USDA ARS SWRC SOLAR PV INSTALLATION

100% CD

USDA Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE

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3/23/2026 1:23:48 PM Autodesk Docs://2025-28 USDA Tucson Solar PV/2025-28 USDA TUCSON SOLAR-PV.rvt

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HEREOF IS A CRIMINAL OFFENSE UNDER 18 U.S.C. SEC. 506. UNAUTHORIZED DISCLOSURE MAY CONSTITUTE TRADE SECRET MISAPPROPRIATION IN VIOLATION OF I.C.24-2-31-1 ET. SEQ. AND OTHER LAWS.

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REGISTERED ARCHITECT
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Date Signed 3-17-26
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

COVER SHEET

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE:	**03.17.2026**
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DRAWING INDEX:

GENERAL

G000	COVER SHEET
G001	INDEX AND GENERAL NOTES
G002	ABBREVIATIONS, DIMENSIONING LEGEND, SYMBOLS
G004	CODE AND ZONING SUMMARY
G005	CODE PLAN - LEVEL 01

ARCHITECTURAL

AS101	ARCHITECTURAL SITE PLAN
A101	LEVEL 1 - ANNOTATED FLOOR PLAN
A131	LEVEL 1 - CEILING PLAN
A140	ROOF PLAN
A200	ELEVATIONS

ELECTRTICAL

EE001	ELECTRICAL COVER SHEET
EE002	SYMBOLS LEGEND
EE703	TYPICAL LABELING DETAILS
EP101	LOWER LEVEL POWER PLAN
EP102	ROOF POWER PLAN
EP103	PV ISOMETRIC
EP601	ONE LINE DIAGRAM
EP615	PANEL SCHEDULES

GENERAL NOTES:

1 THE GENERAL CONTRACTOR SHALL HEREAFTER BE REFERRED TO AS "GENERAL CONTRACTOR" OR "GC". THE OWNER MAY HEREAFTER BE REFERRED TO AS "OWNER".

2 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK REGARDLESS OF THE LOCATION OF THE INFORMATION IN THE DOCUMENTS. THE GENERAL CONTRACTOR SHALL UTILIZE THE COMPLETE & ENTIRE CONSTRUCTION DRAWINGS AND WRITTEN SPECIFICATIONS FOR ALL REQUIRED INFORMATION TO PROVIDE COMPLETE CONSTRUCTION OF THIS PROJECT AND IS RESPONSIBLE TO COORDINATE ALL DRAWINGS AND SPECIFICATIONS WITH ALL SUBCONTRACTORS REGARDLESS OF LOCATION IN CONTRACT DOCUMENTS. ITEMS LISTED IN DRAWINGS MAY NOT BE INCLUDED IN SPECIFICATIONS. ITEMS LISTED IN SPECIFICATIONS MAY NOT BE INCLUDED IN DRAWINGS.

3 UNLESS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS AS BEING NOT IN CONTRACT (N.I.C.) OR EXISTING, ALL ITEMS, MATERIALS AND INSTALLATION OF SAME ARE PART OF THE CONTRACT AS DEFINED BY THE ENTIRE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. THE GC SHALL PROVIDE AND INSTALL ALL ACCESSORIES, COMPONENTS AND ASSEMBLIES REQUIRED FOR THE WORK DEPICTED OR SPECIFIED.

4 THE GENERAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING ANY WORK AND SHALL BE RESPONSIBLE FOR ALL WORK AND MATERIALS INCLUDING THOSE FURNISHED BY SUBCONTRACTORS. THE GC SHALL ACCEPT PREMISES AS FOUND. OWNER WILL MAINTAIN THE EXISTING CONDITION OF THE SITE AND EXISTING STRUCTURES AT THE TIME OF BIDDING.

5 DISCREPANCIES BETWEEN PORTIONS OF THE CONTRACT DOCUMENTS ARE NOT INTENDED. THE GENERAL CONTRACTOR IS TO CLARIFY WITH THE ARCHITECT ANY SUCH DISCREPANCIES DURING BIDDING AND PRIOR TO COMMENCING WORK.

6 DIMENSIONS TAKE PRECEDENCE OVER DRAWINGS: DO NOT SCALE DRAWINGS TO DETERMINE ANY LOCATIONS. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCY PRIOR TO CONTINUING WITH WORK. CHANGES IN THE WORK TO BE DOCUMENTED IN WRITING AND APPROVED IN WRITING PRIOR TO BEING STARTED - (IMPLEMENTED)

7 ALL PLAN DIMENSIONS ARE FROM GRIDLINE OR FACE OF STUD OR FACE OF BLOCK UNLESS OTHERWISE INDICATED. SEE SECTION ON "DIMENSIONING" THIS SHEET.

8 THE CONTRACTOR SHALL REPORT TO THE ARCHITECT ALL CONDITIONS REQUIRING COORDINATION/ CHANGES WITH THE CONTRACT DOCUMENTS. COORDINATION / APPROVAL SHALL TAKE PLACE BEFORE THE WORK BEGINS. ALL CHANGES TO THE CONTRACT COST SHALL BE APPROVED THROUGH A CHANGE ORDER.

9 DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.

10 THE ARCHITECT WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH DESIGN CONCEPT OF THE PROJECT. THE ARCHITECT'S REVIEW OF A SEPARATE ITEM SHALL NOT INDICATE APPROVAL OF AN ASSEMBLY IN WHICH THE ITEM FUNCTIONS. THE ARCHITECT WILL NOT REVIEW SHOP DRAWINGS UNTIL THE GC HAS REVIEWED AND STAMPED THE SHOP DRAWING/SUBMITTAL. THE GC IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS SHOWN ON THE SHOP DRAWINGS. THE ARCHITECT'S REVIEW OF THE SHOP DRAWINGS SHALL NOT OVERRIDE THE CONDITIONS DESCRIBED IN THE CONTRACT DOCUMENTS UNLESS SPECIFICALLY NOTED OTHERWISE BY THE ARCHITECT. WORK SHALL NOT PROCEED WITHOUT RETURNED REVIEWED SUBMITTALS.

11 FOR CONSTRUCTION DETAILS NOT SHOWN, USE THE MANUFACTURER'S STANDARD DETAILS OR APPROVED SHOP DRAWINGS / DATA SHEETS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

12 FOR GRADING, TRENCHING ETC., CONTACT THE ARCHITECT FOR INSTRUCTIONS PRIOR TO THE CONTINUATION OF WORK SHOULD ANY UNUSUAL CONDITIONS BECOME APPARENT DURING GRADING OR FOUNDATION CONSTRUCTION. EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED SHALL BE VERIFIED BY THE GENERAL CONTRACTOR BEFORE CONSTRUCTION.

13 ALL WORK, MATERIALS AND METHODS SHALL BE IN CONFORMANCE WITH THE CODES, ORDINANCES AND REGULATIONS OF ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION AT THE PROJECT LOCATION. THE GENERAL CONTRACTOR MUST COMPLY WITH THE CONTRACTOR REGISTRATION REQUIREMENTS OF ALL GOVERNING AUTHORITIES.

14 ALL PROJECT CONSTRUCTION SHALL CONFORM WITH ANSI A-117.1-2017 AND THE AMERICANS WITH DISABILITIES ACT (ADA).

15 THE GENERAL CONTRACTOR SHALL NOTIFY ALL APPLICABLE LOCAL GOVERNING AUTHORITIES AND UTILITIES PRIOR TO COVERING UP ANY WORK REQUIRING INSPECTION.

16 THE GENERAL CONTRACTOR SHALL MAINTAIN ALL REQUIRED EXITS AND FIRE LANES IN WORKING ORDER.

17 A GENERAL BUILDING PERMIT IS REQUIRED. ALL PERMITS OR CONNECTION FEES SHALL BE SECURED BY THE GENERAL CONTRACTOR AND REIMBURSED THROUGH THE OWNER.

18 THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL FIRE EXTINGUISHERS WHERE SHOWN ON PLAN.

19 MINIMUM FLAME SPREAD CLASSIFICATION OF INTERIOR FINISH SHALL CONFORM TO THE BUILDING CODE AND LOCAL GOVERNING BUILDING CODES/ORDINANCES. SEE CODE SUMMARY, SHEET G1002.

20 THE GENERAL CONTRACTOR SHALL PROVIDE AND IS SOLELY RESPONSIBLE AND LIABLE FOR PUBLIC AND EMPLOYEE PROTECTION AS NECESSARY AND AS REQUIRED BY THE CODES, INCLUDING EXTERIOR AND INTERIOR PEDESTRIAN TRAFFIC BARRIERS. ALL WORK SHALL CONFORM TO THE ORDINANCES AND REGULATIONS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION AT THE PROJECT.

21 THE GENERAL CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES FOR DUST AND NOISE CONTROL, AND ALL REQUIRED ENVIRONMENTAL PROTECTION WHERE WORK JOINS EXISTING CONDITIONS.

22 ALL DEBRIS SHALL BE REMOVED FROM PREMISES AND ALL AREAS SHALL BE LEFT IN A CLEAN (BROOM) CONDITION DAILY.

23 IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE AND OR CALL BLUE STAKES TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN HEREIN OR NOT, AND WHEN IDENTIFIED TO PROTECT THEM FROM DAMAGE. THE GENERAL CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT OF IDENTIFIED UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.

24 APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE GENERAL CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA AND CHANGE ORDERS, ON THE PREMISES AT ALL TIMES. THESE ARE TO BE KEPT UNDER THE CARE OF THE JOB SUPERINTENDENT.

25 THE GENERAL CONTRACTOR IS TO PROVIDE BLOCKING AS REQUIRED FOR MOUNTING OF WALL MOUNTED SHELVES, CABINETS, HC GRAB BARS AND PARTITION BRACES AND ALL OTHER ITEMS IDENTIFIED ON THE EQUIPMENT OR ACCESSORY SCHEDULE. BLOCKING SHALL BE FIRE TREATED WHERE REQUIRED BY THE BUILDING CODE.

26 THE GENERAL CONTRACTOR IS RESPONSIBLE FOR RECEIVING, UNLOADING, UNCRATING, INSTALLATION AND HOOK-UP OF ALL OWNER FURNISHED ITEMS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

GENERAL NOTES:

27 THE GENERAL CONTRACTOR IS TO ASSURE THAT NO REBAR OR REINFORCEMENT IS PRESENT PRIOR TO CORE DRILLING OR PLACING BOLTS OR ANY OTHER ITEM WHICH COULD DISTURB THE STRUCTURAL SLAB OR FOUNDATION WALLS.

28 PROVIDE GALVANIC PROTECTION BETWEEN DISSIMILAR MATERIALS WHERE REQUIRED.

29 PROVIDE METAL TRIM OR CASING AT ALL EDGES OF PLASTER AND DRYWALL SURFACES WHERE IT TERMINATES OR MEETS ANY OTHER MATERIAL, UNLESS NOTED OTHERWISE.

30 PROVIDE METAL CORNER TRIM AT ALL OUTSIDE CORNERS OF PLASTER AND DRYWALL SURFACES.

31 ALL PENETRATIONS THROUGH ANY SURFACE SHALL BE THOROUGHLY SEALED WITH APPROPRIATE SEALANT MATERIAL.

32 UNLESS OTHERWISE NOTED, ALL EXTERIOR AND INTERIOR METAL, TRIM, TREILLAGE, RAILINGS, MOLDINGS, FRAMES, CASTING ETC., SHALL BE PAINTED.

33 FOR PLUMBING, FIRE SPRINKLER AND ELECTRICAL SYSTEMS, PROVIDE APPROVED ASSEMBLIES WITH SELF CLOSING DEVICES FOR ANY PENETRATIONS IN RATED CONSTRUCTION.

34 THE GC SHALL VERIFY LOCATIONS OF ALL CEILING& WALL ACCESS PANELS WITH MECHANICAL, FIRE SPRINKLER AND PLUMBING PLANS. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED WITH A FIRE RATING EQUAL TO THE WALL OR CEILING ASSEMBLY INTO WHICH THEY ARE TO BE INSTALLED. FINISH AND LOCATION SHALL BE APPROVED BY THE ARCHITECT.

35 THE GC SHALL VERIFY DIMENSIONS OF ALL EQUIPMENT PADS & BASES WITH EQUIPMENT MANUFACTURERS & SHALL VERIFY ALL SIZES AND LOCATIONS OF DUCT OPENINGS ON ROOF AND INTERIOR SHAFTS.

NOTES TO BIDDERS:

CONTRACTOR, SUBCONTRATOR, VENDOR OR ANY OTHER PERSON PARTICIPATING IN BIDDING THIS PROJECT SHALL BE RESPONSIBLE FOR INFORMATION CONTAINED IN ANY AND ALL SHEETS OF DRAWINGS AND SPECIFICATIONS.

SCOPE OF WORK:

NEW PV SOLAR PANEL INSTALLATION, ONTO EXISTING FACILITY.

EXISTING SPACES WILL NEED TO BE FIELD VERIFIED, MEASURED, AND MODIFIED TO COMPLETE PROJECT.

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ARCHITECT / CONSULTANT

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INDEX AND GENERAL NOTES

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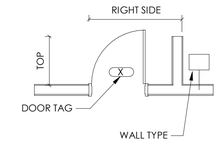
ABBREVIATIONS

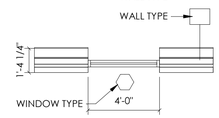
ABBREV	ABBREVIATION (S)
ABB	ABBREVIATION (S)
A.F.F.	ABOVE FINISHED FLOOR
AD	ACCESS DOOR
ACOUS	ACOUSTICAL
A/C	AIR CONDITIONING
ALUM	ALUMINUM
AB	ANCHOR BOLT
APPR	APPROVED
AC	ASPHALT CONCRETE
BM	BEAM
BLK	BLOCK
BD	BOARD
BOT	BOTTOM
B.O.	BOTTOM OF
B.O.B.	BOTTOM OF BEAM
BLDG	BUILDING
CLG	CEILING
CH	CEILING HEIGHT
CEM	CEMENT
C/C	CENTER TO CENTER
CER	CERAMIC
CLR	CLEAR
CLOS	CLOSET
COL	COLUMN
COMPO	COMPOSITION
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
CORD	COORDINATE
CORR	CORRIDOR
CSK	COUNTERSINK
DEL	DELETE
DEMO	DEMOLITION
DET	DETAIL
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DR	DOOR
DO	DOOR OPENING
DBL	DOUBLE
DF	DOUGLAS FIR
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
DF	DRINKING FOUNTAIN
EA	EACH
EWC	ELECTRIC WATER COOLER
ELEC	ELECTRICAL
ELEV OR EL	ELEVATION
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EJ	EXPANSION JOINT
EXT	EXTERIOR
FOC	FACE OF CONCRETE
FOS	FACE OF STUD
FOW	FACE OF WALL
FT	FEET
FRP	FIBER REINFORCED PLASTIC
FIN	FINISH
FF	FINISH FLOOR
FO	FINISHED OPENING
FHC	FIRE HOSE CABINET
FLR	FLOOR
FD	FLOOR DRAIN
FS	FLOOR SINK
FDN	FOUNDATION
FH	FULL HEIGHT
FS	FULL SIZE
FSD	FULL SIZE DETAIL
GALV OR GV	GALVANIZED
GA	GAUGE
GC	GENERAL CONTRACTOR
GL	GLASS
GFRC	GLASS FIBER REINFORCED CONCRETE
GR	GRADE
GYP. BD.	GYPSUM BOARD
HDWD	HARDWOOD
H	HIGH
HP	HIGH POINT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
LAV	LAVATORY
LEV	LEVEL
LTWT	LIGHT WEIGHT
LTG	LIGHTING
MAINT	MAINTENANCE
MFG	MANUFACTURER
MO	MASONRY OPENING
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MB	MECHANICAL BOLT
MET	METAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MULL	MULLION
(N)	NEW
NR	NON-RATED
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO.	NUMBER
OFF	OFFICE
OC	ON CENTER
OPN'G	OPENING
OCC	OPERATOR CONTROL CENTER
OPP	OPPOSITE
OH	OPPOSITE HAND
OD	OUTSIDE DIAMETER
OF	OVERFLOW
OFI	OWNER FURNISH ITEM
OFOI	OWNER FURNISHED OWNER INSTALLED
PR	PAIR
PLAS	PLASTIC
PL	PLATE
PLWD	PLYWOOD
PC	PORTLAND CEMENT
PREP	PREPARATION
PT	PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
PROJ	PROJECTION
QT	QUARRY TILE
REF	FREFERENCE
R OR RAD	RADIUS
REDW'D	REDWOOD
REFL	REFLECTED
RCP	REFLECTED CEILING PLAN
REINF	REINFORCE
REQ'D	REQUIRED
RES	RESILIENT
RR	RESTROOM(S)
R	RISER
RD	ROOF DRAIN
RTU	ROOF TOP UNIT
RM	ROOM
R.O.	ROUGH OPENING
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STA	STATION
STL	STEEL
STG	STORAGE
STRUCT	STRUCTURAL
SIMUL	SUMULATED
SUSP	SUSPENDED
SYM	SYMMETRICAL
TEL	TELEPHONE
TEMP	TEMPERED
THK	THICK
T&G	TONGUE & GROOVE
TBC	TOP BACK OF CURB
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE OR CURB
T.O.F	TOP OF FOOTING
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TDC	TRAFFIC DECK COVERING
T	TREAD
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VER	VERTICAL
WC	WATER CLOSET
WL	WATER LEVEL
WP	WATERPROOFING
W	WIDE
W/	WITH
WD	WOOD
WP	WORKING POINT
WI	WROUGHT IRON

DIMENSIONING LEGEND

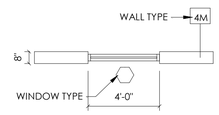
ALL NEW CONSTRUCTION IS SHOWN HATCHED & SHADED AS ILLUSTRATED BELOW.
ALL NEW CONSTRUCTION IS FULLY NOTED AS SHOWN BELOW.
ALL WORK IS NEW UNLESS LABELED "EXISTING"



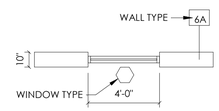
METAL OR WOOD STUD FRAMED WALL
- WALL TYPE DESIGNATES WIDTH OF WALL
- WIDTH OF WALL DIMENSIONED ONLY AT 1/4"=1' OR LARGER SCALE
- DOORS DIMENSIONED TO WIDTH OF NOMINAL OPENING
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE - NOT ROUGH OPENING.



METAL OR WOOD STUD FRAMED WALL W/ MASONRY OR STONE VENEER
- WIDTH OF WALL DIMENSIONED FROM FACE OF MASONRY.
- WIDTH OF MASONRY WALL DIMENSIONED FROM FACE OF STUD.
- DOORS DIMENSIONED TO WIDTH OF NOMINAL OPENING.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE - NOT ROUGH OPENING.



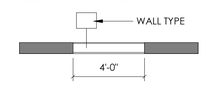
MASONRY WALL
- WIDTH OF WALL DIMENSIONED TO NOMINAL SIZE.
- DOORS DIMENSIONED TO CENTERLINE OF NOMINAL OPENING.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE - NOT MASONRY OPENING.



CONCRETE WALL
- ACTUAL WIDTH OF WALL DIMENSIONED
- DOORS DIMENSIONED TO CENTERLINE OF NOMINAL OPENING.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE - NOT ROUGH OPENING.

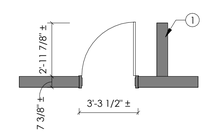
NEW CONSTRUCTION AT EXISTING

NEW CONSTRUCTION SHOWN HATCHED PER MATERIAL W/ THICKER LINE.
ALL EXISTING COMPONENTS SHOWN THIN LINE SOLID, SOLID GRAY HATCH.

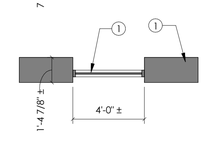


EXISTING CONDITIONS

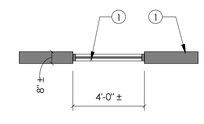
ALL EXISTING CONSTRUCTION IS SHOWN WITHOUT HATCH AS ILLUSTRATED BELOW.
ALL EXISTING CONSTRUCTION IS LABELED "EXISTING" BY KEYNOTE OR OTHERWISE.
ALL DIMENSIONS TO EXISTING ARE APPROXIMATE ONLY AND ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.



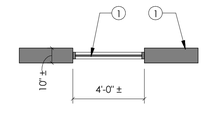
EXISTING
METAL OR WOOD STUD FRAMED WALL.
- WIDTH OF WALL DIMENSIONED TO FINISHED FACE.
- DOORS DIMENSIONED TO NOMINAL DOOR SIZE EXCLUDING FRAME.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE.



EXISTING
METAL OR WOOD STUD FRAMED WALL W/ MASONRY OR STONE VENEER
- WIDTH OF WALL DIMENSIONED FROM FINISHED FACE TO OVERALL NOMINAL WIDTH.
- DOORS DIMENSIONED TO NOMINAL DOOR SIZE EXCLUDING FRAME.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE.



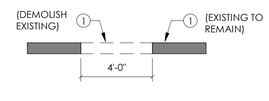
EXISTING
MASONRY WALL (TO REMAIN)
- WIDTH OF WALL DIMENSIONED TO NOMINAL SIZE.
- DOORS DIMENSIONED TO NOMINAL DOOR SIZE EXCLUDING FRAME.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE.



EXISTING
CONCRETE WALL (TO REMAIN)
- NOMINAL WIDTH OF WALL DIMENSIONED.
- DOORS DIMENSIONED TO NOMINAL DOOR SIZE EXCLUDING FRAME.
- WINDOWS DIMENSIONED TO NOMINAL FRAME SIZE.

DEMOLITION AT EXISTING

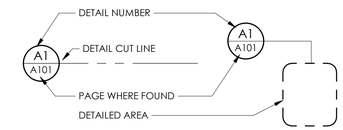
ALL EXISTING COMPONENTS SHOWN THIN LINE SOLID, SOLID GRAY HATCH.
ALL COMPONENTS TO BE DEMOLISHED ARE SHOWN DASHED, THICK LINE.



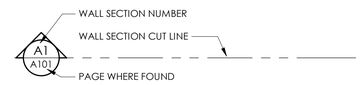
SYMBOLS

℄	CENTER LINE		WORK POINT OR ELEV. BENCH MARK
#	NUMBER	⌀	DIAMETER OR ROUND
°	DEGREE	n	NORTH ARROW
&	AND		
@	AT	AA	GRID HEAD

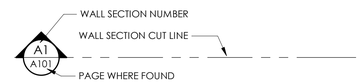
DETAIL TAGS



WALL SECTION TAG

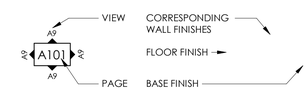


BUILDING SECTION TAG



DRAWING TITLE

ELEVATION TAGS

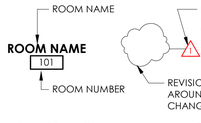


ROOM FINISH TAG

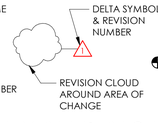
MISCELLANEOUS KEYED NOTE SYMBOLS

01	WINDOW/CURTAIN WALL DESIGNATION. SEE WINDOW SCHEDULE.
?	KEYNOTE.
?	GLAZING MODIFIER GLAZING DESIGNATION.
201.1	DOOR DESIGNATION. SEE DOOR SCHEDULE
F1	WALL, FLOOR, CEILING, ROOF TYPE DESIGNATION. SEE APPROPRIATE TYPE SHEETS.
F	WALL, FLOOR, BASE, CEILING FINISH TAG. THIS SYMBOL WHEN ATTACHED TO A WALL SHALL INDICATE THIS FINISH FOR ENTIRE LENGTH OF WALL FROM ONE INTERSECTION TO THE NEXT AND NOT BE TERMINATED BY WINDOWS OR DOORS UNO.

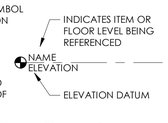
ROOM NAME TAG



REVISION CLOUD & TAG



DATUM TAG



SECTION MATERIALS LEGEND

METAL	FINISHED WOOD MEMBER
EARTH	PLYWOOD
CONCRETE	BATT INSULATION
CONCRETE MASONRY UNIT	GYP. BOARD
CONTINUOUS WOOD MEMBER	MINERAL WOOL INSULATION
WOOD BLOCKING OR SHIM	GRAVEL
PLASTER OR STUCCO	RIGID INSULATION
	MDF

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703 east 1700 south
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ARCHITECT / CONSULTANT

REGISTERED ARCHITECT CERTIFICATE NO. 27712 KIRK A. JONES Date Signed 3-17-26 ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

ABBREVIATIONS, DIMENSIONING LEGEND, SYMBOLS

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE:	**03.17.2026**
ISSUE TYPE:	**100% CD**
DRAWN BY:	**ajl**
CHECKED BY:	**K NIELSEN**
PROJECT#:	**2025-28**

SHEET NUMBER:

G002

3/23/2026 1:23:51 PM Autodesk Docs://2025-28 USDA Tucson Solar PV/2025-28 USDA TUCSON SOLAR-PV.rvt

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY AND THE PROPERTY OF AJC ARCHITECTS PC AND WERE CREATED, EVOLVED, AND DEVELOPED FOR USE ON AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO ANY PERSON, FIRM, OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OF AJC ARCHITECTS PC. WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS AND SUBCONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS. OMISSIONS AND DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT. THE ARCHITECT DOES NOT ASSUME RESPONSIBILITY FOR DIMENSIONS NOT SHOWN CLEARLY OR FOR THE USE OF THESE DRAWINGS WHICH HAVE NOT BEEN SIGNED AND SEALED BY THE ARCHITECT. ANY REPRODUCTION, IN WHOLE OR IN PART, OF THESE DRAWINGS WITHOUT THE WRITTEN PERMISSION OF AJC ARCHITECTS PC IS PROHIBITED. ANY USE OF THESE DRAWINGS AND SPECIFICATIONS BY ANY PERSON OR ENTITY FOR ANY PROJECT OTHER THAN THE SPECIFIED PROJECT IS PROHIBITED. ANY SUCH UNAUTHORIZED USE WITHOUT THE WRITTEN PERMISSION OF AJC ARCHITECTS PC IS AT THE USER'S SOLE RISK AND THE USER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS AJC ARCHITECTS PC FROM AND AGAINST ANY AND ALL LOSSES, DAMAGES, CLAIMS, SUITS, OR LIABILITIES ARISING OUT OF SUCH USE. THIS DOCUMENT MAY CONTAIN TRADE SECRET MISAPPROPRIATION IN VIOLATION OF I.C.24-2-3-1-17, 18, 19(a), AND OTHER LAWS.

CODE SUMMARY

PROJECT NAME: USDA ARS SOUTHWEST WATERSHED RESEARCH CENTER

PROJECT ADDRESS: 2000 E ALLEN RD

JURISDICTION: US GOVERNMENT

PROJECT TYPE: NEW CONSTRUCTION, OFFICE BUILDING

PROPERTY SUMMARY: AREA: 5.29 ACRES
ZONING: R-1

PROJECT SUMMARY: NEW 15,921-SF (DEFINED AS AREA UNDER ROOF) OFFICE BUILDING WITH WORK ROOMS AND STORAGE BUILDING LOCATED ON AN EXISTING CAMPUS OF 1 STORY BUILDINGS. SITE WORK/ PAVING AND UTILITY WORK ARE SHOWN IN A SEPARATE PACKAGE - SEE SHEET A1.0 FOR PROJECT LIMITS.

BUILDING CLASSIFICATION:
[OCCUPANCY CLASSIFICATION AND CONSTRUCTION TYPES PER IBC CHAPTERS 3, 4, 5, AND 6]
BASIC OCCUPANCY GROUP(S) *[PER IBC CHAPTER 3]*

☐ GROUP A-1	☐ GROUP A-2	■ **GROUP A-3**
☐ GROUP A-4	☐ GROUP A-5	■ **GROUP B**
☐ GROUP E	☐ GROUP F-1	☐ GROUP F-2
☐ GROUP H-1	☐ GROUP H-2	☐ GROUP H-3
☐ GROUP H-4	☐ GROUP H-5	☐ GROUP I-1
☐ GROUP I-2	☐ GROUP I-3	☐ GROUP I-4
☐ GROUP M	☐ GROUP R-1	☐ GROUP R-2
☐ GROUP R-3	☐ GROUP R-4	■ **GROUP S-1**
☐ GROUP S-2	☐ GROUP U	

MIXED USE AND OCCUPANCY: *[PER IBC SECTION 508 & 509]*
■ **ACCESSORY OCCUPANCIES** *[PER IBC 508.2]*
ACCESSORY OCCUPANCIES <10% OF STORY
☐ INCIDENTAL USES *[IBC SECTION 509]*
■ **NONSEPARATED OCCUPANCIES** *[IBC 508.3]*
☐ SEPARATED OCCUPANCIES *[IBC 508.4]*

*A-3 OCCUPANCY IS <10% OF STORY, THEREFORE IS ACCESSORY TO THE MAIN OCCUPANCY (B-OCC)
NO FIRE RESISTANCE RATINGS REQUIRED BETWEEN MAIN AND ACCESSORY OCCUPANCIES *[PER SECTION 508.2.4]*

TYPE(S) OF CONSTRUCTION *[PER IBC CHAPTER 6]*: IIB

SPECIAL DETAILED REQUIREMENTS:
NONE

BUILDING AREA CALCULATIONS:
[PER IBC CHAPTER 5]

☐ UNLIMITED AREA ALLOWED *[PER IBC SECTION 504]*
☐ UNLIMITED HEIGHT ALLOWED *[PER IBC SECTION 504]*
☐ UNLIMITED AREA BUILDING *[PER IBC SECTION 507]*
☐ NONSPRINKLERED, ONE-STORY, 60 FOOT YARDS
☐ SPRINKLERED, ONE-STORY ABOVE GRADE PLANE, 60' YDS
☐ SPRINKLERED, TWO STORIES ABOVE GRADE PLANE, 60' YARDS

☐ AUTOMATIC SPRINKLER SYSTEM INCREASE USED FOR ALLOWABLE HEIGHT MODIFICATION
☐ 20 FEET AND ONE STORY

■ **NO ALLOWABLE HEIGHT OR AREA MODIFICATIONS USED**

☐ ALLOWABLE AREA MODIFICATIONS USED PER THE ALLOWABLE AREA CALCS ON THIS SHEET
☐ BUILDING AREA MODIFICATIONS
☐ FRONTAGE INCREASE

ACTUAL AREA - BUILDING (GROSS BUILDING)

SOUTHWEST WATERSHED RESEARCH BUILDING (SWRC) 15,921 GSF*
TOTAL: 15,921 GSF
*DEFINED AS AREA UNDER ROOF

BUILDING HT: 24'-0" ACTUAL < 55' MAX. ALLOWABLE, SO NO HT INCREASES APPLIED*[PER IBC SECTION 504]*
STORIES: 1 ACTUAL < 4 ALLOWABLE (A-3 OCCUPANCY) *[PER IBC SECTION 504]*
ACTUAL AREA: 15,921 GSF
ALLOWABLE AREA: B OCCUPANCY = 60,000 GSF *[PER IBC SECTION 504]*
S-1 OCCUPANCY = 102,000 GSF *[PER IBC SECTION 504]*
A-3 OCCUPANCY = 144,000 GSF *[PER IBC SECTION 504]*

MINIMUM FIRE-RESISTANCE REQUIREMENTS:
FIRE-RESISTIVE RATING REQUIREMENTS FOR BUILDING ELEMENTS :
[PER IBC TABLE 601]

TYPE OF CONSTRUCTION:	IIB
PRIMARY STRUCTURAL FRAME:	0
BEARING WALLS (EXT):	0
BEARING WALLS (INTR):	0
NON-BRG WALLS AND PARTITIONS (EXT):	0
NON-BRG WALLS AND PARTITIONS (INTR):	0
FLOOR CONSTRUCTION AND SECONDARY MEMBERS:	0
ROOF CONSTRUCTION AND SECONDARY MEMBERS:	0

FIRE-RESISTANCE RATING FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE (X): *[PER IBC TABLE 602]*

CONSTRUCTION
TYPE / OCCUPANCY IIB / MIXED (B, S-1 OCCUPANICES)
X < 5 FT 1 HOURS
5 FT < X < 10 FT 1 HOURS
10 FT < X < 30 FT 0 HOURS
X > 30 FT 0 HOURS

MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE: *[PER IBC TABLE 705.8]*

FIRE SEPARATION / DEGREE OF PROTECTION

DISTANCE	(UP, NS)	(UP, S)	(P)
0 < 3 FT	NP	NP	NP
3 < 5 FT	NP	15%	15%
5 < 10 FT	10%	25%	25%
10 < 15 FT	15%	45%	45%
15 < 20 FT	25%	75%	75%
20 < 25 FT	45%	NL	NL
25 < 30 FT	70%	NL	NL
30 FT >	NL	N/R	N/R

ADDITIONAL FIRE-RESISTIVE RATINGS:
NON-SEPARATED OCCUPANCIES *[PER IBC TABLE 508.4]*
SPRINKLERED
OCCUPANCY: MIXED (B & S-1 OCCUPANICES)
RATING (HR): NO SEPARATION REQUIREMENT

NOTE: AN IMAGINARY PROPERTY LINE IS DRAWN OFFSET 10'-0" AWAY FROM BUILDING 320. NO FIRE PROTECTIVE UPGRADES ARE PROPOSED TO THE EXISTING BUILDING 320. A PORTION OF THE SOUTHERN WALLS OF THE SWRC BUILDING WITHIN 10'-0" OF THE IMAGINARY PROPERTY LINE ARE TO BE RATED (SEE CODE PLAN ON SHEET A0.2)

FIRE PROTECTION SYSTEMS *[PER IBC CHAPTER 9]*

AUTOMATIC FIRE SPRINKLER SYSTEM WILL BE PROVIDED IN THIS BUILDING *[PER SECTION 903.2.9]*

PORTABLE 10# FIRE EXTINGUISHERS ARE STORED IN CABINETS OR ON BRACKETS. IN LOCATIONS INDICATED ON THE PLANS (FEC or FE). FOR THE 'B' OCCUPANCY AREAS, 4-A EXTINGUISHERS WILL BE LOCATED SUCH THAT NO PORTION OF THE BUILDING IS MORE THAN 75' AWAY FROM AN EXTINGUISHER PER SECTION 906. IN 'S' OCCUPANCY AREAS, 80-B EXTINGUISHERS WILL BE LOCATED SUCH THAT NO PORTION OF THE BUILDING IS MORE THAN 50' AWAY FROM AN EXTINGUISHER PER SECTION 906.

A FIRE ALARM AND DETECTION SYSTEM WILL BE PROVIDED IN ACCORDANCE WITH SECTION 907, REFERENCE SPECIAL SYSTEMS SHEETS.

PATIO AND ENTRY CANOPIES ARE TO BE SPRINKLERED.

ELECTRICAL ROOMS ARE PROVIDED AS 1-HR RATED. ELECTRICAL ROOM 143 IS EQUIPPED WITH ONE EXIT TO THE BUILDING EXTERIOR.

MEANS OF EGRESS *[PER IBC CHAPTER 10]*

REFER TO THE CODE REVIEW PLAN FOR INFORMATION ABOUT OCCUPANCY LOADS, AND LENGTHS OF PATHS OF TRAVEL, INCLUDING COMMON PATHS OF EGRESS. COMMON PATHS OF EGRESS SHALL NOT EXCEED 100' IN SPRINKLERED 'B' & 'S' OCCUPANCY AREAS *[PER IBC SECTION 1006.2.1]*

MEANS OF EGRESS SIZING *[PER CHAPETER 1005.3.2]*
MEANS OF EGRESS COMPONENTS USE MEANS OF EGRESS CAPACITY FACTOR OF 0.15 INCH PER OCCUPANT AS BUILDING IS EQUIPPED WITH AUTOMATIC FIRE SPRINKLER.

DOORS *[PER IBC SECTION 1010]*
THE MINIMUM CLEAR WIDTH AND HEIGHT OF A DOOR SHALL NOT BE LESS THAN 32 INCHES IN WIDTH AND THE DOOR OPENING HEIGHT NOT LESS THAN 80 INCHES RESPECTIVELY.

SINGLE EXITS. SINGLE EXITS ARE PERMITTED AS ALL OCCUPIED SPACES DISCHARGE DIRECTLY TO THE EXTERIOR *[PER IBC SECTION 1006.3.3]*
THE OCCUPANT LOAD OF THE 'B' & 'S' OCCUPANCY AREAS DO NOT EXCEED 29 OCCUPANTS OR EXCEED THE COMMON PATH OF EGRESS TRAVEL *[PER IBC SECTION 1006.3.3]*, THEREFORE ONE EXIT IS PROVIDED.

DEAD END CORRDIORS *[PER IBC SECTION 1020.4]*
SINCE BUILDING IS EQUIPPED WITH AN AUTOMATIC FIRE SPIRNKLER SYSTEM, DEAD END CORRIDORS SHALL NOT EXCEED 50-FEET *[PER 1020.4 EXCEPTION 2]*

TOTAL OCCUPANCY
REFER TO BUILDING OCCUPANCY SUMMARY TABLE ON THIS PAGE.
MAXIMUM FLOOR AREA ALLOWANCES *[PER IBC TABLE 1004.5]*

REQUIRED EXITS *[PER IBC SECTION 1006]*

AREA	NO. REQUIRED.	NO. PROVIDED
LARGE MEETING ROOM	2	2
ELECTRICAL ROOM	1	1
OVERALL BUILDING	2	4

EXIT SIGNS ARE NOT REQUIRED *[PER SECTION 1013.1]* IN AREAS THAT REQUIRE ONLY ONE EXIT, AND ARE NOT PROVIDED IN THIS SCOPE OF WORK.

ACCESSIBILITY *[PER IBC CHAPTER 11]*

ACCESSIBLE ROUTE CONNECTS BUILDINGS ON SITE (REFER ALSO TO SITE PACKAGE)

FOR SITE PARKING CALCULATIONS REFER TO SITE PACKAGE

ACCESSIBLE SIGNAGE TO BE PROVIDED *[PER SECTION 1111 IBC & ADA REQUIREMENTS]*.

SINKS HAVE BEEN DESIGNED TO BE ACCESSIBLE FROM A FRONT APPROACH.
AT WELLNESS ROOM SINK IS DESIGNED TO BE A PARALLEL APPROACH PERMITTED *[PER ANSI 117.1 SECTION 606.2 EXCEPTION 1]*
ALL LAVATORIES HAVE BEEN DESIGNED FOR A FORWARD APPROACH.

PLUMBING SYSTEMS *[PER IBC CHAPTER 29]*

REQUIRED - B OCCUPANCY

OCCUPANTS: 115 (58 MALE 58 FEMALE)

OCCUPANCY: BUSINESS - B	WATER CLOSET		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER
	MALE	FEMALE	MALE	FEMALE			
RATIO:	1:25 FIRST 50 1:50 REMAIN		1:40 FIRST 80 1:80 REMAIN			1:100	
REQUIRED:	2.16	2.16	1.45	1.45	--	1.15	NOTE 1

REQUIRED - A-3 OCCUPANCY

OCCUPANTS: 63 (32 MALE 32 FEMALE)

OCCUPANCY: ASSEMBLY - A-3 (AUDITORIUMS, ETC.)	WATER CLOSET		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER
	MALE	FEMALE	MALE	FEMALE			
RATIO:	1:125	1:65	1:200	1:200		1:500	
REQUIRED:	0.26	0.49	0.16	0.16	--	0.13	NOTE 1

REQUIRED - S OCCUPANCY

OCCUPANTS: 7 (4 MALE 4 FEMALE)

OCCUPANCY: STORAGE - S-1, S-2	WATER CLOSET		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER
	MALE	FEMALE	MALE	FEMALE			
RATIO:	1:100		1:100			1:1,000	
REQUIRED:	0.04	0.04	0.04	0.04	[a]	0.01	NOTE 1

NOTE [a]: EMERGENCY SHOWERS AND EYEWASH STATIONS SHALL CONFORM TO ISEA Z358.1

PROVIDED

OVERALL BUILDING SUMMARY	WATER CLOSET		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER
	MALE	FEMALE	MALE	FEMALE			
SUBTOTAL REQUIRED:	2.82	3.05	1.65	1.65	0	1.29	1 SERVICE SINK
TOTAL REQUIRED:	3	4	2	2	0	2	1 SERVICE SINK
WC PROVIDED:	2	4	--	--	--	--	--
LAV PROVIDED:	--	--	3	3	--	--	--
URINALS PROVIDED:	2	--	--	--	--	--	--
DF PROVIDED:	--	--	--	--	--	2	--
TOTAL PROVIDED:	4	4	3	3	2	2	1 SERVICE SINK

SINGLE-OCCUPANT RESTROOMS INCLUDED IN THE ABOVE TOTALS:	0
FAMILY RESTROOMS PROVIDED IN ADDITION TO ABOVE TOTALS:	0
FAMILY BATHING ROOMS PROVIDED IN ADDITION TO ABOVE TOTALS:	0

ADDITIONAL CODE NOTES:
1. SEE SITE PACKAGE DRAWING SET FOR ADDITIONAL INFORMATION ON SITE SCOPE.
2. FIRE ALARM AND DETECTION SYSTEM WILL BE PART OF A CAMPUS-WIDE SYSTEM, SEE SHEET E3.0 FOR INFORMATION OF THIS BUILDING.
3. ADDITIONAL CODE RELATED INFORMATION MAY BE FOUND ON THE STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL SHEETS.

APPLICABLE CODES

PER ARS FACILITIES DESIGN STANDARDS
- INTERNATIONAL BUILDING CODE
- NFPA 101 - LIFE SAFETY CODE
- NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) W/ AMENDMENTS
- NATIONAL STANDARD PLUMBING CODE (NSPC)
- NATIONAL ELECTRICAL CODE (NEC)
- ARS TELECOMMUNICATIONS DISTRIBUTION DESIGN GUIDE
- ELECTRONIC INDUSTRY ALLIANCE (EIA)
- INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC. (IEEE)
- AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)
- BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL (BICSI) STANDARDS

CITY OF TUCSON (LOCAL CODES)
- 2018 INTERNATIONAL BUILDING CODE WITH AMENDMENTS
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS
- 2018 INTERNATIONAL EXISTING BUILDING CODE WITH AMENDMENTS
- 2018 INTERNATIONAL FUEL GAS CODE WITH AMENDMENTS
- 2018 INTERNATIONAL MECHANICAL CODE WITH AMENDMENTS
- 2018 INTERNATIONAL PLUMBING CODE WITH AMENDMENTS
- 2018 INTERNATIONAL RESIDENTIAL CODE WITH AMENDMENTS
- 2017 NATIONAL ELECTRICAL CODE WITH AMENDMENTS
- 2018 INTERNATIONAL FIRE CODE WITH AMENDMENTS
- CITY OF TUCSON/PIMA COUNTY OUTDOOR LIGHTING CODE
- ICC A117.1 - 2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

CODE COMPLIANCE STATEMENT

THIS STATEMENT IS TO CERTIFY THAT THIS SET OF CONSTRUCTION DOCUMENTS HAS BEEN DESIGNED TO COMPLY WITH ALL APPLICABLE BUILDING CODES LISTED ABOVE.

LIFE SAFETY SYSTEMS:
(PER IBC AND IFC CHAPTER 9)

AUTOMATIC SPRINKLER SYSTEM :	● PROVIDED PER NFPA 13
ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS :	○ PROVIDED - REFER TO FIRE PROTECTION DRAWINGS
STANDPIPE SYSTEM :	○ PROVIDED PER NFPA 14: CLASS I
PORTABLE FIRE EXTINGUISHERS :	● PROVIDED PER NFPA 10
FIRE ALARM SYSTEM :	● PROVIDED PER NFPA 72

2018 IECC BUILDING ENVELOPE

ELEMENT (CLIMATE ZONE 2)	R-VALUE		U-VALUE	
	REQ'D	PROVIDED	REQ'D	PROVIDED
ROOF INSULATION - ATTIC & OTHER	R-38	R-10ci + R-38		
WALL INSULATION - METAL FRAMED	R-13 + R-5ci	R-19 + R-10ci		
FIXED FENESTRATION			0.50	0.29
OPERABLE FENESTRATION			0.65	N/A
ENTRANCE DOORS			0.83	0.29

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ARCHITECT / CONSULTANT

REGISTERED ARCHITECT
CERTIFICATE NO. 27712
KYLE A. JONES
Date Signed 3-17-26
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

CODE AND ZONING SUMMARY

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE: **03.17.2026**
ISSUE TYPE: **100% CD**
DRAWN BY: **ajl**
CHECKED BY: **K NIELSEN**
PROJECT#: **2025-28**

SHEET NUMBER:

G004

3/23/2026 1:23:57 PM Autodesk Docs://2025-28 USDA Tucson Solar PV/2025-28 USDA TUCSON SOLAR-PV.rvt
ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY AND THE PROPERTY OF AJC ARCHITECTS PC AND WERE CREATED, EVOLVED, AND DEVELOPED FOR USE ON AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO ANY PERSON, FIRM, OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT WRITTEN CONSENT OF AJC ARCHITECTS PC. WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS AND SUBCONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS. WARNING: REPRODUCTION HEREOF IS A CRIMINAL OFFENSE UNDER 18 U.S.C. SEC. 506. UNAUTHORIZED DISCLOSURE MAY CONSTITUTE TRADE SECRET MISAPPROPRIATION IN VIOLATION OF I.C.2-8.2-31-1 ET. SEQ. AND OTHER LAWS.

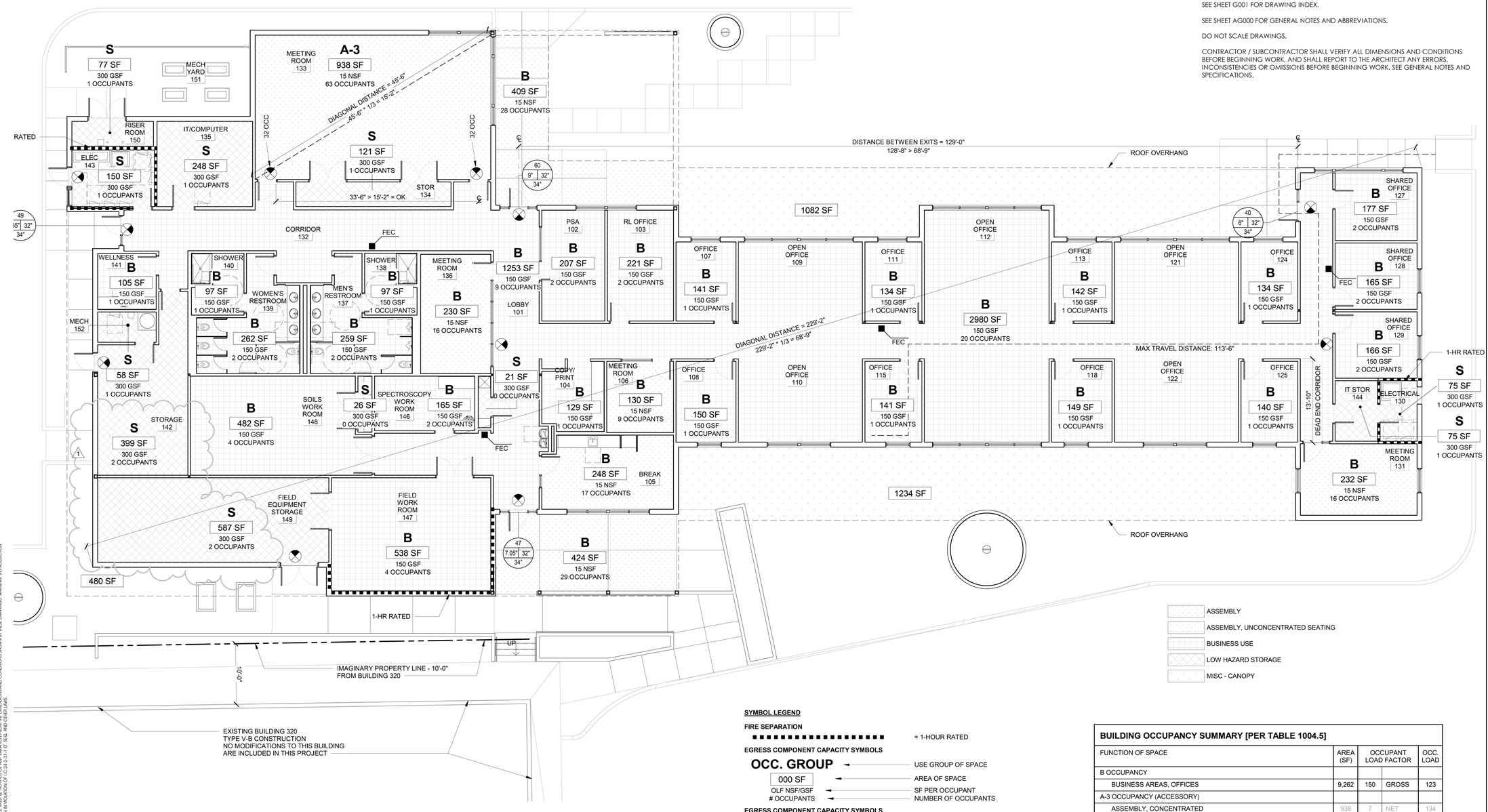
GENERAL NOTES

SEE SHEET G001 FOR DRAWING INDEX.

SEE SHEET AG000 FOR GENERAL NOTES AND ABBREVIATIONS.

DO NOT SCALE DRAWINGS.

CONTRACTOR / SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE BEGINNING WORK, AND SHALL REPORT TO THE ARCHITECT ANY ERRORS, INCONSISTENCIES OR OMISSIONS BEFORE BEGINNING WORK. SEE GENERAL NOTES AND SPECIFICATIONS.



ASSEMBLY

ASSEMBLY, UNCONCENTRATED SEATING

BUSINESS USE

LOW HAZARD STORAGE

MISC - CANOPY

SYMBOL LEGEND

FIRE SEPARATION

= 1-HOUR RATED

EGRESS COMPONENT CAPACITY SYMBOLS

OCC. GROUP — USE GROUP OF SPACE

000 SF — AREA OF SPACE

OLF NSF/GSF — SF PER OCCUPANT

OCCUPANTS — NUMBER OF OCCUPANTS

EGRESS COMPONENT CAPACITY SYMBOLS

— # OF OCCUPANTS EXITING

#" 32" #" — MIN. WIDTH OF MEANS OF EGRESS COMPONENTS (IN.)

EXIT WIDTH PROVIDED (IN.)

CALCULATED EXIT WIDTH REQUIRED (IN.)

STAIR #1 — MARK

— # OF OCCUPANTS EXITING

#" — EGRESS WIDTH REQUIRED

#" — EGRESS WIDTH PROVIDED

EXITING SYMBOLS

PATH ID — = COMMON PATH OF EXIT TRAVEL

FIRE PROTECTION SYMBOLS

FEC — = FIRE EXTINGUISHER CABINET

FE — = FIRE EXTINGUISHER

= EXIT SIGNAGE

BUILDING OCCUPANCY SUMMARY [PER TABLE 1004.5]

FUNCTION OF SPACE	AREA (SF)	OCCUPANT LOAD FACTOR		OCC. LOAD
B OCCUPANCY				
BUSINESS AREAS, OFFICES	9,262	150	GROSS	123
A-3 OCCUPANCY (ACCESSORY)				
ASSEMBLY, CONCENTRATED	938	7	NET	134
ASSEMBLY, STANDING SPACE	938	5	NET	188
ASSEMBLY, UNCONCENTRATED *PRIMARY USE	938	15	NET	63
S-1 OCCUPANCY				
STORAGE, STOCK, MECH AND EQUIP	1,837	300	GROSS	11
TOTAL BLDG GROSS SQUARE FOOTAGE	**12,037**			197
B-OCCUPANCY				
CANOPY AREAS (EXTERIOR)	833	15	NET	57
NON-OCCUPIED OVERHANGS	3,051			
TOTAL BLDG OCCUPANT LOAD				**254**

1 **CODE PLAN - LEVEL 01**
1/8" = 1'-0"

0' 4' 8' 16' 24'

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

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ARCHITECT / CONSULTANT

REGISTERED ARCHITECT CERTIFICATE NO. 27712 KIRK A. JONES Date Signed 3-17-26 ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

CODE PLAN - LEVEL 01

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE: **03.17.2026**
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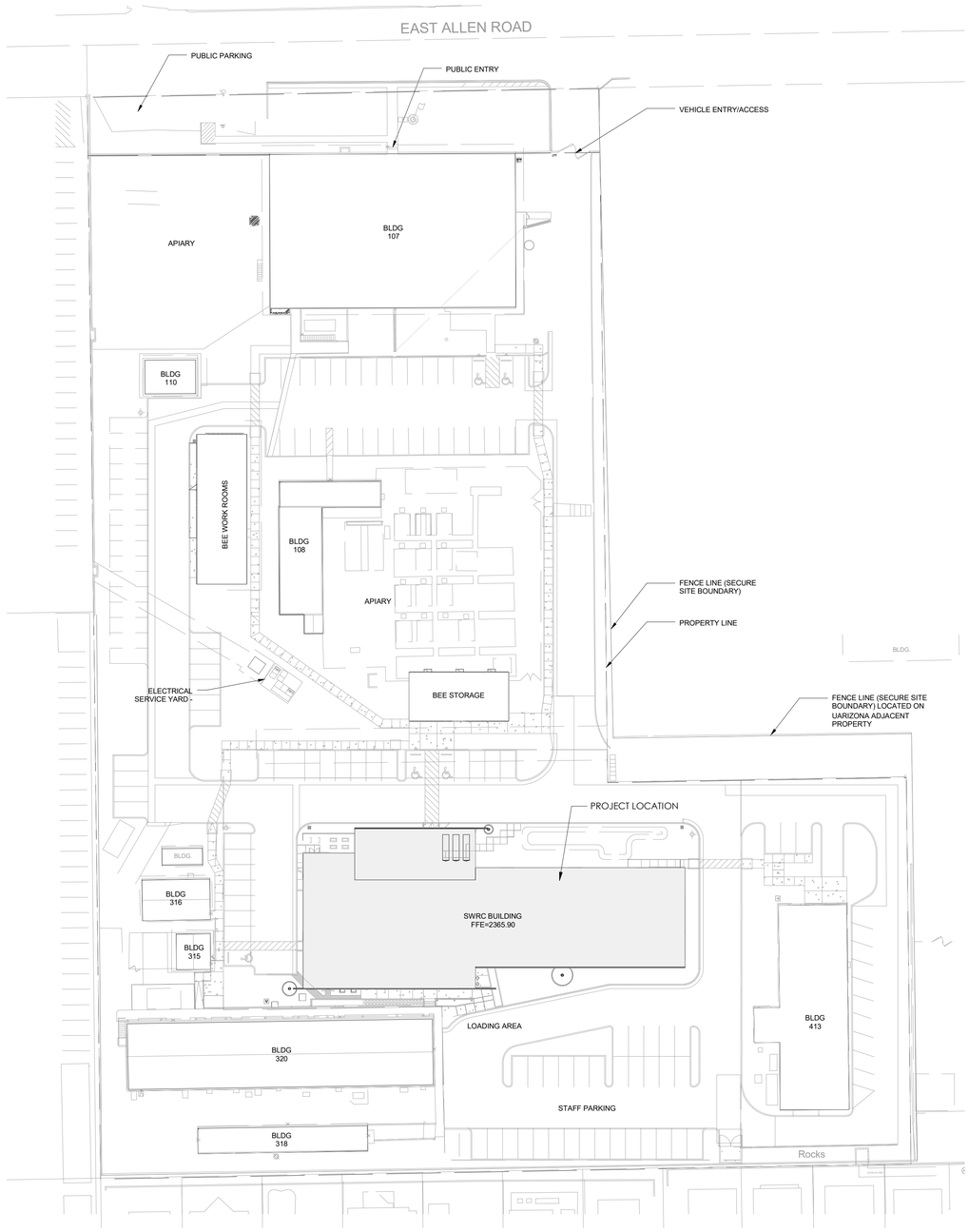

1 **SITE PLAN**
1" = 40'-0" ,

0' 20' 40' 80' 120'
SCALE : 1" = 40'-0"

GENERAL NOTES AND LEGENDS:

SEE SHEET G001 FOR DRAWING INDEX.

SEE SHEET AG000 FOR GENERAL NOTES AND ABBREVIATIONS.

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PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

ARCHITECTURAL SITE PLAN

REVISIONS

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GENERAL NOTES AND LEGENDS:

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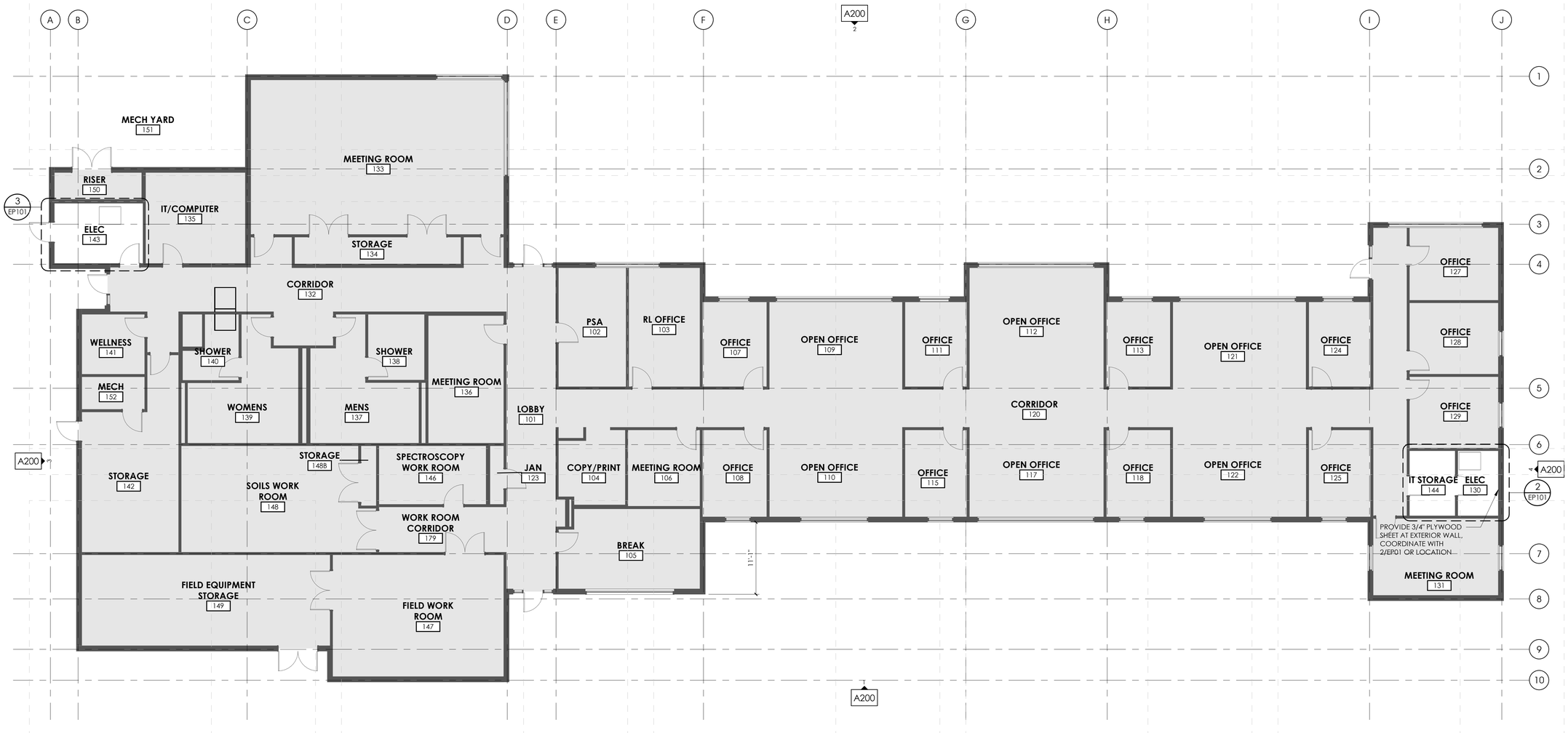
N.I.C.



A2 **ANNOTATED PLAN - LEVEL 01**
1/8" = 1'-0"

0' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

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REGISTERED ARCHITECT
CERTIFICATE NO. 27712
KIRK A. JONES
Date Signed 3-17-26
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

LEVEL 1 - ANNOTATED FLOOR PLAN

REVISIONS

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GENERAL NOTES AND LEGENDS:

SEE SHEET G001 FOR DRAWING INDEX.

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1 LEVEL 1 CEILING PLAN

1/8" = 1'-0" , DWG REF: A200

0' 4' 8' 16' 24'

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

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ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

LEVEL 1 - CEILING PLAN

REVISIONS

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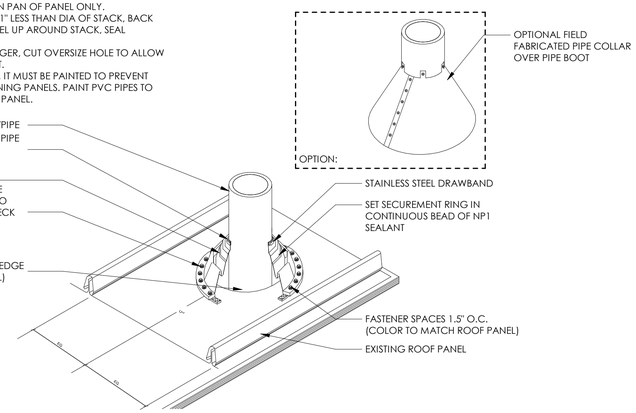
NOTES:
1. POSITION SQUARE BASED BOOTS IN A DIAMOND ORIENTATION WHER POSSIBLE TO AID IN DIVERTING WATER.
2. PIPE PENETRATION TO BE IN PAN OF PANEL ONLY.
3. FIELD CUT HOLE IN PANEL 1" LESS THAN DIA OF STACK, BACK CUT HOLE AND BEND PANEL UP AROUND STACK, SEAL CONTINUOUS.
4. IF PANELS ARE 30' OR LONGER, CUT OVERSIZE HOLE TO ALLOW FOR THERMAL MOVEMENT.
5. IF PIPE IS MADE OF METAL, IT MUST BE PAINTED TO PREVENT RUST RUN-OFF FROM STAINING PANELS. PAINT PVC PIPES TO MATCH COLOR OR ROOF PANEL.



2 ROOF PENETRATION
3" = 1'-0" ,

KEYED NOTES:

02.38	EXISTING STANDING SEAM METAL ROOF SYSTEM TO REMAIN.
26.10	ROOF MOUNTED SOLAR PV PANELS, SEE ELECTRICAL SHEETS.

GENERAL NOTES AND LEGENDS:

SEE SHEET G001 FOR DRAWING INDEX.

SEE SHEET AG000 FOR GENERAL NOTES AND ABBREVIATIONS.

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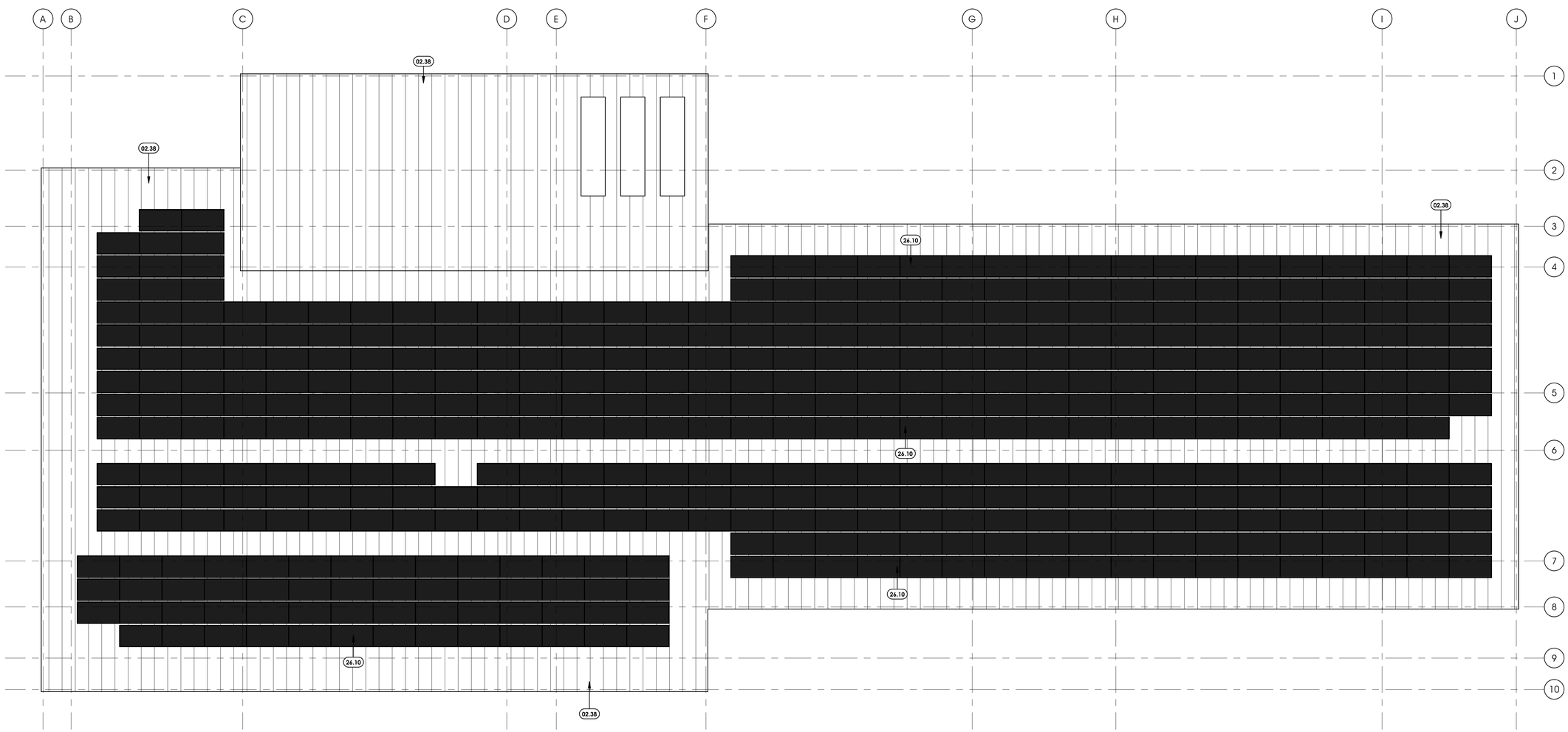

1 ROOF PLAN
1/8" = 1'-0" , DWG REF: A200

0' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

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REGISTERED ARCHITECT CERTIFICATE NO. 27712 JOHN A. JONES Date Signed 3-17-26 ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

ROOF PLAN

REVISIONS

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KEYED NOTES:

26.10 ROOF MOUNTED SOLAR PV PANELS, SEE ELECTRICAL SHEETS.

GENERAL NOTES AND LEGENDS:

SEE SHEET G001 FOR DRAWING INDEX.

SEE SHEET AG000 FOR GENERAL NOTES AND ABBREVIATIONS.

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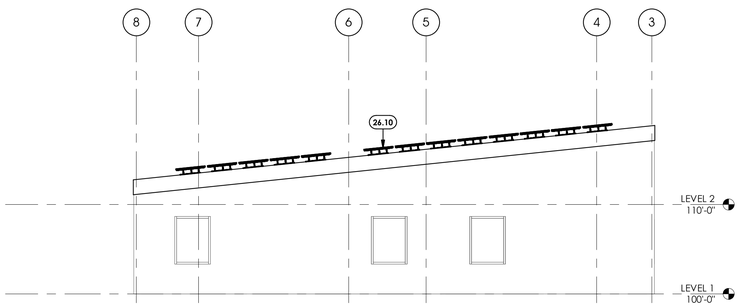
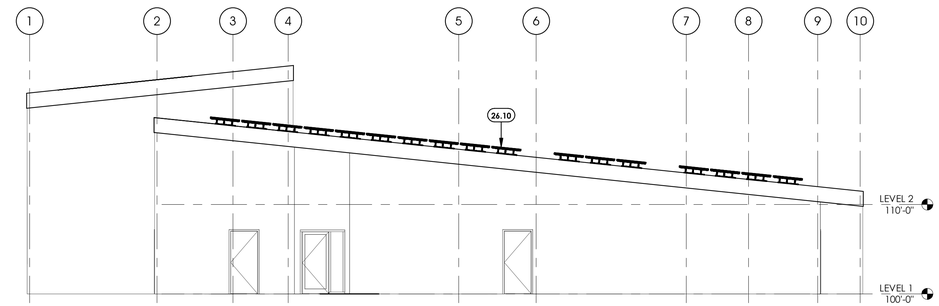
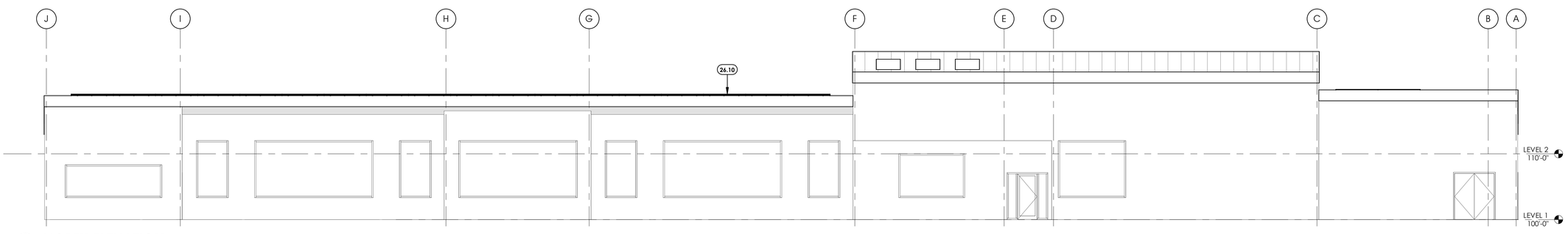


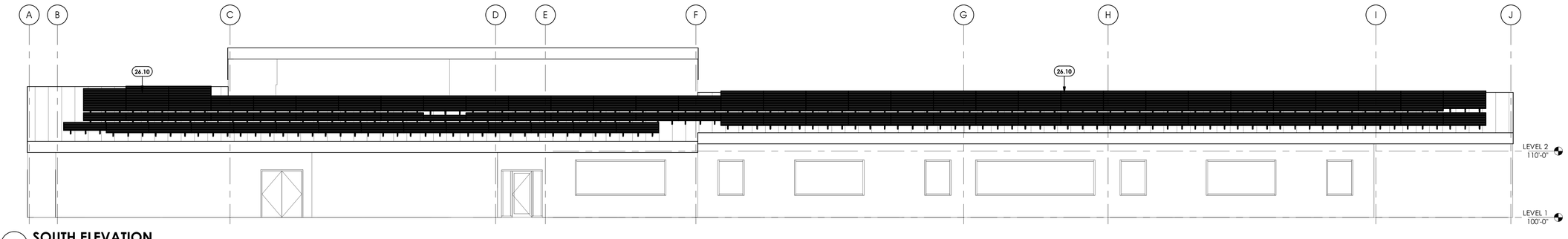
4 **EAST ELEVATION**
1/8" = 1'-0" , DWG REF: A101



3 **WEST ELEVATION**
1/8" = 1'-0" , DWG REF: A101



2 **NORTH ELEVATION**
1/8" = 1'-0" , DWG REF: A101



1 **SOUTH ELEVATION**
1/8" = 1'-0" , DWG REF: A101

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ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON, AZ 85719

SHEET NAME:

ELEVATIONS

REVISIONS

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SYMBOLS LEGEND

SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
A5 / E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 / E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
A5 / E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
ROOM NAME 100	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
1	KEYNOTE INDICATOR.
1	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
X-X / XMDP	MECHANICAL EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XMDP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
	BREAK, ROUND
MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
	NEW LINE: MEDIUM LINE.
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
	EXISTING TO REMAIN LINE: THIN LINE.
	DEMOLITION LINE: DASHED, MEDIUM LINE
	PROPERTY LINE: DASHED, WIDE LINE.
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE.
XXX / EF-X	ELECTRICAL EQUIPMENT INDICATOR. "XXX" INDICATES TYPE OF EQUIPMENT OR EQUIPMENT ID. "EF-X" IDENTIFIES MECHANICAL EQUIPMENT BEING SERVED. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
X-X 1LA-3	EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "1LA-3" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
XXXET #	IN-GRADE PULLBOX INDICATOR. "XXXET" INDICATES LABEL SHOWN ON SCHEDULE. "#" IDENTIFIES SEQUENCE NUMBER SHOWN ON SITE AND RISER DIAGRAM. REFER TO PLANS AND EXTERIOR PULLBOX SCHEDULE FOR ADDITIONAL INFORMATION.

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
CONDUIT TYPES	
	RIGID NONMETALLIC CONDUIT, POWER 208V
	RIGID NONMETALLIC CONDUIT, POWER 480V
	RIGID NONMETALLIC CONDUIT, POWER 600+V
	RIGID NONMETALLIC CONDUIT, COMMUNICATIONS
	RIGID METALLIC CONDUIT, POWER 208V
	RIGID METALLIC CONDUIT, POWER 480V
	RIGID METALLIC CONDUIT, POWER 600+V
	RIGID METALLIC CONDUIT, COMMUNICATIONS
WIRING METHODS	
	WIRING.
	WIRING TURNED UP OR TOWARDS OBSERVER.
	WIRING TURNED DOWN OR AWAY FROM OBSERVER.
A-1	SINGLE BRANCH CIRCUIT HOME RUN TO PANELBOARD WITH DEDICATED NEUTRAL CONDUCTOR. LETTER AND NUMBER NOTATION IDENTIFY PANEL AND CIRCUIT NUMBER.
A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS.
1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE.
	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
	JUNCTION BOX.
C	JUNCTION BOX, CEILING.
SC	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
SP	JUNCTION BOX, SYSTEMS FURNITURE POWER CONNECTION.
PB	PULL BOX.
A"xB" +/-C'-D"	CABLE TRAY ABOVE ACCESSIBLE CEILING. "A" DENOTES CABLE TRAY WIDTH, "B" DENOTES CABLETRAY DEPTH. +/-C'-D" DENOTES CABLE TRAY ELEVATION ABOVE OR BELOW FINISHED SURFACE.
	LADDER RACK.
J J	CABLE J-HOOKS ABOVE ACCESSIBLE CEILING.
	GROUND BUSBAR. REFER TO GROUNDING RISER DIAGRAM FOR ADDITIONAL INFORMATION.

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

1P	SINGLE POLE
1PH	SINGLE-PHASE
1WAY	ONE-WAY
2/C	TWO-CONDUCTOR
2WAY	TWO-WAY
3/C	THREE-CONDUCTOR
3WAY	THREE-WAY
4OUT	QUADRUPLE RECEPTACLE OUTLET
4PDT	FOUR-POLE DOUBLE THROW
4PST	FOUR-POLE SINGLE THROW
4W	FOUR-WIRE
4WAY	FOUR-WAY
A	ABOVE COUNTER
AC	ARMORED CABLE
ACS	ACCESS CONTROL SYSTEM
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ALUM	ALUMINUM
AMP	AMPERE
ANN	ANNUNCIATOR
AP	ACCESS POINT (WIRELESS DATA)
AR	AS REQUIRED
ASC	AMPS SHORT CIRCUIT
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAGE
BB XFMR	BUCK-BOOST TRANSFORMER
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
C	CEILING MOUNTED
CAT	CATEGORY
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCBA	CUSTOM COLOR AS SELECTED BY ARCHITECT
CCTV	CLOSED CIRCUIT TELEVISION
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT
CI	CONTACT INDICATOR
CKT	CIRCUIT
CM	CONSTRUCTION MANAGER
CND	CONDUIT
CO	CONVENIENCE OUTLET
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CP	CONTROL PANEL
CR	CARD READER
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
dBA	UNIT OF SOUND LEVEL
DPDT	DOUBLE POLE, DOUBLE THROW
DS	DISCONNECT SWITCH
E	ENHANCED
EA	EACH
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRIC NONMETALLIC TUBING
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
ER	EQUIPMENT ROOM
EX	EXISTING
F	FURNITURE MOUNTED
FA	FIRE ALARM
FCP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METAL CONDUIT
FOB	FREIGHT ON BOARD
FPP	FIBER PATCH PANEL
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
GEN	GENERATOR
GFCI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GIG	GIGA HERTZ
GND	GROUND
HD	HEAVY DUTY
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSE POWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HWM	HORIZONTAL WIRE MANAGEMENT
HZ	HERTZ
I/O	INPUT/ OUTPUT
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IN/IS	INSULATED/ ISOLATED
IR	INFRARED
J-BOX	JUNCTION BOX
kV	KILOVOLT
kVA	KILOVOLT AMPERE
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWh	KILOWATT HOUR
LED	LIGHT EMITTING DIODE
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MDP	MAIN DISTRIBUTION PANEL
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTS	MANUAL TRANSFER SWITCH
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFC	NATIONAL FIRE CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVER CURRENT PROTECTION
OE	OWNER ELECTRONICS
OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED/ OWNER INSTALLED
OFP	OBTAIN FROM PLANS
OH DR	OVERHEAD (COILING) DOOR
OL	OVERLOAD
PB	PUSHBUTTON
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PNM	PLENUM
PR	PAIR
PS	POWER SUPPLY
PT	POTENTIAL TRANSFORMER
PTZ	PAN/TILT/ZOOM
PV	PHOTO VOLTAIC
QTY	QUANTITY
R	REMOVE
RCP	REFLECTED CEILING PLAN
RMC	RIGID METAL CONDUIT
RNC	RIGID NONMETAL CONDUIT
RO	REMOTE DOOR OPEN
RPM	REVOLUTIONS PER MINUTE
RPP	RISER PATCH PANEL
RR	REMOVE AND RELOCATE
S/S	START/STOP
SCA	SHORT CIRCUIT AMPS
SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
SEC	SECURITY
SF	SQUARE FOOT (FEET)
SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SPEC	SPECIFICATION
SPP	STATION PATCH PANEL
SPST	SINGLE POLE, SINGLE THROW
ST	SINGLE THROW
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TL	TWIST LOCK
TP	TELEPHONE POLE
TP	TWISTED PAIR
TR	TELECOMMMUNICATIONS ROOM
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPPRESSER
TYP	TYPICAL
UF	UNDERFLOOR
UGND	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPERE
VFC/VFD	VARIABLE FREQUENCY MOTOR CONTROLLER
VIC	VIDEO INTERCOM SYSTEM
VSS	VIDEO SURVEILLANCE SYSTEM
VWM	VERTICAL WIRE MANAGEMENT
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WPP	WIRELESS PATCH PANEL
XFMR	TRANSFORMER

ELECTRICAL SHEET INDEX

EE001	ELECTRICAL COVER SHEET
EE002	SYMBOLS LEGEND
EE703	TYPICAL LABELING DETAILS
EP101	LEVEL 1 POWER PLAN
EP102	ROOF POWER PLAN
EP103	PV ISOMETRIC VIEW
EP601	ONE-LINE DIAGRAM
EP615	PANEL SCHEDULES

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.

2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.

   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.

   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.

   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE.THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.

3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.

4. SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED. JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.

5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.

6. ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRICAL CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.

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CERTIFICATE NO. 62314
SPENCER C. LITTLE
Date Signed 03-19-2026
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON AZ 85719

SHEET NAME:

ELECTRICAL COVER SHEET

REVISIONS

MARK	DATE	DESCRIPTION

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SYMBOLS LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	FUSE WITH RATING (ONE-LINE DIAGRAM).
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
	OVERLOAD RELAY (ONE-LINE DIAGRAM).
	STARTER (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER (ONE-LINE DIAGRAM).
S.T.	CIRCUIT BREAKER WITH SHUNT TRIP (ONE-LINE DIAGRAM).
MCP	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
#AF #AT	CIRCUIT BREAKER, ADJUSTABLE TRIP. "#AF" REPRESENTS FRAME RATING. "#AT" REPRESENTS TRIP UNIT. (ONE-LINE DIAGRAM).
LSIG	CIRCUIT BREAKER, ADJUSTABLE TRIP CURVE. L=LONG TIME CURVE ADJUSTMENT, S=SHORT TIME CURVE ADJUSTMENT, I=INSTANTANEOUS CURVE ADJUSTMENT, G=GROUND FAULT ADJUSTMENT FULLY COMPLIANT WITH NEC 210.13, 215.10 AND 230.95. (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, SOLID STATE WITH ARC ENERGY REDUCTION SYSTEM INCLUDING ENERGY REDUCING MAINTENANCE SWITCHING WITH LOCAL STATUS INDICATOR FULLY COMPLIANT WITH NEC 240.87 (ONE-LINE DIAGRAM)
	TRANSFORMER (ONE-LINE DIAGRAM).
	POTENTIAL TRANSFORMER (PT/VT) (ONE-LINE DIAGRAM).
	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM).
	BATTERY (ONE-LINE DIAGRAM).
	CAPACITOR (ONE-LINE DIAGRAM).
	DELTA CONNECTION (ONE-LINE DIAGRAM).
	WYE CONNECTION (ONE-LINE DIAGRAM).
"1DPHA"	DISTRIBUTION PANELBOARD, MOTOR CONTROL CENTER, PLUG-IN BUSWAY, MEDIUM VOLTAGE SWITCHBOARD (ONE-LINE DIAGRAM).
"1H"	PANELBOARD (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).

SYMBOLS LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
225/3 "1H" 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 25/3	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 225/3 "1H"	PANELBOARD WITH SUB FEED LUGS (ONE-LINE DIAGRAM).
225/3 "1H" "1H"	PANELBOARD WITH CIRCUIT BREAKER AND SUB FEED LUGS (ONE-LINE DIAGRAM).
	CT CABINET PER UTILITY'S REQUIREMENTS (ONE-LINE DIAGRAM).
	CT CABINET PER UTILITY'S REQUIREMENTS (ONE-LINE DIAGRAM).
	TRANSFER SWITCH (ONE-LINE DIAGRAM).
	AUTOMATIC TRANSFER SWITCH (ATS) WITH BYPASS ISOLATION SWITCH (ONE-LINE DIAGRAM).
DMM	DIGITAL MULTIMETER (ONE-LINE DIAGRAM).
	EARTH GROUND (ONE-LINE DIAGRAM).
	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
ANN	GENERATOR, ANNUNCIATOR (ONE-LINE DIAGRAM).
EPO	PUSH BUTTON, REMOTE EMERGENCY STOP.
G	GENERATOR, POWER (ONE-LINE DIAGRAM).
K	KIRK-KEY MECHANICAL INTERLOCK (ONE-LINE DIAGRAM)
M	METER.
BBF	BROAD BAND FILTER (ONE-LINE DIAGRAM).
VFC VFD	VARIABLE FREQUENCY MOTOR CONTROLLER (ONE-LINE DIAGRAM).
	DIODE (ONE-LINE DIAGRAM).
	DISCONNECT SWITCH, FUSED.
	DISCONNECT SWITCH, UNFUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	STARTER OR MOTOR CONTROLLER.
	PUSHBUTTON.
	PUSHBUTTONS, MOTOR CONTROL.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
DP#__	DISTRIBUTION PANEL OR SWITCHBOARD.
LP	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
$ST	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
	TRANSFORMER (SEE ONE-LINE FOR SIZE)

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PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

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SHEET NAME:

SYMBOLS LEGEND

REVISIONS

MARK	DATE	DESCRIPTION

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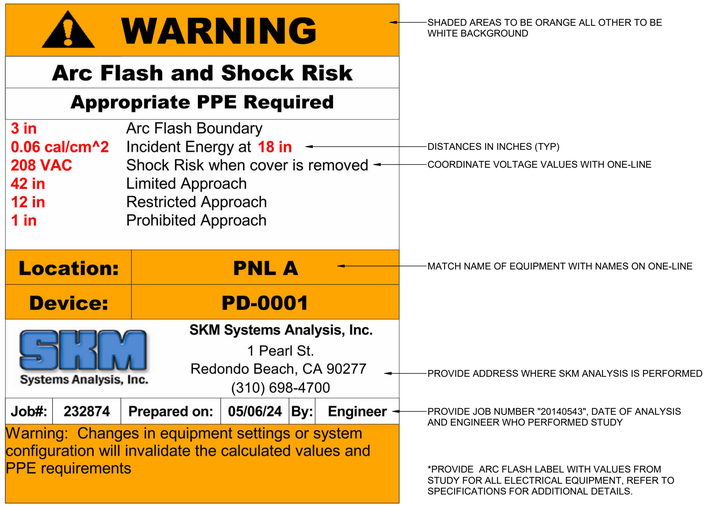
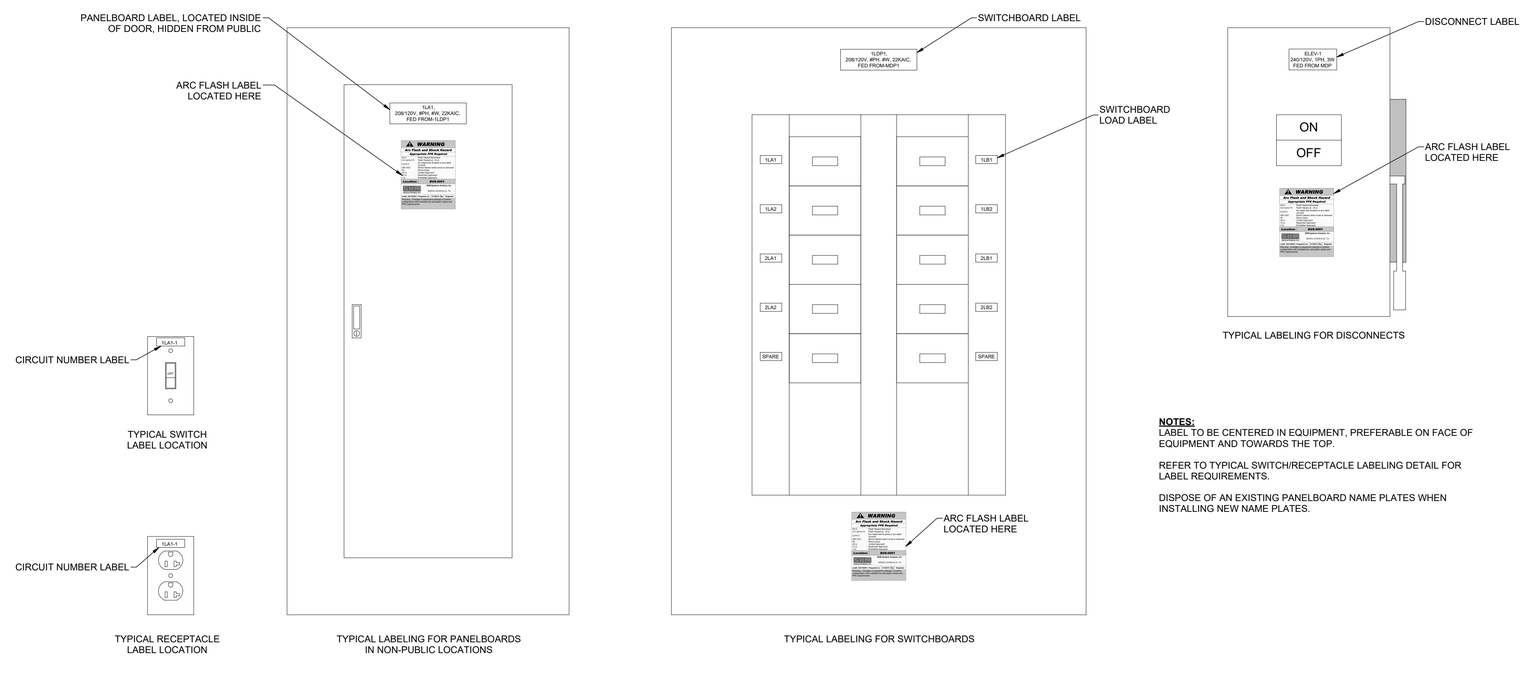


1 TYPICAL ARC FLASH LABEL

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



NOTES:
LABEL TO BE CENTERED IN EQUIPMENT, PREFERABLE ON FACE OF EQUIPMENT AND TOWARDS THE TOP.

REFER TO TYPICAL SWITCH/RECEPTACLE LABELING DETAIL FOR LABEL REQUIREMENTS.

DISPOSE OF AN EXISTING PANELBOARD NAME PLATES WHEN INSTALLING NEW NAME PLATES.

A3 TYPICAL SWITCH, RECEPTACLE AND PANELBOARD/SWITCHBOARD LABELING LOCATION DETAIL

SCALE: NTS

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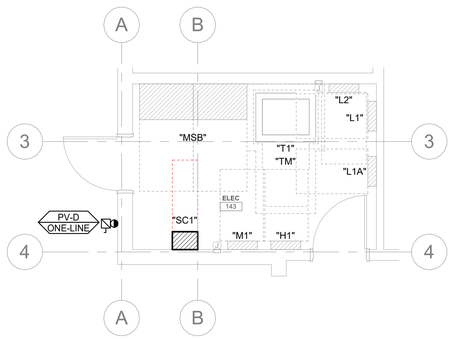
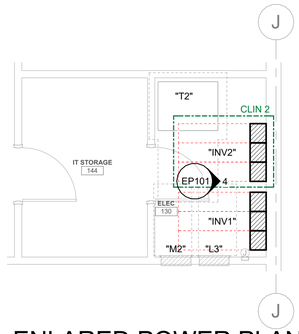
SHEET NUMBER:

EE703



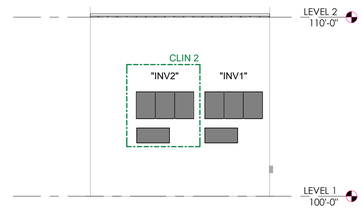
2 ENLARGED POWER PLAN - ELEC ROOM 143

SCALE: 1/4" = 1'-0"



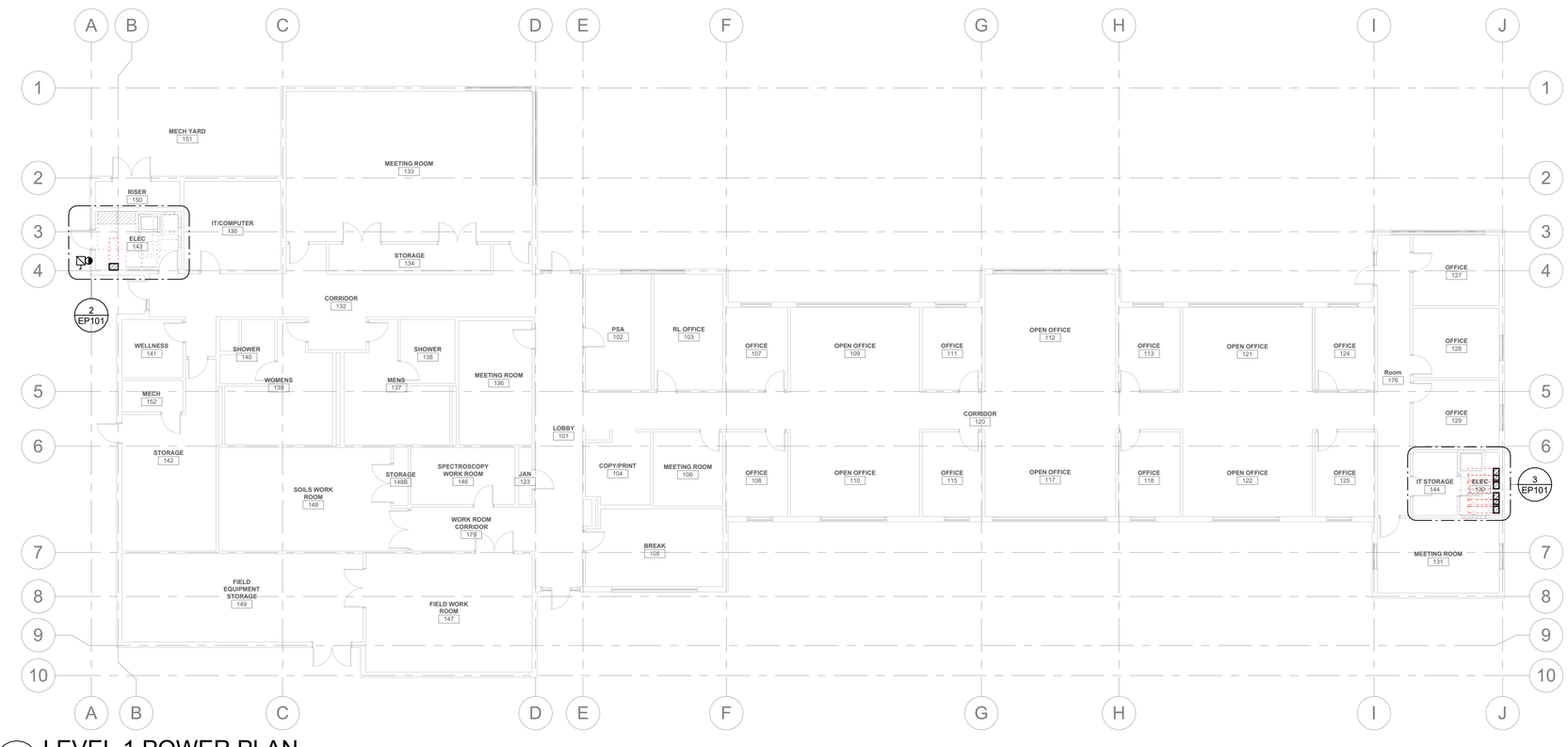
3 ENLARED POWER PLAN - ELEC ROOM 130 & IT STORAGE 144

SCALE: 1/4" = 1'-0"



4 ELEVATION - ELEC 130

SCALE: 1/4" = 1'-0"



1 LEVEL 1 POWER PLAN

SCALE: 3/32" = 1'-0"

NORTH

GENERAL SHEET NOTES

1. LOCATION OF MECHANICAL EQUIPMENT SHOWN IS APPROXIMATE AND PROVIDED BY OTHERS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL EQUIPMENT INSTALLER PRIOR TO ROUGH-IN.
2. LOCATE ALL DISCONNECTS IN ACCESSIBLE LOCATION ADJACENT TO EQUIPMENT. WITH CLEARANCES PER NEC.
3. CONTRACTOR IS RESPONSIBLE FOR ARRANGING ELECTRICAL ROOMS AND SHALL PROVIDE DIMENSIONED SCALED DRAWINGS OF EACH ELECTRICAL ROOM DETAILING EXACT SIZE, REQUIRED CLEARANCES AND FINAL LOCATION OF ALL DISTRIBUTION PANELS, BRANCH PANELS, TRANSFORMERS, AUTOMATIC TRANSFER SWITCHES AND OTHER SIMILAR EQUIPMENT BASED ON FINAL APPROVED GEAR SUBMITTALS PRIOR TO ROUGH-IN OF EQUIPMENT.
4. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES IN KITCHENS, BREAK ROOMS AND SIMILAR AREAS PRIOR TO ROUGH-IN.
5. VERIFY ALL ELECTRICAL REQUIREMENTS FOR OWNER PROVIDED EQUIPMENT PRIOR TO ROUGH-IN.
6. COORDINATE EXACT LOCATIONS OF FLOOR BOXES AND POKETHROUGH DEVICES WITH STRUCTURAL SHOP DRAWINGS AND ARCHITECT PRIOR TO INSTALLATION.
7. CONTRACTOR SHALL UPSIZE BRANCH CIRCUITS AND FEEDERS FOR VOLTAGE DROP BASED ON ACTUAL LENGTHS. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE BRANCH CIRCUIT CONDUCTOR SIZING TABLE IN THE DRAWINGS AND SPECIFICATIONS.
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12. ALL ELECTRICAL PENETRATIONS THROUGH CMU, FOUNDATION, CONCRETE OR STRUCTURAL WALLS SHOULD BE CHECKED FOR REBAR AND ALL PENETRATIONS SHALL AVOID CUTTING THROUGH REBAR.
13. ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO ELECTRICAL SPECIFICATIONS FOR REQUIREMENTS.
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17. SURFACE MOUNTED CONDUIT ON WALLS AND CEILING, EXCLUDING MECHANICAL/ELECTRICAL SPACES, SHALL NOT BE INSTALLED UNLESS APPROVED BY OWNER OR ARCHITECT.

SHEET KEYNOTES

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ARCHITECT / CONSULTANT

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 62314
SPENCER C. LITTLE
Date Signed 03-23-2026
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON AZ 85719

SHEET NAME:

LEVEL 1 POWER PLAN

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE: **03/19/2026**
ISSUE TYPE: **100% CD**
DRAWN BY: **RDW**
CHECKED BY: **SCL**
PROJECT#: **250517**

SHEET NUMBER:

EP101

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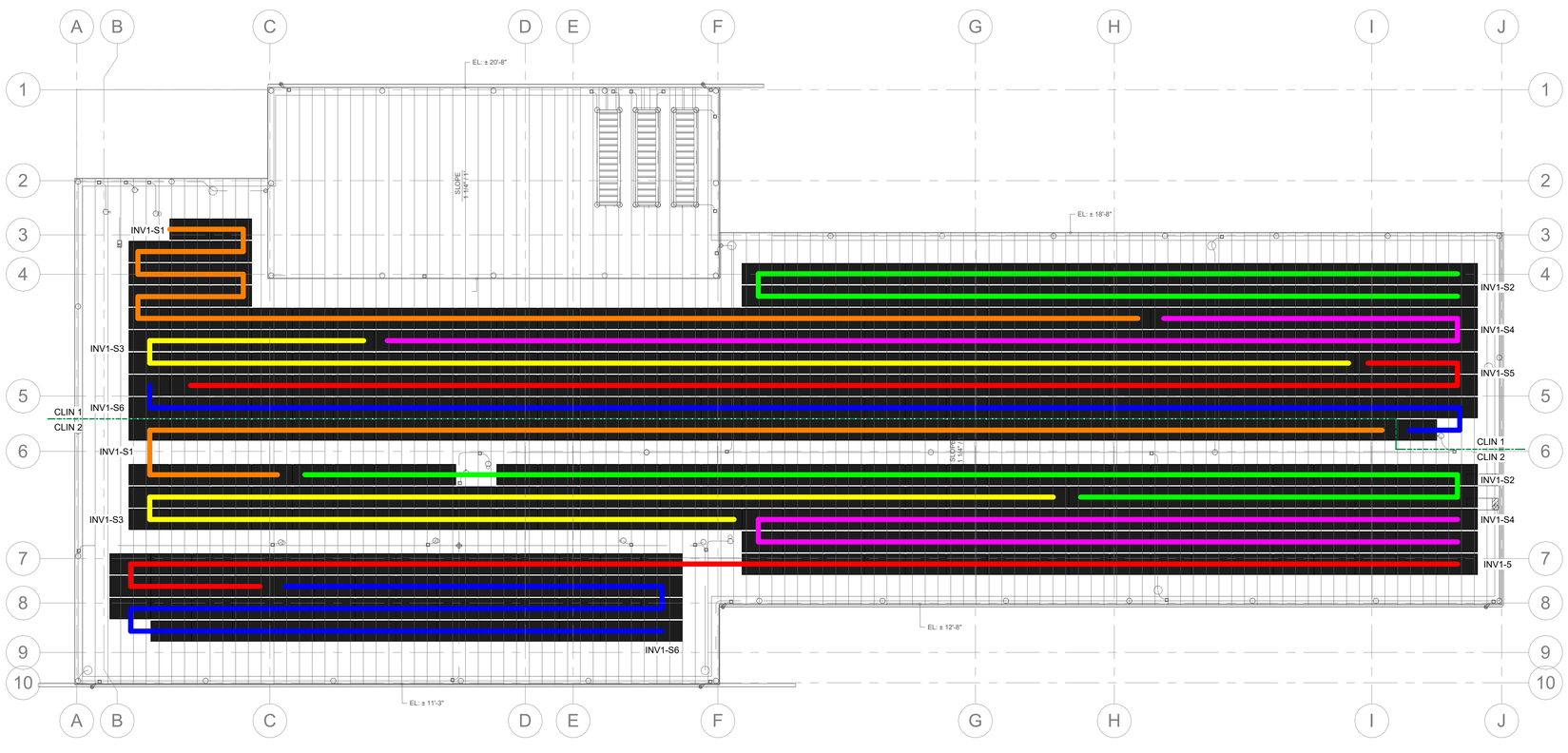

1 ROOF
SCALE: 3/32" = 1'-0"

NORTH

GENERAL SHEET NOTES

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ARCHITECT / CONSULTANT

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 62314
SPENCER C. LITTLE
Date Signed 03-20-2026
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON AZ 85719

SHEET NAME:

ROOF POWER PLAN

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE: **03/19/2026**
ISSUE TYPE: **100% CD**
DRAWN BY: **RDW**
CHECKED BY: **SCL**
PROJECT#: **250517**

SHEET NUMBER:

EP102

3/23/2026 12:15:20 PM Autodesk Docs://2025-28 USDA Tucson Solar PV/250517 - Elec Central.rvt
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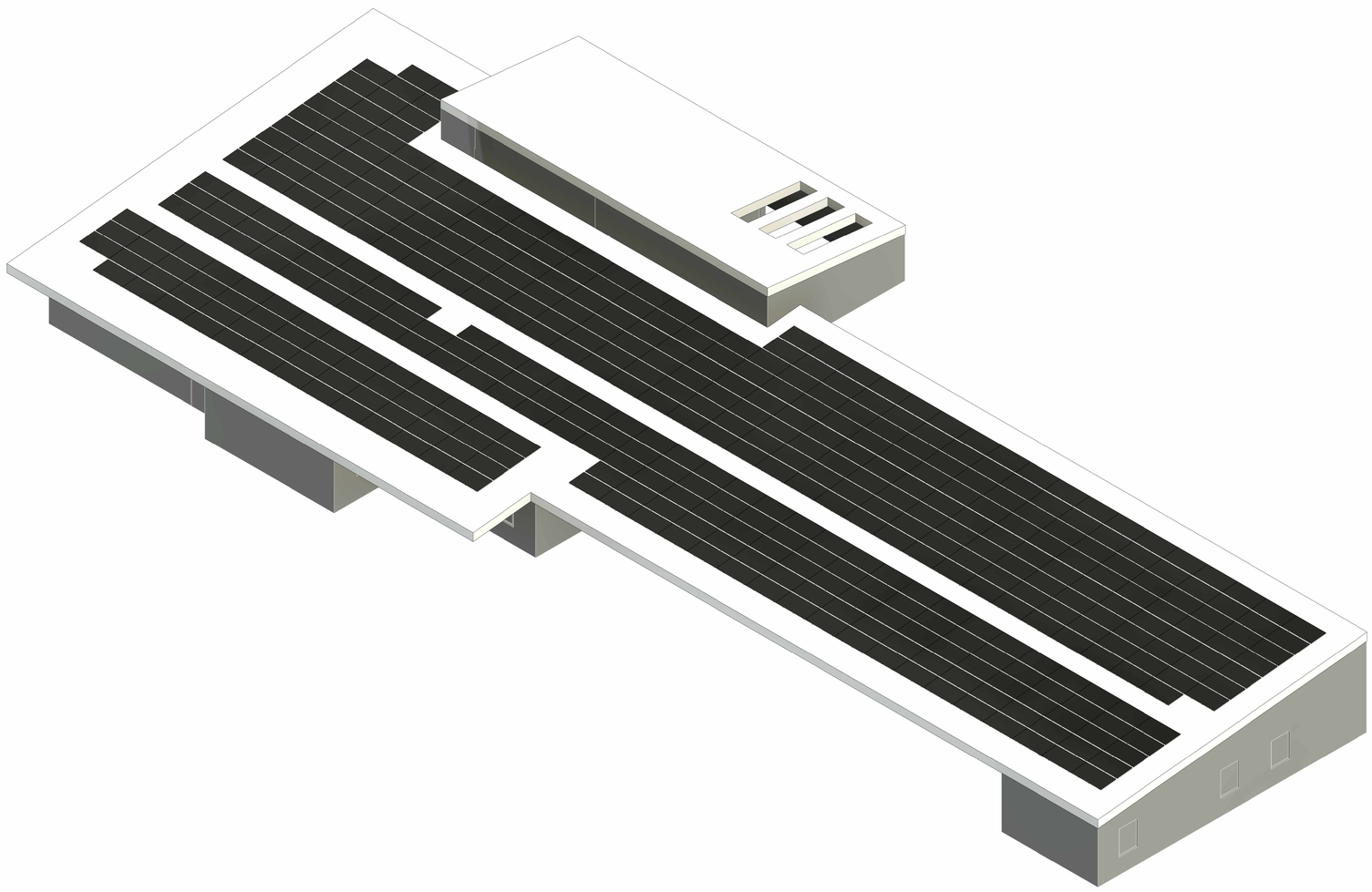

1 3D - PV ISOMETRIC VIEW

SCALE:

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PROJECT DESCRIPTION

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2000 E ALLEN RD
TUCSON AZ 85719

SHEET NAME:

PV ISOMETRIC VIEW

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE:	**03/19/2026**
ISSUE TYPE:	**100% CD**
DRAWN BY:	**RDW**
CHECKED BY:	**SCL**
PROJECT#:	**250517**

SHEET NUMBER:

EP103

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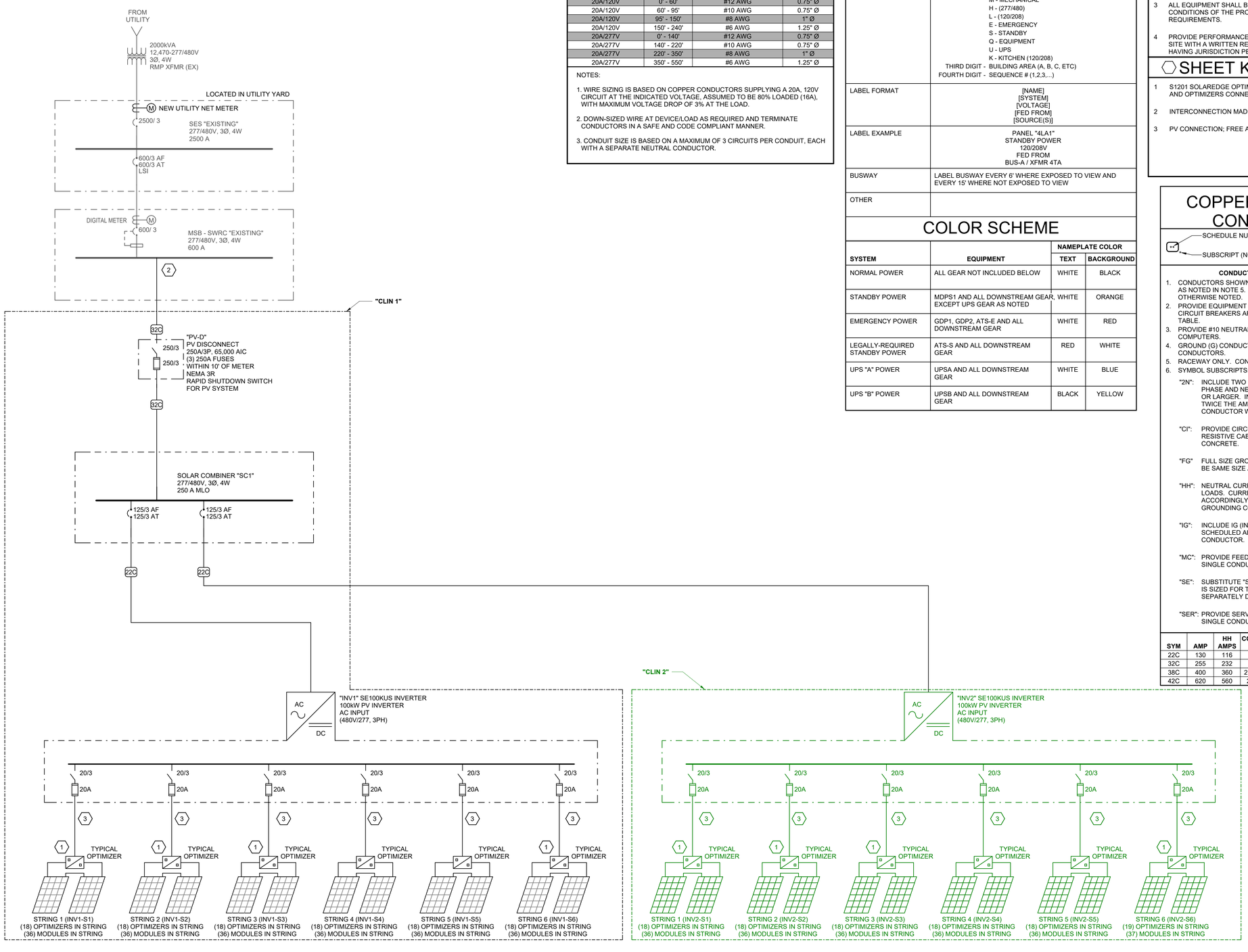

1 ONE-LINE DIAGRAM
SCALE: NTS

BRANCH CIRCUIT CONDUCTOR AND CONDUIT SIZING TABLE

CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	CONDUCTOR SIZE (PHASE, NEUTRAL AND GR)	CONDUIT SIZE
20A/120V	0' - 60'	#12 AWG	0.75" Ø
20A/120V	60' - 95'	#10 AWG	0.75" Ø
20A/120V	95' - 150'	#8 AWG	1" Ø
20A/120V	150' - 240'	#6 AWG	1.25" Ø
20A/277V	0' - 140'	#12 AWG	0.75" Ø
20A/277V	140' - 220'	#10 AWG	0.75" Ø
20A/277V	220' - 350'	#8 AWG	1" Ø
20A/277V	350' - 550'	#6 AWG	1.25" Ø

NOTES:

1. WIRE SIZING IS BASED ON COPPER CONDUCTORS SUPPLYING A 20A, 120V CIRCUIT AT THE INDICATED VOLTAGE, ASSUMED TO BE 80% LOADED (16A), WITH MAXIMUM VOLTAGE DROP OF 3% AT THE LOAD.
2. DOWN-SIZED WIRE AT DEVICE/LOAD AS REQUIRED AND TERMINATE CONDUCTORS IN A SAFE AND CODE COMPLIANT MANNER.
3. CONDUIT SIZE IS BASED ON A MAXIMUM OF 3 CIRCUITS PER CONDUIT, EACH WITH A SEPARATE NEUTRAL CONDUCTOR.

EQUIPMENT NAMEPLATE SCHEDULE

EQUIPMENT ID SCHEME	FIRST DIGIT - BUILDING LEVEL (0, 1, 2, ETC) SECOND DIGIT - PANEL TYPE M - MECHANICAL H - (277/480) L - (120/208) E - EMERGENCY S - STANDBY Q - EQUIPMENT U - UPS K - KITCHEN (120/208) THIRD DIGIT - BUILDING AREA (A, B, C, ETC) FOURTH DIGIT - SEQUENCE # (1,2,3,...)
LABEL FORMAT	[NAME] [SYSTEM] [VOLTAGE] [FED FROM] [SOURCE(S)]
LABEL EXAMPLE	PANEL "4LA1" STANDBY POWER 120/208V FED FROM BUS-A / XFMR 4TA
BUSWAY	LABEL BUSWAY EVERY 6' WHERE EXPOSED TO VIEW AND EVERY 15' WHERE NOT EXPOSED TO VIEW
OTHER	

COLOR SCHEME

SYSTEM	EQUIPMENT	NAMEPLATE COLOR	
		TEXT	BACKGROUND
NORMAL POWER	ALL GEAR NOT INCLUDED BELOW	WHITE	BLACK
STANDBY POWER	MDPS1 AND ALL DOWNSTREAM GEAR, EXCEPT UPS GEAR AS NOTED	WHITE	ORANGE
EMERGENCY POWER	GDP1, GDP2, ATS-E AND ALL DOWNSTREAM GEAR	WHITE	RED
LEGALLY-REQUIRED STANDBY POWER	ATS-S AND ALL DOWNSTREAM GEAR	RED	WHITE
UPS "A" POWER	UPSA AND ALL DOWNSTREAM GEAR	WHITE	BLUE
UPS "B" POWER	UPSB AND ALL DOWNSTREAM GEAR	BLACK	YELLOW

GENERAL SHEET NOTES

1. PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.
2. REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
3. ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO ELECTRICAL SPECIFICATIONS FOR REQUIREMENTS.
4. PROVIDE PERFORMANCE TESTING FOR GROUND-FAULT PROTECTION SYSTEMS ON SITE WITH A WRITTEN RECORD OF THIS TEST SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PER NEC 230.95(C).

SHEET KEYNOTES

1. S1201 SOLAREDGE OPTIMIZER; TYPICAL 2 MODULES PER OPTIMIZER. MODULES AND OPTIMIZERS CONNECTED IN SERIES.
2. INTERCONNECTION MADE USING BUS TAP LUGS. SUPPLY SIDE TAP IN INDOOR MAIN
3. PV CONNECTION; FREE AIR; (12) #10 PV WIRE, (6) #10 CU WIRE; 14.25A PER STRING

COPPER CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER
SUBSCRIPT (NOTE 5)
(E.G. 5C IG)

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1. CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
4. GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
5. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.
6. SYMBOL SUBSCRIPTS:

"2N": INCLUDE TWO NEUTRAL CONDUCTORS SIZED AS SCHEDULED FOR PHASE AND NEUTRAL CONDUCTORS WHERE THE CONDUCTOR IS #1/0 OR LARGER. INCLUDE A SINGLE 200% RATED CONDUCTOR THAT IS TWICE THE AMPACITY OF THE SCHEDULED PHASE AND NEUTRAL CONDUCTOR WHERE THE CONDUCTOR IS BELOW #1/0 IN SIZE.

"CI": PROVIDE CIRCUIT INTEGRITY CABLE; TYPE TWO-HOUR FIRE RESISTIVE CABLES IN CONDUIT OR PROVIDE FEEDER ENCASED IN CONCRETE.

"FG" FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.

"HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.

"IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.

"MC": PROVIDE FEEDER IN METAL-CLAD CABLE; TYPE MC IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.

"SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.

"SER": PROVIDE SERVICE-ENTRANCE CABLE; TYPE SE OR SER IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.

SYM	AMP	HH AMPS	CONDUIT SIZE	CONDCUTOR (NOTE 1)					
				QTY	SIZE	G	IG/HH	SE	NOTES
22C	130	116	1.5	4	1	6	2	2	2
32C	255	232	2.5	4	250	4	1	2/0	2
38C	400	360	2 EA 2.5	4	3/0	3	3/0	3/0	2
42C	620	560	2 EA 3	4	350	1/0	4/0	3/0	2

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ARCHITECT / CONSULTANT

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 62314
SPENCER C. LITTLE
Date Signed 03-19-2026
ARIZONA, U.S.A.

PROJECT DESCRIPTION

USDA ARS SWRC SOLAR PV INSTALLATION

2000 E ALLEN RD
TUCSON AZ 85719

SHEET NAME:

ONE-LINE DIAGRAM

REVISIONS

MARK	DATE	DESCRIPTION

ISSUE DATE: **03/19/2026**
ISSUE TYPE: **100% CD**
DRAWN BY: **RDW**
CHECKED BY: **SCL**
PROJECT#: **250517**

SHEET NUMBER:

EP601

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DISTRIBUTION BUSWAY "MSB"

VOLTS/PHASE/WIRE:	MAIN SIZE & TYPE:	LOCATION:	NOTES:
480/277 V ,3 PH, 4 WIRE	600 AMPERE MAIN CB/	ELEC 143	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR **AIC RATING:** 65000

CKT	OCP		LOAD (kVA)				PHASE LOAD (kVA)		
NO	AMP	POLE	LTG	PWR	CO	PANEL / EQUIPMENT	A	B	C
1	200	3	0.0	0.0	0.0	PANEL H1 (EXISTING)	0.0	0.0	0.0
2	225	3	0.0	0.0	0.0	XFMR T1 / PANELS L1, L2 (EXISTING)	0.0	0.0	0.0
3	225	3	0.0	0.0	0.0	XFMR T2 / PANELS L3, M2 (EXISTING)	0.0	0.0	0.0
4	125	3	0.0	0.0	0.0	XFMR TM / PANEL M1 (EXISTING)	0.0	0.0	0.0
5	100	3	0.0	0.0	0.0	SPD (EXISTING)	0.0	0.0	0.0
6	--	3	0.0	0.0	0.0	SOLAR BUS TAP (NEW)	--	--	--
7	200	3	0.0	0.0	0.0	SPARE (EXISTING)	0.0	0.0	0.0
8	--	3	0.0	0.0	0.0	SPACE (EXISTING)	--	--	--
9	--	3	0.0	0.0	0.0	SPACE (EXISTING)	--	--	--
10									
11									
12									
TOTALS:						CONNECTED kVA PER PHASE	**18.0**	**18.0**	**18.0**
						CONNECTED AMPS PER PHASE	**65**	**65**	**65**
						TOTAL CONNECTED kVA =	**54.0**		
						AVERAGE CONNECTED AMPS PER PHASE =	**65**		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING & CONTINUOUS LOADS:
RECEPTACLES:
ALL OTHER LOADS @ 100%: **67.5 kVA**

- 100% CONNECTED LOAD PLUS 25%
- FIRST 10kVA @ 100%, REMAINDER @ 50%
- MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER...

TOTAL DIVERSIFIED kVA = **67.5**
AVERAGE AMPS PER PHASE = **81**

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