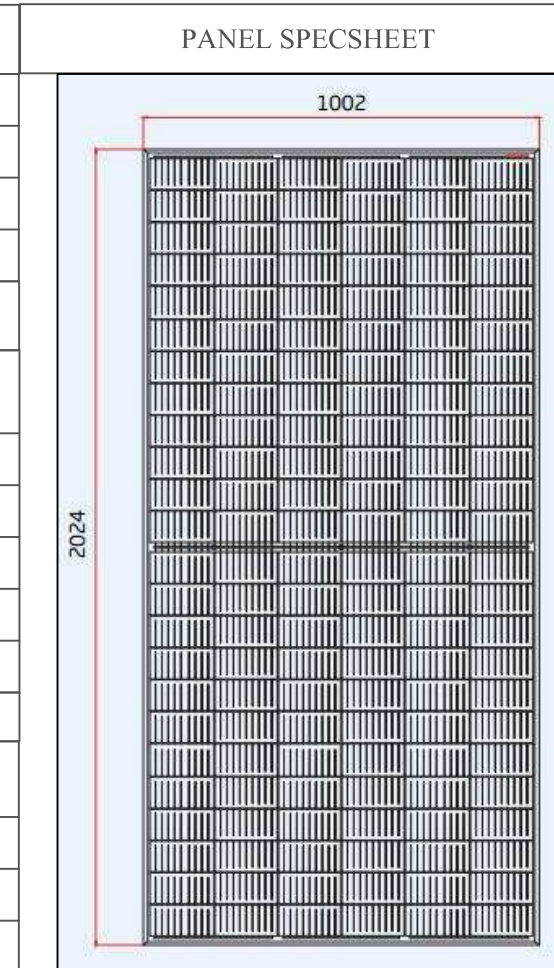


Contour™

PROJECT INFORMATION

PROJECT NAME	BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR - GS
INSTALLATION ADDRESS	LOT 33 PROSPECT STREET, BURLINGTON, CT 06013
CLIENT	VEROGY

SITE SPECIFICATION	
WIND SPEED (MPH)	110 ASCE 7-10
SNOW LOAD (PSF)	35 ASCE 7-10
EXPOSURE CATEGORY	C ASCE 7-10
RISK CATEGORY	1 ASCE 7-10



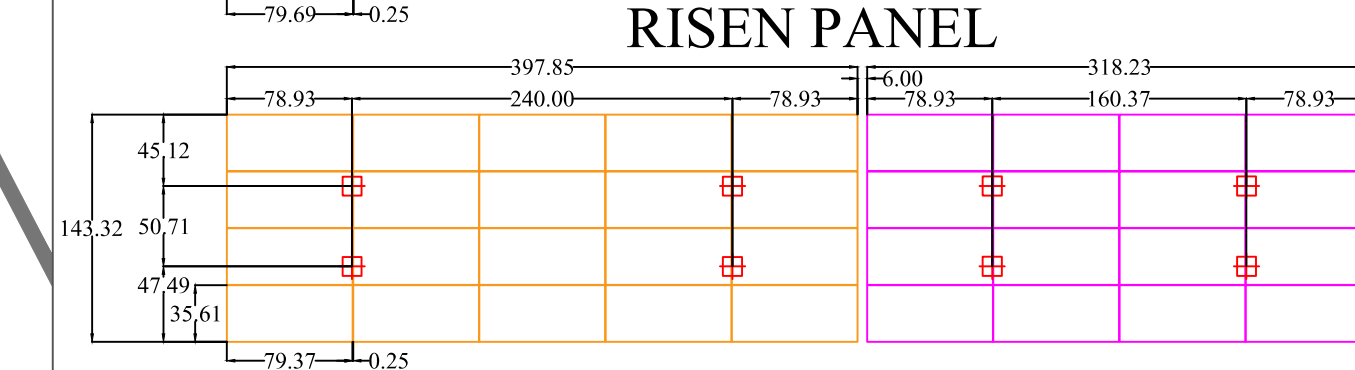
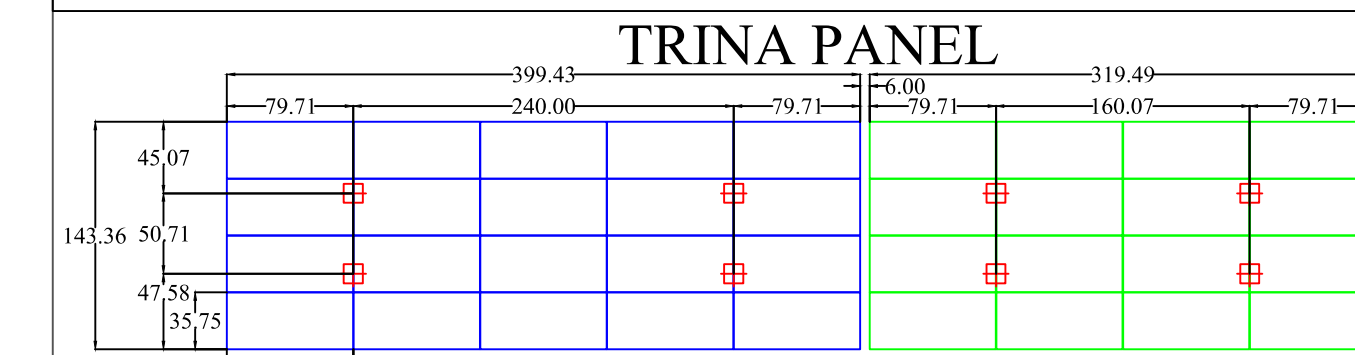
PANEL SPECIFICATION	
MODEL	TRINA SOLAR TSM-DEG15MC.20(II)
LENGTH (mm)	2024
WIDTH (mm)	1002
WEIGHT (lb)	57.3
PANEL WATTAGE (W)	400
PROJECT PANEL COUNT	12,194

SYSTEM INFORMATION	
ARRAY CONFIGURATION	4x5, 4x4
SYSTEM SIZE (W)	4,824,560
ARRAY TILT (°)	25
GROUND CLEARANCE (in)	36

ARRAY DETAILS

ITEM	QUANTITY
Trina Panels	9542
Risen Panels	2652
Trina 4x5 Table	450
Trina 4x4 Table	34
Risen 4x5 Table	103
Risen 4x4 Table	37
Ground Screws	2496
Alternate Connection Locations	117
Trina Non-Producing Panel	2

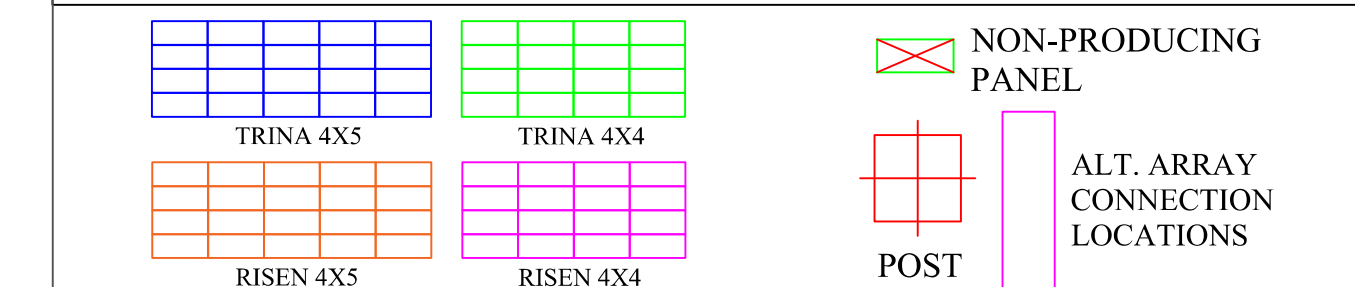
CAD BLOCK



GENERAL NOTES

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3. CUSTOMER PROVIDED SITE LAYOUTS WERE USED TO GENERATE THE LAYOUT AS SHOWN.
4. ANY CHANGES TO THE LAYOUT SHOWN THAT MAY CAUSE ERRORS DURING INSTALLATION ARE NOT THE RESPONSIBILITY OF DCE SOLAR.

LEGEND DETAILS

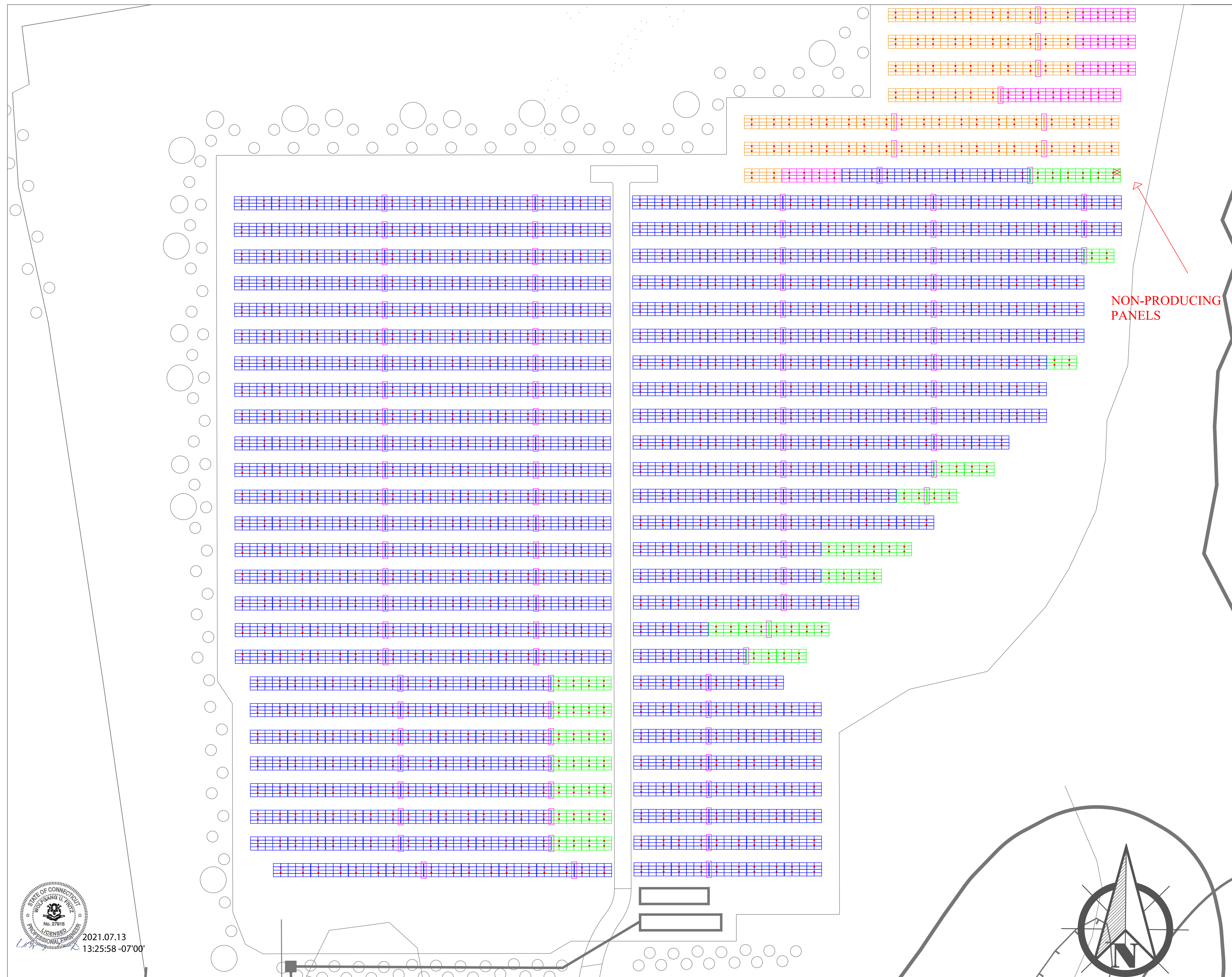


REVISION NOTES

REV	DESCRIPTION	PREPARED BY	DATE
0	GROUND MOUNT LAYOUT	A. MORLACCI	7/14/2020
1	ADDED 2 PLACEHOLDER MODS, REDUCED TOTAL	A. MORLACCI	8/3/2020
2	REVISED LAYOUT	T. MAYHEW	7/7/2021
3			
4			

19410 Jetton Rd., Ste 220
 Cornelius, NC 28031
 www.dcesolar.com
 Phone: 1-704-459-7474

Format: **D**
 SHEET: 4 OF 5



STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 No. 27916
 2021.07.13
 13:25:58 -0700

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PROJECT INFORMATION

PROJECT NAME	BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR - GS
INSTALLATION ADDRESS	LOT 33 PROSPECT STREET, BURLINGTON, CT 06013
CLIENT	VEROGY

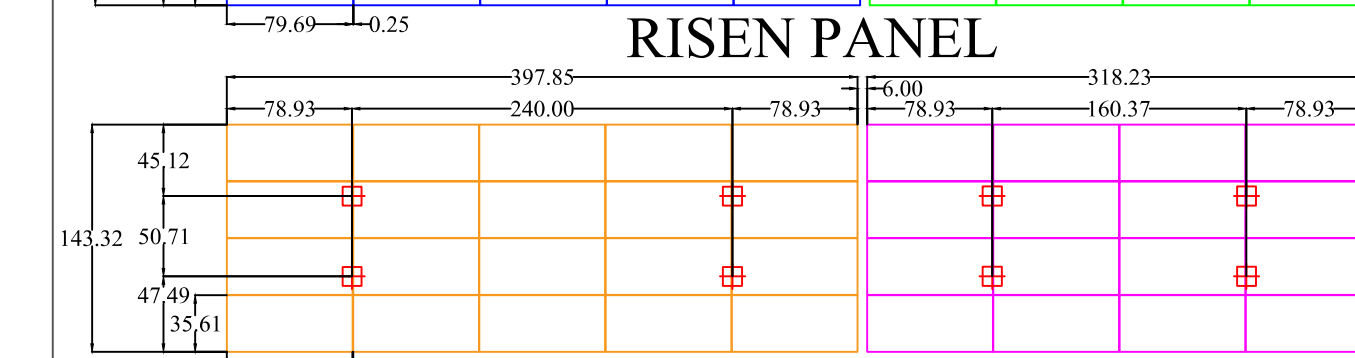
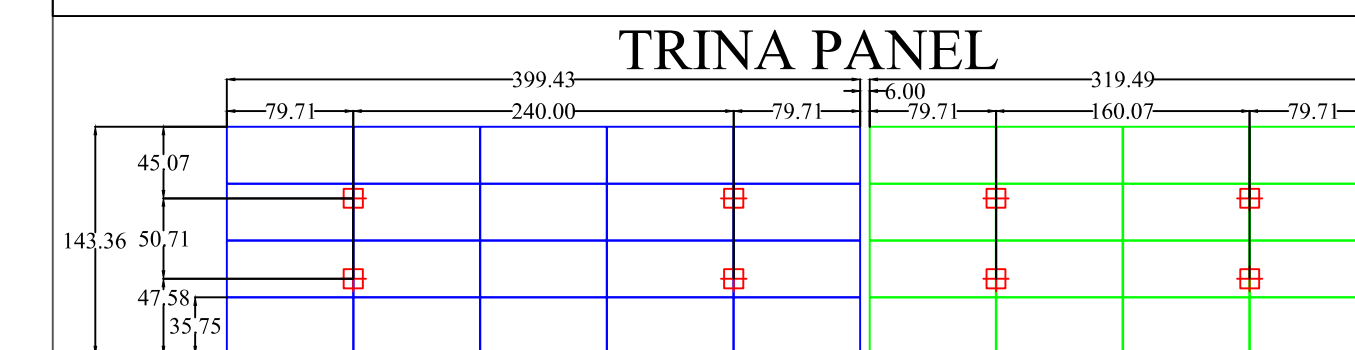
SITE SPECIFICATION		PANEL SPECSHEET
WIND SPEED (MPH)	110 ASCE 7-10	
SNOW LOAD (PSF)	35 ASCE 7-10	
EXPOSURE CATEGORY	C ASCE 7-10	
RISK CATEGORY	1 ASCE 7-10	

PANEL SPECIFICATION	
MODEL	RISEN SOLAR RSM144-6-380BMDG
LENGTH (mm)	2016
WIDTH (mm)	998
WEIGHT (lb)	57.32
PANEL WATTAGE (W)	380
PROJECT PANEL COUNT	12,194

SYSTEM INFORMATION	
ARRAY CONFIGURATION	4x5, 4x4
SYSTEM SIZE (W)	4,824,560
ARRAY TILT (°)	25
GROUND CLEARANCE (in)	36

ARRAY DETAILS	
ITEM	QUANTITY
Trina Panels	9542
Risen Panels	2652
Trina 4x5 Table	450
Trina 4x4 Table	34
Risen 4x5 Table	103
Risen 4x4 Table	37
Ground Screws	2496
Alternate Connection Locations	117
Trina Non-Producing Panel	2

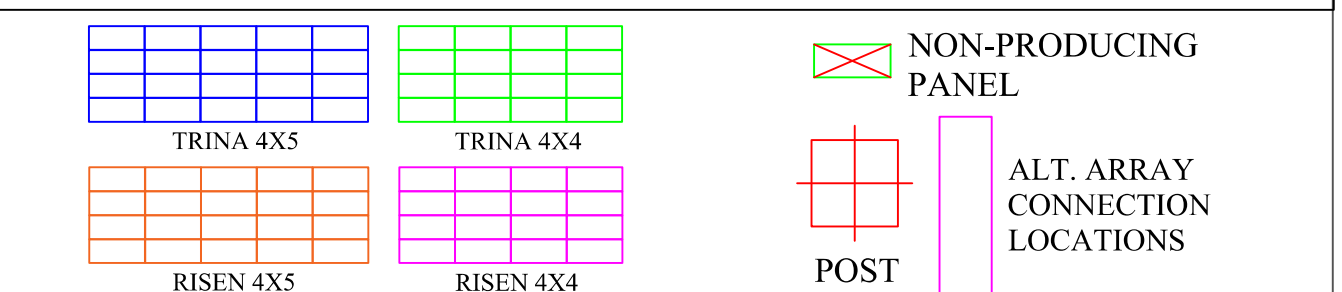
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GENERAL NOTES

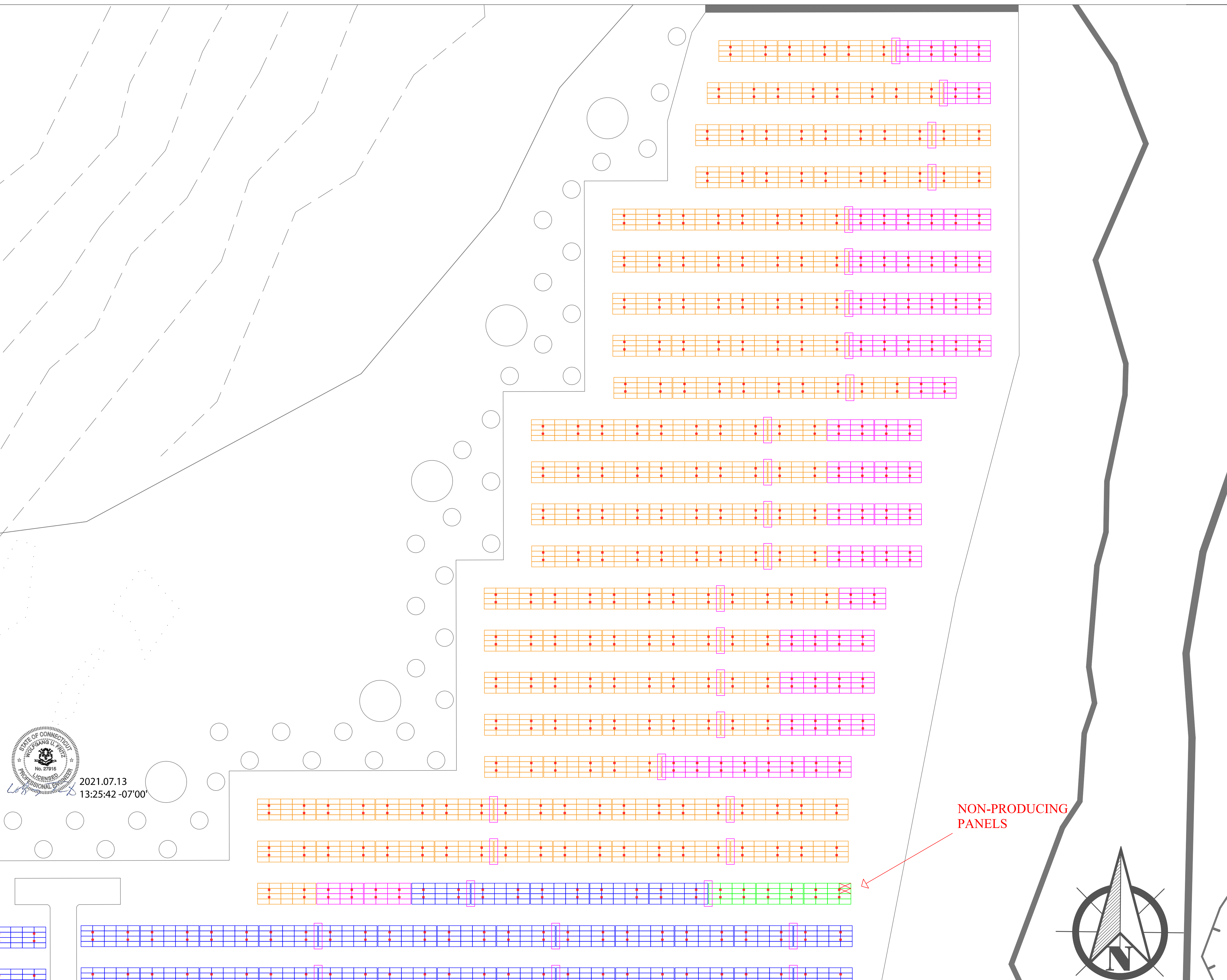
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3. CUSTOMER PROVIDED SITE LAYOUTS WERE USED TO GENERATE THE LAYOUT AS SHOWN.
4. ANY CHANGES TO THE LAYOUT SHOWN THAT MAY CAUSE ERRORS DURING INSTALLATION ARE NOT THE RESPONSIBILITY OF DCE SOLAR.

LEGEND DETAILS



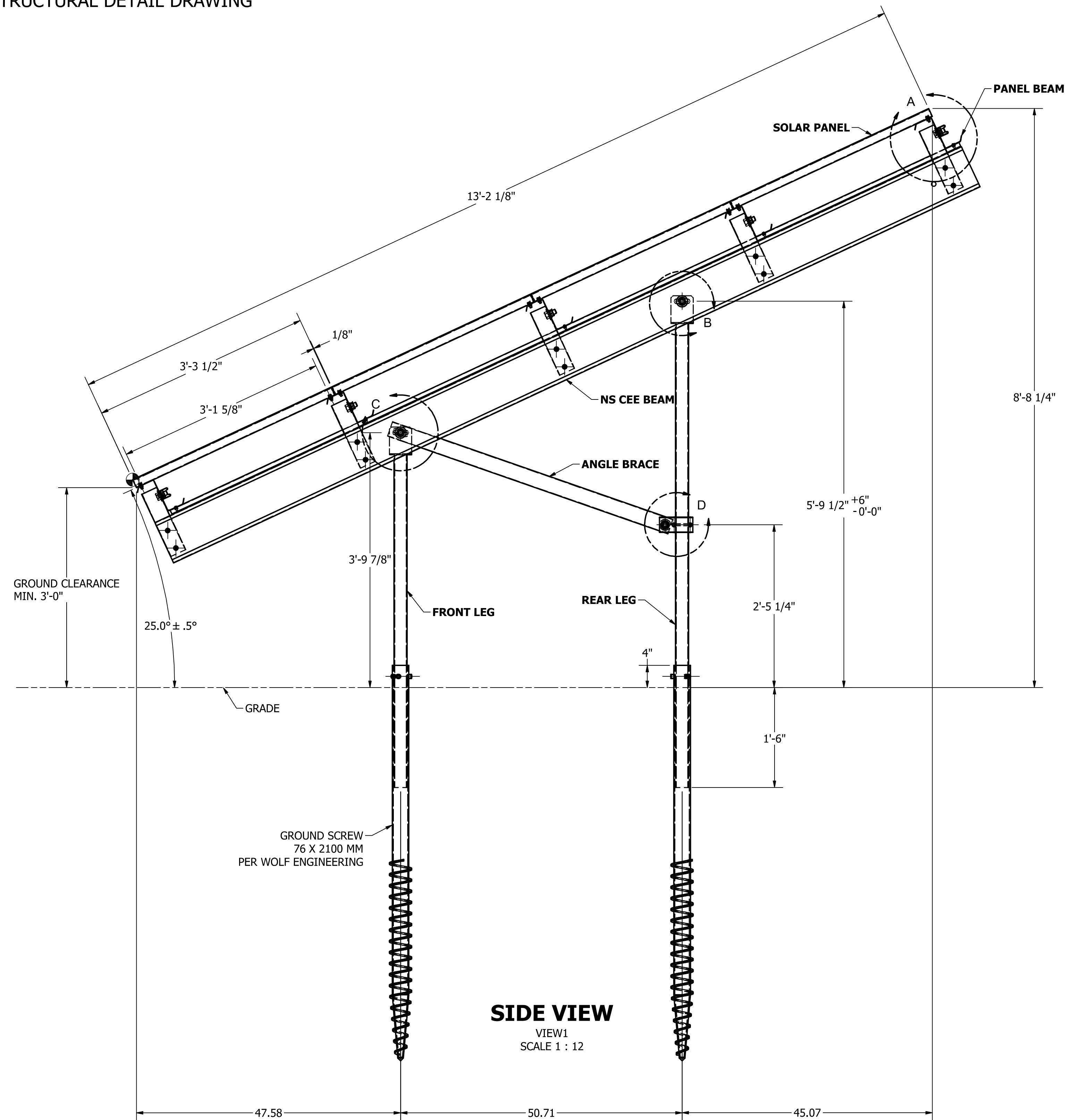
REVISION NOTES

REV	DESCRIPTION	PREPARED BY	DATE
0	GROUND MOUNT LAYOUT	A. MORLACCI	7/14/2020
1	ADDED 2 PLACEHOLDER MODS, REDUCED TOTAL	A. MORLACCI	8/3/2020
2	REVISED LAYOUT	T. MAYHEW	7/7/2021
3			
4			



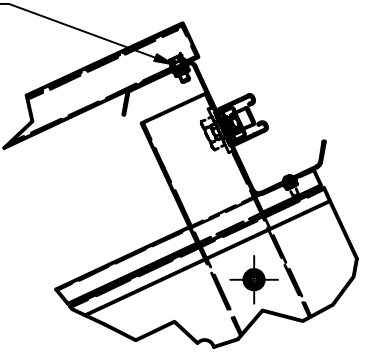
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**APPENDIX- A
STRUCTURAL DETAIL DRAWING**



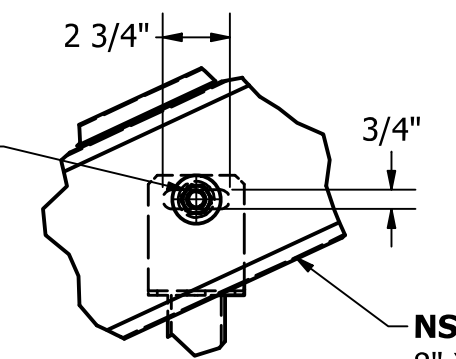
SIDE VIEW
VIEW1
SCALE 1 : 12

PANEL ATTACHES TO PANEL BEAMS WITH
(4) 5/16-18 X 3/4" SERRATED FLANGE CAP SCREWS
AND 5/16-18 SERRATED FLANGE NUTS.
TORQUE TO 15 FT-LBS.



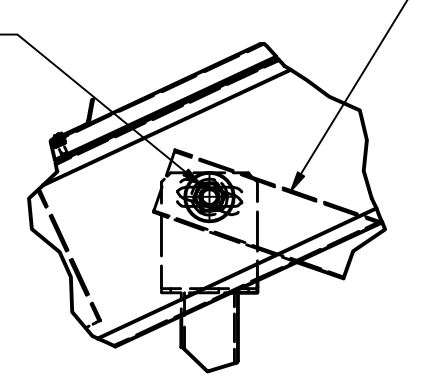
DETAIL A
SCALE 1 / 8

WELDED LEG ADAPTER BRACKET A36 STEEL,
HSS2.375X0.154, A500 C,
HOT DIP GALVANIZED TO ASTM A123.
ATTACHES TO NS BEAM WITH (1) 3/4-10 X 1.5" GRADE 5
STEEL HHCS, WASHER, AND SERRATED FLANGE NUT.
TORQUE TO 250 FT-LBS.



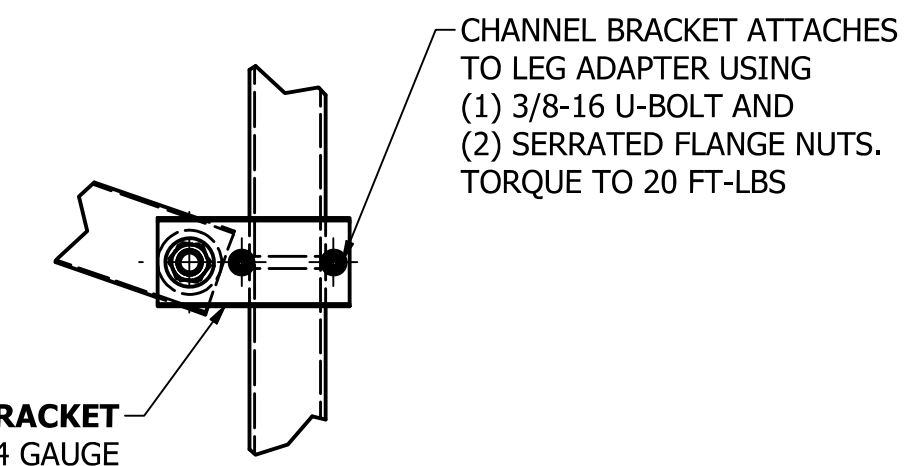
DETAIL B
SCALE 1 / 8

NS CEE BEAM ATTACHES
TO ANGLE BRACE WITH
(1) 3/4-10 X 1.5" GRADE 5
STEEL HHCS, WASHER,
AND SERRATED FLANGE NUT.
TORQUE TO 250 FT-LBS



DETAIL C
SCALE 1 / 8

CHANNEL BRACKET
2.75" X 1.75" U-CHANNEL, 14 GAUGE
ASTM A653 GRADE 50 SS STEEL G115 GALVANIZED.
ATTACHES TO ANGLE BRACE WITH (1) 3/4-10 X 1.5" GRADE 5
STEEL HHCS, WASHER AND SERRATED FLANGE NUT.
TORQUE TO 250 FT-LBS



DETAIL D
SCALE 1 / 6

PROJECT INFORMATION
INSTALLATION ADDRESS: LOT 33 PROSPECT STREET, BURLINGTON, CT
06013

Structural General Notes

- The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
- If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.
- These drawings and notes are for this specific project and no other use is authorized.
- Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISC 360-10 (14th Edition), and AISI S100-12: ASD
Snow Loads:
-Ground Snow Load $p_g = 40$ psf
-Importance Factor $I_s = 0.8$
-Exposure Factor $C_e = 1.0$
-Slope Snow Load $p_s = 30$ psf
Wind Loads:
-Basic Wind Speed $V = 110$ mph (MRI = 0.93 or 25 year)
- $I_w = 1$
-Exposure = C
-Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.
Seismic Loads:
-SS = 0.182g, S1 = 0.065g
-Site Class = D
-SDS = 0.190g, SD1 = 0.100g
-Seismic Design Category = B
-Ordinary Steel Cantilever Column System
- Material strengths:
-Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
-Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
-Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
-I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
-Plate - A36 Steel, Hot Dip Galvanized
-Connectors - Stainless Steel unless otherwise noted.
- Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
- Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
- For the purposes of this project, all arrays are classified as Exterior Arrays.
- Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record



REVISION HISTORY			
REV	DESCRIPTION	DATE	DESIGNER
0	STRUCTURAL DETAIL DRAWING	7/15/2020	JSCOTT
1	REVISED GML ON PAGE 4	7/7/2021	TMAYHEW

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 DCE SOLAR Building the Future for Solar 19410 Jetton Rd, Ste 220 Cornelius, NC, 28031 www.dcesolar.com Phone: 1-704-659-7474	Material:	1758.293 lbmass	
	Weight:	CT-BF-DB, TRINA SOLAR TSM-DEG15MC.20(II), 4x5, 25 DEG, BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR, VEROGY	
	Description:	BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR	
	Project:	BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR	
Drawn:	TMAYHEW	Date:	7/7/2021
Scale:		Sheet:	1 of 5
Format:	D	Part Number:	4637
Rev:		Rev:	1

STRUCTURAL DETAIL DRAWING - REAR

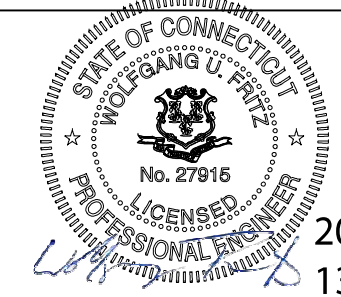
PROJECT INFORMATION

INSTALLATION ADDRESS: LOT 33 PROSPECT STREET, BURLINGTON, CT 06013

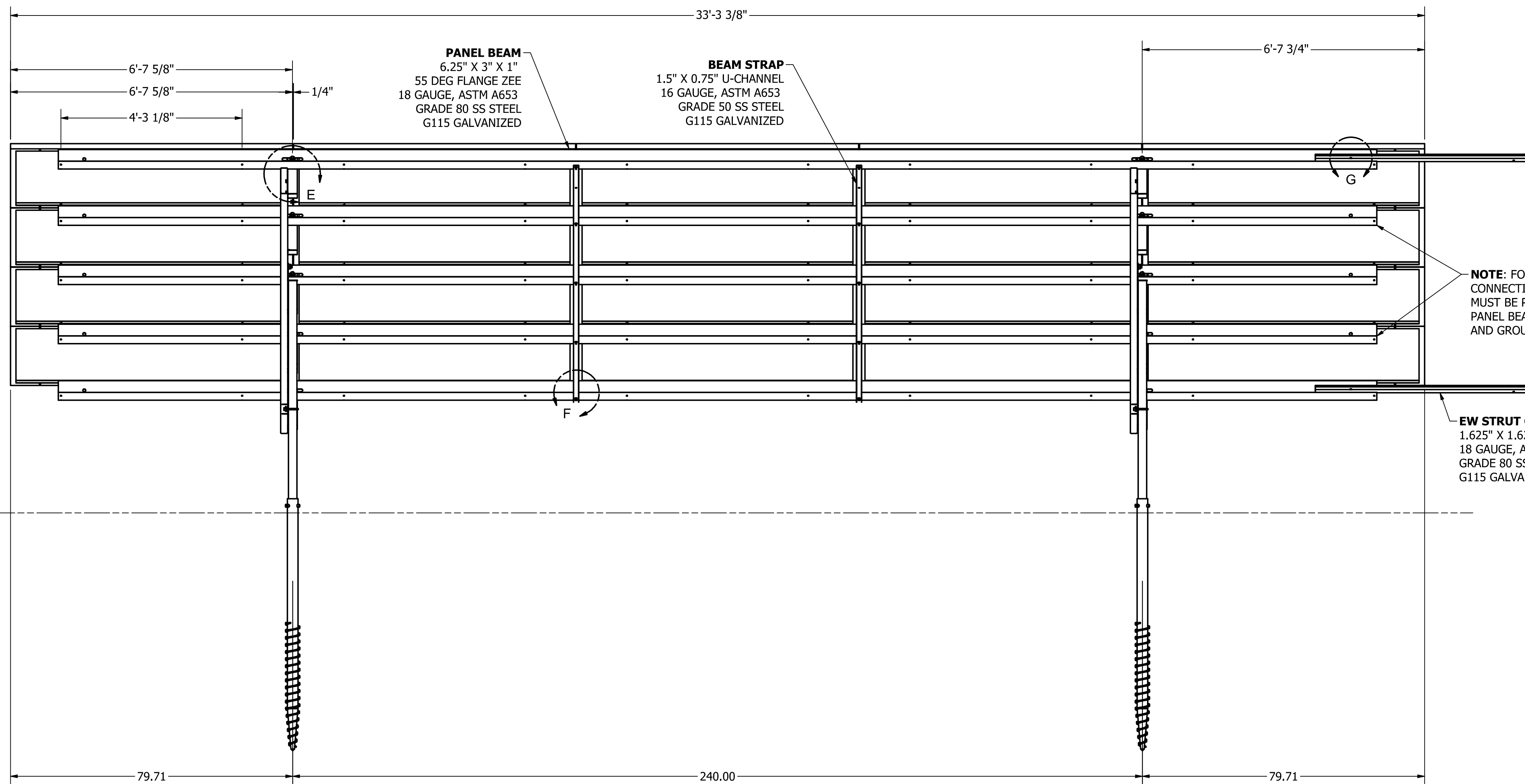
Structural General Notes

- The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
- If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.
- These drawings and notes are for this specific project and no other use is authorized.
- Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISI 360-10 (14th Edition), and AISI S100-12: ASD
 Snow Loads:
 -Ground Snow Load $p_g = 40$ psf
 -Importance Factor $I_s = 0.8$
 -Exposure Factor $C_e = 1.0$
 -Slope Snow Load $p_s = 30$ psf
 Wind Loads:
 -Basic Wind Speed $V = 110$ mph (MRI = 0.93 or 25 year)
 - $I_w = 1$
 -Exposure = C
 -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.
 Seismic Loads:
 -SS = 0.182g, S1 = 0.065g
 -Site Class = D
 -SDS = 0.190g, SD1 = 0.100g
 -Seismic Design Category = B
 -Ordinary Steel Cantilever Column System
- Material strengths:
 -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
 -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
 -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
 -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
 -Plate - A36 Steel, Hot Dip Galvanized
 -Connectors - Stainless Steel unless otherwise noted.
- Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
- Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
- For the purposes of this project, all arrays are classified as Exterior Arrays.
- Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record



2021.07.13
13:26:20 -07'00'



PANEL BEAM
6.25" X 3" X 1"
55 DEG FLANGE ZEE
18 GAUGE, ASTM A653
GRADE 80 SS STEEL
G115 GALVANIZED

BEAM STRAP
1.5" X 0.75" U-CHANNEL
16 GAUGE, ASTM A653
GRADE 50 SS STEEL
G115 GALVANIZED

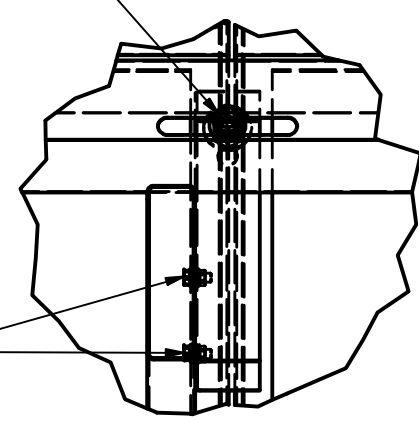
NOTE: FOR ALTERNATE ARRAY CONNECTIONS, STRUT CONNECTORS MUST BE PLACED ON 2ND & 4TH EW PANEL BEAMS PER INSTALLATION MANUAL AND GROUND MOUNT LAYOUT

EW STRUT CONNECTOR
1.625" X 1.625" U-CHANNEL
18 GAUGE, ASTM A653
GRADE 80 SS STEEL
G115 GALVANIZED

REAR VIEW

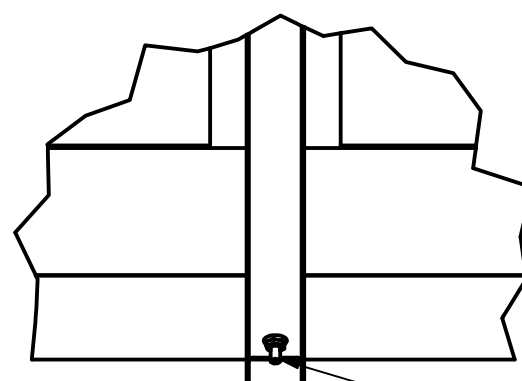
VIEW3
SCALE 1 / 20

ZEE BEAM ATTACHES TO PIVOT BRACKET USING (1) 3/4-10 GRADE 5 STEEL HHCS, WASHER, AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS.



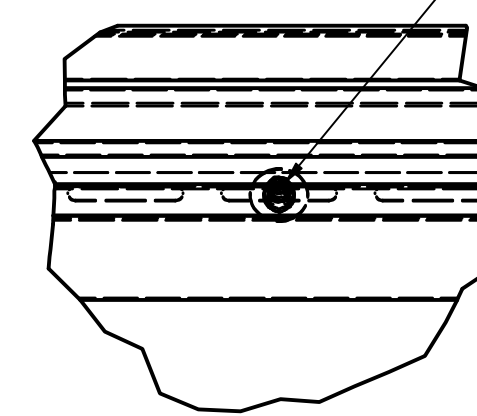
DETAIL E
SCALE 1 / 8

ZEE BEAM ATTACHES TO CEE BEAM USING PIVOT BRACKET 3" X 2.7" X 12.375" 14G CHANNEL ASTM A653 GRADE 80 SS STEEL G115 GALVANIZED. BRACKET ATTACHES TO NS BEAM WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS



DETAIL F
SCALE 1 / 5

BEAM STRAP ATTACHES TO PANEL BEAMS WITH (4) 18-8 SS 1/4-20 BUTTON HEAD CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 15 FT-LBS



DETAIL G
SCALE 1 / 5

NEIGHBORING TABLES BONDED WITH 18G CHANNEL STRUTS. STRUTS CONNECT TO EW PANEL ZEE BEAMS WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS, FENDER WASHERS, AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS.

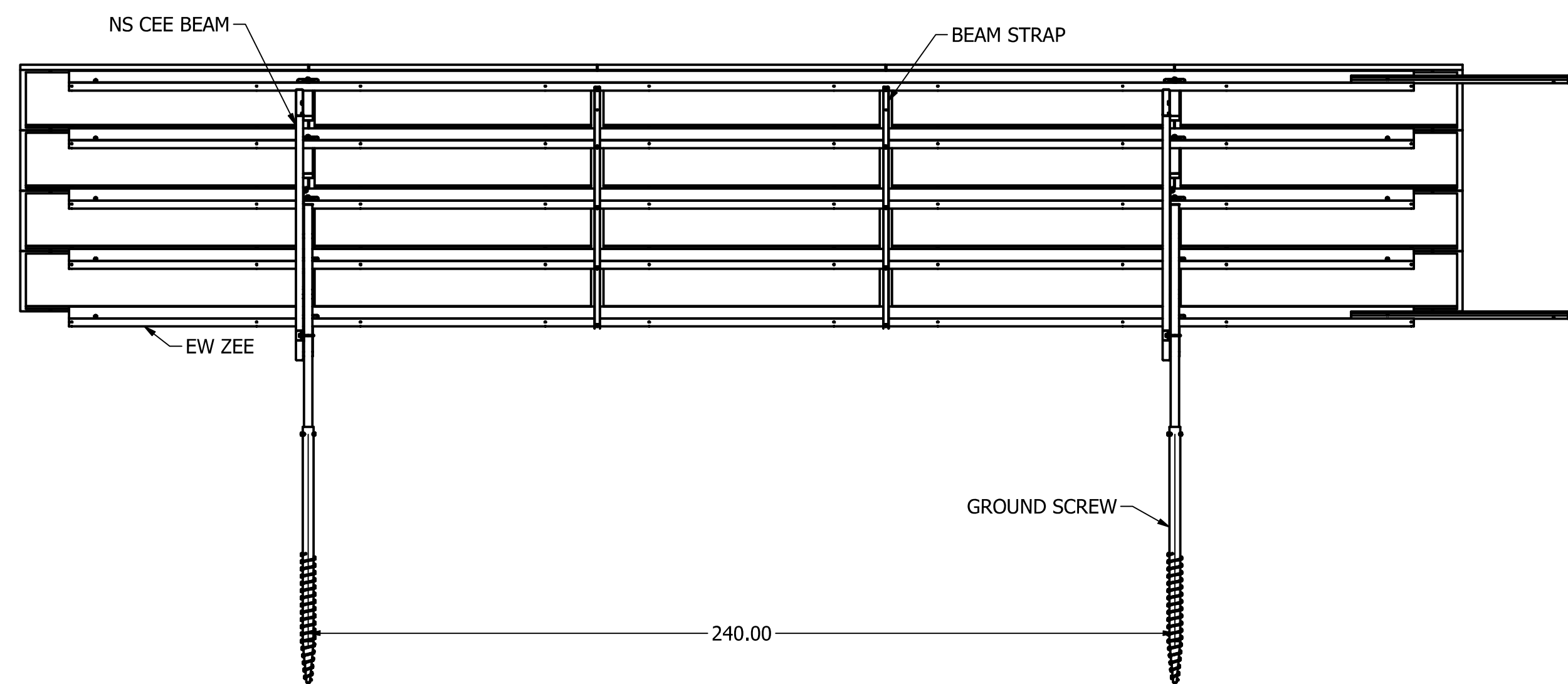
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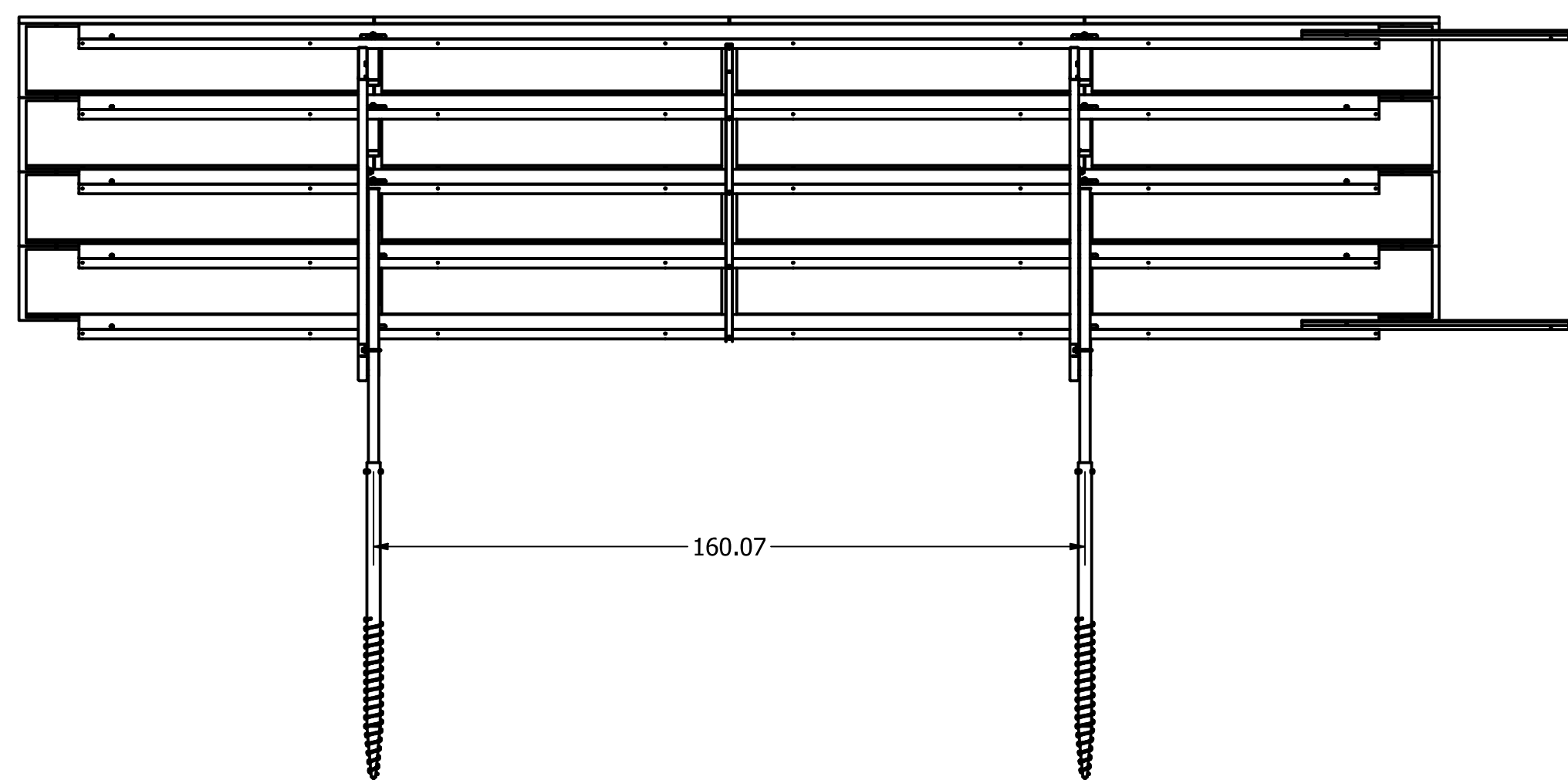
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED TOLERANCES ARE AS FOLLOWS:
 .X = ± 0.050" (1.27mm)
 .XX = ± 0.015" (0.38mm)
 .XXX = ± 0.005" (0.127mm)
 ANGLE = ± 5°
 MIN. BREAK = 0.012" (0.3mm)
 SURFACE FINISH = 63 (US)

Material:	1758.293 lbmass		
Weight:	1758.293 lbmass		
Description:	CT-BF-DB, TRINA SOLAR TSM-DEG15MC.20(11), 4x5, 25 DEG, BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR, VEROGY		
Project:	BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR		
Drawn:	TMAIHEW	Date:	7/7/2021
Scale:		Sheet:	2 of 5
Format:	D	Part Number:	4637
Rev:			1

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Cornelius, NC, 28031
www.dcesolar.com
Phone: 1-704-659-7474

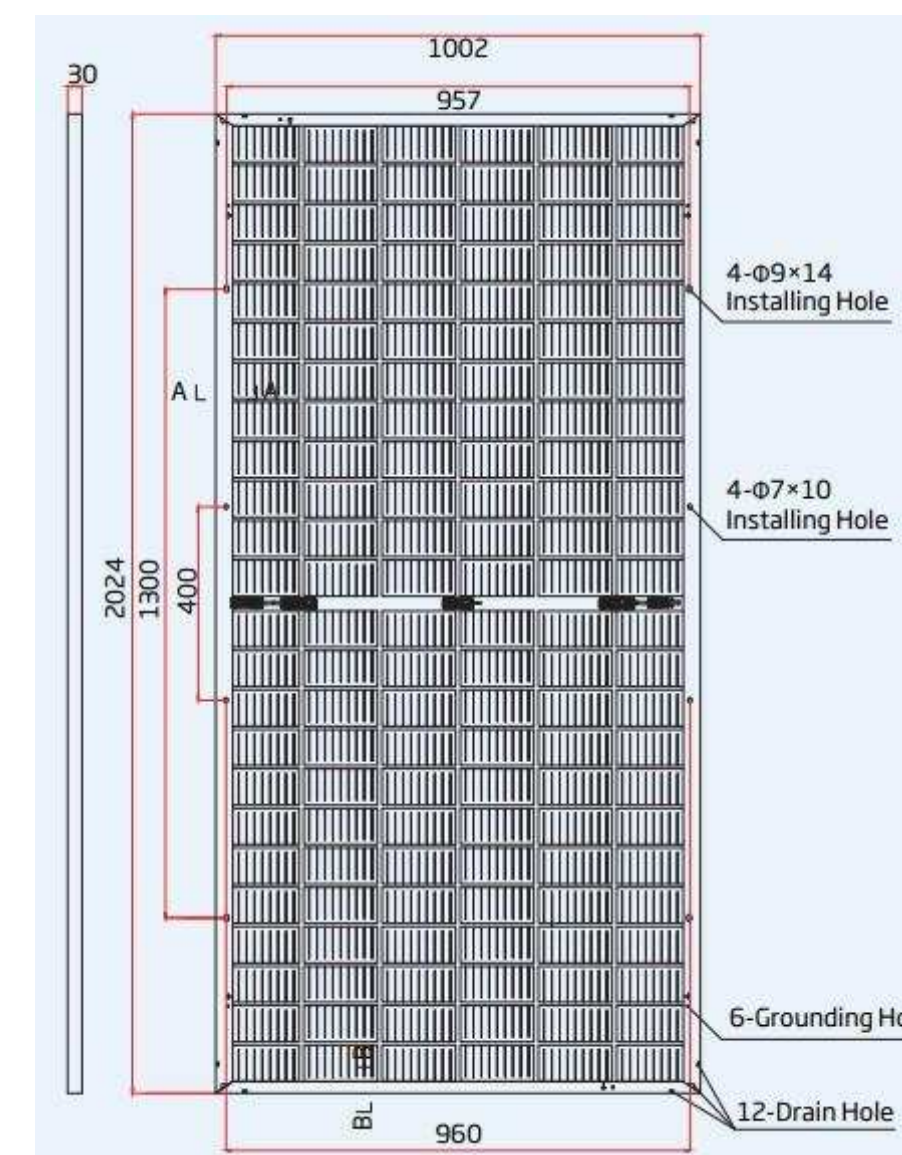


REAR VIEW
4X5 ARRAY
VIEW13
SCALE 0.03 : 1



REAR VIEW
4X4 ARRAY
VIEW19
SCALE 0.03 : 1

PANEL SPECIFICATION				PROJECT INFORMATION	
NAME	DESCRIPTION			INSTALLATION ADDRESS: LOT 33 PROSPECT STREET, BURLINGTON, CT 06013	
MANUFACTURER	TRINA SOLAR				
MODEL	TSM-DEG15MC.20(II)				
LENGTH (mm)	2024			Structural General Notes	
WIDTH (mm)	1002			1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.	
THICKNESS (mm)	30			2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.	
MATERIAL DESCRIPTION				3. These drawings and notes are for this specific project and no other use is authorized.	
MEMBER	SHAPE	MATERIAL	GAGE	4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISI 360-10 (14th Edition), and AISI S100-12: ASD	
PANEL BEAM	6.25Z3X1X55DEG	A653 SS Gr80	18GA	Snow Loads: -Ground Snow Load pg = 40 psf -Importance Factor Is=0.8 -Exposure Factor Ce=1.0 -Slope Snow Load ps= 30 psf	
NS CEE BEAM	8CS2X0.625	A653 SS Gr80	14GA	Wind Loads: -Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year) -Iw = 1 -Exposure = C -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.	
KICKER BRACE	2.75CU1.75	A653 SS Gr50	14GA	Seismic Loads: -SS = 0.182g, S1 = 0.065g -Site Class = D -SDS = 0.190g, SD1 = 0.100g -Seismic Design Category = B -Ordinary Steel Cantilever Column System	
BEAM BRACE	1.5CU0.75	A653 SS Gr50	16GA	5. Material strengths: -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield. -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted. -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85 -Plate - A36 Steel, Hot Dip Galvanized -Connectors - Stainless Steel unless otherwise noted.	
FRONT/REAR LEG	HSS2.375x0.154	A500 GRADE C	-	6. Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.	
PULL TEST LOADS (GROUNDSCREW)				7. Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.	
	REAR (lbs)	FRONT (LBS)		8. For the purposes of this project, all arrays are classified as Exterior Arrays.	
UNFACTORED UPLIFT	2,300	450		9. Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.	
UNFACTORED ADJUSTED UPLIFT*	2,950	1,800		Engineer of Record	
UNFACTORED COMPRESSIVE	4,200	2,550			
UNFACTORED LATERAL	900	100		2021.07.13 13:26:09 -07'00'	
NOTES					
*ADJUSTED UPLIFT IS ASSUMED AS 70% OF THE DOWNWARD LOAD. IT'S RECOMMENDED TO USE THIS LOAD FOR PULL TEST IN CASE PUSH TEST CANNOT BE PERFORMED.					
1: USE ADJUSTED UPLIFT IF NO REFUSAL IS ENCOUNTERED.					
2: USE UPLIFT FORCE IN CASE OF REFUSAL.					
3: FOR UPLIFT AND LATERAL FORCES USE SAFETY FACTOR OF 1.5 AND 2, RESPECTIVELY.					
IN-FIELD PILE REMEDIATION					
ANY IN-FIELD REMEDIATION REQUIRING THE CUTTING OR DRILLING OF GALVANIZED MATERIAL SHOULD FOLLOW ONE OF THESE TWO GUIDELINES TO COAT AND TREAT METALS THAT ARE EXPOSED TO GALVANIZATION DAMAGE:					
1. USE PAINTS CONTAINING ZINC DUST (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A2)					
2. USE ZINC SPRAY (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A3) ONE OF THE ABOVE GUIDELINES MUST BE FOLLOWED TO MAINTAIN THE DCE WARRANTY REQUIREMENTS.					



DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
TOLERANCES ARE AS FOLLOWS:
.X = ± 0.050" (1.27mm)
.XX = ± 0.015" (0.38mm)
.XXX = ± 0.005" (0.127mm)
ANGLE = ± 5°
MIN. BREAK = 0.012" (0.3mm)
SURFACE FINISH = 63 (US)

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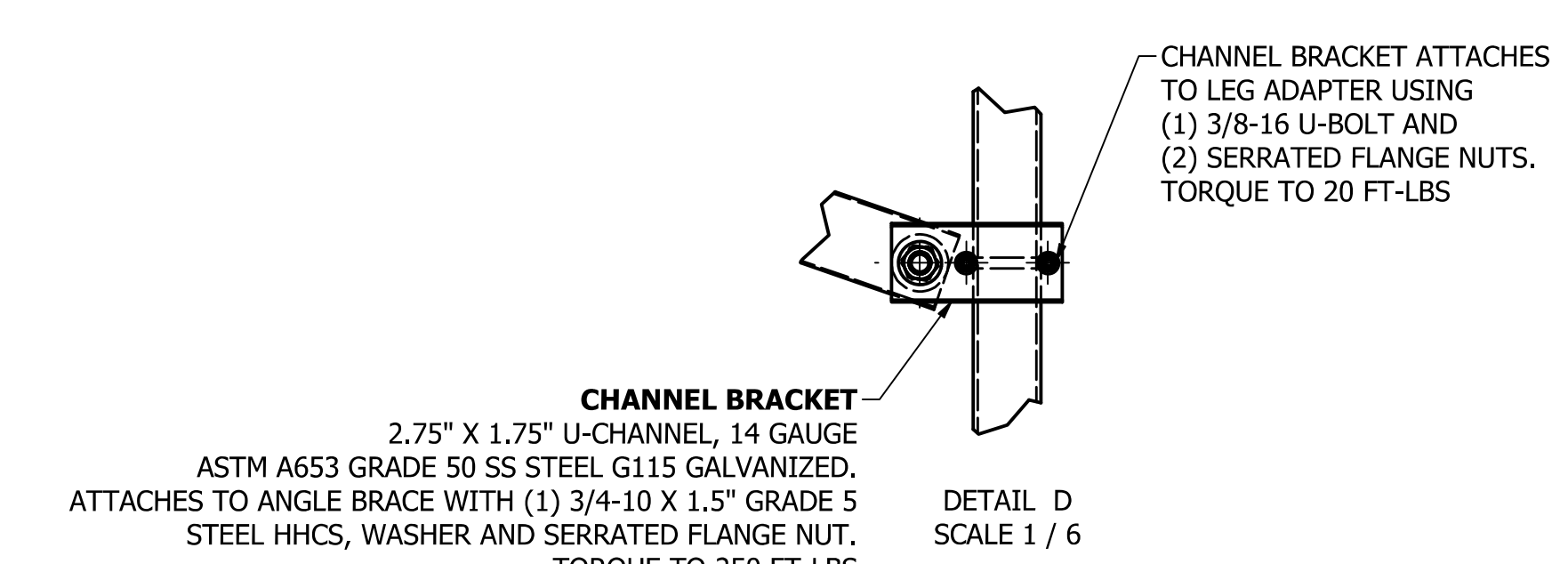
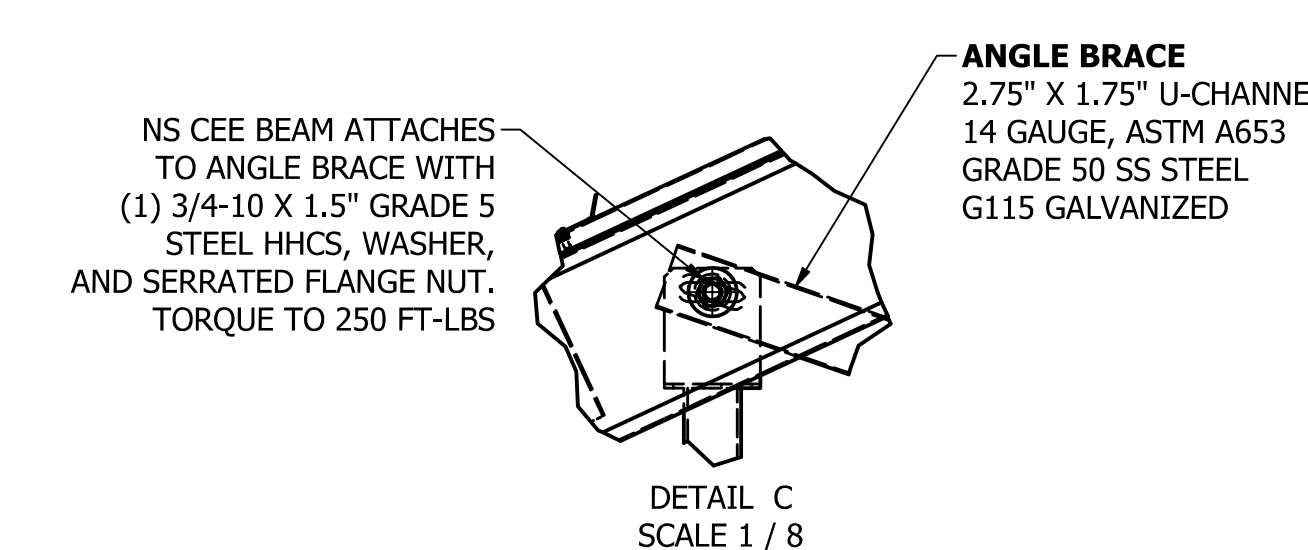
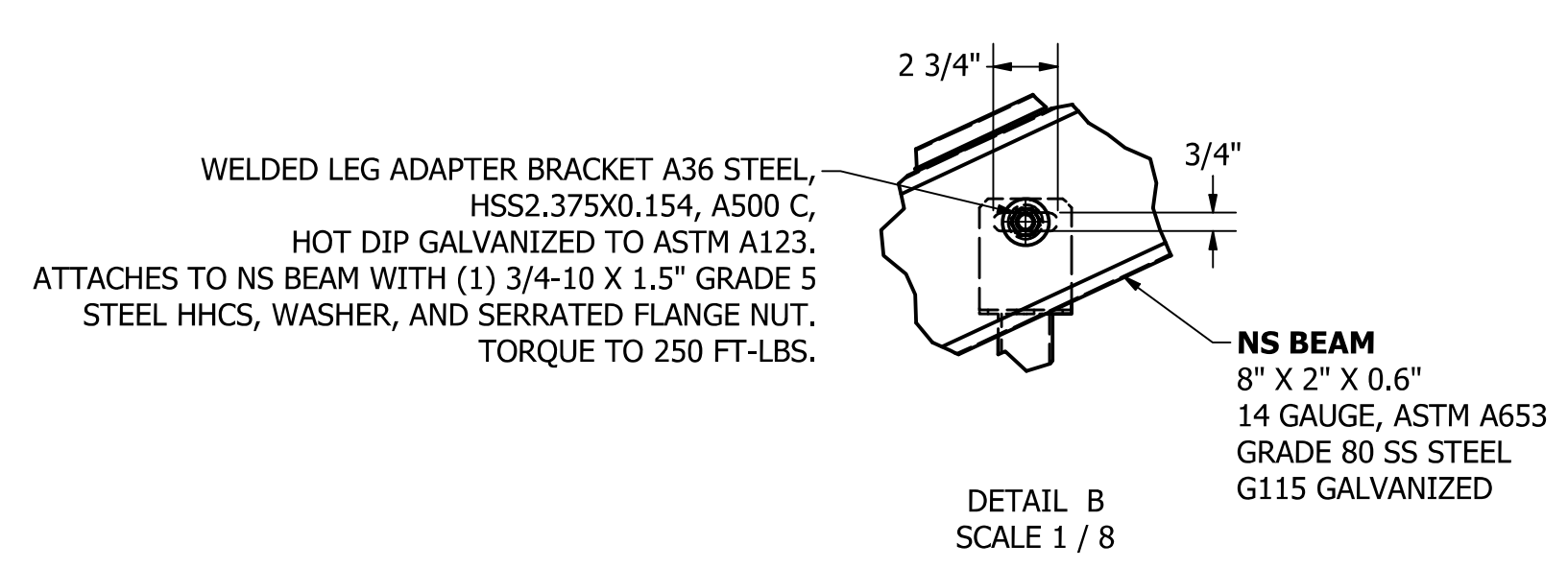
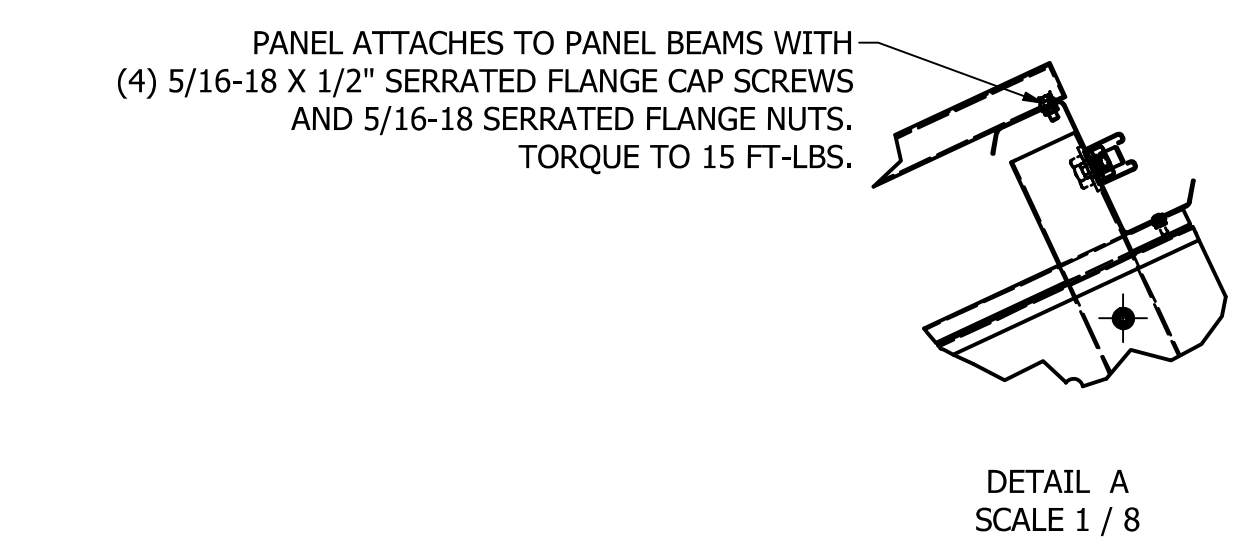
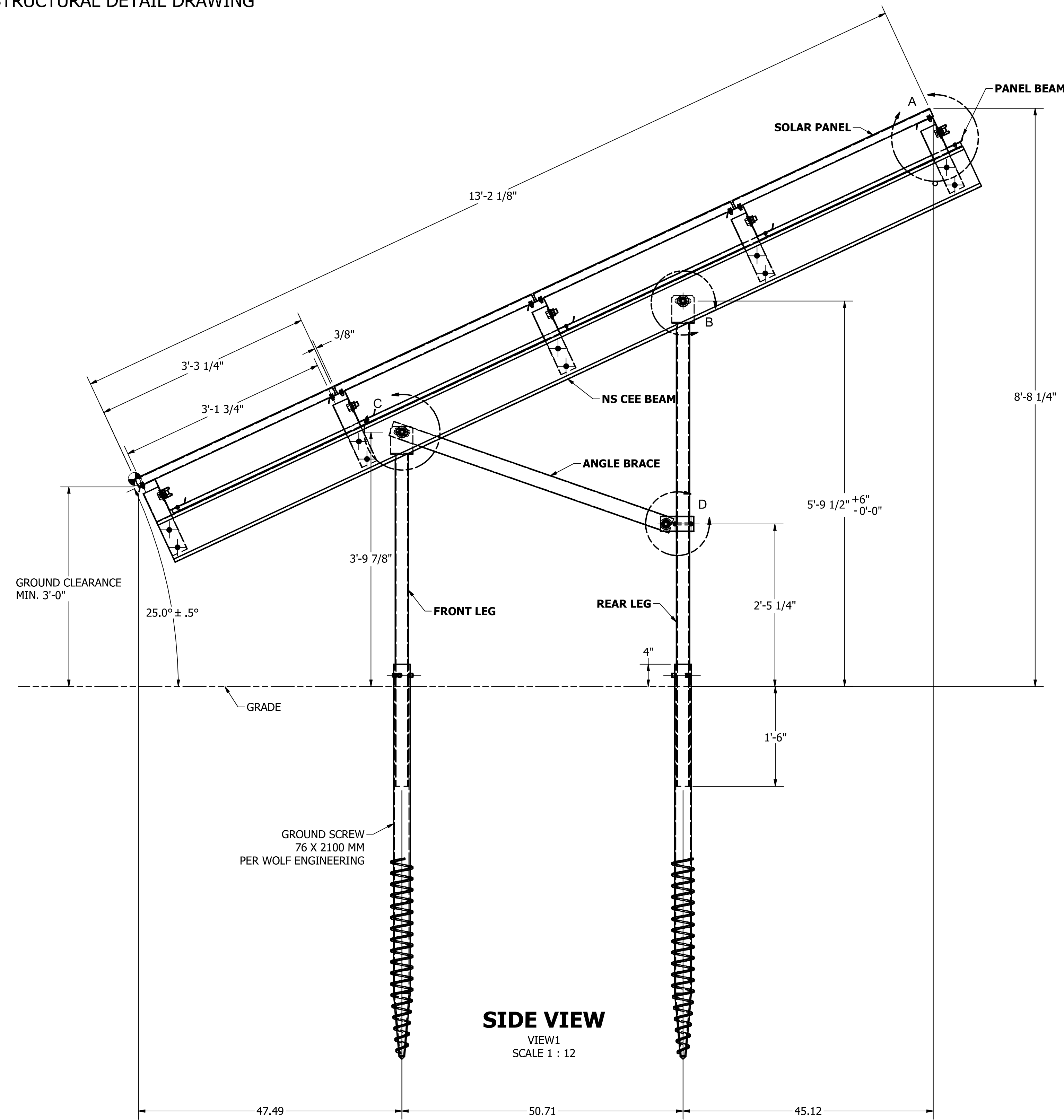
Material: 1758.293 lbmass
CT-BF-DB, TRINA SOLAR TSM-DEG15MC.20(II), 4x5, 25 DEG, BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR, VEROGY

Project: BURLINGTON SOLAR ONE - BIFACIAL - TRINA SOLAR
Date: 7/7/2021
Drawn: TMAYHEW
Sheet: 3 of 5

Format: D
Part Number: 4637
Rev: 1

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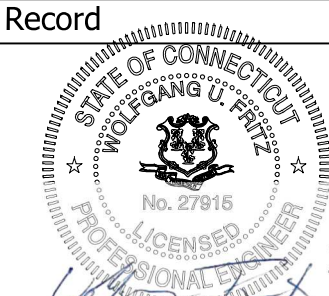
**APPENDIX- A
STRUCTURAL DETAIL DRAWING**



PROJECT INFORMATION
 INSTALLATION ADDRESS: LOT 33 PROSPECT STREET, BURLINGTON, CT 06013

Structural General Notes

- The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
- If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.
- These drawings and notes are for this specific project and no other use is authorized.
- Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISI 360-10 (14th Edition), and AISI S100-12: ASD
 Snow Loads:
 -Ground Snow Load $p_g = 40$ psf
 -Importance Factor $I_s = 0.8$
 -Exposure Factor $C_e = 1.0$
 -Slope Snow Load $p_s = 30$ psf
 Wind Loads:
 -Basic Wind Speed $V = 110$ mph (MRI = 0.93 or 25 year)
 - $I_w = 1$
 -Exposure = C
 -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.
 Seismic Loads:
 -SS = 0.182g, S1 = 0.065g
 -Site Class = D
 -SDS = 0.190g, SD1 = 0.100g
 -Seismic Design Category = B
 -Ordinary Steel Cantilever Column System
- Material strengths:
 -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
 -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
 -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
 -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
 -Plate - A36 Steel, Hot Dip Galvanized
 -Connectors - Stainless Steel unless otherwise noted.
- Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
- Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
- For the purposes of this project, all arrays are classified as Exterior Arrays.
- Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record

 2021.07.13
 13:28:09 -07'00'

REVISION HISTORY			
REV	DESCRIPTION	DATE	DESIGNER
0	STRUCTURAL DETAIL DRAWING	7/15/2020	JSCOTT
1	REVISED GML ON PAGE 4	7/7/2021	TMAYHEW
2	REVISED LENGTH OF MOUNTING HARDWARE TO 1/2"	7/13/2021	TMAYHEW

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED. TOLERANCES ARE AS FOLLOWS:

.X = ± 0.050" (1.27mm)
 .XX = ± 0.015" (0.38mm)
 .XXX = ± 0.005" (0.127mm)

ANGLE = ± 5°
 MIN. BREAK = 0.012" (0.3mm)
 SURFACE FINISH = 63 (US)

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Material:	Weight: 1752.640 lbmass
Description:	CT-BF-DB, RISEN SOLAR RSM144-6-380BMDG, 4x5, 25 DEG, BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR, VEROGY
Project:	BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR
Drawn:	TMAYHEW
Date:	7/13/2021
Scale:	Sheet: 1 of 5
Format:	Part Number
D	4635
Rev:	2

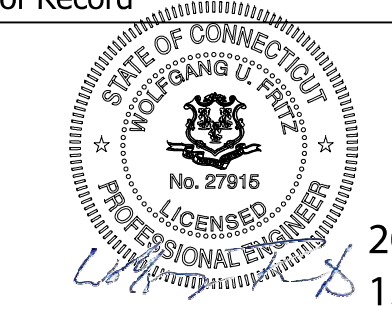
STRUCTURAL DETAIL DRAWING - REAR

PROJECT INFORMATION
 INSTALLATION ADDRESS: LOT 33 PROSPECT STREET, BURLINGTON, CT 06013

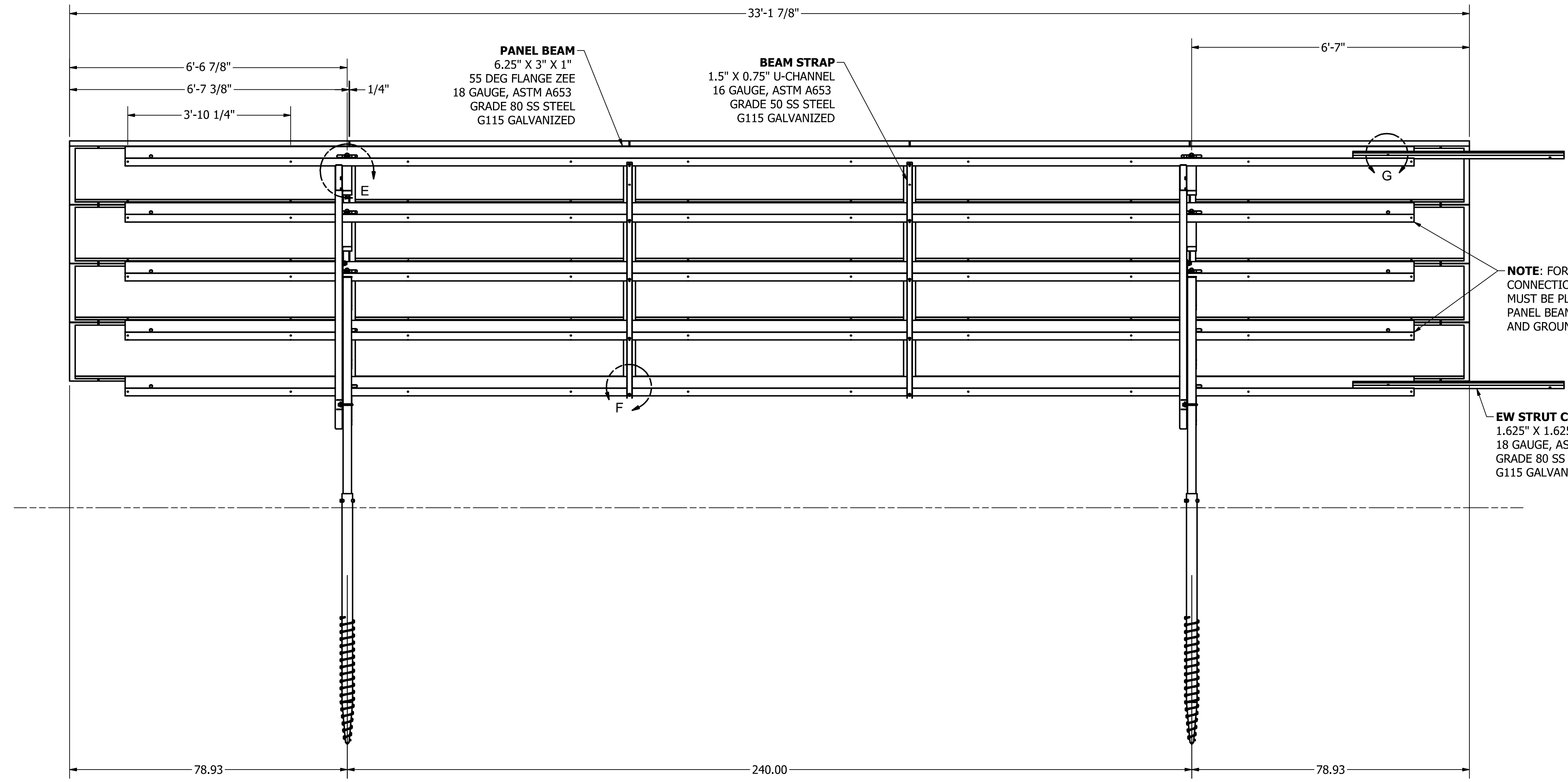
Structural General Notes

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 Snow Loads:
 -Ground Snow Load $p_g = 40$ psf
 -Importance Factor $I_s = 0.8$
 -Exposure Factor $C_e = 1.0$
 -Slope Snow Load $p_s = 30$ psf
 Wind Loads:
 -Basic Wind Speed $V = 110$ mph (MRI = 0.93 or 25 year)
 - $I_w = 1$
 -Exposure = C
 -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOB BLWT Laboratory dated 12/11/14.
 Seismic Loads:
 -SS = 0.182g, S1 = 0.065g
 -Site Class = D
 -SDS = 0.190g, SD1 = 0.100g
 -Seismic Design Category = B
 -Ordinary Steel Cantilever Column System
- Material strengths:
 -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield.
 -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted.
 -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG
 -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85
 -Plate - A36 Steel, Hot Dip Galvanized
 -Connectors - Stainless Steel unless otherwise noted.
- Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.
- Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.
- For the purposes of this project, all arrays are classified as Exterior Arrays.
- Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.

Engineer of Record



2021.07.13
 13:27:58 -07'00'



PANEL BEAM
 6.25" X 3" X 1"
 55 DEG FLANGE ZEE
 18 GAUGE, ASTM A653
 GRADE 80 SS STEEL
 G115 GALVANIZED

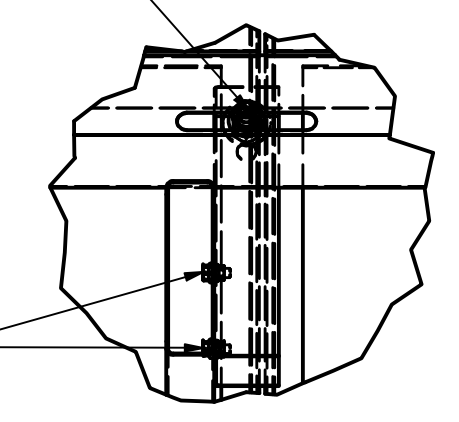
BEAM STRAP
 1.5" X 0.75" U-CHANNEL
 16 GAUGE, ASTM A653
 GRADE 50 SS STEEL
 G115 GALVANIZED

NOTE: FOR ALTERNATE ARRAY CONNECTIONS, STRUT CONNECTORS MUST BE PLACED ON 2ND & 4TH EW PANEL BEAMS PER INSTALLATION MANUAL AND GROUND MOUNT LAYOUT

EW STRUT CONNECTOR
 1.625" X 1.625" U-CHANNEL
 18 GAUGE, ASTM A653
 GRADE 80 SS STEEL
 G115 GALVANIZED

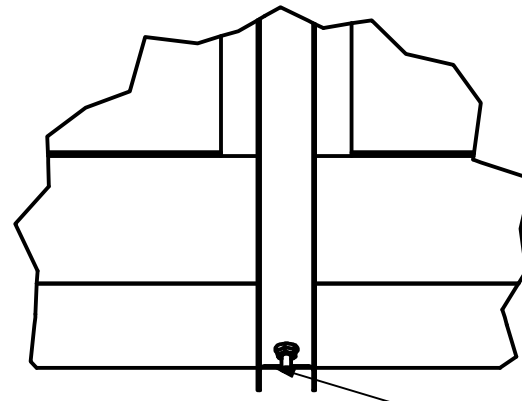
REAR VIEW
 VIEW3
 SCALE 1 / 20

ZEE BEAM ATTACHES TO PIVOT BRACKET USING (1) 3/4-10 GRADE 5 STEEL HHCS, WASHER, AND SERRATED FLANGE NUT. TORQUE TO 250 FT-LBS.



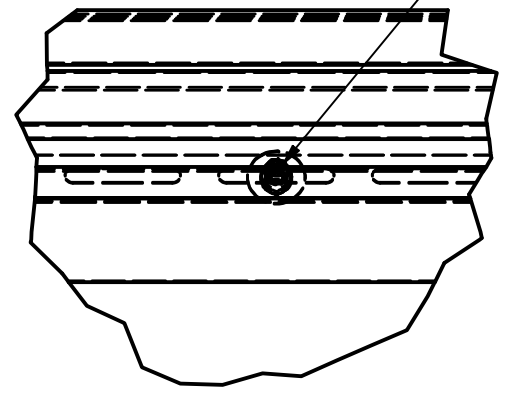
DETAIL E
 SCALE 1 / 8

ZEE BEAM ATTACHES TO CEE BEAM USING PIVOT BRACKET 3" X 2.7" X 12.375" 14G CHANNEL ASTM A653 GRADE 80 SS STEEL G115 GALVANIZED. BRACKET ATTACHES TO NS BEAM WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS



DETAIL F
 SCALE 1 / 5

BEAM STRAP ATTACHES TO PANEL BEAMS WITH (4) 18-8 SS 1/4-20 BUTTON HEAD CAP SCREWS AND SERRATED FLANGE NUTS. TORQUE TO 15 FT-LBS



DETAIL G
 SCALE 1 / 5

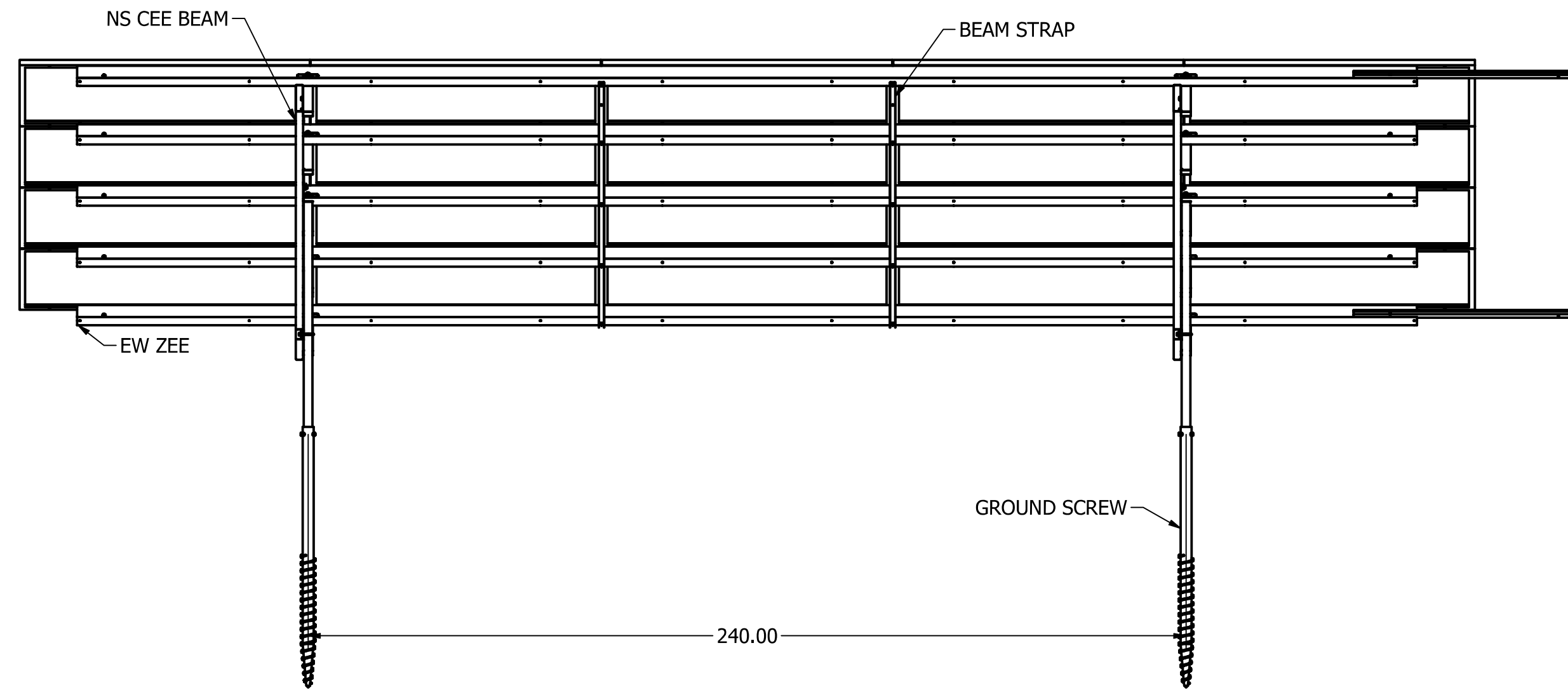
NEIGHBORING TABLES BONDED WITH 18G CHANNEL STRUTS. STRUTS CONNECT TO EW PANEL ZEE BEAMS WITH (2) 18-8 SS 3/8-16 SERRATED FLANGE CAP SCREWS, FENDER WASHERS, AND SERRATED FLANGE NUTS. TORQUE TO 20 FT-LBS.

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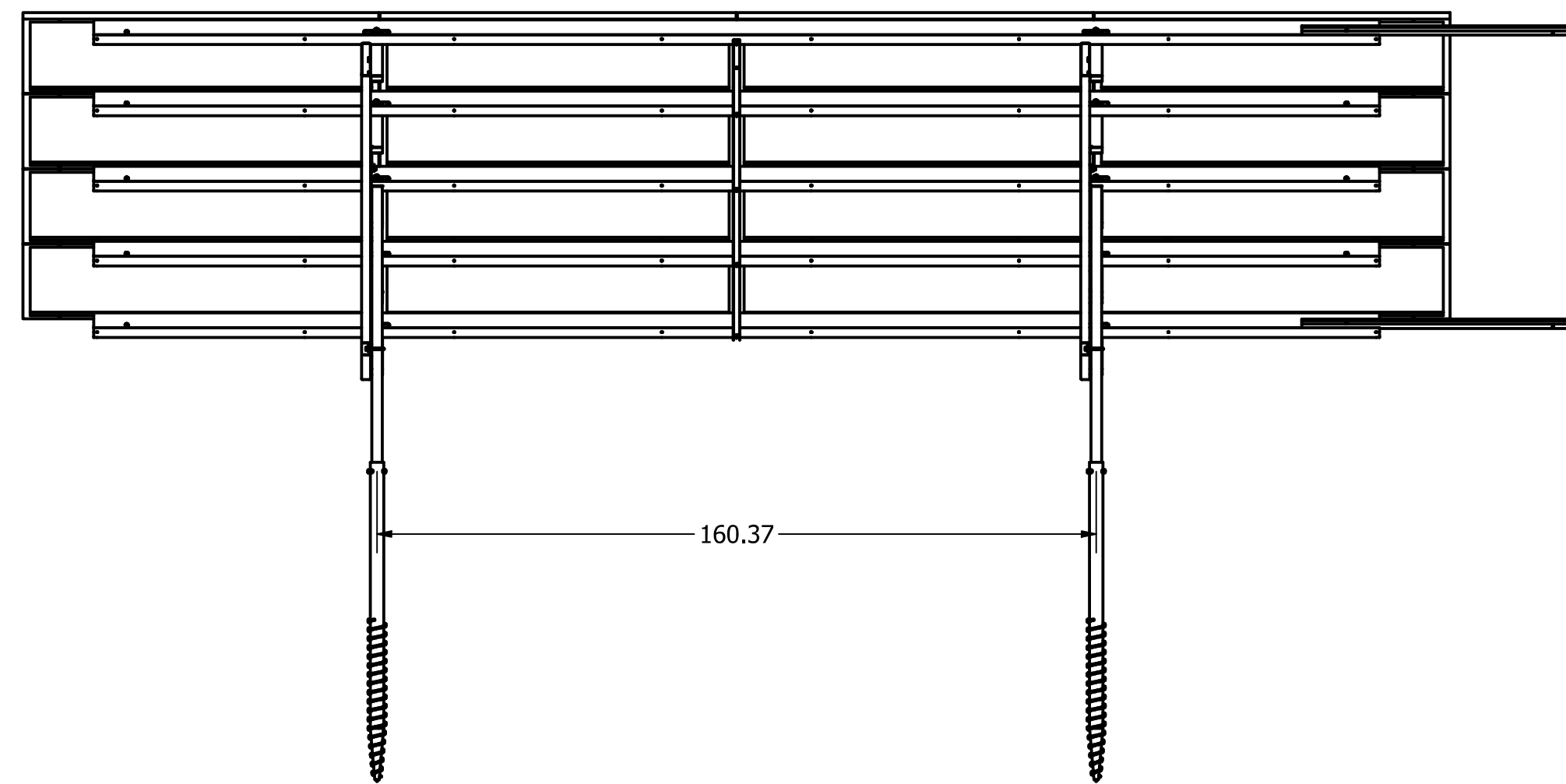
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
 TOLERANCES ARE AS FOLLOWS:
 .X = ± 0.050" (1.27mm)
 .XX = ± 0.015" (0.38mm)
 .XXX = ± 0.005" (0.127mm)
 ANGLE = ± 5°
 MIN. BREAK = 0.012" (0.3mm)
 SURFACE FINISH = 63 (US)

Material:	Weight:	1752.640 lbmass
Description:	CT-BF-DB, RISEN SOLAR RSM144-6-380BMDG, 4x5, 25 DEG, BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR, VEROGY	
Project:	BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR	
Drawn:	TMAIHEW	Date: 7/13/2021
Scale:	Sheet: 2 of 5	
Format:	D	Part Number: 4635
Rev:	2	

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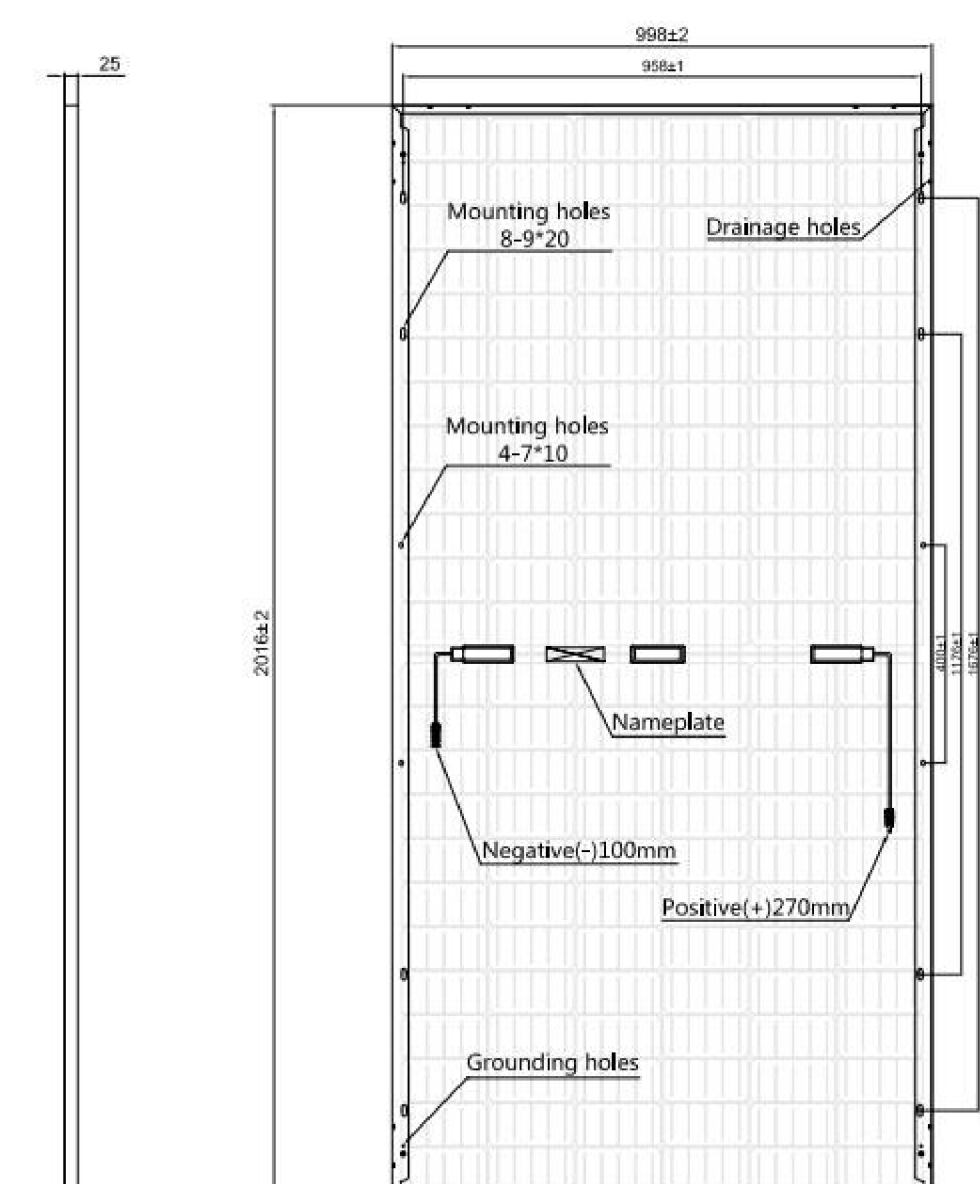


REAR VIEW
4X5 ARRAY
VIEW13
SCALE 0.03 : 1



REAR VIEW
4X4 ARRAY
VIEW19
SCALE 0.03 : 1

PANEL SPECIFICATION				PROJECT INFORMATION	
NAME		DESCRIPTION		INSTALLATION ADDRESS: LOT 33 PROSPECT STREET, BURLINGTON, CT 06013	
MANUFACTURER		RISEN SOLAR TECHNOLOGY			
MODEL		RSM144-6-380BMDG			
LENGTH (mm)		2016		Structural General Notes	
WIDTH (mm)		998		1. The contractor will be solely responsible for all construction means, methods, techniques, sequences and procedures and shall at all times take reasonable precautions for the safety of its employees on the project, and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.	
THICKNESS (mm)		25		2. If existing conditions make it necessary to revise structural details, consult DCE Solar before proceeding with any change.	
MATERIAL DESCRIPTION				3. These drawings and notes are for this specific project and no other use is authorized.	
MEMBER	SHAPE	MATERIAL	GAGE	4. Structure designed in accordance with the 2018 Connecticut State Building Code, ASCE 7-10, AISI 360-10 (14th Edition), and AISI S100-12: ASD	
PANEL BEAM	6.25Z3X1X55DEG	A653 SS Gr80	18GA	Snow Loads: -Ground Snow Load pg = 40 psf -Importance Factor Is=0.8 -Exposure Factor Ce=1.0 -Slope Snow Load ps= 30 psf	
NS CEE BEAM	8CS2X0.625	A653 SS Gr80	14GA	Wind Loads: -Basic Wind Speed V= 110 mph (MRI = 0.93 or 25 year) -Iw = 1 -Exposure = C -Wind Design performed in accordance with the requirements of ASCE - Wind Tunnel Procedure. Refer to Wind Tunnel Report by UWOLBLWT Laboratory dated 12/11/14.	
KICKER BRACE	2.75CU1.75	A653 SS Gr50	14GA	Seismic Loads: -SS = 0.182g, S1 = 0.065g -Site Class = D -SDS = 0.190g, SD1 = 0.100g -Seismic Design Category = B -Ordinary Steel Cantilever Column System	
BEAM BRACE	1.5CU0.75	A653 SS Gr50	16GA	5. Material strengths: -Hot-rolled structural steel ASTM A992 GR50 w/80 ksi yield. -Cold Formed Steel Sections comply w/ASTM A1003, structural grade, galvanized to Grade as noted. -Formed Steel Brackets - ASTM A653 Grade 50 SS, G115 HDG -I-Beams - A992, 50 ksi, Hot Dip Galvanized to ASTM 123 Grade 85 -Plate - A36 Steel, Hot Dip Galvanized -Connectors - Stainless Steel unless otherwise noted.	
FRONT/REAR LEG	HSS2.375x0.154	A500 GRADE C	-	6. Members and connections have been designed for worst-case loading associated with exterior zones of the array per the wind tunnel report.	
PULL TEST LOADS (GROUNDSCREW)				7. Foundation embedment depths are to be calculated and sealed by a CT State Licensed Geotechnical engineer.	
		REAR (lbs)	FRONT (LBS)	8. For the purposes of this project, all arrays are classified as Exterior Arrays.	
UNFACTORED UPLIFT		2,300	450	9. Scope of work by Structural Engineer includes member design, connection design, and determination of design base reactions only. Layout of PV arrays such that they do not conflict with existing site obstructions, determination of site-specific foundation and geotechnical parameters, and all other work not specifically noted is by others.	
UNFACTORED ADJUSTED UPLIFT*		2,950	1,800	Engineer of Record	
UNFACTORED COMPRESSIVE		4,200	2,550	<p>2021.07.13 13:27:47 -07'00'</p>	
UNFACTORED LATERAL		900	100		
NOTES					
*ADJUSTED UPLIFT IS ASSUMED AS 70% OF THE DOWNWARD LOAD. IT'S RECOMMENDED TO USE THIS LOAD FOR PULL TEST IN CASE PUSH TEST CANNOT BE PERFORMED.					
1: USE ADJUSTED UPLIFT IF NO REFUSAL IS ENCOUNTERED.					
2: USE UPLIFT FORCE IN CASE OF REFUSAL.					
3: FOR UPLIFT AND LATERAL FORCES USE SAFETY FACTOR OF 1.5 AND 2, RESPECTIVELY.					
IN-FIELD PILE REMEDIATION					
ANY IN-FIELD REMEDIATION REQUIRING THE CUTTING OR DRILLING OF GALVANIZED MATERIAL SHOULD FOLLOW ONE OF THESE TWO GUIDELINES TO COAT AND TREAT METALS THAT ARE EXPOSED TO GALVANIZATION DAMAGE:					
1. USE PAINTS CONTAINING ZINC DUST (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A2)					
2. USE ZINC SPRAY (IN ACCORDANCE WITH "ASTM A 780-01" SECTION A3) ONE OF THE ABOVE GUIDELINES MUST BE FOLLOWED TO MAINTAIN THE DCE WARRANTY REQUIREMENTS.					



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.XX = ± 0.015" (0.38mm)
.XXX = ± 0.005" (0.127mm)
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MIN. BREAK = 0.012" (0.3mm)
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Material:	1752.640 lbmass	
Weight:	CT-BF-DB, RISEN SOLAR RSM144-6-380BMDG, 4x5, 25 DEG, BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR, VEROGY	
Description:	BURLINGTON SOLAR ONE - BIFACIAL - RISEN SOLAR	
Project:	Date: 7/13/2021	
Drawn:	TMAYHEW	Sheet: 3 of 5
Scale:	Part Number: 4635	
Format:	D	Rev: 2