

CARSON CITY PUBLIC WORKS SOLAR PHOTOVOLTAIC SYSTEM

3505 BUTTI WAY
CARSON CITY, NEVADA

APN 10-031-04
PROJECT No. 2.0805

BOARD OF SUPERVISORS

BOB CROWELL	MAYOR
ROBIN WILLIAMSON	SUPERVISOR
SHELLY ALDEAN	SUPERVISOR
PETE LIVERMORE	SUPERVISOR
MOLLY WALT	SUPERVISOR
ALAN GLOVER	CITY CLERK

DESIGNED FOR:

CARSON CITY PUBLIC WORKS DEPARTMENT
OPERATIONS DIVISION
3505 BUTTI WAY
CARSON CITY, NV 89701
887-2355

GENERAL NOTES:

- ALL WORK SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR THE PUBLIC WORKS CONSTRUCTION" (SSPWC) AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" (SDPWC) AS ADOPTED BY CARSON CITY. THE CONTRACTOR SHALL OBTAIN A PERMIT FOR PUBLIC WORKS CONSTRUCTION FROM THE CARSON CITY PERMIT CENTER PRIOR TO THE START OF CONSTRUCTION.
- ALL WORK IN RIGHT-OF-WAY SHALL CONFORM TO THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2011 EDITION AND THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION, 2007 EDITION.
- ALL TRAFFIC CONTROL AND BARRICADING WITHIN THE CARSON CITY RIGHT-OF-WAY SHALL CONFORM TO SECTION 100.33, 332.04 AND 332.05 OF THE STANDARD SPECIFICATIONS, PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND THE UNR T2 CENTER, TEMPORARY TRAFFIC CONTROL GUIDELINES LATEST EDITION. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY THE CARSON CITY ENGINEERING DIVISION PRIOR TO ANY STREET CLOSURES.
- THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT "CALL BEFORE YOU DIG" (811) OR (1-800-227-2600) AT LEAST TWO (2) WORKING DAYS PRIOR TO START OF CONSTRUCTION AND COMPLY WITH THE REQUIREMENTS OF NRS AND NAC 455 THROUGHOUT THE COURSE OF THE WORK. SEWER SERVICE LATERALS ARE NOT OWNED OR MARKED BY CARSON CITY.
- THE CONTRACTOR SHALL CALL THE CARSON CITY ENGINEERING DIVISION (887-2300) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL ONE (1) WORKING DAY PRIOR TO REQUIRED INSPECTIONS AND TESTING. THE REQUIRED INSPECTIONS AND TESTING ARE LISTED ON THE INSPECTION RECORD ISSUED WITH EACH PERMIT. THE CONTRACTOR MUST HAVE THE PERMIT NUMBER AND THE DESCRIPTION LISTED ON THE INSPECTION RECORD TO SCHEDULE REQUIRED INSPECTIONS AND TESTING. FOR CITY CONTRACTED PROJECTS, THE CONTRACTOR SHALL SCHEDULE INSPECTIONS PER THE CONTRACT DOCUMENTS.
- FINAL INSPECTIONS WILL BE PERFORMED BY CARSON CITY ENGINEERING DIVISION ACCORDING TO THE CARSON CITY INSPECTIONS AND TESTING PROCEDURES. NOTE: THESE PROCEDURES REQUIRE SUBMITTAL OF RECORD DRAWING PRINTS BY THE CONTRACTOR AND 10 WORKING DAYS TO PREPARE A FINAL PUNCH LIST. ALL CONDITIONS OF THE FINAL INSPECTION MUST BE COMPLETED PRIOR TO FINAL ACCEPTANCE OR ANY APPROVAL OF A CERTIFICATE OF OCCUPANCY BY THE CARSON CITY ENGINEERING DIVISION.
- MODIFICATIONS TO THE APPROVED PLANS REQUIRES REVIEW AND APPROVAL BY THE CARSON CITY ENGINEERING DIVISION. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY CARSON CITY ENGINEERING WILL REQUIRE REMOVAL AT THE CONTRACTORS EXPENSE.
- THE APPROVED PLAN, PERMIT AND INSPECTION RECORD MUST BE ON THE JOB SITE AT ALL TIMES.
- PLAN APPROVAL FOR SEWER AND WATER CONSTRUCTION SHALL EXPIRE ONE YEAR FROM DATE OF APPROVAL UNLESS CONSTRUCTION HAS BEEN INITIATED. (CCMC 12.06.180F, 12.01.140D)
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR ACQUIRING A STORM WATER DISCHARGE PERMIT FROM THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP) INCLUDING DEVELOPING, SUBMITTING AND IMPLEMENTING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL DEVELOP, PLACE AND MAINTAIN STORM WATER PROTECTION DEVICES IN COMPLIANCE WITH THE NEVADA CONTRACTORS FIELD GUIDE FOR CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (JUNE 2008).
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS IS BASED ON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THESE LOCATIONS AT THE PROPOSED POINTS OF CONNECTIONS AND IN AREAS OF POSSIBLE CONFLICT WITH NEW UTILITY INSTALLATION, PRIOR TO BEGINNING CONSTRUCTION. POT-HOLING IS REQUIRED. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, HE SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTORS SAFETY IN, ON, OR NEAR THE CONSTRUCTION SITE.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.



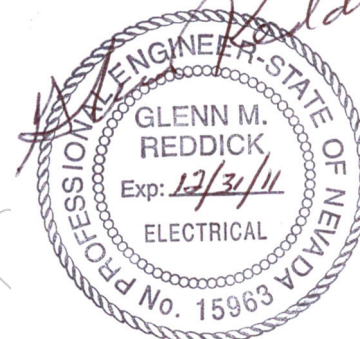
VICINITY MAP

SHEET INDEX

SHEET #	SHEET TITLE
1	A00 TITLE SHEET
2	E01 ELECTRICAL LAYOUT
3	E02 ELECTRICAL SINGLE LINE
4	S01 MODULE ANCHORAGE TOP
5	S02 MODULE ANCHORAGE SIDE
6	S03 PENETRATION DETAILS
7	S04 INVERTER ANCHORAGE & NEW CONCRETE PAD
8	S05 SHADE STRUCTURE
9	S06 BOLLARD DETAILS

BASIS OF DESIGN

CODE	2006 IBC
OCCUPANCY CATEGORY	II STORAGE BUILDING
SNOW LOADS	
GROUND SNOW LOAD, PG	30psf
Ce	1.00
Ct	1.20
Is	1.00
FLAT ROOF SNOW LOAD, PG	25.2psf
WIND LOADS	
BASIC WIND SPEED, v3s	100mph
EXPOSURE	C
Iw	1.00
ENCLOSURE CLASSIFICATION	PARTIALLY ENCLOSED
SEISMIC LOAD	
Ss	1.592
S1	0.600
SITE CLASS	D
Sds	1.06
Sd1	0.06
Ie	1.00
SEISMIC DESIGN CATEGORY	D



REVIEWED FOR CITY REQUIREMENTS:

JEFF SHARP, P.E., - CITY ENGINEER	DATE
DEVELOPMENT ENGINEERING	DATE
KEN ARNOLD, - PUBLIC WORKS OPERATIONS MANAGER	DATE

PERMIT # _____

DESIGNED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 SCALE (HORIZ): _____
 SCALE (VERT): _____
 PLOT DATE: _____

PACIFICWEST ENERGY SOLUTIONS
 561 KEYSTONE AVE. #300
 RENO, NV 89503
 (800) 310-9080 Office
 (800) 310-9596 Fax

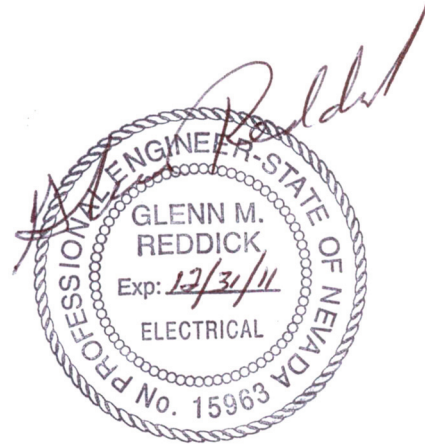
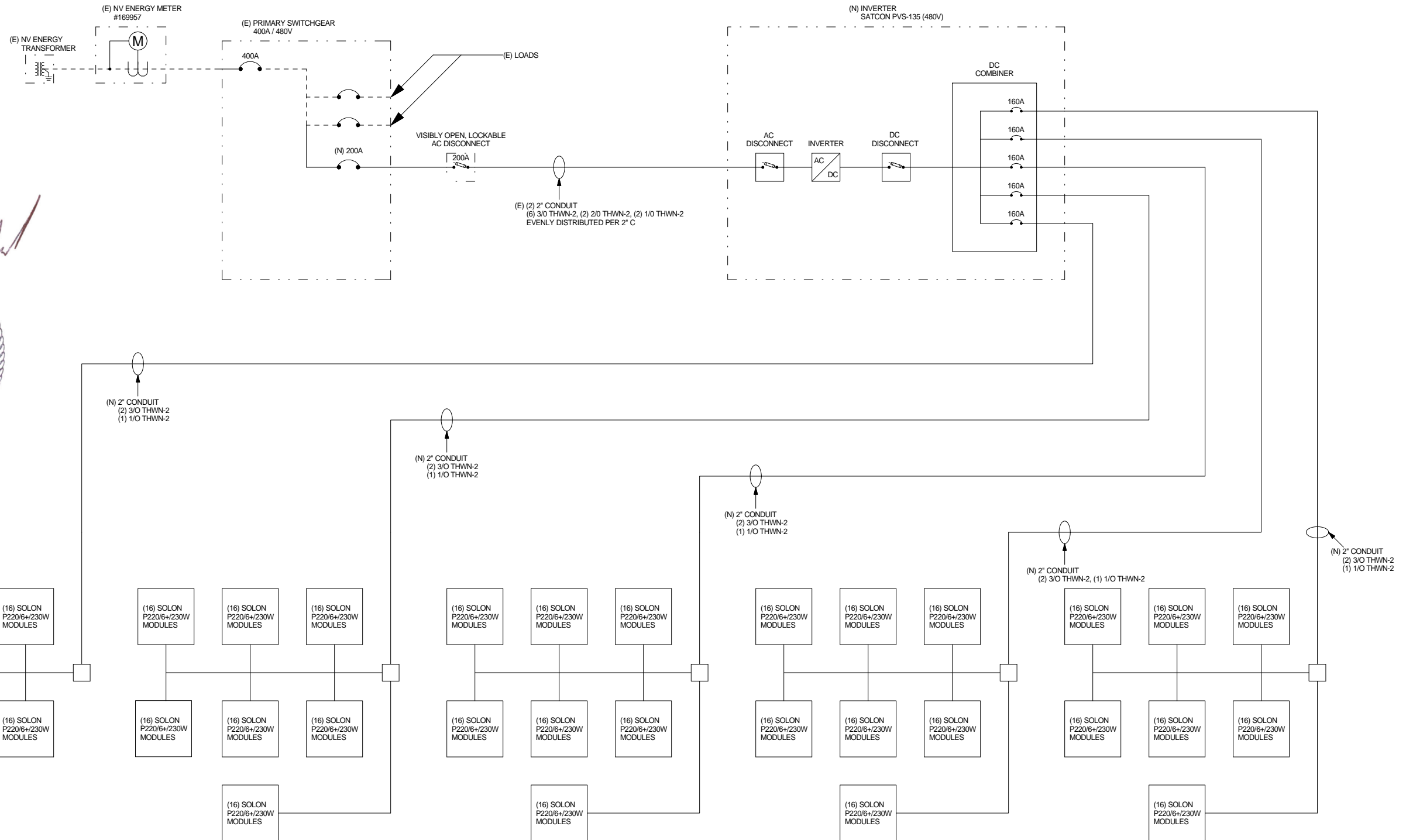
REV.	DATE	DESCRIPTION	BY	APPD

CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 A00 TITLE SHEET
 OPTION A: TRUCK SHED ONLY

SHEET
 1
 OF
 9

NOTES:

1. FINAL MODULE BRAND, SIZE TBD
2. FINAL INVERTER BRAND TBD
3. INVERTER & MODULES MUST MEET EECBG REQUIREMENTS AND BE "BUY AMERICA" APPROVED
4. VISIBLY OPEN AC DISCONNECT MUST LOCATED WITHIN 10' OF UTILITY METER
5. ORIGINAL UTILITY METER #169957 WILL BE REPLACED WITH A NET METER DURING INTERCONNECTION PROCESS
6. CONTRACTOR TO PROVIDE DATA ACQUISITION SYSTEM FOR REMOTE MONITORING AT TWO SEPARATE LOCATIONS (CITY HALL AND PUBLIC WORKS LOBBIES) WITH MIN. 30" WIDE SCREEN DISPLAY UTILIZING FAT SPANIEL SOLAR SPLASH (OR APPROVED EQUAL) WITH WIRELESS SOLUTION



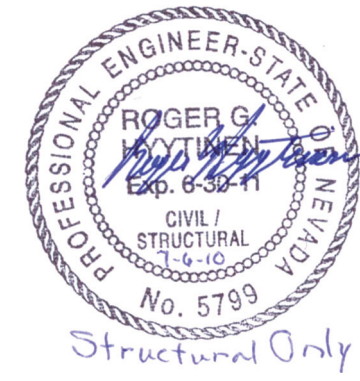
DESIGNED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 SCALE (HORIZ): _____
 SCALE (VERT): _____
 PLOT DATE: _____

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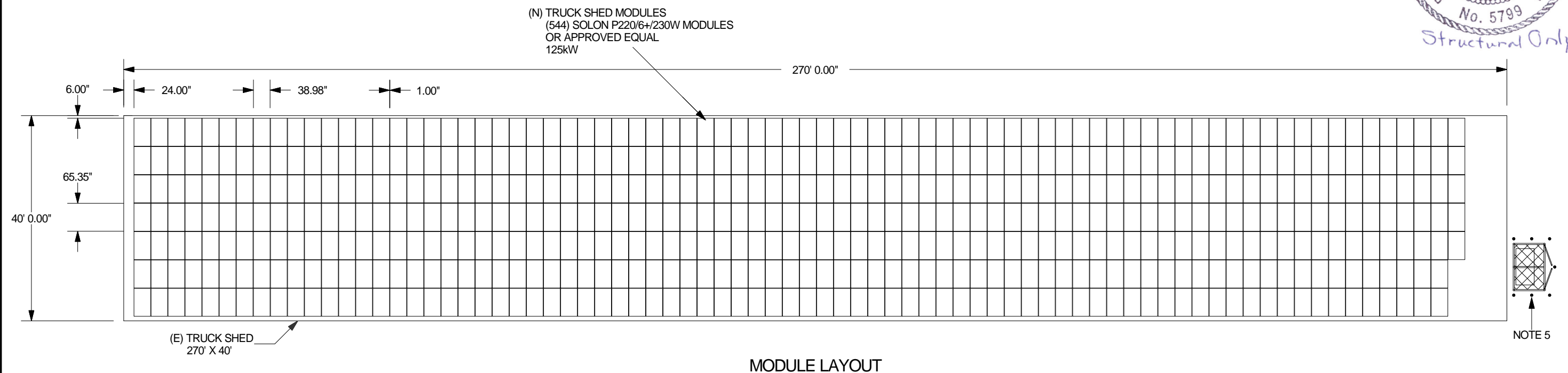
REV.	DATE	DESCRIPTION	BY	APPD

CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 E02 ELECTRICAL SINGLE LINE
 OPTION A: TRUCK SHED ONLY

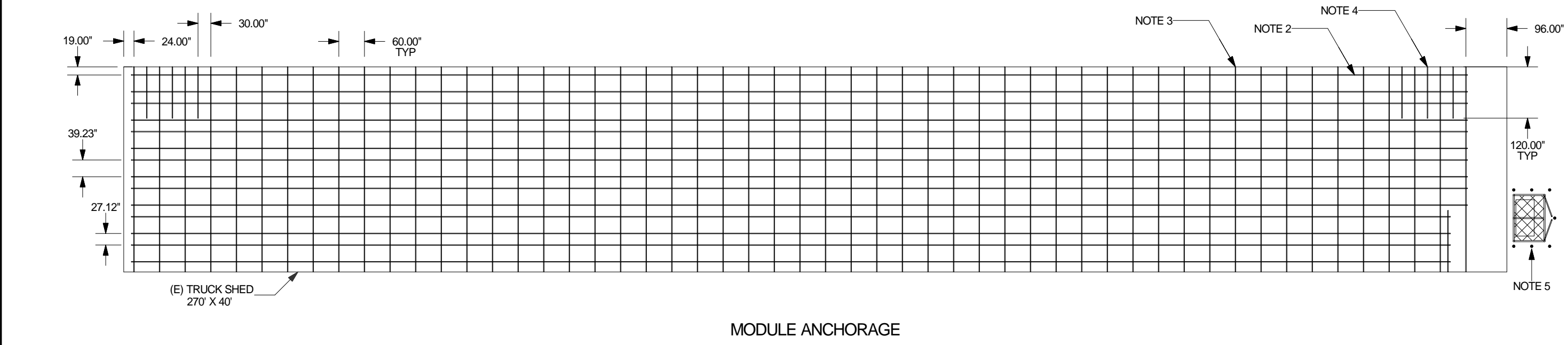
- NOTES:
1. MODULES ATTACHED TO B-LINE B22 CHANNEL (OR APPROVED EQUAL) AT FOUR PLACES W/ S-5 SOLAR PANEL CLAMPS (OR APPROVED EQUAL), 3/8" DIA. A307 BOLT, LOCKWASHER, SPRINGNUT ASSEMBLY
 2. (N) B-LINE B22 HDG CHANNEL (OR APPROVED EQUAL) (2) LINES PER PANEL ROW (TYP)
 3. (N) B-LINE B12 HDG CHANNEL (OR APPROVED EQUAL) @ 5' O.C. (TYP)
 4. (N) ADDED INTERMEDIATE B-LINE B12 HDG CHANNEL X 10'-0" (OR APPROVED EQUAL) (3) EA. @ N.E. AND N.W. CORNERS
 5. (N) INVERTER, CONCRETE PAD, SHADE STRUCTURE SEE S04, S05, S06 FOR DETAILS



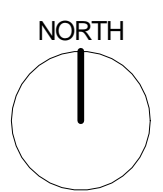
DESIGNED BY: _____
 DRAWN BY: J.C.
 CHECKED BY: C.R.
 SCALE (HORIZ): 1"=20'
 SCALE (VERT): 1"=20'
 PLOT DATE: _____



MODULE LAYOUT



MODULE ANCHORAGE



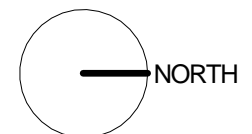
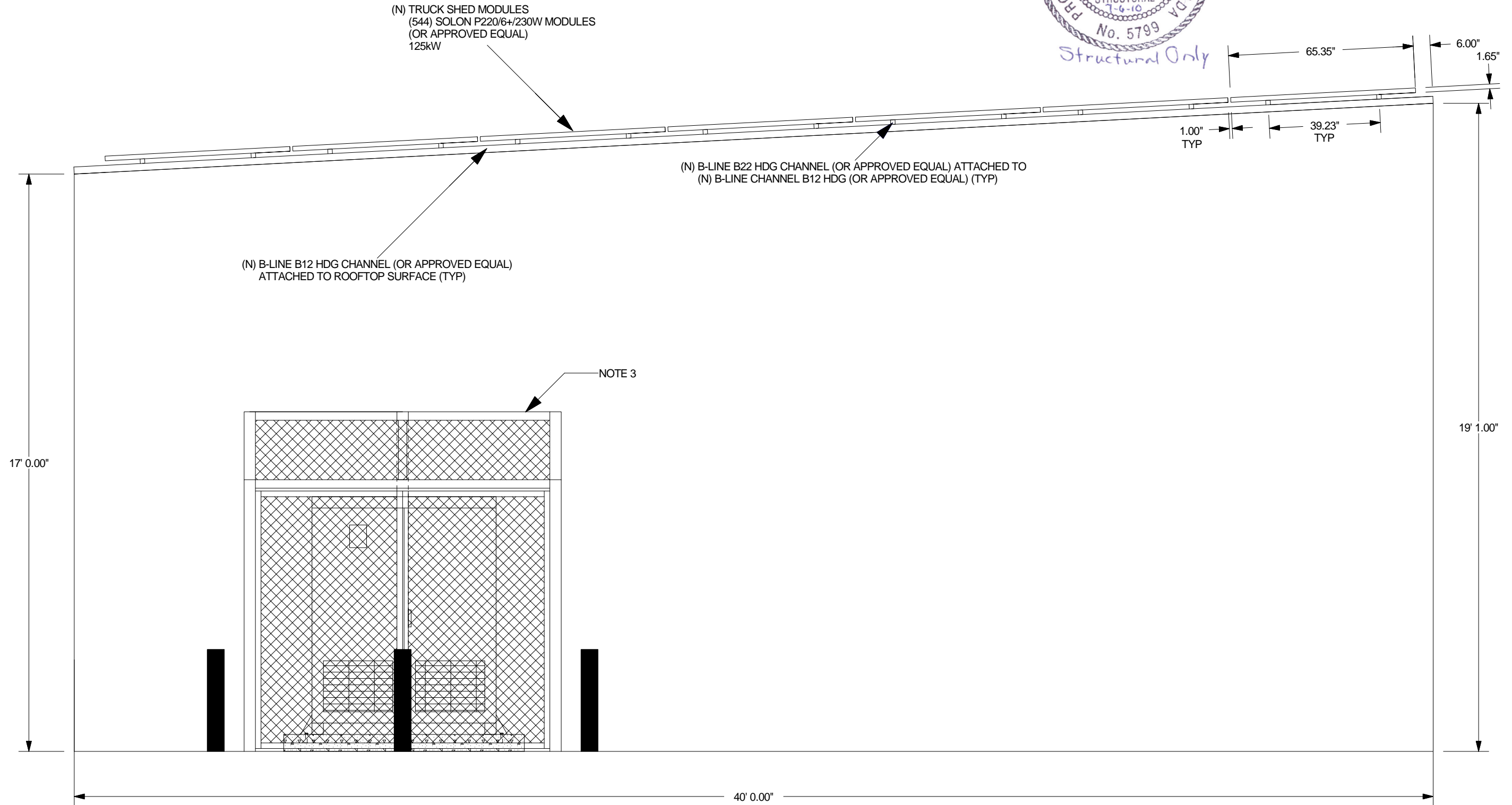
PACIFICWEST ENERGY SOLUTIONS
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 RENO, NV 89503
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 (800) 310-9596 Fax

REV.	DATE	DESCRIPTION	BY	APPD

CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 S01 MODULE LAYOUT/ANCHORAGE TOP
 OPTION A: TRUCK SHED ONLY

NOTES:

1. SLOPE OF TRUCK SHED ROOF EQUALS 3.0 DEGREES
2. MODULES ATTACHED TO B-LINE B22 CHANNEL AT FOUR PLACES W/ S-5 SOLAR PANEL CLAMPS (OR APPROVED EQUAL), 3/8" DIA. A307 BOLT, LOCKWASHER, SPRINGNUT ASSEMBLY
3. (N) INVERTER, CONCRETE PAD, SHADE STRUCTURE SEE S04, S05, S06 FOR DETAILS



DESIGNED BY: _____
 DRAWN BY: J.C.
 CHECKED BY: C.R.
 SCALE (HORIZ): 1"=3'
 SCALE (VERT): 1"=3'
 PLOT DATE: _____

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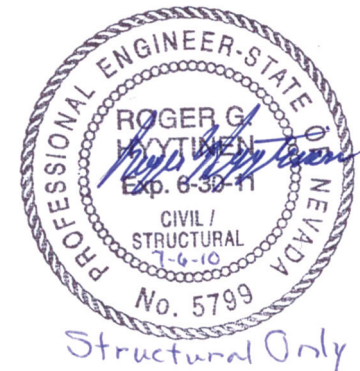
REV.	DATE	DESCRIPTION	BY	APPD

CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 S02 MODULE ANCHORAGE SIDE
 OPTION A: TRUCK SHED ONLY

SHEET
 5
 OF
 9

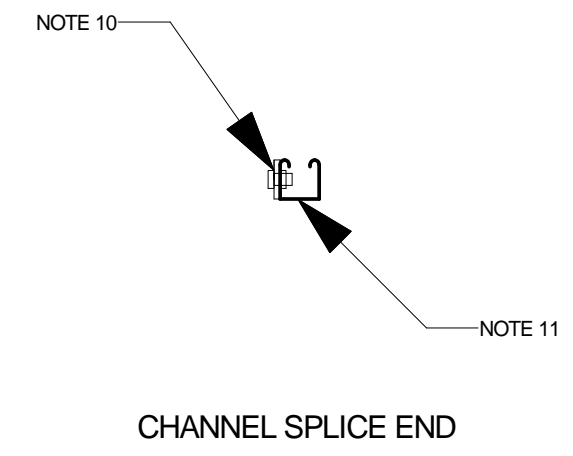
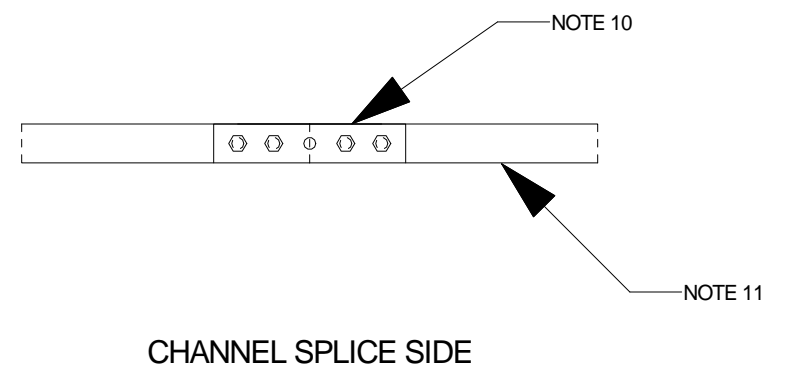
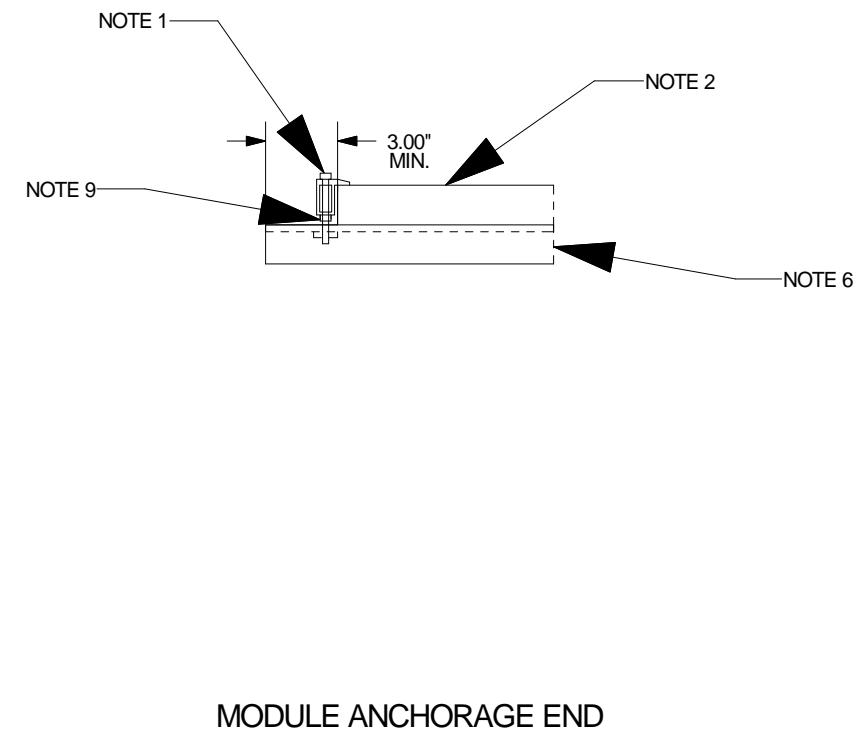
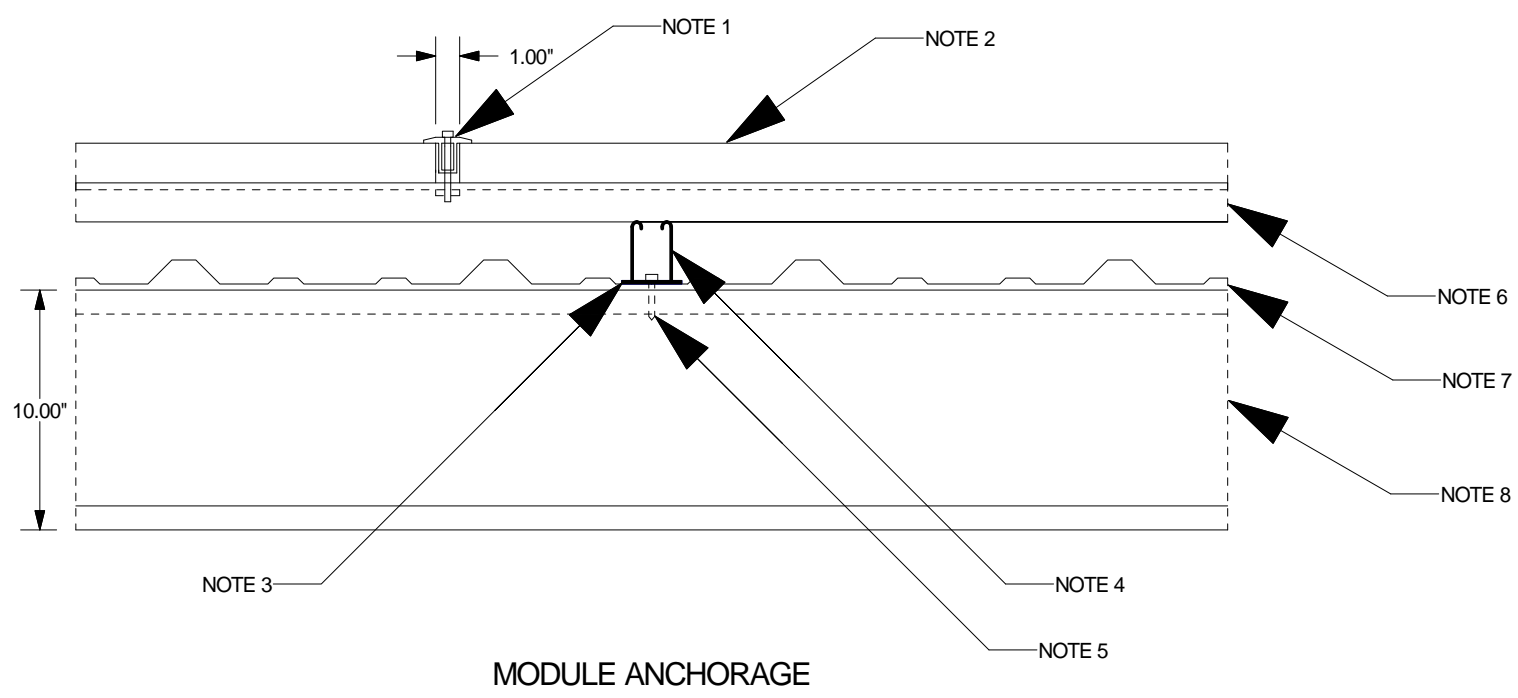
NOTES:

1. (N) S-5 SOLAR PANEL CLAMP (OR APPROVED EQUAL) W/ 3/8" DIA. A307 BOLT, LOCKWASHER AND SPRINGNUT ASSEMBLY (TYP)
2. (N) SOLON P220/6+/230W MODULE (OR APPROVED EQUAL)
3. (N) CONSTRUCTION ADHESIVE GASKET STRIP (SUBMIT FOR APPROVAL) (TYP)
4. (N) B-LINE B12 HDG CHANNEL (OR APPROVED EQUAL) @ 5' O.C. (TYP)
5. (N) (2) 1/4"-14X1 1/2" MAXISEAL TEK SCREWS @ 1" O.C. EACH PURLIN (TYP)
6. (N) B-LINE B22 HDG CHANNEL (OR APPROVED EQUAL) (2) LINES PER PANEL ROW (TYP)
7. (E) 1 1/4" ROOF DECK
8. (E) 10" Z-PURLIN @ 4' O.C
9. (N) ADDED NUT ON UNDERSIDE OF END CLAMP (TYP)
10. (N) B342 HDG FIVE HOLE SPLICE PLATE W/ (4) 1/2" DIA. A307 BOLT, NUT, LOCKWASHER AND WASHER (TYP)
11. (N) B-LINE B22 & B12 HDG CHANNEL (OR APPROVED EQUAL) (CENTER B22 SPLICES BETWEEN B12 CHANNELS, CENTER B12 SPLICES BETWEEN Z-PURLINS) (TYP)



DESIGNED BY:	JC
DRAWN BY:	CR
CHECKED BY:	N/A
SCALE (HORIZ):	N/A
SCALE (VERT):	N/A
PLOT DATE:	

PACIFICWEST ENERGY SOLUTIONS
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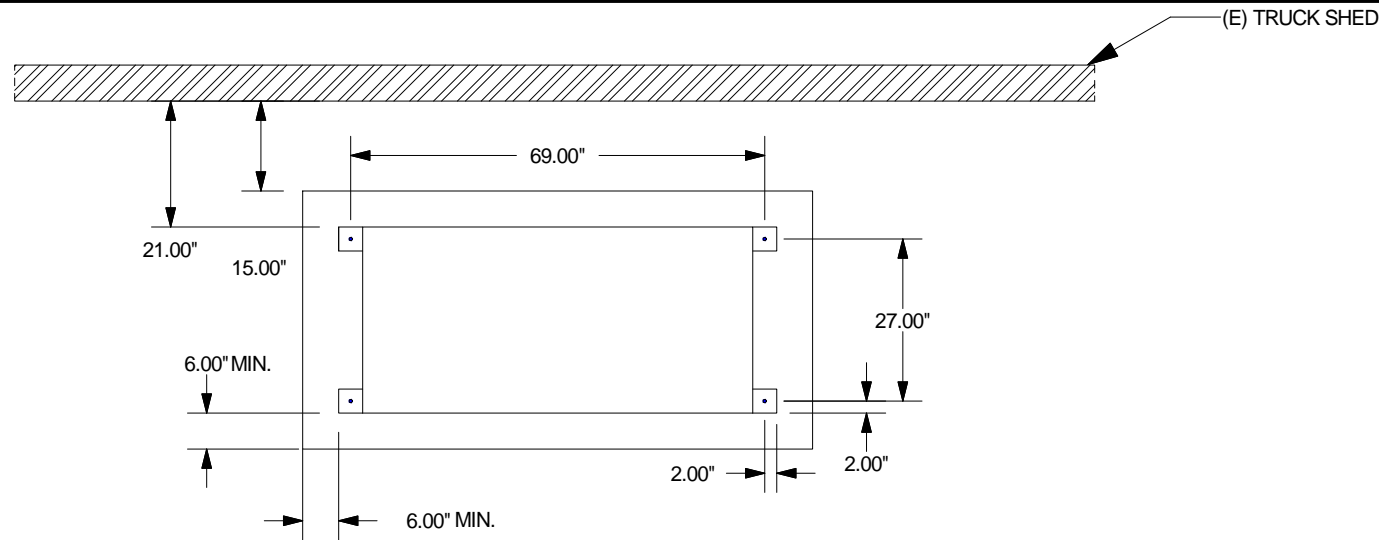


REV.	DATE	DESCRIPTION	BY	APPD

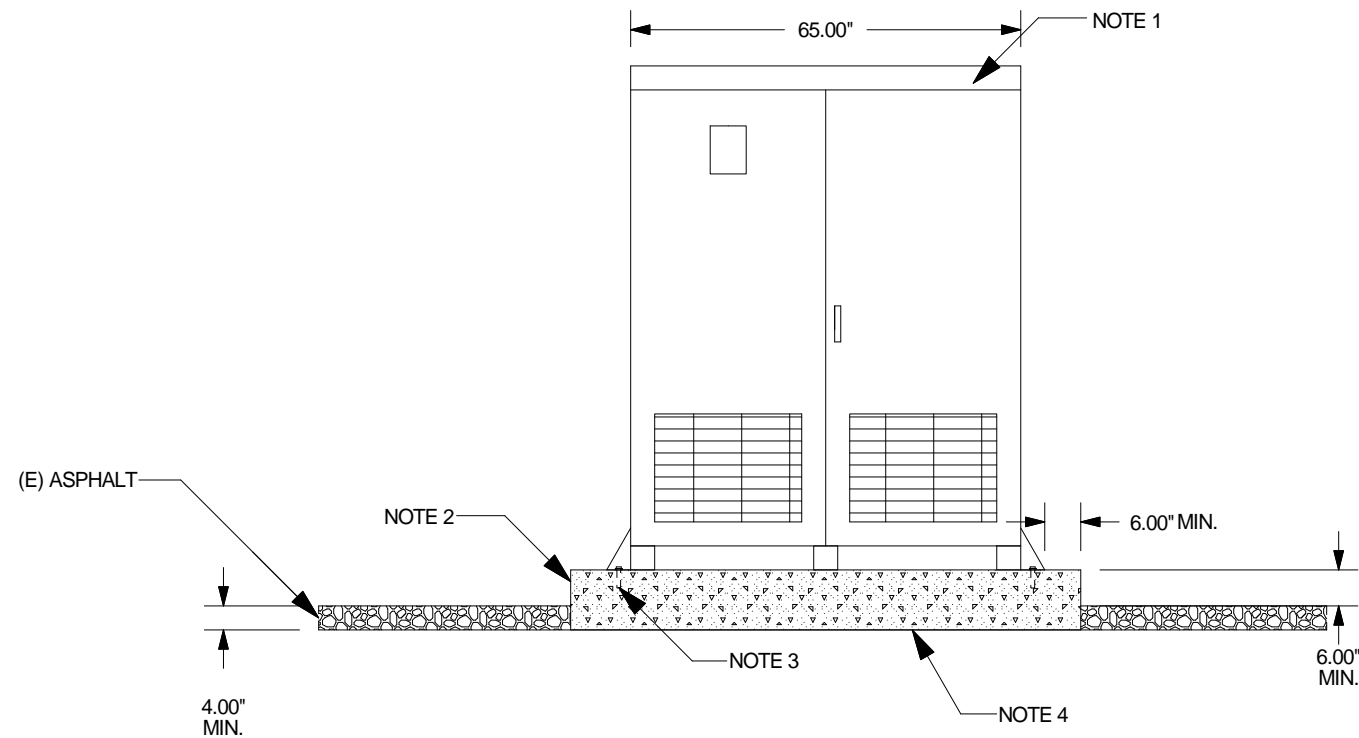
CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 S03 PENETRATION DETAILS
 OPTION A: TRUCK SHED ONLY

NOTES:

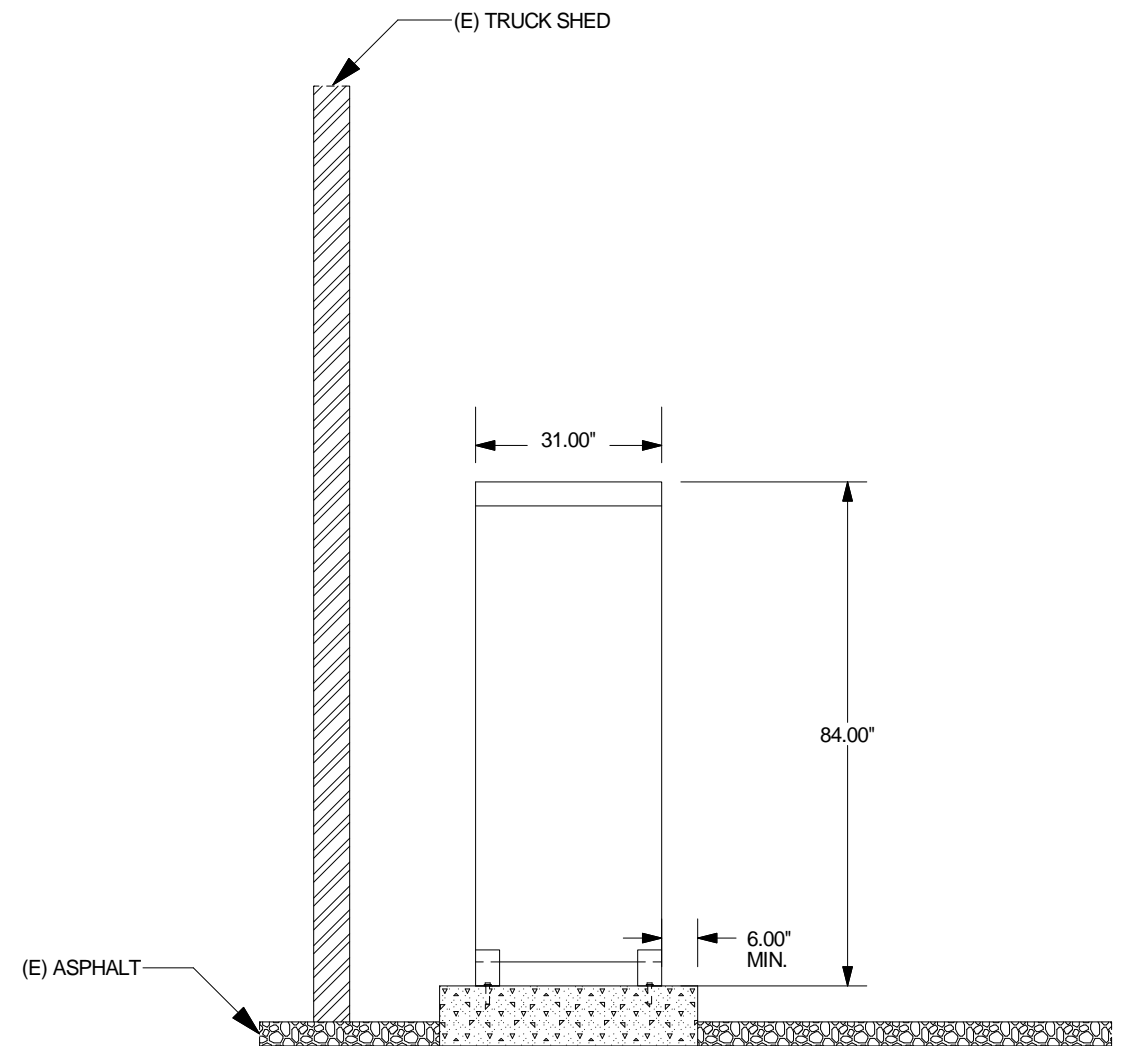
1. (N) SATCON PVS-135 (480) INVERTER (OR APPROVED EQUAL)
2. (N) CONCRETE PAD TO BE 4000 PSI, AIR ENTRAINED CITY MIX WITH #4 REBAR 12" O.C. AT 2" CLEAR OF TOP. DESIGN STRESSES DO NOT EXCEED 2500 PSI, SO NO SPECIAL INSPECTION IS REQUIRED
3. (4) 3/4" EXPANSION ANCHORS W/WASHER 3 1/2" MIN. EMBED. (TYP)
4. SAWCUT AND REMOVE ASPHALT & COMPACT EXISTING SUBGRADE TO 95% RELATIVE COMPACTION.



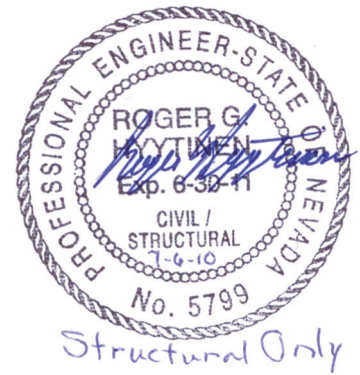
TOP ELEVATION



FRONT ELEVATION



SIDE ELEVATION



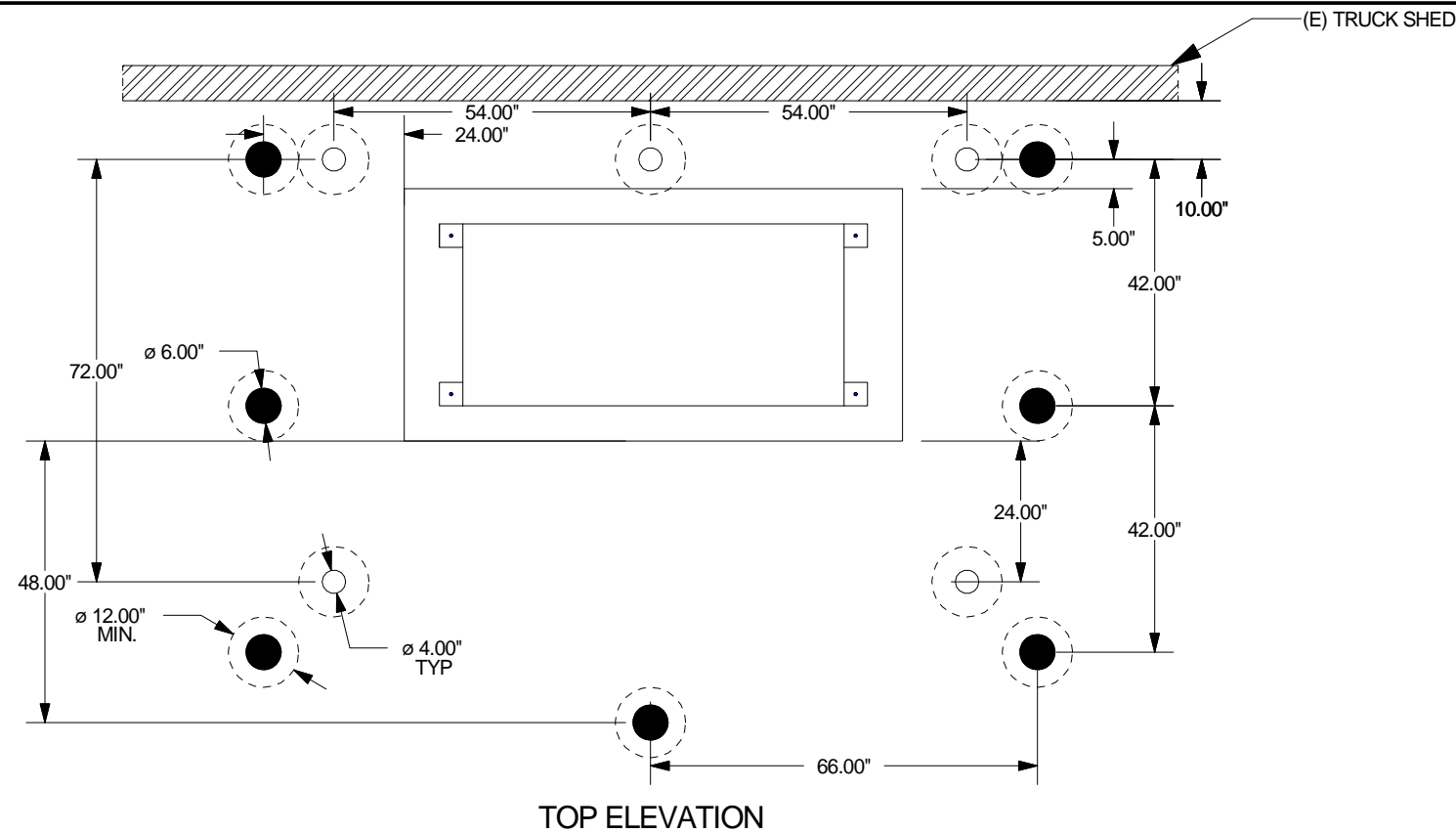
DESIGNED BY:	JC
DRAWN BY:	CR
CHECKED BY:	
SCALE (HORIZ):	3/8\" = 1'
SCALE (VERT):	3/8\" = 1'
PLOT DATE:	

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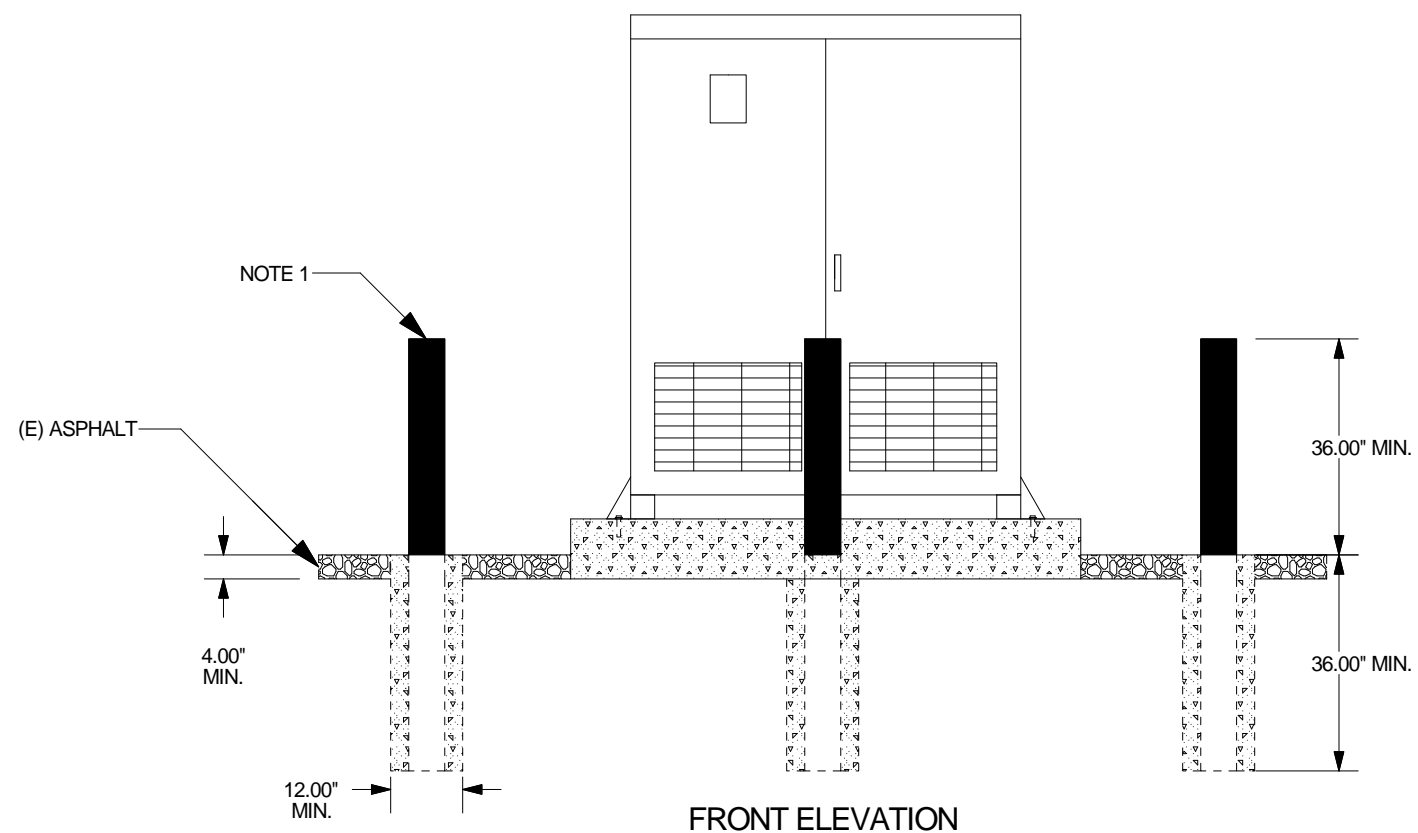
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CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 S04 INVERTER ANCHORAGE
 & NEW CONCRETE PAD
 OPTION A: TRUCK SHED ONLY

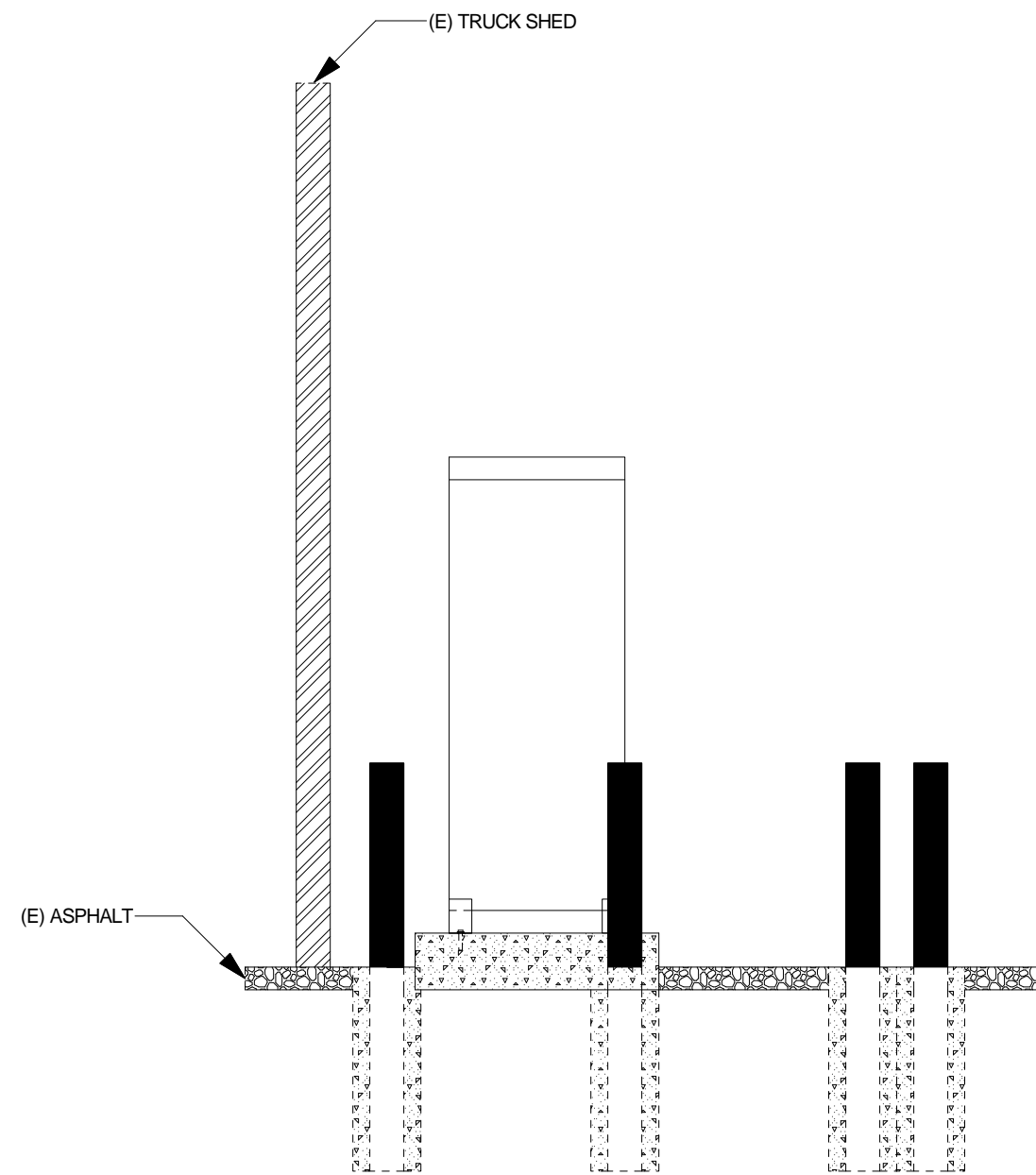
NOTES:
 1. (7) 6" DIAMETER CONCRETE FILLED BOLLARDS
 36" MIN. ABOVE AND BELOW GRADE



TOP ELEVATION



FRONT ELEVATION



SIDE ELEVATION

DESIGNED BY:	_____	IC
DRAWN BY:	_____	CR
CHECKED BY:	_____	SCALE (HORIZ): 3/8" = 1'
SCALE (VERT):	3/8" = 1'	SCALE (VERT): 3/8" = 1'
PLOT DATE:	_____	

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CARSON CITY PUBLIC WORKS
 SOLAR PHOTOVOLTAIC SYSTEM
 PROJECT No. 2.0805
 S06 BOLLARD DETAILS
 OPTION A: TRUCK SHED ONLY

SHEET 9 OF 9