

THIS EDGE INTENTIONALLY LEFT BLANK FOR BINDING - PAPER SIZE 34" X 22" - THIS EDGE INTENTIONALLY LEFT BLANK FOR BINDING

2.12 THERMAL ADHESIVE

- 2.12.1 THERMAL ADHESIVE USED TO ATTACH THERMOCOUPLE TO BACK OF SOLAR MODULES SHALL BE ARCTIC ALUMINA OR APPROVED EQUAL.

2.13 SURGE ARRESTERS

- 2.13.1 WHEN DC SURGE ARRESTERS ARE INDICATED ON CONSTRUCTION DRAWINGS AND NOT FACTORY INTEGRATED, PROVIDE THE FOLLOWING SURGE ARRESTERS:
- 1500V DC SYSTEMS - CITEL DS50VGPVS-1500G/51
 - 1000V DC SYSTEMS - CITEL DS50PVS-1000
 - 600V DC SYSTEMS - CITEL DS50PVS-600
- 2.13.2 WHEN LOW VOLTAGE AC SURGE ARRESTERS ARE INDICATED ON CONSTRUCTION DRAWINGS AND NOT FACTORY INTEGRATED, PROVIDE THE FOLLOWING SURGE ARRESTERS:
- 120V - CITEL DS42S-120/G
 - 120V/240V - CITEL DS43S-120
 - 120/208V WYE - CITEL DS44S-120/G
 - 480V WYE - CITEL DS44S-400
 - 480V DELTA -CITEL DS43S-480
- 2.13.3 WHEN MEDIUM VOLTAGE AC SURGE ARRESTERS ARE INDICATED ON CONSTRUCTION DRAWINGS AND NOT FACTORY INTEGRATED, PROVIDE SURGE ARRESTERS AS INDICATED ON CONSTRUCTION DRAWINGS.

2.14 WEATHERPROOF GFCI OUTLET AND COVER

- 2.14.1 PROVIDE LEVITON GFCI SMARTLOCK PRO SLIM - WR899W.
- 2.14.2 PROVIDE INTERMATIC EXTRA DUTY CAST COVER - 1010MXD OR EQUAL.

2.15 PAINT MAKER

- 2.15.1 PROVIDE MARKAL RED PAINT MARKER FOR TORQUE MARKS.

3. EXECUTION:

3.1 GENERAL

- 3.1.1 SECTION 3 COVERS INSTALLATION METHODS AND REQUIREMENTS FOR CLASSES OF MATERIAL AND EQUIPMENT. SEE CONSTRUCTION DRAWINGS FOR ADDITIONAL REQUIREMENTS PERTAINING TO SPECIFIC MEANS AND METHODS.
- 3.1.2 ALL DISCONNECT SWITCHES AND COMBINER BOXES SHALL BE SECURED FROM UNAUTHORIZED/UNQUALIFIED PERSONNEL BY FASTENER SCREWS, LOCKS, OR LOCATION (LOCKED ACCESS ROOFTOP, LOCKED FENCED AREA, ETC.).
- 3.1.3 MARKINGS THAT VERIFY PROPER TORQUING OF CABLE TERMINATIONS AND FASTENERS SHALL BE MADE USING A PAINT MARKER.

3.2 PHOTOVOLTAIC MODULES

- 3.2.1 LOCATE AND INSTALL MODULES AS SHOWN ON CONSTRUCTION DRAWINGS.
- 3.2.2 INSTALL MODULES PER SUPPLIED MANUFACTURER INSTALLATION AND MOUNTING GUIDES WITH NO DEVIATIONS FROM SUCH DOCUMENTS.
- 3.2.3 HANDLING OF MODULES SHALL BE DONE IN THE MANNER SPECIFIED BY MANUFACTURER.
- 3.2.4 FASTENERS SHALL BE OF PROPER TRADE SIZES, 306 STAINLESS STEEL AND AT ALL LOCATIONS ON MODULE AS IDENTIFIED BY MANUFACTURER INSTALLATION AND MOUNTING SPECIFICATIONS.
- 3.2.5 TORQUE ALL SECURING HARDWARE PER SETTINGS SPECIFIED BY MODULE MANUFACTURER. I MPACT HAMMER TOOLS SHALL NOT BE USED TO SECURE MODULES. MARK TORQUED SECURING HARDWARE WITH SINGLE SLASH INDICATOR.

3.3 MOUNTING SYSTEM FOR PHOTOVOLTAIC MODULES

- 3.3.1 LOCATE AND INSTALL MOUNTING SYSTEM AS SHOWN ON CONSTRUCTION DRAWINGS. THERE SHALL BE NO DEVIATIONS FROM CONSTRUCTION DRAWINGS UNLESS PRIOR AUTHORIZATION IS RECEIVED IN WRITING BY NEXAMP.
- 3.3.2 ASSEMBLE MOUNTING SYSTEM PER MANUFACTURER SPECIFICATIONS AND INSTRUCTIONS.
- 3.3.3 TORQUE ALL SECURING HARDWARE PER SETTINGS SPECIFIED BY MODULE AND MOUNTING SYSTEM MANUFACTURERS. MARK TORQUED SECURING HARDWARE WITH SINGLE SLASH INDICATOR.
- 3.3.4 MOUNT AND FASTEN MODULES TO MOUNTING SYSTEM PER MOUNTING MANUFACTURER SPECIFICATIONS. IF MOUNTING SYSTEM METHODS DEVIATE FROM MODULE MANUFACTURER SPECIFIED MOUNTING METHODS, DO NOT PROCEED WITHOUT WRITTEN AUTHORIZATION FROM NEXAMP.
- 3.3.5 FOR ROOF MOUNTED EQUIPMENT, INSTALL PROTECTIVE PADDING MATERIAL (SUPPLIED BY NEXAMP) FOR THE PURPOSE OF PROTECTING ROOF INTEGRITY. PROTECTIVE PADDING SHALL BE COMPATIBLE WITH ROOF MATERIAL AS SPECIFIED BY ROOFING MANUFACTURER. PROTECTIVE PADDING SHALL BE ADHERED TO ROOF MOUNTED EQUIPMENT FOOT, BALLAST, AND/OR TRAY USING NEXAMP APPROVED ADHESIVE.

3.4 INVERTERS

- 3.4.1 INVERTER SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS AND PROCEDURES.
- 3.4.2 TORQUE ALL TERMINATIONS (CONTRACTOR & MANUFACTURER) PER MANUFACTURER SPECIFICATIONS AND PROCEDURES. MARK ALL TORQUED TERMINATIONS WITH SINGLE SLASH INDICATOR.
- 3.4.3 INVERTER SHALL BE LOCATED AS INDICATED ON CONSTRUCTION DRAWING AND SHALL BE MOUNTED AND SEISMICALLY SECURED TO PAD PER LOCAL CODES AND MANUFACTURER INSTALLATION SPECIFICATIONS AND PROCEDURES.
- 3.4.4 ALL INVERTER OPENINGS SHALL BE SEALED TO PREVENT ANIMAL, INSECT, DUST, AND MOISTURE INFILTRATION.
- 3.4.5 CONCRETE PAD AND GROUND PREPARATIONS SHALL BE PROVIDED AS INDICATED ON CONSTRUCTION DRAWINGS.
- 3.4.6 BARRIERS SHALL BE PROVIDED TO PROTECT INVERTER FROM VEHICULAR TRAFFIC AS INDICATED ON CONSTRUCTION DRAWINGS.
- 3.4.7 CONTRACTOR SHALL VERIFY THAT ALL INVERTER DC CIRCUIT BREAKER AND FUSE LOCATIONS CORRESPOND TO CONSTRUCTION DRAWINGS.
- 3.4.8 INVERTER SHALL NOT BE TURNED ON BY CONTRACTOR UNLESS AUTHORIZED BY NEXAMP.

3.5 SWITCHBOARDS

- 3.5.1 ADJUST TRIP SETTINGS ON ALL CIRCUIT BREAKERS TO THE VALUES SHOWN ON THE CONSTRUCTION DRAWINGS.
- 3.5.2 SUBCONTRACTOR TO COORDINATE INVERTER TERMINATIONS TO THE CORRESPONDING BRANCH BREAKER NAMEPLATE IN THE SWITCHBOARD OR AS INDICATED IN DRAWINGS.

3.6 TRANSFORMERS

- 3.6.1 ADJUST TAPS ON TRANSFORMERS SO THAT LOW VOLTAGE IS WITHIN 5% OF NOMINAL INVERTER NAMEPLATE AC OUTPUT VOLTAGE.

3.7 STRING COMBINER BOX

- 3.7.1 INSTALL STRING COMBINER BOXES PER MANUFACTURER SPECIFICATIONS.
- 3.7.2 TORQUE ALL TERMINATIONS (CONTRACTOR & MANUFACTURER) PER MANUFACTURER SPECIFICATIONS AND PROCEDURES. MARK ALL TORQUED TERMINATIONS WITH SINGLE SLASH INDICATOR.
- 3.7.3 STRING COMBINER BOXES SHALL BE MOUNTED AS INDICATED ON CONSTRUCTION DRAWINGS.
- 3.7.4 ALL CONDUITS ENTERING THE ROOF TOP COMBINER BOXES SHALL BE TERMINATED WITHIN TOP 1/3 SECTION OF ENCLOSURE SIDEWALL AND SLOPED AWAY FROM BOX TO PREVENT THE INGRESS OF MOISTURE. AS INDICATED ON DRAWINGS.
- 3.7.5 CONDUIT AND CONDUCTORS ENTERING AND LEAVING COMBINER BOXES SHALL BE INSTALLED AS INDICATED ON CONSTRUCTION DRAWINGS AND ALL CONDUIT OPENINGS SHALL BE SEALED WITH POLYWATER FST-250 SEALANT.
- 3.7.6 STRING COMBINER BOX MOISTURE CONTROL DEVICES, DRAIN VENTS AND BREATHER DEVICES (SUPPLIED BY NEXAMP) SHALL BE INSTALLED PRIOR TO MOUNTING PER MANUFACTURER SPECIFICATIONS AND PROCEDURES, IF NOT PREVIOUSLY INSTALLED IN COMBINER BOX BY MANUFACTURER.
- 3.7.7 STRING COMBINER BOX FUSES SHALL BE INSTALLED WITH FUSE HOLDER IN OPEN POSITION UNTIL SYSTEM COMMISSIONING.
- 3.7.8 LABEL ALL STRING WIRING AT TERMINATIONS IN COMBINER BOXES.
- 3.7.9 ALL COMBINER BOX ENCLOSURES SHALL BE VACUUMED AND KEPT FREE OF DEBRIS AT ALL TIMES.

3.8 WIRING METHODS

- 3.8.1 WIRING SHALL BE ROUTED/PROTECTED TO AVOID INSULATION DAMAGE DUE TO RUBBING AGAINST EQUIPMENT (MOUNTING RACK, BALLAST BLOCKS, SHARP EQUIPMENT EDGES, ETC.)
- 3.8.2 EXPOSED WIRING, UNDER AND ALONG MODULES SHALL BE MECHANICALLY SECURED TO MODULE FRAMING AND MOUNTING SYSTEM FRAMING, AT THE DISTANCE INDICATED IN THE APPLICABLE NATIONAL ELECTRICAL CODE CYCLE AND AS INDICATED ON CONSTRUCTION DRAWINGS OR AS REQUIRED BY NEXAMP. NO DRILLING OR MODIFYING METAL WORK OF MODULES OR MOUNTING SYSTEM WITHOUT WRITTEN APPROVAL FROM NEXAMP. FASTENERS MUST NOT BLOCK DRAINAGE HOLES OF MODULES. FASTENING MATERIALS SHALL BE UV RESISTANT PLASTIC OR STAINLESS STEEL.
- 3.8.3 WIRING SHALL NOT BE EXPOSED WHEN EXTENDING BETWEEN ROWS OF MODULES. WIRING BETWEEN ROWS SHALL BE INSTALLED IN PROTECTIVE CONDUIT SLEEVE (TECHFLEX F6) AS INDICATED ON CONSTRUCTION DRAWINGS.
- 3.8.4 EXPOSED CONDUCTORS FOR MODULE WIRING SHALL BE PV RATED WIRE.
- 3.8.5 EXPOSED CONDUCTOR CONNECTIONS FOR MODULE WIRING SHALL USE CONNECTORS AS SPECIFIED BY MODULE MANUFACTURER. CONNECTORS SHALL NOT BE PLACED WHERE EXPOSED TO THE WEATHER, INSIDE CONDUIT, PROTECTIVE SHEATHING, INSIDE BUNDLES OF WIRES OR OTHER LOCATIONS WHERE CONNECTORS ARE NOT READILY ACCESSIBLE TO QUALIFIED PERSONNEL. ZIP TIES SHALL NOT BE INSTALLED AROUND CONNECTORS.
- 3.8.6 SOURCE AND FEEDER CONDUCTORS LOCATED IN CONDUIT SHALL BE THHN/THWN-2 OR XHHW-2. FOR CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO SUNLIGHT ON ROOFTOP INSTALLATIONS, INSULATION SHALL BE XHHW-2.
- 3.8.7 SERVICE ENTRANCE CONDUCTORS IN CONDUIT SHALL BE THHN/THWN-2 OR XHHW-2.
- 3.8.8 INSULATING AND COLOR CODING TAPE SHALL BE PREMIUM GRADE PRESSURE SENSITIVE VINYL, HEAT/COLD/MOISTURE/SUNLIGHT/FADE RESISTANT. INSULATING SHALL BE BLACK. PROVIDE COLOR CODING FOR SECONDARY SERVICE, FEEDERS AND BRANCH CIRCUITS AS FOLLOWS:
- DC WIRING:
 - FUNCTIONALLY GROUNDED DC SYSTEM: POSITIVE (UNGROUNDED) - RED OR BLACK W/ RED TRACER, NEGATIVE (FUNCTIONALLY GROUNDED) - BLACK
 - GROUNDED DC SYSTEM (MONO POLAR OR BI POLAR):
 - NEGATIVELY GROUNDED ARRAY SECTIONS: POSITIVE (UNGROUNDED) - BLACK, NEGATIVE (GROUNDED) - WHITE
 - POSITIVELY GROUNDED ARRAY SECTIONS: POSITIVE (GROUNDED) - WHITE, NEGATIVE (UNGROUNDED) - BLACK
 - UNGROUNDED DC SYSTEM:
 - POSITIVE (UNGROUNDED) - RED
 - NEGATIVE (UNGROUNDED) - BLACK
 - GROUNDING CONDUCTORS:
 - EQUIP. GROUND EXPOSED - INSULATED GREEN
 - EQUIP. GROUND IN CONDUIT - INSULATED GREEN
 - 208/120VAC, 3-PHASE, 4-WIRE, WYE:

PHASE COLOR:

 - BLACK
 - RED
 - BLUE

NEUTRAL - WHITE

GROUND - GREEN
 - 480/277VAC, 3-PHASE, 4-WIRE, WYE:

PHASE COLOR:

 - BROWN
 - ORANGE
 - YELLOW

NEUTRAL - GRAY

GROUND - GREEN
 - AC MEDIUM VOLTAGE 3 PHASE, 3 WIRE:

PHASE A - RED TRACER - 1 BLACK BAND

PHASE B - RED TRACER - 2 RED BANDS

PHASE C - RED TRACER - 3 BLUE BANDS

COLOR CODING TAPE SHALL INCLUDE A PURPLE TRACE FOR NON-STANDARD VOLTAGES.

- 3.8.9 MAKE CONNECTIONS TO TERMINALS FROM LEFT TO RIGHT ARRANGED PHASE A, B, C, OR PER MANUFACTURER INSTRUCTIONS.
- 3.8.10 PHASE WIRES SHALL BE CONNECTED TO PHASE SUPPLY MAINS IN PROPER ROTATION TO ASSURE BALANCED CONDITION ON PANEL.
- 3.8.11 NO SPLICES SHALL BE ALLOWED ON DC WIRING.
- 3.8.12 SPLICES SHALL NOT BE USED WITHOUT WRITTEN APPROVAL BY NEXAMP.
- 3.8.13 MULTIPLE CONDUCTORS SHALL NOT BE TERMINATED ON THE SAME TERMINAL UNLESS TERMINAL IS LISTED FOR SUCH USE.
- 3.8.14 USE MANUFACTURER-APPROVED PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT DETERIORATE CONDUCTOR OR INSULATION. DO NOT EXCEED MANUFACTURER RECOMMENDED MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES.

- 3.8.15 USE APPROVED PULLING MEANS: INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS, WHICH SHALL NOT DAMAGE CABLES OR RACEWAY.
- 3.8.16 INSTALL EXPOSED CABLES PARALLEL AND PERPENDICULAR TO SURFACES OF EXPOSED STRUCTURAL MEMBERS, AND FOLLOW SURFACE CONTOURS WHERE POSSIBLE.
- 3.8.17 TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER PUBLISHED TORQUE TIGHTENING VALUES. IF MANUFACTURER TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A AND UL 486B. MARK ALL TORQUED TERMINATIONS WITH SINGLE SLASH INDICATOR.
- 3.8.18 LONG BARREL ALUMINUM COMPRESSION LUGS (THOMAS & BETTS OR APPROVED EQUAL) WITH BELLEVILLE WASHERS SHALL BE USED ON ALL ALUMINUM CABLE TO ALLOW FOR BOLTED CONNECTION TO EQUIPMENT BUS BAR. TWO-HOLE LUGS SHALL BE USED WHERE ALLOWED BY BUS BAR CONFIGURATION. LUGS SHALL BE PRE-FILLED WITH ANTI-OXIDANT TERMINATION COMPOUND. WIRE STRIPPING AND BRUSHING OF CONDUCTOR IN ACCORDANCE WITH VENDOR SPECIFICATIONS IS REQUIRED IMMEDIATELY PRIOR TO LUG INSTALLATION. COLD SHRINK SHALL BE APPLIED WHEN REQUIRED BY NEXAMP TO COVER ANY EXPOSED WIRE SURFACE WHERE THE WIRE MEETS THE TERMINAL. BELLEVILLE WASHERS SHALL BE USED WHEN CONNECTING ALUMINUM CONDUCTOR LUGS TO COPPER BUS BARS OR STUDS.
- 3.8.19 WHEN WIRE TIES ARE EXPOSED TO DIRECT SUNLIGHT THEY SHALL BE UV RESISTANT, BLACK NYLON 12.
- 3.8.20 USE COMPRESSION TOOLS LISTED FOR USE WITH SELECTED COMPRESSION CONNECTORS. USE OF A "ONE SHOT" CRIMPER OR DIE-LESS CRIMPERS SHALL NOT BE ALLOWED FOR ALUMINUM WIRE TERMINATIONS.
- 3.8.21 USE OXIDE INHIBITOR ON ALL ALUMINUM WIRE CONNECTIONS.

3.9 RACEWAY WORK

- 3.9.1 INSTALL WIRE AND CABLE IN APPROVED RACEWAYS AS INDICATED ON CONSTRUCTION DRAWINGS, UNLESS OTHERWISE NOTED BELOW.
- 3.9.2 ALL RACEWAYS SHALL BE SEALED AND ORIENTED TO AVOID MOISTURE INGRESS INTO ALL EXTERIOR EQUIPMENT ENCLOSURES.
- 3.9.3 PROPER GROUNDING BUSHING AND LOCKNUT SHALL BE INSTALLED ON ALL METALLIC CONDUITS WHERE REQUIRED AND/OR INDICATED ON CONSTRUCTION DRAWINGS.
- 3.9.4 RACEWAYS ON ROOFTOPS SHALL BE MOUNTED ON RUBBER EQUIPMENT SUPPORTS.
- 3.9.5 ROOF PENETRATIONS SHALL BE FLASHED AND SEALED TO MAKE WATERTIGHT PER ROOFING MANUFACTURER SPECIFICATIONS FOR CONDUIT PENETRATIONS. COORDINATE WITH ROOFING MANUFACTURER FOR PROPER ROOF PENETRATION PRODUCTS, PROCEDURES AND SPECIFICATIONS SHALL MEET ROOFING MANUFACTURER WARRANTY.
- 3.9.6 PROVIDE CONDUIT EXPANSION FITTINGS WHEREVER BUILDING EXPANSION JOINTS OCCUR, WHERE CONDUITS TURN UP OUT OF GRADE TO FIXED ENCLOSURES (SECURED TO SIDE OF BUILDING, UNISTRUT SUPPORTS, ETC.) AND AS INDICATED ON CONSTRUCTION DRAWINGS OR AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. FLEXIBLE METAL CONDUIT IS NOT ACCEPTABLE AT EXPANSION JOINTS.
- 3.9.7 ALL CONDUIT TERMINATIONS INTO EXTERIOR PULL BOXES, ENCLOSURES, DISCONNECTS, AND OTHER EQUIPMENT SHALL USE MYERS HUB CONNECTORS WHERE NECESSARY TO MAINTAIN NEMA RATINGS.
- 3.9.8 UNLESS OTHERWISE SHOWN ON CONSTRUCTION DRAWINGS, MAKE CONNECTIONS TO INVERTER HOUSING/DISCONNECTS WITH LIQUID TIGHT FLEXIBLE METAL CONDUIT TO PREVENT VIBRATION/NOISE. FLEXIBLE CONNECTIONS SHALL BE MINIMUM OF 18 INCHES AND MAXIMUM OF 3 FEET LONG WITH GROUNDING BUSHINGS/LOCKNUTS.
- 3.9.9 UNLESS OTHERWISE SHOWN ON DRAWINGS, ADAPT UNDERGROUND PVC CONDUIT TO RIGID METAL CONDUIT AND IMC SWEEPS BELOW PROVIDE STEEL SWEEPS PRIOR TO TURNING OUT OF GRADE. PVC SCHEDULE 80 SWEEPS MAY BE USED WHEN THE CONDUIT LENGTH IS LESS THAN 50 FEET OR THE CONDUCTOR SIZE IS #6 OR SMALLER.
- 3.9.10 MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH TRADE SIZE.
- 3.9.11 CAREFULLY CLEAN AND DRY ALL CONDUITS BEFORE INSTALLATION OF CONDUCTORS. PLUG AND CAP CONDUIT ENDS TO EXCLUDE DUST, MOISTURE, PLASTER, MORTAR OR OTHER DEBRIS WHILE UNDER CONSTRUCTION. LUBRICANTS OR CLEANING AGENTS WHICH MIGHT HAVE DELETERIOUS EFFECT ON CONDUCTOR COVERINGS SHALL NOT BE USED FOR DRAWING CONDUCTORS INTO RACEWAYS.
- 3.9.12 RIGID AND INTERMEDIATE METAL CONDUIT ENDS SHALL BE CUT SQUARE, THREADED, AND REAMED TO REMOVE BURRS AND SHARP FIELD THREADS SHALL BE OF SAME TYPE AND SAME EFFECTIVE LENGTH AS FACTORY-CUT THREADS. TURNS IN EXPOSED CONDUIT RUNS SHALL BE MADE BY USE OF FACTORY-MADE BENDS, OR FIELD MADE BENDS EQUIVALENT IN RADIUS AND CONSISTENCY WITH FACTORY-MADE BENDS, AS APPROVED. IN EVENT OF MULTIPLICITY OF CONDUITS MAKING SAME TURN, PROVIDE CONDUITS, OR STEEL JUNCTION BOX WITH REMOVABLE STEEL COVER. ROUTE CONDUITS SO AS NOT TO INTERFERE WITH OPERATION OR MAINTENANCE OF ANY EQUIPMENT. OFFSETS AND BENDS SHALL BE MADE IN CONDUITS AS REQUIRED BY JOB CONDITIONS. PERFORM WORK IN NEAT AND WORKMANLIKE MANNER, AS APPROVED BY NEXAMP. INSTALL CONDUIT TO KEEP EXPOSED THREADS TO AN ABSOLUTE MINIMUM.
- 3.9.13 ALL EXPOSED THREADS TO BE COLD GALVANIZED COATED TO PREVENT RUST, USING RUSTOLEUM BRAND OR APPROVED EQUAL. OVERSPRAY OF COATING TO ADJACENT SURFACES SHALL BE AVOIDED.
- 3.9.14 ENSURE ALL EMT COMPRESSION FITTINGS ARE TIGHTENED PER MANUFACTURER SPECIFICATIONS. MARK ALL EMT COMPRESSION FITTINGS WITH SINGLE SLASH MARK AFTER TIGHTENING.
- 3.9.15 PROVIDE SUPPORT RODS AND CLAMPS TO SUPPORT CONDUITS AS REQUIRED.
- 3.9.16 PROVIDE OFFSETS PRIOR TO ENTRANCE INTO OUTLET BOXES AND OTHER ELECTRICAL EQUIPMENT FOR PROPER ADJUSTMENT TO FINISHED BUILDING SURFACES. EXERCISE CARE WHEN ROUGHING-IN CONDUITS WHICH TURN UP OR DOWN TO SURFACE MOUNTED PANELBOARDS, SO THAT CONDUIT EXTENSIONS WILL BE FITTED CLOSE TO WALL. WHERE POSSIBLE, PROVIDE BACK ENTRY INTO SURFACE MOUNTED BOXES OR EQUIPMENT ITEMS.
- 3.9.17 CONDUIT ROUTING SHOWN ON CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC. RUN CONDUITS TO COORDINATE WITH BUILDING STRUCTURE. EXPOSED CONDUIT SHALL BE RUN IN STRAIGHT LINES PARALLEL TO WALLS, BEAMS, AND COLUMNS WITH RIGHT ANGLE BENDS.
- 3.9.18 PROVIDE MINIMUM 3/16 INCH DIAMETER TWISTED NYLON FISH CORD IN ALL EMPTY RACEWAYS. PROVIDE TAG ON EACH END INDICATING LOCATION OF OTHER END. FISH CORD SHALL HAVE MINIMUM OF 200 POUNDS TENSILE STRENGTH.
- 3.9.19 CONDUIT BODIES SHALL ONLY BE USED FOR 2" CONDUIT AND SMALLER.
- 3.9.20 WEATHERHEADS SHALL BE PROVIDED ON ALL VERTICAL CONDUIT OPENINGS THAT ARE DIRECTLY EXPOSED TO DRIVEN RAIN.
- 3.9.21 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING TRENCH WORK, AND SUPERVISING TRENCH BACKFILLS TO ENSURE THAT CLEAN FILL IS USED AND THAT CONDUITS AND CABLES ARE NOT DAMAGED DURING BACKFILL.

3.10 ENCLOSURES, PULL BOXES, WIREWAYS AND CHANNELS

- 3.10.1 PROVIDE BOLTS OR GALVANIZED STEEL RODS TO SUPPORT PULL BOXES OF MINIMUM THICKNESS EQUAL TO ROD OR BOLT SIZE REQUIRED ON LARGEST SIZE CONDUIT ENTERING PULL BOX, AS DEFINED UNDER "RACEWAYS" PARAGRAPH IN THIS SECTION.
- 3.10.2 ENCLOSURES, PULL BOXES, AND WIREWAYS ON ROOFTOPS SHALL BE MOUNTED ON RUBBER EQUIPMENT SUPPORTS.
- 3.10.3 WHERE STEEL SUPPORT CHANNELS ARE CUT OR UNPROTECTED STEEL IS EXPOSED, APPLY TWO COATS OF ALUMINUM, ZINC CHROMATE OR OTHER APPROVED RUST PREVENTIVE PAINT TO BARE SURFACES AFTER PROPER CLEANING.

- 3.10.4 CONDUIT SIZES INDICATED ON CONSTRUCTION DRAWINGS ARE BASED ON 40% FILL FOR STRAIGHT RUNS OF NO MORE THAN 150 FEET. CONTRACTOR SHALL INSTALL PULL BOXES AS REQUIRED TO AVOID DAMAGE TO CABLE DURING INSTALLATION.
- 3.10.5 EXTERIOR CONDUITS SHALL BE PAINTED TO MATCH BUILDING COLOR WHERE INDICATED ON CONSTRUCTION DRAWINGS.
- 3.10.6 NO CONDUIT BODIES SHALL BE USED ON ANY DC CIRCUITS RUNS.

3.11 WEATHERPROOF GFCI OUTLET AND COVER

- 3.11.1 PROVIDE WEATHERPROOF GFCI OUTLET AND EXTRA DUTY CAST COVER WHERE INDICATED ON CONSTRUCTION DRAWINGS.

3.12 DISCONNECTS

- 3.12.1 LOCATE AND INSTALL DISCONNECTS AS INDICATED ON CONSTRUCTION DRAWINGS.

3.13 GROUNDING

- 3.13.1 THE PHOTOVOLTAIC SOLAR POWER SYSTEM IS A NEW ELECTRICAL SERVICE AND MUST BE GROUNDED AS SUCH. PROVIDE COMPLETE GROUNDING SYSTEM IN CONFORMANCE WITH LOCAL CODE AND AS INDICATED ON CONSTRUCTION DRAWINGS.

3.14 SLEEVING AND FIRESTOPPING

- 3.14.1 PROVIDE INTERMEDIATE METAL CONDUIT OR RIGID STEEL CONDUIT SLEEVES IN INTERIOR BUILDING SLABS AS REQUIRED.
- 3.14.2 LAY OUT CONDUIT AND OPENINGS IN ADVANCE TO PERMIT PROVISIONS IN WORK. SET SLEEVES AND CONDUIT IN FORMS BEFORE CONCRETE IS POURED, PROVIDE REMEDIAL WORK WHERE SLEEVES AND CONDUITS ARE OMITTED OR IMPROPERLY PLACED IN SLABS, OR DECKS.
- 3.14.3 EXTEND SLEEVES IN HORIZONTAL SURFACES 2 INCHES ABOVE FINISHED FLOOR. PROVIDE THREADED CAPS ON BOTH SIDES OF SLEEVES AND OTHER UNUSED SLEEVES.
- 3.14.4 FIRESTOP ALL INTERIOR PENETRATIONS MADE IN FIRE RATED WALLS OR FLOORS WITH UL APPROVED MATERIALS TO PREVENT PASSAGE OF FIRE AND SMOKE AND MAINTAIN ORIGINAL FIRE RATING OF FLOORS OR WALLS.
- 3.14.5 HYDRAULIC CEMENT SHALL BE USED TO SEAL ALL BUILDING EXTERIOR WALL PENETRATIONS.

VERSION 3.0

DESIGN COORDINATOR



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PROJECT

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SEAL



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REVISIONS

#	DESCRIPTION	DATE
0	IFC	02/06/2026
1	IFC R1	02/27/2026

ISSUED FOR CONSTRUCTION
FEBRUARY 27, 2026

**138883 CEMETERY
SUN, LLC**
FREDERICK, IL, 62639

SHEET TITLE

**OWNER'S ELECTRICAL
SPECIFICATIONS**

SHEET NO.

E-005