

GENERAL NOTES

- 26-86.8 LIGHTING DESIGN. THE FOLLOWING GENERAL DESIGN SPECIFICATIONS FOR LIGHTING SHALL BE FOLLOWED:
 - THE STYLE OF THE LIGHT AND LIGHT STANDARD SHALL BE CONSISTENT WITH THE ARCHITECTURAL STYLE OF THE PRINCIPAL BUILDING.
 - ALL LIGHTING SHALL BE DESIGNED IN ACCORDANCE WITH MINIMUM STANDARDS OF SAFETY AND SUGGESTED LIGHTING LEVELS AS SPECIFIED HEREIN AND IN THE STANDARDS OF THE ILLUMINATING ENGINEERING SOCIETY (I.E.S.).
 - MULTI-PHASED PROJECTS SHALL BE DESIGNED IN PHASES AND ALL FIXTURES, LIGHT SOURCES, STANDARDS AND LIGHTING LEVELS SHALL BE CONSISTENT THROUGHOUT, UNLESS OTHERWISE APPROVED BY THE BOARD.
 - THE MAXIMUM HEIGHT OF FREESTANDING LIGHTS SHOULD NOT EXCEED THE HEIGHT OF THE PRINCIPAL BUILDING OR TWENTY-FIVE (25) FEET, WHICHEVER IS LESS.
 - ALL LIGHTS SHALL BE APPROPRIATELY SHIELDED AND DIRECTED SO THAT THE LIGHTING, TO THE EXTENT POSSIBLE, SHALL NOT SPILL OVER ONTO ADJACENT PROPERTIES.
 - PRESTANDING LIGHTS SHALL BE SO LOCATED AND PROTECTED TO AVOID BEING DAMAGED BY VEHICLES.
 - THE FOLLOWING INTENSITY IN FOOTCANDLES SHALL BE MAINTAINED:
 - MULTI-FAMILY RESIDENTIAL PARKING LOTS: A MINIMUM OF 0.25 FOOTCANDLES THROUGHOUT, MAINTAINED WITH ESTABLISHED DEPRECIATION FACTOR CALCULATED INTO LIGHTING LEVEL AT A MAXIMUM TO MINIMUM ILLUMINATION RATIO NOT TO EXCEED 15:1.
 - COMMERCIAL PARKING LOTS: A MINIMUM OF 0.5 FOOTCANDLES THROUGHOUT, MAINTAINED WITH ESTABLISHED DEPRECIATION FACTOR CALCULATED INTO LIGHTING LEVEL AT A MAXIMUM TO MINIMUM ILLUMINATION RATIO NOT TO EXCEED 15:1.
 - ROADWAY LIGHTING (CLASSIFIED AS RESIDENTIAL COLLECTOR TYPE ROADWAY) 0.5 FOOTCANDLES MINIMUM MAINTAINED WITH ESTABLISHED DEPRECIATION FACTOR CALCULATED INTO LIGHTING LEVEL AT A MAXIMUM TO MINIMUM ILLUMINATION RATIO NOT TO EXCEED 4:1.
 - MAXIMUM AT PROPERTY LINES: ONE-HALF (0.5) FOOTCANDLE.
 - SIDEWALKS: A MINIMUM OF ONE (1) FOOTCANDLE ENTIRE LENGTH.
 - ALL WIRING SHALL BE LAID UNDERGROUND, AND THE LIGHTING FIXTURES SHALL BE SO ARRANGED THAT THE DIRECT SOURCE OF LIGHT IS NOT VISIBLE FROM ANY ADJACENT RESIDENTIAL AREA. GLARE FROM BRIGHT ELECTRIC LIGHT BULBS SHALL BE ELIMINATED THROUGH THE USE OF DIFFUSERS OR THE EQUIVALENT.
 - LIGHTING FIXTURES:
 - ALL LIGHTING FIXTURES ARE TO BE OF AN APPROVED TYPE AND SUPPLIED BY A REPUTABLE MANUFACTURER.
 - ALL LIGHTING FIXTURES SHALL UTILIZE MAXIMUM SEVENTY-FIVE (75) DEGREE CUTOFF LUMINAIRE TYPE REFLECTOR SO AS TO MINIMIZE GLARE.
 - ALL FIXTURES BEING UTILIZED SHALL BE SUBMITTED WITH COMPLETE FIXTURE PHOTOMETRICS, AS SUPPLIED BY MANUFACTURER. ANY FIXTURE WHICH IS SUBMITTED WITHOUT PHOTOMETRICS IS NOT ACCEPTABLE.
 - WHERE DETERMINED TO BE REQUIRED BY THE BOARD, HOUSE SIDE SHIELD (INTERNAL OR EXTERNAL) SHALL BE PROVIDED TO MINIMIZE FIXTURE GLARE AND LIGHT POLLUTION ONTO ADJACENT PROPERTIES.
 - ALL FIXTURES SHALL BE AESTHETICALLY COMPATIBLE WITH THE LIGHTING STANDARD (POLES), CONTIGUOUS FIXTURES, AND THE ADJACENT ENVIRONMENT.
 - ALL LAMPS SHALL BE OF AN INSIDE COATED TYPE PHOSPHOR COATING OR INSIDE FROST. NO CLEAR LAMPS SHALL BE PERMITTED.
 - ALL FIXTURES SHALL CONTAIN A SHIELDING MEDIUM WITHIN THE FIXTURE TO PROTECT LAMPS, SUCH AS, CLEAR TEMPERED GLASS DOOR OR BOROSILICATE PRISMATIC REFRACTOR. UNPROTECTED LAMPS OTHER THAN INCANDESCENT TYPE UNITS, SHALL NOT BE PERMITTED.
 - WHERE INCANDESCENT LAMPS ARE EXPOSED TO THE WEATHER THEY SHALL BE OF THE PROPER TYPE (EX. "PAR" LAMPS).
 - LIGHTING STANDARD (POLES):
 - ALL POLES SHALL BE OF AN APPROVED TYPE, ABLE TO WITHSTAND WIND LOADS TYPICAL TO THE REGION AND SUPPLIED BY A REPUTABLE MANUFACTURER.
 - THE MAXIMUM ALLOWABLE POLE HEIGHT SHALL BE THIRTY-FIVE (35) FEET MEASURED FROM THE HIGHEST POINT OF POLE AND FIXTURE TO FINISHED GRADE.
 - ALL POLES SHALL BE AESTHETICALLY COMPATIBLE WITH THE LIGHTING FIXTURES AND SURROUNDING ENVIRONMENT.
 - POLE BASES SHALL BE DESIGNED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND APPROVED BY A LICENSED PROFESSIONAL ENGINEER AS TO STRUCTURAL STABILITY.
- PLAN SUBMISSIONS: THE LIGHTING PLAN SHALL INCLUDE THE FOLLOWING INFORMATION:
 - FIXTURE MANUFACTURER LITERATURE SHOWING FIXTURE TYPE, COLOR, ETC.
 - FIXTURE PHOTOMETRICS AS FURNISHED BY THE MANUFACTURER.
 - LIGHTING STANDARD (POLES) LITERATURE SHOWING POLE TYPE, HEIGHT, ETC.
 - SITE LIGHTING PLANS SHOWING FIXTURE LOCATIONS AND PHOTOMETRIC DATA (SOX/DIAGRAMS) INDICATING FOOTCANDLE INTENSITIES ALONG FIXTURE OUTPUT DISTRIBUTION DRAWN TO PLAN SCALE.
- DESIGN CRITERIA, CONTAINING:
 - LIGHTING SOURCE UTILIZED.
 - FOOTCANDLE LEVEL.
 - TYPE OF LIGHT SOURCE:
 - INCANDESCENT.
 - QUARTZ.
 - METAL HALIDE HIGH INTENSITY DISCHARGE SOURCES.
 - HIGH PRESSURE SODIUM HIGH INTENSITY DISCHARGE SOURCES.
 - LOW PRESSURE SODIUM HIGH INTENSITY DISCHARGE SOURCES.
 - WATTAGES OF LAMPS TO BE INDICATED ON DRAWINGS.
 - ALL OTHER DATA DEEMED NECESSARY TO MAKE AN INFORMED DECISION ON THE APPLICATION.
- M. LIGHTING ALONG PUBLIC ROADWAYS: IT IS RECOGNIZED THAT JERSEY CENTRAL POWER AND LIGHT COMPANY PROVIDES LIGHTING ALONG PUBLIC ROADWAYS AND THE UTILITY COMPANY DOES NOT PROVIDE ELECTRICAL PLANS TO THE DEVELOPER UNLESS PRELIMINARY APPROVAL OF THE PROJECT IS OBTAINED.

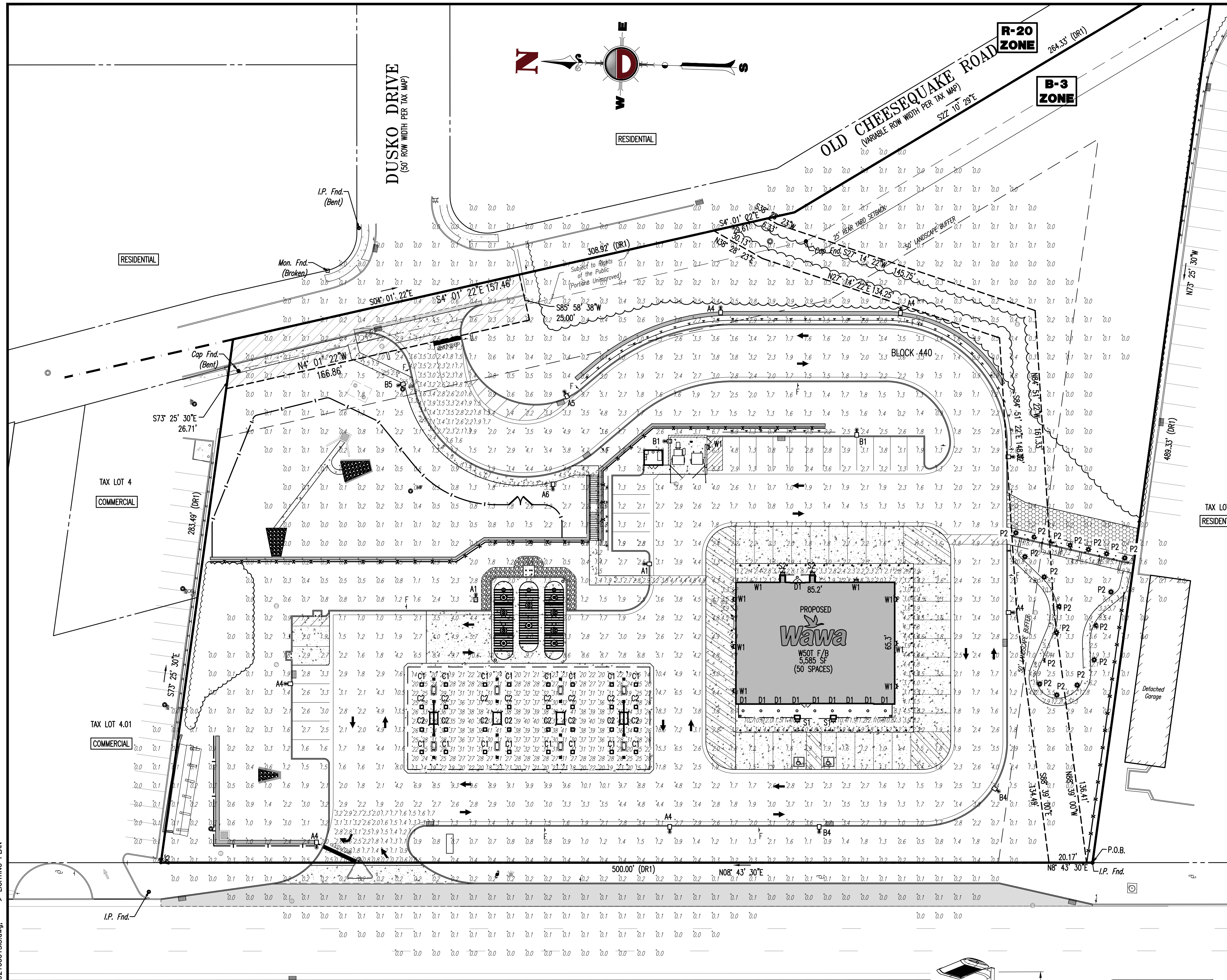
ORDINANCE SECTION	REQUIREMENT	PROPOSED
26-86-80	THE MAXIMUM HEIGHT OF FREESTANDING LIGHTS SHOULD NOT EXCEED THE HEIGHT OF THE PRINCIPAL BUILDING OR TWENTY-FIVE (25) FEET, WHICHEVER IS LESS.	20.5 FT (COMPLIES)
26-86-86	ALL LIGHTS SHALL BE SHIELDED TO RESTRICT THE MAXIMUM APEX ANGLE OF THE CONE OF ILLUMINATION TO SEVENTY-FIVE (75) DEGREES FROM VERTICAL.	(COMPLIES)
26-86-86F	LIGHTS SHALL BE APPROPRIATELY SHIELDED AND DIRECTED SO THAT THE LIGHTING, TO THE EXTENT POSSIBLE, SHALL NOT SPILL OVER ONTO ADJACENT PROPERTIES.	(COMPLIES)
26-86-86G	FREESTANDING LIGHTS SHALL BE SO LOCATED AND PROTECTED TO AVOID BEING DAMAGED BY VEHICLES.	(COMPLIES)
26-86-84H	A MINIMUM OF 0.5 FOOTCANDLES THROUGHOUT ALL COMMERCIAL PARKING LOTS MUST BE MAINTAINED. ESTABLISHED DEPRECIATION FACTOR CALCULATED INTO LIGHTING LEVEL SHOULD NOT EXCEED A 15:1 RATIO.	0.6 FC MINIMUM; 8.0 (COMPLIES)
26-86-84I	A MINIMUM OF 5 FOOTCANDLES MUST BE MAINTAINED IN ALL ROADWAYS. ESTABLISHED DEPRECIATION FACTOR CALCULATED INTO LIGHTING LEVEL SHOULD NOT EXCEED A 4:1 RATIO.	N/A
26-86-84H	A MAXIMUM OF 0.5 FOOTCANDLES IS PERMITTED AT ALL PROPERTY LINES.	0.5 FC MAXIMUM (COMPLIES)
26-86-84H5	A MINIMUM OF 1 FOOTCANDLE IS PERMITTED AT ALL SIDEWALKS.	1.9 FC MINIMUM (COMPLIES)
26-86-80I	ALL WIRING SHALL BE LAID UNDERGROUND, AND THE LIGHTING FIXTURES SHALL BE SO ARRANGED THAT THE DIRECT SOURCE OF LIGHT IS NOT VISIBLE FROM ANY ADJACENT RESIDENTIAL AREA. GLARE FROM BRIGHT ELECTRIC LIGHT BULBS SHALL BE ELIMINATED THROUGH THE USE OF DIFFUSERS OR THE EQUIVALENT.	(WILL COMPLY)
26-86-80J	ALL LIGHTING FIXTURES SHALL UTILIZE MAXIMUM SEVENTY-FIVE (75) DEGREE CUTOFF LUMINAIRE TYPE REFLECTOR SO AS TO MINIMIZE GLARE.	(COMPLIES)
26-86-80K	WHERE DETERMINED TO BE REQUIRED BY THE BOARD, HOUSE SIDE SHIELD (INTERNAL OR EXTERNAL) SHALL BE PROVIDED TO MINIMIZE FIXTURE GLARE AND LIGHT POLLUTION ONTO ADJACENT PROPERTIES.	(COMPLIES)
26-86-80L	ALL FIXTURES SHALL BE AESTHETICALLY COMPATIBLE WITH THE LIGHTING STANDARD (POLES), CONTIGUOUS FIXTURES, AND THE ADJACENT ENVIRONMENT.	(COMPLIES)
26-86-80M	ALL LAMPS SHALL BE OF AN INSIDE COATED TYPE PHOSPHOR COATING OR INSIDE FROST. NO CLEAR LAMPS SHALL BE PERMITTED.	(COMPLIES)
26-86-80N	ALL FIXTURES SHALL CONTAIN A SHIELDING MEDIUM WITHIN THE FIXTURE TO PROTECT LAMPS, SUCH AS, CLEAR TEMPERED GLASS DOOR OR BOROSILICATE PRISMATIC REFRACTOR. UNPROTECTED LAMPS OTHER THAN INCANDESCENT TYPE UNITS, SHALL NOT BE PERMITTED.	(COMPLIES)
26-86-80O	WHERE INCANDESCENT LAMPS ARE EXPOSED TO THE WEATHER THEY SHALL BE OF THE PROPER TYPE (EX. "PAR" LAMPS).	(COMPLIES)
26-86-80P	ALL POLES SHALL BE OF AN APPROVED TYPE, ABLE TO WITHSTAND WIND LOADS TYPICAL TO THE REGION AND SUPPLIED BY A REPUTABLE MANUFACTURER.	(COMPLIES)
26-86-80Q	THE MAXIMUM ALLOWABLE POLE HEIGHT SHALL BE THIRTY-FIVE (35) FEET MEASURED FROM THE HIGHEST POINT OF POLE AND FIXTURE TO FINISHED GRADE.	20.5 FT (COMPLIES)
26-86-80R	POLE BASES SHALL BE DESIGNED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND APPROVED BY A LICENSED PROFESSIONAL ENGINEER AS TO STRUCTURAL STABILITY.	(COMPLIES)
26-86-80S	RUST WHITING TYPE STEEL POLES SHALL NOT BE PERMITTED.	(COMPLIES)

N/A: NOT APPLICABLE
 NOTE: - FOOTCANDLE LEVELS CALCULATED AT GRADE USING PREDICTED LUMEN VALUES AFTER 25K HOURS OF OPERATION
 - ALL AREA LIGHTS ON 20 FT. POLES MOUNTED ON 6 IN. CONCRETE BASES

FOOTCANDLE CALCULATION SUMMARY					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
CANOPY	29.68	42	1.3	2.28	3.23
DELIVERY	3.64	4.5	3.1	1.17	1.45
ENTRANCES & EXISTS	1.73	3.2	0.5	3.46	6.40
ENTRANCES & EXISTS, 20' BELOW	2.58	4.2	1.3	1.98	3.23
PARKING, 10' BELOW	2.52	9.7	1.1	2.29	8.82
PARKING, 20' BELOW	3.18	5.8	0.9	3.53	6.44
NISH CURBLINE	0.03	0.1	0.0	N.A.	N.A.
PARKING	3.24	18.5	0.7	4.63	26.43
PROPERTY LINES	0.07	0.4	0.0	N.A.	N.A.
SIDEWALK	5.95	18.7	1.0	5.95	18.70
SIDEWALK, 20' BELOW	2.54	4.5	0.7	3.63	6.43
UNDEFINED	0.80	12.5	0.0	N.A.	N.A.
UNDEFINED, 10' BELOW	1.79	3.4	0.2	8.95	17.00
UNDEFINED, 20' BELOW	0.41	4.2	0.0	N.A.	N.A.

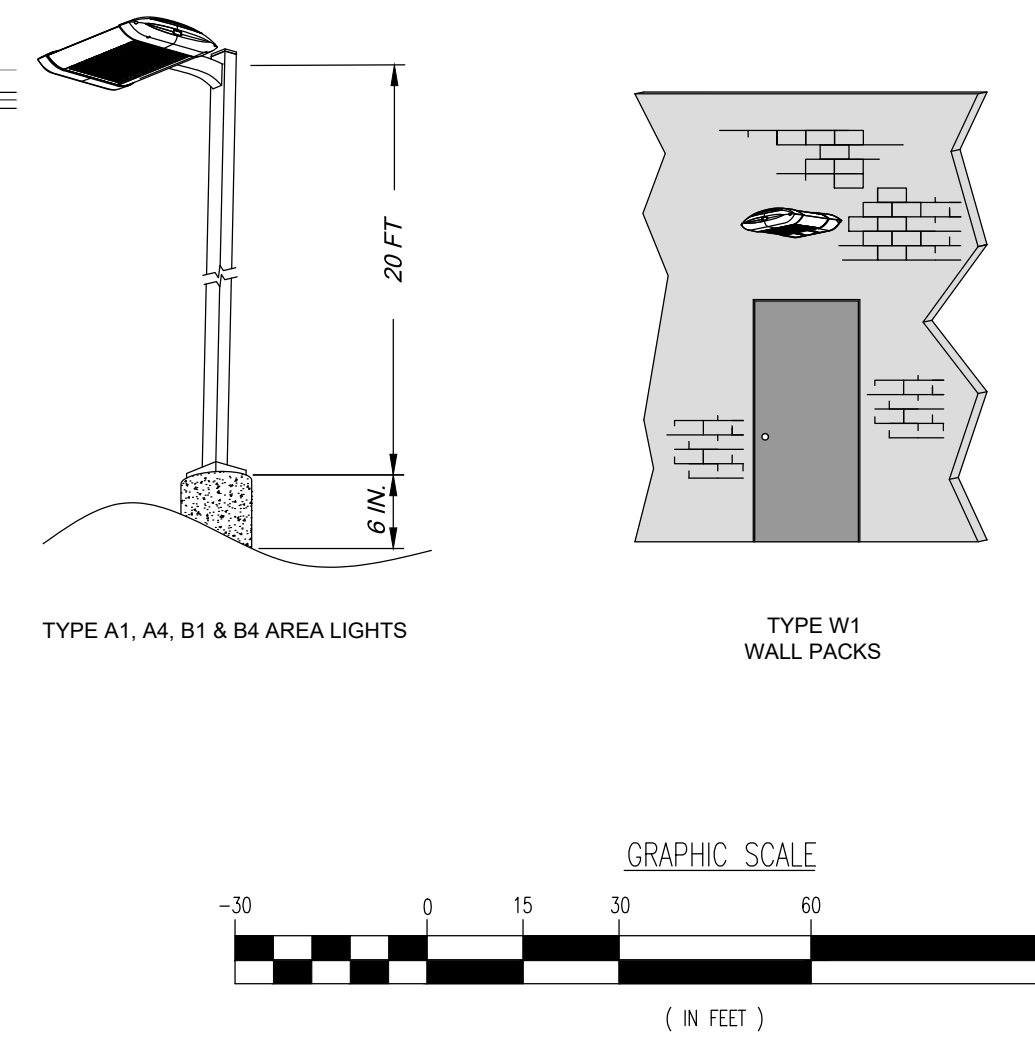
REFER TO LIGHTING PACKAGE PREPARED BY RED LEONARD ASSOCIATES

NOTE: - FOOTCANDLE LEVELS CALCULATED AT GRADE USING PREDICTED LUMEN VALUES AFTER 25K HOURS OF OPERATION
 - AREA LIGHTS #9 & #10 ON 27 FT. POLES MOUNTED ON 3 FT. CONCRETE BASES.
 - THESE BASES ARE LOCATED APPROXIMATELY 20 FT. BELOW F.F.E. OF STORE
 - AREA LIGHTS #2, #11, & #13 ARE ON 20 FT. POLES MOUNTED ON 0.5 FT. CONCRETE BASES. THESE BASES ARE LOCATED APPROXIMATELY 20 FT. BELOW F.F.E. OF STORE
 - ALL OTHER AREA LIGHTS ON 20 FT. POLES MOUNTED ON 0.5 FT. CONCRETE BASES. THESE BASES ARE LOCATED APPROXIMATELY AT THE F.F.E. OF STORE



U.S. ROUTE 9
 (128' ROW WIDTH PER TAX MAP)

LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	MH	ARRANGEMENT	LUMENS	LLF	ARR. WATTS	TOTAL WATTS	MANUFACTURER	DESCRIPTION
⊕	2	A1	20.5 FT	SINGLE	12019	1.000	134.2	268.4	CREE, INC.	ARE-EDG-3M-DA-06-E-UL-WH-700-57K
⊕	3	A4	20.5 FT	SINGLE	8891	1.000	134	670	CREE, INC.	ARE-EDG-3M-DA-06-E-UL-WH-700-57K
⊕	5	A5	10 FT	SINGLE	8891	1.000	134	402	CREE, INC.	ARE-EDG-3M-DA-06-E-UL-WH-700-57K
⊕	1	A6	10 FT	SINGLE	12019	1.000	134.2	134.2	CREE, INC.	ARE-EDG-3M-DA-06-E-UL-WH-700-57K
⊕	2	B1	20.5 FT	SINGLE	12678	1.000	134	268	CREE, INC.	ARE-EDG-4M-DA-06-E-UL-WH-700-57K
⊕	2	B4	20.5 FT	SINGLE	9549	1.000	134	268	CREE, INC.	ARE-EDG-4M-DA-06-E-UL-WH-700-57K
⊕	16	C1	16 FT	SINGLE	10912	0.980	92	1472	CREE, INC.	CAN-304-SL-RD-06-E-UL-WH-525
⊕	1	B5	20.5 FT	SINGLE	12678	1.000	134	268	CREE, INC.	ARE-EDG-4M-DA-06-E-UL-WH-700-57K
⊕	32	D2	18 FT	SINGLE	8924	0.980	92	2944	CREE, INC.	CAN-304-SL-RD-04-E-UL-WH-525
⊕	10	D1	9 FT	SINGLE	1548	1.000	27.6	276	PHILLIPS LIGHTING	CR1522DN30KCLW/CR15N1 (CAN LIGHT)
⊕	2	S1	9 FT	SINGLE	2011	1.000	46.9	93.8	SCOTT ARCHITECTURAL LIGHTING	WC1 SCOTT I161322 S9131 9x20
⊕	2	S2	8.5 FT	SINGLE	1119	1.000	22.6	45.2	SCOTT ARCHITECTURAL LIGHTING	WC2 SCOTT I161321 S9130 9x16
⊕	9	W1	15 FT	SINGLE	4210	0.980	43	387	CREE, INC.	SEC-EDG-3M-WM-04-E-UL-WH-350-57K
⊕	18	P2	3.5 FT	SINGLE	1441	1.000	22	396	CREE, INC.	PNY-EDG-3M-P4-02-E-UL-WH-350-57K



PROTECT YOURSELF
 A PHONE CALL CAN BE YOUR INSURANCE POLICY

WHAT YOU DON'T KNOW CAN HURT YOU.
 THE STATE OF NEW JERSEY REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

ISSUED FOR CONSTRUCTION

DYNAMIC ENGINEERING
 LAND DEVELOPMENT CONSULTING • PERMITTING • GEOTECHNICAL • ENVIRONMENTAL • SURVEY • PLANNING & ZONING

1994 Main Street, Lake Como, NJ 07719
 T: 201-941-0188 F: 201-941-3521
 www.dynamiceng.com

245 Main Street, Suite 110, Chester, NJ 07930 T: 908-879-9229 F: 908-879-0222
 100 Newtown Village Road, Suite 425, Newtown, PA 18940 T: 267-685-0276 F: 267-685-0341
 1301 Central Expressway South, Suite 310, Allen, TX 75013 T: 972-334-2100 F: 972-334-2100
 1403 Oak Knoll Road, Suite 250, Houston, TX 77079 T: 281-789-6400

TITLE: **LIGHTING PLAN**

PROJECT: **RETLAW 967, LLC PROPOSED WAWA FOOD MARKET & FUELING STATION**
 BLOCK 440, LOT 3.01
 969 US ROUTE 9
 BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

JOB No: 1792-16-001 DATE: 11/09/2016
 DRAWN BY: MWK SCALE: (H) 1"=30' (V)
 DESIGNED BY: MJB SHEET No:
 CHECKED BY: MAW
 DJD 7/18/18 DATE
 CONSTRUCTION CHECK DATE
 CONSTRUCTION CHECK DATE
 DEC Client Code: 1792 Rev. # 8

PROFESSIONAL ENGINEER
 NEW JERSEY LICENSE NO. 44147
 NEW HAMPSHIRE LICENSE NO. 13928
 FLORIDA LICENSE NO. 7913
 OKLAHOMA LICENSE NO. 26283

Plotted: 11/11/19 - 5:19 PM, By: areyes, Product Ver: 23.1s (LMS Tech)
 File: P:\VEPC PROJECTS\1792 - Water Permits\16-001 Sayreville\DWG\Site Plans\0179216001SIB.dwg, LIGHTING PLAN