

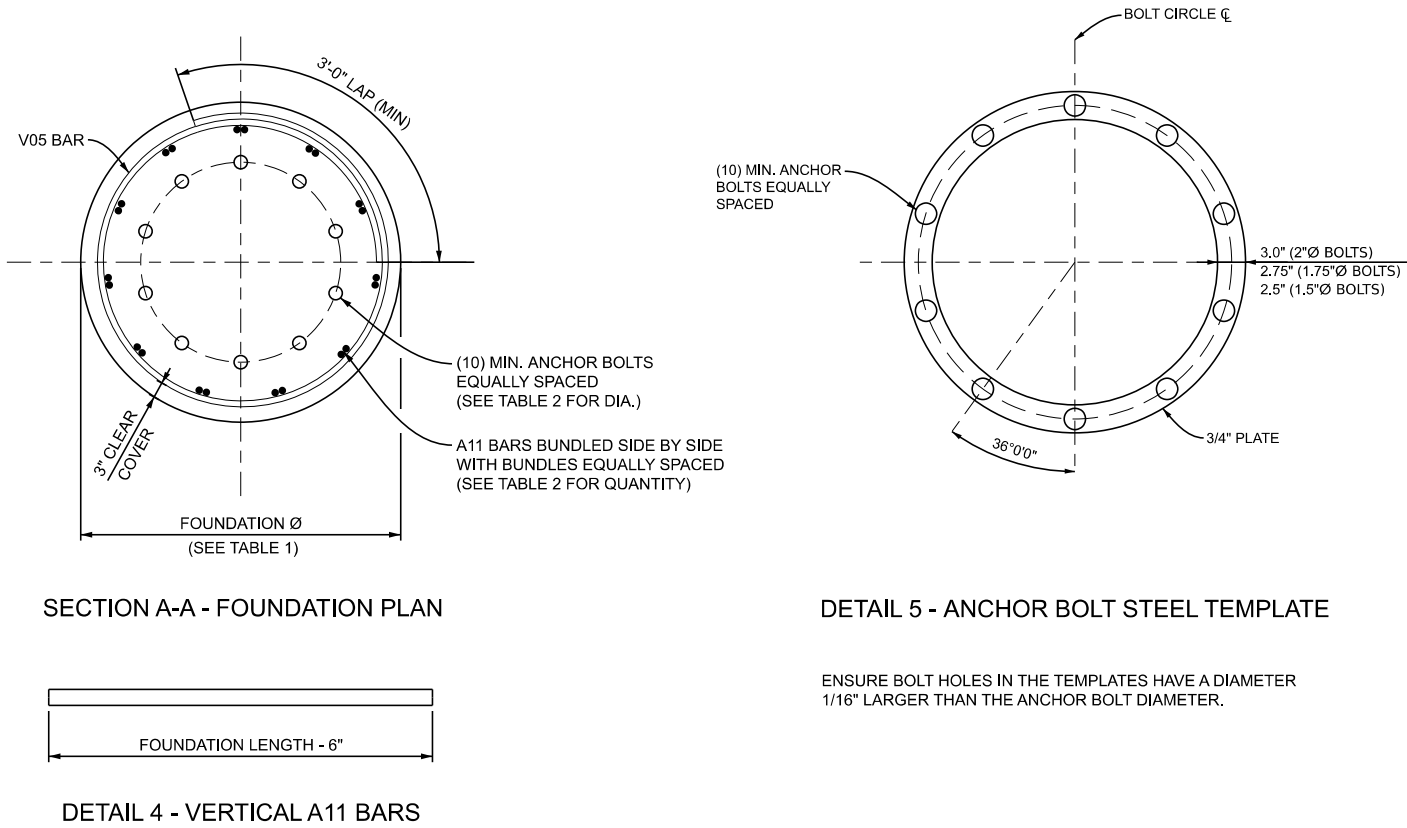
TABLE 1: TOWER LIGHTING UNIT FOUNDATION							
TOWER LIGHTING UNIT HEIGHT (FT)	FOUNDATION DIAMETER (FT)	FOUNDATION LENGTH (FT) **					
		SOIL TYPE					
		N60 *			SU *		
		LOW SAND	MED SAND	HIGH SAND	LOW CLAY	MED CLAY	HIGH CLAY
		5 ≤ N60 < 10	10 ≤ N60 < 20	N60 ≥ 20	400 ≤ SU < 1000	1000 ≤ SU < 2000	SU ≥ 2000
80	4	19.5	16	14.5	16	12	10.5
90	4	20.5	16.5	15	17.5	12.5	10.5
100	4	21	17	15.5	19	13.5	11
110	4	21.5	17.5	16	20.5	14	11.5
120	4.5	23	18.5	17	22	15.5	12.5
130	4.5	23.5	19	17.5	23.5	16	13
140	4.5	24	19.5	18	25	17	13.5
150	5	25.5	20.5	18.5	26.5	18	15
160	5	26	21	19	28.5	19	15.5

* SU = UNDRAINED SHEAR STRENGTH IN COHESIVE SOIL (PSF)
* N60 = STANDARD PENETRATION RESISTANCE (BLOWS/FOOT ACCORDING TO ASTM D-1586) CORRECTED TO 60% HAMMER EFFICIENCY UTILIZING THE HAMMER'S CALIBRATED ENERGY
** FOUNDATION LENGTH MEASURED AS SHOWN IN DETAIL 2 ON SHEET 1

TABLE 2: ANCHOR BOLT AND REINFORCEMENT										
TOWER HEIGHT (FT)	80	90	100	110	120	130	140	150	160	
ANCHOR BOLT DIA (IN)	1 1/2	1 3/4	1 3/4	2	2	2	2	2	2	
BOLT CIRCLE DIA (IN)	30	30	30	30	36	36	36	38	38	
A11 BAR TOTAL QTY *	18	18	18	18	20	20	20	22	22	

ANCHOR BOLT QUANTITY, DIAMETER, AND LENGTH SHOWN ARE MINIMUMS. FINAL ANCHOR BOLT QUANTITY, DIAMETER, LENGTH, AND BOLT CIRCLE ARE THE RESPONSIBILITY OF THE TOWER MANUFACTURER.

* PLACED IN BUNDLES OF 2 BARS PER BUNDLE



APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
TOWER LIGHTING UNIT FOUNDATION

(SPECIAL DETAIL)
FHWA APPROVAL

02/21/2025
PLAN DATE

R-135-A

SHEET
1 OF 4



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

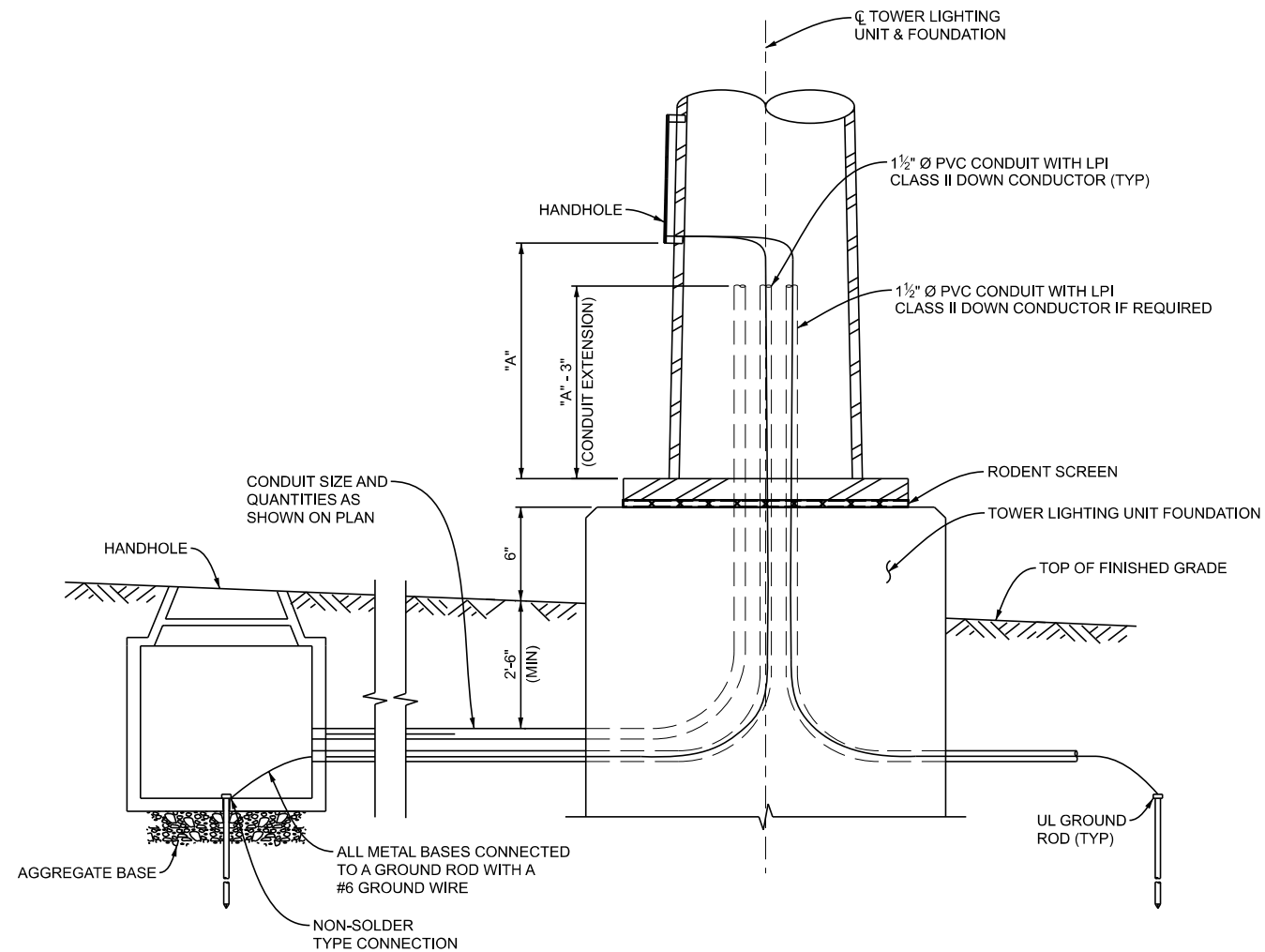
STANDARD PLAN FOR
TOWER LIGHTING UNIT FOUNDATION

(SPECIAL DETAIL)
FHWA APPROVAL

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SHEET
2 OF 4



DETAIL 6 - CONDUIT LAYOUT

TABLE 3: FOUNDATION DESIGN LOADS				
TOWER HEIGHT	COMBINATION	AXIAL LOAD (KIPS)	HORIZONTAL LOAD (KIPS)	MOMENT (KIP-FT)
80 FT	STRENGTH	8.25	0.00	0.00
	SERVICE	6.60	1.06	53.53
	EXTREME	7.26	2.65	133.68
90 FT	STRENGTH	9.13	0.00	0.00
	SERVICE	7.31	1.19	66.54
	EXTREME	8.04	2.97	165.51
100 FT	STRENGTH	10.90	0.00	0.00
	SERVICE	8.72	1.32	80.72
	EXTREME	9.59	3.29	200.80
110 FT	STRENGTH	11.38	0.00	0.00
	SERVICE	9.11	1.45	96.81
	EXTREME	10.01	3.62	241.40
120 FT	STRENGTH	11.86	0.00	0.00
	SERVICE	9.49	1.58	112.90
	EXTREME	10.43	3.94	281.99
130 FT	STRENGTH	12.65	0.00	0.00
	SERVICE	10.12	1.72	131.60
	EXTREME	11.13	4.27	327.81
140 FT	STRENGTH	13.48	0.00	0.00
	SERVICE	10.78	1.86	152.01
	EXTREME	11.86	4.61	377.66
150 FT	STRENGTH	14.51	0.00	0.00
	SERVICE	11.61	1.99	173.04
	EXTREME	12.77	4.96	431.67
160 FT	STRENGTH	15.30	0.00	0.00
	SERVICE	12.24	2.12	195.59
	EXTREME	13.46	5.30	488.62

THE TOWER LIGHTING UNIT FOUNDATION DESIGN IS BASED ON THE LOADS SHOWN IN THIS TABLE. SEE SPECIAL PROVISION FOR REQUIREMENT TO COMPARE TOWER MANUFACTURER BASE REACTIONS AGAINST THESE LOADS.