DOCKETED	
Docket Number:	25-OPT-02
Project Title:	Prairie Song Reliability Project
TN #:	264410
Document Title:	App 2A-B Project Description Appendices Part 2
Description:	N/A
Filer:	Erin Phillips
Organization:	Dudek
Submitter Role:	Applicant Consultant
Submission Date:	6/20/2025 12:39:22 PM
Docketed Date:	6/20/2025

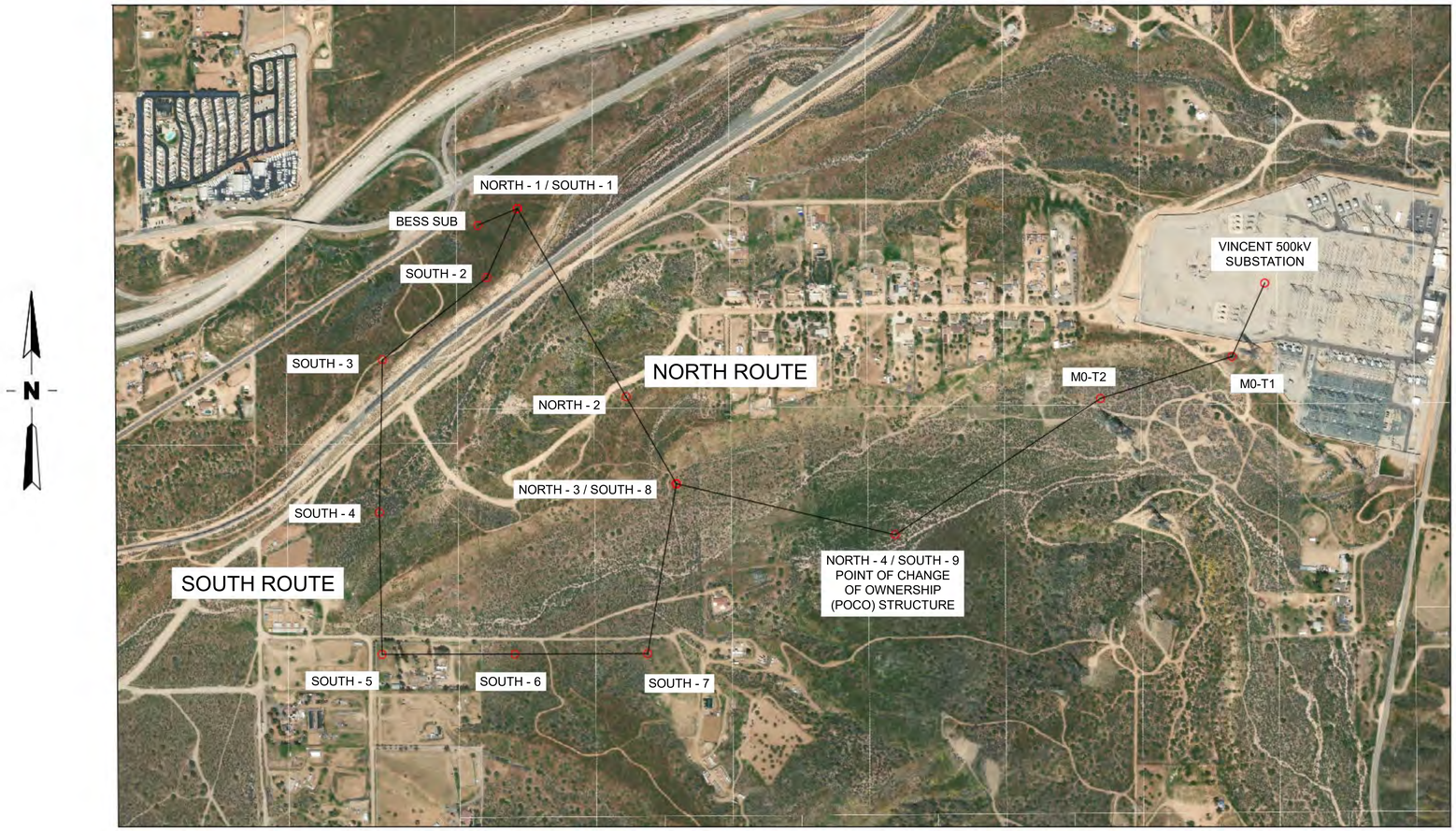
Section 2.0

Project Description
Appendices
2 of 4

Appendix 2A

Site Plan Package
2 of 2

PRAIRIE SONG RELIABILITY LLC
PRAIRIE SONG RELIABILITY BESS 500 kV TRANSMISSION LINE



LOCATION INFORMATION:

STATE: CALIFORNIA
COUNTY: LOS ANGELES

COORDINATE SYSTEM:

STATE PLANE NAD83
405: CALIFORNIA V
U.S. SURVEY FEET

REV.	DATE	REVISIONS AND RECORD OF ISSUE	DRWN	REV'D	APPR	COMP
C	05/12/2025	ISSUED FOR PERMIT	MBP	JOC		
B	03/26/2025	PRELIMINARY - PERMITTING PACKAGE	MBP	JOC		
A	02/20/2025	PRELIMINARY - PERMITTING PACKAGE	MBP	JOC		

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE; INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTORS(S)) PERFORMING THE WORK.

Sargent & Lundy

PREP: MBP | CHKD: JOC | APPD: | DATE: 05/12/2025

PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
COVER PAGE

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-001

DRAWING LIST					
REVISION STATUS	DRAWING NUMBER	TITLE	REVISION	REVISION DATE	ISSUED W/ CURRENT REVISION
IFR	PSR-TL-001	COVER PAGE	C	05/12/2025	X
IFR	PSR-TL-002	CONSTRUCTION NOTES AND DRAWING LIST	C	05/12/2025	X
IFR	PSR-TL-003-S001	NORTH ROUTE: PLAN AND PROFILES	C	05/12/2025	X
IFR	PSR-TL-003-S002	SOUTH ROUTE: PLAN AND PROFILES	C	05/12/2025	X
IFR	PSR-TL-003-S003	SOUTH ROUTE: PLAN AND PROFILES (CONT.)	C	05/12/2025	X
IFR	PSR-TL-003-S004	SCE DESIGN: PLAN AND PROFILES	C	05/12/2025	X
IFR	PSR-TL-004	SITE OVERVIEW	C	05/12/2025	X
IFR	PSR-TL-005	DELTA MONOPOLE SUSPENSION STRUCTURE	C	05/12/2025	X
IFR	PSR-TL-006	MONOPOLE DEADEND STRUCTURE (0°-55°)	C	05/12/2025	X
IFR	PSR-TL-007	MONOPOLE DEADEND STRUCTURE (55°-90°)	C	05/12/2025	X
IFR	PSR-TL-008	MONOPOLE DEADEND STRUCTURE (90°-140°)	C	05/12/2025	X
IFR	PSR-TL-009	DHA-4 LATTICE TOWER	C	05/12/2025	X

HOLD FOR SCE DESIGN
OF TRANSMISSION LINE

GENERAL NOTES:

1. THE FOLLOWING PACKAGE HAS BEEN PROVIDED FOR PERMITTING PURPOSES. INPUTS AND DESIGN SHALL BE VALIDATED PRIOR TO CONSTRUCTION.
2. ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS; (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S); AND (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.
3. UNDERGROUND OR EMBEDDED UTILITIES [MAY] EXIST WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK. THE LOCATION OR IDENTIFICATION OF SUCH UTILITIES HAS NOT BEEN VERIFIED BY OWNER OR BY S&L. CONTRACTOR/INSTALLER IS RESPONSIBLE FOR FIELD LOCATING AND IDENTIFYING UNDERGROUND OR EMBEDDED UTILITIES AND ANY OTHER UNDERGROUND OR EMBEDDED UTILITY DIMENSIONS.
4. DUE CAUTION SHALL BE TAKEN DURING ANY EXCAVATION/FOUNDATION/DEMOLITION WORK WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK DUE TO POSSIBLE INTERFERENCES THAT MAY NOT BE REFLECTED ON THE REFERENCES IDENTIFIED.
5. BIDDER IS RESPONSIBLE FOR VERIFYING ALL PLAN AND PROFILE AND COLLECTING NECESSARY SITE-SPECIFIC SURVEYS AS REQUIRED.
6. THE CONDUCTOR, SHIELD WIRE, AND OPGW ARE ASSUMED SIZES AND ARE SUBJECT TO CHANGE FOR THE FINAL DESIGN.
7. THE DESIGN OF THE SCE TRANSMISSION LINE, ACCESS ROADS, PULLING LOCATIONS, AND UNDERGROUND COMMUNICATION ROUTES ARE THE ASSUMED DESIGN.
8. THE NORTH AND SOUTH ROUTES SHOW TWO ALTERNATE OPTIONS FOR THE PATH OF THE TRANSMISSION LINE. ONLY ONE OF THESE ROUTES WILL BE SELECTED FOR CONSTRUCTION.
9. FOR CIVIL SITE WORK DESIGN, REFER TO DRAWING PSR-CS-001.
10. FOR SUBSTATION DESIGN, REFER TO DRAWING PSR-SE-001.

ASSUMED OPGW INFORMATION		
AFL DNO-10162 CC-38/48/551		
	VALUE	UNITS
DIAMETER	0.551	IN
WEIGHT	0.355	LB/FT
RATED BREAKING STRENGTH	16,464	LB

ASSUMED CONDUCTOR INFORMATION		
795 KCMIL (26/7) ACSR "DRAKE"		
	VALUE	UNITS
DIAMETER	1.108	IN
WEIGHT	1.094	LB/FT
RATED BREAKING STRENGTH	31,500	LB
BUNDLE SPACING	18-18-18	IN-IN-IN

ASSUMED SHIELD WIRE INFORMATION		
1/2" 7 STRAND EHS STEEL		
	VALUE	UNITS
DIAMETER	0.495	IN
WEIGHT	0.517	LB/FT
RATED BREAKING STRENGTH	26,900	LB

ASSUMED SCE CONDUCTOR INFORMATION		
2156 KCMIL (84/19) ACSR "BLUEBIRD"		
	VALUE	UNITS
DIAMETER	1.762	IN
WEIGHT	2.511	LB/FT
RATED BREAKING STRENGTH	60,300	LB
BUNDLE SPACING	18-18	IN-IN-IN

ASSUMED UNDERGROUND FIBER OPTIC INFORMATION		
48F ADSS FIBER OPTIC		
	VALUE	UNITS
DIAMETER	0.642	IN
WEIGHT	0.1366	LB/FT
RATED BREAKING STRENGTH	4,740	LB

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Sargent & Lundy

PREP: MBP | CHKD: JOC | APPD: | DATE: 05/12/2025

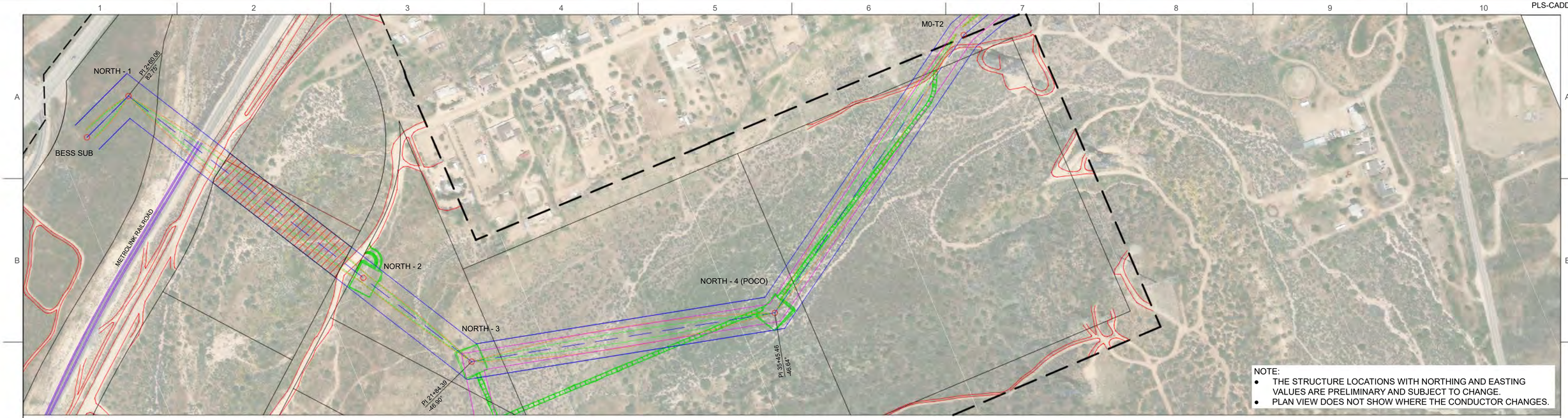
PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
CONSTRUCTION NOTES AND DRAWING LIST

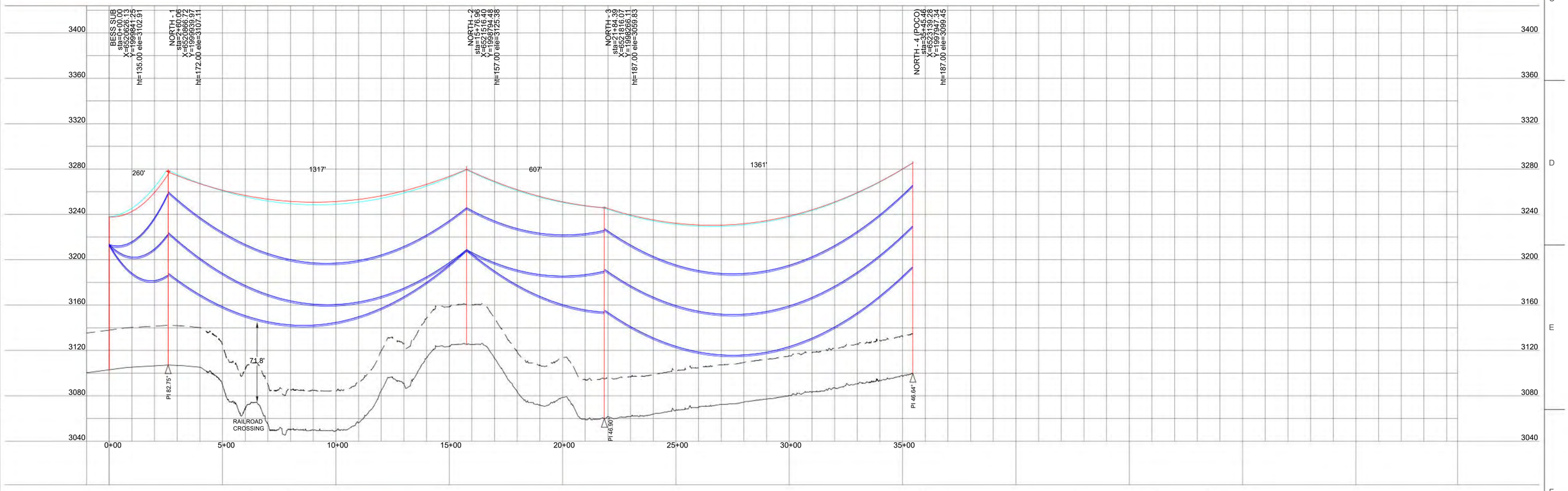
PRELIMINARY
NOT FOR CONSTRUCTION

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-002

PLS-CADD Drawing





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A	02/20/2025	PRELIMINARY - PERMITTING PACKAGE	MBP	JOC		

PROFILE VIEW LEGEND:
- CONDUCTOR: (3) 795 KCMIL (26/7) ACSR "DRAKE" DISPLAYED: 212°F "FINAL" CONDITION
- SHIELD WIRE: 1/2" 7 STRAND EHS STEEL DISPLAYED: 0°F "FINAL" CONDITION
- OPGW: CC-38-48-551 48F AFL OPGW DISPLAYED: 0°F "FINAL" CONDITION
- GROUND CLEARANCE LINE: 35' PER GO-95

PLAN VIEW LEGEND:
- GO-95 HEAVY LOADING 43.1 BLOWOUT LINE
- HIGH WIND (90 MPH) BLOWOUT LINE
- RIGHT OF WAY (150' TOTAL)
- PROPERTY BOUNDARIES
- CIVIL SITE WORK
- ROADS
- UNDERGROUND COMMUNICATION LINE
- METROLINK RAILROAD
- EXTENT OF SURVEY DATA
- TRANSMISSION LINE CENTERLINE
- MRCA EASEMENT

North

200.0 ft. Horiz. Scale

40.0 ft. Vert. Scale

NOTES:
1. COORDINATES IN STRUCTURE LABEL ARE X (EASTING) AND Y (NORTHING) PER CALIFORNIA PLANE NAD83, 405; U.S. SURVEY FEET.
2. GROUND CLEARANCE UNDER 212°F MAINTAINED IS 35 FT. PER G0-95.
3. CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE; INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.
4. CONTRACTOR SHALL PERFORM WORK WITHIN PROVIDED EASEMENT.
5. RAILROAD CROSSING CLEARANCE REQUIREMENTS ARE DERIVED FROM THE DESIGN CRITERIA OF THE RAILROAD OWNER.

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE; INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTORS(S)) PERFORMING THE WORK.

Sargent & Lundy

PREP: MBP | CHKD: JOC | APPD: | DATE: 05/12/2025

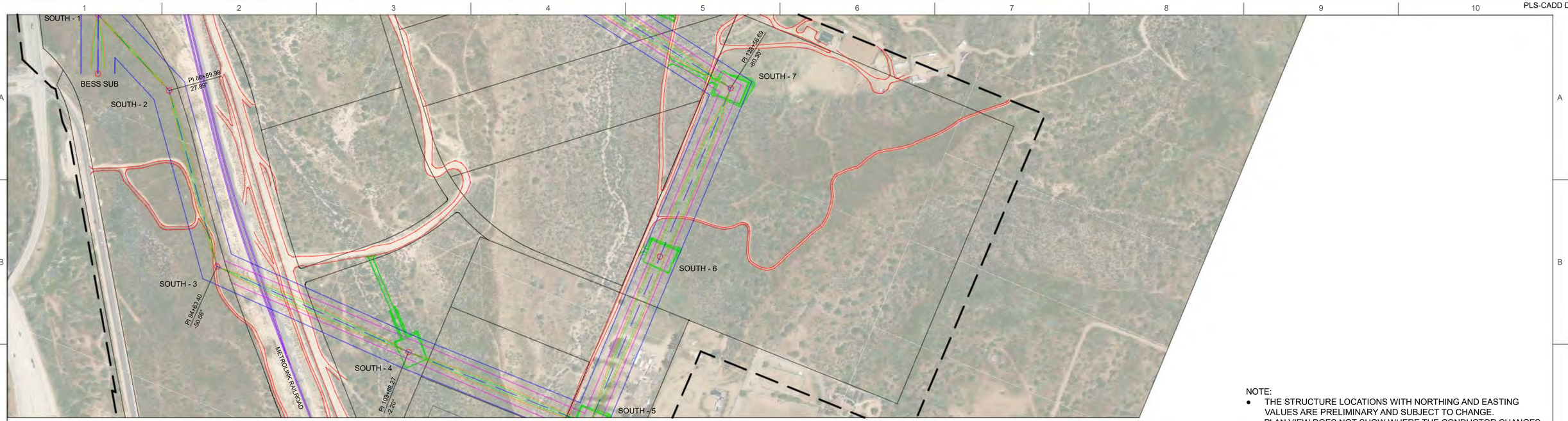
PRAIRIE SONG RELIABILITY 500kV TRANSMISSION LINE NORTH ROUTE: PLAN AND PROFILES

PRELIMINARY
NOT FOR CONSTRUCTION

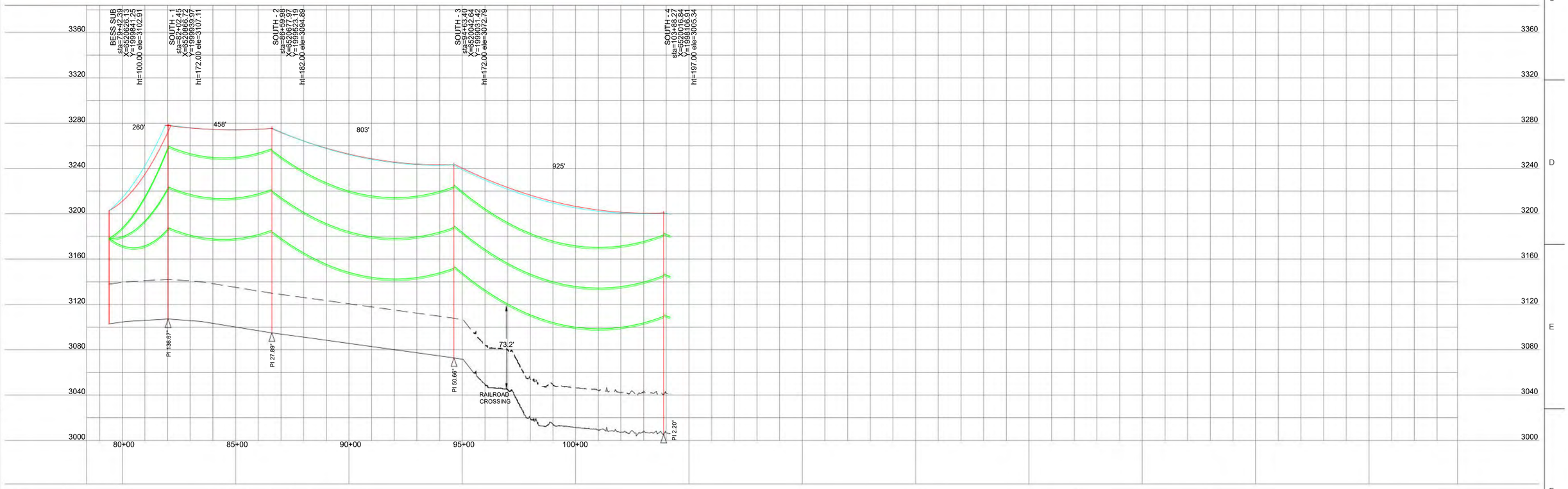
ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-003-S001

PLS-CADD Drawing



NOTE:
- THE STRUCTURE LOCATIONS WITH NORTHING AND EASTING VALUES ARE PRELIMINARY AND SUBJECT TO CHANGE.
- PLAN VIEW DOES NOT SHOW WHERE THE CONDUCTOR CHANGES.



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PROFILE VIEW LEGEND:
- CONDUCTOR: (3) 795 KCMIL (26/7) ACSR "DRAKE" DISPLAYED: 212°F "FINAL" CONDITION
- SHIELD WIRE: 1/2" 7 STRAND EHS STEEL DISPLAYED: 0°F "FINAL" CONDITION
- OPGW: CC-38-48-551 48F AFL OPGW DISPLAYED: 0°F "FINAL" CONDITION
- GROUND CLEARANCE LINE: 35' PER GO-95

PLAN VIEW LEGEND:
- GO-95 HEAVY LOADING 43.1 BLOWOUT LINE
- HIGH WIND (90 MPH) BLOWOUT LINE
- RIGHT OF WAY (150' TOTAL)
- PROPERTY BOUNDARIES
- CIVIL SITE WORK
- ROADS
- UNDERGROUND COMMUNICATION LINE
- METROLINK RAILROAD
- EXTENT OF SURVEY DATA
- TRANSMISSION LINE CENTERLINE

North

200.0 ft. Horiz. Scale

40.0 ft. Vert. Scale

NOTES:
1. COORDINATES IN STRUCTURE LABEL ARE X (EASTING) AND Y (NORTHING) PER CALIFORNIA PLANE NAD83, 405; U.S. SURVEY FEET.
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Sargent & Lundy

PREP: MBP | CHKD: JOC | APPD: | DATE: 05/12/2025

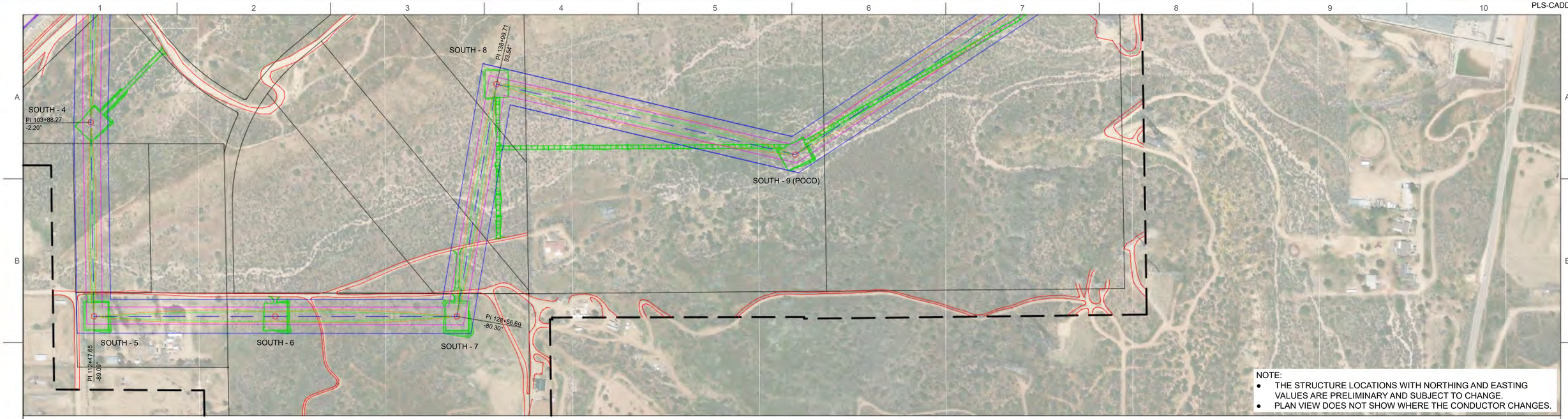
PRAIRIE SONG RELIABILITY 500kV TRANSMISSION LINE SOUTH ROUTE: PLAN AND PROFILES

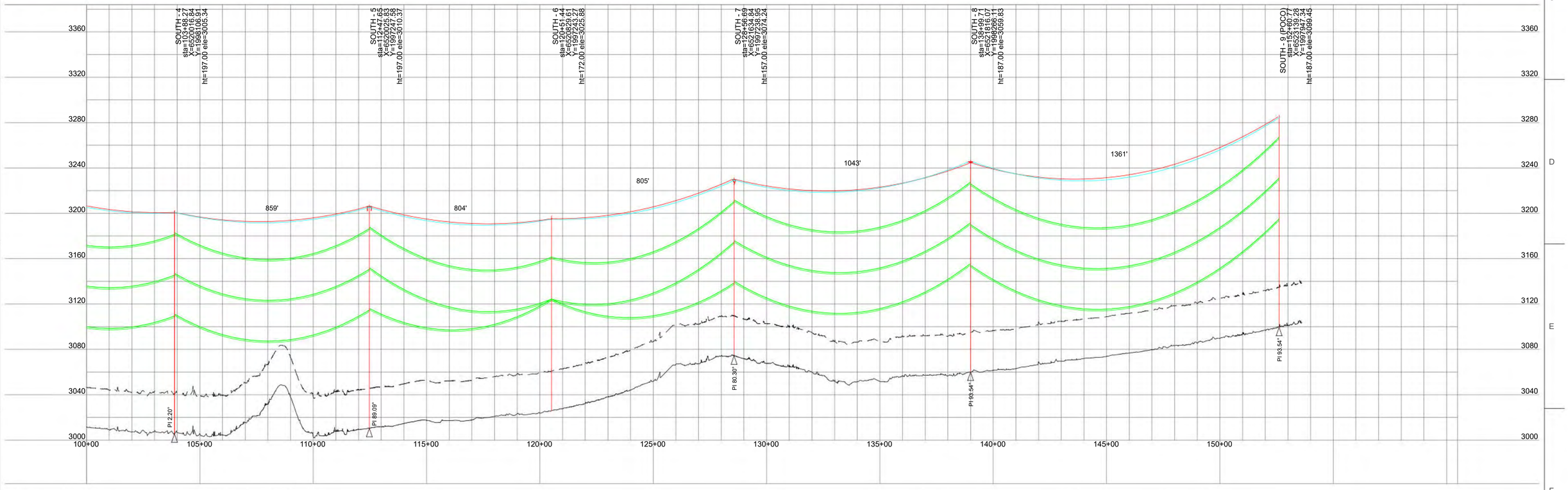
PRELIMINARY
NOT FOR CONSTRUCTION

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-003-S002

PLS-CADD Drawing





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A	02/20/2025	PRELIMINARY - PERMITTING PACKAGE	MBP	JOC		

PROFILE VIEW LEGEND:
- CONDUCTOR: (3) 795 KCMIL (26/7) ACSR "DRAKE" DISPLAYED: 212°F "FINAL" CONDITION
- SHIELD WIRE: 1/2" 7 STRAND EHS STEEL DISPLAYED: 0°F "FINAL" CONDITION
- OPGW: CC-38-48-551 48F AFL OPGW DISPLAYED: 0°F "FINAL" CONDITION
- GROUND CLEARANCE LINE: 35' PER GO-95

PLAN VIEW LEGEND:
- GO-95 HEAVY LOADING 43.1 BLOWOUT LINE
- HIGH WIND (90 MPH) BLOWOUT LINE
- RIGHT OF WAY (150' TOTAL)
- PROPERTY BOUNDARIES
- CIVIL SITE WORK
- ROADS
- UNDERGROUND COMMUNICATION LINE
- EXTENT OF SURVEY DATA
- TRANSMISSION LINE CENTERLINE

North

200.0 ft. Horiz. Scale

40.0 ft. Vert. Scale

NOTES:
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Sargent & Lundy

PREP: MBP | CHKD: JOC | APPD: | DATE: 05/12/2025

PRAIRIE SONG RELIABILITY 500kV TRANSMISSION LINE SOUTH ROUTE: PLAN AND PROFILES (CONT.)

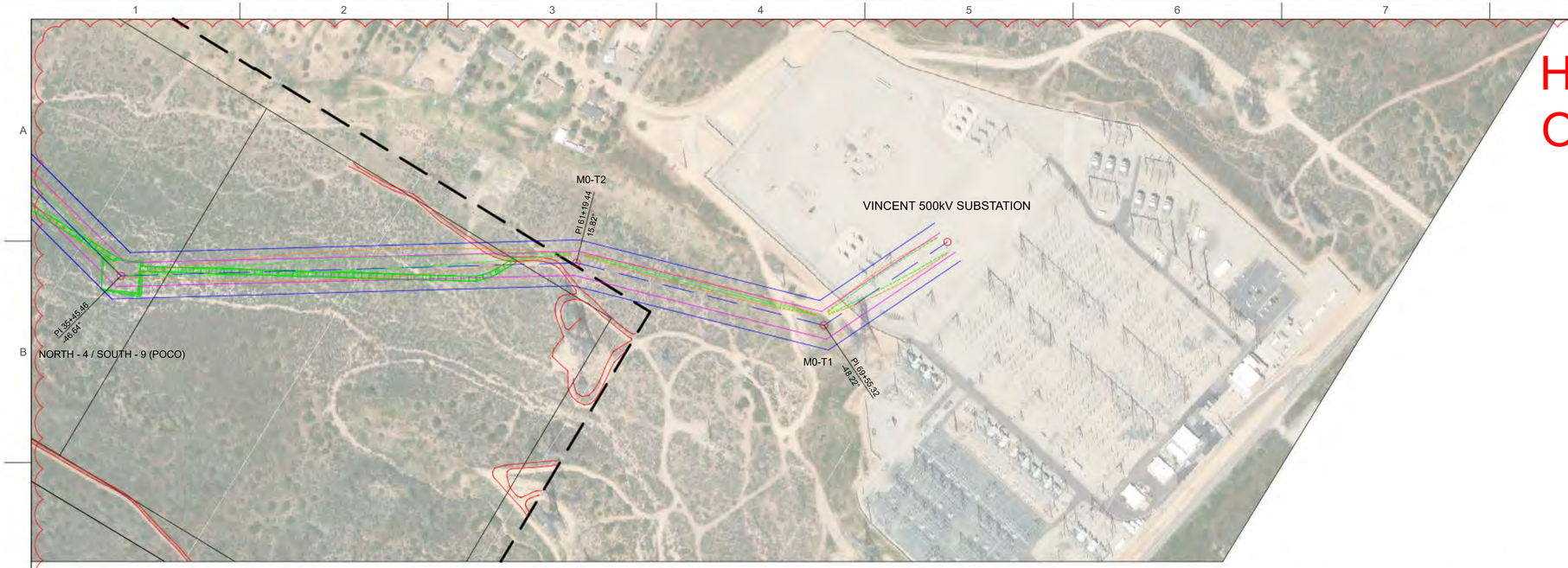
PRELIMINARY
NOT FOR CONSTRUCTION

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-003-S003

PLS-CADD Drawing

HOLD FOR SCE DESIGN OF TRANSMISSION LINE



NOTE:
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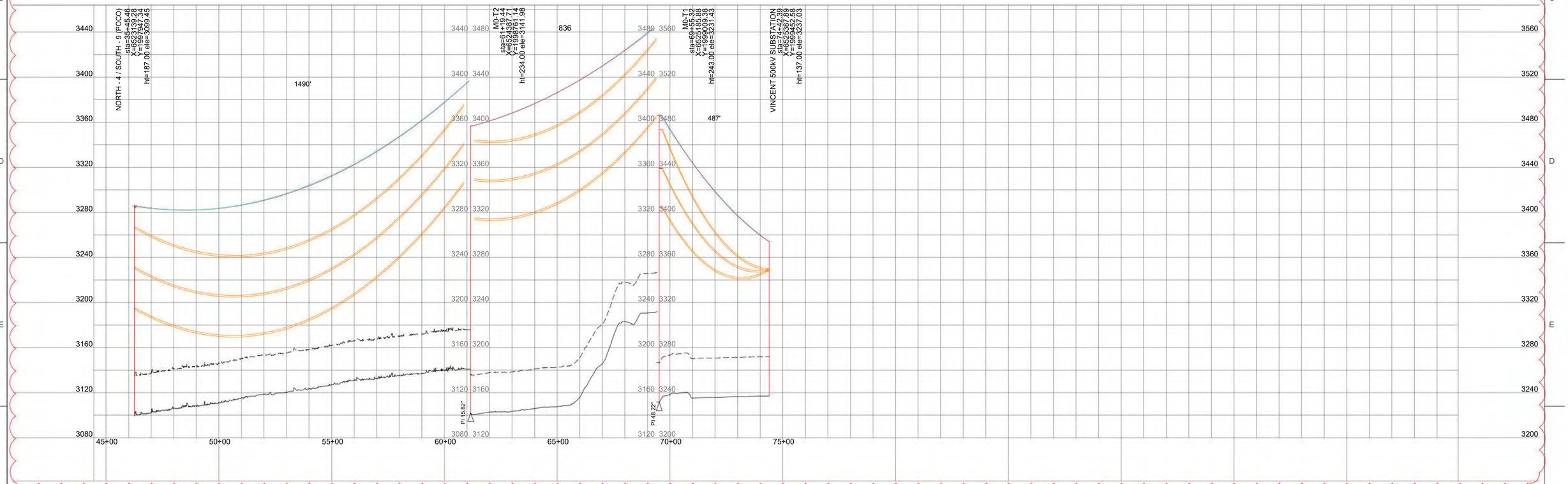
- PLAN VIEW DOES NOT SHOW WHERE THE CONDUCTOR CHANGES.



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PROFILE VIEW LEGEND:
- CONDUCTOR: (2) 2156 KCMIL (84/16) ACSR "BLUEBIRD" DISPLAYED: 212°F "FINAL" CONDITION
- SHIELD WIRE: 1/2" 7 STRAND EHS STEEL DISPLAYED: 0°F "FINAL" CONDITION
- OPGW: CC-38-48-551 48F AFL OPGW DISPLAYED: 0°F "FINAL" CONDITION
- GROUND CLEARANCE LINE: 35' PER GO-95

PLAN VIEW LEGEND:
- GO-95 HEAVY LOADING 43.1 BLOWOUT LINE
- HIGH WIND (90 MPH) BLOWOUT LINE
- RIGHT OF WAY (150' TOTAL)
- PROPERTY BOUNDARIES
- CIVIL SITE WORK
- ROADS
- UNDERGROUND COMMUNICATION LINE
- EXTENT OF SURVEY DATA
- TRANSMISSION LINE CENTERLINE

North

200.0 ft. Horiz. Scale

40.0 ft. Vert. Scale

NOTES:
1. COORDINATES IN STRUCTURE LABEL ARE X (EASTING) AND Y (NORTHING) PER CALIFORNIA PLANE NAD83, 405; U.S. SURVEY FEET.
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Sargent & Lundy

PREP: MBP | CHKD: JOC | APPD: | DATE: 05/12/2025

PRAIRIE SONG RELIABILITY 500kV TRANSMISSION LINE SCE DESIGN: PLAN AND PROFILES

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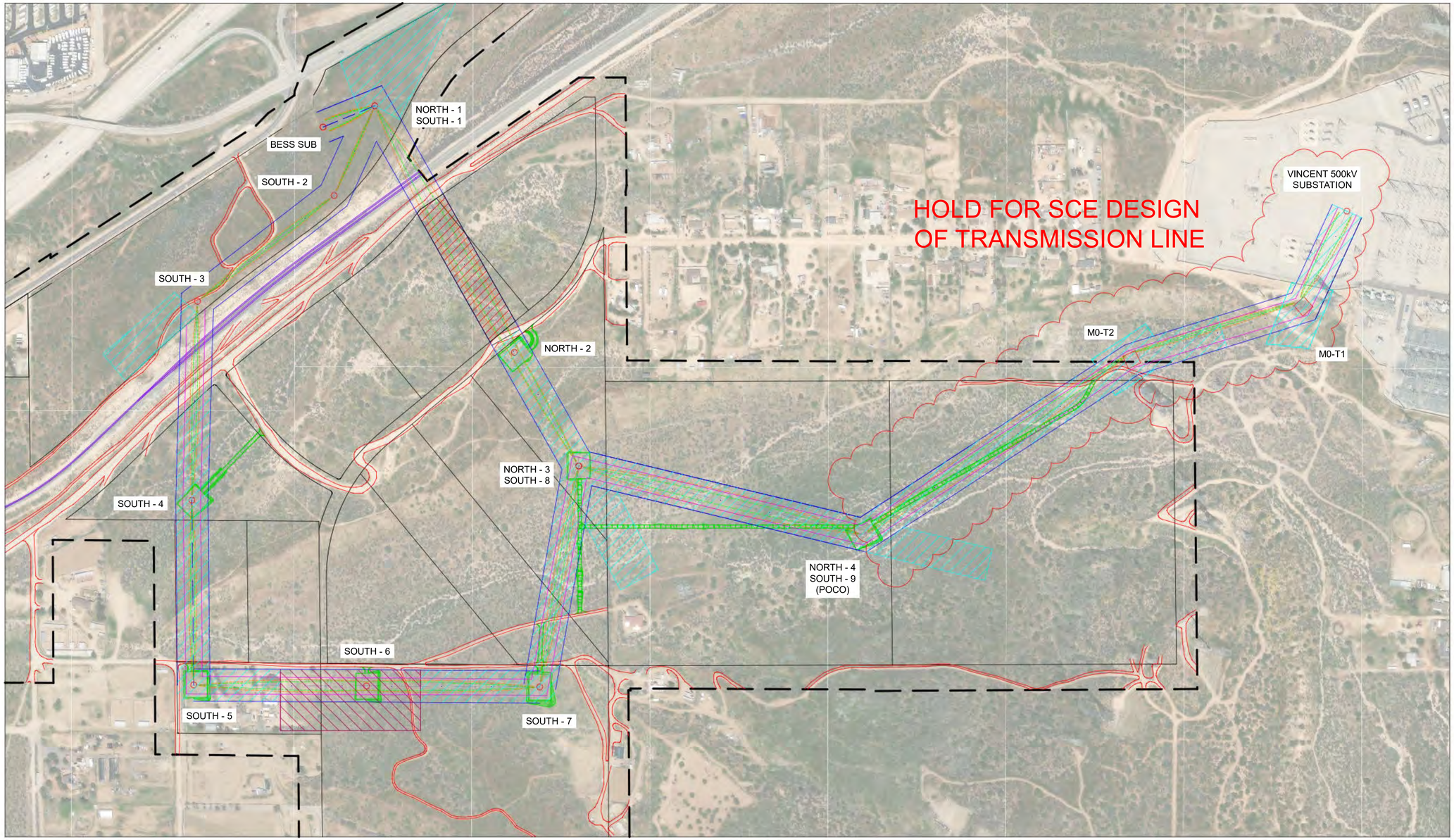
ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-003-S004

PLS-CADD Drawing

SITE OVERVIEW



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PLAN VIEW LEGEND:

- GO-95 HEAVY LOADING 43.1 BLOWOUT LINE
- HIGH WIND (90 MPH) BLOWOUT LINE
- RIGHT OF WAY (150' TOTAL)
- CENTERLINE
- METROLINK RAILROAD
- ROADS
- PROPERTY BOUNDARIES
- CIVIL SITE WORK
- UNDERGROUND FIBER OPTIC LINES
- EXTENT OF SURVEY DATA
- TRANSMISSION LINE CENTERLINE
- LAYDOWN AREA
- PULLING LOCATIONS/TEMPORARY DISTURBANCE AREAS
- MRCA EASEMENT

North

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE; INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTORS(S)) PERFORMING THE WORK.

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PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
SITE OVERVIEW

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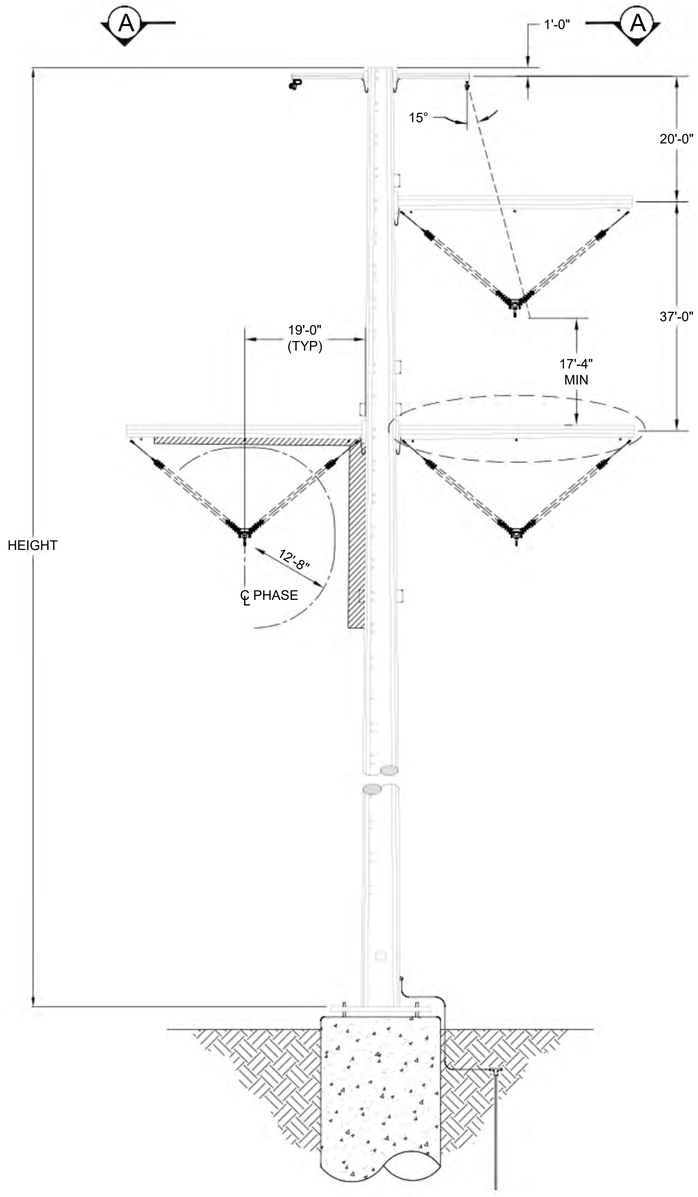
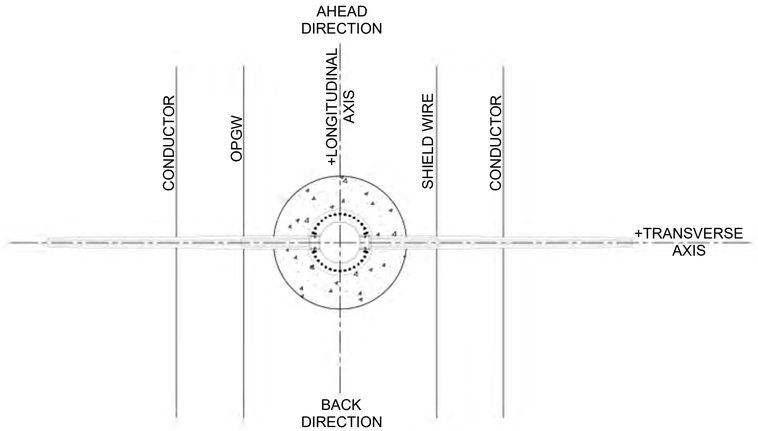
LICENSE #E17455

PSR-TL-004

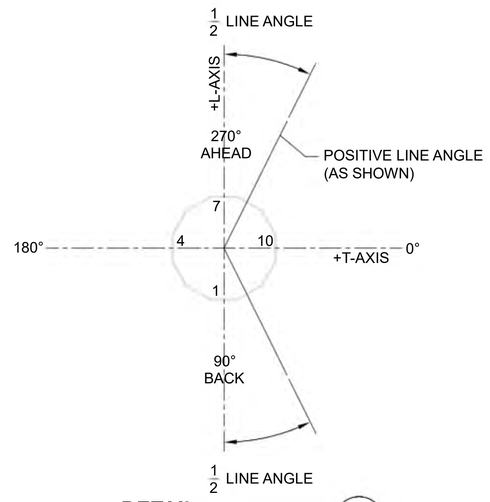
DELTA MONOPOLE SUSPENSION STRUCTURE		
STRUCTURE NUMBER	HEIGHT (FT.)	LINE ANGLE (DEG.)
NORTH - 2	155	0
SOUTH - 6	170	0



500kV SUSPENSION (0°-1°)
STEEL MONOPOLE
VIEW LOOKING AHEAD
NOT TO SCALE



VIEW A-A
PLAN VIEW
NOT TO SCALE



DETAIL 1
FLAT ORIENTATION
NOT TO SCALE

NOTES:

1. OSHA MINIMUM APPROACH DISTANCE OF 12'-8" SHALL BE MAINTAINED TO ALL EXPECTED CLIMBING AND WORK SPACES AS SHOWN.
   CLIMBING SPACE: 2'-6"
   WORKING SPACE: 1'-0"
2. A MINIMUM SHIELDING ANGLE OF 15° SHALL BE REQUIRED.
3. THE STRUCTURE HEIGHTS ARE PRELIMINARY AND ARE SUBJECT TO CHANGE BEFORE THE FINAL DESIGN.

REV.	DATE	REVISIONS AND RECORD OF ISSUE	DRWN	REV'D	APPR	COMP
C	05/12/2025	ISSUED FOR PERMIT	MBP	JOC		
B	03/26/2025	PRELIMINARY - PERMITTING PACKAGE	MBP	JOC		
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Sargent & Lundy

PREP: KSB | CHKD: JOC | APPD: | DATE: 05/12/2025

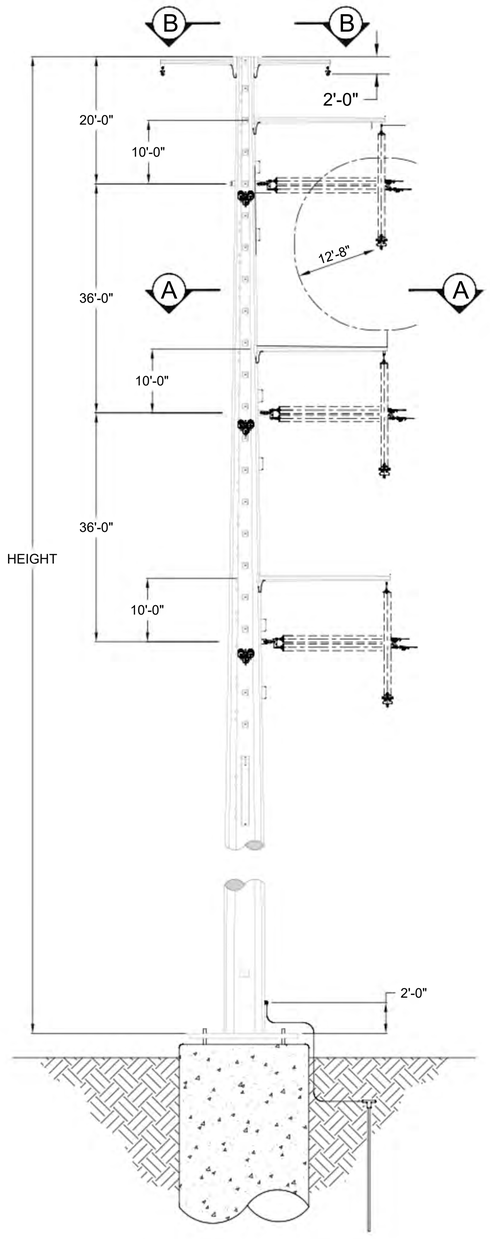
PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
DELTA MONOPOLE SUSPENSION STRUCTURE

PRELIMINARY
NOT FOR CONSTRUCTION

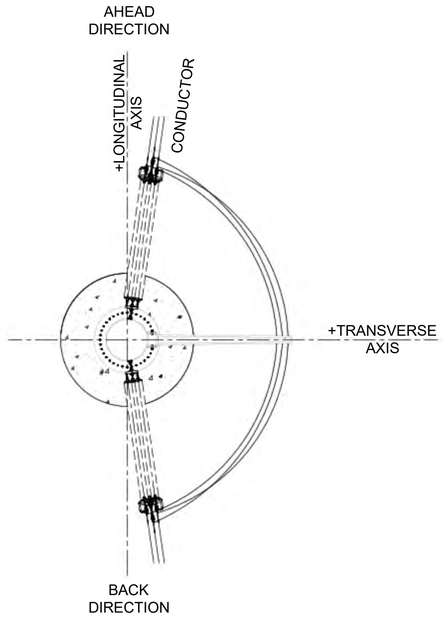
ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-005

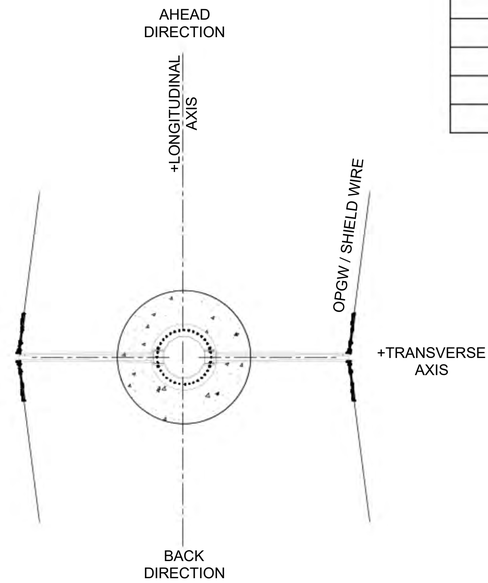
MONOPOLE DEADEND STRUCTURE (0°-55°)		
STRUCTURE NUMBER	HEIGHT (FT.)	LINE ANGLE (DEG.)
NORTH - 3	185	46.89
NORTH - 4	185	46.90
SOUTH - 2	180	27.89
SOUTH - 3	170	50.66
SOUTH - 4	195	2.19
SOUTH - 9	185	46.90



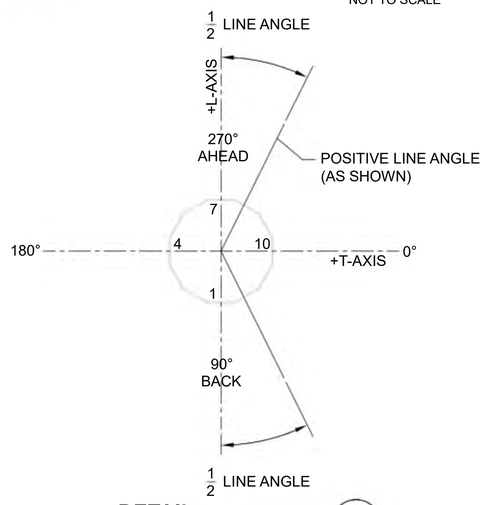
500kV DEADEND (0°-55°)
STEEL MONOPOLE
VIEW LOOKING AHEAD
NOT TO SCALE



SECTION A-A
PLAN VIEW - CONDUCTOR
NOT TO SCALE



VIEW B-B
PLAN VIEW - SHIELD WIRE
NOT TO SCALE



DETAIL 1
FLAT ORIENTATION
NOT TO SCALE

NOTES:

1. OSHA MINIMUM APPROACH DISTANCE OF 12'-8" SHALL BE MAINTAINED TO ALL EXPECTED CLIMBING AND WORK SPACES AS SHOWN.
   CLIMBING SPACE: 2'-6"
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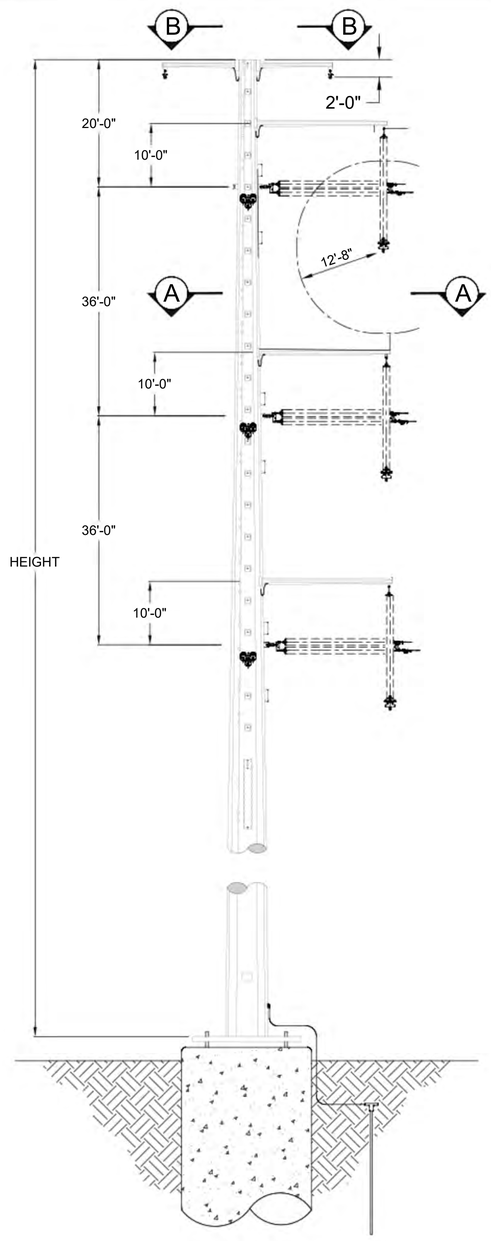
PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
MONOPOLE DEADEND STRUCTURE (0°-55°)

PRELIMINARY
NOT FOR CONSTRUCTION

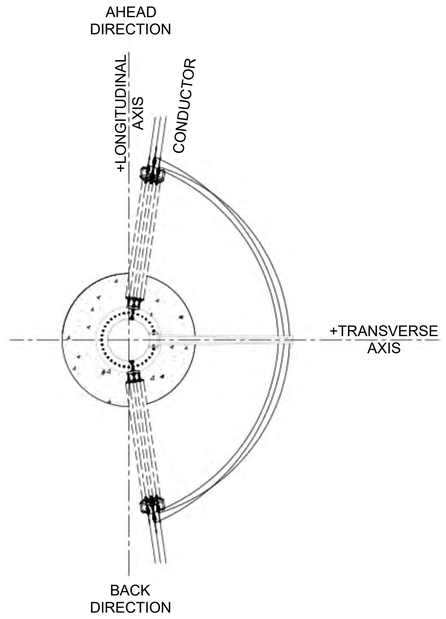
ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-006

MONOPOLE DEADEND STRUCTURE (55°-90°)		
STRUCTURE NUMBER	HEIGHT (FT.)	LINE ANGLE (DEG.)
NORTH - 1	170	82.74
SOUTH - 5	195	89.09
SOUTH - 7	155	80.30



500kV DEADEND (55°-90°)
STEEL MONOPOLE
VIEW LOOKING AHEAD
NOT TO SCALE



SECTION A-A
PLAN VIEW - CONDUCTOR
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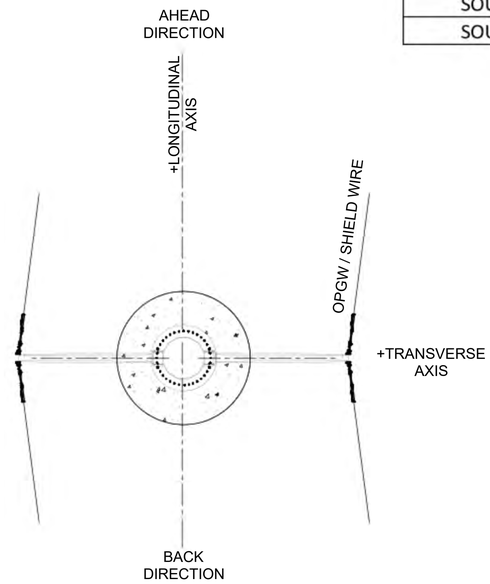
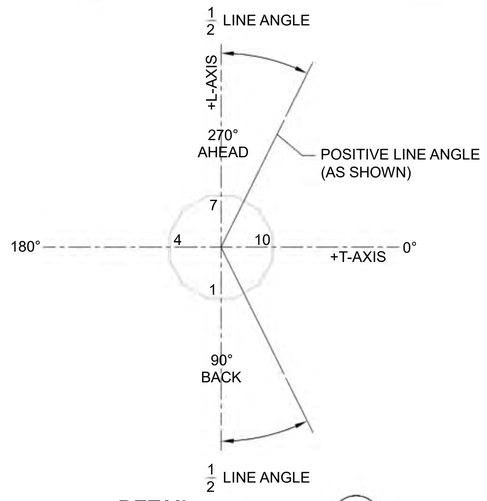


VIEW B-B
PLAN VIEW - SHIELD WIRE
NOT TO SCALE



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PREP: KSB | CHKD: JOC | APPD: | DATE: 05/12/2025

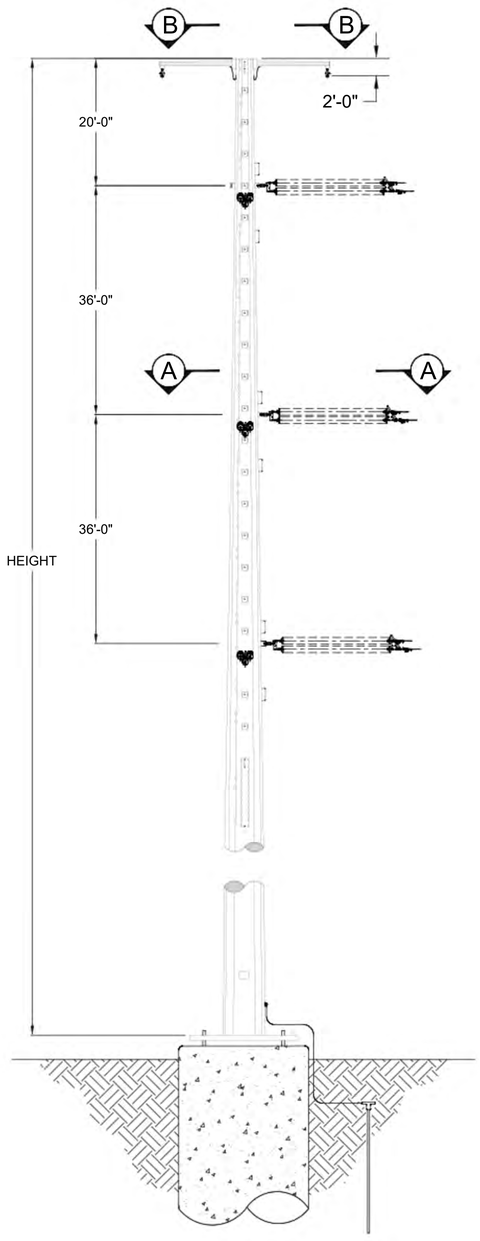
PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
MONOPOLE DEADEND STRUCTURE (55°-90°)

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-007

MONOPOLE DEADEND STRUCTURE (90°-140°)		
STRUCTURE NUMBER	HEIGHT (FT.)	LINE ANGLE (DEG.)
SOUTH - 1	170	133.56
SOUTH - 8	185	93.53



500kV DEADEND (90°-140°)
STEEL MONOPOLE
VIEW LOOKING AHEAD
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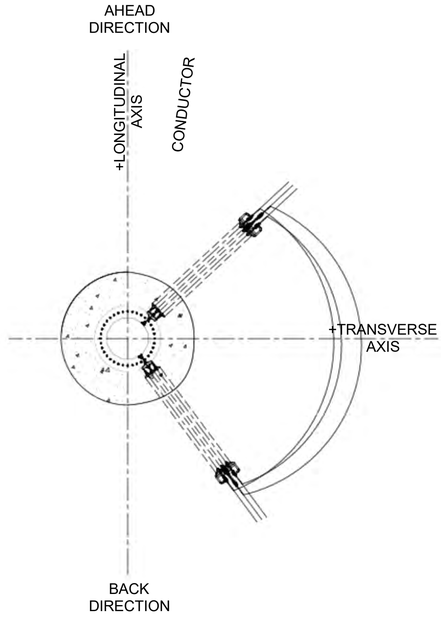
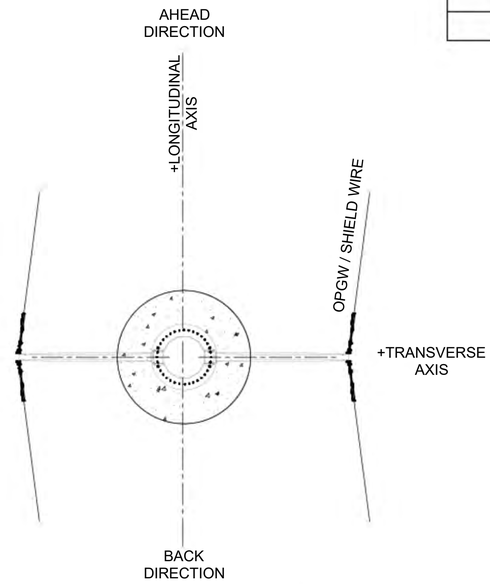
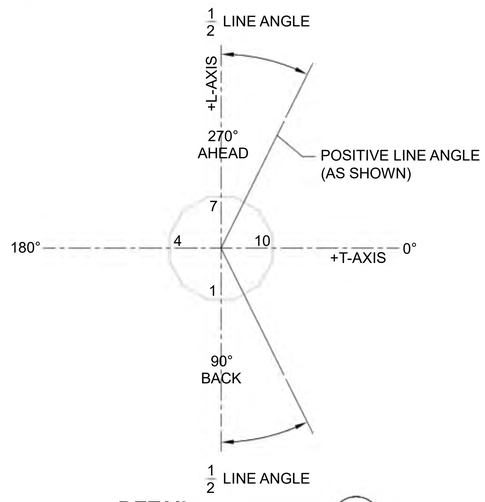


VIEW A-A
PLAN VIEW - CONDUCTOR
NOT TO SCALE



VIEW B-B
PLAN VIEW - SHIELD WIRE
NOT TO SCALE



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Sargent & Lundy

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PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
MONOPOLE DEADEND STRUCTURE (90°-140°)

PRELIMINARY
NOT FOR CONSTRUCTION

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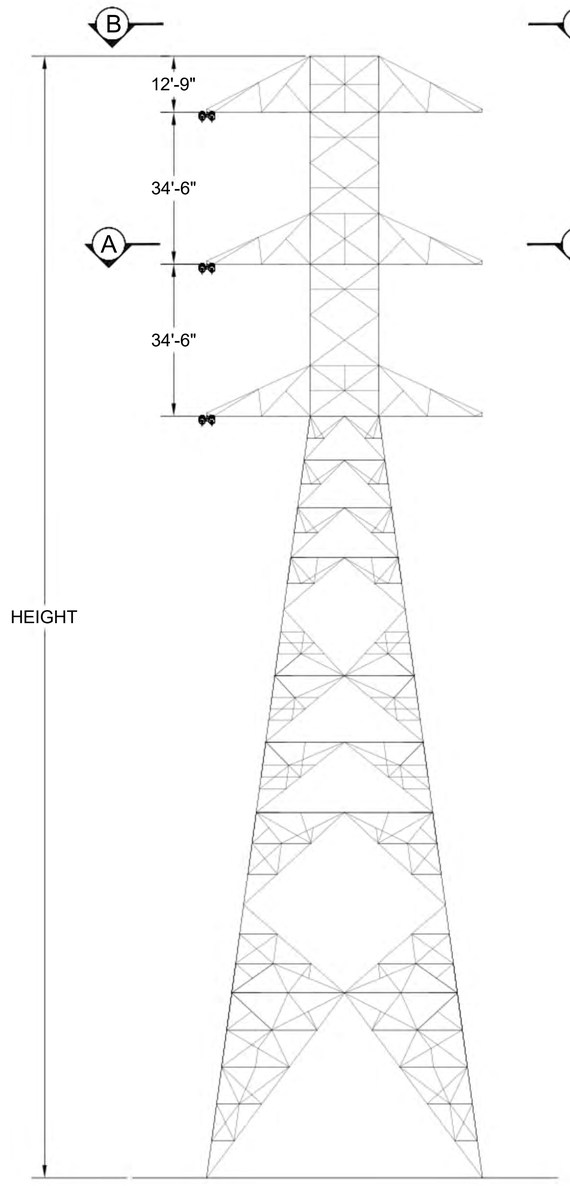
GREG MAGSAYSAY, P.E.
LICENSE #E17455

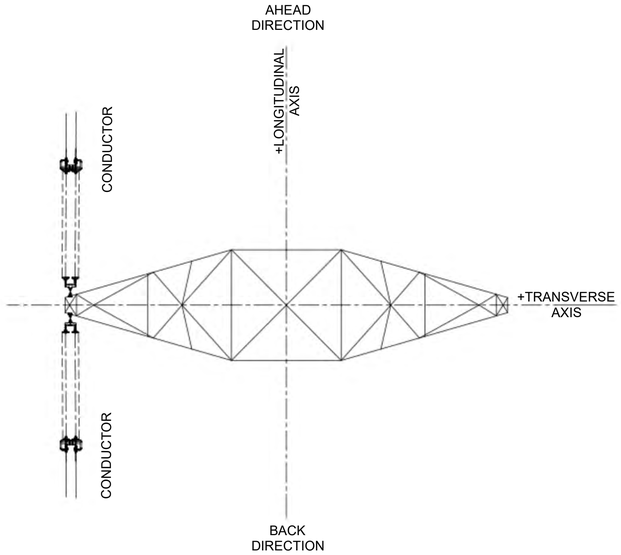
PSR-TL-008

DHA-4 LATTICE TOWER		
STRUCTURE NUMBER	HEIGHT (FT.)	LINE ANGLE (DEG.)
M0-T1	243	48.22
M0-T2	234	15.82

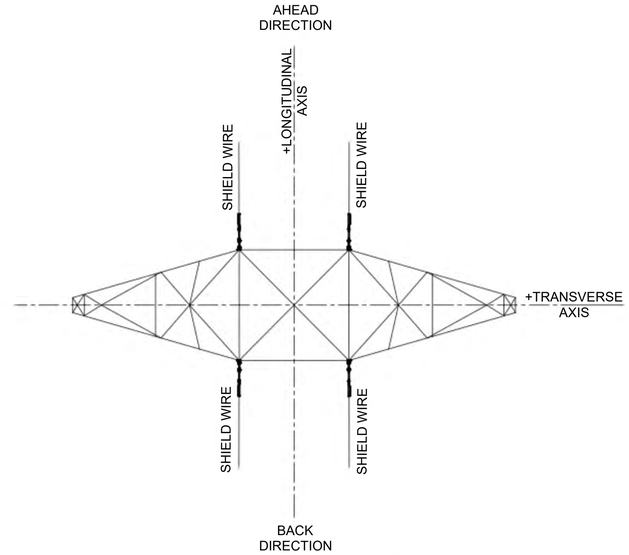
HOLD FOR SCE DESIGN OF TRANSMISSION LINE



500kV DEADEND DHA-4 TOWER
LATTICE TOWER
VIEW LOOKING AHEAD
NOT TO SCALE



VIEW A-A
PLAN VIEW - CONDUCTOR
NOT TO SCALE



VIEW B-B
PLAN VIEW - SHIELD WIRE
NOT TO SCALE

FOR REFERENCE ONLY

NOTES
THIS STRUCTURE CONFIGURATION DRAWING IS BASED ON THE "DHA AND DHA-T TOWER" DRAWING FROM SCE, AND THIS DRAWING IS ONLY MEANT AS A REFERENCE. FOR ACCURATE DESIGN, REFER TO DRAWING NUMBER 5409235-0

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PRAIRIE SONG RELIABILITY
500kV TRANSMISSION LINE
DHA-4 LATTICE TOWER

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GREG MAGSAYSAY, P.E.
LICENSE #E17455

PSR-TL-009

ISSUE SUMMARY
Form SOP-0402-07, Revision 16

DESIGN CONTROL SUMMARY

CLIENT: PRAIRIE SONG RELIABILITY PROJECT, LLC UNIT NO.: PAGE NO.:

PROJECT NAME: PRAIRIE SONG RELIABILITY PROJECT

PROJECT NO.: 15474.001

CALC. NO..: PSR-SE-E3

S&L NUCLEAR QA PROGRAM
APPLICABLE ☐ YES ☒ NO

TITLE: 500kV Switchyard and BESS Calculation

EQUIPMENT NO.:

IDENTIFICATION OF PAGES ADDED/REVISED/SUPERSEDED/VOIDED & REVIEW METHOD

INPUTS/ ASSUMPTIONS
☐ VERIFIED
☐ UNVERIFIED

REVIEW METHOD: REV.:

STATUS: ☐ APPROVED ☐ SUPERSEDED BY CALCULATION NO. ☐ VOID DATE FOR REV.:

ISSUE DESCRIPTION: PRELIMINARY

PREPARER: L. GRAMBUSH DATE: 3/13/2025

REVIEWER: DATE:

APPROVER: DATE:

IDENTIFICATION OF PAGES ADDED/REVISED/SUPERSEDED/VOIDED & REVIEW METHOD

INPUTS/ ASSUMPTIONS
☐ VERIFIED
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ISSUE DESCRIPTION:

PREPARER: DATE:

REVIEWER: DATE:

APPROVER: DATE:

TABLE OF CONTENTS

1. PURPOSE AND SCOPE

1.1 Assess the lighting design and fixtures for adequate illumination of the control house exterior and substation yard.

1.2 The lighting power requirements are outside of the scope of this calculation.

1.3 Interior building lighting is not within the scope of this calculation.

2. DESIGN INPUT

2.1 The luminaire Light Loss Factor entered in our modeling software are as mentioned below.

2.2 General Arrangement PSR-SE-101.pdf
2.3 Substation Lighting Plan, PSR-SE-102 SH.1

2.4 The luminaire manufacturer and product data that was used in the calculation is summarized in Table 1 below. Vendor equipment data can be found in this document.

TABLE 1: MANUFACTURER DATA SUMMARY

Status	Manufacturer	Type	Yard Area	LLF	Lamp	Lumens
New Lights	Cooper	Streetworks UFLD	Substation Lighting	0.85	UFLD-CA2-120-730-U-66-S-AP	18,882
New Lights	Evolve	Evolve - EALS Series	Battery Yard Lighting	0.9	EALS-03-0-FX-SW-7-30-X-A-D1-GRAY-R	15,000
New Lights	LSI	Traditional wall light (TLWP)	Control House Lighting	0.9	TLWP-5L-UNV-30-CWBB-BLK-PCI120	4,900

3. ASSUMPTIONS

3.1.1 Lighting assumptions are based off drawing PSR-SE-101.pdf Prairie Song Reliability Project General Arrangement, and because of such; results are invalidated when this design is changed. All results must be confirmed with new design considerations.

3.1.2 It is assumed that no lights outside of the substation yard influence this report.

3.1.3 A light loss factor has been assumed as per Table 1.

3.1.4 It is assumed that the station has a flat grade throughout the yard.

4. METHODOLOGY AND ACCEPTANCE CRITERIA

4.1 METHODOLOGY:

Acuity Brands Visual lighting software uses a direct lumens and maximum spill calculation method which is acceptable for outdoor applications. This method will be used to determine adequate average lighting intensity.

The methodology using Visual lighting software is as follows:

A. Create or import a model of the area of the substation being examined.

B. Specify surfaces for equipment, control houses, towers, and other utilities and apply appropriate attributes, such as dimensions, reflectance, illuminance metering method (directional or maximum spill), and orientation.

C. Import appropriate ".ies" files for the luminaires to be simulated.

D. Place and orient luminaires and run the calculation to determine illumination throw levels on all inspected surfaces.

E. Compare the calculated illumination levels versus the minimum required illumination levels.

F. If the calculated illuminations do not match the minimum requirements, reconfigure the lighting arrangement and repeat processes D through F until a satisfactory result is obtained.

G. Illumination on equipment surfaces is to be calculated at 90˚ or perpendicular to their surface and illumination on open points on switches is to be calculated at maximum spill.

4.2 INSTALLATION AND GENERAL DESIGN CRITERIA:

4.2.1 The design should use the smallest number of fixtures practical while maintaining the minimum illumination requirements.

4.2.2 Lighting fixtures must be mounted to permanent structures and cannot be mounted to equipment, conduit, pipe or cable tray. The mounts must not hinder the operation, accessibility, or removal of proposed equipment.

4.2.3 The lighting design shall consider ways to reduce light trespass in directions where neighbors are known to exist through light fixture placement and adjustment. Excessive or misdirected light can intrude on the privacy of others when light or glare trespasses over property lines.

5. CALCULATION

5.1.1 Calculations and attachments are shown per the scale shown on each view.

5.1.2 Yard Lighting –Shaded Maps, Contours, Calculation points and schedule are shown in the following sheets.

5.2 COMPUTER USAGE

5.2.1 All calculations have been produced with Visual 2020 r2.11.0094, S&L program number 03.7.736-2020R2.

5.2.2 The text portion of the calculation has been produced with Microsoft Word for Office 365 MSO (16.0.16626.20170) 32-bit.

5.2.3 All CAD drawings have been produced with AutoCAD 2022.

5.2.4 All calculations, drawings and text were produced on S&L computer PL13425 (Lisa Grambush)

5.2.5 The following Inputs were used in the preparation of this calculation:
- Design inputs found in Section 2.1 – 2.3

5.2.6 The following outputs were produced from the preparation of this calculation:
- Computation found in Section 5.1 and results found in Section 7.1 & 7.2

5.2.7 The following calculation files may be requested in order to recreate the calculation:
- PSR-SE Prairie Song.VSL, PSR-BE-Prairie Song.VSL

6. REQUIREMENTS/RECOMMENDATIONS

In Accordance with the NESC Section 111 on illumination the following points are applicable:

a) At stations where lighting is used, the following table is recommended

Table 111-1—Illumination levels

Location	footcandles	lux
Generating station (interior)		
Highly critical areas occupied most of the time [1]	25	270
Areas occupied most of the time [2]	15	160
Critical areas occupied infrequently [3]	10	110
Areas occupied infrequently [4]	5	55
Generating station (exterior)		
Building pedestrian main entrance	10	110
Critical areas [5]	5	55
Areas occupied occasionally by pedestrians [6]	2	22
Areas occupied occasionally by vehicles [7]	1	11
Areas occupied infrequently [8]	0.5	5.5
Remote areas [9]	0.2	2.2
Substation		
Control building interior	5	55
General exterior horizontal and equipment vertical	2	22
Remote areas [10]	0.2	2.2

[1] Such as: Chemical laboratory, large centralized control room 66 in (1.68 m) above floor, section of duplex facing away from operator, bench boards (horizontal level), dispatch boards—horizontal plane (desk level), dispatch boards—vertical face of board [48 in (1.22 m) above floor, facing operator]—system load dispatch room.

[2] Such as: Ordinary control room 66 in (1.68 m) above floor, secondary dispatch room, turbine room.

[3] Such as: Auxiliaries, battery areas, boiler feed pumps, tanks, compressors, gage area, burner platforms, hydrogen and carbon dioxide manifold area, screen house, power switchgear, communications equipment room, turbine bay sub-basement, visitors' gallery, water treating area.

[4] Such as: Air-conditioning equipment, air preheater and fan floor, ash sluicing, boiler platforms, cable room, circulator, or pump bay, coal conveyor, crusher, feeder, scale area, pulverizer, fan area, transfer tower, condensers, de-aerator floor, evaporator floor, heater floors, area inside duplex switchboards, rear of all switchboard panels (vertical), precipitators, soot or slag blower platform, steam headers and throttles, piping tunnels or galleries.

[5] Such as: Coal unloading dock (loading or unloading zone), coal unloading car dumper, gate house conveyor entrance, fuel-oil delivery headers, platforms—boiler, turbine deck.

[6] Such as: Catwalks, coal unloading tipple, conveyors, secondary building entrances.

[7] Such as: Oil storage tanks, roadway between or along buildings.

[8] Such as: Coal unloading barge storage area, roadway not bordered by buildings.

[9] Such as: Cinder dumps, fence, open yard.

[10] Such as: Fence, open yard.

6.1 Substation Yard Area:
For this station, it was decided to use a general lighting of the substation area of a minimum of 0.2 and an average of 2 foot-candles.

6.2 Control house exterior:
For this station, it was decided to use overhead door lighting at a minimum of 5 foot-candles and general lighting around other areas of the control house at 2 foot-candles.

6.3 Control house interior:
This area was not simulated but was estimated to be above 5 foot-candles

6.4 Battery yard area:
There was no requirement to have lighting in the region of the batteries themselves. Any maintenance or operational work will need to be done with mobile lighting equipment.

7. RESULTS

7.1 Substation Yard Area:
The general lighting of the substation area is between 0.2 and 2 foot-candles and therefore meets the design requirements.

7.2 Control house exterior:
The overhead door lighting yields >5 foot-candles in the door regions and general lighting around other areas of the control house is >2 foot-candles. This therefore meets the design requirements.

7.3 Control house interior:
This area was not simulated but was estimated to be above 5 foot-candles and therefore should be acceptable for operations and maintenance activities.

7.4 Battery yard area – batteries:
There was no requirement to have lighting in the region of the batteries themselves. Any maintenance or operational work will need to be done with mobile lighting equipment.

8. REFERENCES

8.1 The IESNA Lighting Handbook, Tenth Edition.

8.2 ANSI C.84.1 Electric Power Systems and Equipment

8.3 PHI Substation Design Manual, Section 36. “Lighting” (Rev 1: July 13th, 2021)

8.4 Substation Lighting Plan, PSR-SE-102 SH.1

8.5 NESC Table 111-1, Illumination Levels

9. ATTACHMENTS

9.1 General Arrangement (PSR-SE-101)
9.2 Lighting & Camera Elevation View (ANG-SE-201)
9.3 500kV Switchyard - Statistics, Luminaire Locations & Schedule
9.4 500kV Switchyard - Contours & Light Saturation Levels
9.5 500kV Switchyard - Lighting Level Contours
9.6 500kV Switchyard – Isometric
9.7 BESS Yards – Statistics, Luminaire Locations & Schedule
9.8 BESS Yards – Contours & Light Saturation Levels
9.9 Cooper Streetworks UFLD Attachments
9.10 Evolve - EALS Series Attachments
9.11 LSI- Traditional wall light (TLWP) Attachments

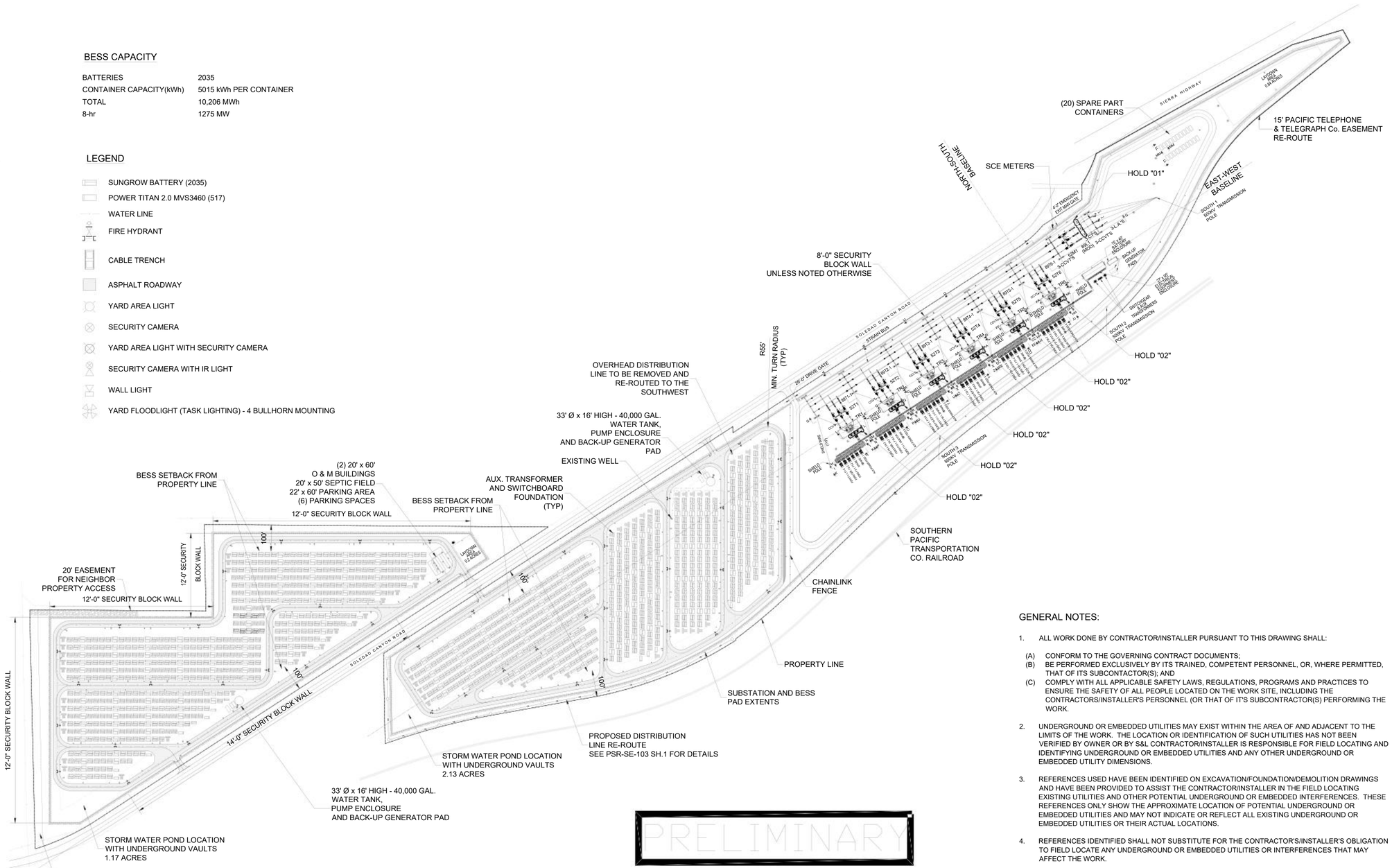
9.1 GENERAL ARRANGEMENT

BESS CAPACITY

BATTERIES	2035
CONTAINER CAPACITY(kWh)	5015 kWh PER CONTAINER
TOTAL	10,206 MWh
8-hr	1275 MW

LEGEND

- SUNGROW BATTERY (2035)
- POWER TITAN 2.0 MVS3460 (517)
- WATER LINE
- FIRE HYDRANT
- CABLE TRENCH
- ASPHALT ROADWAY
- YARD AREA LIGHT
- SECURITY CAMERA
- YARD AREA LIGHT WITH SECURITY CAMERA
- SECURITY CAMERA WITH IR LIGHT
- WALL LIGHT
- YARD FLOODLIGHT (TASK LIGHTING) - 4 BULLHORN MOUNTING



PRELIMINARY

GENERAL NOTES:

1. ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL:
   - (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS;
   - (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL, OR, WHERE PERMITTED, THAT OF ITS SUBCONTACTOR(S); AND
   - (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTORS/INSTALLER'S PERSONNEL (OR THAT OF IT'S SUBCONTRACTOR(S) PERFORMING THE WORK.
2. UNDERGROUND OR EMBEDDED UTILITIES MAY EXIST WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK. THE LOCATION OR IDENTIFICATION OF SUCH UTILITIES HAS NOT BEEN VERIFIED BY OWNER OR BY S&L CONTRACTOR/INSTALLER IS RESPONSIBLE FOR FIELD LOCATING AND IDENTIFYING UNDERGROUND OR EMBEDDED UTILITIES AND ANY OTHER UNDERGROUND OR EMBEDDED UTILITY DIMENSIONS.
3. REFERENCES USED HAVE BEEN IDENTIFIED ON EXCAVATION/FOUNDATION/DEMOLITION DRAWINGS AND HAVE BEEN PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING EXISTING UTILITIES AND OTHER POTENTIAL UNDERGROUND OR EMBEDDED INTERFERENCES. THESE REFERENCES ONLY SHOW THE APPROXIMATE LOCATION OF POTENTIAL UNDERGROUND OR EMBEDDED UTILITIES AND MAY NOT INDICATE OR REFLECT ALL EXISTING UNDERGROUND OR EMBEDDED UTILITIES OR THEIR ACTUAL LOCATIONS.
4. REFERENCES IDENTIFIED SHALL NOT SUBSTITUTE FOR THE CONTRACTOR'S/INSTALLER'S OBLIGATION TO FIELD LOCATE ANY UNDERGROUND OR EMBEDDED UTILITIES OR INTERFERENCES THAT MAY AFFECT THE WORK.
5. DUE CAUTION SHALL BE TAKEN DURING ANY EXCAVATION/FOUNDATION/DEMOLITION WORK WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK DUE TO POSSIBLE INTERFERENCES THAT MAY NOT BE REFLECTED ON THE REFERENCES IDENTIFIED.

TRUE NORTH

PROJECT NORTH

0 200 400 800

GRAPHIC SCALE

DRAWING SCALE
1:200

HOLD INFORMATION	
NO.	DESCRIPTION
01	PHASING TO BE PROVIDED BY CLIENT
02	REACTOR RATINGS ON HOLD PENDING DETAILED DESIGN ENGINEERING STUDIES

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/ INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.

RELEASE INFORMATION		
REV.	DATE	DESCRIPTION
0A	2/24/2025	ISSUED FOR 30%
0B	4/4/2025	ISSUED FOR PERMIT
0C	5/2/2025	ISSUED FOR PERMIT
0D	5/20/2025	ISSUED FOR PERMIT

ISSUE PURPOSE:	ISSUED FOR PERMIT
SPECIFICATION:	-
PROJECT NO.:	15474.001

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ENTER NAME.

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

CERT OF AUTHORIZATION (WHEN REQ'D)

CAD FILE NAME:	PSR-SE-101_S001.DWG
PREPARED BY:	LG
REVIEWED BY:	EC/GM
APPROVED BY:	APPD

ANY MODIFICATION OR ADDITION TO THIS DRAWING BY AN ORGANIZATION OTHER THAN SARGENT & LUNDY, IS NOT THE RESPONSIBILITY OF SARGENT & LUNDY.

Sargent & Lundy

SARGENT & LUNDY
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780

PROJECT

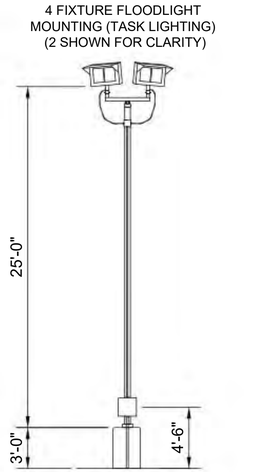
PRAIRIE SONG RELIABILITY PROJECT

DRAWING TITLE

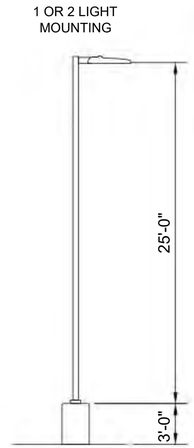
GENERAL ARRANGEMENT

DRAWING NUMBER	REVISION
PSR-SE-101	0D
SHEET 1 OF 2	

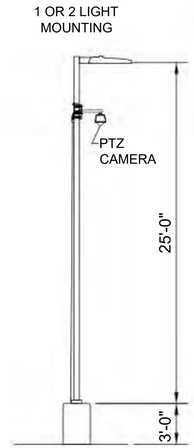
9.2 LIGHTING & CAMERA ELEVATION VIEW



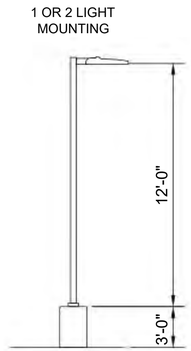
4 FLOODLIGHT (TASK LIGHTING) POLE
TYPICAL MOUNTING
N.T.S.



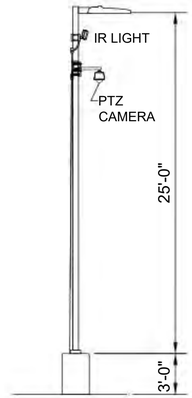
SWITCHYARD AREA LIGHT
TYPICAL MOUNTING
N.T.S.



SWITCHYARD AREA LIGHT
TYPICAL MOUNTING
WITH SECURITY CAMERA
N.T.S.



BESS YARD AREA LIGHT
TYPICAL MOUNTING
N.T.S.

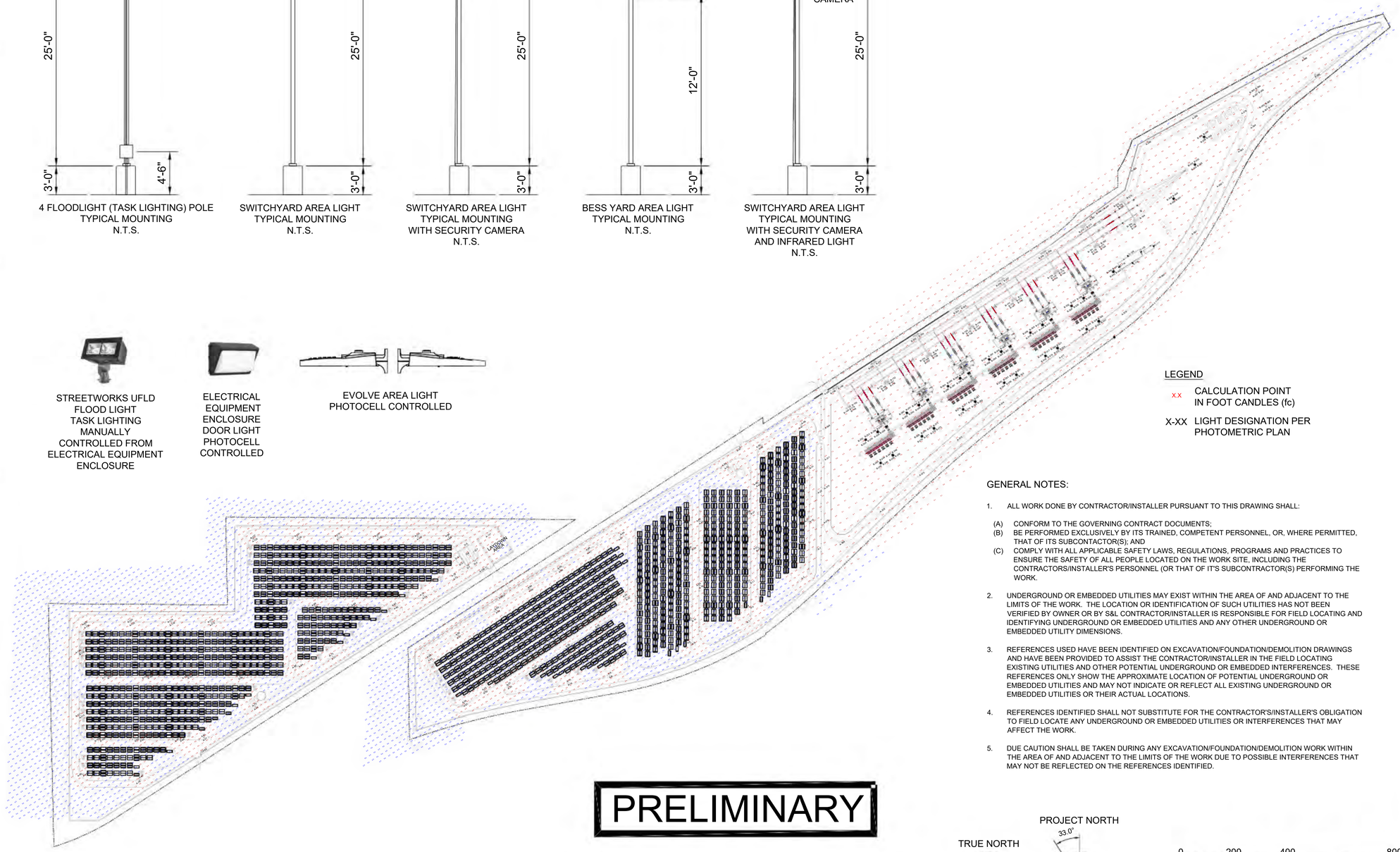


SWITCHYARD AREA LIGHT
TYPICAL MOUNTING
WITH SECURITY CAMERA
AND INFRARED LIGHT
N.T.S.

STREETWORKS UFLD
FLOOD LIGHT
TASK LIGHTING
MANUALLY
CONTROLLED FROM
ELECTRICAL EQUIPMENT
ENCLOSURE

ELECTRICAL
EQUIPMENT
ENCLOSURE
DOOR LIGHT
PHOTOCELL
CONTROLLED

EVOLVE AREA LIGHT
PHOTOCELL CONTROLLED



LEGEND

X.X CALCULATION POINT IN FOOT CANDLES (fc)

X-XX LIGHT DESIGNATION PER PHOTOMETRIC PLAN

GENERAL NOTES:

1. ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL:
   (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS;
   (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL, OR, WHERE PERMITTED, THAT OF ITS SUBCONTACTOR(S); AND
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PRELIMINARY

TRUE NORTH

PROJECT NORTH
33.0°

0 200 400 800
GRAPHIC SCALE

DRAWING SCALE
1" = 200'

HOLD INFORMATION

NO.	DESCRIPTION

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/ INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.

RELEASE INFORMATION

REV.	DATE	DESCRIPTION
0A	4/4/2025	ISSUED FOR PERMIT
OB	5/2/2025	ISSUED FOR PERMIT
0C	5/20/2025	ISSUED FOR PERMIT

ISSUE PURPOSE:	ISSUED FOR PERMIT
SPECIFICATION:	-
PROJECT NO.:	15474.001

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ENTER NAME.

ISSUED FOR PRELIMINARY PURPOSES
GREG MAGSAYSAY, P.E.
LICENSE #E17455

CERT OF AUTHORIZATION (WHEN REQ'D)

CAD FILE NAME:	PSR-SE-102_S001.DWG
PREPARED BY:	LG
REVIEWED BY:	EC
APPROVED BY:	APPD

ANY MODIFICATION OR ADDITION TO THIS DRAWING BY AN ORGANIZATION OTHER THAN SARGENT & LUNDY, IS NOT THE RESPONSIBILITY OF SARGENT & LUNDY.

Sargent & Lundy

SARGENT & LUNDY
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780

PROJECT

PRAIRIE SONG
RELIABILITY PROJECT

DRAWING TITLE

LIGHTING PLAN

DRAWING NUMBER	REVISION
PSR-SE-102	0C
SHEET 1 OF 1	

Schedule

Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
A		25	EVOLVE	EALS03_FSSW730_____ ___	EALS03 EVOLVE LED AREA	1	14700	0.9	101	
B		184	COOPER LIGHTING SOLUTIONS - STREETWORKS (FORMERLY EATON)	UFLD-CA2-120-730-U-66	UTILITY FLOOD, 6x6 OPTIC	2	Absolute	0.85	123.9	
C		5	LSI INDUSTRIES, INC.	XWS-LED-02L-SIL-FT-30--70CRI		1	1890	0.9	13	

9.3 500kV Switchyard - Statistics, Luminaire Locations & Schedule

Statistics

Symbol	Avg	Max	Description
+	3.9 fc	4.3 fc	89T-AUX3-2
+	5.2 fc	6.1 fc	89T-AUX4-1
+	3.9 fc	4.3 fc	89T-AUX4-2
+	5.3 fc	6.1 fc	89T-AUX5-1
+	3.9 fc	4.3 fc	89T-AUX5-2
+	5.1 fc	6.0 fc	89T-AUX6-1
+	3.7 fc	4.1 fc	89T-AUX6-2
+	1.3 fc	5.4 fc	500kV Substation
+	2.6 fc	3.0 fc	Calc Zone #103
+	3.2 fc	3.8 fc	Calc Zone #103(Copy)
+	0.4 fc	2.9 fc	Calc Zone #104
+	0.3 fc	2.8 fc	Reflectance North of Substation
+	4.8 fc	5.7 fc	89F1-1 Switch

Statistics

Symbol	Avg	Max	Description
+	3.6 fc	4.1 fc	89F1-2 Switch
+	6.5 fc	6.9 fc	89F2-1 Switch
+	4.5 fc	4.8 fc	89F2-2 Switch
+	6.1 fc	6.7 fc	89F3-1 Switch
+	4.7 fc	4.9 fc	89F3-2 Switch
+	6.2 fc	6.8 fc	89F4-1 Switch
+	4.8 fc	5.0 fc	89F4-2 Switch
+	6.7 fc	7.0 fc	89F5-1 Switch
+	4.6 fc	4.9 fc	89F5-2 Switch
+	5.2 fc	6.1 fc	89F8-1 Switch
+	3.9 fc	4.3 fc	89F8-2 Switch
+	6.8 fc	7.2 fc	89F9-1 Switch
+	4.7 fc	4.9 fc	89F9-2 Switch
+	6.4 fc	7.0 fc	89F10-1 Switch
+	4.9 fc	5.0 fc	89F10-2 Switch
+	6.4 fc	7.0 fc	89F11-1 Switch
+	4.9 fc	5.0 fc	89F11-2 Switch
+	6.9 fc	7.1 fc	89F12-1 Switch
+	4.7 fc	4.9 fc	89F12-2 Switch
+	5.2 fc	6.1 fc	89F15-1 Switch
+	3.9 fc	4.3 fc	89F15-2 Switch
+	6.9 fc	7.1 fc	89F16-1 Switch
+	4.7 fc	5.0 fc	89F16-2 Switch
+	6.4 fc	6.9 fc	89F17-1 Switch
+	4.9 fc	5.1 fc	89F17-2 Switch
+	6.4 fc	7.0 fc	89F18-1 Switch
+	4.9 fc	5.1 fc	89F18-2 Switch
+	6.8 fc	7.1 fc	89F19-1 Switch
+	4.7 fc	5.0 fc	89F19-2 Switch
+	5.2 fc	6.0 fc	89F22-1 Switch
+	3.9 fc	4.3 fc	89F22-2 Switch
+	6.8 fc	7.1 fc	89F23-1 Switch
+	4.7 fc	5.0 fc	89F23-2 Switch
+	6.4 fc	6.9 fc	89F24-1 Switch
+	4.9 fc	5.1 fc	89F24-2 Switch
+	6.4 fc	6.9 fc	89F25-1 Switch
+	4.9 fc	5.1 fc	89F25-2 Switch
+	6.9 fc	7.2 fc	89F26-1 Switch
+	4.7 fc	5.0 fc	89F26-2 Switch
+	5.3 fc	6.2 fc	89F29-1 Switch
+	3.9 fc	4.4 fc	89F29-2 Switch
+	6.8 fc	7.1 fc	89F30-1 Switch
+	4.7 fc	5.0 fc	89F30-2 Switch
+	6.4 fc	7.0 fc	89F31-1 Switch
+	4.9 fc	5.1 fc	89F31-2 Switch
+	6.4 fc	7.0 fc	89F32-1 Switch
+	4.9 fc	5.1 fc	89F32-2 Switch
+	6.9 fc	7.1 fc	89F33-1 Switch
+	4.7 fc	5.0 fc	89F33-2 Switch
+	5.2 fc	6.0 fc	89F36-1 Switch
+	3.8 fc	4.3 fc	89F36-2 Switch
+	6.8 fc	7.1 fc	89F37-1 Switch
+	4.6 fc	4.9 fc	89F37-2 Switch
+	6.3 fc	6.9 fc	89F38-1 Switch
+	4.8 fc	5.0 fc	89F38-2 Switch
+	6.3 fc	6.9 fc	89F39-1 Switch
+	4.8 fc	4.9 fc	89F39-2 Switch
+	6.8 fc	7.1 fc	89F40-1 Switch
+	4.5 fc	4.8 fc	89F40-2 Switch
+	4.8 fc	9.3 fc	89L1 Switch Phase 1
+	4.0 fc	4.5 fc	89L1 Switch Phase 2
+	2.6 fc	2.8 fc	89L1 Switch Phase 3
+	5.8 fc	6.4 fc	89T1-1 Switch Phase 1
+	3.8 fc	4.1 fc	89T1-1 Switch Phase 2a
+	4.2 fc	4.5 fc	89T1-1 Switch Phase 2b
+	5.1 fc	5.7 fc	89T1-1 Switch Phase 3
+	4.3 fc	4.8 fc	89T2-1 Switch Phase 1
+	2.6 fc	2.8 fc	89T2-1 Switch Phase 2a
+	3.9 fc	4.1 fc	89T2-1 Switch Phase 2b
+	4.7 fc	5.2 fc	89T2-1 Switch Phase 3
+	5.1 fc	5.4 fc	89T3-1 Switch Phase 1
+	2.8 fc	3.0 fc	89T3-1 Switch Phase 2a
+	3.5 fc	3.6 fc	89T3-1 Switch Phase 2b
+	4.7 fc	5.2 fc	89T3-1 Switch Phase 3
+	6.5 fc	7.0 fc	89T4-1 Switch Phase 1
+	4.5 fc	4.8 fc	89T4-1 Switch Phase 2a
+	2.9 fc	3.1 fc	89T4-1 Switch Phase 2b
+	4.2 fc	4.5 fc	89T4-1 Switch Phase 3
+	7.2 fc	8.1 fc	89T5-1 Switch Phase 1
+	3.8 fc	4.1 fc	89T5-1 Switch Phase 2a
+	2.8 fc	2.9 fc	89T5-1 Switch Phase 2b
+	3.9 fc	4.1 fc	89T5-1 Switch Phase 3
+	8.5 fc	9.9 fc	89T6-1 Switch Phase 1
+	4.5 fc	4.9 fc	89T6-1 Switch Phase 2a
+	1.9 fc	2.0 fc	89T6-1 Switch Phase 2b
+	2.9 fc	3.0 fc	89T6-1 Switch Phase 3
+	5.1 fc	5.9 fc	89T-AUX1-1
+	3.9 fc	4.3 fc	89T-AUX1-2
+	5.3 fc	6.2 fc	89T-AUX2-1
+	3.9 fc	4.3 fc	89T-AUX2-2
+	5.2 fc	6.1 fc	89T-AUX3-1

Luminaire Locations

Label	No.	MH	Orientation	Tilt
C	117	7'	180.00	0.00
C	118	7'	180.00	0.00
C	125	7'	90.00	0.00
C	126	7'	0.00	0.00
B	135	55'	270.00	89.00
B	136	55'	90.00	89.00
B	137	55'	270.00	89.00
B	138	55'	90.00	89.00
B	139	55'	270.00	89.00
B	140	55'	90.00	89.00
B	141	55'	270.00	89.00
B	142	55'	90.00	89.00
B	143	55'	270.00	89.00
B	144	55'	90.00	89.00
B	145	55'	270.00	89.00
B	146	55'	90.00	89.00
B	147	55'	270.00	89.00
B	148	55'	90.00	89.00
B	149	15'	270.00	80.00
B	150	15'	90.00	80.00
B	151	15'	270.00	85.00
B	152	15'	90.00	85.00
B	153	15'	270.00	85.00
B	154	15'	90.00	85.00
B	155	15'	270.00	85.00
B	156	15'	90.00	85.00
B	157	15'	270.00	85.00
B	158	15'	90.00	85.00
B	159	15'	270.00	85.00
B	160	15'	90.00	85.00
B	161	15'	270.00	85.00
B	162	15'	90.00	85.00
B	163	15'	270.00	85.00
B	164	15'	90.00	85.00
B	166	55'	270.00	89.00
B	167	55'	90.00	89.00
B	168	55'	270.00	89.00
B	169	55'	90.00	89.00
B	170	55'	270.00	89.00
B	171	55'	90.00	89.00
B	172	55'	270.00	89.00
B	173	55'	90.00	89.00
B	174	55'	270.00	89.00

Luminaire Locations

Label	No.	MH	Orientation	Tilt
B	175	55'	90.00	89.00
B	176	55'	270.00	89.00
B	177	55'	90.00	89.00
B	178	55'	270.00	89.00
B	179	55'	90.00	89.00
B	197	55'	270.00	89.00
B	198	15'	250.00	80.00
B	199	15'	110.00	80.00
B	200	15'	250.00	80.00
B	201	15'	110.00	80.00
B	202	15'	250.00	80.00
B	203	15'	110.00	80.00
B	204	15'	250.00	80.00
B	205	15'	110.00	80.00
B	206	15'	250.00	80.00
B	207	15'	110.00	80.00
B	208	15'	250.00	80.00
B	209	15'	110.00	80.00
B	210	15'	250.00	80.00
B	211	15'	110.00	80.00
B	212	15'	270.00	85.00
B	213	15'	90.00	85.00
B	215	55'	270.00	89.00
B	243	28'	330.00	89.00
B	244	28'	30.00	89.00
B	245	28'	210.00	89.00
B	246	28'	150.00	89.00
B	247	28'	330.00	89.00
B	248	28'	30.00	89.00
B	249	28'	210.00	89.00
B	250	28'	150.00	89.00
B	252	28'	330.00	89.00
B	253	28'	30.00	89.00
B	254	28'	210.00	89.00
B	255	28'	150.00	89.00
B	256	28'	330.00	89.00
B	257	28'	30.00	89.00
B	258	28'	210.00	89.00
B	259	28'	150.00	89.00
B	260	28'	330.00	89.00
B	261	28'	30.00	89.00
B	262	28'	210.00	89.00
B	263	28'	150.00	89.00

Luminaire Locations

Label	No.	MH	Orientation	Tilt
B	264	28'	330.00	89.00
B	265	28'	30.00	89.00
B	266	28'	210.00	89.00
B	267	28'	150.00	89.00
B	268	28'	330.00	89.00
B	269	28'	30.00	89.00
B	270	28'	210.00	89.00
B	271	28'	150.00	89.00
B	272	28'	330.00	89.00
B	273	28'	30.00	89.00
B	274	28'	210.00	89.00
B	275	28'	150.00	89.00
B	276	28'	330.00	89.00
B	277	28'	30.00	89.00
B	278	28'	210.00	89.00
B	279	28'	150.00	89.00
B	280	28'	330.00	89.00
B	281	28'	30.00	89.00
B	282	28'	210.00	89.00
B	283	28'	150.00	89.00
B	284	28'	330.00	89.00
B	285	28'	30.00	89.00
B	286	28'	210.00	89.00
B	287	28'	150.00	89.00
B	288	28'	330.00	89.00
B	289	28'	30.00	89.00
B	290	28'	210.00	89.00
B	291	28'	150.00	89.00
B	292	28'	330.00	89.00
B	293	28'	30.00	89.00
B	294	28'	210.00	89.00
B	295	28'	150.00	89.00
B	296	28'	330.00	89.00
B	297	28'	30.00	89.00
B	298	28'	210.00	89.00
B	299	28'	150.00	89.00
B	300	28'	330.00	89.00
B	301	28'	30.00	89.00
B	302	28'	210.00	89.00
B	303	28'	150.00	89.00
B	304	28'	330.00	89.00
B	305	28'	30.00	89.00
B	306	28'	210.00	89.00

Luminaire Locations

Label	No.	MH	Orientation	Tilt
B	307	28'	150.00	89.00
B	308	28'	330.00	89.00
B	309	28'	30.00	89.00
B	310	28'	210.00	89.00
B	311	28'	150.00	89.00
B	312	28'	330.00	89.00
B	313	28'	30.00	89.00
B	314	28'	210.00	89.00
B	315	28'	150.00	89.00
B	316	28'	330.00	89.00
B	317	28'	30.00	89.00
B	318	28'	210.00	89.00
B	319	28'	150.00	89.00
B	320	28'	330.00	89.00
B	321	28'	30.00	89.00
B	322	28'	210.00	89.00
B	323	28'	150.00	89.00
B	324	28'	330.00	89.00
B	325	28'	30.00	89.00
B	326	28'	210.00	89.00
B	327	28'	150.00	89.00
B	328	28'	330.00	89.00
B	329	28'	30.00	89.00
B	330	28'	210.00	89.00
B	331	28'	150.00	89.00
B	332	28'	330.00	89.00
B	333	28'	30.00	89.00
B	334	28'	210.00	89.00
B	335	28'	150.00	89.00
B	336	28'	330.00	89.00
B	337	28'	30.00	89.00
B	338	28'	210.00	89.00
B	339	28'	150.00	89.00
B	340	28'	330.00	89.00
B	341	28'	30.00	89.00
B	342	28'	210.00	89.00
B	343	28'	150.00	89.00
B	346	28'	210.00	89.00
B	347	28'	150.00	89.00
B	348	28'	330.00	89.00
B	349	28'	30.00	89.00
B	350	28'	210.00	89.00
B	351	28'	150.00	89.00

Luminaire Locations

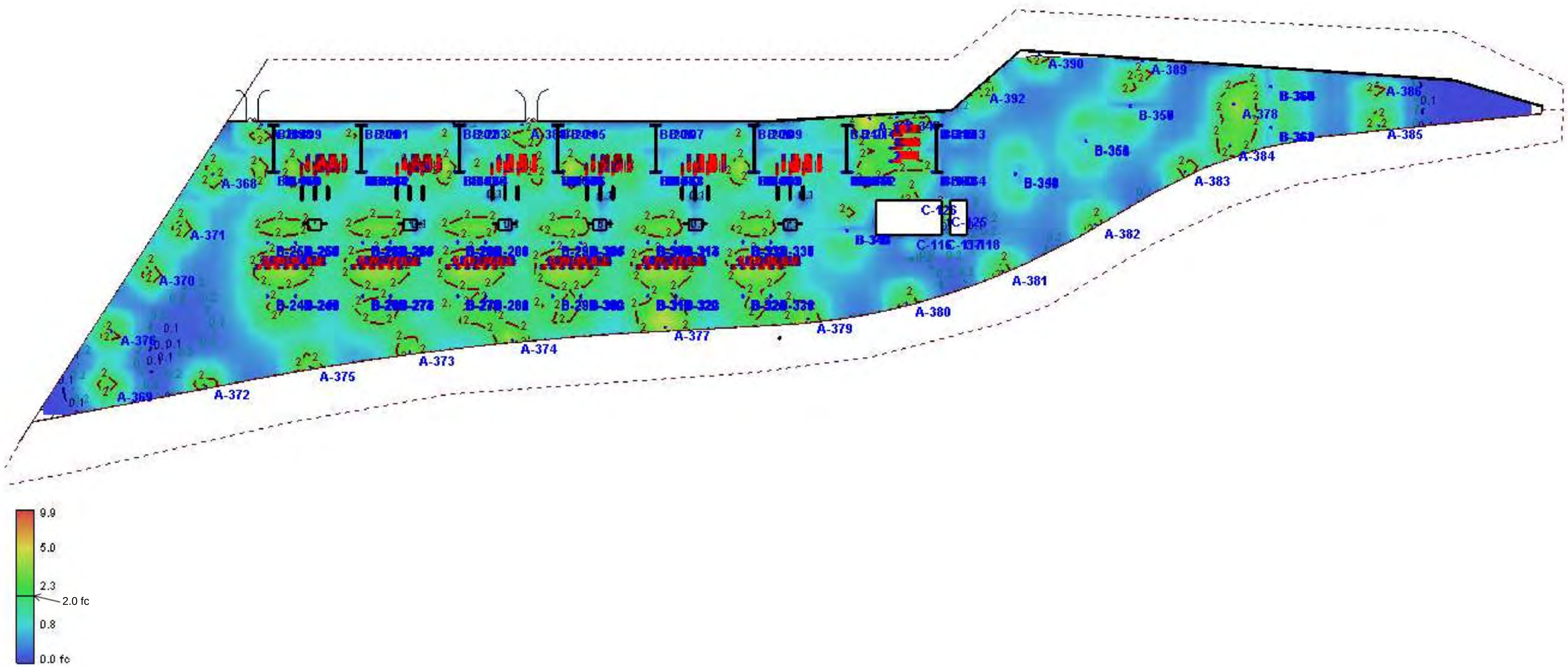
Label	No.	MH	Orientation	Tilt
B	352	28'	330.00	89.00
B	353	28'	30.00	89.00
B	354	28'	210.00	89.00
B	355	28'	150.00	89.00
B	356	28'	330.00	89.00
B	357	28'	30.00	89.00
B	358	28'	210.00	89.00
B	359	28'	150.00	89.00
B	360	28'	60.00	89.00
B	361	28'	120.00	89.00
B	362	28'	300.00	89.00
B	363	28'	240.00	89.00
B	364	28'	60.00	89.00
B	365	28'	120.00	89.00
B	366	28'	300.00	89.00
B	367	28'	240.00	89.00
A	368	28'	120.00	0.00
A	369	28'	45.00	0.00
A	370	28'	120.00	0.00
A	371	28'	120.00	0.00
A	372	28'	0.00	0.00
A	373	28'	0.00	0.00
A	374	28'	0.00	0.00
A	375	28'	350.00	0.00
A	376	28'	120.00	0.00
A	377	28'	0.00	0.00
A	378	28'	270.00	0.00
A	379	28'	350.00	0.00
A	380	28'	350.00	0.00
A	381	28'	340.00	0.00
A	382	28'	335.00	0.00
A	383	28'	335.00	0.00
A	384	28'	335.00	0.00
A	385	28'	0.00	0.00
A	386	28'	185.00	0.00
A	387	28'	270.00	0.00
A	388	28'	90.00	0.00
A	389	28'	185.00	0.00
A	390	28'	185.00	0.00
A	391	28'	180.00	0.00
A	392	28'	130.00	0.00
C	116	7'	180.00	0.00

VISUAL

Prairie Song Reliability Project

Designer
LG
Date
05/02/2025
Scale
Not to Scale
Drawing No.

Summary



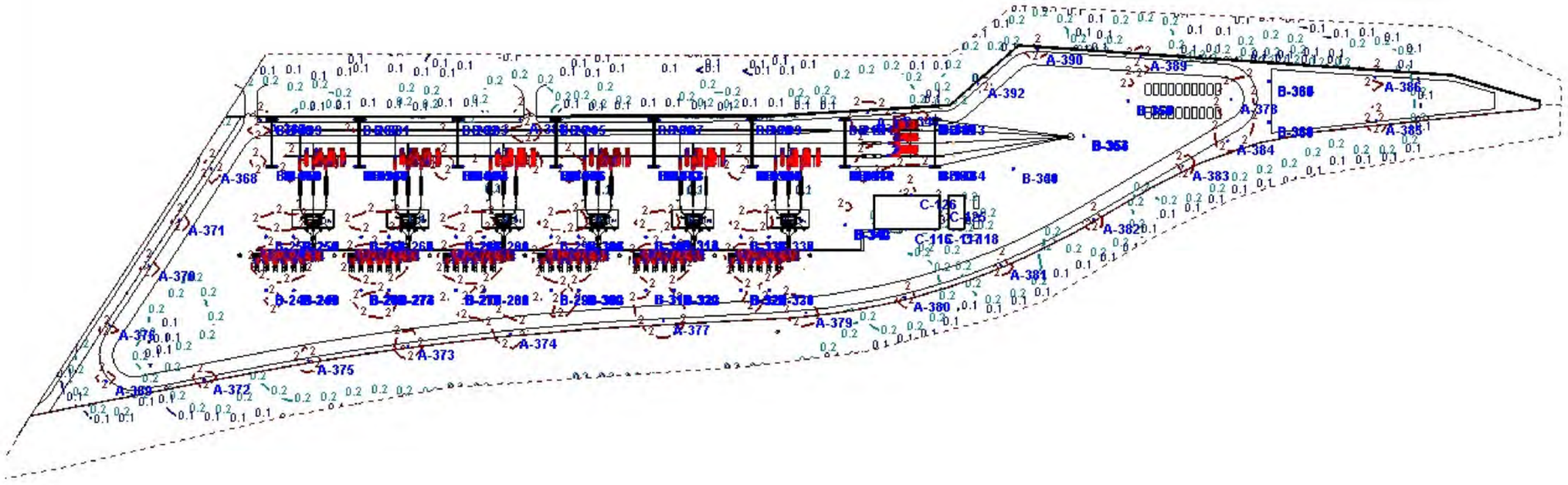
500kV Switchyard - Contours and Light Saturation Levels Map

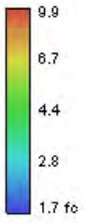
PRAIRIE SONG RELIABILITY PROJECT

VISUAL

Designer
LG
Date
05/02/2025
Scale
Not to Scale
Drawing No.

Summary





9.5 500kV Switchyard - Lighting Level Contours

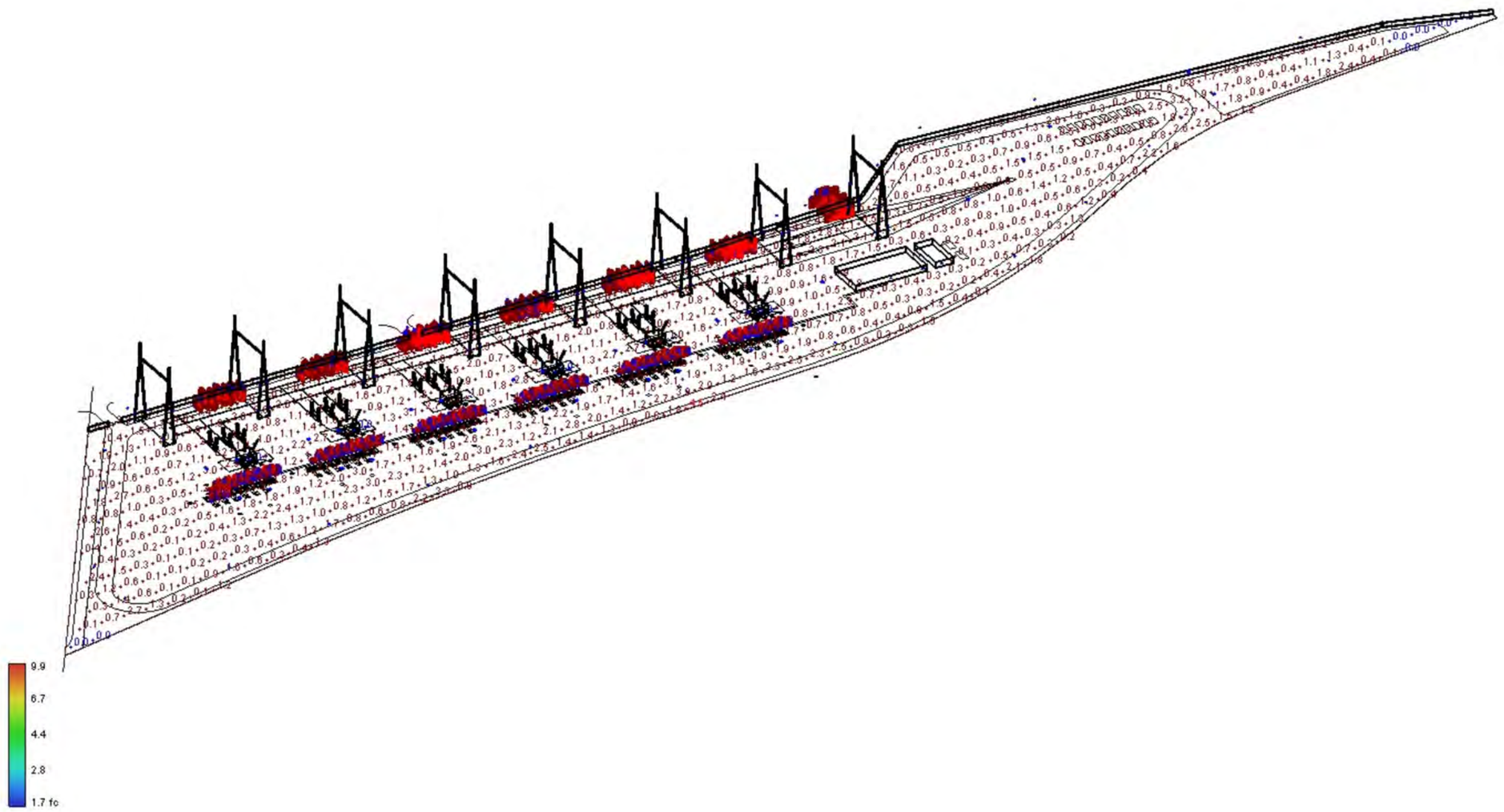
500kV Switchyard - Lighting Level Contours

VISUAL

ONG
ENERGY PROJECT
P
RELIMINARY

Designer
LAG
Date
05/02/2025
Scale
Not to Scale
Drawing No.

Summary



9.6 500kV Switchyard - Isometric

500kV Switchyard - Isometric

VISUAL

PRAIRIE SONG
RELIABILITY PROJECT

Designer
LG
Date
05/05/2025
Scale
Not to Scale
Drawing No.

Summary

Luminaire Locations

Label	No.	MH	Orientation	Tilt
A	2	15.00	0.00	0.00
A	3	15.00	36.02	0.00
A	4	15.00	216.02	0.00
A	5	15.00	36.02	0.00
A	6	15.00	216.02	0.00
A	7	15.00	216.02	0.00
A	8	15.00	114.25	0.00
A	9	15.00	294.25	0.00
A	10	15.00	36.02	0.00
A	11	15.00	36.02	0.00
A	12	15.00	216.02	0.00
A	13	15.00	216.02	0.00
A	14	15.00	114.25	0.00
A	15	15.00	294.25	0.00
A	16	15.00	36.02	0.00
A	17	15.00	216.02	0.00
A	18	15.00	36.02	0.00
A	19	15.00	36.02	0.00
A	20	15.00	216.02	0.00
A	21	15.00	216.02	0.00
A	22	15.00	216.02	0.00
A	23	15.00	90.00	0.00
A	24	15.00	90.00	0.00
A	25	15.00	90.00	0.00
A	26	15.00	90.00	0.00
A	27	15.00	270.00	0.00
A	28	15.00	270.00	0.00
A	29	15.00	270.00	0.00
A	30	15.00	270.00	0.00
A	31	15.00	90.00	0.00
A	32	15.00	90.00	0.00
A	33	15.00	90.00	0.00
A	34	15.00	270.00	0.00
A	35	15.00	270.00	0.00
A	36	15.00	270.00	0.00
A	37	15.00	36.02	0.00
A	38	15.00	216.02	0.00
A	39	15.00	36.02	0.00
A	40	15.00	216.02	0.00
A	41	15.00	36.02	0.00
A	42	15.00	216.02	0.00
A	43	15.00	36.02	0.00
A	44	15.00	36.02	0.00
A	45	15.00	216.02	0.00
A	46	15.00	216.02	0.00
A	47	15.00	90.00	0.00
A	48	15.00	270.00	0.00
A	49	15.00	65.11	0.00
A	50	15.00	245.11	0.00
A	51	15.00	90.00	0.00
A	52	15.00	90.00	0.00
A	53	15.00	90.00	0.00
A	54	15.00	270.00	0.00
A	55	15.00	270.00	0.00
A	56	15.00	270.00	0.00

Luminaire Locations

Label	No.	MH	Orientation	Tilt
A	57	15.00	90.00	0.00
A	58	15.00	90.00	0.00
A	59	15.00	90.00	0.00
A	60	15.00	90.00	0.00
A	61	15.00	90.00	0.00
A	62	15.00	270.00	0.00
A	63	15.00	270.00	0.00
A	64	15.00	270.00	0.00
A	65	15.00	270.00	0.00
A	66	15.00	270.00	0.00
A	67	15.00	36.02	0.00
A	68	15.00	36.02	0.00
A	69	15.00	180.00	0.00
A	70	15.00	90.00	0.00
A	71	15.00	90.00	0.00
A	72	15.00	90.00	0.00
A	73	15.00	270.00	0.00
A	74	15.00	90.00	0.00
A	75	15.00	270.00	0.00
A	76	15.00	119.95	0.00
A	77	15.00	90.00	0.00
A	78	15.00	270.00	0.00
A	79	15.00	270.00	0.00
A	80	15.00	299.95	0.00
A	81	15.00	270.00	0.00
A	82	15.00	119.95	0.00
A	83	15.00	299.95	0.00
A	84	15.00	39.81	0.00
A	85	15.00	219.81	0.00
A	86	15.00	119.95	0.00
A	87	15.00	299.95	0.00
A	88	15.00	119.95	0.00
A	89	15.00	299.95	0.00
A	90	15.00	119.95	0.00
A	91	15.00	299.95	0.00
A	92	15.00	119.95	0.00
A	93	15.00	299.95	0.00
A	94	15.00	119.95	0.00
A	95	15.00	183.19	0.00
A	96	15.00	299.95	0.00
A	97	15.00	3.19	0.00
A	98	15.00	119.95	0.00
A	99	15.00	299.95	0.00
A	100	15.00	119.95	0.00
A	101	15.00	299.95	0.00
A	102	15.00	119.95	0.00
A	103	15.00	299.95	0.00
A	104	15.00	119.95	0.00
A	105	15.00	299.95	0.00
A	106	15.00	119.95	0.00
A	107	15.00	299.95	0.00
A	108	15.00	119.95	0.00
A	109	15.00	299.95	0.00
A	110	15.00	34.52	0.00
A	111	15.00	214.52	0.00

Luminaire Locations

Label	No.	MH	Orientation	Tilt
A	112	15.00	119.95	0.00
A	113	15.00	299.95	0.00
A	114	15.00	119.95	0.00
A	115	15.00	299.95	0.00
A	116	15.00	119.95	0.00
A	117	15.00	299.95	0.00
A	118	15.00	119.95	0.00
A	119	15.00	299.95	0.00
A	120	15.00	119.95	0.00
A	121	15.00	299.95	0.00
A	122	15.00	119.95	0.00
A	123	15.00	299.95	0.00
A	124	15.00	34.52	0.00
A	125	15.00	90.00	0.00
A	126	15.00	214.52	0.00
A	127	15.00	270.00	0.00
A	128	15.00	90.00	0.00
A	129	15.00	270.00	0.00
A	130	15.00	0.00	0.00
A	131	15.00	180.00	0.00
D	1	8.00	180.00	0.00
D	2	8.00	180.00	0.00
D	3	8.00	270.00	0.00
D	4	8.00	270.00	0.00
D	5	8.00	0.00	0.00
D	6	8.00	270.00	0.00
D	7	8.00	90.00	0.00
A	1	15.00	0.00	0.00

Statistics

Avg	Max	Symbol	Description
1.0 fc	21.7 fc	+	South BESS Yard
0.8 fc	19.3 fc	+	North BESS Yard

Schedule

Label	Image	QTY	Manufacturer	Catalog	Number Lamps	Lamp Output	Description	LLF	Input Power	Polar Plot
A		131	EVOLVE	EALS03_F5SW730_____ ___	1	14700	EALS03 EVOLVE LED AREA	0.9	101	 Max: 4969cd
D		7	LSI INDUSTRIES, INC	TLWP-LED-05L-30	1	4883		0.9	39	 Max: 1569cd

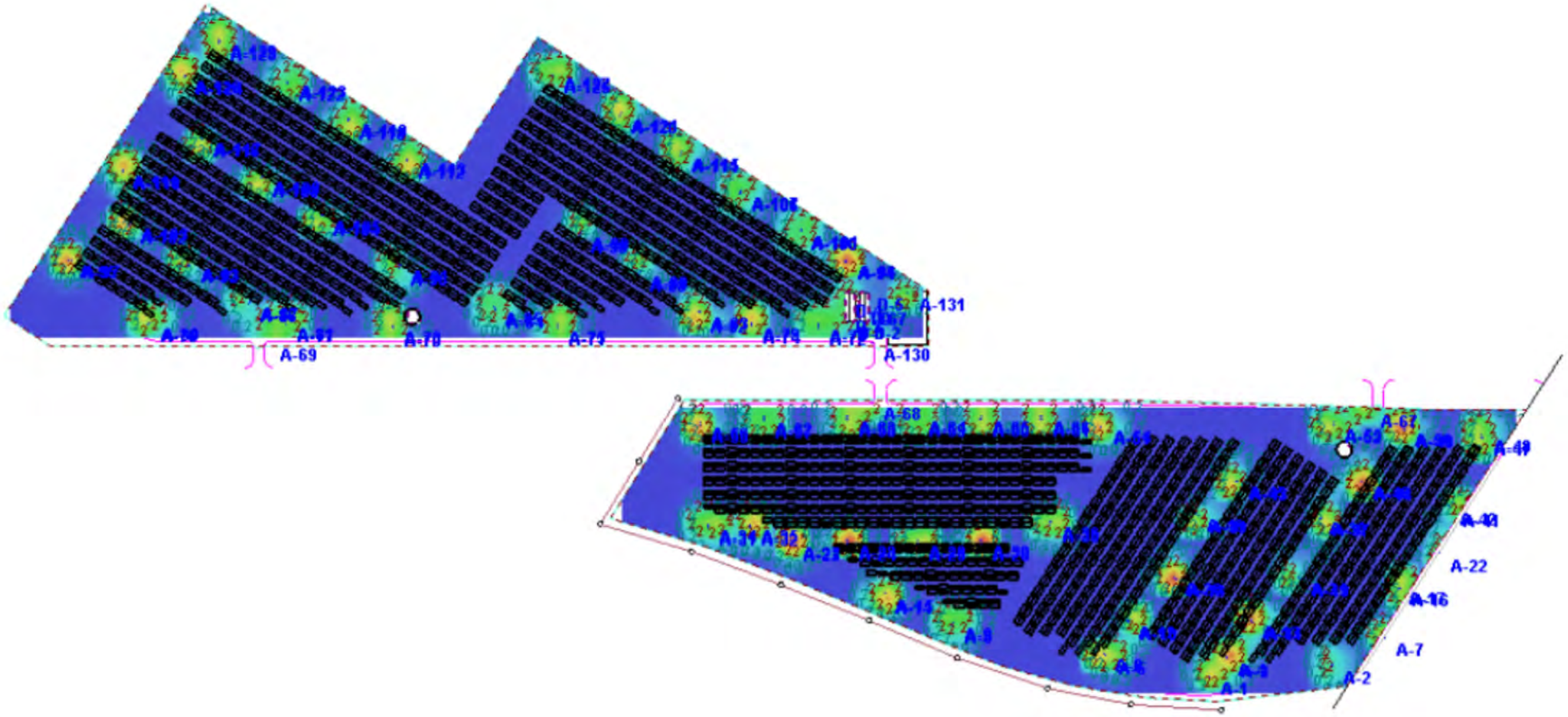
9.7 BESS Yards - Statistics, Luminaire Locations & Schedule

VISUAL

PRAIRIE SONG RELIABILITY PROJECT

Designer
LG
Date
05/05/2025
Scale
Not to Scale
Drawing No.

Summary



9.8 BESS Yards - Contours & Light Saturation Levels

VISUAL

PRAIRIE SONG
RELIABILITY PROJECT

Designer
LG
Date
05/05/2025
Scale
Not to Scale
Drawing No.

Summary

Project		Catalog #		Type	
Prepared by		Notes		Date	

Streetworks

UFLD Utility Flood

Floodlight & Sign Lighting Luminaire

Product Features

Light ARchitect™

BAA

Interactive Menu

Product Certifications

ISO Systems Certified

3G VIB

IP66

UL Certified

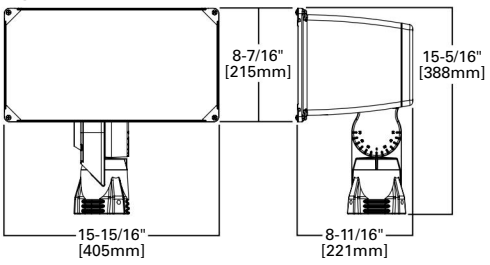
5 YEAR Limited Warranty

Quick Facts

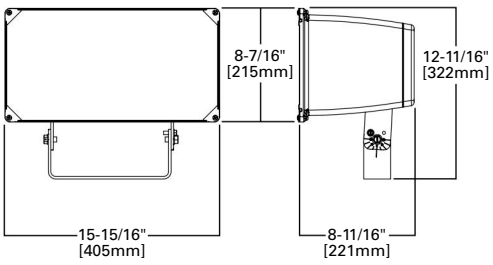
- Up to 156 lumens per watt
- Two optical distributions (Spot, Wide)
- 7 lumen packages ranging from 9,551 - 26,307 delivered lumens
- Offered in 2200K, 2700K, 3000K, 4000K, 5000K, 5700K CCTs

Dimensional Details

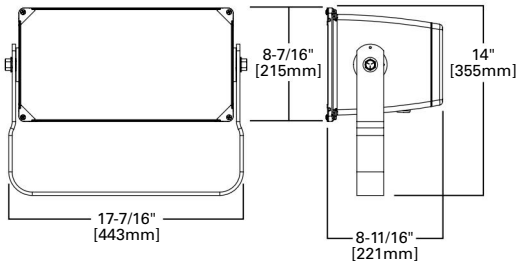
Slipfitter Mount



Trunnion Mount



Yoke Mount



Ordering Information

SAMPLE ORDER NUMBER: **UFLD-CA2-180-740-U-66-C-BK-10K-PR7**

Product Family	Configuration	Wattage Bucket	Color Temperature	Voltage	Distribution	Mounting	Color
UFLD=Utility LED Floodlight **BAA-UFLD**=Utility LED Floodlight Buy American Act Compliant[15] **TAA-UFLD**=Utility LED Floodlight Trade Agreements Act Compliant[15]	**CA2**=2 LED	**80**=80W **90**=90W **120**=120W **130**=130W **140**=140W **150**=150W **180**=180W	**740**=70CRI, 4000K **727**=70CRI, 2700K [2] **722**=70CRI, 2200K [2] **730**=70CRI, 3000K [2] **750**=70CRI, 5000K [2] **760**=70CRI, 5700K [2]	**U**=Universal (120-277V) **8**=480V [1] **9**=347V	**66**=NEMA 6H x 6V Wide [14] **33**=NEMA 3H x 3V Spot [13]	**C**=Slipfitter, 2-3/8"-3" O.D. (SO cord through housing) **S**=Slipfitter, 2-3/8" - 3" O.D. (Leads through slipfitter) **T**=Trunnion **Y**=Yoke	**BK**=Black **BZ**=Bronze **AP**=Grey **WH**=White

Options (Add as Suffix)	**Controls**	**Accessories** (Order Separately)[16]
10K=Series 10kV UL 1449 Surge Protective Device **20K**=Series 20kV UL 1449 Surge Protective Device **20KI**=Series 20kV UL 1449 Surge Protective Device with light indicator **10MSP**=Parallel 10kV MOV Surge Protection Device **20MSP**=Parallel 20kV MOV Surge Protective Device **HA**=50°C High Ambient Temperature [3] **D10**=<10% Dimming **CXXXX**=Cord Type [11] **FADC**=Field Adjustable Dimming Controller [12]	**PR**=NEMA 3-PIN Photocontrol Receptacle **PR7**=NEMA 7-PIN Twistlock Photocontrol Receptacle **MSP/DIM-L12**=Integrated Occupancy Sensor for Dimming Operation, 8' - 12' Mounting Height [4, 5] **MSP/DIM-L30**=Integrated Occupancy Sensor for Dimming Operation, 12' - 30' Mounting Height [4, 5] **MSP-L12**=Integrated Occupancy Sensor for ON/OFF Operation, 8' - 12' Mounting Height [4, 5] **MSP-L30**=Integrated Occupancy Sensor for ON/OFF Operation, 12' - 30' Mounting Height [4, 5]	**FA63**=3" O.D. Surface Mount Bracket [7] **OA1223**=10kV/10kA UL 1449 Surge Protective Device Replacement **OA/RA1013**=Photocontrol Shorting Cap **OA/RA1014**=NEMA Photocontrol - 120V OA/RA1016=NEMA Photocontrol - Multi-Tap **OA/RA1027**=NEMA Photocontrol - 480V **OA/RA1201**=NEMA Photocontrol - 347V **RAB-XX**=Right Angle Pipe Bracket for Slipfitter **SAB-XX**=Steel Angle Bracket for Trunnion **TYS-XX**=Slipfitter Adapter for 2-3/8", 3" or 3-1/2" O.D. Tenon [8] **TS2/UFLD-XX**=Top and Side Visors [9] **VS/UFLD**=Vandal Shield [9] WG/**UFLD**=Wire Guard [9] **ISHH-01**=Integrated Sensor Programming Remote **LLPC**=Long-life Photocontrol [10] **LLPC-FO**=Long-life Photocontrol (Fail-Off)

NOTES:

1. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corne Grounded Delta systems)
2. Extended lead times apply. Use dedicated IES files for 3000K, 5000K, and 5700K when performing layouts. These files are published on the UFLD luminaire product page on the website.
3. Not available with 3H x 3V spot distribution.
4. Integrated sensor option only available in slipfitter mounting.
5. Not available with Photocontrol.
6. Replace XX with color designation. Additional brackets and adaptors available on the poles product page on the website.
7. Not available with tenon mount.
8. Not available with slipfitter mount.
9. Cannot combine TS2 (Top and Side Visor), VS (Vandal Shield), or WG (Wire Guard), limited to one external guard per fixture.
10. Sold as accessory. Not covered under luminaire warranty.
11. 3-conductor cord available in 12, 14, and 16 gauge with lengths of 5, 8, 10, 15, 20, and 25 feet. Specify cord gauge with the first 2 digits and cord length with the last 2 digits (ex: C1605 = 16-gauge, 5 feet length cord). Standard cord is 16-gauge with length of 3.5 ft if not specified.
12. Cannot be used with PR7 or other motion response control options.
13. Only available in 90W and 140W.
14. Available in 80W, 120W, 130W, 150W, and 180W wattage buckets.
15. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
16. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

Product Specifications

Construction

- Heavy-duty, die cast aluminum housing, driver compartment and driver door.
- A separate driver compartment and external fins provide optimal thermal management that result in longer LED and driver life.
- The housing, optical chamber and driver compartment are IP66 rated.
- Access to the driver for maintenance is achieved with a removable driver door using pan head screws.
- A one-piece silicone gasket seals the door to the fixture housing.
- The fixture is 3G vibration rated (ANSI C136.31) to ensure durability in area and site lighting applications. Suitable for mounting within 4' (1.2m) of the ground.

Optics

- The LED chamber incorporates a vacuum metalized reflector that provides high-efficiency illumination.
- Optics are precisely designed to shape the NEMA type 6H x 6V wide distribution and 3H x 3V spot distribution, maximizing efficiency and application spacing.
- Clear glass tempered lens with full circumference form-in-place silicone gasket protects the optics from damage.
- Various CCTs available, offered in 2200K, 2700K, 3000K, 4000K, 5000K, or 5700K and minimum 70 CRI.

Electrical

- LED driver is mounted to the removable die-cast aluminum door for optimal heat sinking and ease of maintenance.
- 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation.
- Integral 6kV surge is standard. 10kV/10kA common- and differential- mode surge protection available as an option.
- 0-10V dimming driver is standard to accommodate controls capability such as dimming and occupancy.
- Available with 3-PIN or 7-PIN NEMA photocontrol receptacles.
- Suitable for ambient temperatures from -40°C to 40°C. Optional 50°C HA (high ambient) available.
- 89% lumen maintenance greater than 60,000 hours per IESNA TM-21.
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected.

Accessories

- Heavy-duty steel top and side visors control glare and spill light. 1/8" thick UV stabilized vandal guard shields glass lens from impact when mounted at low levels.
- Easy to install wire guard features a heavy-gauge welded construction with corrosion resistant polyester powder coat finish to protect glass from projected objects.

Mounting

- Mounting options include an integral die-cast aluminum slipfitter that is preset to a tilt of 45°.
- The knuckle base is supplied with a tooth lock adjustment that can be adjusted in 5° increments. Visual 15° adjustment indicators on the knuckle allow for 180° field rotation of the floodlight assembly.
- The slipfitter fits standard 2-3/8"-3" O.D. tenon.
- The trunnion mounting includes a 3/16" polyester powder coated galvanized steel trunnion with a 16/3 STW-A cord.
- The trunnion mount uses an interlocking slide adjustment that is locked in place with a set screw.

Finish

- Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear.

Shipping Data

- Approximate net weight: 20 lbs. (9.09 kgs.)
- EPA: 1.25 sq. ft.

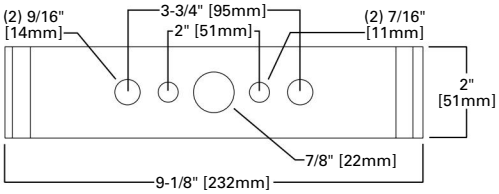
Warranty

- Standard five-year warranty.
- Optional ten-year warranty, please see your Cooper Lighting Solutions Streetworks sales representative for more information

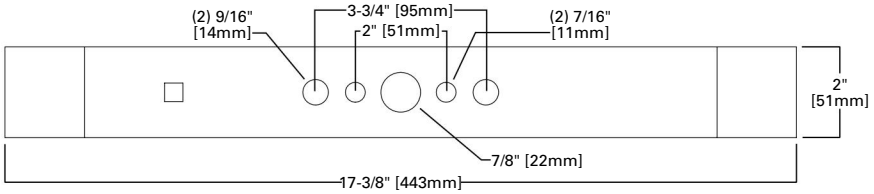
Mounting Details

Drilling Patterns

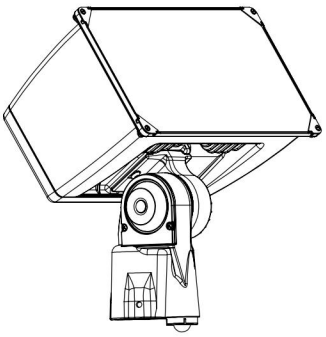
Trunnion Mount



Yoke Mount

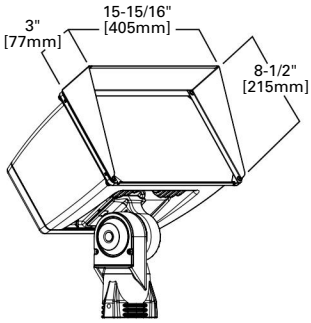


Optional Integrated Sensor

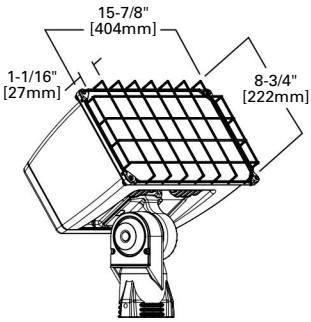


Accessories

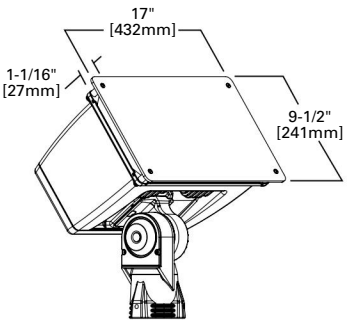
Top and Side Visors



Wire Guard



Vandal Shield



Energy and Performance Data

Distribution	6x6				
ANSI Wattage	80	120	130	150	180
Wattage	82	124	133	151	183
2200K	9,619	15,672	16,575	18,369	21,054
Lumens Per Watt	117	127	125	121	115
2700K	9,994	16,284	17,222	19,086	21,875
Lumens Per Watt	122	131	130	126	120
3000K	11,588	18,882	19,970	22,131	25,365
Lumens Per Watt	141	161	151	146	139
4000K	11,802	19,230	20,338	22,539	25,833
Lumens Per Watt	144	155	153	149	141
5000K	12,018	19,583	20,711	22,952	26,307
Lumens Per Watt	146	158	156	152	144
5700K	11,764	19,168	20,272	22,466	25,749
Lumens Per Watt	143	155	153	149	141

Distribution	3x3	
ANSI Wattage	90	140
Wattage	90	137
2200K	9,551	13,830
Lumens Per Watt	107	101
2700K	9,924	14,370
Lumens Per Watt	111	105
3000K	11,505	16,660
Lumens Per Watt	129	122
4000K	11,719	16,970
Lumens Per Watt	131	124
5000K	11,928	17,272
Lumens Per Watt	133	126
5700K	11,681	16,915
Lumens Per Watt	131	124

Current Draw

Voltage	Model Series						
	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	3x3	3x3
	80W	120W	130W	150W	180W	90W	140W
	Current (A)	Current (A)	Current (A)	Current (A)	Current (A)	Current (A)	Current (A)
120V	0.688	1.07	1.11	1.26	1.53	0.748	1.14
277V	0.31	0.47	0.5	0.54	0.67	0.33	0.51
347V	0.26	0.38	0.4	0.44	0.56	0.28	0.42
480V	0.19	0.29	0.31	0.33	0.4	0.21	0.31

Lumen Maintenance

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
All Distributions		
40°C	88.90%	151,000

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
10°C	1.03
15°C	1.02
25°C	1.00
40°C	0.97
50°C	0.96

FADC Settings

FADC Position	Percent of Typical Lumen Output
1	25%
2	48%
3	56%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

NOTES: +/-5% typical value

Catalog # : _____ Project : _____ Type : _____

Prepared By : _____ Date : _____

Traditional Wall Light (TLWP)

Large

OVERVIEW	
Lumen Package (lm)	5,000 -11,000
Wattage Range (W)	38 - 78
Efficacy Range (LPW)	117 - 135
Weight lbs (kg)	9.25 (4.2)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged traditional aluminum die cast housing provides proven environmental protection for LED modules.
- Traditional fixture design provides a familiar look and standard installation requirements.
- Retaining this look allows the ability to upgrade fixtures gradually, while retaining the same overall fixture appearance throughout a facility.
- Patent pending thermal stacking technology system features a unique internal design that allows for lower operating temperatures which results in a brighter, whiter light, more stable color and longer LED and driver life.
- LEDs manufactured for the TLWP series utilize Epoxy Guard conformal coating which reduces the chance of board corrosion.
- Weight: 9.25 lbs in carton.

Optical System

- Borosilicate glass lens.
- Lens assembly is designed to provide high efficiency and to target the light where needed to satisfy outdoor lighting requirements.
- Positioning of the LEDs result in the light being directed to desired locations eliminating glare and offensive light.
- Available in 5000K, 4000K and 3000K color temperatures per ANSI C78.377.
- Minimum CRI of 80.

Electrical

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 Vac)
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +40°C (-40°F to +104°F).
- Power factor: >0.90
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.
- Minimum 4kV surge rating
- Optional 120v-277v integral emergency battery pack is available to meet critical life safety lighting requirements. The 90-minute batteries provide constant power to the LED system, ensuring code compliance. A test switch/indicator button is installed on the housing for ease of maintenance. Provides ~1,500 lumens of emergency illumination.

Controls

- Optional factory installed electronic button photocontrol (apertures for field install).

Installation

- Fixture retains the same knock-out sizes and positions as previous models, reducing wiring costs.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.
- 1 Year warranty on optional button photocell.
- 1 Year warranty on optional Battery Back Up. Test regularly in accordance with local codes.

Listings

- Listed to UL 1598 and UL 8750.
- CSA Listed.
- Meets Buy American Act requirements.
- RoHS Compliant.
- Suitable for wet locations.
- DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Traditional Wall Light (TLWP) Large

Type : _____

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: TLWP 7L UNV 40 CWBB BZA PCI120

Prefix	Lumen Package	Voltage	Dimming	Color Temperature	Options	Finish	Controls
TLWP LED - Traditional Wall Light Large	**5L** - 5,000 Lumens **7L** - 7,000 Lumens **11L** - 11,000 Lumens	**UNV** - Universal Voltage (120-277V) **HV** - 347-480V	**DIM** - 0-10V Dimming	**50** - 5,000K CCT - 80 CRI **40** - 4,000K CCT - 80 CRI **30** - 3,000K CCT - 80 CRI	**CWBB** - Cold Weather Battery Backup (120-277V Only)	**BZA** - Bronze **BLK** - Black **SLV** - Silver **WHT** - White	**PCI120** - 120V Button Photocell **PCI208-277** - 208-277V Button Photocell

Need more information?
Click here for our glossary

Have additional questions?
Call us at (800) 436-7800

PERFORMANCE

Back to Quick Links

Delivered Lumens

Lumen Package	CRI	3000K			4000K			5000K			Wattage
		Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
5L	80	4900	128	B1-U4-G3	5036	132	B1-U4-G3	5071	132	B1-U4-G3	38
7L		7051	117	B1-U5-G4	7229	121	B1-U5-G4	7349	122	B1-U5-G4	60
11L		10500	135	B1-U5-G5	10500	135	B2-U5-G5	10520	135	B2-U5-G5	78

Electrical Data*

Lumen Package	120V	208V	240V	277V	347V	480V
5L	0.32	0.18	0.16	0.14	0.11	0.08
7L	0.50	0.29	0.25	0.22	0.17	0.13
11L	0.65	0.37	0.32	0.28	0.22	0.16

*Electrical data at 25C (77F). Actual wattage may differ by +/-10%.

DLC Listings*

Lumens	3000K	4000K	5000K
	DLC Prod. ID	DLC Prod. ID	DLC Prod. ID
5L	PF6CGY8T	PVLA4PI8	P1JVJASQ
7L	n/a	n/a	n/a
11L	n/a	PCZII8GQ	PFUF80XL

DesignLights Consortium qualified luminaires, eligible for rebates from DLC member utilities.

Energy Savings

LED		HID			Annual Savings
Wattage	Annual Cost	Source Wattage	Total Wattage Used	Annual Cost	
38	$17	150	185	$100	$83
38	$17	175	210	$112	$95
60	$26	250	285	$150	$124
78	$35	400	458	$226	$191

PHOTOMETRICS

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Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. As specified by IESNA LM-79-08 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

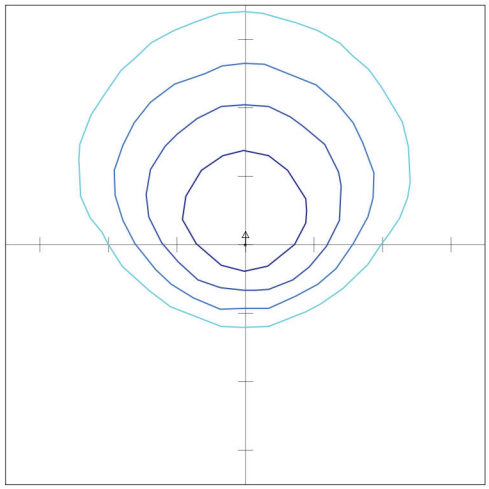
See the individual product page on https://www.lsicorp.com/ for detailed photometric data.

TLWP 5L UNV 40

Luminaire Data	
Type 4 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	7,157
Watts	61
Efficacy	117
IES Type	Type IV - Very Short
BUG Rating	B1-U5-G4

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30°)	949	13%
Medium (30-60°)	2299	32%
High (60-80°)	1596	22%
Very High (80-90°)	677	9%
Uplight (90-180°)	1636	23%
Total Flux	7157	100%

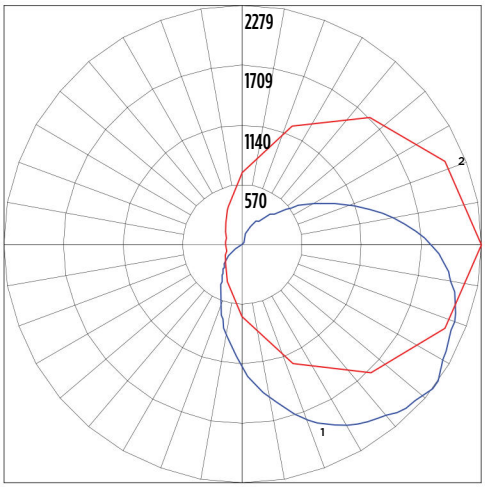
ISO Footcandle



10' Mounting Height / 10' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



Vertical Plane Horizontal Cone

Traditional Wall Light (TLWP) Large

Type : _____

Have questions? Call us at (800) 436-7800

PRODUCT DIMENSIONS

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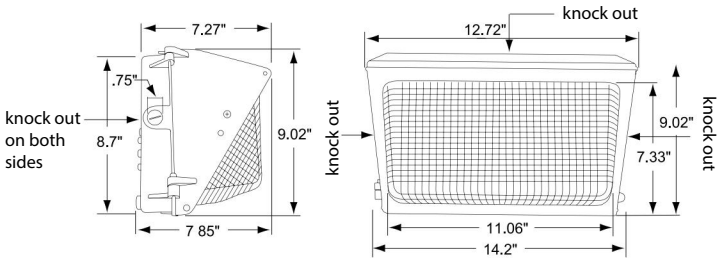
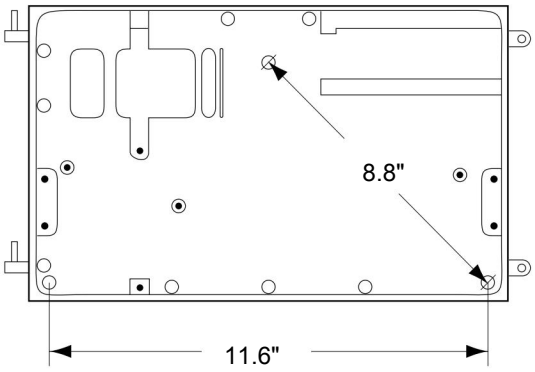


Mounting Detail

Wall Mount



EVOLVE

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

EALS Series

LED Outdoor Area Light

The EALS Area Light luminaire offers a wide range of optical patterns, color temperatures, lumen packages and mounting configurations to optimize area light applications, as well as provide versatility in lighting design within the same form-factor. They are ideal for commercial property site-lighting applications such as retail and commercial exteriors.

Construction

Housing:	Aluminum die cast enclosure. Integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze Gray, White (RAL & custom colors available) Optional = Coastal Finish
Weight:	27 lbs

Optical System

Lumens: **Photometry:**	7,000 - 30,300 Type II, III, IV & V
Efficacy: **CCT:**	126 - 160 LPW 3000K, 4000K, 5000K
CRI:	≥70
Upward Light Output Ration (ULOR):	0 Horizontal Orientation

Electrical

Input Voltage:	120-277V, 277-480V & 347-480V
Input Frequency:	50/60 Hz
Power Factor (PH):	> 90% at rated watts
Total Harmonic Distortion (THD):	< 20% at rated watts

Surge Protection

TYPICAL (120 STRIKES)		
☐ 6kV/3kA*	☐ 10kV/5kA*	☐ 20kV/10kA*

*Per ANSI C136.2-2015

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

OPTICS	LXX(10K) @ HOURS		
	25,000 HR	50,000 HR	60,000 HR
C2, C3, C4, C5, D2, D3, D4, D5	L96	L92	L91
F5, H2, H3, H4, H5	L95	L93	L92
F2, F3, F4, J3, J3, J4, J5	L95	L93	L92
K2, K3, K4, K5	L95	L93	L92

Note: Projected Lxx based on LM80 (= 10,000 hour testing). Accepted Industry tolerances apply to initial luminous flux and lumen maintenance measurements

Luminaire Ambient Temperature Factor

AMBIENT TEMP (°C)	INITIAL FLUX FACTOR	AMBIENT TEMP (°C)	INITIAL FLUX FACTOR
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00		

Ratings

Operating Temperature:	-40° C to 40° C
Vibration: **LM-79:**	3G per ANSI C136.31-2010 Testing in accordance with IESNA Standards

Controls

Dimming:	Standard - 0-10V ☐ Optional - DALI (Option U) ☐
Sensors:	Photo Electric Sensors (PE) available LightGrid+™ and Daintree Compatible

Warranty

☐ 5 Year (Standard) ☐ 10 Year (Optional)

IP66 IK08

CUSTOMER NAME ______________________

PROJECT NAME ______________________

DATE __________ TYPE ______________________

CATALOG NUMBER ______________________

Ordering Information

EALS 03 _ __ __ 7 __ _ _ __ ____ ___

PRODUCT ID	GENERATION	VOLTAGE	OPTICAL CODE	DISTRIBUTION	CRI	CCT	DIMMING[2]	CONTROLS	MOUNTING ARM	COLOR	OPTIONS
E= Evolve	03	0[1]=120-277V	Cx =7500[14]	SM = Symmetric Medium	7 = 70 (min)	30[11] = 3000K	N = Dimming thru PE receptacle	A = ANSI C136.41 7-Pin Receptacle (No Control)	C1[4] = Integral Slipfitter: Standard	BLCK = Black	F= Fusing
AL= Area Light		H[1] = 347-480V	Dx = 10000 lm[15]	SW = Symmetric Wide		40 = 4000K	D = External Dimming 18/2 3 ft Cable	D = ANSI C136.417-Pin Receptacle with Shorting Cap	D1[5] = Universal Mounting Arm: Fitted for round or square pole mounting	DKBZ = Dark Bronze	H = Motion Sensor[3, 14, 16] (Sensor Switch)
S = Standard		E[1,9] = 277-480V	Fx = 15000 lm	SH = Symmetric High Angle		50 = 5000K	X = Non dimming, no external dimming leads[13]	E[3] = ANSI C136.41 7-pin with Non-Dimming PE Control	K1[4, 6] = Knuckle Slipfitter: For 1.9 in. - 2.3 in OD Tenon	GRAY = Gray	H1 = LightGrid w/ WattStopper [14]
			Hx = 20000 lm	AF = Asymmetric Forward					S1[4, 6] = Knuckle Slipfitter: For 2.3 in. - 3.0 in OD Tenon	WHTE = White	H2 = Daintree enabled motion sensor[14, 16]
		1 = 120V	Jx = 25000 lm	AH = Asymmetric High Angle					V1[4, 6] = Knuckle Wall Mount		H4 = Motion Sensor (WattStopper) [14]
		2 = 208V	Kx = 30000 lm	AW = Asymmetric Wide							J = cUL/Canada
		3 = 240V		AN = Asymmetric Narrow/Auto							L = Tool-Less Entry
		4 =277V									R = Enhanced Surge Protection (10kV/5kA)
		D = 347V									S1[12] = Rotated Left
		5 = 480V									S2[12] = Rotated Right
											T = Extreme Surge Protection (20kV/10kA)
											U [7] = DALI Programmable
											V = 3 Position Terminal Block
											Y[10] = Coastal Finish
											XXX = Special Options

[1] Not Available with Fusing, Must Choose a Discrete Voltage with "F" Option Code
[2] Note Standard Dimming is 0-10V
[3] Not available in 277-480V
[4] Supplied with 3ft leads
[5] Supplied with 16/3 ft Cable
[6] Restricted Aiming Angle of 0-45°
[7] Compatible with LightGrid+™ Wireless Control Nodes, Not Compatible with Motion Sensor Control
[8] Not available in 347V, 480V or 347-480V
[9] Only available with F,H,J,K optics
[10] Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
[11] Select 3000K CCT for IDA approved fixtures.
[12] For aimed left of right light distribution orientation, as assembled in manufacturing. Not applicable for Symmetric Distributions
[13] Required for Cx optical codes only, not available for other optic codes
[14] Not available with DALI
[15] DALI option not available with 347V, 480V, or 347-480V
[16] Not available with 20kV/10kA SPD

CUSTOMER NAME _____

PROJECT NAME _____

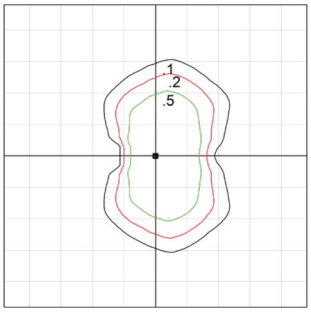
DATE _____ TYPE _____

CATALOG NUMBER _____

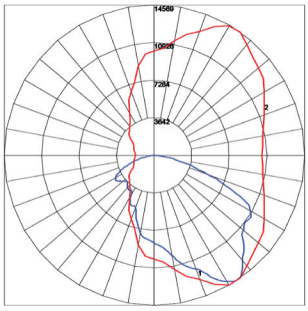
TYPE	OPTIC CODE	DISTRIBUTION	TYPICA L INITIAL LUMENS		TYPICAL SYSTEM WATTAGE	BUG RATINGS	
						3000K	4000 & 5000K
			3000K	4000K & 5000K	120-277 & 347-480V	B-U-G	B-U-G
TYPE V	C5	Symmetric Medium (SM)	7300	7500	46	B3-U0-G1	B3-U0-G1
	D5	Symmetric Medium (SM)	9800	10000	64	B3-U0-G1	B3-U0-G1
	F5	Symmetric Medium (SM)	14700	15000	101	B4-U0-G2	B4-U0-G2
	H5	Symmetric Medium (SM)	19600	20000	140	B4-U0-G2	B4-U0-G2
	J5	Symmetric Medium (SM)	24500	25000	186	B4-U0-G2	B4-U0-G2
	K5	Symmetric Medium (SM)	29400	30000	239	B5-U0-G3	B5-U0-G3
	C5	Symmetric Wide (SW)	7300	7500	46	B2-U0-G1	B2-U0-G1
	D5	Symmetric Wide (SW)	9800	10100	64	B3-U0-G1	B3-U0-G1
	F5	Symmetric Wide (SW)	14700	15100	101	B3-U0-G2	B3-U0-G2
	H5	Symmetric Wide (SW)	19700	20200	140	B4-U0-G2	B4-U0-G2
	J5	Symmetric Wide (SW)	24600	25200	186	B4-U0-G2	B4-U0-G2
	K5	Symmetric Wide (SW)	29600	30300	239	B5-U0-G2	B5-U0-G2
	C5	Symmetric High Angle (SH)	7000	7200	46	B3-U0-G1	B3-U0-G1
	D5	Symmetric High Angle (SH)	9400	9600	64	B3-U0-G2	B3-U0-G2
	F5	Symmetric High Angle (SH)	14200	14500	101	B4-U0-G2	B4-U0-G2
	H5	Symmetric High Angle (SH)	18900	19300	140	B4-U0-G2	B4-U0-G2
	J5	Symmetric High Angle (SH)	23600	24100	186	B5-U0-G3	B5-U0-G3
	K5	Symmetric High Angle (SH)	28400	29000	239	B5-U0-G3	B5-U0-G3
TYPE IV	C4	Asymmetric Forward (AF)	7300	7500	50	B1-U0-G2	B1-U0-G2
	D4	Asymmetric Forward (AF)	9800	10000	70	B2-U0-G2	B2-U0-G2
	F4	Asymmetric Forward (AF)	14700	15000	116	B2-U0-G2	B2-U0-G2
	H4	Asymmetric Forward (AF)	19600	20000	140	B3-U0-G3	B3-U0-G3
	J4	Asymmetric Forward (AF)	24500	25000	186	B3-U0-G3	B3-U0-G3
	K4	Asymmetric Forward (AF)	29400	30000	239	B3-U0-G4	B3-U0-G4
	C4	Asymmetric High Angle (AH)	7000	7200	50	B2-U0-G2	B2-U0-G2
	D4	Asymmetric High Angle (AH)	9400	9600	70	B2-U0-G2	B2-U0-G2
	F4	Asymmetric High Angle (AH)	14200	14500	116	B3-U0-G3	B3-U0-G3
	H4	Asymmetric High Angle (AH)	18900	19300	140	B3-U0-G3	B3-U0-G4
	J4	Asymmetric High Angle (AH)	23600	24100	186	B3-U0-G4	B3-U0-G4
	K4	Asymmetric High Angle (AH)	28400	29000	239	B3-U0-G4	B3-U0-G4
TYPE III	C3	Asymmetric Wide (AW)	7300	7500	50	B2-U0-G1	B2-U0-G1
	D3	Asymmetric Wide (AW)	8900	10100	70	B2-U0-G2	B2-U0-G2
	F3	Asymmetric Wide (AW)	14700	15100	116	B2-U0-G2	B2-U0-G2
	H3	Asymmetric Wide (AW)	19800	20200	140	B3-U0-G2	B3-U0-G3
	J3	Asymmetric Wide (AW)	24600	25200	186	B3-U0-G3	B3-U0-G3
	K3	Asymmetric Wide (AW)	29600	30300	239	B3-U0-G3	B3-U0-G3
TYPE II	C2	Asymmetric Narrow/Auto (AN)	7300	7500	50	B3-U0-G2	B2-U0-G2
	D2	Asymmetric Narrow/Auto (AN)	9800	10100	70	B2-U0-G2	B2-U0-G2
	F2	Asymmetric Narrow/Auto (AN)	14700	15100	116	B2-U0-G2	B3-U0-G3
	H2	Asymmetric Narrow/Auto (AN)	19700	20200	140	B3-U0-G3	B3-U0-G3
	J2	Asymmetric Narrow/Auto (AN)	24600	25200	186	B3-U0-G3	B3-U0-G3
	K2	Asymmetric Narrow/Auto (AN)	29600	30300	239	B3-U0-G3	B3-U0-G3

For additional information on Non-Shielded and Shielded EALS files, please refer to LED.com

EALS03
ASYMMETRIC NARROW
(K2AN750)
30300 Lumens
5000k
EALS03_K2AN750_____.IES

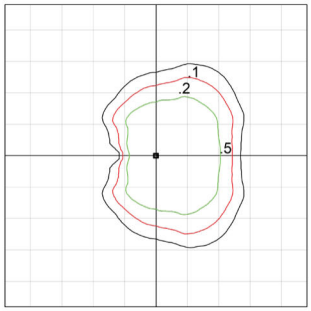


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

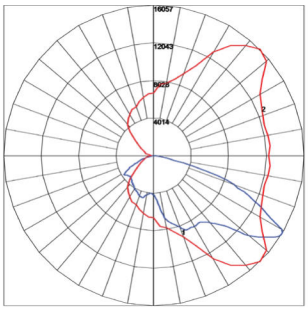


——: Vertical plane through horizontal angle of maximum candlepower at 55°
——: Vertical plane through horizontal angle 34°

EALS03
ASYMMETRIC WIDE
(K3AW750)
30300 Lumens
5000k
EALS03_K3AW750_____.IES

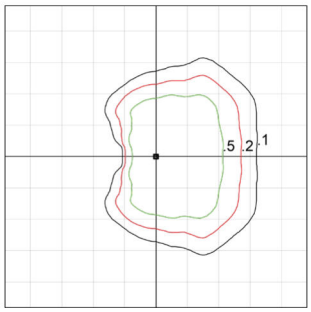


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

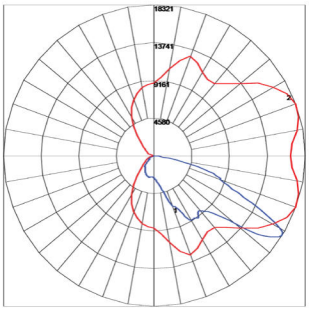


——: Vertical plane through horizontal angle of maximum candlepower at 45°
——: Vertical plane through horizontal angle 58°

EALS03
ASYMMETRIC FORWARD
(K4AF750)
30000 Lumens
5000k
EALS03_K4AF750_____.IES

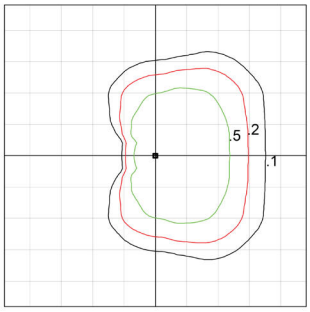


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

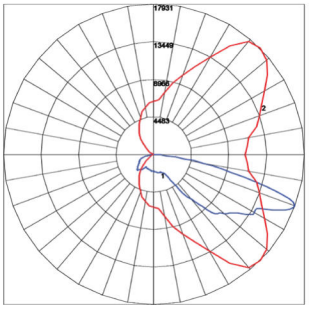


——: Vertical plane through horizontal angle of maximum candlepower at 20°
——: Vertical plane through horizontal angle 58°

EALS03
ASYMMETRIC HIGH ANGLE
(K4AH750)
29000 Lumens
5000k
EALS03_K4AH750_____.IES

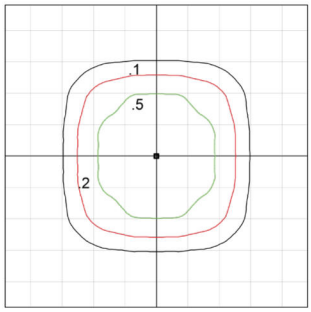


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

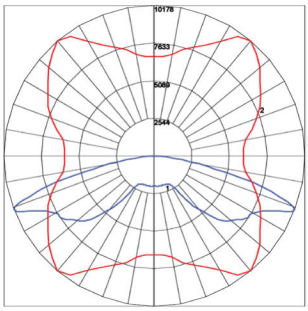


——: Vertical plane through horizontal angle of maximum candlepower at 45°
——: Vertical plane through horizontal angle 70°

EALS03
SYMMETRIC HIGH ANGLE
(K5SH750)
29000 Lumens
5000k
EALS03_K5SH750_____.IES

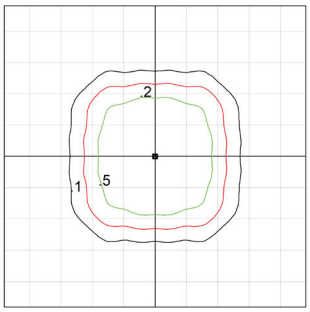


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

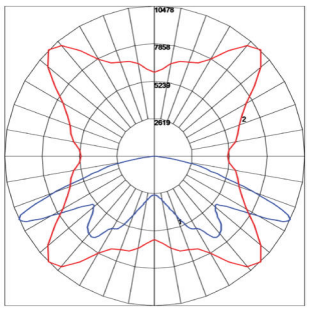


——: Vertical plane through horizontal angle of maximum candlepower at 50°
——: Vertical plane through horizontal angle 69°

EALS03
SYMMETRIC MEDIUM
(K5SM750)
30000 Lumens
5000k
EALS03_K5SM750_____.IES

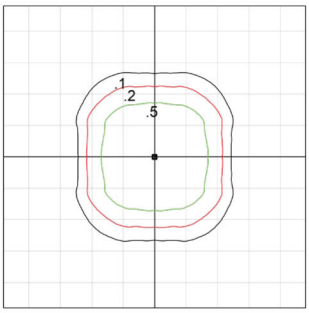


Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade

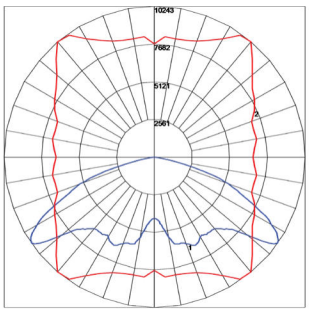


——: Vertical plane through horizontal angle of maximum candlepower at 45°
——: Vertical plane through horizontal angle 65°

EALS03
SYMMETRIC WIDE
(K5SW750)
30300 Lumens
5000k
EALS03_K5SW750_____.IES



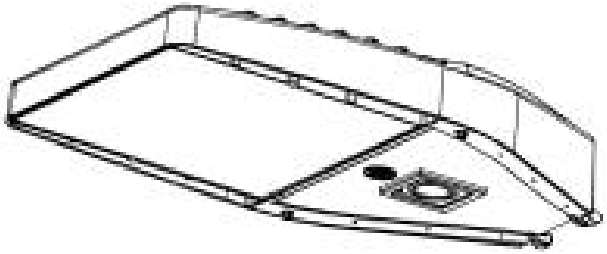
Grid Distance in Units of Mounting Height at 40' Initial Footcandle Values at Grade



——: Vertical plane through horizontal angle of maximum candlepower at 50°
——: Vertical plane through horizontal angle 55°

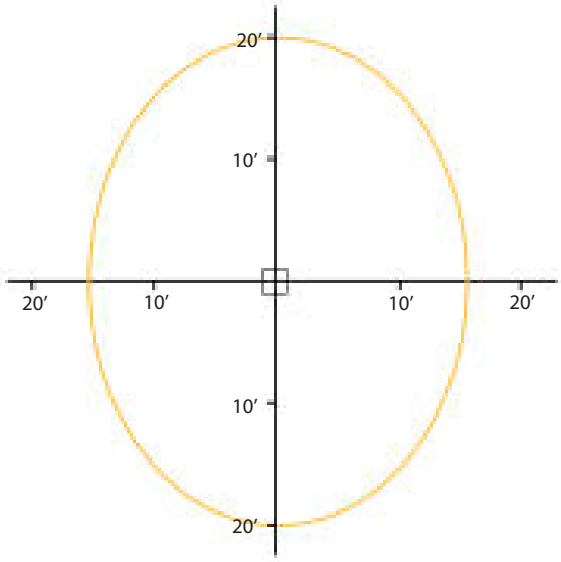
H-Motion Sensing Option

- Recommended Mounting Height: 15-30’ (4.6-9.1m)
- For mounting heights exceeding 30 ft., pole mounted sensors are recommended
- Coverage Radius: 15-20’ (4.6-6.1 m).
- Provides 270 degree of coverage (approx 90 is blocked by the pole)
- Default Settings:
  – Output: Occupied - 100%/Unoccupied - 50%
  – Integral PE Sensor.
  – 5 minute post-occupancy time delay, 5 minute dimming ramp-down.
- Fixture power increase of 1W expected with sensor use.



H1/4 - Motion Sensing Option (WattStopper)

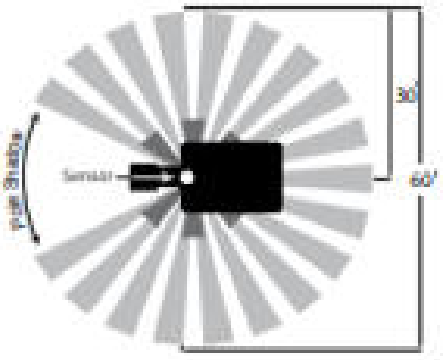
- Recommended Mounting Height: 15-30’ (4.6-9.1m)
- For mounting heights exceeding 30 ft., pole mounted sensors are recommended
- Coverage Radius: 15-20’ (4.6-6.1 m).
- Provides 270 degree of coverage (approx 90 is blocked by the pole)
- Default Settings:
  – Output Occupied – 100% / Unoccupied – 10%
  – PE Sensor: Disabled
  – Ramp/Fade: Disabled
- Adds < 1W to fixture power rating
- Field programmable using FSIR-100 hand held programmer



Sensing Pattern Area Fixture
Up to 30 ft. Mounting Height

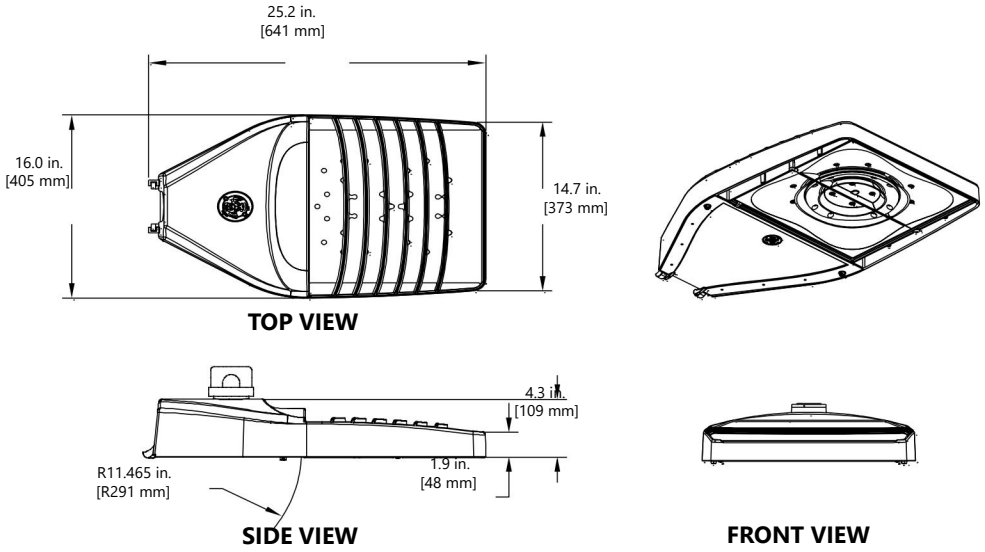
H2 - Motion Sensing Option (Daintree)

- Recommended Mounting Height: 15-30’ (4.6-9.1m)
- For mounting heights exceeding 30 ft., pole mounted sensors are recommended
- Provides a coverage area radius for walking motion of 15-20 ft. (4.57-6.10m)
- Provides 270 degree of coverage (approx 90 is blocked by the pole)
- Default Settings:
  – Output: Occupied - 100%/Unoccupied - 50%
  – PE Sensor: None
  – Ramp/Fade: 5 Minutes/5 Minutes
- Adds < 1W to fixture power rating
- Requires Daintree Enterprise and wide area control (WAC)

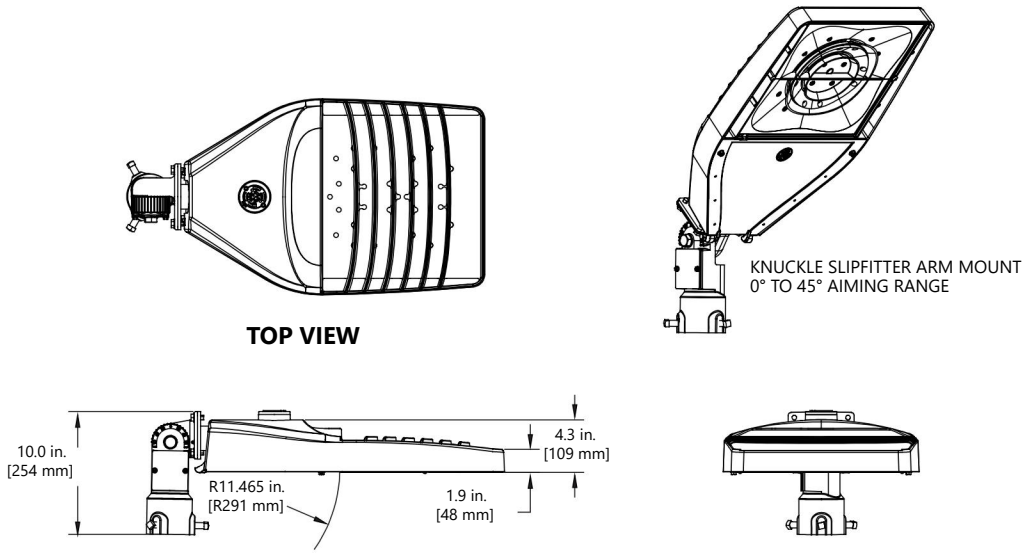


LED Outdoor Area Light

INTEGRAL SLIPFITTER: C1

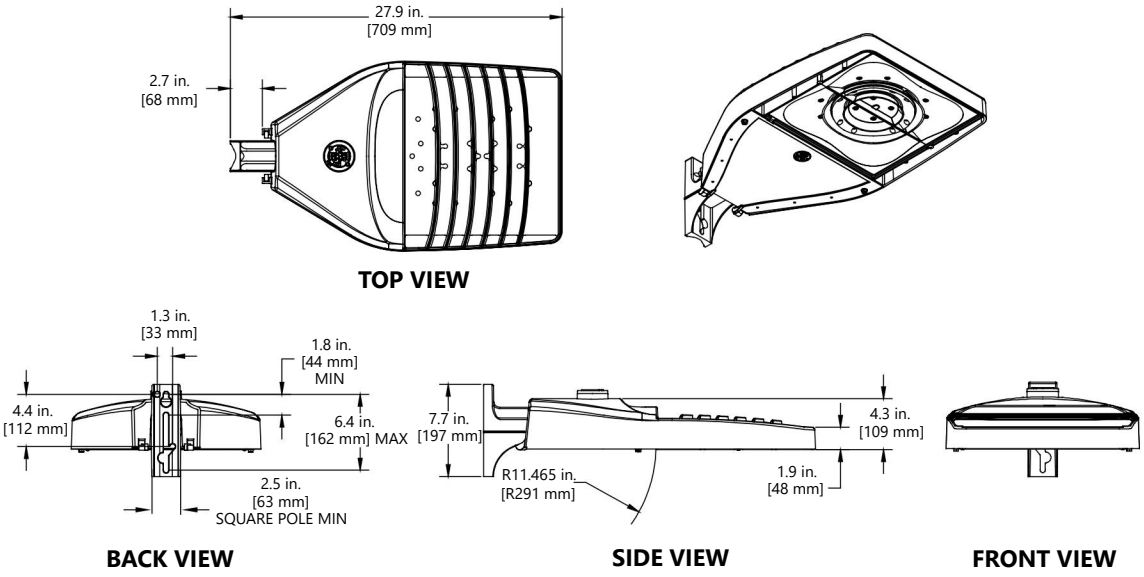


KNUCKLE SLIPFITTER: S1

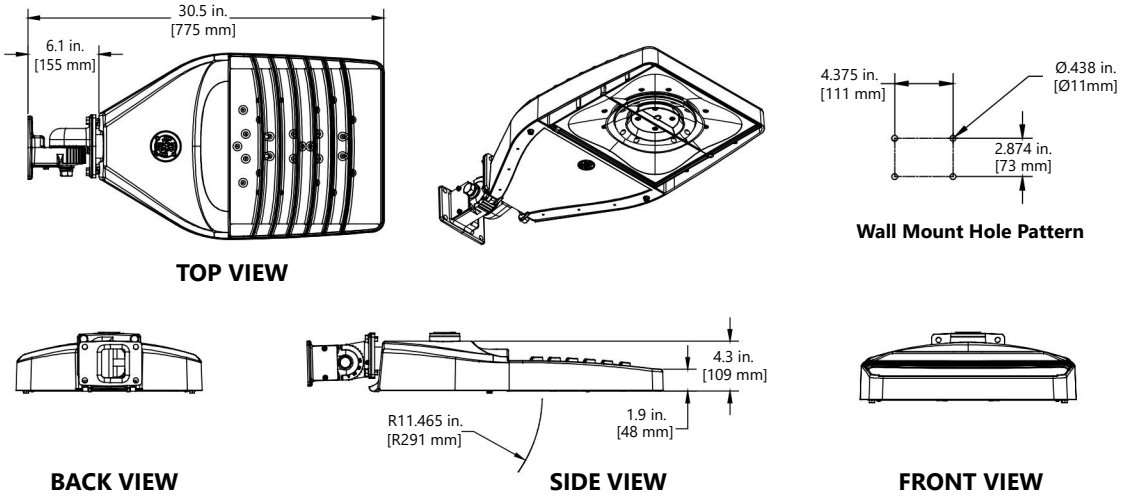


LED Outdoor Area Light

UNIVERSAL ARM MOUNT: D1



KNUCKLE WALL MOUNT: V1



DATA

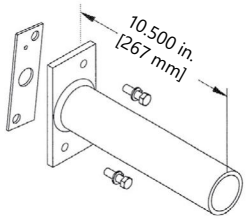
- Approximate Net Weight: 26-28 lbs (11.79 kgs-12.97 kgs)
- Effective Projected Area (EPA):
  - Knuckle Slipfitter S1, 45° aim, EPA = 2.45
  - Knuckle w/Slipfitter S1, downward aim, EPA = 0.73
  - Universal Arm Mount D1, EPA = 0.54
  - Knuckle Wall Mount V1, 45° aim, EPA = 0.77 sq ft min and 1.43 sq ft max
  - Integral Slipfitter C1, EPA = 0.63

Mounting Arms for Slipfitter

Order separately with Mounting Option C1 (Slipfitter)

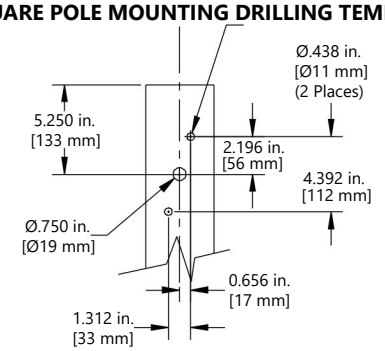
SQUARE POLE MOUNTING ARM

3.5 TO 4.5-inch (89 to 114mm) SQUARE
(WILL ALLOW 4 FIXTURES PER POLE @ 90 DEGREES.)



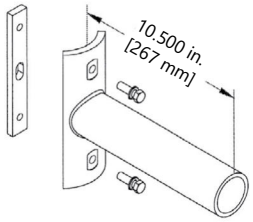
ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
SPA-EAMT10BLCK "Black"
SPA-EAMT10DKBZ "Dark Bronze"

SQUARE POLE MOUNTING DRILLING TEMPLATE



ROUND POLE MOUNTING ARM DRILLING TEMPLATE

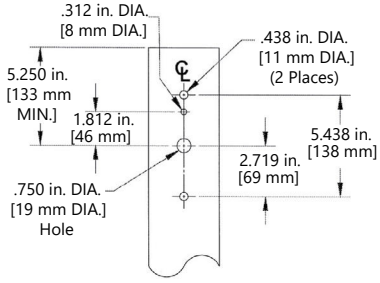
3.5 TO 4.5-inch (89 to 114mm) OD
(WILL ALLOW 4 FIXTURES PER POLE @ 90 DEGREES.)



ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
RPA-EAMT10BLCK "Black"
RPA-EAMT10DKBZ "Dark Bronze"

ROUND POLE MOUNTING DRILLING TEMPLATE

3.5 TO 4.5-inch (89 to 114mm) OD
round pole mounting arm



Wall Mounting Bracket Adapter Plate

ORDER SEPARATELY FROM FIXTURE AS CATALOG NUMBER
WMB-EAMT06
*NOTE: For Wall Mounting, order luminaire with mounting arm: C1 = Slipfitter 2" Pipe (2.378 in. OD) supplied with leads.

Other mounting patterns are available for retrofit installations. Contact manufacturing for other available mounting patterns.

SAP NUMBER	PART NUMBER	DESCRIPTION
93123552	WANSI - 277	ANSI 136.41 Dimming PE Daintree Enable, 105-305V
93123553	WANSI - 480	ANSI 136.41 Dimming PE Daintree Enable, 312-530V
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V

SAP NUMBER	PART NUMBER	DESCRIPTION
28299	PECOTL	Standard 120-277V
28294	PEC5TL	Standard 480V
80436	PECDTL	Standard 347V
93147530	PECHTL	Long Life Standard PE, 347-480V
73251	SCCL-PECTL	Shorting Cap

PE Accessories (to be ordered separately)

Appendix 2B
Landscape Plan

PRELIMINARY PLAN
DATE: 05/28/2025
NOT FOR CONSTRUCTION

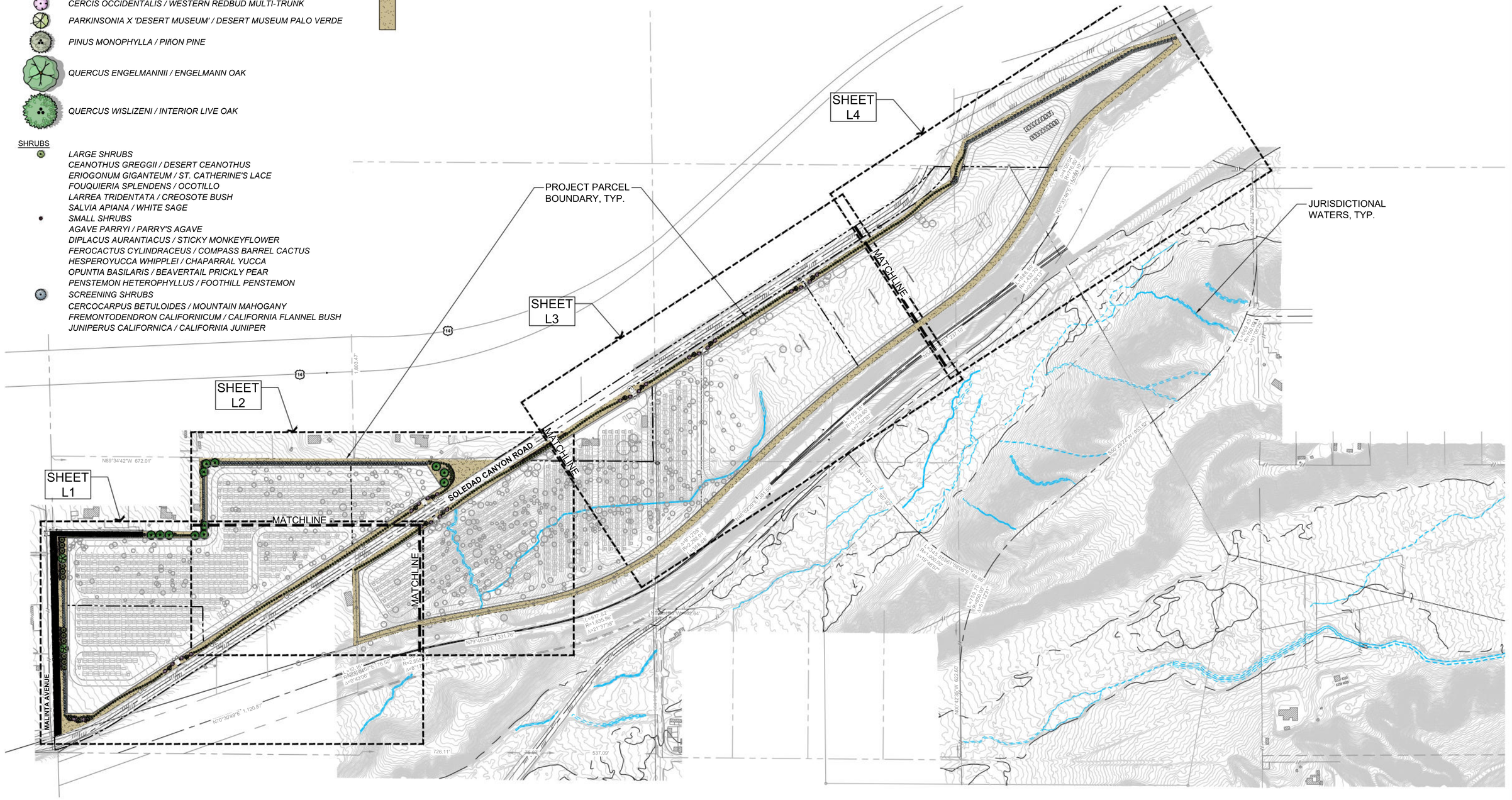
PLANT SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
TREES	
	CERCIS OCCIDENTALIS / WESTERN REDBUD MULTI-TRUNK
	PARKINSONIA X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE
	PINUS MONOPHYLLA / PIñON PINE
	QUERCUS ENGELMANNII / ENGELMANN OAK
	QUERCUS WISLIZENI / INTERIOR LIVE OAK
SHRUBS	
	LARGE SHRUBS
	CEANOTHUS GREGGII / DESERT CEANOTHUS
	ERIOGONUM GIGANTEUM / ST. CATHERINE'S LACE
	FOUQUIERIA SPLENDENS / OCOTILLO
	LARREA TRIDENTATA / CREOSOTE BUSH
	SALVIA APIANA / WHITE SAGE
	SMALL SHRUBS
	AGAVE PARRYI / PARRY'S AGAVE
	DIPLACUS AURANTIACUS / STICKY MONKEYFLOWER
	FEROCACTUS CYLINDRACEUS / COMPASS BARREL CACTUS
	HESPEROYUCCA WHIPPLEI / CHAPARRAL YUCCA
	OPUNTIA BASILARIS / BEAVERTAIL PRICKLY PEAR
	PENSTEMON HETEROPHYLLUS / FOOTHILL PENSTEMON
	SCREENING SHRUBS
	CERCOCARPUS BETULOIDES / MOUNTAIN MAHOGANY
	FREMONTODENDRON CALIFORNICUM / CALIFORNIA FLANNEL BUSH
	JUNIPERUS CALIFORNICA / CALIFORNIA JUNIPER

PERVIOUS LANDSCAPE SURFACE

DECOMPOSED GRANITE

TAKEOFF: 409,387 SQFT.



FINAL PRELIMINARY LANDSCAPE PLAN FOR:

PRAIRIE SONG RELIABILITY PROJECT

LOS ANGELES COUNTY
CALIFORNIA

CONCEPTUAL LANDSCAPE PLAN OVERVIEW

0 200 400 600 feet
1" = 200'

NORTH

DUDEK
605 THIRD STREET
ENCINITAS, CA 92024

L0

MATCHLINE A - SEE SHEET L2

MATCHLINE B - SEE SHEET L2

30'

382'

20'

30

OE

MALINTA AVENUE

SOLEDAD CANYON ROAD

DECOMPOSED GRANITE, TYP.

EXISTING VEGETATION, TYP.

PROJECT PARCEL BOUNDARY

GATE, TYP.

EXISTING OVERHEAD POWER LINE, TYP.

N70°30'49"E 1,120.87'

WALL, TYP.

GRAVEL ROAD BASE PER CIVIL PLANS

L=369.69

PLANT SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME
TREES	
	CERCIS OCCIDENTALIS / WESTERN REDBUD MULTI-TRUNK
	PARKINSONIA X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE
	PINUS MONOPHYLLA / PIñON PINE
	QUERCUS ENGELMANNII / ENGELMANN OAK
	QUERCUS WISLIZENI / INTERIOR LIVE OAK
SHRUBS	
	LARGE SHRUBS
	CEANOTHUS GREGGII / DESERT CEANOTHUS
	ERIOGONUM GIGANTEUM / ST. CATHERINE'S LACE
	FOUQUIERIA SPLENDENS / OCOTILLO
	LARREA TRIDENTATA / CREOSOTE BUSH
	SALVIA APIANA / WHITE SAGE
	SMALL SHRUBS
	AGAVE PARRYI / PARRY'S AGAVE
	DIPLACUS AURANTIACUS / STICKY MONKEYFLOWER
	FEROCACTUS CYLINDRACEUS / COMPASS BARREL CACTUS
	HESPEROYUCCA WHIPPLEI / CHAPARRAL YUCCA
	OPUNTIA BASILARIS / BEAVERTAIL PRICKLY PEAR
	PENSTEMON HETEROPHYLLUS / FOOTHILL PENSTEMON
	SCREENING SHRUBS
	CERCOCARPUS BETULOIDES / MOUNTAIN MAHOGANY

PRELIMINARY PLAN
DATE: 05/28/2025
NOT FOR CONSTRUCTION

FINAL PRELIMINARY LANDSCAPE PLAN FOR:
PRAIRIE SONG RELIABILITY PROJECT

LOS ANGELES COUNTY
CALIFORNIA

0 50 100 150 feet
1" = 50'

NORTH

CONCEPTUAL LANDSCAPE PLAN

L1

DUDEK
605 THIRD STREET
ENCINITAS, CA 92024

WALL, TYP.

WALL, TYP.

MATCHLINE C - SEE SHEET L3

GATE, TYP.

MATCHLINE A - SEE SHEET L1

SOLEDAD CANYON ROAD

MATCHLINE B - SEE SHEET L1

PROJECT PARCEL BOUNDARY, TYP.

DECOMPOSED GRANITE, TYP.

EXISTING VEGETATION, TYP.

EXISTING OVERHEAD POWER LINE, TYP.

WALL, TYP.

N79°46'56"E 331.76'

L=369.89'
R=2,555.72'
S=8°17'17"

FINAL PRELIMINARY LANDSCAPE PLAN FOR:

PRAIRIE SONG RELIABILITY PROJECT

LOS ANGELES COUNTY
CALIFORNIA

CONCEPTUAL LANDSCAPE PLAN

L2

PRELIMINARY PLAN
DATE: 05/28/2025
NOT FOR CONSTRUCTION

0 50 100 150 feet
1" = 50'

NORTH

DUDEK
605 THIRD STREET
ENCINITAS, CA 92024

FINAL PRELIMINARY LANDSCAPE PLAN FOR:
PRAIRIE SONG RELIABILITY PROJECT

LOS ANGELES COUNTY
CALIFORNIA

CONCEPTUAL LANDSCAPE PLAN

0 50 100 150 feet
1" = 50'

NORTH

DUDEK
605 THIRD STREET
ENCINITAS, CA 92024

L3

PRELIMINARY PLAN
DATE: 05/28/2025
NOT FOR CONSTRUCTION

EXISTING OVERHEAD POWER LINE, TYP.

EASEMENT, TYP.

WALL, TYP.

SOLEDAD CANYON ROAD

WALL, TYP.

DECOMPOSED GRANITE, TYP.

PROJECT PARCEL BOUNDARY

MATCHLINE D - SEE SHEET L3

L=686.90'
R=1,432.70'
Δ=27°28'13"

N54°01'59"E - 237.10'

L=44°09'04"
R=119.80'
L=51.10'

N26°33'46"E - 160.00'

FINAL PRELIMINARY LANDSCAPE PLAN FOR:

PRAIRIE SONG RELIABILITY PROJECT

LOS ANGELES COUNTY
CALIFORNIA

CONCEPTUAL LANDSCAPE PLAN

L4

0 50 100 150 feet
1" = 50'

NORTH

DUDEK
605 THIRD STREET
ENCINITAS, CA 92024

PLANTING NOTES AND SCHEDULE

1. BASIS OF DESIGN: THE BASIS OF THIS DESIGN IS TO SOFTEN THE SITE'S PERIMETER WALL WITH A XERISCAPE PLANTING BUFFER THAT IS APPROXIMATELY 10 FEET WIDE. IN ADDITION TO THE 10-FT WIDE PLANTING AREA, THE ENTIRE LANDSCAPE AREA BETWEEN THE PERIMETER WALL AND PROPERTY LINE SHALL BE DECOMPOSED GRANITE "MULCH", AS SHOWN ON THIS CONCEPTUAL LANDSCAPE PLAN, TO ENHANCE THE OVERALL AESTHETICS OF THE SITE.
2. PLANTINGS: ALL TREES SHALL BE STAKED FOR NO LONGER THAN 1 YEAR AFTER PLANTING.
3. SOIL AMENDMENTS: ALL PLANTS SPECIFIED IN THESE PLANS ARE NATIVE TO THE REGION OR WELL-ADAPTED TO THE LOCAL CLIMATE. PRIOR TO AMENDING PLANTING HOLES, SOIL SAMPLES SHALL BE COLLECTED AND TESTED FOR FERTILITY.
4. IRRIGATION: ALL TREES AND SHRUBS SHALL BE IRRIGATED FOR THREE TO FIVE YEARS IMMEDIATELY FOLLOWING INSTALLATION.
   - 4.1. SYSTEM: IRRIGATION SYSTEM SHALL PROVIDE WATER TO ALL SHRUBS AND TREES VIA HARD PIPE AND LOW-FLOW BUBBLERS AND TREE ROOT ZONE BUBBLERS.
5. SUMMARY OF SURFACES: THE SUMMARY OF SURFACES IS CALCULATED BASED UNDER THE ASSUMPTION THAT EACH BATTERY AND RELATED INFRASTRUCTURE WILL BE SET ON AN IMPERVIOUS CONCRETE FOUNDATION. PERVIOUS GRAVEL TREATMENT WILL FILL SPACE BETWEEN EACH BATTERY AND RELATED INFRASTRUCTURE'S FOUNDATION.
6. EXISTING VEGETATION: EXISTING VEGETATION AS SHOWN IS APPROXIMATE AND BASED ON AERIAL IMAGERY.

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	QTY	SIZE	WATER USE	MATURE HEIGHT	GROWTH RATE	MATURE WIDTH
TREES								
	CER WES	CERCIS OCCIDENTALIS / WESTERN REDBUD MULTI-TRUNK	26	15 GAL.	VERY LOW - MEDIUM	10 - FT. HT.	MODERATE	6 - FT. W.
	PAR DES	PARKINSONIA X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE	15	15 GAL.	LOW	15 - 25FT. HT.	FAST	15 - 25FT. W.
	PIN MON	PINUS MONOPHYLLA / PIñON PINE	12	15 GAL.	LOW	40 - 65FT. HT.	SLOW	25 - 40FT. W.
	QUE EN2	QUERCUS ENGELMANNII / ENGELMANN OAK	2	15 GAL.	VERY LOW - LOW	25 - FT. HT.	MODERATE	25 - FT. W.
	QUE WIS	QUERCUS WISLIZENI / INTERIOR LIVE OAK	12	15 GAL.	VERY LOW	25 - FT. HT.	MODERATE	25 - FT. W.

SYMBOL	CODE	BOTANICAL / COMMON NAME	QTY	SIZE	SPACING	WATER USE	MATURE HEIGHT	GROWTH RATE	MATURE WIDTH
SHRUBS									
		LARGE SHRUBS	429						
	CEA GRE	CEANOTHUS GREGGII / DESERT CEANOTHUS		5 GAL.	20% @ 4" o.c.	LOW	3 - 6FT. HT.	MODERATE	3 - 6FT. W.
	ERI GIG	ERIOGONUM GIGANTEUM / ST. CATHERINE'S LACE		5 GAL.	20% @ 4" o.c.	LOW	3 - 6FT. HT.	FAST	6 - 10FT. W.
	FOU SPL	FOUQUIERIA SPLENDENS / OCOTILLO		5 GAL.	20% @ 4" o.c.	VERY LOW - LOW	6 - FT. HT.	SLOW - MODERATE	3 - FT. W.
	LAR TRI	LARREA TRIDENTATA / CREOSOTE BUSH		5 GAL.	20% @ 4" o.c.	VERY LOW - LOW	3 - 1FT. HT.	SLOW	6 - 10FT. W.
	SAL API	SALVIA APIANA / WHITE SAGE		5 GAL.	20% @ 4" o.c.	LOW	3 - 6FT. HT.	FAST	3 - 6FT. W.
		SMALL SHRUBS	796						
	AGA PAR	AGAVE PARRYI / PARRY'S AGAVE		1 GAL.	16% @ 4" o.c.	LOW	6 - 18IN. HT.	MODERATE	1 - 3FT. W.
	DIP AUR	DIPLACUS AURANTIACUS / STICKY MONKEYFLOWER		5 GAL.	17% @ 4" o.c.	VERY LOW	3 - 6FT. HT.	SLOW	1 - 3FT. W.
	FER CYL	FEROCACTUS CYLINDRACEUS / COMPASS BARREL CACTUS		1 GAL.	16% @ 4" o.c.	LOW	3 - 6FT. HT.	SLOW	1 - 3FT. W.
	HES WHI	HESPEROYUCCA WHIPPLEI / CHAPARRAL YUCCA		5 GAL.	17% @ 4" o.c.	LOW	18 - 36IN. HT.	MODERATE	1 - 3FT. W.
	OPU BAS	OPUNTIA BASILARIS / BEAVERTAIL PRICKLY PEAR		1 GAL.	17% @ 4" o.c.	LOW	18 - 36IN. HT.	SLOW	3 - 6FT. W.
	PEN HET	PENSTEMON HETEROPHYLLUS / FOOTHILL PENSTEMON		1 GAL.	17% @ 4" o.c.	VERY LOW - LOW	6 - FT. HT.	FAST	1 - 3FT. W.
		SCREENING SHRUBS	200						
	CER BET	CERCOCARPUS BETULOIDES / MOUNTAIN MAHOGANY		5 GAL.	34% @ 4" o.c.	LOW	10 - 15FT. HT.	FAST	6 - 10FT. W.
	FRE FLA	FREMONTODENDRON CALIFORNICUM / CALIFORNIA FLANNEL BUSH		5 GAL.	33% @ 4" o.c.	LOW	10 - 15FT. HT.	FAST	10 - 15FT. W.
	JUN CA3	JUNIPERUS CALIFORNICA / CALIFORNIA JUNIPER		5 GAL.	33% @ 4" o.c.	LOW	10 - 15FT. HT.	MODERATE	10 - 15FT. W.

PERVIOUS LANDSCAPE SURFACE

DECOMPOSED GRANITE

TAKEOFF: 409,387 SQFT.

SUMMARY OF SURFACES (SF)

	EXISTING	PROPOSED
IMPERVIOUS	3,723	899,006
PERVIOUS	3,072,960	2,177,676
LANDSCAPE	3,072,960	444,201
TOTAL SITE	3,076,682	3,076,682

IRRIGATION EQUIPMENT LIST

WATER SERVICE POINT OF CONNECTION
SHUT-OFF VALVE
WATER METER
REDUCED PRESSURE BACKFLOW PREVENTER
FLOW SENSOR
MASTER VALVE
REMOTE CONTROL VALVE
QUICK-COUPLING VALVE
TREE ROOT ZONE WATER SYSTEM (BUBBLER)
LOW FLOW FLOOD BUBBLER
MAINLINE PIPE (PRESSURIZED)
LATERAL PIPE (NON-PRESSURIZED)
PIPE SLEEVE
AUTOMATIC CONTROLLER ON PEDESTAL
WEATHER SENSOR

WATER EFFICIENT LANDSCAPE WORKSHEET

(AS REQUIRED BY THE M.W.E.L.O.)

REFERENCE EVAPOTRANSPIRATION (ETo) 66.5 — MAWA ETAF 0.45

HYDROZONE / PLANT TYPE	VALVE #	PLANT FACTOR (PF)	IRRIGATION METHOD	IRRIGATION EFFICIENCY (IE)	ETAF (PF/IE)	LANDSCAPE AREA (SQ.FT.)	ETAF x AREA	ESTIMATED TOTAL WATER USE (ETWU)
REGULAR LANDSCAPE AREAS								
LOW WATER SHRUBS	ZONE 1	0.3	BUBBLER	0.81	0.37	66,519	24,636.67	1,015,769.77
LOW WATER TREES	ZONE 2	0.3	ROOT ZONE BUBBLER	0.81	0.37	2,680	992.59	40,924.59
					TOTALS	69,199	24,636.67	
							TOTAL LANDSCAPE AREA (SQFT)	69,199
							ETWU (GAL/YEAR)	1,015,769.77
							MAWA (GAL/YEAR)	1,283,883.65

NOTES:

1	IRRIGATION EFFICIENCY	3	ETAF Variable
	SPRAY 0.75		RESIDENTIAL 0.55
	DRIP 0.81		ALL OTHERS 0.45
2	PLANT FACTOR	4	MAWA (MAXIMUM APPLIED WATER ALLOWANCE)
	LOW 0.1-0.3		=(ETO)(0.62)[(ETAF X LA)+(1-ETAF) X SLA)]
	MED 0.4-0.6	5	ETWU (ESTIMATED TOTAL WATER USE)
	HIGH 0.7-1		=(ETO)(0.62)[(ETAF)(LA)+SLA]

IMPORTANT NOTE REGARDING IRRIGATION DESIGN EFFICIENCY: THE IRRIGATION SYSTEM HYDRAULICS, CONTROLLER OPERATION, NOZZLE SELECTION, HEAD SPACING AND PLACEMENT ARE DESIGNED TO BE IN CONFORMANCE WITH THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (AB 1881). THE IRRIGATION DESIGN IS INTENDED TO OPERATE WITH A MINIMUM DISTRIBUTION UNIFORMITY OF 75% FOR OVERHEAD SPRAY DEVICES AND 81% FOR BUBBLER SYSTEM DEVICES. WHILE THE DESIGN IS DIAGRAMMATIC, THE CONTRACTOR SHALL ENSURE THAT THE MINIMUM DISTRIBUTION UNIFORMITY IS MET BY MAKING MINOR YET VIABLE ADJUSTMENTS IN THE FIELD DURING CONSTRUCTION. CONTRACTOR SHALL CONTACT THE PROJECT OWNER IMMEDIATELY IF, FOR ANY REASON, HE/SHE FORESEES THAT THE SYSTEM AS DESIGNED CANNOT MEET THE MINIMUM DISTRIBUTION UNIFORMITY SPECIFIED.

PRELIMINARY PLAN
DATE: 05/28/2025
NOT FOR CONSTRUCTION

FINAL PRELIMINARY LANDSCAPE PLAN FOR:
PRAIRIE SONG RELIABILITY PROJECT

LOS ANGELES COUNTY
CALIFORNIA

PLANT SCHEDULE, NOTES, AND SUMMARY OF SURFACES

L5

DUDEK
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ENCINITAS, CA 92024