

SYSTEM INFORMATION	
MW-AC @ POI:	96
NAMEPLATE MVA:	110
POI VOLTAGE (KV):	115
COLLECTION SYSTEM VOLTAGE (KV):	34.5
MW-DC:	115.2
SITE DC-AC RATIO @ POI:	1.2
SITE INFORMATION	
ASHRAE STATION NAME:	SANTA FE, NM, USA
ASHRAE 0.4% DB MAX. TEMPERATURE:	33.6°C
ASHRAE ANNUAL DB MEAN MIN. TEMP.:	-16.7°C
LATITUDE:	35.5415
LONGITUDE:	-106.0106
MODULE	
MODULE MANUFACTURER:	BYD SOLAR
MODULE MODEL #:	MLTK-36
STC WATTAGE (W):	560
VOLTAGE RATING (V):	1500 (VDC)
DIMENSIONS:	2278x1134x35MM
MODULES PER STRING:	26
PV ARRAY	
MODULE QUANTITY:	205,712
TOTAL STRINGS:	7912
LOAD BREAK DISCONNECT QUANTITY:	456
PV INVERTER	
INVERTER MANUFACTURER:	SUNGROW
INVERTER MODEL #:	SG4400UD-MV-US
KVA @ 40° C:	4400
KVA @ DESIGN TEMP:	4400
MAX. INPUT VOLTAGE (V-DC):	1500
INV QUANTITY:	25
TRACKER	
TRACKER MANUFACTURER AND MODEL:	ATI DURATRACK HZ V3
AZIMUTH (DEG):	180
CONFIGURATION:	1-HIGH PORTRAIT
ROTATION ANGLE LIMITS:	52°±
78 MODULE (3-STRING) TRACKER QUANTITY:	104
104 MODULE (4-STRING) TRACKER QUANTITY:	1900
TOTAL TRACKER QUANTITY:	2004
PITCH (FT) / GCR (%):	21.98' / 34%
MIN INTER-ROW SPACING (FT):	14.5

- NOTES:**
- ALL DIMENSIONS ARE IN FEET OTHERWISE SPECIFIED.
  - THIS DRAWING IS PRELIMINARY AND FOR ESTIMATING PURPOSES ONLY. IT IS NOT FOR CONSTRUCTION.
  - ALL SPECIFIED EQUIPMENTS ARE PRELIMINARY. FINAL EQUIPMENT SELECTION SHALL BE APPROVED BY OWNER.
  - PCS SIZE CONSIDERED FOR THE LAYOUT IS 4400 KVA.
  - LOCATION OF ALL EXISTING ITEMS IS APPROXIMATE AND MUST BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
  - 50' N/S DISTANCE HAS BEEN MAINTAINED BETWEEN TABLE TO TABLE WHERE PCS'S ARE LOCATED AND FOR OTHERS 12' HAS BEEN MAINTAINED.
  - INTERIOR ROADS ARE MAINTAINED AT 20' WIDE.
  - OFFSET OF MINIMUM 16' HAVE BEEN MAINTAINED FROM INTERIOR ROADS CENTER TO PV TRACKERS.
  - OFFSET OF 16' HAVE BEEN MAINTAINED FROM FENCING TO INTERIOR ROADS CENTER.
  - MINIMUM OFFSET OF 25' HAVE BEEN MAINTAINED FROM PROJECT BOUNDARY TO FENCE.
  - CURRENT LAYOUT IS BASED ON THE ALTA SHARED ON 08.10.2022
  - FOR DETAILS RELATED TO THE COLLECTOR SUBSTATION, SWITCHYARD AND BESS DESIGN DRAWINGS, REFER TO THE DRAWING SET AS PREPARED BY SUBSTATION CONTRACTOR.

**LEGEND:**

	SITE ENTRANCE W/ 20' GATE
	MET STATION
	PROJECT BOUNDARY
	PROJECT BOUNDARY - 25' SETBACK
	100YR FLOOD DEPTHS >1'
	100YR FLOOD - 50' SETBACK
	ENVIRONMENTALLY SENSITIVE AREA
	ENVIRONMENTALLY SENSITIVE AREA - 100' SETBACK
	PRAIRIE DOG COLONY
	PRAIRIE DOG COLONY - 25' SETBACK
	SLOPE KEEPOUT AREA
	115KV OVERHEAD TRANSMISSION LINE
	FWS WETLAND
	FEMA WETLAND (ZONE-A)
	LAYDOWN AREA
	FENCE
	INTERIOR ROADS
	XFMR SKID
	MEDIUM VOLTAGE AC, CIRCUIT #1
	MEDIUM VOLTAGE AC, CIRCUIT #2
	MEDIUM VOLTAGE AC, CIRCUIT #3
	MEDIUM VOLTAGE AC, CIRCUIT #4
	XFMR SKID GROUPING
	MV JUNCTION BOX
	PV PANELS 1P 4 STRING
	PV PANELS 1P 3 STRING
	30,000-GALLON WATER TANK



5717 Legacy Dr Suite 250,  
Plano, Texas 75024

PE STAMP:

**30% DESIGN**  
NOT FOR CONSTRUCTION

KEY PLAN:

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1	08/11/2023	UPDATED 30% DESIGN
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3	07/02/2024	UPDATED 30% DESIGN

PROJECT TITLE:

**RANCHO VIEJO SOLAR UTILITY**

PROJECT LOCATION:

**SANTA FE COUNTY,  
NEW MEXICO  
(35.5415, -106.0106)**

SHEET TITLE & DESCRIPTION:

**SOLAR FIELD LAYOUT PLAN**

**96 MWAC/115.2 MWDC**

PROJ NUM: PC BALAJI  
DES: J RAJESHWAR  
DWN: M AJAY  
CHK: P KRISHNA  
APV: P KRISHNA  
DATE: 07/02/2024

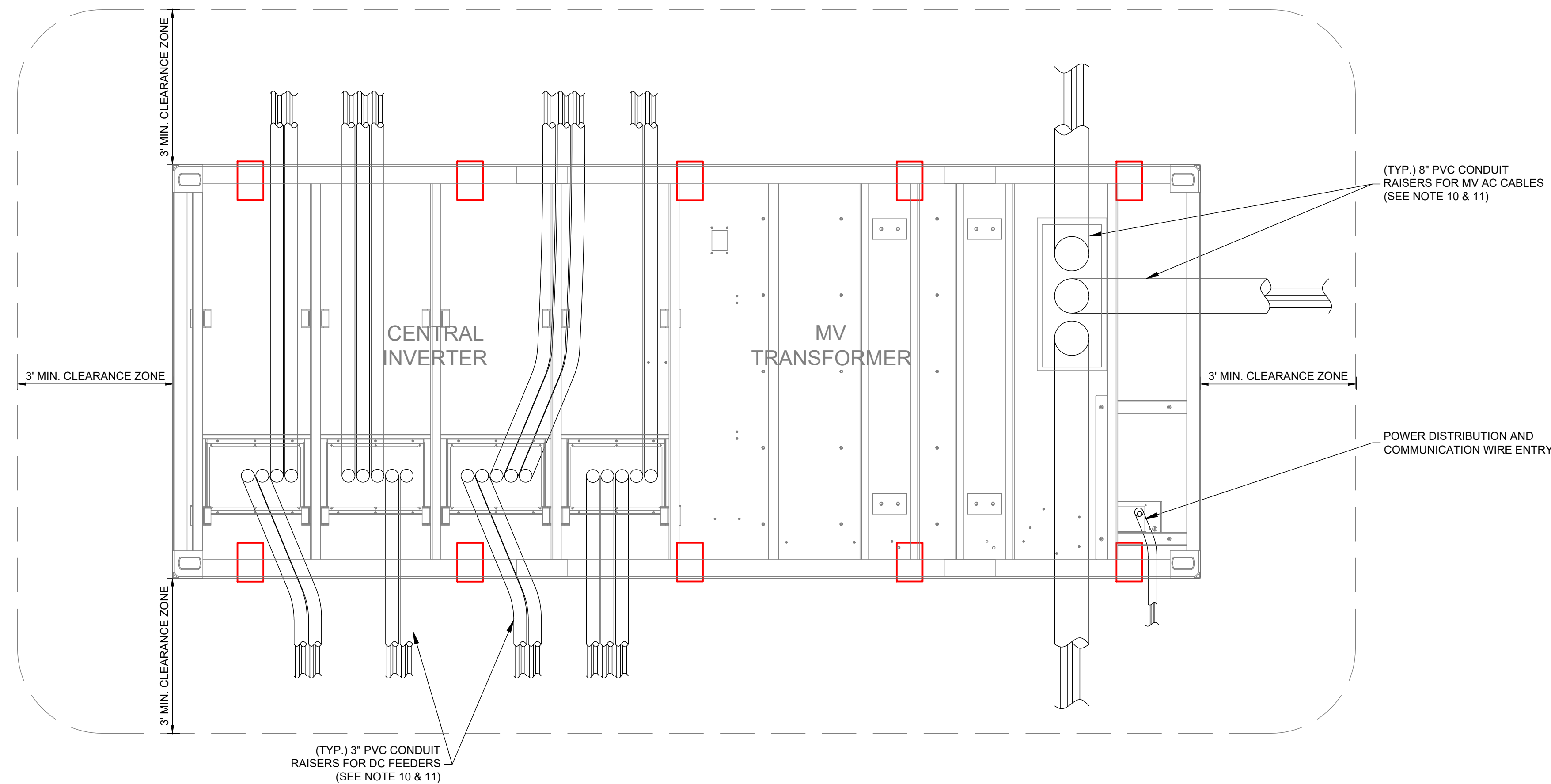
SCALE AT 24" x 36":  
0 200' 400' 600' 800'  
**1" = 400'**

SHEET NO: **PV-E.04.01** REV: **3**

PLOTTED: 7/25/2024 3:09 PM  
 C:\Users\pbalaji\OneDrive\Documents\Projects\119 AES\Design\1 - Elements\03 - PV\03-04-01 Solar Field Layout Plan.dwg  
 485 Tabletop 2436x 31000



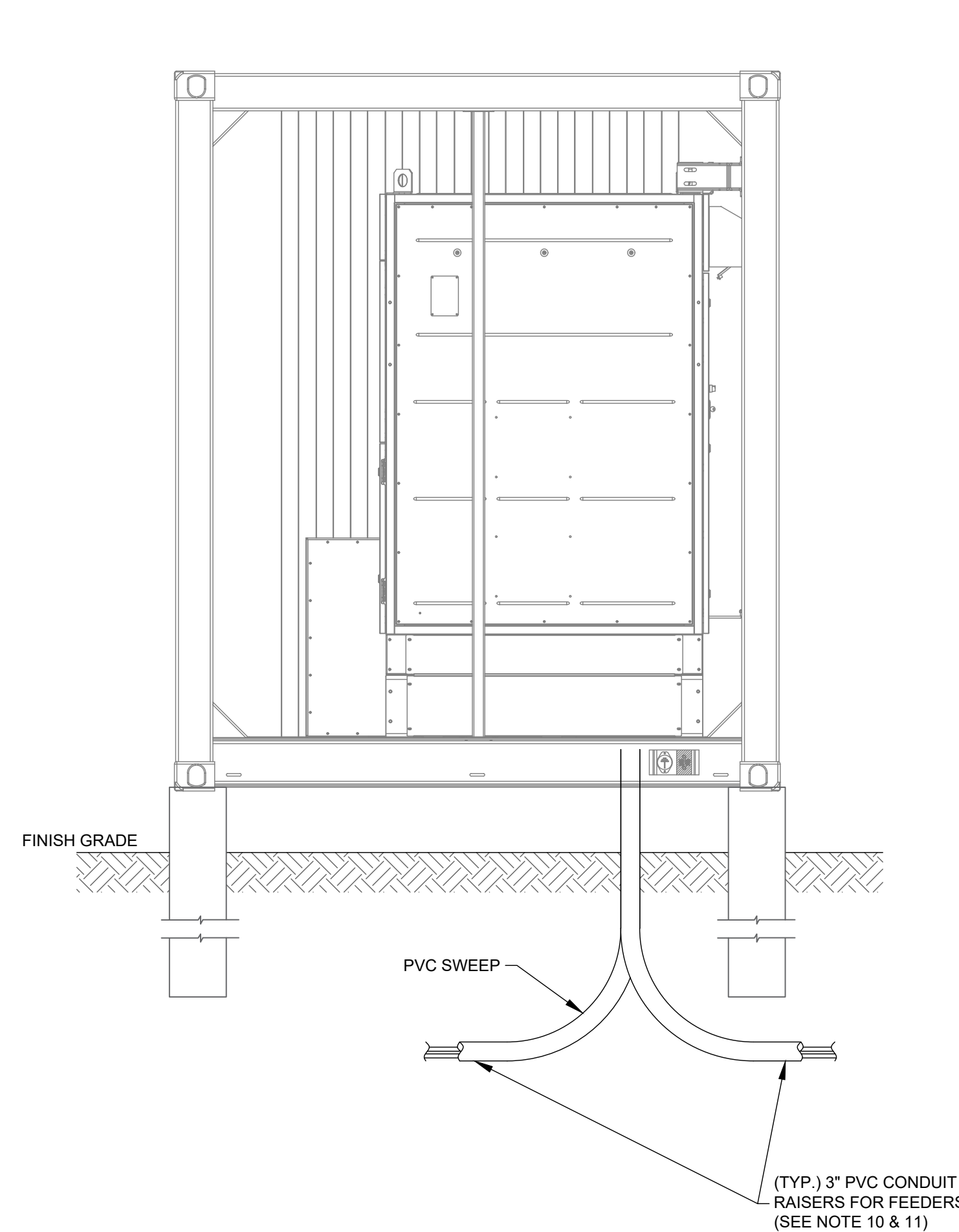




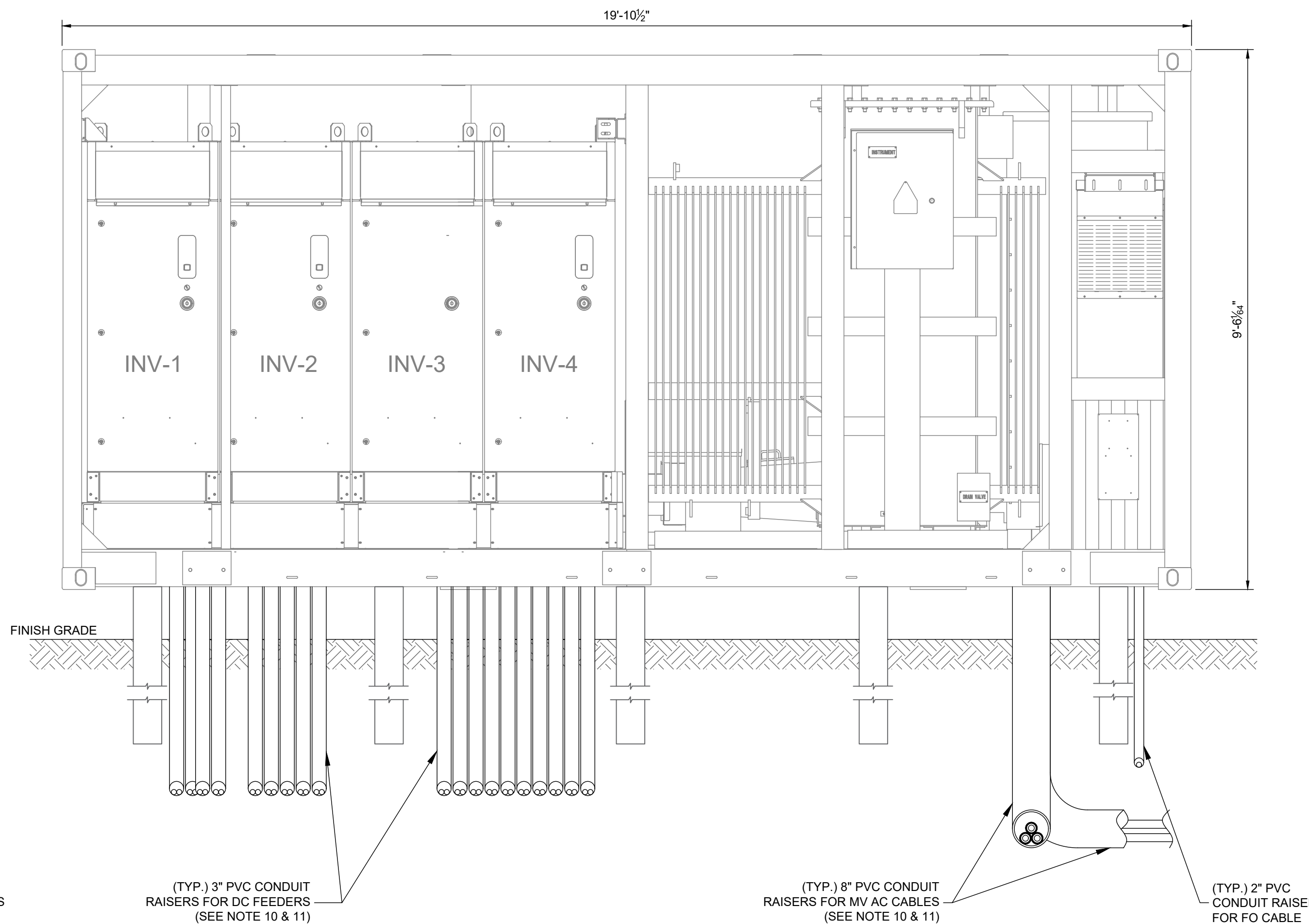
**4400KVA POWER CONVERSION STATION  
 PLAN VIEW**

**NOTES:**

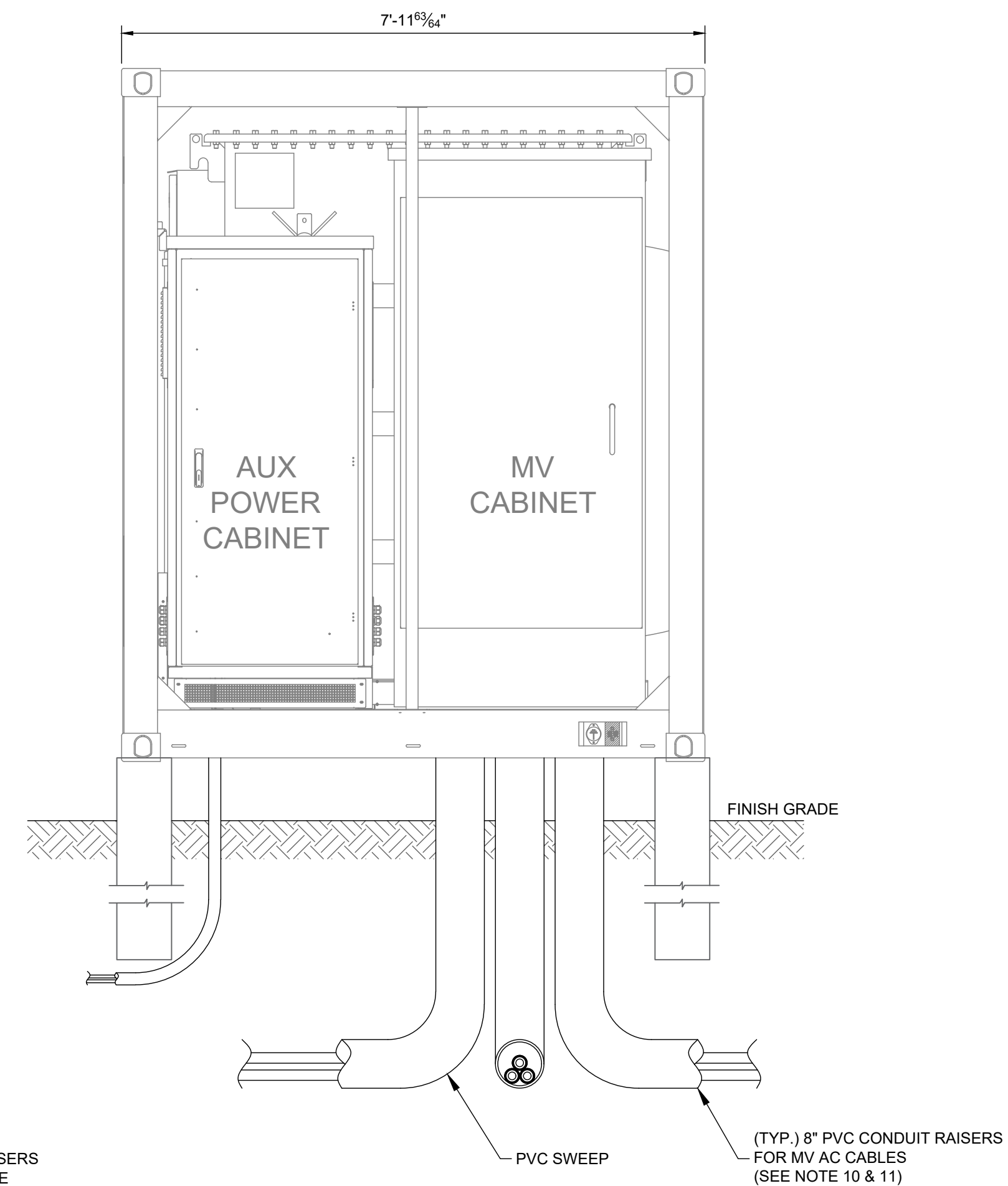
1. REFER PCS VENDOR MANUALS AND DRAWING FOR INSTALLATION DETAILS.
2. REFER DC FEEDERS SCHEDULE (PV-E.09 SHEET 01 TO 25) FOR ALL INCOMING CABLES AND QUANTITY.
3. REFER MV AC CABLE SCHEDULE (PV-E.05 SHEET 02) FOR ALL OUTGOING CABLES AND QUANTITY.
4. REFER MV AC CABLE ROUTING AND TRENCH SECTION LAYOUT (PV-E15 SHEET 01 TO 02) FOR MV ROUTING.
5. REFER TO SCADA VENDOR DRAWINGS FOR FINAL LOCATION OF FIELD NETWORK ENCLOSURE AND DETAILS RELATED TO COMMUNICATION BETWEEN COMPONENTS.
6. SEAL ENTRANCE TO ABOVE GROUND CONDUITS WITH DUCT SEALANT.
7. ORIENT MV AC AND DC FEEDER CONDUIT SWEEPS IN DIRECTION OF INCOMING CABLES AS PER SITE CONDITIONS. PROVIDE WATERTIGHT SEAL WHERE CONDUITS ENTER EQUIPMENT.
8. MINIMUM BENDING RADIUS FOR MV AC AND DC HOME RUN CABLE SHALL BE 12 TIMES THE OUTER DIAMETER OF THE CABLE OR AS PER MANUFACTURER RECOMMENDATION WHICHEVER IS GREATER.
9. DC TERMINALS IN THE INVERTERS MUST BE LISTED AND MARKED AS 90°C RATED.
10. USE SCHEDULE 80 PVC FOR RISERS WHERE CONDUIT IS EXPOSED ABOVE GRADE AND USE SCHEDULE 40 PVC FOR BELOW GRADE.
11. PVC CONDUIT:
  - DC FEEDERS: 3" DIAMETER ( 2 CABLES )
  - MV AC CABLES: 8" DIAMETER ( 3 CABLES )
 (CONTRACTOR TO ENSURE THE MV CABLES ARE IN TREFOIL FORMATION WHEN INSTALLED IN THE CONDUIT)



**LEFT SIDE ELEVATION VIEW**



**FRONT ELEVATION VIEW**



**RIGHT SIDE ELEVATION VIEW**

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**RANCHO VIEJO SOLAR  
 UTILITY**

**PROJECT LOCATION:**

**SANTA FE COUNTY,  
 NEW MEXICO  
 (35.5415, -106.0106)**

**SHEET TITLE & DESCRIPTION:**

**PCS GA PLAN &  
 SECTION LAYOUT**

**SG4400UD-MV-US**

**PROJ  
 NUM:**

DES: PC BALAJI

DWN: L RAMA KRISHNA

CHK: M AJAY

APV: P KRISHNA

DATE: 03/04/2024

SCALE AT 24" x 36"

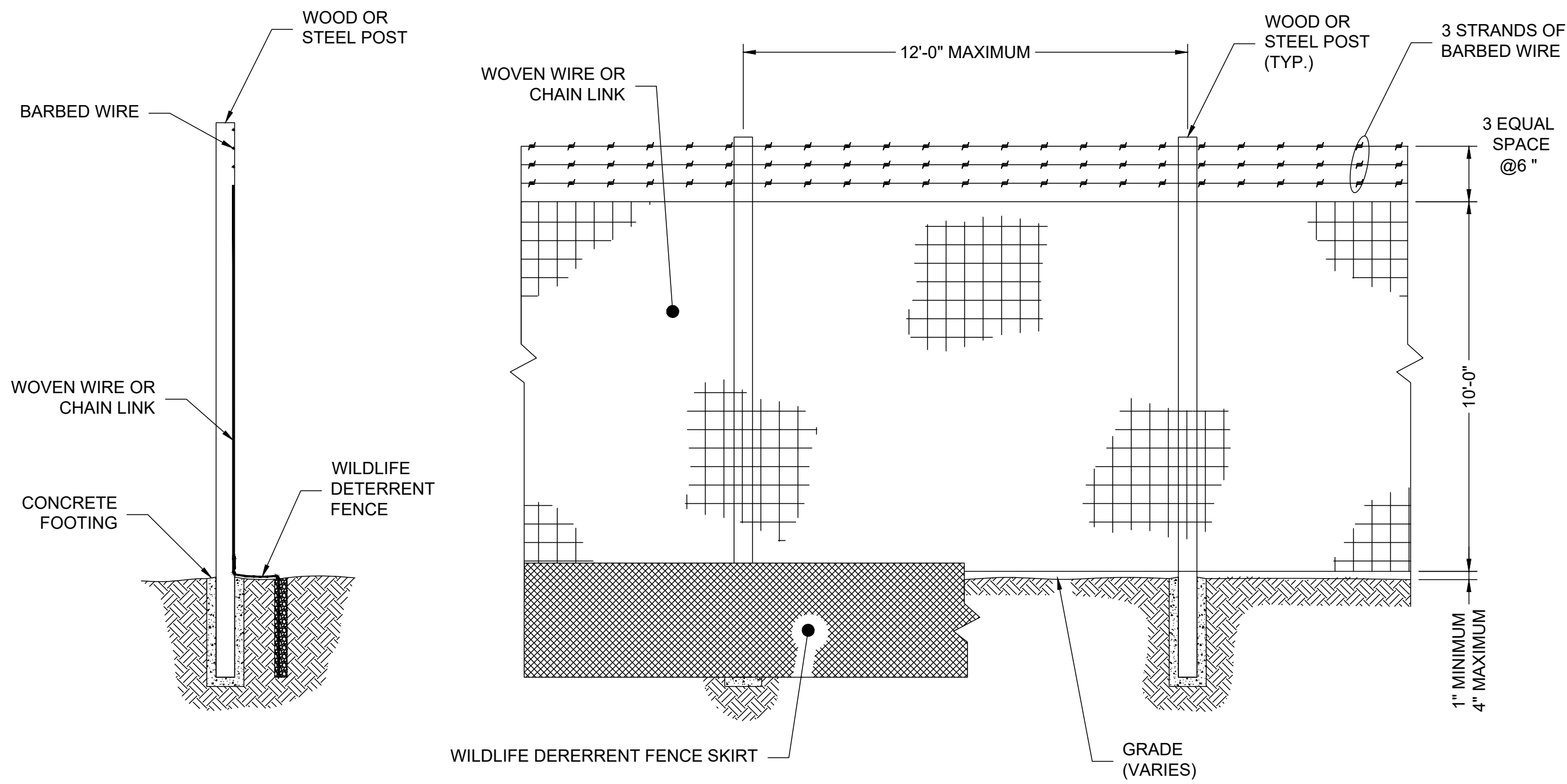
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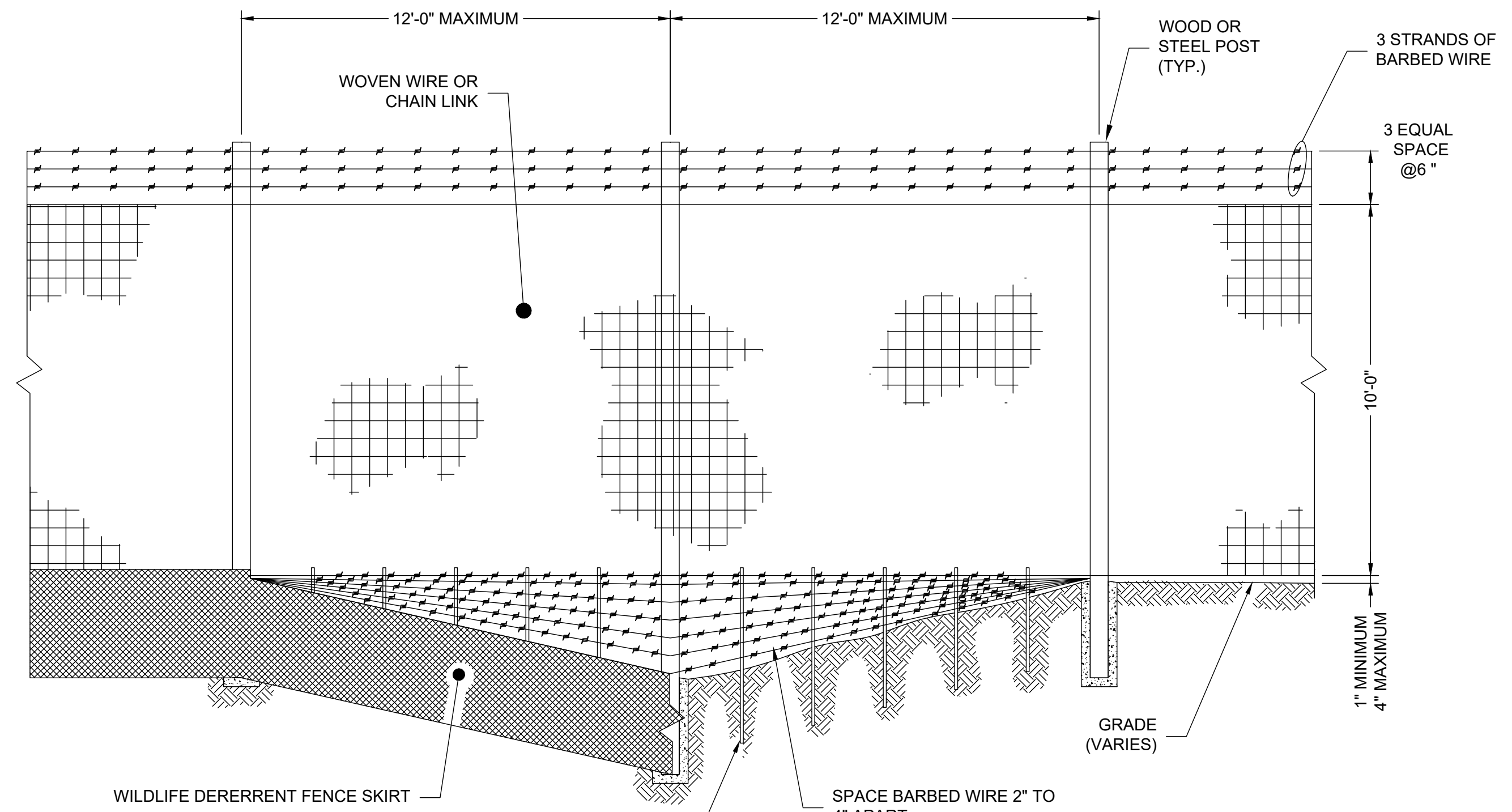
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REV:

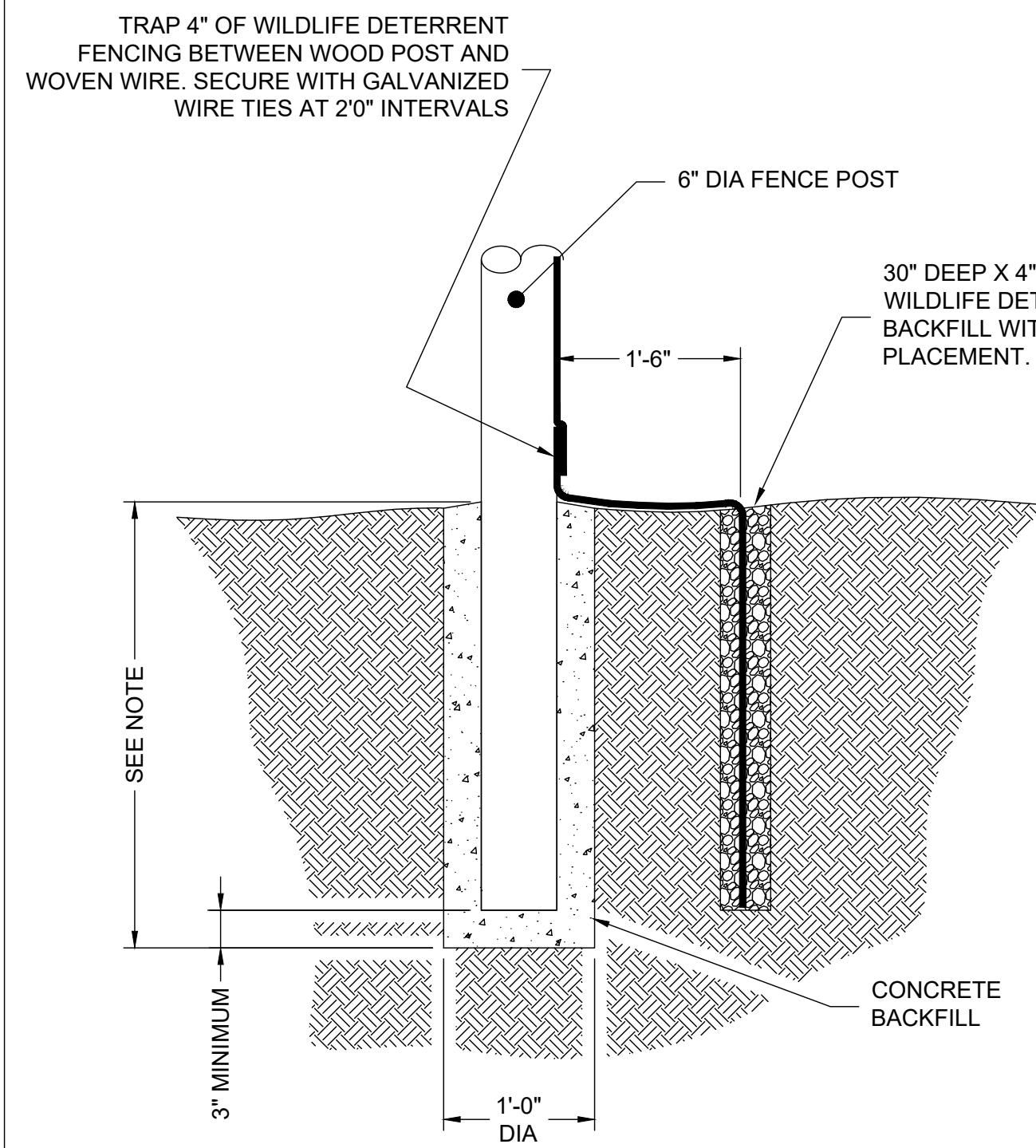
**2**



**WILDLIFE EXCLUSION FENCE**  
 SOME ITEMS OMITTED FOR CLARITY

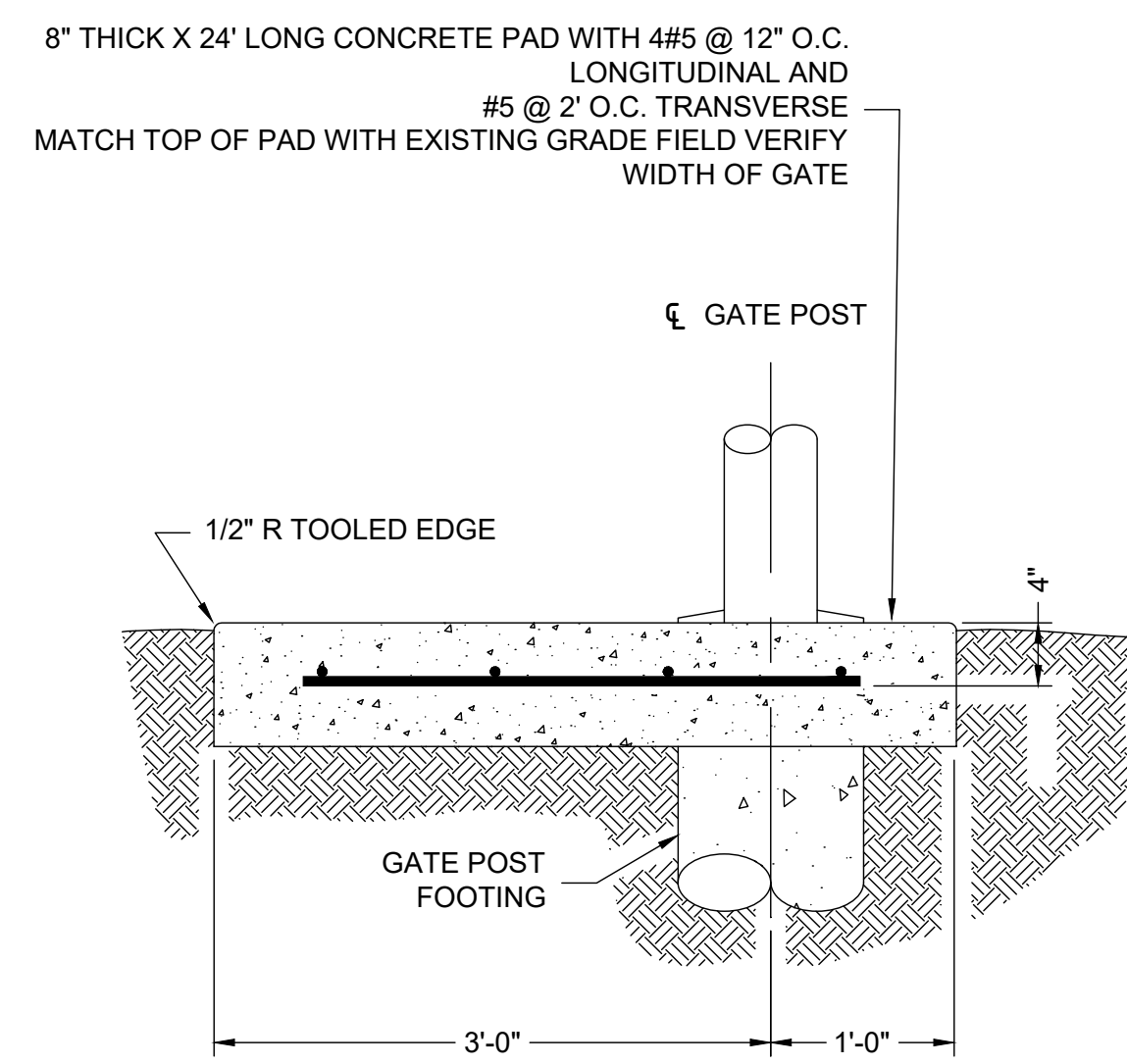


**WILDLIFE EXCLUSION FENCE DITCH CROSSING**  
 SOME ITEMS OMITTED FOR CLARITY



NOTE: NOMINAL DEPTH OF FENCE POST FOOTING IS 30". AT BRACES, GATES, CORNER PULL AND ENDS INCREASE DEPTH TO 36"

**STANDARD WOVEN WIRE FENCE WITH WILDLIFE DETERRENT FENCE SKIRT FOOTING AND INSTALLATION DETAILS**



**GATE CONCRETE PAD DETAIL**  
 SOME ITEMS OMITTED FOR CLARITY

1  
 C.08.02A N.T.S.

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**RANCHO VIEJO SOLAR UTILITY**

PROJECT LOCATION:

**SANTA FE COUNTY,  
 NEW MEXICO  
 (35.5415, -106.0106)**

SHEET TITLE & DESCRIPTION:

**PV CIVIL**

**SITE DETAILS**

PROJ

NUM:

DES: B SURESH

DWN: B SURESH

CHK: S YASHWANTH

APV: M TREW

DATE: 07/02/2024

SCALE AT 24" x 36":

**N.T.S**

SHEET NO:

**PV-C.08.02**

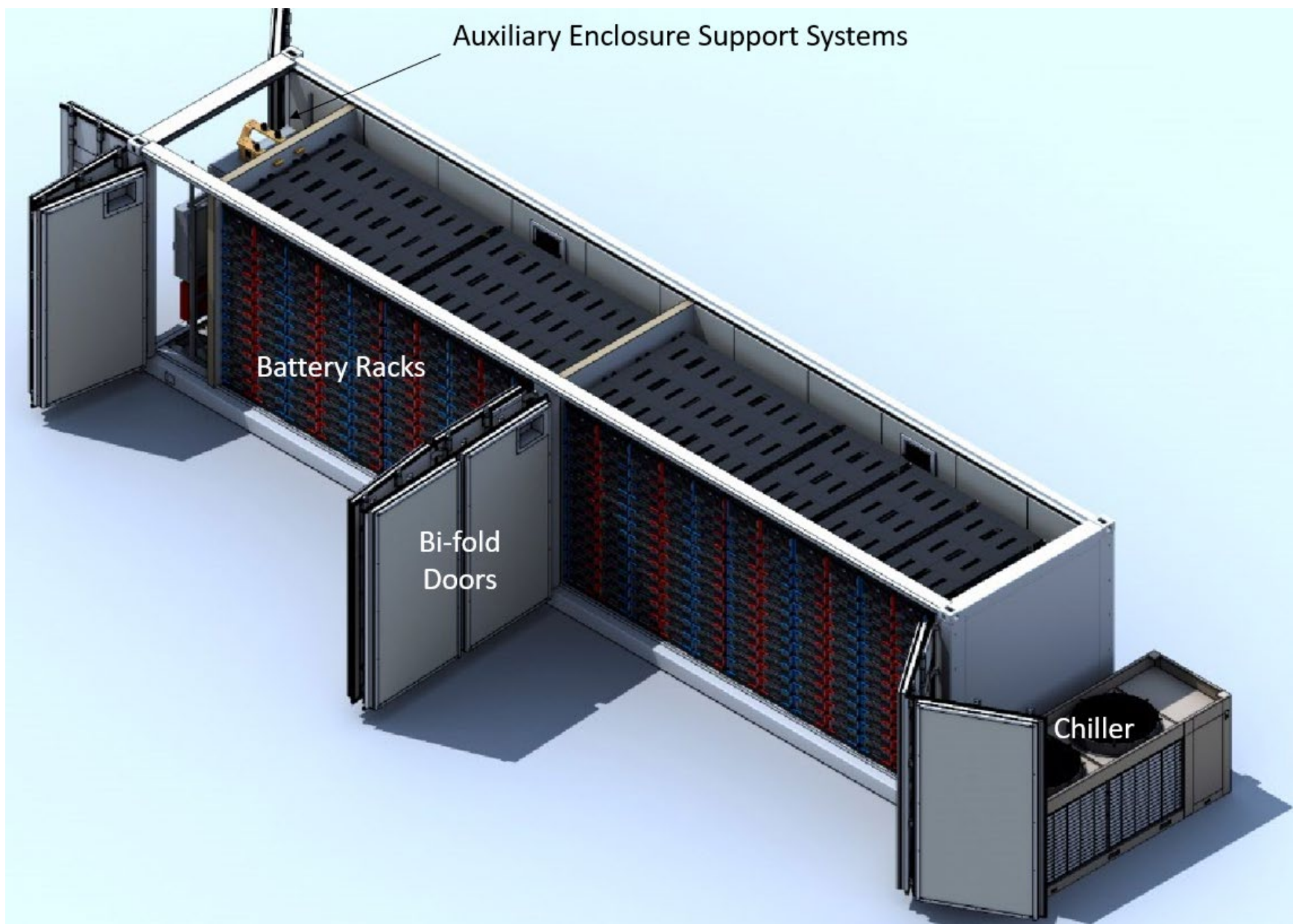
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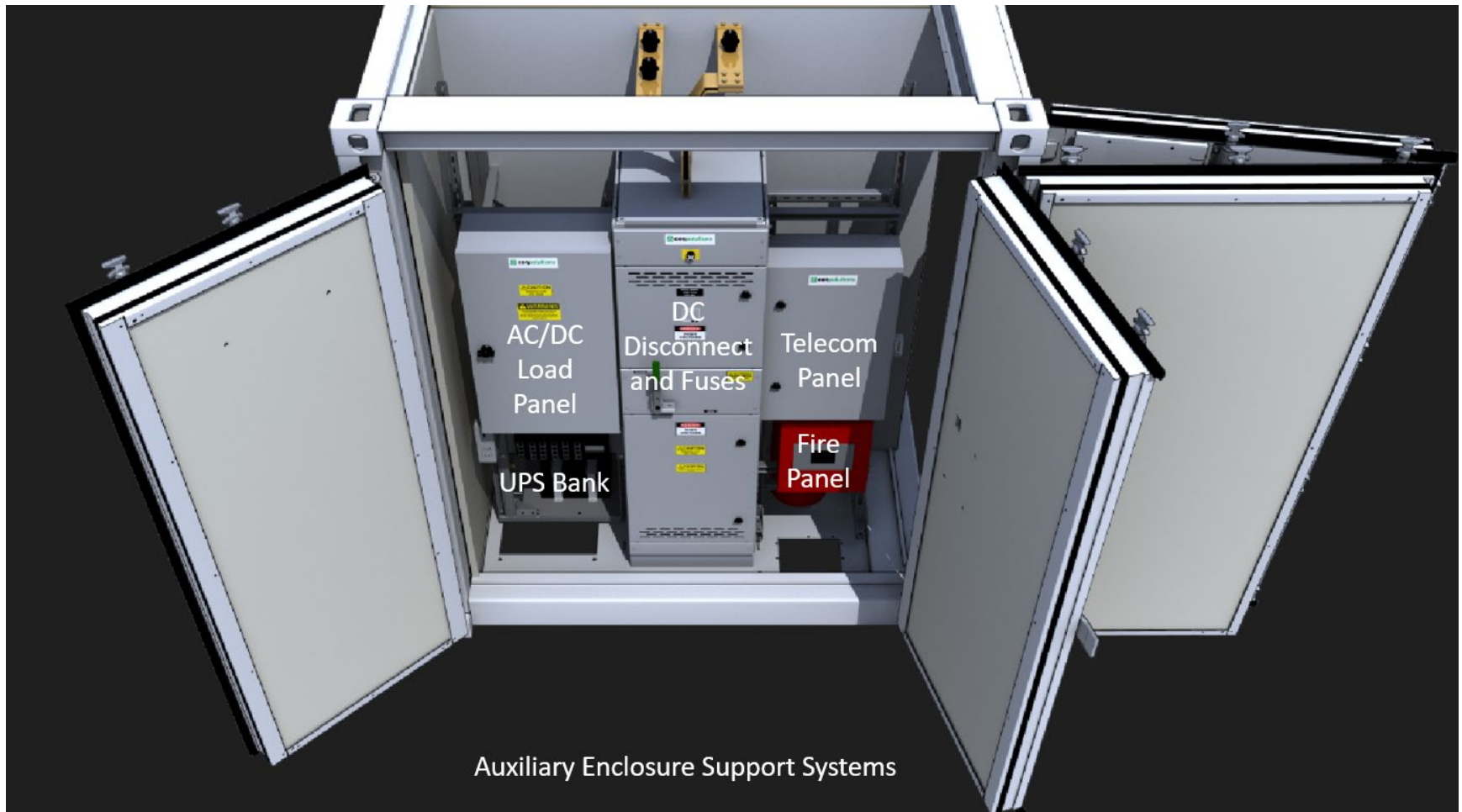


Auxiliary Enclosure Support Systems

Battery Racks

Bi-fold  
Doors

Chiller



Auxiliary Enclosure Support Systems





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PROJECT LOCATION:

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NEW MEXICO  
(35.5415, -106.0106)**

SHEET TITLE & DESCRIPTION:

**ELEVATION  
A-A**

**115/34.5kV COLLECTOR  
SUBSTATION**

PROJ

NUM:

DES:

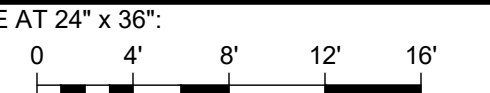
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CHK:

APV:

DATE:

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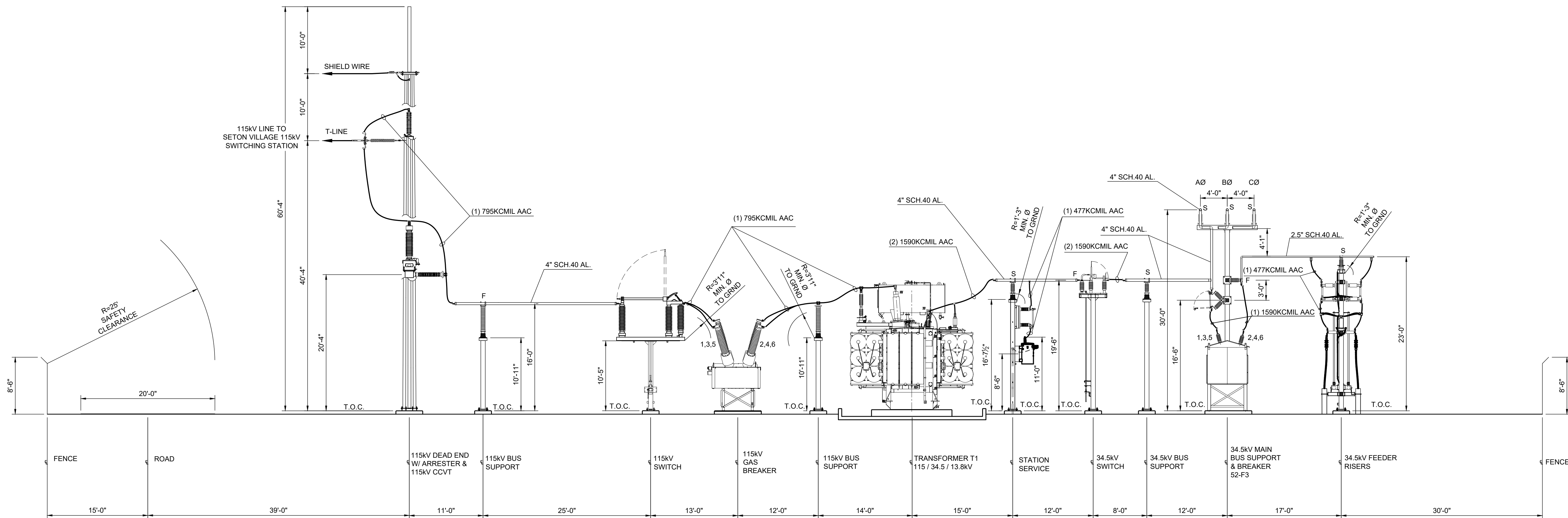
**1/8" = 1'-0"**

SHEET NO:

**HV-P.02.01**

REV:

**1**



**ELEVATION A-A**

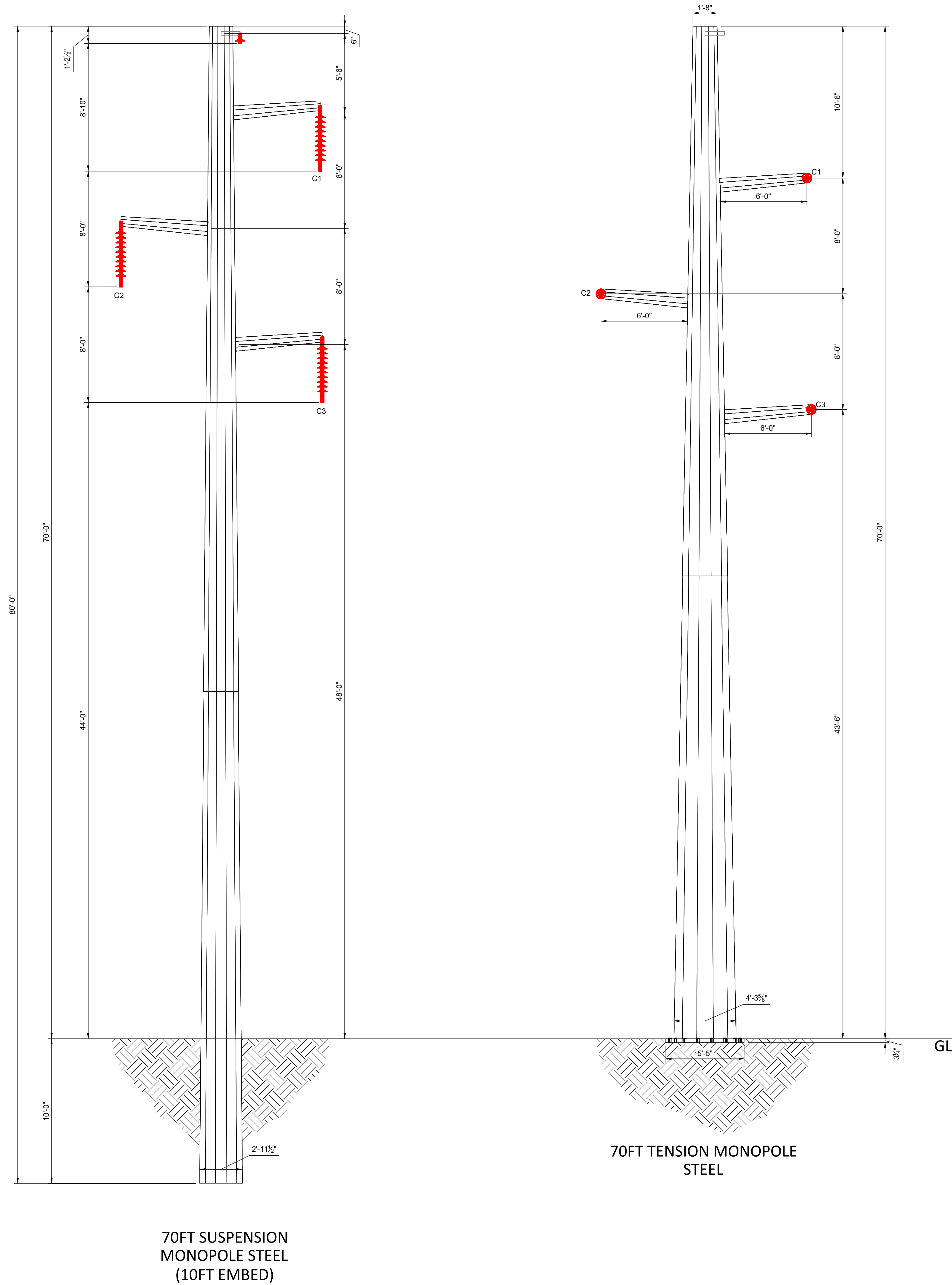
**GENERAL ARRANGEMENT NOTES**

1. JUMPERS
  - 1.1. ALL 115kV JUMPERS= (1) 795 AAC LILAC
  - 1.2. T1 MAIN BUS JUMPERS = (2) 1590 AAC COREOPSIS
  - 1.3. 34.5kV FEEDER BREAKER JUMPERS = (2) 477 AAC COSMOS
  - 1.4. 34.5kV FEEDER JUMPERS = (1) 477 AAC COSMOS
2. PIPE BUS
  - 2.1. ALL 115kV BUS = 4" SCH 40 6063-T6
  - 2.2. 34.5kV MAIN BUS = 4" SCH 40 6063-T6
  - 2.3. 34.5kV FEEDER BUS = 2.5" SCH 40 6063-T6
3. CLEARANCES
  - 3.1. 115kV CLEARANCE (650kV BIL)
    - 3.1.1. PHASE TO PHASE: MIN. 8'-0"
    - 3.1.2. METAL TO METAL: MIN. 4'-11"
    - 3.1.3. PHASE TO GROUND: MIN. 3'-11"
    - 3.1.4. VERTICAL CLEARANCE TO LIVE PART: 14'-0"
    - 3.1.5. HORIZONTAL CLEARANCE FROM FENCE TO LIVE PART: 14'-6"
  - 3.2. 34.5kV CLEARANCE (250kV BIL)
    - 3.2.1. PHASE TO PHASE: MIN. 4'-0"
    - 3.2.2. METAL TO METAL: MIN. 1'-8"
    - 3.2.3. PHASE TO GROUND: MIN. 1'-3"
    - 3.2.4. VERTICAL CLEARANCE TO LIVE PART: 11'-1"
    - 3.1.5. HORIZONTAL CLEARANCE FROM FENCE TO LIVE PART: 11'-1"



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08/02/2023 11:17 AM



70FT SUSPENSION  
MONOPOLE STEEL  
(10FT EMBED)

70FT TENSION MONOPOLE  
STEEL

NOTES:

1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
2. THE DESIGNATED EMBEDMENT LENGTH IS CALCULATED AS 10% OF THE TOTAL POLE LENGTH ABOVE THE GROUND, PLUS AN ADDITIONAL 2 FEET. THIS DECISION IS MADE BASED ON DESIGN CONSIDERATIONS, RESULTING IN A FINAL EMBEDMENT LENGTH OF 10 FEET.
3. ALL ELECTRICAL CLEARANCES WERE CONSIDERED AS PER NESC RULE 235.
4. DUE TO THE NON AVAILABILITY OF GEO-TECHNICAL INVESTIGATION REPORT, IN PARTICULAR, TO TRANSMISSION LINE CORRIDOR, WE HAVE CONSIDERED THE PARAMETERS FOR FOUNDATION DESIGN BASED ON SUBSTATION BORING LOG REPORT AND ASSUMING THE WORST CASE SCENARIO WITH UNIFORM LAYER OF SANDY SILT THROUGH OUT.



2180 South 1300 East, Suite 600  
Salt Lake City, UT 84106-2749  
(801) 679 - 3500



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RANCHO VIEJO SOLAR  
UTILITY

PROJECT LOCATION:

SANTA FE COUNTY,  
NEW MEXICO  
(35.5415, -106.0106)

SHEET TITLE & DESCRIPTION:

STEEL POLE  
GEOMETRY

115kV HV GENERATION  
TIE LINE

PROJ

NUM:

DES: C M HAREESH

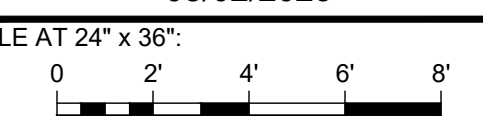
DWN: G VENKATESH

CHK: JAGADEESH Y

APV: P KRISHNA

DATE: 08/02/2023

SCALE AT 24" x 36":



1/4" = 1'-0"

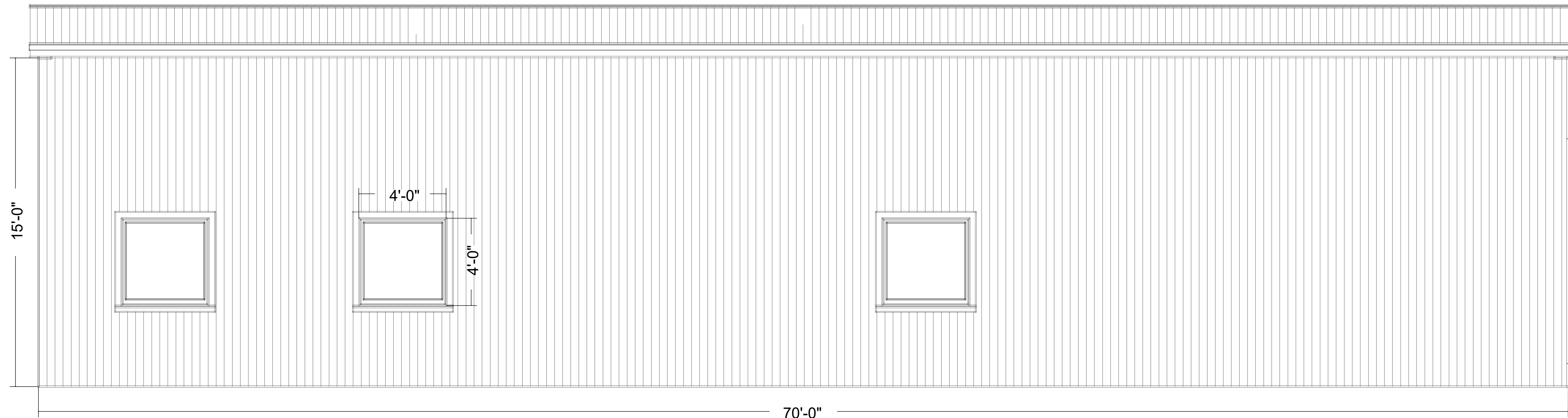
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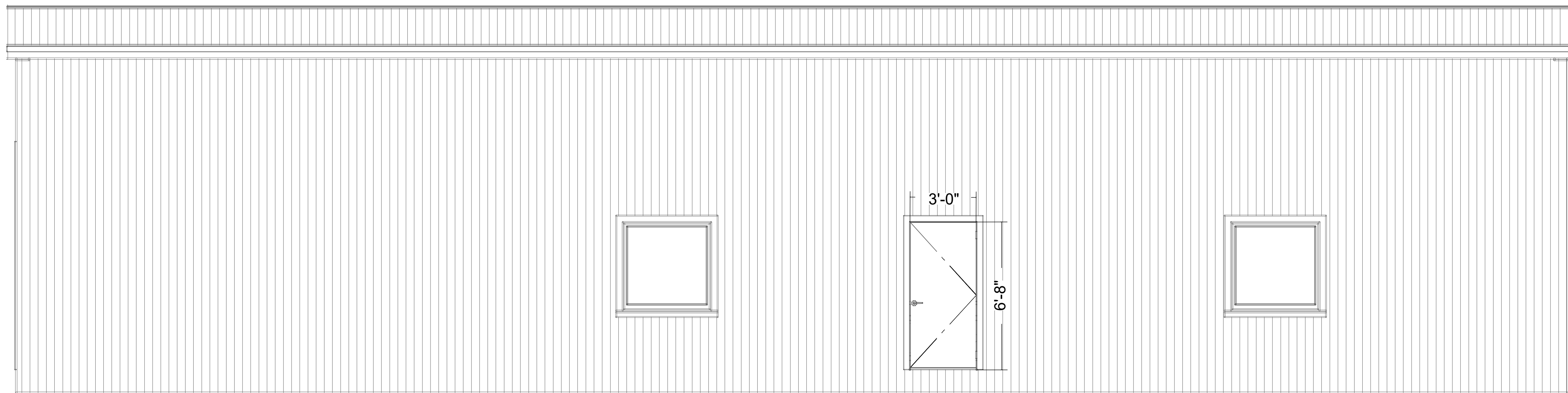
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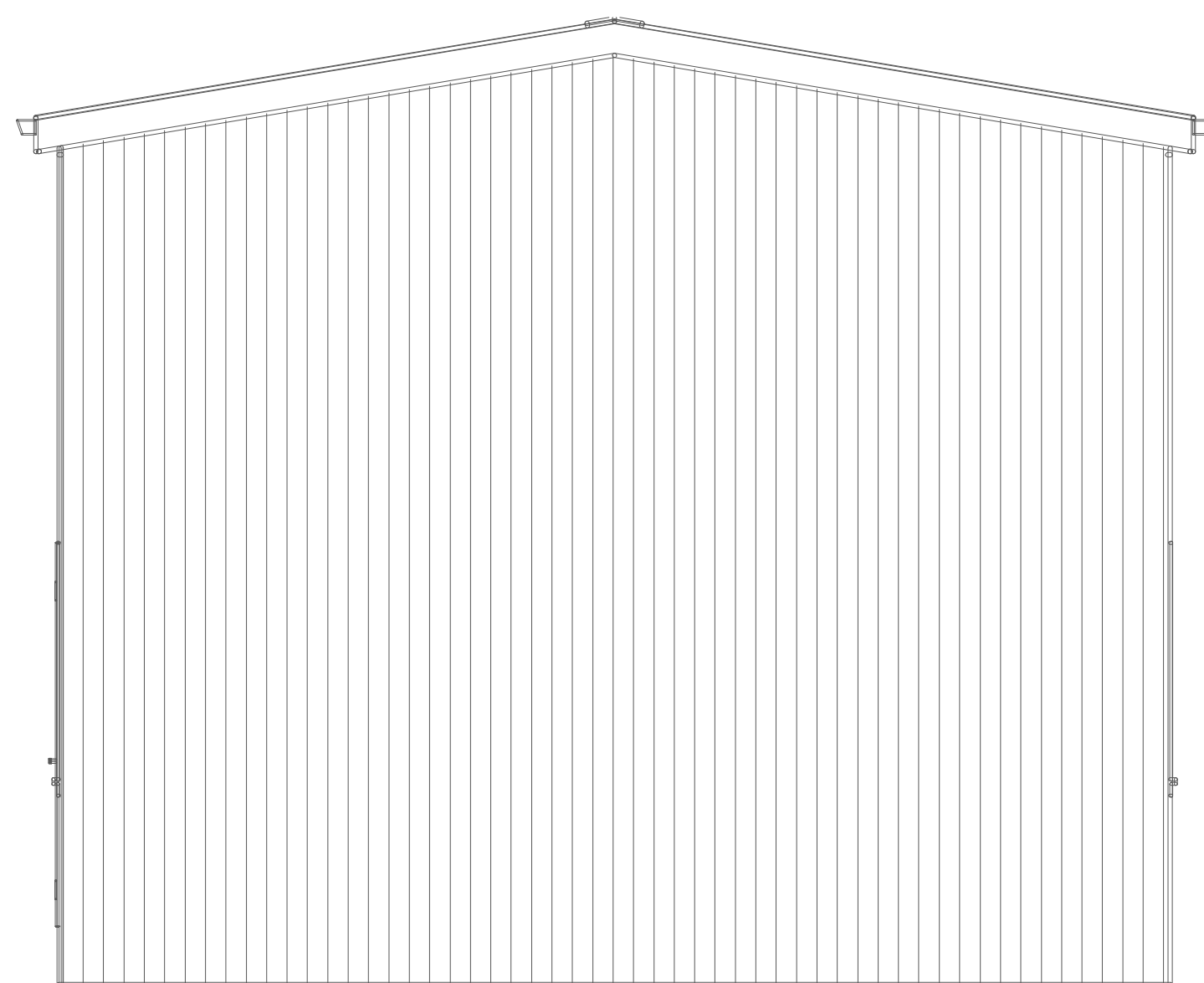




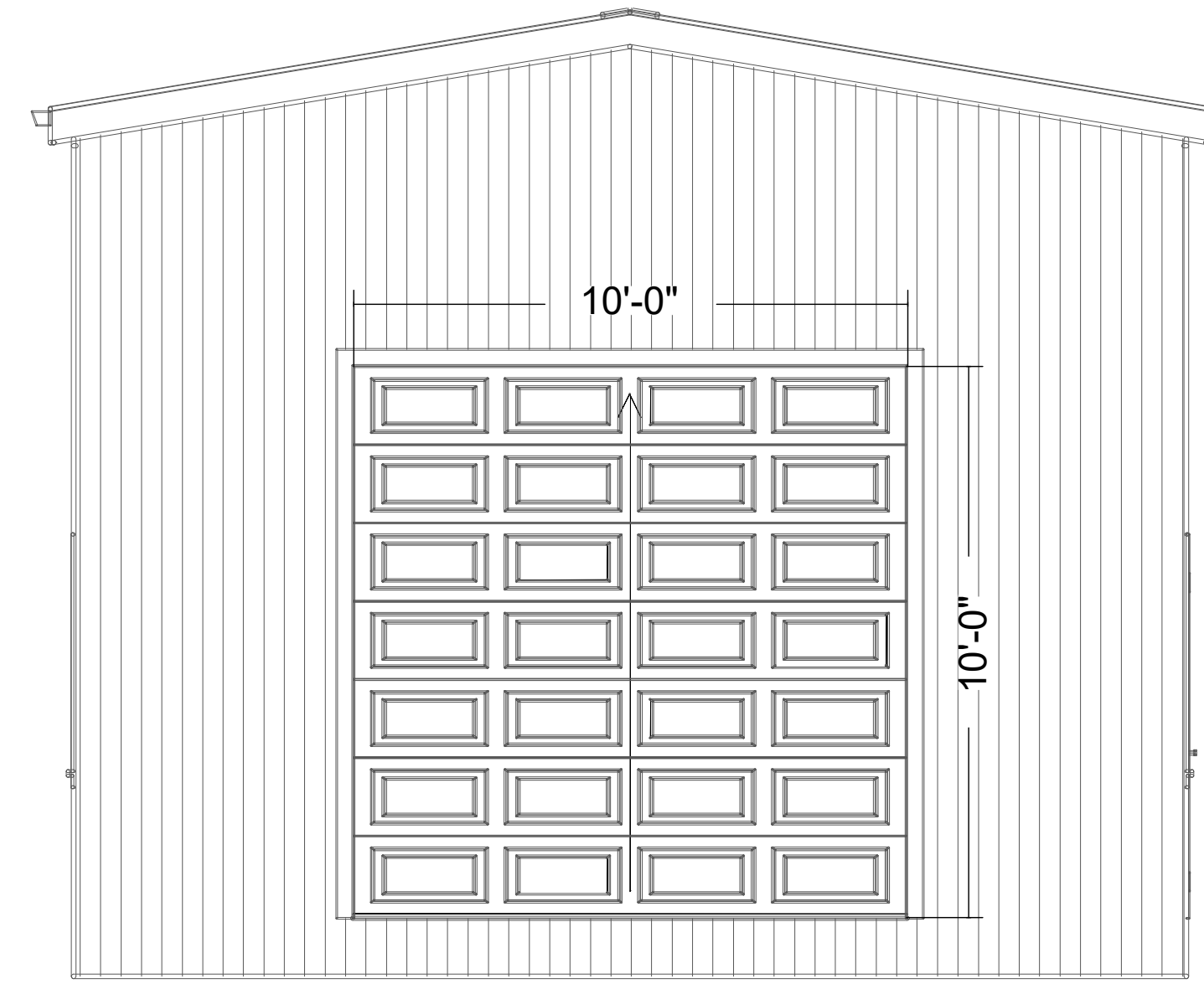
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

- NOTE:
- LIGHTING WILL COMPLY WITH SECTION 7.8 OF THE SUSTAINABLE LAND DEVELOPMENT CODE.
  - BUILDING COLOR WILL BE NEUTRAL EARTH TONES SUCH AS DESERT SAND OR BROWNSTONE, UNLESS OTHERWISE INDICATED BY THE COUNTY.

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SHEET TITLE & DESCRIPTION:

**PV CIVIL**

**O&M BUILDING**

PROJ

NUM:

DES:

DWN:

CHK:

APV:

DATE:

SCALE AT 24" x 36":

**N.T.S**

SHEET NO:

**PV-C.09.01**

REV:

**3**

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**O&M BUILDING**

PROJ  
NUM:

DES: B SURESH

DWN: B SURESH

CHK: S YASHWANTH

APV: M TREW

DATE: 07/02/2024

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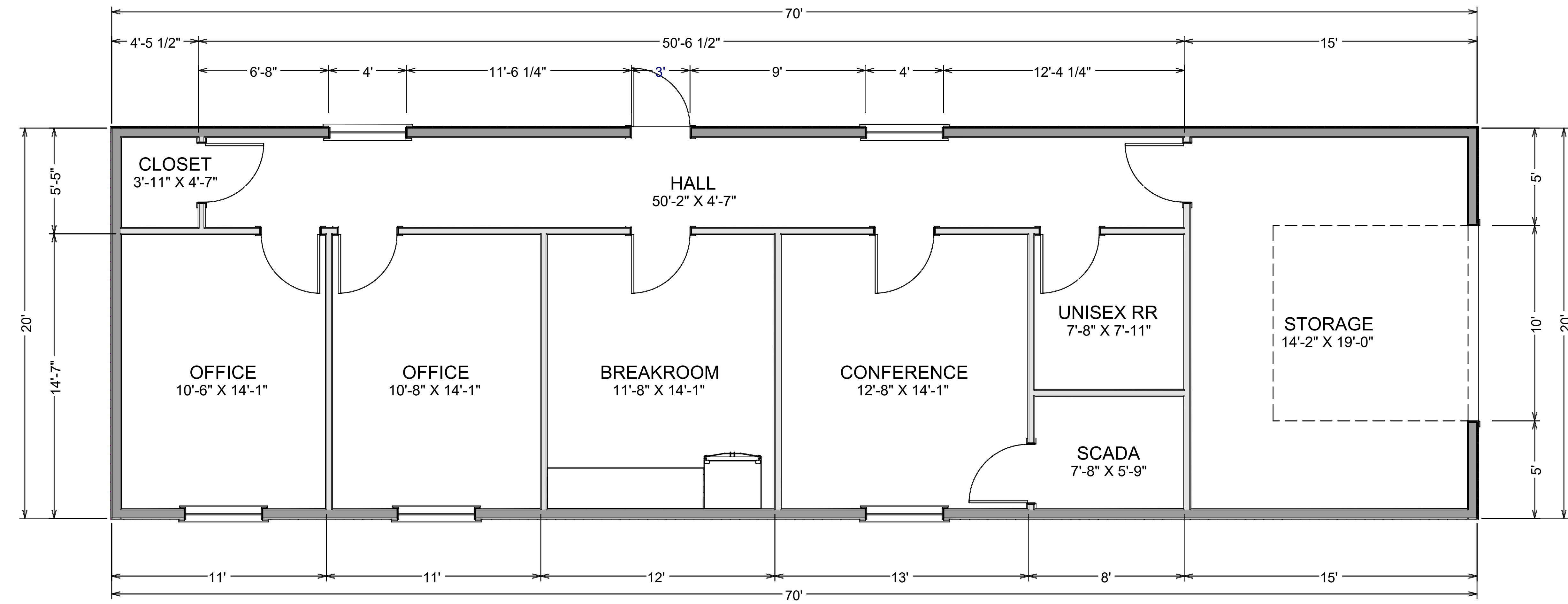
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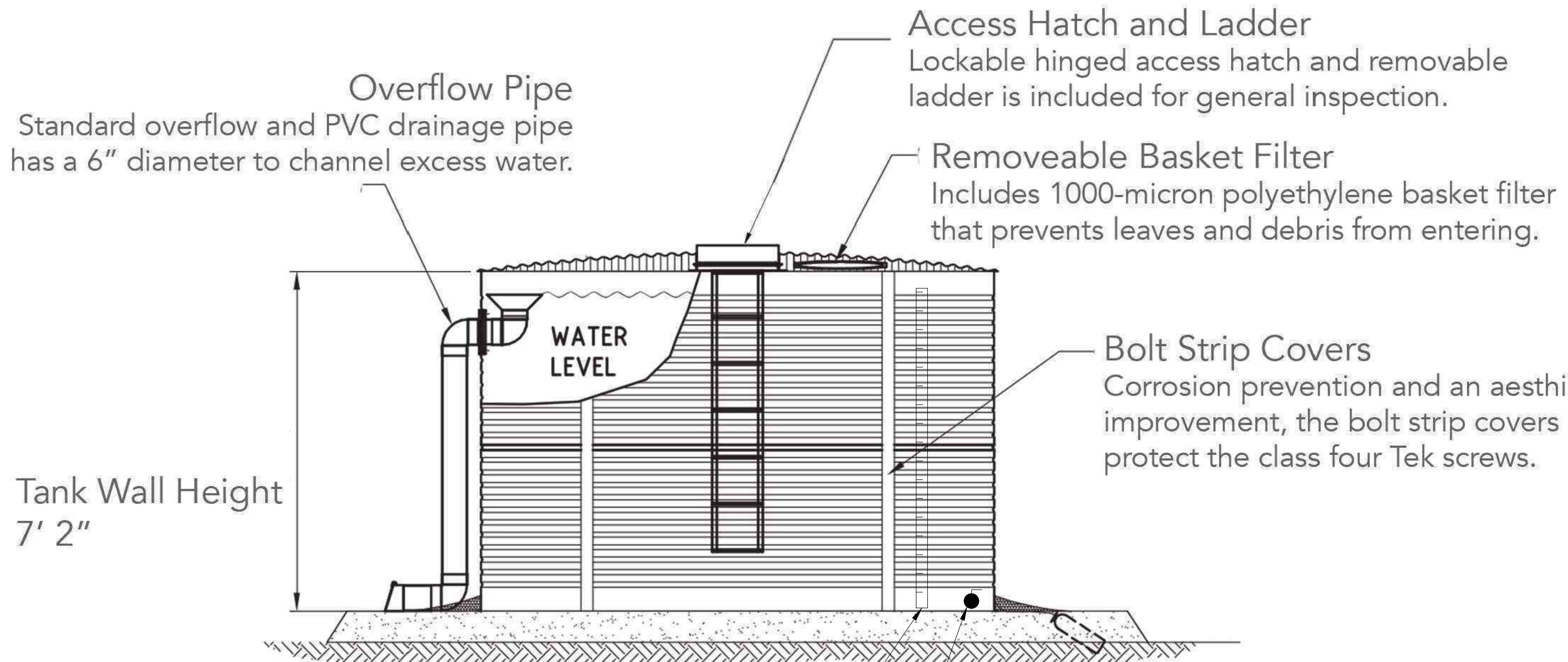
REV:

**3**



**ROOF PLAN**





Tank Wall Height  
7' 2"

**Access Hatch and Ladder**  
Lockable hinged access hatch and removable ladder is included for general inspection.

**Removeable Basket Filter**  
Includes 1000-micron polyethylene basket filter that prevents leaves and debris from entering.

**Bolt Strip Covers**  
Corrosion prevention and an aesthetic improvement, the bolt strip covers included protect the class four Tek screws.

**Magnesium Anodes to provide additional corrosion protection.**  
Buring sacrificial (cathodic) magnesium adnoes underneath Pioneer Water Tanks significantly extends the lifespan of the tank. Electrolysis diverts corrosion to the magnesium away from the tank walls. They should be replaced every 10 years.

**WATER TANK INFORMATION:**

PARAMETERS	DATA
MODEL	PIONEER WATER TANKS XLR 04/02
CAPACITY	5,076-GALLONS NOMINAL CAPACITY
DIAMETER	11'
WALL HEIGHT	7' 2"

**NOTE:**  
1. TANK COLOR WILL BE NEUTRAL EARTH TONES SUCH AS DESERT SAND OR BROWNSTONE, UNLESS OTHERWISE INDICATED BY THE COUNTY.



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**PROJECT LOCATION:**

SANTA FE COUNTY,  
NEW MEXICO  
(35.5415, -106.0106)

**SHEET TITLE & DESCRIPTION:**

PV CIVIL

PIONEER-WATER TANK

**PROJ NUM:**

B SURESH

**DWN:**

B SURESH

**CHK:**

S YASHWANTH

**APV:**

M TREW

**DATE:**

07/02/2024

SCALE AT 24" x 36"

N.T.S

**SHEET NO:**

PV-C.09.04

**REV:**

3