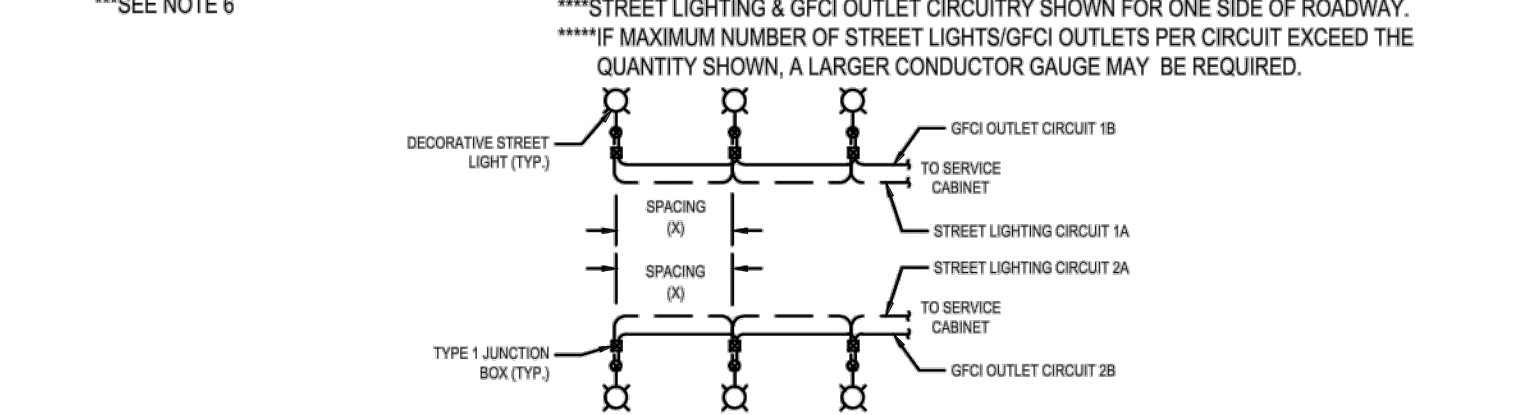


LIGHTING FIXTURE SCHEDULE											
Type	Description	Manufacturer	Model #	Color Temp	Lamp	Shield	Voltage	Watts	Lumen	BUG	Notes
Exterior Street Lighting Equipment											
CITY-1	LED Decorative Street Light Type 3 dist. per EDDS 3-506-002 (See below)	Cyclone	Majesta series #CO12P1A / Valmont Pole w/ Luminaire arm and Visco S22 decorative Base	4000K	Integrated LED	--	UNV	120	10458	2 3 3	Color: RAL 7022 TX (Umbra Grey) See Standard Plan 3-506-002 below for more details.
PUD-1	PUD LED Street Light - Collector Arterial	---	per PUD requirements	--	Integrated LED	--	--	200w equivalent	--	--	Contact Eddie Haugen of Snohomish PUD for more info.

GENERAL NOTES	KEY NOTES
A. CALCULATIONS ASSUME A 0.90 LIGHTING LOSS FACTOR.	1. TRANSFORMER: FINAL PUD TRANSFORMER AND LATERAL PROVISIONS TO BE CONFIRMED WITH PUD ENGINEER. PRIOR TO START OF WORK, TRANSFORMER DESIGNED AND INSTALLED BY PUD.
B. COLORS AND FINISHES SHALL COMPLY WITH CITY OF MARYSVILLE AND PUD STANDARDS.	2. TYPE D SERVICE CABINET: CABINET DESIGN AND INSTALLATION PER WSDOT STANDARD PLANS J-10.10-04 AND J-10.21-02. PRIOR TO ROUGH-IN, CONFIRM APPROVED LOCATION WITH CITY ENGINEER. COORDINATE WITH PUD FOR METERING REQUIREMENTS.
C. LIGHTING CONTROL SHALL BE BY PE CELL.	3. GROUNDING: PROVIDE EQUIPMENT GROUNDING CONDUCTOR AND ASSOCIATED PROVISIONS. SEE WSDOT STANDARD PLAN J-60.05-01 FOR DETAILS.
D. COORD. W/ GC FOR LIGHT STANDARD FOOTING. ELEVATE FOOTING ABOVE GRADE WHERE POSSIBILITY OF BEING HIT BY A CAR. VERIFY HEIGHT.	4. TYPE 1 JUNCTION BOX: J-BOX DESIGN AND INSTALLATION PER WSDOT STANDARD PLAN J-40.10-04. CONTAINS CONDUCTORS FOR BOTH LIGHT FIXTURE AND POLE-MOUNTED RECEPTACLE.
E. ALL SITE LIGHTS TO BE DARK SKY COMPLIANT FIXTURES.	5. OVERHEAD DISTRIBUTION LINES AT 60FT.
F. ALL EQUIPMENT SHALL BE GROUNDED PER NEC. SEE WSDOT STANDARD PLAN J-60.05-01 FOR GROUNDING DETAILS. CONDUIT GROUND WIRE SHALL BE GREEN THWN OF CODE SIZE.	6. CONDUCTORS AND CONDUITS: 2 SETS #8 AWG. EACH SET IN 2" SCH 40 PVC. 1 SET FOR POLE MOUNTED RECS AND 1 SET FOR LIGHT FIXTURES. FIELD VERIFY (E) U/G UTILITIES AND COORDINATE LOCATION.
G. PROVIDE AND INSTALL J-BOXES OF THE SIZE AND TYPE AS INDICATED ON PLANS PER WSDOT STANDARD PLAN J-40.10-04. BOXES SHALL BE ADJUSTED TO MATCH FINISH GRADE.	
H. FOUNDATION DESIGN SHALL BE PER WSDOT STANDARD PLAN J-28.30-03.	

DECORATIVE STREET LUMINAIRE							
MANUFACTURER	MODEL	MODEL #	TYPE	DISTRIBUTION	WATTAGE	COLOR TEMPERATURE	ARM LENGTH
CYCLONE	MAJESTA	CO12P1A	LED	3	120 W*	4,000K	12 FT

MAXIMUM STREET LIGHT SPACING PER ROADWAY CLASSIFICATION**	CIRCUIT****	VOLTAGE	CONDUCTOR	MAXIMUM STREET LIGHTS/GFCI OUTLETS PER CIRCUIT****
PRINCIPAL ARTERIAL - 5 LANES	160 FT	240 V	#8 AWG	11
	GFCI OUTLET	120 V	#8 AWG	11



- NOTES**
- DECORATIVE STREET LIGHTING STANDARD SHOWN ON THIS SHEET SHALL BE USED FOR THE FOLLOWING ROADWAY SEGMENTS AS DIRECTED BY THE CITY ENGINEER OR DESIGNER:
 - STATE AVE/SMOKEY POINT BLVD (GROVE ST/2ND ST NE TO NORTHERN CITY LIMIT).
 - ALL STREET AND PEDESTRIAN LIGHT STANDARDS, FIXTURES, AND BASES SHALL BE POWDER COATED COLOR RAL7022TX (UMBRA GREY).
 - SEE CITY OF MARYSVILLE SPECIAL PROVISIONS FOR ADDITIONAL STREET LIGHTING STANDARD SPECIFICATIONS.
 - ORIENT STREET LIGHTING STANDARD PERPENDICULAR TO ROADWAY CENTERLINE UNLESS OTHERWISE APPROVED BY CITY ENGINEER OR DESIGNER.
 - MAXIMUM STREET LIGHT SPACING SHOWN IS FOR TANGENT ROADWAY SEGMENTS ONLY WITH LIGHTING ON BOTH SIDES OF THE ROAD AT DIRECT OFFSET FROM ONE ANOTHER. CURVED ROADWAYS SEGMENTS SHALL REQUIRE PHOTOMETRIC EVALUATION PER THE CITY OF MARYSVILLE ENGINEERING DESIGN AND DEVELOPMENT STANDARDS.
 - MAXIMUM STREET LIGHT SPACING WAS EVALUATED FOR MINIMUM AVERAGE MAINTAINED LIGHT LEVEL OF 1.4 FOOT CANDLES AND MAXIMUM UNIFORMITY RATIO (AVERAGE LIGHT LEVEL / MINIMUM LIGHT LEVEL) OF 4:1 USING THE 120W CYCLONE MAJESTA SERIES LUMINAIRE PER INTERMEDIATE AREA CLASSIFICATION FOR PRINCIPAL ARTERIAL BASED ON THE CITY OF MARYSVILLE CHAPTER 3-506 ENGINEERING DESIGN AND DEVELOPMENT STANDARDS. USE OF AN ALTERNATE FIXTURE/WATTAGE, ROADWAY CLASSIFICATION, AREA CLASSIFICATION, AND/OR TYPICAL SECTION SHALL REQUIRE PHOTOMETRIC EVALUATION PER THE CITY OF MARYSVILLE ENGINEERING DESIGN AND DEVELOPMENT STANDARDS.

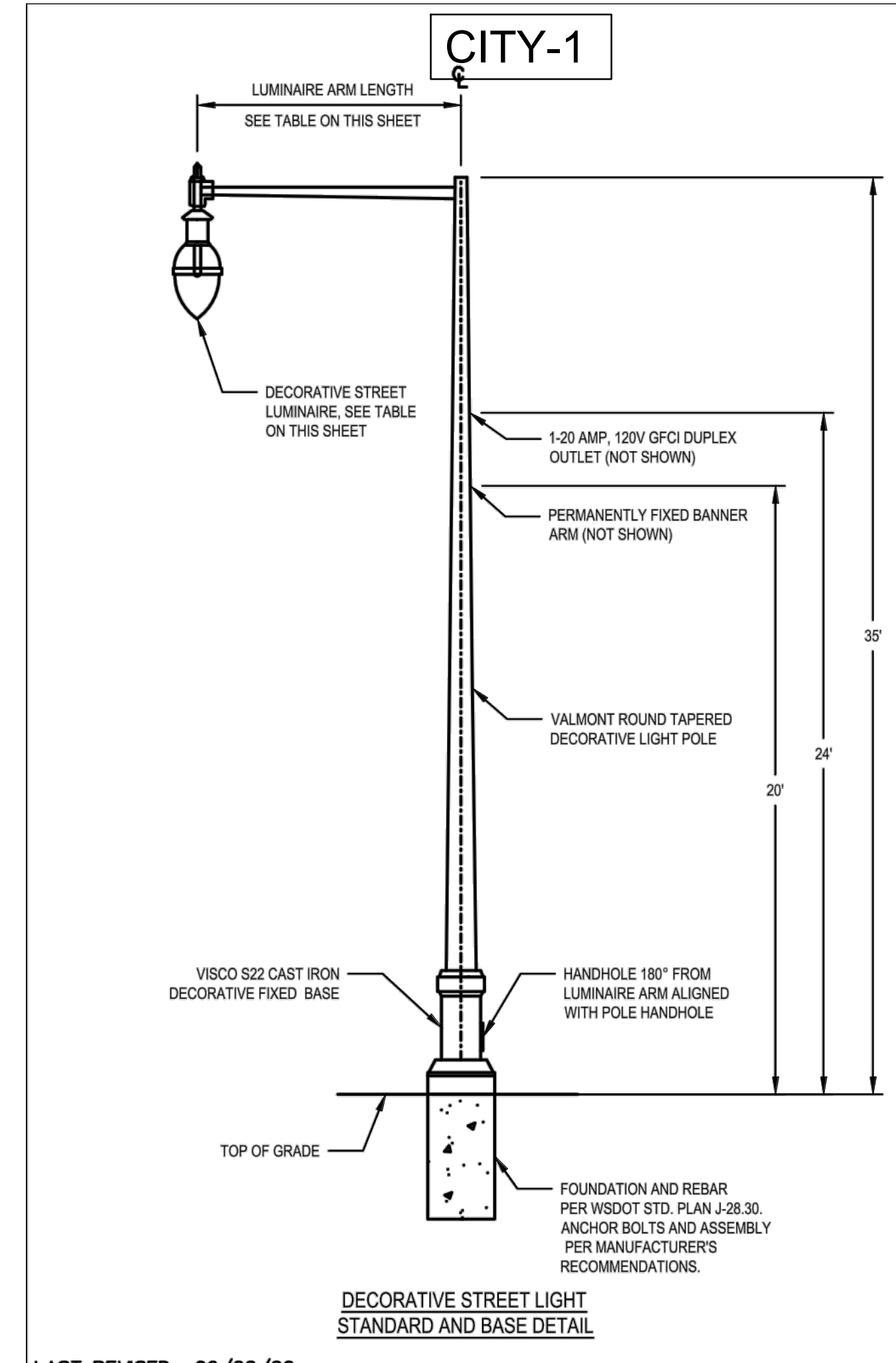
APPROVED BY

 MARYSVILLE CITY ENGINEER
 DATE: 07/14/20

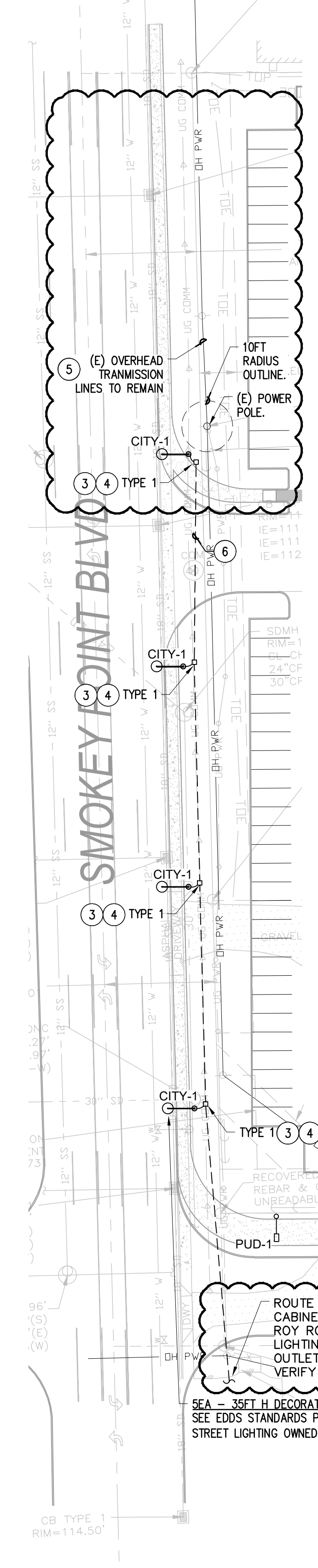
CITY OF MARYSVILLE WASHINGTON

STREET AND PEDESTRIAN LIGHTING STANDARDS - SEGMENT 2

STANDARD PLAN 3-506-002



LINE LOSS
 TOTAL LINE LOSS FROM THE EXISTING SERVICE CABINET TO THE MOST REMOTE FIXTURE IS < 1%



NOTE: PANEL, BREAKERS AND LOADS ARE ALL EXISTING UNLESS NOTED OTHERWISE. IF GFI OR REPLACEMENT BREAKERS ARE NOT AVAILABLE, F&I NEW PANEL.

EXISTING SERVICE PANEL												
VOLTAGE: 240V / 120V 1 Ph/3 W				MOUNTING: FREESTANDING				MAINS DEVICE: MCB				
FED FROM: UTILITY XFMR				TYPE D CABINET				MAIN OCPD RATING: 200 AMPS				
BUS RATING: 200 AMP				WSDOT J-10.21-02				AIC RATING:				
HIGH LEG? No				# OF SPACES: 24				LOCATION: NW ROY ROBINSON RV LOT				
				FEED THRU LUGS: No								
NOTES	SERVES	TYPE LOAD	CKT BRKR	CKT NO.	CKT LOAD	PHASE LOADS	CKT LOAD	CKT NO.	CKT BRKR	TYPE LOAD	SERVES	NOTES
	LIGHTING SOUTH - A	L	20 / 2	1	400	A	640	2	20 / 2	L	LIGHTING NORTH - B	
		L		3	400	B	640	4				
	OUTLETS SOUTH - C	R	20 / 1	5	360	A	1,080	6	20 / 1	R	OUTLETS NORTH - D	
				7				8				
				9				10				
				11				12				
				13				14				
				15				16				
				17				18				
				19				20	15 / 1		HEAT	
				21				22	20 / 1		GFR	
				23				24	15 / 1		CONROLS	
PANEL PHASE CONNECTED VA =				640	0	1,720	25% OF BREAKER SPACES USED (SPARES NOT COUNTED)					
TOTAL PHASE CONNECTED AMPS =				5		14	USED TO SHOW PHASE BALANCE ONLY					
CONNECTED AMPS				DEMAND AMPS								
TOTAL AMPS = 9.83 AMPS				= 11.17 AMPS @240/120 1 Ph/3 W (5% OF BUS RATING)								

- NOTES:**
- * IF RECEPTACLE LOAD IS OVER 10KW THEN THE AMOUNT OVER 10KW IS COUNTED AS 50% FOR NON-DWELLING UNITS PER 2020 NEC 220.44.
 - ** THE LARGEST MOTOR OF THIS PANEL OR THE LARGEST MOTOR OF ANY SUBPANEL IS TAKEN AT 125%, ANY OTHER MOTORS ARE TAKEN AT 100%.

ELECTRICAL STREET LIGHTING PLAN

SCALE: 1"=40'

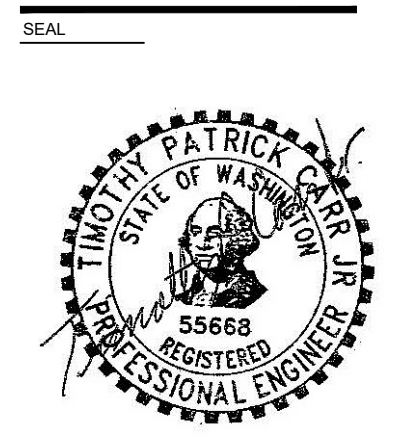
0' 10' 20' 40' 80'

RENSCH ENGINEERING

MECHANICAL AND ELECTRICAL BUILDING DESIGN

111 AVE. C, SUITE 104
 SNOHOMISH, WA 98290

office: 360-863-6677
 fax: 360-863-3585



CITY FILE NO.
 PA 22-035

PROJECT
 NEW AUTO DEALERSHIP
 KENDALL SUBARU
 SMOKEY POINT BLVD.
 MARYSVILLE, WASHINGTON 98223

REVISIONS

08/25/2022 Site Design Review Clarification 11-21-2022
 Street Lighting Plans Per City 04-12-2023
 Updated Plans Per City Review 07-14-2023
 Updated Per PUD/City Site Mtg. 08-28-2023

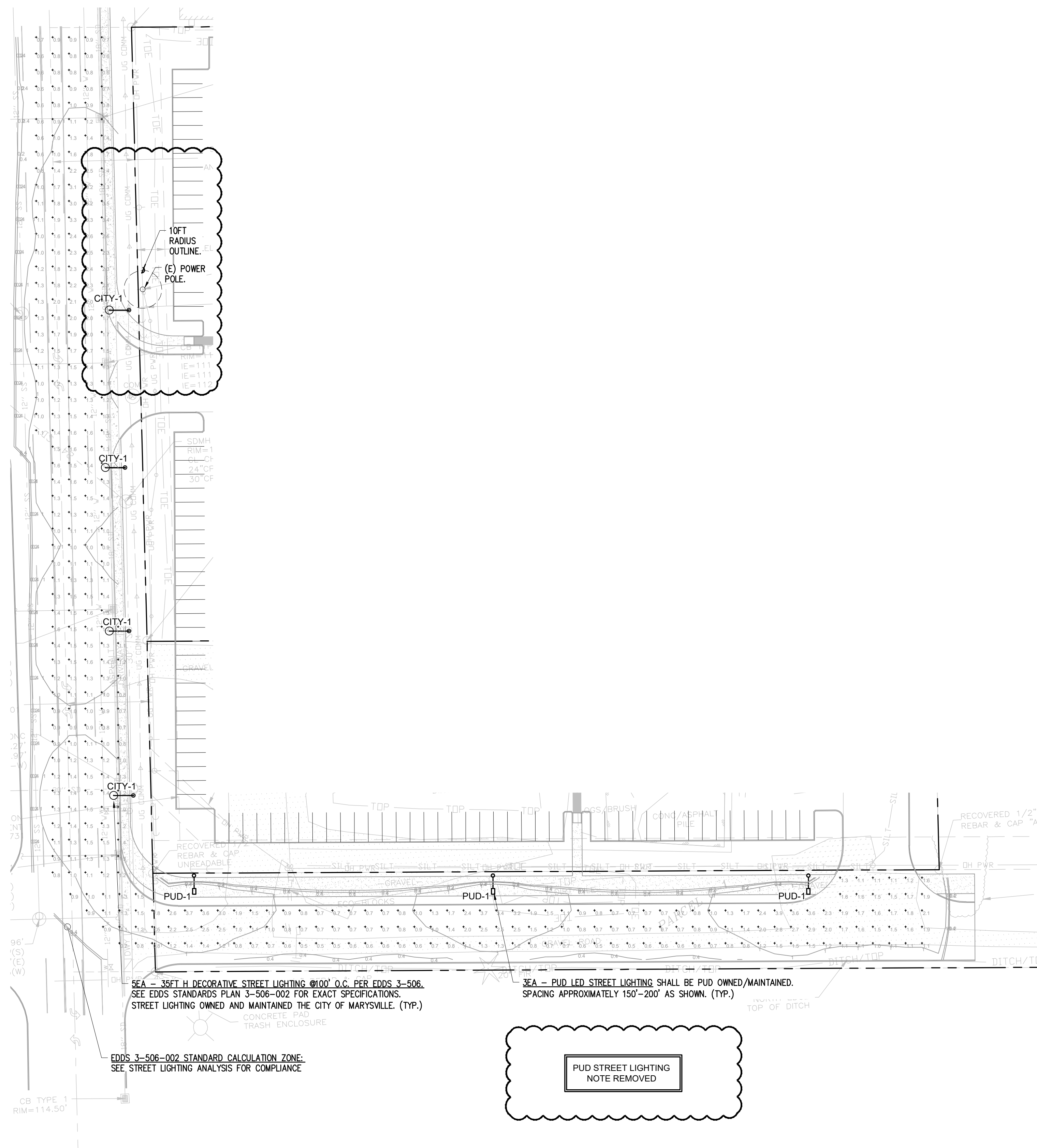
DATE: 08/25/2022

SHEET TITLE: STREET LIGHTING POWER PLAN & SCHEDULES

PERMIT SET

DRAWN BY: Yumi Roth
 DESIGNER: Jeff Hudson
 CHECKED BY: Tim Carr
 SHEET:

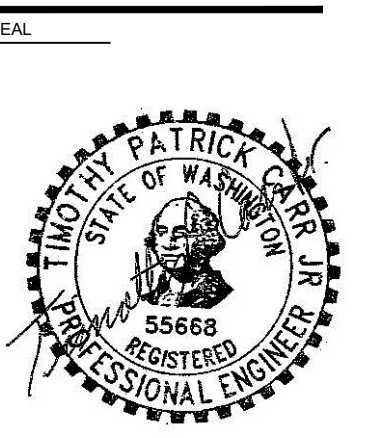
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STREET LIGHTING ANALYSIS			
EDDS: 3-506 C.D.2 / Table 3-5.01 Collector Arterial - Commercial / Standard Plan 3-506-002			
BASIC	IESNA RECOMMENDED ILLUMINATION LEVEL (IESNA HANDBOOK 10th Edition)	City of Marysville Engineering Design and Development Standards (EDDS) Requirements	ACTUAL PER PHOTOMETRIC PLAN
Zone GC (General Commercial)			
Pole Height / Arm Length	--	35ft /12ft	35ft /12 ft
Minimum Horizontal Illuminance	.2 fc	0.5 fc min.	.5 fc
Uniformity Ratio (AVE:MIN)	--	4:1	2:1
Street Light Ave - Collector Arterial	--	1.2 fc	1.2 fc

- GENERAL NOTES**
- CALCULATIONS ASSUME A 0.90 LIGHTING LOSS FACTOR.
 - COLORS AND FINISHES SHALL COMPLY WITH CITY OF MARYSVILLE AND PUD STANDARDS.
 - LIGHTING CONTROL SHALL BE BY PE CELL.
 - COORD. W/ GC FOR LIGHT STANDARD FOOTING. ELEVATE FOOTING ABOVE GRADE WHERE POSSIBILITY OF BEING HIT BY A CAR. VERIFY HEIGHT.
 - ALL SITE LIGHTS TO BE DARK SKY COMPLIANT FIXTURES.

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 MECHANICAL AND ELECTRICAL BUILDING DESIGN
 111 AVE. C, SUITE 104
 SNOHOMISH, WA 98290
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REVISIONS

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Updated Per PUD/City Site Mtg	08-28-2023

DATE
08/28/2023
SHEET TITLE
STREET LIGHTING
FOOTCANDLE PLAN

PERMIT SET

DRAWN BY: Yumi Roth
 DESIGNER: Yumi Roth
 CHECKED BY: Tim Carr
 SHEET

E1.02

E:\03 STREET LIGHTING FOOTCANDLE PLAN.DWG 8/28/2023 10:50 AM

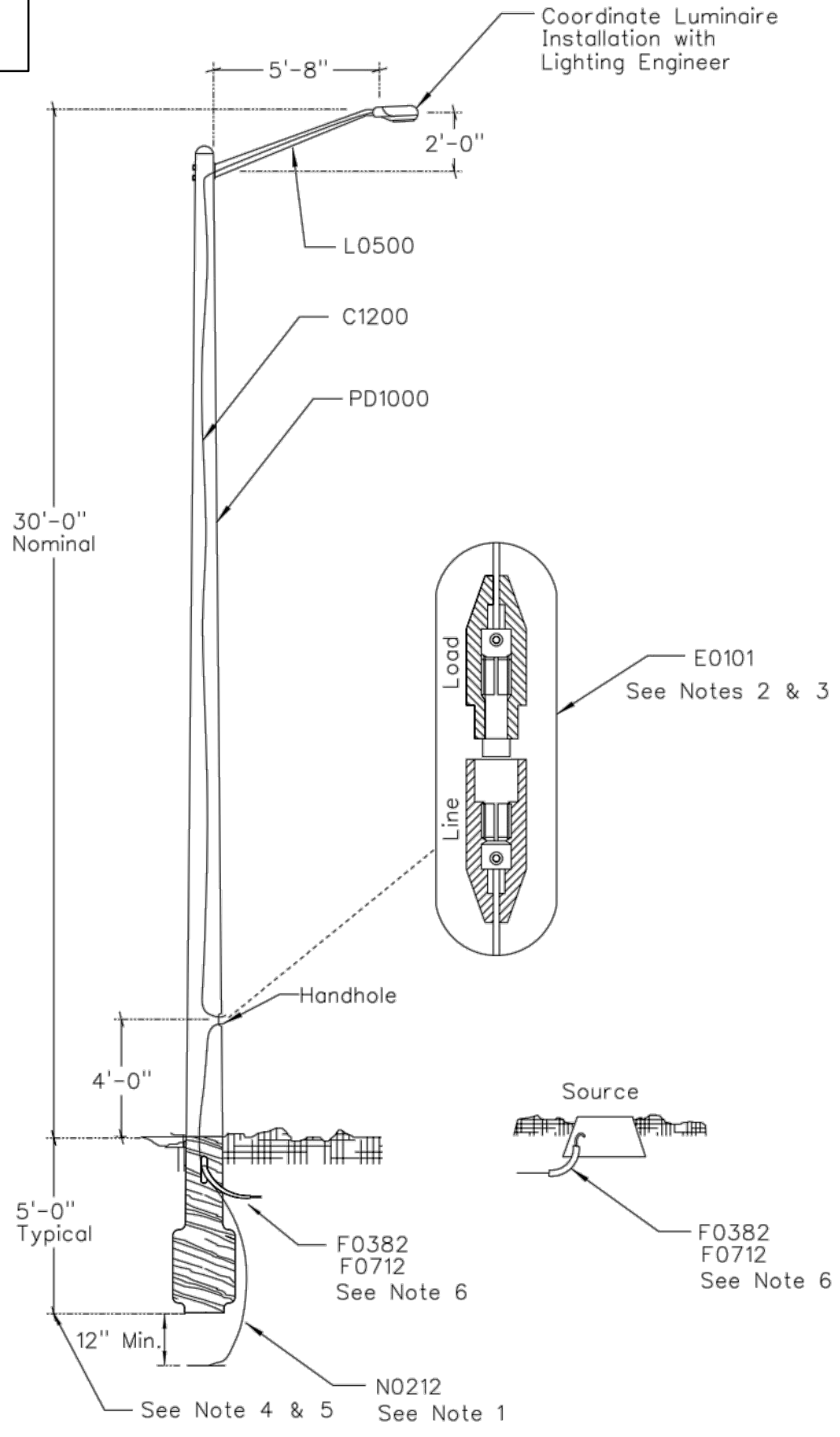
PUD-1



C.U.	ITEM	SIZE CODE	DESCRIPTION	QTY	MID
100W HPS Equivalent					
L0210	A	A	Photocontrol Solid State, 105-305V	1	485020
	B		LED 50W Nom. 120-277V Type II Med. 3000K	1	5000622
L0212	A	C	Photocontrol Solid State, 105-305V	1	485020
	B		LED 50W Nom. 120-277V Type IV Med. 3000K	1	5000623
200W HPS Equivalent (See Note 1)					
L0216	A	G	Photocontrol Solid State, 105-305V	1	485020
	B		LED 100W Nom. 120-277V Type II Med. 3000K	1	5000625
L0217	A	H	Photocontrol Solid State, 105-305V	1	485020
	B		LED 100W Nom. 120-277V Type III Med. 3000K	1	5000626
250W HPS Equivalent					
L0219	A	K	Photocontrol Solid State, 105-305V	1	485020
	B		LED 140W Nom. 120-277V Type II Med. 3000K	1	5000627
L0220	A	L	Photocontrol Solid State, 105-305V	1	485020
	B		LED 140W Nom. 120-277V Type III Med. 3000K	1	5000628
400W HPS Equivalent					
L0223	A	P	Photocontrol Solid State, 105-305V	1	485020
	B		LED 275W Nom. 120-277V Type III Med. 3000K	1	5000629

- Notes:**
- When replacing 150W HPS fixtures, check with the Street Lighting Engineer for the correct LED replacement.
 - Refer to [T&D Guideline 4-14-1.3](#) for a LED street light size codes, HPS equivalent size cross-reference and IES type light pattern reference.
 - Refer to [T&D Guideline 4-14-3.0](#) for identification & placement of District decals.

PUD-1



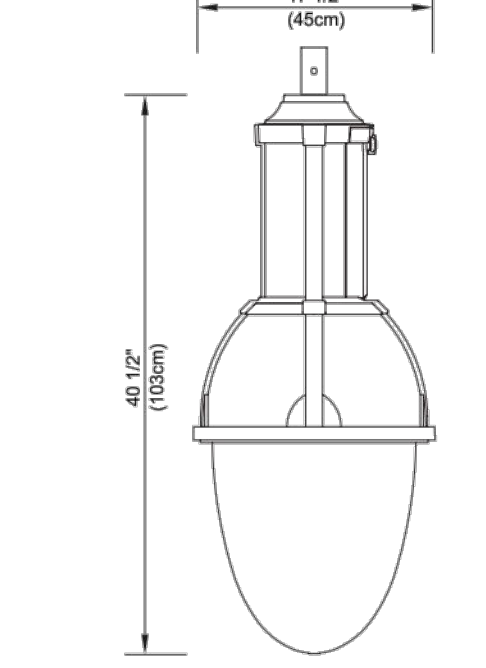
- Notes:**
- Connect the #4 Cu pole ground to the #12 Cu street light equipment ground with a #4 Cu split bolt connector (C.U. Z0404).
 - Fuseholder(s) are to be installed inside the pole. Leave enough slack conductor to allow for removing them.
 - For 240 volt systems use 2 fuses and 2 hot leg fuseholders (C.U. E0101).
 - Because of variations in overall pole length among manufacturers, adjust pole setting depth to place the centerline of the handhole 48" above final grade.
 - Backfill the pole hole with crushed rock as needed for stability to ensure that the pole sets straight.
 - The preferred method of extending 2" rigid PVC street lighting conduit up into a pedestal or pole is to install a short section of 2" corrugated flexible PVC conduit on each end. Use of 2" rigid PVC bends (C.U. F0602) is an acceptable alternate method.

MATERIAL LIST

QTY	C.U.	DESCRIPTION	QTY	MID
35	C1200	Wire, #12/2 UF-B	35	1002736
1	E0101	Fuse, Street Light 6 25A	1	312405
		Fuseholder, Street Light Hot Leg 1-Wire	1	312603
10	F0382	Conduit, PVC Corrugated Flexible Grey 2"	10	250142
2	F0712	Coupling, Conduit PVC Sch 40 Long 2"	2	250481
1	L0500	Mast Arm, Street Light 6' Al, Fiberglass Pole Type Bolt, Machine 5/8" x 7" Hex Head	2	1000984
		Washer, Galv Sq 2-1/4" Curved 11/16" Hole	2	1000996
		Washer, Galv Double Coil Spring Lock 5/8"	2	1001443
1	N0212	Wire, #4 Cu Bare SD Sol	10	848476
		Screw, Self-Drilling SS #8-18 x 3/4"	4	1001615
		Tap, Grounding	1	1001802
		Plate, Cu Ground 144 in ²	1	1001807
1	PD1000	Pole, 35' Fiberglass Street Light with 6' Al Mast Arm	1	711300

Project: _____ Order: _____
 Qty: _____ Luminaire: _____ Type: _____

Housing Module: Round dome made of cast A356 aluminum. A utility filter for the driver module consisting of an aluminum extrusion is welded to the top of the housing module. A cast-aluminum tenon cap is mechanically assembled on top of the utility filter and is fitted with a vertical tenon of Ø 1 7/8" (4.7cm) O.D. by 4" (10cm) long with a 0.200" (0.5cm) wall. The utility filter's door offers tool free access to the driver module. The luminaire is suspended from a mounting with a 2 3/8" (6cm) outside Ø by 5 1/2" (14mm) minimum length, and 0.150" (0.4cm) wall tenon by means of set screws and a locking bolt.



Lens Module: Cast A356 aluminum frame accepts the lens or the globe and is mechanically fixed to the housing module by a hinge and a latch that provides tool-free access to the interior of the luminaire. The luminaire is with a flat lens or a globe inserted in the lens module.

Optical Module: The molded A384 aluminum heat sink is designed to minimize the temperature of the LEDs, increasing their longevity and efficiency. The optical module is mechanically assembled to the heat-sink for easy replacement. The optical module is fully IP66 thanks to a molded silicone gasket. The high efficiency Orion LED optical engine is mechanically assembled on the heat sink. The lifetime of the LEDs is 100,000 hours. It is based on the LM-80 test and extrapolated with TM-21. This data is calculated when 50% of the LEDs produce 70% of their initial luminous flux (L70). The minimum color rendering index (CRI) is 70. The optical acrylic lens are designed to illuminate only where needed while achieving excellent uniformity with maximum spacing. The optical acrylic lens are sealed on the LED board. The light distribution type according to IES is _____.

Driver: Class 1 (P70 to P110) or Class 2 (P10 to P60) self-adjusting regulator.

Primary Voltage of _____ Volts, 50 / 60Hz, THD max 20%, High power factor of 90%. Operating temperature from -40°F (-40°C) to 130°F (55°C). The driver provides 0-10 Volts output (DIM option) and is ROHS compliant. Complete with an 18-6 AWG three-pole connector block and a 10kA three-pole surge protector for Line-Ground, Line-Neutral and Neutral-Ground lines according to the IEEE / ANSI C62.41 2002 C standard.

Wiring / Hardware: Type TEW 14-7, 12' (30cm) minimum exceeding luminaire. All electrical connections between the modules are provided with quick-disconnect connectors for easy maintenance. All outside accessible hardware is stainless steel.

Color: _____ textured or smooth _____ finish. The application of durable polyester powder coating meets AAMA 2604 requirements (5 years at all weather conditions). The finish meets ASTM G7, B117, D1654 and D2247 standards for salt spray and moisture. Cyclone recommends a textured finish for this product. Cyclone offers a marine grade pre-finish as an option.

Warranty: 5-year limited warranty. Complete warranty terms located at: www.aculybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Stamp/Approval: _____ Name: _____ Page 1 of 2
 Date: _____ Date: _____

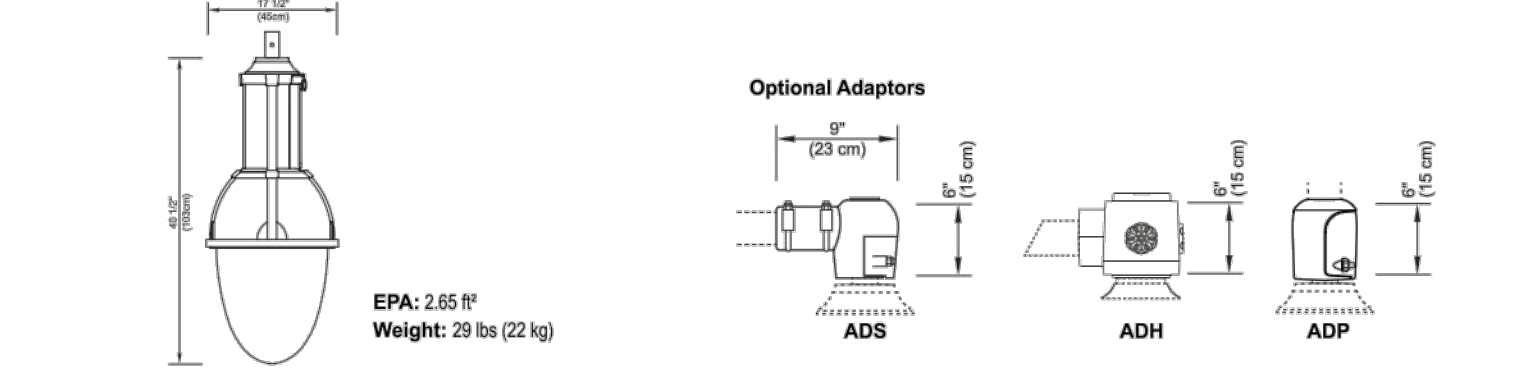
Cyclone Lighting: 2175 Des Entreprises Blvd, Terrebonne (QC) Canada J6Y 1W9 www.cyclonelighting.com Rev. 22/05/12
 Phone: 450.434.5000 - info@cyclonelighting.com © 2019-2022 Aculy Brands Lighting, Inc. All rights reserved.

Project: _____ Order: _____
 Qty: _____ Luminaire: _____ Type: _____

Ordering Code

Model	Lens	Distribution	Performance Package	CCT	Volts	Surge Protector
CO12P1A	DP3AP Globe Acrylic FOND	T1 Type 1	P10 (3500lm)	30K 3000K	MVOLT 120-277VAC	10KV 10 Kv
	DP3AR Globe Acrylic Ribbed	T1A Type 1A	P20 (5000lm)	40K 4000K	HVOLT 347-480VAC	20KV 20 Kv
	DP3OR Globe Glass Ribbed	T1AHS Type 1A with HS	P30 (8500lm)			
	FGC Flat Glass Clear	T2 Type 2	P40 (8000lm)			
	FGF Flat Glass Frosted	T2HS Type 2 with HS	P50 (9000lm)			
		T2M Type 2M	P60 (12000lm)			
		T2MHS Type 2M with HS	P70 (15500lm)			
		T3 Type 3	P80 (17500lm)			
		T3HS Type 3 with HS	P90 (22000lm)			
		T3M Type 3M	P100 (24000lm)			
		T3MHS Type 3M with HS	P110 (16000lm)			
		T4 Type 4				
	T4HS Type 4 with HS					
	T5 Type 5					

Adaptor	Photocell	Dimming	Color	Texture	Pre Finish
ADS Side Mount Adaptor	PT Photocell W7-PIN receptacle (ANSI C136.41)	DIM 0-10 volts dimming	BK Black RAL9005	TX Textured	MG Marine grade pre-finish
ADH Square Shape Side Mount Adaptor	PX Surfing cap W7-PIN receptacle (ANSI C136.41)	PND506 Program 50% for 6 hours (1PM to 5AM)	DG Dark green RAL6012	SM Smooth	
ADP Suspended Mounting Adaptor	PTL Long life photocell W7-PIN receptacle (ANSI C136.41)	PND508 Program 50% for 8 hours (SPM to 5AM)	MA Marine blue RAL5013		
	PTOR W7-PIN receptacle (ANSI C136.41)	SD Field adjustable 10% increment step-dimming switch	SI Metallic silver RAL9006 (smooth only)		
			BZ Dark bronze RAL8019		
			BG Burgundy RAL3005		
			GM Moss green RAL6005		
			PG Pale grey RAL7040		
			WH White RAL9003		
			BKH* Black Holophane (smooth only)		
			BZH* Dark bronze Holophane (smooth only)		
			GNH* Green Holophane (smooth only)		
			GRH* Graphite Holophane (smooth only)		
			GRH* Gray Holophane (smooth only)		
			SLH* Silver Holophane (smooth only)		
			WHH* White Holophane (smooth only)		

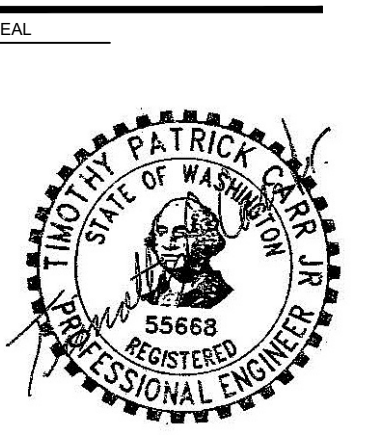


Stamp/Approval: _____ Name: _____ Page 2 of 2
 Date: _____ Date: _____

Cyclone Lighting: 2175 Des Entreprises Blvd, Terrebonne (QC) Canada J6Y 1W9 www.cyclonelighting.com Rev. 22/05/12
 Phone: 450.434.5000 - info@cyclonelighting.com © 2019-2022 Aculy Brands Lighting, Inc. All rights reserved.

4/25/2023 10:50 AM D:\03 STREET LIGHTING SPEC\5186

RENSCH ENGINEERING
 MECHANICAL AND ELECTRICAL BUILDING DESIGN
 1111 AVE. C, SUITE 104
 SNOHOMISH, WA 98290
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CITY FILE NO. PA 22-035

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REVISIONS:
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DATE: 08/25/2022
 SHEET TITLE: STREET LIGHTING SPECS

PERMIT SET
 DRAWN BY: Yumi Roth
 DESIGNER: Yumi Roth
 CHECKED BY: Tim Carr
 SHEET

E1.03