Roadway Lighting Cabinet Photocell

Ahmet Demirbilek
Statewide Lighting Engineer
414- 322- 9606
Ahmet.Demirbilek@dot.wi.gov

Roadway Lighting

- Luminaire Type
- Light Pole, Arm
- Underdeck Lighting
- High mast Lighting
- Lighting Control Cabinet
- Temporary Lighting

LED Luminaires Type

LED Category; LED A, LED B, LED C, LED D

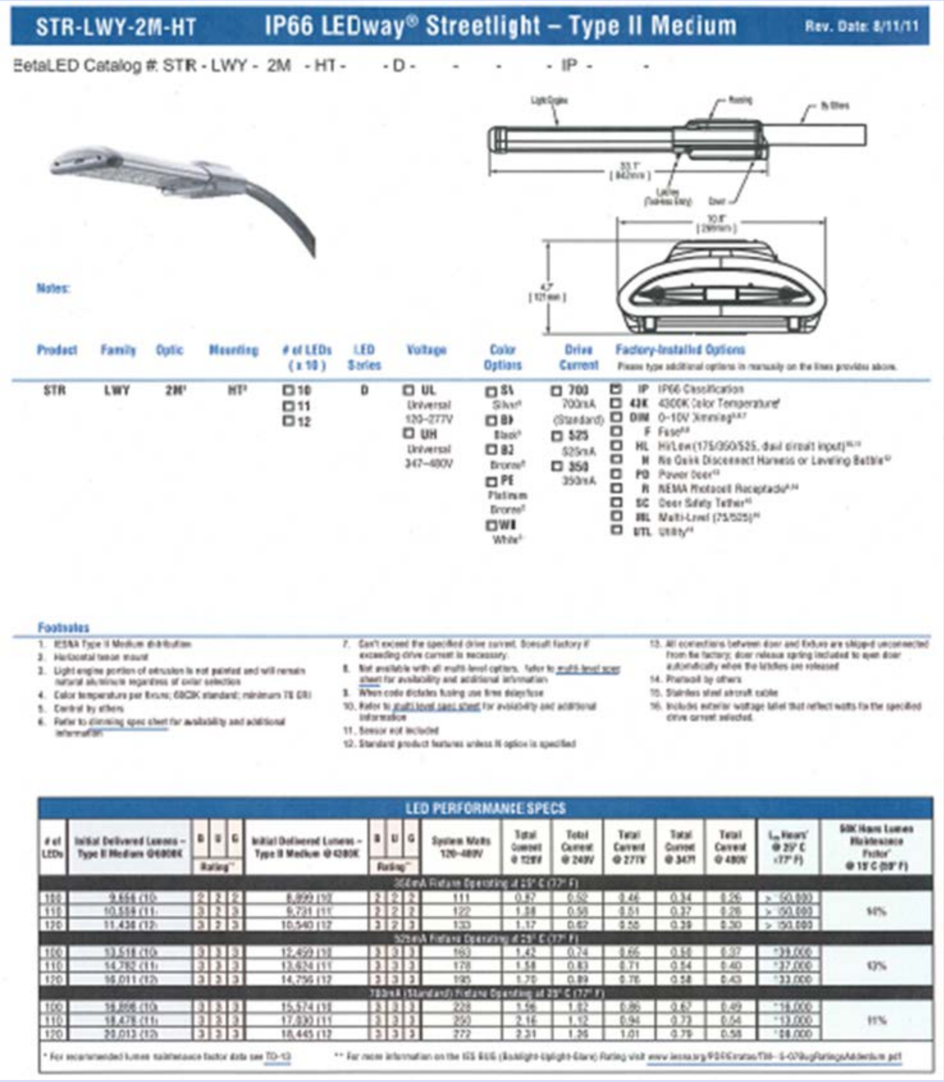
COLOR PATCH CODE FOR HPS AND LED LUMINAIRES

HPS	LED	COLOR PATCH CODE
1000 WATT		NO PATCH
400 WATT	CATEGORY D	ORANGE
310 WATT		BLUE
250 WATT	CATEGORY C	ORANGE WITH WHITE STRIPE
200 WATT		RED
150 WATT	CATEGORY B	GREEN
100 WATT	CATEGORY A	BROWN
70 WATT	CATEGORY UDL	BROWN WITH WHITE STRIPE

LED Luminaires

- LED Type
- From QPL
- Material Submittals

http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/prods/659.aspx



STR-LWY-2M-HT IP66 LEDway® Streetlight – Type II Medium Rev. Date: 8/11/11

BetaLED Catalog #: STR - LWY - 2M - HT - - D - - - - IP - -

Notes:

Product	Family	Optic	Mounting	# of LEDs (x 10)	LED Series	Voltage	Color Options	Drive Current	Factory-Installed Options
STR	LWY	2M	HT	10, 11, 12	D	UL Universal 120–277V; UH Universal 347–480V	SV Silver; BK Black; BZ Bronze; PB Platinum Bronze; WH White	700 700mA (Standard); 525 525mA; 350 350mA	IP IP66 Classification; 40K 4300K Color Temperature; DIM 0-10V Dimming; F Fuse; HL Hi/Low; N No Quick Disconnect Harness; PD Power Door; R NEMA Photocell Receptacle; SC Door Safety Tether; ML Multi-Level (75/525); UTL Utility

Footnotes

LED PERFORMANCE SPECS

# of LEDs	Initial Delivered Lumens – Type II Medium @6000K	B	U	G	Initial Delivered Lumens – Type II Medium @4300K	B	U	G	System Watts 120–480V	Total Current @120V	Total Current @240V	Total Current @277V	Total Current @347V	Total Current @480V	L70 Hours* @25° C (77° F)	50K Hours Lumen Maintenance Factor* @15° C (59° F)
350mA Fixture Operating at 25° C (77° F)																
100	9,656 (10)	2	2	2	8,899 (10)	2	2	2	111	0.87	0.52	0.46	0.34	0.26	> 150,000	94%
110	10,559 (11)	3	2	3	9,731 (11)	2	2	2	122	1.08	0.58	0.51	0.37	0.28	> 150,000	
120	11,438 (12)	3	2	3	10,540 (12)	3	2	3	133	1.17	0.62	0.56	0.39	0.30	> 150,000	
525mA Fixture Operating at 25° C (77° F)																
100	13,518 (10)	3	3	3	12,459 (10)	3	3	3	163	1.42	0.74	0.65	0.50	0.37	*39,000	93%
110	14,782 (11)	3	3	3	13,624 (11)	3	3	3	178	1.58	0.83	0.71	0.54	0.40	*37,000	
120	16,011 (12)	3	3	3	14,756 (12)	3	3	3	195	1.70	0.89	0.76	0.58	0.43	*33,000	
700mA (Standard) Fixture Operating at 25° C (77° F)																
100	16,898 (10)	3	3	3	15,574 (10)	3	3	3	228	1.96	1.02	0.86	0.67	0.49	*16,000	91%
110	18,478 (11)	3	3	3	17,030 (11)	3	3	3	250	2.16	1.12	0.94	0.73	0.54	*13,000	
120	20,013 (12)	3	3	3	18,445 (12)	3	3	3	272	2.31	1.26	1.01	0.79	0.58	*08,000	

* For recommended lumen maintenance factor data see TD-13 ** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit www.iesna.org/PDF/Erratas/TM-15-07BugRatingsAddendum.pdf

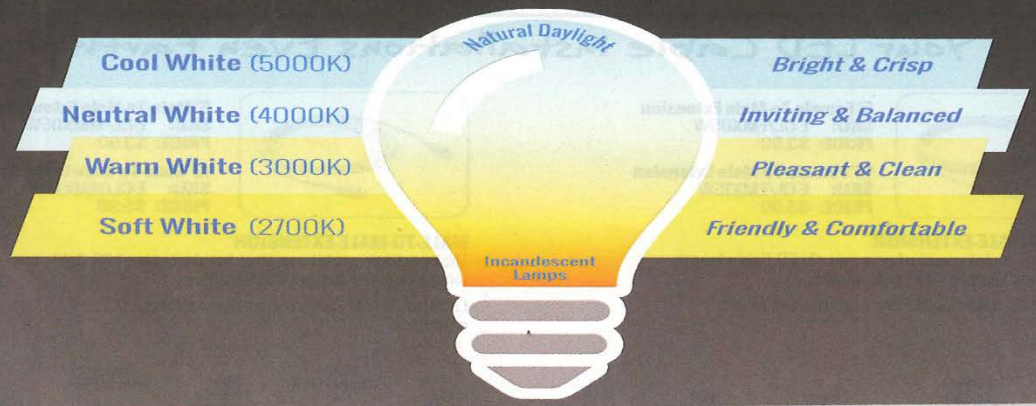
Using COLOR TEMPERATURE To Your Advantage

Correlated Color Temperature

[cor·re·lat·ed col·or tem·per·a·ture] Also commonly known as CCT.

A measurement in Kelvin (K) that indicates the color of light emitted.

- Cooler, white light has a higher CCT.
- Warmer, yellow light has a lower CCT.



PEOPLE RESPOND BEST TO:

> Warm, clean light around **3000K** with a high CRI for interior lighting.

> Cool, crisp light around **5000K** for outdoor lighting.

> The use of spotlights and **CONTRAST** lighting.

HOW IT ALL WORKS:

Blue LED chips are coated with **yellow phosphor** to create **WHITE LIGHT.**

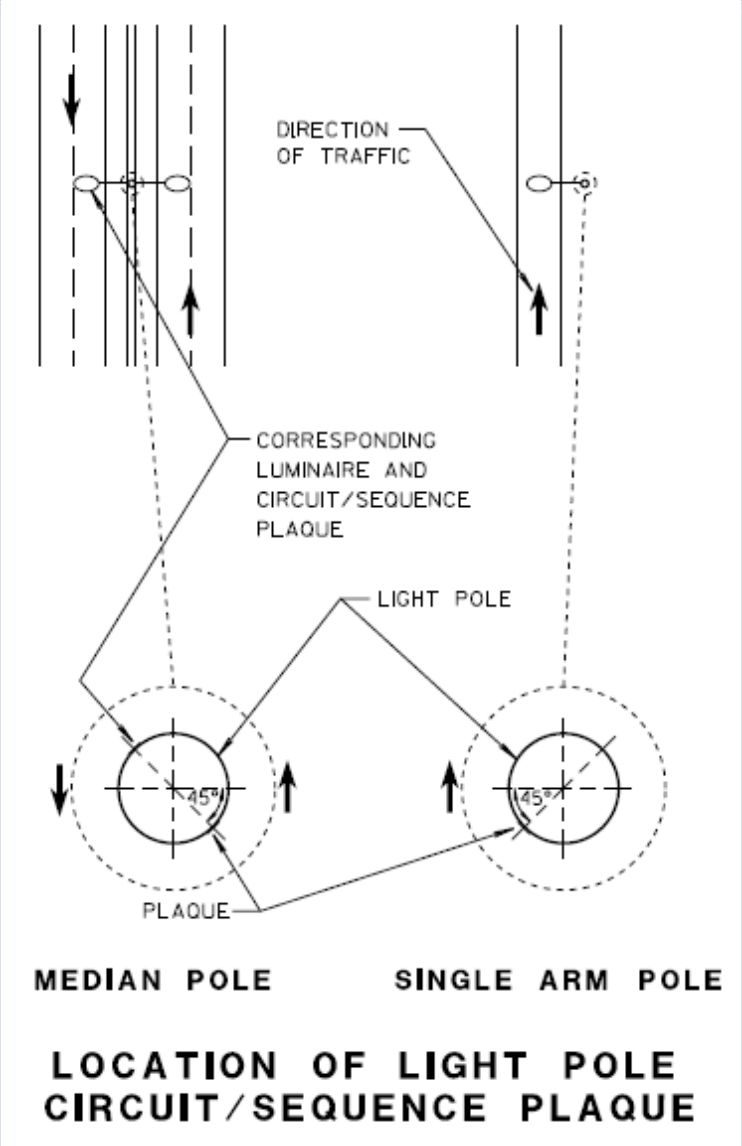
- If intersection lighting is included with the signal installation the power feeding the lighting controller must be on a separate circuit breaker.

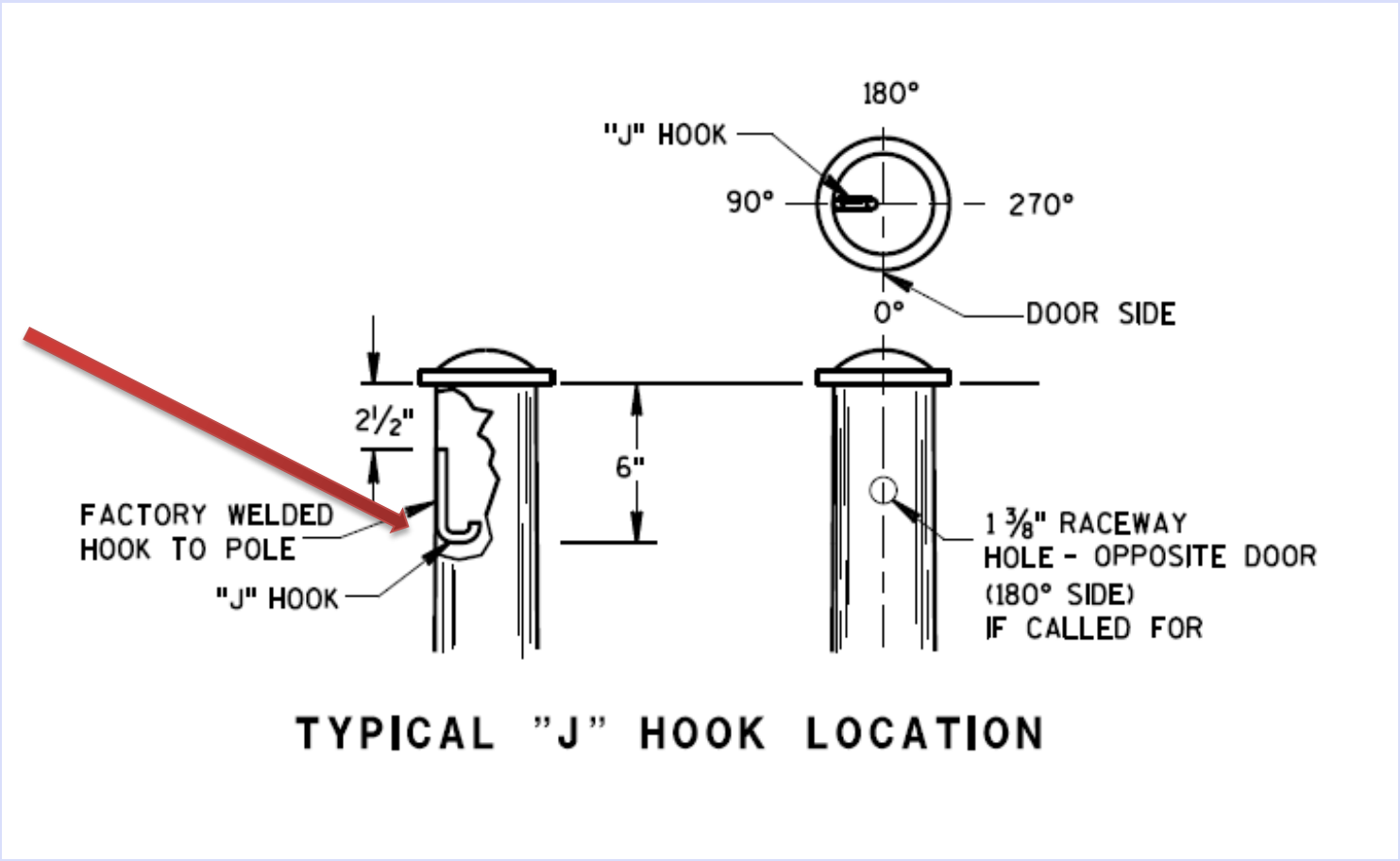
- General Requirements
- Identification Plaques and Decals
- Bases
- Poles
- Arms

- All lighting components must be from the department electrical qualified product list and as the plan shows.
- All hardware equipment must be furnished according to the plans.

Identification Plaques

- Circuit identification plaques and sequence decals suitable for outdoor use must be installed on support poles as the plan shows.


DIRECTION
OF TRAFFIC
CORRESPONDING
LUMINAIRE AND
CIRCUIT/SEQUENCE
PLAQUE
LIGHT POLE
45°
45°
PLAQUE
MEDIAN POLE
SINGLE ARM POLE
LOCATION OF LIGHT POLE
CIRCUIT/SEQUENCE PLAQUE



TYPICAL "J" HOOK LOCATION

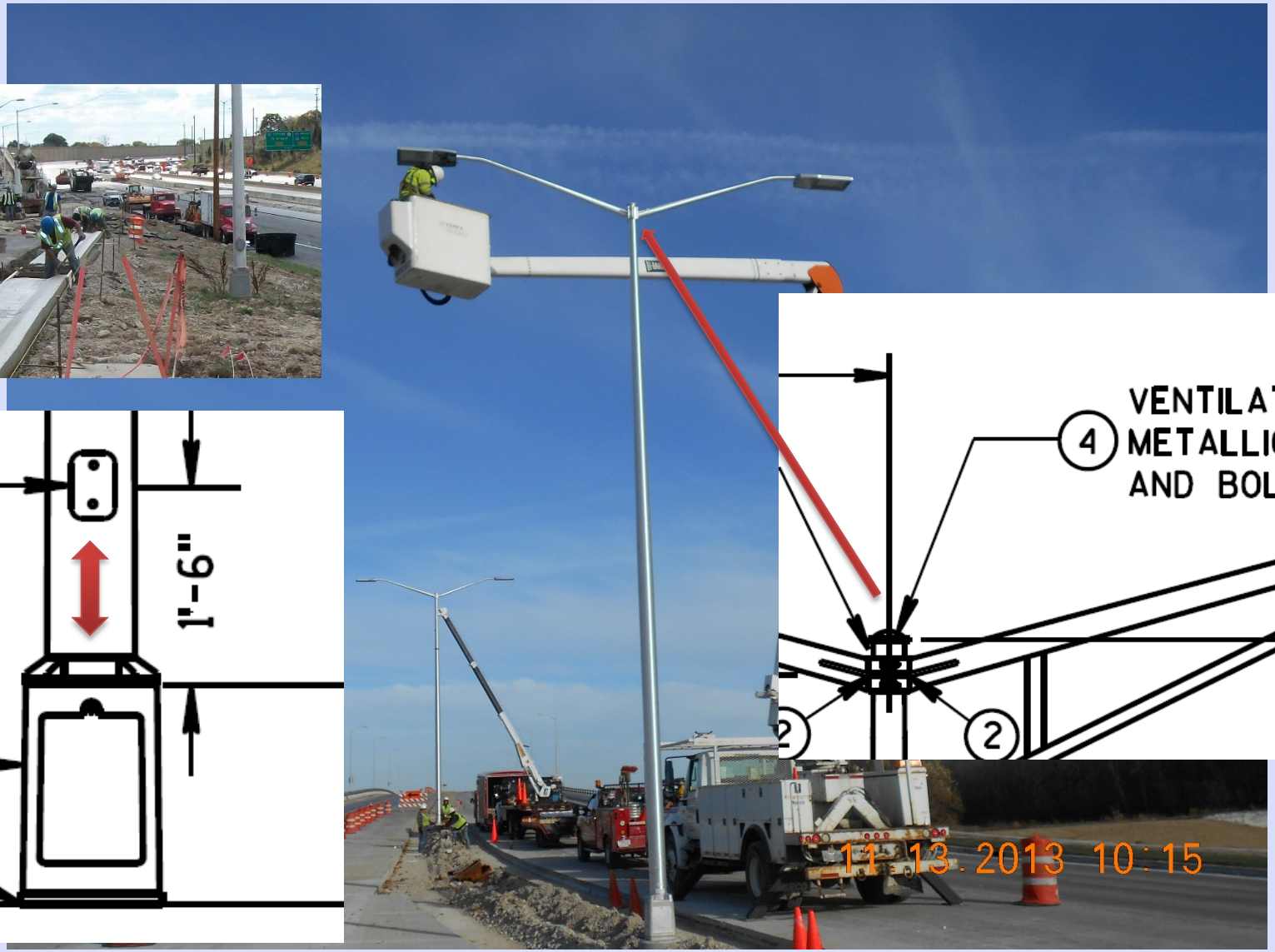
Wiring and Fusing

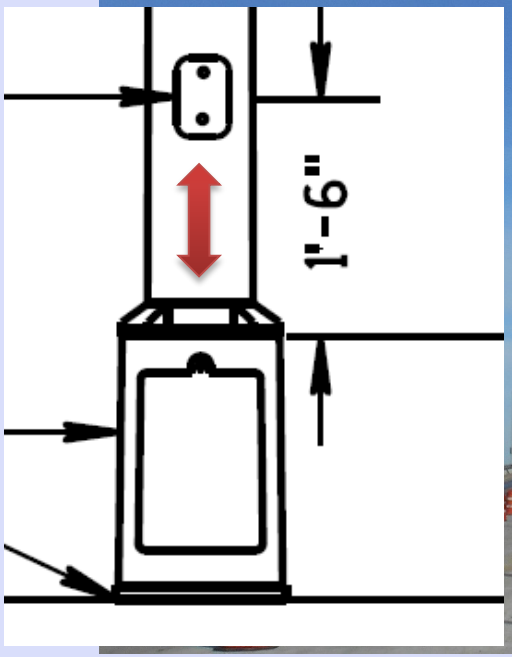
- Conductors shall be stranded copper, XLP insulated, USE rated, 600V AC wire.
- Where there is more than one circuit each circuit group shall be bundled and identified at all access points.
- Breakaway fuse holders shall be installed as the plan specify and according to the QPL.

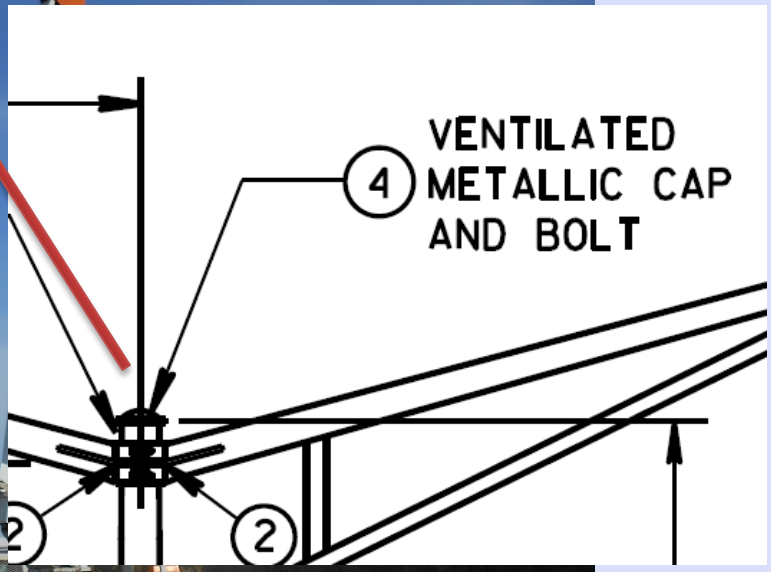
- Prior to installing transformer bases check to make sure anchor bolts have been installed properly.
- Make sure anchor bolts are the correct pattern, straight, and threads are not damaged.

Poles

- Poles should be cleaned before installing.
- Check to make sure poles are not blocking view of signals
- After installation ensure that centerline of the pole is vertical (leveled).
- Furnish galvanized or aluminum (matching the pole) shims, hardware and other components the department does not furnish to complete the installation



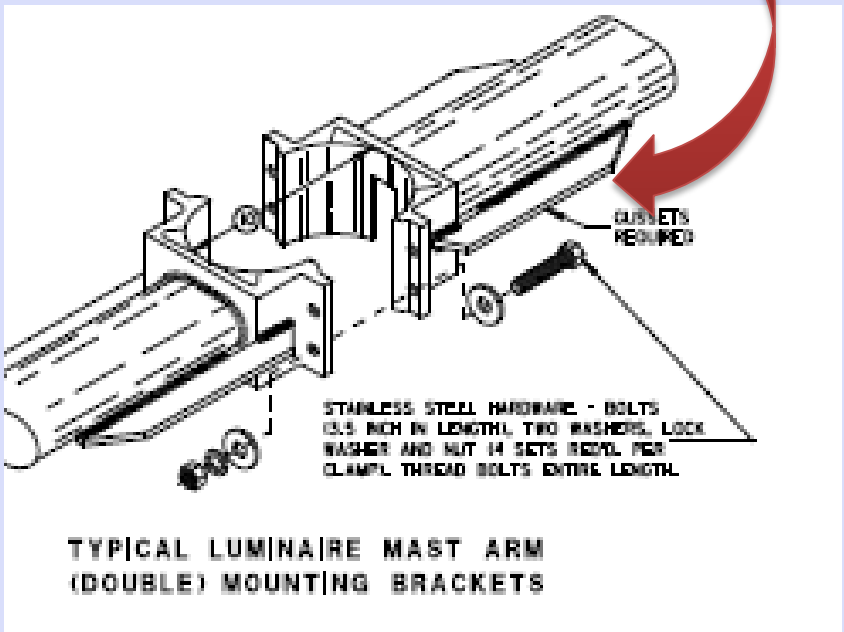

1'-6"

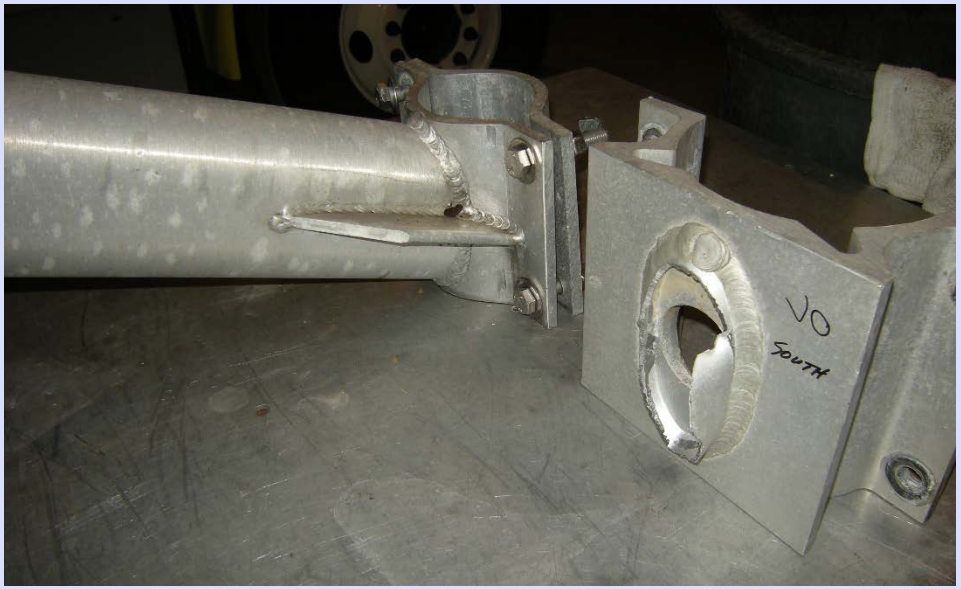

4
VENTILATED
METALLIC CAP
AND BOLT
2
2

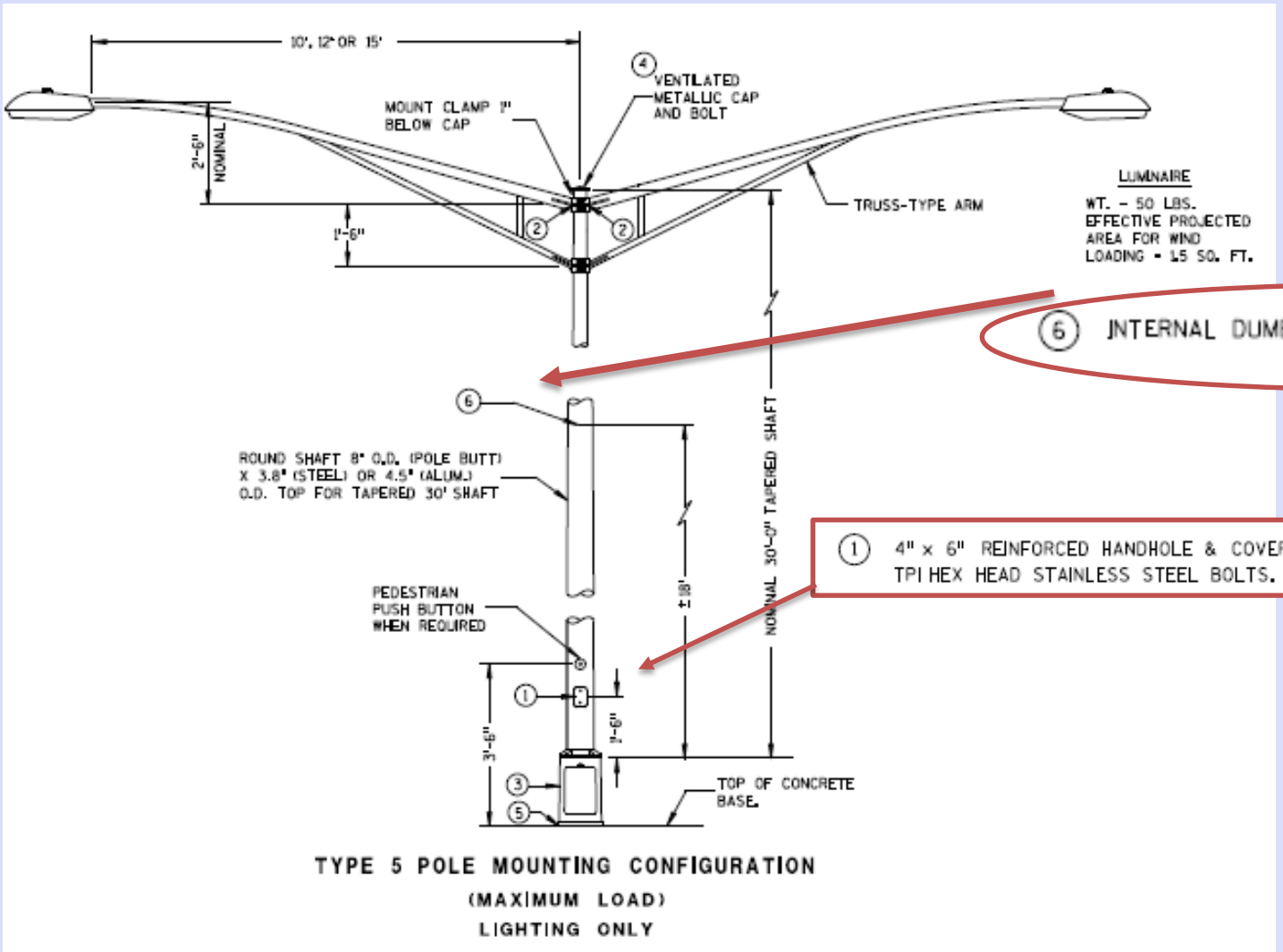
11.13.2013 10:15

Arms

- Make sure arm has gusset per SDD







TYPE 5 POLE MOUNTING CONFIGURATION

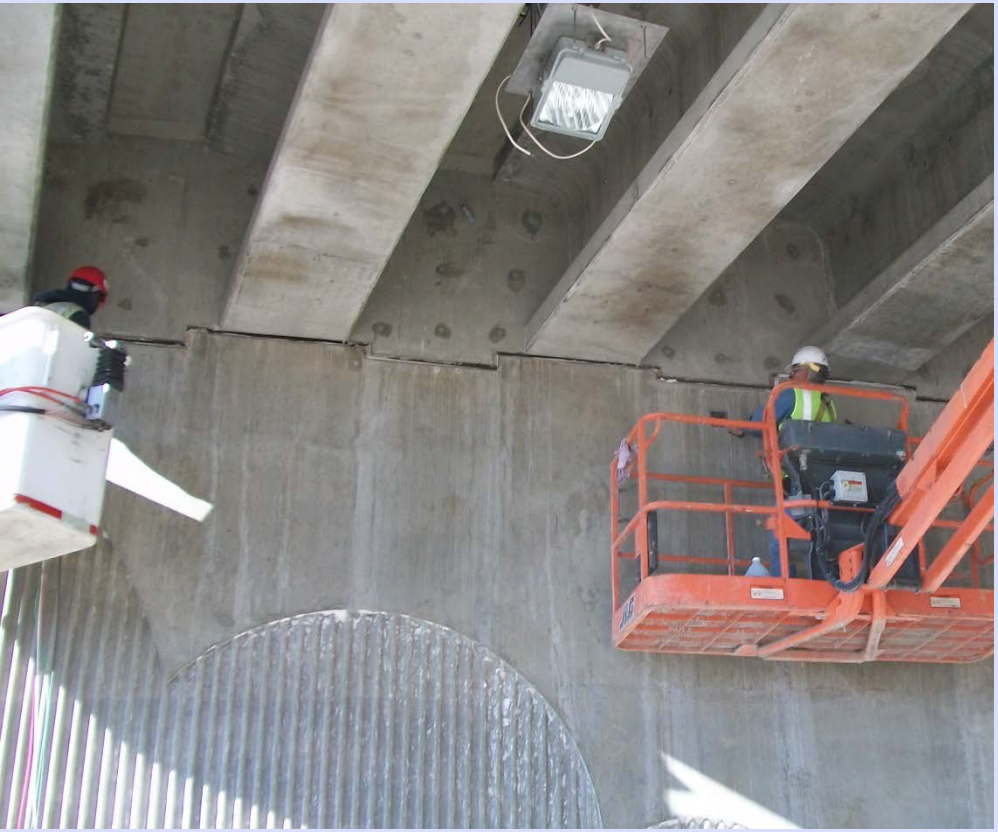
(MAXIMUM LOAD)

LIGHTING ONLY

Underdeck Lighting

- Under-deck lighting is provided under highway bridges as the plan shows.

- Conduit for under-deck lighting shall be of the RTRC or Rigid metallic type.




Santa Fe

High Mast Lighting

- High mast lighting
- Base
- Fixture
- Anchor Rod Tensioning


College Av
NEXT RIG
EAST
RAMP


MEC 3391R1
Stodart Electric Service, Inc.
SLOW
ONE WAY
4x4

Control cabinet

Question?

Lighting Contacts

- Ahmet Demirbilek– BTO/Statewide
- Eric Perea– SE Region
- Matt Talcott – NE Region
- Jeff Vollmar– SW Region
- Ron Johnson – NC Region
- Steven Bachman – NW Region