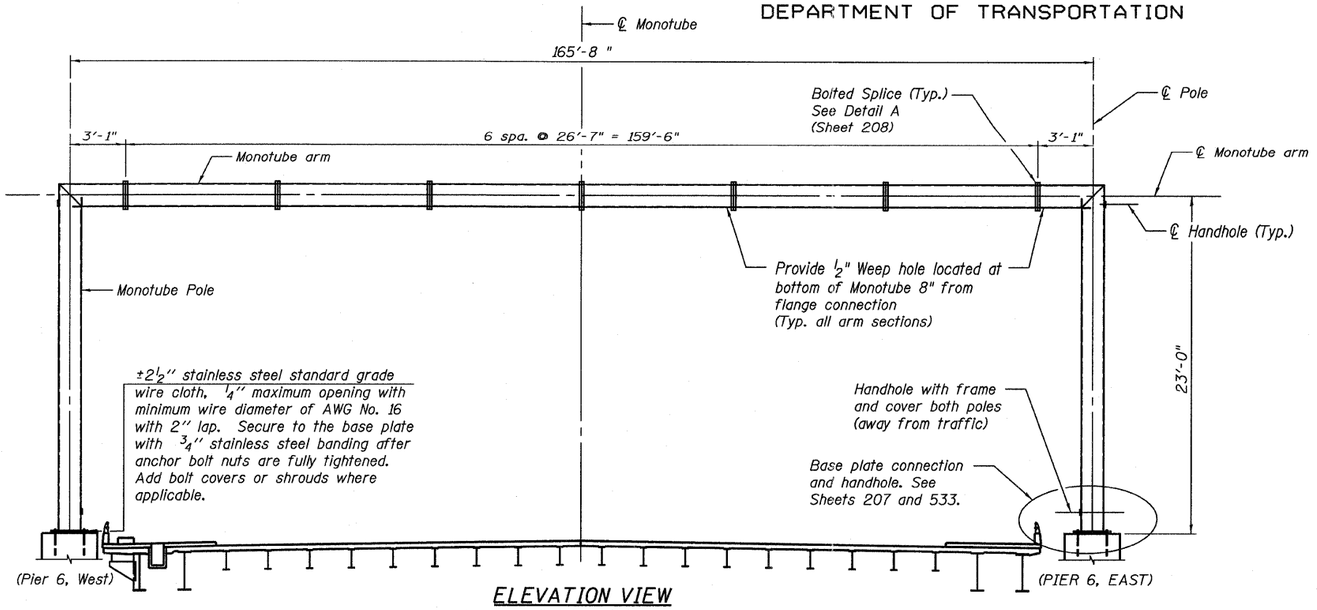
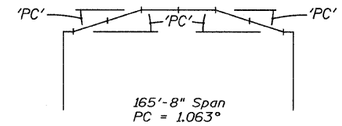
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION VIEW
(Not to scale)



CAMBER DETAILS

Note: Fabricate with rolling camber up.

MONOTUBE SIGNAL STRUCTURE NOTES

* Note: Contractor shall verify these dimensions prior to fabrication of pole and arm.

1. DESIGN: Current (at time of letting) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

2. Signal structure materials shall be as follows:

Poles & Monotube Arm	->	ASTM A252 GRADE III (Fy = 46 ksi)
Handhole Frame	->	ASTM A709 GRADE 36
Handhole Cover	->	ASTM A607, GRADE 50, 55 OR 60 ksi
Steel Plates	->	ASTM A709 GRADE 50
Weld Metal	->	E70XX
Bolts (except Anchor Bolts)	->	ASTM A325 TYPE I
Anchor Bolts	->	ASTM F1554 GRADE 105 ksi
Nuts for Anchor Bolts	->	ASTM A563 GRADE A HEAVY HEX
Washers for Anchor Bolts	->	ASTM F436 TYPE I
Stainless Steel Screws	->	AISI TYPE 316
Aluminum Nut Cover	->	ASTM B26 (356-T6)

3. CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions. ("Standard Specifications") All references to "Mast Arm Assembly and Pole" are applicable, unless otherwise noted.

4. All welding to be continous unless otherwise shown. All welding shall conform to the American Welding Society Structural Welding Code (Steel) ANSI/AWS D1.1 (current edition) and the Standard Specifications.

5. GALVANIZING: All plates, shapes and pipe shall be hot dip galvanized after fabrication in accordance with AASHTO M111.

6. No welding shall be permitted on anchor rods.

7. FASTENERS: All connection bolts shall be High Strength Bolts M164, Galvanize M232 (A153), Type 3, or stainless steel heavy hex conforming to ASTM A193, Grade B8 or B8M, Class 1. U-bolts shall be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished, or an equivalent material acceptable to the Engineer. Nuts for stainless steel bolts shall be stainless steel conforming to ASTM A194, Grade 8 (AISI Type 304) or Grade 8F (AISI Type 303). All nuts shall be "locknuts" with nylon or steel inserts and semifinished hexagonal heads equivalent to the finished heavy hex series of the American National Standard. Washers for stainless steel bolts shall be stainless steel conforming to ASTM A240, Type 302 or 304.

8. The design wind speed is 90 mph.

9. Except for Anchor Bolts, all bolt hole diameters shall be equal to the bolt diameter plus 1/16", prior to galvanizing. Hole diameters for Anchor Bolts shall not exceed the bolt diameter plus 1/2".

10. The pole shall be installed vertically. Arm camber shall be accounted for in the Flange Connections.

11. Locate handhole 180° from monotube arm.

12. All signals shall be installed vertically.

13. Monotube Arm & Poles shall be fabricated from round pipe.

BILL OF MATERIAL

Item	Unit	Total
Overhead Sign Structure - Monotube (Special)	Foot	165.7

MONOTUBE SIGNAL STRUCTURE ELEVATION, NOTES AND CAMBER DETAILS

TY·LIN INTERNATIONAL

DESIGNED -	MAU
CHECKED -	AMD,
DRAWN -	MAU
CHECKED -	AMD,
DATE -	03/25/2011

REVISIONS	
NAME	DATE

SHEET NO.
SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	0711.2R & 1011.1BR	COOK	741	205
		CONTRACT NO. 60999		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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4/28/2011
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n:\01345\ROAD\55mtl.dgn 4/28/2011 3:02:40 PM