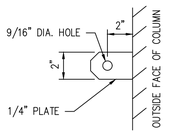
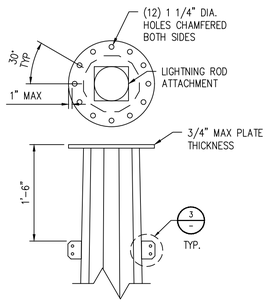
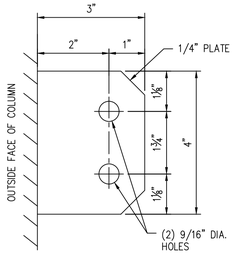


NOTE:
SEE NOTE 9 FOR GROUND TAB SPACING.

1-HOLE GROUND TAB (1) SCALE: NONE

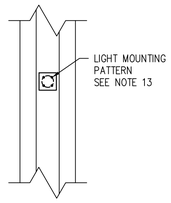


SHIELDWIRE ATTACHMENT (2) SCALE: NONE



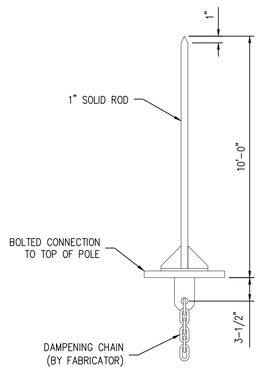
NOTE:
SEE NOTE 9 FOR GROUND TAB SPACING.

2-HOLE GROUND TAB (3) SCALE: NONE

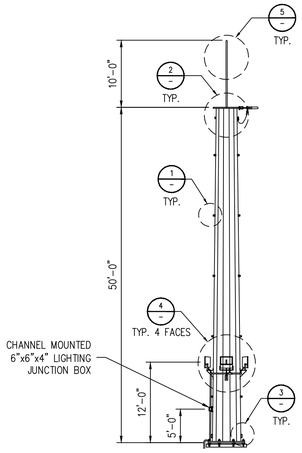


LIGHT MOUNT (4) SCALE: NONE

PLAN VIEW
SCALE: NONE



LIGHTNING ROD (5) SCALE: NONE



50' STATIC MAST
THREE (3) REQUIRED SCALE: NONE

LOADING DIAGRAM
SCALE: NONE

LOAD CASES							DESIGN LOADS IN KIPS (FOR STRUCTURAL STEEL DESIGN)		
DESCRIPTION		WEATHER CONDITIONS							
		TEMP (°F)	WIND (mph)	ICE (in)	W_{WIRE} (psf)	W_{STR} (psf)	V_S*	T_S*	L_S*
1	NESC 250B – HEAVY LOADING	0	40	0.50	4.00	10.00	0.40	1.89	6.41
2	NESC 250C – EXTREME WIND	60	105	0.00	28.22	31.05	0.14	0.96	3.00
3	NESC 250D – ICE & WIND	15	40	0.75	4.00	4.40	0.44	1.32	4.59
4	CONSTRUCTION	15	35	0.00	3.14	4.70	1.80	0.65	0.46
5	EXTREME ICE	32	0	1.00	0.00	0.00	0.63	1.41	5.44
6	DEFLECTION – EXTREME WIND	60	70	0.00	12.54	12.54	0.12	0.53	1.73
7	DEFLECTION – ICE & WIND	15	40	0.37	4.10	4.10	0.21	0.78	2.70
8	DEFLECTION – EXTREME ICE	32	0	0.50	0.00	0.00	0.26	0.71	2.75

* LOADS SHOWN FOR (2) SHIELD WIRES

DESIGN CONDITIONS:

SHIELD WIRE: (2) – 3/8" 7 STRAND EHS STEEL BARE WIRE

WIND SPAN: 100 FT.
WEIGHT SPAN: 135 FT.
LINE ANGLE (ø): 0° – 15°
LIMITED BY: 4 FT. SAG @ NESC 250B HEAVY (INITIAL)

NOMENCLATURE:

LOAD DIRECTION
V: VERTICAL
T: TRANSVERSE
L: LONGITUDINAL

CONDUCTOR
S: SHIELD

NOTES:

1. LOAD FACTORS THAT WERE APPLIED TO THE LOAD CASES:
   A. NESC 250B – HEAVY LOADING
      1.5 (VERT) 2.5 (TRANS) 1.65 (LONG)
   B. CONSTRUCTION
      1.5 (VERT) 1.5 (TRANS) 1.5 (LONG)
   C. DEFLECTION
      1.0 (VERT) 1.0 (TRANS) 1.0 (LONG)
   D. ALL OTHER LOAD CASES
      1.1 (VERT) 1.1 (TRANS) 1.1 (LONG)

2. THE WIND LOAD ON THE STRUCTURE SHALL BE APPLIED TO ALL MEMBERS WITH NO SHIELDING EFFECTS. WIND PRESSURE FOR EACH LOAD CASE SHALL BE APPLIED TO THE STRUCTURE IN THE DIRECTION WHICH YIELDS THE MOST CONSERVATIVE DESIGN.

3. W_{WIRE} IS THE WIND PRESSURE APPLIED TO THE WIRE AND W_{STR} IS THE WIND PRESSURE TO BE APPLIED TO THE STRUCTURE. A SHAPE FACTOR SHALL BE APPLIED TO THE WIND LOAD IN ACCORDANCE WITH ASCE 113 TABLE 3-9.

4. ICE LOADING ON THE STRUCTURE ITSELF MAY BE IGNORED.

5. THETA (ø) IS THE SHIELD PULL OFF ANGLE AS SHOWN IN THE PLAN VIEW.

6. THE STRUCTURE SHALL BE DESIGNED FOR THE FOLLOWING CONFIGURATIONS FOR ALL LOAD CASES:
   A. ALL SHIELD WIRES INSTALLED.
   B. NO WIRES ATTACHED.
   C. ANY OTHER CONFIGURATION THAT CONTROLS THE STRUCTURE DESIGN.

7. SEE DRAWING XXXE2000 FOR SHIELD WIRE ARRANGEMENT.

8. DEFLECTION SHALL BE LIMITED BY ASCE 113 CLASS "C" STRUCTURES TO TOP OF STRUCTURE UNDER THE DEFLECTION LOAD CASES.

9. WELD 2-HOLE GROUND TABS TO OUTSIDE FACE OF MAST STARTING AT 1'-6" BELOW TOP PLATE AND CONTINUE WITH 1-HOLE GROUND TABS AT 6'-0" MAX SPACING. WELD 2-HOLE GROUND TAB TO OUTSIDE FACE OF MAST AT 1'-6" ABOVE THE BASE PLATE.

10. TUBULAR STEEL SHALL BE USED FOR STRUCTURE DESIGN AND COMPLY WITH THE SPECIFICATIONS.

11. STRUCTURE DESIGN SHALL CONSIDER AN ALLOWABLE FOUNDATION ROTATION OF 0.5 DEGREES.

12. STRUCTURE SHALL BE DESIGNED TO REDUCE AND MINIMIZE WIND INDUCED OSCILLATIONS PRIOR TO INSTALLATION OF WIRES.

13. VENDOR SHALL DESIGN AND PROVIDE LIGHT MOUNTING BRACKET, BRACES AND HOOK.

14. CHAIN DAMPER SHALL MEET THE FOLLOWING CRITERIA:
   A. CHAIN WEIGHT ≥ 5% MAST WEIGHT (EXCLUDING BEARING PLATE WEIGHT)
   B. CHAIN LENGTH = 20% OF MAST LENGTH

15. ANCHOR BOLTS AND TEMPLATES SHALL BE FURNISHED BY STEEL SUPPLIER.

no.	date	by	ckd	description
0	05/13/26	VTR	CCP	ISSUED FOR BID

PRELIMINARY
NOT FOR
CONSTRUCTION

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. E-65

date	detailed
05/13/2026	T. BYINGTON
designed	checked
V. REED	C. PENNINGTON

Midwest Energy,Inc.
1330 Canterbury Rd.
Hays, Kansas 67601
(785) 625-3437

EAST HAYS SUBSTATION
50' STATIC MAST
LOADING DIAGRAM

project	contract
193866	
drawing	rev.
XXXS8001-2 –	0
sheet 1 of 1	sheets
file XXXS8001-2.dwg	

Scale For Microfilming
Millimeters
Inches