

LUMINAIRE CLAMP DETAILS

4" x 6" HAND HOLE DETAIL

LIGHT STANDARD FOUNDATIONS MUST BE CAST IN PLACE. PRECAST FOUNDATIONS ARE NOT ALLOWED.

ALL MATERIALS AND WORKMANSHIP MUST BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION

EACH BRACKET ARM MUST BE SUPPLIED WITH ITS OWN POLE CONNECTION WITH STAINLESS STEEL HARDWARE. HARWARE MUST INCLUDE LOCK WASHERS, MEETING ANSI B18.21.1.

BOLT CIRCLE DIMENSION MUST BE EXACT. ANCHOR BOLTS MUST BE SET BY A TEMPLATE AND CENTERED ON THE FOUNDATION.

IF FOUNDATION IS WITHIN 30 FEET OF HANDHOLE, CONDUIT MAY BE RUN DIRECTLY TO HANDHOLE.

HANDHOLE TO FACE AWAY FROM TRAFFIC, EXCEPT IT MUST FACE ROADWAY WHEN MOUNTED ON BRIDGE OR MEDIAN WALL. USE STAINLESS STEEL HEX HEAD MACHINE SCREWS. THE HANDHOLES MUST BE PLACED SO THEY DO NOT INTERSECT THE LONGITUDINAL SEAM WELD ON THE POLE.

NUT COVERS ARE NOT ALLOWED

WHEN A FRANGIBLE TRANSFORMER BASE IS CALLED FOR ON THE PLANS, NO LEVELING NUT IS TO BE USED. FRANGIBLE TRANSFORMER BASES SHALL BE MOUNTED FLUSH WITH

LIGHT STANDARDS MOUNTED ON FRANGIBLE TRANSFORMER BASES MUST HAVE THE SAME DIMENSIONS AS OTHER BASE TYPES, EXCEPT SHAFT LENGTH.

THE FOUNDATION LENGTHS PROVIDED ARE BASED ON TWO SOIL TYPES: LOOSE COHESIONLESS SOILS WITH A MINIMUM BLOW COUNT OF 5 BLOWS/FT, AND MEDIUM STIFF COHESIVE SOILS WITH A MINIMUM UNDRAINED SHEAR STRENGTH OF 750 PSF. THE CONTRACTOR SHALL VERIFY THE SOIL STRENGTH DURING DRILLING FOR THE SHAFT FOUNDATIONS. SHOULD VERY LOOSE COHESIONLESS SOILS OR SOFT TO VERY SOFT COHESIVE SOILS WITH UNDRAINED SHEAR STRENGTH LESS THAN 750 PSF BE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

THIS STRUCTURE IS DESIGNED FOR THE SPECIFIED LUMINAIRE ONLY. DEVIATIONS FROM THIS STANDARD REQUIRE ADDITIONAL ANALYSIS.

THIS STRUCTURE IS DESIGNED FOR A HEIGHT ABOVE GROUND EQUAL TO THE STRUCTURE'S MOUNTING HEIGHT. STRUCTURES PLACED AT A HIGHER ELEVATION REQUIRE A UNIQUE DESIGN.

FOUNDATIONS SHALL NOT BE BURIED AND SHALL BE REMOVED IF NO LONGER IN USE.

THE DESIGN OF THIS STRUCTURE IS BASED ON THE CATEGORY I FATIGUE REQUIREMENTS FOUND IN AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS LUMINAIRES AND TRAFFIC SIGNALS 1ST EDITION WITH INTERIM REVISIONS THROUGH 2022

SHAFT LENGTHS MOUNTED ON TRANSFORMER BASES MUST BE ALTERED TO COMPENSATE FOR THE HEIGHT OF THE TRANSFORMER BASE. THE BOLT CIRCLE ON TOP OF THE TRANSFORMER BASE MUST BE THE SAME AS THE BOLT CIRCLE OF THE LIGHT STANDARD ANCHOR BASE.

THE ENTIRE BOTTOM OF THE FRANGIBLE TRANSFORMER BASE MUST BE SEATED ON THE FOUNDATION. THE DIAMETER OF THE FOUNDATION MAY BE ALTERED TO MEET THIS REQUIREMENT

ALL HARDWARE COMPONENTS (INCLUDING FLAT AND LOCK WASHERS) MUST BE INSTALLED AS SHOWN IN THE DETAILS ON THIS SHEET.

FRANGIBLE TRANSFORMER BASES SHALL MATCH DARK BRONZE LUMINAIRE ASSEMBLY COLOR.

EMDOT DEPARTMENT DIRECTOR

STANDARD PLAN FOR LIGHT STANDARD DETAILS

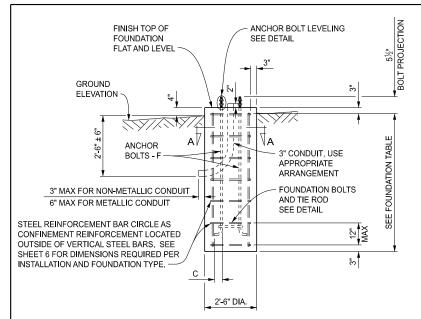
BRADLEY C. WIEFERICH, PE

(SPECIAL DETAIL) FHWA APPROVAL PLAN DATE

R-130-A

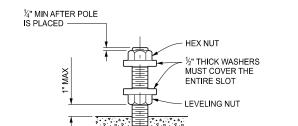
2 OF 6

SECT



GROUNDING NUT OR LUG INSIDE OF POLE # 6 GROUNDING CONDUCTOR SOLDERLESS TERMINAL 12" APPROX. GROUND GROUND # 6 GROUNDING CONDUCTOR # 6 GROUNDING CONDUCTOR GROUND ROD 2'-0" MIN

LIGHT STANDARD FOUNDATION DETAIL



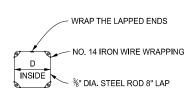
ANCHOR BOLT - F

ANCHOR BOLT LEVELING DETAIL

LIGHT STANDARD

FOUNDATION

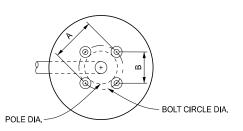
THIS DETAIL DOES NOT APPLY WHEN USING FRANGIBLE TRANSFORMER BASE. SEE FRANGIBLE TRANSFORMER BASE DETAIL ON SHEET 4.



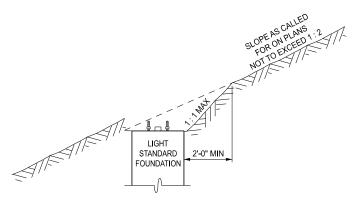
ANCHOR BOLTS AND TIE ROD

LIGHT STANDARD GROUNDING DETAIL

NOTE:
IF CONDUIT EXTENDS TO HAND HOLE, DRIVE GROUND ROD
IN OR NEAR HANDHOLE.



TOP OF FOUNDATION DETAIL



SLOPE DETAIL AT FOUNDATION

ON FILL OR CUT SLOPE

NOTE:
DO NOT COVER HANDHOLES. PLACE PERPENDICULAR
TO SLOPE AT SAME ELEVATION AS FOUNDATION.

DO NOT PLACE SOIL ABOVE TOP OF FOUNDATION.

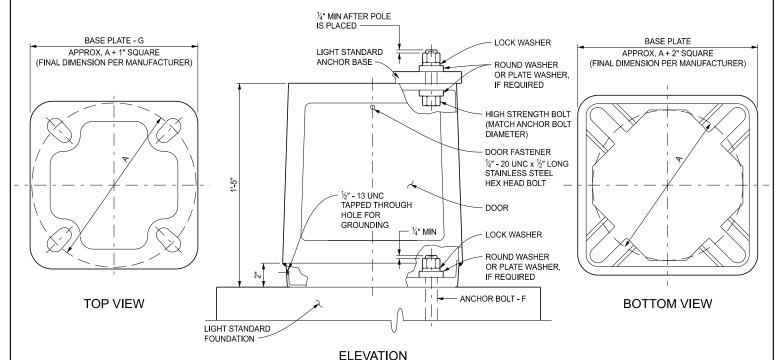


STANDARD PLAN FOR LIGHT STANDARD DETAILS

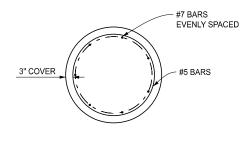
SHEET

3 OF 6

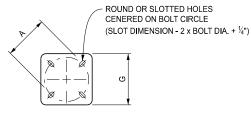
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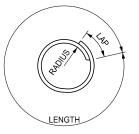
FRANGIBLE TRANSFORMER BASE FOR POLES WITH BOLT CIRCLE DIAMETER - A



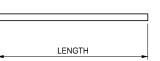
SECTION A-A
ANCHOR RODS NOT SHOWN FOR CLARITY



ANCHOR BASE DETAIL



CONFINEMENT REINFORCEMENT



VERTICAL REINFORCEMENT

REINFORCEMENT DETAILS

Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR LIGHT STANDARD DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL
PLAN DATE

R-130-A

4 OF 6 SECT

SHEET

BASE AND POLE DATA TABLE

LIGHT STANDARD FOR	A	В	С	D	E	STEEL POLES GAGE	** F	ALUM. POLES GAGE	POLE DIAMETER AT BASE	G
20 FT NOMINAL MOUNTING HEIGHT (WITHOUT TRANSFORMER BASE)	11"	7¾"			2"	(MIN)	1" Ø x 3'-4"	(MIN) 0.188"		12.2"
20 FT NOMINAL MOUNTING HEIGHT (WITH TRANSFORMER BASE)	* 11"	7¾"			2"		1" Ø x 3'-4"	0.188"		12.2"
30 FT MOUNTING HEIGHT WITH 4 OR 6 FT SINGLE OR DOUBLE BRACKET ARM	1'-3" (A) 1'-0" (S)	10 ⁵ / ₈ " (A) 8 ¹ / ₂ " (S)	5%"	11 ⁷ / ₈ " (A) 9 ³ / ₄ " (S)	2"	7	1½" Ø x 3'-4"	0.188"	9" ±½"	15.38" (A) *** 13.26" (S)
30 FT MOUNTING HEIGHT WITH 8, 10 OR 12 FT SINGLE OR DOUBLE BRACKET ARM	1'-3" (A) 1'-0" (S)	10 ⁵ / ₈ " (A) 8 ¹ / ₂ " (S)	5%"	11 ⁷ / ₈ " (A) 9 ³ / ₄ " (S)	2"	7	1½" Ø x 5'-0"	0.188"	9" ±½"	15.38" (A) *** 13.26" (S)
30 FT MOUNTING HEIGHT WITH 15 FT SINGLE OR DOUBLE BRACKET ARM	1'-3" (A) 1'-0" (S)	10%" (A) 8½" (S)	6¾"	1'-01/8" (A) 10" (S)	2"	7	1½" Ø x 5'-0"	0.25"	9" ±½"	15.73" (A) *** 13.61" (S)
30 FT MOUNTING HEIGHT WITH 17 FT SINGLE OR DOUBLE BRACKET ARM	1'-3" (A) 1'-0" (S)	10%" (A) 8½" (S)	6¾"	1'-0 ¹ / ₈ " (A) 10" (S)	2"	7	1½" Ø x 5'-0"	0.25"	9" ±½"	15.73" (A) *** 13.61" (S)
40 FT MOUNTING HEIGHT WITH 4, 6, 8, 10, 12, 15 OR 17 FT SINGLE OR DOUBLE BRACKET ARM	1'-4" (A) 1'-3" (S)	11¾" (A) 10%" (S)	7%"	1'-1½" (A) 1'-0¾" (S)	2"	7	1 ³ ⁄ ₄ " Ø x 5'-0"	0.313"	10" ±½"	16.79" (A) *** 16.09" (S)
45 FT MOUNTING HEIGHT WITH 4, 6, 8, 10, 12, 15 OR 17 FT SINGLE OR DOUBLE BRACKET ARM	1'-5" (A) 1'-6" (S)	1'-0" (A) 1'-0¾" (S)	7%"	1'-1¾" (A) 1'-2½" (S)	2" (A) 2%" (S)	7	1 ³ ⁄ ₄ " Ø x 5'-0"	0.375"	11" ±½" (A) 10" ±½" (S)	17.5" (A) *** 18.21" (S)

- * THE 11" BOLT CIRCLE SHALL APPLY FOR BOTH THE POLE TO TRANSFORMER BASE AND FOR THE TRANSFORMER BASE TO FOUNDATION.

 ** LENGTH GIVEN IS LENGTH PRIOR TO BENDING.

 *** FINAL BASEPLATE WIDTHS FOR ALUMINUM STRUCTURES ARE PER MANUFACTURER

 (A) = DIMENSION CORRESPONDS TO ALUMINUM

 (S) = DIMENSION CORRESPONDS TO STEEL

FOUNDATION DATA TABLE

	SINGLE ARM MAXIMUM	30 FT MOUNTING HEIGHT, 6 FT ARM	30 FT MOUNTING HEIGHT, 17 FT ARM	45 FT MOUNTING HEIGHT, 17 FT ARM
	LUMINAIRE STRUCTURE SIZE	L (FT)	L (FT)	L (FT)
UND	HORIZONTAL	8.5	9	10
GROUNE	SLOPED	16.5	17.5	18.5

		DOUBLE ARM MAXIMUM	30 FT MOUNTING HEIGHT, 6 FT ARM	30 FT MOUNTING HEIGHT, 17 FT ARM	45 FT MOUNTING HEIGHT, 17 FT ARM	
		LUMINAIRE STRUCTURE SIZE	L (FT)	L (FT)	L (FT)	
	GROUND SLOPE *	HORIZONTAL	9	10	11	

- L= EMBEDDED LENGTH OF THE SHAFT FOUNDATION
 * SLOPED GROUND SLOPE CASE NOT TO BE USED FOR DOUBLE ARM LUMINAIRE STRUCTURE.

BRACKET ARM TABLE

	BRACKET LENGTH, L	6'-0"	12'-0"	15'-0"	17'-0"
STEEL	TOP MEMBER O.D.	2" DIA.	2½" DIA.	2½" DIA.	3½" DIA.
STE	BOTTOM MEMBER O.D.	1½" DIA.	1½" DIA.	2" DIA.	2" DIA.
ALUMINUM	TOP MEMBER O.D.	2" DIA.	3" DIA.	3" DIA.	3" DIA.
ALUM	BOTTOM MEMBER O.D.	1½" DIA.	2" DIA.	2¼" DIA.	2 ¹ ⁄ ₄ " DIA.

Michigan Department of Transportation		=	NDARD PLAN FOR FANDARD DETAILS	
DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) FHWA APPROVAL	11/13/2024 PLAN DATE	R-130-A	

SHEET

5 OF 6

REINFORCEMENT DATA TABLE

MAXIMUM LUMINAIRE STRUCTURE SIZE	FOUNDATION	VERTICAL REINFORCEMENT				CONFINEMENT REINFORCEMENT			
	DIAMETER (IN)	BAR	NUMBER OF BARS	BAR LENGTH		BAR	BAR	BAR	BAR
		SIZE		HORIZONTAL	SLOPED	RADIUS	SIZE	SPACING	LENGTH
30 FT MOUNTING HEIGHT, 6 FT ARM				8'-0" (SINGLE ARM) 8'-6" (DOUBLE ARM)	16'-0"				
30 FT MOUNTING HEIGHT, 17 FT ARM	30	7	12	8'-6" (SINGLE ARM) 9'-6" (DOUBLE ARM)	17'-0"	12"	5	12" (MAX)	6'-4"
45 FT MOUNTING HEIGHT, 17 FT ARM				9'-6" (SINGLE ARM) 10'-6" (DOUBLE ARM)	18'-0"				

PROVIDE A 2'-8" LAP FOR #5 BAR CIRCLES.

MATERIALS TABLE (ANCHOR BASE)

MATERIAL	SPECIFICATION	DIMENSIONS	QUANTITY (PER FOUNDATION)
ANCHOR BOLTS	MDOT 908.14	DETERMINED BY LIGHT STANDARD CHART	4
ANCHOR NUTS	MDOT 908.14	DETERMINED BY ANCHOR BOLT DIAMETER	8
FLAT WASHERS **** (1 ¹ / ₄ " DIA. ANCHOR BOLT)	MDOT 908.14	2¾" O.D. x 1½" I.D. x ½" THICK	8 (IF REQUIRED ****)
FLAT WASHERS **** (1½" DIA. ANCHOR BOLT)	MDOT 908.14	2¾" O.D. x 1¾6" I.D. x ½" THICK	8 (IF REQUIRED ****)
FLAT WASHERS **** (1¾" DIA. ANCHOR BOLT)	MDOT 908.14	4" O.D. x 1%" I.D. x ½" THICK	8 (IF REQUIRED ****)
PLATE WASHERS **** (1 ¹ / ₄ " DIA. ANCHOR BOLT)	ASTM A1018	1¾6" I.D. x ½" THICK	8 (IF REQUIRED ****)
PLATE WASHERS **** (1½" DIA. ANCHOR BOLT)	ASTM A1018	15/16" I.D. x ½" THICK	8 (IF REQUIRED ****)
PLATE WASHERS **** (1¾" DIA. ANCHOR BOLT)	ASTM A1018	1%" I.D. x ½" THICK	8 (IF REQUIRED ****)

MATERIALS TABLE (FRANGIBLE BASE)

WATERIALS TABL	L (1 10 11401DL	_ 5, (62)	
MATERIAL	SPECIFICATION	DIMENSIONS	QUANTITY (PER FOUNDATION)
ANCHOR BOLTS	MDOT 908.14	DETERMINED BY LIGHT STANDARD CHART	4
ANCHOR NUTS	MDOT 908.14	DETERMINED BY ANCHOR BOLT DIAMETER	4
FLAT WASHERS **** (1½" DIA. ANCHOR BOLT)	MDOT 908.14	2¾" O.D. x 1¾6" I.D. x ½" THICK	12 OR 14 (****)
FLAT WASHERS **** (1½" DIA. ANCHOR BOLT)	MDOT 908.14	2¾" O.D. x 1¾6" I.D. x ½" THICK	12 OR 14 (****)
FLAT WASHERS **** (1¾" DIA. ANCHOR BOLT)	MDOT 908.14	4" O.D. x 1%" I.D. x ½" THICK	12 OR 14 (****)
LOCK WASHERS	ANSI B18.21.1	½" THICK	8
HIGH STRENGTH BOLTS	MDOT 906.07	LENGTH DETERMINED BY THE CONTRACTOR DIAMETER TO BE SAME AS ANCHOR BOLT	4
CONNECTING NUTS	MDOT 906.07	DETERMINED BY HIGH STRENGTH BOLT DIAMETER	4
PLATE WASHERS **** (11/4" DIA. ANCHOR BOLT)	ASTM A1018	1 ⁵ ⁄ ₁₆ " I.D. x ½" THICK	8 (IF REQUIRED)
PLATE WASHERS **** (1½" DIA. ANCHOR BOLT)	ASTM A1018	1 ⁵ ⁄ ₁₆ " I.D. x ½" THICK	8 (IF REQUIRED)
PLATE WASHERS **** (1¾" DIA. ANCHOR BOLT)	ASTM A1018	1 ⁷ ⁄ ₈ " I.D. x ½" THICK	8 (IF REQUIRED)
FRANGIBLE TRANSFORMER BASE	SELECT FROM THE MDOT QUALIFIED PRODUCTS LIST	ACCESS DOOR OPENING: 8½" x 9" x 11"	1

^{****} IF LIGHT STANDARDS BASE PLATE HAS SLOTTED HOLES, PLATE WASHERS ARE REQUIRED IN LIEU OF CIRCULAR WASHERS AND MUST COVER ENTIRE SLOT.

ALL ANCHOR BOLTS, NUTS, WASHERS AND PLATE WASHERS MUST BE HOT DIP GALVANIZED ACCORDING TO AASHTO M232.

Michigan Department of Transportation	
DEPARTMENT DIRECTOR	(
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STANDARD PLAN FOR LIGHT STANDARD DETAILS

(SPECIAL DETAIL) 11/13/2024 FHWA APPROVAL PLAN DATE

R-130-A

6 OF 6 SECT