

PIKE SOLAR LLC



Appendix AD- Lighting Plan

Pike Solar Lighting Plan

The Pike Solar project (“Project”) will bring 175 megawatts (MW) of solar energy onto the Colorado Springs Utilities electrical grid with the operational benefits provided by a 25 MW of AC-couple battery energy storage system (“BESS”). The principal purpose for outdoor lighting on site is for the safety of construction, operations, and maintenance personnel. During both the construction and operational periods of the facilities, lighting will be required. Accordingly, this Lighting Plan addresses construction and operations, and applicability of the El Paso County Land Development Code to the proposed development.

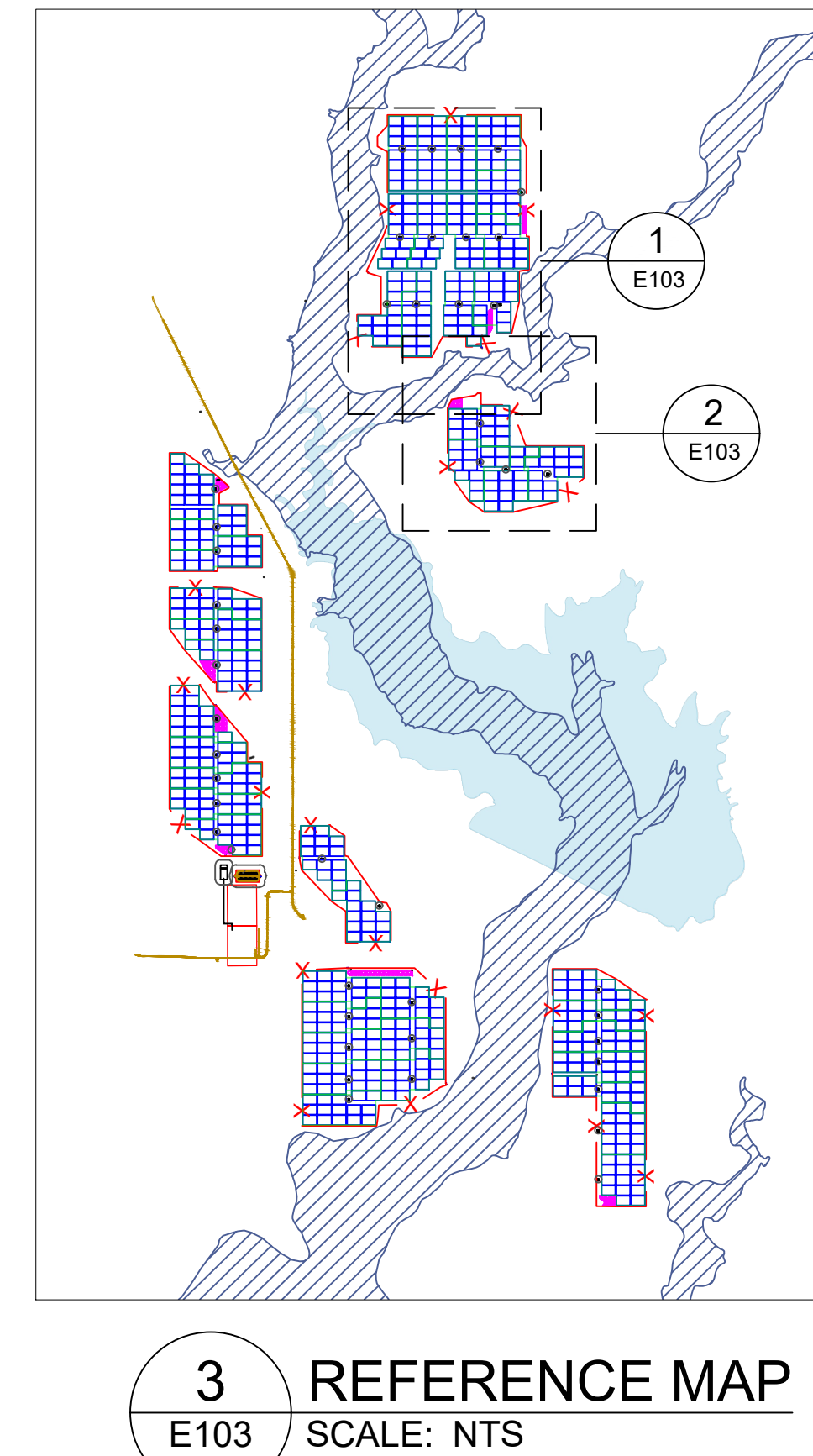
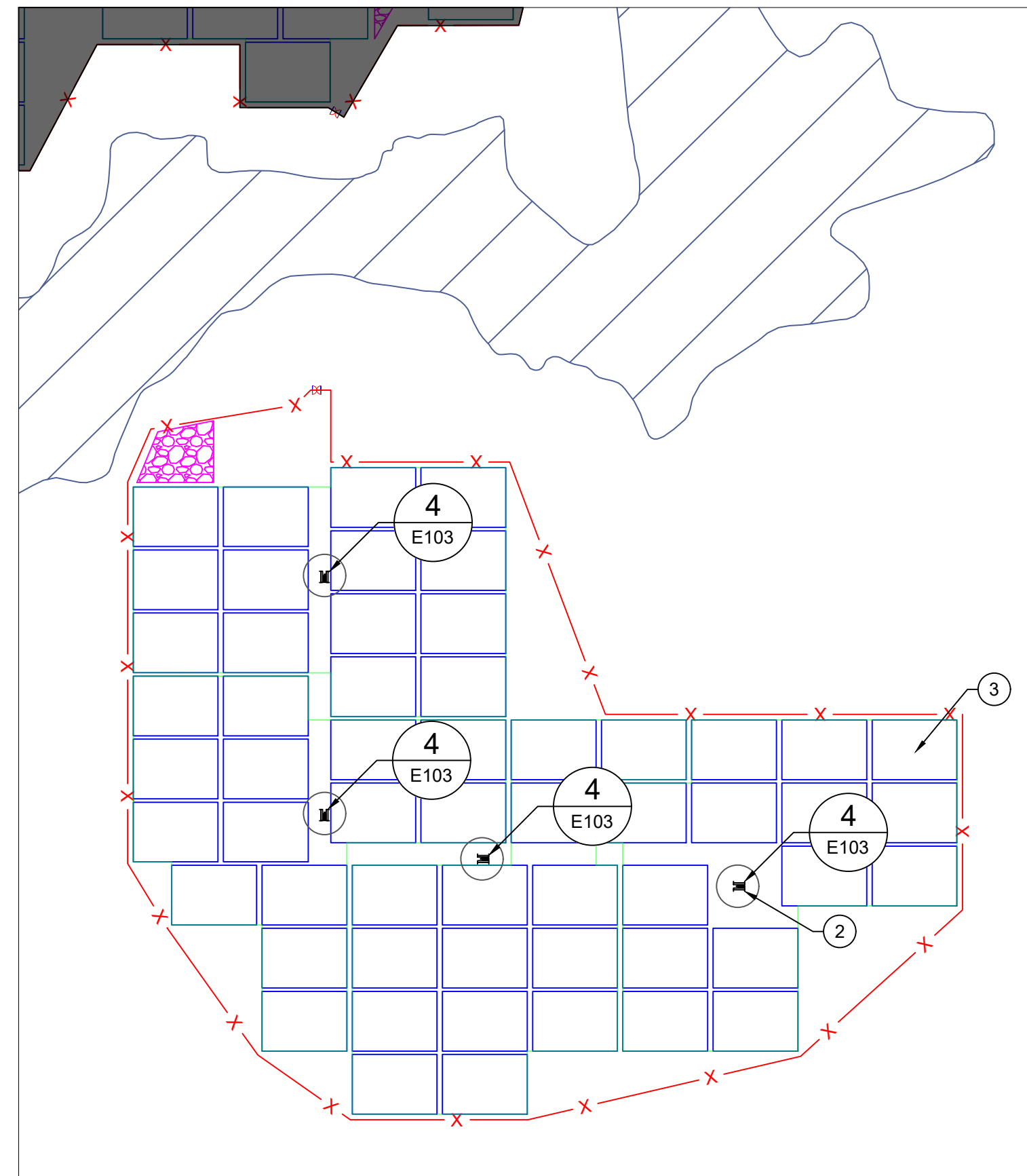
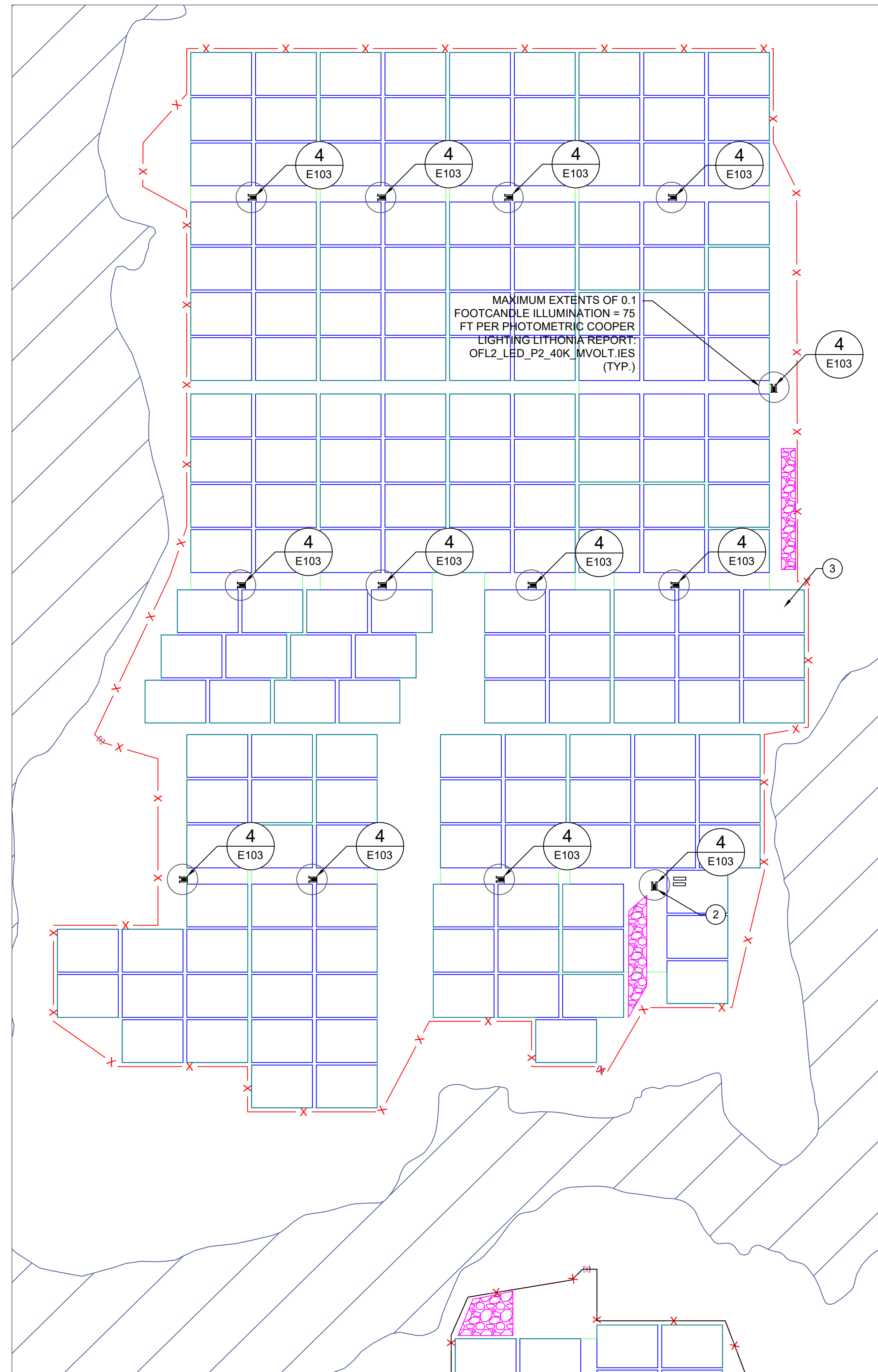
Construction

Project construction will largely take place during daylight hours and consequently, will not require substantial lighting on site. Weather conditions and time of the year may necessitate the use of temporary lighting to illuminate work stations until daylight allows for safe working conditions. Construction lighting may also be installed at construction trailers to ensure safety.

Construction lighting would be limited to gas/diesel generated systems that are temporary and mobile; common to most construction sites. While the El Paso County Code does not put height limitations on construction lighting, temporary lighting poles would generally not exceed 24 feet. All lighting would be directed downward and shielded. Individual light sources would not exceed 150,000 lumens per light source. At all times, construction lighting would be less than 0.1 lumen at property lines. Additionally, generators used to power light sources would not exceed sound thresholds laid out in the El Paso County Noise Ordinance (75 db(A) at property line).

Operations

The layout proposed in the WSEO includes 45 power stations (housing power infrastructure such as inverters and transformers), a BESS, a substation, and an operations and maintenance (“O&M”) building. Project lighting will be limited to interior-located power stations, BESS area, substation, and O&M building (as put forward by national electrical standards) and will not include exterior lighting. Lighting will be manually activated and will be set on a motion detector to limit events where there is unnecessary lighting at the facility. The use of lighting on the site will be limited to instances of O&M at the facility during nighttime hours. Operations and maintenance activities at solar facilities during the evening is rare. Maintenance personnel will specifically target work during daylight hours to best ensure safety on-site. El Paso County Land Development Code states that light levels at residential property lines may not exceed 0.1 foot candles because of on-site lighting. A photometric study was completed for a prior El Paso County project (Palmer Solar) to demonstrate lighting compliance. The same design criteria will be used for the Pike Solar, and nowhere on the site will the proposed lighting exceed this threshold. The results of the photometric study are included with the Lighting Plan showing the maximum extent of 0.1 foot candle based on the proposed lighting technology at both the Pike Solar. Project lighting will be downcast and will be fixed to permanent structures on site; exclusively power stations, structures within the BESS area, the substation, and the O&M building.

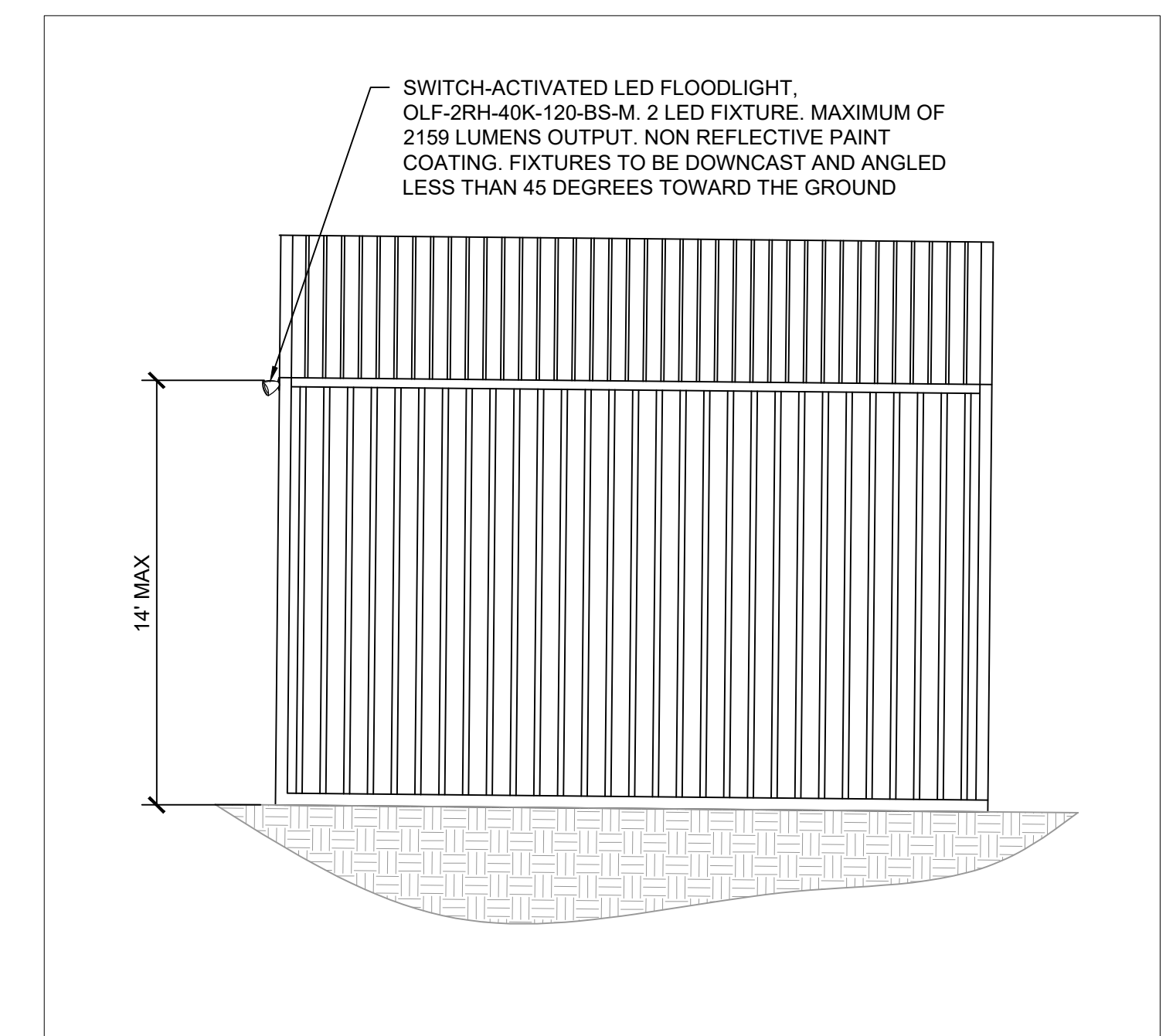
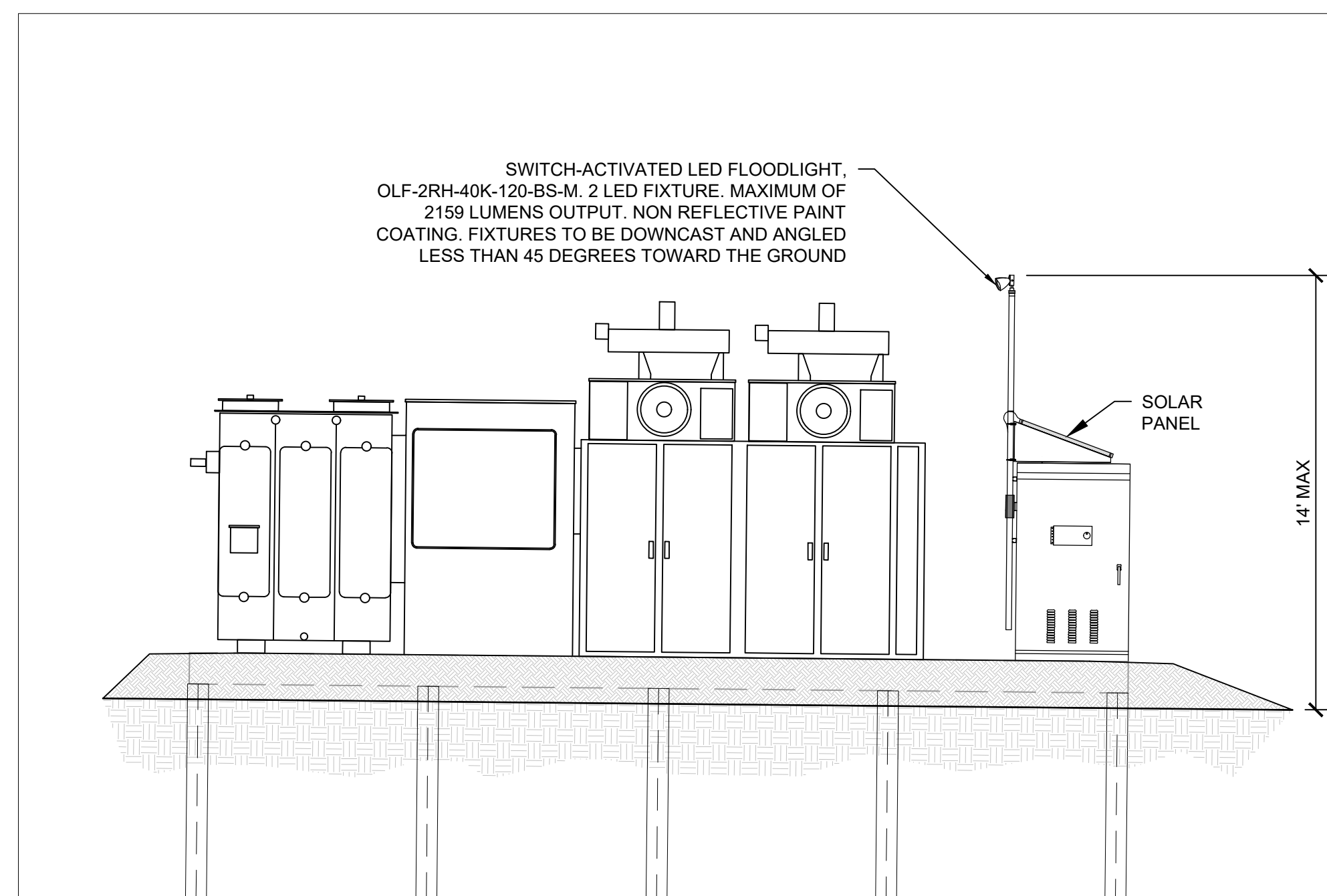
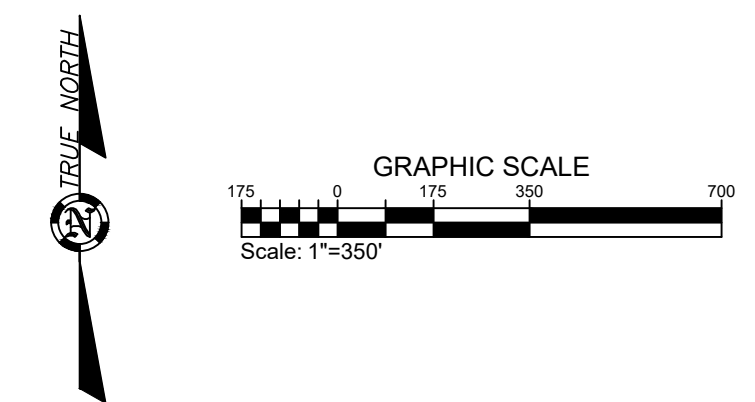


- | GENERAL NOTES | |
|---------------|---|
| 1 | THE PROJECT DOES NOT INCLUDE ANY REGULARLY SCHEDULED DAYTIME LIGHTING. |
| 2 | TEMPORARY LIGHTING IS LIMITED TO LOCATIONS IDENTIFIED HERE WITHIN AND WILL ONLY BE ALLOWED FOR MAINTENANCE OF THE FACILITY. |
| 3 | DURING OPERATION, THE PROJECT WILL ABIDE BY EL PASO COUNTY LIGHTING ORDINANCE AT ALL TIMES INCLUDING LUMEN LIMITATIONS AT PROPERTY LINES. |
| 4 | NO LIGHTING IS PROPOSED FOR CONSTRUCTION. |

- Legend:

 - PROJECT FENCE
 - SITE ACCESS ROAD
 - EXISTING CSU ROAD
 - STAGING/PARKING AREA
 - TRACKER ARRAY OUTLINE
 - POWER STATION
 - O&M SHED

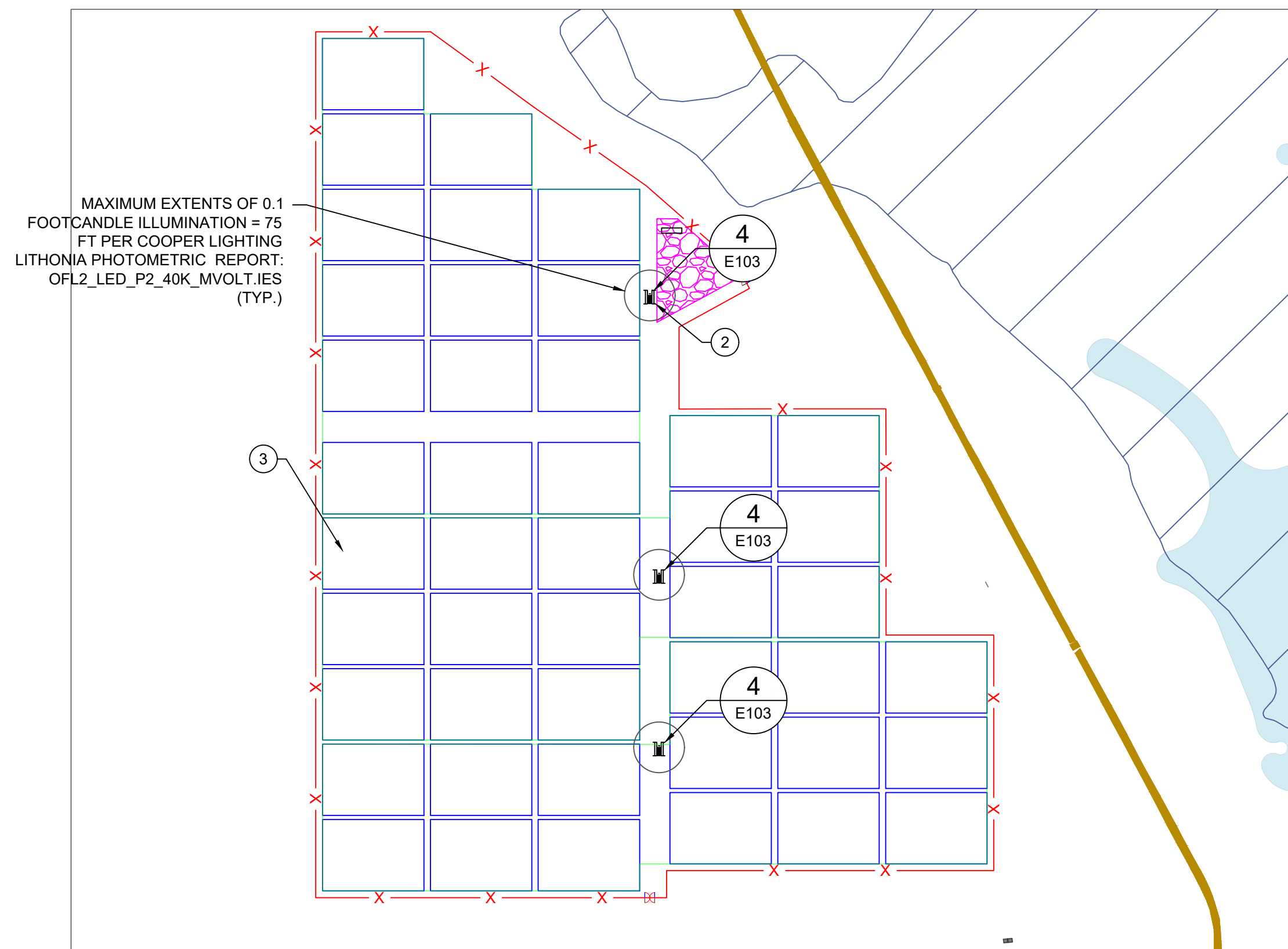
- | ## | KEYNOTES |
|----|---|
| 1 | SUBSTATION CONTROL BUILDING |
| 2 | POWER STATION (TYPICAL) |
| 3 | TRACKER BLOCK (TYPICAL) |
| 4 | O&M SHED |
| 5 | 40'x8' BATTERY ENERGY STORAGE CONTAINER (TYPICAL) |



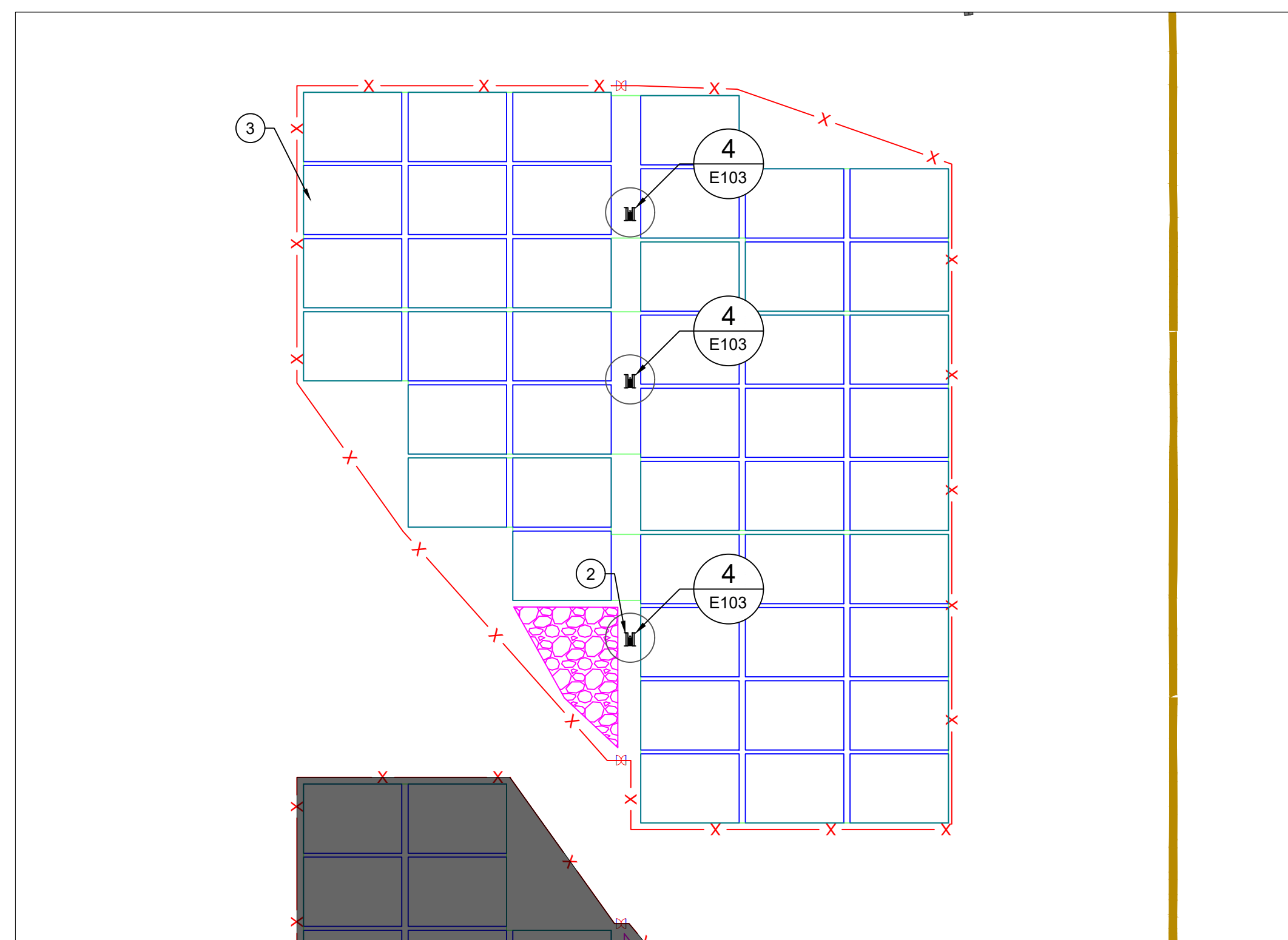
50% DRAFT

E103

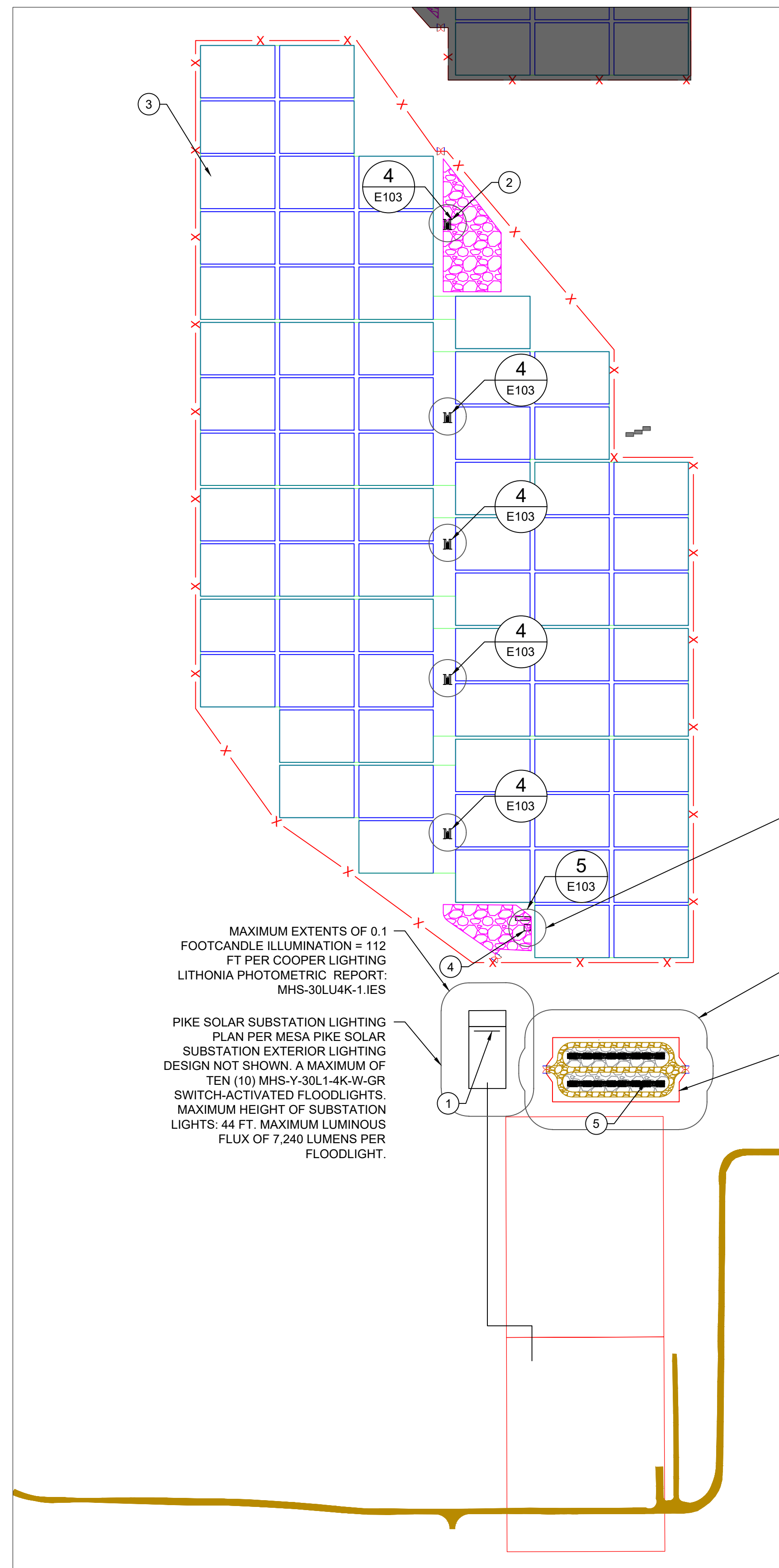
SITE LIGHTING PLAN -
SECTIONS 1, 2



1 SECTION 3 - PLAN VIEW
E104 SCALE: 1"=325'



2 SECTION 4 - PLAN VIEW
E104 SCALE: 1"=325'



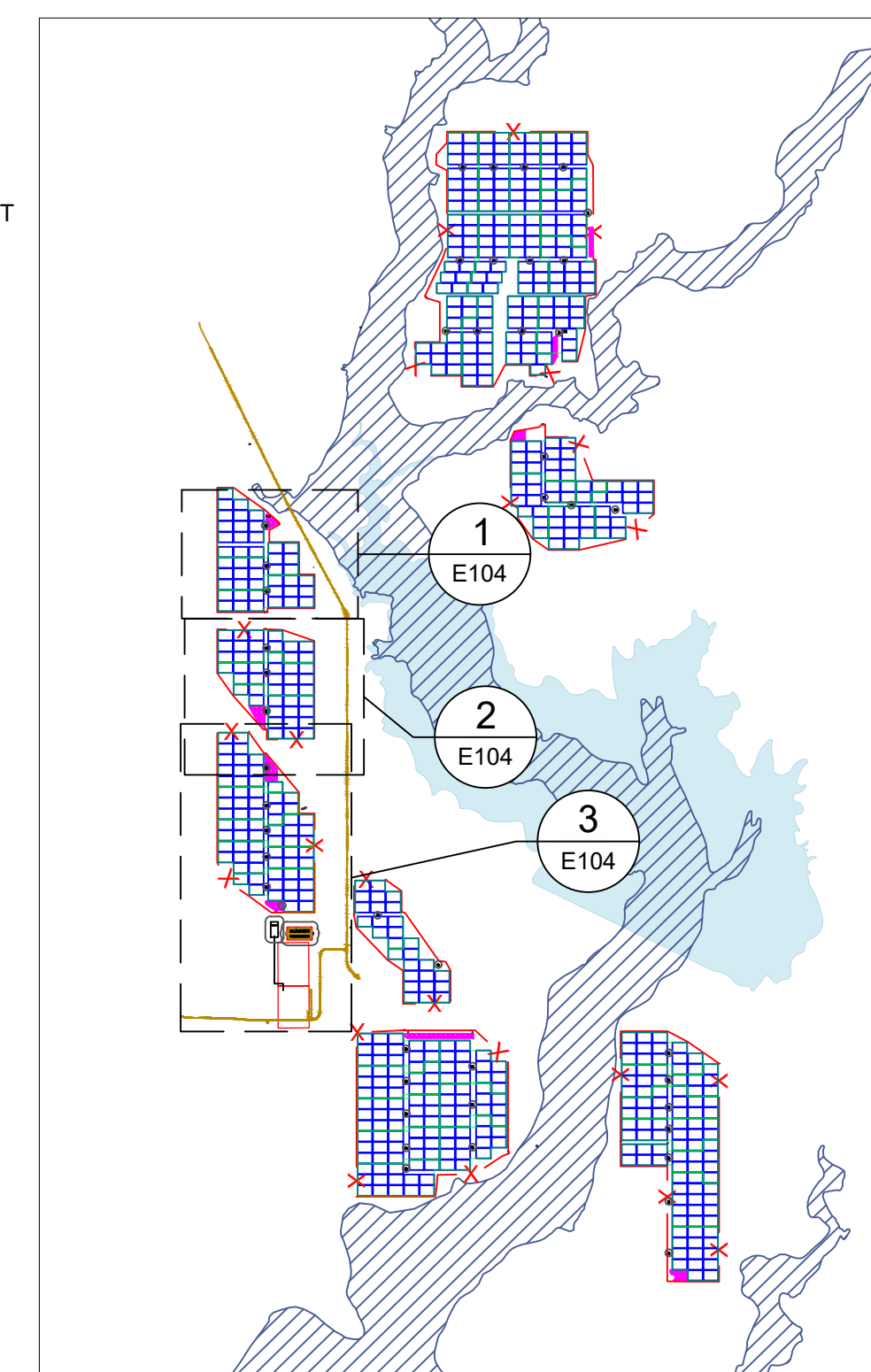
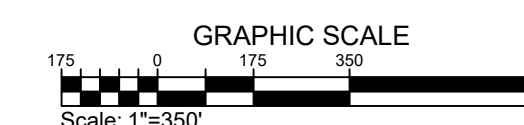
3 SECTION 5 - PLAN VIEW
E104 SCALE: 1"=325'

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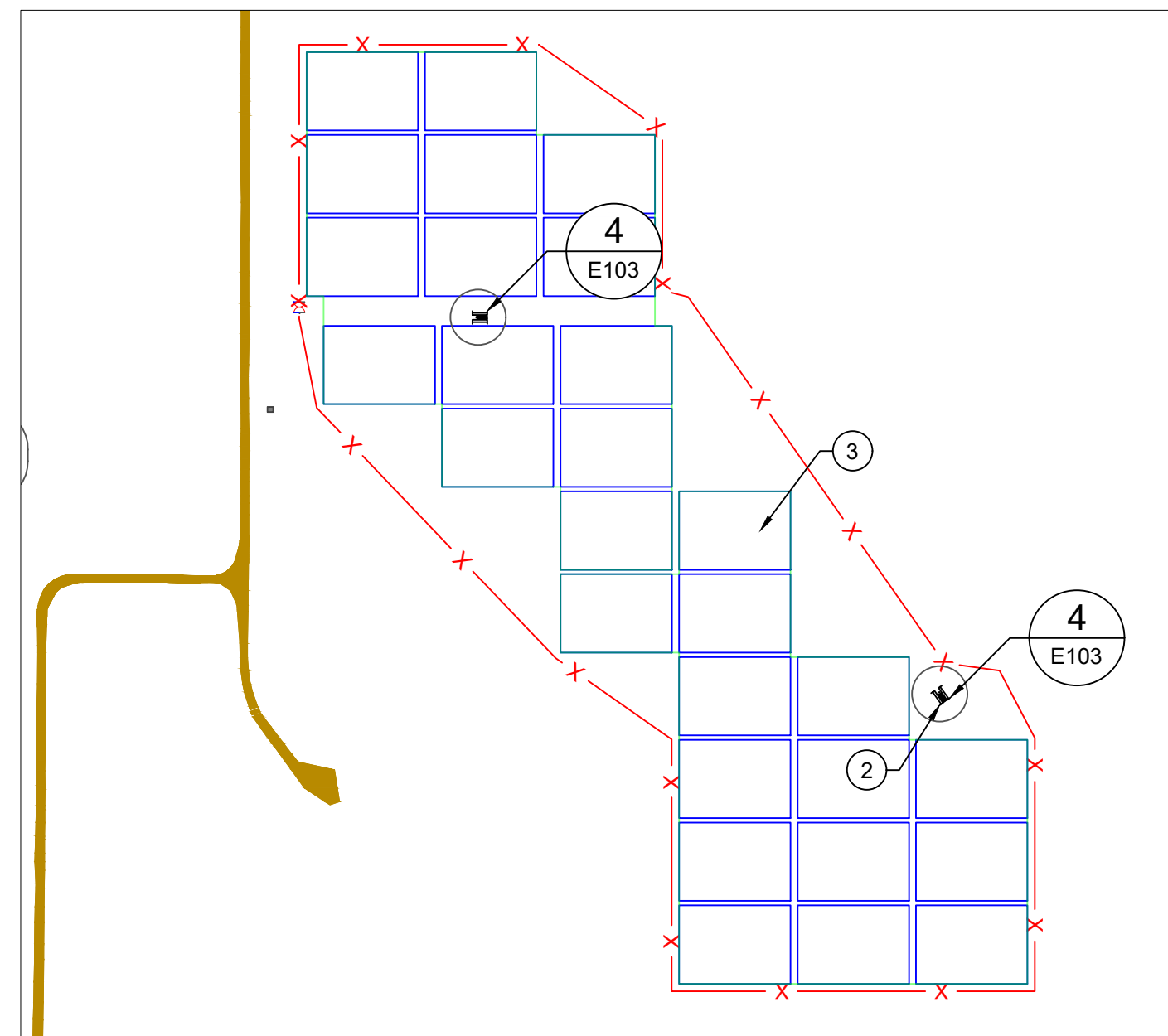
- LEGEND**

 - PROJECT FENCE
 - SITE ACCESS ROAD
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 - STAGING/PARKING AREA
 - TRACKER ARRAY OUTLINE
 - POWER STATION
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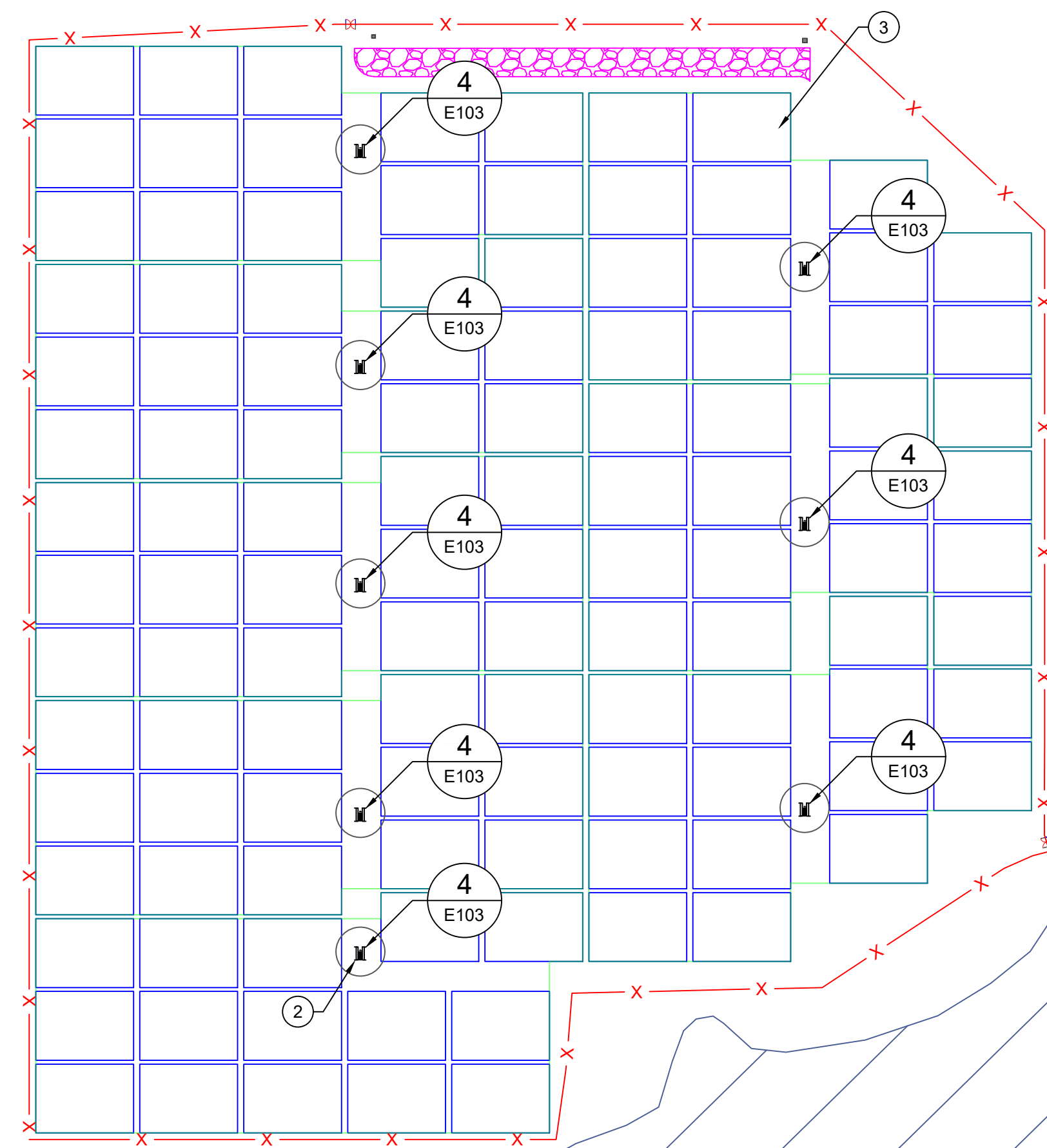
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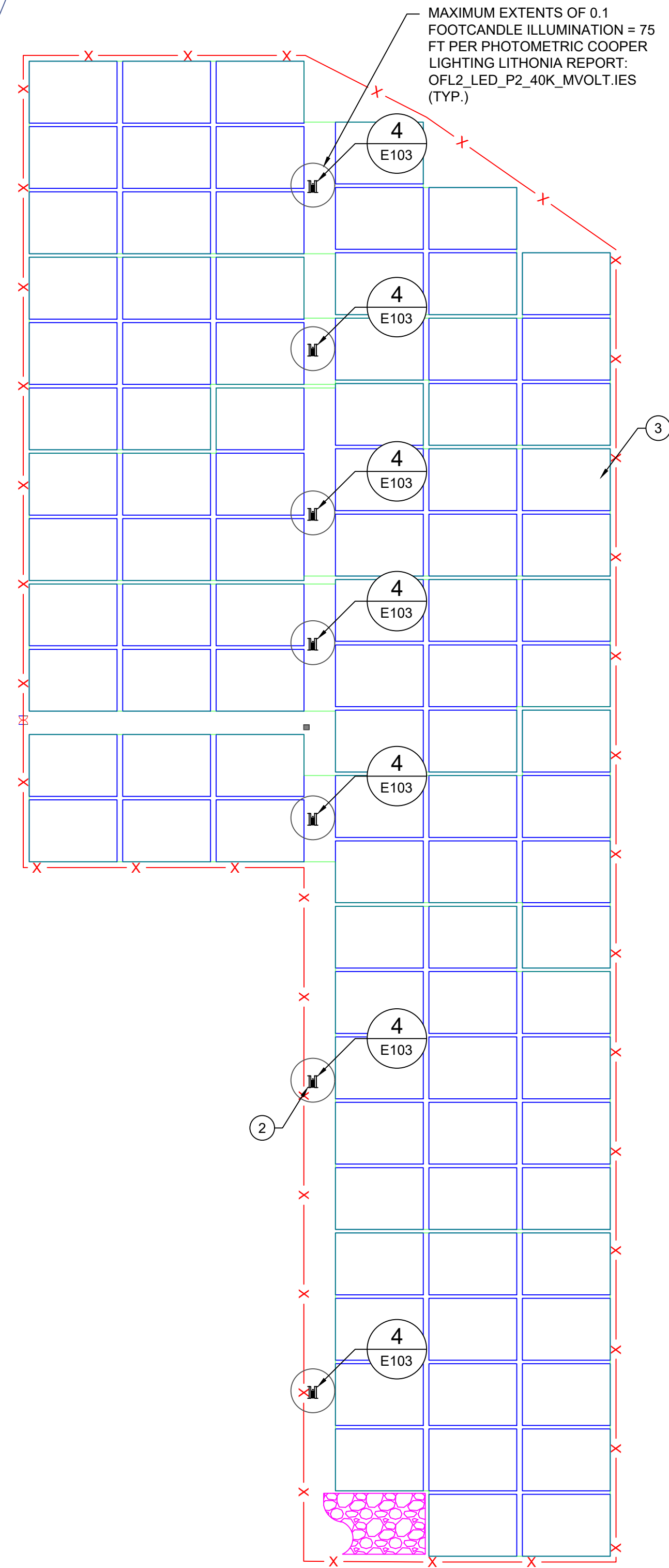
4 REFERENCE MAP
E104 SCALE: NTS



1 SECTION 6 - PLAN VIEW
E105 SCALE: 1"=400'










2 SECTION 7 - PLAN VIEW
E105 SCALE: 1"=350'



3 SECTION 8 - PLAN VIEW
E105 SCALE: 1"=300'

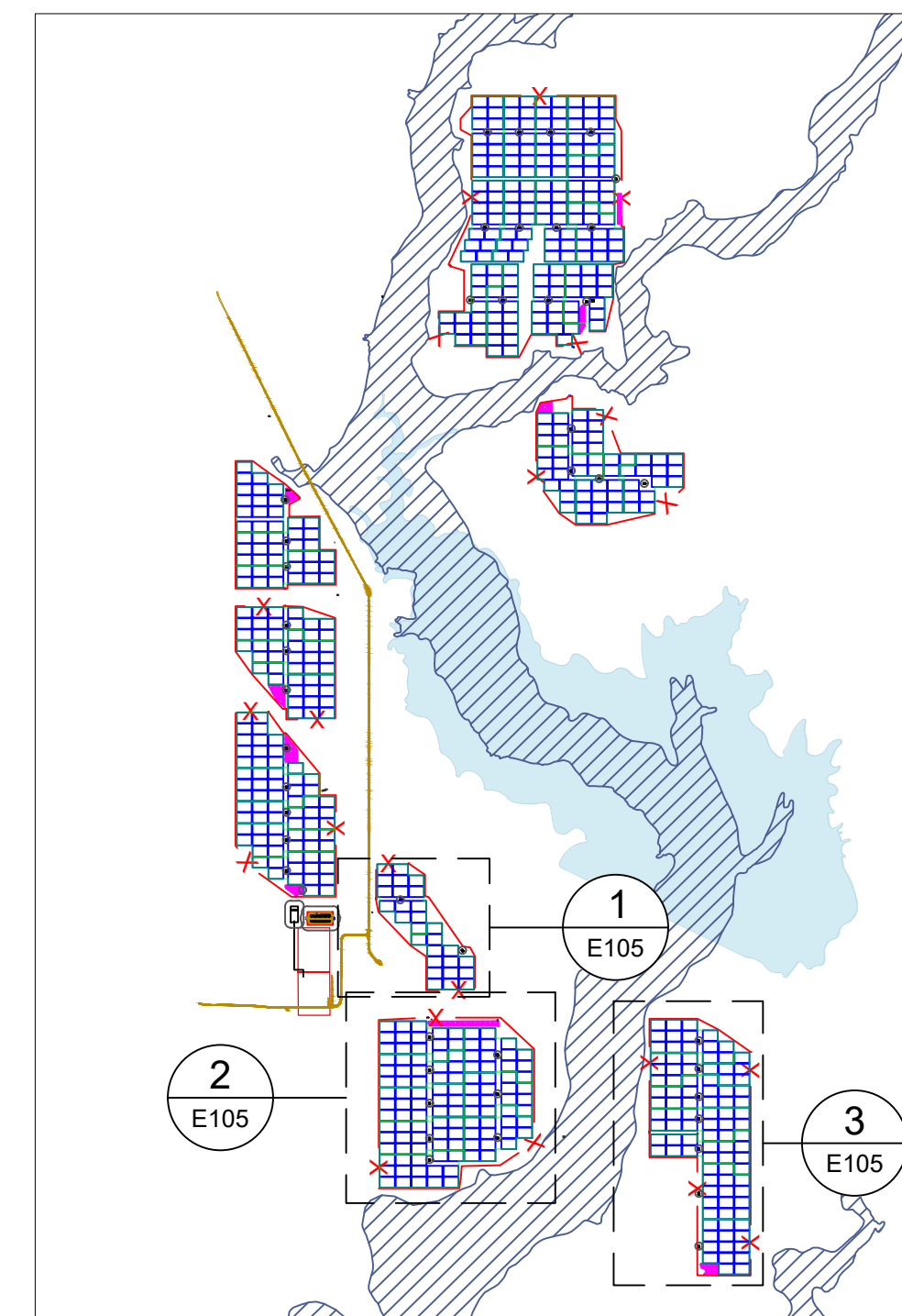
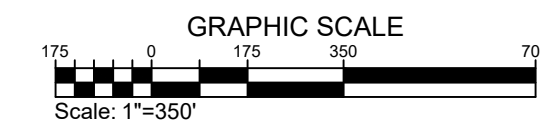
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 SITE ACCESS ROAD
 EXISTING CSU ROAD
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KEYNOTES

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4 REFERENCE MAP
E105 SCALE: NTS

 <p>juwi Inc. 1710 29th St. Suite 1068 Boulder, CO 80301 www.juwiamerica.com</p>	<p>1</p>
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PIKE SOLAR
219.46 MW PV, 25 MW BESS, 175.00 MW POI
EL PASO COUNTY, CO

50% DRAFT

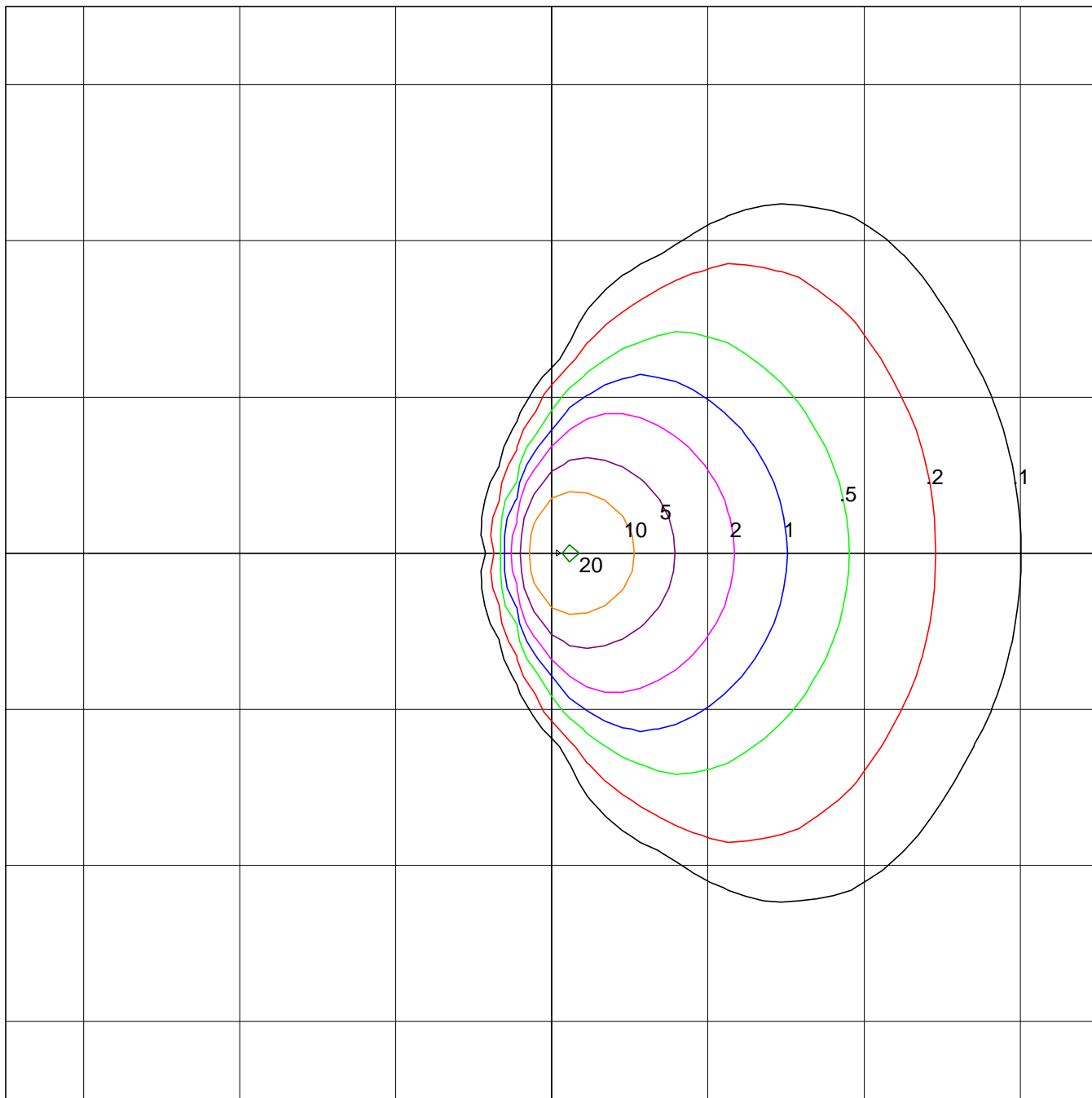
E105

PROPRIETARY AND CONFIDENTIAL
TO BE REPRODUCED IN COLOR
PRINT SIZE: ARCH D
ISSUED BY: JSI
JOB #: CO485
SCALE: AS SHOWN

E105

DWG TITLE:

**SITE LIGHTING PLAN -
SECTIONS 6, 7, 8**



Lithonia Lighting
OFL2 LED P2 40K MVOLT
General Purpose Flood size 2 w/6 COBs
LED

Horizontal Footcandles
Scale: 1 Inch = 25 Ft.
Light Loss Factor = 1.00
Lumens Per Lamp = N.A. (absolute photometry)
Luminaire Lumens = 12422
Mounting Height = 14.00 Ft, Tilt = 45 Degrees
Maximum Calculated Value = 20.77 Fc
Arrangement: Single

PHOTOMETRIC FILENAME : OFL2_LED_P2_40K_MVOLT.IES

DESCRIPTIVE INFORMATION (From Photometric File)

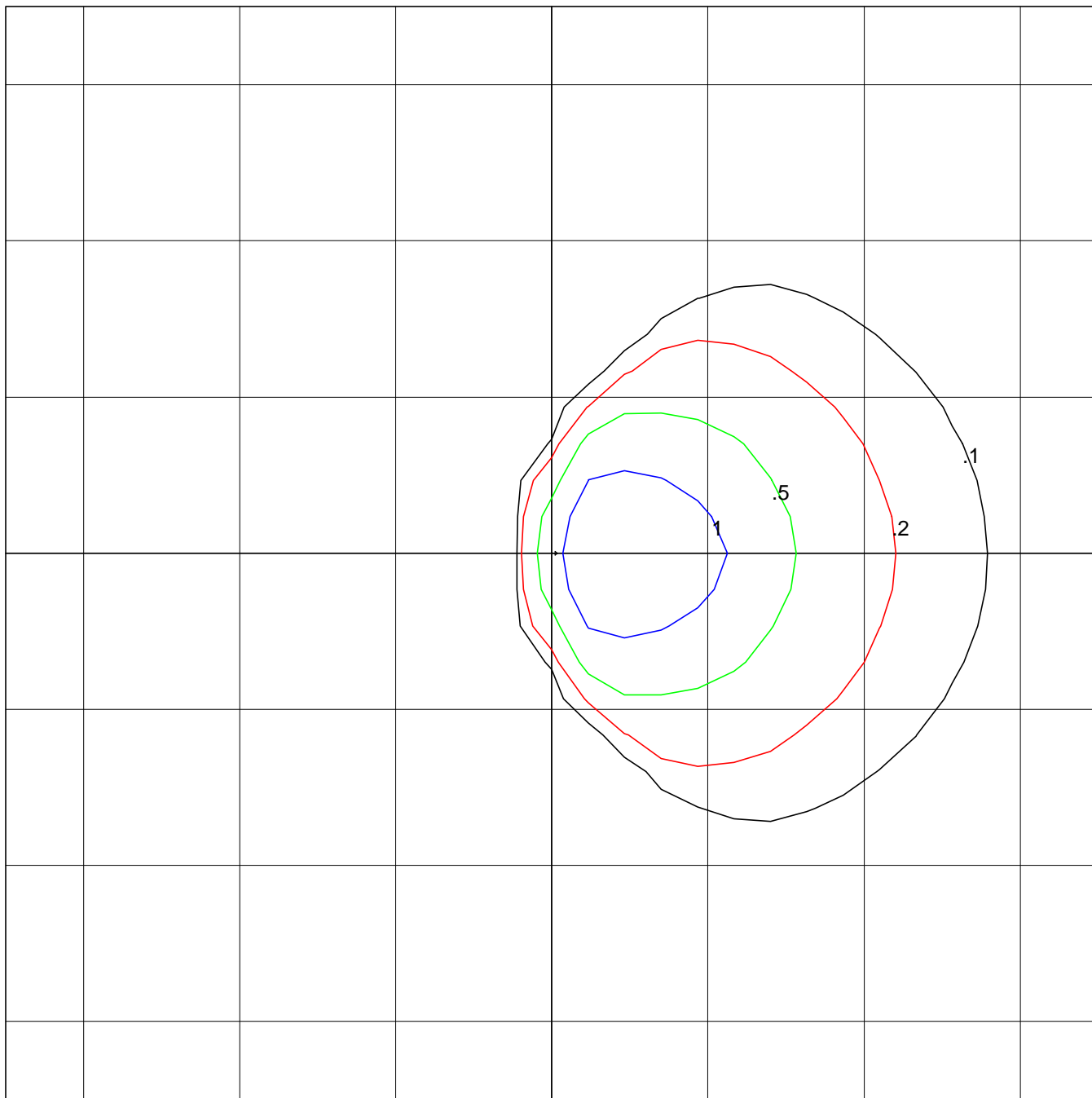
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LUMINAIRE LAYOUT INFORMATION

<u>#</u>	<u>X</u>	<u>Y</u>	<u>Z</u>	<u>Orient</u>	<u>Tilt</u>	<u>Roll</u>	<u>Spin</u>	<u>Tilt Correction</u>
1	0.00	0.00	14.00	0.00	45.00	0.00	0.00	1.00



Hubbell Outdoor
MHS-30LU-4K-W
MINILITER 5 MHS, 30 LED, 4000K, WIDE 6X6
30- NICHIA 4K LEDS

Horizontal Footcandles
Scale: 1 Inch = 40 Ft.
Light Loss Factor = 1.00
Lumens Per Lamp = N.A. (absolute photometry)
Luminaire Lumens = 7240
Mounting Height = 44.00 Ft, Tilt = 45 Degrees
Maximum Calculated Value = 1.65 Fc
Arrangement: Single

PHOTOMETRIC FILENAME : MHS-30LU-4K-W.IES

DESCRIPTIVE INFORMATION (From Photometric File)

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MHS-30LU-4K-W
MINILITER 5 MHS, 30 LED, 4000K, WIDE 6X6
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1	0.00	0.00	44.00	0.00	45.00	0.00	0.00	1.00