

**-PEDESTAL POLE CONFIGURATIONS-**

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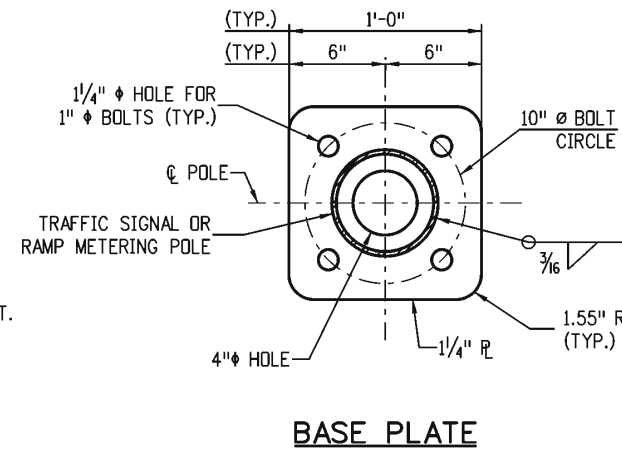
1. PEDESTAL POLE INSTALLATION
2. PEDESTAL POLE FOUNDATION DETAILS

**GENERAL NOTES**

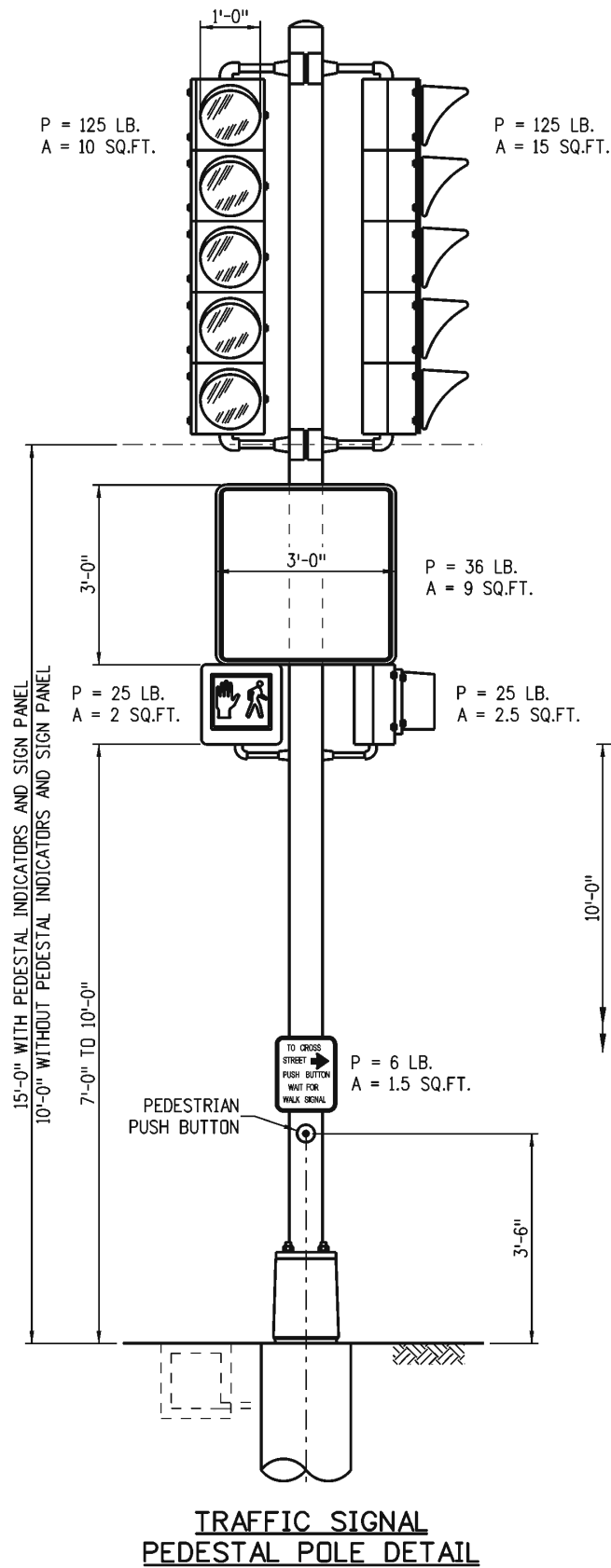
1. ALL PEDESTAL POLE STEEL SHALL BE ASTM A53 GRB AND SHALL BE HOT DIP GALVANIZED INSIDE AND OUTSIDE ACCORDING TO ASTM A123.
2. MOUNTING HARDWARE FOR EACH TRAFFIC SIGNAL WILL BE FURNISHED BY THE MANUFACTURER, INCLUDING POLE PLATES FOR SIDE POLE MOUNTING.
3. PEDESTAL POLES SHALL HAVE A FRANGIBLE BASE: AKRON FOUNDRY TB2-17 OR APPROVED EQUAL.
4. ALL POLES, PEDESTALS AND CABINETS SHALL BE PLACED A MINIMUM OF 2 FEET OFF THE ROADWAY MEASURED FROM THE EDGE OF SHOULDER OR FACE OF CURB.
5. 12-12-12 TRAFFIC SIGNAL FACES FOR RAMP METERING LOCATIONS SHALL BE ALUMINUM TYPE.
6. TWO-SECTION 12" RED AND GREEN SIGNAL HEADS SHALL BE "ANGLED IN" AND SHALL BE EQUIPPED WITH VISORS THAT MAY BE POSITIONED TO EITHER SIDE OF THE LENS, ALLOWING ONLY THE FIRST MOTORIST BEHIND THE STOP BAR TO SEE THE SIGNAL INDICATION.
7. REGULATORY SIGNING SHALL BE AS SHOWN ON THE PLANS. 24R10-6a FOR LEFT SIDE POLE INSTALLATIONS SHALL CONTAIN A RIGHT-POINTING ARROW. 24R10-6a FOR RIGHT SIDE POLE INSTALLATIONS SHALL CONTAIN A LEFT-POINTING ARROW. TYPICAL SPECIAL SIGN MESSAGES ARE "1 VEHICLE PER GREEN" FOR SINGLE-LANE METERED RAMPS, AND "1 VEHICLE PER GREEN EACH LANE" FOR TWO-LANE METERED RAMPS.
8. ALL SIGNAL HEADS SHALL BE APPROVED LED TYPE.
9. IF THE PLACEMENT OF A PEDESTRIAN PUSH BUTTON ASSEMBLY ON A TRAFFIC SIGNAL MAST POLE WILL NOT BE WITHIN EASY REACH BY PEDESTRIANS (10" OR LESS AND UNOBSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT), THEN A SEPARATE PEDESTRIAN PUSH BUTTON POST ASSEMBLY (PPBPA) SHALL BE INSTALLED WITHIN EASY REACH. THE PPBPA SHALL MEET THE PROVISIONS FOUND IN CDOT STANDARD PLAN S-614-9 AND "SECTION 4E.08 THROUGH 4E.13 - PEDESTRIAN DETECTORS" IN THE 2009 MUTCD WITH REVISIONS 1 AND 2.

**POLE AND CAISSON INFORMATION**

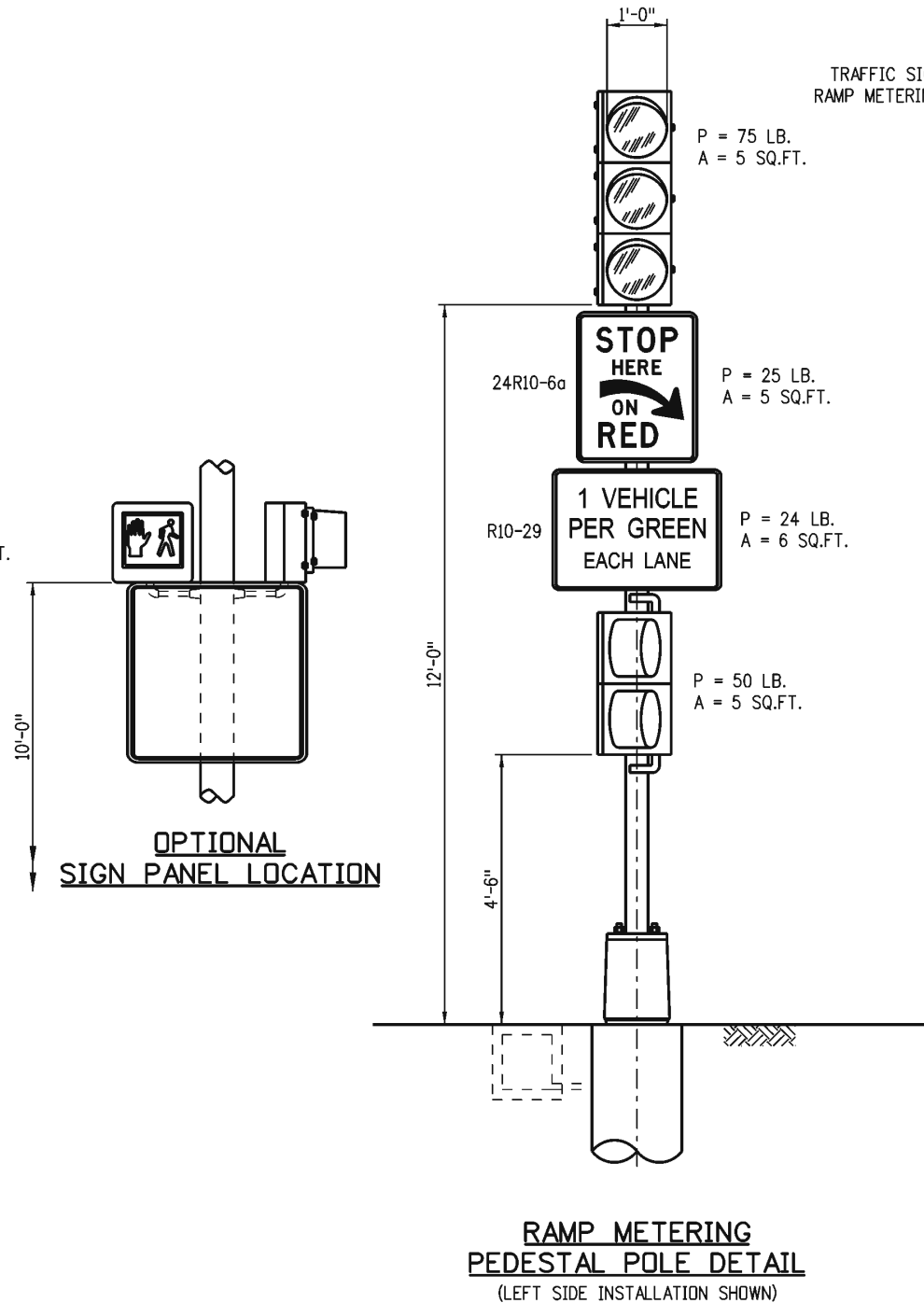
MEMBER	ATTRIBUTES AND LOADS	TRAFFIC SIGNAL POLE	RAMP METERING POLE
POLE	SIZE	6" $\phi$ SCH 40	4" $\phi$ SCH 40
	SERVICE MOMENT	14.72 k.ft.	4.23 k.ft.
	SERVICE SHEAR	0.97 kip	0.45 kip
CAISSON	SIZE	18" $\phi$	18" $\phi$
	ULT. MOMENT	20.55 k.ft.	5.90 k.ft.
	ULT. SHEAR	1.36 kip	0.63 kip



**BASE PLATE**



**TRAFFIC SIGNAL PEDESTAL POLE DETAIL**



**RAMP METERING PEDESTAL POLE DETAIL  
(LEFT SIDE INSTALLATION SHOWN)**

Computer File Information	
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**Colorado Department of Transportation**  
 2829 W. Howard Pl.  
 Denver, CD 80204  
 Phone: 303-757-9436  
 FAX: 303-757-9219  
**Traffic & Safety Engineering**

**MKB**

**PEDESTAL POLE SIGNALS**

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**STANDARD PLAN NO.**

**S-614-44**

**Standard Sheet No. 1 of 2**

Project Sheet Number:

**FOUNDATION NOTES**

1. CAISSON CONCRETE SHALL BE AIR ENTRAINED CLASS BZ IN ACCORDANCE WITH SECTION 503 OF THE STANDARD SPECIFICATIONS.
2. REINFORCING STEEL SHALL BE GRADE 60 IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.
3. ALL REINFORCING STEEL SHALL BE NON COATED.
4. CAISSON CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,700 PSI BEFORE INSTALLING THE PEDESTAL POLE; VERIFY CONCRETE STRENGTH WITH MATURITY METER.
5. CAISSONS SHALL BE PLACED AGAINST UNDISTURBED EARTH.

**DESIGN DATA**

CAISSON CONCRETE:  
 CLASS BZ CONCRETE:  $f'_c = 4,000$  psi  
 REINFORCING STEEL:  $f_y = 60,000$  psi

DESIGN WIND SPEED = 90 mph

THE DESIGNS HEREIN ASSUME THAT THE PEDESTAL POLES ARE INSTALLED WITHIN THE ROADWAY PRISM WITH THE FOLLOWING PARAMETERS:

MEDIUM DENSE COHESIONLESS SOIL:  
 SOIL DENSITY,  $\gamma = 110$  pcf  
 SOIL  $\phi$  ANGLE =  $30^\circ$   
 SF = 1.25 FOR FLEXURAL RESISTANCE

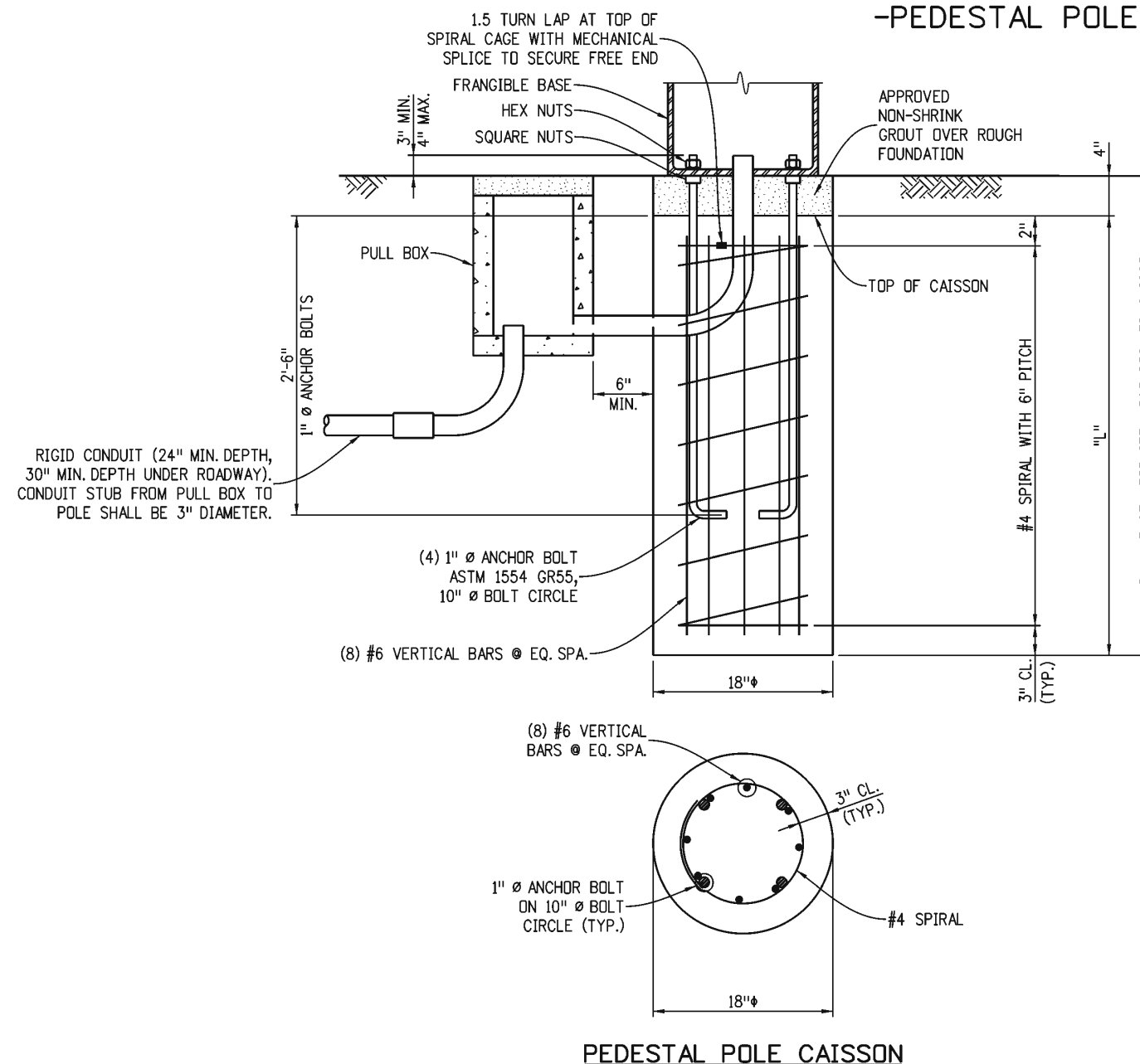
MEDIUM STIFF COHESIVE SOIL:  
 SOIL DENSITY,  $\gamma = 110$  pcf  
 SOIL COHESION = 750 psf  
 SF = 1.25 FOR FLEXURAL RESISTANCE

CONTACT THE ENGINEER IF ANY OF THE FOLLOWING SOIL CONDITIONS ARE ENCOUNTERED DURING DRILLING:

- (A) SIGNALS WILL NOT BE INSTALLED WITHIN THE ROADWAY PRISM.
- (B) THE SOIL HAS A HIGH ORGANIC CONTENT OR CONSISTS OF SATURATED SILT AND CLAY.
- (C) THE SITE WON'T SUPPORT THE WEIGHT OF THE DRILLING RIG.
- (D) THE FOUNDATION SOILS ARE NOT HOMOGENOUS.
- (E) FIRM BEDROCK IS ENCOUNTERED.


UNFACTORED GROUP LOAD II COMBINATION LOADS FOR THE DESIGN OF POLES WERE GENERATED WITH THE STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 5TH EDITION INCLUDING THE 2010 & 2011 INTERIMS.  
 LOAD FACTORS FOR GENERATING ULTIMATE CAISSON LOADS ARE FOR THE STRENGTH III LOAD COMBINATION AS SPECIFIED IN THE 6TH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

**-PEDESTAL POLE FOUNDATION DETAILS-**



**CAISSON DATA TABLE**

	TRAFFIC SIGNAL PEDESTAL POLE CAISSON	RAMP METERING PEDESTAL POLE CAISSON
"L"	4'-8"	3'-2"
PAY LENGTH	5'-0"	3'-6"

<b>Computer File Information</b>		<b>Sheet Revisions</b>	 <p>Colorado Department of Transportation                  2829 W. Howard Pl.                  Denver, CO 80204                  Phone: 303-757-9436                  FAX: 303-757-9219</p>	<p><b>PEDESTAL POLE SIGNALS</b></p> <p>Issued By: Traffic &amp; Safety Engineering Branch July 31, 2019</p>	<p><b>STANDARD PLAN NO.</b></p> <p><b>S-614-44</b></p> <p><b>Standard Sheet No. 2 of 2</b></p> <p>Project Sheet Number:</p>
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