MATCHLINE - SHEET C102

EXISTING CULTURAL AVOIDANCE AREA (TYP.)

PROPOSED 130' CULTURAL AVOIDANCE AREA BUFFER (TYP.)

EXISTING TORTOISE PROTECTION FENCE (TYP.)

MATCHLINE - SHEET C103

EXISTING OVERLAND FLOW PATH (TYP.)

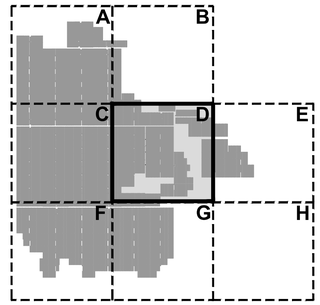
MATCHLINE - SHEET C105

PROPOSED SECURITY FENCE (TYP.)

PROPOSED SILT FENCE (TYP.)

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.
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. 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

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

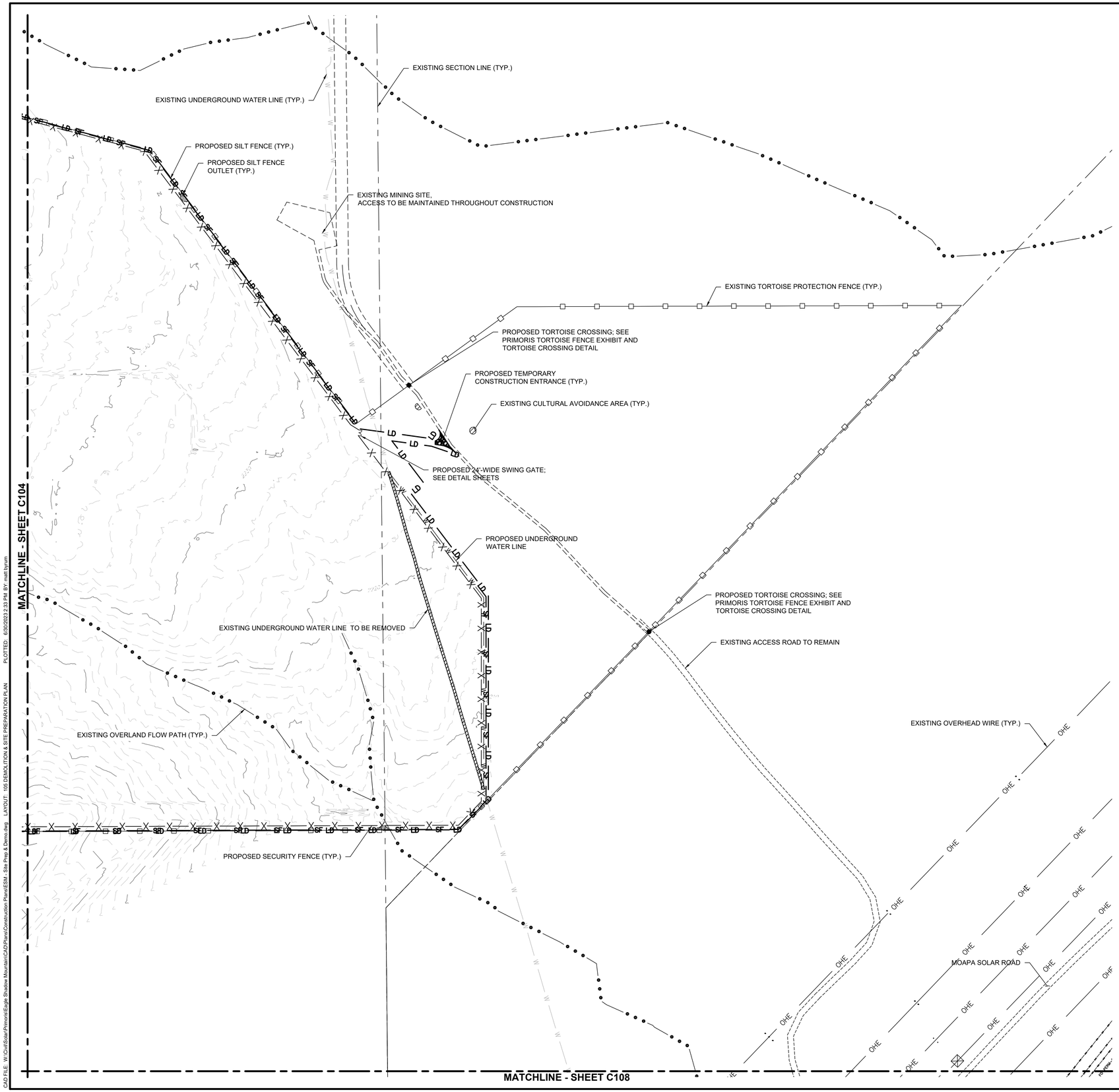
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

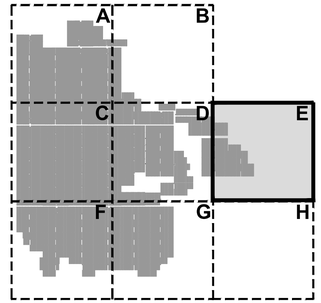
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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.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

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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"

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

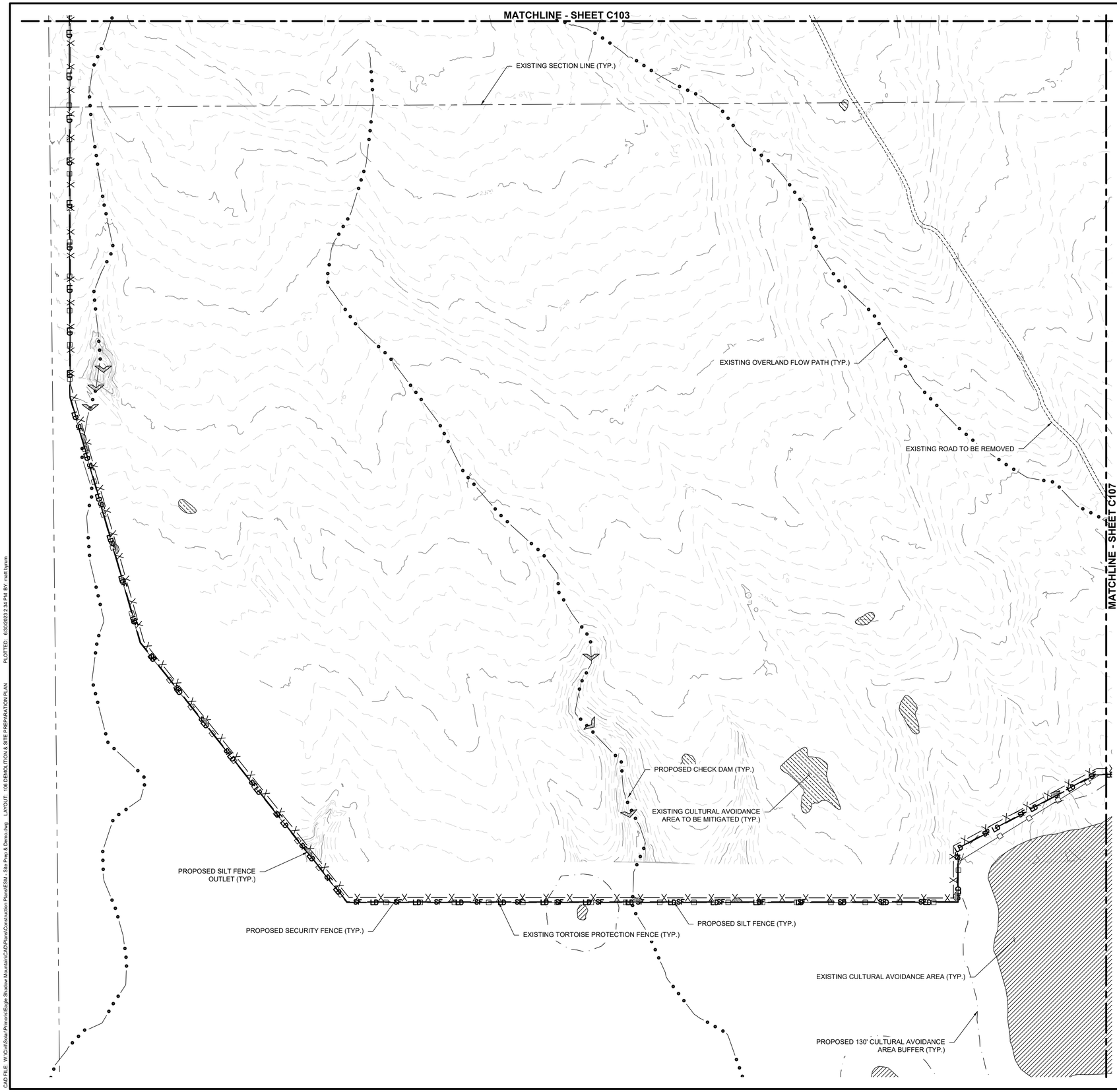
Primoris 8MINUTE SOLAR ENERGY

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

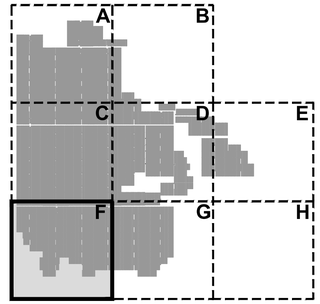
CONSTRUCTION PLANS

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

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DEMOLITION & SITE PREPARATION PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

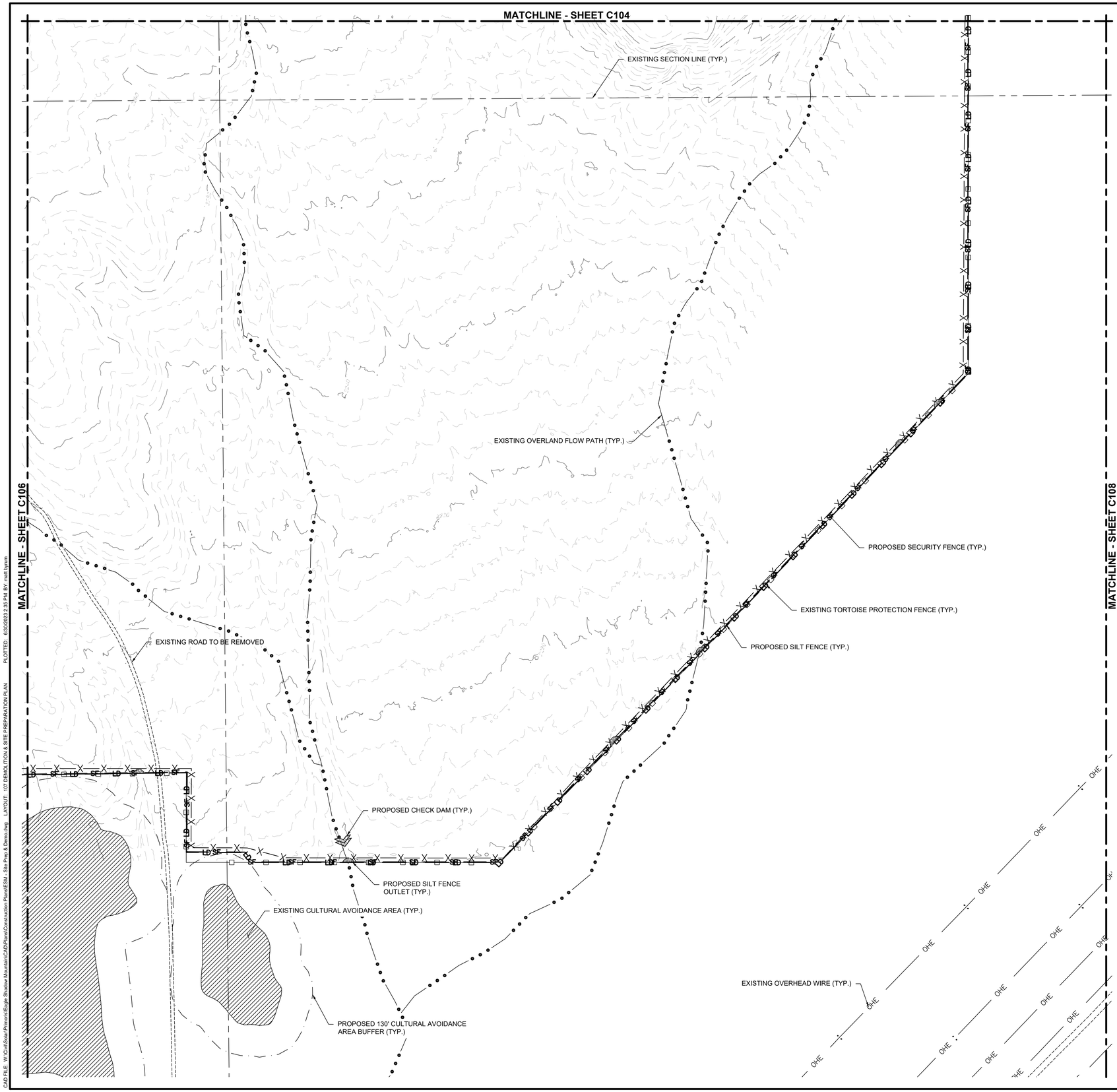
Primoris 8MINUTE SOLAR ENERGY

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

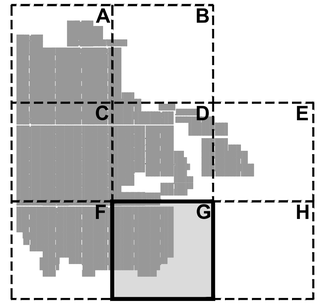
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	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



KEY MAP



LEGEND

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

REV	DESCRIPTION	DSN	CHK	DATE
		DWN	APP	
0	CONSTRUCTION PLANS	MCB	CGO	10/16/2020
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		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

PSC Primoris | 8minute SOLAR ENERGY

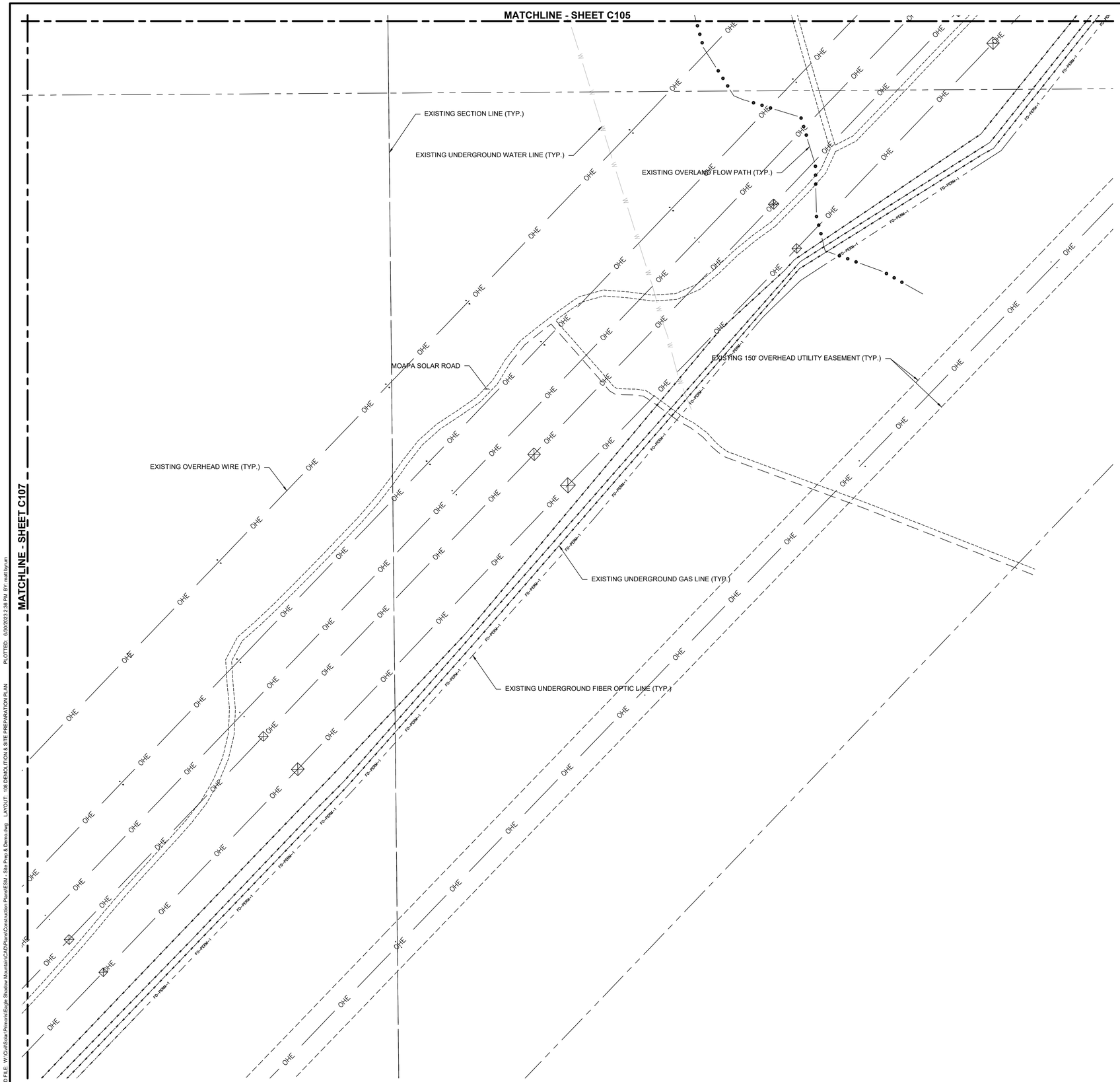
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

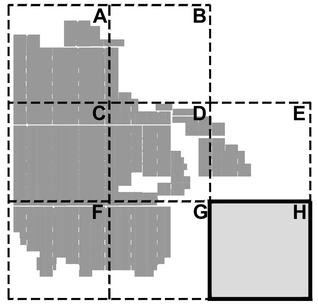
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C107
SHEET NUMBER

CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Site Prep & Demo.dwg LAYOUT: 107 DEMOLITION & SITE PREPARATION PLAN PLOTTED: 6/30/2023 2:35 PM BY: matt byrum



KEY MAP



LEGEND

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

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

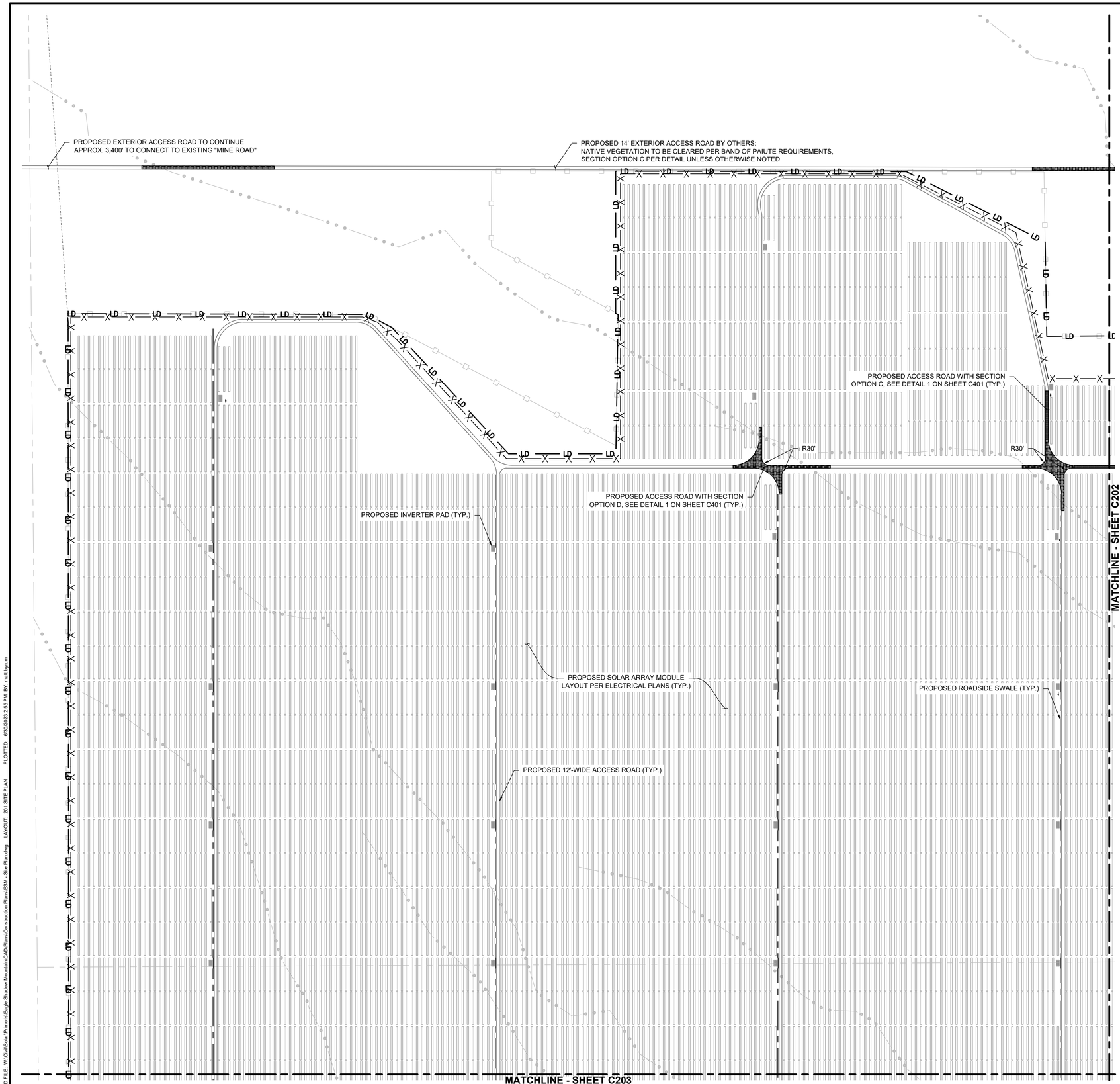
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

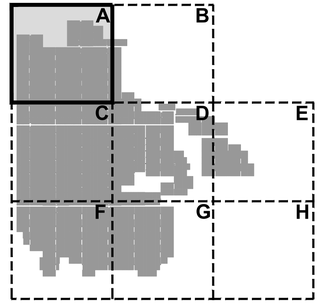
PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	

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
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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	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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0 200 400 600

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SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

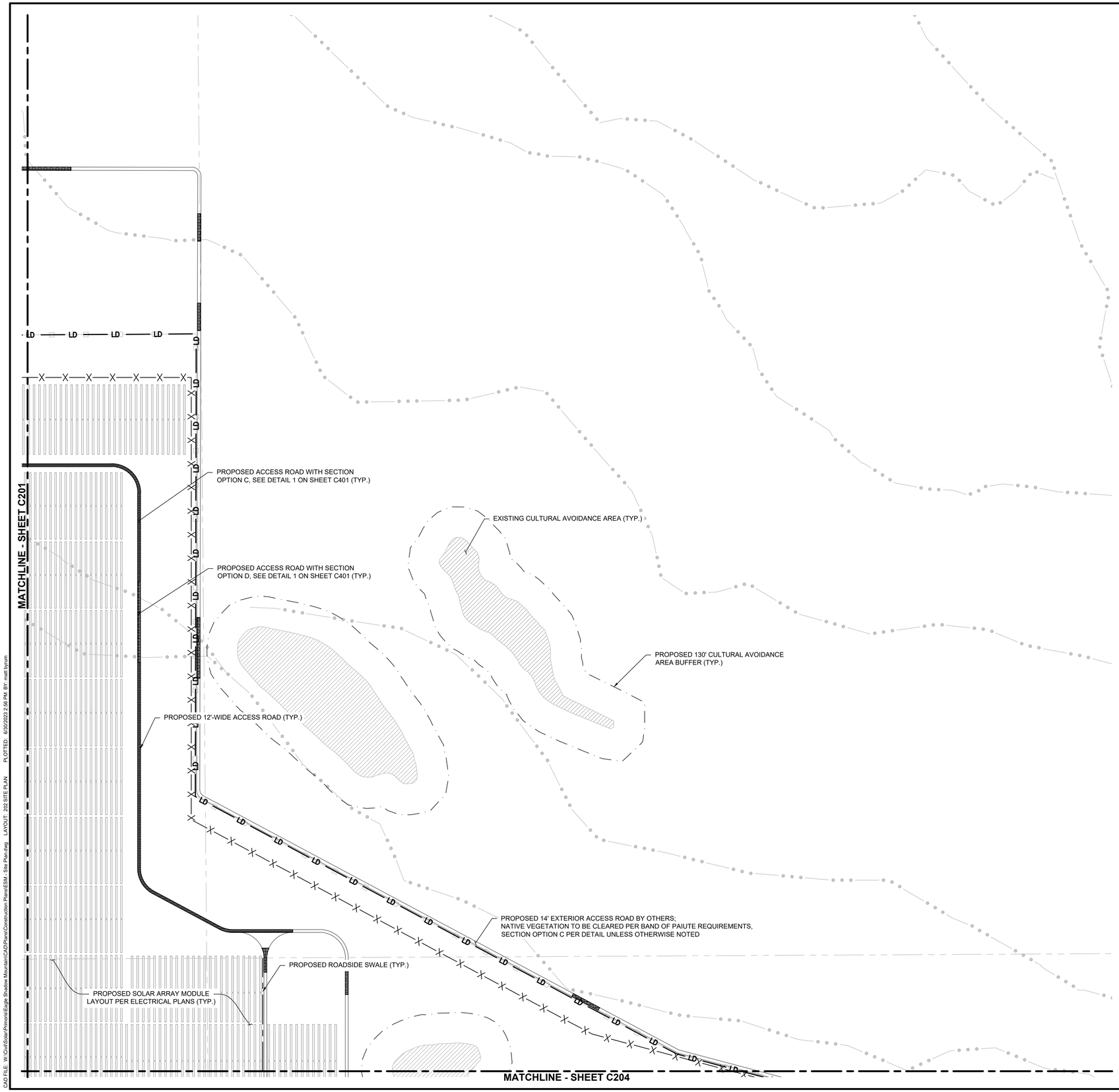
PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

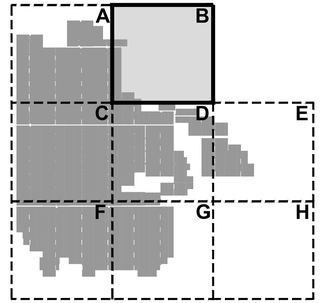
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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: 6/30/2023 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
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- 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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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

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris MINUTE SOLAR ENERGY

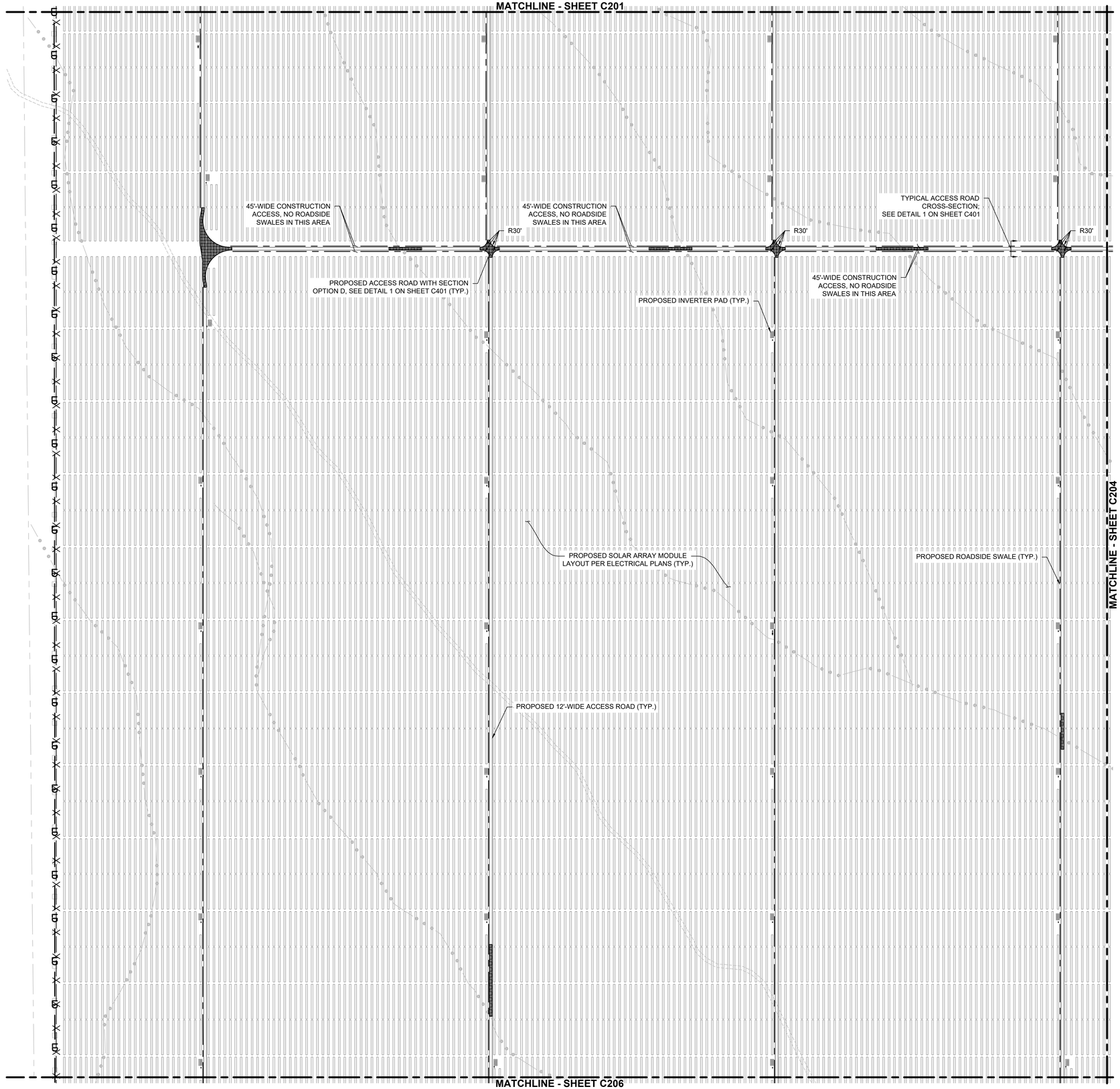
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

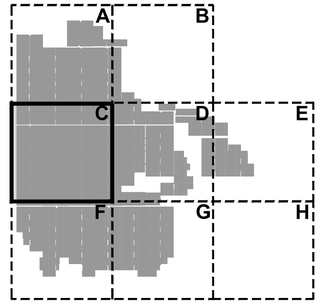
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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
- EXISTING EASEMENT BOUNDARY
- EXISTING OVERHEAD WIRE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC LINE
- EXISTING WATER LINE
- EXISTING OVERLAND FLOW PATH
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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

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DAVID A. SEARE
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

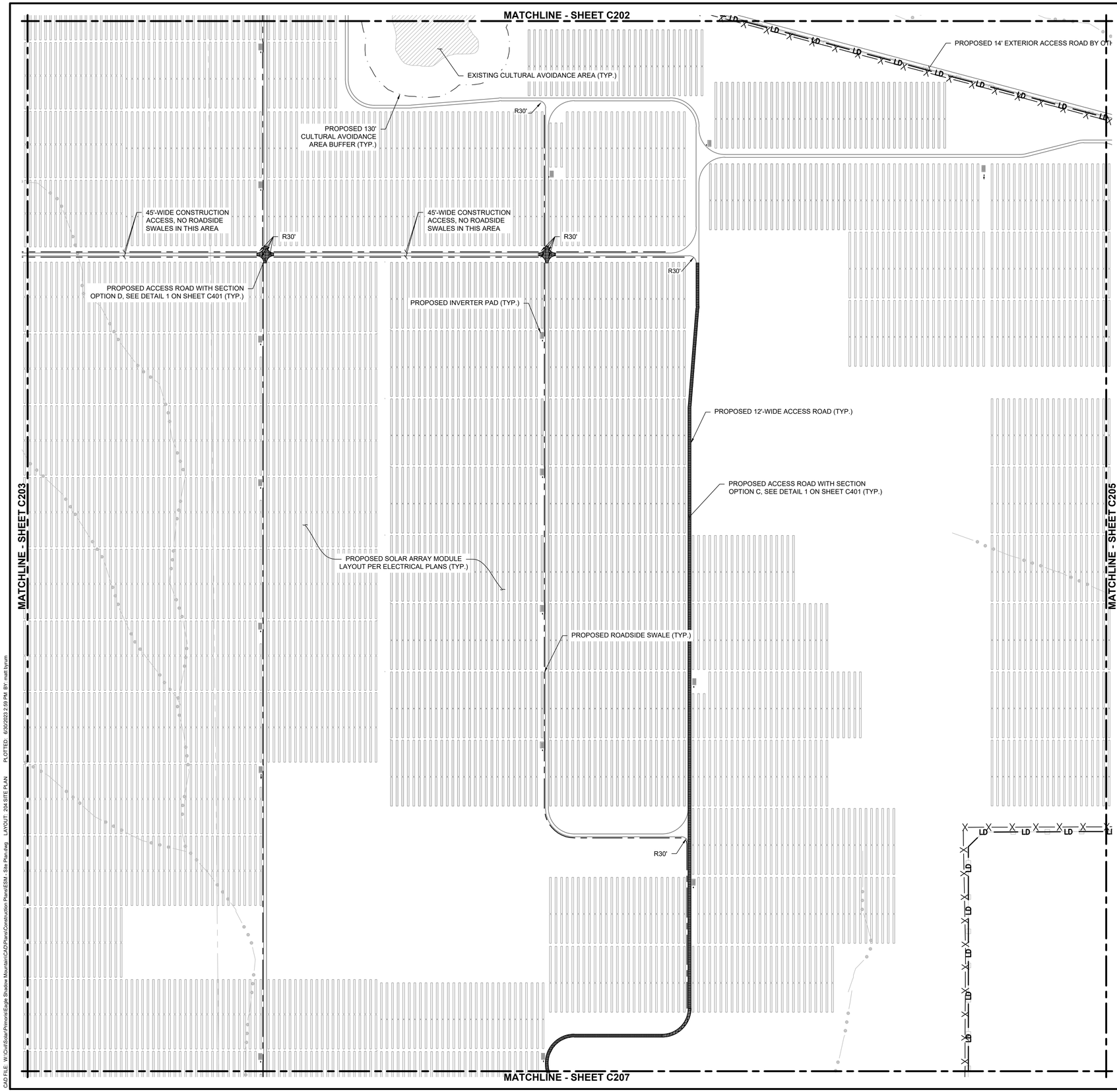
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

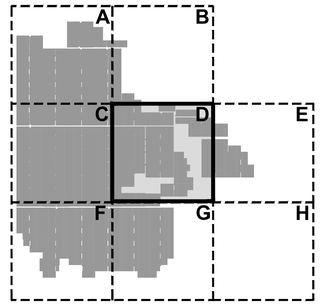
PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	

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
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
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NOTES

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REVISIONS

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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

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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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SCALE: 1" = 200' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

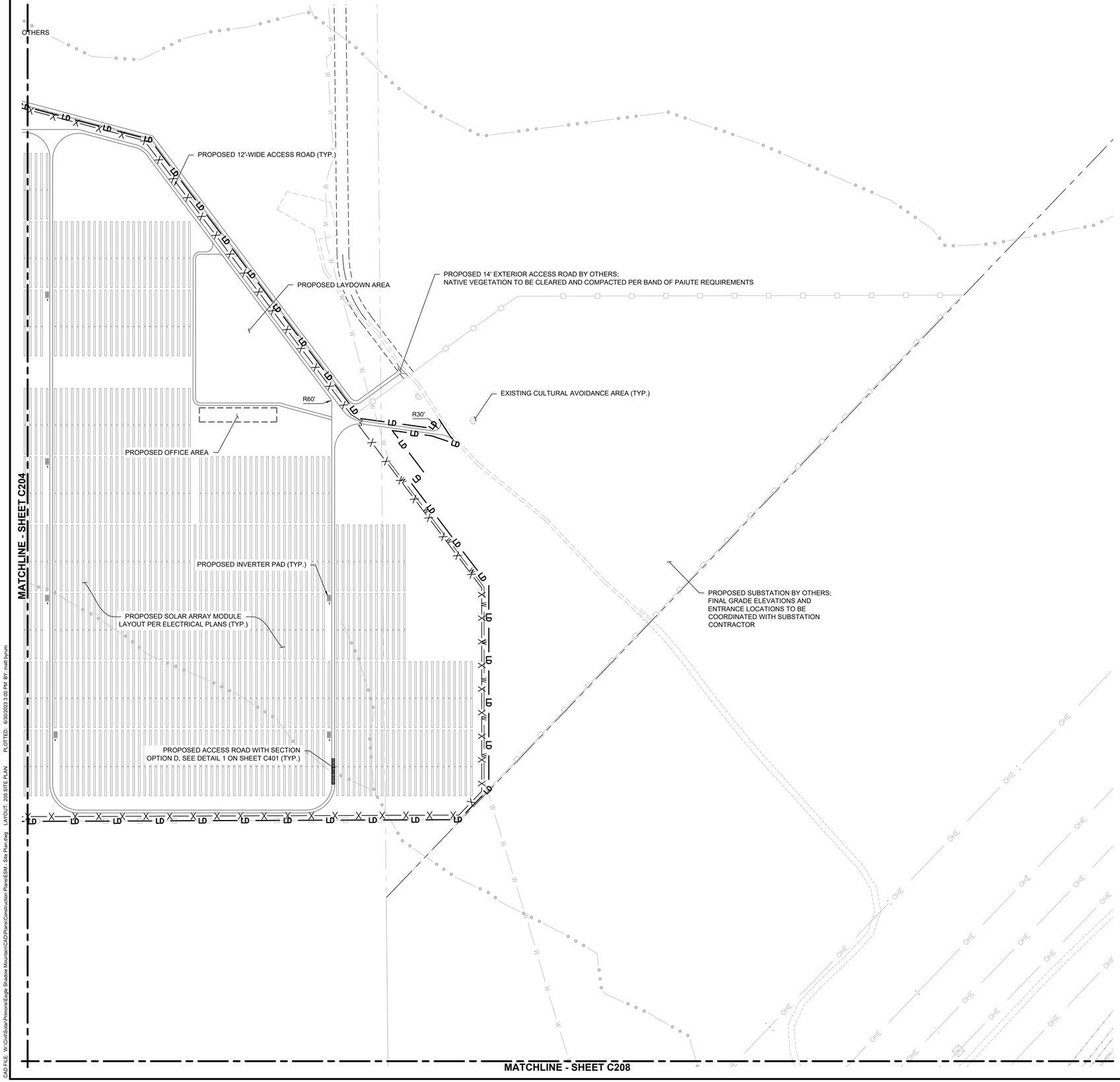
PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

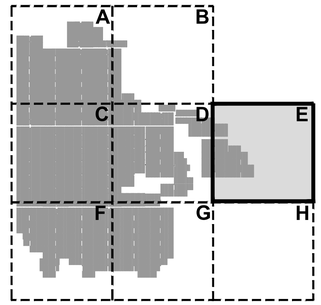
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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
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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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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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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

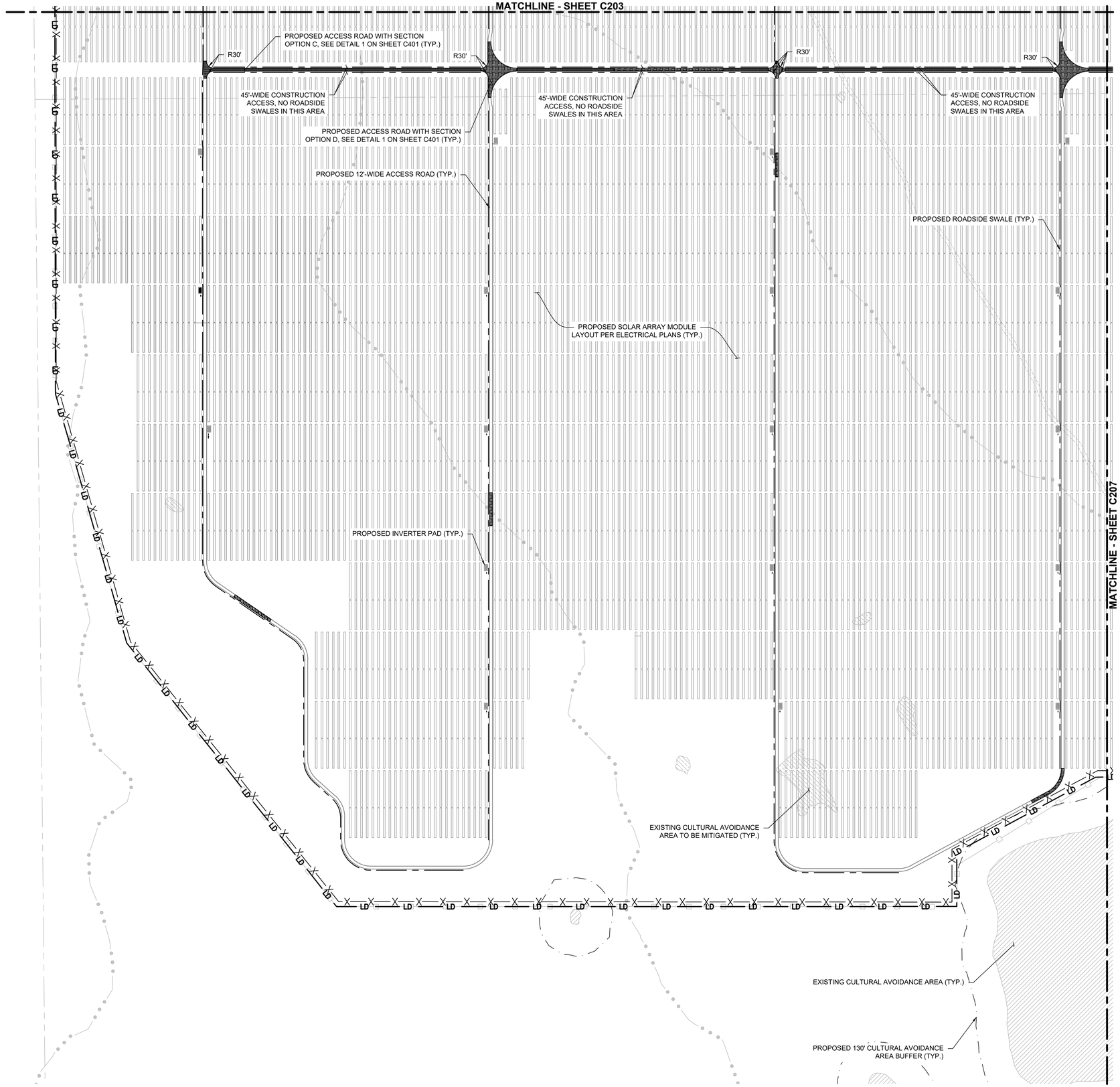
Primoris
8MINUTE SOLAR ENERGY
PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

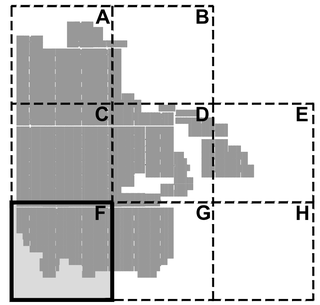
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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



KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
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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. 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

Primoris 8minute SOLAR ENERGY

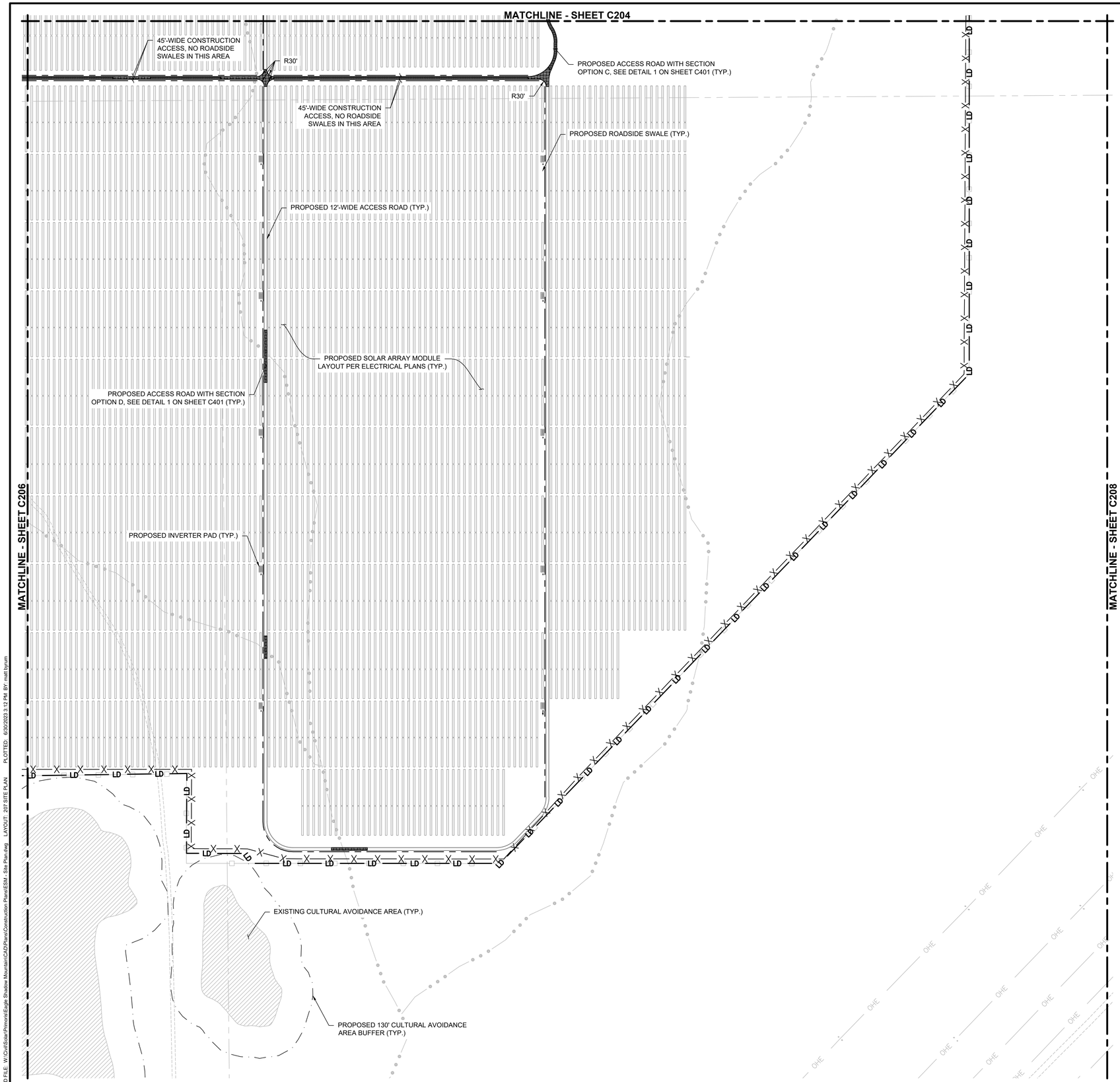
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

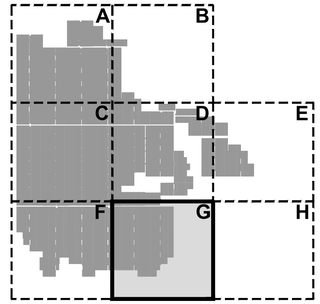
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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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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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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

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	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 byrum

MATCHLINE - SHEET C205

EXISTING SECTION LINE (TYP.)

EXISTING UNDERGROUND WATER LINE (TYP.)

EXISTING PROPERTY LINE (TYP.)

MOAPA SOLAR ROAD

EXISTING 150' OVERHEAD UTILITY EASEMENT (TYP.)

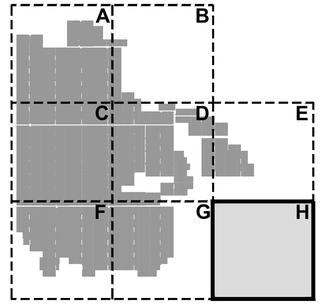
EXISTING OVERHEAD WIRE (TYP.)

EXISTING UNDERGROUND GAS LINE (TYP.)

EXISTING UNDERGROUND FIBER OPTIC LINE (TYP.)

MATCHLINE - SHEET C207

KEY MAP



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTING PROPERTY LINE
- EXISTING SECTION LINE
- EXISTING ROAD BOUNDARY
- EXISTING TORTOISE PROTECTION FENCE
- EXISTING EASEMENT BOUNDARY
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REVISIONS

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		DWN	APP	
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		MCB	AGB	
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		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"

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ORIGINAL DRAWING SIZE IS 24 x 36

SITE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

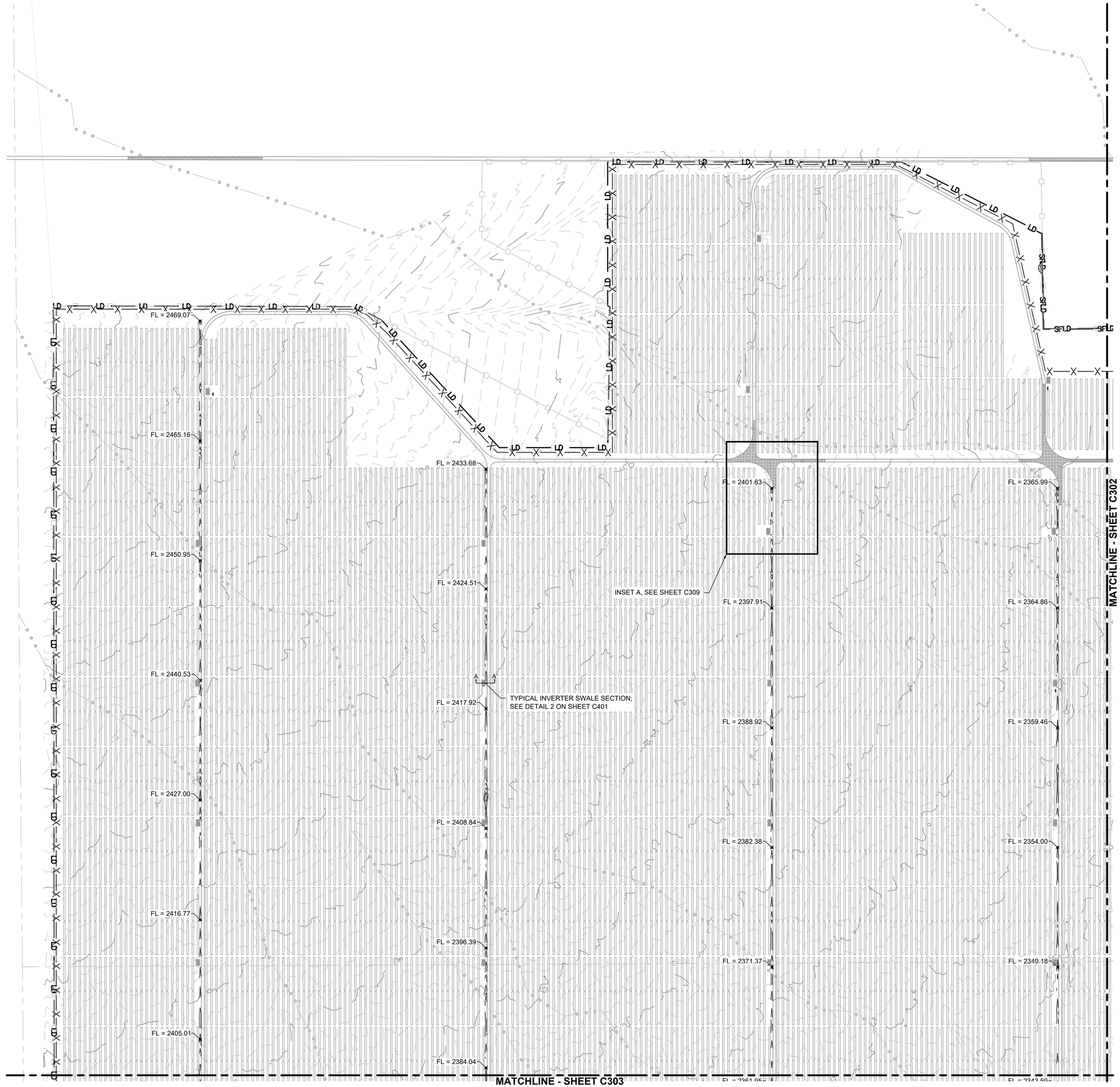
Primoris 8MINUTE SOLAR ENERGY

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SUITE 500
DENVER, CO 80239

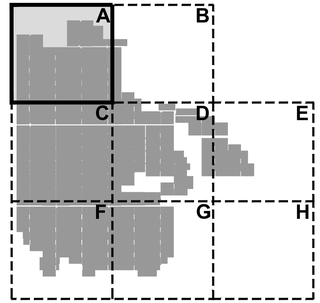
CONSTRUCTION PLANS

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

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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

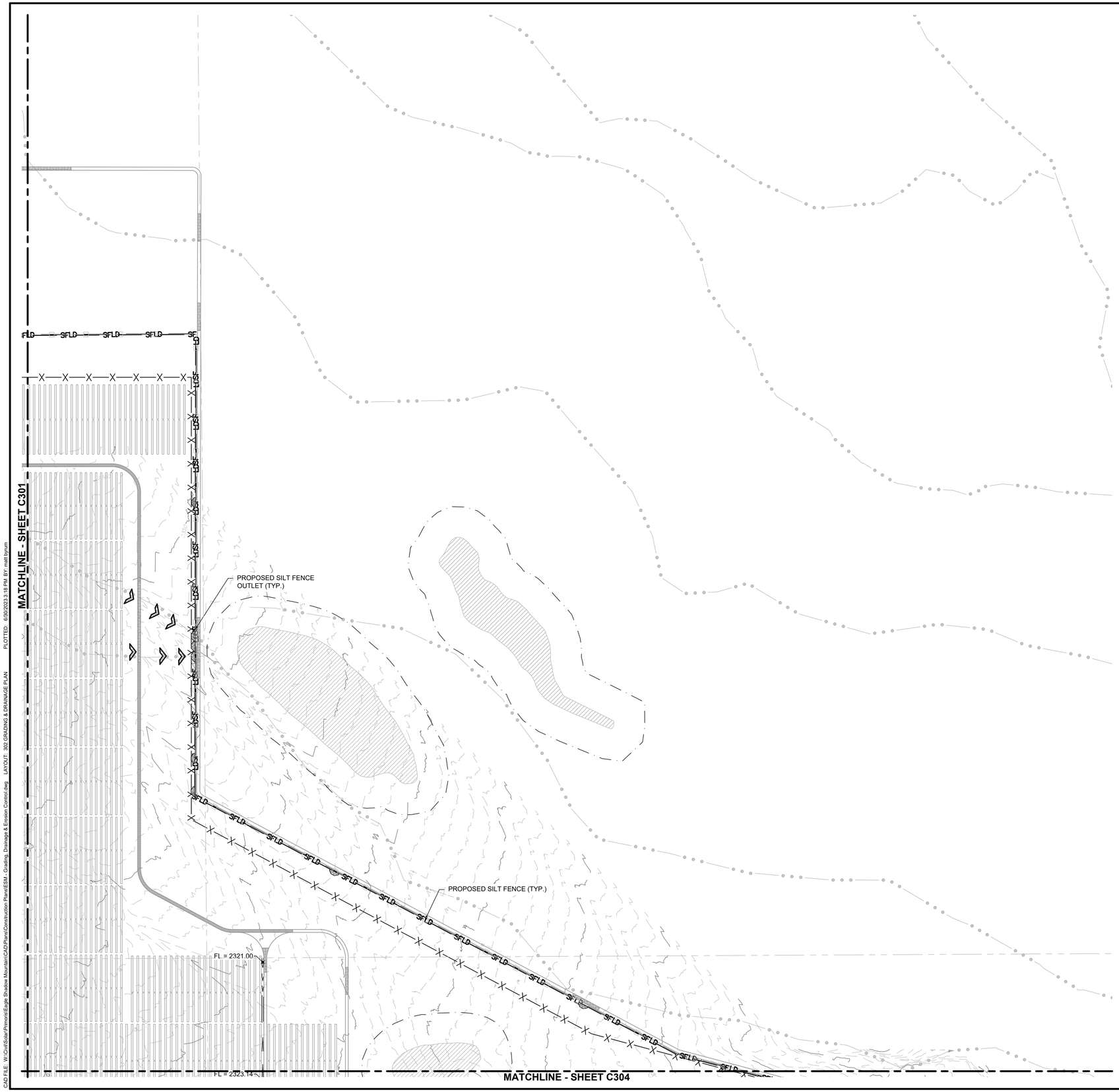
Primoris MINUTE SOLAR ENERGY

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

CONSTRUCTION PLANS

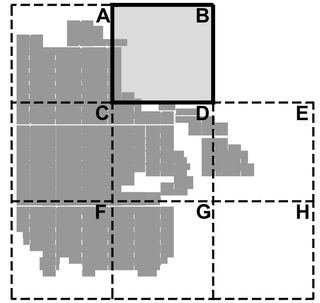
PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	C301
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	SHEET NUMBER

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



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

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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

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

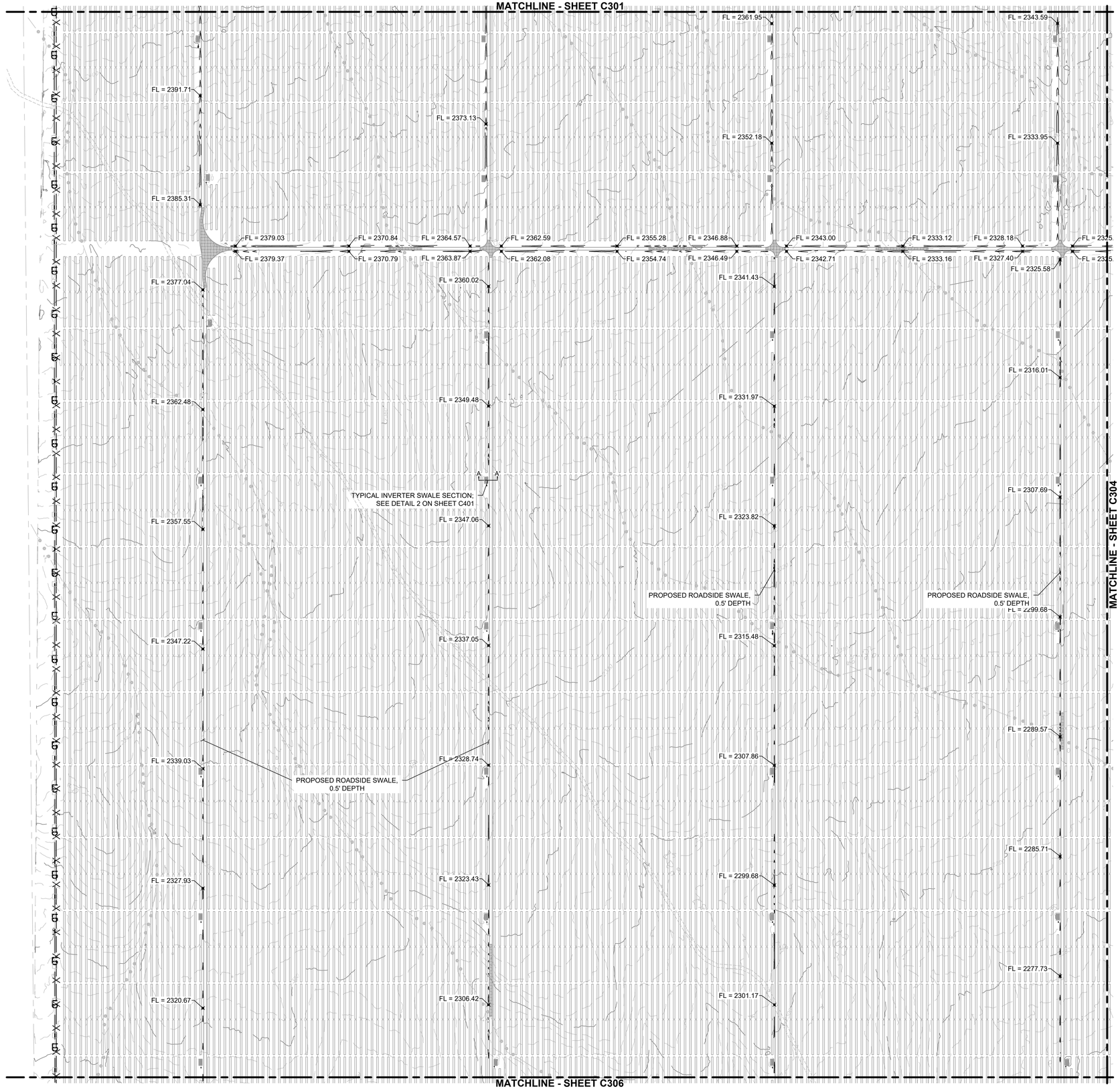
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PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

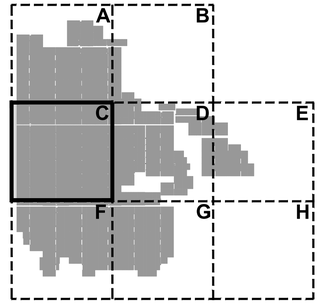
CONSTRUCTION PLANS

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

C302
SHEET NUMBER



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)
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- EXISTING WATER LINE (W)
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- EXISTING CULTURAL AVOIDANCE AREA
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- PROPOSED LIMIT OF DISTURBANCE (LD)
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- 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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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"

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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

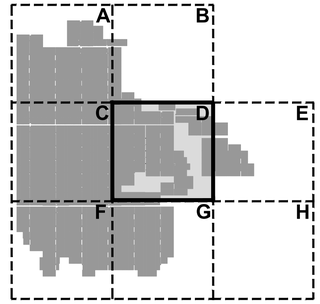
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	
DRAWN BY MCB	
CHECKED BY AML	
APPROVED BY DS	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 OVERHEAD WIRE (OHE)
- EXISTING GAS LINE (GAS)
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- EXISTING WATER LINE (W)
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- PROPOSED SECURITY FENCE
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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	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. 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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0 200 400 600
SCALE: 1" = 200' SCALE IN FEET

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GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

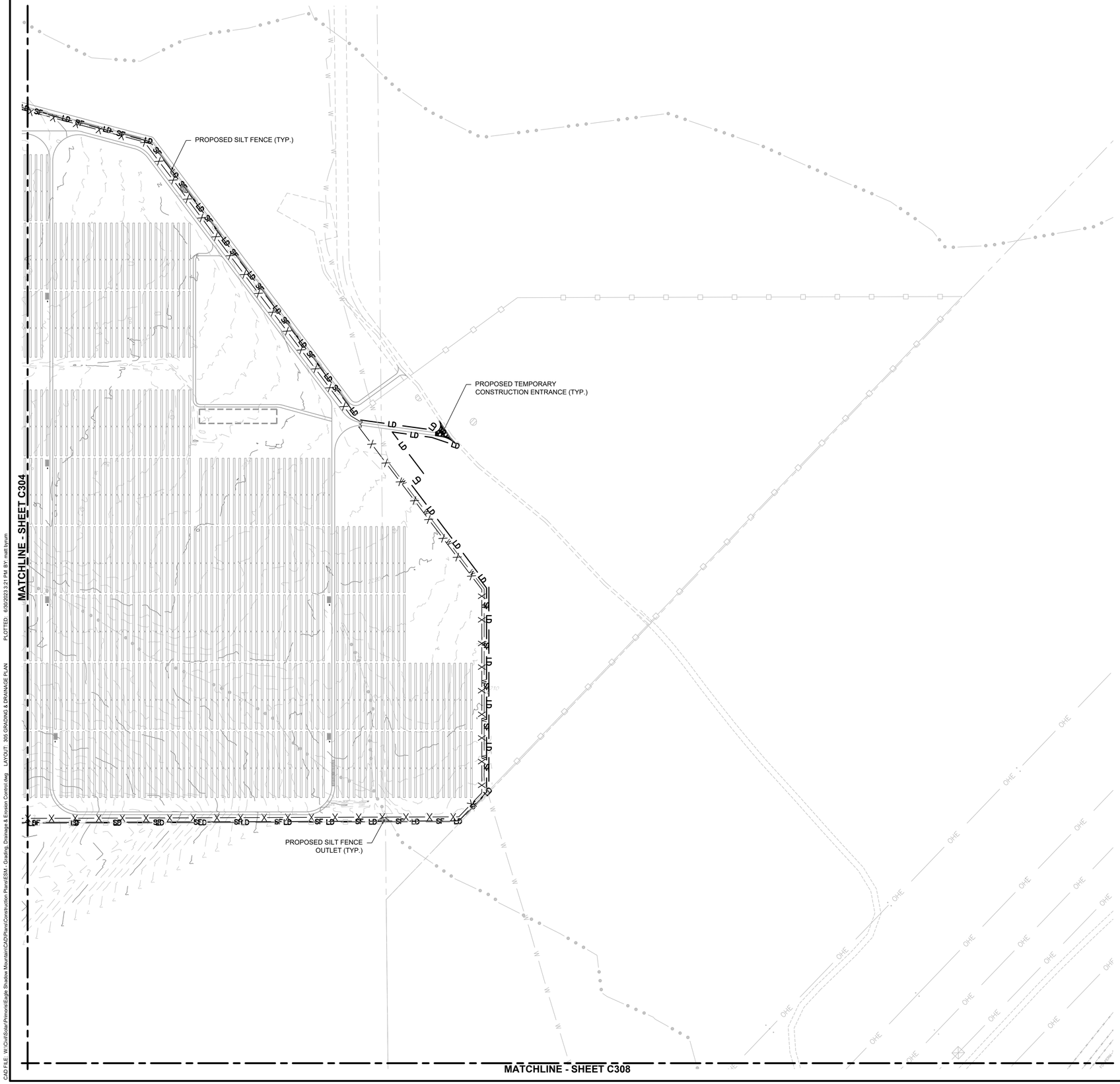
PSC Primoris | 8minute SOLAR ENERGY

PRIMORIS RENEWABLE ENERGY
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SUITE 500
DENVER, CO 80239

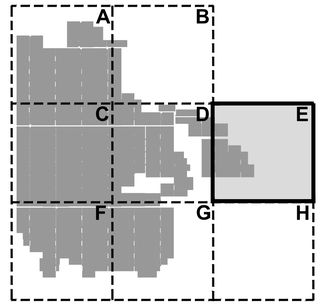
CONSTRUCTION PLANS

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

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



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)
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- EXISTING WATER LINE (W)
- EXISTING OVERLAND FLOW PATH
- EXISTING CULTURAL AVOIDANCE AREA
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- PROPOSED LIMIT OF DISTURBANCE (LD)
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- PROPOSED ACCESS ROAD, SECTION OPTION C
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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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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

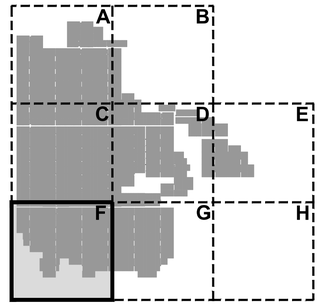
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

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



KEY MAP



LEGEND

- EXISTING MAJOR CONTOUR LINE (2445)
- EXISTING MINOR CONTOUR LINE (2444)
- EXISTING PROPERTY LINE
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REVISIONS

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

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GRADING & DRAINAGE PLAN

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

Primoris | 8minute SOLAR ENERGY

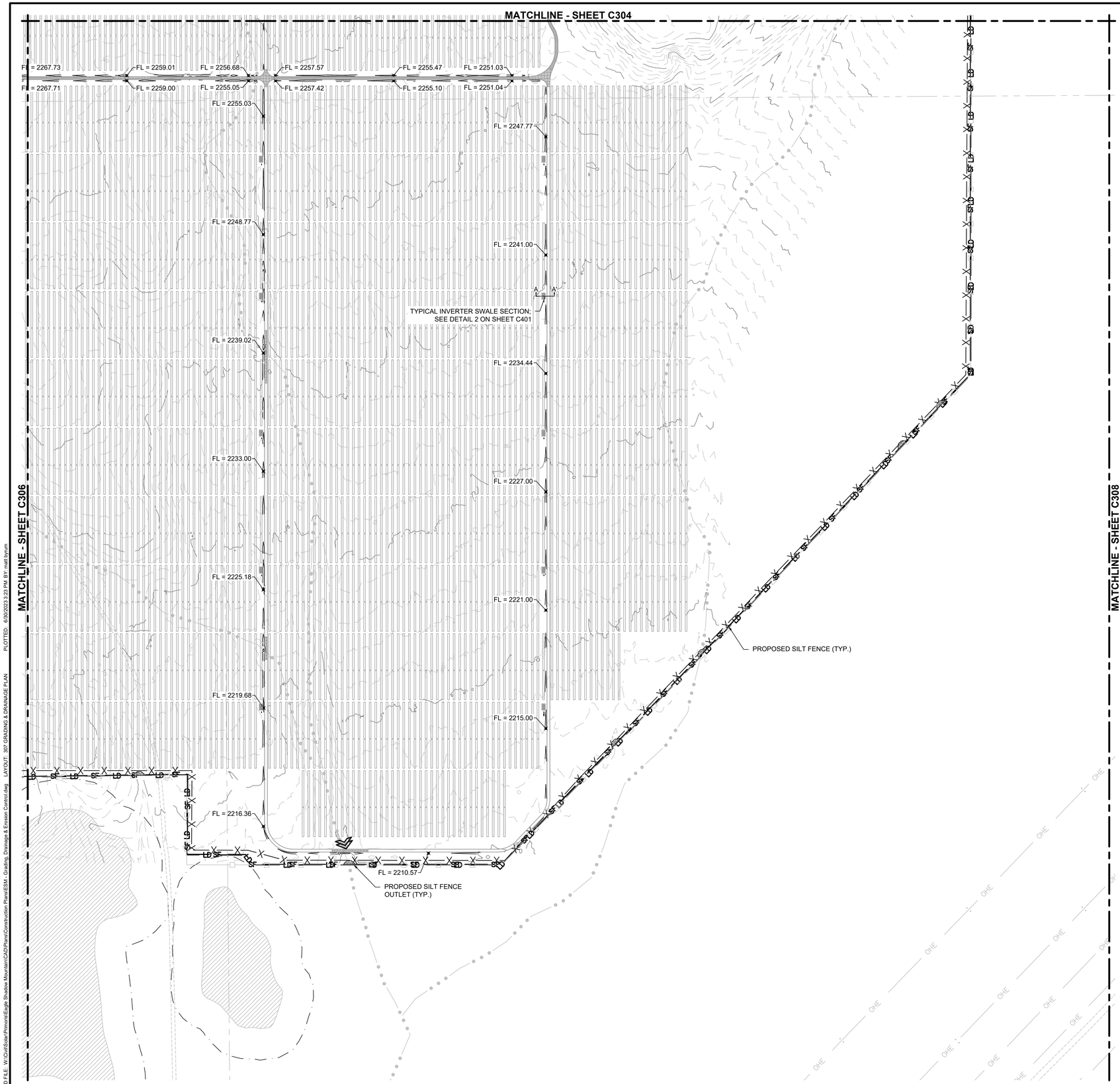
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SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

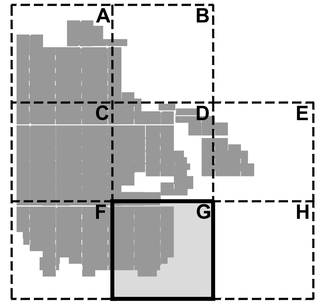
PROJECT NO.	20203753.003A
ISSUE DATE	06/30/2023
CURRENT REVISION	3
DESIGNED BY	MCB
DRAWN BY	MCB
CHECKED BY	AML
APPROVED BY	DS

C306
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
- 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	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. 20794
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

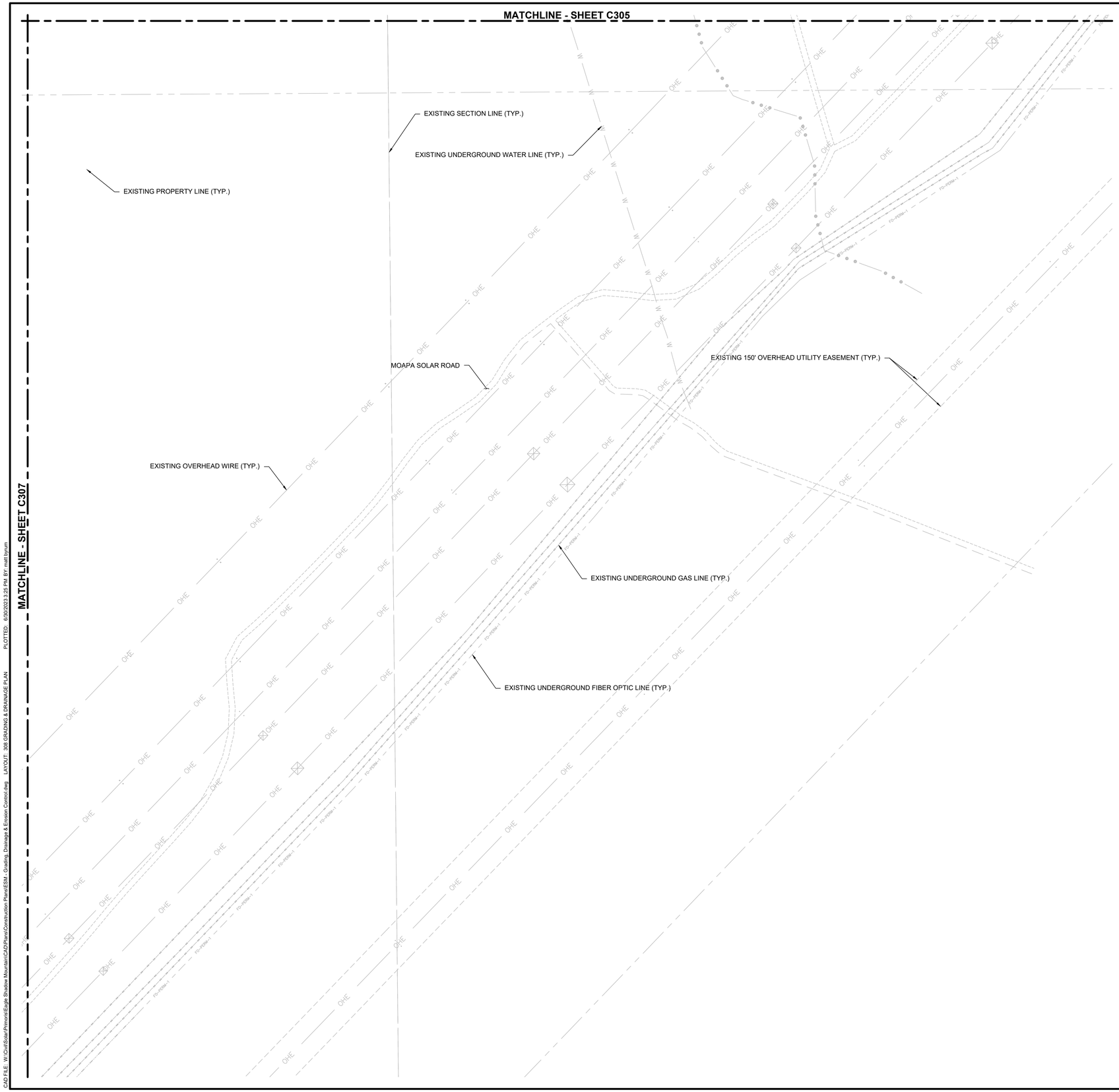
EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris
MINUTE SOLAR ENERGY
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

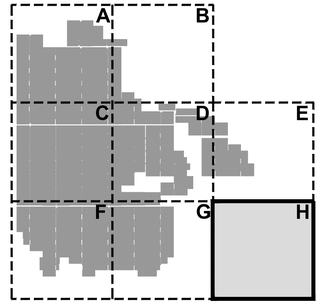
CONSTRUCTION PLANS

PROJECT NO. 20203753.003A	
ISSUE DATE 06/30/2023	
CURRENT REVISION 3	
DESIGNED BY MCB	C307
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



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
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- 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	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

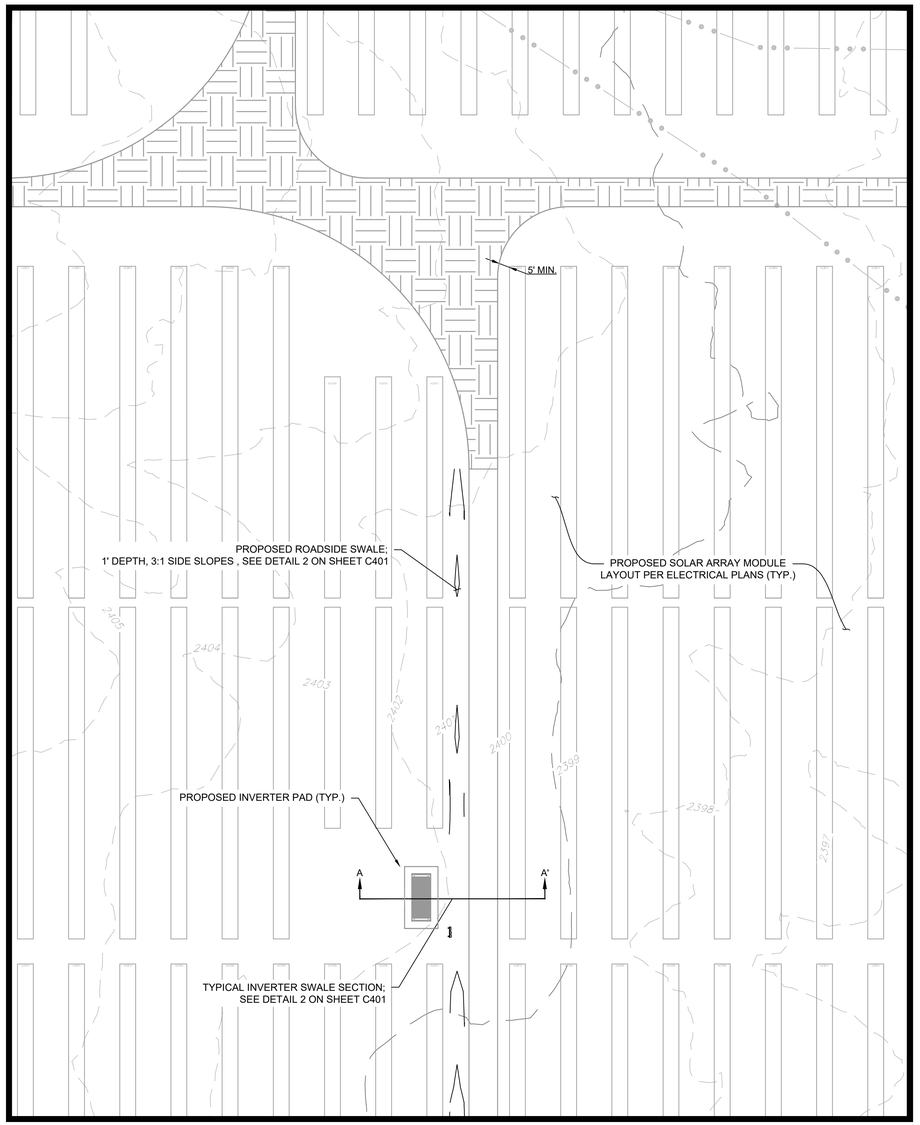
EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

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	
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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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. 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"
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ORIGINAL DRAWING SIZE IS 24 x 36

TYPICAL ROADSIDE SWALE INSET

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

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

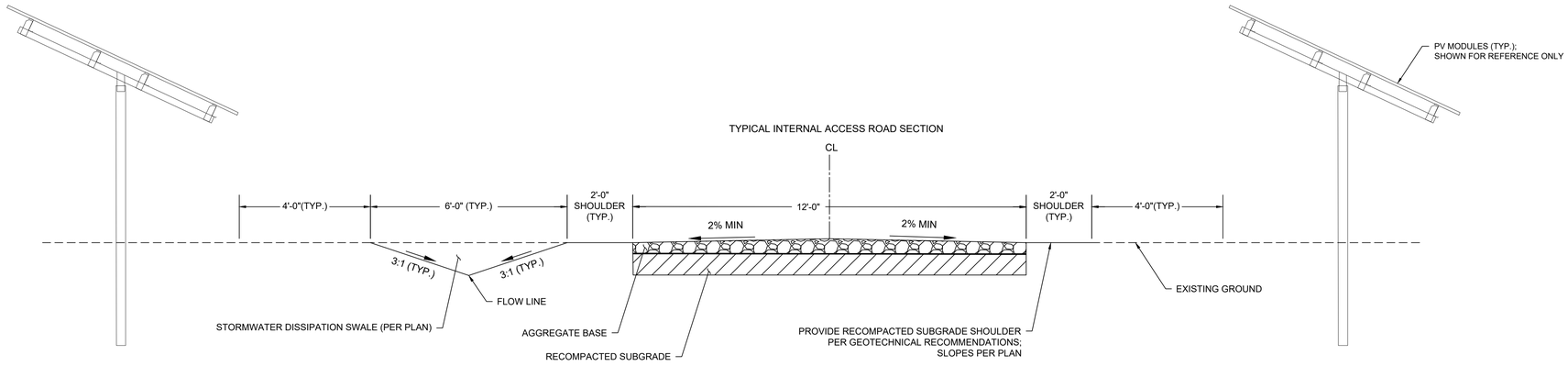
CONSTRUCTION PLANS

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

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.

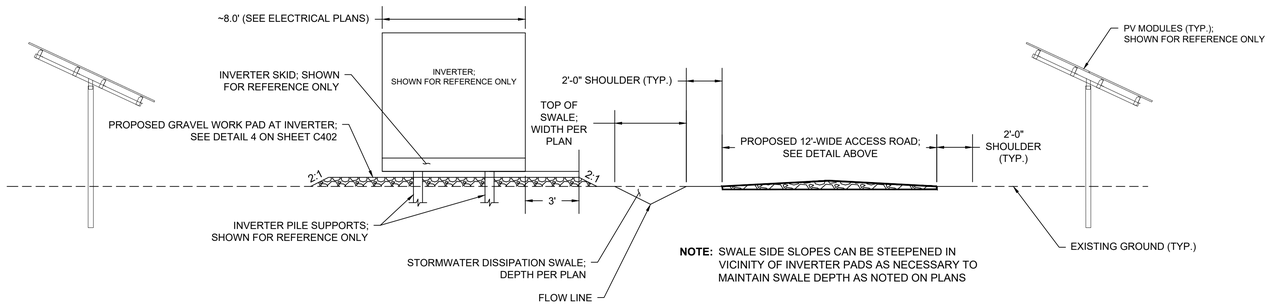
NOTE: IF 3 INCH MINIMUM SECTION THICKNESS USED, THEN ADDITIONAL MAINTENANCE WILL BE REQUIRED OVER THE LIFE OF THE PROJECT.

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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REVISIONS

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		MCB	AML	
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		MCB	DS	

ISSUED FOR CONSTRUCTION

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

SCALE VERIFICATION

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0 1"

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ORIGINAL DRAWING SIZE IS 24 x 36

ACCESS DETAILS

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

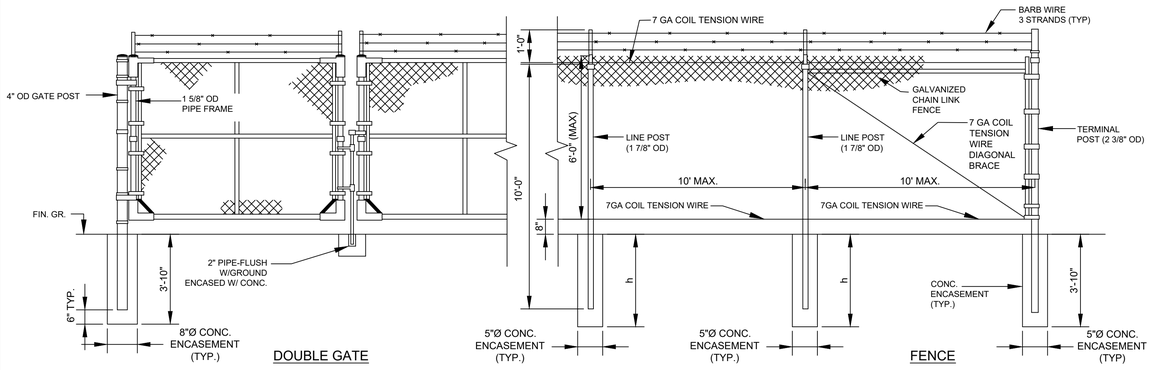
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

CONSTRUCTION PLANS

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

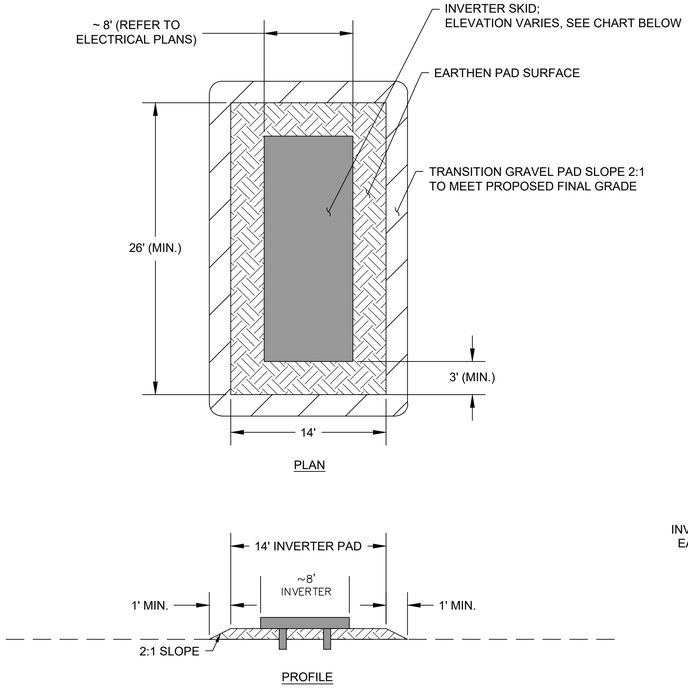
C401
SHEET NUMBER

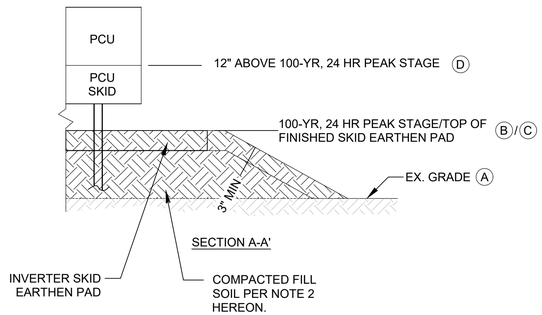
CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Details.dwg LAYOUT: 401 ACCESS DETAILS PLOTTED: 6/30/2023 3:40 PM BY: matt byrum



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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MORRISVILLE, NC 27560
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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

ORIGINAL DRAWING SIZE IS 24 x 36

EQUIPMENT DETAILS

EAGLE SHADOW MOUNTAIN SOLAR
CLARK COUNTY, NEVADA

PSC Primoris 8MINUTE SOLAR ENERGY

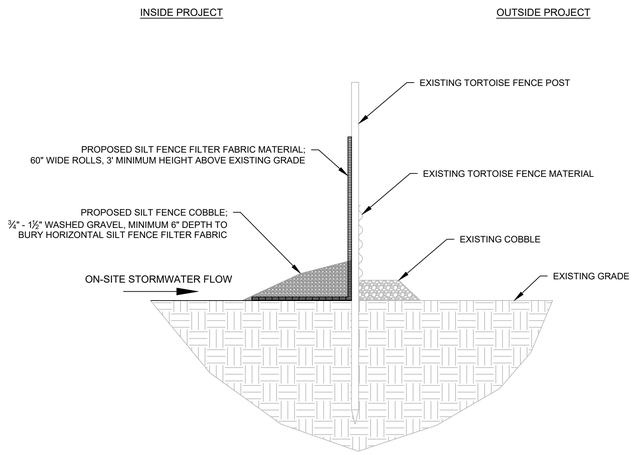
PRIMORIS RENEWABLE ENERGY
4880 HAVANA STREET
SUITE 500
DENVER, CO 80239

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

C402
SHEET NUMBER

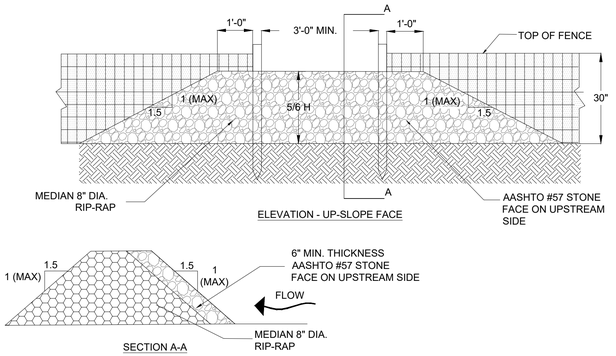
CAD FILE: W:\Civil\Solar\Primoris\Eagle Shadow Mountain\CAD\Plans\Construction Plans\ESM - Details.dwg LAYOUT: 402 EQUIPMENT DETAILS PLOTTED: 6/30/2023 3:40 PM BY: matt byrum



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.

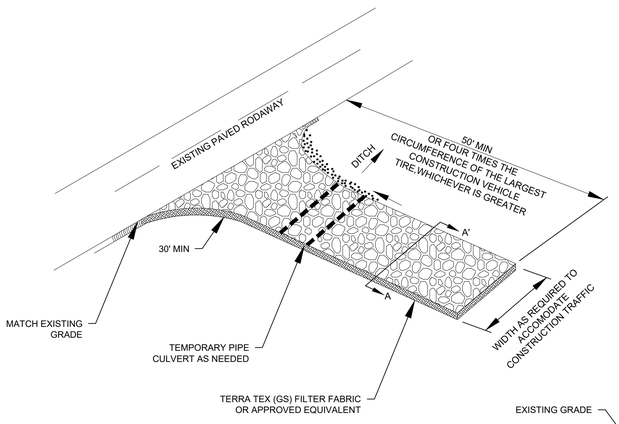
7 SILT FENCE ON EXISTING TORTOISE FENCE
NO SCALE



NOTES:

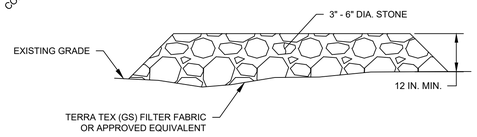
1. WASHED STONE (#57) TO BE REMOVED AND REPLACED ONCE IT BECOMES CLOGGED WITH SEDIMENT.
2. SEDIMENT TO BE REMOVED WHEN ACCUMULATIONS REACH ⅓ HEIGHT OF SILT FENCE
3. THE KEY TO FUNCTIONAL SILT FENCE OUTLETS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

8 SILT FENCE OUTLET
NOT TO SCALE



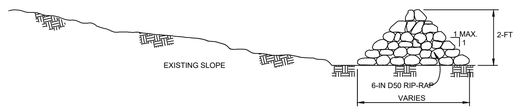
NOTE:

CONSTRUCT SEDIMENT BARRIOR AND CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE.

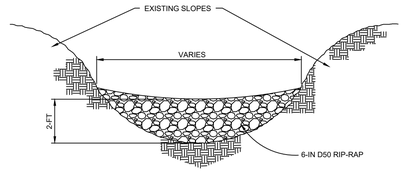


SECTION A-A'
NO SCALE

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

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NV LICENSE # C4310-1980

REVISIONS

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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. 29794
7/5/23

SCALE VERIFICATION

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ORIGINAL DRAWING SIZE IS 24 x 36

EROSION CONTROL DETAILS

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

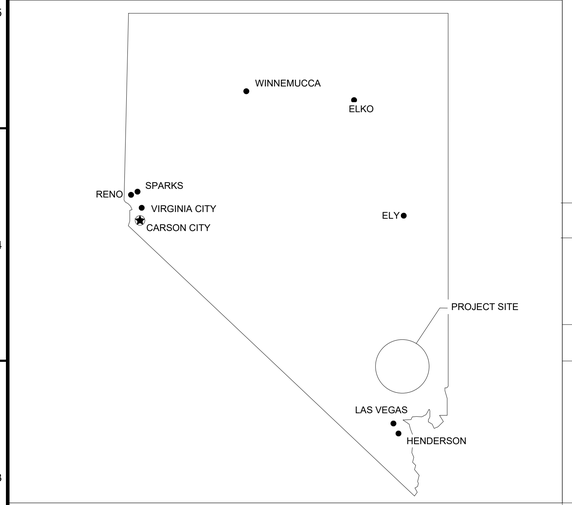
C403
SHEET NUMBER

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.byrum

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
225 E. GERMANN RD
SUITE 101 GILBERT, AZ 85297
CONTACT: ERIC LOOS
MAIL: ERIC.LOOS@FASTGRID.COM

OWNER
8 MINUTE ENERGY
250 SUTTER STREET, SUITE 600,
SAN FRANCISCO, CA 94108
CONTACT:
EMAIL:

CONTRACTOR
PRIMORIS RENEWABLE ENERGY
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DENVER, CO 80239
CONTACT:KYLE CRAGIN
EMAIL: KCRAGIN@PRIM.COM

LOCAL UTILITY
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LAS VEGAS, NV 89146
CONTACT:CONTRACT MANAGEMENT
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:

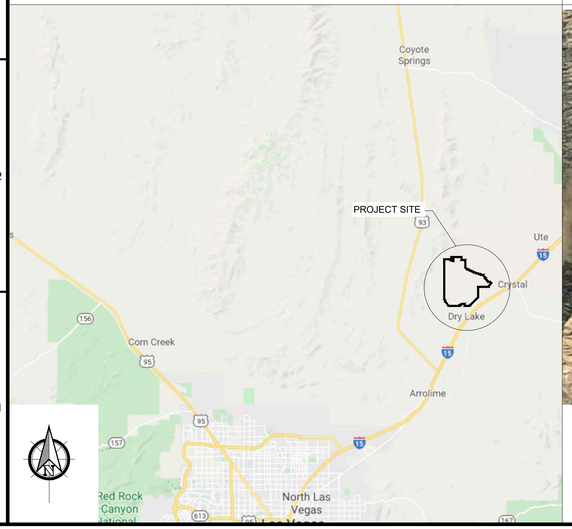
INSTALLATION OF UTILITY SCALE PV SYSTEM. INCLUDING MODULES, INVERTERS, STEP-UP XFMR'S, TRACKERS & SCADA. SUBSTATION NOT IN CONTRACT. INSTALLATION TO MEET OR EXCEED CODE

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

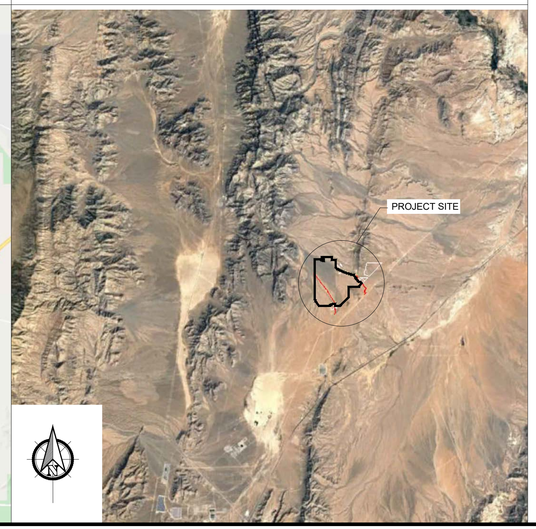
EXCLUDING SUBSTATION.

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

STREET MAP:



AERIAL VIEW:



SHEET INDEX

Sheet Number	Sheet Title
GENERAL	
E-000	ELECTRICAL COVER
E-001	ELECTRICAL NOTES
E-002	SYMBOLS AND TAGS
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-201	MVAC SLD - CKT 3 & 4
E-202	MVAC SLD - CKT 5 & 6
E-203	MVAC SLD - CKT 7 & 8
E-204	MVAC SLD - CKT 9 & 10
E-205	MVAC SLD - CKT 11 & 12
E-206	MVAC SLD - CKT 13 & 14
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E-213	DC SLD - ARRAY TYPE C (TRINA)
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E-216	DC SLD - ARRAY TYPE F (JINKO)
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E-219	DC SLD - ARRAY TYPE I (JINKO)
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E-413	DC PLAN - ARRAY TYPE M (JINKO)
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E-906	EQUIP SPECS - MODULES
E-907	EQUIP SPECS - CABLING
E-908	EQUIP SPECS - DC HARNESS
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: K1_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

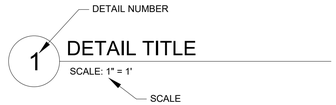
GENERAL SYMBOLOGY

NORTH ARROW

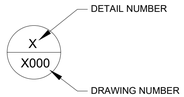
KEYNOTE

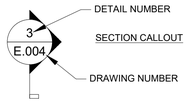
1 OR MV CONDUCTOR ID

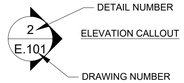
DETAIL TITLE



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.

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 ABBREVIATIONS

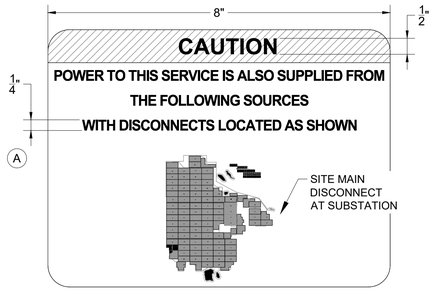
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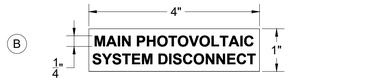
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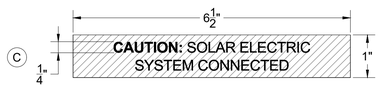
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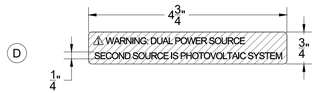
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-003 SYMBOLS AND ABBREVIATIONS

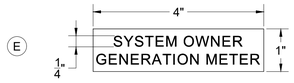
A | B | C | D | E | F | G | H | I | J

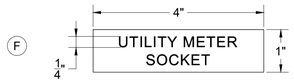


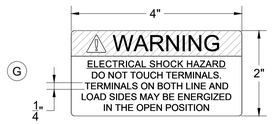


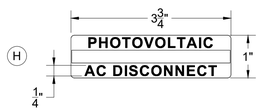




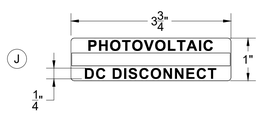


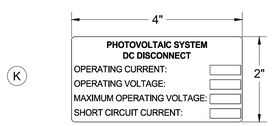


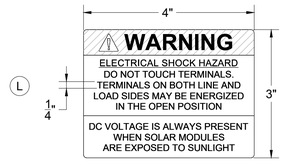


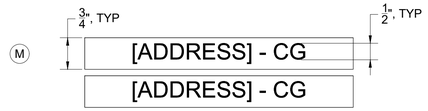


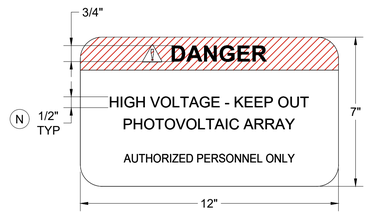


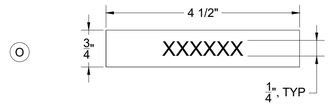


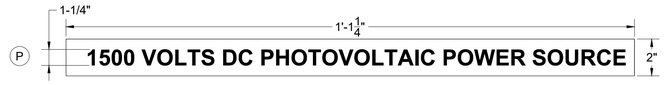






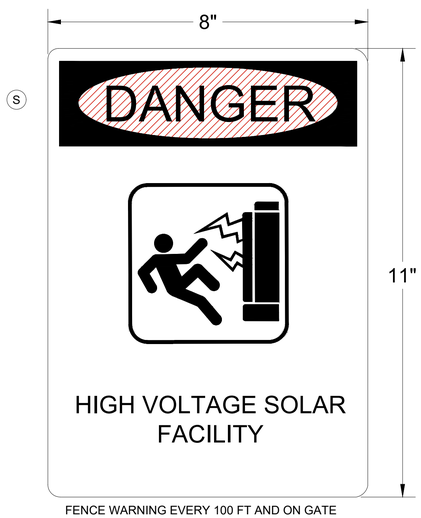












FENCE WARNING EVERY 100 FT AND ON GATE

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

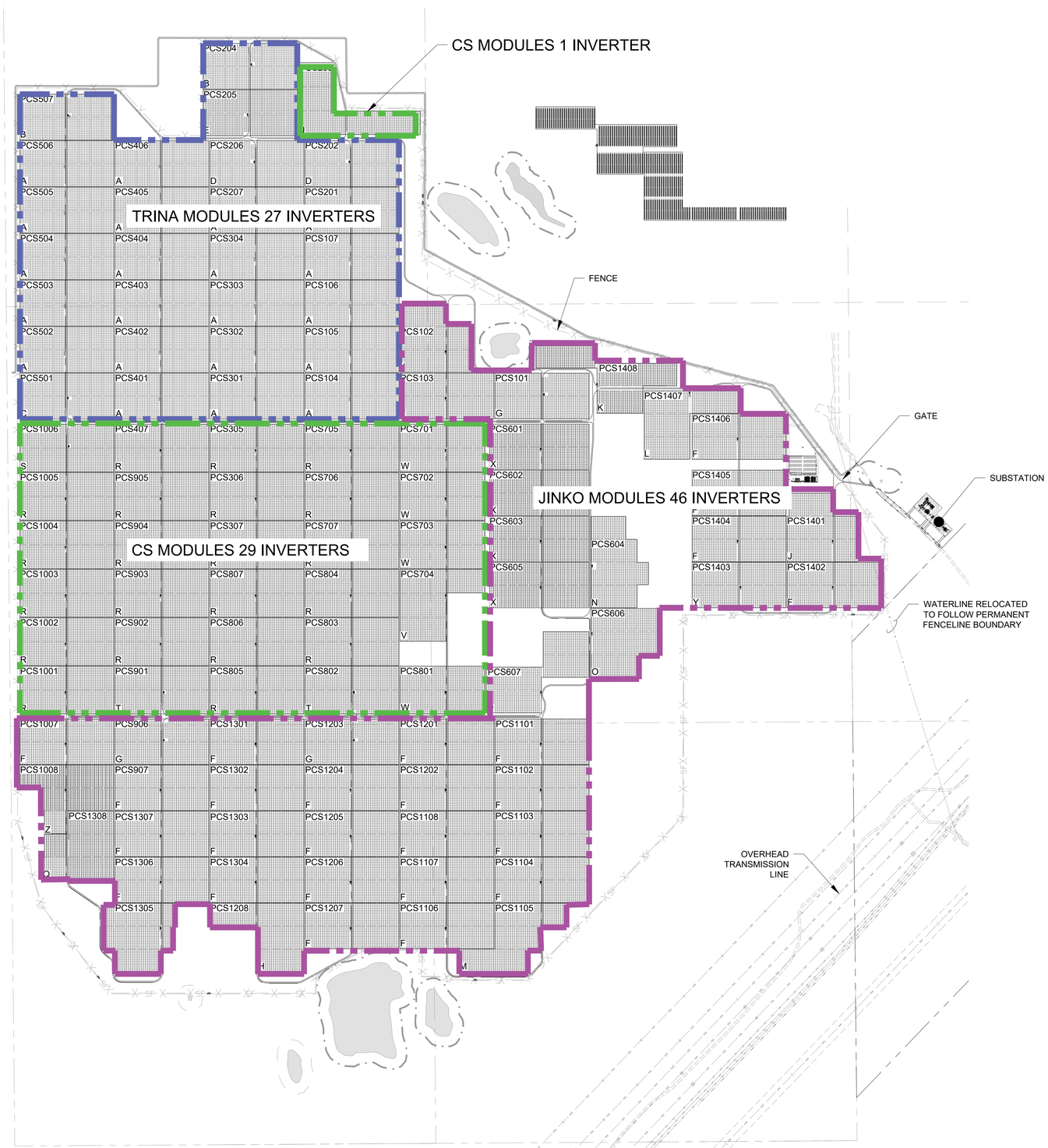
SEAL:

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:

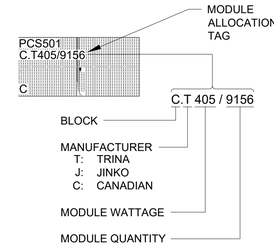
1. CHRONOLOGICAL ORDER IS BASED ON "Build Sequence Rev 1.pdf" RECEIVED 15 JULY 2020.

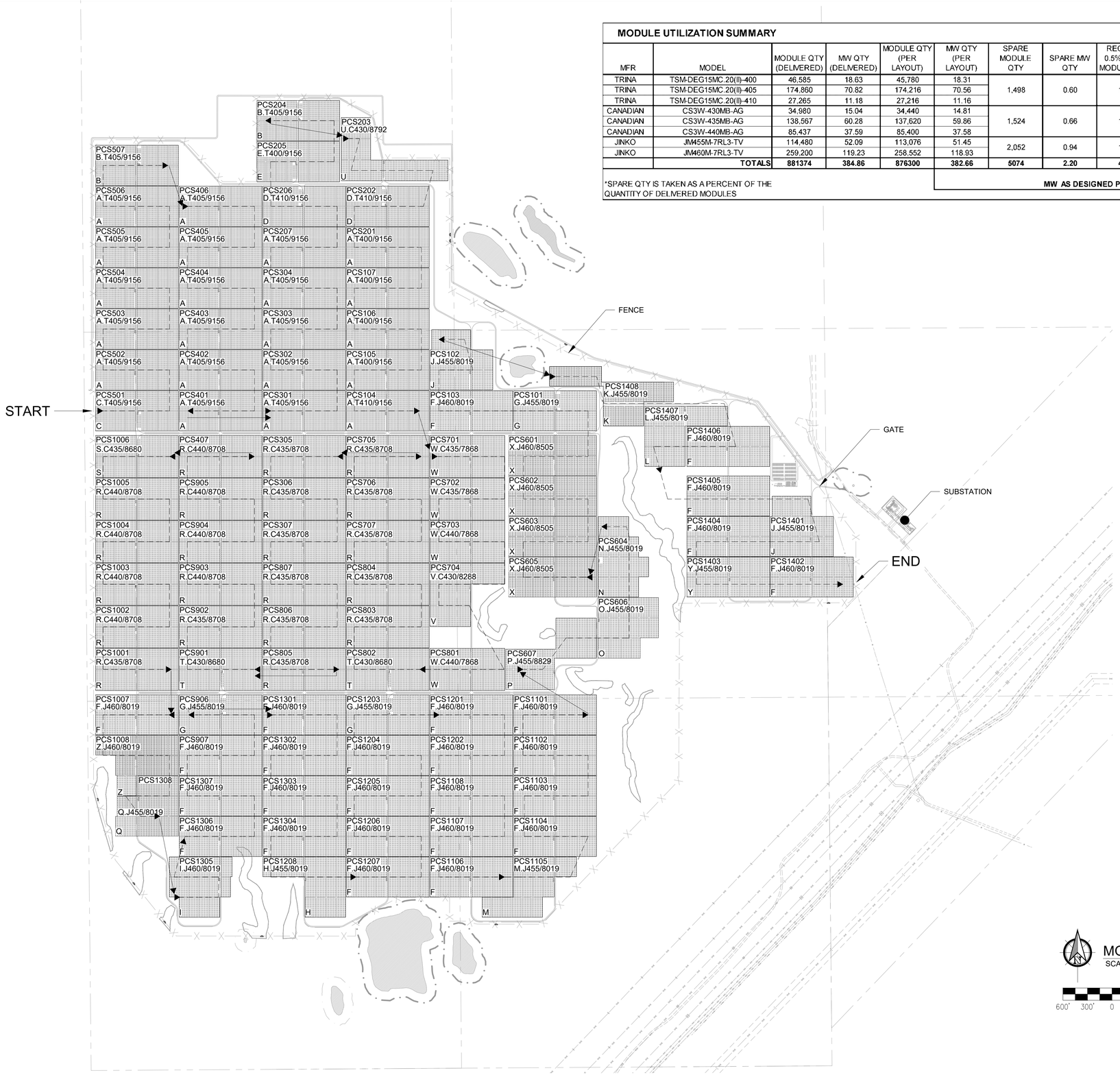
LEGEND:

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

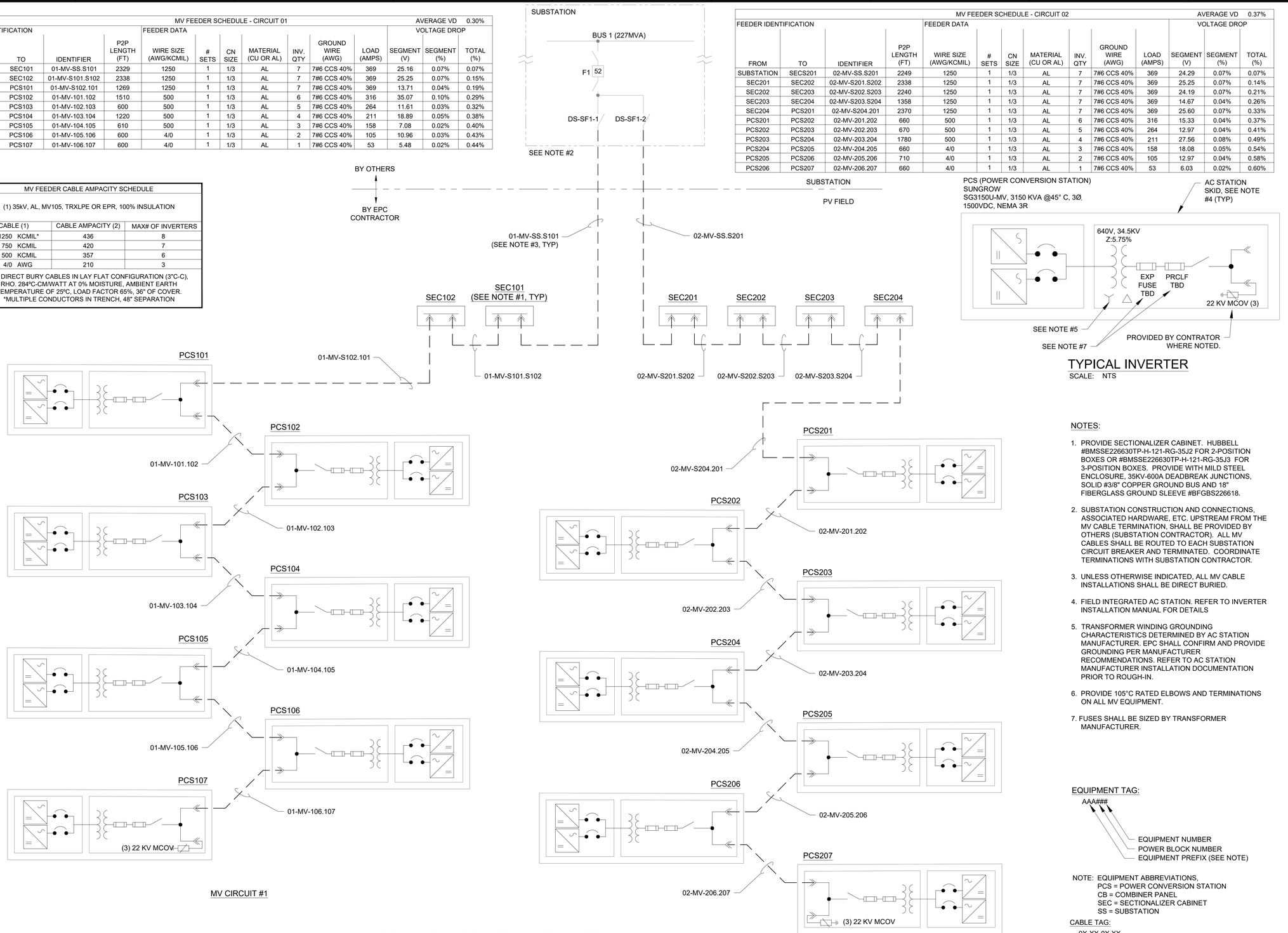
SHEET NAME:
MODULE ALLOCATION PLAN

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

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

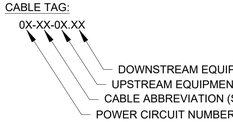
NOTES:

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)

FastGrid, LLC
225 E Germann Road
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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

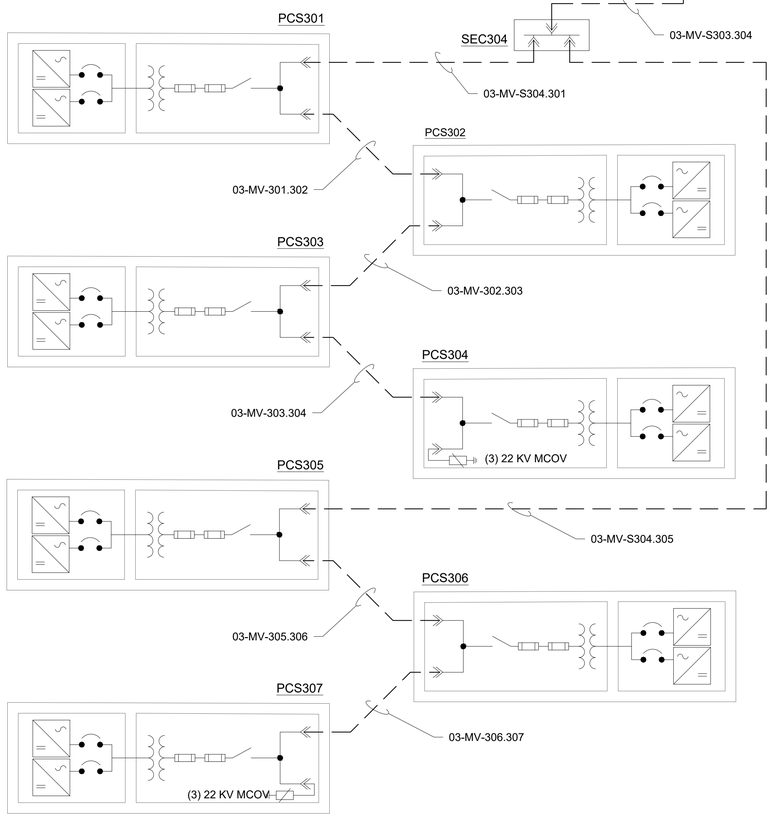
RECORD DRAWING

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 1 & 2.dwg

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 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%

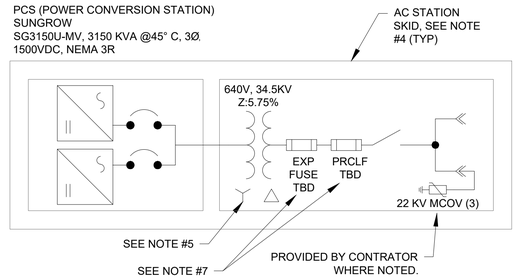


MV CIRCUIT #3

MV CIRCUIT #4

MVAC SINGLE LINE DIAGRAM - CIRCUITS 3 & 4

SCALE: NOT TO SCALE



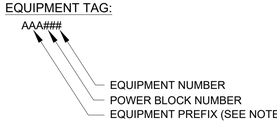
TYPICAL INVERTER

SCALE: NTS

NOTES:

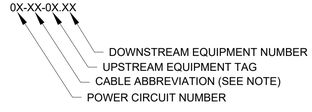
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION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

PROJECT ADDRESS:
I-15
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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

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

A B C D E F G H I J

MV FEEDER SCHEDULE - CIRCUIT 05

AVERAGE VD 0.37%

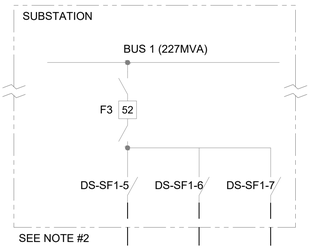
FEEDER IDENTIFICATION				FEEDER DATA							VOLTAGE DROP		
FROM	TO	IDENTIFIER	P2P LENGTH (FT)	WIRE SIZE (AWG/KCMIL)	# SETS	CN SIZE	MATERIAL (CU OR AL)	INV. QTY	GROUND WIRE (AWG)	LOAD (AMPS)	SEGMENT (V)	SEGMENT (%)	TOTAL (%)
SUBSTATION	SEC501	05-MV-SS.S501	2444	1250	1	1/3	AL	7	#4/0 CU	369	26.40	0.08%	0.08%
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

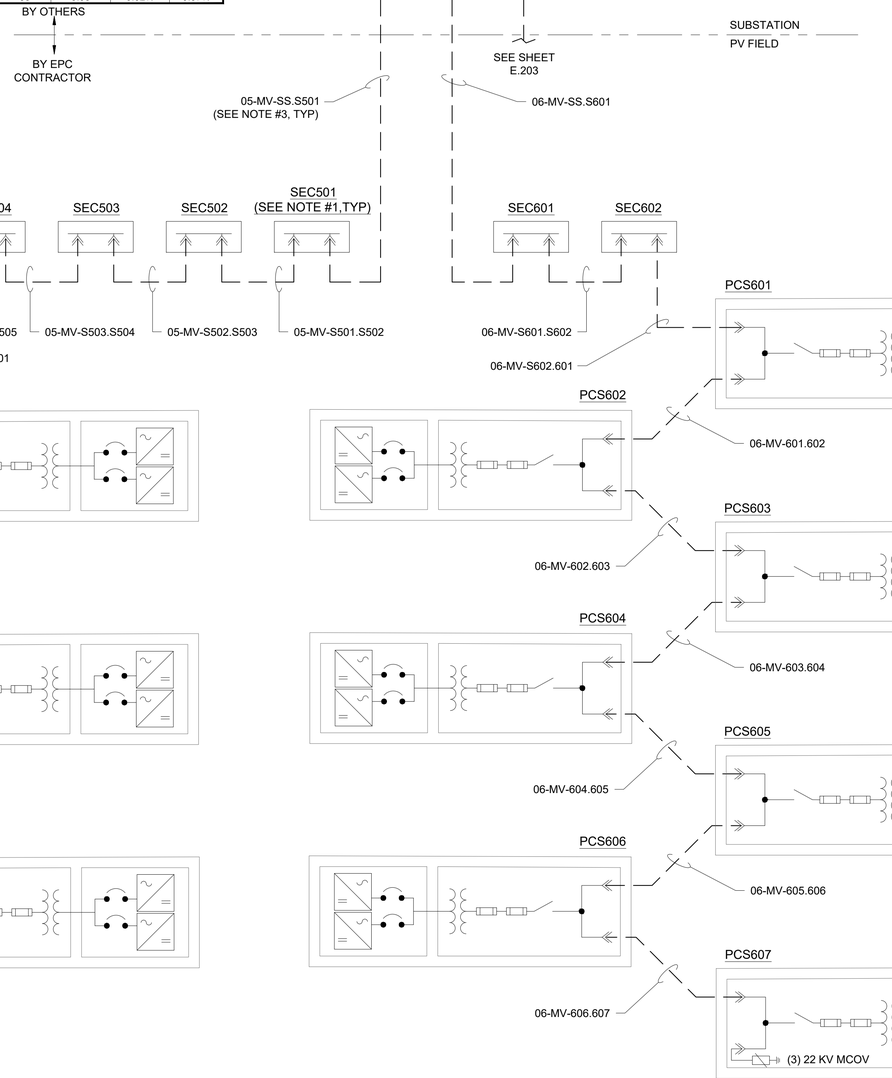
(2) DIRECT BURY CABLES IN LAY FLAT CONFIGURATION (3"C-C), RHO. 284ºC-CM/WATT AT 0% MOISTURE, AMBIENT EARTH TEMPERATURE OF 25ºC, LOAD FACTOR 65%, 36" OF COVER.
*MULTIPLE CONDUCTORS IN TRENCH, 48" SEPARATION



MV FEEDER SCHEDULE - CIRCUIT 06

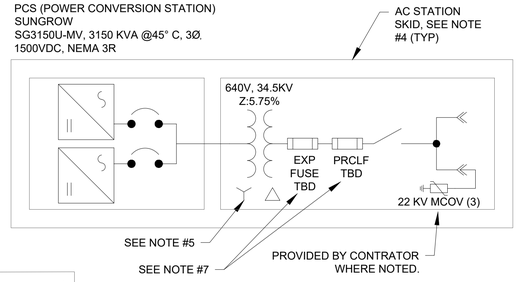
AVERAGE VD 0.27%

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



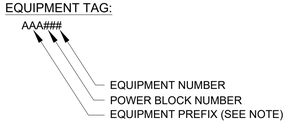
TYPICAL INVERTER

SCALE: NTS

NOTES:

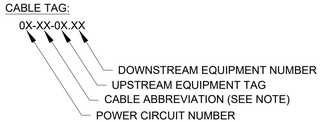
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION 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 5 & 6

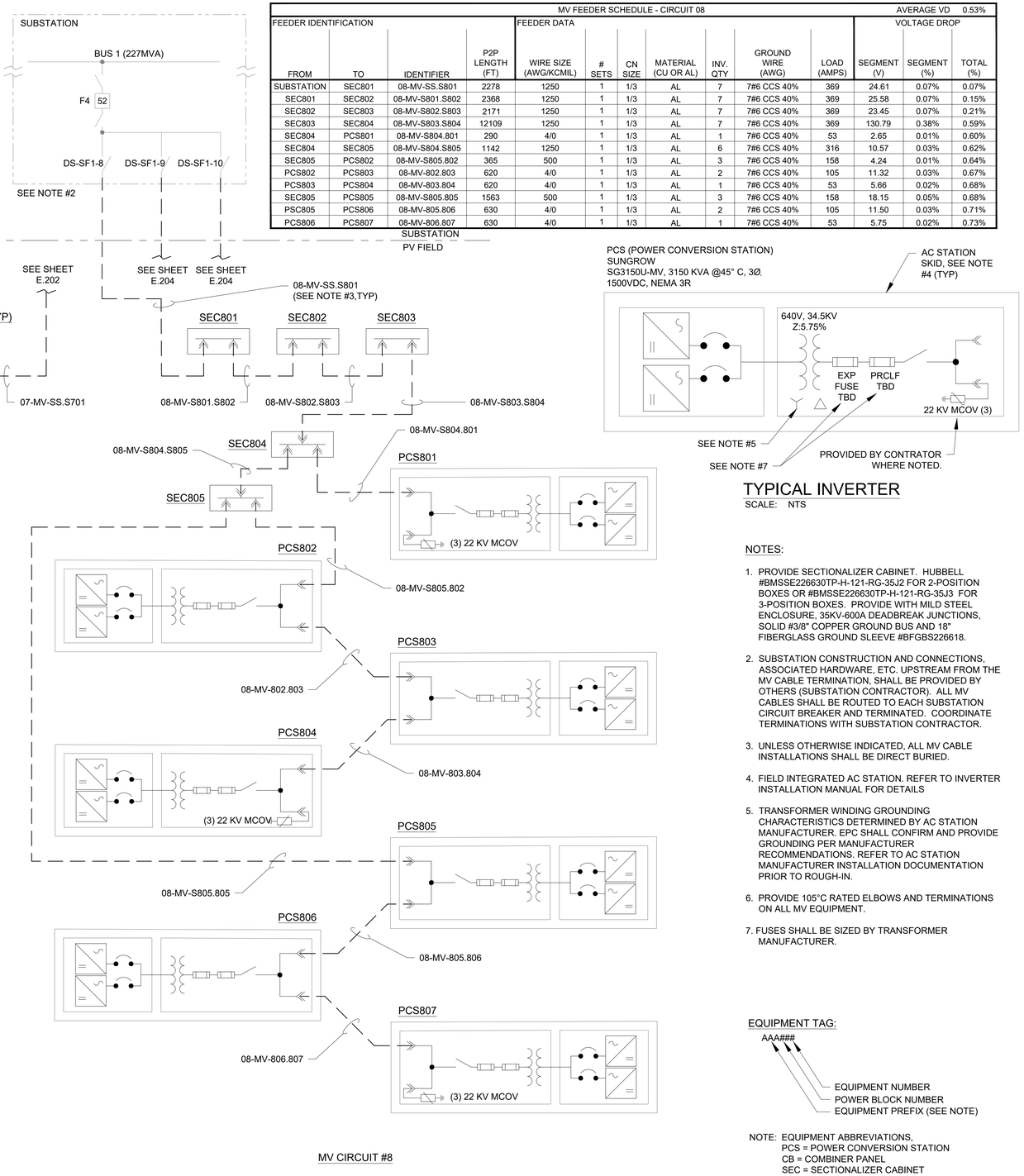
SHEET #: E-202
REV #: 4

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

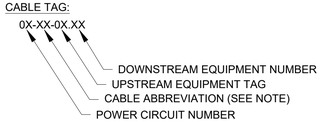
NOTES:

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

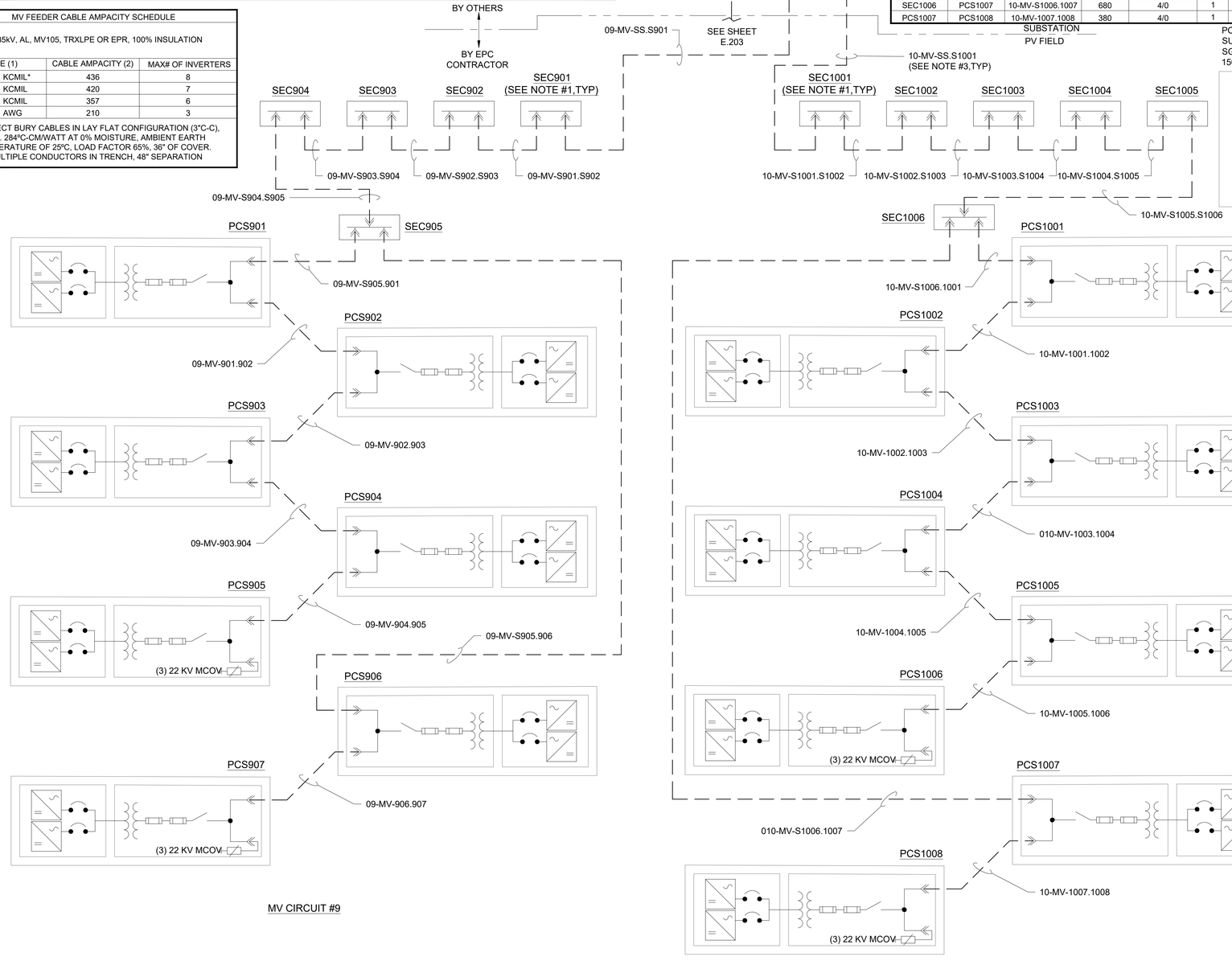
SHEET #: E-203
REV #: 4

RECORD DRAWING

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K1_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		



MV CIRCUIT #9

MV CIRCUIT #10

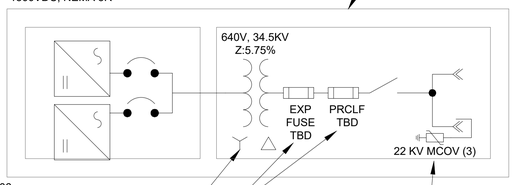
MVAC SINGLE LINE DIAGRAM - CIRCUITS 9 & 10

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)



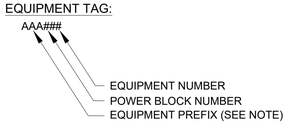
TYPICAL INVERTER

SCALE: NTS

NOTES:

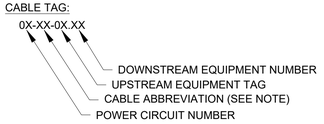
1. PROVIDE SECTIONALIZER CABINET. HUBBELL #BMSSE226630TP-H-121-RG-35J2 FOR 2-POSITION BOXES OR #BMSSE226630TP-H-121-RG-35J3 FOR 3-POSITION BOXES. PROVIDE WITH MILD STEEL ENCLOSURE, 35KV-600A DEADBREAK JUNCTIONS, SOLID #3/8" COPPER GROUND BUS AND 18" FIBERGLASS GROUND SLEEVE #BFGBS226618.
2. SUBSTATION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

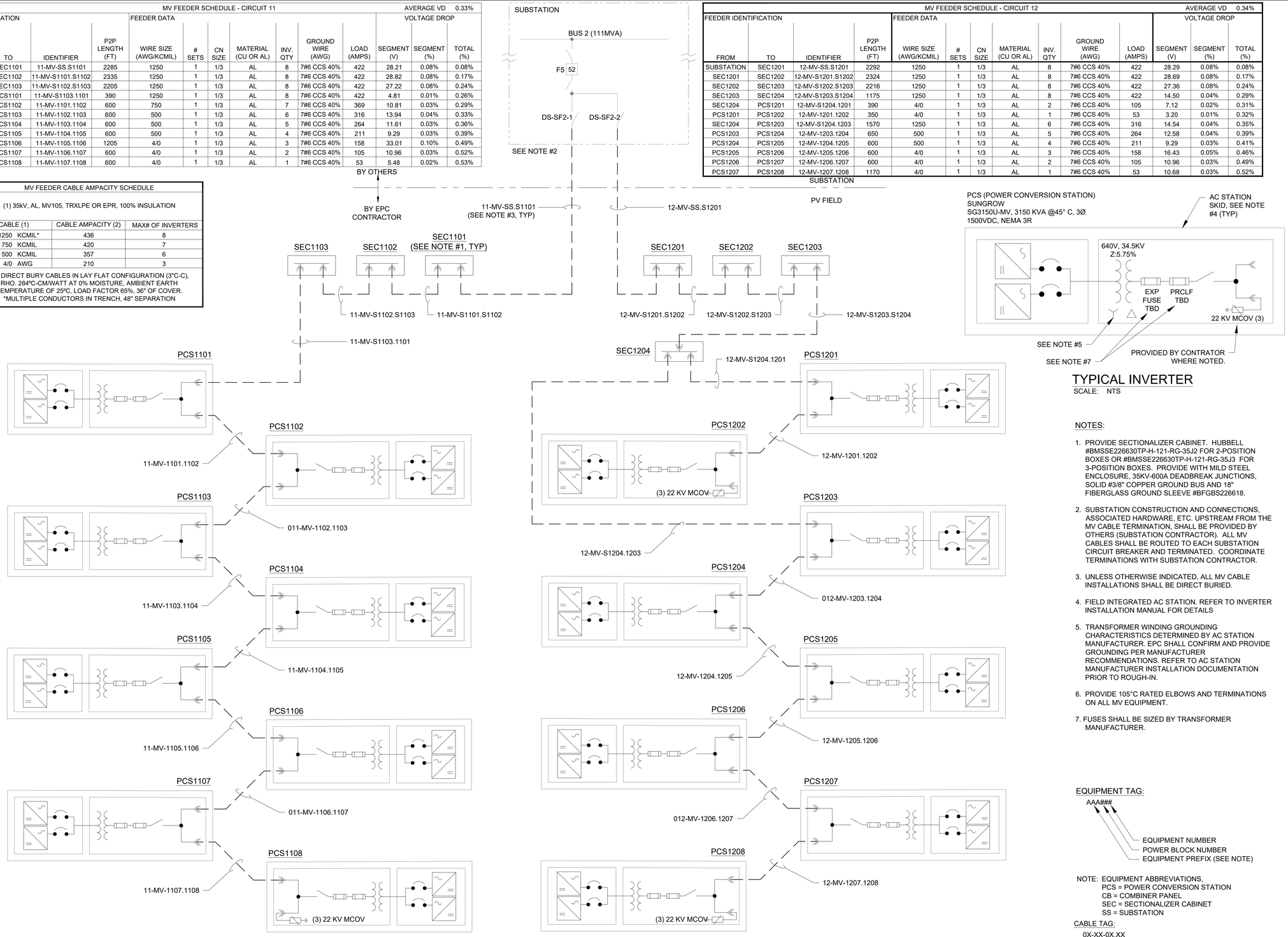
SHEET NAME:
MVAC SLD - CKT 9 & 10

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 CIRCUIT #11

MV CIRCUIT #12

MVAC SINGLE LINE DIAGRAM - CIRCUITS 11 & 12

SCALE: NOT TO SCALE

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%

TYPICAL INVERTER

SCALE: NTS

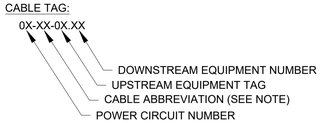
NOTES:

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
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

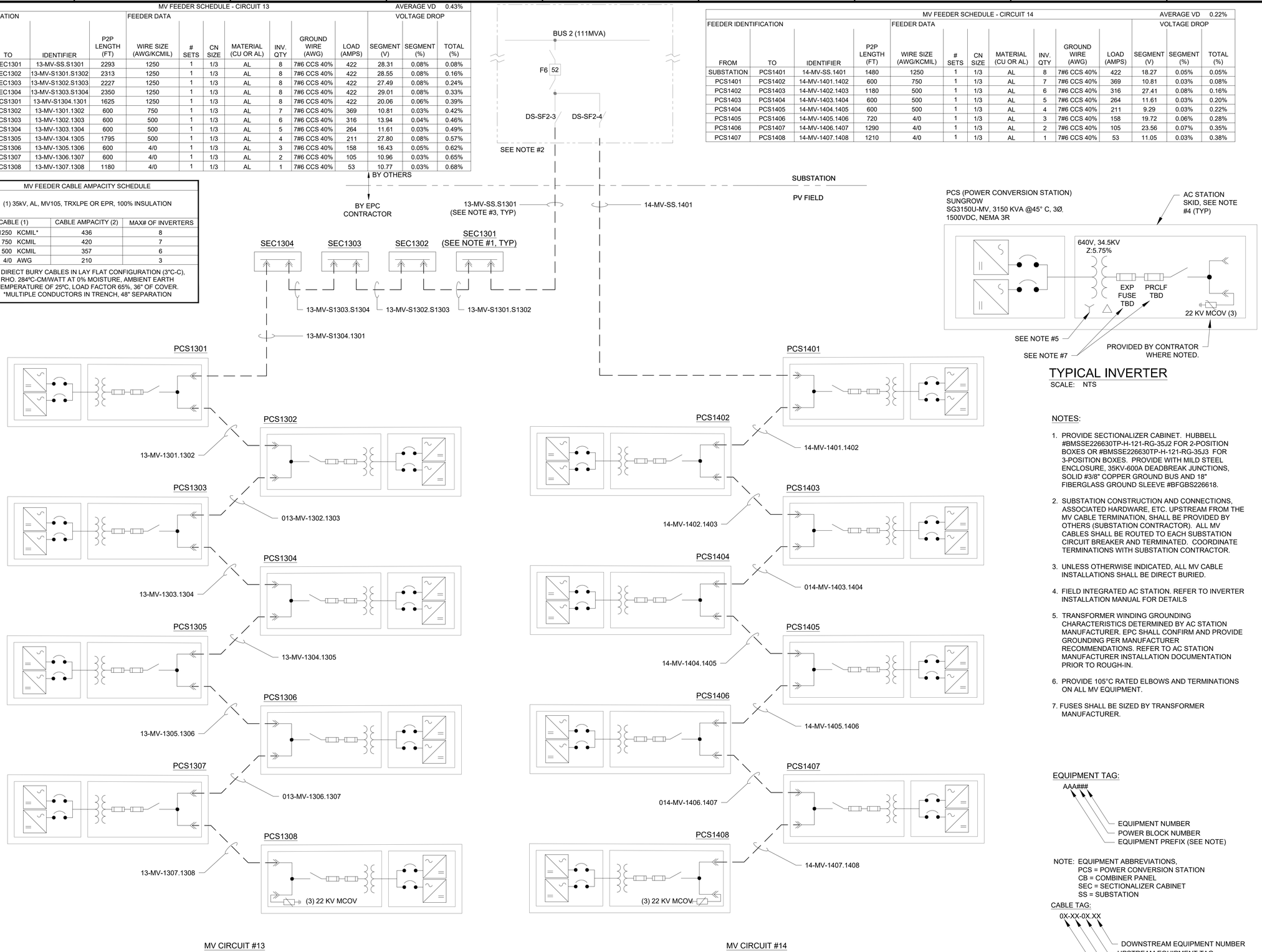
SHEET #: E-205
REV #: 4

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 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%

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

TYPICAL INVERTER

SCALE: NTS

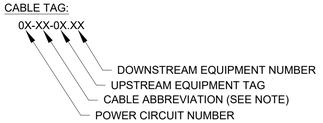
NOTES:

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
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
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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:

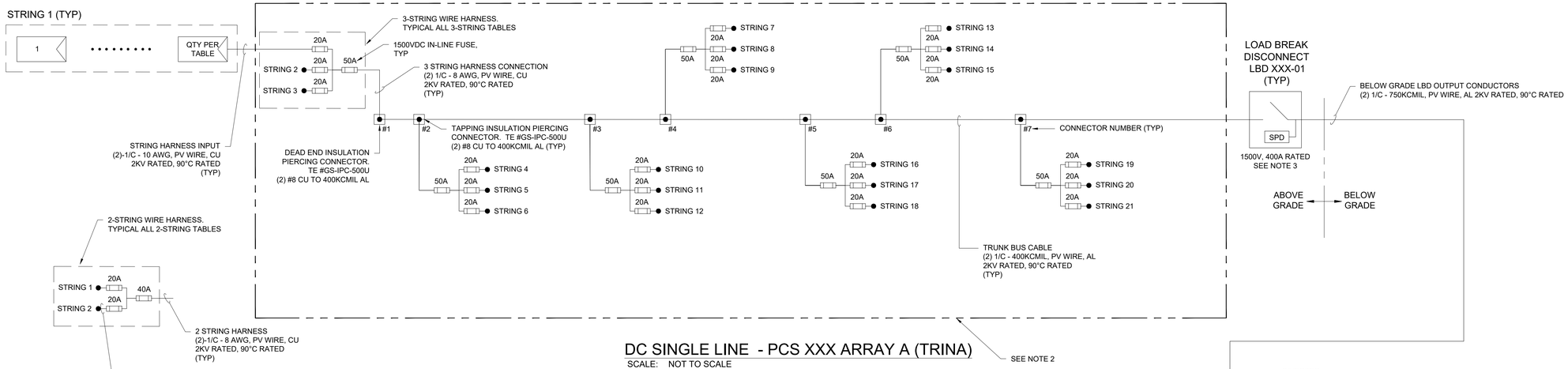
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
MVAC SLD - CKT 13 & 14

SHEET #: E-206
REV #: 4

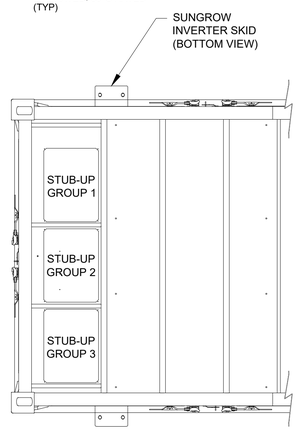
RECORD DRAWING

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



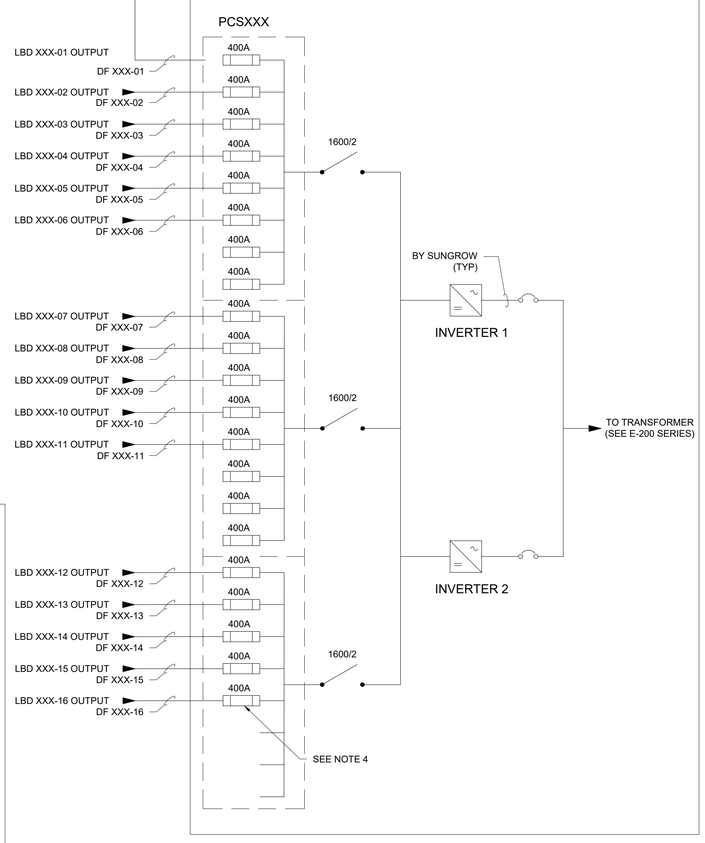
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA						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	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:

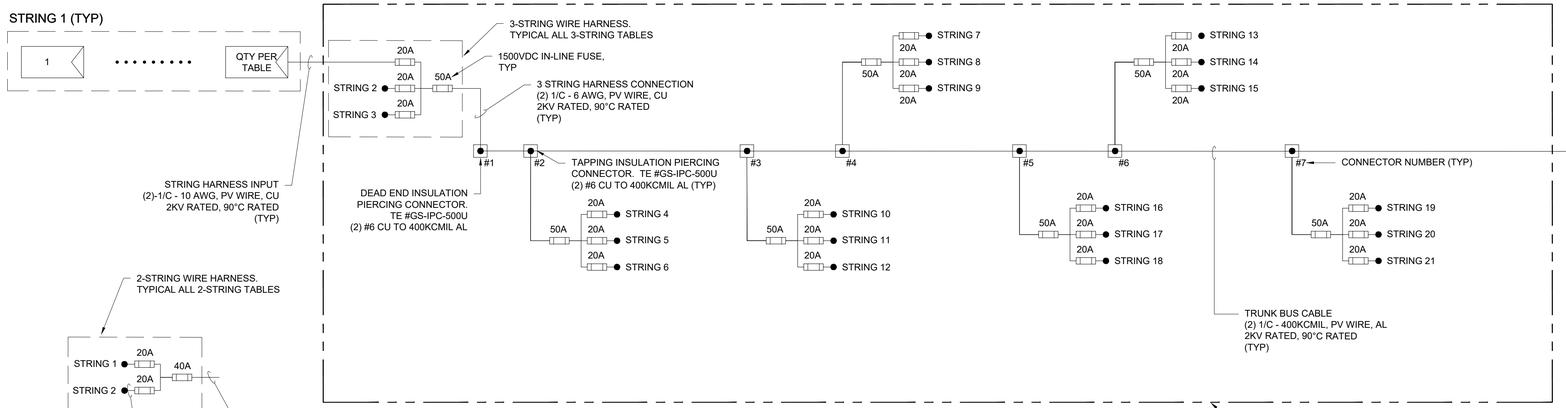
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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

SHEET #: E-211
REV #: 4

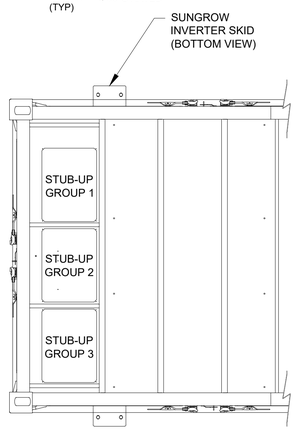
RECORD DRAWING

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



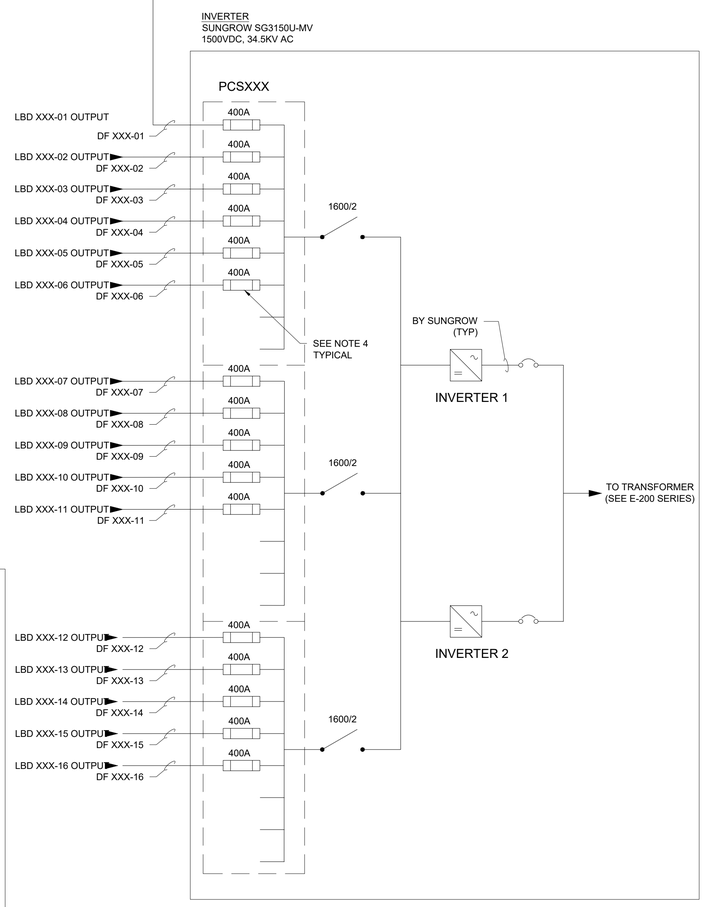
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION										
ARRAY DATA 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 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

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:

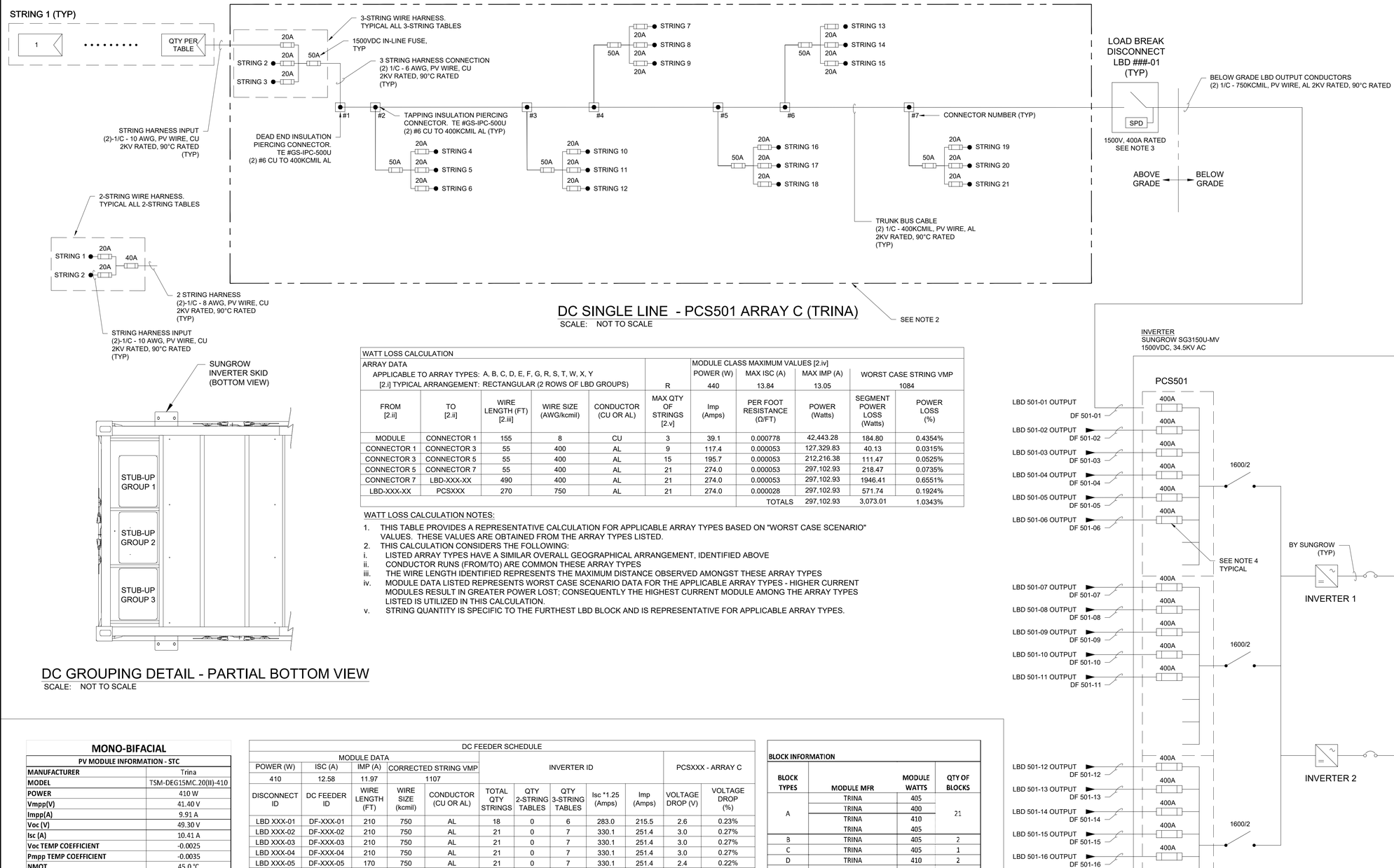
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE 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).dwg



DC SINGLE LINE - PCS501 ARRAY C (TRINA)

SCALE: NOT TO SCALE

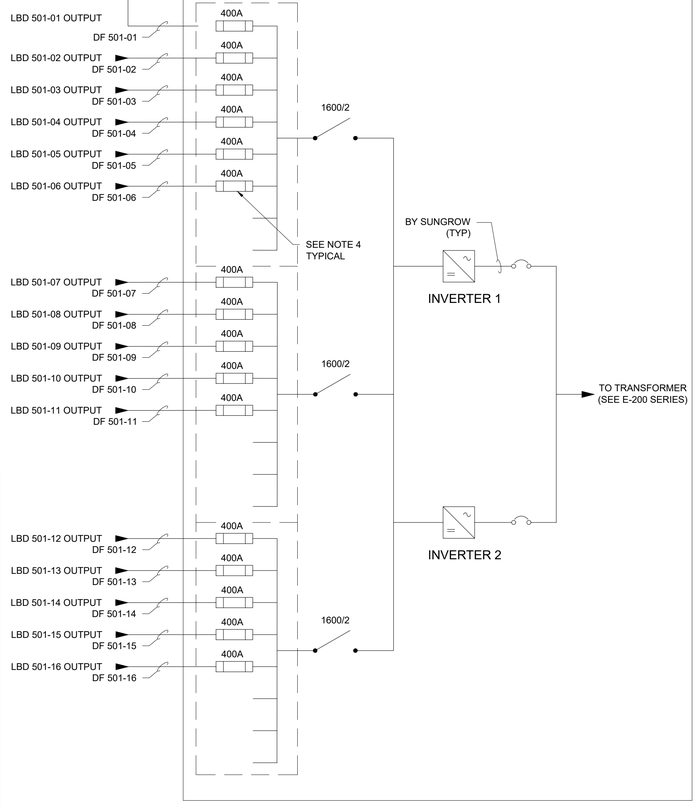
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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:

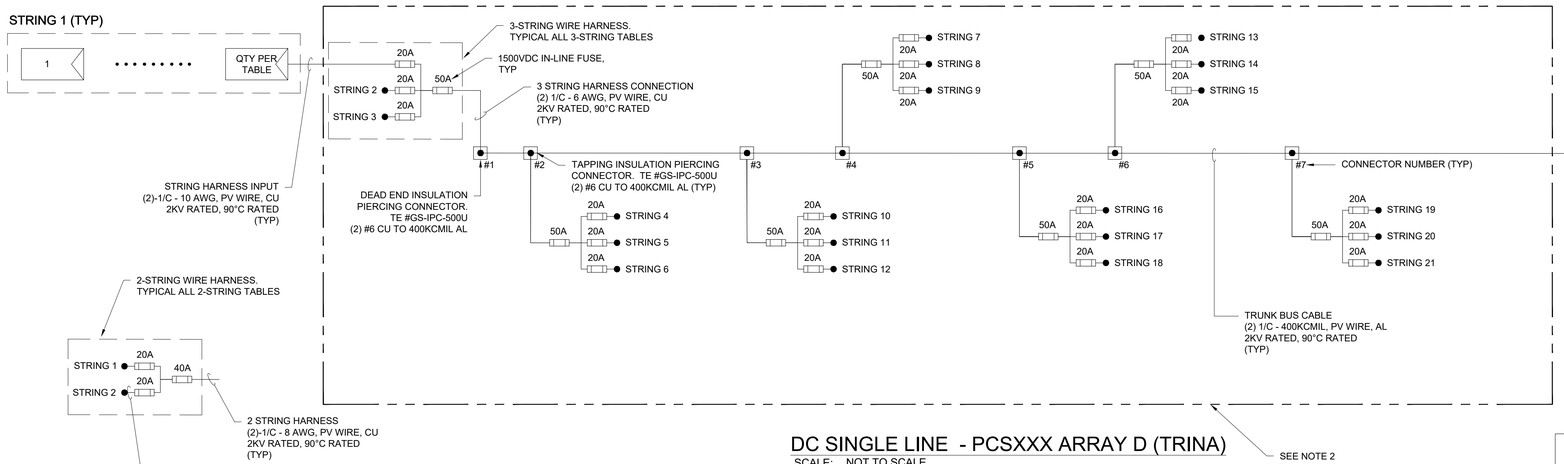
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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

SHEET #: E-213
REV #: 4

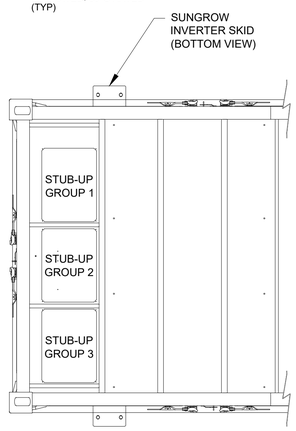
RECORD DRAWING

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



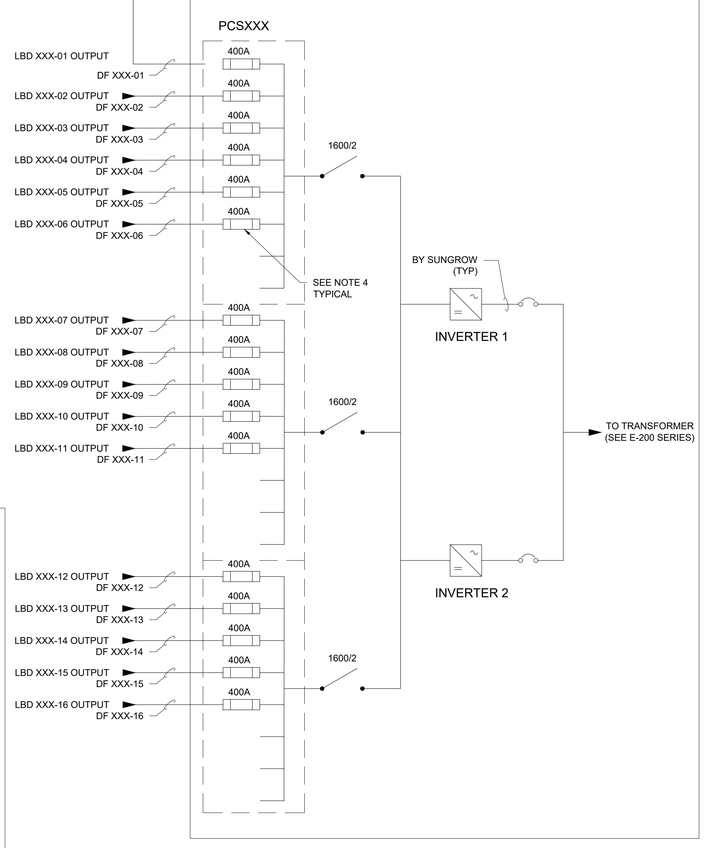
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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

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:

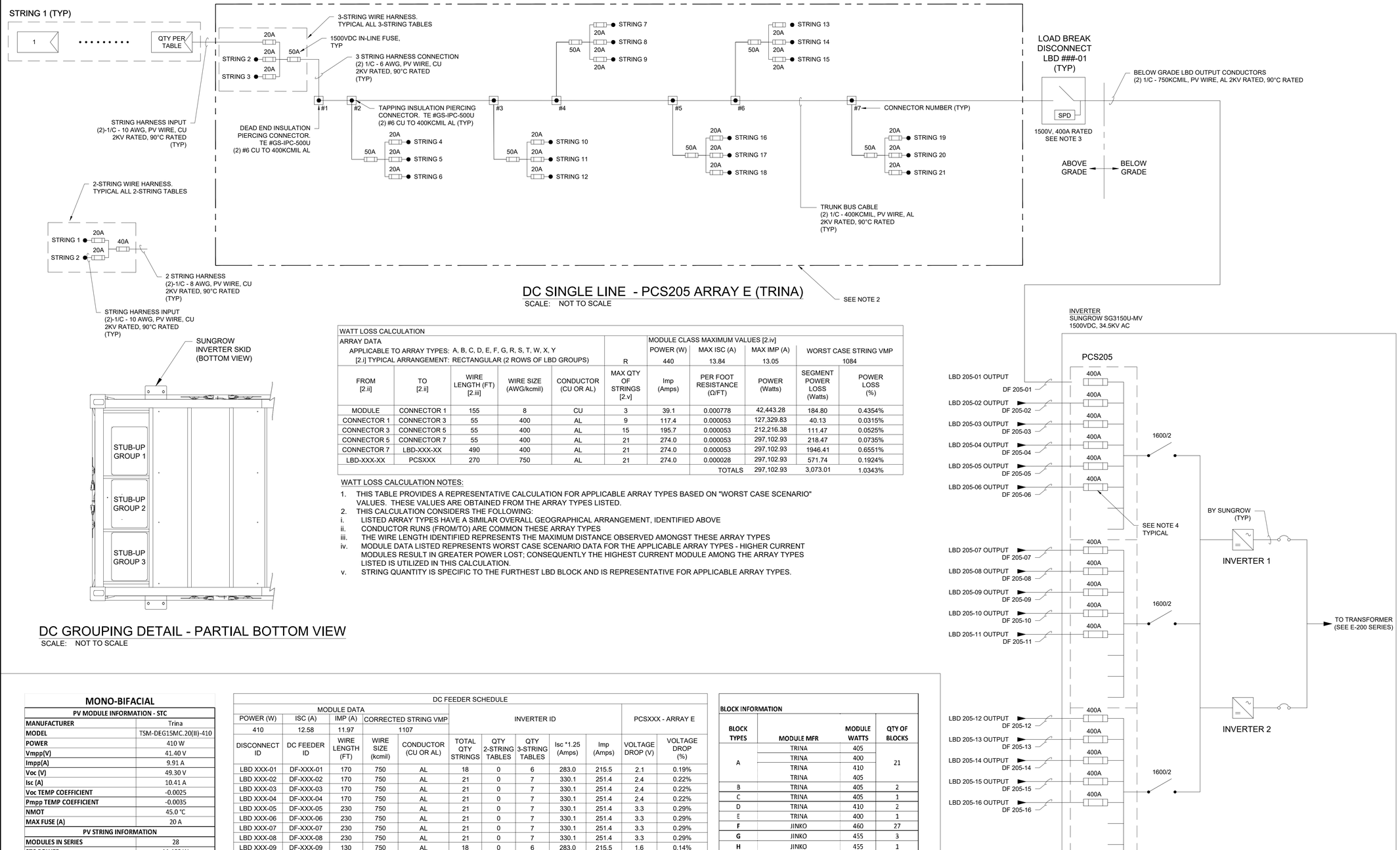
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE 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.

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

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

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:

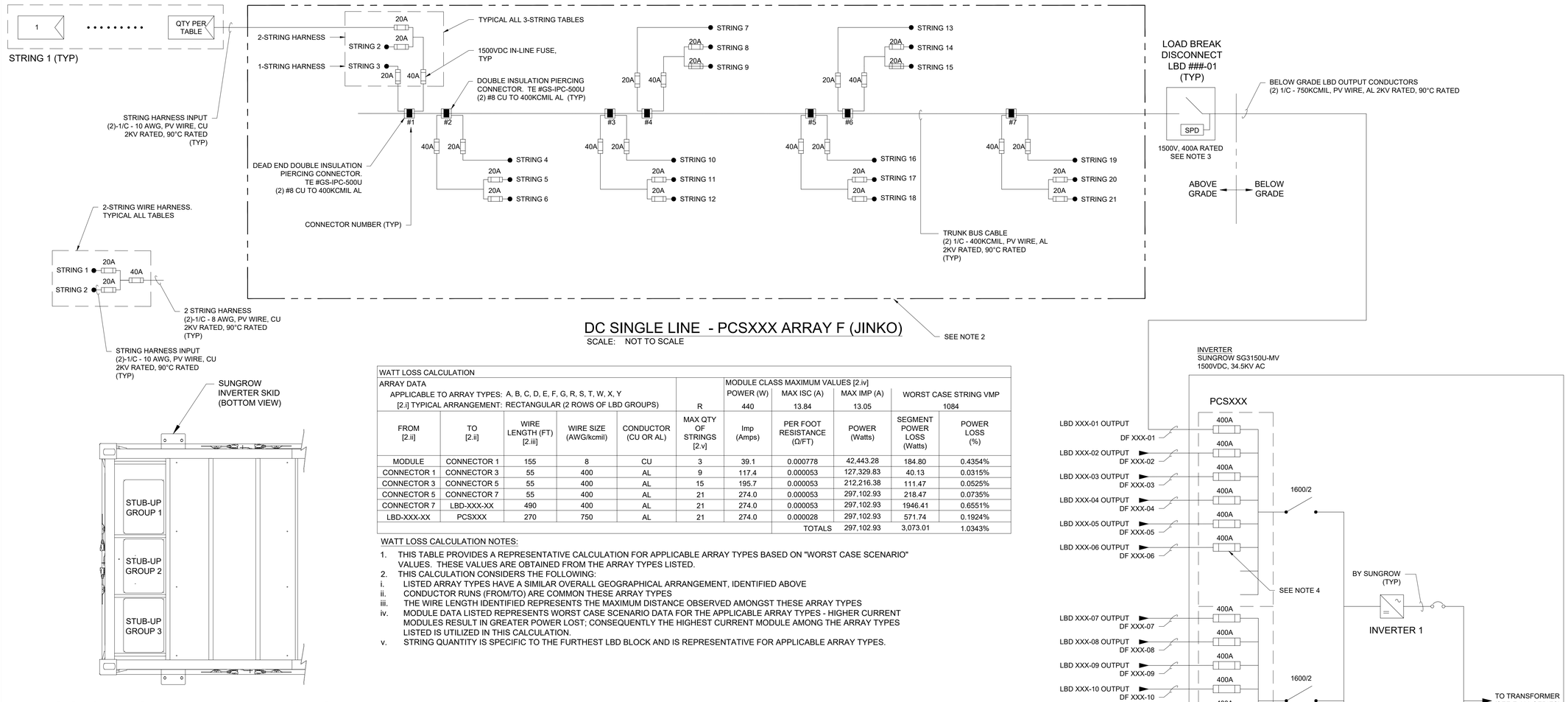
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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

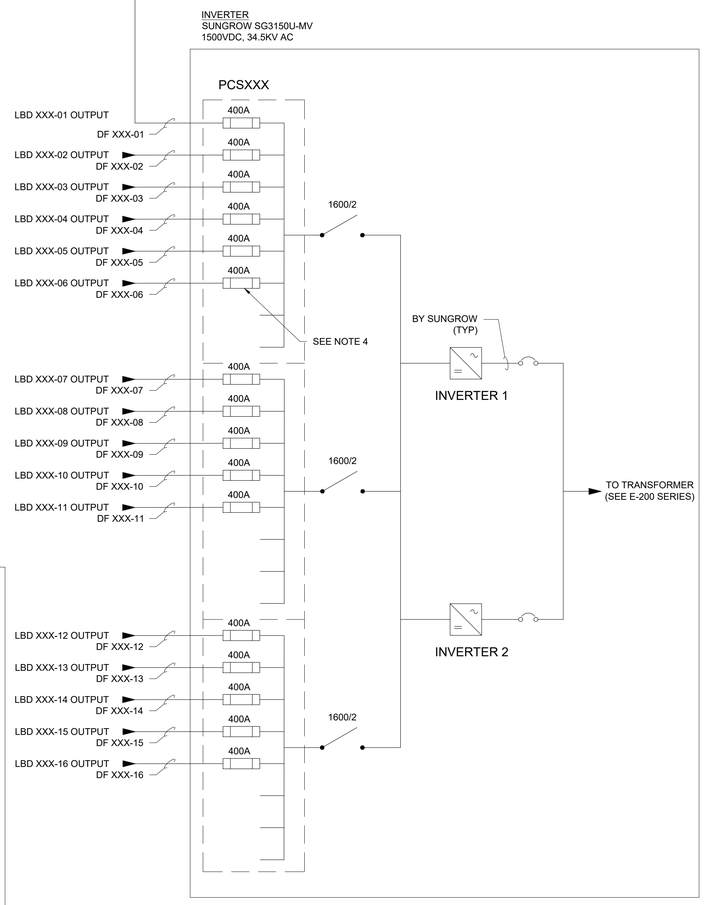
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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 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

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:

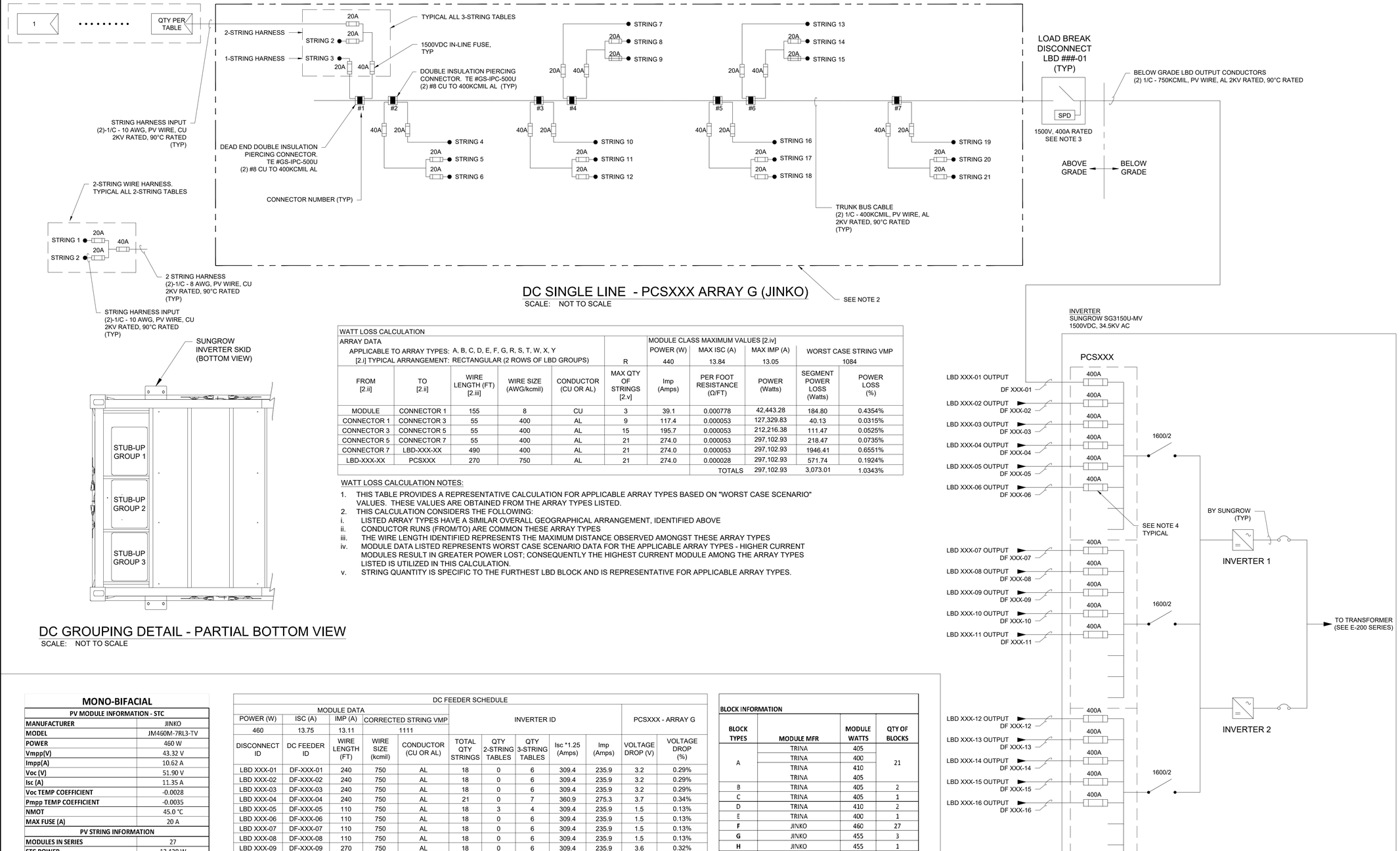
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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

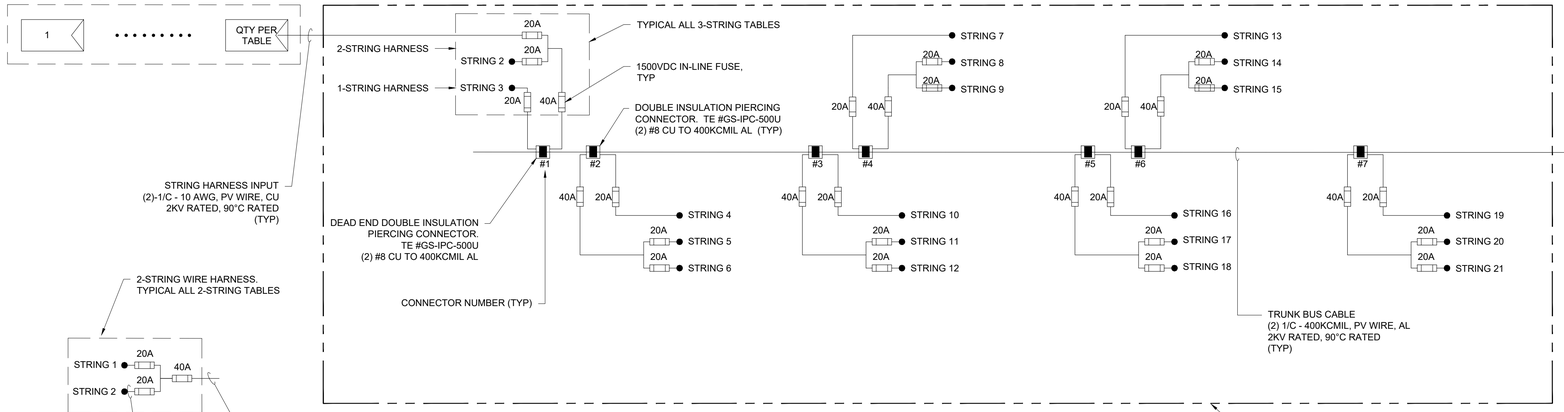
SHEET NAME:
DC SLD - ARRAY TYPE G (JINKO)

SHEET #: E-217
REV #: 4

RECORD DRAWING

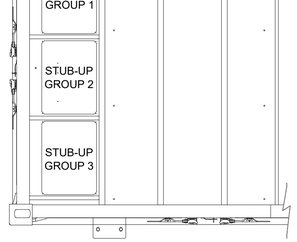
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-217 DC SLD - ARRAY TYPE G (JINKO)

STRING 1 (TYP)



DC SINGLE LINE - PCS1208 ARRAY H (JINKO)

SCALE: NOT TO SCALE



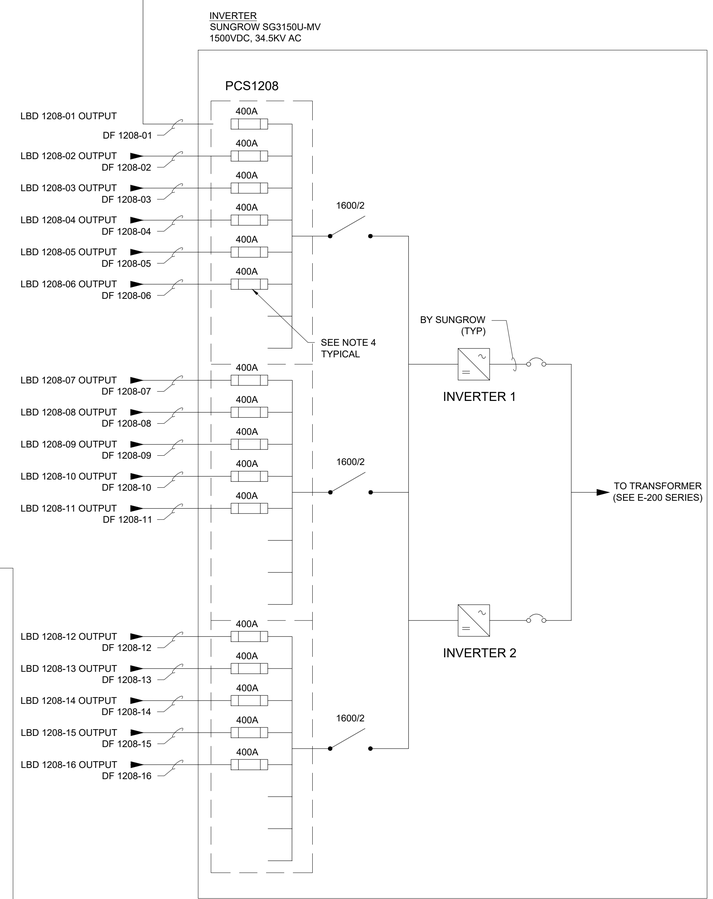
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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:

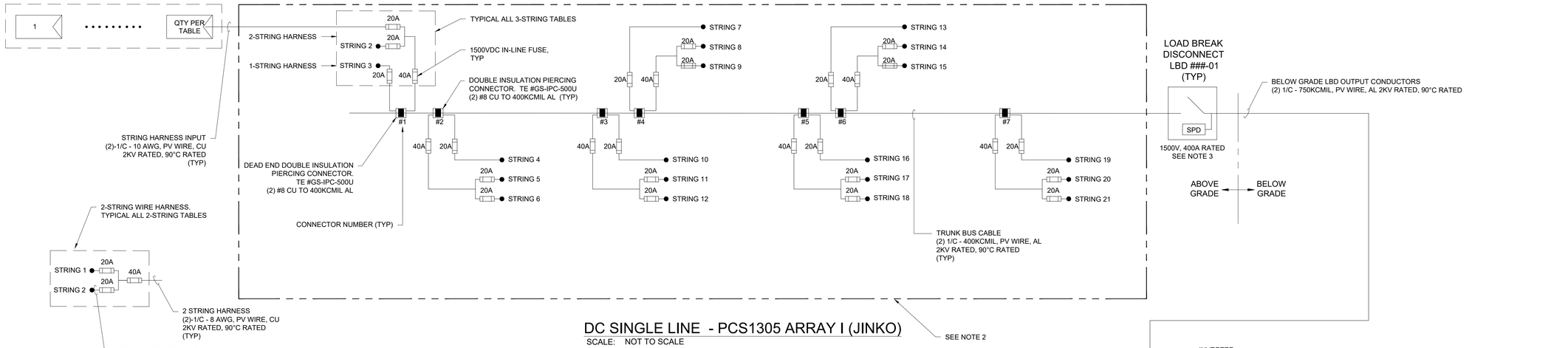
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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

SHEET #: E-218
REV #: 4

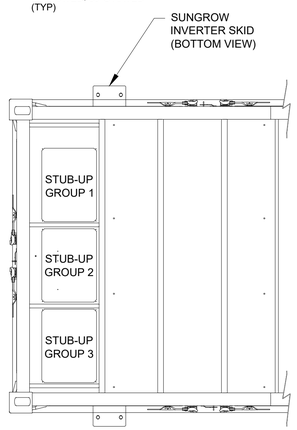
RECORD DRAWING

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



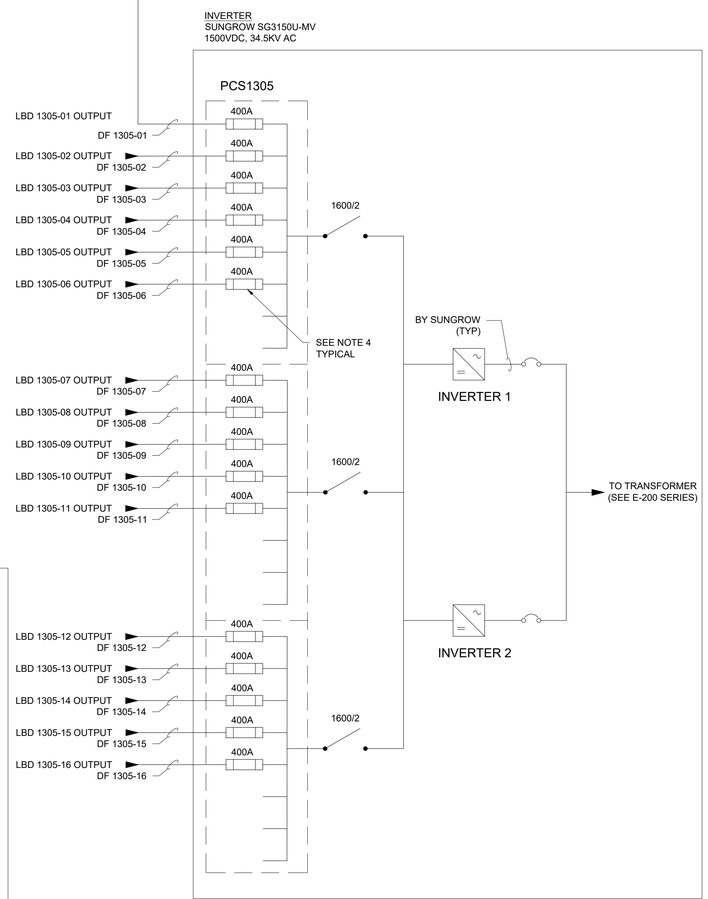
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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

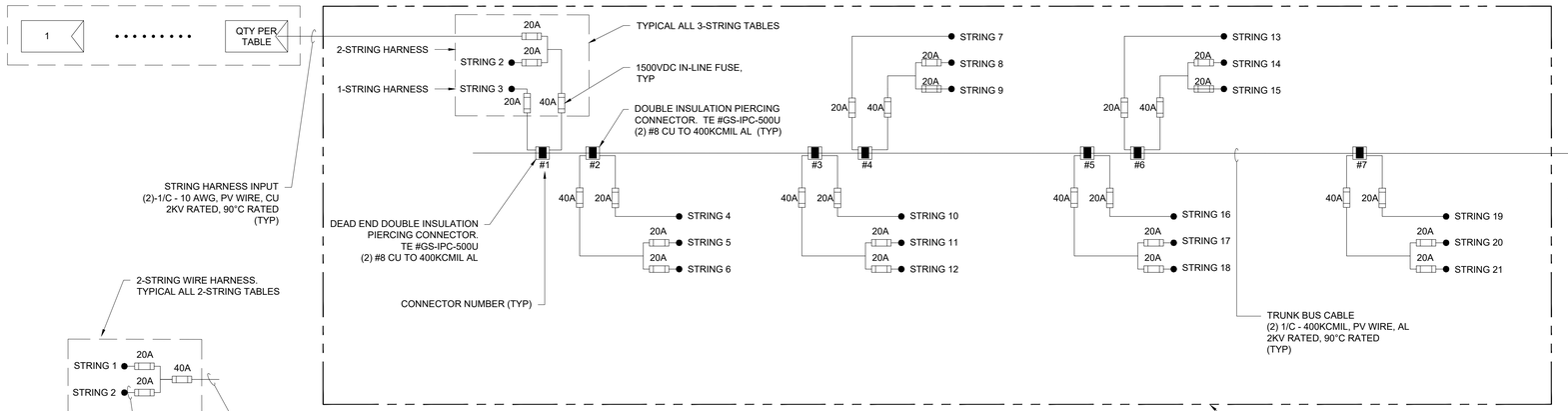
SHEET NAME:
DC SLD - ARRAY TYPE I (JINKO)

SHEET #: E-219
REV #: 4

RECORD DRAWING

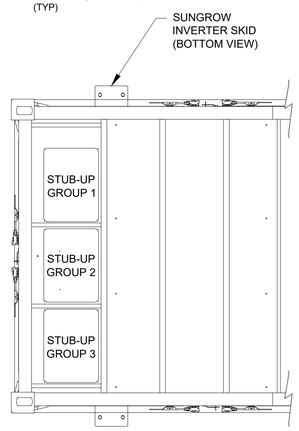
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-219 DC SLD - ARRAY TYPE I (JINKO)

STRING 1 (TYP)



DC SINGLE LINE - PCSXXX ARRAY J (JINKO)

SCALE: NOT TO SCALE



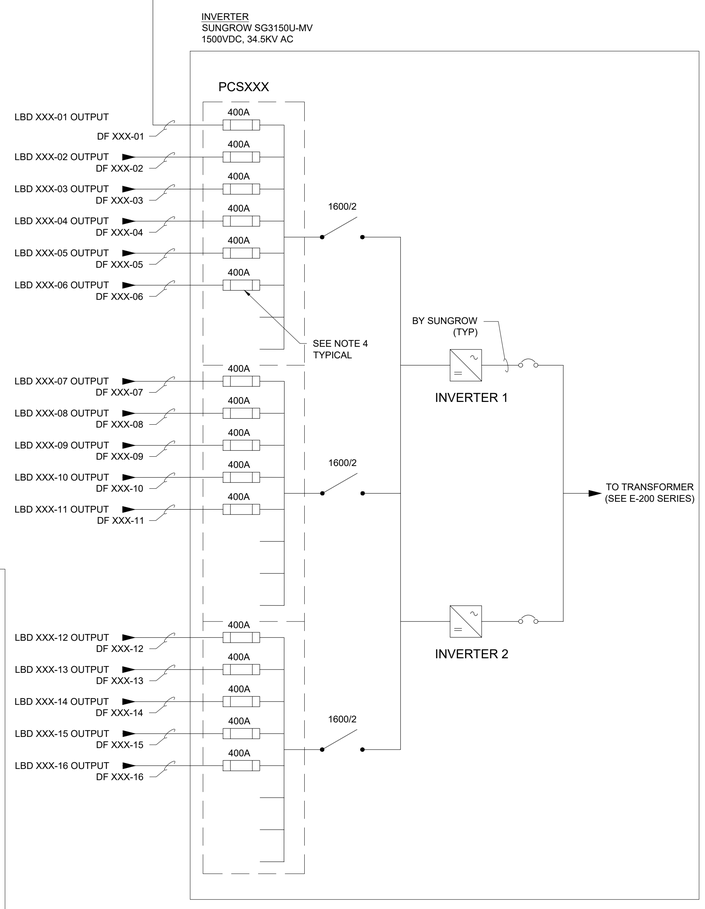
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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

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:

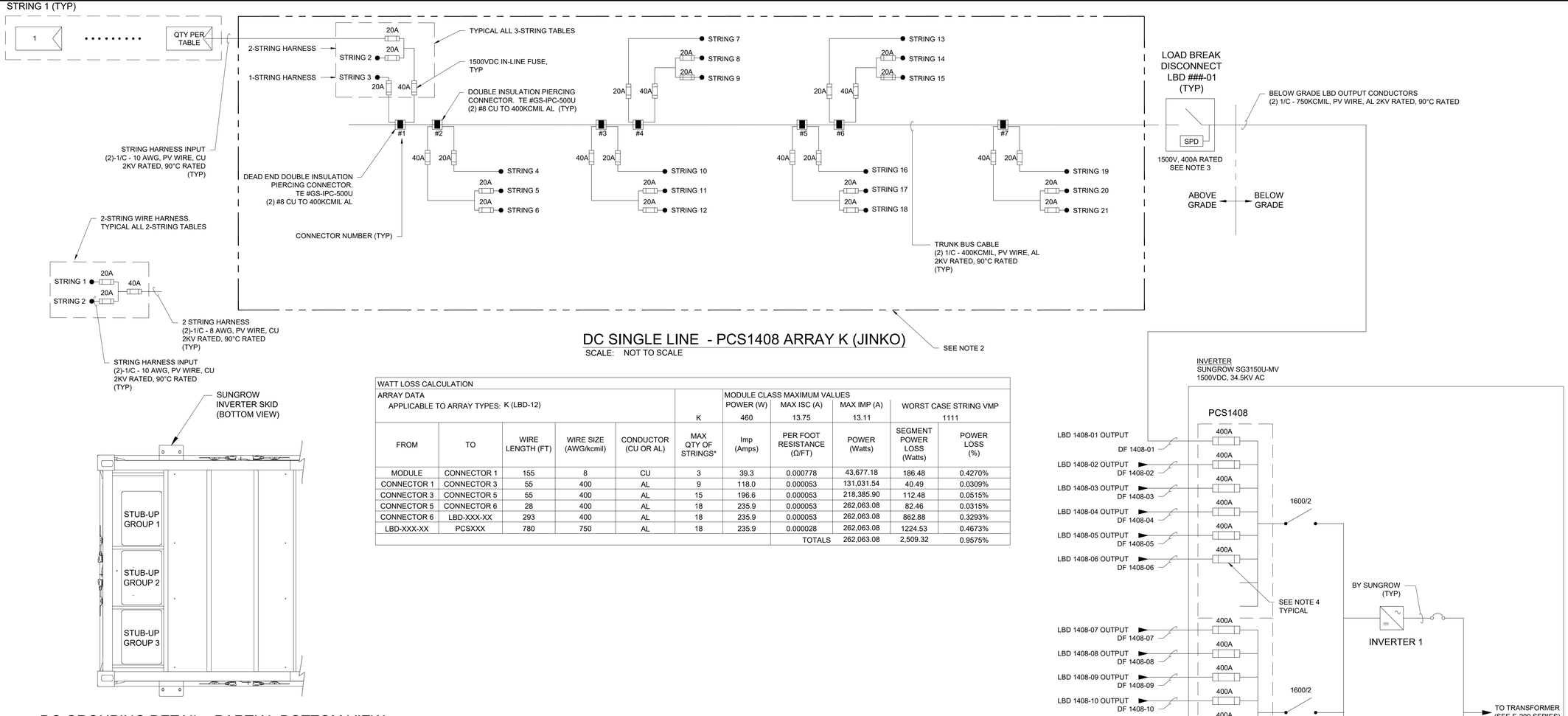
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE 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)



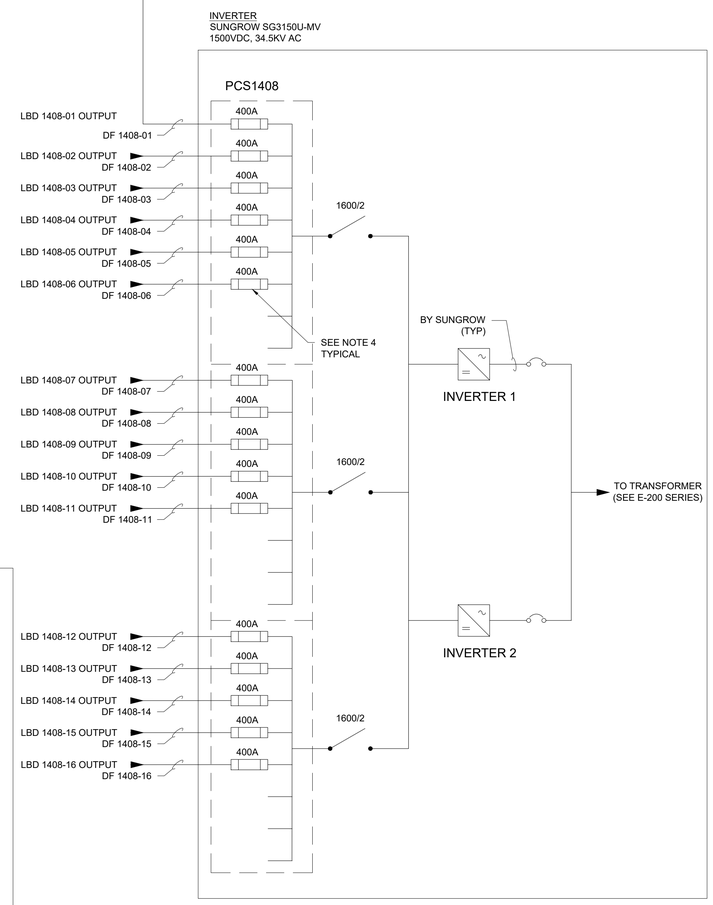
DC SINGLE LINE - PCS1408 ARRAY K (JINKO)

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:

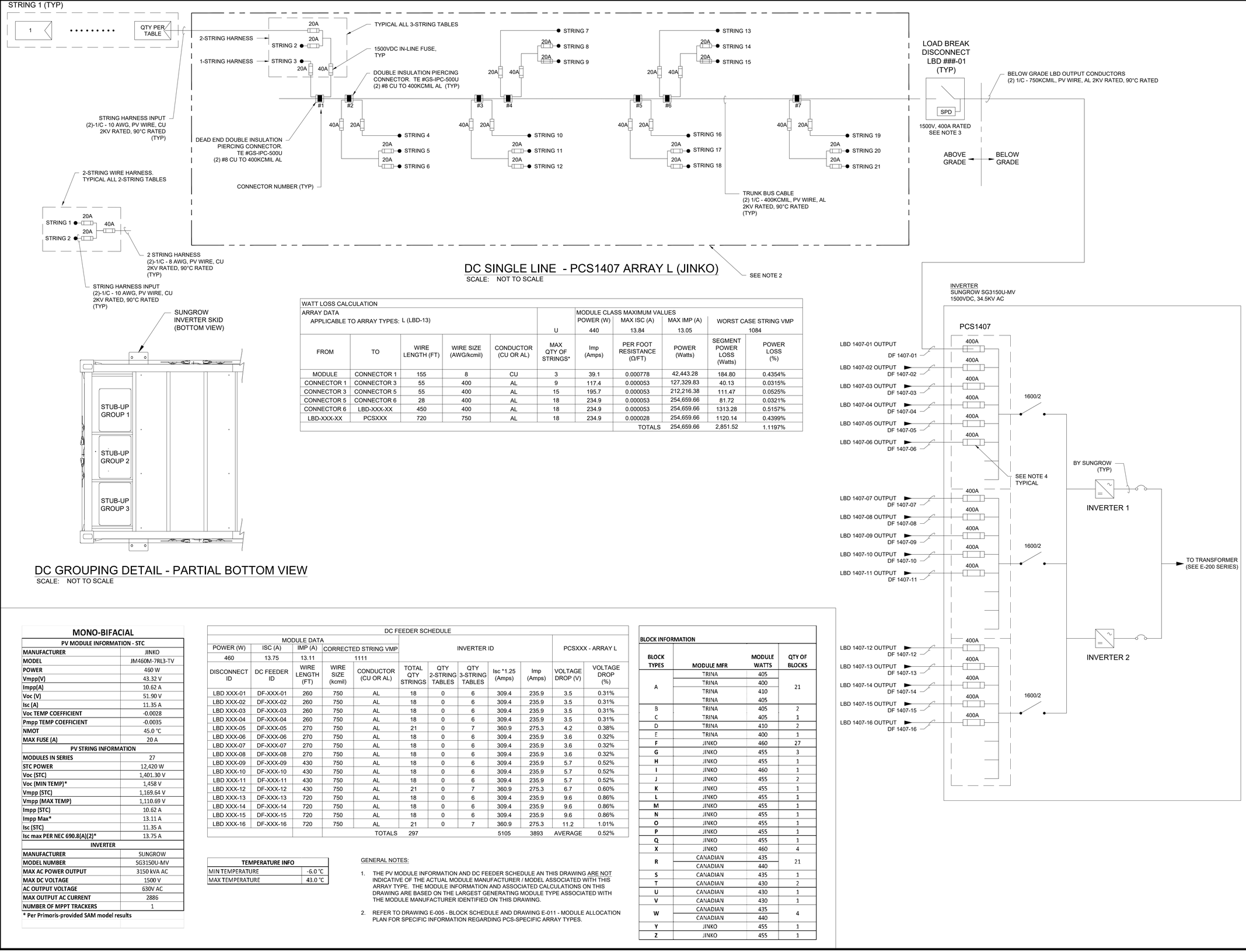
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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%

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

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:

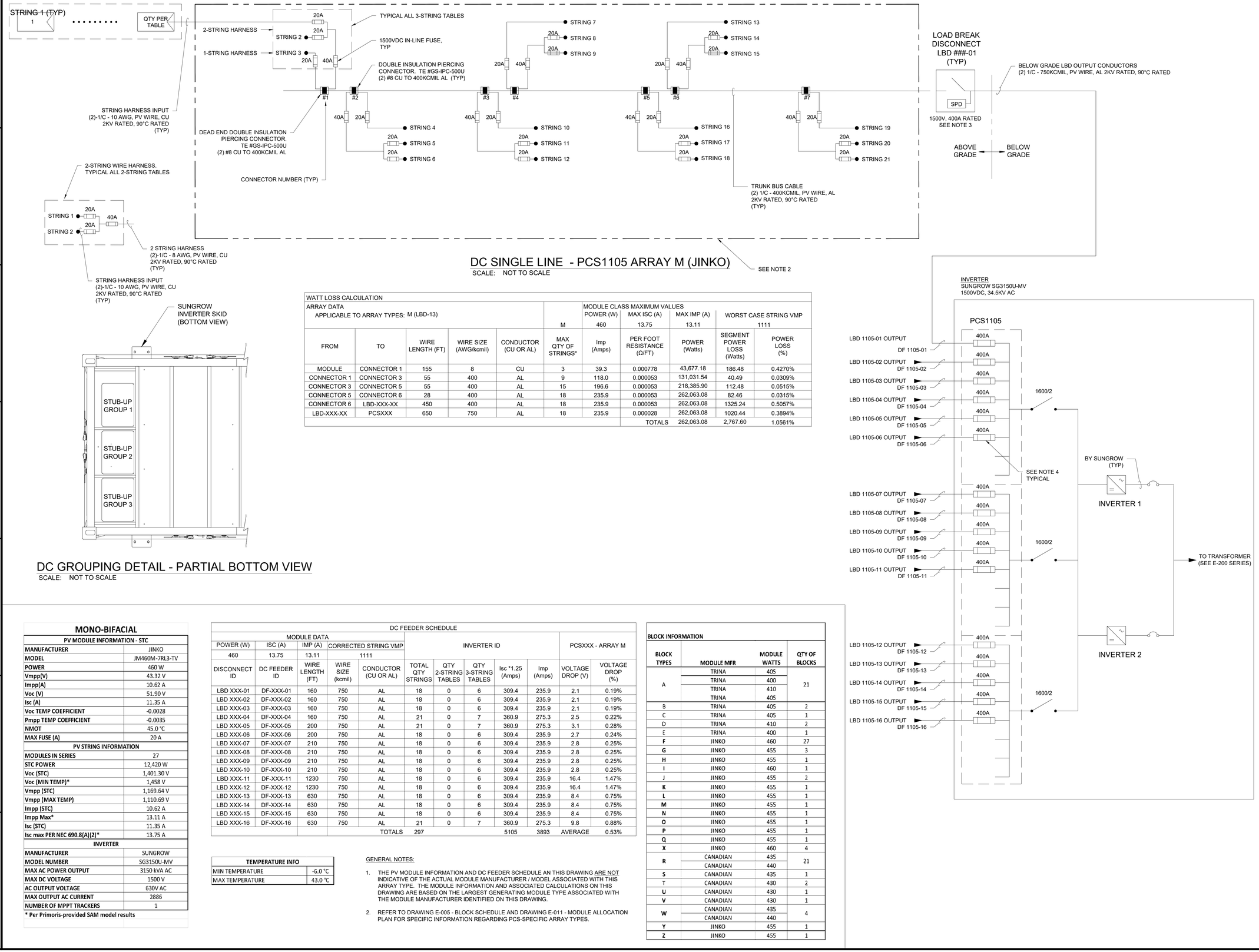
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD -ARRAY TYPE 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%

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 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

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:

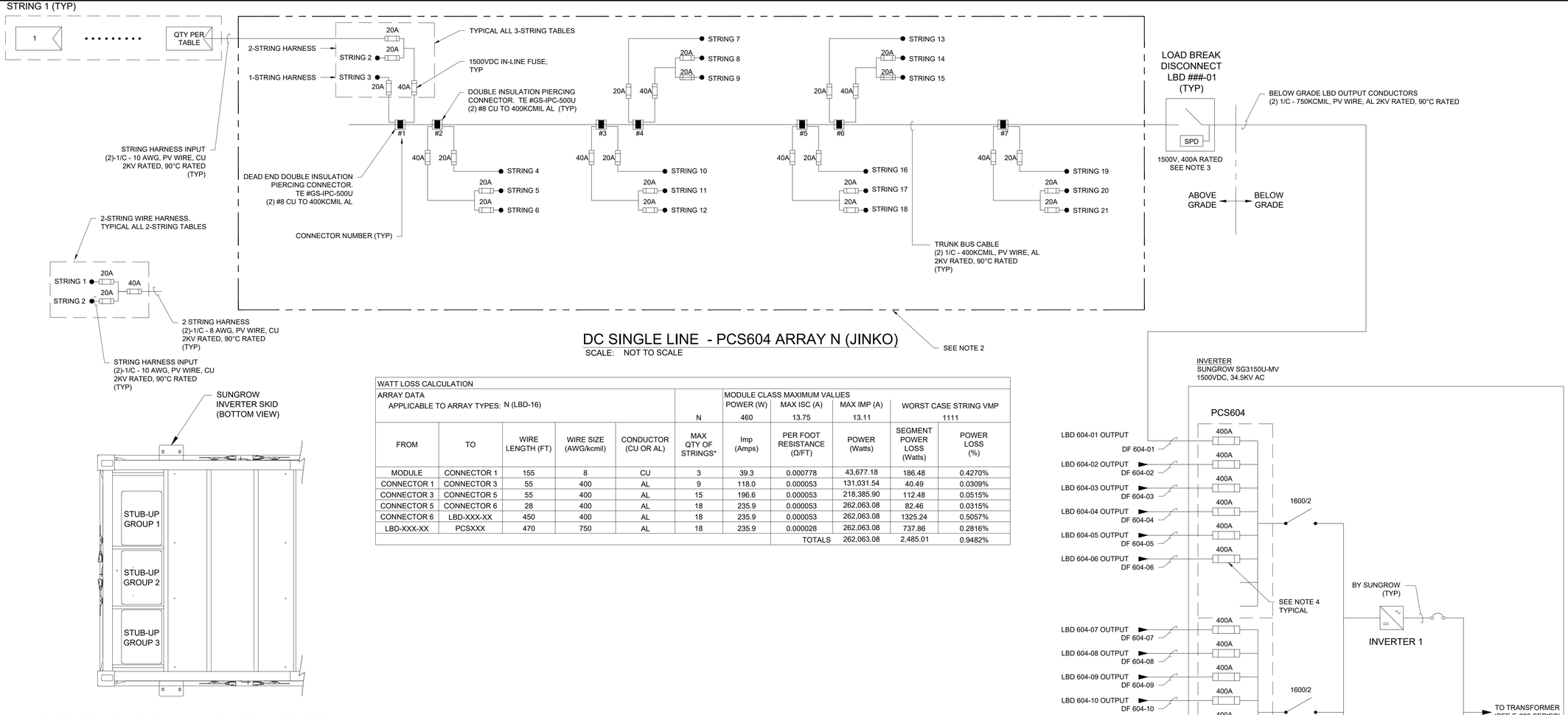
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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

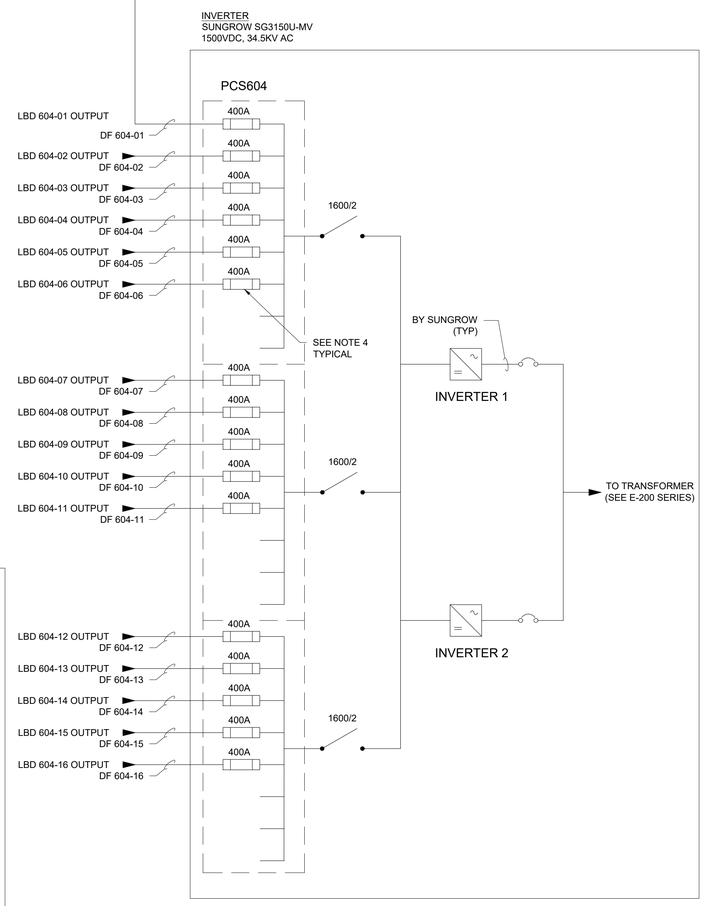
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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 POWER (W) 460	ISC (A) 13.75	IMP (A) 13.11	CORRECTED STRING VMP 1111		INVERTER ID					PCSXXX - ARRAY N	
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:

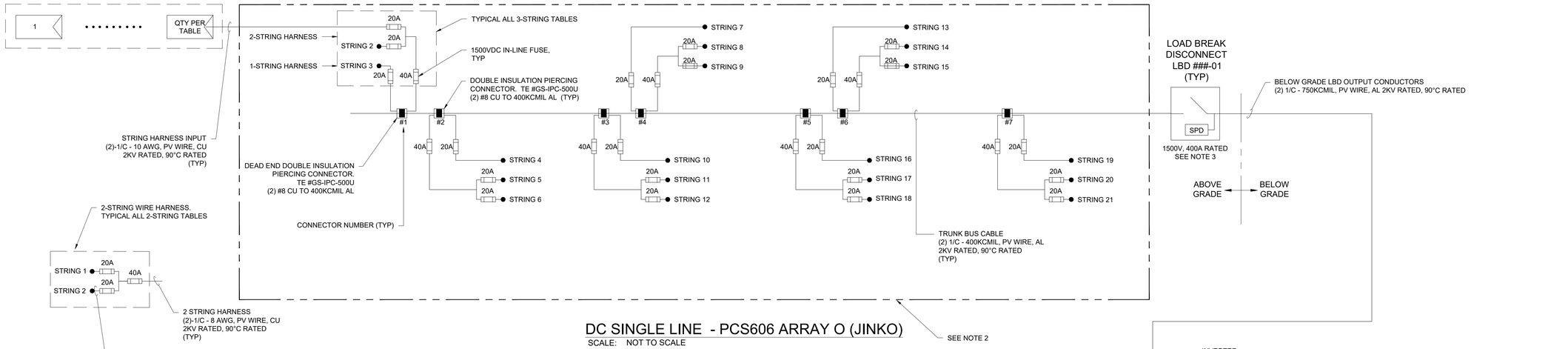
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

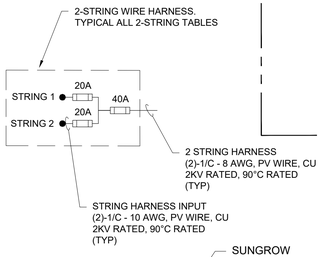
SHEET NAME:
DC SLD - ARRAY TYPE N (JINKO)

SHEET #: E-224
REV #: 4

RECORD DRAWING

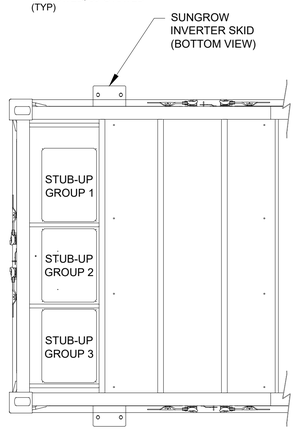
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-224 DC SLD - ARRAY TYPE N (JINKO)





DC SINGLE LINE - PCS606 ARRAY O (JINKO)

SCALE: NOT TO SCALE



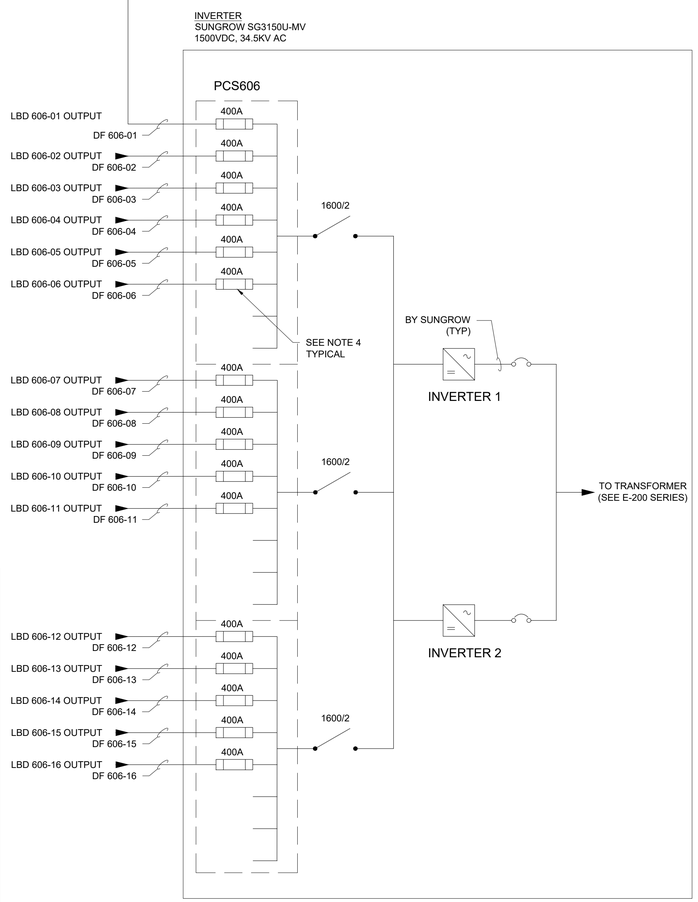
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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

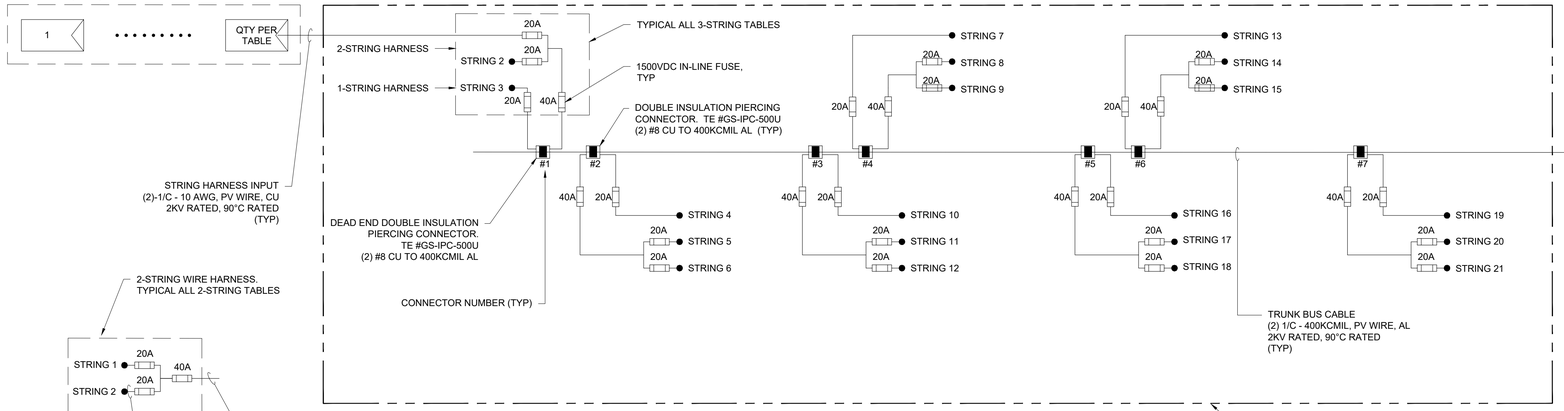
SHEET NAME: DC SLD - ARRAY TYPE O (JINKO)

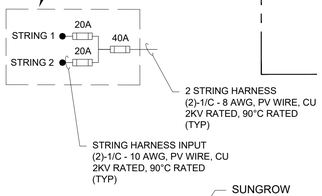
SHEET #: E-225
REV #: 4

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)

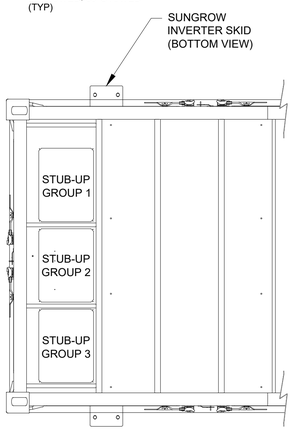
STRING 1 (TYP)





DC SINGLE LINE - PCS607 ARRAY P (JINKO)

SCALE: NOT TO SCALE

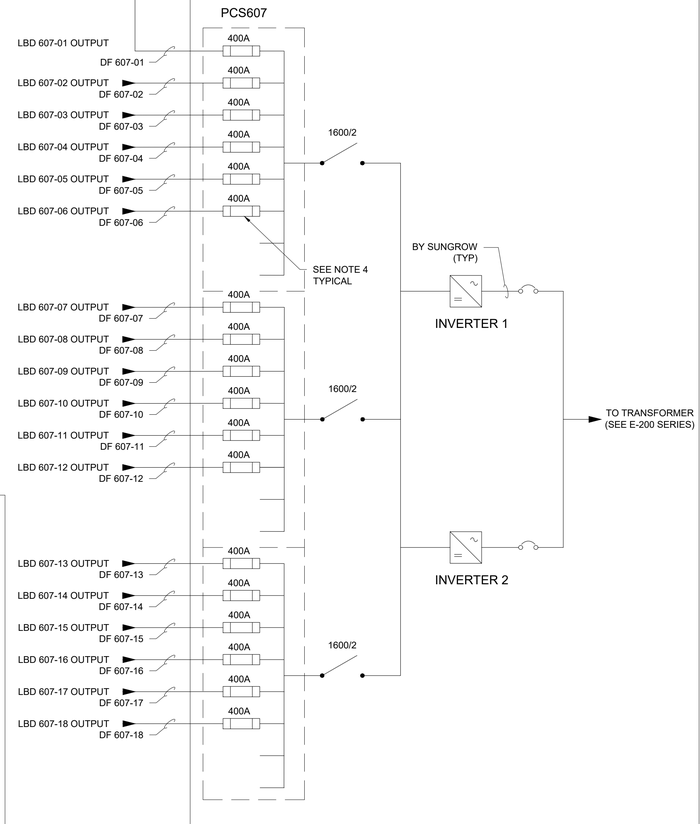


DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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%

INVERTER
SUNGROW SG3150U-MV
1500VDC, 34.5KV AC



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

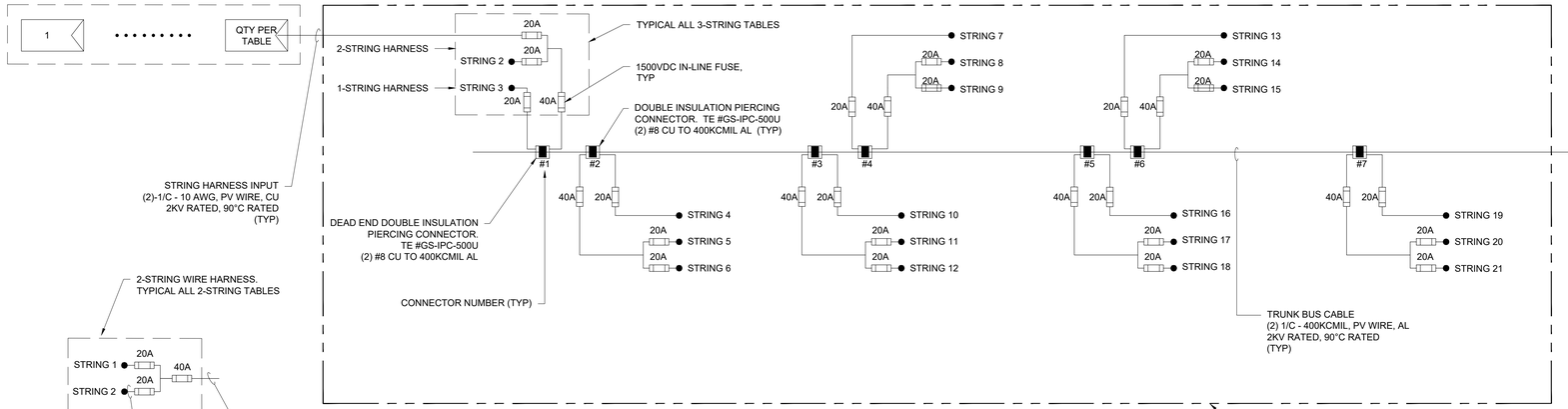
SHEET NAME:
DC SLD - ARRAY TYPE P (JINKO)

SHEET #: E-226
REV #: 4

RECORD DRAWING

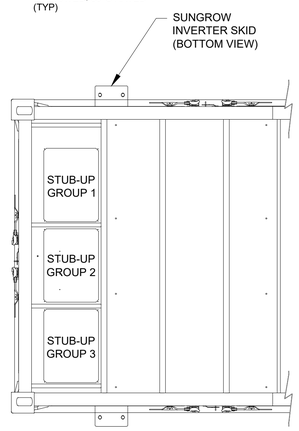
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-226 DC SLD - ARRAY TYPE P (JINKO)

STRING 1 (TYP)



DC SINGLE LINE - PCS1308 ARRAY Q (JINKO)

SCALE: NOT TO SCALE



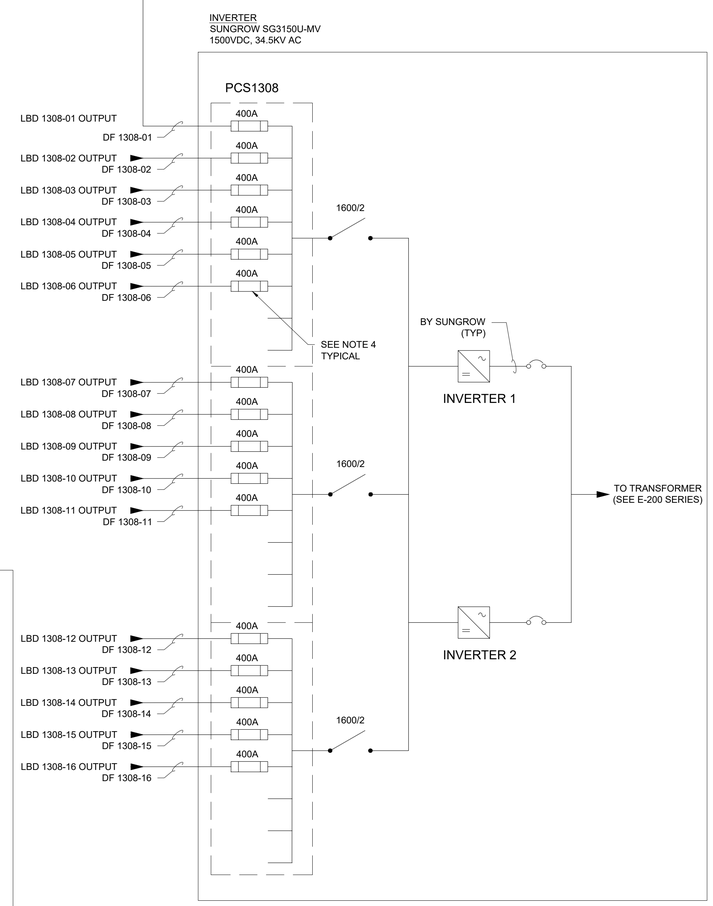
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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 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

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

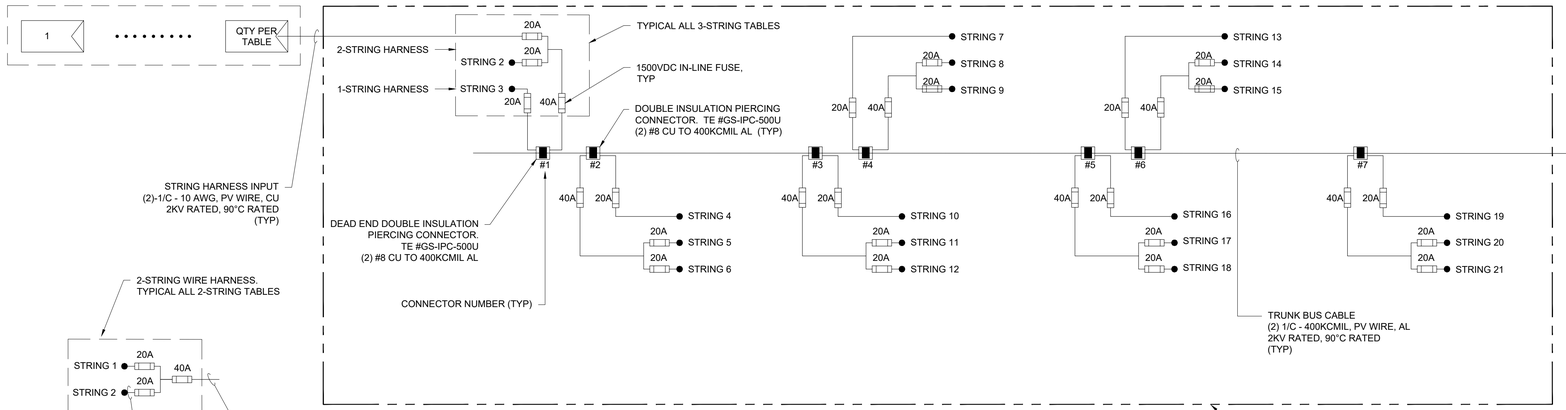
SHEET NAME:
DC SLD - ARRAY TYPE Q (JINKO)

SHEET #: E-227
REV #: 4

RECORD DRAWING

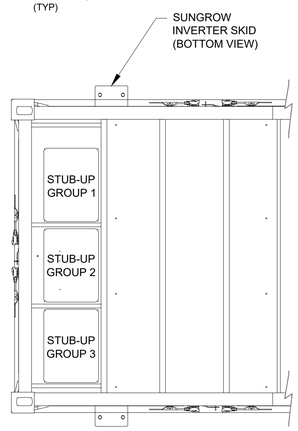
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-227 DC SLD - ARRAY TYPE Q (JINKO)

STRING 1 (TYP)



DC SINGLE LINE - PCSXXX ARRAY R (CS)

SCALE: NOT TO SCALE



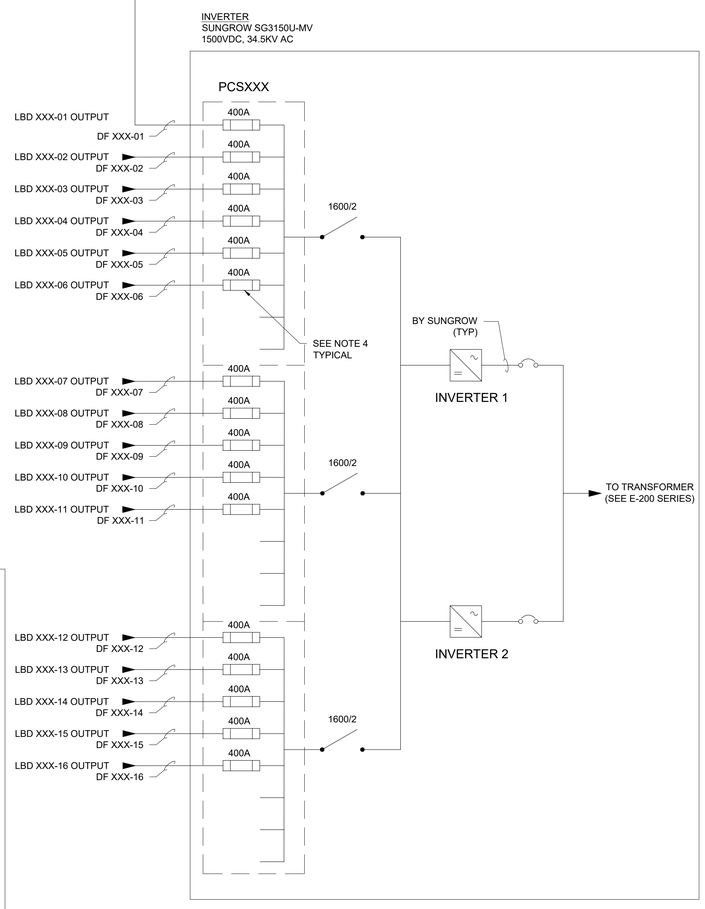
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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

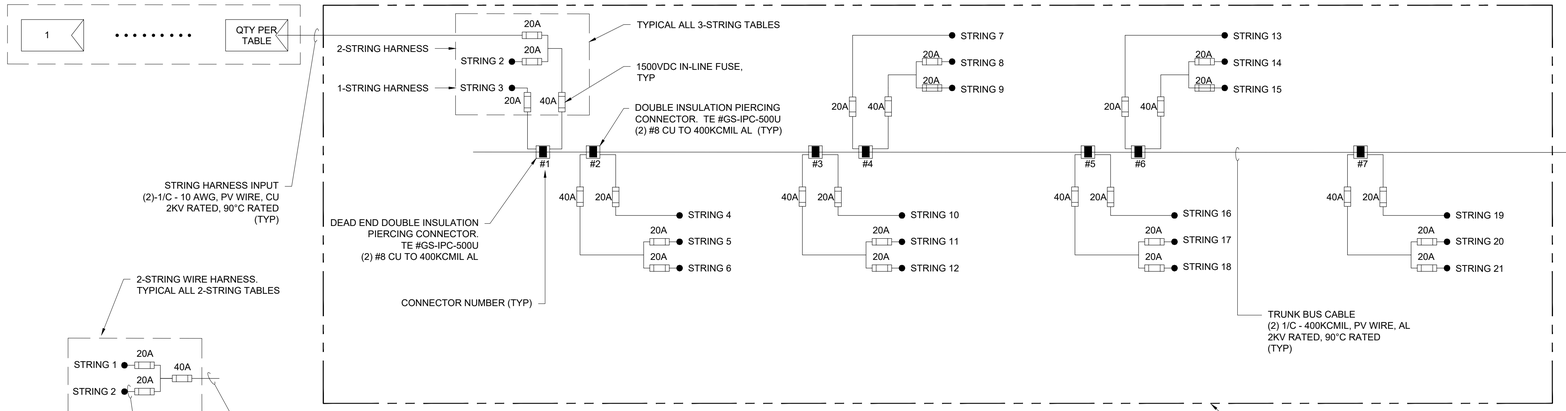
SHEET NAME: DC SLD - ARRAY TYPE R (CS)

SHEET #: E-228
REV #: 4

RECORD DRAWING

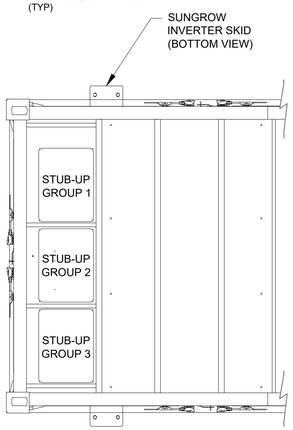
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-228 DC SLD - ARRAY TYPE R (CS)

STRING 1 (TYP)



DC SINGLE LINE - PCS1006 ARRAY S (CS)

SCALE: NOT TO SCALE



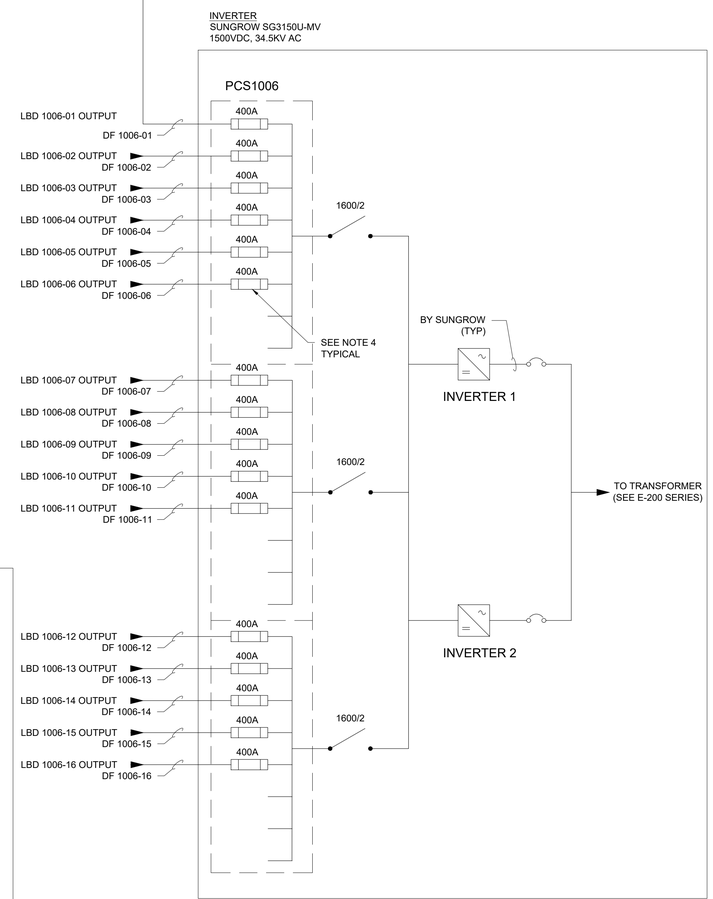
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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 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

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:

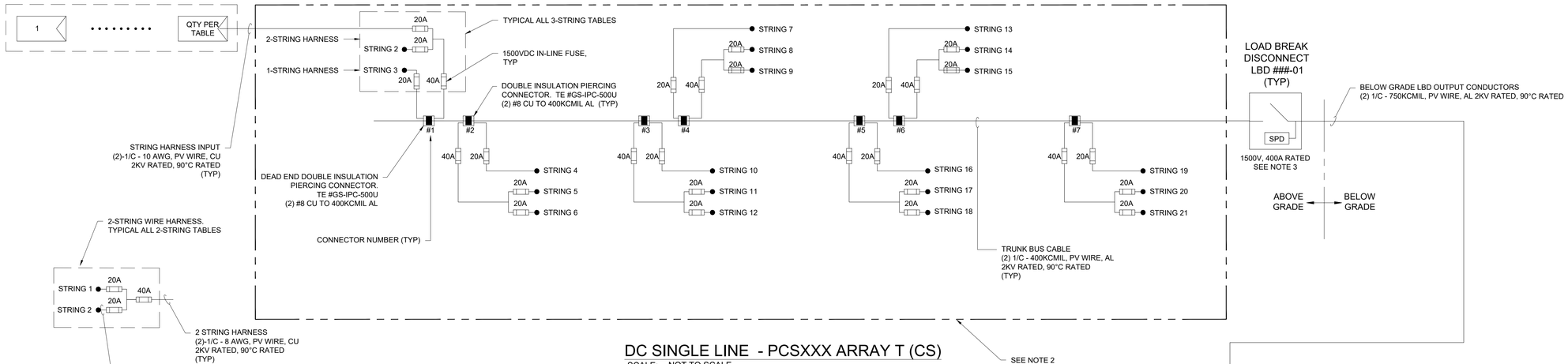
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE S (CS)

SHEET #: E-229
REV #: 4

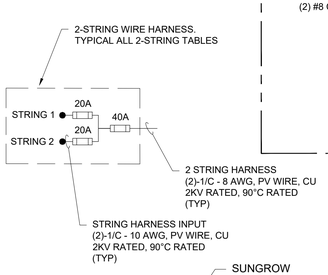
RECORD DRAWING

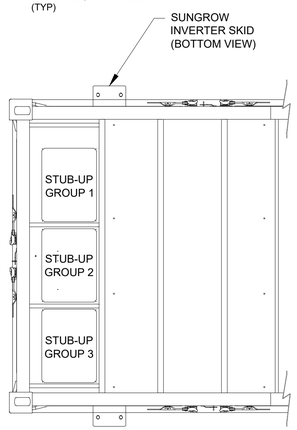
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-229 DC SLD - ARRAY TYPE S (CS)



DC SINGLE LINE - PCSXXX ARRAY T (CS)

SCALE: NOT TO SCALE





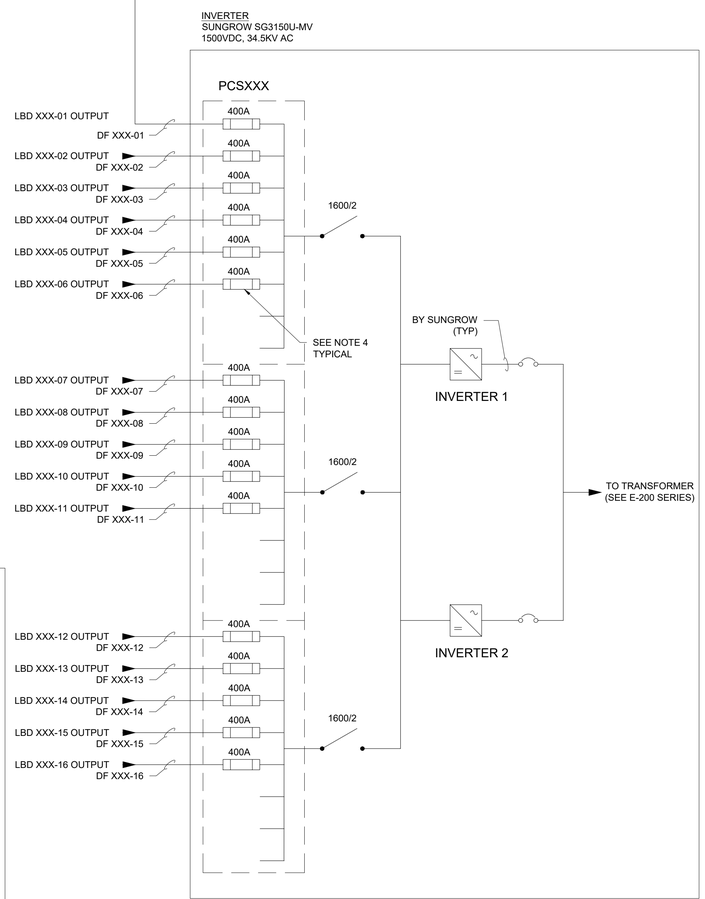
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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 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

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:

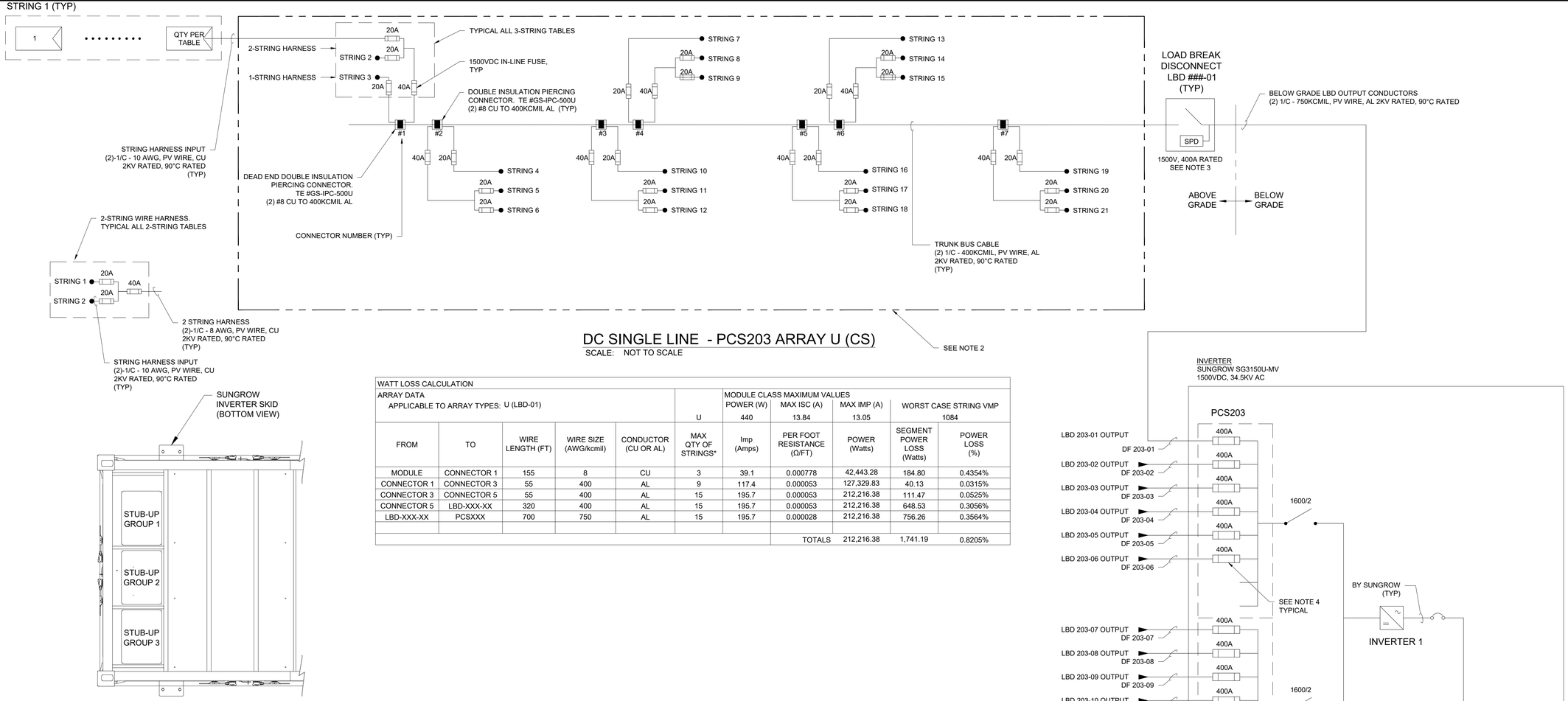
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

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)



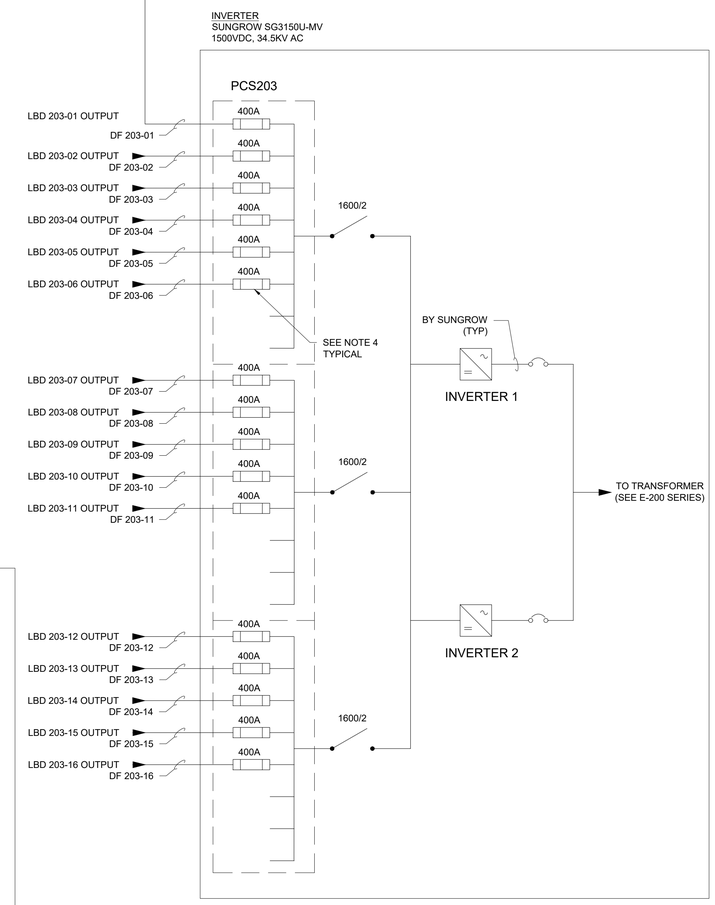
DC SINGLE LINE - PCS203 ARRAY U (CS)

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:

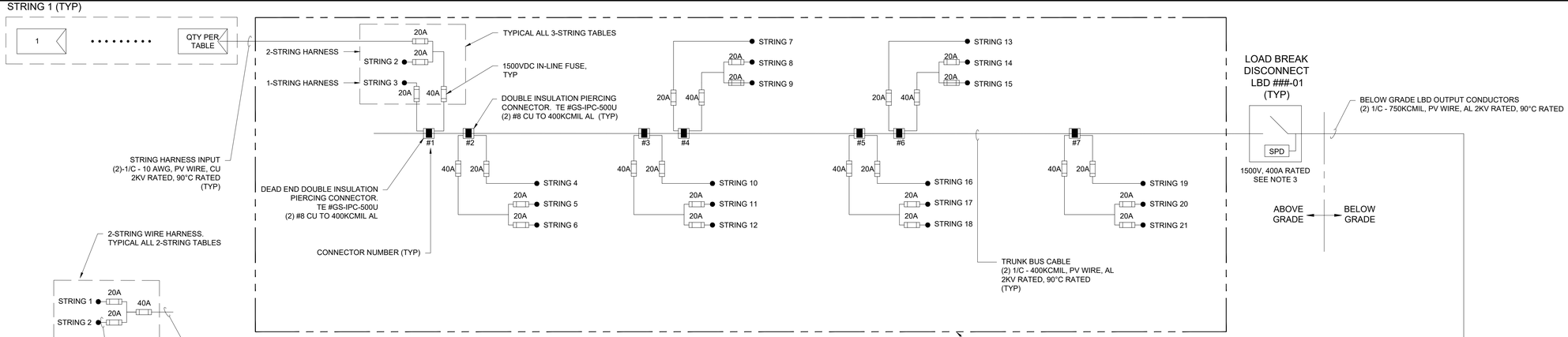
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE U (CS)

SHEET #: E-231
REV #: 4

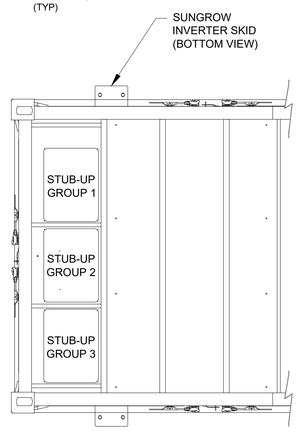
RECORD DRAWING

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



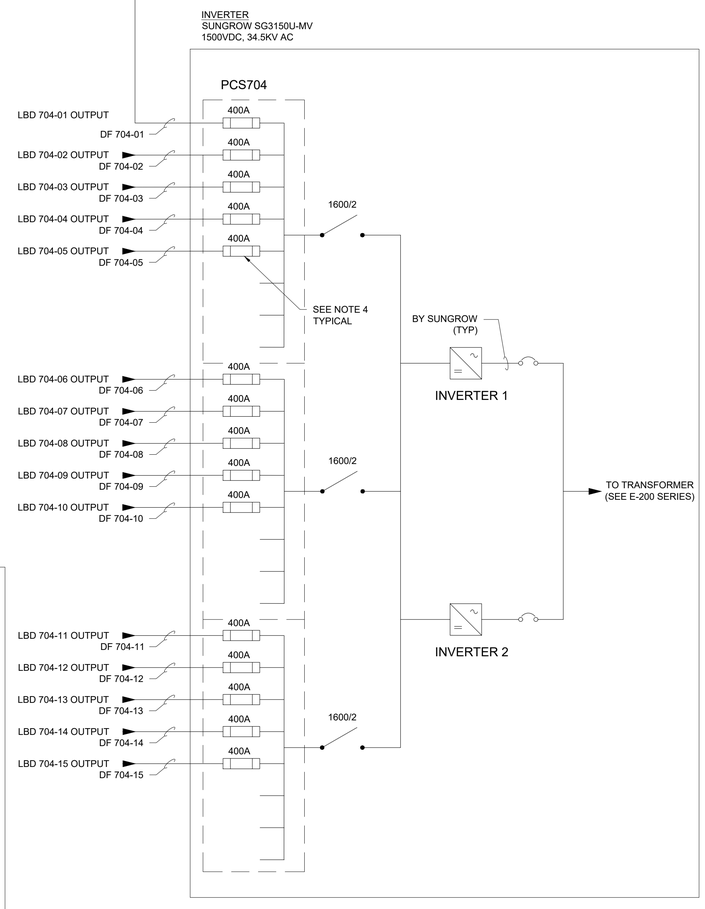
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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.



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 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.

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:

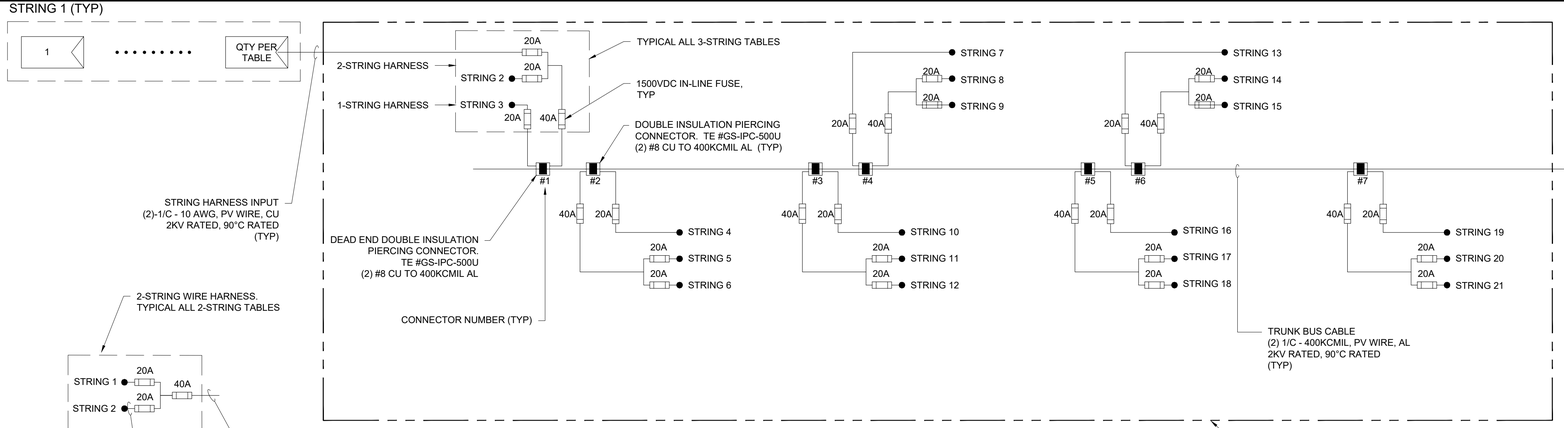
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

SHEET NAME:
DC SLD - ARRAY TYPE V (CS)

SHEET #: E-232
REV #: 4

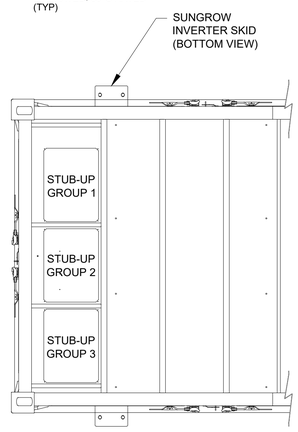
RECORD DRAWING

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



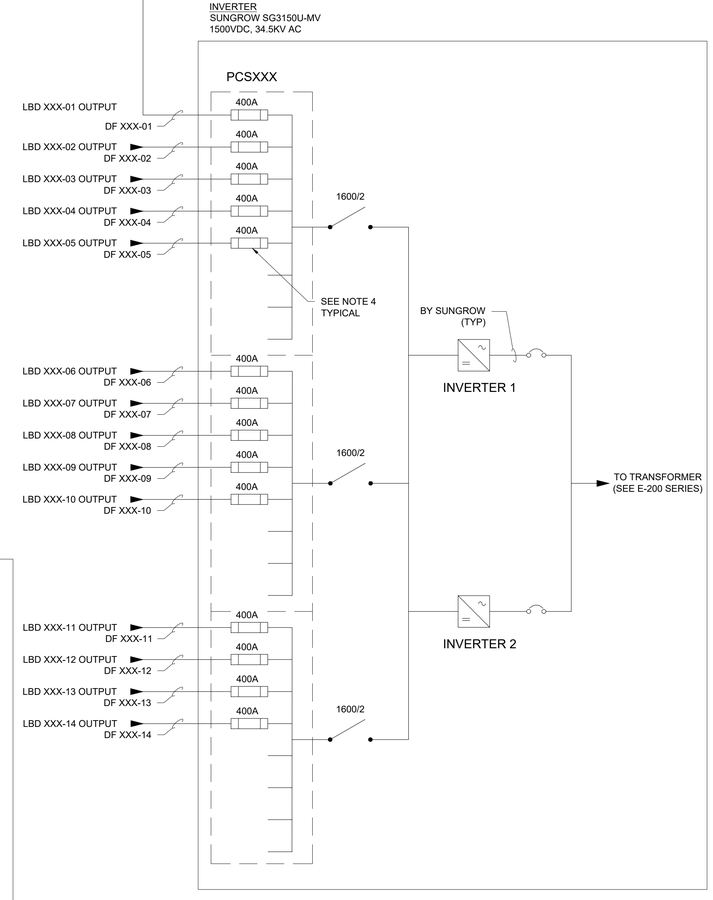
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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

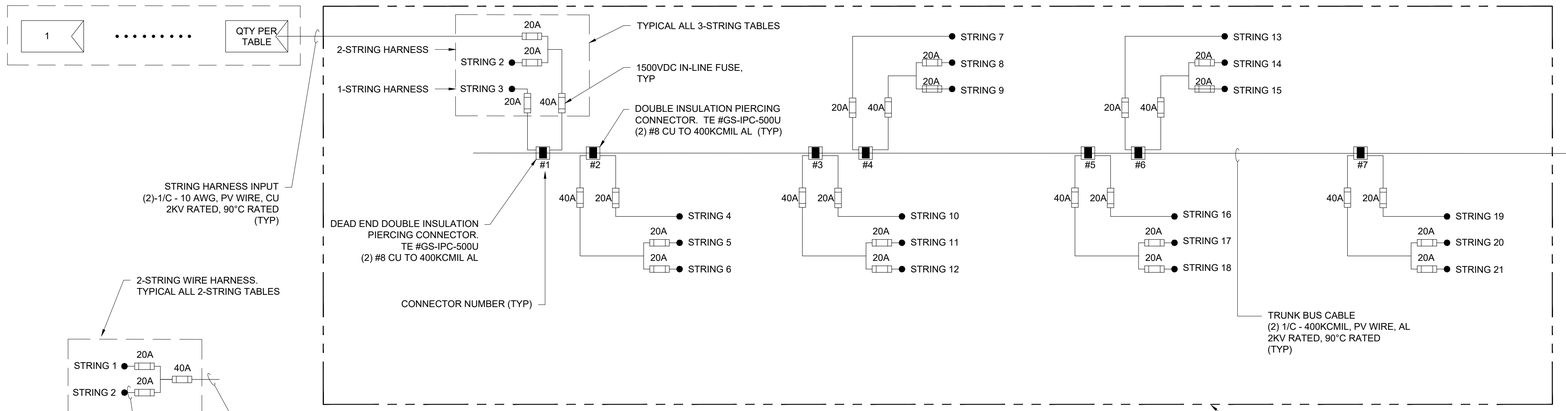
SHEET NAME:
DC SLD - ARRAY TYPE W (CS)

SHEET #: E-233
REV #: 4

RECORD DRAWING

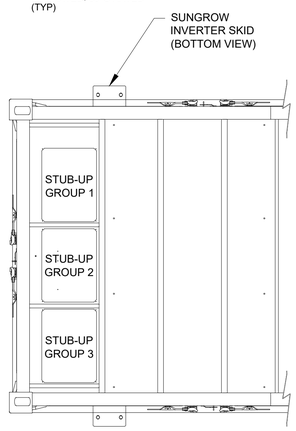
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: EricLoos
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-233 DC SLD - ARRAY TYPE W (CS)

STRING 1 (TYP)



DC SINGLE LINE - PCSXXX ARRAY X (JINKO)

SCALE: NOT TO SCALE



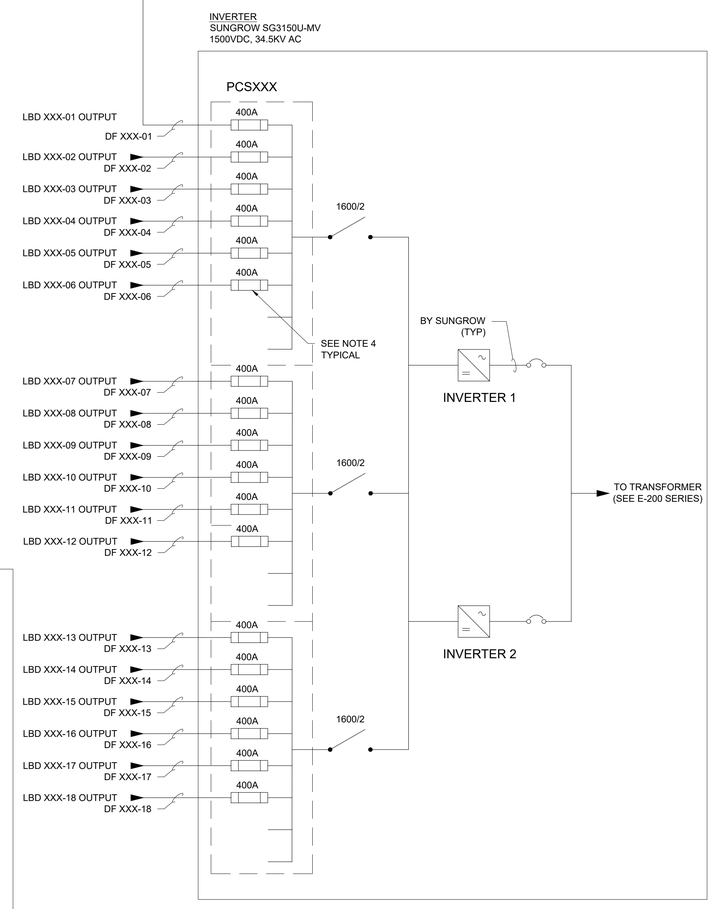
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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 °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 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 °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:

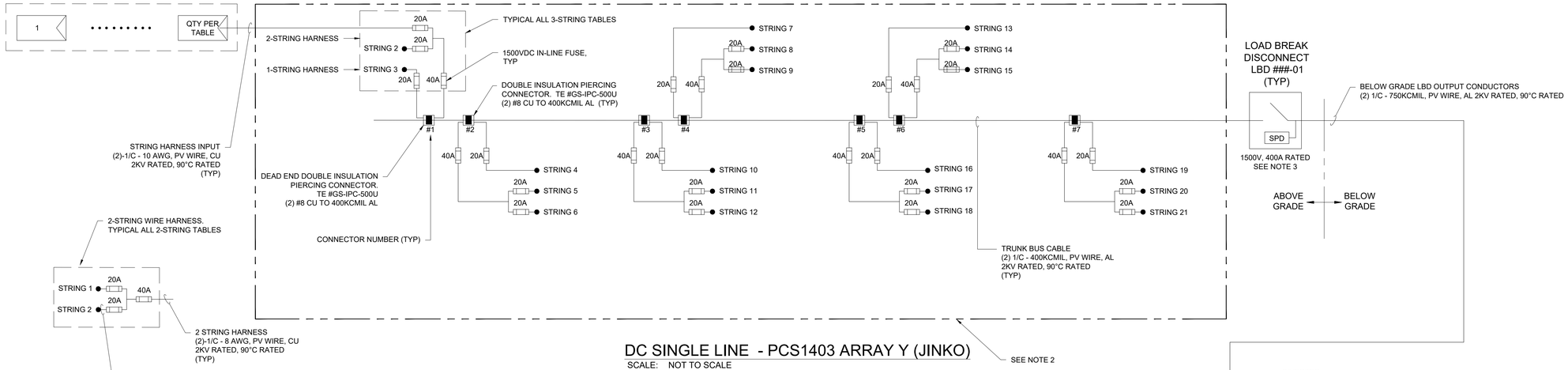
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: GL
CHECKED BY: EL

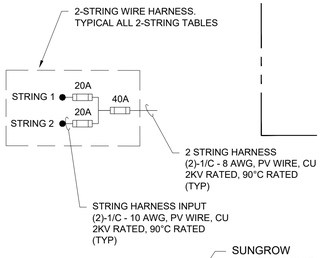
SHEET NAME:
DC SLD - ARRAY TYPE X (JINKO)

SHEET #: E-234
REV #: 4

RECORD DRAWING

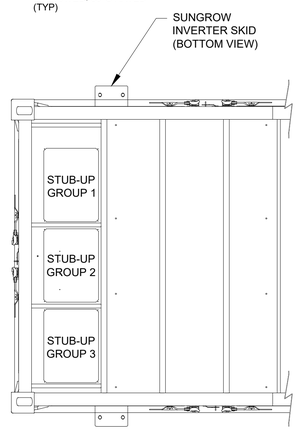
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg.looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-234 DC SLD - ARRAY TYPE X (JINKO)





DC SINGLE LINE - PCS1403 ARRAY Y (JINKO)

SCALE: NOT TO SCALE



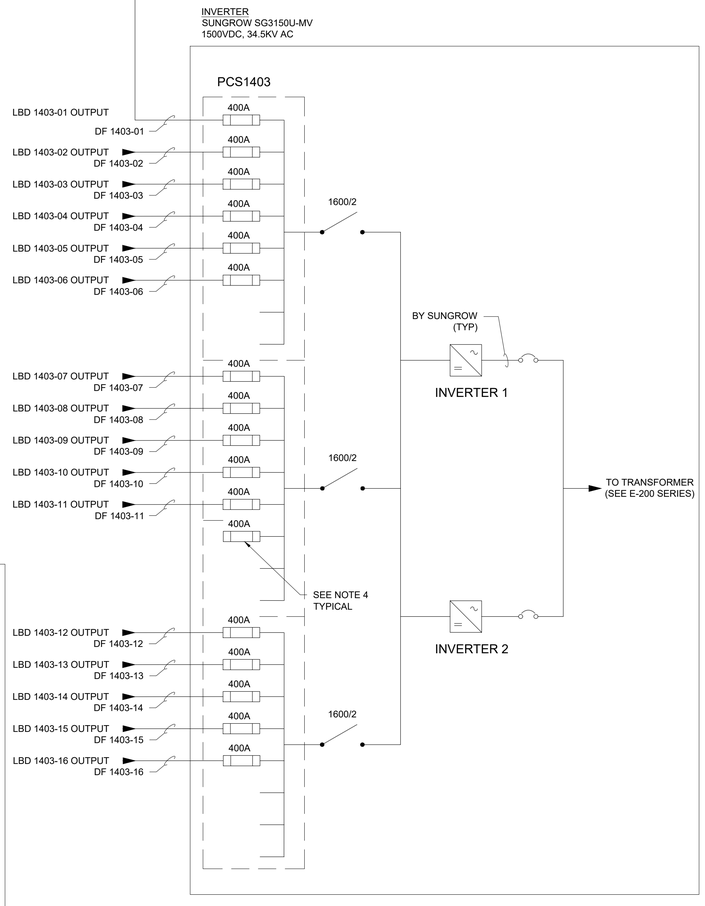
DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

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 ℃
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 ℃
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

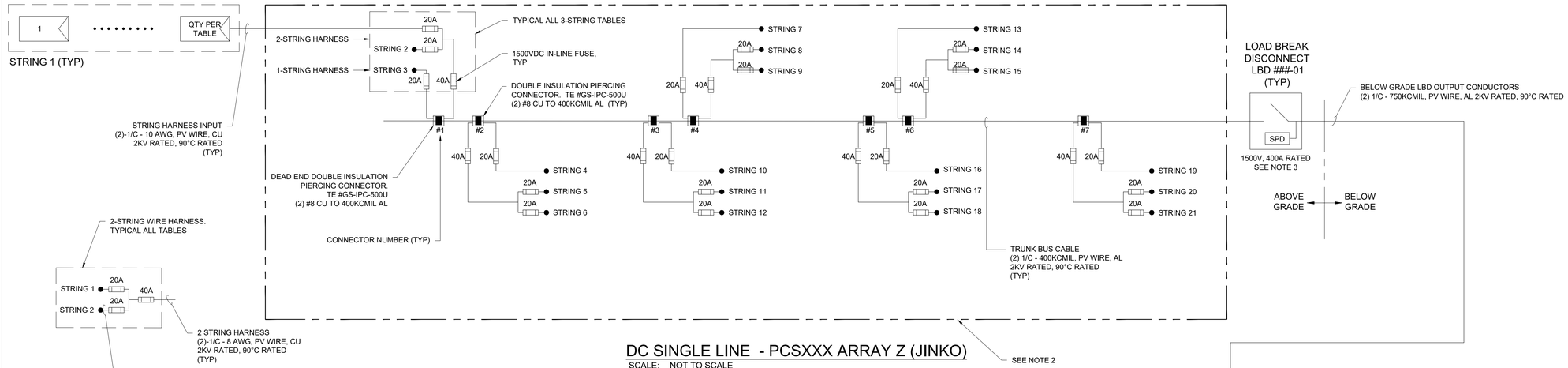
SEAL:

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

SHEET NAME: DC SLD - ARRAY TYPE Y (JINKO)
SHEET #: E-235
REV #: 4

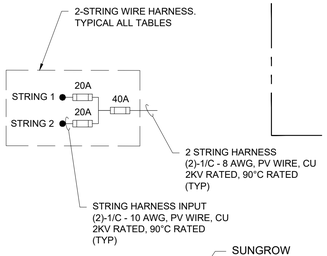
RECORD DRAWING

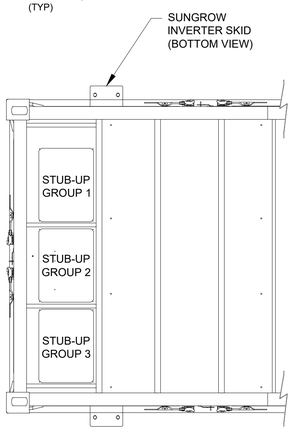
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: gregg looney
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-235 DC SLD - ARRAY TYPE Y (JINKO)



DC SINGLE LINE - PCSXXX ARRAY Z (JINKO)

SCALE: NOT TO SCALE





DC GROUPING DETAIL - PARTIAL BOTTOM VIEW

SCALE: NOT TO SCALE

WATT LOSS CALCULATION

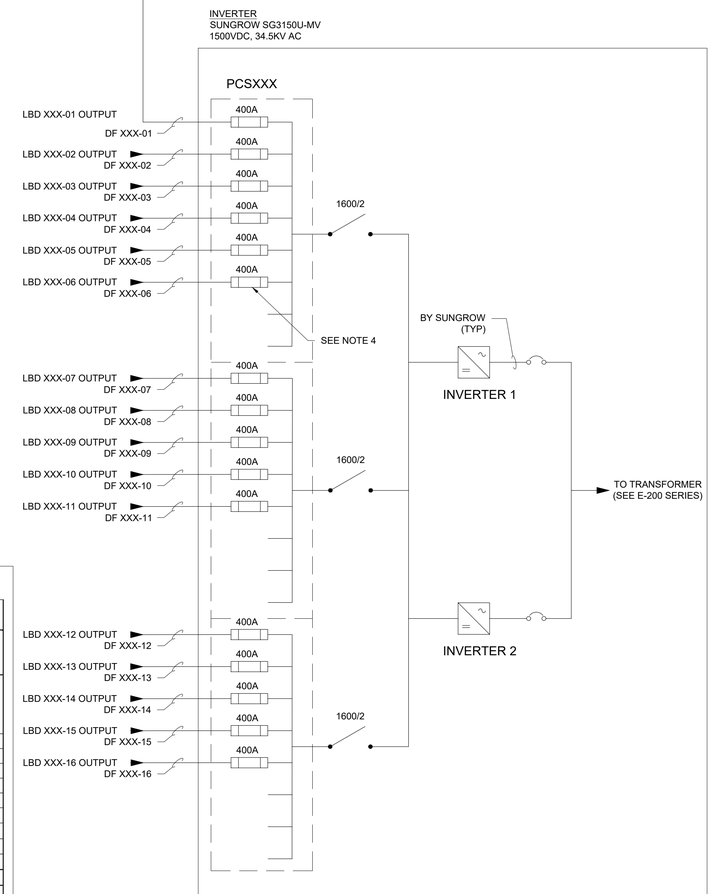
ARRAY DATA — APPLICABLE TO ARRAY TYPES: Z (LBD-15)

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,
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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
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)

PANELBOARD TAG:

PNL.X.###

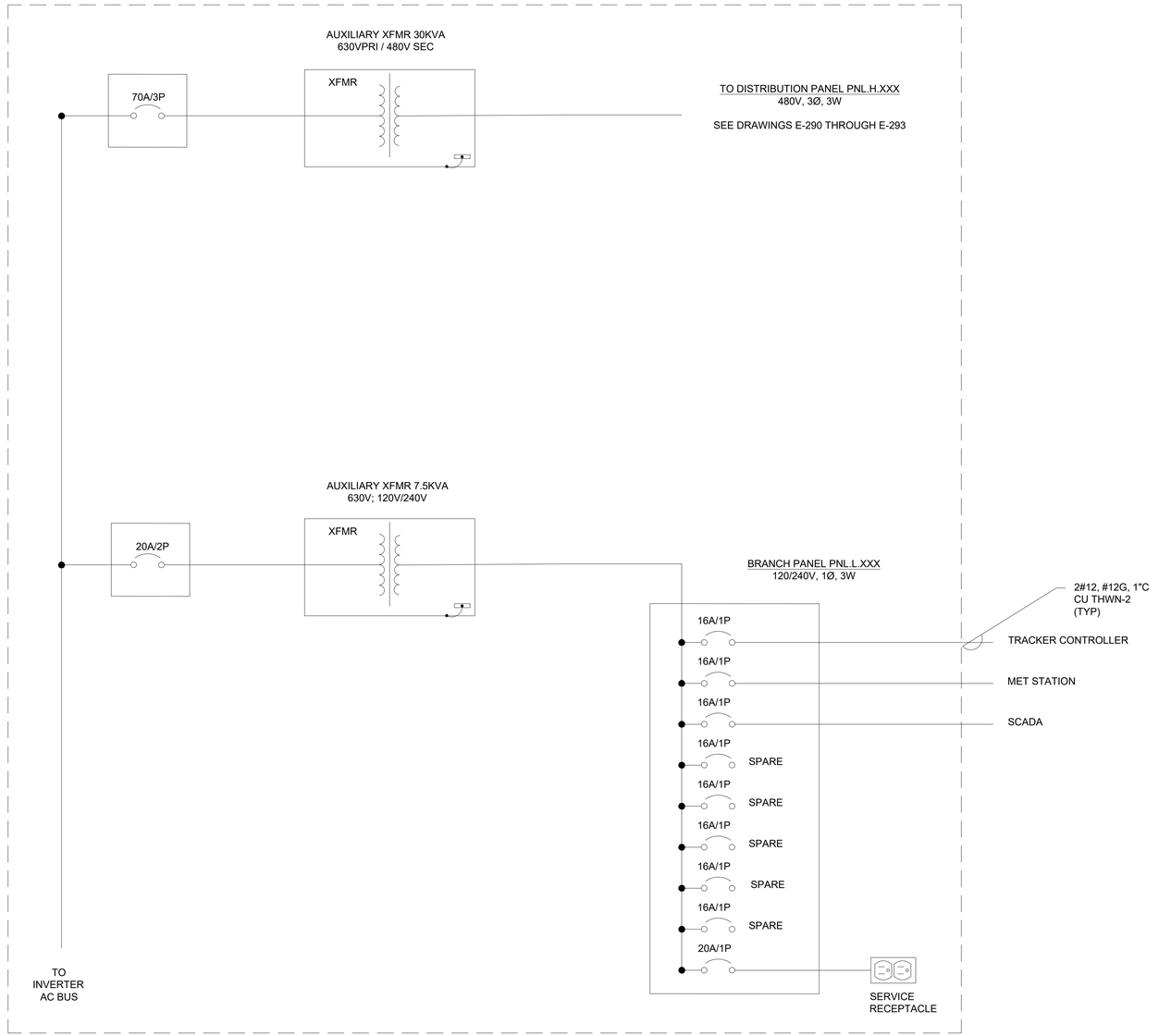
- PCS EQUIPMENT ID
- H: 277/480V; L:120/240V
- PANELBOARD

KEYED NOTES:

1. ALL EQUIPMENT, COMPONENTS AND DEVICES SHOWN WITHIN THIS DASHED LINE ARE PROVIDED WITH, AND INTEGRAL TO, THE INVERTER.
2. SIZE DETERMINED BY MANUFACTURER.
3. REFER TO E-500 FOR MET STATION LOCATIONS AT PCS201, PCS203, PCS307, PCS502, PCS507, PCS704, PCS1105, PCS1308, AND PCS1407.

NOTES:

A. PROVIDE BRANCH CIRCUITING AND ASSOCIATED TERMINATIONS SHOWN ON THIS 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: NK
CHECKED BY: EL

SHEET NAME:
LV WIRING DIAGRAM

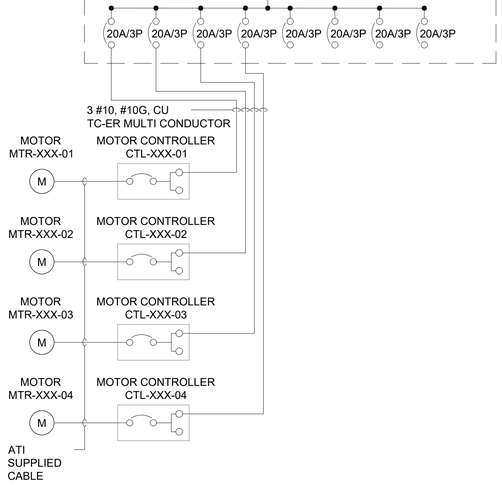
SHEET #: E-280
REV #: 4

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-280 LV WIRING DIAGRAM

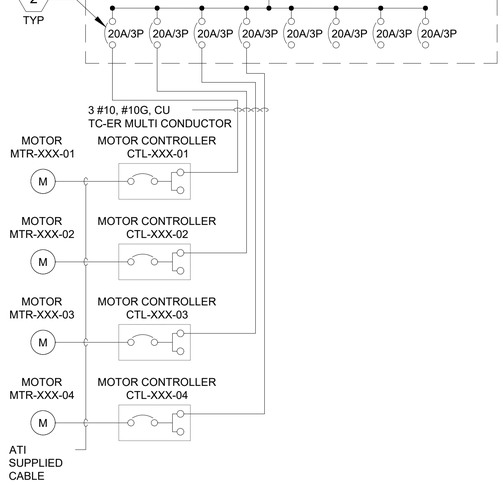
ARRAY TYPE A

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



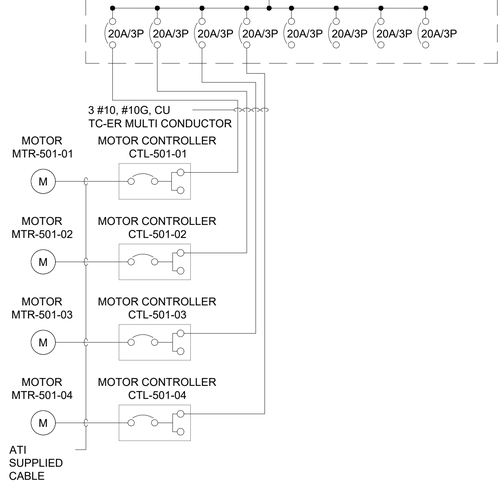
ARRAY TYPE B

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



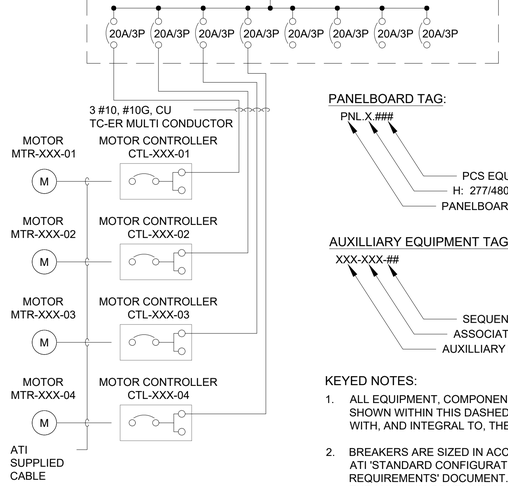
ARRAY TYPE C

DISTRIBUTION PANEL: PNL-H-501
480V, 3Ø, 3W

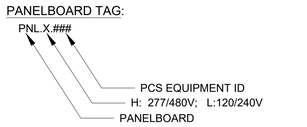


ARRAY TYPE D

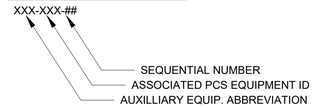
DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



PANELBOARD TAG:



AUXILLIARY EQUIPMENT TAG:



KEYED NOTES:

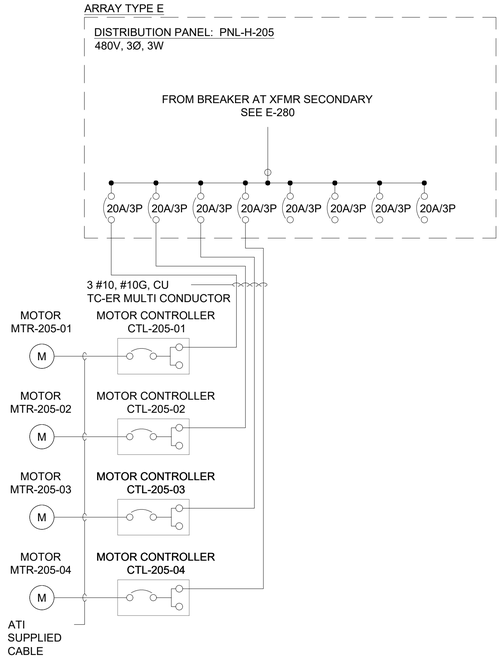
1. ALL EQUIPMENT, COMPONENTS AND DEVICES SHOWN WITHIN THIS DASHED LINE ARE PROVIDED WITH, AND INTEGRAL TO, THE INVERTER.
2. BREAKERS ARE SIZED IN ACCORDANCE WITH THE ATI 'STANDARD CONFIGURATION POWER REQUIREMENTS' DOCUMENT. PER THE DOCUMENT, THE MAXIMUM CONTINUOUS CURRENT PER MOTOR IS 3A @ 480V-3PH. IN-RUSH CURRENT IS AS FOLLOWS: I = 3A*6 + 3A = 21A. THE TRIP CURVE OF THE CIRCUIT BREKAER PROVIDED BY THE INVERTER MUST BE ABLE TO SUSTAIN THE IN-RUSH AS INDICATED TO AVOID ANY NUISANCE TRIPPING INCLUDING ANY TEMPERATURE DERATIONS. ADDITIONAL COORDINATION WITH ATI MAY BE REQUIRED TO UNDERSTAND THE MAXIMUM TIME LENGTH OF THE INRUSH CURRENT.

AUXILLIARY EQUIPMENT ABBREVIATIONS:

MTR	MOTOR
CTL	MOTOR CONTROLLER

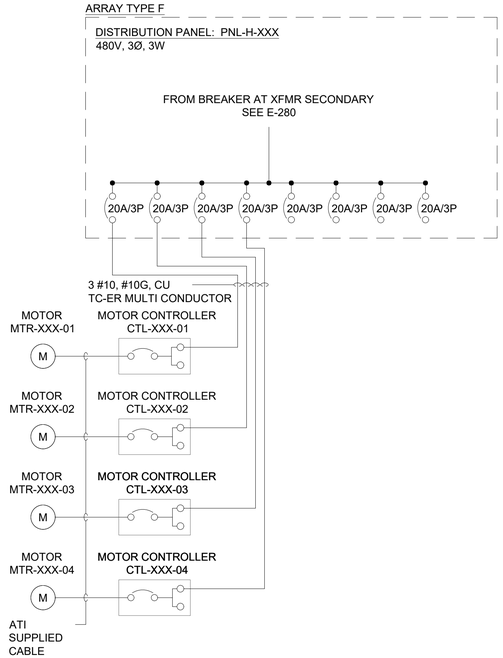
ARRAY TYPE E

DISTRIBUTION PANEL: PNL-H-205
480V, 3Ø, 3W



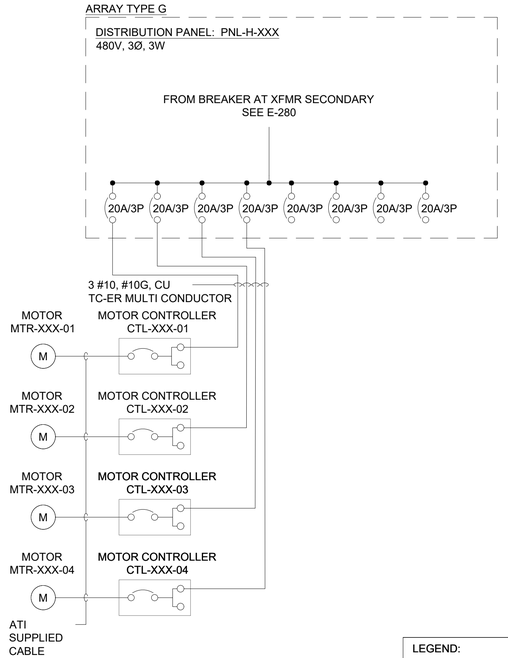
ARRAY TYPE F

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



ARRAY TYPE G

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



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

LEGEND:

SWITCH | FUSE | M MOTOR | CIRCUIT PHASE /AC CABLES | AC CIRCUIT BREAKER | TRANSFORMER

NOTES:

1. REFER TO DRAWINGS E-401 THROUGH E-426 FOR MOTOR LOCATIONS AND ASSOCIATED FEEDER ROUTING.

AS BUILT

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: LR
CHECKED BY: EL

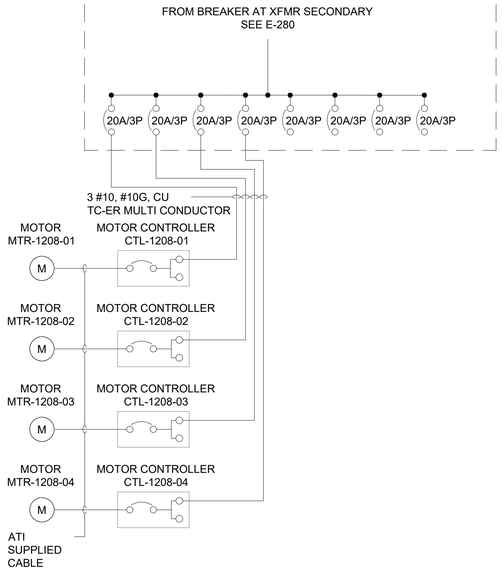
SHEET NAME:
TRACKER MOTOR SLD

SHEET #: E-290
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-290 TRACKER MOTOR SLD

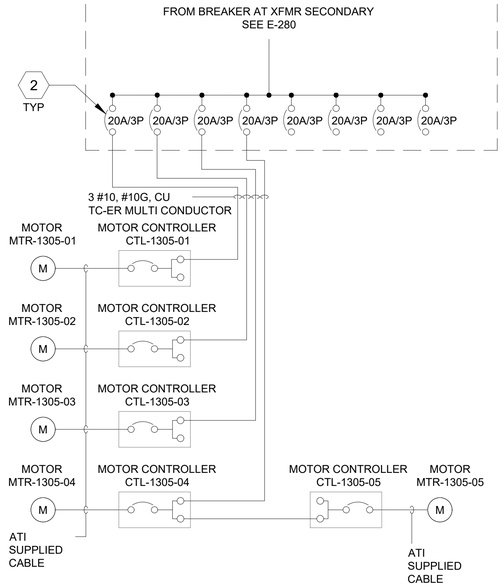
ARRAY TYPE H

DISTRIBUTION PANEL: PNL-H-1208
480V, 3Ø, 3W



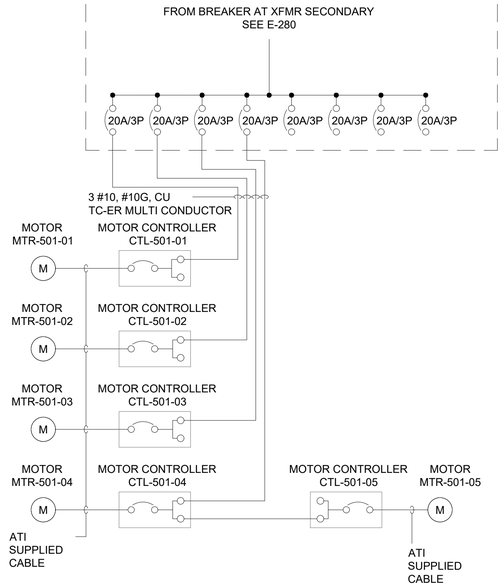
ARRAY TYPE I

DISTRIBUTION PANEL: PNL-H-1305
480V, 3Ø, 3W

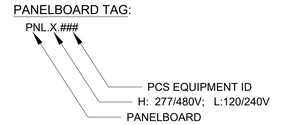


ARRAY TYPE J

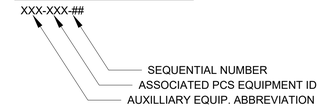
DISTRIBUTION PANEL: PNL-H-501
480V, 3Ø, 3W



PANELBOARD TAG:



AUXILLIARY EQUIPMENT TAG:



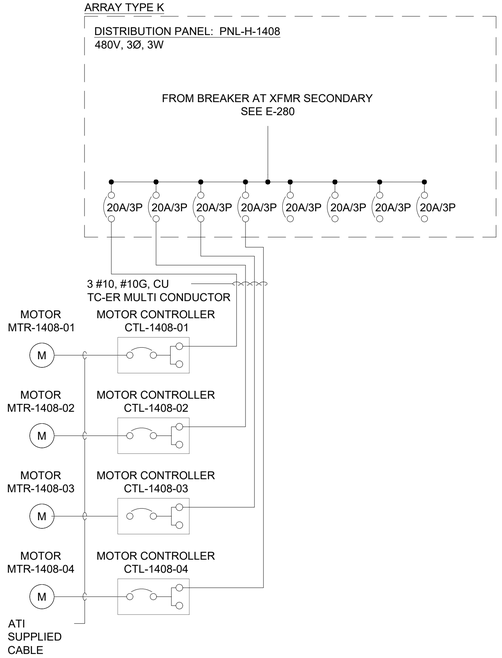
KEYED NOTES:

1. ALL EQUIPMENT, COMPONENTS AND DEVICES SHOWN WITHIN THIS DASHED LINE ARE PROVIDED WITH, AND INTEGRAL TO, THE INVERTER.
2. BREAKERS ARE SIZED IN ACCORDANCE WITH THE ATI 'STANDARD CONFIGURATION POWER REQUIREMENTS' DOCUMENT. PER THE DOCUMENT, THE MAXIMUM CONTINUOUS CURRENT PER MOTOR IS 3A @ 480V-3PH. IN-RUSH CURRENT IS AS FOLLOWS: I = 3A*6 + 3A = 21A. THE TRIP CURVE OF THE CIRCUIT BREKAER PROVIDED BY THE INVERTER MUST BE ABLE TO SUSTAIN THE IN-RUSH AS INDICATED TO AVOID ANY NUISANCE TRIPPING INCLUDING ANY TEMPERATURE DERATIONS. ADDITIONAL COORDINATION WITH ATI MAY BE REQUIRED TO UNDERSTAND THE MAXIMUM TIME LENGTH OF THE INRUSH CURRENT.

AUXILLIARY EQUIPMENT ABBREVIATIONS:
MTR MOTOR
CTL MOTOR CONTROLLER

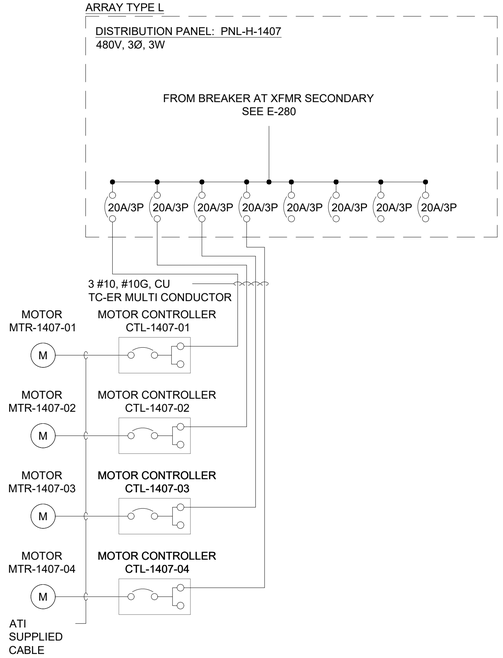
ARRAY TYPE K

DISTRIBUTION PANEL: PNL-H-1408
480V, 3Ø, 3W



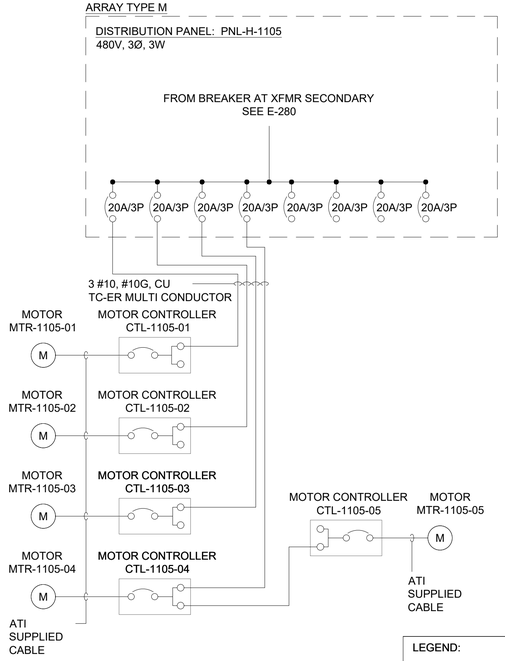
ARRAY TYPE L

DISTRIBUTION PANEL: PNL-H-1407
480V, 3Ø, 3W



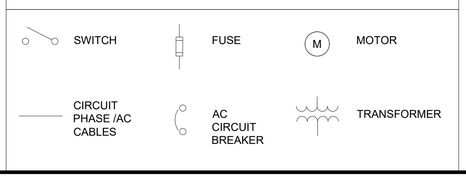
ARRAY TYPE M

DISTRIBUTION PANEL: PNL-H-1105
480V, 3Ø, 3W



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

LEGEND:



AS BUILT

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

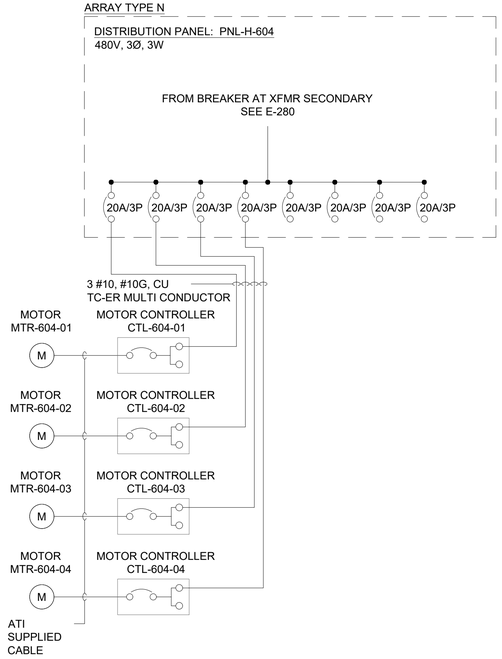
SHEET NAME:
TRACKER MOTOR SLD

SHEET #: E-291
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-291 TRACKER MOTOR SLD

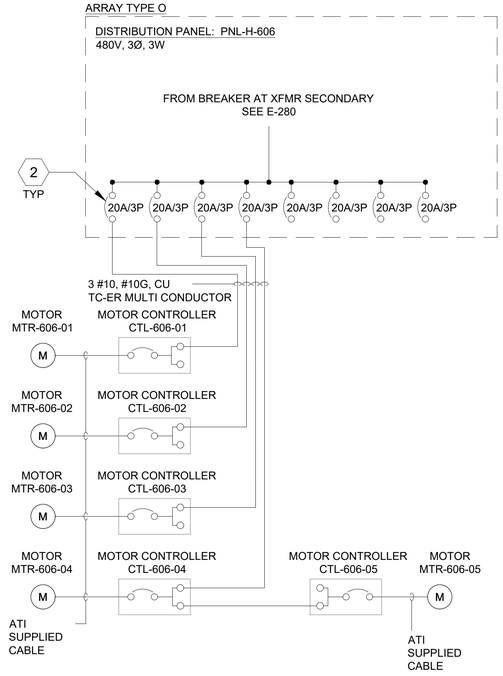
ARRAY TYPE N

DISTRIBUTION PANEL: PNL-H-604
480V, 3Ø, 3W



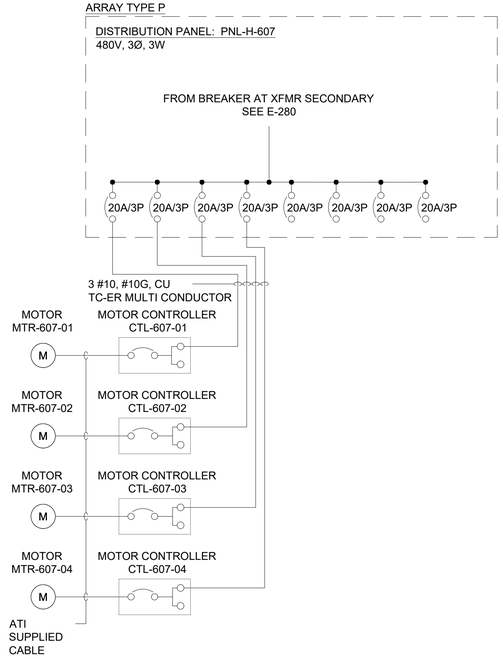
ARRAY TYPE O

DISTRIBUTION PANEL: PNL-H-606
480V, 3Ø, 3W



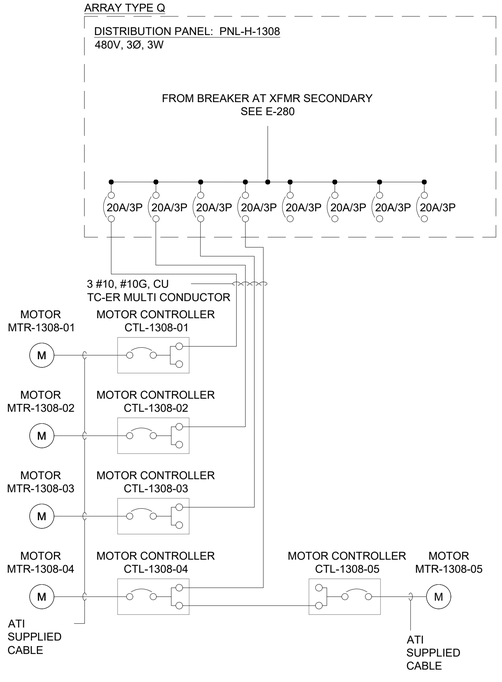
ARRAY TYPE P

DISTRIBUTION PANEL: PNL-H-607
480V, 3Ø, 3W



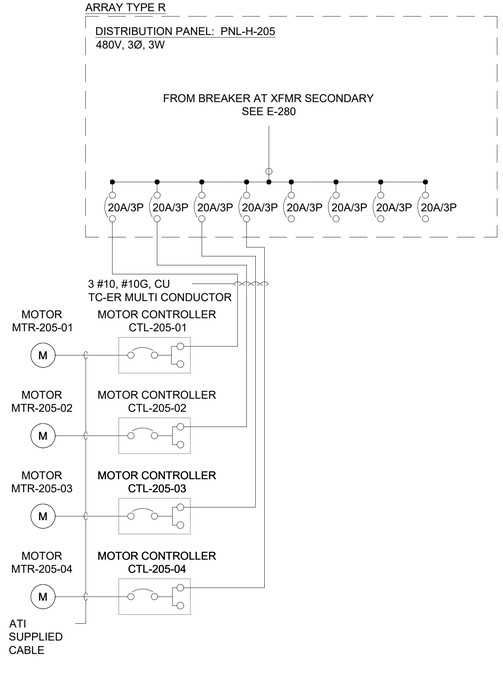
ARRAY TYPE Q

DISTRIBUTION PANEL: PNL-H-1308
480V, 3Ø, 3W



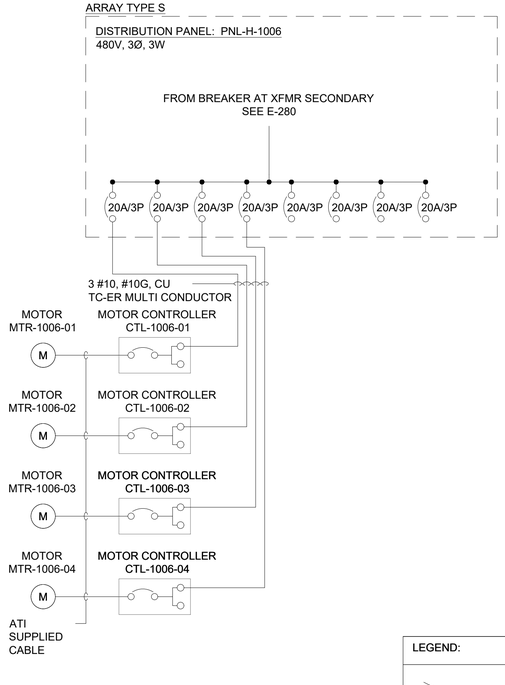
ARRAY TYPE R

DISTRIBUTION PANEL: PNL-H-205
480V, 3Ø, 3W

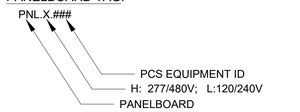


ARRAY TYPE S

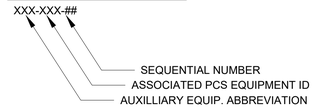
DISTRIBUTION PANEL: PNL-H-1006
480V, 3Ø, 3W



PANELBOARD TAG:



AUXILLIARY EQUIPMENT TAG:



KEYED NOTES:

1. ALL EQUIPMENT, COMPONENTS AND DEVICES SHOWN WITHIN THIS DASHED LINE ARE PROVIDED WITH, AND INTEGRAL TO, THE INVERTER.
2. BREAKERS ARE SIZED IN ACCORDANCE WITH THE ATI 'STANDARD CONFIGURATION POWER REQUIREMENTS' DOCUMENT. PER THE DOCUMENT, THE MAXIMUM CONTINUOUS CURRENT PER MOTOR IS 3A @ 480V-3PH. IN-RUSH CURRENT IS AS FOLLOWS: I = 3A*6 + 3A = 21A. THE TRIP CURVE OF THE CIRCUIT BREKAER PROVIDED BY THE INVERTER MUST BE ABLE TO SUSTAIN THE IN-RUSH AS INDICATED TO AVOID ANY NUISANCE TRIPPING INCLUDING ANY TEMPERATURE DERATIONS. ADDITIONAL COORDINATION WITH ATI MAY BE REQUIRED TO UNDERSTAND THE MAXIMUM TIME LENGTH OF THE INRUSH CURRENT.

1. REFER TO DRAWINGS E-401 THROUGH E-426 FOR MOTOR LOCATIONS AND ASSOCIATED FEEDER ROUTING.

AUXILLIARY EQUIPMENT ABBREVIATIONS:

MTR	MOTOR
CTL	MOTOR CONTROLLER

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

LEGEND:

SWITCH | FUSE | M MOTOR | CIRCUIT PHASE /AC CABLES | AC CIRCUIT BREAKER | TRANSFORMER

AS BUILT

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

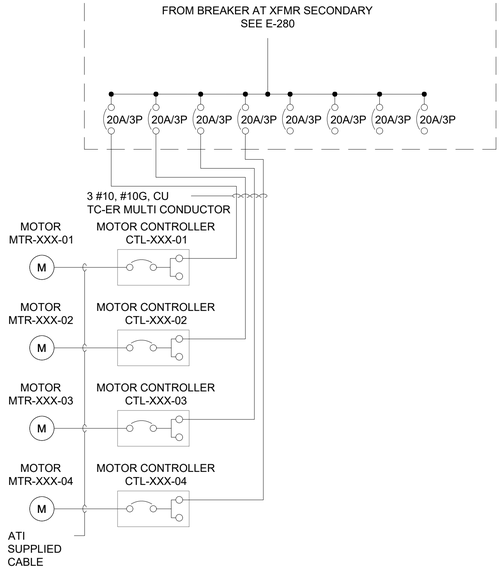
SHEET NAME:
TRACKER MOTOR SLD

SHEET #: E-292
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-292 TRACKER MOTOR SLD

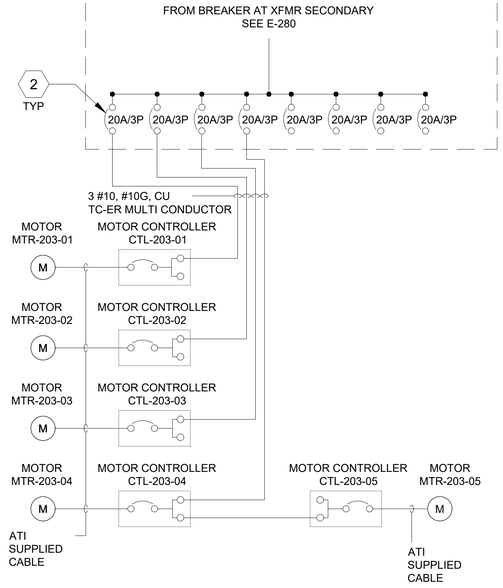
ARRAY TYPE T

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



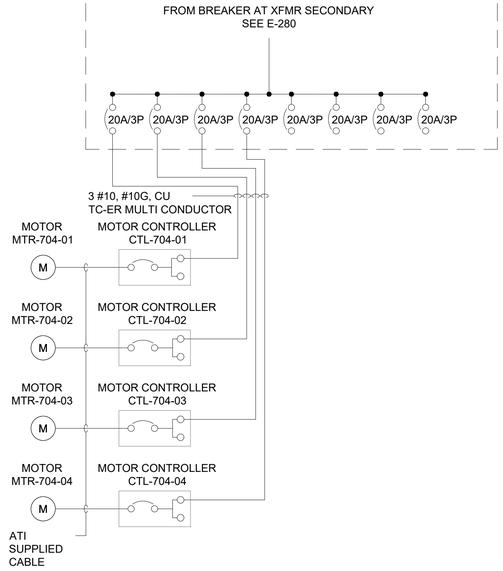
ARRAY TYPE U

DISTRIBUTION PANEL: PNL-H-203
480V, 3Ø, 3W



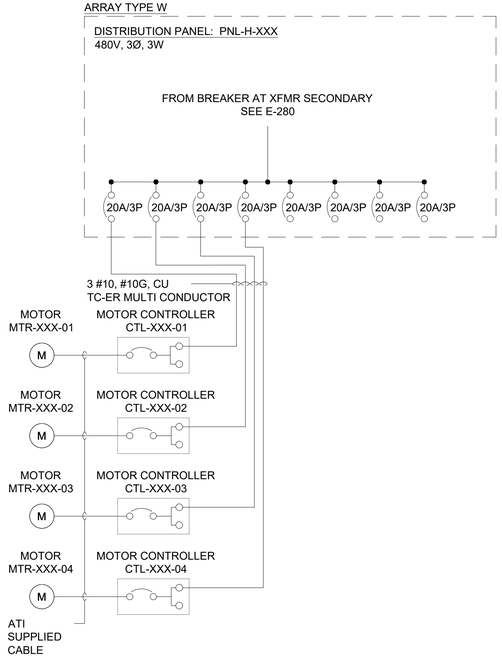
ARRAY TYPE V

DISTRIBUTION PANEL: PNL-H-704
480V, 3Ø, 3W



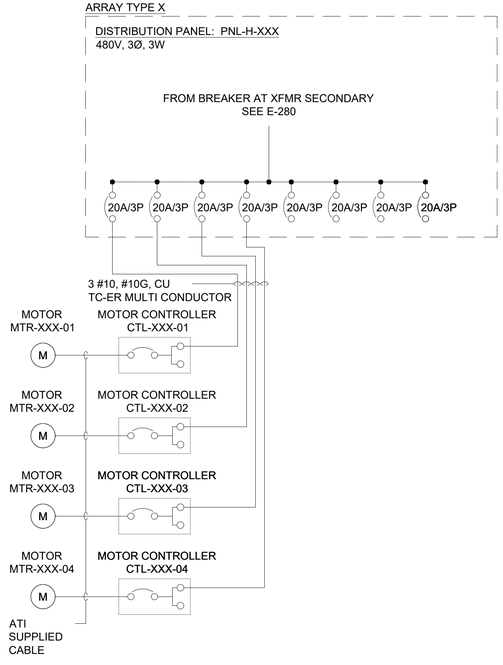
ARRAY TYPE W

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W



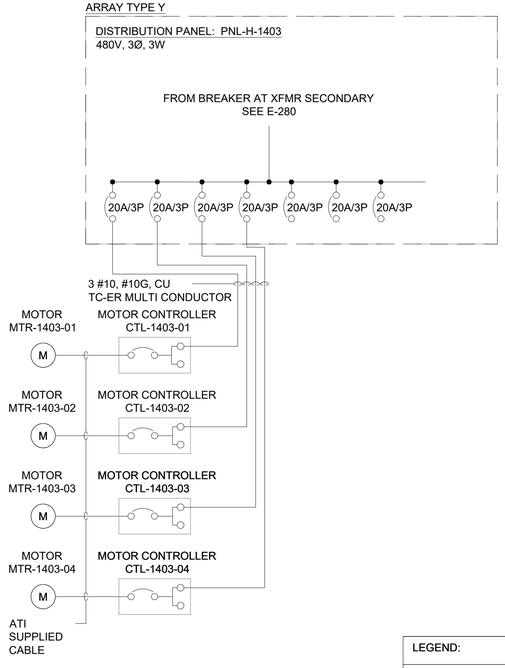
ARRAY TYPE X

DISTRIBUTION PANEL: PNL-H-XXX
480V, 3Ø, 3W

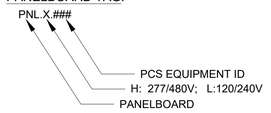


ARRAY TYPE Y

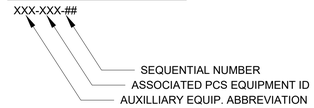
DISTRIBUTION PANEL: PNL-H-1403
480V, 3Ø, 3W



PANELBOARD TAG:



AUXILLIARY EQUIPMENT TAG:



KEYED NOTES:

1. ALL EQUIPMENT, COMPONENTS AND DEVICES SHOWN WITHIN THIS DASHED LINE ARE PROVIDED WITH, AND INTEGRAL TO, THE INVERTER.
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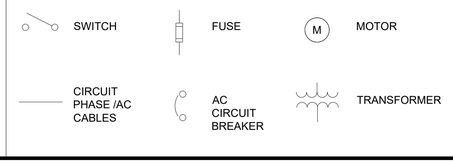
1. REFER TO DRAWINGS E-401 THROUGH E-426 FOR MOTOR LOCATIONS AND ASSOCIATED FEEDER ROUTING.

AUXILLIARY EQUIPMENT ABBREVIATIONS:

MTR	MOTOR
CTL	MOTOR CONTROLLER

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

LEGEND:



AS BUILT

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

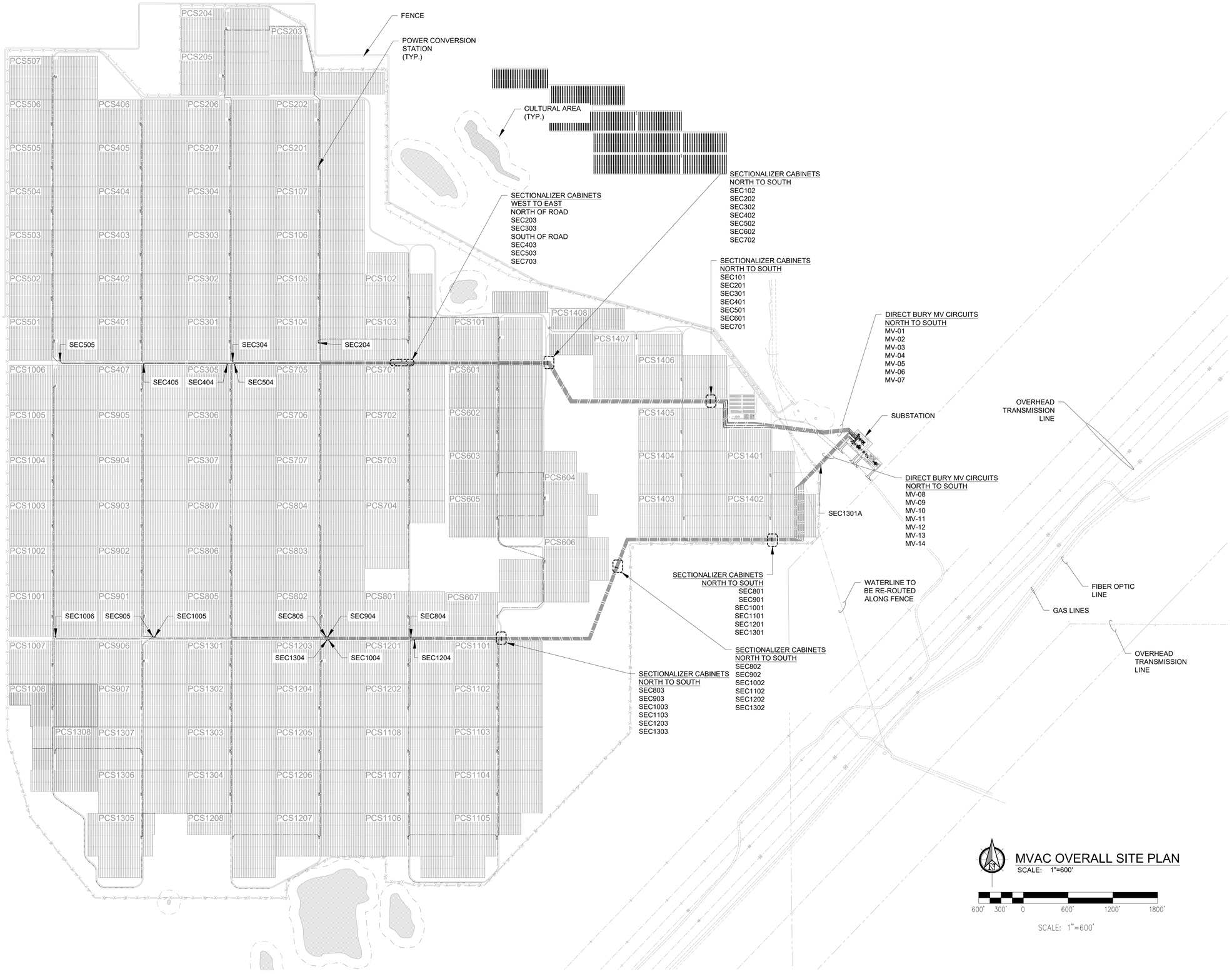
SEAL:

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

SHEET NAME:
TRACKER MOTOR SLD

SHEET #: E-293
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-293 TRACKER MOTOR SLD



MVAC OVERALL SITE PLAN
SCALE: 1"=600'

600' 300' 0 600' 1200' 1800'

SCALE: 1"=600'

NOTES:

1. WORK WITH-IN SUBSTATION IN ITS ENTIRETY IS BY OTHERS. LOCATION, SIZE, ETC. DEPICTED ON THESE PLANS IS FOR REFERENCE ONLY AND MAY NOT DEPICT ACTUAL FIELD CONDITIONS.
2. REFER TO E-500 FOR COMMUNICATIONS SITE PLAN.
3. REFER TO E-700 FOR GROUNDING SITE PLAN.

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

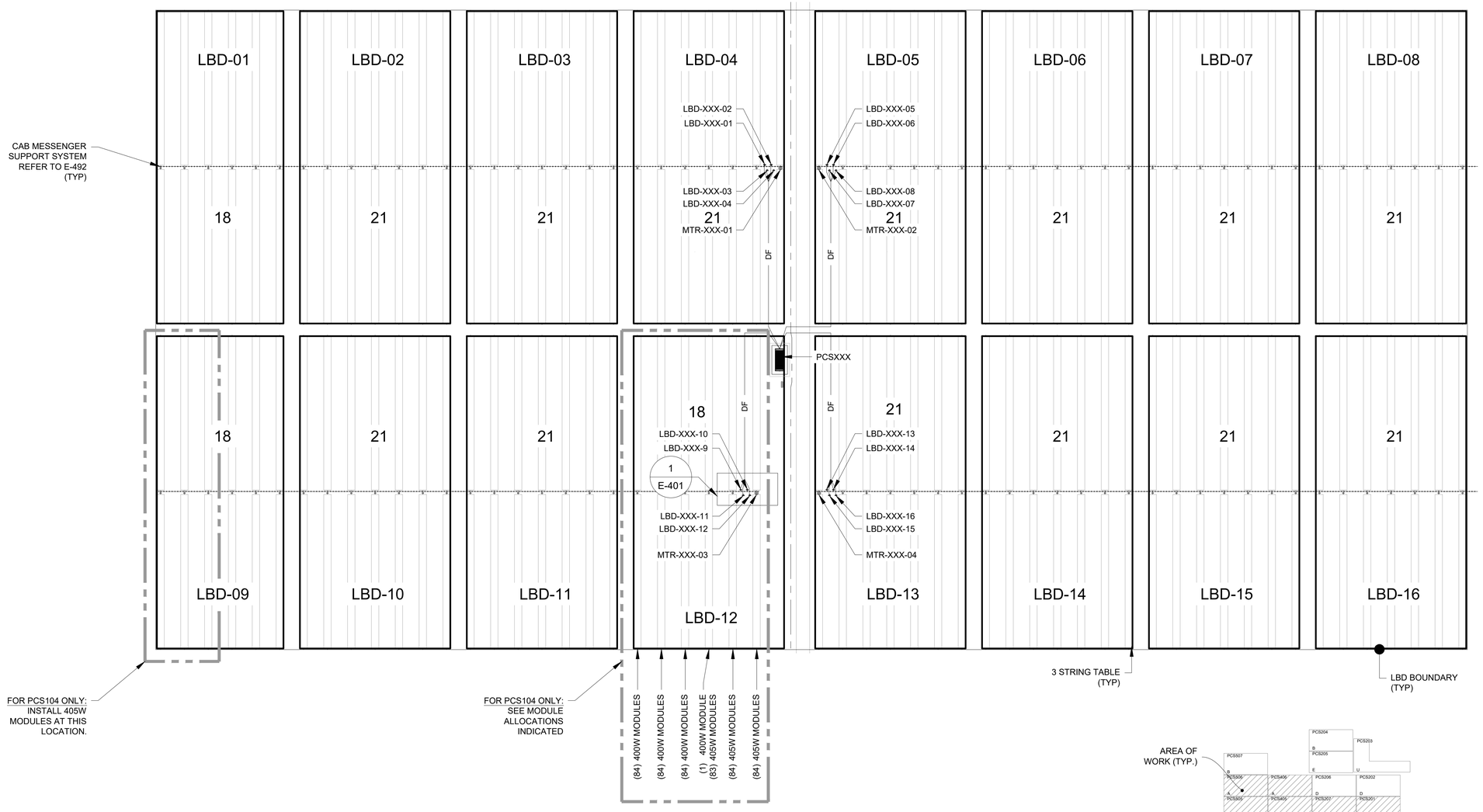
SEAL:

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

SHEET NAME:
MVAC OVERALL SITE PLAN

SHEET #: E-300
REV #: 4

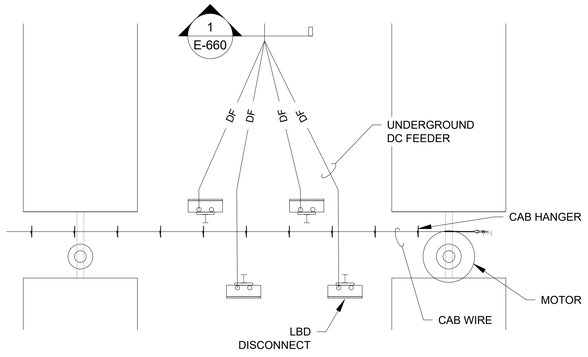
PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
LOCATION: K:_09_PROJECTS\190067.03 - PRIMORIS - EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-300 MVAC OVERALL SITE PLAN



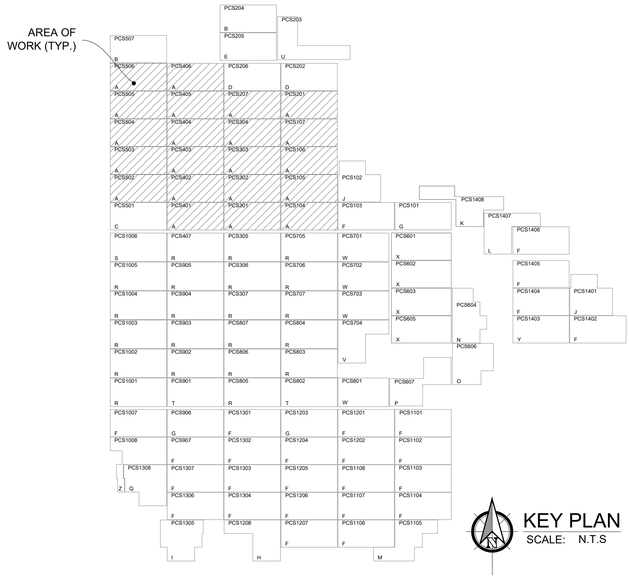
DC PLAN - ARRAY TYPE - A (TRINA)
SCALE: 1"=50'

50' 25' 0 50' 100' 150'

SCALE: 1"=50'



1 LBD LAYOUT DETAIL



KEY PLAN
SCALE: N.T.S

NOTES:

1. DC FEEDER TAGS ARE SAME AS LBD TAGS EXCEPT SUBSTITUTING 'DF' IN PLACE OF 'LBD'.
2. REFER TO SHEET E-005 - BLOCK SCHEDULE AND SHEET E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING MODULE QUANTITIES ASSOCIATED WITH PCS-SPECIFIC ARRAY TYPES.

LEGEND:

DF — DC FEEDER

HANGER SYSTEM

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:

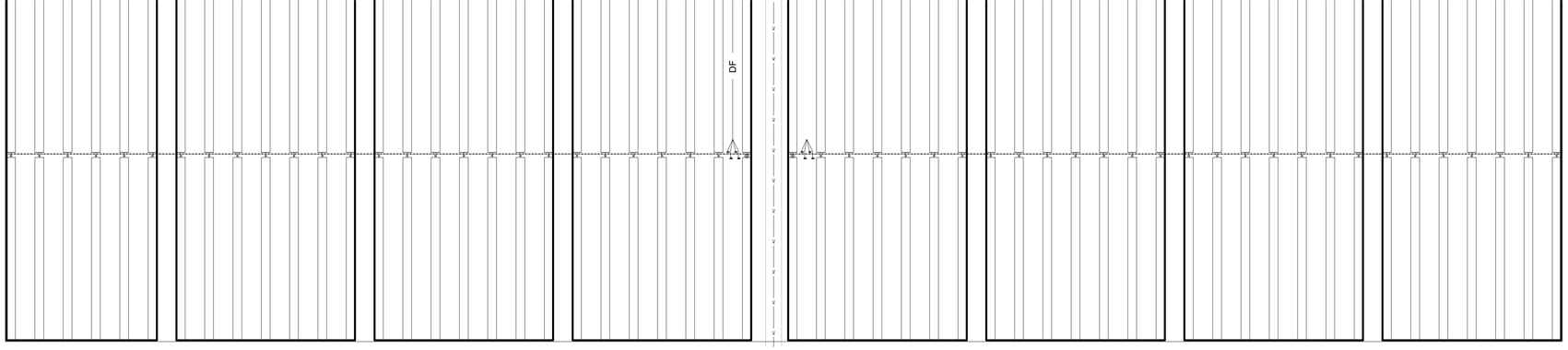
DATE: 10/16/2020
PROJECT #: 190067.03
DRAWN BY: NK
CHECKED BY: EL

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

SHEET #: E-401
REV #: 4

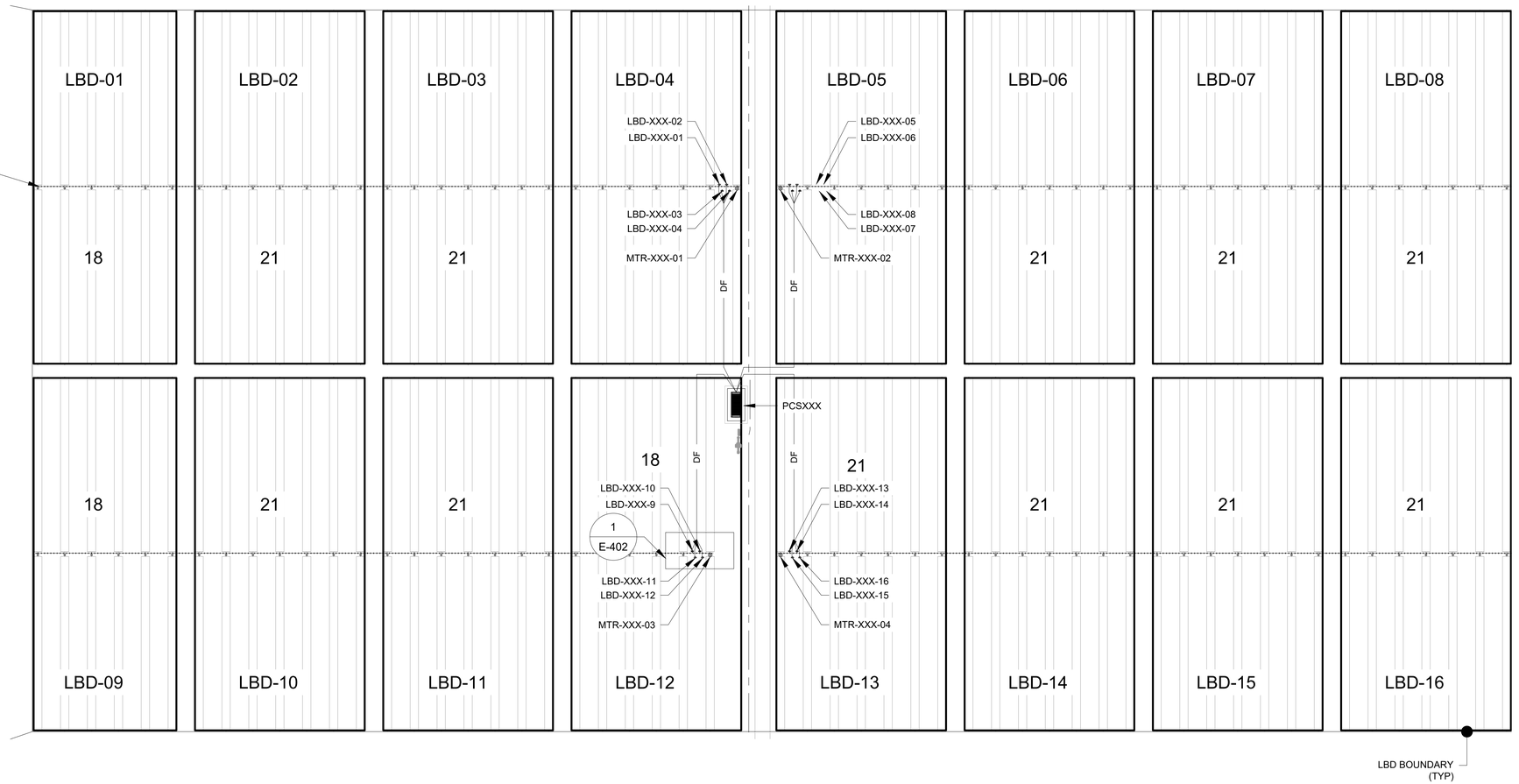
RECORD DRAWING

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-401 DC PLAN - ARRAY TYPE A (TRINA).dwg



A B C D E F G H I J

7 6 5 4 3

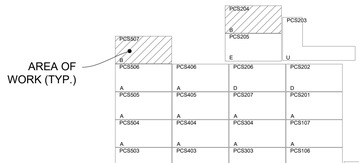


DC PLAN - ARRAY TYPE - B (TRINA)

SCALE: 1"=50'

50' 25' 0 50' 100' 150'

SCALE: 1"=50'



NOTES:

1. DC FEEDER TAGS ARE SAME AS LBD TAGS EXCEPT SUBSTITUTING 'DF' IN PLACE OF 'LBD'.
2. REFER TO SHEET E-005 - BLOCK SCHEDULE AND SHEET E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING MODULE QUANTITIES ASSOCIATED WITH PCS-SPECIFIC ARRAY TYPES.

LEGEND:

DF — DC FEEDER

HANGER SYSTEM

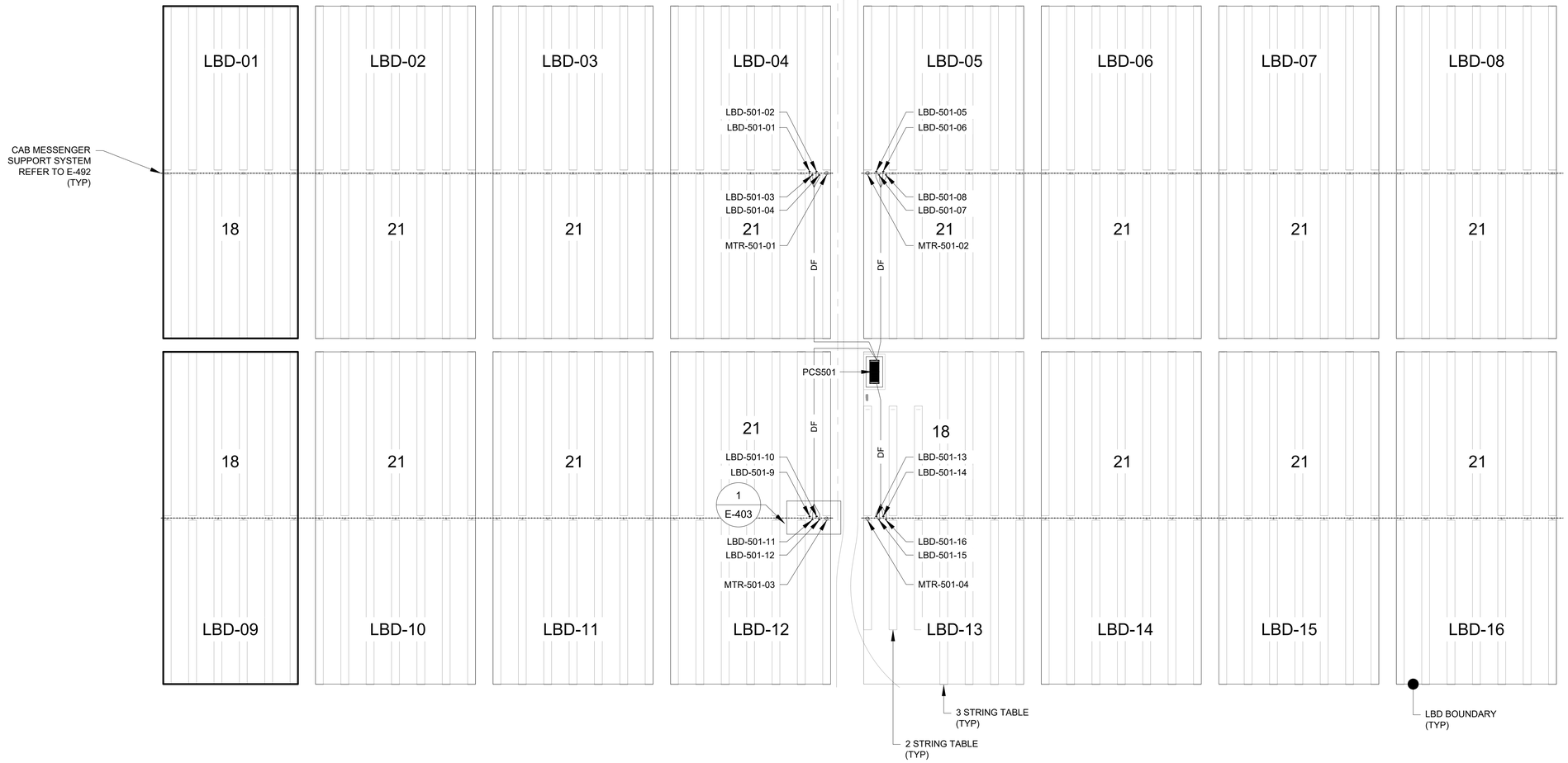
ARRAY TYPE	ASSOCIATED PCS
A	PCS104 PCS105 PCS106 PCS107 PCS201 PCS207 PCS301 PCS302 PCS303 PCS304 PCS401 PCS402 PCS403 PCS404 PCS405 PCS406 PCS502 PCS503 PCS504 PCS505 PCS506
B	PCS204 PCS507
C	PCS501
D	PCS202 PCS206
E	PCS205
F	PCS103 PCS907 PCS1007 PCS1101 PCS1102 PCS1103 PCS1104 PCS1106 PCS1107 PCS1108 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: SBE 26-113 Pg 374
EAGLE SHADOW MOUNTAIN

PLOT DATE: Thursday, June 08, 2023
PLOT BY: Brady Burgason
SAVED BY: brady.burgason
M:\EAGLE SHADOW MOUNTAIN\05 ENGINEERING*DWG\E-402 DC PLAN - ARRAY TYPE B (TRINA)

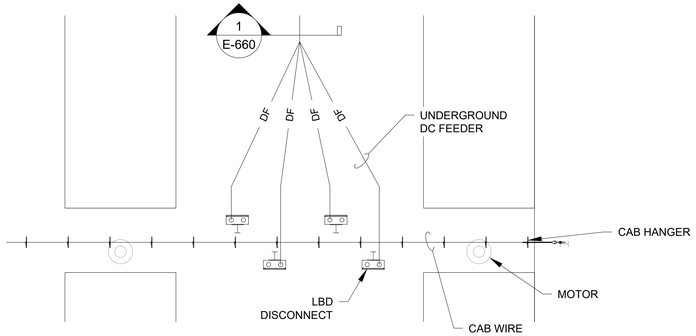


DC PLAN - ARRAY TYPE - C (TRINA)

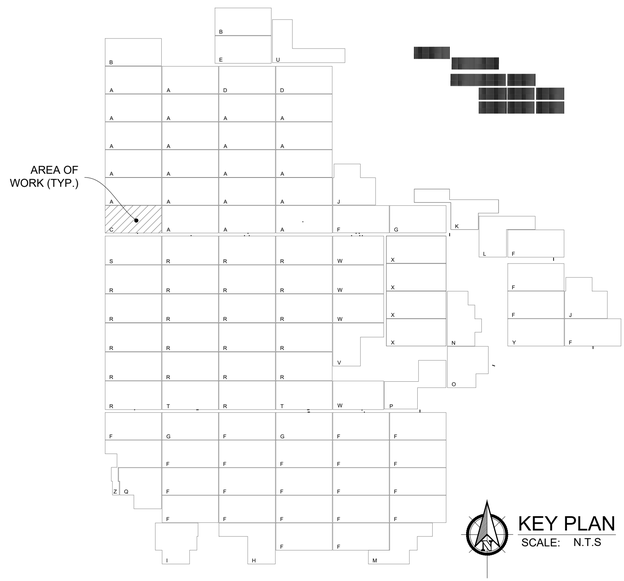
SCALE: 1"=50'

50' 25' 0 50' 100' 150'

SCALE: 1"=50'



1 LBD LAYOUT DETAIL



KEY PLAN

SCALE: N.T.S

NOTES:

1. DC FEEDER TAGS ARE SAME AS LBD TAGS EXCEPT SUBSTITUTING 'DF' IN PLACE OF 'LBD'.
2. REFER TO SHEET E-005 - BLOCK SCHEDULE AND SHEET E-011 - MODULE ALLOCATION PLAN FOR SPECIFIC INFORMATION REGARDING MODULE QUANTITIES ASSOCIATED WITH PCS-SPECIFIC ARRAY TYPES.

LEGEND:

DF

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

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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: NK
CHECKED BY: EL

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

SHEET #: E-403
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-403 DC PLAN - ARRAY TYPE C (TRINA)