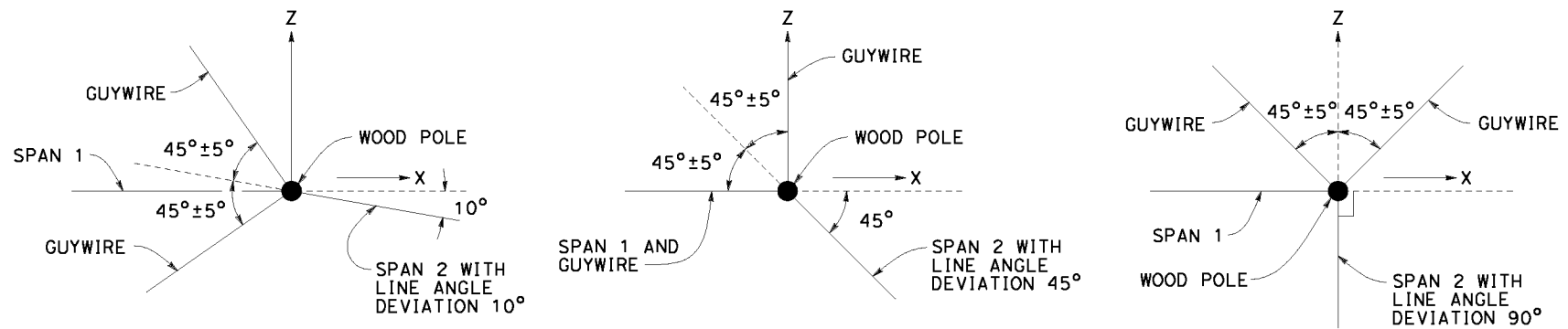


LEGEND:

- ① CCTV Camera
- ② Conductors and Messenger-Wire
- ③ Luminaire with Mast Arm
- ④ Vehicle Detection System
- ⑤ Flashing Beacon 1
- ⑥ Single Sheet Sign Panel (4' X 4' Max) or Traffic Signal w/ 3 Indicators
- ⑦ Flashing Beacon 2



PLAN

DESIGN NOTES:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition (LTS-5).

GROUP LOAD COMBINATIONS:

- I Dead Load
- II Dead Load + Wind Load
- III Dead Load + 0.5 (Wind Load) + Ice Load
- IV Fatigue: Not used

LOADING:

Wind Loading: 100 mph (3-second gust)
 Wind Recurrence Interval: 10 years
 Combined height, exposure, and elevated terrain factor = 1.05
 (Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)

Ice Loading: 3.0 psf on surfaces, 0.60 in radial thickness of ice at a unit weight of 60 pcf on bundles

BASIC DESIGN VALUES:

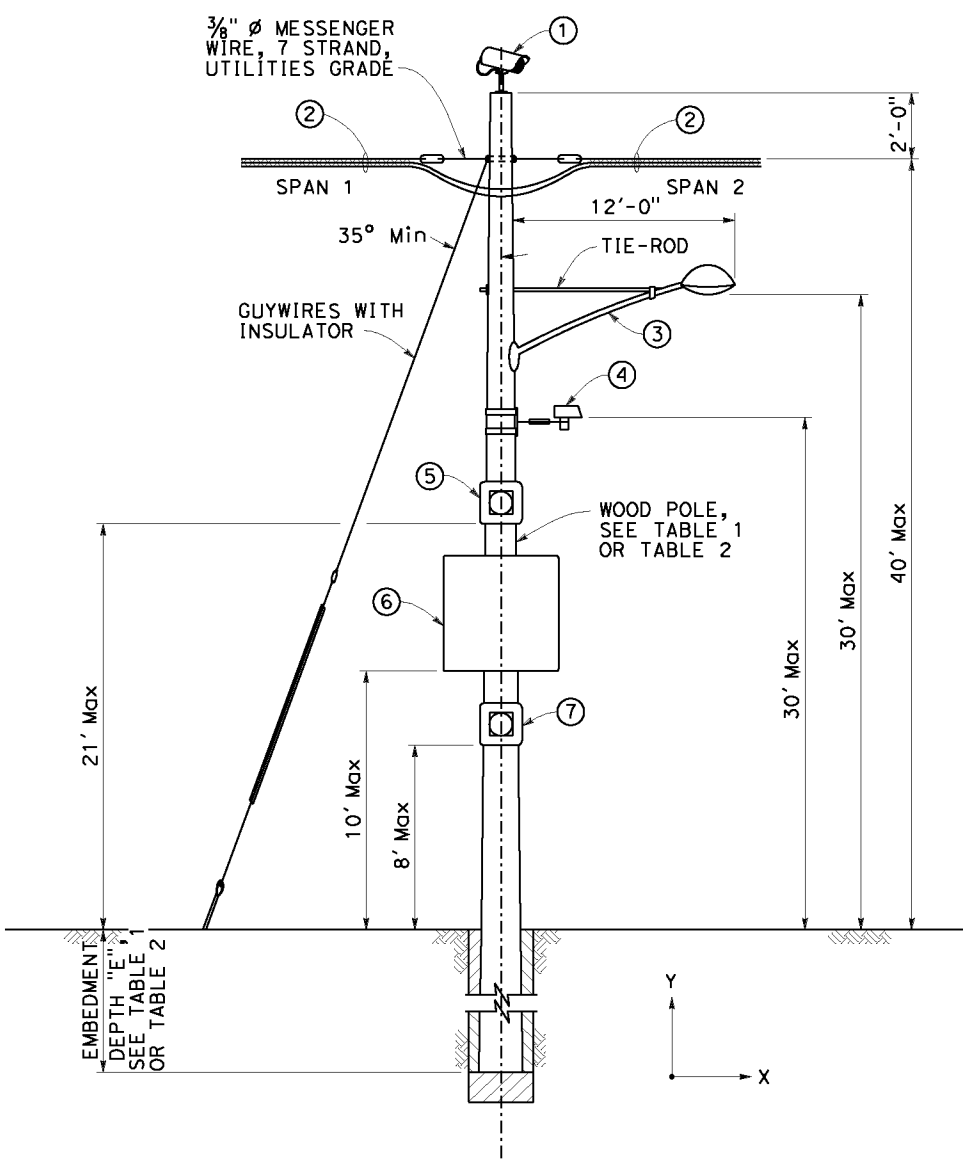
Timber Poles:
 $F_b = 1850 \text{ psi}$
 $F_v = 110 \text{ psi}$
 $F_{cp} = 230 \text{ psi}$
 $F_c = 950 \text{ psi}$
 $E = 1500 \times 10^3 \text{ psi}$

DESIGN WIRE BREAKING STRENGTHS:

ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8

FOUNDATION DESIGN NOTES:

- Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
- Standard embedment depth is calculated based on level ground assumption (up to slope 1V:4H).
- Embedment depth is calculated based on following soil parameters:
 Cohesive Soil:
 Shear strength of soil $c = 1500 \text{ psf}$.
 Cohesionless Soil:
 $\phi = 30 \text{ deg}$, $\gamma = 120 \text{ pcf}$.
 Soil assumed to be unsaturated.
- An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
- If pole is located on or near a steep slope (up to 1H:2V) add 2 feet extra embedment.
- Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.



ELEVATION
NO SCALE

DEVIATION ANGLE	MESSENGER WIRE SPAN		MINIMUM WOOD POLE CLASS	MINIMUM POLE EMBEDMENT DEPTH "E"	GUYWIRE MINIMUM CABLE SIZE
	SPAN 1 MINIMUM	SPAN 2 MAXIMUM			
10°	50	100	4	8'	3/8"
45°	50	100	2	9'	7/16"
90°	50	100	2	9'	1/2"

DEVIATION ANGLE	MESSENGER WIRE SPAN		MINIMUM WOOD POLE CLASS	MINIMUM POLE EMBEDMENT DEPTH "E"	GUYWIRE MINIMUM CABLE SIZE
	SPAN 1 MINIMUM	SPAN 2 MAXIMUM			
10°	100	150	4	8'	7/16"
45°	100	150	H-1	9'	1/2"
90°	100	150	1	9'	2-7/16"

NOTES:

- Install attachments shown if indicated on the "Project Plans".
- Guywires shall always be provided on the opposite side of larger span.
- Bundle for Span 1 must be the same as bundle for Span 2.
- Span 1 must be less than 95% of Span 2.