

THIS DIM. SHALL BE AS NOTED IN THE LIGHT FIXTURE SCHEDULE.

POLE HEIGHT DEPENDS UPON BASE HEIGHT.

THIS DIM. SHALL BE 30" IN BLACKTOP AREAS AND 12" IN GRASS AREAS WHEN SET BACK 4'-0" FROM CURB.

HAND HOLE

POLE PER FIXTURE SCHEDULE

PVC CONDUIT WITH BUSHED ENDS

INSTALL NON-SHRINK GROUT

1 1/2" 45 DEG. CHAMFER

ANCHOR BOLTS 3/4"x48" LNG.

FINISHED GRADE

24"

72"

6 #6 VERTICAL RODS

PVC CONDUIT

#5 @ 12" o.c. HORIZONTAL TIES

4000 PSI CONCRETE AT 28 DAYS

24"

1 1/2" X 8'-0" GROUND ROD

COMPLETE ASSEMBLY SHALL BE RATED FOR 100 MPH WIND LOAD FOR TOTAL E.P.A. IMPOSED.

Technical drawing of a bollard base showing dimensions and components. The drawing includes a cross-section of the bollard and its base. The base is 48" high and 12" wide. The bollard is 18" high. The base is made of 4000 PSI concrete at 28 days. The bollard is made of 1 1/2" 45 DEG. CHAMFER. The base is finished with non-shrink grout. The bollard is made of bollard per fixture schedule. The base is made of 4 #4 vertical rods, 4 #3 horizontal ties, and 4000 PSI concrete at 28 days. The bollard is made of 1 1/2" 45 DEG. CHAMFER. The base is finished with non-shrink grout. The bollard is made of bollard per fixture schedule.

Labels and dimensions:

- BOLLARD PER FIXTURE SCHEDULE
- INSTALL NON-SHRINK GROUT
- FINISHED GRADE
- 1 1/2" 45 DEG. CHAMFER
- ANCHOR BOLTS
- 4 #4 VERTICAL RODS
- PVC CONDUIT
- 4 #3 HORIZONTAL TIES
- 4000 PSI CONCRETE AT 28 DAYS
- 18"
- 48"
- 12"

1 SITE LIGHTING PLAN
1" = 50'-0"



STEEN
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5430 Douglas Drive North
Crystal, MN 55429

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

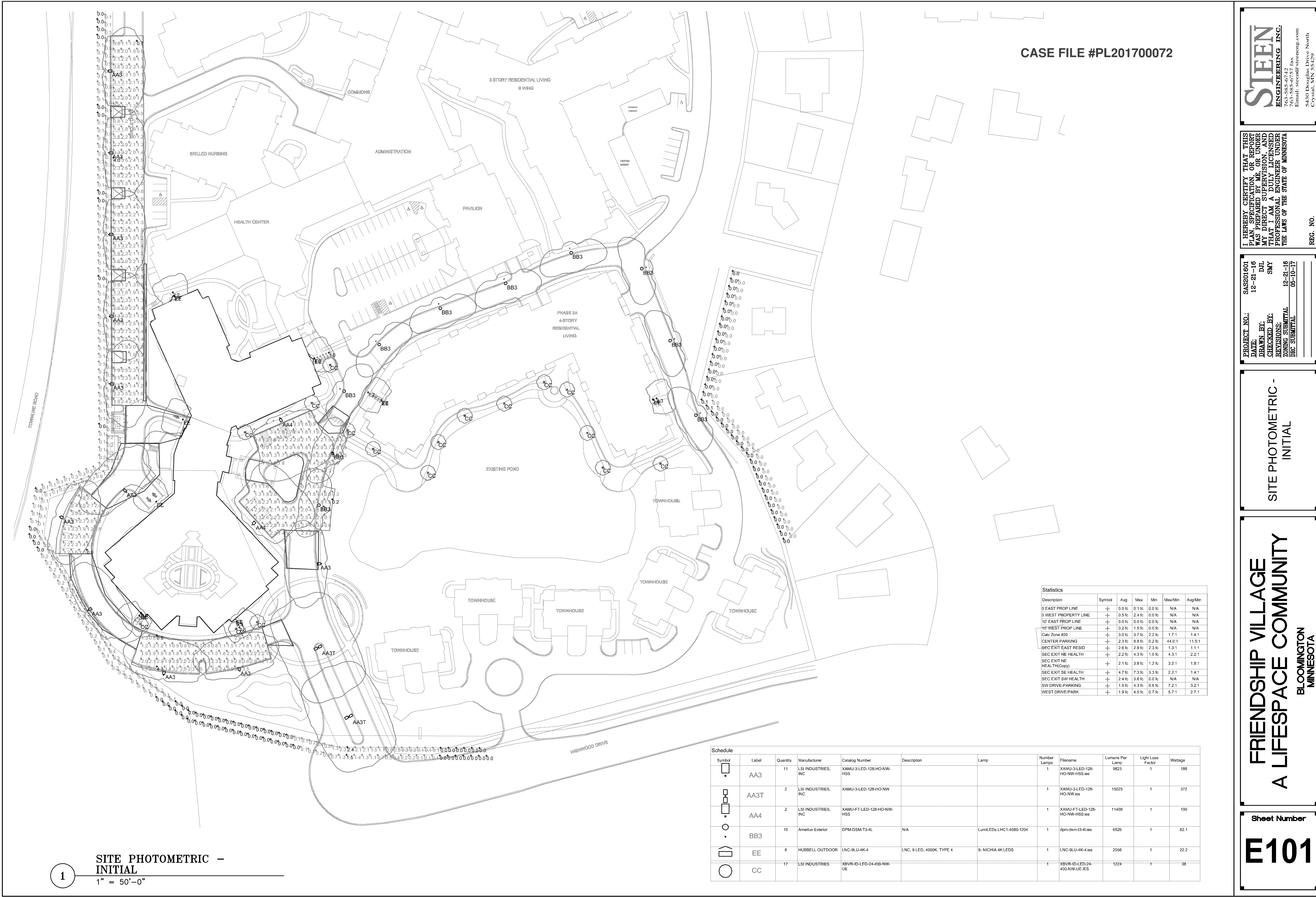
<u>PROJECT NO.:</u>	SAS201601
<u>DATE:</u>	12-21-16
<u>DRAWN BY:</u>	DJL
<u>CHECKED BY:</u>	SMY
<u>REVISIONS:</u>	
<u>ZONING SUBMITTAL</u>	12-21-16
<u>DRG SUBMITTAL</u>	05-10-17

SITE LIGHTING PLAN

**FRIENDSHIP VILLAGE
A LIFESPACE COMMUNITY**

Sheet Number

E100



CASE FILE #PL201700072

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
0' EAST PROP LINE	+	0.0 fc	0.1 fc	0.0 fc	N/A	N/A
0' WEST PROPERTY LINE	+	0.5 fc	2.4 fc	0.0 fc	N/A	N/A
10' EAST PROP LINE	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
10' WEST PROP LINE	+	0.2 fc	1.5 fc	0.0 fc	N/A	N/A
Calc Zone #20	+	3.0 fc	3.7 fc	2.2 fc	1.7:1	1.4:1
CENTER PARKING	+	2.3 fc	8.8 fc	0.2 fc	44.0:1	11.5:1
SEC EXIT EAST RESID	+	2.6 fc	2.9 fc	2.3 fc	1.3:1	1.1:1
SEC EXIT NE HEALTH	+	2.2 fc	4.3 fc	1.0 fc	4.3:1	2.2:1
SEC EXIT NE HEALTH(COPY)	+	2.1 fc	3.8 fc	1.2 fc	3.2:1	1.8:1
SEC EXIT SE HEALTH	+	4.7 fc	7.3 fc	3.3 fc	2.2:1	1.4:1
SEC EXIT SW HEALTH	+	2.4 fc	3.6 fc	0.0 fc	N/A	N/A
SW DRIVE/PARKING	+	1.9 fc	4.3 fc	0.6 fc	7.2:1	3.2:1
WEST DRIVE/PARK	+	1.9 fc	4.0 fc	0.7 fc	5.7:1	2.7:1

Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	AA3	11	LSI INDUSTRIES, INC	XAMU-3-LED-128-HQ-NW-HSS			1	XAMU-3-LED-128-HQ-NW-HSS.ies	9623	1	188
	AA3T	2	LSI INDUSTRIES, INC	XAMU-3-LED-128-HQ-NW			1	XAMU-3-LED-128-HQ-NW.ies	15025	1	372
	AA4	2	LSI INDUSTRIES, INC	XAMU-FT-LED-128-HQ-NW-HSS			1	XAMU-FT-LED-128-HQ-NW-HSS.ies	11498	1	190
	BB3	10	Amerlux Exterior	DPM-DSM-T3-4L	N/A	LumiLEDs LHC1-4080-1204	1	dpm-dsm-t3-4l.ies	6526	1	82.1
	EE	8	HUBBELL OUTDOOR	LNC-9LU-4K-4	LNC, 9 LED, 4000K, TYPE 4	9- NICHIA 4K LEDS	1	LNC-9LU-4K-4.ies	2056	1	22.2
	CC	17	LSI INDUSTRIES	XBVR-ID-LED-24-400-NW-UE			1	XBVR-ID-LED-24-400-NW-UE.ies	1224	1	38

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REG. NO. _____

PROJECT NO.: SAS201601
DATE: 12-21-16
DRAWN BY: DJL
CHECKED BY: SMY
REVISIONS:
DATE SUBMITTAL: 12-21-16
BY SUBMITTAL: 05-10-17

SITE PHOTOMETRIC - INITIAL

FRIENDSHIP VILLAGE
A LIFESPACE COMMUNITY
BLOOMINGTON
MINNESOTA

Sheet Number
E101

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REG. NO.

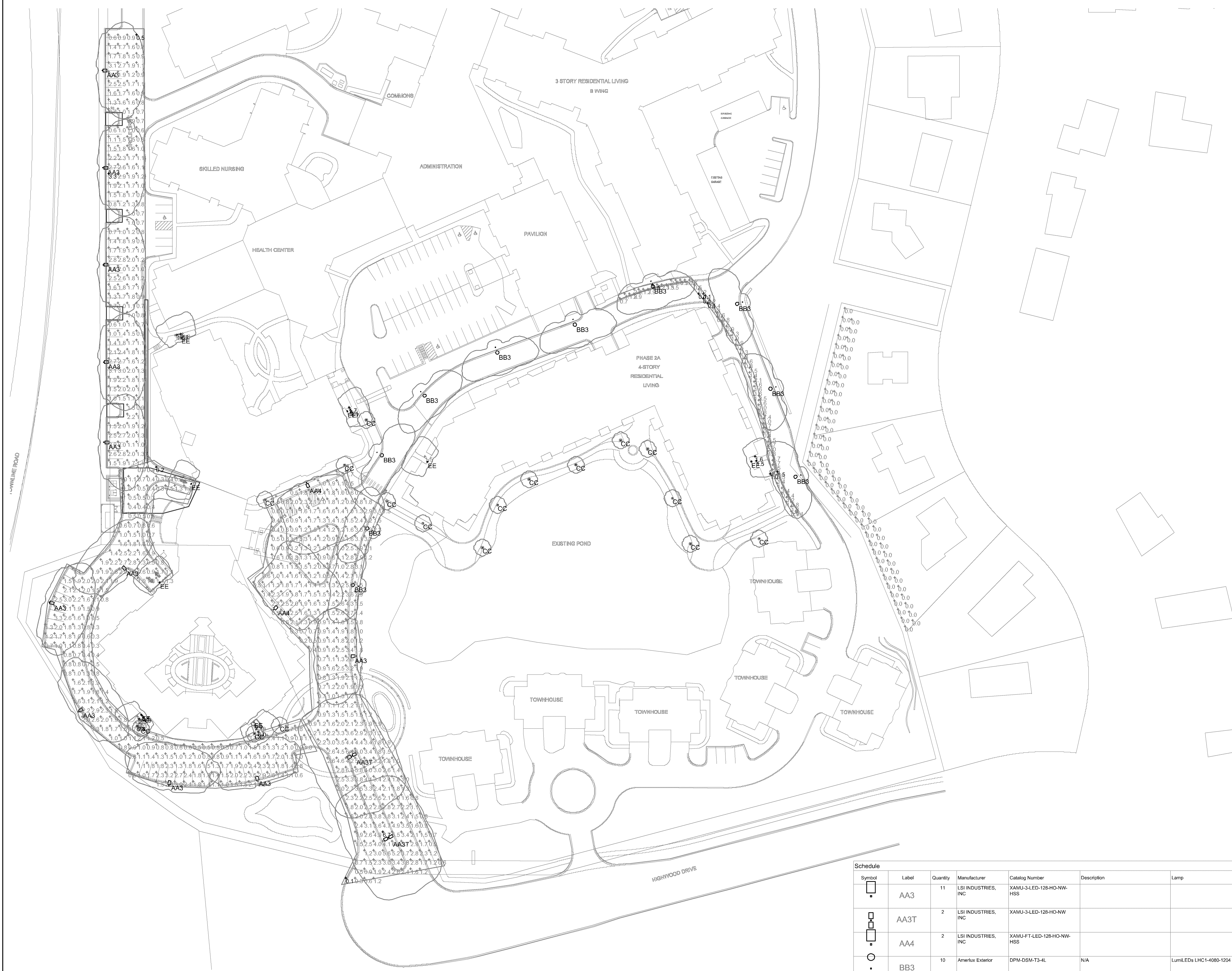
PROJECT NO.:	SAS201601
DATE:	12-21-16
DRAWN BY:	DJL
CHECKED BY:	SMY
REVISIONS:	
ZONING SUBMITTAL	12-21-16
DRC SUBMITTAL	05-10-17

SITE PHOTOMETRIC - MAINTAINED

**FRIENDSHIP VILLAGE
A LIFESPACE COMMUNITY**

Sheet Number

E102



Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
0 EAST PROP LINE	+	0.0/c	0.0/c	0.0/c	N/A	N/A
10 EAST PROP LINE	+	0.0/c	0.0/c	0.0/c	N/A	N/A
Catc Zone #1	+	1.5/c	1.5/c	1.5/c	1.0/1	1.0/1
Catc Zone #14	+	1.6/c	1.6/c	1.5/c	1.1/1	1.1/1
Catc Zone #16	+	1.4/c	9.8/c	0.2/c	49.0/1	7.0/1
Catc Zone #18	+	2.0/c	67.7/c	0.1/c	67.0/1	20.0/1
EAST SIDEWALK	+	1.3/c	6.5/c	1.1/c	65.0/1	13.0/1
Exits	+	2.8/c	3.4/c	2.3/c	1.5/1	1.2/1
Exits	+	1.8/c	2.1/c	1.6/c	1.3/1	1.1/1
Exits	+	1.8/c	2.1/c	1.7/c	1.2/1	1.1/1
SEC EXIT EAST RESID	+	1.2/c	1.5/c	1.0/c	1.5/1	1.2/1
SEC EXIT SE HEAD	+	3.9/c	6.0/c	2.7/c	2.2/1	1.4/1
SEC EXIT SW HEAD	+	4.1/c	6.3/c	1.9/c	3.3/1	2.2/1
WEST DRIVE/PARK	+	1.5/c	13.3/c	0.5/c	6.6/1	3.0/1

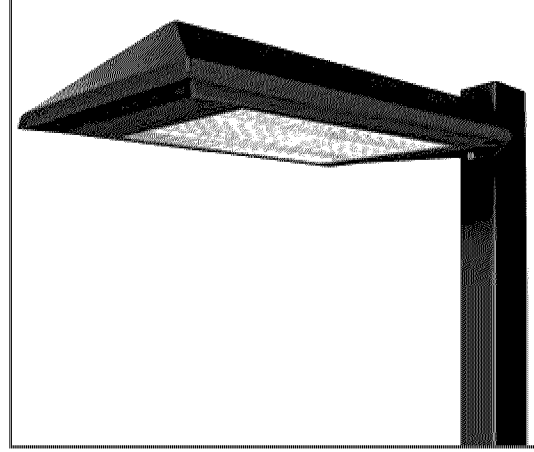
Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	AA3	11	LSI INDUSTRIES, INC	XAMU-3-LED-128-HO-NW-HSS			1	XAMU-3-LED-128-HO-NW-HSS.ies	9823	0.81	188
	AA3T	2	LSI INDUSTRIES, INC	XAMU-3-LED-128-HO-NW			1	XAMU-3-LED-128-HO-NW.ies	15025	0.81	372
	AA4	2	LSI INDUSTRIES, INC	XAMU-FT-1-LED-128-HO-NW-HSS			1	XAMU-FT-1-LED-128-HO-NW-HSS.ies	11498	0.81	190
	BB3	10	Amerlux Exterior	DPM-DSM-T3-4L	N/A	LumiLEDs LHC1-4080-1204	1	dpm-dsm-t3-4l.ies	6526	0.81	82.1
	EE	8	HUBBELL OUTDOOR	LNC-9LU-4K-4	LNC, 9 LED, 4000K, TYPE 4	9- NICHIA 4K LEDS	1	LNC-9LU-4K-4.ies	2056	0.81	22.2
	CC	17	LSI INDUSTRIES	XBVR-ID-LED-24-400-NW-UE			1	XBVR-ID-LED-24-400-NW-UE.ies	1224	0.81	38

SITE PHOTOMETRIC —
MAINTAINED

1" = 50'-0"

TYPE AA3, AA3T, AA4

LED AREA LIGHTS - AEROMAX™ MEDIUM (XAMU)



DOE LIGHTING FACTS
Department of Energy has verified representative product test data and results in accordance with its Lighting Facts Program. Visit www.lightingfacts.com for specific catalog strings.

LIGHT OUTPUT - XAMU						
Color	Cul. #	# of LEDs	Lumens (Nominal)		Type 5	Watts (Nominal)
			Type 1	Type 1T		
Cool White	SS	128	13500	14100	12100	139
	HO	128	18500	17300	14800	178
	SS	128	12400	12200	11200	139
Warm White	HO	128	15500	13300	12500	178

LED Chips are frequently updated therefore values may increase.

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



Fixtures comply with ANSI C136.3-2010 American National Standard for Roadway Lighting Equipment - Luminaire Version 30 requirements.

Project Name _____ Fixture Type _____ 10/19/16
Catalog # _____ LSI INDUSTRIES, INC. © 2016

TYPE EE

LNC SERIES

SPECIFICATIONS

Intended Use:
The compact LED LNC is designed for entry-level illumination for safety, security and identity. Typical mounting height is up to 12 feet with 40ft. fixture spacing (without acrylic diffuser) and 30ft spacing with acrylic diffuser installed. Photocell control option is available to provide dusk-to-dawn control for additional energy savings.

Construction:
Decorative die-cast aluminum housing and door. Rugged design protects internal components and provides excellent thermal management for long life – 60,000 hours minimum LED life at L86 rating per IESNA TM-21-11. Powder paint finishes provide lasting appearance in outdoor environments.

Optics/Electrical LED:
Drivers are 120-277V, 50/60Hz. Type I, II and Type IV lenses provide wide lateral spread. 0-10V dimming 120-277V only.
• LNCUL – 5 LEDs, Types I, II or IV available, see page 2 for electrical details.
• LNC7L – 7 LEDs, Type II, III or IV available, see page 2 for electrical details.
• LNCUL – 9 LEDs, Types II, III or IV available, see page 2 for electrical details.
• 3000K - 80 CRI, 4000K - 70 CRI, and 5000K - 70 CRI, CCT nominal
• Minimum operating temperature is -40°C/-40°F
• Drivers have greater than 90 power factor and less than 20% Total Harmonic Distortion

CERTIFICATIONS/LISTINGS
UL
Lighting Facts
DLC
Energy Star
3000K and warmer CCT only

Coll. #
Job _____ Type _____

Hubbell Outdoor Lighting
Approvals _____

PRODUCT IMAGE(S)
LNC-5L LNC-7L
LNC-9L With diffuser
DIMENSIONS

A 4.81" (122 mm) B 1.55" (39 mm) C 8.22" (209 mm) D 5.25" (133 mm)
SHIPPING INFORMATION

Catalog Number	Weight/ CU YD	Carton Dimensions Length (in) Width (in) Height (in)	Carton Qty. per Master Pack
LNC-5LU	9.6 (4.36)	14.5 (37) 9.6 (24.5) 8.4 (17.5)	2
LNC-7LU	9.6 (4.36)	14.5 (37) 9.6 (24.5) 8.4 (17.5)	2
LNC-9LU	9.6 (4.36)	14.5 (37) 9.6 (24.5) 8.4 (17.5)	2

ORDERING INFORMATION
ORDERING EXAMPLE: LNC-9LU-SK-3-1-PC1

SERIES	NUMBER OF LEDs	VOLTAGE	CCT	IES DISTRIBUTION	FINISH	OPTIONS
LNC LNC zero uplight	5L ¹ 5 LEDs 7L ² 7 LEDs 9L ² 9 LEDs	0 120V-277V 1 120V 2 208V 3 240V 4 277V	3K 3000K nominal, 70 CRI 4K 4000K nominal, 70 CRI 5K 5000K nominal	2 Type I 3 ¹ Type II 4 ¹ Type IV	1 Bronze 2 Black 3 Gray 4 White 5 Platinum	PCXX ³ Button photocell, replace X with voltage, specify 1-120V, 2-208V, 3-240V, 4-277V
AM ¹ Amber (590 nm available for Turtle Friendly/observatory applications, 350 mA (consult factory))						

1 When PC is ordered, input must match PC voltage
2 Amber LEDs only available on 7LU and 9LU configurations, 350 mA only
3 Design Lights Consortium (DLC) qualified 5/7/9 models SK only. LNC-9LU-SK-4, LNC-9LU-SK-5, LNC-7LU-SK-4, LNC-7LU-SK-5, LNC-5LU-SK

TYPE BB3

DOWNLIGHT PENDANT-MEDIUM

U12.3.14

22" LED LUMINAIRE

Description

Performance and directional control make this luminaire highly versatile and able to accommodate needs in the strictest environments. Multiple size and shade configurations make this luminaire suitable for a wide variety of decorative applications, especially where a Dark Sky friendly instrument is desirable. The decorative housing encloses IP66 sealed optical modules, while protecting heat-sink fins from debris collection. The driver is accessible through the bottom. Greater than 88% optical efficiency, highly uniform with reduced hot-spot and greater fixture center spacing. This luminaire uses less than 60% of the energy yet achieves greater fixture spacing, improved uniformity vs. Metal Halide.

Construction:

- Cast aluminum housing
- Spun aluminum shade

Optical Chamber:

Individual IP66 sealed optical modules

Installation

The luminaire will mount to a pendant hook or bracket by a 1.50 NPS. Post top crooks will mount to a 4" OD post or tenon with (6) 5/16" stainless steel set screws. Wall bracket models have four 3/8" holes for mounting (wall mount hardware is not included).

Driver:

Convection cooled driver with electronic constant current operation with over voltage and short circuit protection. Automatic voltage sensing for 120 to 277V input.

Optics:

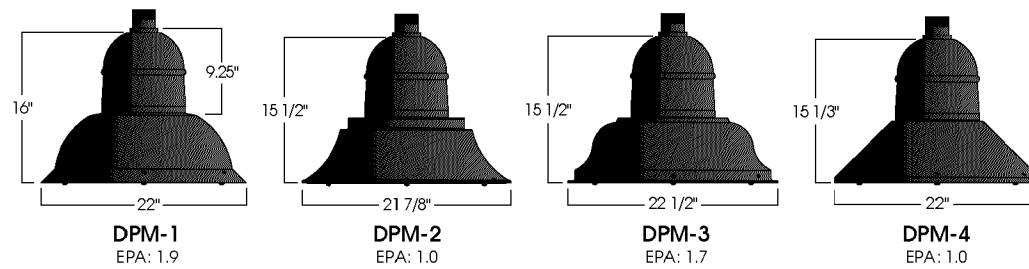
- High Performance individual optical refractive lens for each LED module.
- Cool, neutral, or warm color temperatures
- IESNA Full Cutoff
- Available in Type 2, 3, or 5 light patterns

Finish

Premium quality thermoset polyester powdercoat for a durable finish in the following: Standard Premium

- BLK - Satin Black
- CLB - Classic Bronze
- GRN - Green
- TBK - Textured Black
- ATC - Antique Copper
- GTG - Granite Green
- WHT - White

Available Shade Styles



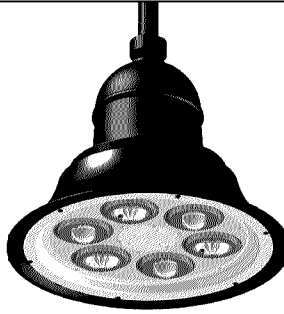
Ordering Information:

Mounting	Model	Light Dia. Type	Order Code	CCT	CR	Approx. Lumens Delivered	Nominal Input Power	Finish
See next page for options	DPM-1	T2	3L	3000K	80	5,700		ATC, BLK, CLB, GRN, GTG, SDB, TBK, WHT
	DPM-2	T3	4L	4000K	80	5,900	82W (410V)	
	DPM-3	T3	5L	5000K	70	6,100		
	DPM-4	T5	3H	3000K	80	8,725	126W (610V)	Custom
			4H	4000K	80	9,000		
			5H	5000K	70	9,300		

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Amerlux reserves the right to change details that do not affect overall function and performance.

DPM Series LED



PROJECT:

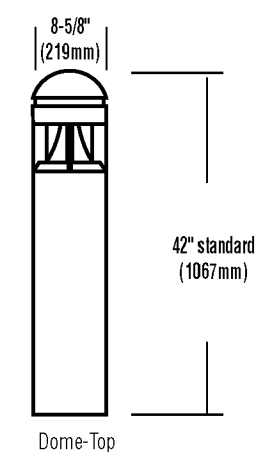
TYPE:

LED BOLLARD LIGHT (XBVRD)



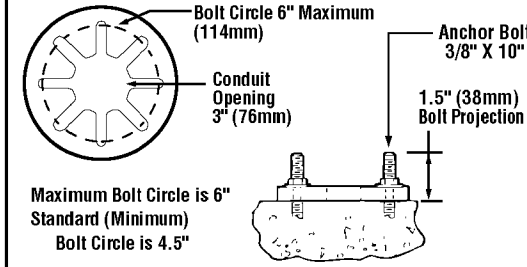
DOE LIGHTING FACTS
Department of Energy has verified representative product test data and results in accordance with its Lighting Facts Program. Visit www.lightingfacts.com for specific catalog strings.

DIMENSIONS



BASE DETAIL

Note: Base plate dimensions may change without notice. Do not use for setting anchor bolts. Consult factory for base plate templates.



Also available in traditional light sources

Project Name _____ Fixture Type _____ 10/20/16
Catalog # _____ © 2016 LSI INDUSTRIES, INC.

TYPE CC

U.S. and international patents pending

LEDS - An array of 24 select high-brightness LEDs in Cool White (5000K), Warm White (3500K) or Neutral White (4000K) color temperature, 69 CRI

REFLECTOR/DISTRIBUTION - Indirect. Photometric data is tested in accordance to IESNA Procedures.

HOUSING - Crown: Virtually tamper-proof concealed stainless steel fasteners in the cast aluminum crown assembly.

Lower Housing: One-piece, .322 inch seamless, extruded aluminum. Various heights are available in 5" increments starting at a minimum of 30" (maximum height is 60"). Lower housing attaches to cast aluminum base plate with ten stainless steel roll pins.

OPTIONAL ROUGHNECK REINFORCEMENT - .375" thick zinc plated, steel base plate with welded U shaped reinforcement. 3/8" diameter 302 stainless steel roll pins with 10,000 lb. shear load.

LENS/GASKET - One-piece, clear acrylic lens enclosure fully gasketed at top and bottom edge.

ANCHOR BOLTS - Requires four heavy-duty 3/8" x 10" galvanized steel anchor bolts.

ELECTRICAL - Universal voltage power supply (120-277 VAC, 50/60 Hz), 347-480V also available - 400mA is standard. Surge protector meets IEEE C62.41.2-2002, Scenario 1 Location Category C.

DRIVER - State-of-the-art driver technology designed specifically for LSI LED light sources provides unsurpassed system efficiency. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°F to +50°C (-40°F to +122°F).

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling.

DECAL STRIPING - Color-coordinated decal is available in 9 standard decal colors or by custom order from a selection of hundreds. Decal is guaranteed for five years against peeling, cracking, or fading.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Please visit our web site at www.lsi-industries.com for detailed photometric data.

LISTING - Listed to U.S. and Canadian safety standards. Suitable for wet locations. DLC - not all possible distributions are DLC approved. Please refer to LSI or DLC web site for specific listings. For a list of the specific products in this series that are DLC listed, please consult the LED Lighting section of our website or the Design Lights website at www.designlights.org.

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



LIGHT OUTPUT - XBVR			
Description	# of LEDs	Lumens	Output Watts
Cool White XBVR ID	24	1338	.38
Neutral White XBVR ID	24	1224	.38
Warm White XBVR ID	24	856	.38

LED Chips are frequently updated therefore values may increase.

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SITE LIGHT FIXTURE CUTSHEETS

FRIENDSHIP VILLAGE
A LIFESPACE COMMUNITY
BLOOMINGTON MINNESOTA

Sheet Number

E103