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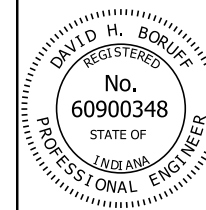
SHEET NO.	SUBJECT
1	Highway Illumination Tower Index
2	Highway Illumination Tower
3	Highway Illumination Tower Wiring Details
4	Highway Illumination Tower Bottom Latch And Winch Details
5	Highway Illumination Tower Winch Drive Details
6	Highway Illumination Tower Power Unit Mounting Bracket Details
7	Highway Illumination Tower Handhole Details
8	Highway Illumination Tower Luminaire Ring Assembly
9	Highway Illumination Tower ID Plate
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11	Highway Illumination Tower Concrete Pad
12	Highway Illumination Tower Concrete Pad With Retaining Wall
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INDIANA DEPARTMENT OF TRANSPORTATION

HIGHWAY ILLUMINATION TOWER
INDEX

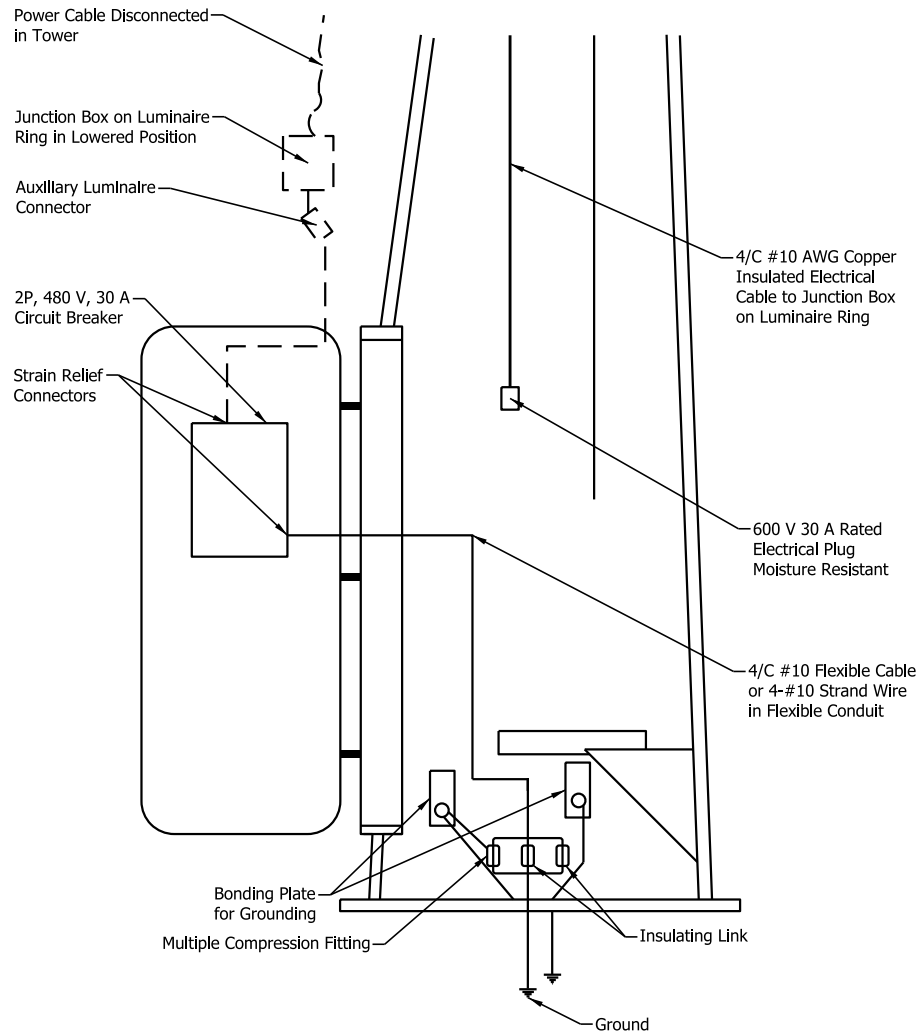
SEPTEMBER 2017

STANDARD DRAWING NO. E 807-LTHI-01



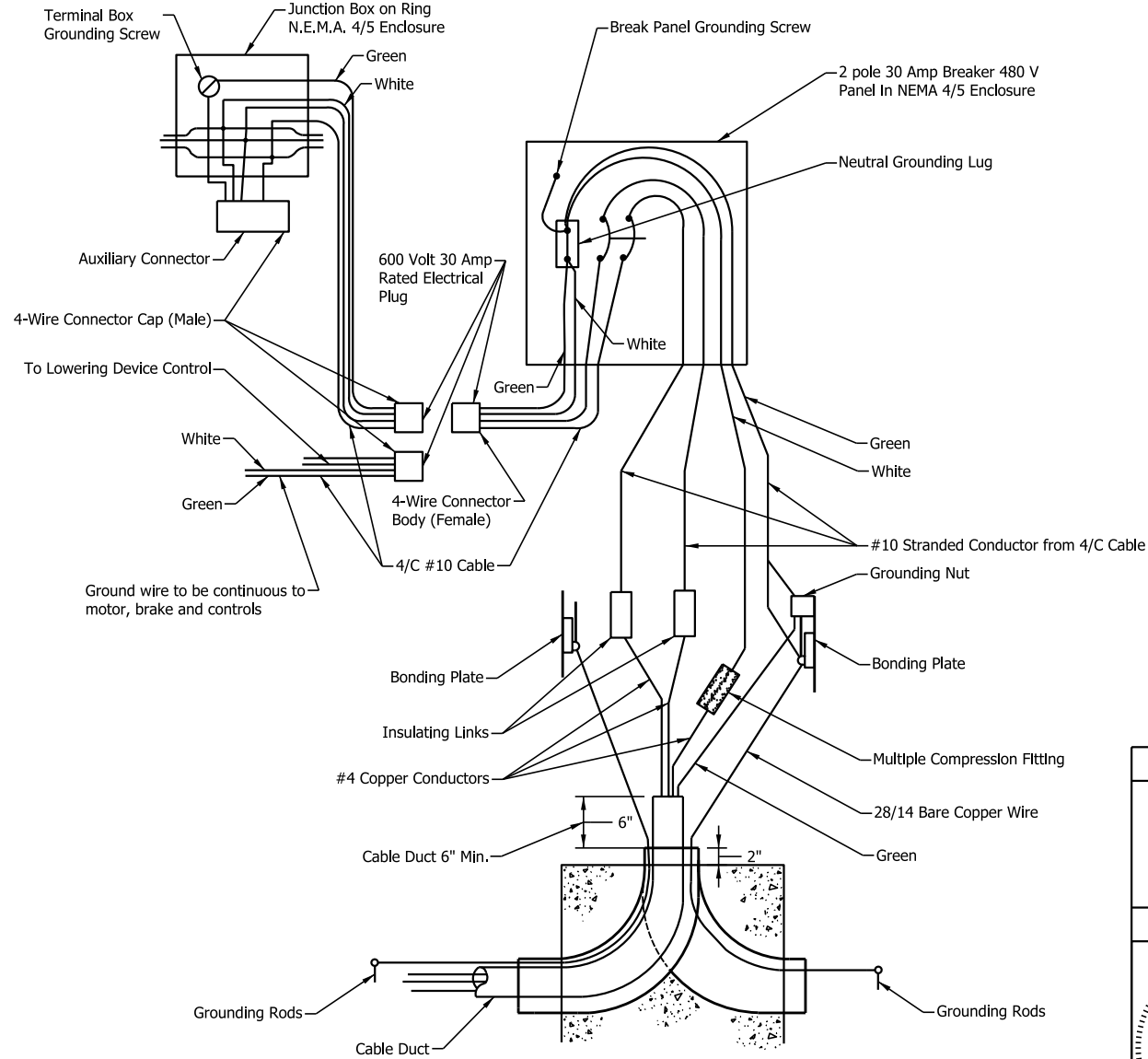
/s/ David H. Boruff 03/20/17
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 03/20/17
CHIEF ENGINEER DATE



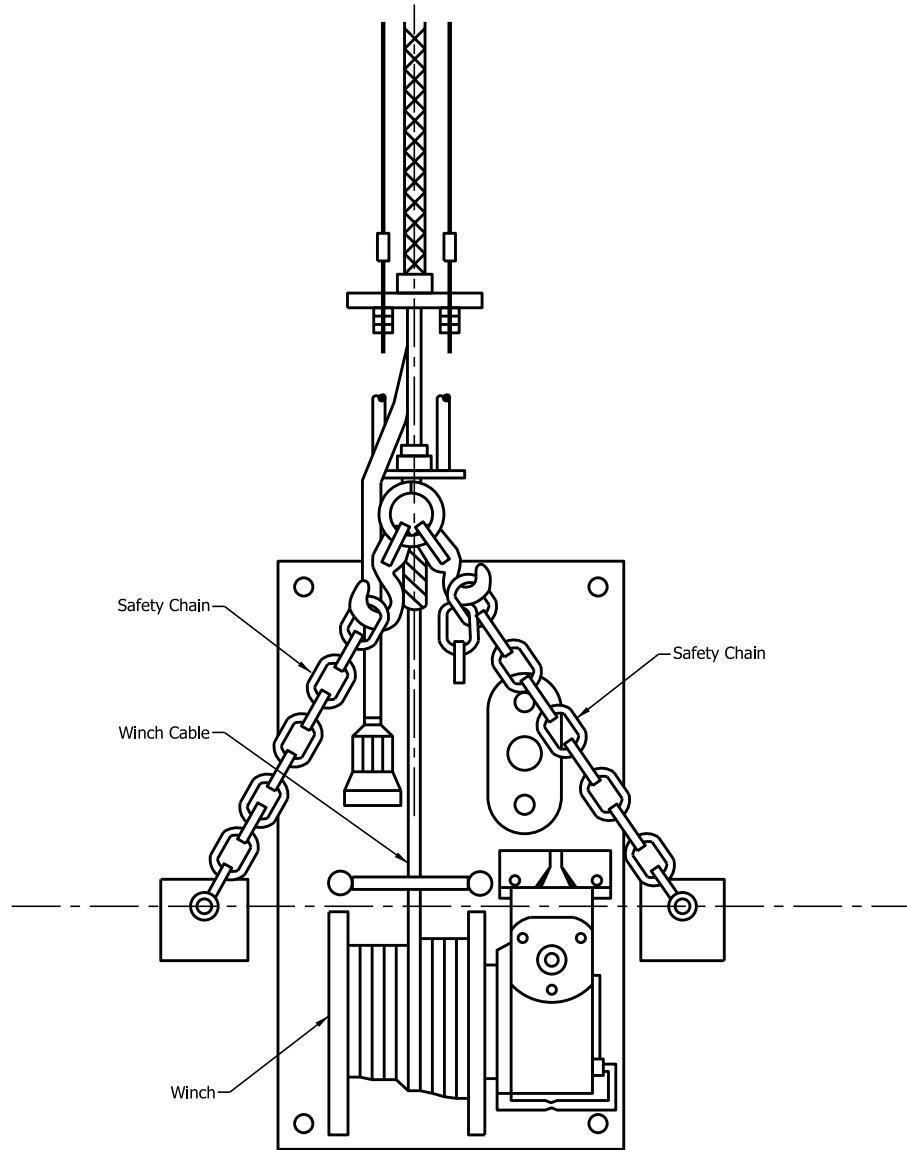
DETAIL

INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER CIRCUIT BREAKER AND GROUNDING	
SEPTEMBER 2017	
STANDARD DRAWING NO.	E 807-LTHI-02
	<i>/s/ David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	<i>/s/ John Leckie</i> 03/20/17 CHIEF ENGINEER DATE



WIRING DIAGRAM

INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER WIRING DETAILS	
SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-03	
	<i>/s/ David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	<i>/s/ John Leckie</i> 03/20/17 CHIEF ENGINEER DATE

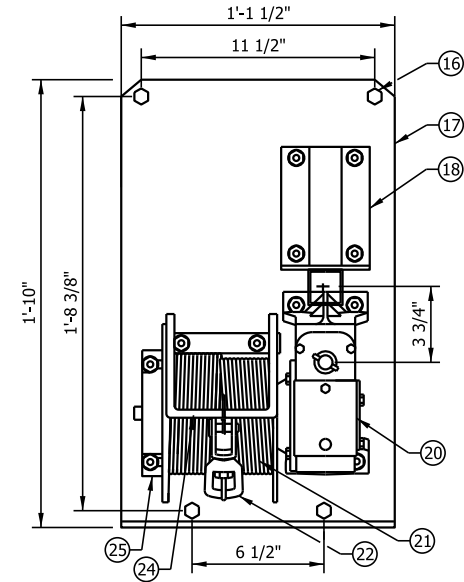
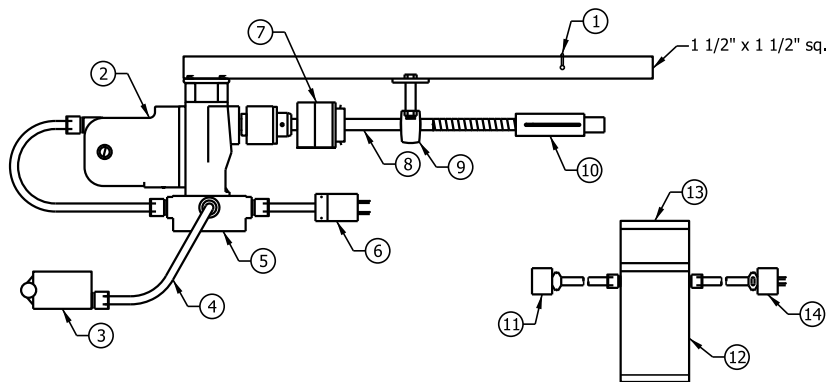


BOTTOM LATCH

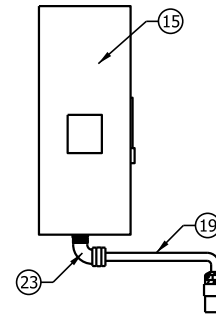
INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER BOTTOM LATCH AND WINCH DETAILS SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-04	
	<i>/s/ David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	<i>/s/ John Leckie</i> 03/20/17 CHIEF ENGINEER DATE

ITEM DESCRIPTIONS

- ① Hitch Pin
- ② 3/4" Dia. Reversible Electric Motor 120 V, 11.5 A, 350 RPM
- ③ Reversing Drum Switch
- ④ Control Cord 20 ft, Length
- ⑤ Wiring Housing
- ⑥ Plug to Mate to Connector in Pole Base or Transformer Secondary
- ⑦ Torque Limiter Coupling
- ⑧ 3/4" Dia. Steel Shaft
- ⑨ Ballbearing Pillowblock
- ⑩ 5/8" Hex Socket Crank Shaft Coupling
- ⑪ Connector to Motor from 120 V Transformer Secondary
- ⑫ Stepdown Transformer 120 V Secondary, 1.5 kVA for 240 V, 277 V, & 480 V; 2.0 kVA for 208 V
- ⑬ 1/2" Carry Handle
- ⑭ Plug to Connector in Pole Base from Transformer Primary
- ⑮ NEMA 4-Circuit-Breaker Enclosure Field Mounted to Pole Handhole Door
- ⑯ 1/2" Dia. Mounting Bolt, 4 Req'd.
- ⑰ 0.25 in. Thick Steel Winch Plate Zinc Electroplate Finish
- ⑱ Power Unit Mounting Bracket, 0.25 in. Thick Steel Zinc Electroplate Finish
- ⑲ 5 ft Power Supply Cord and Connector
- ⑳ Winch 30:1 Gear Ratio Internal Drag Brake
- ㉑ 5/16" Dia. 7 x 19 Stainless Steel Wire Rope. Length is Pole Height + 6 ft
- ㉒ Forged Steel Swivel, 11,000 psi Ultimate Strength
- ㉓ Cord Grip
- ㉔ Winch Cable Guard
- ㉕ Winch Outboard Support



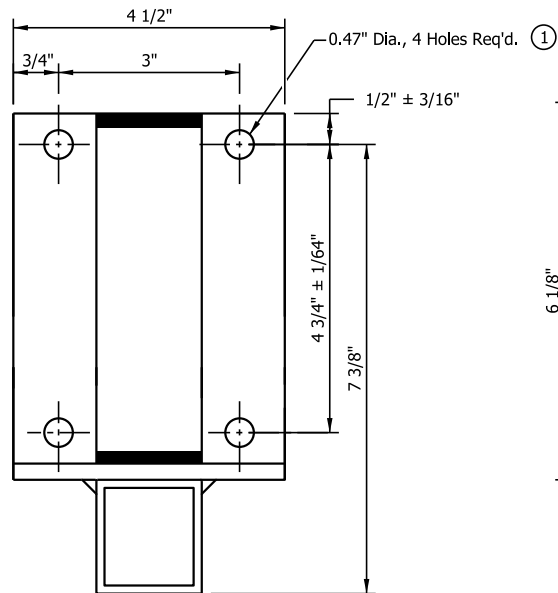
WINCH PLATE ASSEMBLY



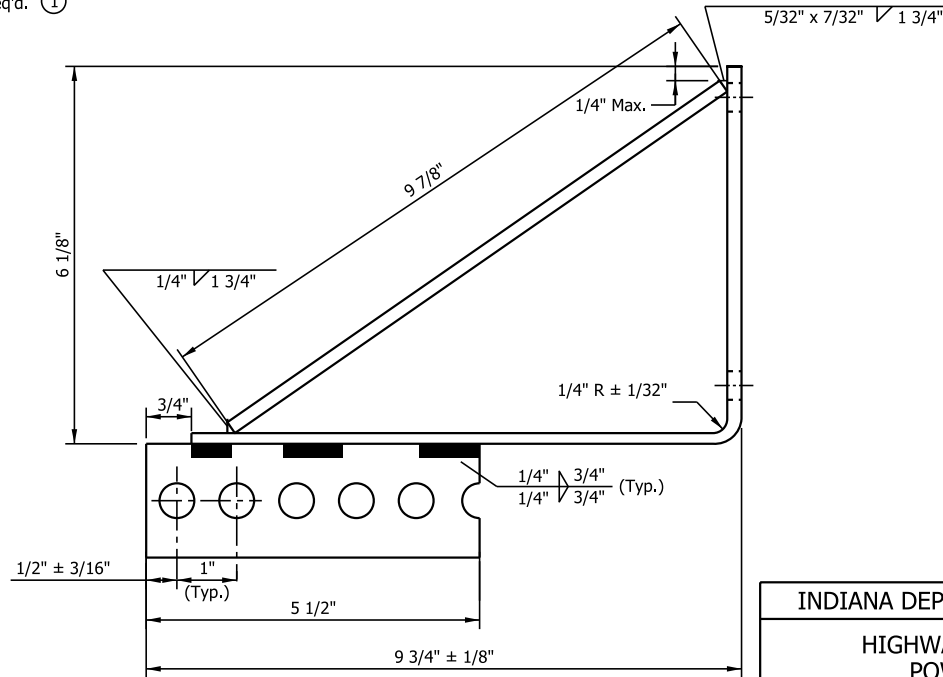
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HIGHWAY ILLUMINATION TOWER WINCH DRIVE DETAILS									
SEPTEMBER 2017									
STANDARD DRAWING NO. E 807-LTHI-05									
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/s/ David H. Boruff	03/20/17								
DESIGN STANDARDS ENGINEER	DATE								
/s/ John Leckie	03/20/17								
CHIEF ENGINEER	DATE								

NOTES:

- ① Tolerances: 0 1/32", Angles ± 1/2"
Unless Noted



FRONT VIEW

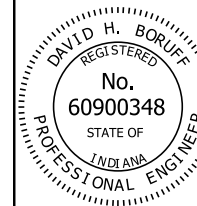


SIDE VIEW

INDIANA DEPARTMENT OF TRANSPORTATION

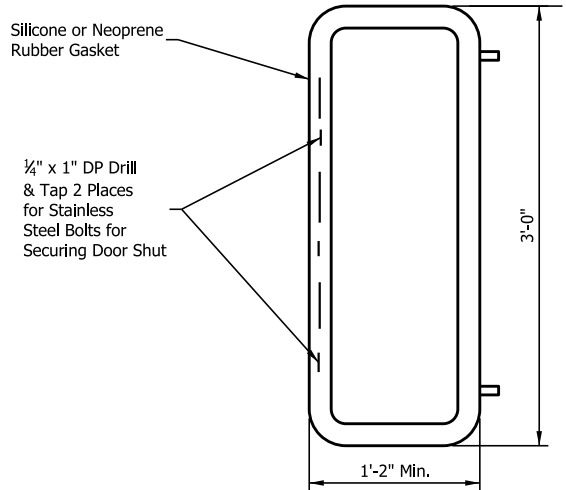
HIGHWAY ILLUMINATION TOWER
POWER UNIT MOUNTING
BRACKET DETAILS
SEPTEMBER 2017

STANDARD DRAWING NO. E 807-LTHI-06

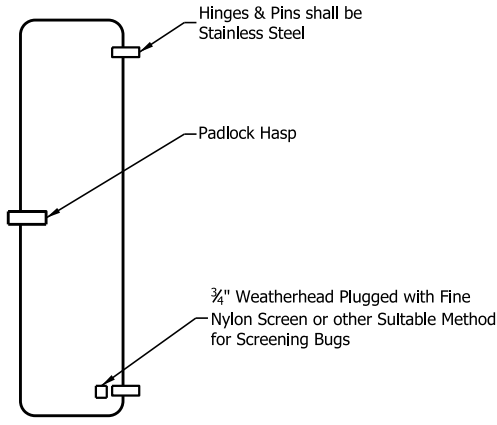


/s/ David H. Boruff 03/20/17
DESIGN STANDARDS ENGINEER DATE

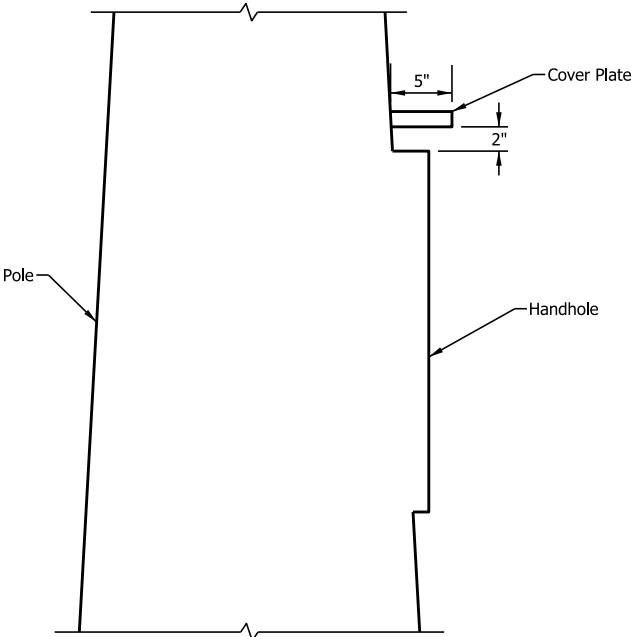
/s/ John Leckie 03/20/17
CHIEF ENGINEER DATE



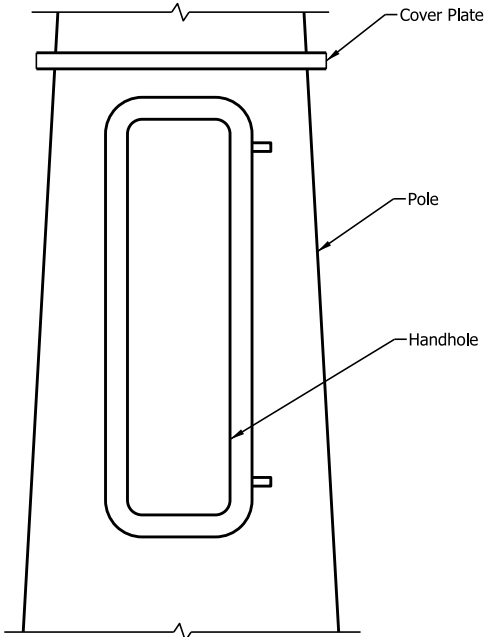
HANDHOLE FRAME DETAIL



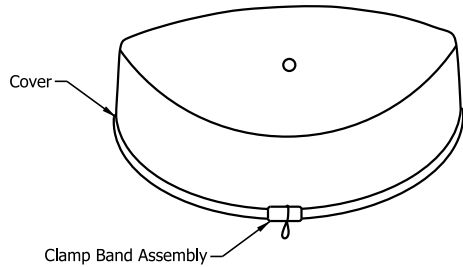
HANDHOLE COVER DETAIL



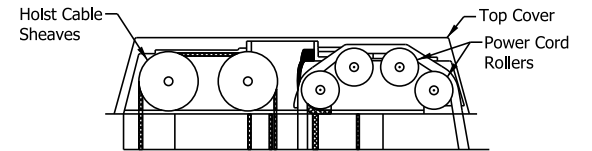
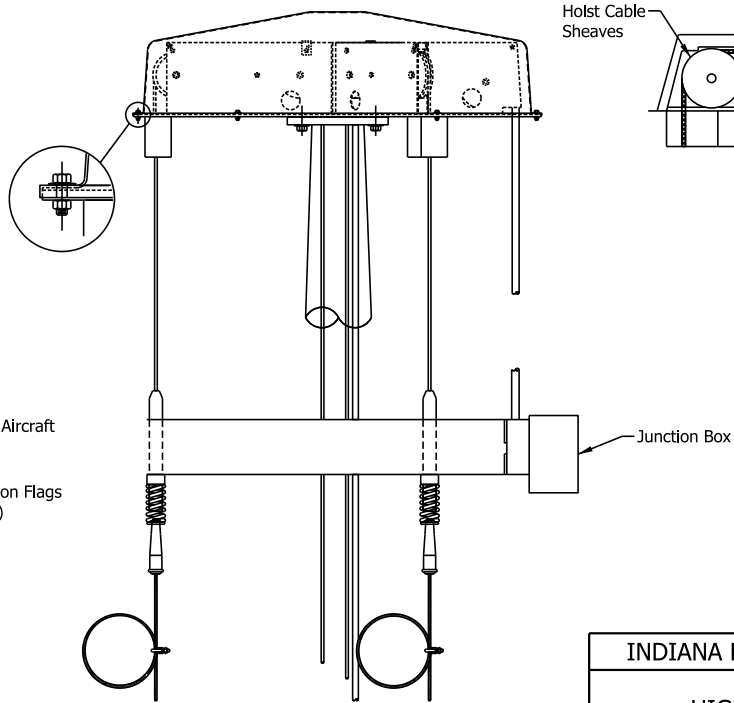
COVER PLATE



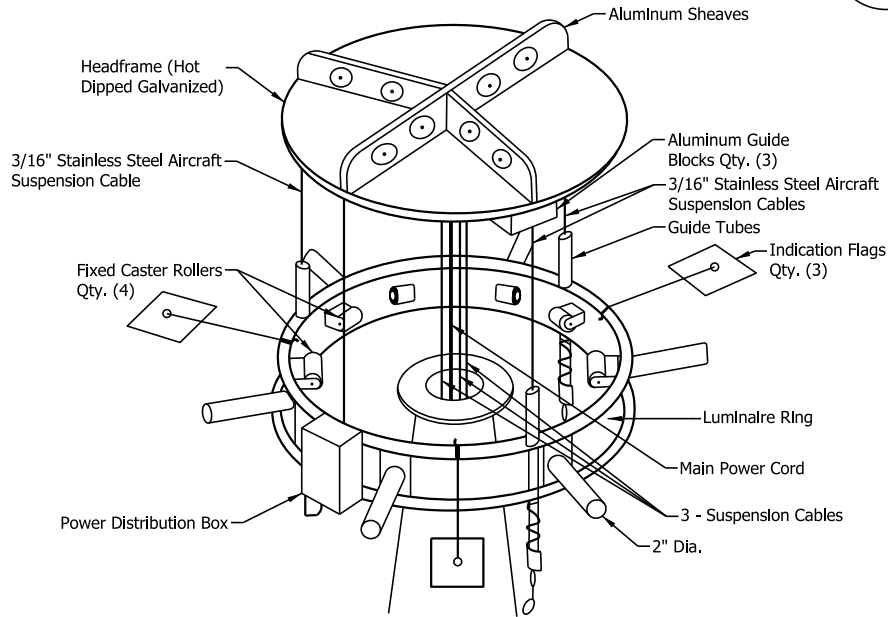
INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER HANDHOLE DETAILS	
SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-07	
	<i>/s/ David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	<i>/s/ John Leckie</i> 03/20/17 CHIEF ENGINEER DATE



COVER

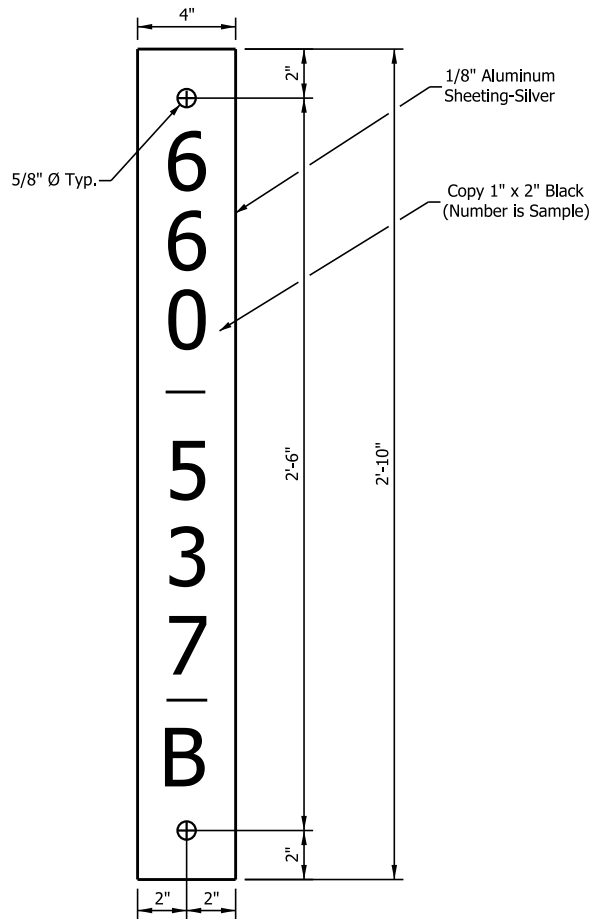


COVER DETAILS

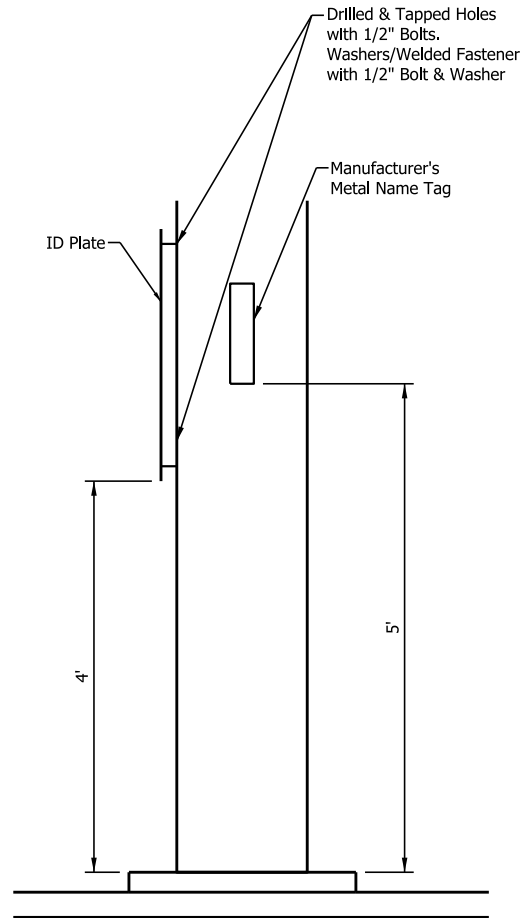


RING ASSEMBLY

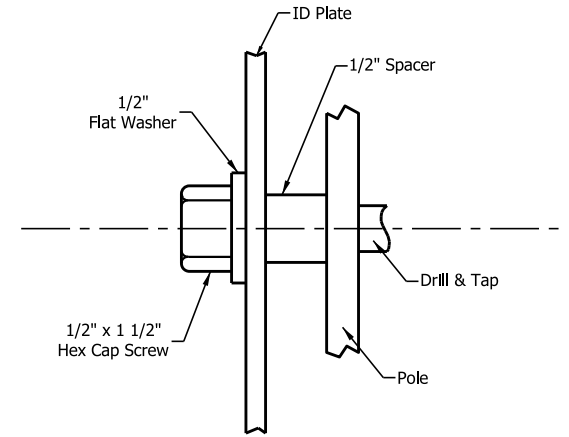
INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER LUMINAIRE RING ASSEMBLY	
SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-08	
	/s/ <i>David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	/s/ <i>John Leckie</i> 03/20/17 CHIEF ENGINEER DATE



ID PLATE DETAIL

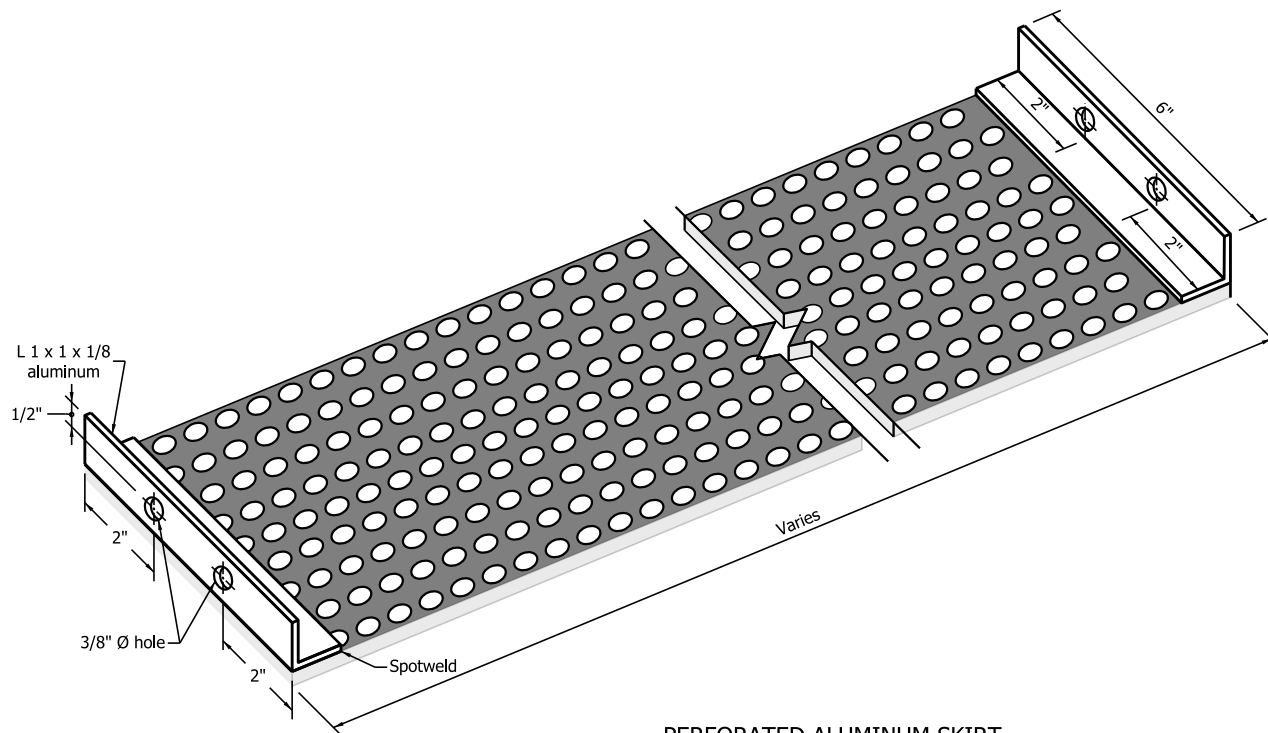


HIGH MAST POLE



MOUNTING DETAIL

INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER ID PLATES	
SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-09	
	<p>/s/ David H. Boruff 03/20/17 DESIGN STANDARDS ENGINEER DATE</p> <p>/s/ John Leckie 03/20/17 CHIEF ENGINEER DATE</p>



PERFORATED ALUMINUM SKIRT

NOTES:

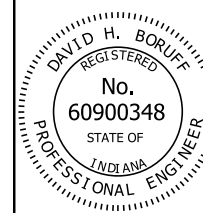
1. Holes shall be 3/8" dia., 1/2" outer circle, staggered.
2. The base plate of the high mast pole and exposed anchor bolts shall be enclosed by the aluminum skirt.

INDIANA DEPARTMENT OF TRANSPORTATION

HIGHWAY ILLUMINATION TOWER
PERFORATED ALUMINUM SKIRT

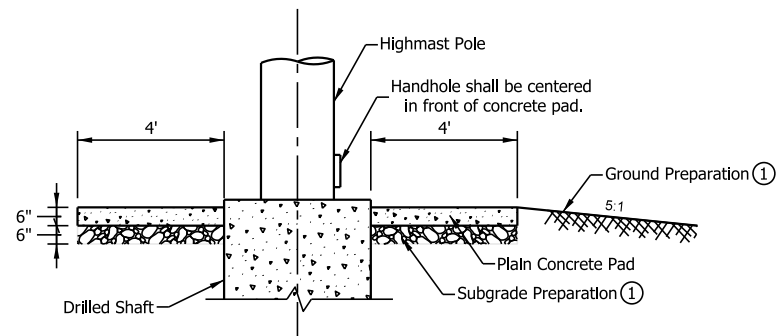
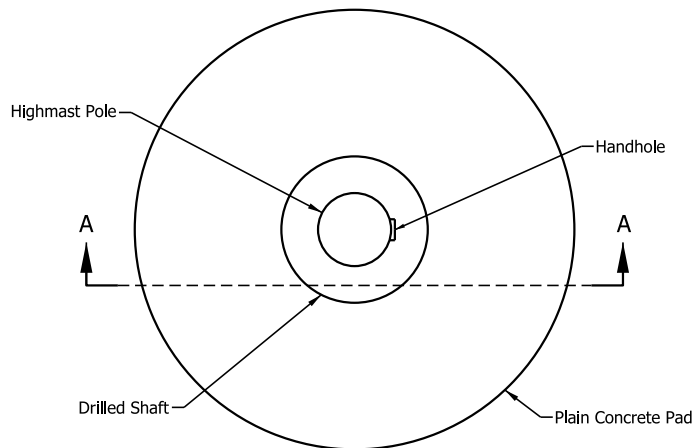
SEPTEMBER 2017

STANDARD DRAWING NO. E 807-LTHI-10



/s/ David H. Boruff 03/20/17
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 03/20/17
CHIEF ENGINEER DATE



SECTION A-A

NOTES:

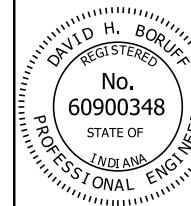
- ① See Standard Drawing E 807-LTHI-11 for Subgrade and ground preparation requirements.
2. The slope grading around the concrete pad shall be as shown unless otherwise directed.

INDIANA DEPARTMENT OF TRANSPORTATION

HIGHWAY ILLUMINATION TOWER
CONCRETE PAD

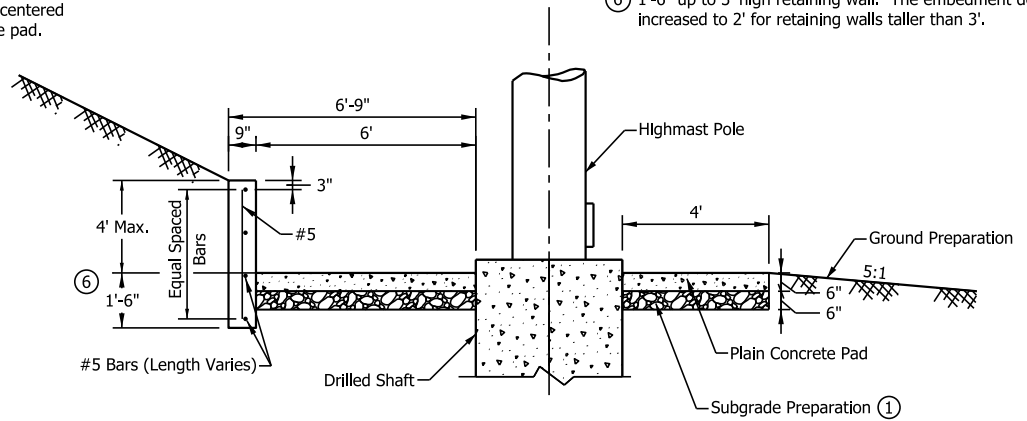
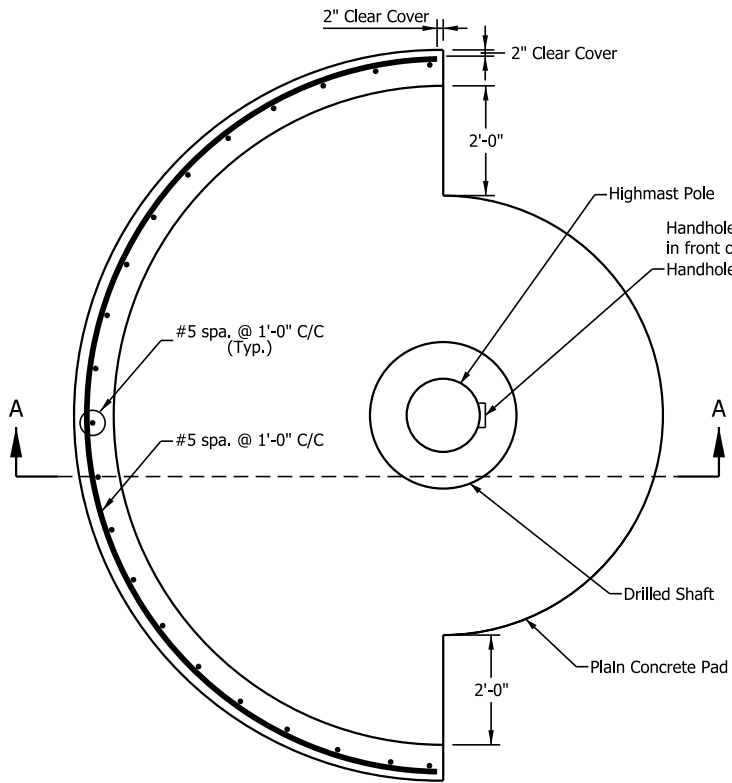
SEPTEMBER 2017

STANDARD DRAWING NO. E 807-LTHI-11



/s/ David H. Boruff 03/20/17
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 03/20/17
CHIEF ENGINEER DATE



SECTION A-A

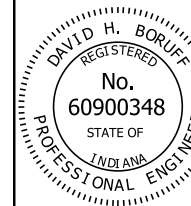
NOTES:

- ① After excavation, the ground shall be compacted by means of a portable vibratory roller. Soft soil which does not compact shall be removed. All excavated material shall be replaced with compacted aggregate No. 53. Concrete pad shall be placed prior to placing backfill behind wall.
2. See Standard Drawing E 807-LTHI-11 for concrete pad where no retaining wall is required.
3. See Standard Drawing E 703-BRST-01 for bar bending details.
4. All reinforcing bars shall be epoxy coated.
5. Shape of retaining wall may be semi circular or half trapezoidal.
- ⑥ 1'-6" up to 3' high retaining wall. The embedment depth shall be increased to 2' for retaining walls taller than 3'.

INDIANA DEPARTMENT OF TRANSPORTATION

HIGHWAY ILLUMINATION TOWER
CONCRETE PAD WITH
RETAINING WALL
SEPTEMBER 2017

STANDARD DRAWING NO. E 807-LTHI-12

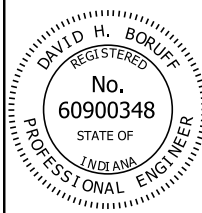


/s/ David H. Boruff 03/20/17
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 03/20/17
CHIEF ENGINEER DATE

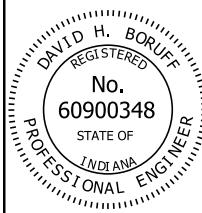
POLE DATA SCHEDULE

POLE HEIGHT (E.M.H.)	POLE SHAFT DATA						BASE PLATE			ANCHOR BOLT		
	No. of Sec.	Sec.	Minimum Diameter in inches		Min. Wall Thickness in inches	Section Length in Feet	Size in inches	Bolt Circle (in.)	Thick-ness (in.)	No Req'd.	Diameter (in.)	Length (in.)
			Base	Top								
100'	2	A	24.50	17.16	0.250	52.42	36 x 33	31.50	2.00	6	2.25	90
		B	18.00	10.88	0.1875	50.89						
100'	3	A	20.79	17.26	0.250	25.25	36 x 36	31.50	2.00	6	2.25	90
		B	18.04	12.30	0.179	41.00						
		C	13.01	7.59	0.179	38.75						
105'	2	A	22.00	14.46	0.250	53.87	36 x 33	31.50	2.00	6	2.25	90
		B	15.25	7.68	0.1875	54.11						
105'	3	A	21.50	18.14	0.3125	23.98	36 x 36	31.50	2.00	6	2.25	90
		B	19.00	13.23	0.1875	41.21						
		C	14.00	7.55	0.1875	46.07						
110'	3	A	22.50	19.13	0.3125	24.10	36 x 36	31.50	2.00	6	2.25	90
		B	20.00	13.72	0.1875	44.84						
		C	14.50	7.85	0.1875	47.50						
115'	3	A	23.50	20.11	0.3125	24.23	36 x 36	31.50	2.00	6	2.25	90
		B	21.00	14.21	0.1875	48.48						
		C	15.00	8.15	0.1875	48.93						
120'	3	A	26.00	22.07	0.3125	28.05	36 x 36	31.50	2.00	6	2.25	90
		B	23.00	16.18	0.1875	48.73						
		C	17.00	9.95	0.1875	50.36						
125'	3	A	25.00	21.09	0.3750	27.92	36 x 33	31.50	2.00	6	2.25	90
		B	22.00	14.70	0.1875	52.11						
		C	15.50	8.25	0.1875	51.79						
125'	4	A	24.30	20.17	0.250	29.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.17	15.82	0.250	38.25						
		C	16.74	12.16	0.250	32.75						
		D	12.87	8.15	0.179	33.75						
130'	3	A	25.00	20.11	0.3750	34.94	36 x 33	31.50	2.00	6	2.25	90
		B	21.00	14.21	0.1875	48.48						
		C	15.00	7.55	0.1875	53.21						
130'	4	A	24.30	20.17	0.250	29.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.31	15.96	0.250	38.25						
		C	16.88	12.30	0.250	32.75						
		D	13.01	7.59	0.179	38.75						
135'	3	A	26.00	20.11	0.3750	42.09	36 x 33	31.50	2.00	6	2.25	90
		B	21.00	14.21	0.1875	48.48						
		C	15.00	7.85	0.1875	51.07						
135'	4	A	25.70	20.17	0.250	39.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.31	15.96	0.250	38.25						
		C	16.88	12.30	0.250	32.75						
		D	13.01	8.29	0.179	33.75						
140'	3	A	26.80	20.60	0.3750	44.29	36 x 33	31.50	2.00	6	2.25	90
		B	21.50	14.21	0.1875	52.05						
		C	15.00	7.95	0.1875	50.36						
140'	4	A	25.70	20.17	0.250	39.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.31	15.96	0.250	38.25						
		C	16.88	12.30	0.250	32.75						
		D	13.01	7.59	0.179	38.75						

INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER POLE DATA SCHEDULE (1 of 2) POLE HEIGHTS 100' - 155' SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-13	
	/s/ <i>David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	/s/ <i>John Leckie</i> 03/20/17 CHIEF ENGINEER DATE

POLE DATA SCHEDULE

POLE HEIGHT (E.M.H.)	POLE SHAFT DATA						BASE PLATE			ANCHOR BOLT		
	No. of Sec.	Sec.	Minimum Diameter in inches		Min. Wall Thickness in inches	Section Length in Feet	Size in inches	Bolt Circle (in.)	Thick-ness (in.)	No Req'd.	Diameter (in.)	Length (in.)
			Base	Top								
100'	2	A	24.50	17.16	0.250	52.42	36 x 33	31.50	2.00	6	2.25	90
		B	18.00	10.88	0.1875	50.89						
100'	3	A	20.79	17.26	0.250	25.25	36 x 36	31.50	2.00	6	2.25	90
		B	18.04	12.30	0.179	41.00						
		C	13.01	7.59	0.179	38.75						
105'	2	A	22.00	14.46	0.250	53.87	36 x 33	31.50	2.00	6	2.25	90
		B	15.25	7.68	0.1875	54.11						
105'	3	A	21.50	18.14	0.3125	23.98	36 x 36	31.50	2.00	6	2.25	90
		B	19.00	13.23	0.1875	41.21						
		C	14.00	7.55	0.1875	46.07						
110'	3	A	22.50	19.13	0.3125	24.10	36 x 36	31.50	2.00	6	2.25	90
		B	20.00	13.72	0.1875	44.84						
		C	14.50	7.85	0.1875	47.50						
115'	3	A	23.50	20.11	0.3125	24.23	36 x 36	31.50	2.00	6	2.25	90
		B	21.00	14.21	0.1875	48.48						
		C	15.00	8.15	0.1875	48.93						
120'	3	A	26.00	22.07	0.3125	28.05	36 x 36	31.50	2.00	6	2.25	90
		B	23.00	16.18	0.1875	48.73						
		C	17.00	9.95	0.1875	50.36						
125'	3	A	25.00	21.09	0.3750	27.92	36 x 33	31.50	2.00	6	2.25	90
		B	22.00	14.70	0.1875	52.11						
		C	15.50	8.25	0.1875	51.79						
125'	4	A	24.30	20.17	0.250	29.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.17	15.82	0.250	38.25						
		C	16.74	12.16	0.250	32.75						
		D	12.87	8.15	0.179	33.75						
130'	3	A	25.00	20.11	0.3750	34.94	36 x 33	31.50	2.00	6	2.25	90
		B	21.00	14.21	0.1875	48.48						
		C	15.00	7.55	0.1875	53.21						
130'	4	A	24.30	20.17	0.250	29.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.31	15.96	0.250	38.25						
		C	16.88	12.30	0.250	32.75						
		D	13.01	7.59	0.179	38.75						
135'	3	A	26.00	20.11	0.3750	42.09	36 x 33	31.50	2.00	6	2.25	90
		B	21.00	14.21	0.1875	48.48						
		C	15.00	7.85	0.1875	51.07						
135'	4	A	25.70	20.17	0.250	39.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.31	15.96	0.250	38.25						
		C	16.88	12.30	0.250	32.75						
		D	13.01	8.29	0.179	33.75						
140'	3	A	26.80	20.60	0.3750	44.29	36 x 33	31.50	2.00	6	2.25	90
		B	21.50	14.21	0.1875	52.05						
		C	15.00	7.95	0.1875	50.36						
140'	4	A	25.70	20.17	0.250	39.50	36 x 36	31.50	2.00	6	2.25	90
		B	21.31	15.96	0.250	38.25						
		C	16.88	12.30	0.250	32.75						
		D	13.01	7.59	0.179	38.75						

INDIANA DEPARTMENT OF TRANSPORTATION	
HIGHWAY ILLUMINATION TOWER POLE DATA SCHEDULE (2 of 2) POLE HEIGHTS 160' - 200' SEPTEMBER 2017	
STANDARD DRAWING NO. E 807-LTHI-14	
	/s/ <i>David H. Boruff</i> 03/20/17 DESIGN STANDARDS ENGINEER DATE
	/s/ <i>John Leckie</i> 03/20/17 CHIEF ENGINEER DATE