

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWNED UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

WHEN THE SEQUENCE OF CONSTRUCTION ACTIVITIES REQUIRES, OR SHOULD THE CONTRACTOR DESIRE, THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING OF THIS PORTION OF THE ROADWAY.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATIONS OF POLES, LENGTHS OF BRACKET ARMS, STYLES OF LUMINAIRES, MOUNTING HEIGHTS, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 3:1. MOUNTING HEIGHT OF TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 30 FEET, AND THE MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "B" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

SPECIAL, MAINTAIN EXISTING LIGHTING (CONT.)

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

WHEN THE PROJECT BEGINS AND THE CONTRACTOR HAS TAKEN OVER MAINTENANCE OF THE EXISTING FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED LAYOUTS AND LOCATIONS OF THE EXISTING AND PROPOSED ELECTRICAL CIRCUITS AND RELATED ITEMS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL LOCATE AND MARK ALL UNDERGROUND ELECTRICAL CIRCUITS (INCLUDING TRAFFIC LOOPS AND LOOP LEAD-INS) FOR THE DURATION OF THE PROJECT.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE OF THE LIGHTING WORK. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

SPECIAL - MAINTAIN EXISTING LIGHTING LUMP
625, POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED:

120/240 VOLT POWER SERVICE
CEI FIRST ENERGY CORP WILL MAKE FINAL CONNECTIONS TO EXISTING OVERHEAD CIRCUIT TO CONNECT THE PROPOSED LIGHTING WITHIN THIS PLAN TO EXISTING POWER CIRCUIT. SEE EXHIBIT 9 (THIS SHEET) FOR CONNECTION DETAILS.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

POWER COMPANY FIRST ENERGY CORP

ADDRESS 735 BRADLEY ROAD WESTLAKE, OHIO 44145

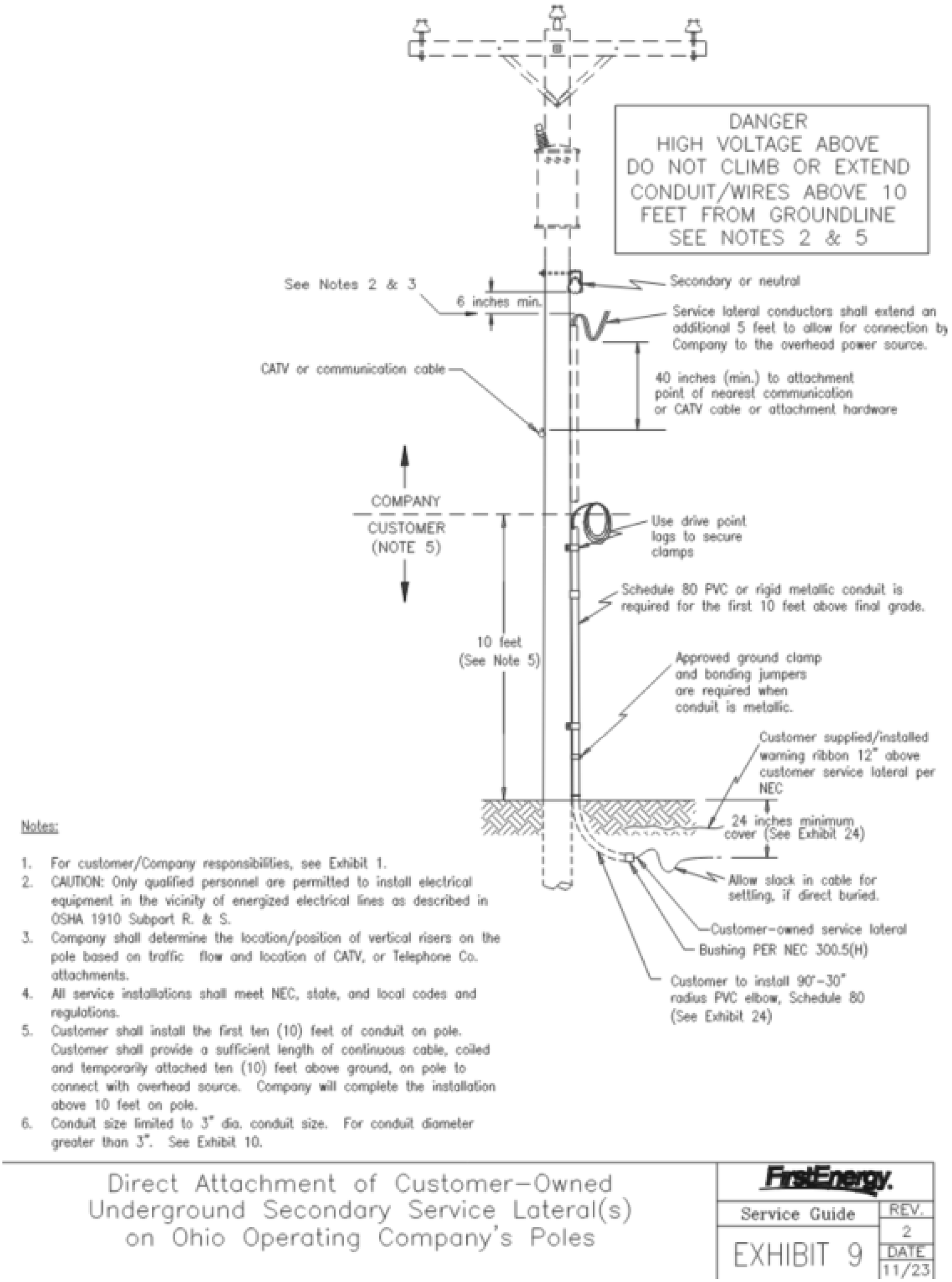
PHONE # 216-281-8007

CONTACT NAME DAVE CONLEY

625, POWER SERVICE, AS PER PLAN (CONT.)

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.



DESIGN AGENCY

Lanham
ENGINEERING LLC

DESIGNER
MJB

REVIEWER
DKA 02-14-25

PROJECT ID
115826

SHEET TOTAL
P.42 86

UNDERDRAINS FOR PULL BOXES

REFERENCE TRAFFIC SCD HL-30.11 FOR DETAILS ABOUT DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED 20 FEET. THE FOLLOWING BID ITEMS HAVE BEEN QUANTIFIED IN THE LIGHTING SUBSUMMARY:

ITEM 611 4" CONDUIT, TYPE E

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE EXISTING CIRCUIT MODIFIED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

ITEM 625 - LIGHTING, MISC.: TEST EXISTING CIRCUIT

UPON COMPLETION OF THE MODIFICATIONS TO THE EXISTING LIGHTING CIRCUITS, THE CONTRACTOR SHALL TEST ALL EXISTING/MODIFIED CIRCUITS TO VERIFY THAT POWER IS SUPPLIED TO ALL LIGHT POLES, AND THAT NO CIRCUITS HAVE BEEN DAMAGED. REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL BE PRESENT FOR THE INSPECTION OF THESE CIRCUITS.

TESTING OF EXISTING CIRCUITS SHALL BE CHECKED AT EACH PROPOSED POWER SERVICE LOCATION THAT WILL SERVE ALL, OR PORTIONS OF EXISTING LIGHTING CIRCUITRY.

PAYMENT WILL BE MADE AT THE UNIT PRICE UNDER CMS ITEM 625, "LIGHTING, MISC.: TEST EXISTING CIRCUIT" FOR EACH INDICATED POWER SERVICE INSTALLATION WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLINE MANNER.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 625 - LIGHTING, MISC.: TEST EXISTING CIRCUIT 1 EACH

625 LUMINAIRE, CONVENTIONAL, SOLID-STATE (LED), TEARDROP, 3000K, BLACK FINISH, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT’S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES II-M-SC DISTRIBUTION AND LED LAMPS SHALL BE HOLOPHANE "ESPLANADE" WITH PHOTOMETRIC DISTRIBUTION TYPE III, SHORT, BUG RATING: B1 - U3 - G3, STERNBERG LIGHTING "LIBERTYVILLE FIXTURE" WITH PHOTOMETRIC DISTRIBUTION TYPE 3L COB LED, GLASS TEARDROP OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, “LUMINAIRE, CONVENTIONAL, SOLID-STATE (LED), TEARDROP, 3000K, BLACK FINISH, AS PER PLAN” FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625 DECORATIVE POST-TOP LUMINAIRE, SOLID-STATE (LED), LANTERN STYLE, 3000K, BLACK, AS PER PLAN

THIS ITEM CONSISTS OF SUPPLYING AND INSTALLING DECORATIVE POST-TOP LED LUMINAIRES FOR STREET AND/OR SIDEWALK ILLUMINATION.

A LANTERN STYLE LUMINAIRE CONSISTS OF A FOUR DISCRETE FLAT SLOPING SIDES, PER HL-10.11, WITH OR WITHOUT GLASS OR POLYMER PANELS, AND A ROUNDED OR POINTED TOP AND A SMALL CUPOLA.

THE LUMINAIRE IS INTENDED FOR EXTERNAL ON/OFF CONTROL AND SHALL NOT INCLUDE A PHOTOCELL SOCKET.

LUMINAIRES SHALL BE EATON LIGHTING “ULTD TRADITIONAIRE" WITH PHOTOMETRIC DISTRIBUTION TYPE III, GENERAL ELECTRIC “SALEM” WITH PHOTOMETRIC DISTRIBUTION TYPE III, OR EQUAL APPROVED BY THE ENGINEER.

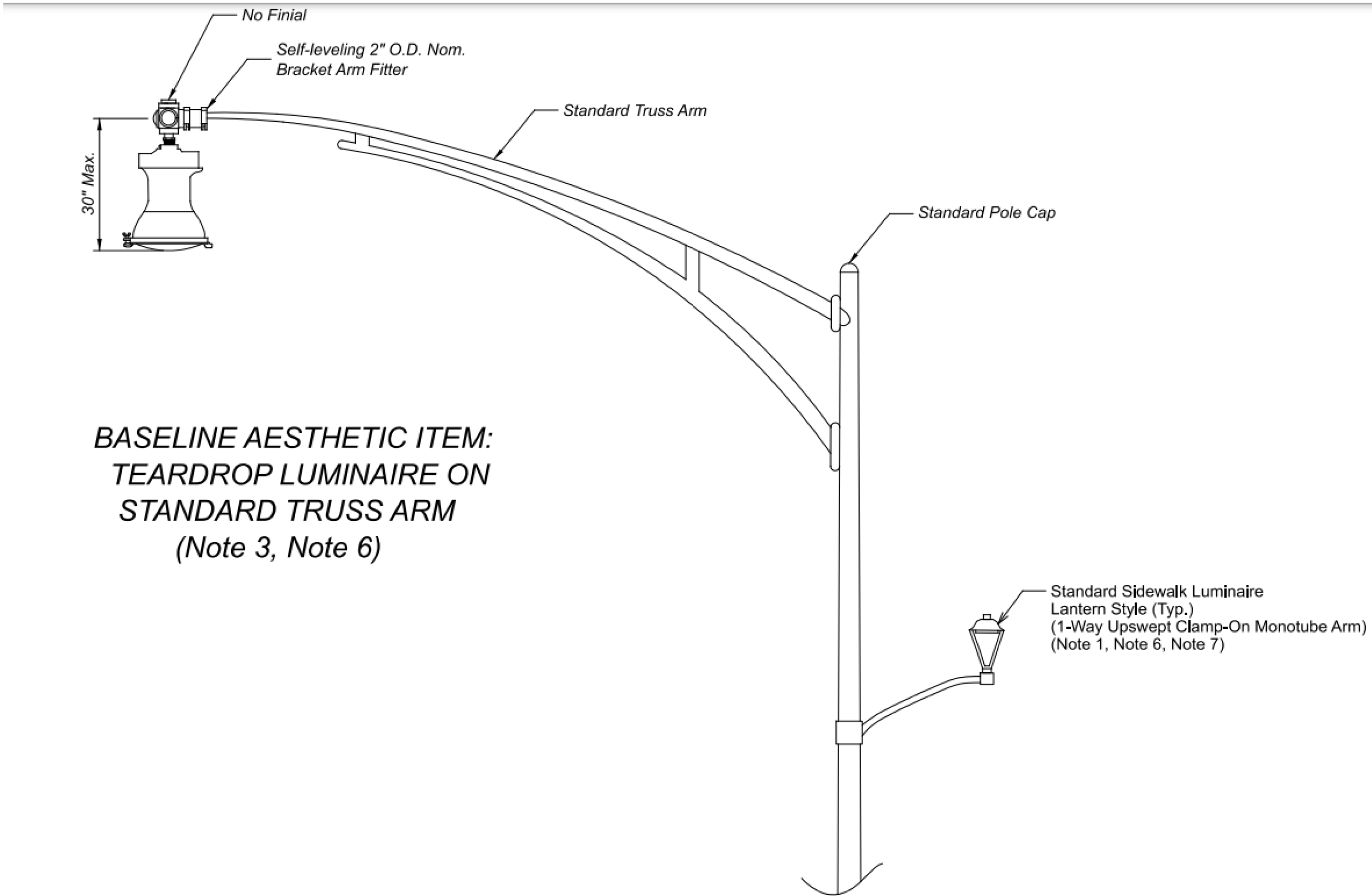
PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625, “DECORATIVE POST-TOP LUMINAIRE, SOLID-STATE (LED), LANTERN STYLE, 3000K, BLACK, AS PER PLAN” FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, LIGHT POLE, DECORATIVE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT’S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LIGHT POLES FOR AESTHETIC LIGHTING UNITS SHALL BE AS FOLLOWS:

THIS LIGHT POLE SHALL FOLLOW ODOT STANDARD CONSTRUCTION DRAWING HL 10.11 FOR BASELINE AESTHETIC LIGHT POLES AND SHALL INCLUDE A STRUCTURE MOUNTED BASE WITH ANCHOR BOLTS. THIS POLE SHALL BE FINISHED WITH BLACK FINISH TO MATCH BOTH LUMINAIRES INSTALLED WITH THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, “LIGHT POLE, DECORATIVE, AS PER PLAN” FOR EACH POLE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.



DESIGN AGENCY



DESIGNER

MJB

REVIEWER

DKA 02-14-25

PROJECT ID

115826

SHEET

P.43

TOTAL

86

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LIGHTING SUBSUMMARY

DESIGN AGENCY



DESIGNER

MJB

REVIEWER

DKA 02-14-25

PROJECT II

115826

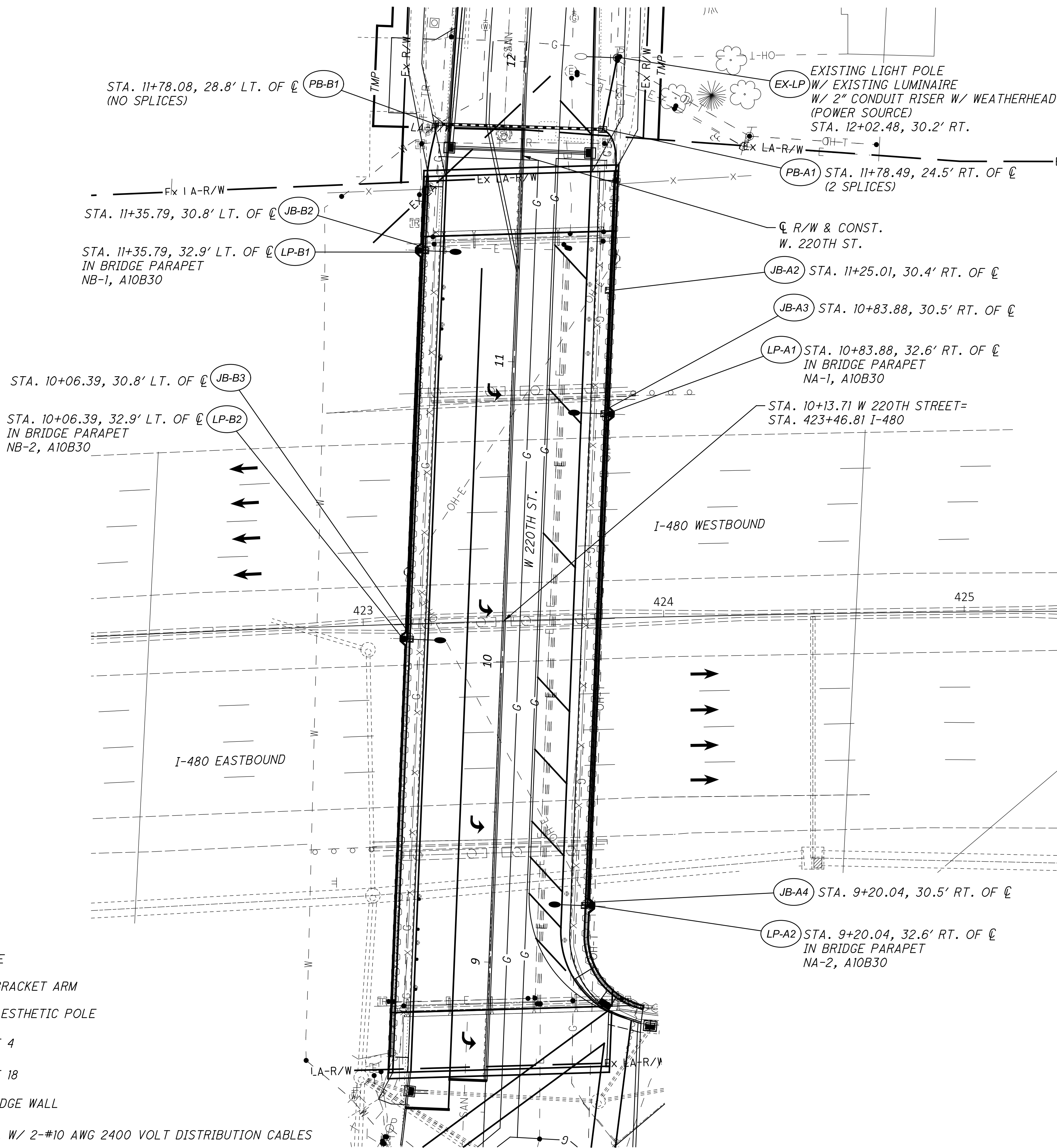
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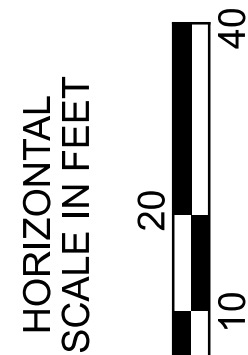
PLAN LEGEND	
	EXISTING POWER POLE WITH POWER SERVICE
	PROPOSED TEARDROP LUMINAIRE WITH 10' BRACKET ARM
	PROPOSED LANTERN STYLE LUMINAIRE ON AESTHETIC POLE
	PROPOSED LIGHTING PULLBOX 725.06, SIZE 4
	PROPOSED LIGHTING PULLBOX 725.06, SIZE 18
	PROPOSED LIGHTING JUNCTION BOX, IN BRIDGE WALL
	PROPOSED CONCRETE ENCASED 3" CONDUIT, W/ 2-#10 AWG 2400 VOLT DISTRIBUTION CABLES
	PROPOSED 2" CONDUIT, W/ 2-#10 AWG 2400 VOLT DISTRIBUTION CABLES



NOTE:

1. OFFSETS TO LIGHT POLES AND PULL BOXES ARE TO RESPECTIVE ROADWAY CL

2. COORDINATE WITH CEI FIRST ENERGY FOR POWER SERVICE CONNECTION ON EXISTING OVERHEAD LINES PER EXHIBIT 9



LIGHTING PLAN

W 220TH STREET - STA. 8+38 TO STA. 12+18

DESIGN AGENCY

Lanham
ENGINEERING LLC

DESIGNER

MJB

REVIEWER

DKA 02-14-25

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SHEET

P.45

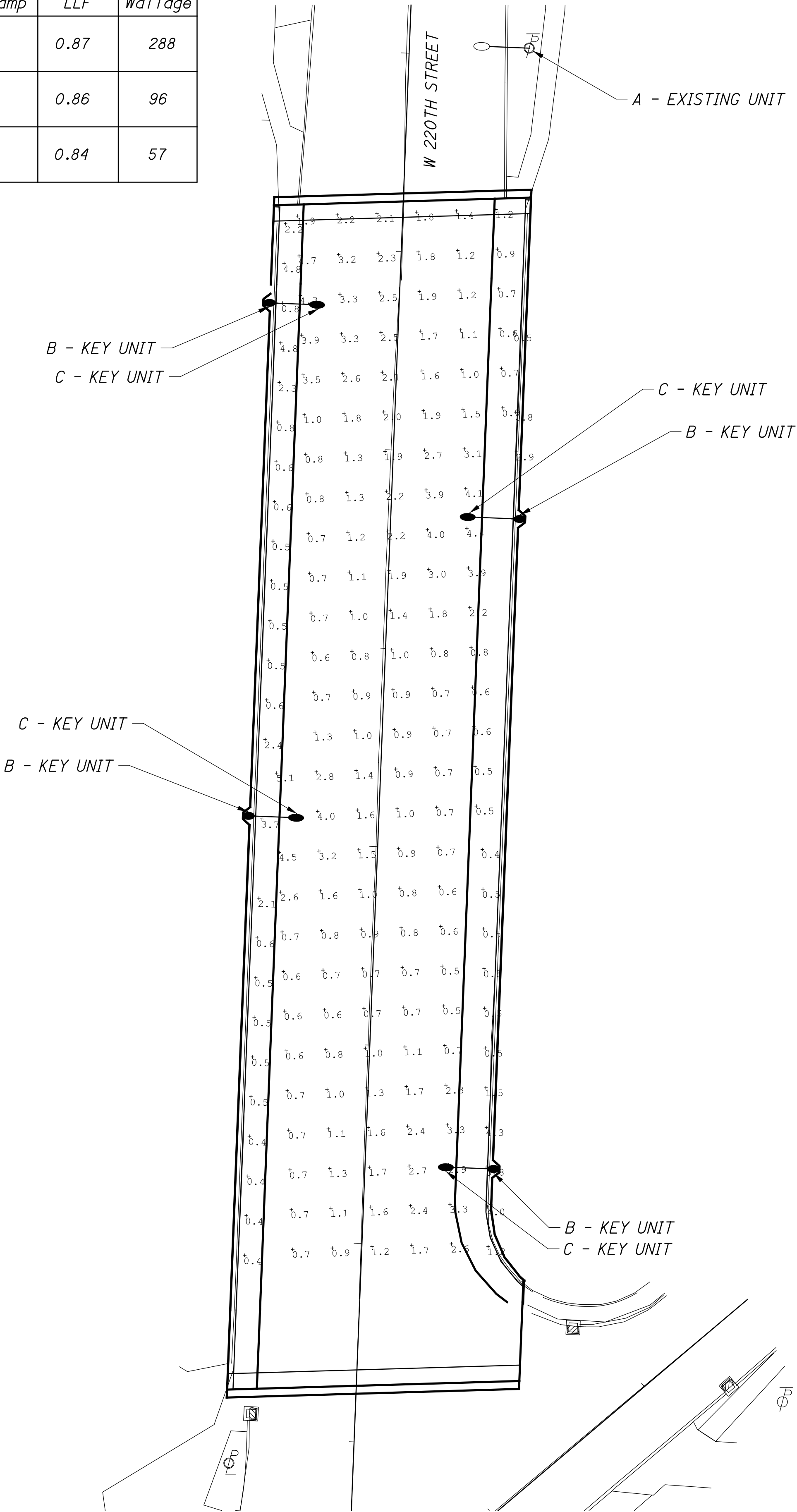
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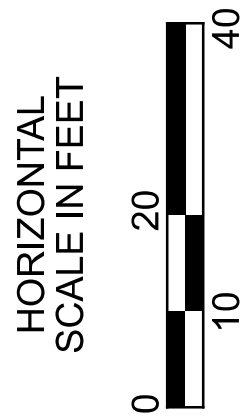
LUMINAIRE SCHEDULE									
Label	Qty	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Lumens Per Lamp	LLF	Wattage
A	1	LUMEC Signify	HBS_250HPS	Existing 250W HPS Luminaire	HPS	1	20556	0.87	288
B	4	Cooper Lighting Solutions	UTLD_PA1_LT2	Traditionaire LED Downlight Latern Luminaire, Sidewalk	LED	1	6508	0.86	96
C	4	Holophane	ESPL2_P10S_30K	Esplanade Tear Drop LED, 3000K, Roadway	LED	1	7100	0.84	57

LIGHTING STATISTICS - W 220th Street Bridge							
Description	Roadway Classification	Pedestrian Classification	Average	Max	Min	Max/Min	Avg/Min
Target - Roadway	Collector/Collector	Intermediate	1.2 fc	-	-	-	4.0:1
Target - Sidewalk	Collector/Collector	Intermediate	0.9 fc	-	-	-	4.0:1
Achieved - E Sidewalk	Collector/Collector	Intermediate	1.3 fc	4.3 fc	0.4 fc	10.7 fc	3.2:1
Achieved - W Sidewalk	Collector/Collector	Intermediate	1.3 fc	4.8 fc	0.4 fc	12.0 fc	3.2:1
Achieved - Roadway	Collector/Collector	Intermediate	1.6 fc	5.1 fc	0.5 fc	10.2 fc	3.2:1

- PLAN LEGEND
- PROPOSED LUMINAIRE WITH 10' BRACKET ARM (30' MOUNTING HEIGHT)
 - PROPOSED POST TOP LUMINAIRE (14' MOUNTING HEIGHT)
 - ⊕ EXISTING LUMINAIRE ON EXISTING POLE



LIGHTING ANALYSIS
W. 220TH STREET - STA. 8+38 TO STA. 12+18



DESIGN AGENCY



DESIGNER

MJB

REVIEWER

DKA 02-14-25

PROJECT ID

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SHEET

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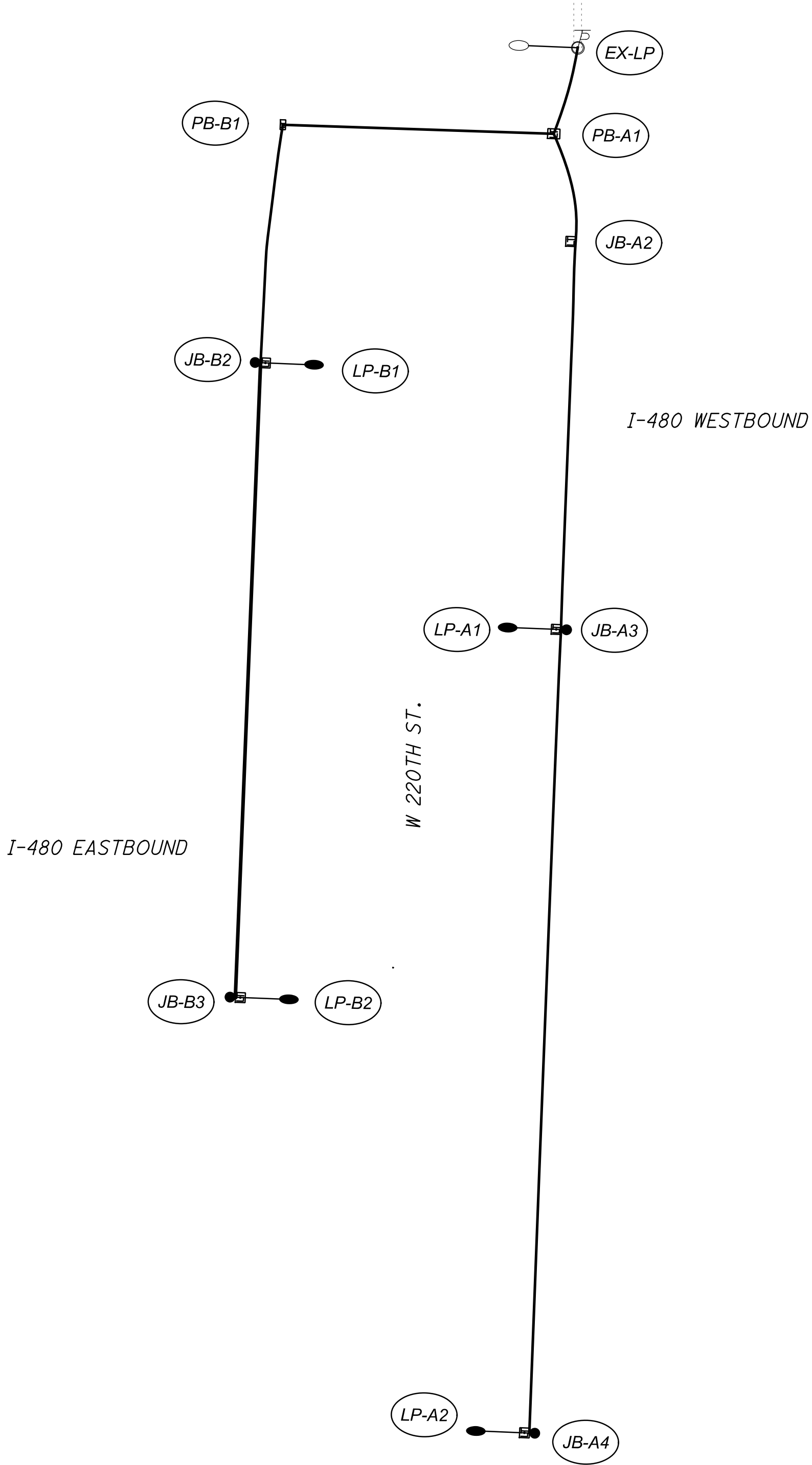
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PLAN LEGEND

- EXISTING POWER/LIGHT POLE W/ CIRCUIT CONNECTION
- EXISTING LIGHT POLE W/ HPS LUMINAIRE
- EXISTING LIGHTING CIRCUIT CABLE
- AESTHETIC LIGHT POLE W/ LED LUMINAIRE
- LANTERN STYLE LUMINAIRE ON AESTHETIC POLE
- LIGHTING PULLBOX, VARIOUS SIZES
- LIGHTING JUNCTION BOX, IN BRIDGE PARAPET
- LIGHTING CIRCUIT CABLE



VOLTAGE DROP CALCULATION

CIRCUIT N

VOLTAGE: 120/240V

WIRE FACTOR USED (TWO - NO. 10 AWG WIRES: 1.2 OHMS/MFT/1000)

Section					Current (Amperes)		Voltage Drop					
From	To	Length (ft)	AWG	Resistance (ohms/Kft)	At Point	Accum	In Section	Accum	% Drop	Power Loss (W/ft)	At Point	
LP-A2	LP-A1	174	10	1.2	0.64	0.64	0.27	0.75	0.31	0.00	LP-A2	
LP-A1	PB-A1	112	10	1.2	0.64	1.28	0.34	0.49	0.20	0.00	LP-A1	
LP-B2	LP-B1	139	10	1.2	0.64	0.64	0.21	0.71	0.29	0.00	LP-B2	
LP-B1	PB-A1	114	10	1.2	0.64	1.28	0.35	0.49	0.20	0.00	LP-B1	
PB-A1	EX-LP (PS)	23	10	1.2	0.00	2.56	0.14	0.14	0.06	0.00	PB-A1	