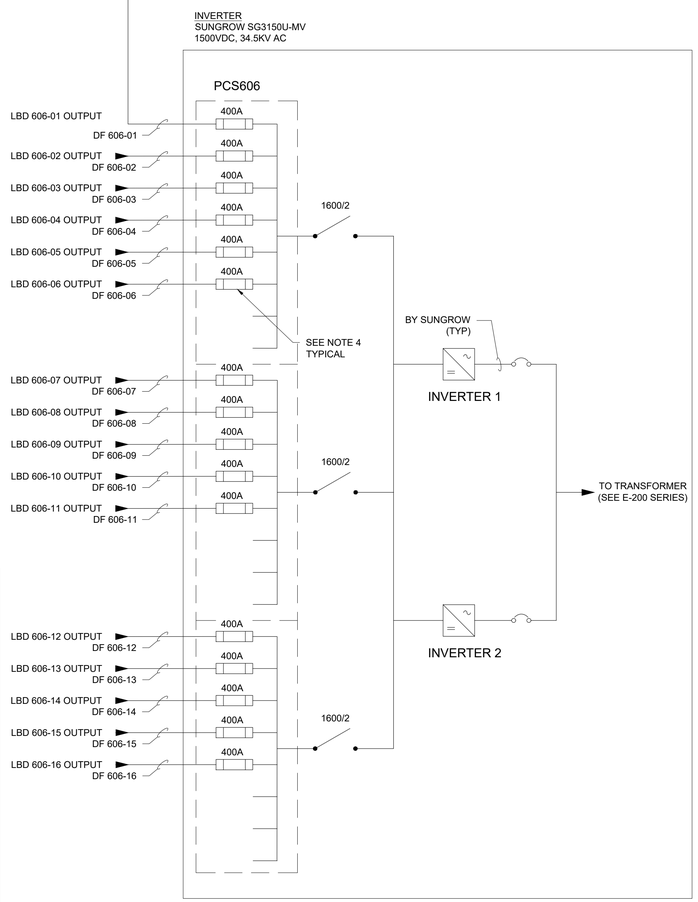
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES				
APPLICABLE TO ARRAY TYPES: I, J, O, Q						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: TRAPEZOIDAL BLOCK CONFIGURATION					o	460	13.75	13.11	1111	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	485	400	AL	18	235.9	0.000053	262,063.08	1428.31	0.5450%
LBD-XXX-XX	PCSXXX	480	750	AL	18	235.9	0.000028	262,063.08	753.56	0.2875%
							TOTALS	262,063.08	2,603.79	0.9936%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 ℃
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY O	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-02	DF-XXX-02	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-03	DF-XXX-03	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-04	DF-XXX-04	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-05	DF-XXX-05	720	750	AL	18	0	6	309.4	235.9	9.6	0.86%
LBD XXX-06	DF-XXX-06	720	750	AL	18	0	6	309.4	235.9	9.6	0.86%
LBD XXX-07	DF-XXX-07	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-08	DF-XXX-08	210	750	AL	18	3	6	309.4	235.9	2.8	0.25%
LBD XXX-09	DF-XXX-09	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-10	DF-XXX-10	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-11	DF-XXX-11	750	750	AL	18	0	6	309.4	235.9	10.0	0.90%
LBD XXX-12	DF-XXX-12	750	750	AL	18	0	6	309.4	235.9	10.0	0.90%
LBD XXX-13	DF-XXX-13	480	750	AL	21	0	7	360.9	275.3	7.5	0.67%
LBD XXX-14	DF-XXX-14	480	750	AL	21	0	7	360.9	275.3	7.5	0.67%
LBD XXX-15	DF-XXX-15	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
LBD XXX-16	DF-XXX-16	480	750	AL	18	0	6	309.4	235.9	6.4	0.58%
				TOTALS	297			5105	3893	AVERAGE	0.49%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 ℃
MAX TEMPERATURE	43.0 ℃

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

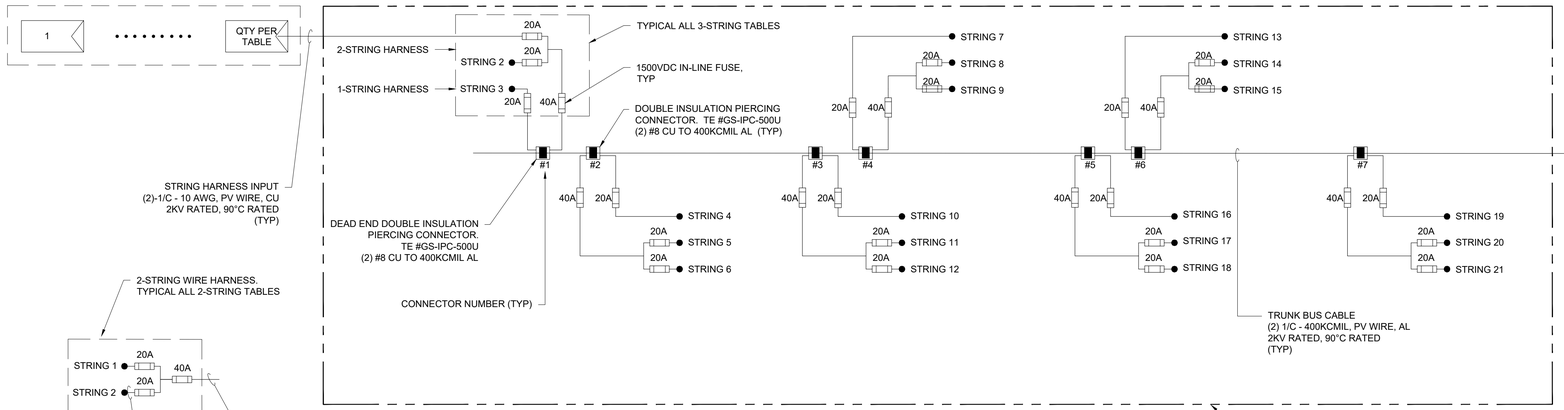
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE O (JINKO)

SHEET #: E-225
REV #: 4

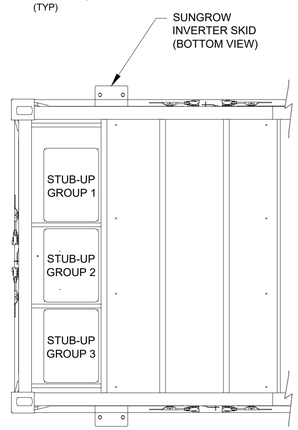
RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-225 DC SLD - ARRAY TYPE O (JINKO)



DC SINGLE LINE - PCS607 ARRAY P (JINKO)

SCALE: NOT TO SCALE



DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: P (LBD-04)					P	MODULE CLASS MAXIMUM VALUES POWER (W) 460	MAX ISC (A) 13.75	MAX IMP (A) 13.11	WORST CASE STRING VMP 1111	
FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS*	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	450	400	AL	18	235.9	0.000053	262,063.08	1325.24	0.5057%
LBD-XXX-XX	PCSXXX	640	750	AL	18	235.9	0.000028	262,063.08	1004.74	0.3834%
							TOTALS	262,063.08	2,751.90	1.0501%

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 ℃
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

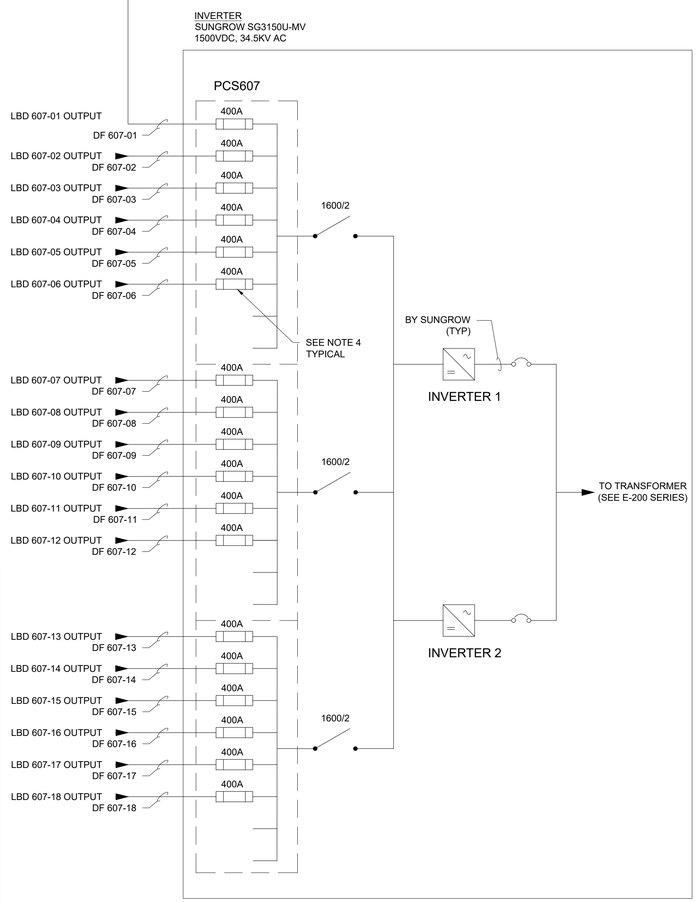
DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY P	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	640	750	AL	21	0	7	360.9	275.3	9.9	0.89%
LBD XXX-02	DF-XXX-02	640	750	AL	18	0	6	309.4	235.9	8.5	0.77%
LBD XXX-03	DF-XXX-03	640	750	AL	18	0	6	309.4	235.9	8.5	0.77%
LBD XXX-04	DF-XXX-04	640	750	AL	18	0	6	309.4	235.9	8.5	0.77%
LBD XXX-05	DF-XXX-05	350	750	AL	21	0	7	360.9	275.3	5.4	0.49%
LBD XXX-06	DF-XXX-06	350	750	AL	18	0	6	309.4	235.9	4.7	0.42%
LBD XXX-07	DF-XXX-07	350	750	AL	18	0	6	309.4	235.9	4.7	0.42%
LBD XXX-08	DF-XXX-08	350	750	AL	18	3	6	309.4	235.9	4.7	0.42%
LBD XXX-09	DF-XXX-09	580	750	AL	15	0	5	257.8	196.6	6.4	0.58%
LBD XXX-10	DF-XXX-10	580	750	AL	18	0	6	309.4	235.9	7.7	0.69%
LBD XXX-11	DF-XXX-11	190	750	AL	18	0	6	309.4	235.9	2.5	0.23%
LBD XXX-12	DF-XXX-12	190	750	AL	18	0	6	309.4	235.9	2.5	0.23%
LBD XXX-13	DF-XXX-13	190	750	AL	21	0	7	360.9	275.3	2.9	0.27%
LBD XXX-14	DF-XXX-14	610	750	AL	15	0	5	257.8	196.6	6.8	0.61%
LBD XXX-15	DF-XXX-15	610	750	AL	18	0	6	309.4	235.9	8.1	0.73%
LBD XXX-16	DF-XXX-16	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-17	DF-XXX-17	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
LBD XXX-18	DF-XXX-18	210	750	AL	18	0	6	309.4	235.9	2.8	0.25%
				TOTALS	327			5620	4286	AVERAGE	0.50%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 ℃
MAX TEMPERATURE	43.0 ℃

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1



NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

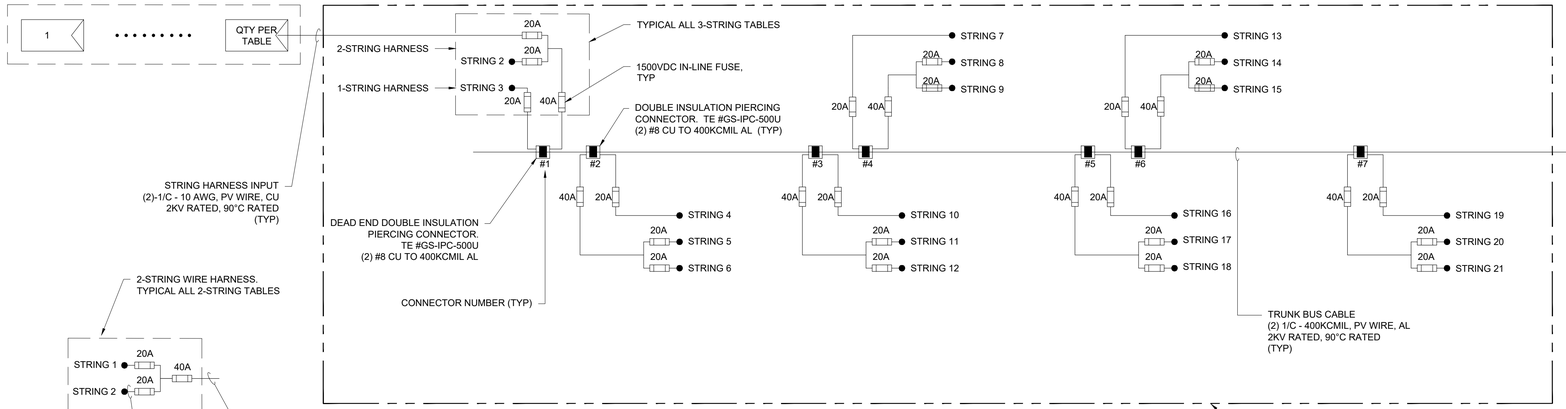
SHEET NAME:
DC SLD - ARRAY TYPE P (JINKO)

SHEET #: E-226
REV #: 4

RECORD DRAWING

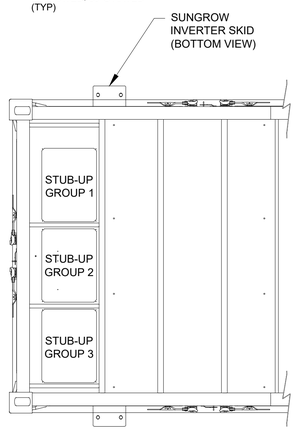
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-226 DC SLD - ARRAY TYPE P (JINKO)

STRING 1 (TYP)



DC SINGLE LINE - PCS1308 ARRAY Q (JINKO)

SCALE: NOT TO SCALE



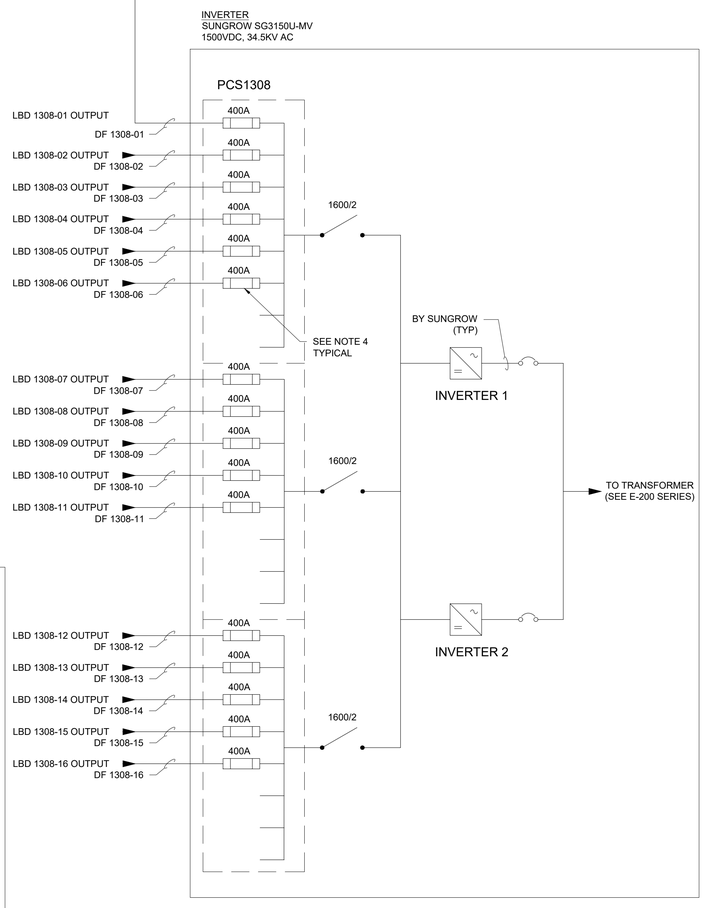
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES				
APPLICABLE TO ARRAY TYPES: I, J, O, Q						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: TRAPEZOIDAL BLOCK CONFIGURATION					o	460	13.75	13.11	1111	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.3	0.000778	43,677.18	186.48	0.4270%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	118.0	0.000053	131,031.54	40.49	0.0309%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	196.6	0.000053	218,385.90	112.48	0.0515%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	235.9	0.000053	262,063.08	82.46	0.0315%
CONNECTOR 6	LBD-XXX-XX	485	400	AL	18	235.9	0.000053	262,063.08	1428.31	0.5450%
LBD-XXX-XX	PCSXXX	480	750	AL	18	235.9	0.000028	262,063.08	753.56	0.2875%
							TOTALS	262,063.08	2,603.79	0.9936%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID					PCSXXX - ARRAY Q
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	160	750	AL	18	0	6	309.4	235.9		#VALUE!
LBD XXX-02	DF-XXX-02	160	750	AL	21	0	7	360.9	275.3		#VALUE!
LBD XXX-03	DF-XXX-03	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-04	DF-XXX-04	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-05	DF-XXX-05	220	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-06	DF-XXX-06	220	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-07	DF-XXX-07	200	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-08	DF-XXX-08	200	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-09	DF-XXX-09	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-10	DF-XXX-10	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-11	DF-XXX-11	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-12	DF-XXX-12	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-13	DF-XXX-13	470	750	AL	21	0	7	360.9	275.3	7.3	0.66%
LBD XXX-14	DF-XXX-14	470	750	AL	18	0	6	309.4	235.9	6.3	0.56%
LBD XXX-15	DF-XXX-15	470	750	AL	18	0	6	309.4	235.9	6.3	0.56%
LBD XXX-16	DF-XXX-16	470	750	AL	18	0	6	309.4	235.9	6.3	0.56%
				TOTALS	297			5105	3893	AVERAGE	#VALUE!

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

RECORD DRAWING

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

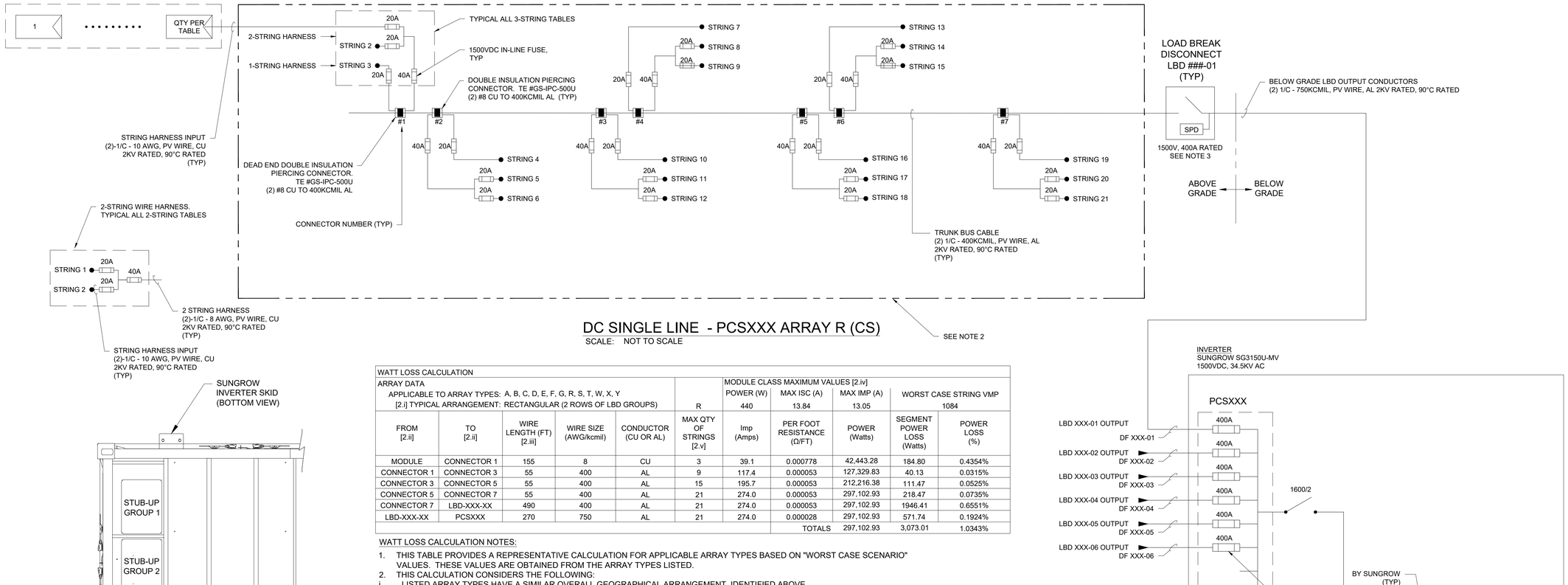
SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE Q (JINKO)

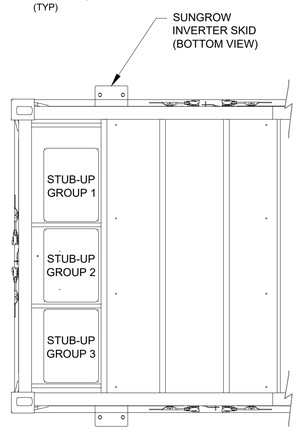
SHEET #: E-227
REV #: 4

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-227 DC SLD - ARRAY TYPE Q (JINKO)



DC SINGLE LINE - PCSXXX ARRAY R (CS)

SCALE: NOT TO SCALE



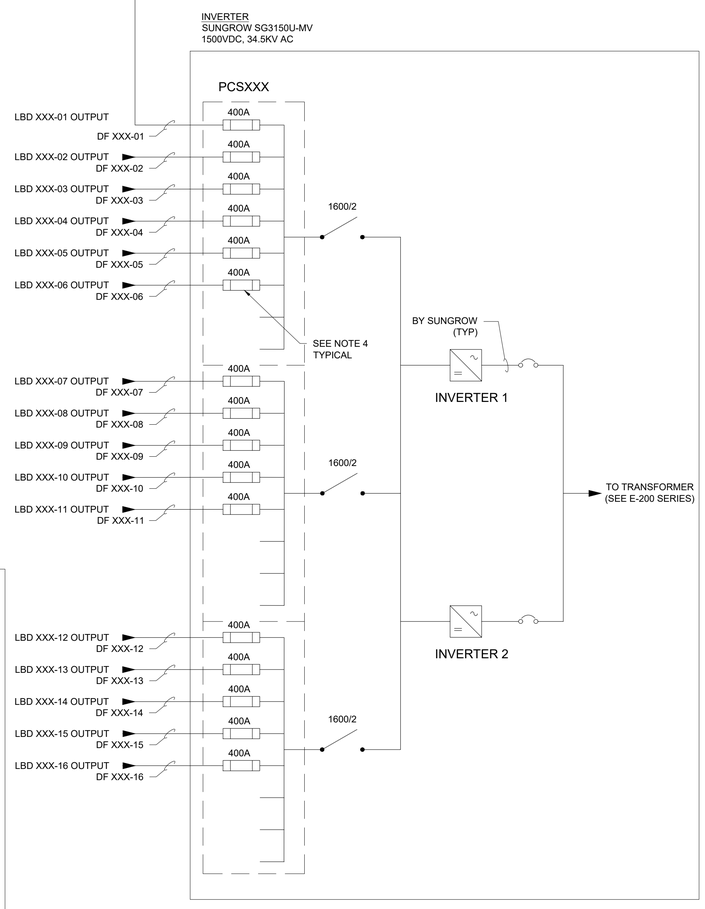
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	CANADIAN SOLAR
MODEL	CS3W-440MB-AG
POWER	440 W
Vmpp(V)	40.70 V
Impp(A)	10.82 A
Voc (V)	48.70 V
Isc (A)	11.48 A
Voc TEMP COEFFICIENT	-0.0027
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	25 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	12,320 W
Voc (STC)	1,363.60 V
Voc (MIN TEMP)*	1,418 V
Vmpp (STC)	1,139.60 V
Vmpp (MAX TEMP)	1,084.22 V
Impp (STC)	10.82 A
Impp Max*	13.05 A
Isc (STC)	11.48 A
Isc max PER NEC 690.8(A)(2)*	13.84 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

*** Per Primoris-provided SAM model results**

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY R	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
440	13.84	13.05	1084							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	170	750	AL	15	0	5	259.6	195.7	1.9	0.17%
LBD XXX-02	DF-XXX-02	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-03	DF-XXX-03	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-04	DF-XXX-04	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-05	DF-XXX-05	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-06	DF-XXX-06	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-07	DF-XXX-07	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-08	DF-XXX-08	230	750	AL	15	0	5	259.6	195.7	2.5	0.23%
LBD XXX-09	DF-XXX-09	190	750	AL	15	0	5	259.6	195.7	2.1	0.19%
LBD XXX-10	DF-XXX-10	190	750	AL	21	0	7	363.4	274.0	2.9	0.27%
LBD XXX-11	DF-XXX-11	190	750	AL	21	0	7	363.4	274.0	2.9	0.27%
LBD XXX-12	DF-XXX-12	190	750	AL	20	1	6	346.1	261.0	2.8	0.26%
LBD XXX-13	DF-XXX-13	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-14	DF-XXX-14	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-15	DF-XXX-15	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-16	DF-XXX-16	210	750	AL	15	0	5	259.6	195.7	2.3	0.21%
				TOTALS	311			5382	4058	AVERAGE	0.26%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

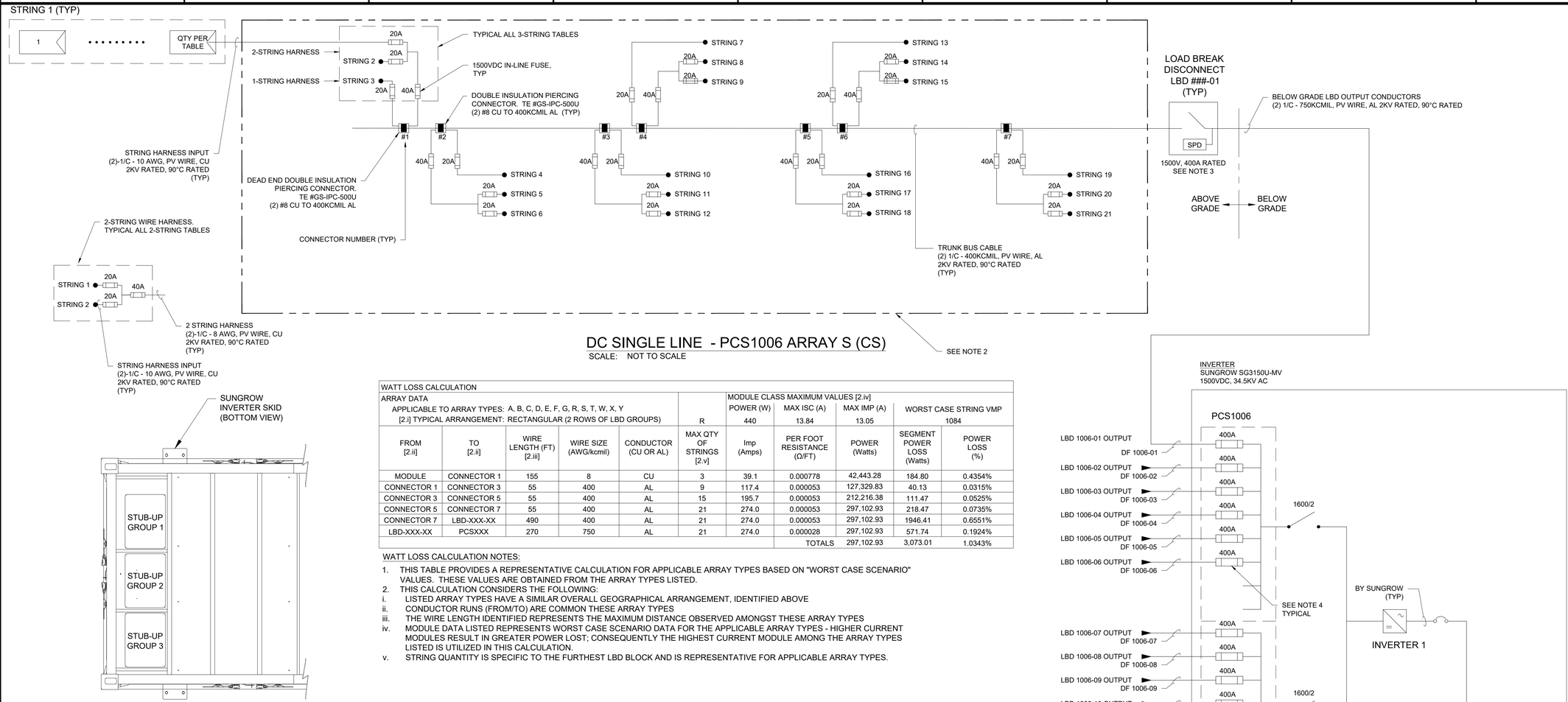
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE R (CS)

SHEET #: E-228
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-228 DC SLD - ARRAY TYPE R (CS).dwg



DC SINGLE LINE - PCS1006 ARRAY S (CS)

SCALE: NOT TO SCALE

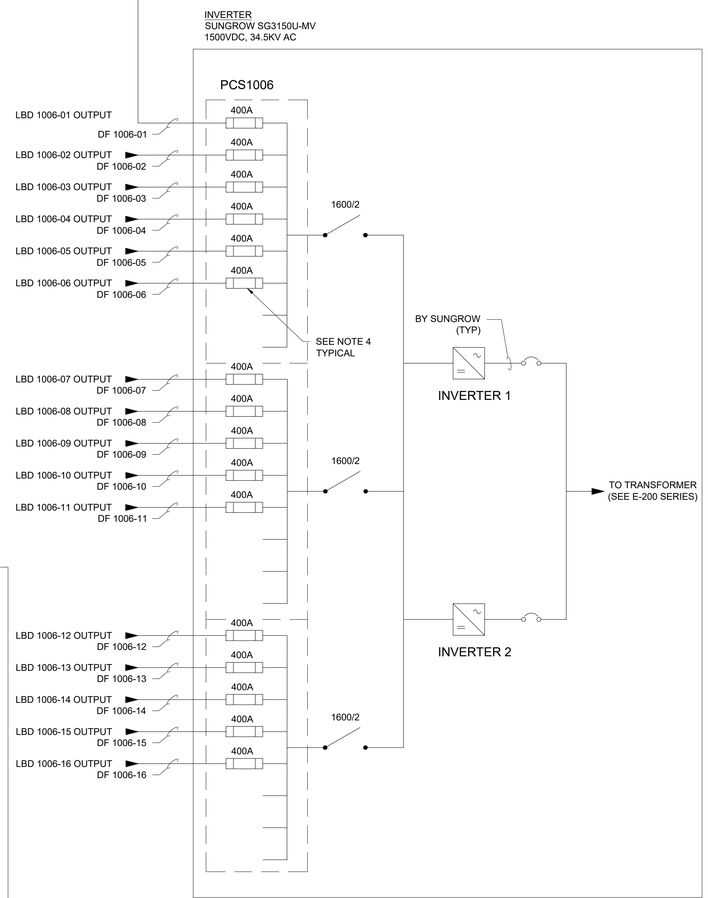
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	CANADIAN SOLAR
MODEL	CS3W-440MB-AG
POWER	440 W
Vmpp(V)	40.70 V
Impp(A)	10.82 A
Voc (V)	48.70 V
Isc (A)	11.48 A
Voc TEMP COEFFICIENT	-0.0027
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	25 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	12,320 W
Voc (STC)	1,363.60 V
Voc (MIN TEMP)*	1,418 V
Vmpp (STC)	1,139.60 V
Vmpp (MAX TEMP)	1,084.22 V
Impp (STC)	10.82 A
Impp Max*	13.05 A
Isc (STC)	11.48 A
Isc max PER NEC 690.8(A)(2)*	13.84 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY S	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
440	13.84	13.05	1084							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	160	750	AL	15	0	5	259.6	195.7	1.8	0.16%
LBD XXX-02	DF-XXX-02	160	750	AL	21	0	7	363.4	274.0	2.5	0.23%
LBD XXX-03	DF-XXX-03	160	750	AL	21	0	7	363.4	274.0	2.5	0.23%
LBD XXX-04	DF-XXX-04	160	750	AL	21	0	7	363.4	274.0	2.5	0.23%
LBD XXX-05	DF-XXX-05	140	750	AL	19	2	5	328.8	247.9	2.0	0.18%
LBD XXX-06	DF-XXX-06	140	750	AL	21	0	7	363.4	274.0	2.2	0.20%
LBD XXX-07	DF-XXX-07	140	750	AL	21	0	7	363.4	274.0	2.2	0.20%
LBD XXX-08	DF-XXX-08	140	750	AL	15	0	5	259.6	195.7	1.5	0.14%
LBD XXX-09	DF-XXX-09	250	750	AL	15	0	5	259.6	195.7	2.8	0.25%
LBD XXX-10	DF-XXX-10	250	750	AL	21	0	7	363.4	274.0	3.9	0.36%
LBD XXX-11	DF-XXX-11	250	750	AL	21	0	7	363.4	274.0	3.9	0.36%
LBD XXX-12	DF-XXX-12	250	750	AL	21	0	7	363.4	274.0	3.9	0.36%
LBD XXX-13	DF-XXX-13	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-14	DF-XXX-14	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-15	DF-XXX-15	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-16	DF-XXX-16	230	750	AL	15	0	5	259.6	195.7	2.5	0.23%
				TOTALS	310			5365	4045	AVERAGE	0.26%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

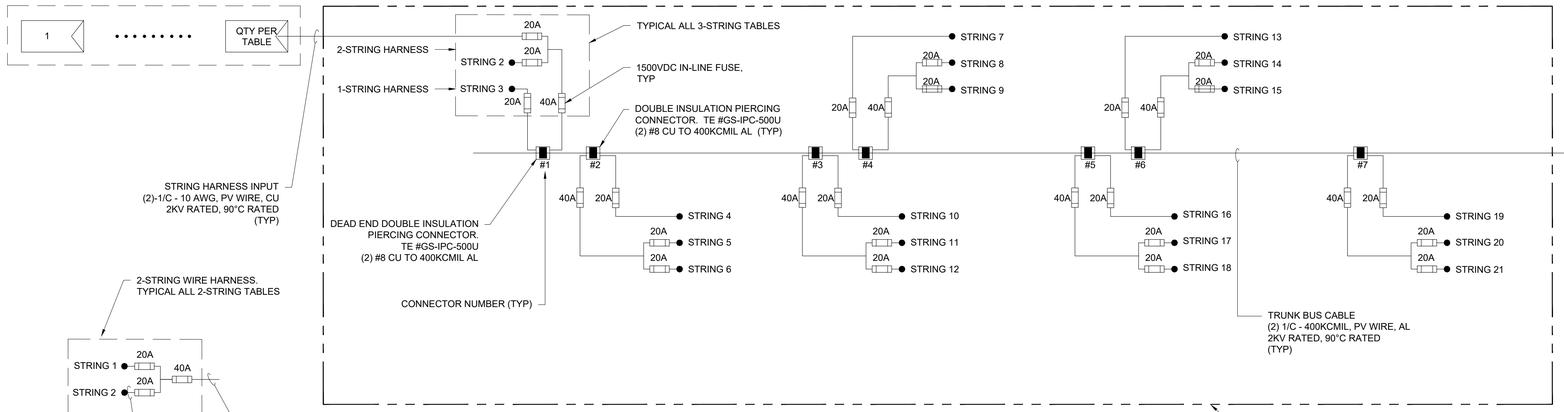
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE S (CS)

SHEET #: E-229
REV #: 4

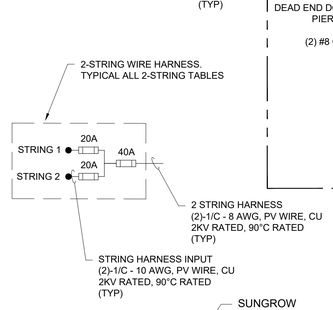
RECORD DRAWING

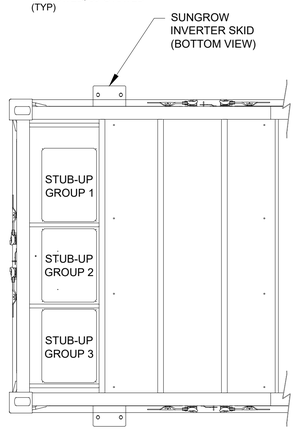
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-229 DC SLD - ARRAY TYPE S (CS)



DC SINGLE LINE - PCSXXX ARRAY T (CS)

SCALE: NOT TO SCALE





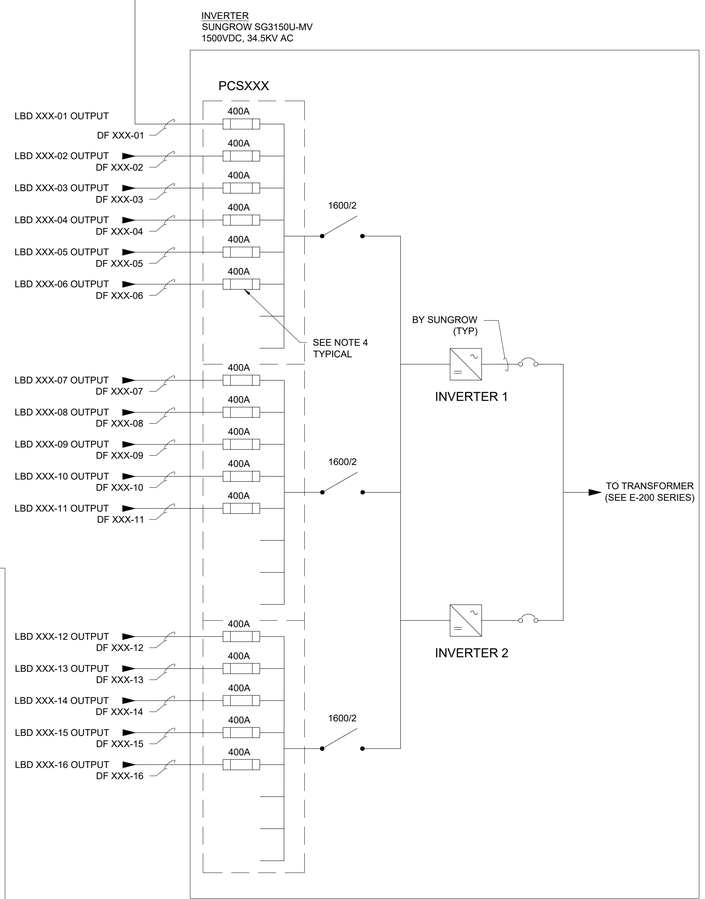
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	CANADIAN SOLAR
MODEL	CS3W-440MB-AG
POWER	440 W
Vmpp(V)	40.70 V
Impp(A)	10.82 A
Voc (V)	48.70 V
Isc (A)	11.48 A
Voc TEMP COEFFICIENT	-0.0027
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	25 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	12,320 W
Voc (STC)	1,363.60 V
Voc (MIN TEMP)*	1,418 V
Vmpp (STC)	1,139.60 V
Vmpp (MAX TEMP)	1,084.22 V
Impp (STC)	10.82 A
Impp Max*	13.05 A
Isc (STC)	11.48 A
Isc max PER NEC 690.8(A)(2)*	13.84 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY T	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
440	13.84	13.05	1084								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	210	750	AL	15	0	5	259.6	195.7	2.3	0.21%
LBD XXX-02	DF-XXX-02	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-03	DF-XXX-03	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-04	DF-XXX-04	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-05	DF-XXX-05	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-06	DF-XXX-06	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-07	DF-XXX-07	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-08	DF-XXX-08	170	750	AL	15	0	5	259.6	195.7	1.9	0.17%
LBD XXX-09	DF-XXX-09	210	750	AL	15	0	5	259.6	195.7	2.3	0.21%
LBD XXX-10	DF-XXX-10	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-11	DF-XXX-11	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-12	DF-XXX-12	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-13	DF-XXX-13	150	750	AL	19	2	5	328.8	247.9	2.1	0.19%
LBD XXX-14	DF-XXX-14	150	750	AL	21	0	7	363.4	274.0	2.3	0.21%
LBD XXX-15	DF-XXX-15	150	750	AL	21	0	7	363.4	274.0	2.3	0.21%
LBD XXX-16	DF-XXX-16	150	750	AL	15	0	5	259.6	195.7	1.7	0.15%
				TOTALS	310			5365	4045	AVERAGE	0.24%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

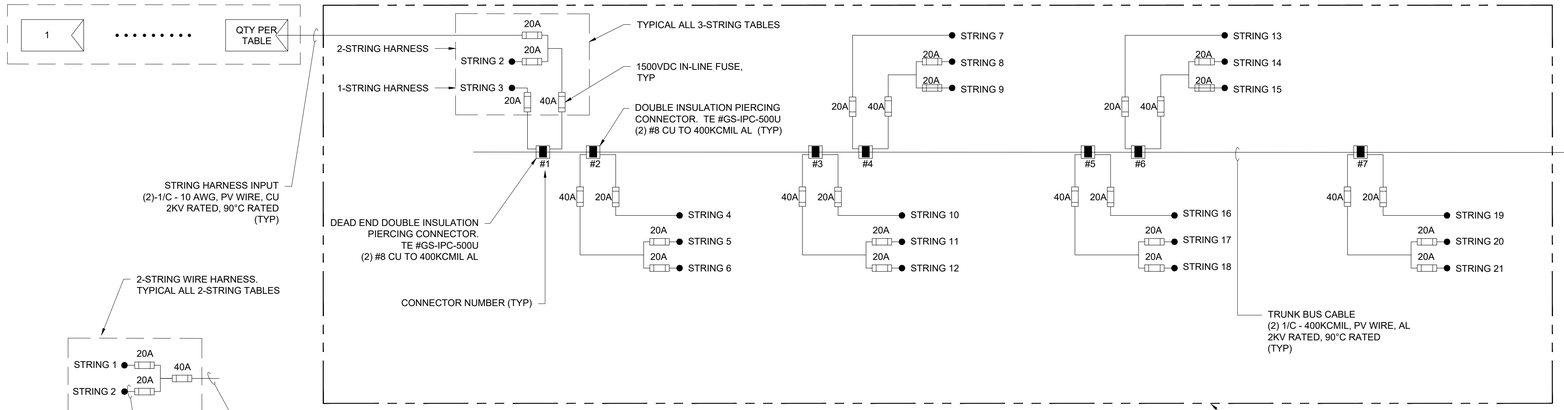
SHEET NAME:
DC SLD - ARRAY TYPE T (CS)

SHEET #: E-230
REV #: 4

RECORD DRAWING

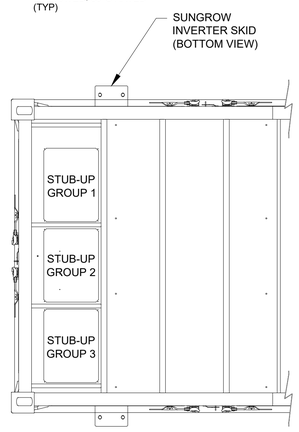
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-230 DC SLD - ARRAY TYPE T (CS)

STRING 1 (TYP)



DC SINGLE LINE - PCS203 ARRAY U (CS)

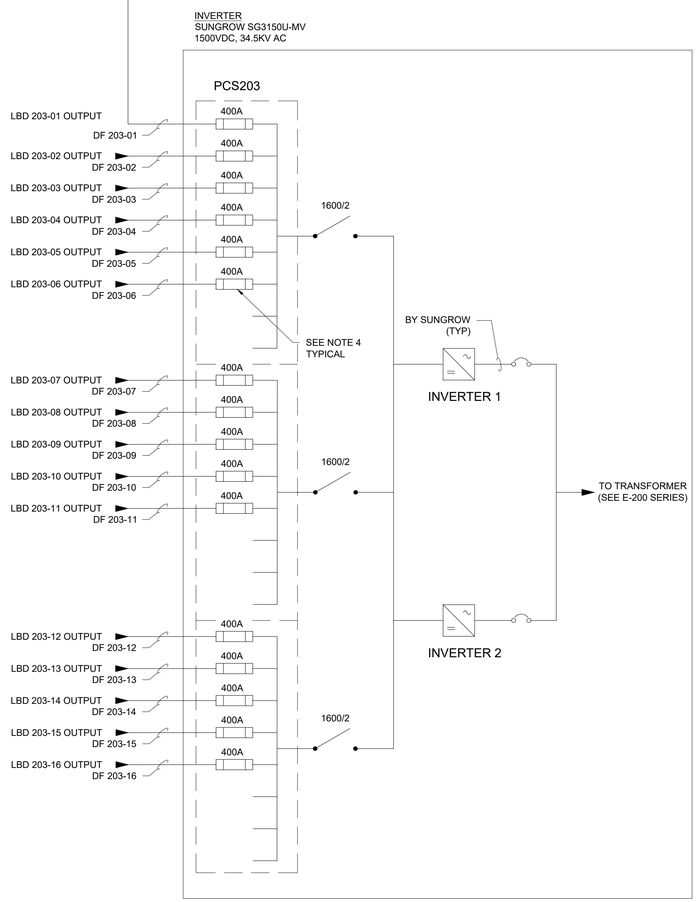
SCALE: NOT TO SCALE



DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA APPLICABLE TO ARRAY TYPES: U (LBD-01)					U	MODULE CLASS MAXIMUM VALUES POWER (W) 440	MAX ISC (A) 13.84	MAX IMP (A) 13.05	WORST CASE STRING VMP 1084	
FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS*	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	LBD-XXX-XX	320	400	AL	15	195.7	0.000053	212,216.38	648.53	0.3056%
LBD-XXX-XX	PCSXXX	700	750	AL	15	195.7	0.000028	212,216.38	756.26	0.3564%
							TOTALS	212,216.38	1,741.19	0.8205%



MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	CANADIAN SOLAR
MODEL	CS3W-440MB-AG
POWER	440 W
Vmpp(V)	40.70 V
Impp(A)	10.82 A
Voc (V)	48.70 V
Isc (A)	11.48 A
Voc TEMP COEFFICIENT	-0.0027
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	25 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	12,320 W
Voc (STC)	1,363.60 V
Voc (MIN TEMP)*	1,418 V
Vmpp (STC)	1,139.60 V
Vmpp (MAX TEMP)	1,084.22 V
Impp (STC)	10.82 A
Impp Max*	13.05 A
Isc (STC)	11.48 A
Isc max PER NEC 690.8(A)(2)*	13.84 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA						INVERTER ID					PCSXXX - ARRAY U
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
440	13.84	13.05	1084								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	700	750	AL	15	0	5	259.6	195.7	7.7	0.71%
LBD XXX-02	DF-XXX-02	700	750	AL	21	0	7	363.4	274.0	10.8	1.00%
LBD XXX-03	DF-XXX-03	700	750	AL	21	0	7	363.4	274.0	10.8	1.00%
LBD XXX-04	DF-XXX-04	390	750	AL	15	0	5	259.6	195.7	4.3	0.40%
LBD XXX-05	DF-XXX-05	390	750	AL	21	0	7	363.4	274.0	6.0	0.56%
LBD XXX-06	DF-XXX-06	390	750	AL	21	0	7	363.4	274.0	6.0	0.56%
LBD XXX-07	DF-XXX-07	220	750	AL	15	0	5	259.6	195.7	2.4	0.22%
LBD XXX-08	DF-XXX-08	220	750	AL	21	0	7	363.4	274.0	3.4	0.31%
LBD XXX-09	DF-XXX-09	220	750	AL	21	0	7	363.4	274.0	3.4	0.31%
LBD XXX-10	DF-XXX-10	220	750	AL	21	0	7	363.4	274.0	3.4	0.31%
LBD XXX-11	DF-XXX-11	150	750	AL	20	1	6	346.1	261.0	2.2	0.20%
LBD XXX-12	DF-XXX-12	150	750	AL	21	0	7	363.4	274.0	2.3	0.21%
LBD XXX-13	DF-XXX-13	150	750	AL	21	0	7	363.4	274.0	2.3	0.21%
LBD XXX-14	DF-XXX-14	150	750	AL	21	0	7	363.4	274.0	2.3	0.21%
LBD XXX-15	DF-XXX-15	800	750	AL	21	0	7	363.4	274.0	12.4	1.14%
LBD XXX-16	DF-XXX-16	800	750	AL	18	0	6	311.5	234.9	10.6	0.98%
				TOTALS	314			5434	4097	AVERAGE	0.52%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

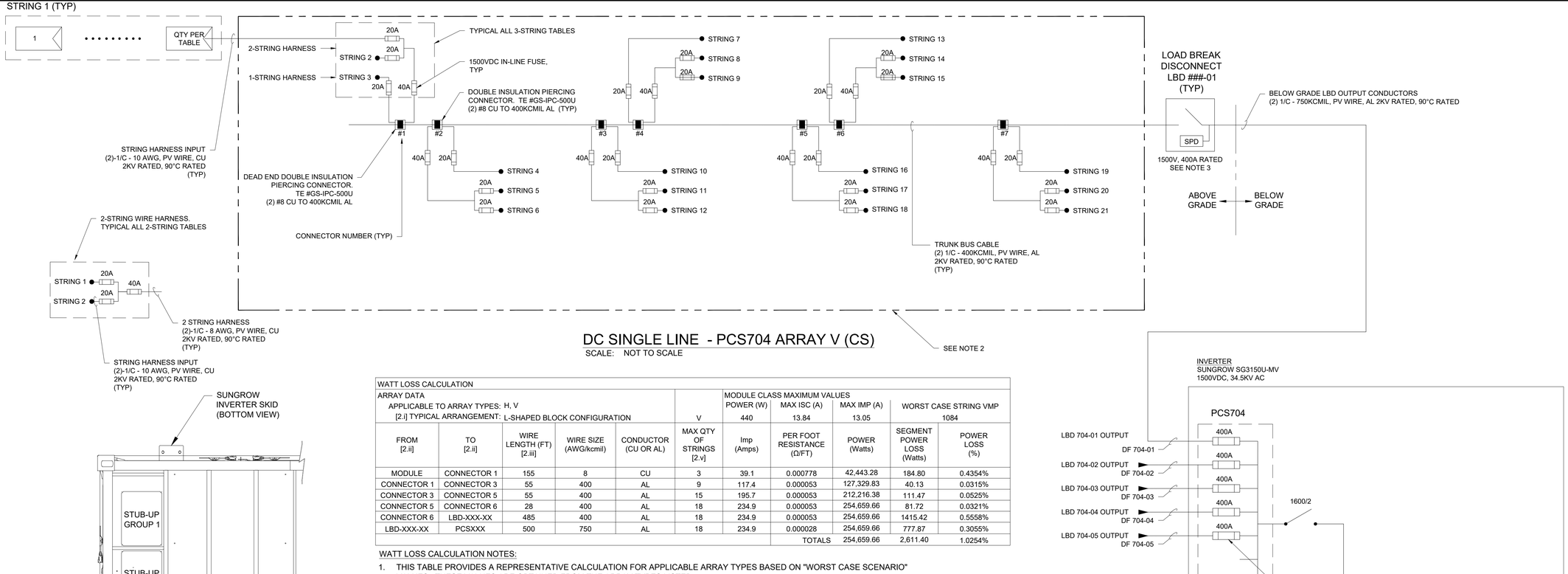
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE U (CS)

SHEET #: E-231
REV #: 4

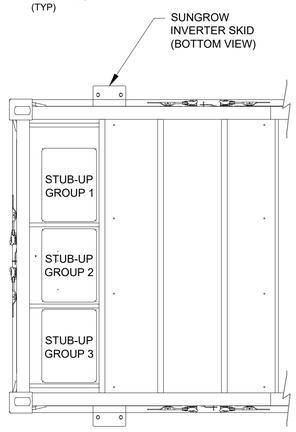
RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-231 DC SLD - ARRAY TYPE U (CS)



DC SINGLE LINE - PCS704 ARRAY V (CS)

SCALE: NOT TO SCALE



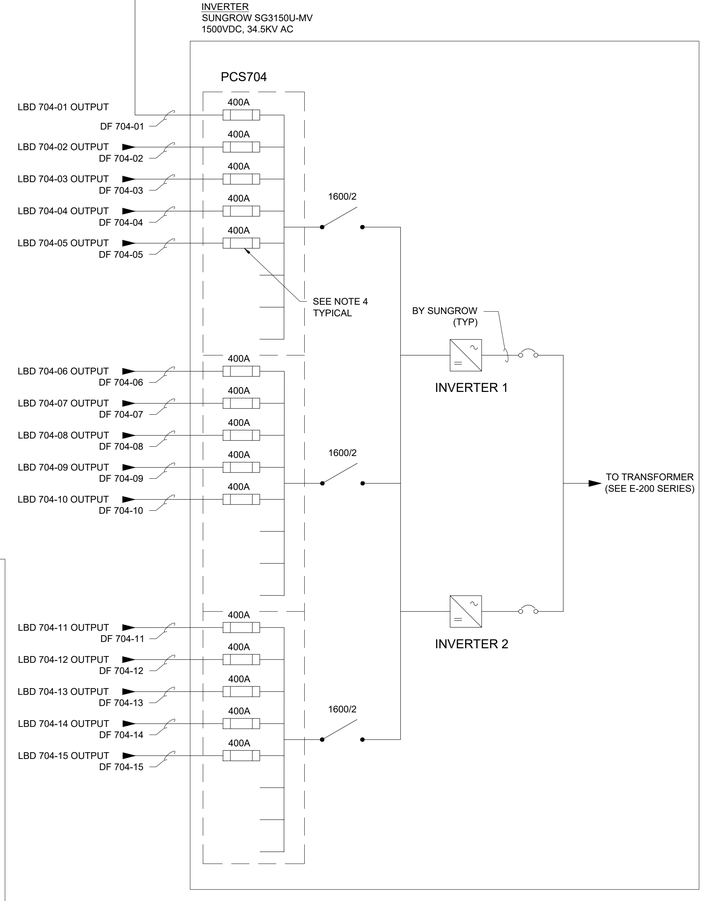
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES				
APPLICABLE TO ARRAY TYPES: H, V						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: L-SHAPED BLOCK CONFIGURATION					V	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 6	28	400	AL	18	234.9	0.000053	254,659.66	81.72	0.0321%
CONNECTOR 6	LBD-XXX-XX	485	400	AL	18	234.9	0.000053	254,659.66	1415.42	0.5558%
LBD-XXX-XX	PCSXXX	500	750	AL	18	234.9	0.000028	254,659.66	777.87	0.3055%
							TOTALS	254,659.66	2,611.40	1.0254%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   - i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   - ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   - iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   - iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   - v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



DC FEEDER SCHEDULE											
MODULE DATA								INVERTER ID		PCSXXX - ARRAY V	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
440	13.84	13.05	1084								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	180	750	AL	15	0	5	363.4	274.0	2.8	0.26%
LBD XXX-02	DF-XXX-02	180	750	AL	21	0	7	363.4	274.0	2.8	0.26%
LBD XXX-03	DF-XXX-03	180	750	AL	21	0	7	363.4	274.0	2.8	0.26%
LBD XXX-04	DF-XXX-04	180	750	AL	21	0	7	363.4	274.0	2.8	0.26%
LBD XXX-05	DF-XXX-05	220	750	AL	21	0	7	363.4	274.0	3.4	0.31%
LBD XXX-06	DF-XXX-06	220	750	AL	21	0	7	363.4	274.0	3.4	0.31%
LBD XXX-07	DF-XXX-07	220	750	AL	21	0	7	363.4	274.0	3.4	0.31%
LBD XXX-08	DF-XXX-08	170	750	AL	15	0	5	259.6	195.7	1.9	0.17%
LBD XXX-09	DF-XXX-09	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-10	DF-XXX-10	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-11	DF-XXX-11	170	750	AL	20	1	6	346.1	261.0	2.5	0.23%
LBD XXX-12	DF-XXX-12	500	750	AL	15	0	5	259.6	195.7	5.5	0.51%
LBD XXX-13	DF-XXX-13	500	750	AL	21	0	7	363.4	274.0	7.7	0.71%
LBD XXX-14	DF-XXX-14	500	750	AL	21	0	7	363.4	274.0	7.7	0.71%
LBD XXX-15	DF-XXX-15	500	750	AL	21	0	7	363.4	274.0	7.7	0.71%
				TOTALS	296			5123	3862	AVERAGE	0.36%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	CANADIAN SOLAR
MODEL	CS3W-440MB-AG
POWER	440 W
Vmpp(V)	40.70 V
Impp(A)	10.82 A
Voc (V)	48.70 V
Isc (A)	11.48 A
Voc TEMP COEFFICIENT	-0.0027
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	25 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	12,320 W
Voc (STC)	1,363.60 V
Voc (MIN TEMP)*	1,418 V
Vmpp (STC)	1,139.60 V
Vmpp (MAX TEMP)	1,084.22 V
Impp (STC)	10.82 A
Impp Max*	13.05 A
Isc (STC)	11.48 A
Isc max PER NEC 690.8(A)(2)*	13.84 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

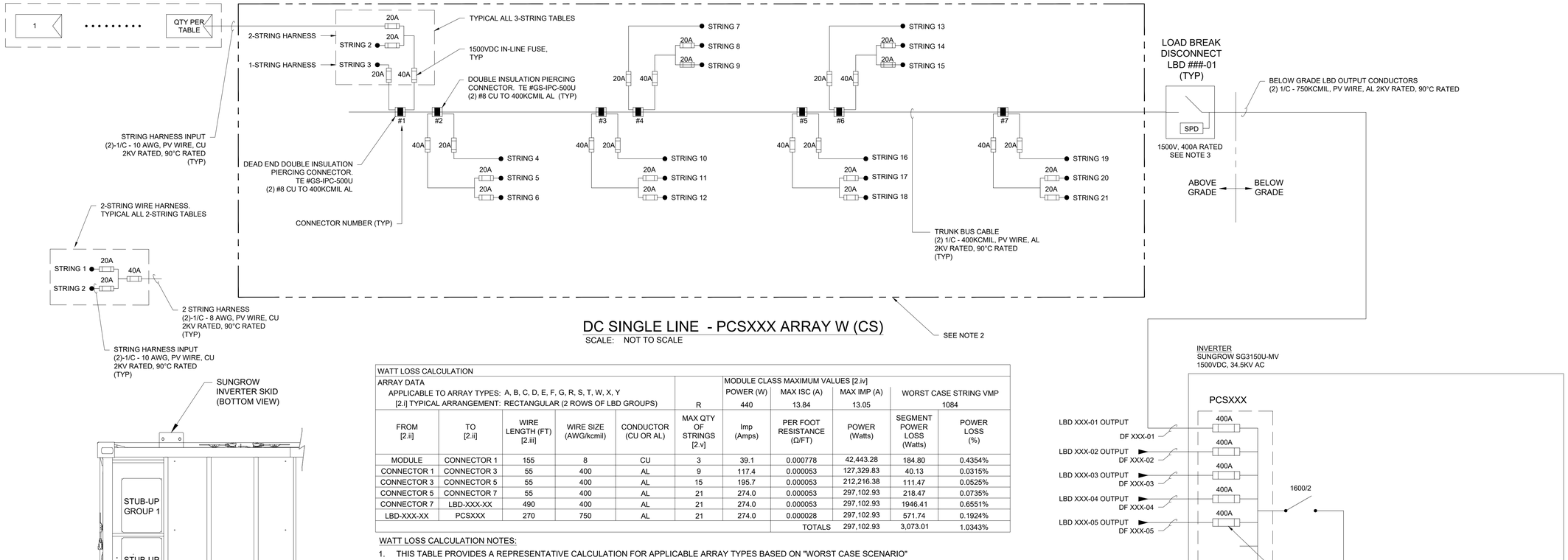
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE V (CS)

SHEET #: E-232
REV #: 4

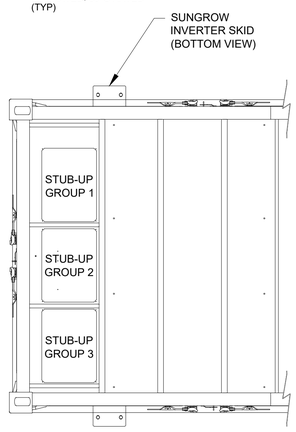
RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-232 DC SLD - ARRAY TYPE V (CS)



DC SINGLE LINE - PCSXXX ARRAY W (CS)

SCALE: NOT TO SCALE



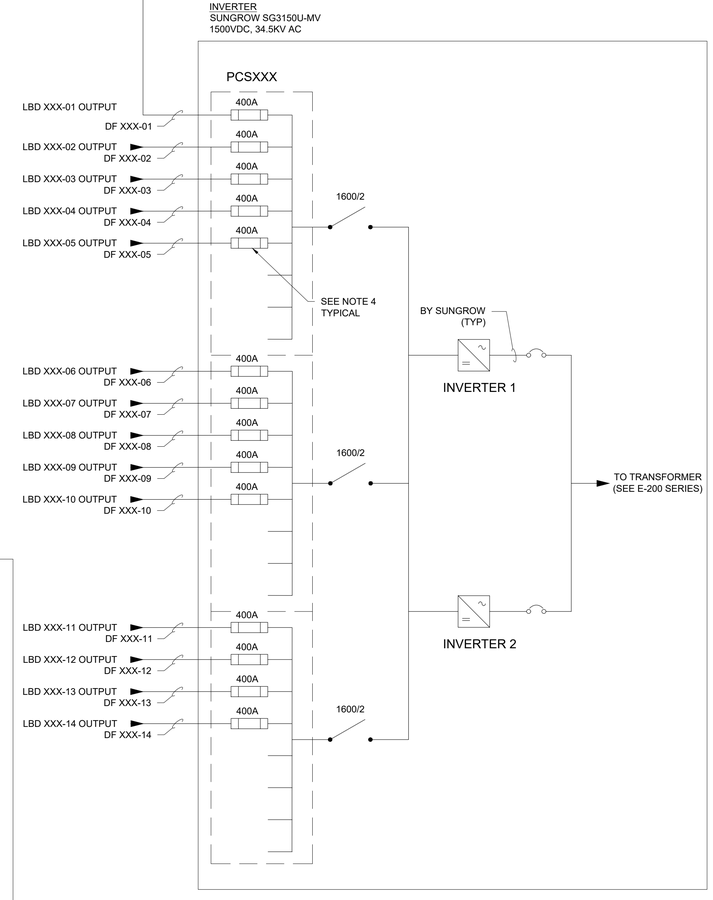
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   - i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   - ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   - iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   - iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   - v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	CANADIAN SOLAR
MODEL	CS3W-440MB-AG
POWER	440 W
Vmpp(V)	40.70 V
Impp(A)	10.82 A
Voc (V)	48.70 V
Isc (A)	11.48 A
Voc TEMP COEFFICIENT	-0.0027
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	25 A
PV STRING INFORMATION	
MODULES IN SERIES	28
STC POWER	12,320 W
Voc (STC)	1,363.60 V
Voc (MIN TEMP)*	1,418 V
Vmpp (STC)	1,139.60 V
Vmpp (MAX TEMP)	1,084.22 V
Impp (STC)	10.82 A
Impp Max*	13.05 A
Isc (STC)	11.48 A
Isc max PER NEC 690.8(A)(2)*	13.84 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY W	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
440	13.84	13.05	1084								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	170	750	AL	15	0	5	259.6	195.7	1.9	0.17%
LBD XXX-02	DF-XXX-02	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-03	DF-XXX-03	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-04	DF-XXX-04	170	750	AL	21	0	7	363.4	274.0	2.6	0.24%
LBD XXX-05	DF-XXX-05	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-06	DF-XXX-06	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-07	DF-XXX-07	230	750	AL	21	0	7	363.4	274.0	3.6	0.33%
LBD XXX-08	DF-XXX-08	190	750	AL	15	0	5	259.6	195.7	2.1	0.19%
LBD XXX-09	DF-XXX-09	190	750	AL	21	0	7	363.4	274.0	2.9	0.27%
LBD XXX-10	DF-XXX-10	190	750	AL	21	0	7	363.4	274.0	2.9	0.27%
LBD XXX-11	DF-XXX-11	190	750	AL	20	1	6	346.1	261.0	2.8	0.26%
LBD XXX-12	DF-XXX-12	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-13	DF-XXX-13	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
LBD XXX-14	DF-XXX-14	210	750	AL	21	0	7	363.4	274.0	3.2	0.30%
				TOTALS	281			4863	3667	AVERAGE	0.27%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

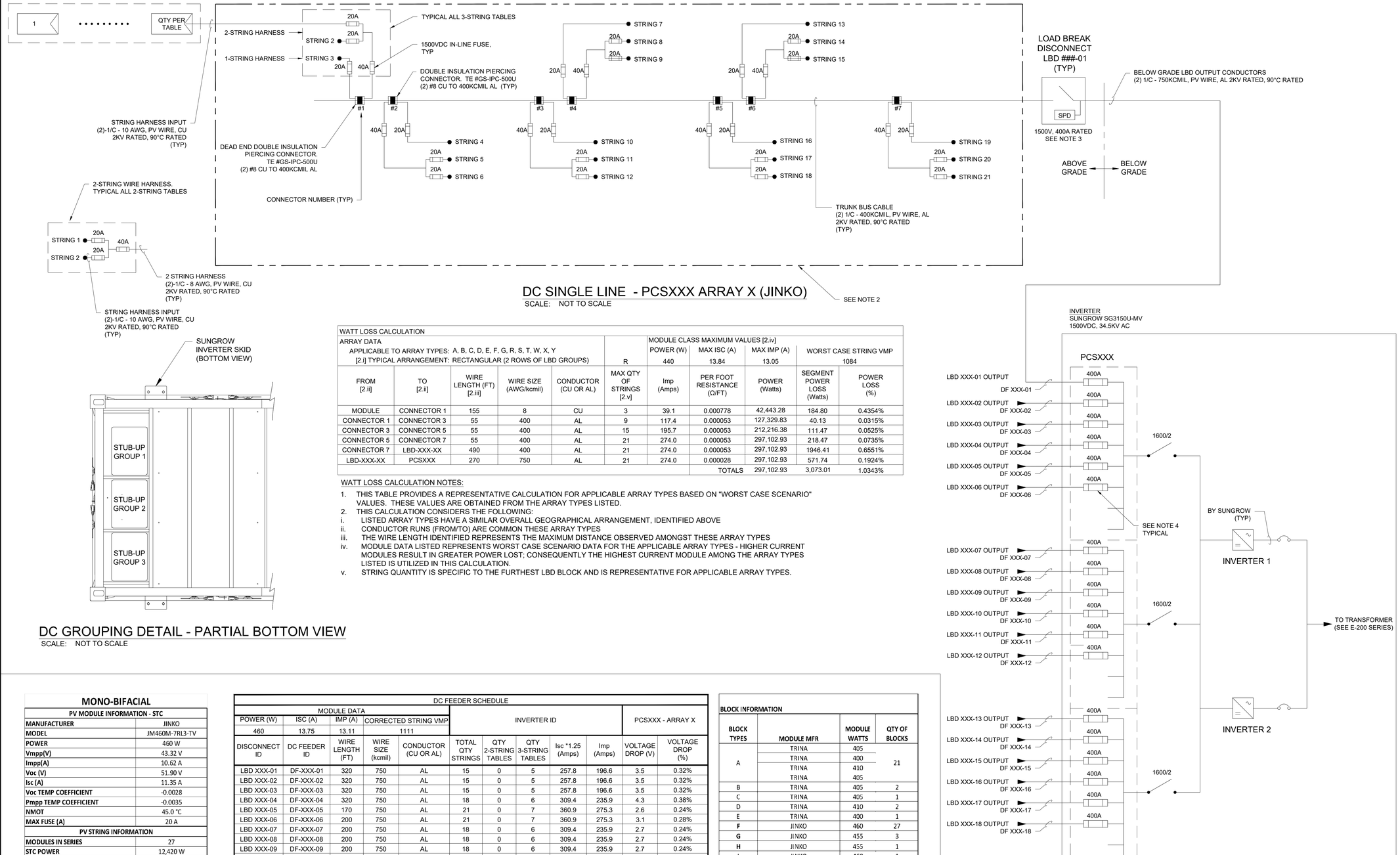
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE W (CS)

SHEET #: E-233
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: EricLoos
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-233 DC SLD - ARRAY TYPE W (CS)



DC SINGLE LINE - PCSXXX ARRAY X (JINKO)

SCALE: NOT TO SCALE

DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]				
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP	
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084	
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%
							TOTALS	297,102.93	3,073.01	1.0343%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.

MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 ℃
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE										
MODULE DATA					INVERTER ID				PCSXXX - ARRAY X	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP							
460	13.75	13.11	1111							
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	320	750	AL	15	0	5	257.8	196.6	3.5	0.32%
LBD XXX-02	DF-XXX-02	320	750	AL	15	0	5	257.8	196.6	3.5	0.32%
LBD XXX-03	DF-XXX-03	320	750	AL	15	0	5	257.8	196.6	3.5	0.32%
LBD XXX-04	DF-XXX-04	320	750	AL	18	0	6	309.4	235.9	4.3	0.38%
LBD XXX-05	DF-XXX-05	170	750	AL	21	0	7	360.9	275.3	2.6	0.24%
LBD XXX-06	DF-XXX-06	200	750	AL	21	0	7	360.9	275.3	3.1	0.28%
LBD XXX-07	DF-XXX-07	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-08	DF-XXX-08	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-09	DF-XXX-09	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-10	DF-XXX-10	340	750	AL	15	0	5	257.8	196.6	3.8	0.34%
LBD XXX-11	DF-XXX-11	340	750	AL	15	0	5	257.8	196.6	3.8	0.34%
LBD XXX-12	DF-XXX-12	340	750	AL	15	0	5	257.8	196.6	3.8	0.35%
LBD XXX-13	DF-XXX-13	340	750	AL	18	0	6	309.4	235.9	4.5	0.42%
LBD XXX-14	DF-XXX-14	180	750	AL	18	0	6	309.4	235.9	2.4	0.22%
LBD XXX-15	DF-XXX-15	240	750	AL	21	0	7	360.9	275.3	3.7	0.34%
LBD XXX-16	DF-XXX-16	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-17	DF-XXX-17	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
LBD XXX-18	DF-XXX-18	240	750	AL	18	0	6	309.4	235.9	3.2	0.29%
				TOTALS	315			5414	4129	AVERAGE	0.30%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 ℃
MAX TEMPERATURE	43.0 ℃

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

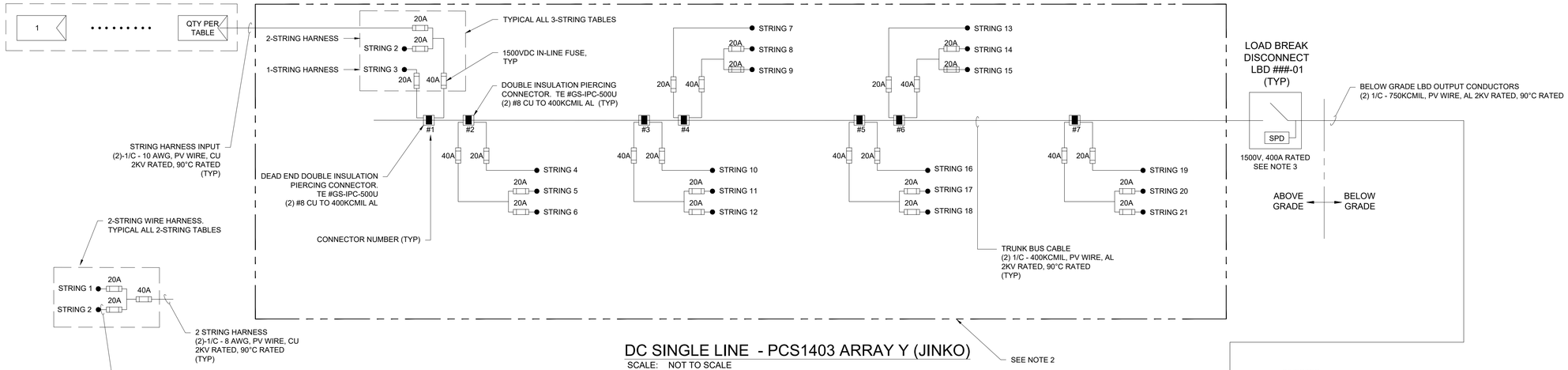
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE X (JINKO)

SHEET #: E-234
REV #: 4

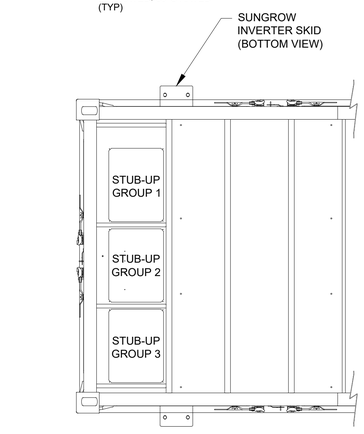
RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-234 DC SLD - ARRAY TYPE X (JINKO)



DC SINGLE LINE - PCS1403 ARRAY Y (JINKO)

SCALE: NOT TO SCALE



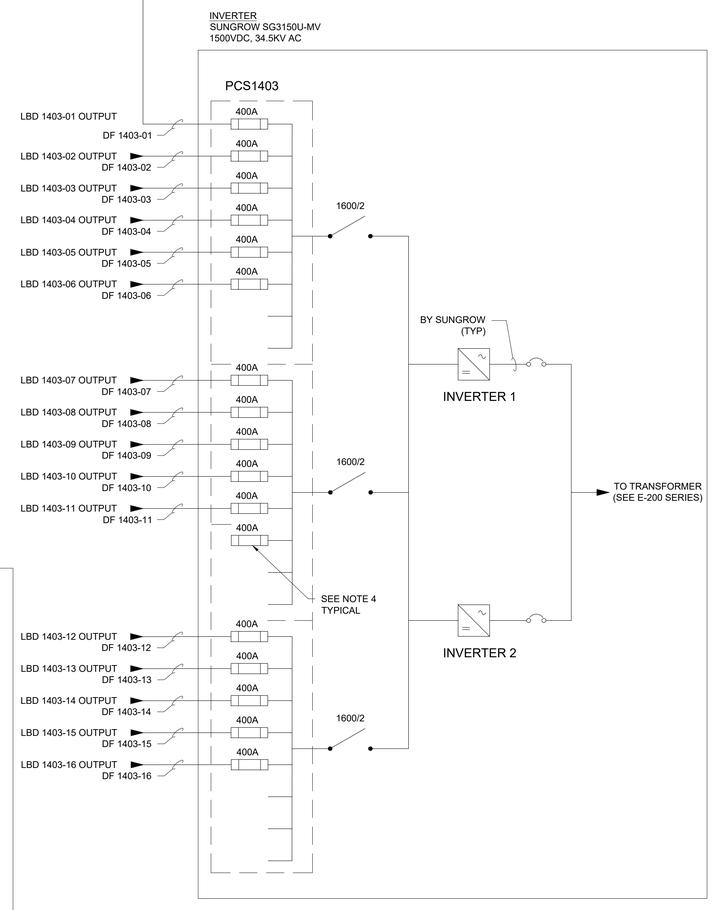
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION											
ARRAY DATA						MODULE CLASS MAXIMUM VALUES [2.iv]					
APPLICABLE TO ARRAY TYPES: A, B, C, D, E, F, G, R, S, T, W, X, Y						POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP		
[2.i] TYPICAL ARRANGEMENT: RECTANGULAR (2 ROWS OF LBD GROUPS)					R	440	13.84	13.05	1084		
FROM [2.ii]	TO [2.ii]	WIRE LENGTH (FT) [2.iii]	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS [2.v]	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)	
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%	
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%	
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%	
CONNECTOR 5	CONNECTOR 7	55	400	AL	21	274.0	0.000053	297,102.93	218.47	0.0735%	
CONNECTOR 7	LBD-XXX-XX	490	400	AL	21	274.0	0.000053	297,102.93	1946.41	0.6551%	
LBD-XXX-XX	PCSXXX	270	750	AL	21	274.0	0.000028	297,102.93	571.74	0.1924%	
							TOTALS	297,102.93	3,073.01	1.0343%	

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



MONO-BIFACIAL	
PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE											
MODULE DATA					INVERTER ID					PCSXXX - ARRAY Y	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-02	DF-XXX-02	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-03	DF-XXX-03	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-04	DF-XXX-04	200	750	AL	21	0	7	360.9	275.3	3.1	0.28%
LBD XXX-05	DF-XXX-05	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-06	DF-XXX-06	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-07	DF-XXX-07	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-08	DF-XXX-08	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-09	DF-XXX-09	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-10	DF-XXX-10	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-11	DF-XXX-11	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-12	DF-XXX-12	220	750	AL	21	0	7	360.9	275.3	3.4	0.32%
LBD XXX-13	DF-XXX-13	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
LBD XXX-14	DF-XXX-14	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
LBD XXX-15	DF-XXX-15	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
LBD XXX-16	DF-XXX-16	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
			TOTALS		297			5105	3893	AVERAGE	0.25%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION			
BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
4	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

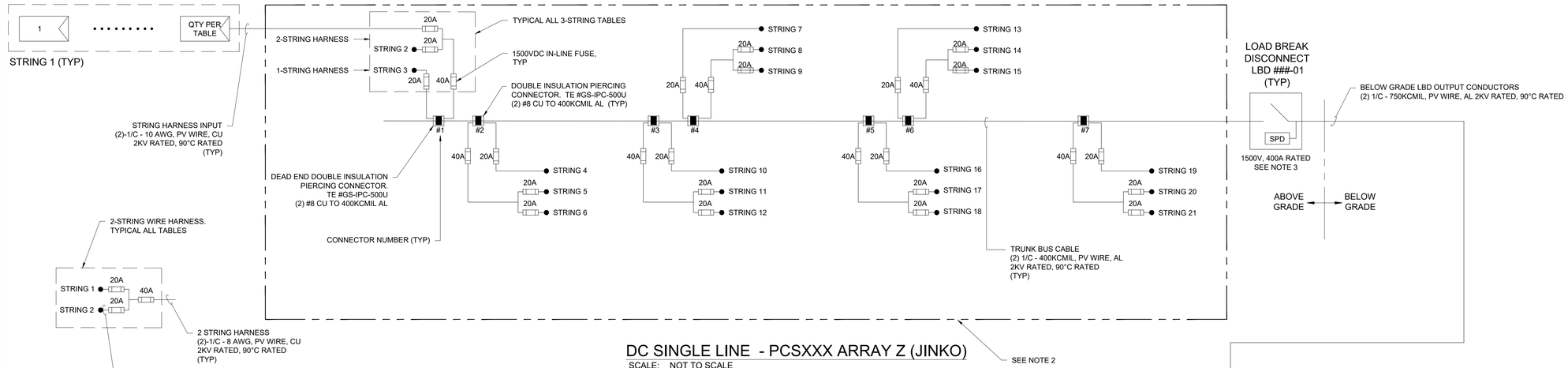
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME: DC SLD - ARRAY TYPE Y (JINKO)

SHEET #: E-235
REV #: 4

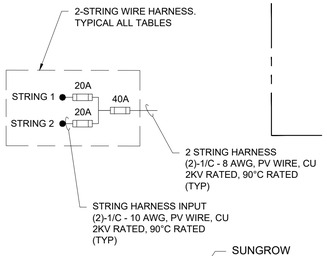
RECORD DRAWING

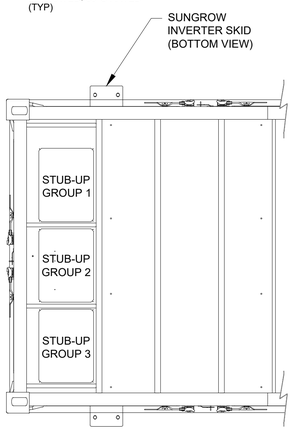
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-235 DC SLD - ARRAY TYPE Y (JINKO)



DC SINGLE LINE - PCSXXX ARRAY Z (JINKO)

SCALE: NOT TO SCALE





DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION

ARRAY DATA

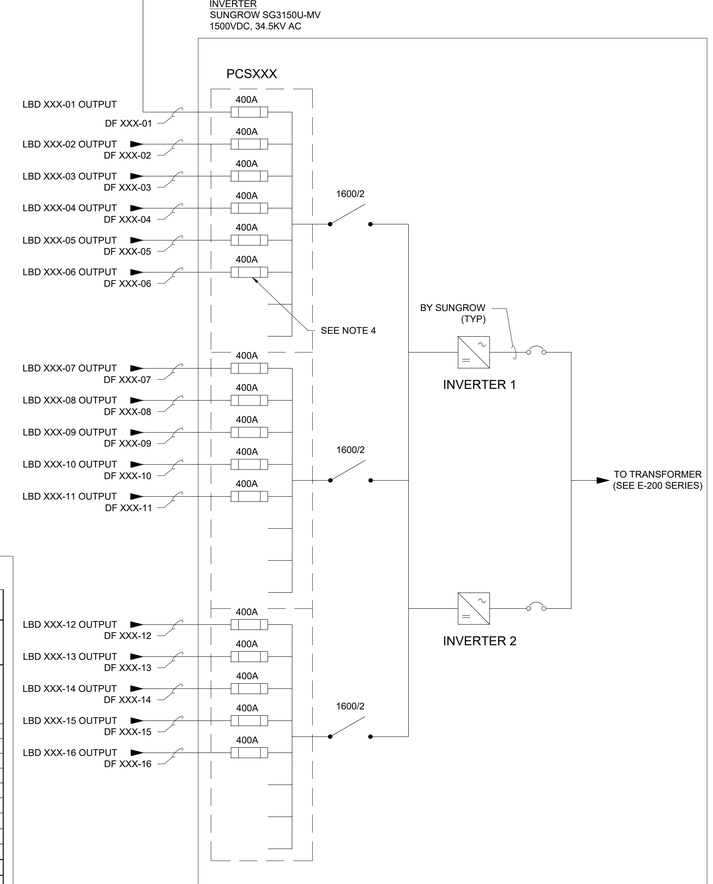
APPLICABLE TO ARRAY TYPES: Z (LBD-15)

MODULE CLASS MAXIMUM VALUES			
POWER (W)	MAX ISC (A)	MAX IMP (A)	WORST CASE STRING VMP
440	13.84	13.05	1084

FROM	TO	WIRE LENGTH (FT)	WIRE SIZE (AWG/kcmil)	CONDUCTOR (CU OR AL)	MAX QTY OF STRINGS	Imp (Amps)	PER FOOT RESISTANCE (Ω/FT)	POWER (Watts)	SEGMENT POWER LOSS (Watts)	POWER LOSS (%)
MODULE	CONNECTOR 1	155	8	CU	3	39.1	0.000778	42,443.28	184.80	0.4354%
CONNECTOR 1	CONNECTOR 3	55	400	AL	9	117.4	0.000053	127,329.83	40.13	0.0315%
CONNECTOR 3	CONNECTOR 5	55	400	AL	15	195.7	0.000053	212,216.38	111.47	0.0525%
CONNECTOR 5	CONNECTOR 6	55	400	AL	18	234.9	0.000053	254,659.66	160.51	0.0630%
CONNECTOR 6	LBD-XXX-XX	130	400	AL	18	234.9	0.000053	254,659.66	379.39	0.1490%
LBD-XXX-XX	PCSXXX	460	750	AL	18	234.9	0.000028	254,659.66	715.64	0.2810%
							TOTALS	254,659.66	1,591.94	0.6251%

WATT LOSS CALCULATION NOTES:

1. THIS TABLE PROVIDES A REPRESENTATIVE CALCULATION FOR APPLICABLE ARRAY TYPES BASED ON "WORST CASE SCENARIO" VALUES. THESE VALUES ARE OBTAINED FROM THE ARRAY TYPES LISTED.
2. THIS CALCULATION CONSIDERS THE FOLLOWING:
   i. LISTED ARRAY TYPES HAVE A SIMILAR OVERALL GEOGRAPHICAL ARRANGEMENT, IDENTIFIED ABOVE
   ii. CONDUCTOR RUNS (FROM/TO) ARE COMMON THESE ARRAY TYPES
   iii. THE WIRE LENGTH IDENTIFIED REPRESENTS THE MAXIMUM DISTANCE OBSERVED AMONGST THESE ARRAY TYPES
   iv. MODULE DATA LISTED REPRESENTS WORST CASE SCENARIO DATA FOR THE APPLICABLE ARRAY TYPES - HIGHER CURRENT MODULES RESULT IN GREATER POWER LOST; CONSEQUENTLY THE HIGHEST CURRENT MODULE AMONG THE ARRAY TYPES LISTED IS UTILIZED IN THIS CALCULATION.
   v. STRING QUANTITY IS SPECIFIC TO THE FURTHEST LBD BLOCK AND IS REPRESENTATIVE FOR APPLICABLE ARRAY TYPES.



NEW SHEET

MONO-BIFACIAL

PV MODULE INFORMATION - STC	
MANUFACTURER	JINKO
MODEL	JM460M-7RL3-TV
POWER	460 W
Vmpp(V)	43.32 V
Impp(A)	10.62 A
Voc (V)	51.90 V
Isc (A)	11.35 A
Voc TEMP COEFFICIENT	-0.0028
Pmpp TEMP COEFFICIENT	-0.0035
NMOT	45.0 °C
MAX FUSE (A)	20 A
PV STRING INFORMATION	
MODULES IN SERIES	27
STC POWER	12,420 W
Voc (STC)	1,401.30 V
Voc (MIN TEMP)*	1,458 V
Vmpp (STC)	1,169.64 V
Vmpp (MAX TEMP)	1,110.69 V
Impp (STC)	10.62 A
Impp Max*	13.11 A
Isc (STC)	11.35 A
Isc max PER NEC 690.8(A)(2)*	13.75 A
INVERTER	
MANUFACTURER	SUNGROW
MODEL NUMBER	SG3150U-MV
MAX AC POWER OUTPUT	3150 kVA AC
MAX DC VOLTAGE	1500 V
AC OUTPUT VOLTAGE	630V AC
MAX OUTPUT AC CURRENT	2886
NUMBER OF MPPT TRACKERS	1

* Per Primoris-provided SAM model results

DC FEEDER SCHEDULE

MODULE DATA					INVERTER ID					PCSXXX - ARRAY Y	
POWER (W)	ISC (A)	IMP (A)	CORRECTED STRING VMP								
460	13.75	13.11	1111								
DISCONNECT ID	DC FEEDER ID	WIRE LENGTH (FT)	WIRE SIZE (kcmil)	CONDUCTOR (CU OR AL)	TOTAL QTY STRINGS	QTY 2-STRING TABLES	QTY 3-STRING TABLES	Isc *1.25 (Amps)	Imp (Amps)	VOLTAGE DROP (V)	VOLTAGE DROP (%)
LBD XXX-01	DF-XXX-01	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-02	DF-XXX-02	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-03	DF-XXX-03	200	750	AL	18	0	6	309.4	235.9	2.7	0.24%
LBD XXX-04	DF-XXX-04	200	750	AL	21	0	7	360.9	275.3	3.1	0.28%
LBD XXX-05	DF-XXX-05	160	750	AL	21	0	7	360.9	275.3	2.5	0.22%
LBD XXX-06	DF-XXX-06	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-07	DF-XXX-07	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-08	DF-XXX-08	160	750	AL	18	0	6	309.4	235.9	2.1	0.19%
LBD XXX-09	DF-XXX-09	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-10	DF-XXX-10	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-11	DF-XXX-11	220	750	AL	18	0	6	309.4	235.9	2.9	0.26%
LBD XXX-12	DF-XXX-12	220	750	AL	21	0	7	360.9	275.3	3.4	0.32%
LBD XXX-13	DF-XXX-13	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
LBD XXX-14	DF-XXX-14	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
LBD XXX-15	DF-XXX-15	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
LBD XXX-16	DF-XXX-16	210	750	AL	18	0	6	309.4	235.9	2.8	0.26%
		TOTALS			297			5105	3893	AVERAGE	0.25%

TEMPERATURE INFO	
MIN TEMPERATURE	-6.0 °C
MAX TEMPERATURE	43.0 °C

GENERAL NOTES:

1. THE PV MODULE INFORMATION AND DC FEEDER SCHEDULE AN THIS DRAWING ARE NOT INDICATIVE OF THE ACTUAL MODULE MANUFACTURER / MODEL ASSOCIATED WITH THIS ARRAY TYPE. THE MODULE INFORMATION AND ASSOCIATED CALCULATIONS ON THIS DRAWING ARE BASED ON THE LARGEST GENERATING MODULE TYPE ASSOCIATED WITH THE MODULE MANUFACTURER IDENTIFIED ON THIS DRAWING.
2. REFER TO DRAWING E-005 - BLOCK SCHEDULE AND DRAWING E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING PCS-SPECIFIC ARRAY TYPES.

BLOCK INFORMATION

BLOCK TYPES	MODULE MFR	MODULE WATTS	QTY OF BLOCKS
A	TRINA	405	21
	TRINA	400	
	TRINA	410	
	TRINA	405	
B	TRINA	405	2
C	TRINA	405	1
D	TRINA	410	2
E	TRINA	400	1
F	JINKO	460	27
G	JINKO	455	3
H	JINKO	455	1
I	JINKO	460	1
J	JINKO	455	2
K	JINKO	455	1
L	JINKO	455	1
M	JINKO	455	1
N	JINKO	455	1
O	JINKO	455	1
P	JINKO	455	1
Q	JINKO	455	1
X	JINKO	460	4
R	CANADIAN	435	21
	CANADIAN	440	
S	CANADIAN	435	1
T	CANADIAN	430	2
U	CANADIAN	430	1
V	CANADIAN	430	1
W	CANADIAN	435	4
	CANADIAN	440	
Y	JINKO	455	1
Z	JINKO	455	1

NOTES:

1. THE DC SYSTEM IS NEGATIVELY GROUNDED AND REQUIRES FUSES ONLY ON THE POSITIVE CONDUCTORS. NEGATIVE CONDUCTORS NOT SHOWN FOR CLARITY.
2. TRUNK BUS CABLE CONFIGURATION IS SHOWN DIAGRAMMATICALLY AND IS ONE OF MANY CONFIGURATIONS.
3. LOAD BREAK DISCONNECT (LBD) SHALL DISCONNECT BOTH POSITIVE AND NEGATIVE POLE TO BE IN COMPLIANCE WITH NEC 2017. OLSON #PRI-DIS-5-400-G-SW-UL-N4-SRG-TA. DISCONNECT SHALL BE RATED AT 400A AND INCLUDING ALL TERMINALS AT 90°C,
4. FUSE SHALL BE SELECTED SUCH THAT THE RATING IS IN ACCORDANCE WITH NEC 690.9(B) AND THE MAXIMUM AMBIENT TEMPERATURE INSIDE THE ENCLOSURE. FINAL FUSE SELECTION IS TO BE BY THE INVERTER MANUFACTURER DEPENDING UPON THE TEMPERATURE DERATING CURVE OF THE FUSE. REFER TO THE CABLE SIZING STUDY SECTION 4.2.5 FOR MORE ADDITIONAL INFORMATION.

ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 PCS1201 PCS1202 PCS1204 PCS1205 PCS1206 PCS1207 PCS1301 PCS1302 PCS1303 PCS1304 PCS1306 PCS1307 PCS1402 PCS1404 PCS1405 PCS1406
G	PCS101 PCS906 PCS1203
H	PCS1208
I	PCS1305
J	PCS102 PCS1401
K	PCS1408
L	PCS1407
M	PCS1105
N	PCS604
O	PCS606
P	PCS607
Q	PCS1308
R	PCS305 PCS306 PCS307 PCS407 PCS705 PCS706 PCS707 PCS803 PCS804 PCS805 PCS806 PCS807 PCS902 PCS903 PCS904 PCS905 PCS1001 PCS1002 PCS1003 PCS1004 PCS1005
S	PCS1006
T	PCS802 PCS901
U	PCS203
V	PCS704
W	PCS701 PCS702 PCS703 PCS801
X	PCS601 PCS602 PCS603 PCS605
Y	PCS1403
Z	PCS1008

FastGrid, LLC
225 E Germann Road
Suite 301
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
	RECORD DRAWINGS	06/08/2023

PROJECT NAME:
EAGLE SHADOW MOUNTAIN PV SOLAR POWER GENERATION FACILITY

PROJECT ADDRESS:
I-15
CRYSTAL, NV
CLARK COUNTY

SEAL:

DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: LR
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE Z (JINKO)

SHEET #: E-236
REV #: 4

AS BUILT

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-236 ARRAY TYPE Z (JINKO)