

Date: September 1, 2020

## Lighting Discussion - Major Special Use Permit Amendment (SUP-18-05) - 7101 E Lincoln Drive - Smoke Tree Resort

### Lighting

The SOD identifies that the Planning Commission focus on exterior lighting along the perimeter of the site. Parking lot, landscape, pathway, water feature, and building lighting will be placed around the site for on-site visibility, wayfinding, aesthetics, and life safety requirements. The SUP Guidelines recommend that the light source of each fixture be hooded and shielded so that it is not visible from adjacent properties, identifies recommended height and setbacks for certain fixtures, and recommends a maximum output at the property line based upon the use (such as parking lot, entrance roadways, etc.). Article XXV of the Zoning Ordinance also recommends a maximum color temperature of 3000 Kelvins (K). Below is a summary of the resort light fixtures:

- *Pole Lights.* 23 pole lights will be placed in the parking lot and around the auto court/entrance (Fixture Type SA). This is a reduction of 3 lights since the original plan showed a total of 26 pole lights. These pole lights are 16' tall above the adjoining finished grade (height includes a 28" decorative base), have a color temperature of 2700 K, and vary in setback from 2' to 16' from the adjoining and post-dedicated property lines. The SUP Guidelines recommend that pole lights be limited to a maximum height of 16' tall, setback a distance equal to or greater than the height of the pole measured from the adjoining property line, and a maximum output of 1.6 foot candles for parking lot lights. The table below summarizes the setbacks of the parking lot light poles from each adjoining property lines:

Property Line	Minimum Setbacks
Lincoln Dr (North - Net/Post Dedication)	2'
Quail Run Rd (West - Net/Post Dedication)	16'
Andaz (South Property Line)	16'
Lincoln Plaza Medical Center (East Property Line)	2'
SUP Guidelines	16' Minimum (Height of the fixture determines the setback)

The pole lights have a ML660 Millenia Series hood (with the light source recessed into the hood of the fixture), will have shields on all the perimeter fixtures to help reduce the amount of light trespass onto the neighboring properties, and are proposed to be on from dusk until dawn. However, several pole lights deviate from the SUP Guidelines since approximately 12 pole lights encroach into the 16' recommended setback. The number of pole lights which encroach into the recommended setback has been reduced from 18 to 12 poles. Encroachment into the recommended setback is typically discouraged or limited.

- *Building Lights.* Five different fixtures will be placed on or around the exterior of the resort buildings. All building lights will turn on at dusk, be reduced to 50% intensity at 1:00 a.m., and turned off at dawn. A stipulation will be added to identify the duration and reduced intensity of the building lights. Below is a summary of the various building light fixtures:

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- 57 wall sconces (Fixture Type WP) will be placed on the buildings. The light source is shielded by an opaque cover, directed downward, and has a color temperature of 2700K. This is the same as the prior lighting plan.
- 30 sconces (Fixture Type WS) will be placed in the building patios. The light source is recessed in the hood of the fixture, directed downward, and has a color temperature of 3000K. This is the same as the prior lighting plan.
- 62 accent lights (Fixture Type LT) will be placed on the building trellises and on two free standing trellises located in the event lawn. The light source is recessed into the fixture, directed downward, and has a color temperature of 2700K. This is an increase of 6 fixtures from the prior lighting plan.
- An estimated 90 accent up-lights (Fixture Type LU) will be placed around five of buildings and will highlight the façade of the buildings. The light source is recessed within the fixture, will have a maximum of 250 lumens, and have a color temperature of 2700 K. Building accent lighting is typically discouraged or limited. This is an increase of 2 fixtures from the prior lighting plan.
- 17 carriage style lights will be placed on four of the buildings, predominately on the restaurant and event pavilion buildings. These are a new fixture type since the prior lighting plan. Some of these carriage lights replace proposed sconce fixtures. These fixtures have a color temperature of 3000K, will face Lincoln Drive and Quail Run Road, and do not meet all of the Town Code requirements. The Code requires the light source of each fixture to be screened or shielded so they are not visible from off the property. However, the light source on these fixtures are located behind semi-opaque or frosted glass panels, which does not properly shield the light bulb.

With the exception of the carriage style lights, the building fixtures are compliant with the SUP Guidelines.

- *Landscape and Path Lights.* One type of bollard, three types of landscape fixtures, and one type of handrail fixture will be used to illuminate the landscaping and pathways. All landscape lights will turn on at dusk, be reduced to 50% intensity at 1:00 a.m., and turned off at dawn:
  - 12 bollard lights (Fixture Type BL) will be placed next to the various walkways within the campus. The original plan had 8 bollards in the right-of-way. However, the applicant removed all lighting from the right-of-way in response to Commission and staff concerns. The bollards are approximately 4' tall, have the light source recessed in the top of the fixture, and have a color temperature of 3000K.
  - 24 ring lights (Fixture Type TR) will be placed on the palm trees. Each ring can hold up to four lights. The lights are directed downward and will illuminate from the bottom half of the trees, have a color temperature of 2700 K, and the light source is recessed in the hood of the fixture. These lights will be limited to a maximum mounted height of 16' tall. The majority

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of the tree lights are located in the event lawn; however, four of these tree lights are located at the main entrance off of Quail Run Road. Palm tree light rings are typically discouraged or limited.

- 32 landscape up lights (Fixture Type GU) will be placed around the campus. 18 of these lights were originally going to be placed in the right-of-way. However, all light fixtures have been removed from the right-of-way in accordance with Planning Commission's direction. The color temperature is 2700 K.
  - An estimated 11 handrail fixtures (Fixture Type HR) will be placed under all the exterior handrails on campus. The light source is recessed inside the fixture, has a color temperature of 2700 K, and the light is directed downward on the walking surface.
  - 5 flush mounted up-lights (Fixtures LU) will be placed in the parking lot landscape islands adjoining Lincoln Drive in lieu of the bollard lights in the right-of-way. These lights will highlight the trees in the parking lot planters. The light source is recessed within the fixture, will have a maximum of 250 lumens, and have a color temperature of 2700 K. Building accent lighting is typically discouraged or limited.
- *Resort Identification Sign Illumination.* As noted in the previous meetings, a total of three sign types will be used at the resort: resort identification, retail signage, and directional signage. Resort identification includes three signs that will face Lincoln Drive and one sign that will face Quail Run Road (see Sheets A25 and A26). However, the sign illumination information and details were not included in original submittal. The applicant provided updated plans and a detail illustrating the illumination of resort identification signs. These are backlit signs, with the light source located behind opaque aluminum lettering, and a color temperature of 2700K.
  - *Water Feature Lights.* 19 water feature lights will be used in the seven water features shown on Sheet A12. Each fixture is 250 lumens.
  - *Output.* The applicant provided an updated photometric plan (Sheet AL5) which illustrates the combined output of the proposed exterior lighting. The updated plan accounts for the changes noted above and identifies the minimum, average, and maximum output levels which are summarized in the Calculation Summary Table. The SUP Guidelines recommend maximum output levels at the property line per use. Parking lots have a recommended output of 1.6 foot candles at the property line and roadway entrances, drop off areas, and driveways have a recommended output of 5.0 foot candles measured at the property line. Please reference Section 2 in the SUP Guidelines (Attachment D) for all the recommended outputs by use. It is also recommended that all other areas not outlined in the SUP Guidelines comply with the residential output of 0.75 foot candles at the property line.

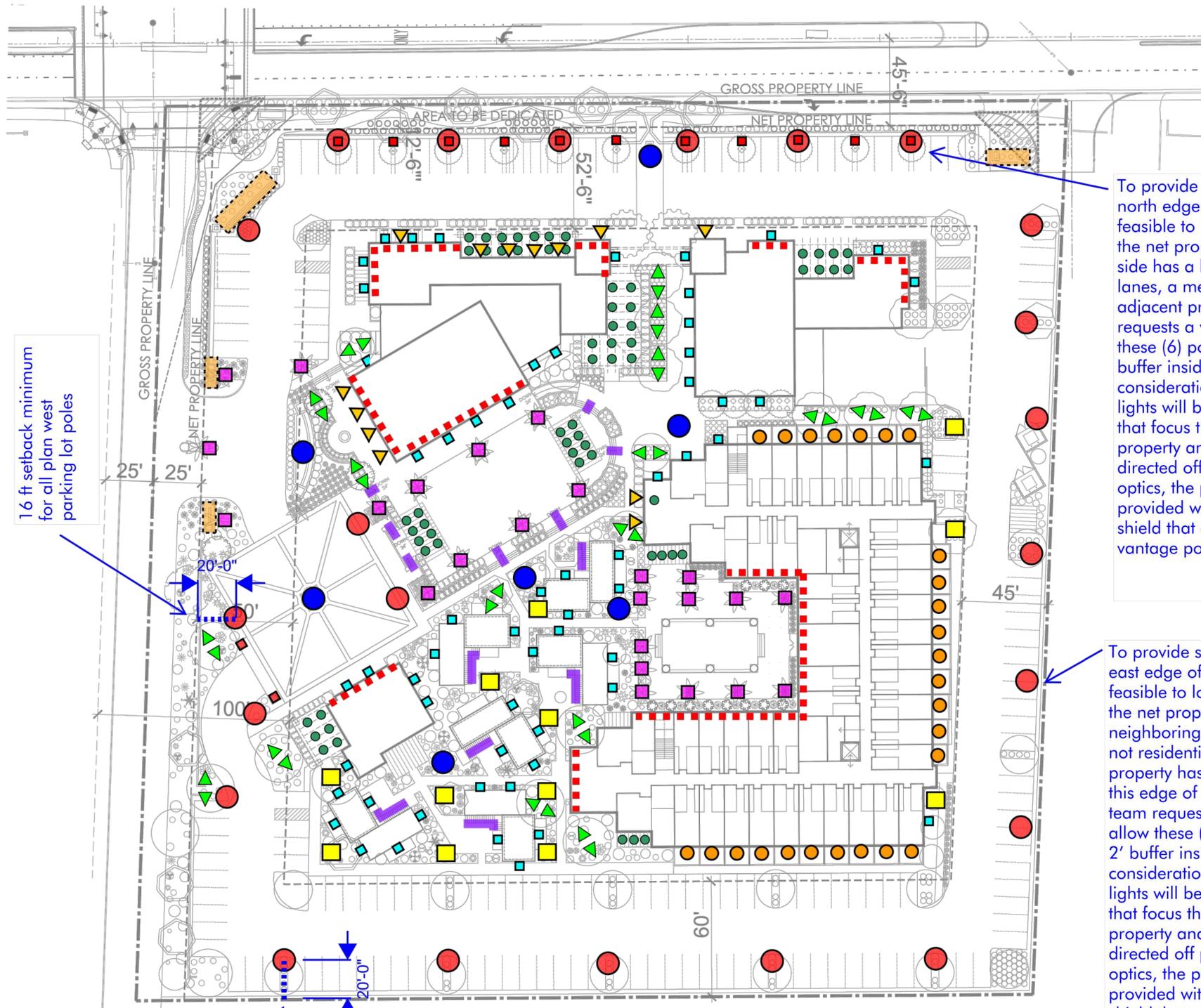
Per the updated photometric plan, the output varies from 0.0 foot-candles to 0.5 foot-candles at the property lines. The Calculation Summary Table is broken down into three categories of the light trespass, interior drives, and pool deck area. The light trespass areas have an average output of 0.18 foot-candles and

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maximum output of 0.5 foot-candles (which is compliant with the recommended output of 0.75 foot-candles at the property line). The interior drives have an average output of 1.08 foot-candles and a maximum output of 4.4 (which is compliant with the recommended output of 5 foot-candles for driveways and entrances). The pool deck area has an average output of 1.62 foot-candles and a maximum output of 4.9 (which is compliant with the recommended output of 5 foot-candles for pool decks and function areas).

Staff is seeking the Commission's input regarding the reduced setbacks for the parking lot light poles, use of palm tree lighting, and if there are any concerns regarding the timing of certain light fixtures. Refer to Attachment S for the updated lighting plans.

# GROUND LEVEL LIGHTING



16 ft setback minimum for all plan west parking lot poles

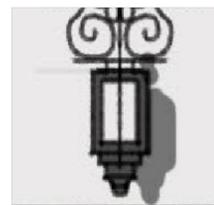
16 ft setback minimum for all plan south parking lot poles

To provide safe levels of lighting on the north edge of the property, it may not be feasible to locate the pole lights 16' from the net property line. Note that the north side has a landscape buffer, 4 traffic lanes, a median, and wall between adjacent property. The design team requests a variance to the code to allow these (6) poles to be placed in the 2' buffer inside the property line. In consideration of this request, all pole lights will be provided with fixture optics that focus the light to aim onto our property and minimize light being directed off property. In addition to the optics, the pole fixtures will also be provided with a physical house-side shield that additionally block glare from vantage points off property.

To provide safe levels of lighting on the east edge of the property, it may not be feasible to locate the pole lights 16' from the net property line. Note that the neighboring property on the east side is not residential and that this commercial property has parking and drive lanes at this edge of their property. The design team requests a variance to the code to allow these (7) poles to be placed in the 2' buffer inside the property line. In consideration of this request, all pole lights will be provided with fixture optics that focus the light to aim onto our property and minimize light being directed off property. In addition to the optics, the pole fixtures will also be provided with a physical house-side shield that additionally block glare from vantage points off property.



**NDI**  
Custom backlit signage, light source completely shielded with no footcandle impact on ground, 2700K



Custom decorative fixture with semi-opaque glass panels to obscure light source, max 250 lumens



Submersible fixtures in water features by water feature consultant



**TYPE BL**  
Symmetric bollard fixture for way-finding



**TYPE GU**  
Ground mounted landscape fixture for accenting select trees



**TYPE HR**  
Handrail mounted puck LED lights for safe stair lighting



**TYPE LU**  
Flush-to-grade fixture to uplight landscape, pots, and key architecture, max 250 lumen



**TYPE LT**  
Adjustable accent light trellis mounted and concealed from most vantage points



**TYPE SA**  
Post-top thematic pole, 16' max pole height (dark sky friendly with house-side shield & optics)



**TYPE TR**  
Palm tree ring for grazing down sides of textured tree, 16' max mounting height



**TYPE WP**  
Thematic wall sconce for ambient illumination & way-finding



**TYPE WS**  
Decorative wall sconce for patios (dark sky friendly)



CREATIVE DESIGNS IN LIGHTING



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years of architectural lighting design

**SMOKE TREE RESORT**  
7101 E LINCOLN DR, PARADISE VALLEY, AZ 85253

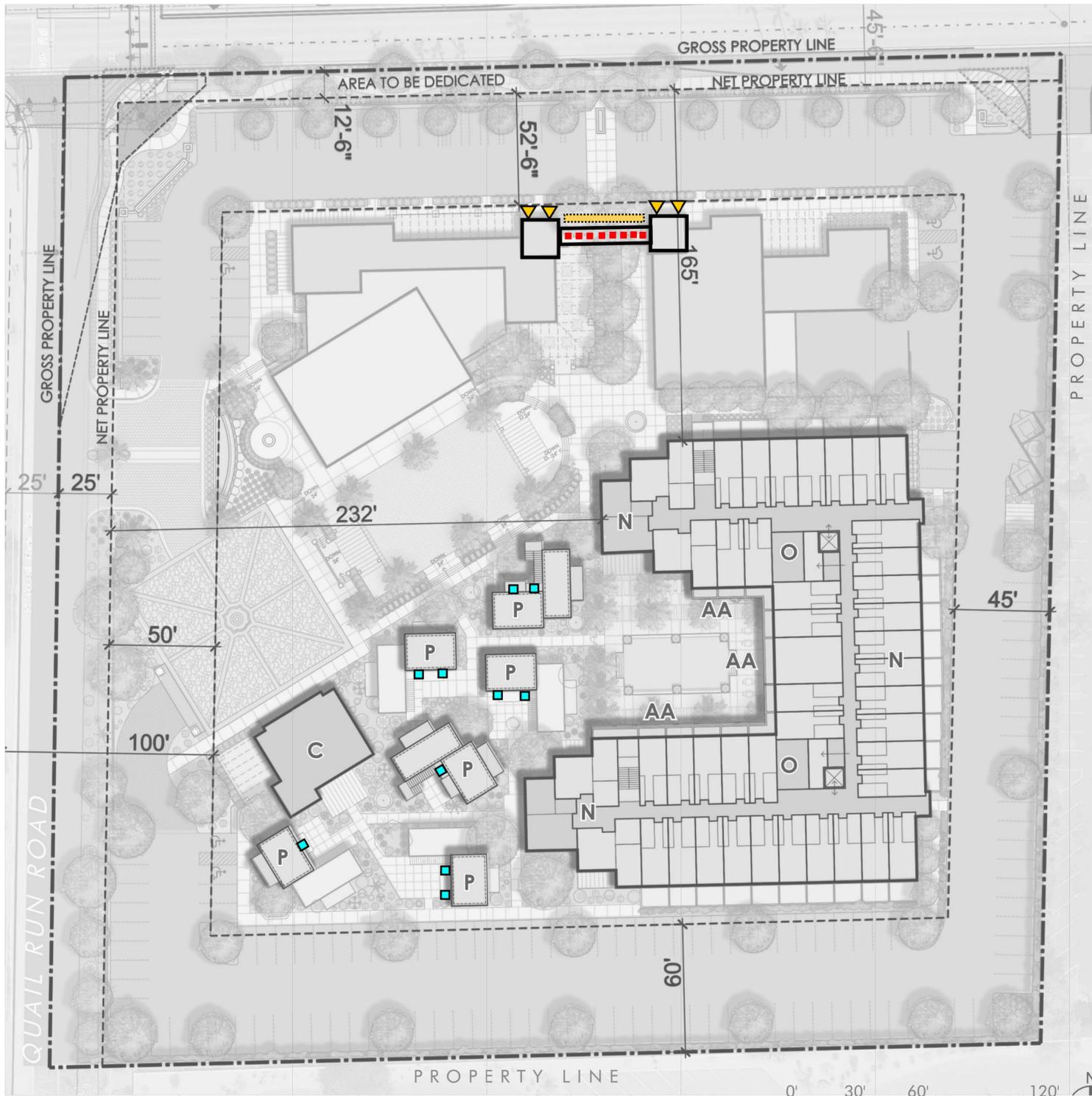
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DATE	08.24.2020
SCALE	NTS
PROJECT NUMBER	116325-19
DRAWN BY	JG
CHECKED BY	MG
SHEET NAME	

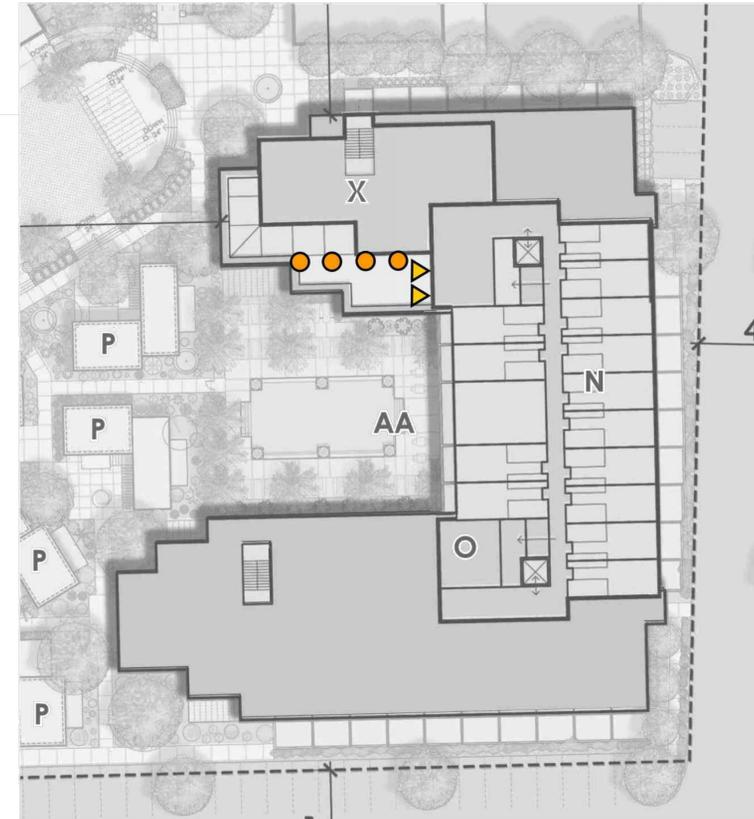
GROUND LEVEL LIGHTING PLAN

SHEET NUMBER  
**AL3**

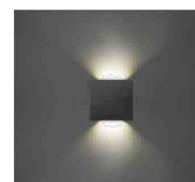
## SECOND LEVEL LIGHTING



## THIRD LEVEL LIGHTING



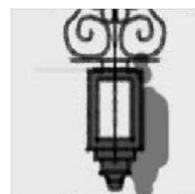
Custom backlit signage, light source completely shielded with no footcandle impact on ground, **2700K**



**TYPE WP**  
Thematic wall sconce for ambient illumination & way-finding



**TYPE LU**  
Flush-to-grade fixture to upright pots and key architecture, max 250 lumens



Custom decorative fixture with semi-opaque glass panels to obscure the light source, max 250 lumens



**TYPE WS**  
Decorative wall sconce for patios (dark sky friendly)



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2ND & 3RD LEVEL  
LIGHTING PLAN

SHEET NUMBER  
**AL4**



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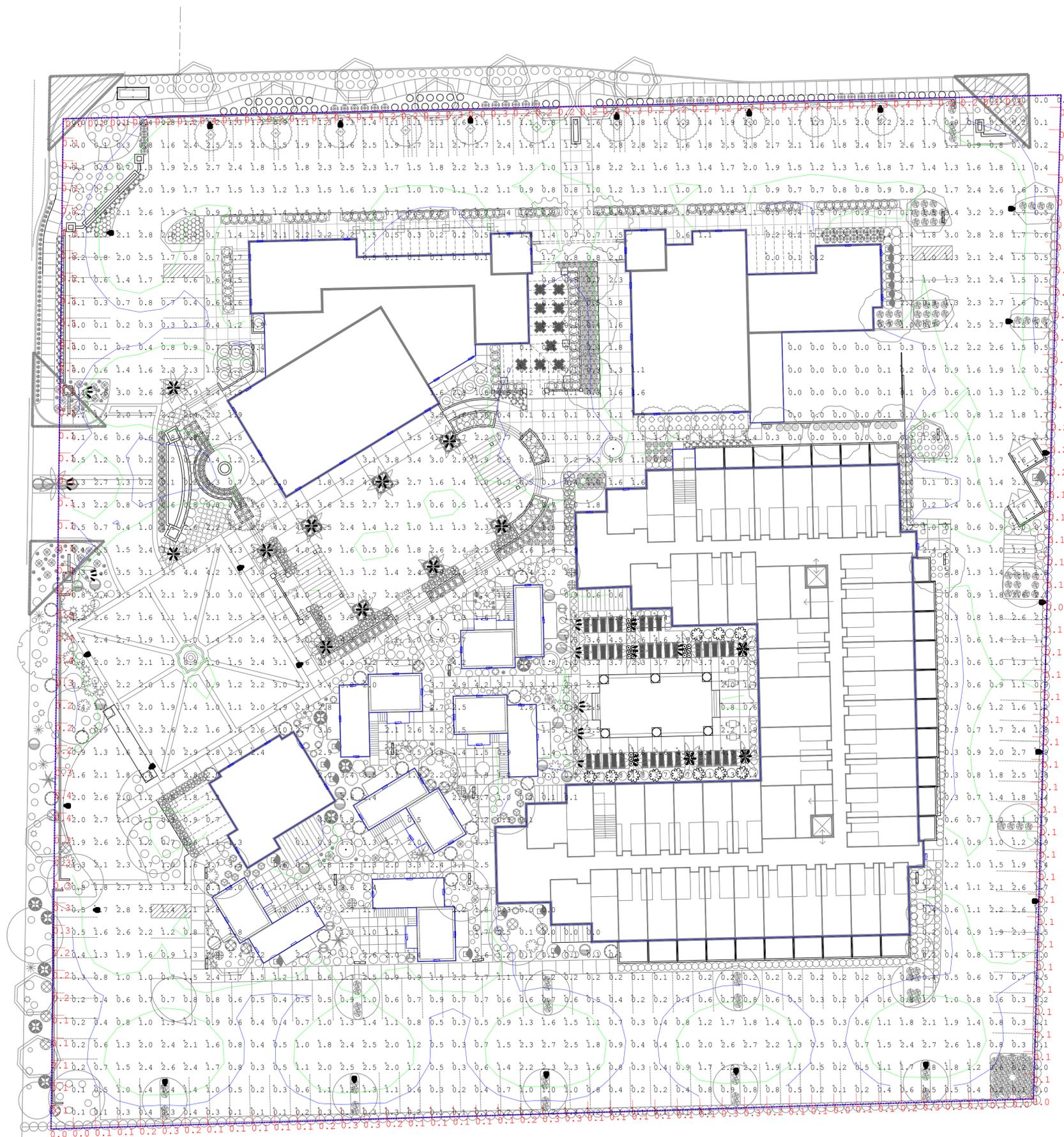


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**GROUND LEVEL  
PHOTOMETRY PLAN**

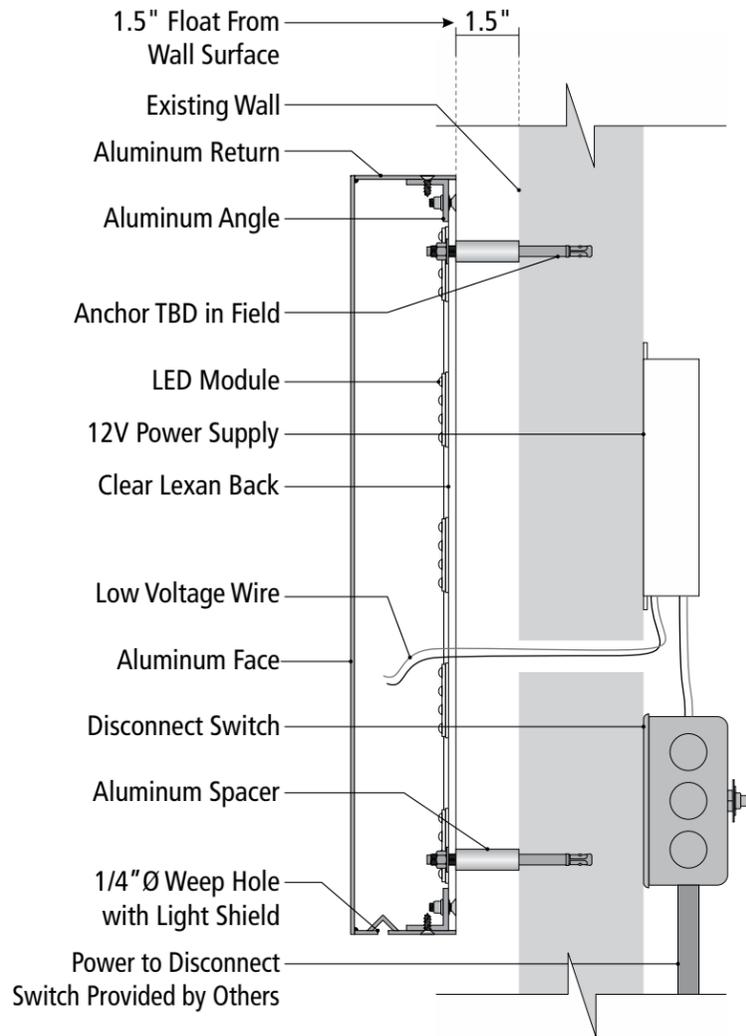
SHEET NUMBER  
**AL5**

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	
Light Trespass Calc	Illuminance	Fc	0.18	0.5	0.0	
Entrance Rd Interior Drives	Illuminance	Fc	1.08	4.4	0.0	
Pool Deck Function Areas	Illuminance	Fc	1.62	4.9	0.0	

DESIGN DEVELOPMENT SET - NOT FOR CONSTRUCTION



Custom backlit signage,  
light source completely  
shielded with no footcandle  
impact on ground, **2700K**



This sign is intended to be installed in accordance with the requirements of article 600 of the national electrical code and/or other applicable local codes. This includes proper grounding and bonding of the sign. The location of the disconnect switch after installation shall comply with Article 600.6(A)(1) of the National Electrical Code. All signs fabricated as per 2008 N.E.C. Standards.

### TYP. HALO ILLUMINATED LETTER SECTION

scale: nts



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REVISIONS

Table with 2 columns: REVISIONS, and a grid for tracking changes.

DATE: 08.24.2020  
SCALE: N.T.S.  
PROJECT NUMBER: 116325-19  
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SHEET NAME

LIGHTING CUTSHEETS

SHEET NUMBER

AL1

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TYPE 'L' Lumiere LED HALOGEN. Includes description, material, finish, mounting, and electrical specifications for the 203 CAMBRIA LED HALOGEN.

ALPHABET LED Brands TYPE 'HR'. Includes job name, contact, ordering code, and detailed specifications for the ZETA750.

HKusa Lighting Group TYPE 'GU'. Includes characteristics, technical data, and ordering guide for the ZX16-SOI.

Voltaire Concrete Bollard - Archilinear LED TYPE "BL". Includes cross sections, features, and technical specifications for the VCBA - L9/830 - NC - AB - OPTIONS - 120.

TYPE 'L' OPTICAL ACCESSORIES - ORDER SEPARATELY. Includes tables for beam diameter, ground mounting, and CCT multiplier tables.

ALPHABET LED Brands TYPE 'HR'. Includes job name, contact, ordering code, and detailed specifications for the 60° STANDARD BEAM and 90° VERTICAL ASYMMETRIC.

SORAA LED MR16 7.5W TYPE 'GU'. Includes output range, beam angle, color temperature range, and application information.

VCBA LED TYPE "BL". Includes photometry information, fixture performance data, and mounting details for the Voltaire Concrete Bollard.



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Table with 2 columns: REVISIONS, DATE

DATE: 08.24.2020  
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PROJECT NUMBER: 116325-19  
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SHEET NAME

LIGHTING CUTSHEETS

SHEET NUMBER

AL2

TYPE 'WP' Cypher™ - CY1 Accent Scale. Features, Specifications, and Mounting details for a wall-mounted luminaire.

ARCHITECTURAL AREA LIGHTING. 17760 Rowland Street | City of Industry, CA 91748. Includes contact information and a job type notes section.

TYPE 'TR' PALM TREE RING INTEGRAL ARTISTAR™. Includes catalog number logic, finish options, and mounting details for a palm tree ring luminaire.

B-K LIGHTING. 40429 Backyard Drive - Modesto, CA 95366 - USA. Includes contact information and a drawing number section.

TYPE 'SA' ML660 MILLENNIA SERIES. Includes mounting configuration, specifications, and finish options for a modern form luminaire.

SternbergLighting. 555 Lawrence Ave., Roseville, IL 60172. Includes contact information and a website link.

TYPE 'LU' 3" INGROUND 120V WAC LANDSCAPE LIGHTING. Includes product description, specifications, and ordering information for an in-ground luminaire.

wacighting.com. Headquarters/Eastern Distribution Center, Central Distribution Center, Western Distribution Center. Includes contact information and a website link.

TYPE 'WP' Cypher™ - CY1 Accent Scale. Includes luminaire performance table, isoline templates, and mounting details.

ARCHITECTURAL AREA LIGHTING. 17760 Rowland Street | City of Industry, CA 91748. Includes contact information and a job type notes section.

TYPE 'TR' PALM TREE RING INTEGRAL ARTISTAR™. Includes top view, side view, and fixture quantity diagrams for a palm tree ring luminaire.

B-K LIGHTING. 40429 Backyard Drive - Modesto, CA 95366 - USA. Includes contact information and a drawing number section.

TYPE 'WS' URBAN - model: WS-W11 LED Outdoor Sconce Luminaire. Includes specifications, replacement glass, and ordering information for a modern form luminaire.

modernforms.com. Headquarters/Eastern Distribution Center, Central Distribution Center, Western Distribution Center. Includes contact information and a website link.

TYPE 'LU' 3" INGROUND 120V WAC LANDSCAPE LIGHTING. Includes product description, specifications, and ordering information for an in-ground luminaire.

wacighting.com. Headquarters/Eastern Distribution Center, Central Distribution Center, Western Distribution Center. Includes contact information and a website link.