WYSSLING CONSULTING
CORPORATE EXPERIENCE WITH SMALL BUSINESS VALUE

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July 12, 2023
Revised September 8, 2023

Complete Solar
3000 Executive Parkway, Ste 504
San Ramon, CA 94583

Scott Wyssling, PE

Digitally signed by Scott Wyssling, PE
DN: C=US, SN="Wyssling, PE", G=Scott, E=swyssling@wysslingconsulting.com, CN="Scott Wyssling, PE"
Reason: I am the author of this document
Location: your signing location here
Date: 2023.09.08 16:51:52-06'00'
Foxit PDF Editor Version: 11.1.0

Re: Engineering Services
Schmidt Residence
23 Hamilton Farm Circle, Fuquay-Varina NC
9.480 kW System

To Whom It May Concern:

We have received information regarding solar panel installation on the roof of the above referenced structure. Our evaluation of the structure is to verify the existing capacity of the roof system and its ability to support the additional loads imposed by the proposed solar system.

A. Site Assessment Information

1. Site visit documentation identifying attic information including size and spacing of framing for the existing roof structure.
2. Design drawings of the proposed system including a site plan, roof plan and connection details for the solar panels. This information will be utilized for approval and construction of the proposed system.

B. Description of Structure:

Roof Framing:	2x6 dimensional lumber at 16" on center.
Roof Material:	Composite Asphalt Shingles
Roof Slope:	22 degrees
Attic Access:	Accessible
Foundation:	Permanent

C. Loading Criteria Used

- **Dead Load**
  - Existing Roofing and framing = 7 psf
  - New Solar Panels and Racking = 3 psf
  - TOTAL = 10 PSF
- **Live Load** = 20 psf (reducible) – 0 psf at locations of solar panels
- **Ground Snow Load** = 15 psf
- **Wind Load** based on ASCE 7-10
  - Ultimate Wind Speed = 119 mph (based on Risk Category II)
  - Exposure Category C

Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the 2018 North Carolina Residential Code*, including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing framing will support the additional panel loading without damage, if installed correctly.*

D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent Ironridge installation manual. If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. The maximum allowable withdrawal force for a $^{5}/_{16}$" lag screw is 229 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on a minimum penetration depth of 2½", the allowable capacity per connection is greater than the design withdrawal force (demand). Considering the variable factors for the existing roof framing and installation tolerances, the connection using one $^{5}/_{16}$" diameter lag screw with a minimum of 2½" embedment will be adequate and will include a sufficient factor of safety.
3. Considering the wind speed, roof slopes, size and spacing of framing members, and condition of the roof, the panel supports shall be placed no greater than 48" on center.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the 2018 North Carolina Residential Code, current industry standards, and is based on information supplied to us at the time of this report.

Should you have any questions regarding the above or if you require further information do not hesitate to contact me.

Very truly yours,

Scott E. Wyssling, PE
North Carolina License No. 46546
North Carolina COA P-2308

NORTH CAROLINA PROFESSIONAL SEAL 046546 ENGINEER SCOTT E. WYSSLING

Wyssling Consulting, PLLC
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North Carolina COA # P-2308

Signed 9/08/2023

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JOHN SCHMIDT RESIDENCE

NEW PHOTOVOLTAIC ROOF MOUNT SYSTEM PROJECT - 9.480 KW DC / 6.960 KW AC

PROJECT INFORMATION

PROPERTY OWNER
NAME: JOHN SCHMIDT

CONTRACTOR
NAME: BYLD

DESIGN SPECIFICATIONS
OCCUPANCY: R-3
CONSTRUCTION TYPE: SINGLE FAMILY RESIDENCE
ZONING: RESIDENTIAL
WIND EXPOSURE: C
AHJ : HARNETT
UTILITY: DUKE ENERGY

APPLICABLE CODES & STANDARDS
NORTH CAROLINA RESIDENTIAL CODE 2018 (IRC 2018)
NORTH CAROLINA BUILDING CODE 2018 (IBC 2018)
NORTH CAROLINA FIRE CODE 2018 (IFC 2018)
NATIONAL ELECTRICAL CODE, NEC 2020 CODE BOOK, NFPA 70

TYPE OF INTERCONNECTION: LINE SIDE TAP IN THE MSP

SCOPE OF WORK
TYPE OF SYSTEM: ROOF MOUNT

SYSTEM SIZE: STC: 24 X 395W = 9.480kW
PTC: 24 X 372W = 8.928kW
(24) TRINA SOLAR TSM-395 DE09.05 (395W) [BLK] MODULES
(12) NORTHERN ELECTRIC BDM-600X(BDM-300X2X) MICROINVERTERS
(1) 60A FUSED AC DISCONNECT WITH 40A FUSES
(1) 100A PV LOAD CENTER

MSP UPGRADE: NO
MAIN BREAKER DERATE: NO

RACKING & MOUNTING

PV ATTACHMENT TYPE: IRONRIDGE QUICKMOUNT L FOOT FOR COMP SHINGLE ROOF

RACKING TYPE: UNIRAC SOLAR MOUNT ROOF MOUNT RACKING HARDWARE

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SHEET #	SHEET NAME
T-1	COVER SHEET
T-2	PLAN NOTES
PV-1	SITE PLAN LAYOUT
PV-2	ATTACHMENT DETAILS
PV-3	MOUNTING DETAILS
E-1	ELECTRICAL DIAGRAM
E-2	WARNING LABELS
S-1	SPEC SHEET
S-2	SPEC SHEET
S-3	SPEC SHEET
S-4	SPEC SHEET

COORDINATES:
35.479282, -78.833908

AERIAL VIEW

BYLD BETTER

CONTRACTOR

BYLD

ADDRESS:1213W MOOREHEAD ST, STE500 CHARLOTTE, NC 28208
LICENSE #:

DESIGNER: ORG

JOHN SCHMIDT RESIDENCE

23 HAMILTON FARM CIR,
FUQUAY-VARINA,
NC 27526

DATE:9/8/2023
APN:0806430050

DESIGN BY

CompleteSolar
A Brighter Way.

SHEET
T-1
COVER SHEET

1.1. PROJECT NOTES:

1.2. THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) ARTICLE 690, ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.

1.3. THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION

1.4. GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS INTEGRATED WITH THE MICROINVERTER IN ACCORDANCE WITH NEC 690.5(A)

1.5. ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4 & NEC 690.60: PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE INVERTERS: UL 1741 CERTIFIED, IEEE 1547, 929, 519 COMBINER BOX(ES): UL 1703 OR UL 1741 ACCESSORY

1.6. MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.

1.7. ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].

1.8. ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

1.9. SCOPE OF WORK:

1.10. PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

1.11. WORK INCLUDES:

1.12. PV ROOF ATTACHMENTS - IRONRIDGE QUICKMOUNT L FOOT FOR COMP SHINGLE ROOF

1.13. PV RACKING SYSTEM INSTALLATION - UNIRAC SOLAR MOUNT ROOF MOUNT RACKING HARDWARE

1.14. PV MODULE AND INVERTER INSTALLATION - TRINA SOLAR TSM-395 DE09.05 (395W) [BLK] MODULES/ NORTHERN ELECTRIC BDM-600X(BDM-300X2X) MICROINVERTERS

1.15. PV EQUIPMENT GROUNDING

1.16. PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX

1.17. PV LOAD CENTERS (IF INCLUDED)

1.18. PV METERING/MONITORING (IF INCLUDED)

1.19. PV DISCONNECTS

1.20. PV GROUNDING ELECTRODE & BONDING TO (E) GEC

1.21. PV FINAL COMMISSIONING

1.22. (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV

1.23. SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE

1.24. SITE NOTES:

1.25. A LADDER WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.

1.26. THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.

1.27. THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.

1.28. PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26.

1.29. ROOF COVERINGS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVES TO PROTECT THE BUILDING OR STRUCTURE.

1.30. EQUIPMENT LOCATIONS:

1.31. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.

1.32. WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A),(C) AND NEC TABLES 310.15 (B)(2)(A) AND 310.15 (B)(3)(C)

1.33. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.

1.34. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.

1.35. ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.

1.36. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

1.37. STRUCTURAL NOTES:

1.38. RACKING SYSTEM

1.39. PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND

1.40. A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, ACCORDING TO RAI MANUFACTURER'S INSTRUCTIONS.

1.41. JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS' SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED SEALED PER LOCAL REQUIREMENTS.

1.42. ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED W/ APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.

1.43. ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.

1.44. WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

1.45. WIRING & CONDUIT NOTES:

1.46. ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.

1.47. CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.

1.48. VOLTAGE DROP LIMITED TO 1.5%.

1.49. DC WIRING LIMITED TO MODULE FOOTPRINT. MICROINVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY W/ SUITABLE WIRING CLIPS.

1.50. AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK PHASE B OR L2- RED, OR OTHER CONVENTION IF THREE PHASE PHASE C OR L3- BLUE, YELLOW, ORANGE**, OR OTHER CONVENTION NEUTRAL- WHITE OR GREY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH HIGHER VOLTAGE TO BE MARKED ORANGE [NEC 110.15

1.51. GROUNDING NOTES:

1.52. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVISES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.

1.53. PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC TABLE 250.122.

1.54. METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).

1.55. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45 AND MICROINVERTER MANUFACTURER'S INSTRUCTIONS.

1.56. EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

1.57. THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.

1.58. GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]

1.59. THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250, NEC 690.47 AND AHJ.

1.60. GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.5 IN GENERAL AND NEC 690.5 (A)(1) SPECIFICALLY.

1.61. DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:

1.62. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).

1.63. DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH

1.64. RAPID SHUTDOWN OF ENERGIZED CONDUCTORS BEYOND 10 FT OF PV ARRAY OR 5 FT INSIDE A BUILDING WITHIN 10 SECONDS. CONTROLLED CONDUCTORS ≤30V AND ≤240VA [NEC 690.12]. LOCATION OF LABEL ACCORDING TO AHJ

1.65. ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.

1.66. MICROINVERTER BRANCHES CONNECTED TO A SINGLE BREAKER OR GROUPED FUSES IN ACCORDANCE WITH NEC 110.3(B).

1.67. IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.

1.68. ELECTRICAL INTERCONNECTION NOTES:

1.69. THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF THE BUSBAR RATING.

1.70. WHEN THE SUM OF THE PV SOURCES EQUALS >100% OF THE BUSBAR RATING, PV DEDICATED BACKFEED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD.

1.71. AT MULTIPLE PV OUTPUT COMBINER PANEL, THE TOTAL RATING OF ALL OVERCURRENT DEVICES SHALL NOT EXCEED THE AMPACITY OF THE BUSBAR. HOWEVER, THE COMBINED OVERCURRENT DEVICE MAY BE EXCLUDED.

1.72. SUPPLY-SIDE TAP INTERCONNECTION SHOULD BE WITH SERVICE ENTRANCE CONDUCTORS.

1.73. BACKFEEDING BREAKER FOR UTILITY-INTERACTIVE INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING].

NORTH CAROLINA PROFESSIONAL SEAL 046546 ENGINEER SCOTT E. WYSSLING

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
North Carolina COA # P-2308

Signed 9/08/2023

BYLD BETTER

CONTRACTOR

BYLD

ADDRESS:1213W MOOREHEAD ST, STE500 CHARLOTTE, NC 28208
LICENSE #:

DESIGNER: ORG

JOHN SCHMIDT RESIDENCE

23 HAMILTON FARM CIR,
FUQUAY-VARINA,
NC 27526

DATE:9/8/2023
APN:0806430050

DESIGN BY

CompleteSolar
A Brighter Way.

SHEET
T-2
PLAN NOTES

N

PV SYSTEM SIZE:
9.48 kW DC

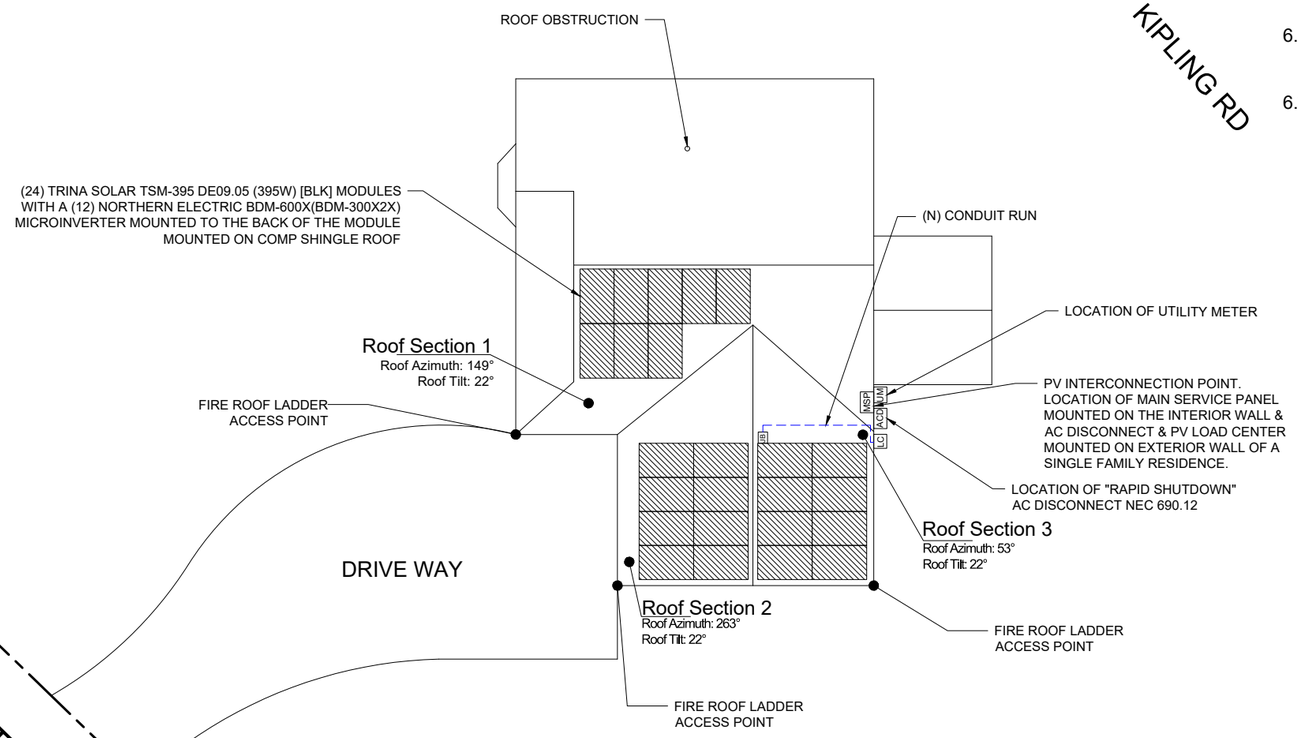
KINTON DR

PROPERTY LINE

PROPERTY LINE

PROPERTY LINE

KIPLING RD



23 HAMILTON FARM CIR

PROPERTY LINE

PROPERTY LINE

LEGEND	
	NEW SOLAR PANELS
UM	UTILITY METER
ACD	AC DISCONNECT
LC	PV LOAD CENTER
MSP	MAIN SERVICE PANEL

CONSTRUCTION NOTES

1. SOLAR PHOTOVOLTAIC SYSTEM TO BE INSTALLED ON RESIDENTIAL STRUCTURE.
2. THIS PROJECT HAS BEEN DESIGNED IN COMPLIANCE WITH THE IBC SECTION 1609 TO WITHSTAND A BASIC , WIND EXPOSURE C.
3. THE ROOF MEMBERS ARE 2"X6" RAFTERS AT 16" ON CENTER. CONNECTION TO STRUCTURE SHALL NOT BE WITHIN 11" OF NAILING PLATES.
4. THE SOLAR PHOTOVOLTAIC INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
5. ALL CONDUCTORS AND CONDUITS MOUNTED ON ROOF SHALL BE MINIMUM 7/8" ABOVE ROOF SURFACE (INCLUDING CABLES UNDERNEATH MODULES AND RACKING).
6. ROOF ACCESS POINTS SHALL BE PROVIDED PER THE FOLLOWING
   - 6.1. LOCATED IN AREAS NOT REQUIRING PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS DOORS OR WINDOWS.
   - 6.2. LOCATED AT STRONG POINTS OF CONSTRUCTION IN LOCATIONS WHERE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS: TREES, WIRES, OR SIGNS.

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DESIGNER: ORG

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23 HAMILTON FARM CIR,
FUQUAY-VARINA,
NC 27526

DATE:9/8/2023
APN:0806430050

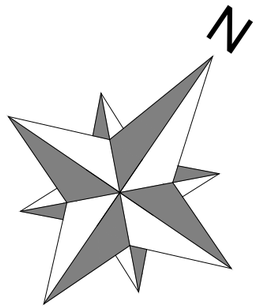
DESIGN BY

CompleteSolar
A Brighter Way.

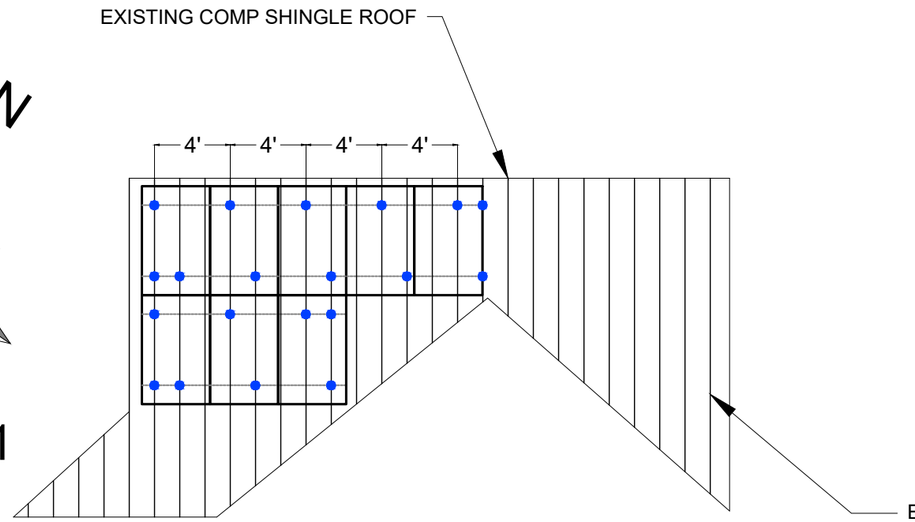
PV SYSTEM SITE PLAN

SCALE: 1/16" = 1'-0"

SHEET
PV-1
SITE PLAN LAYOUT



Roof Section 1
Roof Azimuth: 149°
Roof Tilt: 22°



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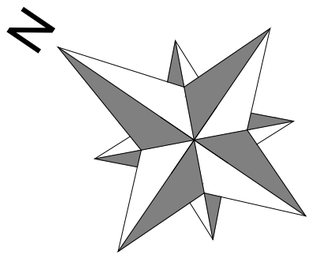
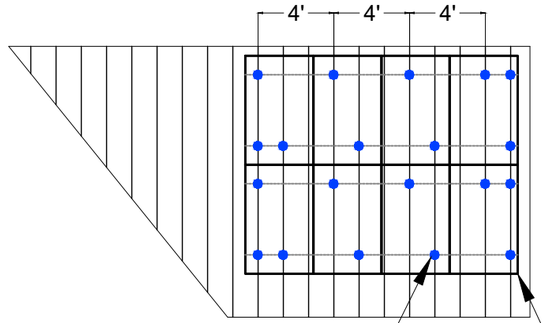
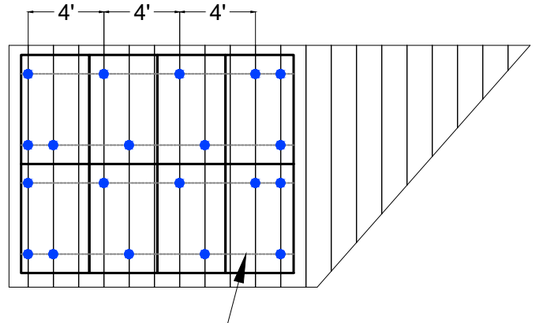
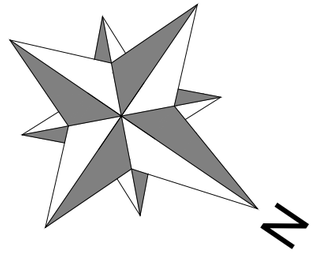


Roof Section 2
Roof Azimuth: 263°
Roof Tilt: 22°







Roof Section 3
Roof Azimuth: 53°
Roof Tilt: 22°

PV SYSTEM MOUNTING DETAILS

SCALE: 1/8" = 1'-0"

BYLD BETTER

CONTRACTOR

BYLD

ADDRESS:1213W MOOREHEAD ST, STE500 CHARLOTTE, NC 28208
LICENSE #:

DESIGNER: ORG

JOHN SCHMIDT RESIDENCE

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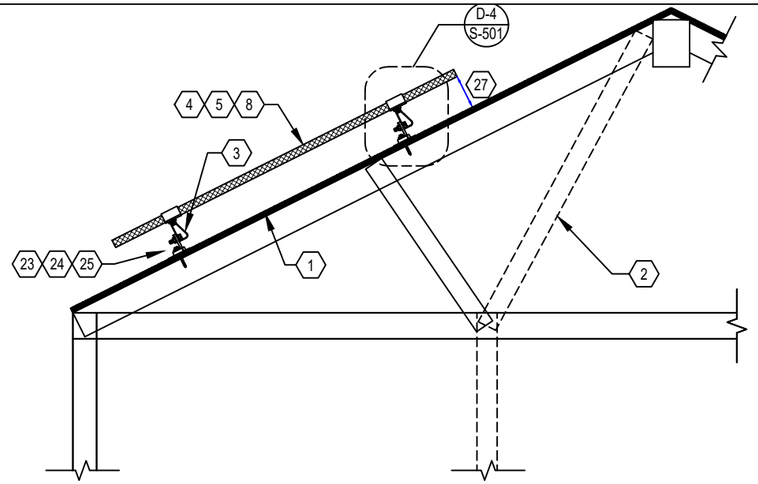
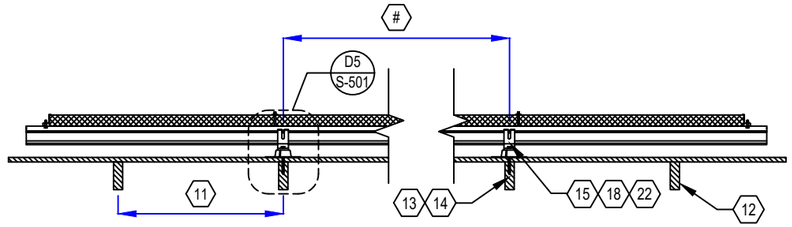
SHEET
PV-2
ATTACHMENT DETAILS



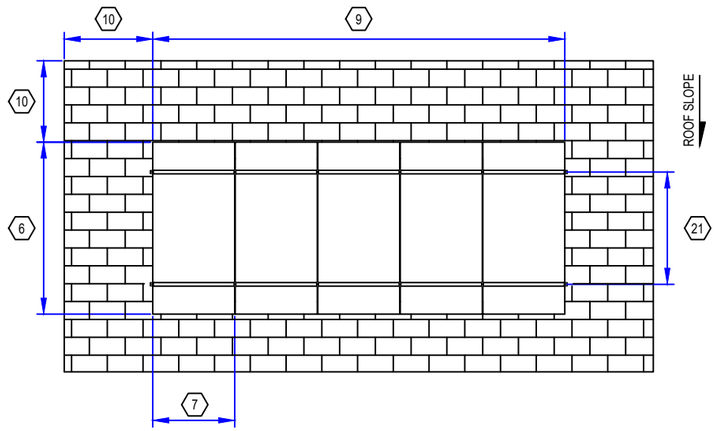
D1 RACKING DETAIL (TRANSVERSE)

NOT TO SCALE



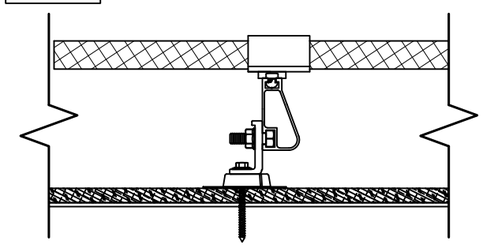
D2 RACKING DETAIL (LONGITUDINAL)

NOT TO SCALE



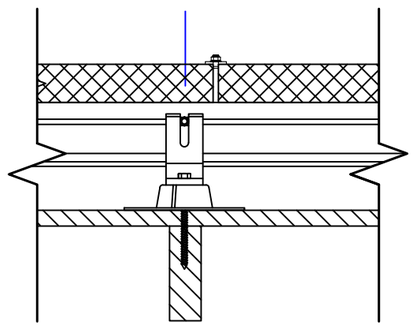
D3 RACKING DETAIL (TOP)

NOT TO SCALE



D4 DETAIL (TRANSVERSE)

NOT TO SCALE



D5 DETAIL (LONGITUDINAL)

NOT TO SCALE

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
North Carolina COA # P-2308

Signed 9/08/2023

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

1. ROOF MATERIAL: COMP SHINGLE
2. ROOF STRUCTURE: RAFTERS
3. ATTACHMENT TYPE: IRONRIDGE QUICKMOUNT L FOOT
4. MODULE MANUFACTURER: TRINA SOLAR
5. MODULE MODEL: TSM-395 DE09.05 (395W) [BLK]
6. MODULE LENGTH: 69.05"
7. MODULE WIDTH: 43.14"
8. MODULE WEIGHT: 46.29 LBS.
9. SEE SHEET S-1 FOR DIMENSION(S)
10. MIN. FIRE OFFSET
11. RAFTERS SPACING: 16" O.C.
12. RAFTERS SIZE: 2"X6" NOMINAL
13. LAG BOLT DIAMETER: 5/16 IN.
14. LAG BOLT EMBEDMENT: 2.5 IN.
15. TOTAL # OF ATTACHMENTS: 60
16. TOTAL AREA: 496.47 SQ. FT.
17. TOTAL WEIGHT: 1110.96LBS.
18. WEIGHT PER ATTACHMENT: 18.52 LBS.
19. DISTRIBUTED LOAD: 2.24 PSF
20. MAX. HORIZONTAL STANDOFF: 48 IN.
21. MAX. VERTICAL STANDOFF: LANDSCAPE: 25 IN., PORTRAIT: 46 IN.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER AND MODEL (OR EQUIV.):UNIRAC SOLAR MOUNT
24. RAIL WEIGHT: 0.436 PLF.
25. MAX. RAFTERS SPAN: 12 FT.
26. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

BYLD BETTER

CONTRACTOR

BYLD

ADDRESS:1213W MOOREHEAD ST, STE500 CHARLOTTE, NC 28208
LICENSE #:

DESIGNER: ORG

JOHN SCHMIDT RESIDENCE

23 HAMILTON FARM CIR,
FUQUAY-VARINA,
NC 27526

DATE:9/8/2023
APN:0806430050

DESIGN BY

CompleteSolar
A Brighter Way.

SHEET
PV-3
MOUNTING DETAILS

PV Module Ratings @ STC

Module Make/Model	TRINA SOLAR TSM-395 DE09.05 (395W) [BLK]
Max Power-Point Current (Imp)	11.62A
Max Power-Point Voltage (Vmp)	34.0V
Open-Circuit Voltage (Voc)	41.0V
Short-Circuit Current (Isc)	12.21A
Max Series Fuse (OCPD)	20A
Nominal Maximum Power at STC (Pmax)	395W
Maximum System Voltage	1500V
Voc Temperature Coefficient	-0.25 %/K

SYSTEM SUMMARY

	BRANCH #1	BRANCH #2
INVERTERS PER BRANCH	6	6
MAX CONTINUOUS OUTPUT CURRENT	14.52A	14.52A
MAX CONTINUOUS OUTPUT POWER	3480W	3480W
ARRAY STC POWER		9480W
ARRAY PTC POWER		8928.0W
MAX CONTINUOUS OUTPUT CURRENT		29.04A
MAX CONTINUOUS OUTPUT POWER		6960W
DERATED (CEC) AC POWER		8526.24W

Inverter Ratings

Inverter Make/Model	NORTHERN ELECTRIC BDM-600X(BDM-300X2X)
Max DC Volt Rating	60V
Max Continuous Output Power	580W
Max Nominal Voltage	240V
Max Continuous Output Current Current	2.42A
Max OCPD Rating	20A

DESIGN TEMPERATURES

ASHRAE EXTREME LOW	-12°C
ASHRAE 2% HIGH	34°C

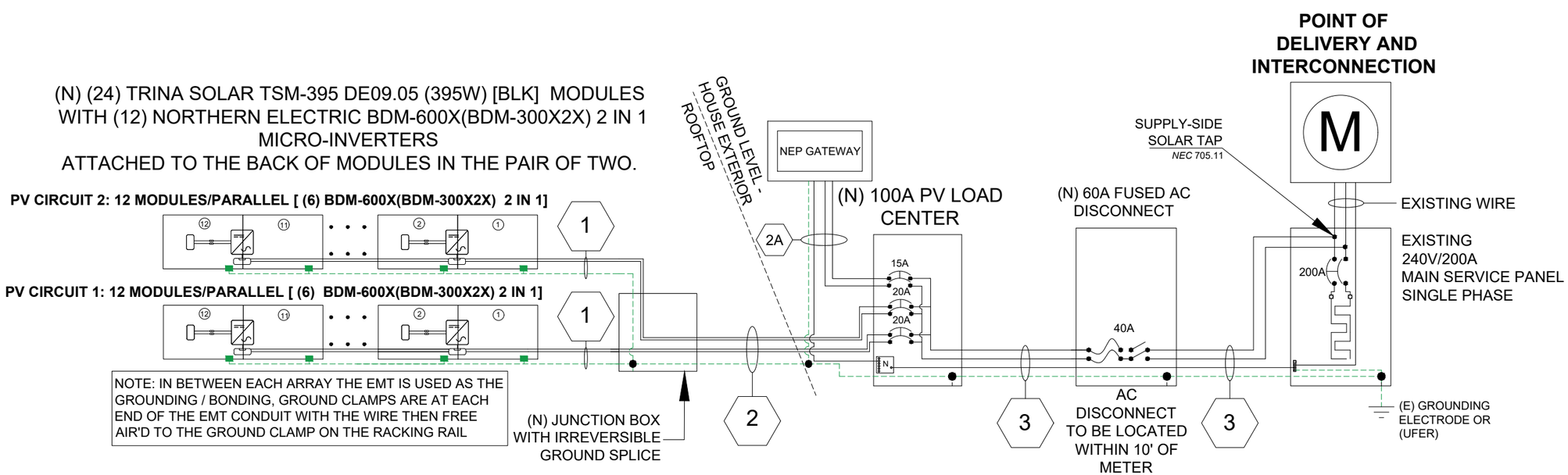
Conduit and Conductor Schedule

Tag	Description	Wire Gauge	# of Conductors	Conduit Type	Conduit Size
1	PV Cable	10 AWG	2	N/A - Free Air	N/A - Free Air
1	Bare Copper Ground (EGC/GEC)	6 AWG	1	N/A - Free Air	N/A - Free Air
2	THWN-2	10 AWG	4	EMT	3/4"
2	THWN-2 - Ground	10 AWG	1	EMT	3/4"
2A	THWN-2	14 AWG	3	N/A - Free Air	N/A - Free Air
2A	THWN-2 - Ground	14 AWG	1	N/A - Free Air	N/A - Free Air
3	THWN-2	6 AWG	3	EMT	3/4"
3	THWN-2 - Ground	6 AWG	1	EMT	3/4"

METER # 325332429

MAIN SERVICE PANEL
SUPPLY SIDE TAP
NEC 705. 11 SUPPLY SIDE.
POWER PRODUCTION SOURCES

(N) (24) TRINA SOLAR TSM-395 DE09.05 (395W) [BLK] MODULES
WITH (12) NORTHERN ELECTRIC BDM-600X(BDM-300X2X) 2 IN 1
MICRO-INVERTERS
ATTACHED TO THE BACK OF MODULES IN THE PAIR OF TWO.



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SHEET
E-1
ELECTRICAL DIAGRAM

WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION:
INVERTER(S), AC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).
PER CODE(S): NEC : 690.13(B), NEC 2014: 690.17(E), NEC : 690.17(4)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
UTILITY SERVICE ENTRANCE/METER, INVERTER/DC DISCONNECT IF REQUIRED BY LOCAL AHJ, OR OTHER LOCATIONS AS REQUIRED BY LOCAL AHJ.
PER CODE(S): NEC : 690.56(C)(3), NEC : 690.12, NEC 690.56, IFC 2012: 605.11.1, IFC 2018: 1204.5.3

WARNING

POWER SOURCE OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
ADJACENT TO PV BREAKER (IF APPLICABLE).
PER CODE(S): NEC : 705.12(B)(3)(2), NEC : 705.12(B)(2)(3)(b), NEC : 705.12(D)(2)(3)(b)

WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR.

LABEL LOCATION:
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.
PER CODE(S): NEC : 690.54, NEC : 690.54, NEC : 690.54

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL LOCATION: PV SYSTEM DISCONNECT
PER CODE(S): NEC 690.13(B)

WARNING

DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION:
MAIN SERVICE PANEL (IF APPLICABLE).
PER CODE(S): NEC : 705.12(C) & 690.59

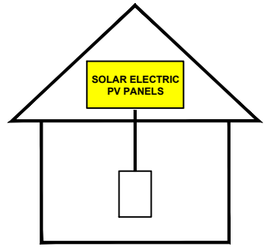
GENERATION DISCONNECT SWITCH

MAXIMUM AC OPERATING CURRENT: 29.04 AMPS
NOMINAL OPERATING AC VOLTAGE: 240.0 VAC

LABEL LOCATION:
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.
PER CODE(S): NEC : 690.54

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.

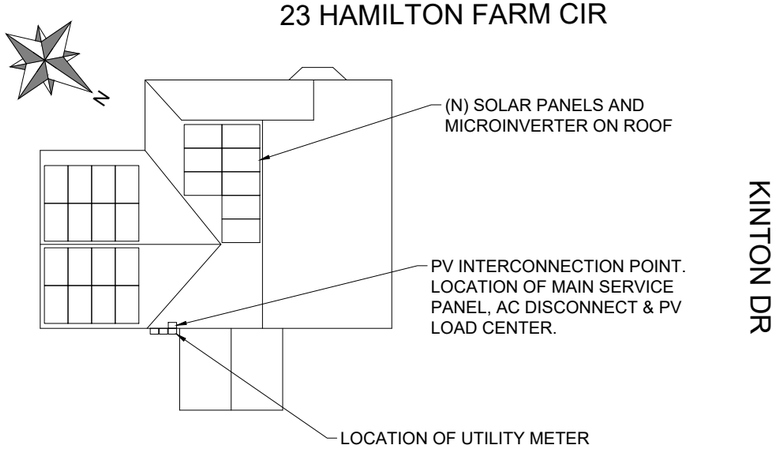


LABEL LOCATION:
ON OR NO MORE THAT 3 M (10 FT) FROM THE SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED.
PER CODE(S): NEC : 690.56(C)(1)(a)

CAUTION:

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS AS SHOWN

23 HAMILTON FARM CIR



KIPLING RD

PERMANENT SIGNAGE NOTES:

1. NOT ALL PLACARDS SHOWN MAY BE REQUIRED BY LOCAL AHJ. CONTRACTOR TO VERIFY PLACARD REQUIREMENTS WITH LOCAL AHJ BEFORE INSTALLATION.
2. ALL PLAQUES AND SIGNAGE REQUIRED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE
3. ALTERNATE POWER SOURCE PLACARD SHALL BE METALLIC OR MACHINE PRINTED LETTERS IN A CONTRASTING COLOR TO THE PLAQUE. THIS PLAQUE WILL BE ATTCHED BY POP RIVETS OR SCREWS OR OTHER APPROVED METHOD.
4. DIRECTORY PLACARD MARKING CONTENT AND FORMAT: RED BACKGROUND, WHITE LETTERING, MINIMUM 3/8" LETTER HIEGHT, ALL CAPITAL LETTERS, ARIAL OR SIMILAR FONT, NON BOLD, REFLECTIVE WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT.

BYLD BETTER

CONTRACTOR

BYLD

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LICENSE #:

DESIGNER: ORG

JOHN SCHMIDT RESIDENCE

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DESIGN BY

CompleteSolar
A Brighter Way.

SHEET
E-2
WARNING LABELS

Vertex S

BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-DE09.05
POWER RANGE: 380-395 W

395 W+	0/+5 W	20.5 %
MAXIMUM POWER OUTPUT	POSITIVE POWER TOLERANCE	MAXIMUM EFFICIENCY

Outstanding Visual Appearance
- Designed with aesthetics in mind
- Ultra-thin, virtually invisible busbars
- Excellent cell color control by machine selection

Small in size, big on power
- Generates up to 395 W, 20.5 % module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping, lower series resistance, improved current collection and enhanced reliability
- Excellent low light performance (IAM) with cell process and module material optimization

Universal solution for residential and C&I rooftops
- Designed for compatibility with existing mainstream inverters, optimizers and mounting systems
- Perfect size and low weight for easy handling. Optimized transportation cost
- Reduces installation cost with higher power bin and efficiency
- Flexible installation solutions for system deployment

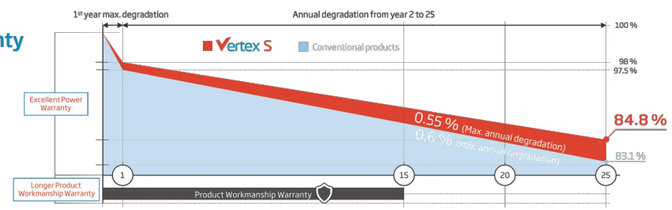
High Reliability
- 6,000 Pa snow load (test load)
- 4,000 Pa wind load (test load)

Extended Vertex S Warranty

2 %
1st year max. degradation

0.55 %
Max. annual degradation from year 2 to 25

15 Years
Product Workmanship Warranty



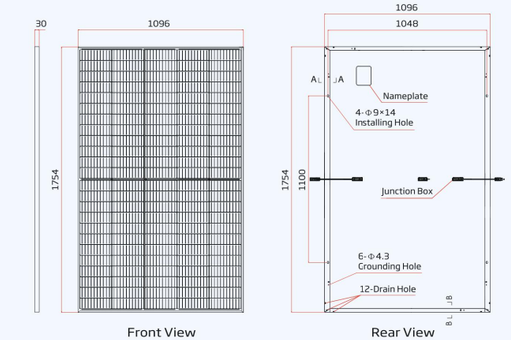
Comprehensive Product and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System

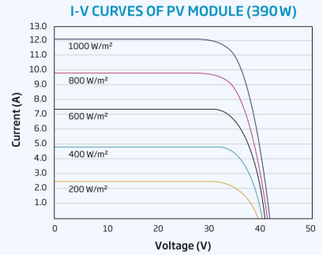
Trinasolar

Vertex S

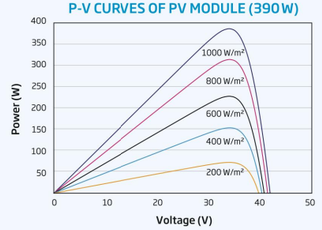
DIMENSIONS OF PV MODULE (mm)



I-V CURVES OF PV MODULE (390 W)



P-V CURVES OF PV MODULE (390 W)



ELECTRICAL DATA (STC)	TSM-380 DE09.05	TSM-385 DE09.05	TSM-390 DE09.05	TSM-395 DE09.05
Peak Power Watts-PMAX (Wp)*	380	385	390	395
Power Tolerance-PMAX (W)	0/+5	0/+5	0/+5	0/+5
Maximum Power Voltage-VMPP (V)	33.4	33.6	33.8	34.0
Maximum Power Current-IMPP (A)	11.38	11.46	11.54	11.62
Open Circuit Voltage-VOC (V)	40.4	40.6	40.8	41.0
Short Circuit Current-ISC (A)	12.00	12.07	12.14	12.21
Module Efficiency η m (%)	19.8	20.0	20.3	20.5

STC: Irradiance 1000 W/m², Cell Temperature 25 °C, Air Mass AM1.5 *Measuring tolerance: ±3%

ELECTRICAL DATA (NOCT)	TSM-380 DE09.05	TSM-385 DE09.05	TSM-390 DE09.05	TSM-395 DE09.05
Maximum Power-PMAX (Wp)	286	290	294	298
Maximum Power Voltage-VMPP (V)	31.4	31.6	31.8	31.9
Maximum Power Current-IMPP (A)	9.12	9.18	9.24	9.32
Open Circuit Voltage-VOC (V)	38.0	38.2	38.4	38.6
Short Circuit Current-ISC (A)	9.67	9.73	9.78	9.84

NOCT: Irradiance at 800 W/m², Ambient Temperature 20 °C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	120 cells
Module Dimensions	1754×1096×30 mm
Weight	21.0 kg
Glass	3.2 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	Black-White
Frame	30 mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm² Landscape: 1100/1100 mm Portrait: 280/280 mm*
Connector	TS4/MC4 EVO2*

*Special order only

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43 °C (±2 K)
Temperature Coefficient of PMAX	-0.34 %/K
Temperature Coefficient of VOC	-0.25 %/K
Temperature Coefficient of ISC	0.04 %/K

MAXIMUM RATINGS

Operational Temperature	-40 to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Max Series Fuse Rating	20 A

WARRANTY

15 Year product workmanship warranty
25 Year power warranty
2 % First year degradation
0.55 % Annual power degradation

(Please refer to the applicable limited warranty for details)

PACKAGING CONFIGURATION

Modules per box	36 pieces
Modules per 40' container	936 pieces

Trinasolar

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Version number: TSM_EN_2021_B

www.trinasolar.com

BYLD BETTER

CONTRACTOR

BYLD

ADDRESS:1213W MOOREHEAD ST, STE500 CHARLOTTE, NC 28208
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DESIGN BY

CompleteSolar
A Brighter Way.

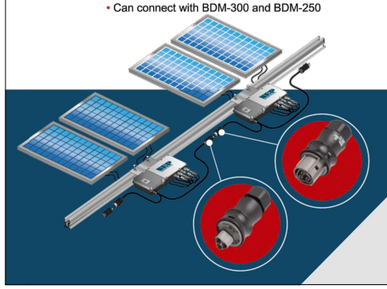
SHEET
S-1
SPEC SHEET

NORTHERN ELECTRIC

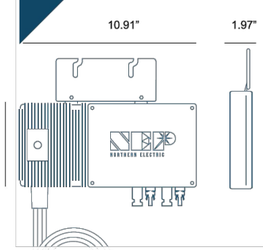
BDM-600X (BDM-300X2X) MICROINVERTER

Features

- Low cost $/watt micro inverter
- High continuos output power up to 580Wac, recommended for dua max 450W solar panel
- High efficiency with 95.5% CEC
- Globally certified for UL1741, SAA, TUV, VDE-AR-N 4105, VDE 0126, G83/2, CEL 021, IEC61727, EN50438
- Integrated grounding for easy installation
- NEMA-6/IP-66/IP-67 enclosure rating
- Integrated monitoring and power line communication with RDG-256 gateway
- Can connect with BDM-300 and BDM-250



northernep.com



Intertek 4005622 | CE | TÜV | SAA 152167

Important product information

- NEP is committed to developing Clean, Affordable, Reliable and Efficient (CARE) products for our customers worldwide.
- NEP microinverters have an isolation transformer and basic isolation between the DC input and the AC output network.

NORTHERN ELECTRIC

BDM-600X (BDM-300X2X) MICROINVERTER

* Grid parameters are configurable through a BDG-256 or BDG-256P3 gateway
* All NEC required adjustment factors have been considered for AC outputs. AC current outputs will not exceed stated values for Rated Output AC Current

COMPLIANCE
*NEC 2014 Section 690.11 DC Arc-Fault Circuit Protection
*NEC 2014 Section 690.12 Rapid Shutdown of PV Systems on Buildings
*NEC 2014 Section 705.12 Point of Connection (AC Arc-Fault Protection)

INPUT(DC)	Recommended Max PV Power (Wp)	450 x 2		
	Max DC Open Circuit Voltage (Vdc)	60		
	Max DC Input Current (Adc)	14 x 2		
	MPPT Tracking Accuracy	>99.5%		
	MPPT Tracking Range (Vdc)	22-55		
	Isc PV (absolute maximum) (Adc)	18 x 2		
	Maximum Inverter Backfeed Current to the Array (Adc)	0		
OUTPUT (AC)	Peak AC Output Power (Wp)	580(continuous)		
	Rated AC Output Power (Wp)	500		
	Nominal Power Grid Voltage (Vac)	240	208	230
	Allowable Power Grid Voltage (Vac)	211-264*	183-229*	configurable*
	Allowable Power Grid Frequency (Hz)	59.3 a 60.5*		configurable*
	THD	<3% (at rated power)		
	Power Factor (cos phi, fixed)	>0.99 (at rated power)		
	Rated Output Current (Aac)	2.42	2.78	2.52
	Current (inrush)(Peak and Duration)	24A, 15us		
	Nominal Frequency (Hz)	60		50
	Maximum Output Fault Current (Aac)	4.4A peak		
	Maximum Output Overcurrent Protection (Aac)	10		
	Maximum Number of Units Per Branch (20A) (All NEC adjustment factors have been considered)	7	6	6
SYSTEM EFFICIENCY	Weighted Averaged Efficiency (CEC)	95.50%		
	Night Time Tare Loss (Wp)	0.11		
PROTECTION FUNCTIONS	Over/Under Voltage Protection	Yes		
	Over/Under Frequency Protection	Yes		
	Anti-Islanding Protection	Yes		
	Over Current Protection	Yes		
	Reverse DC Polarity Protection	Yes		
	Overload Protection	Yes		
	Protection Degree	NEMA-6 / IP-66 / IP-67		
	Ambient Temperature	-40°F to +149°F (-40°C to +65°C)		
	Operating Temperature	-40°F to +185°F (-40°C to +85°C)		
	Display	LED LIGHT		
	Comunications	Power Line		
	Dimension (W-H-D)	10.91"x5.20"x1.97"(277x132x50 mm)		
	Weight	6.4 lbs. (2.9 kg)		
	Environment Category	Indoor and outdoor		
	Wet Location	Suitable		
	Pollution Degree	PD 3		
	Overvoltage Category	II(PV), III (AC MAINS)		
	Product Safety Compliance	UL 1741 CSA C22.2 No. 107.1	IEC/EN 62109-1 IEC/EN 62109-2	
	Grid Code Compliance* (Refer to the label for the detailed grid code compliance)	IEEE 1547	VDE-AR-N 4105* VDE V 0126-1-1/A1 G83/2, CEI 021 AS 4777.2 & AS 4777.3,EN50438	

BYLD BETTER

CONTRACTOR

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SHEET
S-2
SPEC SHEET

SOLARMOUNT

UNIRAC

SOLARMOUNT defined the standard in solar racking. Features are designed to get installers off the roof faster. Our grounding & bonding process eliminates copper wire and grounding straps to reduce costs. Systems can be configured with standard or light rail to meet your design requirements at the lowest cost possible. The superior aesthetics package provides a streamlined clean edge for enhanced curb appeal, with no special brackets required for installation.

Now Featuring:

THE NEW FACE OF SOLAR RACKING

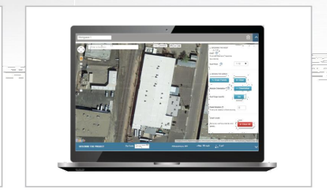
Superior Aesthetics Package

LOSE ALL OF THE COPPER & LUGS

System grounding through Enphase microinverters and trunk cables

SMALL IS THE NEXT NEW BIG THING

Light Rail is Fully Compatible with all SM Components



ENHANCED DESIGN & LAYOUT TOOLS

Featuring Google Map Capabilities within U-Builder

FAST INSTALLATION. SUPERIOR AESTHETICS

OPTIMIZED COMPONENTS • VERSATILITY • DESIGN TOOLS • QUALITY PROVIDER

SOLARMOUNT

UNIRAC

OPTIMIZED COMPONENTS

INTEGRATED BONDING & PRE-ASSEMBLED PARTS

Components are pre-assembled and optimized to reduce installation steps and save labor time. Our new grounding & bonding process eliminates copper wire and grounding straps or bonding jumpers to reduce costs. Utilize the microinverter mount with a wire management clip for an easier installation.

VERSATILITY

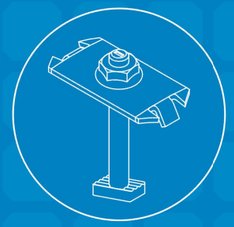
ONE PRODUCT - MANY APPLICATIONS

Quickly set modules flush to the roof or at a desired tilt angle. Change module orientation to portrait or landscape while securing a large variety of framed modules on flat, low slope or steep pitched roofs. Available in mill, clear and dark anodized finishes to outperform your projects financial and aesthetic aspirations.

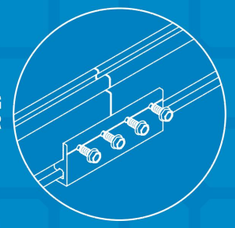
AUTOMATED DESIGN TOOL

DESIGN PLATFORM AT YOUR SERVICE

Creating a bill of materials is just a few clicks away with U-Builder, a powerful online tool that streamlines the process of designing a code compliant solar mounting system. Save time by creating a user profile, and recall preferences and projects automatically when you log in. You will enjoy the ability to share projects with customers: there's no need to print results and send to a distributor, just click and share.

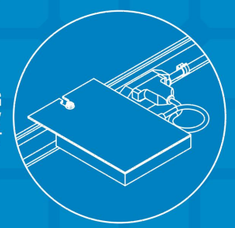


INTEGRATED BONDING MIDCLAMP



INTEGRATED BONDING SPLICE BAR

INTEGRATED BONDING L-FOOT w/ T-BOLT



INTEGRATED BONDING MICROINVERTER MOUNT w/ WIRE MANAGEMENT

LISTED **UL2703**

BONDING & GROUNDING
MECHANICAL LOADING
SYSTEM FIRE CLASSIFICATION

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT

UNMATCHED EXPERIENCE | CERTIFIED QUALITY | ENGINEERING EXCELLENCE | BANKABLE WARRANTY | DESIGN TOOLS | PERMIT DOCUMENTATION

TECHNICAL SUPPORT

Unirac's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2015, 14001:2015 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance, Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. SOLARMOUNT is covered by a twenty five (25) year limited product warranty and a five (5) year limited finish warranty.

PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PUB201FEB28 - PRNTED

BYLD BETTER

CONTRACTOR

BYLD

ADDRESS:1213W MOOREHEAD ST, STE500 CHARLOTTE, NC 28208
LICENSE #:

DESIGNER: ORG

JOHN SCHMIDT RESIDENCE

23 HAMILTON FARM CIR,
FUQUAY-VARINA,
NC 27526

DATE:9/8/2023
APN:0806430050

DESIGN BY

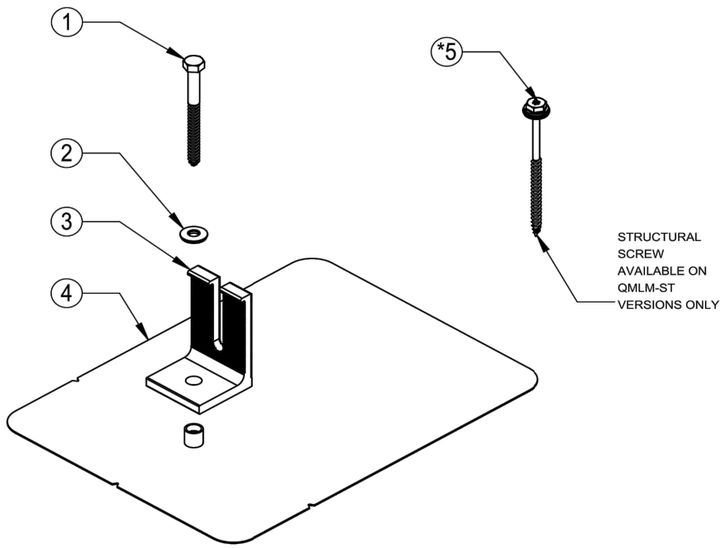
CompleteSolar
A Brighter Way.

SHEET
S-3
SPEC SHEET

Cut Sheet

QuickMount®

L-Mount®



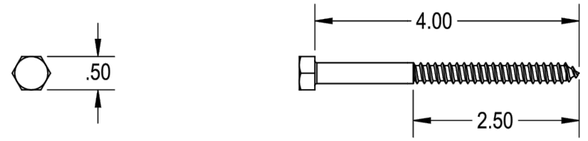
ITEM NO	DESCRIPTION	QTY IN KIT
1	LAG SCREW, 5/16" X 4"	1
2	WASHER, SEALING, EPDM BONDED SS	1
3	OPEN SLOTTED L-FOOT, MILL/BLACK	1
4	FLAHING, ROUNDED CORNERS, MILL/BLACK	1
5	STRUCTURAL SCREW, T-30 HEX WASHER HEAD, 5/16" X 4-1/2	1

PART NUMBER	DESCRIPTION
QM-LM-01-M1	L-MOUNT®, OPEN SLOT
QM-LM-01-B1	L-MOUNT®, OPEN SLOT, BLACK
QM-LMST-01-M1	L-MOUNT®, OPEN SLOT, STRUCTURAL SCREW
QM-LMST-01-B1	L-MOUNT®, OPEN SLOT, STRUCTURAL SCREW, BLACK

Cut Sheet

QuickMount®

1) LAG SCREW

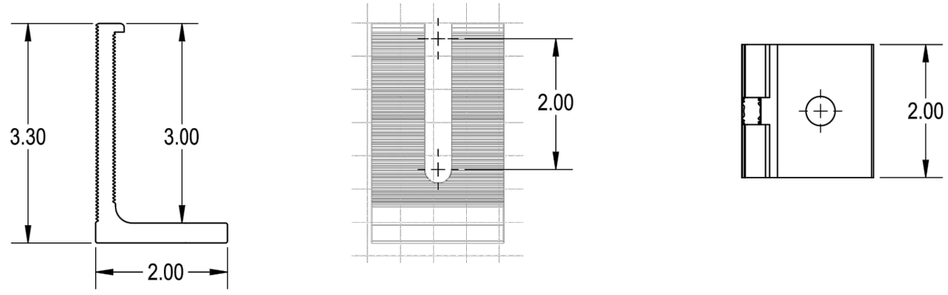


Property	Value
Material	300 Series Stainless Steel
Finish	Clear

2) WASHER, SEALING, EPDM BONDED SS

Property	Value
Material	300 Series Stainless Steel
Finish	Clear

3) OPEN SLOTTED L-FOOT, MILL/BLACK



Property	Value
Material	6000 Series Aluminum
Finish	Mill

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QM-LM-01-M1
Cut Sheet Rev 1.01

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SHEET
S-4
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