Special Exception Permit Application for SV CSG Dale, LLC

Prepared by: Jacob Van Domelen (SunVest Solar, LLC)

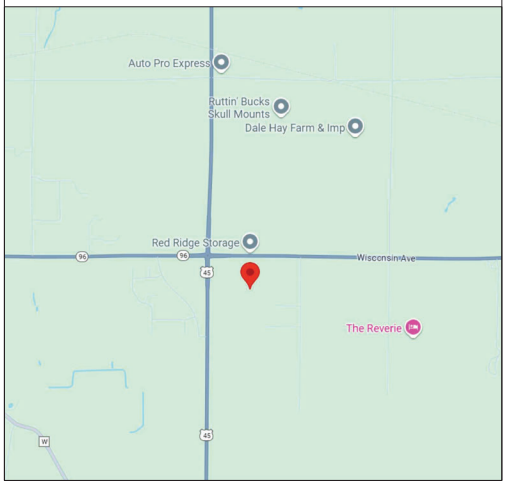
SV CSG Dale, LLC

(44.27078, -88.73535)

PV SYSTEM DETAILS	
ARRAY TYPE:	SINGLE AXIS TRACKER (SAT)
DC SYSTEM SIZE:	5.47992 MW DC
DC SYSTEM VOLTAGE:	1500 V
AC SYSTEM SIZE:	5.000 MVA @PF=1
DC/AC RATIO:	1.095984
MODULE QTY/TYPE:	(9,288) HANWHA QCELL:Q.PEAK XL-G11S SERIES
MODULE WATTAGE:	590 W
INVERTER QTY/TYPE:	(40) KACO -125 TL3 M1 WM OD (XL) 600V:120.3A
INVERTER AC OUTPUT :	(40) 125 KVA
STRING SIZE:	(24) MODULES PER STRING (387) TOTAL STRINGS
OPTIMIZER TYPE:	N/A
RACKING:	TBD
CLAMPS:	NA
AZIMUTH:	90°
INTER-ROW SPACING:	24'-1" (CENTER TO CENTER SPACING)
ARRAY TILT:	+/- 52° (SAT) OR 25° (GFT)
SITE INFORMATION	
FENCE LINEAR FEET:	4292 L.F.
APPROXIMATE SITE ACREAGE:	22.032 ACRES (INSIDE FENCE)
UTILITY INFORMATION	
UTILITY COMPANY:	WE ENERGIES
UTILITY COMPANY CONTACT: TBD	PHONE: NA
UTILITY PROJECT MANAGER: TBD	PHONE: NA
INTERCONNECTION VOLTAGE:	34.5 KV

AERIAL SITE LOCATION

LOCATION MAP



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(262) 547-1200 www.sunvest.com

N27 W24025 PAUL CT. SUITE 100
PEWAUKEE, WI 53072
PHONE: (262)-547-1200
WWW.SUNVEST.COM

ELECTRICAL ENGINEER STAMP:

PROFESSIONAL ENGINEER STAMPS

ISSUANCE:

INTERCONNETION PLAN SET

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DRAWN BY: TLG | CHECKED BY: N/A
SCALE: AS NOTED | JOB NO: 02063

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SHEET TITLE

TITLE SHEET

DWG. NO.

T-1.00

SYMBOLS LEGEND:

FUSE

SURGE PROTECTION DEVICE/ SURGE ARRESTER MOV STYLE

CIRCUIT BREAKER

GROUND

GROUNDED WYE

DELTA

MV DISCONNECT

NON-FUSED CUTOUT

POTENTIAL TRANSFORMER (PT)

CPT
CONTROL POWER TRANSFORMER

CT
CURRENT TRANSFORMER (CT)

CS
CURRENT SENSOR (CS)

VS
VOLTAGE SENSOR (VS)

METER
METER

INVERTER

INVERTER WITH INTEGRATED DISCONNECT

PANELBOARD

MAIN DISTRIBUTION SWITCHBOARD

FUSED DISCONNECT

NON FUSED DISCONNECT

AIRBREAK (GOAB) DISCONNECT SWITCH

ELECTRIC SYMBOLS:

AUXILIARY TRANSFORMER

WYE/WYE TRANSFORMER W/ INTERNAL FUSING AND SURGE ARRESTERS

WYE/DELTA TRANSFORMER W/ INTERNAL FUSING AND SURGE ARRESTERS

STRING COMBINER BOX

R
RESISTOR

RECLOSER W/ VACUUM INTERRUPTER

RECLOSER W/ MULTIFUNCTIONAL RELAY

TRACKER MOTOR

PV MODULE

INDICATING LIGHT

SPECIAL PURPOSE OUTLET CONNECTION

ST
SHUNT-TRIP

XXXA FUSE XXXA/3P 100% BPS GFP
FUSED BOLTED-PRESSURE SWITCH (BPS) W/ GROUND-FAULT-PROTECTION (GFP)

DC DC
DC/DC OPTIMIZER/CONVERTER

METER
PRIMARY REVENUE METER POLE

LV CONNECTION/TERMINATION

MV LIVE-FRONT BUSHING/TERMINATION

MV DEAD-FRONT BUSHING/ TERMINATION

MEDIUM VOLTAGE- UNDERGROUND

OHC
EXISTING OVERHEAD CONDUCTORS

DC CONDUCTORS- ABOVE GROUND

AC
AC CONDUCTORS ABOVE GROUND

DC CONDUCTORS- UNDERGROUND

AC CONDUCTORS- UNDERGROUND

COMMUNICATION

(2 STRING) MODULE TRACKER

(3 STRING) MODULE TRACKER

(4 STRING) MODULE TRACKER

SITE LAYOUT SYMBOLS:

PARCEL BOUNDARY

PARCEL SETBACKS

ARRAY FENCE

WETLANDS

WETLAND SETBACK

FLOODPLAIN

FLOODPLAIN SETBACK

BUILDING

BUILDING SETBACK

INVERTER STRINGING (11 STRINGS)

INVERTER STRINGING (12 STRINGS)

INVERTER STRINGING (13 STRINGS)

DC TRENCHING

AC TRENCHING

POWER UNDERGROUND

POWER OVERHEAD

ACCESS ROAD

MODULE

TORQUE TUBE

ACCESS GATE

UTILITY/CUSTOMER POLES

EQUIPMENT PAD

INVERTER RACK

MAIN SWITCHBOARD

TRANSFORMER

TRACKER MOTOR

DC COMBINER BOX

POLLINATOR

TREE (VEGETATION)

SHRUB (VEGETATION)

AUXILLARY TRANSFORMER

BESS EQUIPMENT PAD

GENERAL NOTES/REQUIREMENTS:

1.1 THE WORK TO BE DONE UNDER THIS PROJECT INCLUDES PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES NOT INCLUDED IN THE B.O.M, AND PERFORMING ALL OPERATIONS FOR COMPLETE AND OPERATING SYSTEMS. ANY WORK NOT SPECIFICALLY COVERED BUT NECESSARY TO COMPLETE THIS INSTALLATION, SHALL BE PROVIDED. ALL EQUIPMENT AND WIRING TO BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED.

1.2 ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AS WELL AS ALL APPLICABLE LAWS AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK:

1.3 THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "CONTRACTOR" SHALL MEAN ELECTRICAL CONTRACTOR.

1.4 ONLY WRITTEN CHANGES AND/OR MODIFICATIONS APPROVED BY THE ENGINEER, CONSULTING ENGINEER OR OWNER'S REPRESENTATIVE WILL BE RECOGNIZED.

1.5 THE ELECTRICAL CONTRACTOR SHALL SUBMIT, FOR THE ENGINEER'S APPROVAL, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT SPECIFIED.

1.6 CONTRACTOR SHALL COORDINATE WITH SPECIFICATIONS PROVIDED BY OTHER TRADES.

1.7 PROVIDE OPERATING AND MAINTENANCE MANUALS, PER SPECIFICATIONS, AND GIVE INSTRUCTIONS TO USER FOR ALL EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS CONTRACT AFTER ALL ARE CLEANED AND OPERATING.

1.8 KEEP PREMISES FREE FROM RUBBISH. REMOVE ALL ELECTRICAL RUBBISH FROM SITE.

1.9 ALL WORK SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED.

1.10 THE WORK SHALL INCLUDE ALL PANELS, DEVICES, FEEDERS AND BRANCH CIRCUIT WIRING AS REQUIRED FOR THE DISTRIBUTION SYSTEM INDICATED AND CALLED FOR ON THE DRAWINGS, REQUIRED BY SPECIFICATIONS AND AS NECESSARY FOR COMPLETE FUNCTIONAL SYSTEMS PRESENTED AND INTENDED.

1.11 THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, CONSUMABLES AND SERVICES REQUIRED FOR OBTAINING, DELIVERY, INSTALLATION, CONNECTION, DISCONNECTION, REMOVAL, RELOCATION, REPAIR, REPLACEMENT, TESTING AND COMMISSIONING OF ALL EQUIPMENT AND DEVICES INCLUDED IN OR NECESSARY FOR THE WORK, AS APPLICABLE. THIS INCLUDES SCAFFOLDING, LADDERS, RIGGING, HOISTING, ETC.

1.12 ELECTRICAL WORK SHALL INCLUDE ALL REQUIRED CUTTING, PATCHING AND THE FULL RESTORATION OF WALL AND FLOOR STRUCTURE AND SURFACES. ALL EQUIPMENT, WALLS, FLOORS, ETC., DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER, AT THE CONTRACTORS EXPENSE.

1.13 BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL FULLY AQUAINT HIMSELF/HERSELF WITH THE JOB CONDITIONS AND DIFFICULTIES THAT WILL PERTAIN TO THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

1.14 THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES.

1.15 UPON COMPLETION OF THE ELECTRICAL WORK, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR SHORTS, GROUNDS, AND PROPER OPERATION, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.

1.16 UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN AND ADJUST ALL EQUIPMENT AND LIGHTING AND TEST SYSTEMS TO THE SATISFACTION OF OWNER AND ENGINEER. RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

1.17 THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF FINISHED CONSTRUCTION PRIOR TO FABRICATION AND INSTALLATION OF FIXTURES AND EQUIPMENT.

1.18 EXACT ROUTING OF CONDUITS AND "MC" CABLES SHALL BE DETERMINED IN THE FIELD.

1.19 IF THE OWNER AND/OR HIS REPRESENTATIVE CONSIDERS ANY WORK TO BE INFERIOR, THE RESPECTIVE CONTRACTOR SHALL REPLACE SAME WITH CONTRACT STANDARD WORK WITHOUT ADDITIONAL CHARGE. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE MANNER, LEFT CLEAN AND FREE FROM DEFECTS, AND COMPLETELY OPERABLE.

1.20 THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AS SHOWN ON THE DRAWINGS AND/OR AS SPECIFIED. ALL MATERIALS SHALL BE NEW, AND BEAR THE UL LABEL. ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.

1.21 DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, AND SHALL BE FOLLOWED AS CLOSELY AS CONDITIONS ALLOW TO COMPLETE THE INTENT OF THE CONTRACT. THE DRAWINGS AND SPECIFICATIONS COMPLIMENT ONE ANOTHER, AND WHAT IS SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, AND VICE VERSA, IS TO BE INCLUDED IN THE SCOPE OF WORK.

1.22 ALL EQUIPMENT CONNECTIONS SHALL BE INSTALLED PER APPLICABLE SEISMIC REQUIRMENTS.

1.23 ENGINEER WILL MAKE A FINAL INSPECTION WITH THE OWNER AND CONTRACTOR AND WILL NOTIFY THE CONTRACTOR IN WRITING OF ALL PARTICULARS IN WHICH THIS INSPECTION REVEALS THAT THE WORK IS INCOMPLETE OR DEFECTIVE. THE CONTRACTOR SHALL IMMEDIATELY TAKE SUCH MEASURES AS ARE NECESSARY TO COMPLETE SUCH WORK OR REMEDY SUCH DEFICIENCIES.

1.24 THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, TRENCHING AND BACKFILL REQUIRED FOR ELECTRICAL WORK. BACKFILL SHALL BE SUITABLE MATERIAL PROPERLY COMPACTED TO 95% DENSITY IN EACH LAYER OF SIX (6) INCH DEPTH. CONDUIT SHALL BE MINIMUM 30" BELOW FINISHED GRADE.

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(262) 547-1200 www.sunvest.com
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GENERAL NOTES/REQUIREMENTS:

2. PROJECT COORDINATION:

2.1 THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER OF ANY DISCREPANCIES, PRIOR TO COMMENCING WITH THE WORK.

2.2 THE CONTRACTOR SHALL REVIEW AND COORDINATE WITH THE DOCUMENTS OF ALL TRADES.

2.3 THE CONTRACTOR SHALL FURNISH A SCHEDULE INDICATING HIS PORTION OF TIME, WITHIN THE OVERALL SCHEDULE, REQUIRED TO COMPLETE THE WORK, IN CONJUNCTION WITH ALL TRADES. ALL WORK THAT MAY AFFECT OPERATION OF BUILDING SYSTEMS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.

2.4 SHUT DOWN OF POWER SHALL BE COORDINATED WITH THE OWNER, ARCHITECT AND PROJECT MANAGER AT LEAST 14 WORKING DAYS PRIOR TO SHUT DOWN. SHUT DOWNS LONGER THAN 2 DAYS SHALL BE COORDINATED WITH THE ABOVE PERSONNEL AT LEAST ONE MONTH IN ADVANCE. TEMPORARY POWER FOR CONSTRUCTION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR FOR SHUT DOWNS OVER 2 DAYS.

2.5 ALL CONDUITS AND DEVICE BOXES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR, INCLUDING ALL TECHNOLOGY CONDUITS AND BOXES.

2.6 EXACT LOCATIONS OF OUTLETS AND EQUIPMENT SHALL BE COORDINATED WITH ARCHITECTURAL AND MILLWORK PLANS. ALL OUTLET AND EQUIPMENT LAYOUTS SHALL BE VERIFIED AND COORDINATED WITH WORK OF OTHER TRADES.

2.7 PROVIDE TEMPORARY LIGHTING AND POWER IN ACCORDANCE WITH ARTICLE 305 OF THE NEC. TEMPORARY LIGHTING FIXTURES IN UNFINISHED AREAS SHALL REMAIN CONNECTED UNTIL REMOVAL IS REQUESTED BY THE CONTRACTOR.

2.8 THE CONTRACTOR SHALL CONTACT THE BUILDING MANAGER TO OBTAIN A COPY OF THE GENERAL REQUIREMENTS AND/OR CONDITIONS TO BE USED FOR THIS PROJECT.

3. CONNECTORS:

3.1 DO NOT CROSS MATE CONNECTORS ON ANY SYSTEM. ENSURE THAT CONNECTOR SELECTION MEETS THE LEGAL BASIS THE EXCLUDE CROSS-CONNECTIONS OF:

- PRODUCT NORMS ((IEC 62852 (EN62852)) AND UL 6703 PRODUCT NORM RESP. UL 1703 MODULE NORM
- INSTALLATION NORMS AND LOCAL REGULATIONS
- ASSEMBLY INSTRUCTIONS OF THE MANUFACTURER

VALID PV STANDARDS (IEC 60364-7-712:2017; E343181) STATE THAT "MALE AND FEMALE CONNECTORS [...] SHALL BE OF THE SAME TYPE FROM THE SAME MANUFACTURER" AND THAT UL CERTIFICATION FOR CONNECTORS ONLY APPLIES IF PRODUCTS FROM THE SAME PRODUCT FAMILY HAVE BEEN MATED

4. WARRANTIES:

4.1 ALL MATERIALS AND EQUIPMENT SHALL BE GUARANTEED IN WRITING FOR A MINIMUM OF ONE YEAR AFTER FINAL ACCEPTANCE BY OWNER.

4.2 WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A MINIMUM OF 5 YEARS AFTER FINAL ACCEPTANCE BY OWNER

4.3 OBTAIN AND DELIVER TO THE OWNER'S REPRESENTATIVE ALL GUARANTEES AND CERTIFICATES OF COMPLIANCE.

5. PERMITS:

5.1 CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES FOR ELECTRICAL WORK.

6. RACEWAYS:

6.1 ALL CONDUIT SHALL BE MINIMUM SIZE OF 1/2" FOR POWER CIRCUITS AND CONTROL CIRCUITS EXCEPT WHERE FLEXIBLE CONDUIT IS CALLED FOR ON PROJECT DOCUMENTS. ALL EXTERIOR EXPOSED CONDUIT SHALL BE PVC. ALL UNDERGROUND, IN SLAB OR UNDER SLAB SHALL BE SCH. 40 PVC. CHANGE TO SCH. 80 PVC CONDUIT BEFORE EXITING OUT OF UNDERGROUND SECTIONS. EMT IS ALLOWED IN INTERIOR DRY LOCATIONS WHERE NOT SUBJECT TO DAMAGE.

6.2 ALL FLEXIBLE CONDUIT IN WET OR DRY AREAS SHALL BE LIQUID TIGHT CONDUIT. NONMETALLIC FLEXIBLE CONDUIT IS SPECIFICALLY PROHIBITED.

6.3 CONDUIT SHALL BE RUN AT RIGHT ANGLES AND PARALLEL TO BUILDING LINES, SHALL BE NEATLY RACKED AND SECURELY FASTENED. JUNCTION BOXES SHALL BE PROVIDED WHERE REQUIRED TO FACILITATE INSTALLATION OF WIRES.

6.4 ALL CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN AN APPROVED MANNER.

6.5 ALL EMPTY RACEWAYS SHALL BE FURNISHED WITH A 200 LB. TEST NYLON DRAG LINE.

6.6 ARRANGEMENT OF CONDUIT AND EQUIPMENT SHALL BE AS INDICATED, UNLESS MODIFICATION IS REQUIRED TO AVOID INTERFERENCES.

6.7 ALL RACEWAY AND WIRING SHALL BE CONCEALED IN FINISHED AREAS. RACEWAY IN MECHANICAL ROOMS, BASEMENTS AND CRAWL SPACES MAY BE SURFACE MOUNTED.

6.8 FOR CONDUITS CROSSING EXPANSION JOINTS, PROVIDE EXPANSION FITTINGS FOR SIZE 1-1/4", AND LARGER. PROVIDE SECTIONS OF FLEXIBLE CONDUIT WITH GROUNDING JUMPERS FOR SIZES 1" AND SMALLER.

6.9 THE CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS WITH APPROVED FIRE RATED SEALANT. ALL PENETRATIONS THROUGH ALL WALLS AND FLOORS SHALL BE SEALED. FOR ALL SLAB PENETRATIONS THE METHOD, DEPTHS AND LOCATIONS SHALL BE PRE-APPROVED BY THE BUILDING ENGINEER PRIOR TO THE START OF WORK.

6.10 THE CONTRACTOR SHALL INSTALL DETECTABLE UNDERGROUND TAPES FOR THE PROTECTION, LOCATION AND IDENTIFICATION OF UNDERGROUND CONDUIT INSTALLATION.

6.11 EXACT ROUTING OF CONDUITS AND CABLES SHALL BE DETERMINED IN FIELD.

6.12 ALL PENETRATIONS THROUGH FLOORS SHALL BE FIRE STOPPED AND SEALED WITH APPROVED SEALANT.

6.13 ELECTRICAL RACEWAY CONNECTIONS TO VIBRATING EQUIPMENT AND MACHINERY, SHALL BE MADE WITH FLEXIBLE LIQUID TIGHT METALLIC CONDUIT.

6.14 SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS IN HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK. MACHINE SCREWS IN METAL, BEAM CLAMPS IN FRAMEWORK AND WOOD SCREWS IN WOOD. NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO BUILDING LINES.

6.15 DO NOT RUN RACEWAYS CLOSER THAN 6 INCHES WHEN PARALLEL TO HOT WATER OR STEAM PIPES. WHEN CROSSING WATER OR STEAM PIPES CROSS A MINIMUM OF 3 INCHES ABOVE. IF CROSSING BELOW IS UNAVOIDABLE, PROVIDE DRIP SHIELDS EXTENDING 6 INCHES BEYOND THE WATER OR STEAMPIPE. BOXES INSTALLED IN PROXIMITY TO WATER OR STEAM PIPE SHALL BE RATED NEMA 4X.

7. BOXES:

7.1 INTERIOR JUNCTION BOXES SHALL BE SHEET STEEL. EXTERIOR JUNCTION BOXES SHALL BE NONMETALLIC, WITH SCREW COVERS. BOXES SHALL BE SUPPORTED INDEPENDENTLY OF CONDUITS.

8. WIRING:

8.1 ALL WIRE SHALL BE MADE OF COPPER WITH INSULATION SUITABLE FOR THE APPLICABLE ENVIRONMENT AND VOLTAGE. CONTRACTOR SHALL GET APPROVAL FOR ANY OTHER WIRE TYPE.

8.2 UNDER NO CIRCUMSTANCES SHALL FEEDERS BE SPLICED.

8.3 ALL ELECTRICAL TERMINAL TEMPERATURE RATINGS ASSUMED TO BE 75° C UNLESS SITE CONDITIONS REQUIRE OTHERWISE.

8.4 WIRE SIZES SHALL BE INCREASED WHERE NECESSARY TO LIMIT AC VOLTAGE DROP TO 1.5% TOTAL FROM INVERTER TO POINT OF COMMON COUPLING

9. GROUNDING:

9.1 PROVIDE A COMPLETE EQUIPMENT GROUND SYSTEM FOR THE ELECTRICAL SYSTEM AS REQUIRED BY ARTICLE 250 AND 690, OF THE NEC, AND AS SPECIFIED HEREIN.

9.2 ALL BRANCH CIRCUITS AND FEEDERS FOR POWER WIRING SHALL CONTAIN A COPPER GROUND WIRE. NO FLEXIBLE METAL CONDUIT OF ANY KIND OR LENGTH SHALL BE USED AS THE EQUIPMENT GROUNDING CONDUCTOR.

10. MECHANICAL SYSTEMS POWER:

10.1 DISCONNECT SWITCHES SHALL BE HEAVY DUTY, QUICK MAKE, QUICK BREAK TYPE, ENCLOSED IN A HEAVY SHEET METAL ENCLOSURE WITH HINGED INTERLOCKING COVER, IN PROPER NEMA RATED ENCLOSURES. FUSED OR NON-FUSED AS REQUIRED. DISCONNECT SWITCHES SHALL BE PROVIDED BY CONTRACTOR, EXCEPT AS NOTED ON DRAWINGS.

10.2 THE RATING FOR DISCONNECT SWITCHES SHALL BE THE SAME AS, OR GREATER THAN, THE PROTECTIVE DEVICE SERVING THE EQUIPMENT.

10.3 A STRUT FRAME SHALL BE PROVIDED AT ALL LOCATIONS WHERE STRUCTURE WILL NOT ADEQUATELY SUPPORT EQUIPMENT, OR FOR FREESTANDING EQUIPMENT.

11. PANEL BOARDS:

11.1 PANELBOARDS: SWITCHING UNITS SHALL BE 3 PHASE, 4 WIRE CIRCUIT BREAKER TYPE UNLESS OTHERWISE NOTED. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98% CONDUCTIVITY, AND SILVER OR TIN-PLATED JOINTS. CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME-PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN. HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. PROVIDE DOOR-IN-DOOR CONSTRUCTION. MINIMUM GUTTER SPACES FOR LIGHTING PANELS SHALL BE 5- BOTTOM. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER.

11.2 PROVIDE A NEW TYPE WRITTEN CIRCUIT DIRECTORY FOR EACH PANEL AFFECTED BY THIS PROJECT.

11.3 WHEREVER POSSIBLE, PANELBOARDS SHALL BE RECESSED IN WALL. SURFACE MOUNTED PANELBOARDS SHALL BE MOUNTED ON A PLYWOOD BACKBOARD. PLYWOOD SHALL BE MOUNTED ON TOP OF GYMPSUM BOARD. PLYWOOD SHALL BE PAINTED ON ALL SIDES AND EDGES. COORDINATE WITH OWNER FOR COLOR.

11.4 PROVIDE LIGHTNING SURGE PROTECTION FOR MAIN SWITCHBOARD OR MAIN SERVICE PANEL BOARD. PROVIDE GROUNDING OF SURGE DEVICE PER THE NEC.

11.5 CONTRACTOR IS RESPONSIBLE FOR BALANCING LOADS ON ALL PHASES AND MAY ALTER ASSIGNMENT OF CIRCUITS FOR BALANCING PHASES.

11.6 CIRCUIT SCHEDULES ARE INTENDED TO REPRESENT THE GENERAL WIRING NEEDS OF THE EQUIPMENT SERVICED FROM THE PANEL. THE EXACT CIRCUIT ARRANGEMENT WILL BE DETERMINED BY PANEL SHOP DRAWING AND ARRANGEMENT WILL BE DETERMINED BY PANEL SHOP DRAWING AND PANELS ACTUALLY FURNISHED.

12. IDENTIFICATION:

12.1 REFER TO NEC LABELS DRAWING FOR LABELING REQUIREMENTS

12.2 INSTALL NAMEPLATES ON ALL MAJOR EQUIPMENT, INCLUDE STARTERS, TRANSFORMERS, PANELBOARDS, DISCONNECT SWITCHES AND OTHER ELECTRICAL BOXES AND CABINETS INSTALLED UNDER THIS CONTRACT.

12.3 APPLY CABLE/CONDUCTOR IDENTIFICATION MARKERS ON EACH CABLE AND CONDUCTOR IN EACH BOX, ENCLOSURE OR CABINET.

13. RECORD DRAWINGS:

13.1 THE CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS. THE APPROVAL OF SHOP DRAWINGS SHALL ONLY BE CONSTRUED TO APPLY TO THE GENERAL LAYOUT AND CONFORMANCE TO THE DESIGN CONCEPT OF THE PROJECT AND FOR THE COMPLIANCE WITH THE GENERAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL RETAIN THE RESPONSIBILITY FOR ANY DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

13.2 PROVIDE SHOP DRAWINGS FOR THE LIGHTING FIXTURES, PANEL BOARDS, CIRCUIT BREAKERS, WIRING DEVICES, FIRE ALARM DEVICES AND SEALS FOR FIRE AND WATER STOPPING.

13.3 DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A RECORD SET OF INSTALLATION PRINTS. HE SHALL NEATLY AND CLEARLY RECORD ON THESE PRINTS ALL DEVIATIONS FROM THE CONTRACT DRAWINGS IN SIZES, LOCATIONS AND DETAILS.

13.4 UPON PROJECT COMPLETION, THE CONTRACTOR SHALL COMPLETE THE MARK UP OF ALL PROJECT DRAWINGS TO RECORD INSTALLED CONDITIONS.

13.5 REPRODUCIBLE "RECORD" DRAWINGS PREPARED IN CAD FORMAT SHALL BE PROVIDED AS INSTALLED CONDITIONS OF THE WORK. A FULL SIZE PRINT OUT OF THE "RECORD" DRAWING FILE SHALL BE PROVIDED AFTER COMPLETION OF THE INSTALLATION.

13.6 UPON COMPLETION AND ACCEPTANCE OF WORK, THE CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE THE PROPER OPERATIONS AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

14. PROTECTION OF WORK:

14.1 EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.

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REV	SET/DATE	REV	SET/DATE

DRAWN BY: TLG	CHECKED BY: N/A
SCALE: AS NOTED	JOB NO: 02063

SV CSG
Dale, LLC

(44.27078, -88.73535)

SHEET TITLE

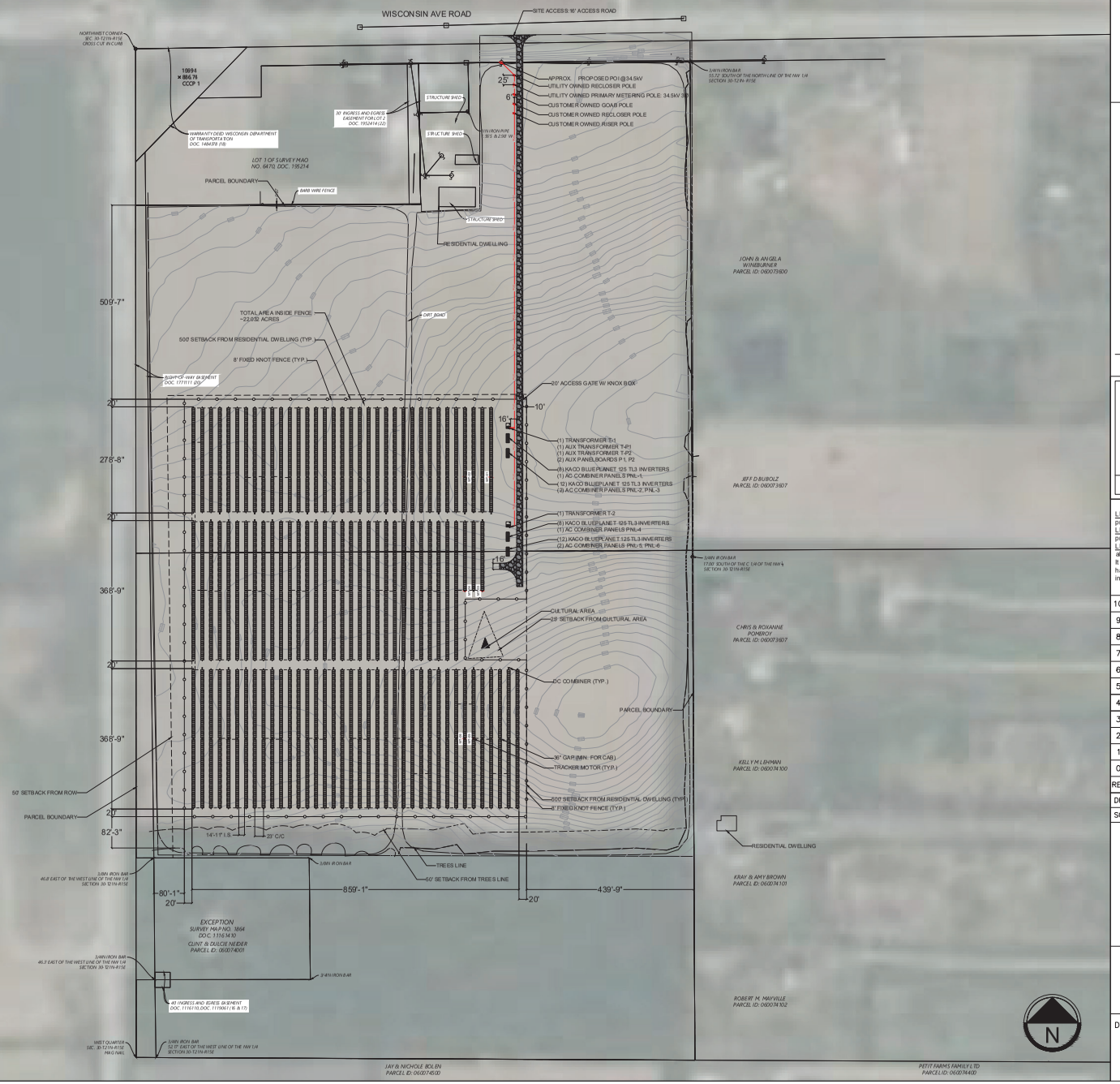
GENERAL NOTES

DWG. NO.

G-2.00

SITE LAYOUT SYMBOL LEGEND:

- PARCEL BOUNDARY
- PARCEL SETBACKS
- ARRAY FENCE
- WETLANDS
- WETLAND SETBACK
- FLOODPLAIN
- FLOODPLAIN SETBACK
- BUILDING
- BUILDING SETBACK
- INVERTER STRINGING (11 STRINGS)
- INVERTER STRINGING (12 STRINGS)
- INVERTER STRINGING (13 STRINGS)
- DC TRENCHING
- AC TRENCHING
- POWER UNDERGROUND
- POWER OVERHEAD
- ACCESS ROAD
- MODULE
- TORQUE TUBE
- ACCESS GATE
- UTILITY/CUSTOMER POLES
- EQUIPMENT PAD
- INVERTER RACK
- MAIN SWITCHBOARD
- TRANSFORMER
- TRACKER MOTOR
- DC COMBINER BOX
- POLLINATOR
- TREE (VEGETATION)
- SHRUB (VEGETATION)
- AUXILLARY TRANSFORMER
- BESS EQUIPMENT PAD



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ELECTRICAL ENGINEER STAMP:

PROFESSIONAL ENGINEER STAMPS

ISSUANCE:

INTERCONNETION PLAN SET

SCALE: 1" = 124.99993'

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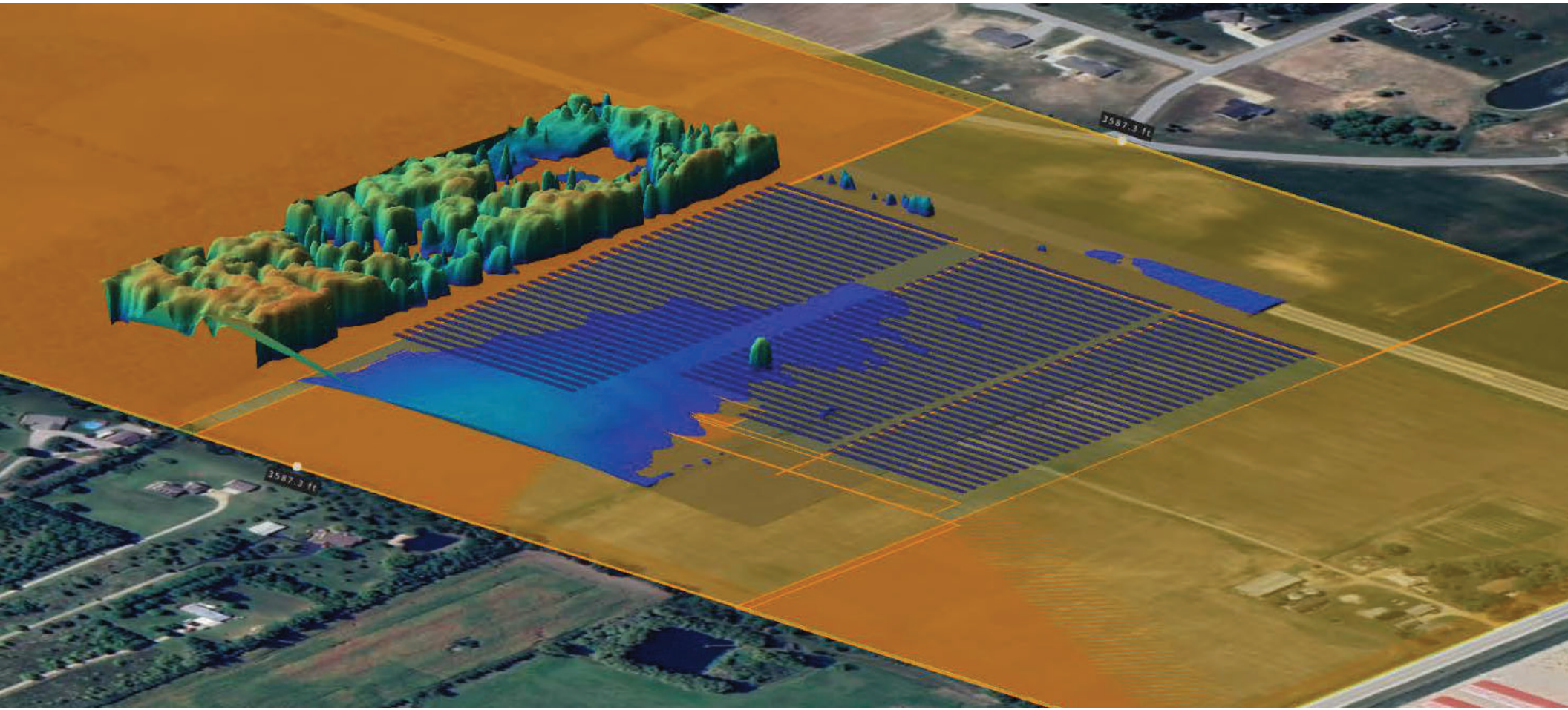
SHEET TITLE

ARRAY LAYOUT

DWG. NO.

PV-1.00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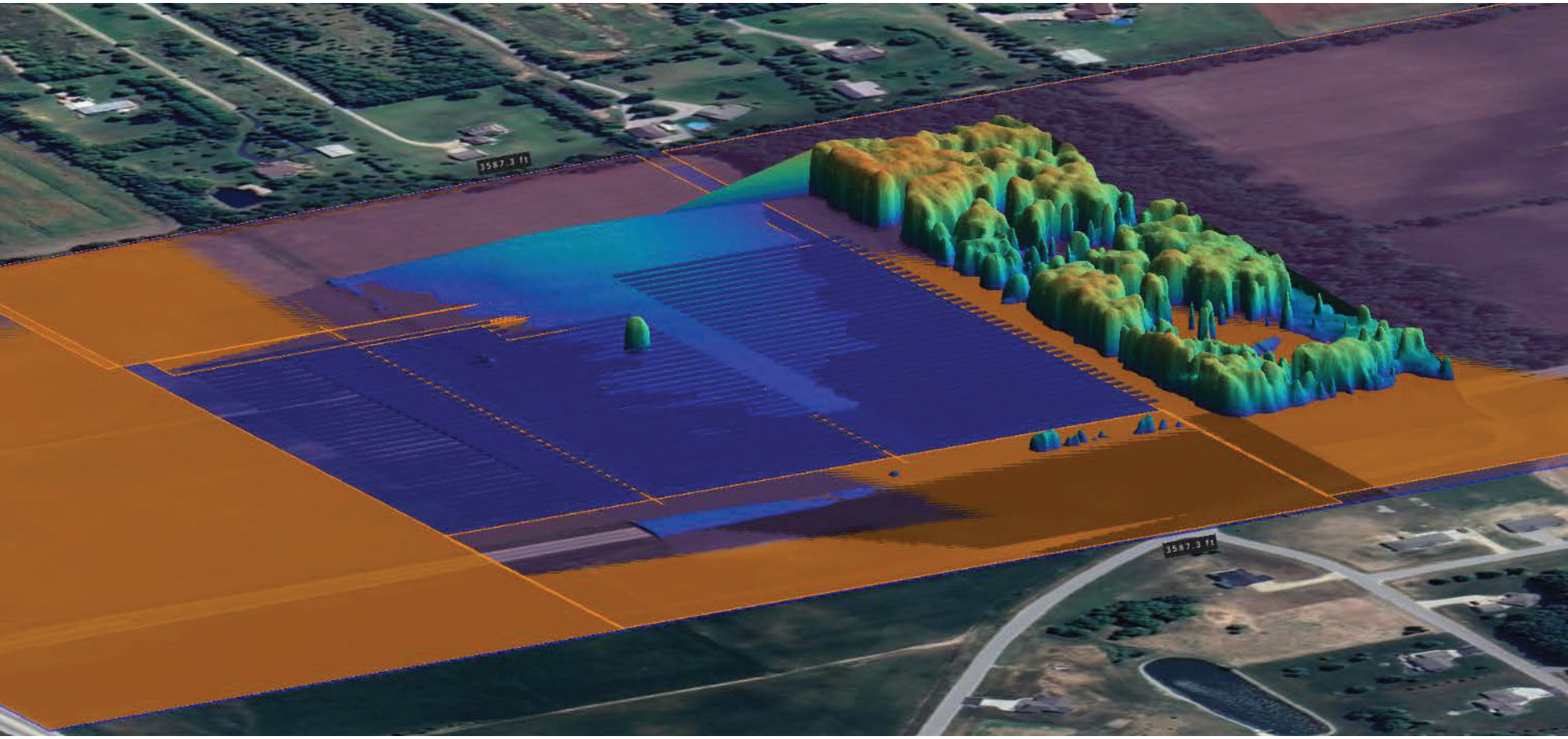
3587.3 ft


3587.3 ft
3587.3 ft

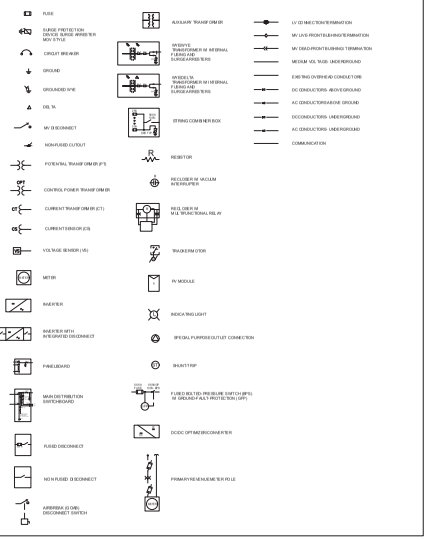
PV SYSTEM DETAILS

ARRAY TYPE:	SINGLE AXIS TRACKER (SAT)
DC SYSTEM SIZE:	5.47992 MW DC
DC SYSTEM VOLTAGE:	1500 V
AC SYSTEM SIZE:	5000 MVA @PF=1
AC/DC RATIO:	1.095984
MODULE QTY/TYPE:	(9,288) HANWHA QCELL:Q.PEAK XL-G11S SERIES
MODULE WATTAGE:	590W
INVERTER QTY/TYPE:	(40) KACO 125 TL3 M1 WM OD (XL) 600V:120.3A
INVERTER AC OUTPUT :	(40) 125KVA
STRING SIZE:	(24) MODULES PER STRING (387) TOTAL STRINGS
OPTIMIZER TYPE:	N/A

ELECTRICAL NOTES

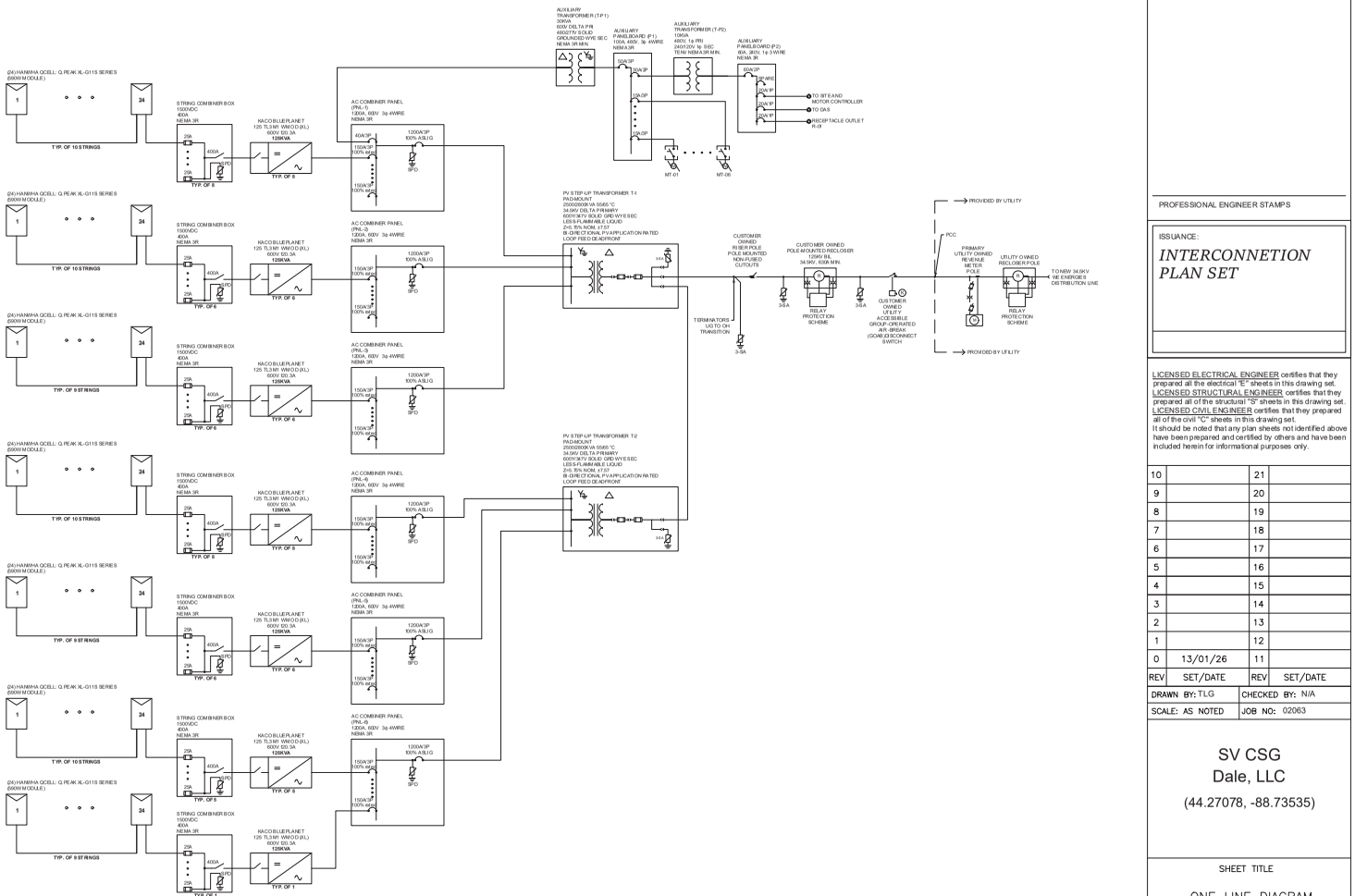
1. INVERTER UNDERFREQUENCY AND OVER FREQUENCY SETTINGS SHALL BE COORDINATED WITH THE UTILITY STANDARDS.
2. COORDINATE INVERTER SETTINGS WITH RECLOSING SETTINGS.
3. INVERTERS SHALL COMPLY WITH IEEE 1547, IEEE 519 AND UL1741.
4. PROVIDE A POLE MOUNTED VISIBLE OPEN, GANG OPERATED AIR BREAK, LOAD BREAK DISCONNECT SWITCH THAT IS VISIBLY MARKED "GENERATING FACILITY GENERATION DISCONNECT " AND IS ACCESSIBLE TO AND LOCABLE BY THE UTILITY AT ALL TIMES. LOCATE DISCONNECT IN CLOSE PROXIMITY TO THE UTILITY METER.
5. PROVIDE VISIBLE LABEL "GF GENERATION BREAKER" ON MAIN BREAKERS. BREAKERS SHALL HAVE LOTO PROVISIONS.
6. PROVIDE A POLE MOUNTED 3-PHASE VACUUM INTERRUPTER POLYMER RECLOSER, 27kV, 630A MIN, WITH INTEGRAL CURRENT TRANSFORMERS & (6) LEA VOLTAGE SENSORS ON BOTH SIDES OF RECLOSER. VOLTAGE SENSOR SHALL HAVE A MIN. ACCURACY PER IEEE1547. PROVIDE RECLOSER WITH 120V CPT AND SURGE ARRESTERS ON BOTH SOURCE & LOAD SIDE. PROVIDE WITH MANUFACTURER FURNISHED ADVANCED RECLOSER CONTROL RELAY WITH MINIMUM PROTECTION FUNCTIONS SHOWN AND WITH CONTROL CABLE AND POWER CABLE. PROVIDE WILDLIFE PROTECTORS. RECLOSER SHALL BE TAVRIDA ELECTRIC WITH SEL-651R RECLOSER OR APPROVED EQUAL IN STAINLESS STEEL CONTROL CABINET WITH BATTERY BACKUP AND HEATER PACKAGE. COMMUNICATE STATUS OF RECLOSER TO DAS.
7. PROVIDE A PERMANENT AND WEATHERPROOF ONE-LINE DIAGRAM OF THE GENERATING FACILITY LOCATED AT THE POINT OF SERVICE CONNECTION TO THE UTILITY.
8. PROVIDE MAIN TRANSFORMERS WITH EXTERNALLY ACCESSIBLE AND REPLACEABLE BAY-O-NET FUSES OR EQUIVALENT WITH SERIES CURRENT LIMITING FUSE.
9. MAIN TRANSFORMERS SHALL BE RATED FOR PV APPLICATION WITH BI-DIRECTIONAL POWER FLOW CAPABILITY.
10. INTERRUPTING AND WITHSTAND RATINGS SHALL BE CONFIRMED DURING CONSTRUCTION DESIGN PROCESS.
11. DESIGN SHALL BE IN COMPLIANCE WITH NEC, WE ENERGIES AND ALL OTHER APPLICABLE CODES AND STANDARDS.

ELECTRICAL SYMBOLS



UTILITY INFORMATION

UTILITY COMPANY:	WE ENERGIES
UTILITY COMPANY CONTACT: TBD	PHONE: NA
UTILITY PROJECT MANAGER: TBD	PHONE: NA
INTERCONNECTION VOLTAGE:	34.5 KV



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Dale, LLC
(44.27078, -88.73535)

SHEET TITLE

ONE LINE DIAGRAM

DWG. NO.

E-1.00

Q.PEAK DUO XL-G11S SERIES

590-605 Wp | 156 Cells
21.7% Maximum Module Efficiency

MODEL Q.PEAK DUO XL-G11S.3/BFG

Bifacial energy yield gain of up to 21%
Bifacial Q.ANTUM solar cells make efficient use of light shining on the module rear-side for radically improved LCOE.

Low electricity generation costs
Q.ANTUM DUO technology with optimized module layout to boost module power and improve LCOE.

A reliable investment
Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty[1].

Enduring high performance
Long-term yield security with Anti LID and Anti PID Technology[2], Hot-Spot Protect.

Frame for versatile mounting options
High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (3750 Pa)[3].

Innovative all-weather technology
Optimal yields, whatever the weather with excellent low-light and temperature behavior.

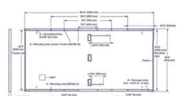
[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC/TS 62804-1:2015 method B (-1500 V, 168 h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)
[3] See Installation Manual for instructions

The ideal solution for:
Ground-mounted solar power plants
Solar power plants with tracker

Q.PEAK DUO XL-G11S SERIES

■ Mechanical Specification

Format	96.9 in × 44.6 in × 1.38 in (including frame) (2462 mm × 1134 mm × 35 mm)
Weight	76.9 lbs (34.9 kg)
Front Cover	0.08 in (2.0 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2.0 mm) semi-tempered glass
Frame	Anodized aluminum
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥29.5 in (750 mm), (-) ≥13.8 in (350 mm)
Connector	Stäubli MC4; Stäubli MC4-Evo2; - IP68



■ Electrical Characteristics

MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W/−0 W)

POWER CLASS			590	BSTC*	595	BSTC*	600	BSTC*	605	BSTC*
Power at MPP[1]	P_{MPP}	[W]	590	645.4	595	650.8	600	656.3	605	661.8
Short Circuit Current[1]	I_{SC}	[A]	13.74	15.04	13.77	15.07	13.80	15.10	13.90	15.21
Open Circuit Voltage[1]	V_{OC}	[V]	53.60	53.79	53.63	53.82	53.66	53.85	53.69	53.88
Current at MPP	I_{MPP}	[A]	13.12	14.36	13.17	14.41	13.25	14.50	13.33	14.58
Voltage at MPP	V_{MPP}	[V]	44.96	44.95	45.18	45.17	45.30	45.27	45.40	45.39
Efficiency[1]	η	[%]	≥21.1		≥21.3		≥21.5		≥21.7	

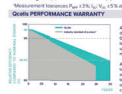
Bifaciality of P_{MPP} and I_{SC} 70% ±5% • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2
[1]Measurement tolerances P_{MPP} ±3%; I_{SC}, V_{OC} ±5% at STC: 1000 W/m²; *at BSTC: 1000 W/m² + φ × 135 W/m², φ = 70%, 25±2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]

			590	595	600	605
Power at MPP	P_{MPP}	[W]	444.2	448.0	451.8	455.5
Short Circuit Current	I_{SC}	[A]	11.07	11.09	11.11	11.20
Open Circuit Voltage	V_{OC}	[V]	50.69	50.72	50.75	50.78
Current at MPP	I_{MPP}	[A]	10.34	10.38	10.45	10.51
Voltage at MPP	V_{MPP}	[V]	42.97	43.15	43.24	43.33

[1]Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2]800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

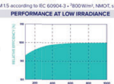


At least 98% of nominal power during first year. Thereafter max. 0.45% degradation per year. At least 93.95% of nominal power up to 10 years. At least 84.95% of nominal power up to 30 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organization of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.34	Nominal Module Operating Temperature	NMOT	[°F]	108±5.4 (42±3 °C)

■ Properties for System Design

Maximum System Voltage V_{SYS}	[V]	1500	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	30	Fire Rating based on ANSI/UL 61730	TYPE 29[4]
Max. Push Load[3], Test/Design	[lbs/ft²]	113 (5400 Pa) / 75 (3600 Pa)	Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)
Max. Pull Load[3], Test/Design	[lbs/ft²]	78 (3750 Pa) / 52 (2500 Pa)		

[3] See Installation Manual for instructions
[4] New Type is similar to Type 3 but with metallic frame

■ Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells)

* Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.
Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS USA Corp. 300 Spectrum Center Drive, Suite 500, Irvine, CA 92618, USA | TEL +1 949 741 5996 | EMAIL na.support@qcells.com | WEB www.qcells.com/us

qcells

The trendsetter among inverters

Features

125 TL3
- Optimized for solar power plants with 1500 volt modules
- Extensive grid management functions
- Special properties for extreme climatic conditions
- Farsighted technical features for future requirements
- Lean commissioning and maintenance via remote services
- 5 year standard warranty; optional 10 year warranty available

155 TL3
- Optimized for solar power plants with 1500 volt modules
- Extensive grid management functions
- Farsighted technical features for future requirements
- Lean commissioning and maintenance via remote services
- 5 year standard warranty; optional 10 year warranty available

Technical Data

DC input data	125 TL3	155 TL3
MPP range	875 – 1300 V	875 – 1300 V
Operating range	875 – 1450 V	875 – 1450 V
Rated DC voltage / start voltage	900 V / 1000 V	900 V / 1000 V
Max. no-load voltage	1500 V	1500 V
Max. input current	160 A	183 A
Max. short circuit current $I_{sc\ max}$	300 A	300 A
Number of MPP tracker	1	1
Connection per tracker	1 - 2	1 – 2

AC output data	125 TL3	155 TL3
Rated output	125 000 VA	155 000 VA
Max. power	137 500 VA	155 000 VA
Line voltage	600 V (3P+PE)	600 V (3P+PE)
Voltage range (Ph-Ph)	480 – 760 V	480 – 690 V
Rated frequency (range)	50 Hz / 60 Hz (45 – 65 Hz)	50 Hz / 60 Hz (45 – 65 Hz)
Rated current	3 x 120.3 A	3 x 149.5 A
Max. current	3 x 132.3 A	3 x 152.0 A
Reactive power / cos phi	0 – 100 % Som / 0.3 ind. – 0.30 cap.	0 – 100 % Snom / 0,30 ind. – 0,30 cap.
Max. total harmonic distortion (THD)	≤ 3 %	≤ 3 %
Number of grid phases	3	3

Technical Data (continued)

General data	125 TL3	155 TL3
Max. efficiency	99.2 %	99.1 %
Europ. efficiency	99.1 %	98.9 %
CEC efficiency	99.0 %	98.9 %
Standby consumption	< 10 W	7 W
Circuitry topology	transformerless	transformerless

Mechanical data	125 TL3	155 TL3
Display	LEDs	LEDs
Control units	webserver, supports mobile devices	webserver, supports mobile devices
Interfaces	Ethernet (Modbus TCP, Sunspec) RS485 (Modbus RTU, Sunspec, KACO-protocol) USB, optional: 4-DI, WIFI	Ethernet (Modbus TCP, Sunspec), RS485 (KACO-protocol), USB, optional: 4-DI, WIFI
Fault signalling relay	potential-free NOC max. 30 V / 1 A	potential-free NOC max. 30 V / 1 A
DC connection	cable lug, max. two pairs of 240 mm² (500 MCM) Cu or Al conductors or one pair of 300 mm² (600 MCM) Cu or Al conductors	cable lug, max. two pairs of 240 mm² (500 MCM) Cu or Al conductors or one pair of 300 mm² (600 MCM) Cu or Al conductors
AC connection	cable lug, max of 240 mm² (500 MCM) per phase Cu or Al conductors	cable lug, max of 240 mm² (500 MCM) per phase Cu or Al conductors
Ambient temperature	-13 °F - +140 ° / -25 °C – +60 °C ①	-13 °F - +140 °F / 25 °C – +60 °C ①
Humidity	0 – 100 %	0 – 100 %
Max. installation elevation (above MSL)	9843 ft / 3000 m	9843 ft / 3 000 m
Min. distance from coast	1640 ft / 500 m	1640 ft / 500 m
Cooling	temperature controlled fan	temperature controlled fan
Protection class	IP66 / NEMA 4X	IP66 / NEMA 4X
Noise emission	59.2 db (A)	59.2 db (A)
H x W x D	28.3 x 27.5 x 17.7 in / 719 x 699 x 450 mm	28.3 x 27.5 x 18.1 in / 719 x 699 x 460 mm
Weight	172.4 lb / 78.2 kg	172.4 lb / 78.2 kg

Certifications	125 TL3	155 TL3
Safety	UL62109-1, UL1741 SA, UL1741 SB (pending), CSA-C22.2 No. 62109-1, CSA-C22.2 No. 62109-2, CSA-C22.2 No. 107.1, IEC 62109-1/-2, EN 61000-6-1/-2/-3, EN 61000-3-11/-12	IEC 62109-1/-2, EN 61000-6-1/-2/-4, EN 61000-3-11/-12, EN 55011 group 1, class A EN 62920 Emission class A / Immunity class A UL62109-1, UL1741 SA, UL1741 SB (pending), CSA-C22.2 No.107.1, CSA-C22.2 No.62109-1, CSA-C22.2 No.62109-2
Grid connection rule	overview see homepage / download area	overview see homepage / download area

① Power derating at high ambient temperatures

Versions	S	XL
Number of DC inputs	1 - 2	1 - 2
DC switch	–	✓
DC SPD	Type 1 + 2	Type 1 + 2
AC SPD	○	○
RS485 interface SPD	○	○
Ethernet interface SPD	○	○
PID Set	○	○

standard = ✓ upgradeable = ○

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PHONE: (262)-547-1200
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SHEET TITLE
SPEC SHEETS

DWG. NO.
E-4.00

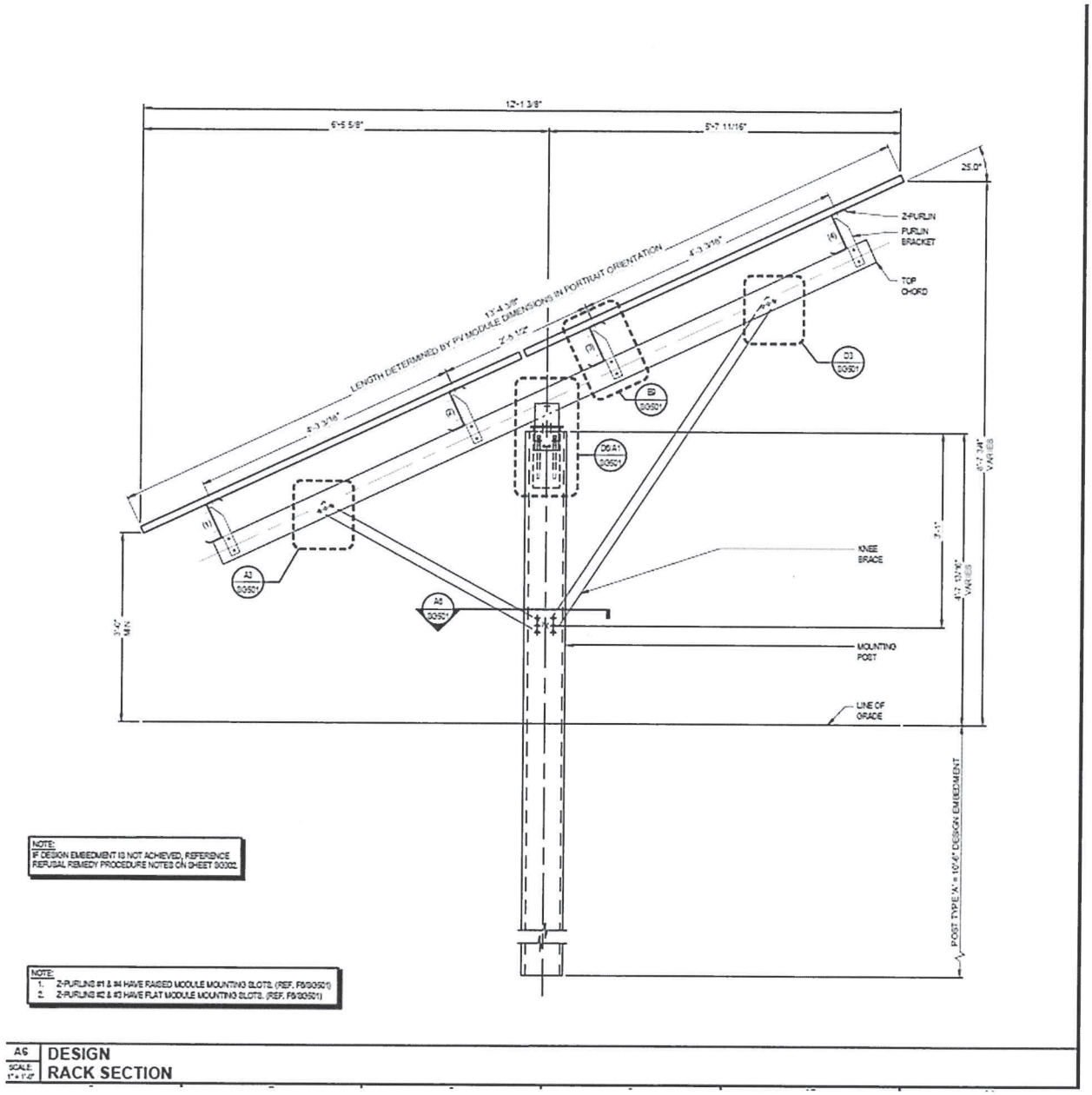

Figure 1 – Snip from the racking construction drawings showing a cross-section of the racking, above and below grade.

Figure 2 - Example of a solar array with an establishing pollinator habitat

Figure 3 – Photo of a fixed mounted solar project with established native vegetation

CONSTRUCTION ACTIVITIES

It is anticipated that 15 to 20 full time employees will be on site in the early stages of construction. This will taper off to a team of approximately 10 members toward the end of the construction activities. Typically, there will be a vehicle for each worker, approximately three (3) utility vehicles (UTV's) for transferring equipment around the site, and forklifts needed to perform different construction tasks.

Vehicles will be parked on the site access road that will be built to connect to the array. Hours of operation will be from 7am to 5pm. The total construction will take approximately 12-16 weeks. The first two (2) weeks will consist of pile driving with the balance of the construction timeline used for erecting the racking, panels and electrical equipment. Dust will be mitigated through the use of a water truck as needed.

Example array construction showing pile being driven (left) and racking before module install (right)

OPERATIONS & MAINTENANCE

The site will be monitored remotely with 24/7 alerts via a SCADA system and wireless phone connection. Annual preventative maintenance will take place each spring to ensure the facility is operating at its full capabilities and to proactively identify issues before they arise. Landscaping will be performed on an as needed basis to keep the low growth vegetation in check. This will be limited to a crew of 1-2 electrical personnel in a passenger vehicle performing annual maintenance checks and replacing equipment as needed.

Vegetation Management Plan for

SV CSG Dale, LLC

Prepared January 6, 2026 by:

Natural Resource Services

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   1.2. Vegetation Restoration Consultant 3
   1.3. Project Description 3
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1. SV CSG Dale, LLC Vegetation Management Plan (VMP) Overview

1.1. Site Developer

SunVest Solar LLC
N27 W24025 Paul CT. Suite 100
Pewaukee, WI 53072
262.547.1200

1.2. Vegetation Restoration Consultant

Natural Resource Services, Inc
2885 Quail Road NE
Sauk Rapids, MN 56379
320.290.5363

and

16425 W. State Route 90
Princeville, IL 61559

1.3. Project Description

The proposed SV CSG Dale, LLC project is a 5 MW AC project planned for approximately 23.70 acres of land in Dale, Outagamie County, Wisconsin. A Single Axis Tracker system will be installed with approximately 36" ground-panel clearance at max tilt with above-ground drivelines. The site will be planted with a native pollinator mix in the fenced array. No vegetative screening is proposed at this time.

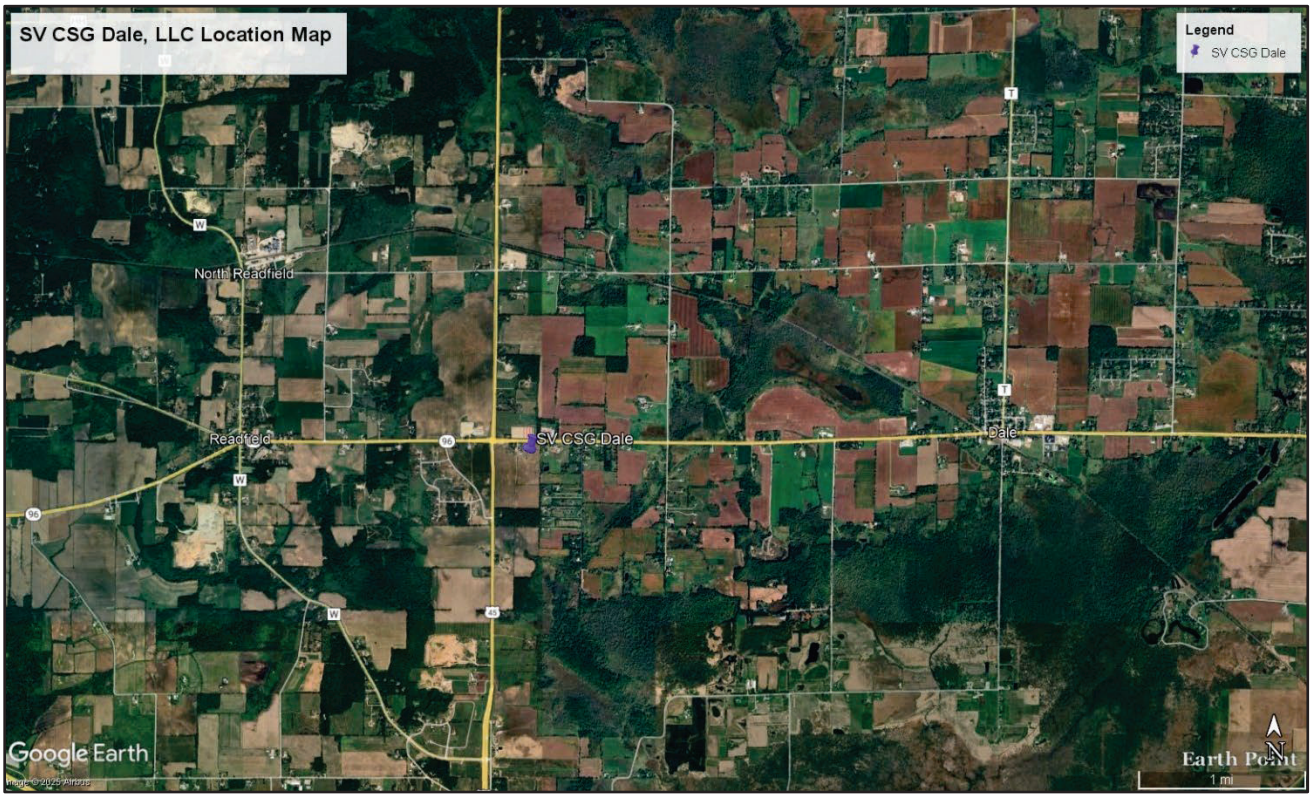
1.4. VMP Use and Objectives

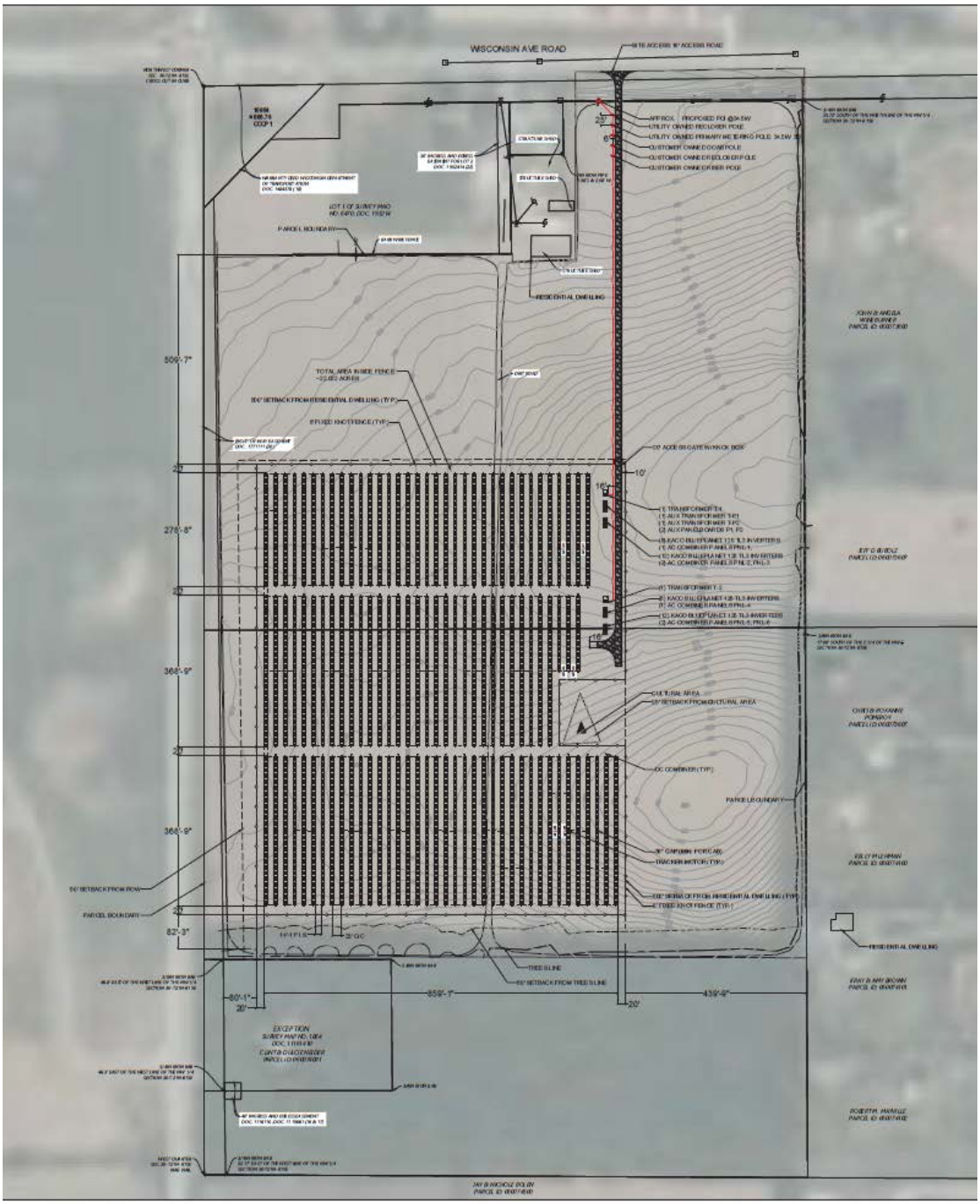
The VMP was written to provide a brief overview and description of the project and to act as a guide for vegetation installation and management. It has been custom-written based on information known at the time of writing. The VMP should be treated as a living document and adjusted as additional information about the site is gathered both pre and post construction. A qualified native vegetation contractor with a history of success working on native vegetation restorations should be contracted to implement the procedures outlined in this document and to provide feedback and suggestions for the VMP during the lifespan of the project.

2. Site Information

2.1. Site Location

The SV CSG Dale project is located on the south side of Wisconsin Ave., approximately ¼ of a mile to the southwest of the Rabbit Road and Wisconsin Avenue intersection. The proposed site is bordered by residential areas, trees and agricultural fields. The GPS coordinates for the site are 44.27078, -88.73535.





A review of historical aerial photos shows that the entire site has been in traditional agricultural row crops for the last 30 years. Little to no ponding can be seen in the aerial photos. A review of the soils on the USDA/NRCS Web Soil Survey shows well drained soils. The entire site is composed of soils classified as Hortonville silt loam.

3. Overview of Vegetation Establishment and Management

3.1. Vegetative Goals

The primary vegetative goal is to establish permanent vegetation that does not interfere with solar production. This solar site is being planted with 100% native species. The species chosen produce an emphasis on native pollinator habitat that will provide resources for pollinators and other wildlife.

3.2. Contribution of Native Habitat on Solar Sites

Economical production of power is the foremost goal of solar sites. There is a parallel opportunity to provide critically important native pollinator-friendly habitat throughout the array while capitalizing on the long-term low maintenance needs of native vegetation.

Establishing prairies and other native plant communities within the confines of solar sites provides a tremendous opportunity to restore ecosystems that have been severely degraded or eliminated across all areas of the country.

Native plants have profound root systems, many reaching 12 or more feet deep into the soil. Rainwater follows those roots into the ground, helping to reduce water runoff and promote the drainage of standing water into an aquifer. Those deep roots also stabilize the soil, preventing erosion from rain and wind. The plants provide seeds for songbirds, cover for game birds and, of course, provide blossoms and host plants for our beloved butterflies and other nectar-loving insects.

Native grasses and forbs will be selected based on their ecological appropriateness to the specific conditions of this site, with consideration to their mature height to not interfere with panel productivity. These species will not require irrigation, fertilizer, or other soil amendments.

The contribution to habitat restoration cannot be overstated given the acreage impacted and lifespan of the project.

3.3. Vegetation Installation Overview

The native mix planned for this array is selected for ecological appropriateness to the soil moisture, types and site conditions as well as the mature plant height of 24” to 36” so as to not interfere with panel productivity. The habitat provides low-maintenance vegetation that won’t require fertilizer, amended soils or irrigation on this site.

It is important to note that the species selected for this site are based on their ability to successfully establish from seed and thrive within the unique conditions found on solar sites. From a practical standpoint, the species contained in these mixes are generally available in the marketplace and, as a whole, have reasonable price points. Ultimately, the list consists of well-performing, workhorse species coupled with smaller amounts of more unique species for a robust mixture.

3.4. Vegetation Management Overview

Maintenance plays a vital role in the eventual success of any native landscape installation, especially during the establishment period of years one through three. Active management is similar in all areas of the project site. All areas of the site are inspected annually followed by maintenance necessary to encourage healthy native species while discouraging non-native/invasive species. During the growing season of the first year of establishment, the site shall be inspected a minimum of three times.

4. Vegetation Installation Procedures

4.1. Site Inspections and Monitoring

Site inspections and monitoring throughout the installation process are vital to continually assess site conditions and determine what procedures are needed and the timing of those procedures. The pre-construction site inspection is particularly important to determine the need for any herbicide application or mowing prior to soil preparation and seeding.

4.2. Site Preparation Herbicide Application

A site preparation herbicide application, if deemed necessary, should be performed by a licensed, qualified contractor using appropriate herbicides to kill all actively growing weeds on the project site. Typically, only glyphosate herbicide is necessary, but if certain perennial weed species are present such as Canada thistle, a broadleaf additive may be necessary. The contractor should carefully select an herbicide with a short soil residual, such as Garlon 3A, to minimize the impact on germination of the permanent seeding. The vegetation should not be disturbed for a minimum of 14 days after an herbicide application to allow time for effective weed elimination.

4.3. Site Preparation Mowing

Site preparation mowing may be required to reset vegetative growth to prepare for an herbicide application. Additionally, site preparation mowing may be needed to cut and mulch vegetation to simplify the soil preparation and seeding process.

4.4. Soil and Seedbed Preparation

Soil and seedbed preparation is vital to the success of any planting. Disking and harrowing (or raking) the site is common and extremely effective. If extreme compaction is present on site, a ripper may be needed to mitigate the compaction. The seedbed should be relatively smooth and firm prior to seeding. Soil that is too clumpy or too fluffy may result in seeds being planted too deep in the soil to germinate and survive.

4.5. Seed and Seeding

A custom native pollinator seed mix has been designed for use on this project and is found in Section 8. Seeding will be completed through broadcasting by using a mechanical spreader appropriate for the specified seed mixes. Large and fluffy seeds (such as most grasses and cover crop) should be broadcast first and then lightly harrowed/raked into the soil. Following the harrowing, small seeds (such as most forbs, sedges, and rushes) should be broadcast on top of the soil.

4.6. Erosion control

Erosion control measures should be implemented as required after permanent seeding is completed.

5. Vegetation Management Procedures

5.1. Adaptive Management

An adaptive management strategy is vital to the success of any project, but especially so for native pollinator restorations. Adaptive management consists of continual monitoring and adjusting maintenance strategies based on the site conditions in order to achieve the best outcomes. No two sites are exactly the same and responding to changing site conditions, weed pressures, weather, and a multitude of other variables is essential to the success of the planting.

5.2. Complete Site Maintenance Mowing

Complete site maintenance mowing consists of mowing the entire project area during the growing season, including trimming as appropriate around equipment or in inaccessible areas. Complete site maintenance mowing is implemented primarily during the establishment phase of the restoration (years 1-3) for several reasons. First, if a closed canopy of vegetation develops, mowing is implemented to knock back the taller vegetation and allow sunlight to reach the native seedlings below. Second, if weed species are present and actively nearing their seed set, mowing is implemented to prevent those weeds from producing viable seed. Third, vegetation has become tall enough to shade the panels or impact other solar equipment on site and must be cut down.

5.3. Integrated Vegetation Maintenance

Integrated vegetation maintenance or IVM is a method using a combination of targeted mowing/trimming and herbicide application aimed at reducing or eliminating weed species and promoting the desired vegetation. IVM is implemented starting towards the end of the 2nd full growing season typically and is used throughout the life of the project. 3 IVM visits are typical on most sites until year 5 when a reduction to 1-2 visits per year can be made if site conditions allow.

5.4. Dormant Mowing

Dormant mowing is a type of complete site mow implemented when vegetation is not actively growing on site. This method is typically performed in early spring or fall. Oftentimes, dormant mows are completed in the fall to mulch up dead vegetation and encourage decomposition. This practice also has a dual purpose of cleaning up the site to make electrical maintenance easier and to reduce the chance of accidental fire.

6. Vegetation Installation and Management Timeline

6.1. Site Prep and Installation Phase

Site Preparation:

1. Prior to the start of construction, a cover crop may be seeded to aid in erosion control, soil moisture management, and weed suppression.
2. Inspection of the project area to assess site conditions and determine the need for any site prep mowing or spraying activities.
3. If necessary, an herbicide application will be completed using glyphosate (Round-up® or equivalent) as per manufacturer's directions in areas with actively growing vegetation. Allow a minimum of 14 days before disturbing the soil or completing seeding activities.
4. When perennial broadleaf vegetation is present a triclopyr herbicide will be added (Garlon 3A® or equivalent) as per manufacturer's directions. When a broadleaf herbicide is used allow a minimum of 30 days before disturbing the site or completing seeding.
5. Depending on the density and type of undesirable vegetation present (i.e., annual vs perennial) a complete site mowing might be advisable in lieu of an herbicide application. For instance, if the site is dominated by Foxtail (an annual), mowing would be preferrable to an herbicide application.

Soil Prep and Seeding:

1. Construction debris, garbage, and building materials will be removed and/or staged outside the intended seeding areas.
2. Disk soil within the project area in preparation for seeding. Harrow or rake the soil to achieve the proper seedbed.
3. Broadcast the large and fluffy seed (mostly grasses) along with a cover crop of winter wheat or oats.
4. Harrow or rake the soil to work the seed to a proper depth.
5. Broadcast the small seeds (forbs, sedges, rushes, small grass seeds) on top of the soil.

Installation Phase Maintenance

If the site is seeded in the summer or early fall, 1-2 complete site mowings may be needed during this first partial growing season.

6.2. Establishment Phase

Year 1 is defined as the 1st full growing season for the vegetation. A recommendation of 3 complete site mowings is most common for this phase. Depending on site conditions and vegetation growth, more or less may be needed.

Year 2 is the second full growing season. 3 total visits are typical with 2 complete site mowings and 1 Integrated Vegetation Maintenance visit the most likely combination.

Year 3 typically requires 3 IVM site visits depending on vegetation status.

6.3. Maintenance Phase

Year 4 – 34. During the maintenance phase, 2 IVM visits are typical.

7. Monitoring

Consistent project monitoring is essential to evaluate vegetative establishment, weed presence, and possible erosion concerns. This information helps determine which management procedures to utilize, the proper timing for those procedures, and whether any other remedial action is required such as reseeding or replanting. As the site's vegetation matures, adaptive management should be utilized as previously described.

8. Seed Mix

SV CSG Dale Native Pollinator Mix

Seeding Rate - 13.40 lb/acre - 80.50 seeds/ft^2

Common Name	Scientific Name	PLS Lb/Acre	% of Mix by Weight	Seeds/ft^2	% of Mix by Seeds/ft^2
Slender Wheatgrass	Elymus trachycaulus	0.20	1.49%	0.51	0.63%
Sideoats Grama	Bouteloua curtipendula	4.80	35.82%	10.58	13.14%
Plains Oval Sedge	Carex brevior	0.20	1.49%	2.13	2.64%
June Grass	Koeleria macrantha	0.10	0.75%	7.38	9.17%
Troublesome Sedge	Carex molesta	0.10	0.75%	0.92	1.15%
Silky Wild Rye	Elymus villosus	0.22	1.64%	0.44	0.55%
Little Bluestem	Schizachyrium scoparium	4.33	32.31%	23.85	29.64%
Prairie Dropseed	Sporobolus heterolepis	0.05	0.37%	0.29	0.36%
Graminoid Total		**10.00**	**74.62%**	**46.11**	**57.28%**
Common Yarrow	Achillea millefolium	0.05	0.41%	3.60	4.47%
Nodding Onion	Allium cernuum	0.03	0.22%	0.08	0.10%
Lead Plant	Amorpha canescens	0.17	1.29%	1.02	1.26%
Canada Anemone	Anemone canadensis	0.01	0.06%	0.02	0.03%
Wild Columbine	Aquilegia canadensis	0.02	0.13%	0.24	0.30%
Common Milkweed	Asclepias syriaca	0.01	0.09%	0.02	0.02%
Butterfly Milkweed	Asclepias tuberosa	0.03	0.22%	0.05	0.06%
Partridge Pea	Chamaecrista fasciculata	0.26	1.94%	0.26	0.32%
Lanceleaf Coreopsis	Coreopsis lanceolata	0.40	2.99%	2.95	3.66%
White Prairie Clover	Dalea candida	0.54	4.03%	3.77	4.69%
Purple Prairie Clover	Dalea purpurea	0.73	5.44%	4.82	5.99%
Pale Purple Coneflower	Echinacea pallida	0.14	1.01%	0.26	0.32%
Spotted Bee Balm	Monarda punctata	0.01	0.07%	0.31	0.39%
Virginia Mountain Mint	Pycnanthemum virginianum	0.01	0.04%	0.43	0.54%
Black-eyed Susan	Rudbeckia hirta	0.24	1.79%	8.11	10.07%
Gray Goldenrod	Solidago nemoralis	0.03	0.19%	2.81	3.49%
Calico Aster	Symphyotrichum lateriflorum	0.01	0.04%	0.49	0.61%
Sky Blue Aster	Symphyotrichum oolentangiense	0.03	0.21%	0.83	1.03%
Ohio Spiderwort	Tradescantia ohiensis	0.05	0.37%	0.15	0.18%
Hoary Vervain	Verbena stricta	0.25	1.85%	2.55	3.17%
Heartleaf Alexanders	Zizia aptera	0.05	0.36%	0.21	0.26%
Golden Alexanders	Zizia aurea	0.35	2.61%	1.41	1.76%
Forb Total		**3.40**	**25.38%**	**34.38**	**42.72%**
Mix Total		**13.40**	**100.00%**	**80.5**	**100.00%**

January 2026

Eastern WI, well drained loam soils mix

9. Soils Maps

USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

12/30/2025
Page 1 of 3

Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
7214B	Hortonville silt loam, 2 to 6 percent slopes	Well drained	17.2	73.2%
7214C2	Hortonville silt loam, 6 to 12 percent slopes, eroded	Well drained	6.3	26.8%
Totals for Area of Interest			**23.6**	**100.0%**

Description

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Outagamie County, Wisconsin
Survey Area Data: Version 19, Sep 10, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 7, 2023—Jun 9, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

A DECOMMISSIONING PLAN FOR

SV CSG Dale, LLC Solar Project

Outagamie County, Wisconsin

JANUARY 09, 2026

PREPARED FOR:

SUNVEST SOLAR LLC®

PREPARED BY:

Westwood

Westwood

Decommissioning Plan

SV CSG Dale, LLC Solar Project

Outagamie County, Wisconsin

Prepared for:

SunVest Solar, LLC
N27 W24025 Paul CT. Suite 100
Pewaukee, WI 53072
(262) 547-1200

Prepared by:

Westwood Professional Services
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: 0071679.00

Date: January 09, 2026

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Attachment A: Decommissioning Cost Estimate

1.0 Introduction / Project Description

This Decommissioning Plan ("Plan") has been prepared for the SV CSG Dale, LLC Solar Project in accordance with the Outagamie County Code of Ordinances Sec. 54-448. The purpose of the Plan is to describe the means and methods that can be used to remove all structures, foundations, underground cables, and equipment and to reclaim and restore the land altered during the construction and operation of the solar project to its predevelopment condition to the extent feasible.

The Project Name ("Project") is a solar power generation project proposed by Developer Name ("Applicant") in Outagamie County, Wisconsin. The Project will have an aggregate nameplate capacity of up to 5.0-megawatt (MW) alternating current (AC), 5.47-MW direct current (DC). Upon completion, the Project will comprise a solar array consisting of solar modules, tracking systems, inverters, transformers, underground and overhead collection lines, access roads, and fencing. The Project will be built within a general Project Area of approximately 24 acres.

The useful life of solar panels is generally considered to be 35 years. At that time, the Project will either be decommissioned or repowered with newer technology. The Plan identifies components which may be removed and areas that may be restored once the Project has reached the end of useful life.

2.0 Proposed Future Land Use

Prior to the development of the Project, the land use of the Project Area was primarily agricultural production. After all equipment and infrastructure is removed during decommissioning, any holes or voids created by poles, concrete pads, and other equipment will be filled in with native soil to the surrounding grade, and the site will be restored to pre-construction conditions to the extent practicable. Access roads and other areas compacted by equipment may be decompacted to a depth necessary to ensure drainage of the soil and root penetration prior to fine grading and tilling to a farmable condition to match preconstruction conditions. Please refer to Section 3.3 for a detailed description of reclamation activities.

3.0 Decommissioning Activities

Decommissioning of the Project will include removing the solar panels, solar panel racking, steel foundation posts and beams, inverters, transformers, overhead and underground cables and lines, equipment pads and foundations, equipment cabinets, and ancillary equipment. The civil facilities, access roads, security fencing, and drainage structures are included in the scope. Standard decommissioning practices will be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements.

During decommissioning, the landowners will be consulted to identify the extent and type of work to be completed. Some Project infrastructure, such as the access roads, and fencing, may be removed at the discretion of the landowner(s).

Decommissioning will include the removal and transportation of all Project components from the Project site. All dismantling, removal, recycling, and disposal of materials generated during

decommissioning will comply with rules, regulations, and prevailing Federal, State, and local laws at the time decommissioning is initiated and will use approved local or regional disposal or recycling sites as available. Recyclable materials will be recycled to the furthest extent practicable. Non-recyclable materials will be disposed of in accordance with State and Federal law.

3.1 Decommissioning of Project Components

3.1.1 Solar Panels

Solar panels will be inspected for physical damage, tested for functionality, and disconnected and removed from racking. Functioning panels will be packed, palletized, and shipped to an off-site facility for reuse or resale. Non-functioning panels will be shipped to the manufacturer or a third party for recycling or disposal.

3.1.2 Tracker Racking System

The tracker racking system and racking components will be disassembled and removed from the steel foundation posts, processed to appropriate size, and sent to a metal recycling facility.

3.1.3 Steel Foundation Posts

Structural foundation steel posts will be pulled out to full depth, removed, processed to appropriate size, and shipped to a recycling facility. The posts can be removed using back hoes or similar equipment. During decommissioning, the area around the foundation posts may be compacted by equipment and, if compacted, the area will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation.

3.1.4 Overhead and Underground Cables and Lines

All underground cables and conduits will be removed to a depth of four feet. Topsoil will be segregated and stockpiled for later use prior to any excavation and the subsurface soils will be staged next to the excavation. The subgrade will be compacted per standards. Topsoil will be redistributed across the disturbed area. Overhead lines, support poles, and attachments will be removed from the Project and taken to a recycling facility.

3.1.5 Inverters, Transformers, and Ancillary Equipment

All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards.

3.1.6 Equipment Foundations and Ancillary Foundations

The ancillary foundations are pile foundations for the equipment pads. As with the solar array steel foundation posts, the foundation piles will be pulled out completely. Duct banks will be excavated to full depth. All unexcavated areas compacted by equipment used in decommissioning will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density similar to the surrounding soils. All materials will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards.

3.1.7 Fence

Fence parts and foundations will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards. The surrounding areas will be restored to pre-solar farm conditions to the extent feasible.

3.1.8 Access Roads

Project access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the landowner(s) and one of the following options will be pursued:

1. After final clean-up, roads may be left intact through mutual agreement of the landowner and the Applicant unless otherwise restricted by federal, state, or local regulations.
2. If a road is to be removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards. Internal service roads are assumed to be constructed with geotextile fabric and eight inches of aggregate over compacted subgrade. Any ditch crossing connecting access roads to public roads will be removed unless the landowner requests it remains. The subgrade will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for reintroduction of farming. Topsoil that was stockpiled during the original construction will be distributed across the open area. Finally, the access road corridors will be tilled to an agricultural condition.

3.2 Component Disposal

Project components removed from the Project site will be resold, reused, recycled, or scrapped to the greatest extent possible.

- Metal components will be processed to size, sorted, and hauled to a recycling facility (Alter Metal Recycling – Waupaca in Waupaca, WI, approximately 22 miles from the Project site) to be processed as scrap. This includes:
    - Steel components, including steel piles and trackers, chain-link fencing, and smaller components from recycled equipment.
    - Underground and overhead collection, and grounding cables, typically composed of aluminum and copper.
    - Copper windings from transformers and inverters.
- Other electrical equipment may be assessed for its condition and either sold for reuse or scrapped from its components.
- Fluids, such as transformer oils, will be drained and shipped off-site to an approved recycling facility.
- Solar panels will be resold or recycled to the greatest extent possible, based on their age and condition, as well as market conditions around resale of solar panels and advancements in recycling technologies. For the purposes of this cost estimate, it is assumed that 95% of panels will be resold to another party for reuse or recycling. The estimate further assumes that 5% will be damaged beyond repair and will be hauled to a landfill that accepts solar module components as approved wastes.

- If possible, clean gravel removed from the site may be re-used to improve public roads or used by local landowners to improve driveways or be used as clean fill. For the purposes of this cost estimate, it's assumed that the gravel will be hauled to a landfill.

Project components that are not recyclable may include items composed of mixed materials, certain plastic components, materials that have been contaminated, and certain general municipal wastes. It may not be feasible for concrete to be recycled due to the distance between the Project site and a sufficient recycling facility. For the purposes of this Plan, it is assumed that these materials will be hauled to Outagamie County Recycling and Solid Waste, located in Appleton, WI, approximately 28 miles from the site.

3.3 Reclamation

The Applicant will restore and reclaim the site to the pre-solar farm condition consistent with the site lease agreement. The Applicant assumes that most of the site will be returned to farmland and/or pasture after decommissioning through implementation of appropriate measures to facilitate such uses. If no specific use is identified, the Applicant will vegetate the site with a seed mix approved by the local soil and water conservation district or similar agency. The goal of restoration will be to restore natural hydrology and plant communities to the greatest extent practicable while minimizing new disturbance and removal of native vegetation. In addition to the reclamation activities described above for each decommissioning activity, all unexcavated areas compacted by equipment and activity during the decommissioning will be decompacted as needed to ensure proper density of topsoil consistent and compatible with the surrounding area and associated land use. All materials and debris associated with Project decommissioning will be removed and properly recycled or disposed of at off-site facilities.

4.0 Best Management Practices (BMPs)

4.1 Construction Stormwater Practices

During decommissioning, erosion and sediment control BMPs will be implemented to minimize potential for erosion of site soils and sedimentation of surface waters and waters of the state. Because decommissioning will entail disturbance of more than one acre of soil, the Applicant will prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage with the Wisconsin Department of Natural Resources (DNR) under the Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit prior to initiating soil disturbing activities. Potential BMPs to be implemented during decommissioning activities are described below and will be subject to refinement in the SWPPP. The decommissioning team will review the permitting requirements at the time of decommissioning and obtain any other necessary permits, which may include a US Army Corps of Engineers (USACE) Section 404 Permit to Discharge Dredged or Fill Material.

4.1.1 Erosion Control

Erosion control measures will be refined based on the standard of practice current at the time the SWPPP is developed for decommissioning. All disturbed areas without permanent impermeable or gravel surfaces, or planned for use as crop land, will be vegetated for final stabilization. All slopes steeper than 4:1 should be protected with erosion control blankets. Restoration should include seed

application prior to application of the blanket. All slopes 4:1 or flatter should be restored with seed and mulch, which will be disc anchored.

4.1.2 Sediment Control

Sediment controls, such as silt fences, fiber logs, dewatering practices, construction entrances, and sedimentation traps and/or basins will be implemented during construction to prevent the transport of sediment off-site during decommissioning activities. Street sweeping/scraping will also be implemented to mitigate potential tracking of sediment onto public roadways.

4.1.3 Controlling Stormwater Flowing onto and Through the Project

Given the low gradient of the slopes in the Project Area, controlling stormwater flow that enters the Project Area will likely require minimal effort during decommissioning activities. Only newly disturbed areas may require new, temporary stormwater control. If necessary, water may be diverted around the Project site using diversion berms.

4.2 Permitting

All decommissioning and reclamation activities will comply with Federal and State permit requirements. Decommissioning activities that will disturb more than one acre of soil will require coverage under Wisconsin's Construction Site Storm Water Runoff General Permit for construction stormwater. The permits will be applied for and received prior to decommissioning construction activities commencing. A SWPPP will be developed prior to filing for construction stormwater permit coverage.

If necessary for decommissioning activities, wetlands and waters permits will be obtained from the USACE or Wisconsin DNR. A Spill Prevention, Control, and Countermeasure (SPCC) Plan for decommissioning will likely also be required for decommissioning work.

4.3 Health and Safety Standards

Work will be conducted in strict accordance with the Applicant's health and safety plan. The construction contractor hired to perform the decommissioning will also be required to prepare a site-specific health and safety plan. All site workers, including subcontractors, will be required to read, understand, and abide by the plans. A site safety officer will be designated by the construction contractor to ensure compliance. This official will have stop-work authority over all activities on the site should unsafe conditions or lapses in the safety plan be observed.

5.0 Timeline

Decommissioning of the Project will be initiated if the Project has reached the end of useful life. It is anticipated that the decommissioning activities for the Project can be completed in a 12-week period. The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews.

6.0 Decommissioning Costs

The decommissioning costs are calculated using current pricing. Westwood recommends the estimate of net costs should be updated periodically to recognize price trends for both decommissioning costs and the salvage and resale values of the components.

There are currently active markets for scrap steel, aluminum, and copper, used transformers and electrical equipment, and used solar panels. Scrap metal prices have been discounted from posted spot prices found on www.scrapmonster.com. Pricing for used panels has been discounted from the average price of used panels, as published in EnergyBin's 2024 "Module Price Index."

The total estimated cost of decommissioning the SV CSG Dale, LLC Solar Project is approximately $496,535 ($90,774 per MW). Estimated salvage/scrap value of the modules, racking, transformers, and other materials is approximately $688,295. The net decommissioning costs after accounting for resale and salvage values is approximately $191,800 in surplus, or $35,064 in surplus per MW.

7.0 Financial Assurance

According to Outagamie County Code of Ordinances Sec. 54-448, financial assurance is required in the amount adequate to cover the estimated cost of decommissioning as determined within the decommissioning plan and any subsequent amendments thereto. Financial assurance must be provided prior to the commencement of construction activities in the form of cash, irrevocable letter of credit, or other suitable financial mechanism as agreed upon by the county.

Attachment A

Decommissioning Cost Estimate

SV CSG Dale, LLC Solar Project

	Quantity	Unit	Unit Cost	Total Cost
Mobilization/Demobilization	1	Lump Sum	$24,600.00	$24,600
Mobilization was estimated to be approximately 7% of total cost of other items.				
Permitting				
County Permits	1	Lump Sum	$10,000.00	$10,000
State Permits	1	Lump Sum	$20,000.00	$20,000
Subtotal Permitting				**$30,000**
Decommissioning will require SWPPP and SPCC Plans. Cost is an estimate of the permit preparation cost.				
Civil Infrastructure				
Remove Gravel Surfacing from Road	840	Cubic Yards (BV)	$3.08	$2,587
Haul Gravel Removed from Road to Landfill (Appleton, WI)	1,050	Cubic Yards (LV)	$19.95	$20,948
Dispose of Gravel Removed from Road (Landfill uses as Daily Cover)	1,361	Tons	$5.00	$6,805
Remove Geotextile Fabric from Beneath Access Roads	4,727	Square Yards	$1.40	$6,618
Haul Geotech Fabric to Landfill (Appleton, WI)	1.3	Tons	$14.63	$19
Dispose of Geotech Fabric	1.3	Tons	$57.00	$74
Grade Road Corridor (Re-spread Topsoil)	2,127	Linear Feet	$2.46	$5,232
Decompact Road Area	1.0	Acres	$249.40	$249
Remove Agricultural Fence	4,083	Linear Feet	$2.71	$11,065
Haul Agricultural Fence to Metal Recycling (Waupaca, WI)	6.3	Tons	$13.41	$84
Subtotal Civil Infrastructure				**$53,682**
Civil removal costs are a combination of MNDOT unit costs where applicable, RSMeans cost for Oshkosh, WI, and industry standards provided to Westwood.				
Structural Infrastructure				
Remove Steel Foundation Posts (Arrays)	1,762	Each	$16.90	$29,778
Haul Steel Post to Metal Recycling (Waupaca, WI)	159	Tons	$13.41	$2,132
Remove Tracker Racking per String	387	Each	$129.22	$50,008
Haul Tracker Racking to Metal Recycling (Waupaca, WI)	263	Tons	$13.41	$3,527
Subtotal Structural Infrastructure				**$85,445**
Steel removal costs were calculated by using RSMeans information for demolition of steel members. Hauling calculations are based on the locations of metals recyclers.				
Electrical Collection System				
Remove PV Panels	9,288	Each	$9.52	$88,422
Haul PV 95% of Panels to Reseller (Carol Stream, IL)	339	Tons	$47.05	$15,950
Haul 5% of PV Panels to Landfill (Appleton, WI)	18	Tons	$11.12	$200
Dispose of PV Panels	18	Tons	$57.00	$1,026
Remove Equipment Skids	40	Each	$1,210.20	$48,408
Remove Steel Foundation Posts (Equipment Skids)	320	Each	$16.90	$5,408
Haul Steel Post to Metal Recycling (Waupaca, WI)	19	Tons	$13.41	$257
Haul Equipment to Transformer Disposal (Germantown, WI)	40	Each	$293.01	$11,720
Remove SCADA Equipment	1	Each	$2,000.00	$2,000
Remove DC Collector System Cables (copper)	5.47	Per MW	$2,000.00	$10,940
Remove Underground (AC) Collector System Cables & Fiber Optic	1,879	Linear Feet	$2.34	$4,397
Load and Haul Cables for Recycling	72	Tons	$15.42	$1,110
Dispose of Fiber Optic Cables	0.5	Tons	$57.00	$27
Remove Overhead Cables	49.4	Feet	$4.23	$209
Loadout Overhead Cables	1.0	Tons	$6.27	$6
Haul Overhead Cables to Metals Recycling (Waupaca, WI)	1.0	Tons	$13.41	$13
Remove Insulators and Gangs	6	Each	$577.48	$3,465
Remove and Load Timber Transmission Poles	2	Each	$946.11	$1,892
Haul Timber Poles to Landfill (Appleton, WI)	2	Each	$305.75	$612
Subtotal Electrical Collection				**$196,063**
Electrical removal costs of PV Panels and Combiner Boxes were based industry standard installation rates. Equipment pads, MV Equipment, and SCADA Equipment removal cost are based on removal of equipment, concrete pads, and conduits using a truck mounted crane and RSMeans information on crew production rates.				

Site Restoration				
Stabilized Construction Entrance	1	Each	$2,000.00	$2,000
Perimeter Controls (Erosion and Sediment Control)	2,042	Linear Feet	$3.94	$8,045
Permanent Seeding on Roadway Areas	1.0	Acres	$1,322.93	$1,323
Till Array Areas to Agricultural Condition	23.7	Acres	$216.22	$5,124
Subtotal Site Restoration				**$16,493**
Project Management				
Project Manager	12	Weeks	$3,749.00	$44,988
Superintendent (half-time)	12	Weeks	$1,762.50	$21,150
Field Engineer (half-time)	12	Weeks	$1,634.50	$19,614
Clerk (half-time)	12	Weeks	$375.00	$4,500
Subtotal Project Management				**$90,252**
Standard industry weekly rates from RSMeans.				
Subtotal Demolition/Removals				**$496,535**
Salvage				
Fencing (Wire/Agricultural)	6.3	Tons	$217.72	$1,372
Steel Posts	127	Tons	$217.72	$27,650
Module Racking	263	Tons	$217.72	$57,260
PV Modules	8,824	Each	$36.40	$321,140
Transformers and Inverters	151,164	Pounds	$0.38	$57,442
Transformers (Oil)	1,440	Gallons	$0.70	$1,008
DC Collection Lines (Copper)	128,057	Pounds	$1.61	$206,172
AC Collection Lines (Aluminum)	14,090	Pounds	$0.91	$12,822
Ground Conductor Lines (Copper)	1,432	Pounds	$1.61	$2,305
Transmission Lines (Aluminum)	1,234	Pounds	$0.91	$1,123
Subtotal Salvage				**$688,295**
Salvage values are a combination of the following factors; current market metal salvage prices, current secondary market for solar panel module recycling, discussions with national companies that specialize in recycling and reselling electrical transformers and inverters, and the assumption that care is taken to prevent any damage or breakage of equipment.				
Total Demolition Minus Salvage				**($191,800)**

Notes:

1. Prices used in analysis are estimated based on research of current average costs and salvage values.
2. Prices provided are estimates and may fluctuate over the life of the project.
3. Contractor means and methods may vary and price will be affected by these.

Cost Estimate Assumptions

To develop a cost estimate for the decommissioning of the SV CSG Dale, LLC Solar Project, Westwood engineers made the following assumptions and used the following pricing references. Costs were estimated based on current pricing, technology, and regulatory requirements. The assumptions are listed in order from top to bottom of the estimate spreadsheet. When publicly available bid prices or bid summaries were not available for particular work items, we developed time- and material-based estimates considering composition of work crews and equipment and material required. While materials may have a salvage value at the end of the Project life, the construction activity costs and the hauling/freight costs are separated from the disposal costs or salvage value to make revisions to salvage values more transparent.

1. Project quantities are based on SV CSG Dale, LLC Interconnection Plan Set, dated 10/20/2025.
2. A project of this size and complexity requires a full-time project manager with half-time support staff.
3. RS Means pricing was used for the Oshkosh, WI region for the 4th quarter of 2025.
4. Common labor will be used for the majority of tasks, supplemented by electricians, steel workers, and equipment operators where labor rules may require. The labor rates reflect union labor rates.
5. Mobilization was estimated at approximately 7% of total cost of other items.
6. Permit applications will require the preparation of a SWPPP and an SPCC Plan.
7. Road gravel removal was estimated on a time and material basis. Since the material will not remain on-site, a hauling cost is added to the removal cost. Clean aggregate can typically be used as “daily cover” at landfills without incurring a disposal cost. The road gravel may also be used to fortify local driveways and roads, lowering hauling costs but incurring placing and compaction costs.
8. The selected disposal facility (Outagamie County Recycling and Solid Waste) is located in Appleton, WI, approximately 28 miles from the Project site. Hauling costs to the landfill are estimated to be $14.63 per ton.
9. Erosion and sediment control along road reflects the cost of silt fences on the downgradient side of the proposed roads. As such, the length of controls has been estimated to be approximately 50% of the road length.
10. Topsoil is required to be stockpiled on-site during construction, so no topsoil replacement is expected to replace the road aggregate. Subsoiling cost to decompact roadway areas is estimated as $249.40 per acre, and tilling to an agriculture-ready condition is estimated as $216.22 per acre.
11. The selected metal recycling facility (Alter metal Recycling - Waupaca) is located in Waupaca, WI, approximately 22 miles from the Project site. Hauling costs to the recycling facility are approximately $0.62 per ton mile, or $13.41 per ton.
12. Tracker foundation posts are lightweight “I” beam sections installed with a specialized piece of equipment and can be removed with a standard backhoe with an attachment for gripping the piles. We estimate crew productivity at 240 posts per day, resulting in a per post cost of approximately $16.90. The posts weigh approximately 150 pounds each.
13. It is assumed that the racking structures weigh approximately 15 pounds per linear foot of array. Each solar panel has a width of 44.65 inches. The Project will have approximately 9,288 modules and 35,024 feet of array. The arrays are made of steel pipes; a crew with hand tools can disassemble and

cut the pieces to sizes for recycling at a rate of about 1800 pounds per person per hour, or about $190.15 per ton.

14. The solar panels for this Project measure approximately 3.72 feet by 8.08 feet and weigh 76.94 pounds. They can easily be disconnected, removed, and packed by a three-person crew at a rate we estimate at 18 panels per hour.
15. The equipment skids will consist of inverter(s), a transformer, and a panel on a metal frame approximately 19 feet long by 8 feet wide by 8 feet 6 inches tall. The skids weigh approximately 20,400 pounds and can be disconnected by a crew of electricians. They must be lifted by a mobile crane for transport to the recycler. They contain copper or aluminum windings.
16. The transformers contain copper windings that have significant salvage value. They are typically oil filled, but most transformer recyclers will accept the transformers with oil. The estimated costs include removal of metal frame and conduits feeding the equipment.
17. Medium voltage (MV) equipment and SCADA equipment are mounted on the same equipment skids as the inverters and transformers, and they are enclosed in weatherproof cabinets. Their size requires light equipment to remove them. The costs for the removal of the pile foundations are included in the "Remove Steel Foundation Posts" estimate.
18. The underground collector system cables are placed in trenches with a minimum of 18 inches of cover. Several cables/circuits are placed side by side in each trench. The conduits and cables can be removed by trenching.
19. Perimeter control pricing is based on silt fence installation around downgradient sides of the project perimeter.
20. Metal salvage prices (steel, aluminum, copper) are based on December 2025 quotes from www.scrapmonster.com for the Midwest Region. Posted prices are three months old. These prices are based on delivery to the recycling facility with the material prepared to meet size, thickness, cleanliness, and other specifications.
21. A reduction of 25% has been taken from all pricing obtained from www.scrapmonster.com to reflect the processing by the contractor to meet the specifications.
22. The salvage value for steel uses pricing from the Midwest Region United States at $320 per metric ton, or $290.30 for U.S. ton.
23. Solar module salvage values are shown in current values, assuming near-new conditions for the first few years of operations. Pricing for used panels has been discounted from the average resale price of used panels, as published in EnergyBin's 2024 "Module Price Index." Module values will decline over time as a function of loss of output and age.
24. There is an active market for reselling and recycling electrical transformers and inverters with several national companies specializing in recycling. However, we have assumed that the electrical equipment will be obsolete at the time of decommissioning, so we have based the pricing on a percentage of the weight that reflects the copper windings that can be salvaged. Pricing was used for Copper Transformer Scrap for the Midwest Region United States, at $0.50 per pound.
25. The collection lines are priced assuming copper conductor wire for the direct current circuits and aluminum wire for the alternating current circuits. The prices reflect a reduced yield of copper or aluminum resulting from the stripping of insulation and other materials from the wire prior to recycling. The estimate uses the Midwest Region prices of #2 insulated copper wire with a 50% recovery rate ($2.14 /pound) and E.C. Aluminum Wire ($1.21 /pound).

26. Care to prevent damage and breakage of equipment, PV modules, inverters, capacitors, and SCADA must be exercised, but removal assumes unskilled common labor under supervision.