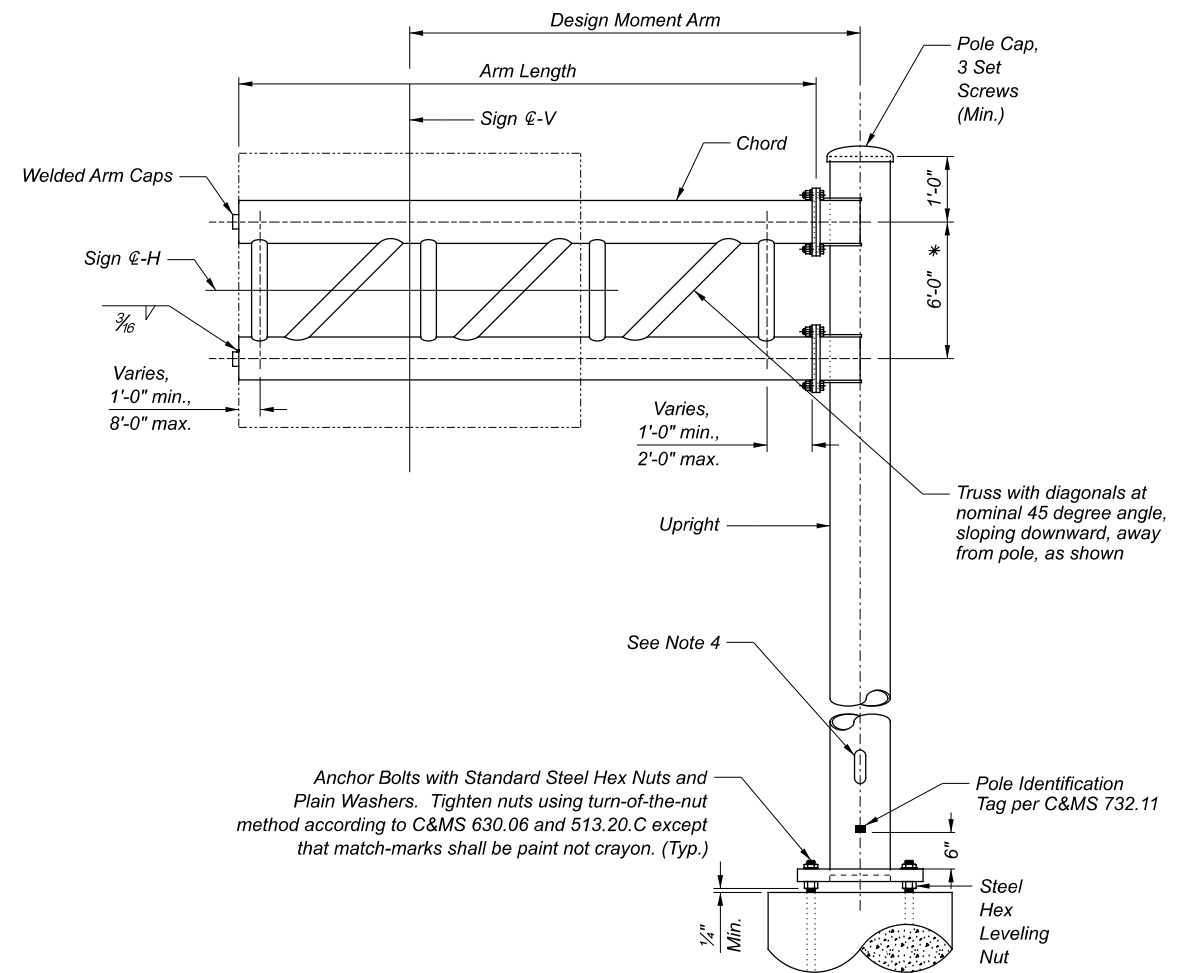
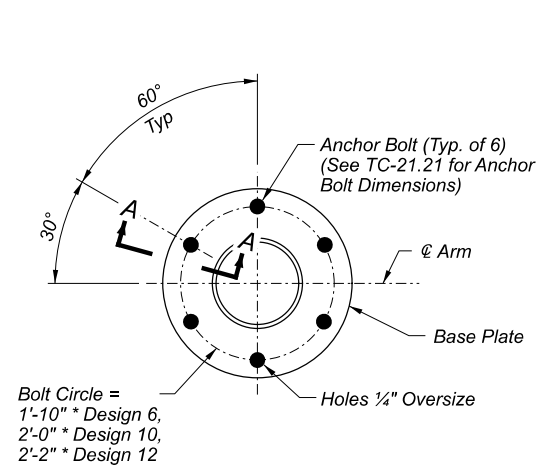


TYPICAL ARM TO UPRIGHT CONNECTION

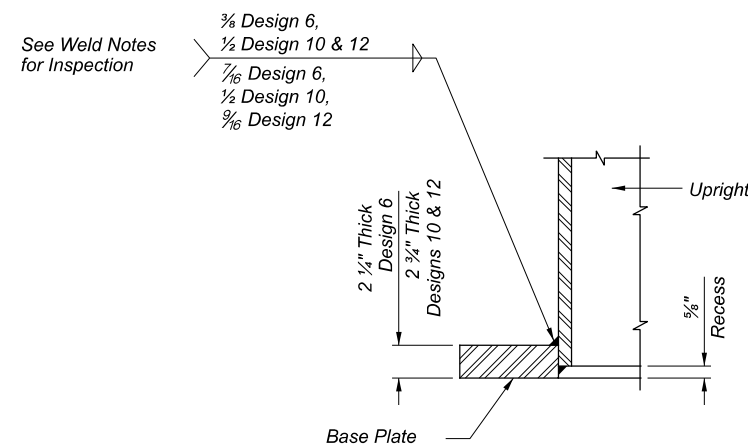
Details Shown are Similar to LRFDLTS-1 Table 11.9.3.1-1 (5.6 Fillet-Welded Gusseted Box Connections) (5.7-Fillet Welded Ring Stiffened Connections, also Permitted)



ELEVATION - STANDARD DESIGN

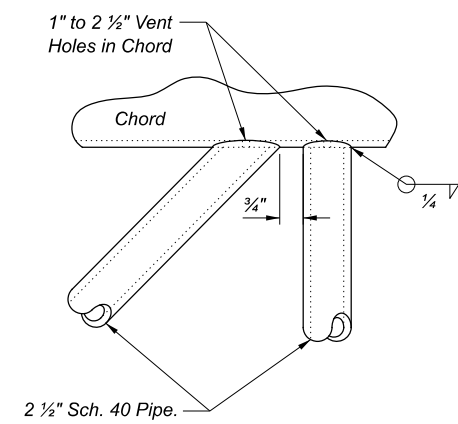


POLE BASE DETAIL



SECTION A-A

Weld Shown is Similar to LRFDLTS-1 Table 11.9.3.1-1 (5.4-Fillet-Welded Tube - to - Transverse Plate Connection)



TRUSS JOINTS

LEGEND:

* = Required dimension. See Note 2 on Sheet 2/2

NOTES:

For Notes and Table see Sheet 2/2

NOTES:

1. The design of the Cantilever Overhead Sign Support meets the requirements of the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition 2015 (LRFDLTS-1) and all interim releases prior to the bid date of the project.
2. Dimensions marked as required shall be as indicated on the drawing and shall not be altered.
3. ODOT permits modifications to accommodate minor variations in manufacturing processes and detailing between suppliers. Modifications shall not decrease the main tube section moduli as depicted in this drawing. Calculations are required for any modifications to the information shown on the drawings. Modifications shall meet the requirements of LRFDLTS-1 and the design criteria shown in Note 18. Calculations shall be stamped by a Professional Engineer registered in the State of Ohio and shall be submitted for review and acceptance with the shop drawings.
4. For sign attachment assemblies to be furnished with this support, construction details, and location of handholes, see Standard Construction Drawings (SCDs) TC-22.10 and TC-22.20.
5. For foundation details, see SCD TC-21.21.
6. For modification of the pole to support roadway lighting, see SCD HL-10.12.
7. Assure arm attachment bolts do not contact pole.
8. The arm shall be cambered and the upright shall be tilted to provide a horizontal arm and a plumb upright upon erection.
9. Structural steel plate shall meet the requirements of C&MS 630 and 711.01 with the following limitations:

Structural steel plate - ASTM A 709 Grade 50 (A572)
(Not Grade 36, 50W or 70W)
10. All material shall meet the requirements of C&MS 730 with the following limitations:

Steel tube and pipe - ASTM A 500 Grade B
(Not ASTM A 53 Grade B and ASTM A 501)

Steel hardware - Galvanizing - ASTM A 153 (Hot-dipped)
(Not ASTM B 695 Class 50)
11. Nuts shall meet the requirements of C&MS 730.08 and shall also meet the requirements of ASTM A 563 Grade DH or A 194 Grade 2H.
12. Flat washers shall meet the requirements of C&MS 730.08 and shall also meet the requirements of ASTM F 436.
13. Anchor bolts shall meet the requirements of C&MS 630, 711.02, 730.02 and 732.11 except that 730.02 shall be modified to require the galvanizing limits to be the full length of the anchor bolts not at least 2 inches beyond the threads.

14. Anchor bolt nuts shall meet the requirements of ASTM A 563 Grade DH or A 194 Grade 2H.
15. Anchor bolt washers shall meet the requirements of ASTM F 436 Type 1 (Hot-dip galvanized) according to ASTM A 153.
16. Holes for high-strength bolts and bearing bolts shall meet the requirements of C&MS 513.19. Modifications to the holes must be approved by the Engineer. Enlarging or slotting holes to match mis-aligned anchor bolts will not be permitted.
17. All welds shall be inspected according to the requirements of C&MS 630.06 and AWS D1.1 Structural Welding Code - Steel. A report of the welding inspection shall be submitted to the ODOT Office of Material Management Structural Welding and Materials Engineer.
18. Design Criteria:

Load Parameters:

Wind Load: 700-year MRI Basic Wind Speed Map, 115 mph Design Wind Speed

Service Life: Infinite per LRFDLTS-1 11.9.3

Service I Wind Velocity: 76 mph per LRFDLTS-1 Table 3.4.1 and Figure 3.8-4b

ADT: Greater than 10,000

Serviceability Parameters:

Permanent Camber: L/1000 per LRFDLTS-1 10.5

Rake (Pole Tilt): H/180 maximum (H = pole height)

Horizontal Deflection at Top of Pole: maximum 1.5% of pole height

Slope at Top of Pole: maximum of 0.35 inch/foot (1.67 degrees) per LRFDLTS-1 10.4.2.1

Fatigue Parameters:

Fatigue Category: II

Natural Wind Gust: Include

Truck-Induced Gust: Include

Galloping: Not Included

19. Support shall be manufactured to accommodate the design sign area and moment arm given in the Table, or greater, even if the sign area and moment arm in the Plans are smaller.
20. Multi-sided vertical main tube (12 sides, min.) may be provided.

ALL DIMENSIONS IN INCHES, UNLESS OTHERWISE NOTED

DESIGN NUMBER	OUTSIDE DIAMETERS		DESIGN SIZE (SQ. FT.) (Note 19)	DESIGN MOMENT ARM (FT.) (Note 19)
	POLE SIZE (Diameter and Wall are Minimums, Length is Maximum)	ARM SIZE (Diameter and Wall are Minimums, Length is Maximum)		
6	16 x .375 WALL x 32'-0"	8 3/8" x .322 WALL x 26'-0"	150	17
10	18 x .500 WALL x 32'-0"	10 3/4" x .365 WALL x 30'-0"	225	20
12	20 x .500 WALL x 32'-0"	12 3/4" x .375 WALL x 30'-0"	300	24

NOTE: See TC-21.21 for anchor bolt dimensions.