

WHITEMAN AFB READINESS CENTER CONSTRUCT SOLAR ARRAY KNOB KNOSTER, MISSOURI

CLARK &
ENERSEN

OWNER: STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

MISSOURI DEPARTMENT OF
NATIONAL GUARD

PROJECT
MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT, DESIGN AND
CONSTRUCTION



PROJECT LOCATION

WHITEMAN AIR FORCE BASE
ONE ATTACK AVENUE
KNOB NOSTER, MO 65305

DESIGNER: CLARK & ENERSEN

PROJECT NUMBER: T2411-01

A/E PROJECT NUMBER: 050-022-24

SITE: 6258

ASSET NUMBER: 8136258003

SHEET NUMBER:

G-000

07/10/2026

1 of 11

SYMBOLS LEGEND

- 1871 - - - - - EXISTING CONTOUR
--- UGE --- UGE --- UGE --- UGE UNDERGROUND ELECTRIC LINE - WAFB
--- W --- W --- W --- W --- W --- WATER LINE - WAFB
--- GAS --- GAS --- GAS --- GAS GAS LINE
--- T --- T --- T --- T --- T --- COMMUNICATION LINE - WAFB
--- CHAIN LINK FENCE
--- CABLE FENCE
- ⊕ TELEPHONE MANHOLE
☐ TELEPHONE RISER
● BOLLARD
▲ CONTROL MARK

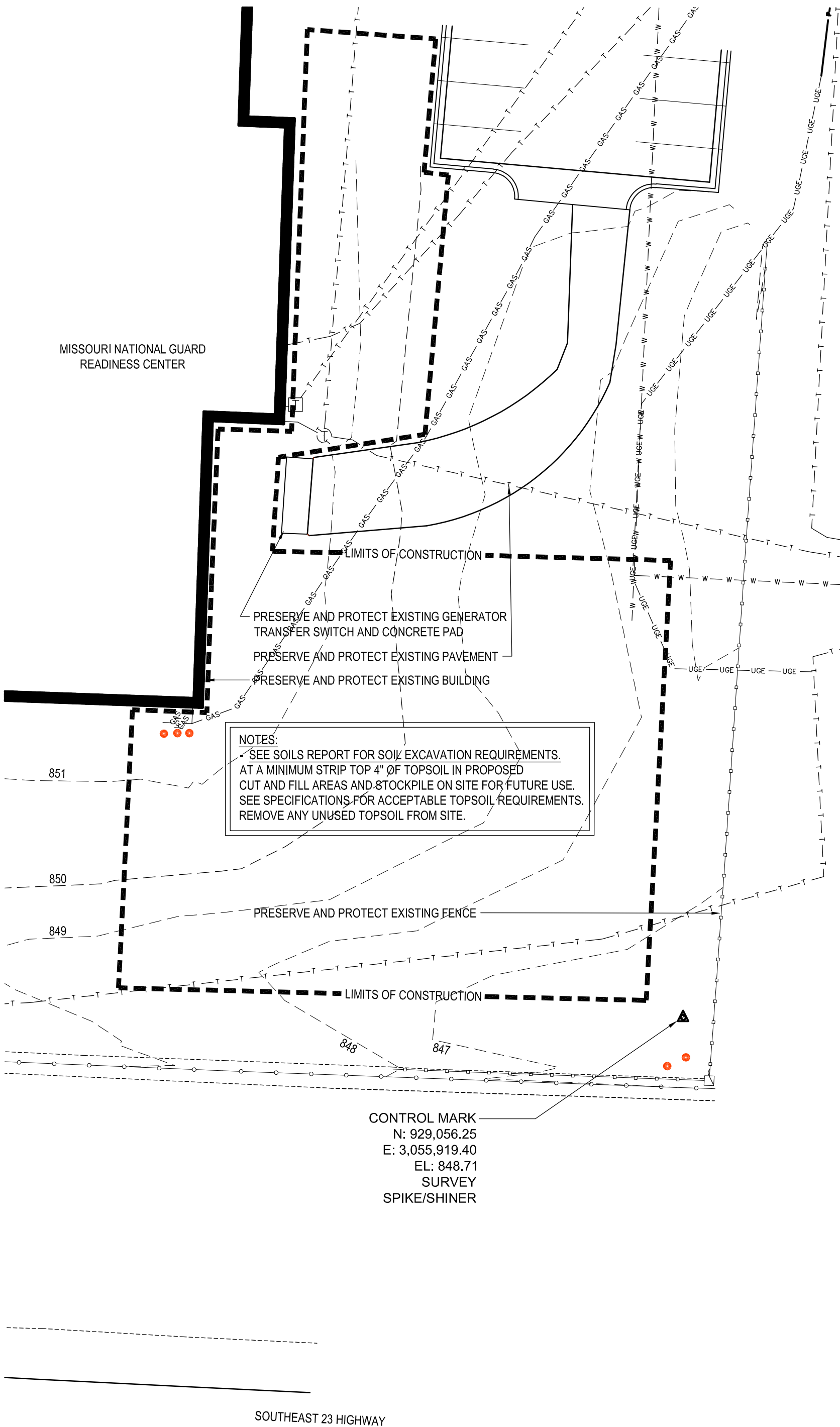
NOTE: UTILITY LINES LABELED AS "..." - WAFB" ARE DEPICTED PER WHITEMAN GIS DATA

GENERAL NOTES & INFORMATION

- EXISTING UTILITIES DEPICTED ON THESE PLANS ARE BASED ON FIELD MEASUREMENTS AND AVAILABLE RECORDS. THEREFORE, LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE ADDITIONAL UTILITIES, THE EXISTENCE OF WHICH, AT PRESENT, IS NOT KNOWN. VERIFICATION OF THE LOCATIONS OF UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, UTILITY LOCATES WILL BE REQUIRED PRIOR TO CONSTRUCTION. CONTACT THE MISSOURI ONE CALL SYSTEM AT 1-800-DIG-RITE (1-800-344-7483) PRIOR TO EXCAVATION OR DEMOLITION.
- HORIZONTAL & VERTICAL CONTROL WERE DERIVED FROM THE MISSOURI DEPARTMENT OF TRANSPORTATION'S REAL-TIME NETWORK. THE HORIZONTAL CONTROL IS UTILIZING THE MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE, CONVERTED TO U.S. SURVEY FEET AND THE VERTICAL CONTROL IS BASED FROM NAVD88 DATUM.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS SHOWN ON PLAN, ANY DISCREPANCIES NOTICED IN FIELD SHALL BE RELAYED TO LANDSCAPE ARCHITECT / OWNER PRIOR TO COMMENCEMENT OF ANY WORK.
- THE GENERAL CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES TO REMAIN DURING CONSTRUCTION.
- THE GENERAL CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING PLANTING BEDS, SHRUBS AND TREES TO REMAIN ON SITE. DO NOT PARK, DRIVE OR STACK CONSTRUCTION MATERIALS IN THESE AREAS.
- THE GENERAL CONTRACTOR SHALL NOT REMOVE OR ALTER ANY PROTECTION FENCING WITHOUT PRIOR WRITTEN CONSENT FROM OWNER AND LANDSCAPE ARCHITECT.

DEMOLITION NOTES

- CONTRACTOR TO PRESERVE ALL SURVEY CONTROL POINTS.
- CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, SIGNING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES AND APPROVED BY THE OWNER AND THE CITY OF ALBANY, MO.
- DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSING IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES OF FENCE, FLUMES, FOUNDATIONS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., (EXCEPT WHERE NOTED BY ENGINEER), SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR THE DEMOLITIONS AND DISPOSAL.
- ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED IF UNDER BUILDING.
- ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED, RELOCATED, AND/OR ABANDONED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE CONSTRUCTION LIMITS DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES.
- ALL SIDEWALK & PAVEMENT TO REMAIN SHALL BE PROTECTED IN PLACE INCLUDING PROTECTION FROM DAMAGE CAUSED BY REMOVAL OF ABUTTING CONCRETE. THE CONTRACTOR SHALL SAW CUT, FULL DEPTH AT NEAREST JOINT.
- DO NOT DISRUPT UTILITY SERVICES TO ADJACENT BUSINESSES OR RESIDENCES WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT OR OWNER.



EXISTING CONDITIONS/ DEMOLITION PLAN

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR



PROFESSIONAL SEAL

CLARK &
ENERSEN

2020 Baltimore Ave.
Suite 300
Kansas City, MO 64108
p. 816-474-8237

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BASE

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KNOB NOSTER, MO 65305

PROJECT #: T2411-01

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ASSET #: 8136258003

REVISION: _____
DATE: _____
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ISSUE DATE: 07/10/2026

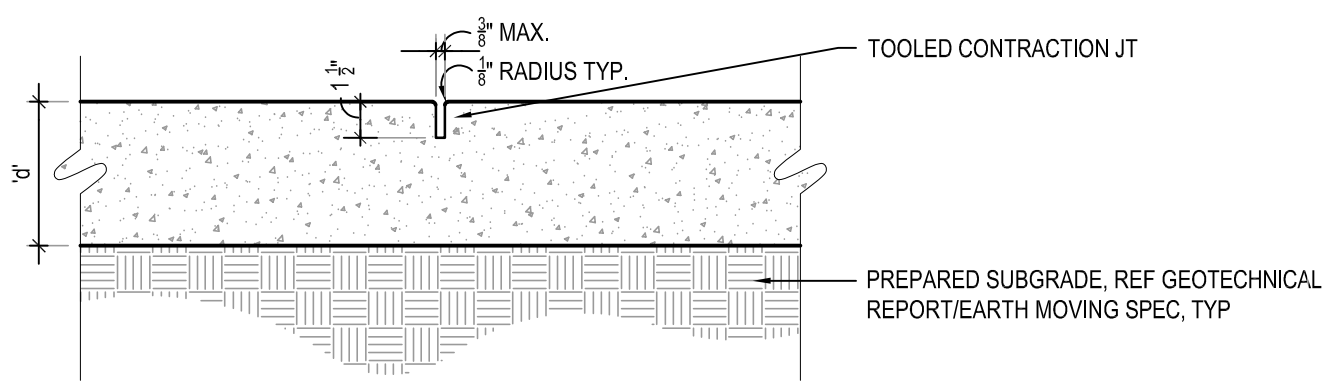
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CHECKED BY: JS
DESIGNED BY: JS

SHEET TITLE:
Existing Conditions/
Site Demolition Plan

SHEET NUMBER:

L-101

GENERAL NOTE:
"d" = TYPICAL PVMT DEPTH,
AS INDICATED ON LAYOUT SHTS



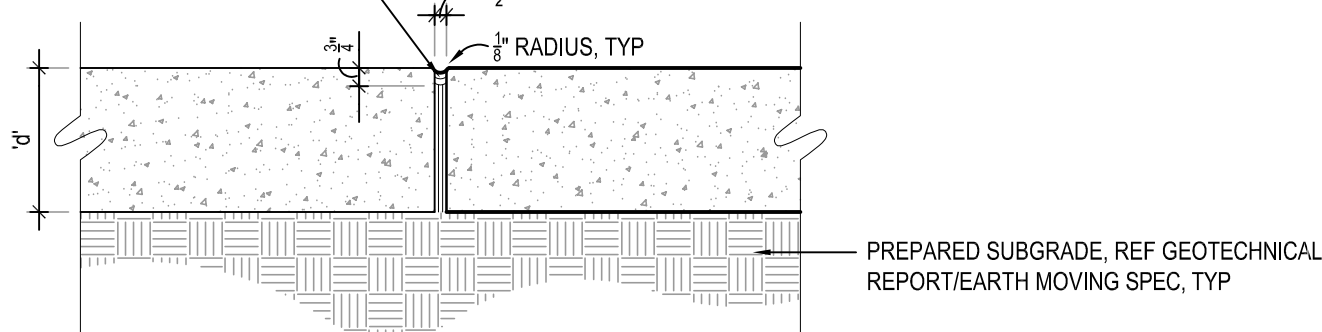
1 TOOLED CONC. CONTRACTION JOINT

SCALE: 1 1/2"=1'-0" SPACE AT 10'-0" UNLESS OTHERWISE INDICATED

GENERAL NOTE:

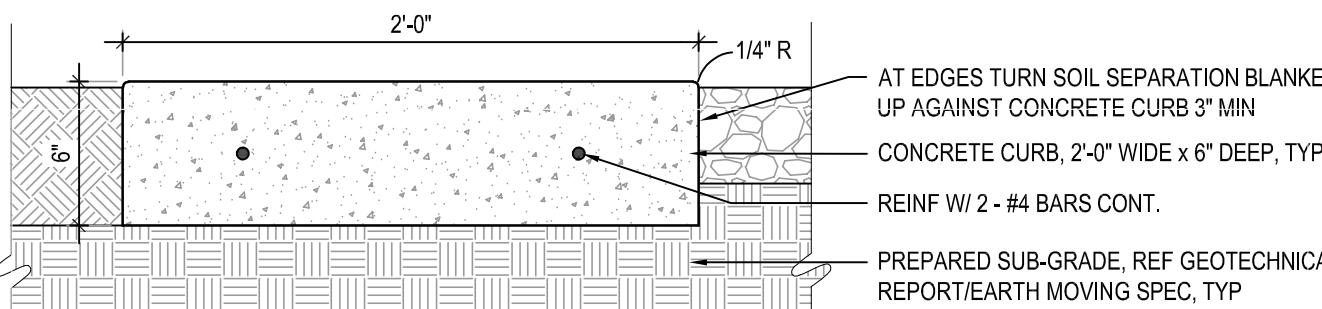
- "d" = TYPICAL PVMT DEPTH,
AS INDICATED ON LAYOUT SHTS
- LOCATE WHERE ABUTTING ALL STRUCTURES,
BACK OF CURBS, 50' O.C. ALONG WALKS,
DRIVE SLABS, & AS INDICATED ON SITE
LAYOUT PLAN

SEALANT TO BE 1/4" BELOW
TOP OF GRADE, TYP.



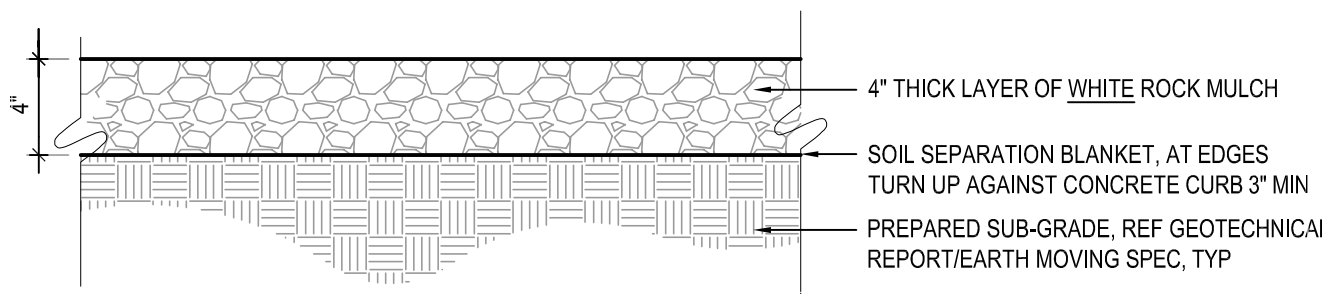
2 CONCRETE EXPANSION JOINT

SCALE: 1 1/2"=1'-0" (INDICATED EJ ON LAYOUT PLAN)



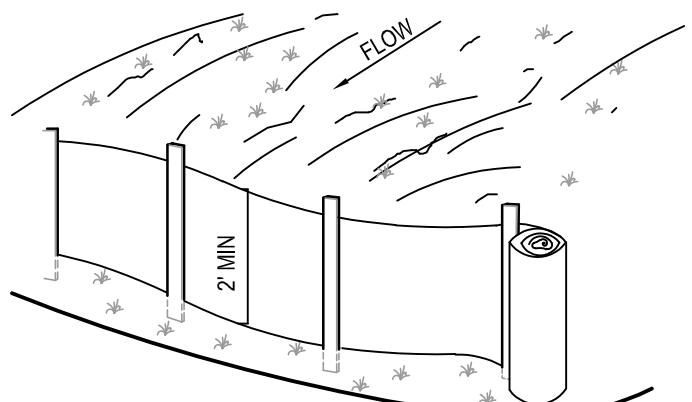
3 CONCRETE BANDING

SCALE: 1 1/2"=1'-0"



4 ROCK MULCH

SCALE: 1 1/2"=1'-0"



- SINGLE ROW FABRIC SILT FENCE (6" OC POST SPACING MAX) 3'
WIDE WOVEN POLYPROPYLENE FABRIC, TRENCH INTO EARTH 8"
AND BACKFILL, INSTALLED HEIGHT 2'-0" TYPICAL.
- LOW POROSITY SILT FENCE MANUF BY MIRAFI 100X OR EQUAL.

5 SILT FENCE

NOT TO SCALE

ALTERNATE #2

WORK SHOWN WITHIN DASHED LINE

TO BE INCLUDED IN ALTERNATE #2

ALIGN NORTH END OF CONCRETE WITH
MIDDLE OF EXISTING PARKING STALL AS SHOWN

CONCRETE PAD,
PER CHARGING STATION
MANUFACTURES REQUIREMENTS,
REF ELECTRICAL

CHARGING STATION,
COORDINATE EXACT LOCATION WITH
OWNER AND MANUFACTURE,
REF ELECTRICAL

ALIGN INSIDE EDGE OF
CONCRETE MOW STRIP WITH
EDGE OF BUILDING AS SHOWN

4" THICK LAYER TYPE 'A'

WHITE ROCK MULCH

REF DETAIL: 12.01

6" THICK x 24" WIDE CONC. MOW STRIP

SPACE CJS EVENLY AS SHOWN

REF ARCH, REF DETAILS: 12.01

INSTALL INSIDE EDGE OF MOW STRIP

2' MINIMUM FROM OUTSIDE EDGE OF

SOLAR PANELS AS SHOWN,

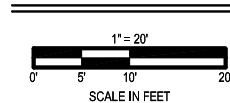
TYP ON ALL EDGES

SOLAR PANELS,

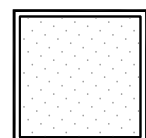
REF ELECTRICAL FOR EXACT LAYOUT AND LOCATION



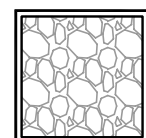
SITE LAYOUT PLAN



HARDSCAPE LEGEND



6" THICK REINFORCED CONCRETE PAVEMENT
COLOR: STANDARD GRAY



4" THICK WHITE ROCK MULCH

GRADING LEGEND

EXISTING CONTOUR LINE

PROPOSED CONTOUR LINE

PROPOSED SPOT ELEVATION

POINT #

ELEVATION

DESCRIPTION

PROPOSED SLOPE

MATCH EXISTING

BUILDING

PAVEMENT

SLOPE

1%

ME

BLDG

PVMT

ALTERNATE #2

WORK SHOWN WITHIN DASHED LINE

TO BE INCLUDED IN ALTERNATE #2

SEED TYPE 'A'

SEE LEGEND THIS SHEET

SEED ALL AREAS DISTURBED

DURING CONSTRUCTION

OPERATIONS

IRRIGATION NOTE:

IRRIGATION IS NOT AVAILABLE

AT THE SITE AND WILL NEED TO

BE PROVIDED BY CONTRACTOR

FROM AN OFF-SITE SOURCE

SEED TYPE 'A'

SEE LEGEND THIS SHEET

SEED ALL AREAS DISTURBED

DURING CONSTRUCTION

OPERATIONS

REDISTRIBUTE 4" OF TOPSOIL IN CUT

AND FILL LAWN AREAS AROUND

PERIMETER OF MOW STRIP

IRRIGATION NOTE:

IRRIGATION IS NOT AVAILABLE

AT THE SITE AND WILL NEED TO

BE PROVIDED BY CONTRACTOR

FROM AN OFF-SITE SOURCE

SEED TYPE 'A'

SEE LEGEND THIS SHEET

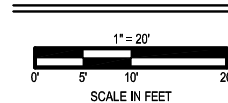
SEED ALL AREAS DISTURBED

DURING CONSTRUCTION

OPERATIONS



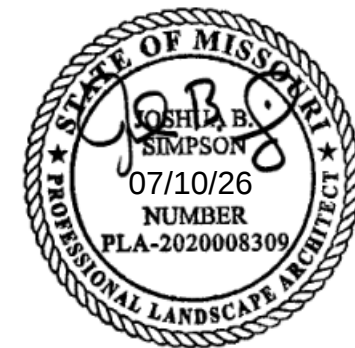
SITE GRADING/ PLANTING PLAN



GRADING NOTES:

- CONTRACTOR TO PRESERVE ALL SURVEY CONTROL.
- THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS SHOWN ON PLAN. ANY DISCREPANCIES NOTED IN THE FIELD SHALL BE RELAYED TO THE LANDSCAPE ARCHITECT AND OWNER PRIOR TO THE COMMENCEMENT OF WORK.
- UNDERGROUND IMPROVEMENTS ARE UNKNOWN. UTILITY LOCATIONS ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES AND SHALL REPAIR ANY SUCH DAMAGE AT HIS OWN EXPENSE. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED THROUGH THE 'ONE CALL' SYSTEM BEFORE DIGGING.
- CONTRACTOR TO FOLLOW ALL GEOTECHNICAL RECOMMENDATIONS FOR SUBGRADE PREPARATION.
- ANY GEOTECHNICAL/TESTING REPORTS SOLICITED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE OWNER AND THE LANDSCAPE ARCH/ENGINEER.
- ALL LINES SHOWN REPRESENTING PAVEMENT ARE TO BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
- THE PROPOSED CONTOURS REPRESENT TOP OF SLAB, OR TOP OF SIDEWALK IN PAVEMENT, IN ALL OTHER AREAS, THEY REPRESENT THE FINISHED GROUND SURFACE.
- CONTRACTOR WILL BE HELD RESPONSIBLE FOR SETTLEMENT DUE TO IMPROPER COMPACTION.
- AT THE COMPLETION OF GRADING, THE CONTRACTOR SHALL REMOVE ANY EXCESS EXCAVATION FROM THE SITE. EXCEPT FOR REQUIRED TOPSOIL REQUIRED FOR RE-SPREAD.
- CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES, IF NECESSARY.
- PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO FLOW OR POND IN EXCAVATION AREAS.

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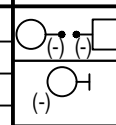
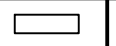
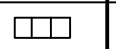
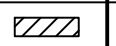
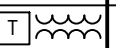
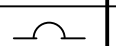
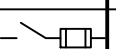
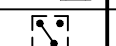
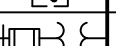
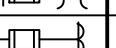
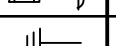
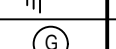
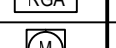
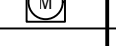
SHEET TITLE:
Site Layout Plan,
Site Grading/ Planting Plan,
and Site Details

SHEET NUMBER:

L-201

BID DOCUMENTS
4 of 11

ELECTRICAL ABBREVIATIONS
AND SYMBOLS LEGEND

ABBREVIATIONS		LIGHTING		ELECTRICAL DISTRIBUTION	
AFF	ABOVE FINISHED FLOOR		POLE MOUNTED EXTERIOR LIGHT FIXTURE. LETTER INDICATES FIXTURE AND POLE TYPE.	S	SINGLE POLE SWITCH
AFG	ABOVE FINISH GRADE		WALL MOUNTED FIXTURE. LETTER DENOTES FIXTURE TYPE. REFER TO DRAWINGS FOR MOUNTING HEIGHT.	S ₂	TWO POLE SWITCH
C	SUBSCRIPT 'C' ADJACENT TO ANY DEVICE INDICATES CEILING.			S ₃	THREE WAY SWITCH
CATV	CABLE TELEVISION			S ₄	FOUR WAY SWITCH
CCTV	CLOSED CIRCUIT TELEVISION			S _P	SINGLE POLE SWITCH WITH PILOT LIGHT
DAS	DISTRIBUTED ANTENNA SYSTEM			S _D	DIMMER SWITCH
(E)	SUBSCRIPT 'E' ADJACENT TO ANY DEVICE INDICATES EXISTING.			S _{MC}	MOMENTARY CONTACT SWITCH
EPO	EMERGENCY POWER OFF			S _{TE}	THERMAL ELEMENT SWITCH
(ER)	SUBSCRIPT 'ER' ADJACENT TO ANY DEVICE INDICATES EXISTING TO BE RELOCATED.			S _K	KEYED SWITCH
EWC	ELECTRIC WATER COOLER			S _Q	OCCUPANCY SENSING SWITCH, WATTSTOPPER #DW-100-G
F	SUBSCRIPT 'F' ADJACENT TO ANY DEVICE INDICATES FLOOR.			S _T	LINE VOLTAGE DIGITAL TIMER SWITCH, WATTSTOPPER #TS-400
GFI	GROUND FAULT INTERRUPTER			S _{3T}	LINE VOLTAGE 3-WAY DIGITAL TIMER SWITCH, WATTSTOPPER #TS-400
H	SUBSCRIPT 'H' DENOTES HOSPITAL GRADE			S _X	SPST EXPLOSION PROOF SWITCH
HOA	HAND-OFF-AUTO			S _{2X}	DPST EXPLOSION PROOF SWITCH
NF	NON-FUSED				PIGTAIL DENOTES CONNECTION TO EQUIPMENT
NIC	NOT IN CONTRACT				JUNCTION BOX - CEILING, FLOOR, AND WALL MOUNTING. WALL MOUNTED DEVICES SHALL BE FLUSH MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED.
OHE	OVERHEAD ELECTRICAL	ELECTRICAL DISTRIBUTION EQUIPMENT  LIGHTING AND APPLIANCE PANEL  (LIGHTING) RELAY PANEL  MOTOR CONTROL CENTER OR SWITCHBOARD  POWER PANEL (DISTRIBUTION)  TRANSFORMER  CIRCUIT BREAKER  FUSIBLE SWITCH  AUTOMATIC TRANSFER SWITCH  POTENTIAL TRANSFORMER  CURRENT TRANSFORMER  GROUND  ENGINE GENERATOR  REMOTE GENERATOR ANNUNCIATOR  METER  PANELBOARD TAG. SEE THE CORRESPONDING PANELBOARD SCHEDULE AND/OR ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION.			
PVC	POLYVINYL CHLORIDE				
(R)	SUBSCRIPT 'R' ADJACENT TO ANY DEVICE INDICATES THE RELOCATED POSITION OF AN EXISTING DEVICE.				
RGS	RIGID GALVANIZED STEEL				
(S)	SUBSCRIPT 'S' ADJACENT TO ANY DEVICE INDICATES THE DEVICE IS TO BE SURFACE MOUNTED.				
TR	TAMPER RESISTANT				
UGE	UNDERGROUND ELECTRICAL				
USB	UNIVERSAL SERIAL BUS				
HVE	UNDERGROUND MEDIUM OR HIGH VOLTAGE ELECTRICAL				
UGT	UNDERGROUND TELEPHONE				
WAP	WIRELESS ACCESS POINT				
WG	WIRE GUARD				
WP	WEATHERPROOF				
WPU	WEATHERPROOF IN-USE TYPE				
////	CROSS-HATCHING INDICATES REMOVAL				

PROJECT GENERAL ELECTRICAL NOTES

GENERAL DEMOLITION NOTES:

- ALL OF THE DEVICES SHOWN ON THE DEMOLITION PLANS ARE EXISTING. THE LOCATIONS OF EXISTING EQUIPMENT AND DEVICES WERE OBTAINED FROM PREVIOUS DRAWINGS AND SITE VISITS. THE LOCATIONS OF EXISTING EQUIPMENT AND DEVICES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. ACCURACY OF THE INFORMATION SHOWN IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING THE PROJECT BID. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CHANGES WHICH OCCUR AFTER BIDS ARE SUBMITTED WHICH ARE A RESULT OF EXISTING CONDITIONS. SITE VISITS PRIOR TO SUBMISSION OF BIDS MUST BE FULLY COORDINATED WITH THE OWNER.
- THE CONTRACTOR MUST FIELD VERIFY EXISTING CIRCUITING PRIOR TO COMMENCING ANY WORK. ALL BIDS MUST INCORPORATE THIS REQUIREMENT.
- DEVICES SHOWN WITH CROSS HATCHING, DASHED AND/OR SO NOTED SHALL BE REMOVED. ALL OTHER DEVICES SHALL BE RELOCATED, SHALL REMAIN, OR SHALL BE ABANDONED AS SHOWN, OR AS FOLLOWS:

DEVICES SHALL BE COMPLETELY REMOVED FROM WALLS THAT ARE ALSO SHOWN TO BE REMOVED. DEVICES SHOWN TO BE REMOVED ON DRYWALL OR PLASTER TYPE WALLS THAT ARE TO REMAIN SHALL HAVE THE WALL SURFACE PATCHED TO MATCH THE EXISTING FINISH. FLUSH TYPE DEVICES SHOWN TO BE REMOVED ON CONCRETE OR BRICK TYPE WALLS THAT ARE TO REMAIN SHALL HAVE THE DEVICES REMOVED AND BOXES PROVIDED WITH BLANK COVER PLATES.
- CONDUITS SHALL BE COMPLETELY REMOVED FROM WALLS THAT ARE ALSO SHOWN TO BE REMOVED. CONCEALED CONDUITS MAY BE ABANDONED IN WALLS THAT ARE TO REMAIN. ALL CONDUITS AND BOXES THAT ARE SURFACE MOUNTED AND NO LONGER REQUIRE ACTIVE CIRCUITS SHALL BE REMOVED.
- THE CONDUCTORS FOR DEVICES SHOWN TO BE REMOVED SHALL BE DISCONNECTED AND REMOVED BACK TO THE PANEL OR BACK TO THE NEXT DEVICE SHOWN TO REMAIN OR AS REQUIRED BY ACTUAL CIRCUITING. ACTUAL CIRCUITING MUST BE DETERMINED IN THE FIELD. ALL BIDS SHOULD INCORPORATE THIS REQUIREMENT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CHANGES WHICH OCCUR AS A RESULT OF EXISTING CIRCUITING. CONTINUITY OF CIRCUITING SHALL BE MAINTAINED FOR ALL EXISTING CIRCUITS AS REQUIRED. CONTRACTOR SHALL PROVIDE ALL NECESSARY WIRE, CONDUIT, DEVICES AND CONNECTIONS TO ENSURE CIRCUIT CONTINUITY TO ALL NEW AND EXISTING EQUIPMENT.
- THE OWNER HAS THE RIGHT TO RETAIN ALL SALVAGEABLE MATERIAL. ANY MATERIAL THE OWNER CHOOSES NOT TO ACCEPT SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR.
- THE OWNER WILL OCCUPY PORTIONS OF THE FACILITY THROUGHOUT CONSTRUCTION. ELECTRICAL SYSTEMS TO OCCUPIED PORTIONS OF THE FACILITY MUST REMAIN IN OPERATION. THE ELECTRICAL CONTRACTOR MUST COORDINATE ALL PHASING REQUIREMENTS WITH THE GENERAL CONTRACTOR AND THE OWNER, AND MUST PROVIDE ALL NECESSARY DEVICES, EQUIPMENT, WIRE, CONDUIT, AND CONNECTIONS TO ENSURE PHASING AND OWNER OCCUPANCY REQUIREMENTS ARE SATISFIED. ALL BIDS SHOULD INCORPORATE THIS REQUIREMENT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ISSUES AND CHANGES WHICH OCCUR AS A RESULT OF PHASING AND OWNER OCCUPANCY REQUIREMENTS.

GENERAL POWER & AUXILIARY SYSTEMS NOTES:

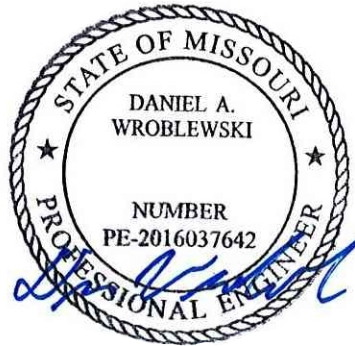
- FULLY COORDINATE THE INSTALLATION OF ALL ELECTRICAL DEVICES WITH THE WORK OF OTHER TRADES.
- UNLESS OTHERWISE NOTED, ELECTRICAL DEVICES ARE TO BE FLUSH MOUNTED AND ALL WIRE AND CONDUIT IS TO BE ROUTED CONCEALED. FULLY COORDINATE INSTALLATION WITH EXISTING CONDITIONS, AND INCLUDE PATCHING AND REFINISHING OF EXISTING SURFACES TO ACCOMMODATE THIS REQUIREMENT.
- SEAL AROUND ALL CONDUIT AND CABLE PENETRATIONS THROUGH WALLS, CELLINGS AND FLOORS TO MAINTAIN CODE REQUIRED RATINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL PHOTOVOLTAIC SYSTEM NOTES:

- THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) ARTICLE 690, ALL MANUFACTURERS LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTIONS (AHJ) APPLICABLE CODES.
- GROUND FAULT DETECTION AND INTERRUPTION DEVICE IS INTEGRATED WITH THE INVERTER IN ACCORDANCE WITH NEC 690.5(A).
- UTILITY INTERCONNECTION MUST BE REVIEWED AND APPROVED. CONTRACTOR TO COORDINATE PV SYSTEM INSPECTION WITH UTILITY PROVIDER PRIOR TO PARALLEL OPERATION.
- ALL PV SYSTEM COMPONENTS, MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PV SYSTEM AS REQUIRED BY NEC 690.4 & NEC 690.90.

UNLESS OTHERWISE INDICATED PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS. NEUTRAL CONDUCTORS SHALL NOT BE SHARED BETWEEN CIRCUITS. WHERE THE DRAWINGS INDICATE SHARED NEUTRAL CONDUCTORS FOR A MULTIWIRE BRANCH CIRCUIT, GROUP BREAKERS TOGETHER IN ACCORDANCE WITH CODE.

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ONE ATTACK AVENUE
KNOB NOSTER, MO 65305

PROJECT #: T2411-01

SITE #: 6258

ASSET #: 8136258003

REVISION: _____
DATE: _____
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DATE: _____

ISSUE DATE: 07/10/2026

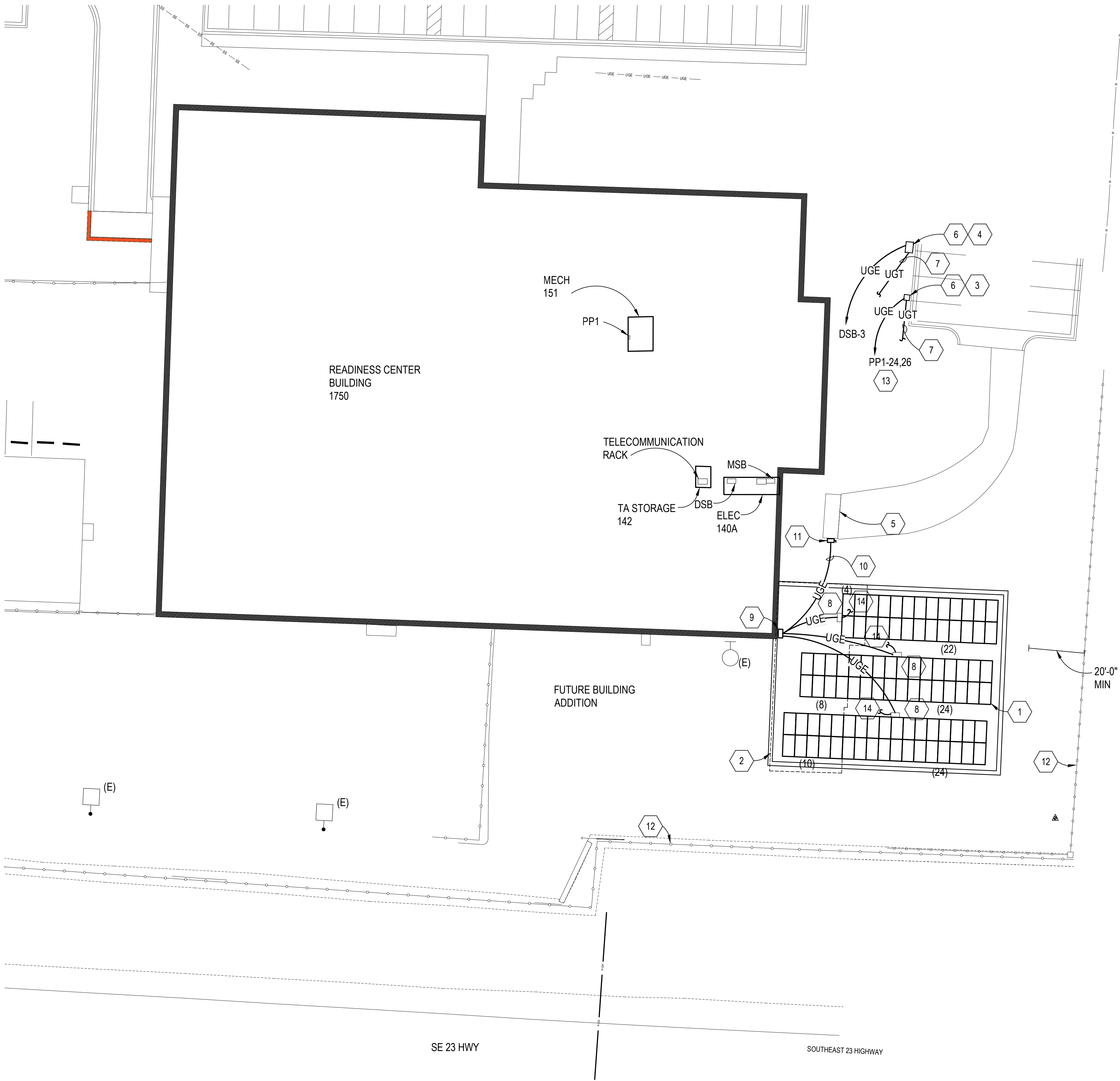
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DESIGNED BY: DW

SHEET TITLE:

Electrical Abbreviations,
Symbols Legend &
General Notes

SHEET NUMBER:

E-000



ELECTRICAL SITE PLAN NOTES	
KEY NOTE	DESCRIPTION
1	PROPOSED GROUND MOUNT 60 KW PHOTOVOLTAIC ARRAY. (70) - 725KW BIFACIAL SOLAR MODULES. 30 DEGREE TILT GROUND MOUNT RACKING SYSTEM WITHIN WHITE ROCK LANDSCAPING FOR 20% BIFACIAL GAIN.
2	IF ALTERNATE #1 IS ACCEPTED, PROVIDE ADDITIONAL MODULES FOR A TOTAL OF 80KW GROUND MOUNT ARRAY. ADDITIONAL (22) - 725KW BIFACIAL SOLAR MODULES. TO BE BID AS AN ADD ALTERNATE #1.
3	IF ADD ALTERNATE #2 IS ACCEPTED, PROVIDE AND INSTALL NEW BOLLARD MOUNT LEVEL 2 ELECTRIC VEHICLE CHARGING STATION (CHARGEPOINT CPFS0 OR ENGINEER APPROVED EQUAL) WITH POWER MANAGEMENT KIT FOR POWER SHARING. PROVIDE ALL NECESSARY ANCHORING ACCESSORIES AND ELECTRICAL CONNECTIONS AS REQUIRED PER MANUFACTURER AND NEC 625. ENSURE EV CHARGING STATION HAS BUILT-IN GFCI PROTECTION. REFERENCE MANUFACTURER INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION WITH OWNER.
4	IF ADD ALTERNATE #2 IS ACCEPTED, PROVIDE AND INSTALL NEW BOLLARD MOUNT LEVEL 3 ELECTRIC VEHICLE CHARGING STATION (ABB-TERA-124-UL-A OR ENGINEER APPROVED EQUAL) WITH POWER MANAGEMENT KIT FOR POWER SHARING. PROVIDE ALL NECESSARY ANCHORING ACCESSORIES AND ELECTRICAL CONNECTIONS AS REQUIRED PER MANUFACTURER AND NEC 625. ENSURE EV CHARGING STATION HAS BUILT-IN GFCI PROTECTION. REFERENCE MANUFACTURER INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION WITH OWNER. SEE THE ELECTRICAL ONE-LINE DIAGRAM FOR ADDITIONAL FEEDER INFORMATION.
5	EXISTING ELECTRICAL SERVICE. SHOWN FOR REFERENCE.
6	IF ADD ALTERNATE #2 IS ACCEPTED, INSTALL CONCRETE EQUIPMENT PAD FOR HOUSING NEW EV CHARGING STATION. CONCRETE SHALL BE 3000 PSI. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER FOR INSTALLATION AND ANCHORING OF EV CHARGING STATION TO ENSURE A SECURE INSTALLATION. REFER TO EV CHARGING STATION BASE DETAIL FOR MORE INFORMATION. COORDINATE FINAL LOCATION WITH OWNER.
7	IF ADD ALTERNATE #2 IS ACCEPTED, ROUTE (1) 1" SCH 40 PVC CONDUIT W/ PULLSTRING A MINIMUM OF 42" BELOW GRADE FROM VEHICLE CHARGING STATION TO 'TA STORAGE 142'. COORDINATE ROUTING WITH ALL OTHER TRADES. COORDINATE WITH OWNER'S IT REPRESENTATIVE FOR EXACT LOCATION AND ADDITIONAL REQUIREMENTS.
8	LOCATION OF SURFACE MOUNT NEMA 3R PV SYSTEM INVERTER. CONTRACOR TO COORDINATE EXACT MOUNTING LOCATION AND ADDITIONAL MOUNTING REQUIREMENTS WITH GROUND MOUNT INFRASTRUCTURE. SEE THE ELECTRICAL DETAILS, ELECTRICAL ONE-LINE DIAGRAM, AND SPECIFICATIONS FOR MORE INFORMATION.
9	PROPOSED LOCATION OF AGGREGATION PANEL. PROVIDE UNISTRUT MOUNTING AS APPLICABLE. SEE THE ELECTRICAL DETAILS, ELECTRICAL ONE-LINE DIAGRAM, AND SPECIFICATIONS FOR MORE INFORMATION.
10	PV SYSTEM SERVICE FEEDERS. BURY A MINIMUM OF 36" BELOW GRADE. PROVIDE WARNING TAPE 12" ABOVE. COORDINATE ROUTING WITH OWNER AND EXISTING SITE UTILITIES. SEE THE ELECTRICAL ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
11	PROPOSED LOCATION OF PV SYSTEM SAFETY DISCONNECT MOUNTED ADJACENT TO EXISTING ELECTRICAL SERVICE TRANSFER SWITCHING EQUIPMENT. COORDINATE EXACT LOCATION WITH OWNER AND EXISTING UTILITIES. PROVIDE UNISTRUT SUPPORT AS REQUIRED. SEE THE ELECTRICAL DETAILS, ELECTRICAL ONE-LINE DIAGRAM, AND SPECIFICATIONS FOR MORE INFORMATION.
12	EXISTING SITE FENCING. PHOTOMETRIC ARRAY EQUIPMENT TO BE MOUNTED A MINIMUM OF 20'-0" AWAY FROM FENCING.
13	ROUTE (3)#8 & (1) #10 GRND IN 3/4" CONDUIT
14	ROUTE (1) 1" SCH 40 PVC CONDUIT W/ PULLSTRING FROM EACH INVERTER TO 'TA STORAGE 142'. COORDINATE ROUTING WITH ALL OTHER TRADES. COORDINATE WITH OWNER'S IT REPRESENTATIVE FOR EXACT LOCATION AND ADDITIONAL REQUIREMENTS.

PV SYSTEM						
ARRAY SIZE	MODULE POWER	BIFCIAL GAIN	MODULE QUANTITY	INVERTER POWER	SYSTEM VOLTAGE	ANNUAL PRODUCTION
60 kW	725	20%	70	(2) 30 kW	480V/3PH	80,356 kWh/Yr
80 kW	725	20%	92	(3) 30 kW	480V/3PH	107,140 kWh/Yr



ELECTRICAL SITE PLAN
SCALE: 1"=20'-0"

052040

FEET

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PROJECT #: T2411-01

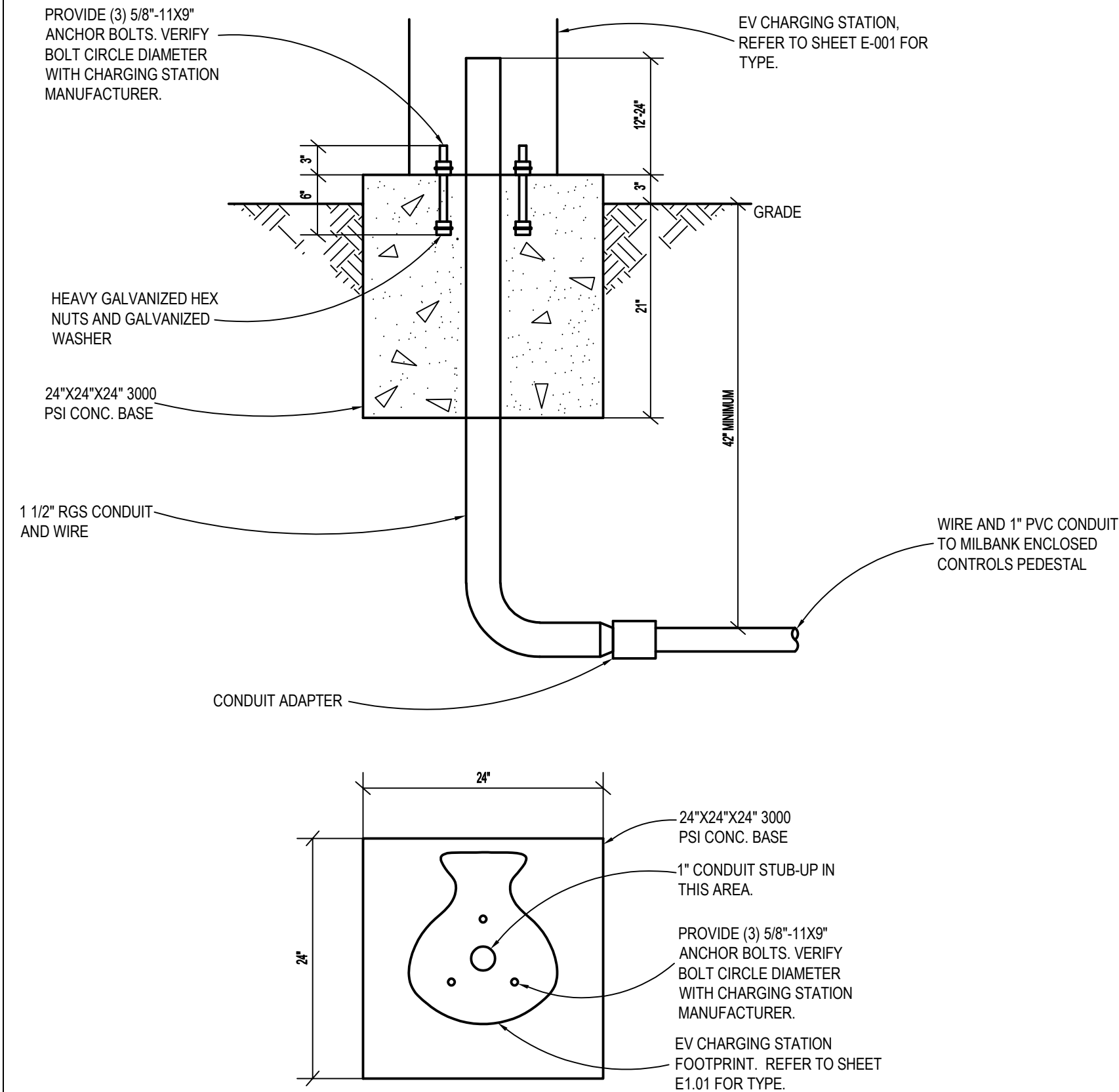
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DESIGNED BY: DW

SHEET TITLE:
Electrical Site Plan

SHEET NUMBER:
E-001

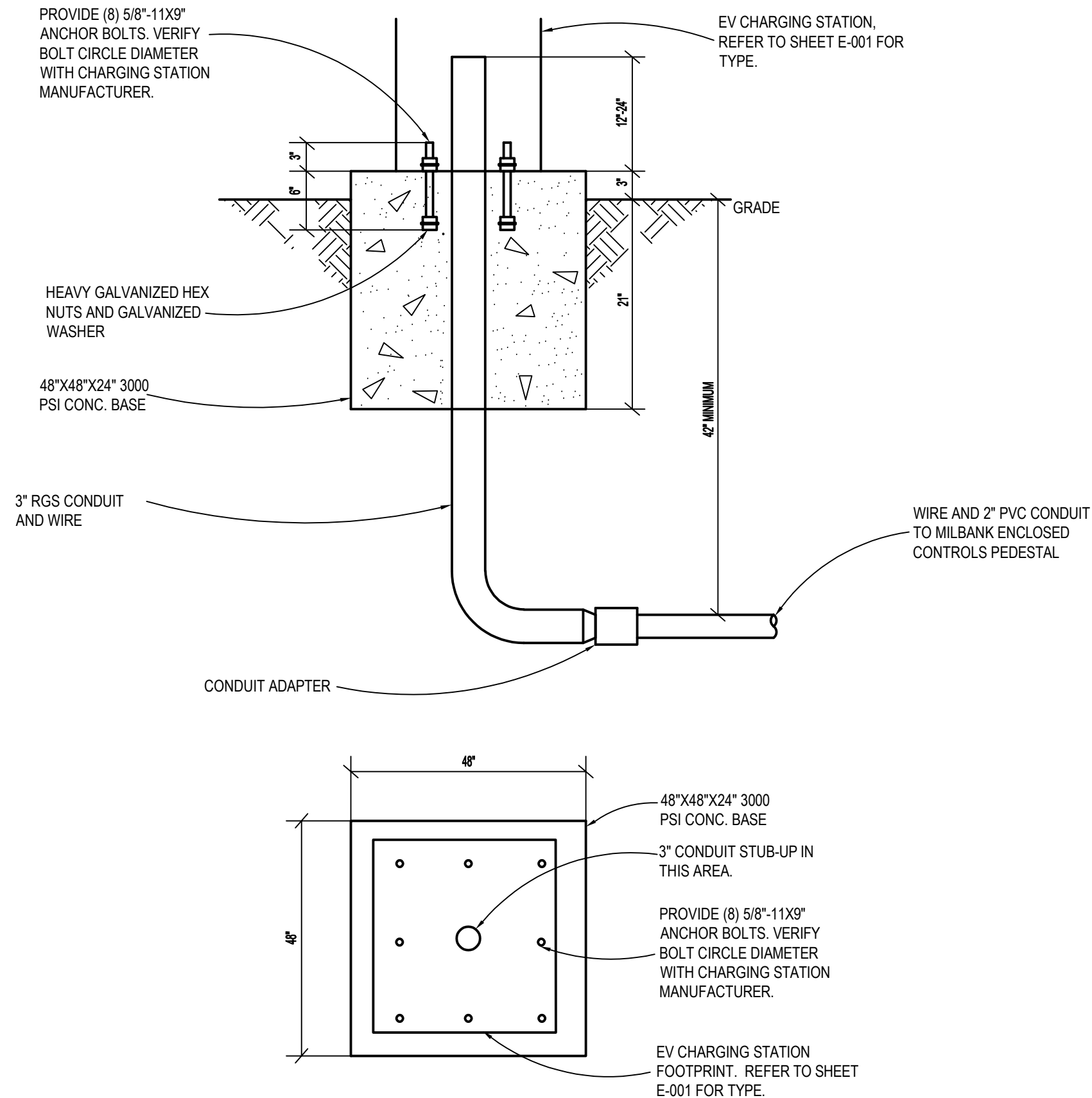


1 LEVEL 2 EV CHARGING STATION BASE DETAIL

NO SCALE

BASE DETAIL NOTES:

1. FULLY COORDINATE INSTALLATION DETAILS WITH EV CHARGING STATION MANUFACTURER. CONTRACTOR SHALL OBTAIN ALL INSTALLATION INSTRUCTIONS, TEMPLATES, CONCRETE MOUNTING KITS, AND OTHER PARTS AND PIECES REQUIRED BY MANUFACTURER FOR A COMPLETE INSTALLATION PRIOR TO BEGINNING INSTALLATION. THIS DETAIL IS NOT INTENDED TO DEPICT COMPLETE INSTALLATION INSTRUCTIONS/REQUIREMENTS, BUT IS INTENDED TO SHOW GENERAL SCOPE AND MINIMUM REQUIREMENTS FOR THE CHARGING STATION BASE INSTALLATION. CONTRACTOR SHALL FULLY COORDINATE TELECOMMUNICATION REQUIREMENTS WITH MANUFACTURER AND OBTAIN AND INSTALL TELECOMMUNICATION CONDUIT.



2 LEVEL 3 EV CHARGING STATION BASE DETAIL

NO SCALE

BASE DETAIL NOTES:

1. FULLY COORDINATE INSTALLATION DETAILS WITH EV CHARGING STATION MANUFACTURER. CONTRACTOR SHALL OBTAIN ALL INSTALLATION INSTRUCTIONS, TEMPLATES, CONCRETE MOUNTING KITS, AND OTHER PARTS AND PIECES REQUIRED BY MANUFACTURER FOR A COMPLETE INSTALLATION PRIOR TO BEGINNING INSTALLATION. THIS DETAIL IS NOT INTENDED TO DEPICT COMPLETE INSTALLATION INSTRUCTIONS/REQUIREMENTS, BUT IS INTENDED TO SHOW GENERAL SCOPE AND MINIMUM REQUIREMENTS FOR THE CHARGING STATION BASE INSTALLATION. CONTRACTOR SHALL FULLY COORDINATE TELECOMMUNICATION REQUIREMENTS WITH MANUFACTURER AND OBTAIN AND INSTALL TELECOMMUNICATION CONDUIT.

LOAD JUSTIFICATION - TOTAL SERVICE LOAD			
PEAK SERVICE LOAD:	Aug-22	67.872 KW	
Convert to VA:	0.93 pf	72981 VA	
X NEC DEMAND FACTOR:	X 1.25 =		
DEMAND LOAD:	109.7783 AMPS	91226 VA	
ADDED LOADS:			
LEVEL 2 CHARGING STATION	40 A, 1PH,208V	8,320 VA	
LEVEL 3 CHARGING STATION	153 A, 3PH,480V	127,198 VA	
		135518 VA	
TOTAL COMBINED LOAD:			
	273 AMPS	226744 VA	
SERVICE CAPACITY:	800 A MAIN BREAKER		
% LOADED:	34%		

EXISTING PANELBOARD 'PP1' SCHEDULE																
MAIN BUS: 225 A			LOAD (VA)					LOAD (VA)					LOCATION: MECHANICAL 151			
VOLTAGE: 208Y/120 VOLTS, 3 PHASE, 4 WIRE													MOUNTING: SURFACE			
PANEL TYPE: LIGHTING AND APPLIANCE													MINIMUM AIC: EXISTING			
C	A	P	LOAD SERVED	LTG	RECP	MECH	SPARE	PHASE	LTG	RECP	MECH	SPARE	LOAD SERVED	P	A	C
1	20	1	RECP: RM 127,128,129		800			A		800			RECP: RM 130, 131, 132	1	20	2
3	20	1	RECP: RM 129, 101		600			B		800			RECP: RM 130, 131, 132	1	20	4
5	20	1	RECP: RM 127, 128		600			C		800			RECP: RM 130, 131, 132	1	20	6
7	20	1	RECP: RM 133, 134, 135		800			A		800			RECP: RM 136, 137, 138	1	20	8
9	20	1	RECP: RM 133, 134, 135		800			B		800			RECP: RM 136, 137, 138	1	20	10
11	20	1	RECP: RM 133, 134, 135		800			C		800			RECP: RM 136, 137, 138	1	20	12
13	20	1	RECP: RM 139		400			A		400			RECP: RM 152	1	20	14
15	20	1	RECP: RM 139		400			B		400			RECP: RM 152	1	20	16
17	20	1	RECP: RM 139		400			C		400			RECP: RM 152	1	20	18
19	20	1	RECP: RM 151, 150, 148, 149		800			A				1000	SPARE	1	20	20
21	20	1	RECP: RM 156, 155		600			B				1200	MECH: CIRCULATING PUMP	1	20	22
23	20	1	RECP: EWC NORTH		600			C		4160			RECP: LEVEL 2 CHARGING STATION	2	50	24
25	20	1	RECP: EWC SOUTH		600			A		4160			-	-	-	26
27			SPACE					B					SPACE			28
29			SPACE					C					SPACE			30
31	20	1	MECH: UNIT HEATER RM 151, 141			1600		A				1200	MECH: EF-4	1	20	32
33	20	1	RECP: ROOF NORTH		800			B		400			RECP: FIRE ALARM PANEL	1	20	34
35	20	1	RECP: ROOF SOUTH		800			C		300			RECP: AUTOMATIC FLUSH VALVE	1	20	36
37	20	1	RECP: TELEPHONE		200			A		600			RECP: EWC	1	20	38
39	20	1	MECH: EF-3			1200		B					SPARE	1	20	40
41	20	1	LTG: EXIT LIGHTS	200				C					SPARE	1	20	42
43	20	1	SPARE				1000	A		1400				-	-	44
45	20	1	SPARE				1000	B		1400			EXISTING LOAD	3	20	46
47	20	1	SPARE				1000	C		1400				-	-	48
49			SPACE					A					SPACE			50
51			SPACE					B					SPACE			52
53			SPACE					C					SPACE			54
55			SPACE					A					SPACE			56
57			SPACE					B					SPACE			58
59			SPACE					C					SPACE			60
61			SPACE					A					SPACE			62
63			SPACE					B					SPACE			64
65			SPACE					C					SPACE			66
67			SPACE					A					SPACE			68
69			SPACE					B					SPACE			70
71			SPACE					C					SPACE			72
CONNECTED LOAD				200	10000	2800	3000	-				19820	2400	1000	CONNECTED LOAD	
% DF				100	67	80	50	100				67	80	50	%DF	
EMD				200	6677	2240	1500	-				13233	1920	500	EMD	
EMD X 1.25 =				26270 X 1.25 =				91 Amps								
SYS. VOLT:				208 X 1.73												
												MAIN LUG ONLY (MLO): 200 A				

PANEL SCHEDULE NOTES	
KEY NOTE	DESCRIPTION
1	PROVIDE NEW CIRCUIT BREAKER OF THE AMPERAGE AND POLES INDICATED, NEW CIRCUIT BREAKER SHALL BE FULLY COMPATIBLE WITH EXISTING PANELBOARD AND SHALL MAINTAIN THE PANELBOARD'S UL LISTING AND INTERRUPT RATING.

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Electrical Details &
Schedules

SHEET NUMBER:

E-201

BID DOCUMENTS
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SHEET TITLE:
Electrical One Line
Diagram

SHEET NUMBER:

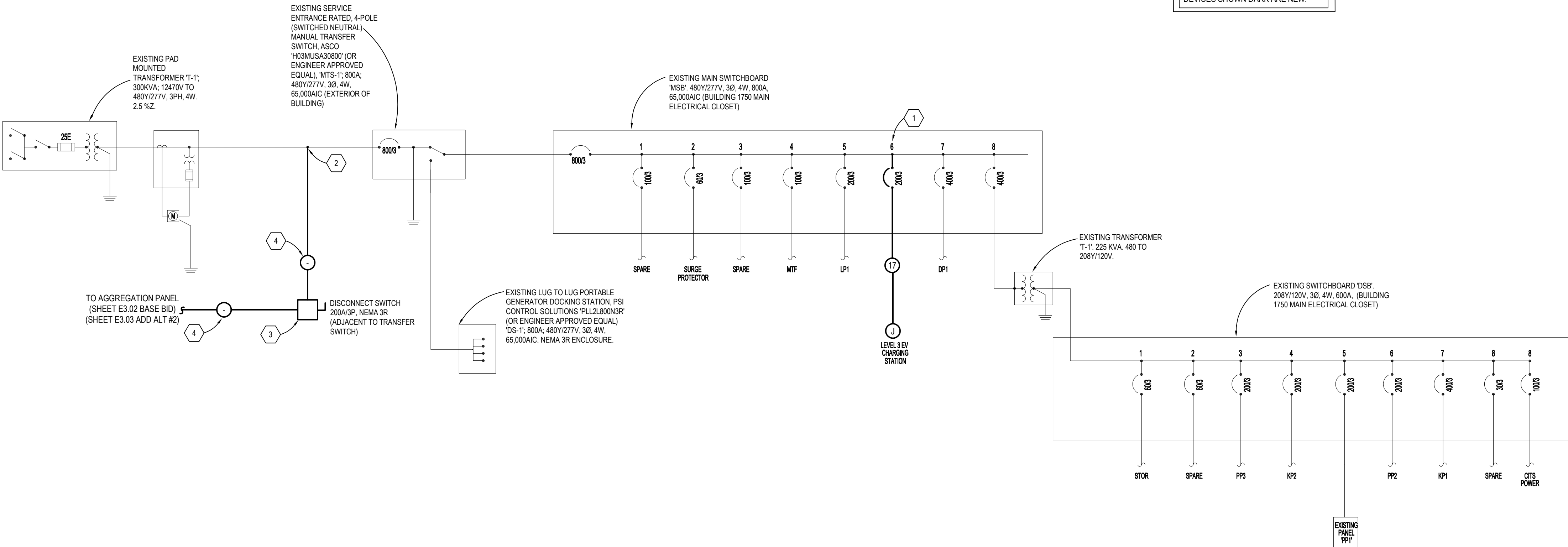
E-301

ELECTRICAL ONE LINE DIAGRAM

NO SCALE

COPPER FEEDER SCHEDULE			
MARK	FEEDER DESCRIPTION	FEEDER DESCRIPTION	MARK
1	(1) #10 PV WIRE 600V FREE AIR	(3) #12 & (1) #12 GRND IN 3/4" CONDUIT	1A
2	(4) #10 & (1) #10 GRND IN 3/4" CONDUIT	(3) #10 & (1) #10 GRND IN 3/4" CONDUIT	2A
3	(4) #10 & (1) #10 GRND IN 3/4" CONDUIT	(3) #10 & (1) #10 GRND IN 3/4" CONDUIT	3A
4	(4) #8 & (1) #10 GRND IN 3/4" CONDUIT	(3) #8 & (1) #10 GRND IN 3/4" CONDUIT	4A
5	(4) #8 & (1) #10 GRND IN 3/4" CONDUIT	(3) #8 & (1) #10 GRND IN 3/4" CONDUIT	5A
6	(4) #8 & (1) #10 GRND IN 3/4" CONDUIT	(3) #8 & (1) #10 GRND IN 3/4" CONDUIT	6A
7	(3) #8 & (1) #10 GRND IN 3/4" CONDUIT	(3) #8 & (1) #10 GRND IN 3/4" CONDUIT	7A
8	(4) #6 & (1) #10 GRND IN 1" CONDUIT	(3) #6 & (1) #10 GRND IN 3/4" CONDUIT	8A
9	(4) #4 & (1) #8 GRND IN 1 1/4" CONDUIT	(3) #4 & (1) #8 GRND IN 1" CONDUIT	9A
10	(4) #4 & (1) #8 GRND IN 1 1/4" CONDUIT	(3) #4 & (1) #8 GRND IN 1" CONDUIT	10A
11	(4) #3 & (1) #8 GRND IN 1 1/4" CONDUIT	(3) #3 & (1) #8 GRND IN 1 1/4" CONDUIT	11A
12	(4) #3 & (1) #8 GRND IN 1 1/4" CONDUIT	(3) #3 & (1) #8 GRND IN 1 1/4" CONDUIT	12A
13	(4) #2 & (1) #6 GRND IN 1 1/4" CONDUIT	(3) #2 & (1) #6 GRND IN 1 1/4" CONDUIT	13A
14	(4) #1 & (1) #6 GRND IN 1 1/2" CONDUIT	(3) #1 & (1) #6 GRND IN 1 1/4" CONDUIT	14A
15	(4) 1/O & (1) #6 GRND IN 2" CONDUIT	(3) 1/O & (1) #6 GRND IN 1 1/2" CONDUIT	15A
16	(4) 2/O & (1) #6 GRND IN 2" CONDUIT	(3) 2/O & (1) #6 GRND IN 2" CONDUIT	16A
17	(4) 3/O & (1) #6 GRND IN 2" CONDUIT	(3) 3/O & (1) #6 GRND IN 2" CONDUIT	17A

ALL CONDUIT SIZES SHOWN ON FEEDER SIZING
TABLE HAVE BEEN SIZED FOR EMT CONDUIT.
ADJUST SIZE AS NECESSARY FOR OTHER RACEWAY
TYPES. CONDUIT SIZE SHALL NOT EXCEED NEC
MANDATED FILL CAPACITIES.



ALL POWER OUTAGES SHALL BE FULLY
COORDINATED WITH OWNER AND
FACILITIES REPRESENTATIVES. OUTAGES
SHALL ONLY OCCUR DURING DAYLIGHT
HOURS AND SHALL NOT LAST LONGER
THAN 8 HOURS.

DEVICES SHOWN LIGHT ARE EXISTING.
DEVICES SHOWN DARK ARE NEW.



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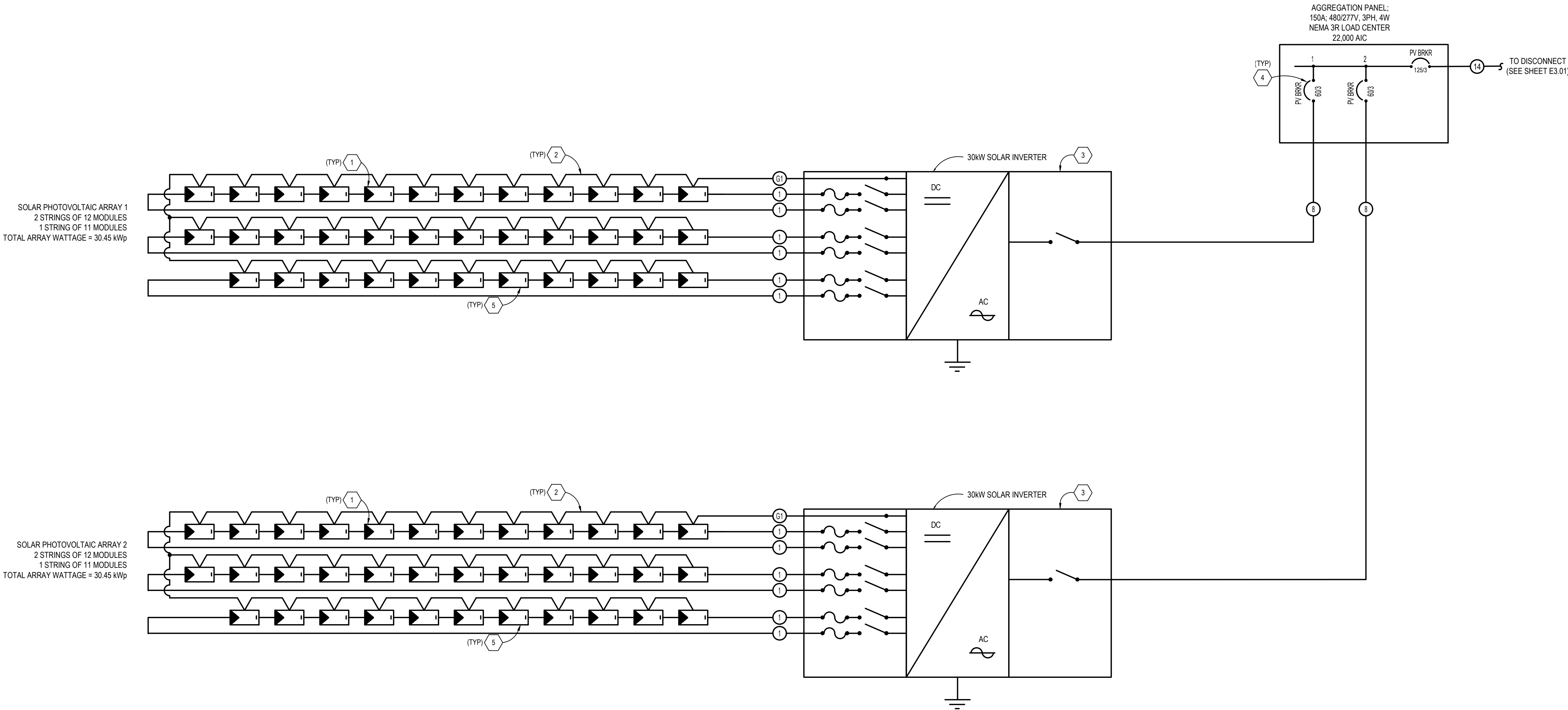
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Electrical One Line
Diagram -
Photovoltaic Base

SHEET NUMBER:

E-302



ELECTRICAL ONE LINE DIAGRAM - PHOTOVOLTAIC BASE

NO SCALE

ELECTRICAL ONE-LINE DIAGRAM NOTES	
KEY NOTE	DESCRIPTION
1	(12) 725W W/ 20% BIFACIAL GAIN PHOTOVOLTAIC MODULES. TOTAL STRING Vmp - 492Vdc TOTAL STRING Voc - 586Vdc / Voc cold - 645.5. PHOTOVOLTAIC MODULES SHALL BE UL LISTED.
2	ALL SOLAR COMPONENTS TO BE GROUNDED.
3	ARC FAULT AND GROUND FAULT PROTECTION SHALL BE INTEGRAL TO INVERTER. INVERTER TO BE PROVIDED WITH RAPID SHUTDOWN IN COMPLIANCE WITH NEC.
4	ALL PV BREAKERS SHALL BE UL LISTED AND SUITABLE FOR BACK / REVERSE FEED USE.
5	(11) 725W W/ 20% BIFACIAL GAIN PHOTOVOLTAIC MODULES. TOTAL STRING Vmp - 451Vdc TOTAL STRING Voc - 537.9Vdc / Voc cold - 591.69. PHOTOVOLTAIC MODULES SHALL BE UL LISTED.

REFERENCE SHEET E3.01 FOR FEEDER
SCHEDULE INFORMATION

PV INVERTER SCHEDULE (MODULE RATINGS @ STC)											
			INPUT PARAMETERS (DC)						OUTPUT PARAMETERS (AC)		
MANUFACTURER	MODEL	QUANTITY	P _{max} (W)	V _{max} (Voc)	V _{ocm} (Voc)	I _{scmax} (A)	I _{max} (A)	P _{acm} (W)	V _{ocm} (Voc)	I _{scm} (A)	F _{scm} (Hz)
SMA	TRIPOWER X 30-US	2	45,000	1000	350-800	37.5	24	30,000	480	36	60

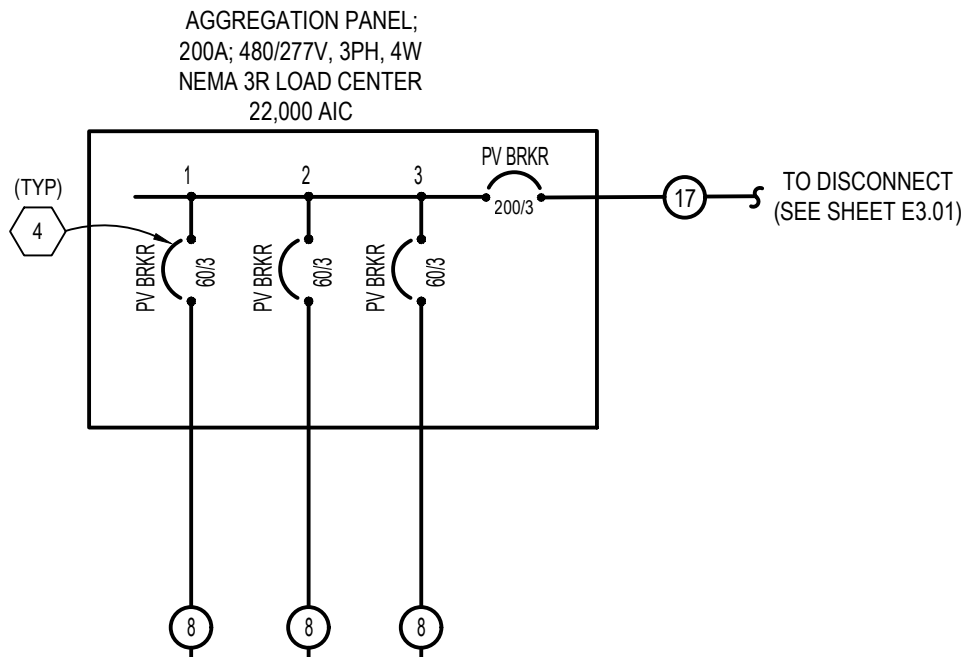
PV MODULE SCHEDULE (MODULE RATINGS @ STC)							
MANUFACTURER	MODEL	QUANTITY	P _{max} (W)	V _{mp} (Voc)	I _{mp} (A)	V _{oc} (Voc)	I _{sc} (A)
CANADIAN SOLAR	CS7N-725TB-AG	70	870	41	21.25	48.9	22.49

PHOTOVOLTAIC SYSTEM COMPONENTS ARE TO SERVE AS BASIS
OF DESIGN. SEE SPECIFICATIONS FOR MORE INFORMATION.

SOLAR PHOTOVOLTAIC ARRAY 1
2 STRINGS OF 12 MODULES
1 STRING OF 11 MODULES
TOTAL ARRAY WATTAGE = 30.45 kWp

SOLAR PHOTOVOLTAIC ARRAY 2
2 STRINGS OF 12 MODULES
1 STRING OF 11 MODULES
TOTAL ARRAY WATTAGE = 30.45 kWp

SOLAR PHOTOVOLTAIC ARRAY 3
2 STRINGS OF 11 MODULES
TOTAL ARRAY WATTAGE = 19.14 kWp



STATE OF MISSOURI
MIKE KEHOE
GOVERNOR



7-10-26

PROFESSIONAL SEAL

CLARK &
ENERSEN

2020 Baltimore Ave.
Suite 300
Kansas City, MO 64108
p. 816-474-8237

OFFICE OF
ADMINISTRATION
DIVISION OF FACILITIES,
MANAGEMENT, DESIGN
AND CONSTRUCTION

DEPARTMENT OF
PUBLIC SAFETY

MISSOURI ARMY
NATIONAL GUARD

WHITEMAN AFB READINESS
CENTER - CONSTRUCT
SOLAR ARRAY

WHITEMAN AIR FORCE
BASE

ONE ATTACK AVENUE
KNOB NOSTER, MO 65305

PROJECT #: T2411-01

SITE #: 6258

ASSET #: 8136258003

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 07/10/26

DRAWN BY: BS
CHECKED BY: DW
DESIGNED BY: DW

SHEET TITLE:
Electrical One Line
Diagram -
Photovoltaic
Alternate

SHEET NUMBER:

E-303

BID DOCUMENTS
10 of 11

ELECTRICAL ONE LINE DIAGRAM - PHOTOVOLTAIC ALTERNATE

NO SCALE

ELECTRICAL ONE-LINE DIAGRAM NOTES	
KEY NOTE	DESCRIPTION
1	(12) 725W W/ 20% BIFACIAL GAIN PHOTOVOLTAIC MODULES. TOTAL STRING Vmp - 492Vdc. TOTAL STRING Voc - 586Vdc / Voc cold - 645.5. PHOTOVOLTAIC MODULES SHALL BE UL LISTED.
2	ALL SOLAR COMPONENTS TO BE GROUNDED.
3	ARC FAULT AND GROUND FAULT PROTECTION SHALL BE INTEGRAL TO INVERTER. INVERTER TO BE PROVIDED WITH RAPID SHUTDOWN IN COMPLIANCE WITH NEC.
4	ALL PV BREAKERS SHALL BE UL LISTED AND SUITABLE FOR BACK / REVERSE FEED USE.
5	(11) 725W W/ 20% BIFACIAL GAIN PHOTOVOLTAIC MODULES. TOTAL STRING Vmp - 451Vdc. TOTAL STRING Voc - 537.9Vdc / Voc cold - 591.69. PHOTOVOLTAIC MODULES SHALL BE UL LISTED.

REFERENCE SHEET E3.01 FOR FEEDER
SCHEDULE INFORMATION

PV INVERTER SCHEDULE (MODULE RATINGS @ STC)									
INPUT PARAMETERS (DC)					OUTPUT PARAMETERS (AC)				
MANUFACTURER	MODEL	QUANTITY	P _{max} (W)	V _{max} (Voc)	V _{nom} (Voc)	I _{sc} (A)	I _{max} (A)	P _{nom} (W)	V _{nom} (Vc)
SMA	TRIPOWER X 30-US	2	45,000	1000	350-800	37.5	24	30,000	480

PV MODULE SCHEDULE (MODULE RATINGS @ STC)								
MANUFACTURER	MODEL	QUANTITY	P _{max} (W)	V _{mp} (Voc)	I _{sc} (A)	V _{oc} (Vc)	I _{sc} (A)	
CANADIAN SOLAR	CS7N-725TB-AG	92	870	41	21.25	48.9	22.49	

PHOTOVOLTAIC SYSTEM COMPONENTS ARE TO SERVE AS BASIS
OF DESIGN. SEE SPECIFICATIONS FOR MORE INFORMATION.



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ISSUE DATE: 07/10/26

DRAWN BY: BS
CHECKED BY: DW
DESIGNED BY: DW

SHEET TITLE:
Electrical Details

SHEET NUMBER:

E-401

BASE BID INVERTER AND AGGREGATION PANEL LABELS

LABEL INVERTER #1 WITH THE FOLLOWING 5 PLACARDS:

INVERTER #1

OPERATING CURRENT: 24 A
OPERATING VOLTAGE: 515/800 VDC
MAXIMUM SYSTEM VOLTAGE: 1000 VDC
SHORT CIRCUIT CURRENT: 37.5 A

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE
LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES
ARE EXPOSED TO SUNLIGHT

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

LABEL INVERTER #2 WITH THE FOLLOWING 5 PLACARDS:

INVERTER #2

OPERATING CURRENT: 24 A
OPERATING VOLTAGE: 515/800 VDC
MAXIMUM SYSTEM VOLTAGE: 1000 VDC
SHORT CIRCUIT CURRENT: 37.5 A

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE
LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES
ARE EXPOSED TO SUNLIGHT

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

LABEL PV AGGREGATION PANEL WITH THE FOLLOWING 4 PLACARDS:

WARNING!

DUAL POWER SOURCE PANEL
MAIN BREAKER AND PV BREAKERS
SHALL BE DISCONNECTED
FOR POWER DISCONNECT

SOLAR PHOTOVOLTAIC SOURCE
NOMINAL AC VOLTAGE: 480V
MAXIMUM AC CURRENT PER SOURCE: 36A

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE
LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

LABEL MAIN SERVICE METER WITH THE FOLLOWING 3 PLACARDS:

WARNING!

THIS SERVICE METER IS ALSO
SERVED BY A PHOTOVOLTAIC SYSTEM

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE LINE AND LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION

SOLAR PHOTOVOLTAIC SOURCE
NOMINAL AC VOLTAGE: 480V
MAXIMUM AC CURRENT: 108A

LABEL SOLAR SERVICE DISCONNECTING
MEANS WITH THE FOLLOWING 3 PLACARDS:

SOLAR POWER DISCONNECT
FOR UTILITY OPERATION.

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE LINE AND LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

MARKING AND LABELING GENERAL NOTES:

- A. MARKING AND LABELING SHALL COMPLY WITH NEC 690 AND IFC 605.
B. ALL PLACARDS, SIGNAGE AND LABELS SHALL BE PERMANENTLY ATTACHED.
C. ALL PLACARDS AND SIGNAGE SHALL BE MADE OF RIGID LAMINATE MATERIAL WITH ENGRAVED LETTERS.
D. ALL PLACARDS, SIGNAGE AND LABELS SHALL BE RED WITH WHITE LETTERING.
E. ALL LETTERING SHALL BE A MINIMUM OF 3/8" IN HEIGHT.
F. ALL LETTERING SHALL BE CAPITAL LETTERS, ARIAL OR SIMILAR FONT, NON-BOLD.
G. ALL FIELD-INSTALLED PLACARDS, SIGNAGE AND LABELS SHALL BE VISIBLE AFTER INSTALLATION.
H. ALL PLACARDS, SIGNAGE, AND LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE THEY ARE INSTALLED.
I. PROVIDE A PLACARD, SIGN OR LABEL SHOWING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE LOCATION OF THE PHOTOVOLTAIC DISCONNECTIONS MEANS.
J. A PERMANENT PLACARD OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES ON OR IN THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED.
K. THE SITE DIRECTORY SHALL INCLUDE WORDING SIMILAR TO THE FOLLOWINGS: "CAUTION - THE POWER TO THIS SITE IS ALSO SUPPLIED FROM THE FOLLOWING SOLAR PV AND UTILITY SOURCES WITH DISCONNECTS LOCATED AS SHOWN."

AT INTERVALS OF NO MORE THAN TEN FEET AND WITHIN ONE FOOT OF TURNS, BENDS OR PENETRATIONS, IDENTIFY ALL INTERIOR AND EXTERIOR DC PV WIRING SYSTEM COMPONENTS (CONDUIT, RACEWAYS, ENCLOSURES, OTHER WIRING METHODS, COVERS, OR ENCLOSURES OF PULL BOXES AND JUNCTION BOXES, CONDUIT BODIES IN WHICH ANY OF THE AVAILABLE CONDUIT OPENINGS ARE UNUSED) WITH THE FOLLOWING REFLECTIVE LABEL:

WARNING: PHOTOVOLTAIC POWER SOURCE

ALTERNATE #2 INVERTER AND AGGREGATION PANEL LABELS

LABEL INVERTER #1 WITH THE FOLLOWING 5 PLACARDS:

INVERTER #1

OPERATING CURRENT: 24 A
OPERATING VOLTAGE: 515/800 VDC
MAXIMUM SYSTEM VOLTAGE: 1000 VDC
SHORT CIRCUIT CURRENT: 37.5 A

WARNING!

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH THE
LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES
ARE EXPOSED TO SUNLIGHT

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

LABEL INVERTER #2 WITH THE FOLLOWING 5 PLACARDS:

INVERTER #2

OPERATING CURRENT: 24 A
OPERATING VOLTAGE: 515/800 VDC
MAXIMUM SYSTEM VOLTAGE: 1000 VDC
SHORT CIRCUIT CURRENT: 37.5 A

WARNING!

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TERMINALS ON BOTH THE
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WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES
ARE EXPOSED TO SUNLIGHT

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

LABEL INVERTER #3 WITH THE FOLLOWING 5 PLACARDS:

INVERTER #3

OPERATING CURRENT: 24 A
OPERATING VOLTAGE: 515/800 VDC
MAXIMUM SYSTEM VOLTAGE: 1000 VDC
SHORT CIRCUIT CURRENT: 37.5 A

WARNING!

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

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED

DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES
ARE EXPOSED TO SUNLIGHT

PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

LABEL PV AGGREGATION PANEL WITH THE FOLLOWING 4 PLACARDS:

WARNING!

DUAL POWER SOURCE PANEL
MAIN BREAKER AND PV BREAKERS
SHALL BE DISCONNECTED
FOR POWER DISCONNECT

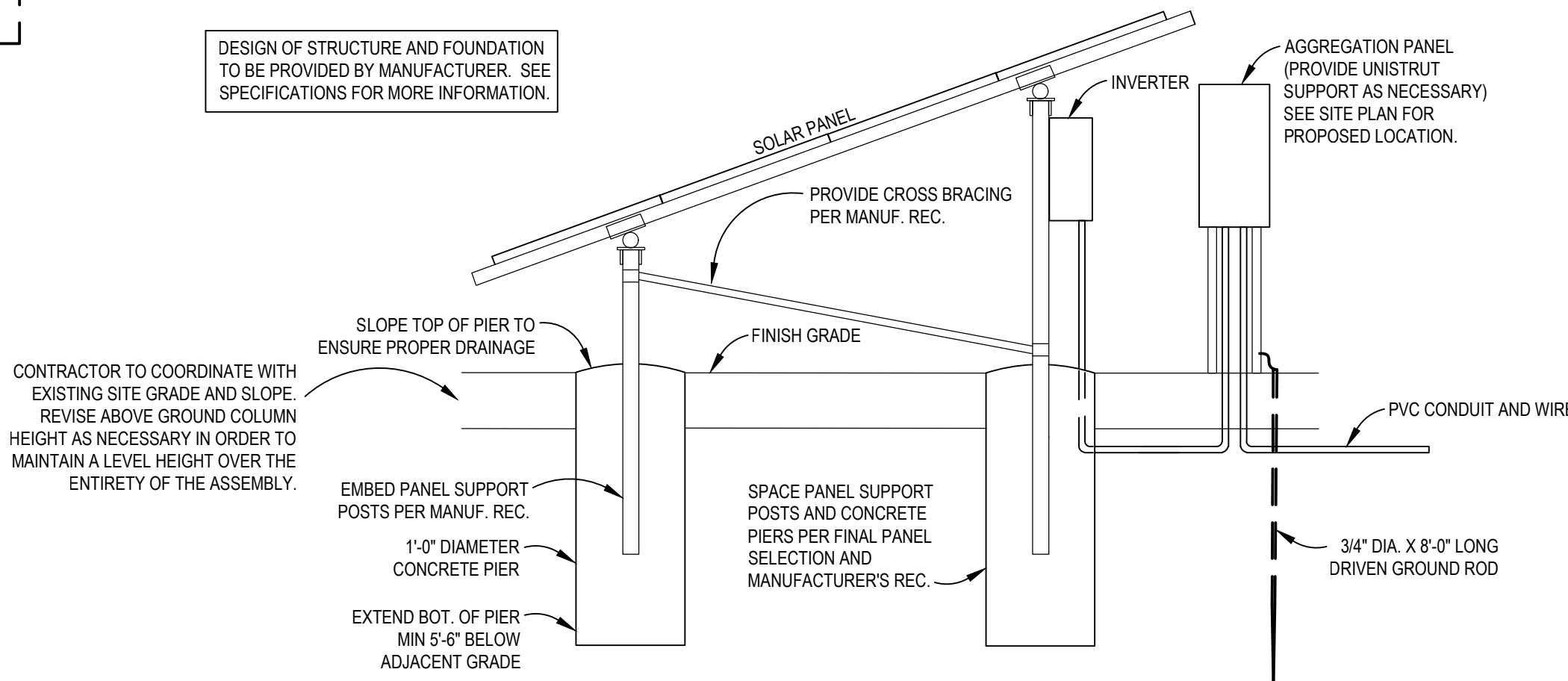
SOLAR PHOTOVOLTAIC SOURCE
NOMINAL AC VOLTAGE: 480V
MAXIMUM AC CURRENT PER SOURCE: 36A

WARNING!

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LINE AND LOAD SIDES MAY BE
ENERGIZED IN THE OPEN POSITION

WARNING!

ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED,
NORMALLY GROUND CONDUCTORS MAY
BE UNGROUNDED AND ENERGIZED



1 PV MOUNTING & CONCRETE BASE DETAIL
NO SCALE