

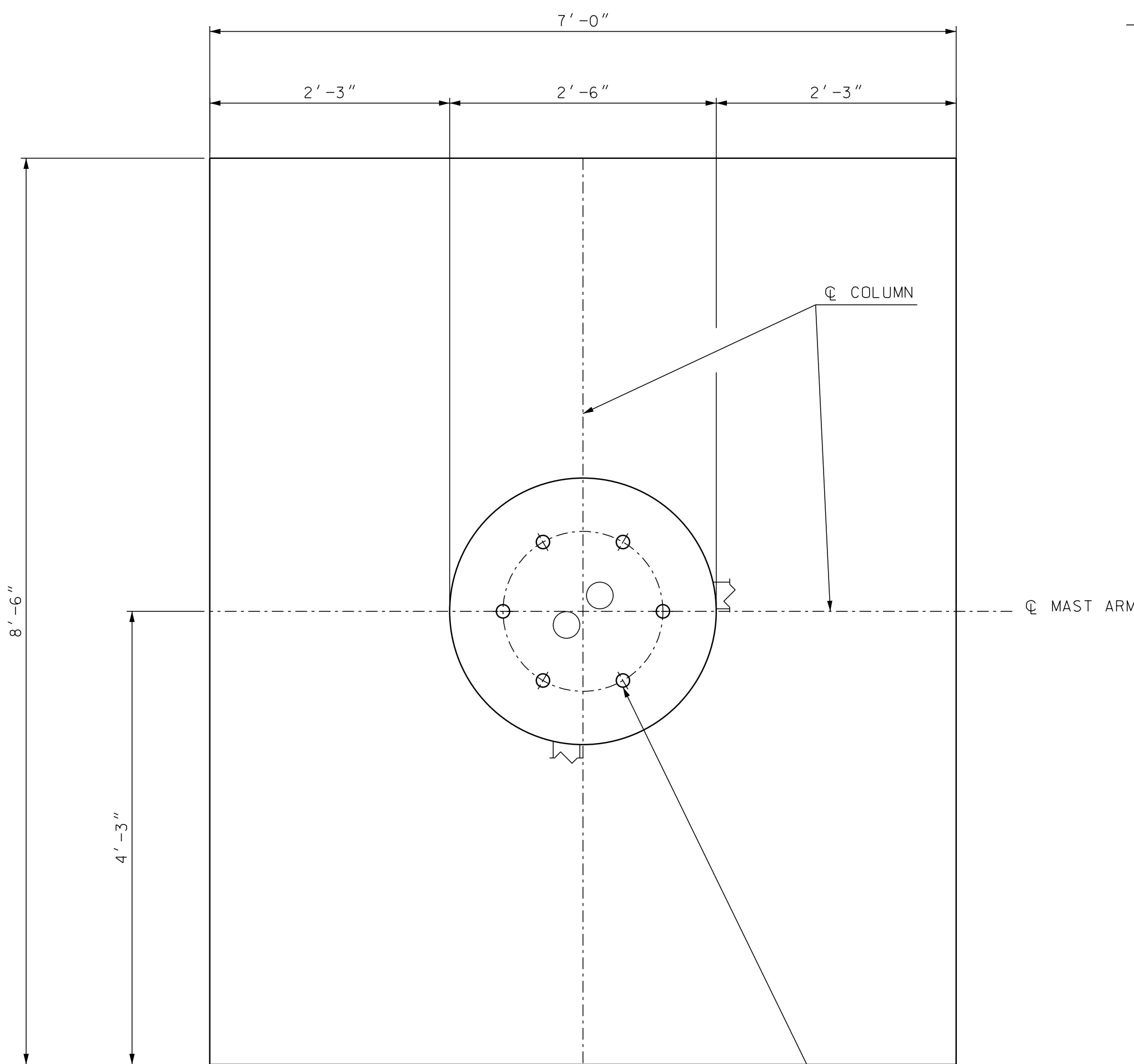
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07-13-01
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*DGN FILE NAME
TS-1

TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 1A

GENERAL NOTES (TYPE 1 FOUNDATION)

- THERE SHALL BE A MINIMUM OF ONE TEST BORING REQUIRED, AT THE APPROXIMATE FOUNDATION LOCATION, TO CONFIRM THE ENGINEERING PROPERTIES OF THE SOILS PROVIDING FOUNDATION SUPPORT. THE ENGINEER MAY REQUIRE ADDITIONAL BORINGS IF CONSIDERED NECESSARY.
- ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31/M31M, GRADE 60 (420). ALL REINFORCING STEEL SHALL BE A MINIMUM OF 3 INCHES FROM CONCRETE SURFACES, UNLESS NOTED OTHERWISE, AND SHALL MEET THE REQUIREMENTS OF SECTION 544.
- CONCRETE SHALL BE CLASS B HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI PLACED IN CONFORMANCE WITH SECTION 520. CYLINDERS FOR STRENGTH TESTING SHALL BE TAKEN DURING CONCRETE PLACEMENT.
- BEARING CAPACITY IS BASED ON THE ALLOWABLE STRESS DESIGN. THE ALLOWABLE BEARING CAPACITY SHALL BE A MINIMUM OF 1 1/2 TONS/SF AFTER THE APPLICATION OF A FACTOR OF SAFETY OF 3 TO THE ULTIMATE BEARING CAPACITY.
- FOOTING CONCRETE SHALL BE PLACED ON UNDISTURBED MATERIAL. UNSUITABLE MATERIAL FOUND AT THE BOTTOM OF FOOTING GRADE SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL, ITEM 508, AS DIRECTED BY THE ENGINEER. STRUCTURAL FILL USED IN EXCESS OF THE AMOUNT SPECIFIED ON THE PROJECT PLANS OR UNDER ITEM 616.1XX WILL BE PAID AS EXTRA WORK IN ACCORDANCE WITH 109.04.
- STAINLESS STEEL STD. GR. WIRE CLOTH, 1/4" MAX. OPENING WITH MIN. WIRE DIA. OF AWG NO. 16 WITH 2" LAP. SECURE WITH 3/4" STAINLESS STEEL BANDING AFTER ANCHOR RODS ARE FULLY TIGHTENED.
- NO GROUT SHALL BE PLACED BETWEEN THE FOUNDATION AND BOTTOM OF THE BASE PLATE.
- THE EXPOSED LENGTH OF THE ANCHOR ROD BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE LEVELING NUT SHOULD NOT EXCEED ONE ROD DIAMETER (MAXIMUM) OR 1-INCH (PREFERRED).
- FOR THE INSTALLATION, PRETENSIONING AND ULTRASONIC TESTING OF ANCHOR RODS, SEE THE SPECIAL PROVISION AMENDMENT TO SECTION 616, TRAFFIC SIGNALS.
- ANCHOR RODS SHALL BE STRAIGHT RODS AND CONFORM TO ASTM F1554 GRADE 50 (MIN.). GALVANIZE THE ENTIRE ROD PER ASTM A153. EACH ANCHOR ROD SHALL BE SUPPLIED WITH A MINIMUM OF THREE HEX NUTS (ASTM A563 OR ASTM A194) AND A MINIMUM OF TWO FLAT HARDENED WASHERS (ASTM F436). LOCK WASHERS SHALL NOT BE USED. THE EMBEDDED END OF THE ANCHOR ROD SHALL HAVE EITHER ONE NUT TACKED WELDED OR DOUBLE NUTS. BENT (HOOKED OR J-BOLT) ANCHOR RODS SHALL NOT BE USED.
- EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON AN EXCAVATED AREA ONE FOOT CLEAR OF THE FOUNDATION SIDES AND TO THE BOTTOM OF THE FOOTING.
- WHERE BEDROCK IS ENCOUNTERED, EXCAVATION SHALL STILL EXTEND TO LIMITS SHOWN.
- TYPE 1 FOUNDATIONS SHALL BE PAID FOR UNDER ITEM 616.1XX.
- SEE THE TYPE 1B & TYPE 1C FOOTING ON STANDARD PLAN TS-2.
- SEE THE TYPE 1D & TYPE 1E FOOTING ON STANDARD PLAN TS-3.



PLAN VIEW

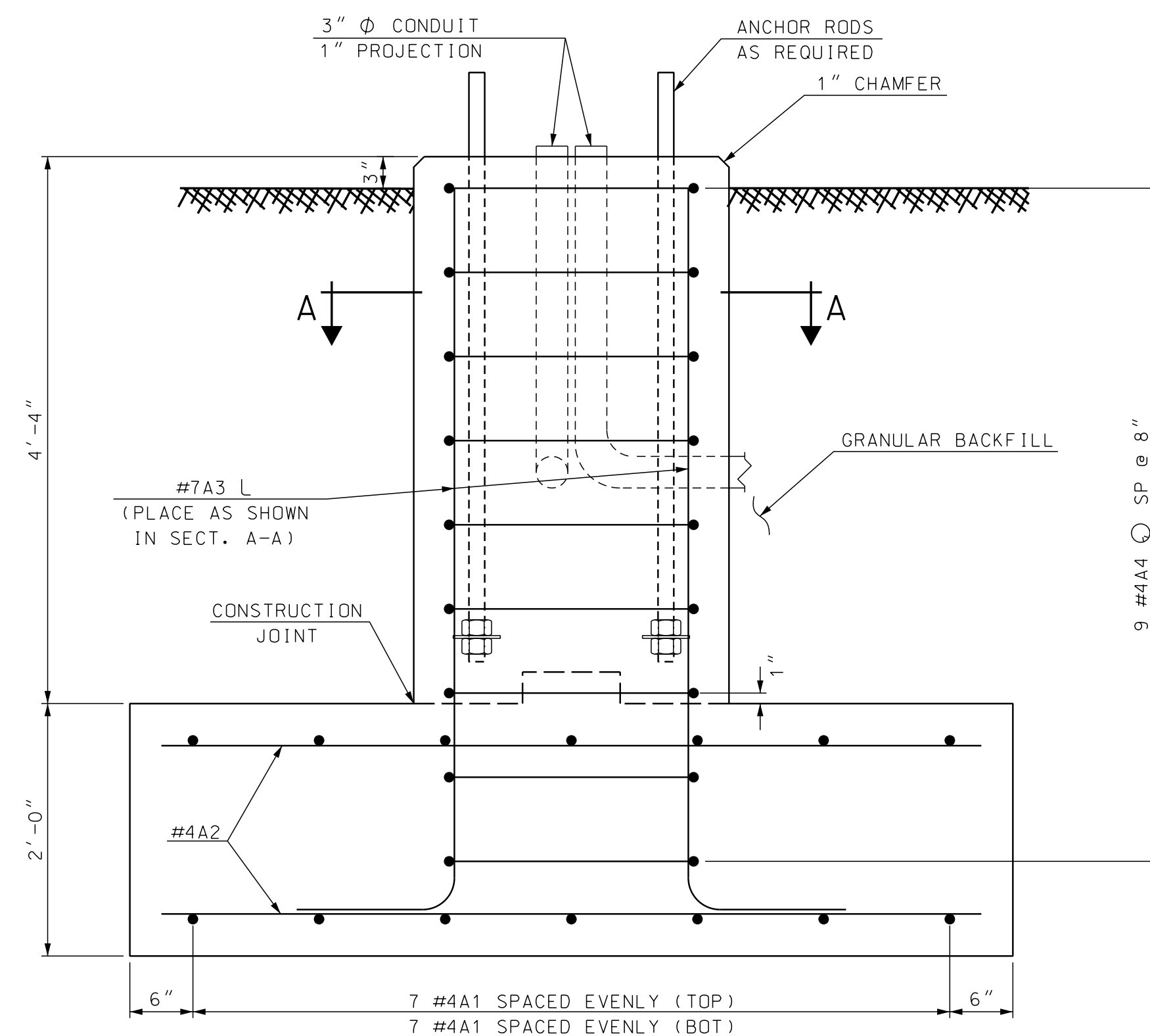
ANCHOR RODS SHALL BE SET ACCORDING TO MANUFACTURER'S RECOMMENDATION

REQUIRED FOUNDATION DIMENSIONS			
STEM DIAMETER AND LENGTH	FOOTING DIMENSIONS	CASE 1 WITH LUMINAIRE	CASE 2 WITHOUT LUMINAIRE
TYPE 1A (2'-6"Øx4'-4")	TYPE 1A (8'-6"x7'x2')	MAX L = 25'-0"	MAX L = 25'-0"
TYPE 1B (3'-0"Øx4'-10")	TYPE 1B (8'x7'x2')	-	MAX L = 40'-0"
TYPE 1C (3'-0"Øx4'-10")	TYPE 1C (9'x7'x2')	MAX L = 45'-0"	MAX L = 45'-0"
TYPE 1D (3'-0"Øx4'-10")	TYPE 1D (9'x8'-6"x2')	MAX L = 55'-0"	MAX L = 55'-0"
TYPE 1E (3'-0"Øx5'-4")	TYPE 1E (9'x9'x2')	MAX L = 60'-0"	MAX L = 60'-0"

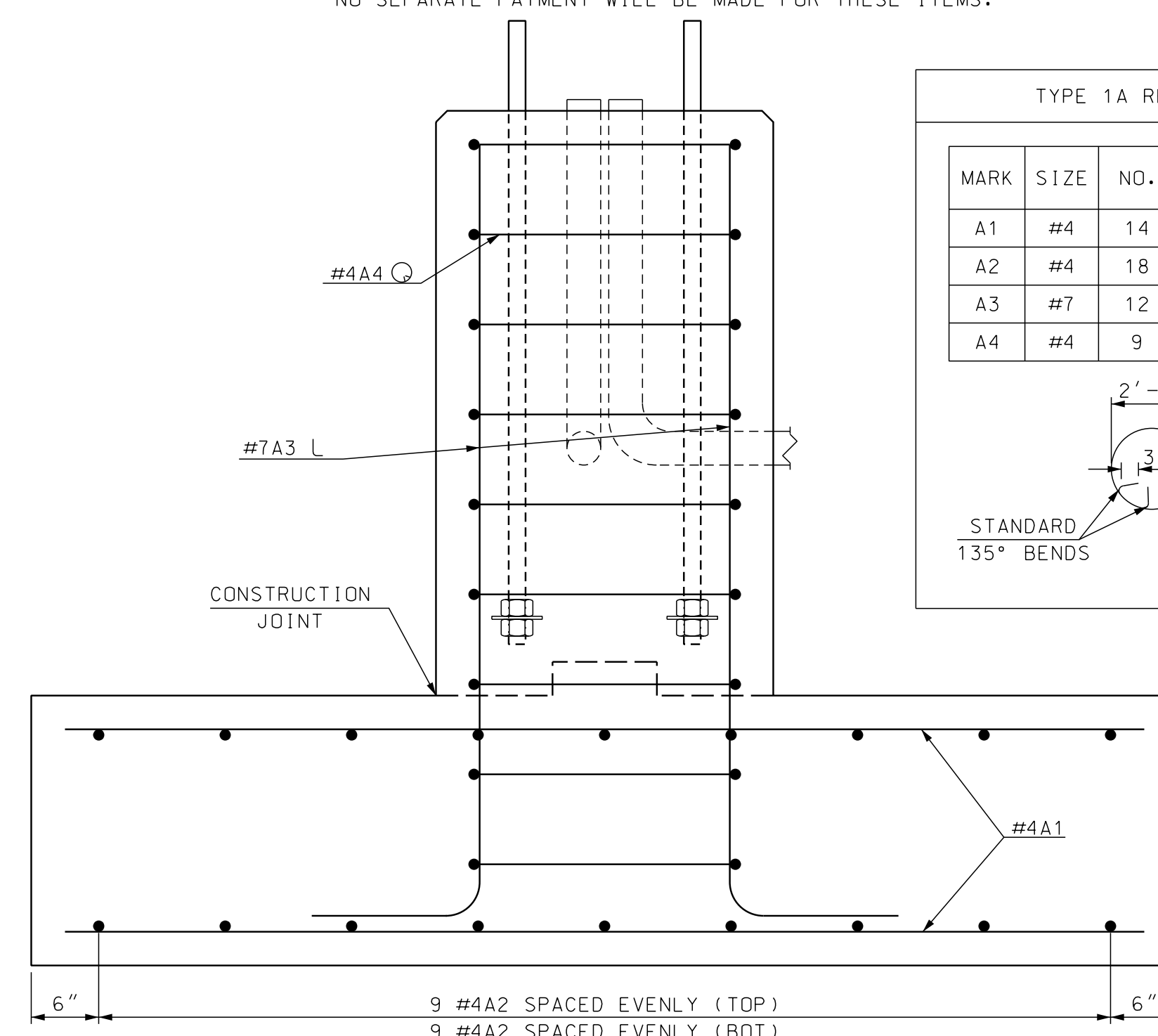
** NOTE: SEE TRAFFIC SIGNAL MAST ARM LAYOUT STANDARD PLAN TS-7 FOR ATTACHMENT LAYOUTS. ATTACHMENT COMBINATIONS OTHER THAN THOSE SHOWN ON THE STANDARD SHALL NOT BE USED WITHOUT DESIGN APPROVAL FROM EITHER THE BUREAU OF BRIDGE DESIGN OR THE BUREAU OF TRAFFIC.

TYPICAL QUANTITIES PER BASE		
ITEM NUMBER	ITEM	QUANTITY
206.1*	COMMON STRUCTURE EXCAVATION	21 CY
209.1*	GRANULAR BACKFILL	16.1 CY
520.21*	CONCRETE CLASS B, FOOTINGS	5.2 CY
544*	REINFORCING STEEL	366 LB

* ITEM NUMBERS ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.



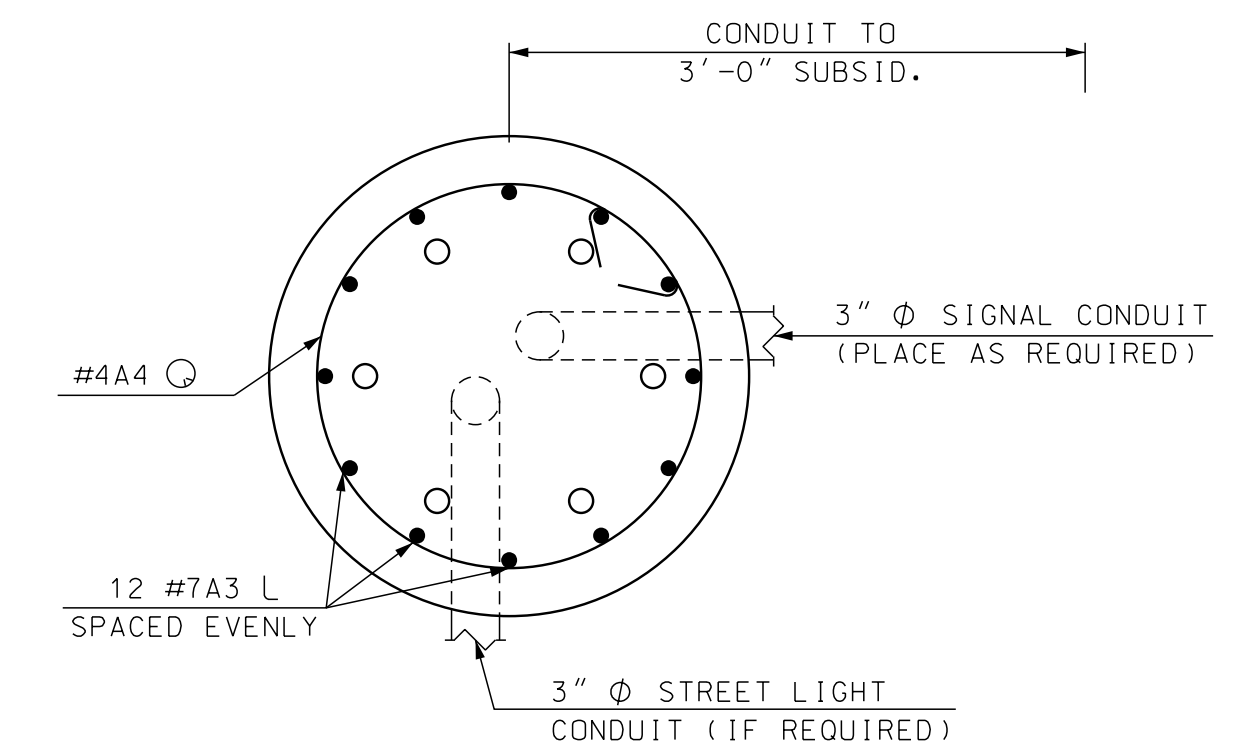
ELEVATION VIEW



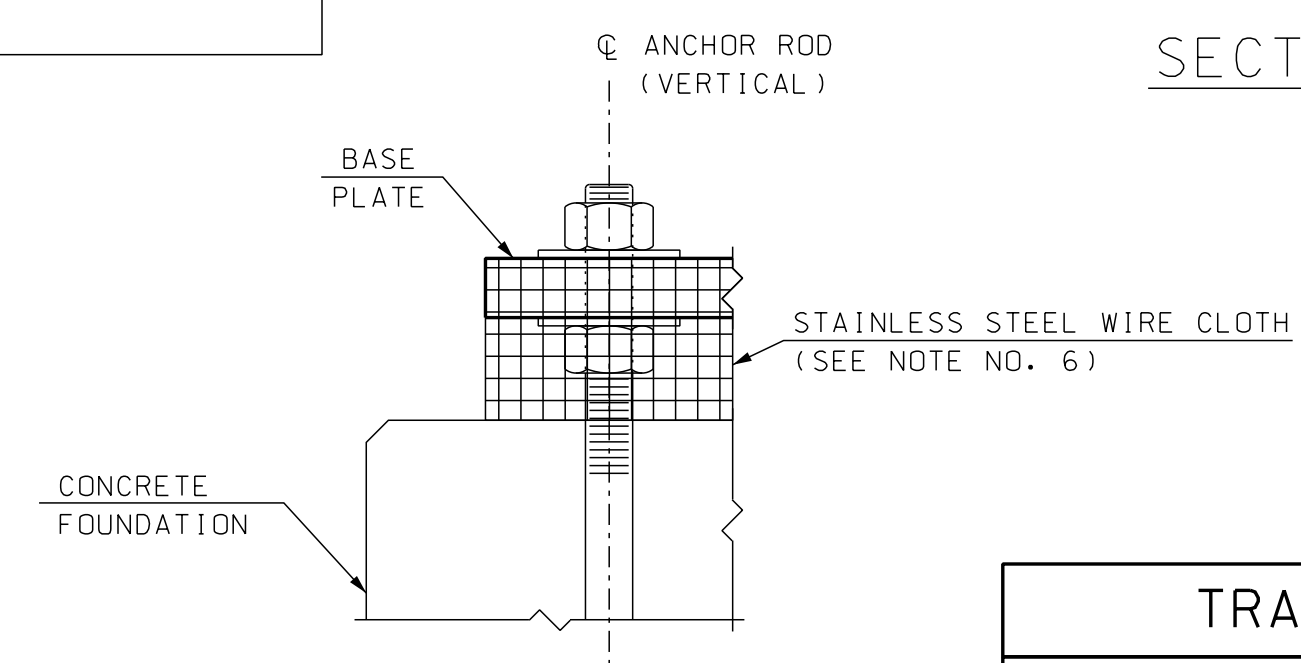
END ELEVATION VIEW

TYPE 1A REINFORCING SCHEDULE				
MARK	SIZE	NO.	UNBENT LENGTH	TYPE
A1	#4	14	8'-0"	—
A2	#4	18	6'-6"	—
A3	#7	12	6'-10"	L
A4	#4	9	7'-7"	Q

STANDARD 135° BENDS



SECTION A-A



SCREEN DETAIL

TRAFFIC SIGNAL STANDARD

Traffic Signal Mast Arm Foundation - Type 1A