

**GENERAL NOTES:**

- CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS OF THE MAST ARM POLE ASSEMBLY AND MANUFACTURERS SPECIFICATIONS FOR CONTROLLERS AND TRAFFIC SIGNAL HEADS FOR APPROVAL BY THE ENGINEER PRIOR TO ORDERING ANY EQUIPMENT OR BEFORE ANY WORK HAS BEGUN.
- SIGNAL POLES, MAST ARMS AND ANCHOR BOLTS TO BE GALVANIZED STEEL.
- MINIMUM STRUCTURAL REQUIREMENTS:

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHURPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN OR AS MODIFIED IN THE PLANS.

IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"x16"x0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OF GREATER AT THE LOCATION OF THE STRUCTURE.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 INCH, VACUUM FORMED PLASTIC, BACK PLATES.

HEADS AT END OF ARM - ONE - 5 SECTION, 85 LB., 16.0 SQ. FT.

ONE SIGN MOUNTED 3 FT. FROM SIGNAL - 2'-0"x 2'-6"; 20 LB.

REMAINING HEADS SPACED AT 8 FT. - 3 SECTION, 56 LB. 14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING TWO 5 SECTIONS):

- 2 HEADS FOR ARMS 10 TO 16 FT.
- 3 HEADS FOR ARMS 18 TO 24 FT.
- 4 HEADS FOR ARMS OVER 26 FT.

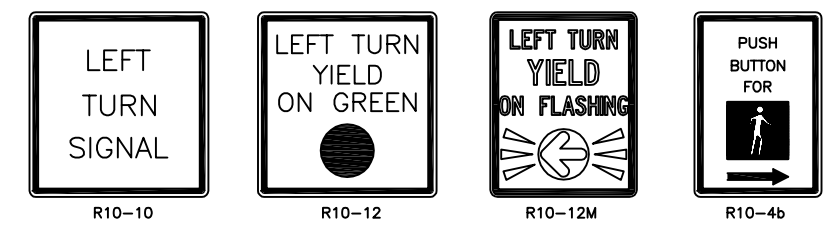
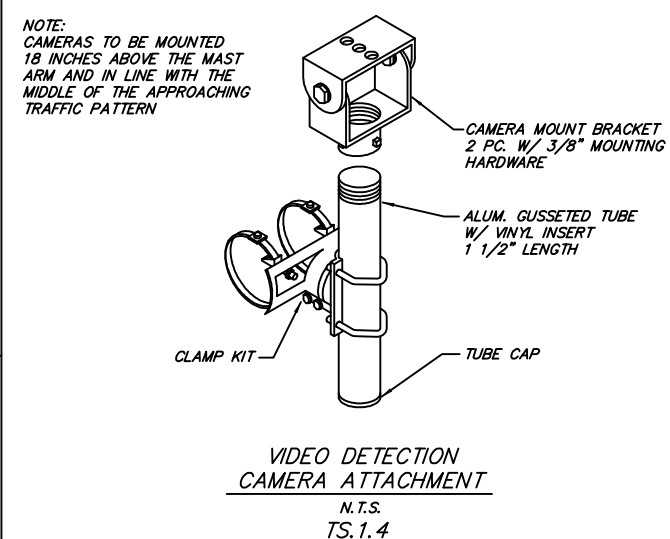
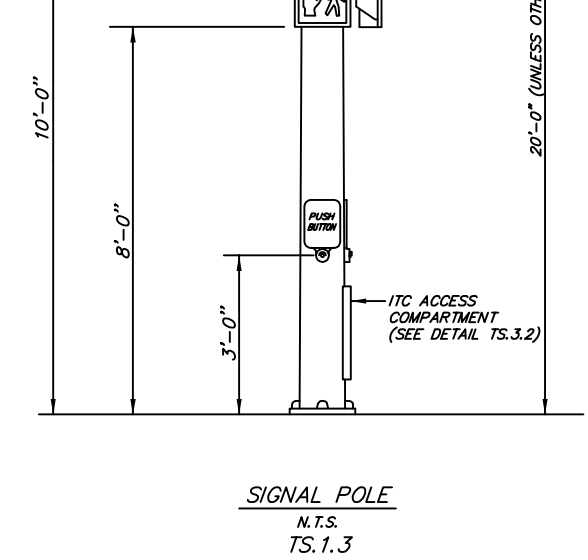
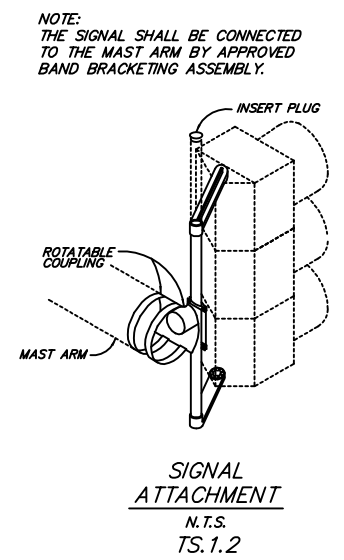
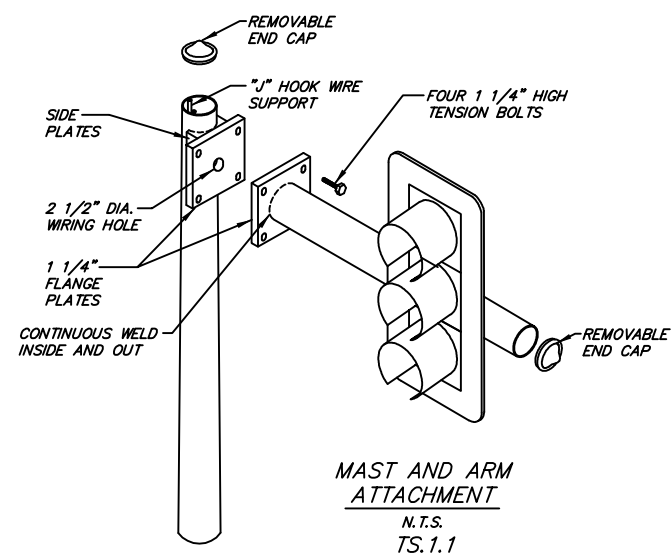
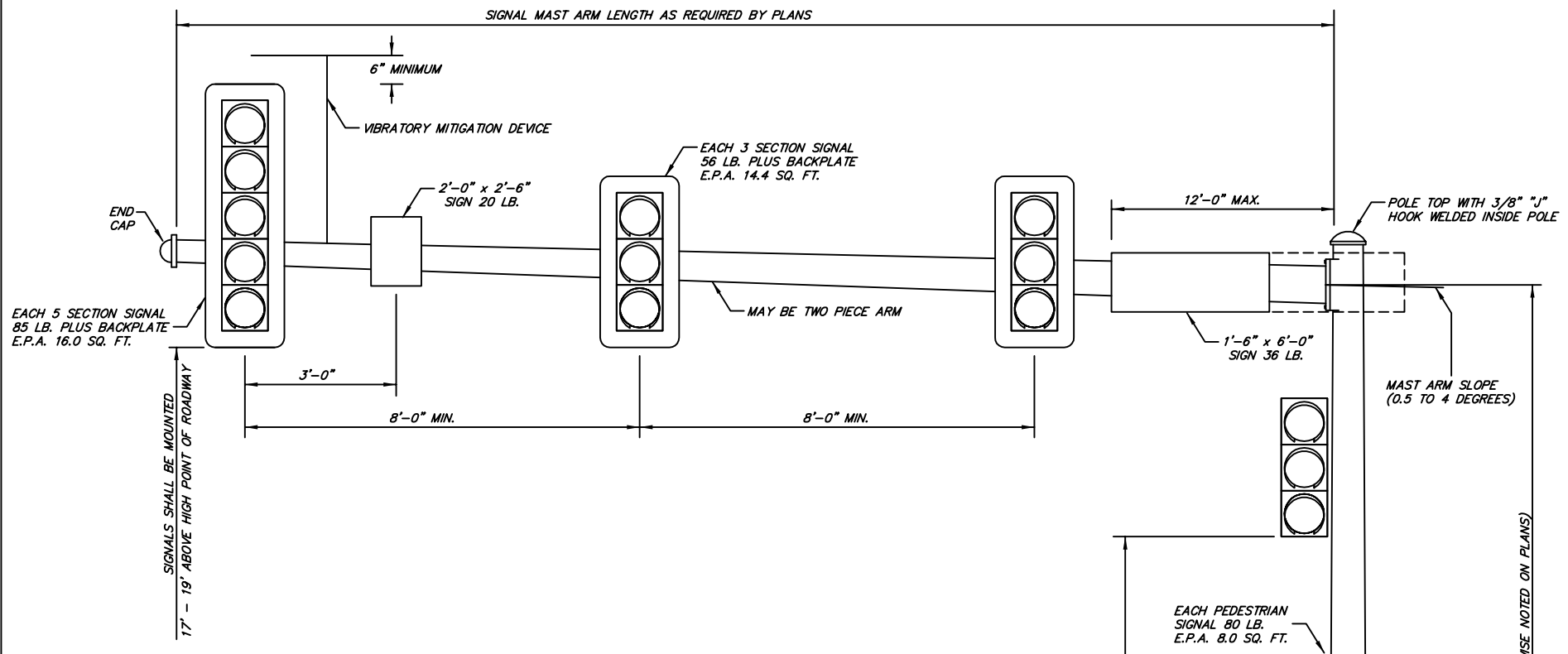
STREET NAME SIGN - 72"x 24", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT UP TO 12".

ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEETS) - 10 FT. ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB.

PEDESTRIAN SIGNALS - TWO 2 SECTION, 12" MOUNTED 8 FT. FROM BASE OF POLE.

POLE MOUNT 3 SECTION SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

- MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER, UNLESS OTHERWISE APPROVED BY THE ENGINEER. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND POLES. ALL POLES AND MAST ARMS IN A JOB MUST BE OF THE SAME SHAPE.
- POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF GALVANIZED STEEL OR CAST ALUMINUM.
- AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT. MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.
- EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.
- EACH POLE BASE SHALL INCLUDE A 10' x 5/8" COPPER-WELD GROUND ROD WHICH EXTENDS A MINIMUM OF 8 FT. OUTSIDE BASE. GROUND ROD SHALL BE SECURELY BONDED TO POLE WITH A #8 AWG SOLID GROUND WIRE. (SEE DETAILS ON SHEET TS2)
- CONCRETE FOR CONTROLLER CABINET SHALL BE CLASS "AA" 3500 psi, OR GREATER. CONCRETE FOR POLE FOUNDATIONS SHALL BE CLASS "AAA" 4000 psi, OR GREATER.
- PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLANS. FURNISHING AND INSTALLING PEDESTRIAN PUSH SWITCH SHALL BE CONSIDERED INCIDENTAL TO THE ITEM PEDESTRIAN SIGNAL HEAD.
- PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD. AT THE TIME INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLANS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATIONS IN FLASH SEQUENCE. SIGNAL HEADS SHALL REMAIN COVERED UNTIL PLACED INTO OPERATION.



- NOTES:
- EACH ITEM "TRAFFIC SIGNAL HEAD (5 SEC., 1-WAY)" SHALL INCLUDE A SIGN (R10-12) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.
  - EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SIGN (R10-12M) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.
  - EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.
  - EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-4b SIGN ATTACHED TO THE POLE ABOVE THE BUTTON.
  - ALL SIGN FACES SHALL BE CONSTRUCTED OF DIAMOND VIP GRADE SHEETING WITH SILKSCREEN LEGEND AND BORDER.
  - ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH A THICKNESS OF 0.100 INCH.

By	Date	Revision
MM	AUG-2011	Revised General Notes 3 & 5.
MM	AUG-2011	Added Note 3 to the Sign Notes.
MM	AUG-2011	Revised Dimensions & Notes for TS.1.3

Standard Drawings  
**TRAFFIC SIGNALS**  
Public Works Construction



CITY OF FORT SMITH  
Engineering Department  
623 Garrison Avenue, Room 409  
Fort Smith, Arkansas 72901  
Phone (479)784-2225 Fax (479)784-2245

Project:	Details
Date:	NOV 2012
Scale:	As Shown
Drawn By:	RBR
Dwg. No.:	TS1
Sheet No.:	32

RBR 11/29/12-08:23 32-TS1.dwg C:\DRAWINGS\00-Standard Details\2012\DWG