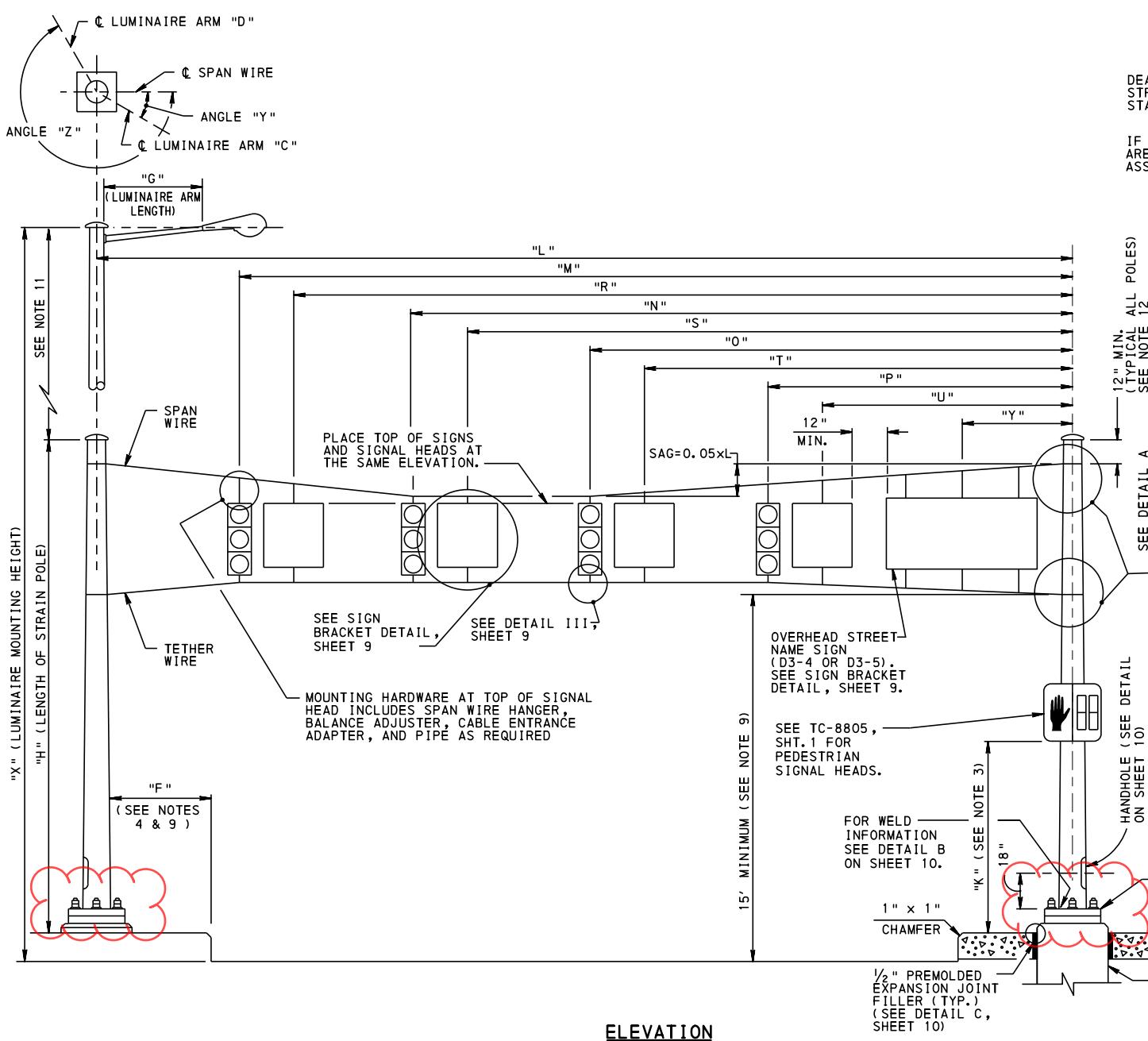
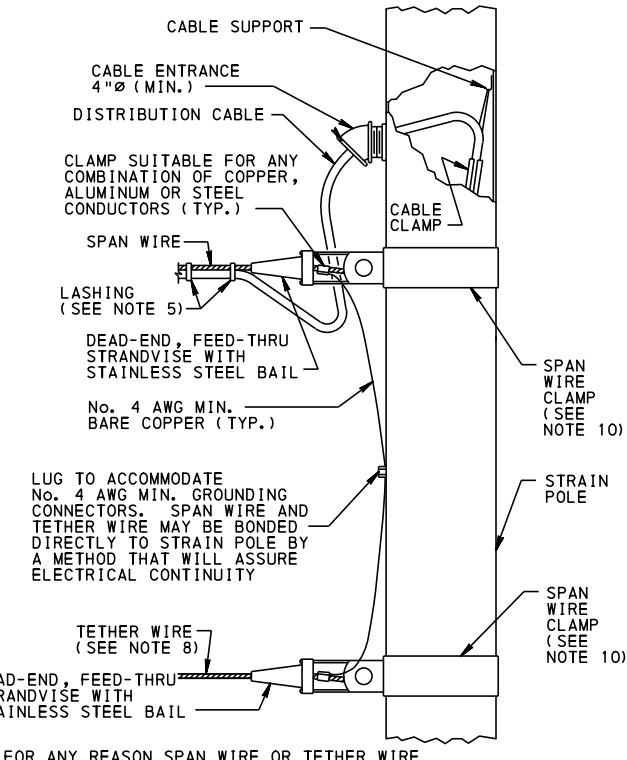


### MINIMUM BREAKING STRENGTH OF SPAN WIRE

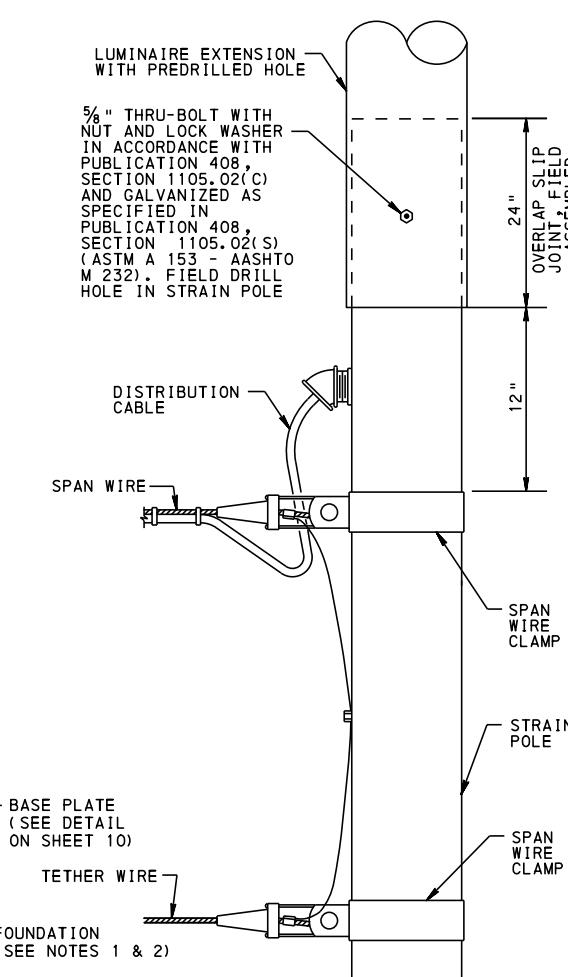
NOM. DIA. OF SPAN WIRE	ASTM A 475, CLASS A, SIEMENS-MARTIN GRADE	ASTM B 416
1/4 "	3150 lbs	6301 lbs
5/16 "	5350 lbs	10,020 lbs
3/8 "	6950 lbs	15,930 lbs
7/16 "	9350 lbs	19,060 lbs
1/2 "	12,100 lbs	23,000 lbs



## ELEVATION



**DETAIL A**



**OVERLAP SLIP JOINT DETAIL**  
( ALTERNATE METHOD TO PROVIDE LUMINAIRE)  
( SEE NOTES 14 AND 16 )

GENERAL NOTES:

1. FOR FOUNDATION DETAILS, SEE SHEETS 3 THROUGH 7.
2. INSTALL A MINIMUM OF ONE GROUND ROD AT EACH FOUNDATION, SEE TC-8804, SHT. 1.
3. DIMENSION "K" IS FROM SIDEWALK. IF NO SIDEWALK, DIMENSION "K" IS FROM PAVEMENT GRADE AT CENTER OF ROADWAY. PROVIDE SPECIFIED DIMENSION "K" SUCH THAT CLEARANCE IS IN THE RANGE OF: 8' MINIMUM, 15' MAXIMUM FOR TRAFFIC SIGNAL HEADS; 7' MINIMUM, 10' MAXIMUM FOR PEDESTRIAN SIGNAL HEADS.
4. DIMENSION "F" IS 2' MINIMUM FROM CURB OR FROM EDGE OF SHOULDER. PLACE POST-MOUNTED SIGNALS 2' MINIMUM BEHIND CURB OR EDGE OF SHOULDER.
5. LASH DISTRIBUTION CABLE TO THE SPAN WIRE WITH PREFORMED GALVANIZED STEEL RODS, SELF-LOCKING CABLE TIES OF THE OUTDOOR TYPE, SOLID COPPER WIRE, GALVANIZED STEEL WIRE, STAINLESS STEEL WIRE, OR CABLE RINGS AND SADDLES. MAKE ONE COMPLETE WRAP WITH WIRE LASHING AT INTERVALS NOT EXCEEDING 6". SECURE ENDS OF WIRE LASHING TO THE SPAN WIRE WITH AN ALL PURPOSE SPLIT BOLT CONNECTOR. PLACE CABLE TIES AT INTERVALS NOT EXCEEDING 12". PROVIDE PROPER SIZE AND SPACING OF CABLE RINGS AND SADDLES ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE DEAD-ENDS THAT DEVELOP THE STRENGTH OF THE SPAN WIRE.
7. FOR QUANTITY, SIZE, SIZE OF HOLES AND BOLT CIRCLE FOR ANCHOR BOLTS, SEE SHEET 3.
8. TETHER WIRE -  $\frac{1}{4}$ " DIAMETER (NOMINAL) WITH A BREAKING STRENGTH OF 1900 lbs MEETING ASTM A 475, CLASS A, COMMON GRADE.
9. PROVIDE SPECIFIED CLEARANCE IN ACCORDANCE WITH PUBLICATION 149 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
10. EACH SPAN OR TETHER WIRE WILL HAVE AN INDIVIDUAL SPAN WIRE CLAMP.
11. USE ONE-PIECE STRAIN POLE WHEN LUMINAIRE IS REQUIRED EXCEPT FOR ROUND STEPPED SUPPORTS, OR UNLESS ALTERNATE OVERLAP SLIP JOINT IS SPECIFIED OR APPROVED ON A PROJECT-BY-PROJECT BASIS.
12. IF SPECIFIED, PROVIDE 36" MINIMUM STUB TO ALLOW FUTURE LUMINAIRE ATTACHMENT VIA OVERLAP SLIP JOINT.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

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## STANDARD

## TRAFFIC SIGNAL SUPPORT

## STRAIN POLE

RECOMMENDED XXX. X, 20XX	RECOMMENDED XXX. X, 20XX	SHEET 2 OF 10
CHIEF, TRAFFIC OPERATIONS SECTION	CHIEF OF HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION	TC-8801

### ANCHOR BOLT DESIGN, MAST ARM

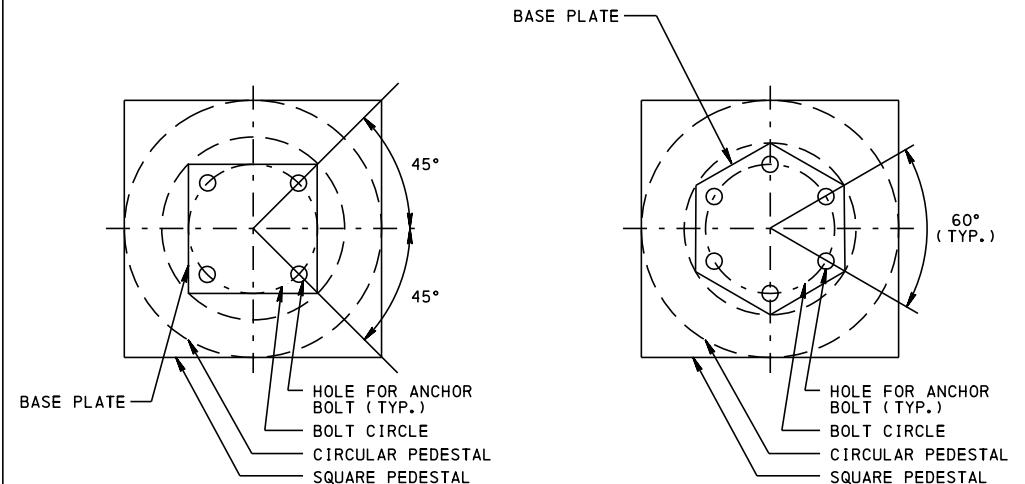
MAST ARM LENGTH	QTY.	ONE ARM				TWO ARMS *			
		DIA.	LGTH.	B.C.	HOLE	DIA.	LGTH.	B.C.	HOLE
0 - 10'	6	1 3/4"	35"	18"	2"	1 3/4"	35"	18"	2"
>10' - 15'	6	1 3/4"	35"	18"	2"	1 3/4"	35"	18"	2"
>15' - 20'	6	1 3/4"	35"	18"	2"	1 3/4"	35"	18"	2"
>20' - 25'	6	1 3/4"	35"	18"	2"	1 3/4"	35"	18"	2"
>25' - 30'	6	1 3/4"	35"	21"	2"	1 3/4"	35"	21"	2"
>30' - 35'	6	1 3/4"	35"	21"	2"	1 3/4"	35"	21"	2"
>35' - 40'	6	2"	40"	24"	2 1/4"	2"	40"	24"	2 1/4"
>40' - 45'	6	2"	40"	24"	2 1/4"	2"	40"	24"	2 1/4"
>45' - 50'	6	2"	40"	24"	2 1/4"	2"	40"	24"	2 1/4"
>50' - 60'	6	2"	40"	24"	2 1/4"	2"	40"	24"	2 1/4"

\* TWO ARMS PERPENDICULAR TO EACH OTHER. ADDITIONAL STRUCTURAL ANALYSIS IS REQUIRED FOR TWO MAST ARMS AT ACUTE OR OBTUSE ANGLES TO EACH OTHER

B.C. = BOLT CIRCLE DIAMETER

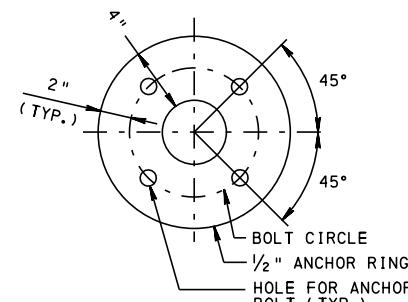
### ANCHOR BOLT DESIGN, PEDESTAL POLE

PEDESTAL SHAFT LENGTH	ANCHOR BOLTS		
	QTY.	DIA.	LENGTH
7' - 10'	4	3/4"	2'-0"
>10' - 14'	4	3/4"	2'-0"



#### BASE MOUNT PLAN

NOTE: A MINIMUM OF 4 ANCHOR BOLTS IS REQUIRED FOR PEDESTAL TRAFFIC SIGNAL SUPPORTS.

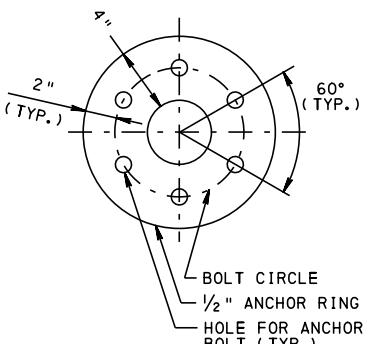


#### ANCHOR RING DETAIL (N.T.S.)

#### TRAFFIC SIGNAL SUPPORT PEDESTAL POLE ANCHOR BOLT DETAILS

#### BASE MOUNT PLAN

NOTE: A MINIMUM OF 6 ANCHOR BOLTS IS REQUIRED FOR MAST ARM AND STRAIN POLE TRAFFIC SIGNAL SUPPORTS.



#### ANCHOR RING DETAIL (N.T.S.)

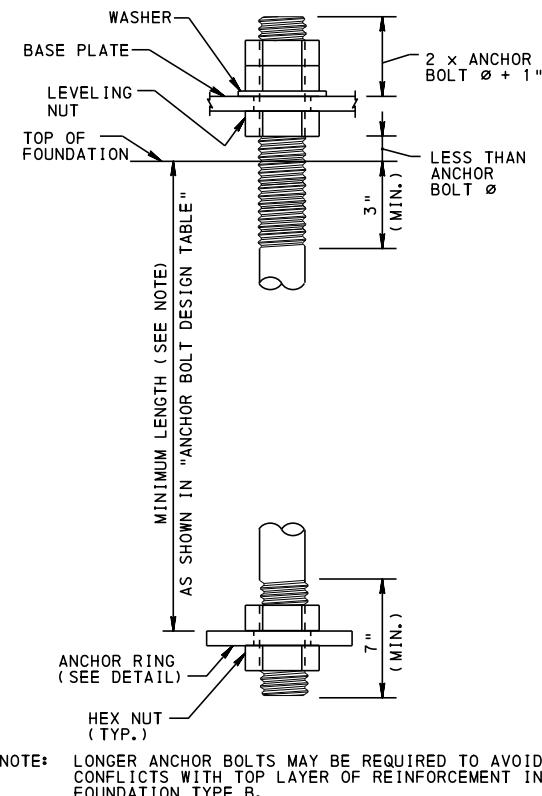
#### TRAFFIC SIGNAL SUPPORT MAST ARM AND STRAIN POLE ANCHOR BOLT DETAILS

### ANCHOR BOLT DESIGN, STRAIN POLE

DESIGN TENSION (LBS)	QTY.	SHAFT LENGTH 20' - 24'				SHAFT LENGTH 26' - 30'				SHAFT LENGTH 32' - 34'			
		DIA.	LGTH.	B.C.	HOLE	DIA.	LGTH.	B.C.	HOLE	DIA.	LGTH.	B.C.	HOLE
1000	6	1 3/4"	35"	18"	2"	40"	18"	2 1/4"	2"	40"	18"	2 1/4"	
2000	6	1 3/4"	35"	18"	2"	40"	18"	2 1/4"	2"	40"	18"	2 1/4"	
3000	6	1 3/4"	35"	18"	2"	40"	18"	2 1/4"	2"	40"	18"	2 1/4"	
4000	6	1 3/4"	35"	18"	2"	40"	18"	2 1/4"	2"	40"	18"	2 1/4"	
5000	6	1 3/4"	35"	18"	2"	40"	18"	2 1/4"	2"	40"	18"	2 1/4"	
6000	6	2 1/4"	45"	18"	2 1/2"	2 1/4"	45"	21"	2 1/2"	2 1/4"	45"	21"	2 1/2"
7000	6	2 1/4"	45"	18"	2 1/2"	2 1/4"	45"	21"	2 1/2"	2 1/4"	45"	21"	2 1/2"
8000	6	2 1/4"	45"	18"	2 1/2"	2 1/4"	45"	21"	2 1/2"	2 1/4"	45"	21"	2 1/2"
9000	6	2 1/4"	45"	18"	2 1/2"	2 1/4"	45"	21"	2 1/2"	2 1/4"	45"	21"	2 3/4"
10,000	6	2 1/4"	45"	18"	2 1/2"	2 1/4"	45"	21"	2 1/2"	2 1/2"	45"	21"	2 3/4"

### FOUNDATION NOTES:

1. PROVIDE 3" CONCRETE COVER ON REINFORCEMENT BARS, EXCEPT AS NOTED.
2. USE CLASS A CEMENT CONCRETE  $f'c = 3000$  PSI IN PEDESTALS, FOOTINGS AND CAISSENS.
3. PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A615/A615M-96A FOR CONCRETE REINFORCEMENT. DO NOT WELD REINFORCING STEEL BARS.
4. RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS, EXCEPT AS INDICATED.
5. CHAMFER EXPOSED CONCRETE EDGES 1" x 1".
6. DIMENSIONS ARE BASED ON A NORMAL TEMPERATURE OF 68°F.
7. GALVANIZE ALL STRUCTURAL STEEL IN ACCORDANCE WITH PUB. 408, SECTION 951.21(c) 1. d.
8. PROVIDE ANCHOR BOLT HOLES ~~1/4"~~ LARGER THAN BOLT DIAMETER.
9. PROVIDE ANCHOR BOLTS CONFORMING TO ASTM F1554 GRADE 55 PER PUBLICATION 408, SECTION 1105.02 (c) 3.
10. USE STEEL TEMPLATE TO SET ANCHOR BOLTS IN ACCORDANCE WITH PUBLICATION 408, SECTION 951.2(c) 5.
11. STEEL TEMPLATE TO BE PROVIDED BY MAST ARM OR STRAIN POLE FABRICATOR.
12. PROVIDE ANCHOR BOLTS WITH THREADS WHICH EXTEND A MINIMUM OF 3" BELOW THE TOP OF THE FOUNDATION.
13. SEE PENNDOT PUBLICATION 149 "CRITERIA FOR THE DESIGN OF TRAFFIC SIGNAL SUPPORTS".
14. IF WEAK SOIL CONDITIONS ARE ENCOUNTERED DURING CAISSON DRILLING OPERATION (I.E. SOIL MOVEMENT DURING DRILLING), NOTIFY CENTRAL OFFICE FOR APPROPRIATE FOUNDATION DEPTHS IN WEAK SOIL CONDITIONS.



### DESIGN CRITERIA

(SEE NOTE 13)

ALL MAIN LOAD CARRYING TENSION MEMBERS GREATER THAN 1/2 INCH THICKNESS MUST MEET AASHTO ZONE 2, NON-FRACTURE CRITICAL MEMBER COMPONENTS (FCM) CHARPY V-NOTCH (CVN).

### EXTERNAL LOADS

AASHTO SIGN SPEC <sup>†</sup>

ICE LOAD  
WIND LOAD

SECTION 3.7  
APPENDIX C, SECTION C.3,  
EQ. C-1, WITH 80 MPH WIND  
AND 30% GUST FACTOR

### GROUP LOADS

AASHTO SIGN SPEC SECTION 3.4 <sup>†</sup>

### BOLT CRITERIA

AASHTO SIGN SPEC <sup>†</sup>

BOLT CRITERIA  
ALLOWABLE ANCHOR BOLT STRESSES

SECTION 5.16  
SECTION 5.17

### SPREAD FOOTINGS

MAXIMUM DESIGN PRESSURE  
MINIMUM AREA IN BEARING  
UNIT WEIGHT OF SOIL  
1.5 TONS PER SQUARE FOOT  
100%  
100 POUNDS PER CUBIC FOOT

### DRILLED SHAFTS (CAISSENS)

PENNDOT DM4 APPENDIX J, PENNDOT COM624 COMPUTER PROGRAM, OR L-PILE

#### CASE 1 (SOIL)

MAXIMUM DESIGN PRESSURE  
MAXIMUM DESIGN LATERAL DISPLACEMENT  
MODULUS OF SUBGRADE REACTION:

COHESION: ABOVE WATER TABLE  
BETWEEN WATER TABLE

K = 80.0 POUNDS PER CUBIC INCH  
K = 60.0 POUNDS PER CUBIC INCH

WATER TABLE: BELOW WATER TABLE  
UNIT WEIGHT OF SOIL  
ANGLE OF INTERNAL FRICTION

15 POUNDS PER SQUARE FOOT  
0 POUNDS PER SQUARE FOOT  
5 FEET BELOW GRADE  
120 POUNDS PER CUBIC FOOT  
30°

#### CASES 2 THROUGH 4 (ROCK)

MAXIMUM DESIGN PRESSURE  
MAXIMUM DESIGN LATERAL DISPLACEMENT  
MODULUS OF SUBGRADE REACTION:

COHESION: ABOVE WATER TABLE  
BETWEEN WATER TABLE

K = 80.0 POUNDS PER CUBIC INCH  
K = 60.0 POUNDS PER CUBIC INCH

WATER TABLE: UNIT WEIGHT OF SOIL  
ANGLE OF INTERNAL FRICTION

0 POUNDS PER CUBIC INCH  
5 FEET BELOW GRADE  
120 POUNDS PER CUBIC FOOT  
30°

#### ROCK PARAMETERS:

UNIT WEIGHT OF ROCK  
UNIAXIAL COMPRESSIVE STRENGTH

120 POUNDS PER CUBIC FOOT  
250 POUNDS PER SQUARE INCH

FOR ROCK CASE DEFINITION, SEE ROCK SOCKET NOTES ON SHEET 4.

### LEGEND:

AASHTO SIGN SPEC:

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", 4TH EDITION (2001) INCLUDING INTERIM SPECIFICATIONS (2002, 2003 AND 2006)

U.N.O.:

UNLESS NOTED OTHERWISE

### STANDARD

### TRAFFIC SIGNAL SUPPORT FOUNDATION NOTES AND ANCHOR BOLT DETAILS

RECOMMENDED XXX. X, 20XX

RECOMMENDED XXX. X, 20XX

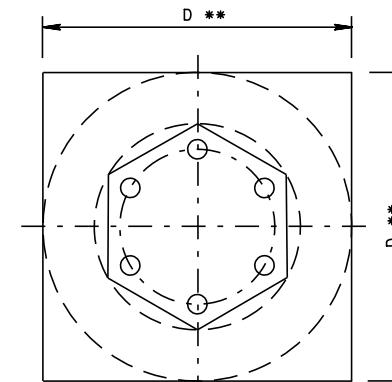
SHEET 3 OF 10

CHIEF, TRAFFIC OPERATIONS SECTION

&lt;p

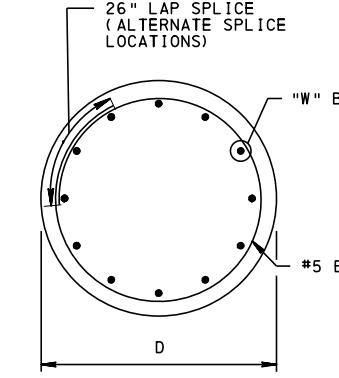
**NOTES:**

1. PROVIDE THE TYPE "A" FOUNDATION AT ALL LOCATIONS, EXCEPT THE TYPE "B" FOUNDATION (SHOWN ON SHEET 8) MAY BE USED WHEN PHYSICAL CONDITIONS PREVENT PLACING THE TYPE "A" FOUNDATION TO ITS REQUIRED DEPTH.
2. FOR DESIGN CRITERIA SEE SHEET 3.
3. IN A PAVED AREA, PLACE THE TOP OF FOUNDATION FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT. GRADE ADJACENT PAVEMENT AWAY FROM ANCHOR BOLTS FOR DRAINAGE. IN UNPAVED AREAS TOP OF FOUNDATION TO BE 6" ABOVE TOP OF GROUND.
4. FOR GROUND ROD SIZE AND INSTALLATION DETAILS, SEE TC-8804.
5. IN A PAVED AREA, GROUT SHALL BE PLACED.
6. FOR MAST ARM AND TRAFFIC SIGNAL PEDESTAL POLE TABLES, REFER TO SHEET 5. FOR STRAIN POLE TABLES, SEE SHEET 6.
7. FOR TRAFFIC SIGNAL PEDESTRIAN PUSH BUTTON POLE DETAIL, REFER TO TC-8803.
8. FOR MAST ARM LOCATIONS WITH SITE LIMITATIONS, ALTERNATE TYPE A FOUNDATIONS WITH SMALLER DIAMETERS MAY BE USED IF APPROVED BY THE BUREAU OF HIGHWAY SAFETY AND TRAFFIC ENGINEERING. SEE SHEET 7 FOR ALTERNATE TYPE A FOUNDATION DETAILS.

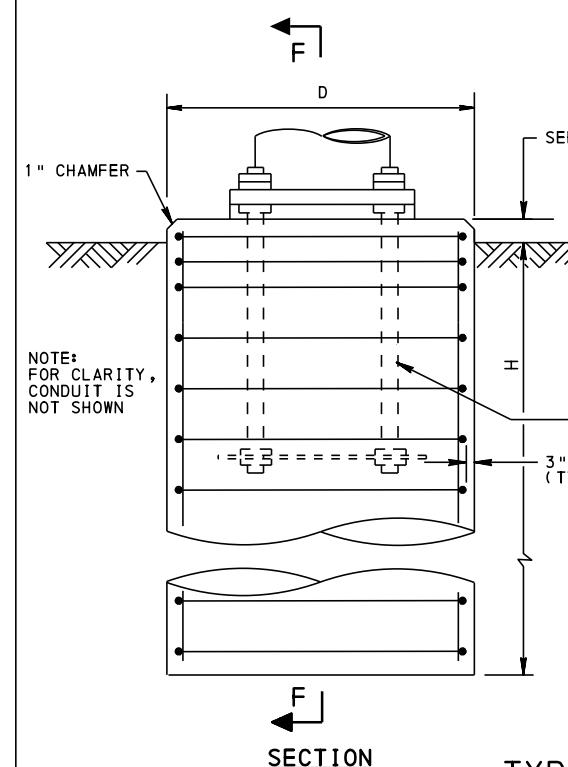


PLAN

\*\* DIAMETER IF CIRCULAR, OR SIDE IF SQUARE. CIRCULAR FOUNDATIONS SHALL BE SQUARE FROM THE TOP TO A POINT 6" BELOW THE GROUND LINE, IF SIDEWALK IS PRESENT



SECTION A-A



SECTION

TYPE A FOUNDATION  
CASE 1

SECTION F-F

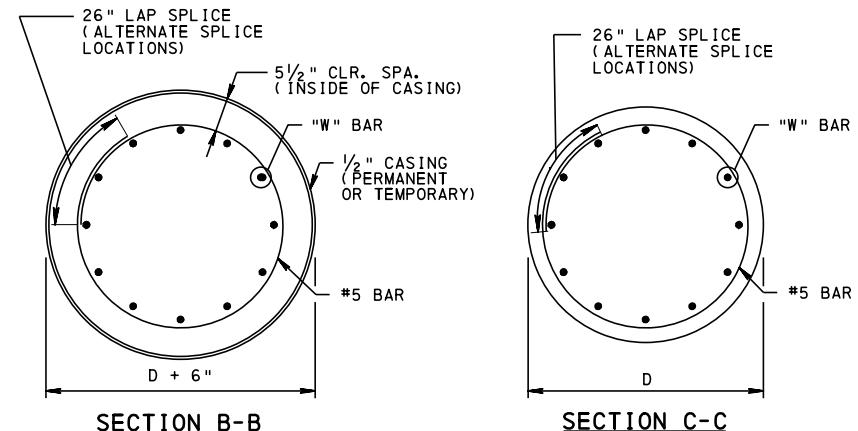
NOTE: 6-ANCHOR BOLT CONFIGURATION SHOWN IS FOR MAST ARM & STRAIN POLE TRAFFIC SIGNAL SUPPORTS. 4-ANCHOR BOLT CONFIGURATION FOR PEDESTAL POLE TRAFFIC SIGNAL SUPPORTS IS SIMILAR.

TYPE A FOUNDATION  
CASE 2

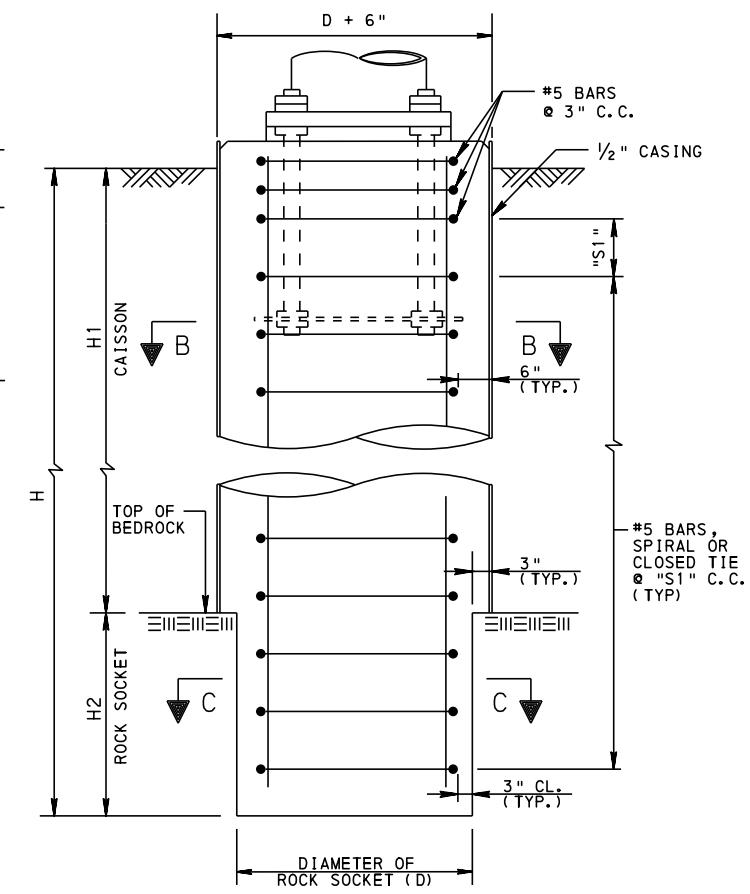
STIRRUP SPACING	
COMBINATION	S1
32 FT STRAIN POLE, 10,000 LB (CASE 5)	5"
34 FT STRAIN POLE, 10,000 LB (CASE 5)	5"
ALL OTHER COMBINATIONS	6"

**ROCK SOCKET NOTES:**

1. IF ROCK STRATUM IS ENCOUNTERED, USE THE TABLES PRESENTED FOR CASES 2 THROUGH 4. ROCK STRATUM IS DEFINED IN ACCORDANCE WITH PUB. 408, SECTION 1006.1(d). FOR CASES 3 AND 4, INCREASE CAISSON DIAMETER "D" BY 6" AND INSTALL STEEL CASING TO TOP OF ROCK TO STABILIZE SOIL DURING ROCK AUGERING. STEEL CASING MAY BE PERMANENTLY LEFT IN PLACE OR REMOVED IN ACCORDANCE WITH PUB. 408, SECTION 1006. IF A STEEL CASING IS REQUIRED FOR CASE 2, INCREASE CAISSON DIAMETER "D" BY 6".
2. ROCK CASES ARE DEFINED AS FOLLOWS:
  - CASE 2:  $0' \leq H_1 < 5'$
  - CASE 3:  $5' \leq H_1 < 10'$
  - CASE 4:  $H_1 \geq 10'$
3. THE ROCK SOCKET DETAILS PRESENTED WITHIN THIS STANDARD ARE BASED ON ROCK PARAMETERS ON SHEET 3. ALTERNATE FOUNDATION SIZES AND TYPES MAY BE PERMITTED FOR DIFFERENT ROCK CONDITIONS PROVIDED THAT ACTUAL GEOTECHNICAL CONDITIONS ARE VALIDATED AND THE FOUNDATION DESIGN MEETS APPLICABLE CRITERIA FOR STRENGTH AND SERVICEABILITY. SUBMIT ALTERNATE FOUNDATION DESIGNS TO THE DISTRICT FOR REVIEW AND APPROVAL.
4. THE TOTAL CAISSON AND ROCK SOCKET DEPTH "H" NEED NOT EXCEED THE TOTAL CAISSON DEPTH "H" FOR CASE 1 UNLESS DIRECTED OTHERWISE.
5. FOR DETAILS NOT SHOWN, SEE TYPE A FOUNDATION DETAIL FOR CASE 1 ON THIS SHEET.



SECTION B-B  
SECTION C-C  
CLOSED TIE DETAILS  
CASES 3 AND 4



TYPE A FOUNDATION  
CASES 3 AND 4

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

TRAFFIC SIGNAL SUPPORT

FOUNDATION TYPE A

RECOMMENDED XXX. X, 20XX

RECOMMENDED XXX. X, 20XX

SHEET 4 OF 10

CHIEF, TRAFFIC OPERATIONS SECTION

CHIEF OF HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION

TC-8801

MAST ARM FOUNDATION NOTES:

- FOUNDATION DESIGN IS BASED ON STANDARD STRUCTURAL LOADINGS SHOWN IN THE PUBLICATION 149 AND THE FOLLOWING DESIGN ASSUMPTIONS:
  - CENTROIDAL HEIGHT OF SIGNALS AND SIGNS ATTACHED TO THE MAST ARM AT 20' MAXIMUM FROM THE TOP OF FOUNDATION.
  - A LUMINAIRE WITH A 15' ARM LENGTH AND A 30' MOUNTING HEIGHT FROM THE TOP OF ROADWAY.
  - A CABINET WITH A 4'-3" HEIGHT, 2'-6" WIDTH, 1'-10" DEPTH AND A DEAD LOAD OF 281 LBS. THE CENTROIDAL HEIGHT IS LOCATED 4'-6" FROM THE TOP OF THE FOUNDATION.
- WHEN THE MAST ARM SUPPORT HAS TWO ARMS WHICH ARE PERPENDICULAR TO EACH OTHER, USE THE FOUNDATION IN THE DESIGN TABLE FOR THE LENGTH OF THE LONGER ARM.
- FOR DEFINITION OF CASES, SEE DRILLED SHAFT DESIGN CRITERIA ON SHEET 3 AND DETAILS ON SHEET 4.

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, MAST ARM (SOIL CONDITION)

MAST ARM LENGTH	"D"	CASE 1			"W" BAR
		ONE ARM	TWO ARMS*	QTY.	
0' - 10'	3'-0"	7'-0"	7'-6"	12	#9
>10' - 15'	3'-0"	8'-0"	8'-0"	12	#9
>15' - 20'	3'-0"	8'-6"	9'-0"	12	#9
>20' - 25'	3'-0"	9'-0"	9'-0"	12	#9
>25' - 30'	3'-0"	9'-6"	10'-0"	12	#9
>30' - 35'	3'-0"	10'-0"	10'-6"	12	#9
>35' - 40'	3'-6"	10'-0"	10'-6"	14	#9
>40' - 45'	3'-6"	10'-0"	11'-0"	14	#9
>45' - 50'	3'-6"	10'-6"	11'-6"	14	#9
>50' - 60'	3'-6"	11'-0"	12'-6"	14	#9

\* TWO ARMS PERPENDICULAR TO EACH OTHER.  
ADDITIONAL STRUCTURAL ANALYSIS IS REQUIRED  
FOR TWO MAST ARMS AT ACUTE OR OBTUSE  
ANGLES TO EACH OTHER.

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, MAST ARM (ROCK CONDITION)

MAST ARM LENGTH	"D" **	CASE 2 [0' ≤ H1 < 5']		CASE 3 [5' ≤ H1 < 10']		CASE 4 [H1 ≥ 10']		"W" BAR
		H2	H2 ***	H2	H2 ***	H2	H2 ***	
0' - 10'	3'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	12 #9
>10' - 15'	3'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	12 #9
>15' - 20'	3'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	12 #9
>20' - 25'	3'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	12 #9
>25' - 30'	3'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	12 #9
>30' - 35'	3'-0"	4'-0"	4'-6"	4'-0"	4'-0"	4'-0"	4'-0"	12 #9
>35' - 40'	3'-6"	4'-0"	4'-6"	4'-0"	4'-0"	4'-0"	4'-0"	14 #9
>40' - 45'	3'-6"	4'-0"	4'-6"	4'-0"	4'-6"	4'-0"	4'-0"	14 #9
>45' - 50'	3'-6"	4'-0"	4'-6"	4'-0"	4'-6"	4'-0"	4'-0"	14 #9
>50' - 60'	3'-6"	4'-6"	5'-6"	4'-6"	5'-6"	4'-6"	4'-6"	14 #9

\*\* INCREASE CAISSON DIAMETER BY 6" AS APPLICABLE IN  
ACCORDANCE WITH ROCK SOCKET NOTE 1 ON SHEET 4.

\*\*\* SEE ROCK SOCKET NOTE 4 ON SHEET 4 FOR TOTAL "H" DEPTH REQUIREMENTS.

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, PEDESTAL POLE DESIGN TABLE (SOIL CONDITION)

SHAFT LENGTH	"D"	H	CASE 1		"W" BAR
			QTY.	SIZE	
7' - 10'	3'-0"	5'-0"	8	#8	
>10' - 14'	3'-0"	5'-6"	8	#8	

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, PEDESTAL POLE DESIGN TABLE (ROCK CONDITION)

SHAFT LENGTH	"D"	CASE 2 [0' ≤ H1 < 5']		"W" BAR
		H2	QTY.	
7' - 10'	3'-0"	4'-0"	8	#8
>10' - 14'	3'-0"	4'-0"	8	#8

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

TRAFFIC SIGNAL SUPPORT -  
MAST ARM & PEDESTAL  
FOUNDATION TYPE A

RECOMMENDED XXX. X, 20XX	RECOMMENDED XXX. X, 20XX	SHEET 5 OF 10
CHIEF, TRAFFIC OPERATIONS SECTION	CHIEF OF HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION	TC-8801

**FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, STRAIN POLE  
(SOIL CONDITION)**

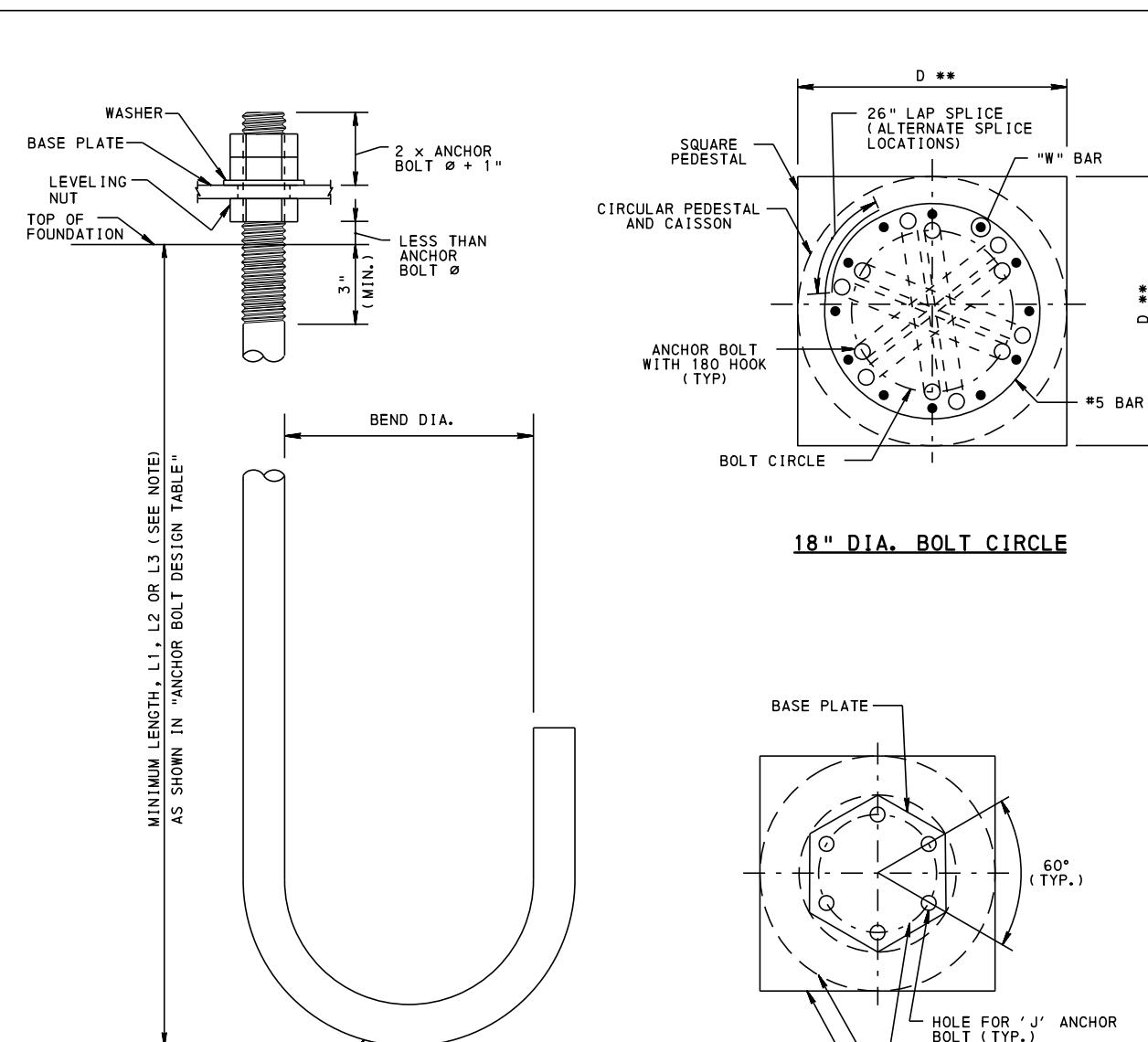
DESIGN TENSION (LBS)	"D" *	SHAFT LENGTH 20' - 34' (CASE 1)									
		QTY.	SIZE	20' SHAFT	22' SHAFT	24' SHAFT	26' SHAFT	28' SHAFT	30' SHAFT	32' SHAFT	34' SHAFT
				FOUNDATION DEPTH H							
1000	3'-0"	12	#9	7'-6"	7'-6"	7'-6"	8'-0"	8'-0"	8'-0"	8'-6"	8'-6"
2000	3'-0"	12	#9	8'-6"	8'-6"	8'-6"	9'-0"	9'-0"	9'-0"	9'-6"	9'-6"
3000	3'-0"	12	#9	9'-0"	9'-0"	9'-6"	9'-6"	10'-0"	10'-0"	10'-6"	10'-6"
4000	3'-0"	12	#9	9'-6"	10'-0"	10'-0"	10'-6"	10'-6"	11'-0"	11'-0"	11'-6"
5000	3'-0"	12	#9	10'-0"	10'-6"	10'-6"	11'-0"	11'-6"	11'-6"	12'-0"	12'-0"
6000	3'-0"	12	#9	11'-0"	11'-6"	11'-6"	12'-0"	12'-6"	12'-6"	12'-6"	13'-0"
7000	3'-0"	18	#9	11'-6"	11'-6"	12'-0"	12'-6"	12'-6"	13'-0"	13'-6"	14'-0"
8000	3'-0"	18	#9	12'-0"	12'-6"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	14'-6"
9000	3'-0"	18	#9	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	14'-6"	15'-0"	15'-6"
10000	3'-0"	18	#9	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"	15'-6"	15'-6"	16'-0"

**FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, STRAIN POLE  
(ROCK CONDITION)**

DESIGN TENSION (LBS)	"D" *	CASE 2 [0' ≤ H1 < 5']									
		QTY.	SIZE	20' SHAFT	22' SHAFT	24' SHAFT	26' SHAFT	28' SHAFT	30' SHAFT	32' SHAFT	34' SHAFT
				ROCK SOCKET EMBEDMENT H2							
1000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
2000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
3000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-6"	4'-6"
4000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-6"	4'-6"	4'-6"	4'-6"	5'-0"
5000	3'-0"	12	#9	4'-0"	4'-6"	4'-6"	4'-6"	4'-6"	5'-0"	5'-0"	5'-0"
6000	3'-0"	12	#9	4'-6"	4'-6"	4'-6"	5'-0"	5'-0"	5'-6"	5'-6"	5'-6"
7000	3'-0"	12	#9	4'-6"	5'-0"	5'-0"	5'-6"	5'-6"	5'-6"	6'-0"	6'-0"
8000	3'-0"	16	#9	5'-0"	5'-0"	5'-6"	5'-6"	5'-6"	6'-0"	6'-0"	6'-6"
9000	3'-0"	16	#9	5'-0"	5'-6"	5'-6"	6'-0"	6'-0"	6'-0"	6'-6"	6'-6"
10,000	3'-0"	16	#9	5'-6"	5'-6"	6'-0"	6'-0"	6'-6"	6'-6"	7'-0"	7'-0"

DESIGN TENSION (LBS)	"D" *	CASE 3 [5' ≤ H1 < 10']									
		QTY.	SIZE	20' SHAFT	22' SHAFT	24' SHAFT	26' SHAFT	28' SHAFT	30' SHAFT	32' SHAFT	34' SHAFT
				ROCK SOCKET EMBEDMENT H2 **							
1000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
2000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
3000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
4000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-6"	4'-6"	4'-6"
5000	3'-0"	12	#9	4'-0"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	5'-0"	5'-0"
6000	3'-0"	18	#9	4'-6"	4'-6"	4'-6"	5'-0"	5'-0"	5'-0"	5'-6"	5'-6"
7000	3'-0"	18	#9	4'-6"	5'-0"	5'-0"	5'-6"	5'-6"	5'-6"	6'-0"	6'-0"
8000	3'-0"	18	#9	5'-0"	5'-6"	5'-6"	5'-6"	5'-6"	6'-0"	6'-0"	6'-6"
9000	3'-0"	18	#9	5'-6"	5'-6"	5'-6"	6'-0"	6'-0"	6'-0"	6'-6"	6'-6"
10,000	3'-0"	18	#9	5'-6"	5'-6"	6'-0"	6'-0"	6'-6"	6'-6"	7'-0"	7'-0"

DESIGN TENSION (LBS)	"D" *	CASE 4 [H1 ≥ 10']									
		QTY.	SIZE	20' SHAFT	22' SHAFT	24' SHAFT	26' SHAFT	28' SHAFT	30' SHAFT	32' SHAFT	34' SHAFT
				ROCK SOCKET EMBEDMENT H2 **							
1000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
2000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
3000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
4000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
5000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
6000	3'-0"	12	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
7000	3'-0"	18	#9	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-6"	4'-6"
8000	3'-0"	18	#9	4'-0"	4'-0"	4'-0"	4'-0"</td				



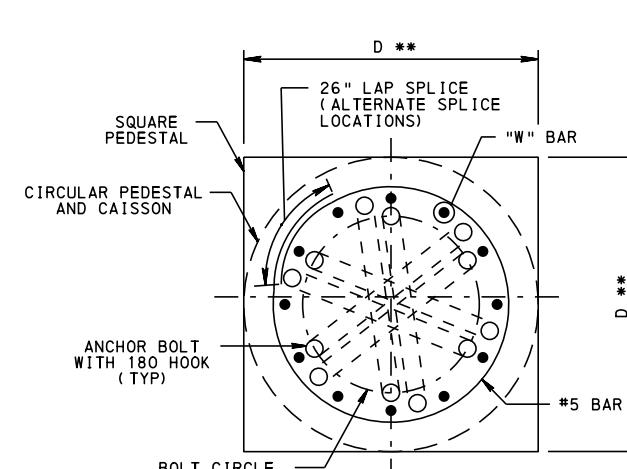
NOTE: DUE TO OVERLAPPING 'J' ANCHOR BOLTS, VARY EMBEDMENT BY 6" FOR EACH 2-BOLT PAIR FOR 1 3/4" DIA. BOLTS AND BY 12" FOR EACH 2-BOLT PAIR FOR 2" DIA. BOLTS. SEE L1, L2 AND L3 EMBEDMENT DEPTHS IN ANCHOR BOLT DESIGN TABLE.

#### ANCHOR BOLT DESIGN, MAST ARM

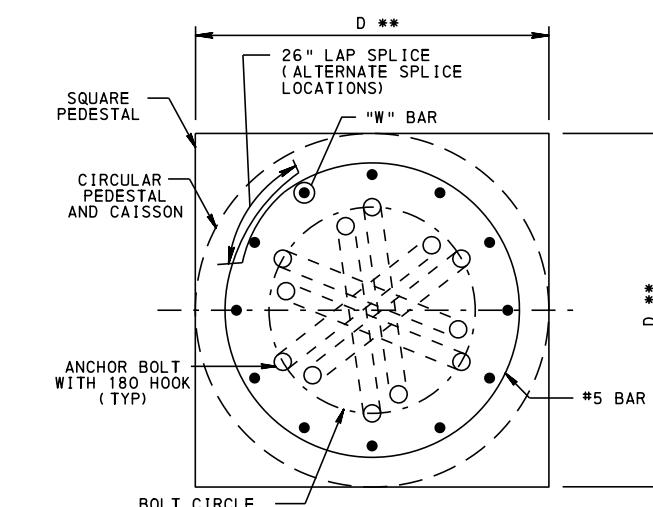
MAST ARM LENGTH	QTY.	ONE ARM						TWO ARMS *							
		BOLT DIA.	BEND DIA.	L1	L2	L3	B.C.	HOLE	BOLT DIA.	BEND DIA.	L1	L2	L3	B.C.	HOLE
0 - 10'	6	1 3/4"	17 1/2"	42"	48"	54"	18"	2"	1 3/4"	17 1/2"	42"	48"	54"	18"	2"
>10' - 15'	6	1 3/4"	17 1/2"	42"	48"	54"	18"	2"	1 3/4"	17 1/2"	42"	48"	54"	18"	2"
>15' - 20'	6	1 3/4"	17 1/2"	42"	48"	54"	18"	2"	1 3/4"	17 1/2"	42"	48"	54"	18"	2"
>20' - 25'	6	1 3/4"	17 1/2"	42"	48"	54"	18"	2"	1 3/4"	17 1/2"	42"	48"	54"	18"	2"
>25' - 30'	6	1 3/4"	17 1/2"	42"	48"	54"	21"	2"	1 3/4"	17 1/2"	42"	48"	54"	21"	2"
>30' - 35'	6	1 3/4"	17 1/2"	42"	48"	54"	21"	2"	1 3/4"	17 1/2"	42"	48"	54"	21"	2"
>35' - 40'	6	2"	22"	48"	60"	72"	24"	2 1/4"	2"	22"	48"	60"	72"	24"	2 1/4"
>40' - 45'	6	2"	22"	48"	60"	72"	24"	2 1/4"	2"	22"	48"	60"	72"	24"	2 1/4"
>45' - 50'	6	2"	22"	48"	60"	72"	24"	2 1/4"	2"	22"	48"	60"	72"	24"	2 1/4"
>50' - 60'	6	2"	22"	48"	60"	72"	24"	2 1/4"	2"	22"	48"	60"	72"	24"	2 1/4"

\* TWO ARMS PERPENDICULAR TO EACH OTHER. ADDITIONAL STRUCTURAL ANALYSIS IS REQUIRED FOR TWO MAST ARMS AT ACUTE OR OBTUSE ANGLES TO EACH OTHER

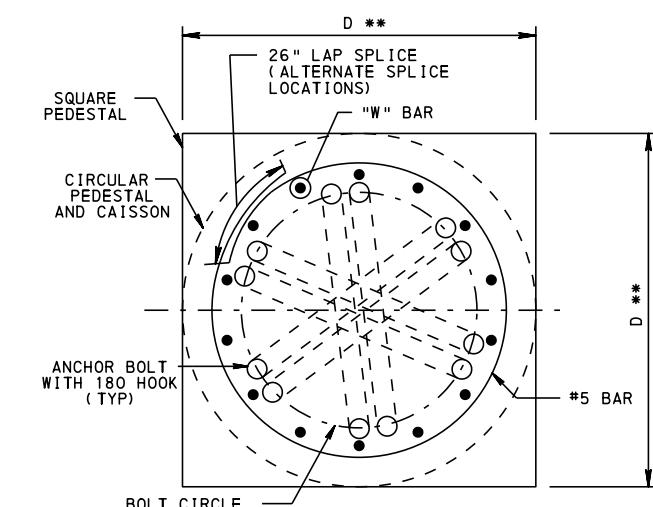
B.C. = BOLT CIRCLE DIAMETER



18" DIA. BOLT CIRCLE

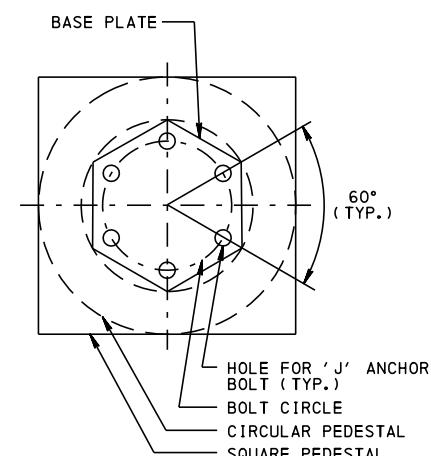


21" DIA. BOLT CIRCLE



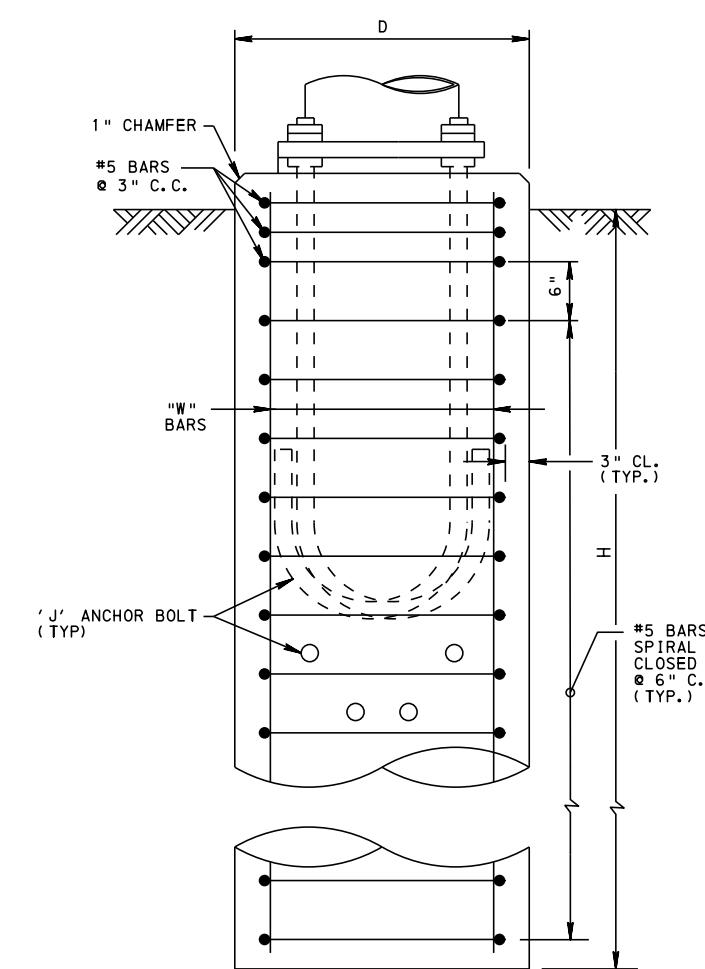
24" DIA. BOLT CIRCLE

**PLAN** \*\* DIAMETER IF CIRCULAR, OR SIDE IF SQUARE. CIRCULAR FOUNDATIONS SHALL BE SQUARE FROM THE TOP TO A POINT 6" BELOW THE GROUND LINE, IF SIDEWALK IS PRESENT



**BASE MOUNT PLAN**

NOTE: A MINIMUM OF 6 'J' ANCHOR BOLTS IS REQUIRED FOR MAST ARM TRAFFIC SIGNAL SUPPORTS.



**SECTION**

**TYPE A FOUNDATION**  
CASE 1 ALTERNATE

#### FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, MAST ARM (SOIL CONDITION)

MAST ARM LENGTH	"D"	H		"W" BAR QTY.	SIZE
		ONE ARM	TWO ARMS*		
0' - 10'	2' - 6"	7' - 6"	7' - 6"	12	#9
>10' - 15'	2' - 6"	8' - 0"	8' - 6"	12	#9
>15' - 20'	2' - 6"	9' - 0"	9' - 0"	12	#9
>20' - 25'	2' - 6"	9' - 6"	9' - 6"	12	#9
>25' - 30'	3' - 0"	9' - 6"	10' - 0"	12	#9
>30' - 35'	3' - 0"	10' - 0"	10' - 6"	12	#9
>35' - 40'	3' - 0"	10' - 6"	11' - 0"	14	#9
>40' - 45'	3' - 0"	10' - 6"	11' - 6"	14	#9
>45' - 50'	3' - 0"	11' - 0"	12' - 0"	14	#9
>50' - 60'	3' - 0"	11' - 6"	13' - 0"	14	#9

\* TWO ARMS PERPENDICULAR TO EACH OTHER. ADDITIONAL STRUCTURAL ANALYSIS IS REQUIRED FOR TWO MAST ARMS AT ACUTE OR OBTUSE ANGLES TO EACH OTHER.

ALTERNATE TYPE A FOUNDATIONS AS SHOWN ON THIS SHEET REQUIRE APPROVAL BY THE BUREAU OF MAINTENANCE AND OPERATIONS.

#### MAST ARM FOUNDATION TYPE A ALTERNATE NOTES:

1. FOR ADDITIONAL DESIGN CRITERIA, NOTES AND DETAILS, SEE SHEETS 3 THROUGH 5.

**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS**

**STANDARD**

TRAFFIC SIGNAL SUPPORT - MAST ARM

FOUNDATION TYPE A ALTERNATE

### FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, MAST ARM

MAST ARM LENGTH	"D"	"W" BAR			"L" BAR			Y	S		Z	S	
		QTY.	SIZE	SIZE	ONE ARM	TWO ARMS*	ONE ARM		ONE ARM	TWO ARMS*		ONE ARM	TWO ARMS*
0 - 10'	3'-0"	12	#9	#4	4'-0"	9'-6"	9'-6"	5'-0"	9'-6"	9'-6"			
>10' - 15'	3'-0"	12	#9	#4	4'-0"	10'-6"	10'-6"	5'-0"	10'-6"	10'-6"			
>15' - 20'	3'-0"	12	#9	#5	4'-0"	11'-6"	11'-6"	5'-6"	11'-6"	11'-6"			
>20' - 25'	3'-0"	12	#9	#6	4'-0"	12'-0"	12'-0"	6'-0"	12'-0"	12'-0"			
>25' - 30'	3'-0"	12	#9	#6	4'-6"	12'-6"	13'-0"	6'-6"	12'-6"	12'-6"			
>30' - 35'	3'-0"	12	#9	#7	4'-6"	13'-0"	13'-6"	7'-0"	13'-0"	13'-6"			
>35' - 40'	3'-6"	14	#9	#7	5'-0"	13'-6"	14'-0"	7'-0"	13'-0"	13'-6"			
>40' - 45'	3'-6"	14	#9	#7	5'-0"	13'-6"	14'-6"	7'-6"	13'-0"	13'-6"			
>45' - 50'	3'-6"	14	#9	#7	5'-6"	14'-0"	14'-6"	8'-0"	13'-0"	13'-6"			
>50' - 60'	3'-6"	14	#9	#8	5'-6"	14'-6"	16'-0"	8'-0"	13'-6"	14'-6"			

\* TWO ARMS PERPENDICULAR TO EACH OTHER. ADDITIONAL STRUCTURAL ANALYSIS IS REQUIRED FOR TWO MAST ARMS AT ACUTE OR OBTUSE ANGLES TO EACH OTHER.

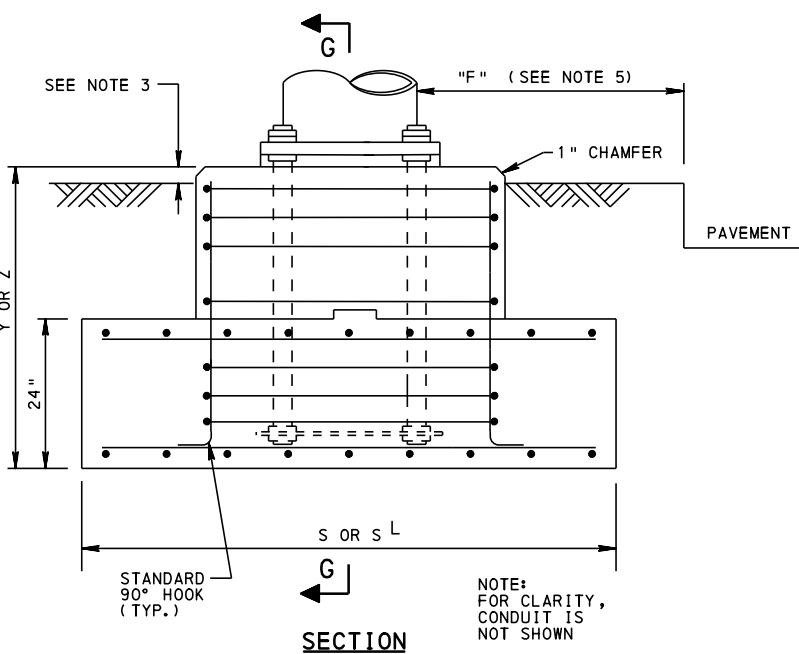
### FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, STRAIN POLE

DESIGN TENSION (LBS)	SHAFT LENGTH 20' - 24'								SHAFT LENGTH 26' - 30'								SHAFT LENGTH 32' - 34'																			
	"D"	"W" BAR			"L" BAR			Y	S <sup>L</sup>	S	Z	S <sup>L</sup>	S	"D"	"W" BAR			"L" BAR			Y	S <sup>L</sup>	S	Z	S <sup>L</sup>	S	"D"	"W" BAR			Y	S <sup>L</sup>	S	Z	S <sup>L</sup>	S
		QTY.	SIZE	SIZE	ONE ARM	TWO ARMS*	ONE ARM								QTY.	SIZE	SIZE	ONE ARM	TWO ARMS*	ONE ARM	TWO ARMS*	ONE ARM	TWO ARMS*	ONE ARM	TWO ARMS*	QTY.	SIZE	SIZE	ONE ARM	TWO ARMS*	ONE ARM	TWO ARMS*	ONE ARM	TWO ARMS*		
1000	3'-0"	12	#9	#4	4'-0"	9'-6"	9'-6"	5'-0"	9'-6"	9'-6"				12	#9	#4	4'-0"	10'-6"	10'-6"	4'-0"	10'-0"	3'-0"	12	#9	#4	4'-0"	11'-0"	10'-6"	4'-0"	11'-0"	10'-6"					
2000	3'-0"	12	#9	#4	4'-0"	10'-6"	10'-6"	4'-0"	10'-6"	10'-6"	10'-6"	3'-0"	12	#9	#5	4'-0"	12'-0"	12'-0"	4'-0"	12'-0"	11'-6"	3'-0"	12	#9	#5	4'-0"	12'-6"	12'-0"	4'-0"	12'-6"	12'-0"					
3000	3'-0"	12	#9	#5	4'-0"	11'-6"	11'-6"	4'-0"	12'-0"	11'-6"	3'-0"	12	#9	#5	4'-0"	13'-0"	13'-0"	5'-0"	12'-6"	12'-0"	3'-0"	12	#9	#6	4'-0"	13'-6"	13'-0"	5'-0"	12'-6"	12'-0"						
4000	3'-0"	12	#9	#5	4'-0"	12'-6"	12'-0"	5'-0"	12'-0"	12'-6"	3'-0"	12	#9	#6	4'-6"	14'-0"	14'-0"	6'-0"	12'-6"	12'-0"	3'-0"	12	#9	#6	4'-6"	14'-0"	14'-0"	6'-0"	13'-0"	13'-0"						
5000	3'-0"	12	#9	#6	4'-6"	13'-0"	12'-6"	6'-0"	12'-0"	12'-6"	3'-0"	12	#9	#6	5'-0"	14'-6"	14'-6"	6'-6"	13'-0"	3'-0"	12	#9	#7	5'-0"	14'-6"	14'-6"	6'-6"	13'-6"	13'-0"							
6000	3'-0"	12	#9	#6	5'-0"	13'-0"	13'-0"	6'-6"	12'-6"	12'-6"	3'-0"	12	#9	#7	5'-6"	14'-6"	14'-6"	7'-0"	13'-6"	3'-0"	12	#9	#7	5'-6"	14'-6"	14'-6"	7'-0"	14'-0"	13'-6"							
7000	3'-0"	12	#9	#7	5'-0"	13'-6"	13'-6"	7'-0"	13'-0"	13'-0"	3'-0"	12	#9	#7	6'-0"	15'-0"	15'-0"	8'-0"	13'-6"	3'-0"	16	#9	#8	6'-0"	15'-0"	15'-0"	8'-0"	14'-0"	13'-6"							
8000	3'-0"	12	#9	#7	5'-6"	14'-0"	14'-0"	7'-6"	13'-0"	13'-0"	3'-0"	12	#9	#8	6'-6"	15'-6"	15'-6"	8'-6"	13'-6"	3'-0"	16	#9	#8	6'-6"	15'-6"	15'-6"	8'-6"	14'-0"	14'-0"							
9000	3'-0"	12	#9	#7	6'-0"	14'-0"	14'-0"	8'-0"	13'-6"	13'-6"	3'-0"	16	#9	#8	7'-0"	15'-6"	15'-6"	9'-0"	14'-0"	13'-6"	3'-0"	16	#9	#9	7'-0"	15'-6"	15'-6"	9'-0"	14'-6"	14'-6"						
10,000	3'-0"	12	#9	#8	6'-6"	14'-6"	14'-0"	8'-6"	13'-6"	13'-6"	3'-0"	16	#9	#9	7'-6"	15'-6"	15'-6"	10'-0"	14'-0"	3'-0"	16	#9	#9	7'-6"	15'-6"	15'-6"	10'-0"	14'-6"	14'-6"							

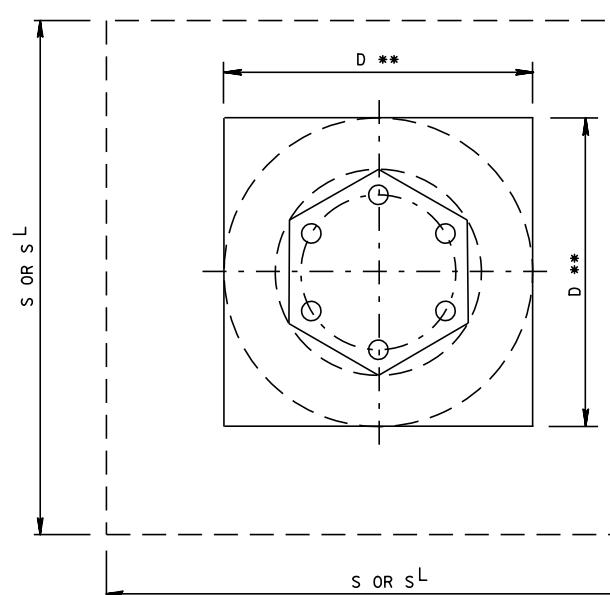
S<sup>L</sup> = WITH LUMINAIRE

### NOTES:

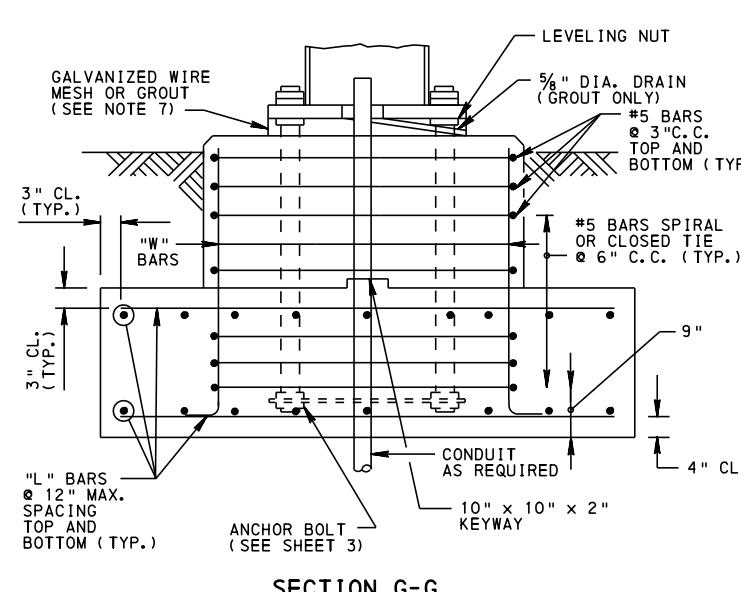
1. THE TYPE "B" FOUNDATION MAY BE AUTHORIZED FOR USE WHERE CONDITIONS PREVENT PLACING THE TYPE "A" FOUNDATION (AS SHOWN ON SHEET 4) TO ITS REQUIRED DEPTH.
2. FOR DESIGN CRITERIA SEE SHEET 3.
3. IN A PAVED AREA, PLACE THE TOP OF FOUNDATION FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT. IN UNPAVED AREAS, TOP OF FOUNDATION TO BE AT LEAST 6" ABOVE TOP OF GROUND.
4. FOR GROUND ROD SIZE AND INSTALLATION DETAILS, SEE TC-8804.
5. DISTANCE "F" AS REQUIRED TO AVOID PAVEMENT AND/OR CURB EXCAVATION.
6. SEE SHEET 4 FOR CLOSED TIE DETAIL.
7. IN A PAVED AREA, GROUT SHALL BE PLACED.
8. SEE MAST ARM FOUNDATION NOTES 1 AND 2 ON SHEET 5.



TYPE B FOUNDATION

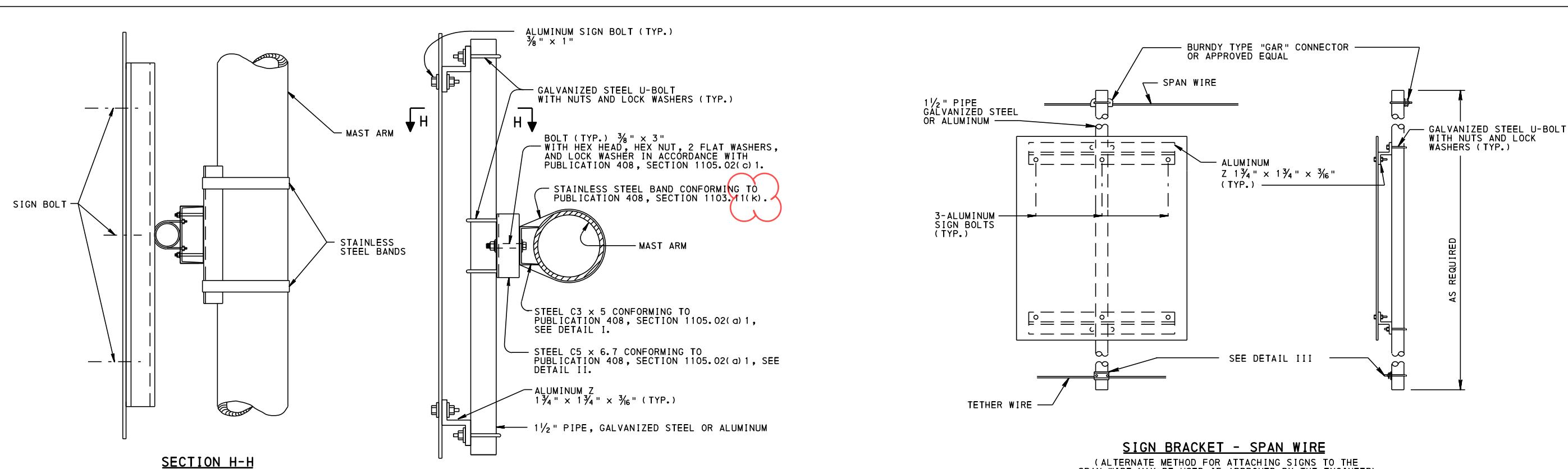


\*\* DIAMETER IF CIRCULAR, OR SIDE IF SQUARE. CIRCULAR FOUNDATIONS SHALL BE SQUARE FROM THE TOP TO A POINT 6" BELOW THE GROUND LINE, IF SIDEWALK IS PRESENT.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS  
STANDARD  
TRAFFIC SIGNAL SUPPORT  
FOUNDATION TYPE B

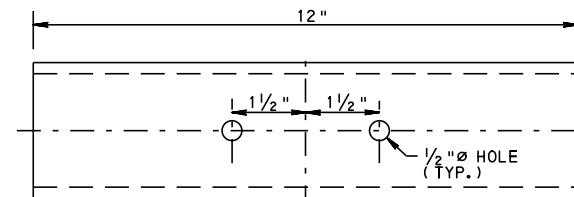
RECOMMENDED XXX. X, 20XX	RECOMMENDED XXX. X, 20XX	SHEET 8 OF 10
CHIEF, TRAFFIC OPERATIONS SECTION		CHIEF OF HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION



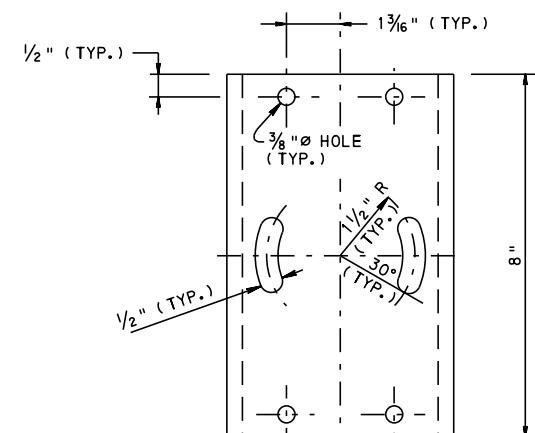
**SECTION H-H**

**SIGN BRACKET - MAST ARM**

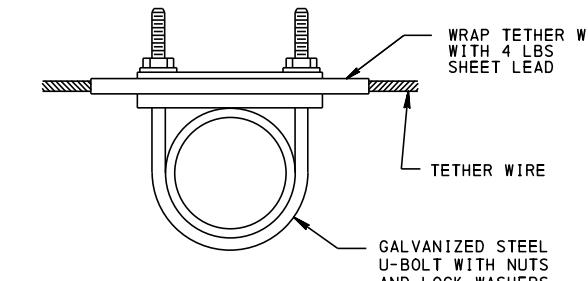
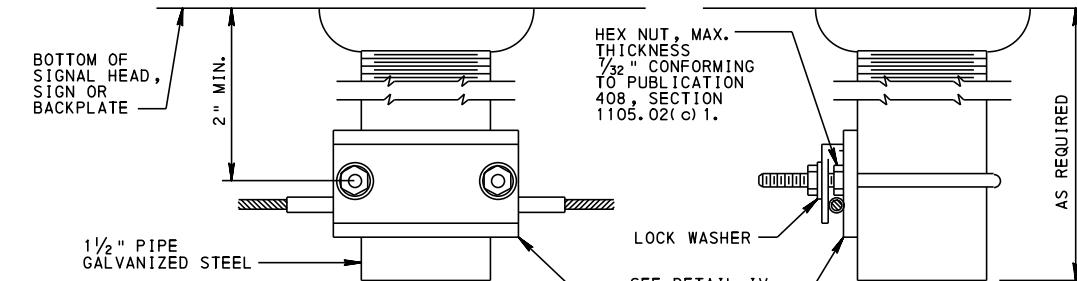
(ALTERNATE METHOD FOR ATTACHING SIGNS TO THE MAST ARM MAY BE USED IF APPROVED BY THE ENGINEER)



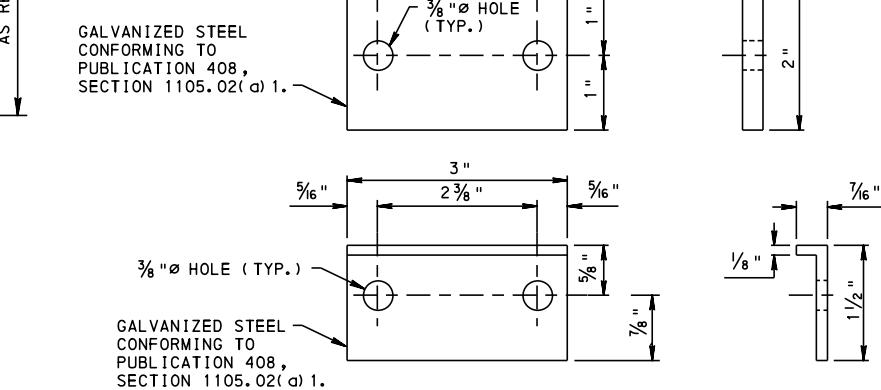
**STEEL C3 X 5  
GALVANIZED AFTER FABRICATION  
DETAIL I**



**STEEL C5 X 6.7  
GALVANIZED AFTER FABRICATION  
DETAIL II**



**DETAIL III**



**DETAIL IV**

**NOTES:**

1. USE ONE BRACKET FOR SIGNS WITH A WIDTH OF 36" OR LESS. USE TWO BRACKETS FOR SIGNS WITH WIDTHS GREATER THAN 36" AND NOT EXCEEDING 48". USE THREE BRACKETS FOR SIGNS WITH WIDTHS GREATER THAN 48" AND NOT EXCEEDING 96".
2. Z 1 3/4" x 1 3/4" x 3/16" SHALL BE MANUFACTURED FROM ALUMINUM CONFORMING TO ASTM B 209M, ALLOY 6061-T6.
3. 1.5" GALVANIZED STEEL PIPE SHALL CONFORM TO PUBLICATION 408, SECTION 1105.02(j) 1.
4. ALUMINUM SIGN BOLTS, NUTS, WASHERS AND NYLON WASHERS SHALL CONFORM TO PUBLICATION 408, SECTION 1103.11(m), SECTION 1103.11(o), SECTION 1103.11(o)1 AND SECTION 1103.11(o)2 RESPECTIVELY.
5. GALVANIZED STEEL U-BOLTS, NUTS AND LOCK WASHERS SHALL BE CONFORM TO PUBLICATION 408, SECTION 1105.02(c) 1, AND SHALL BE OF 1/4" x 3" x 1 1/8".

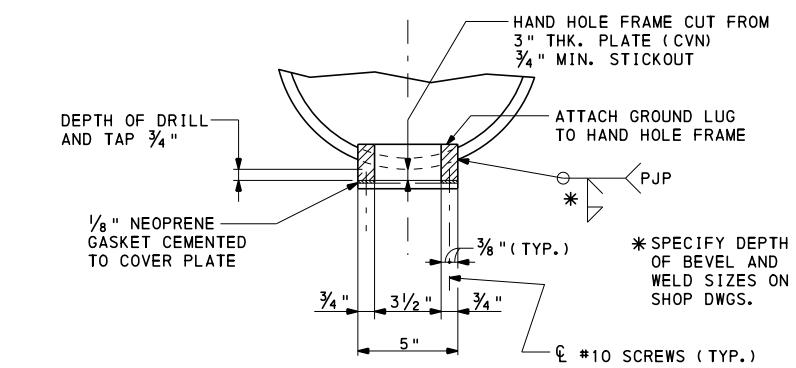
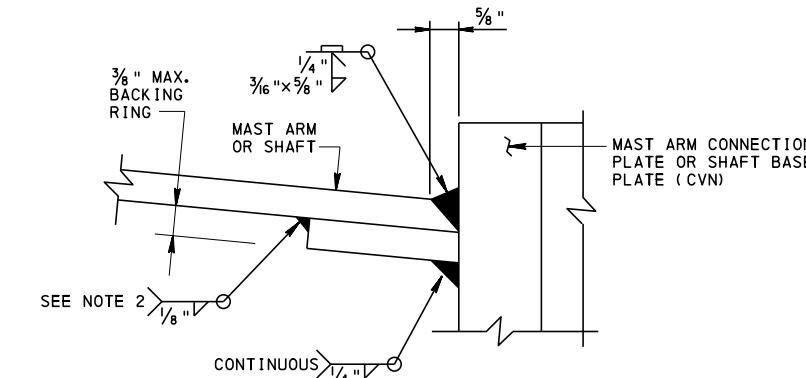
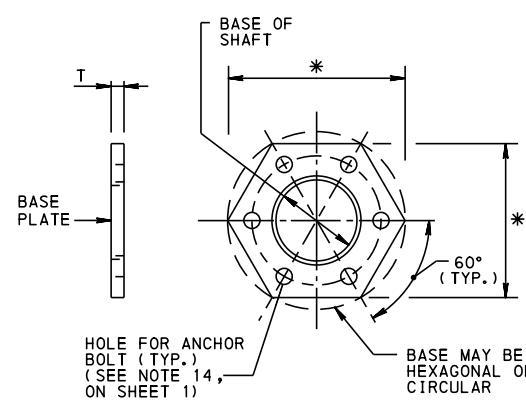
**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS**

**STANDARD**

**TRAFFIC SIGNAL SUPPORT**

**BRACKETS**

RECOMMENDED XXX. X, 20XX	RECOMMENDED XXX. X, 20XX	SHEET 9 OF 10
CHIEF, TRAFFIC OPERATIONS SECTION	CHIEF OF HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION	TC-8801



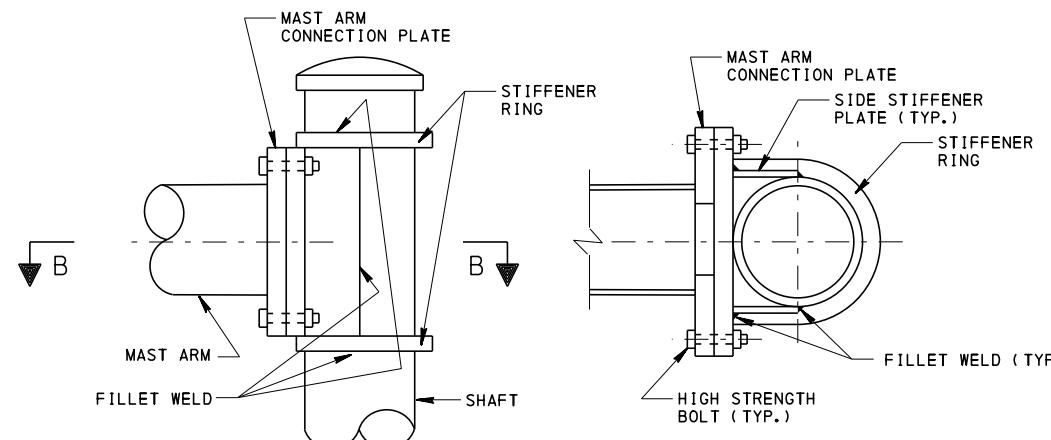
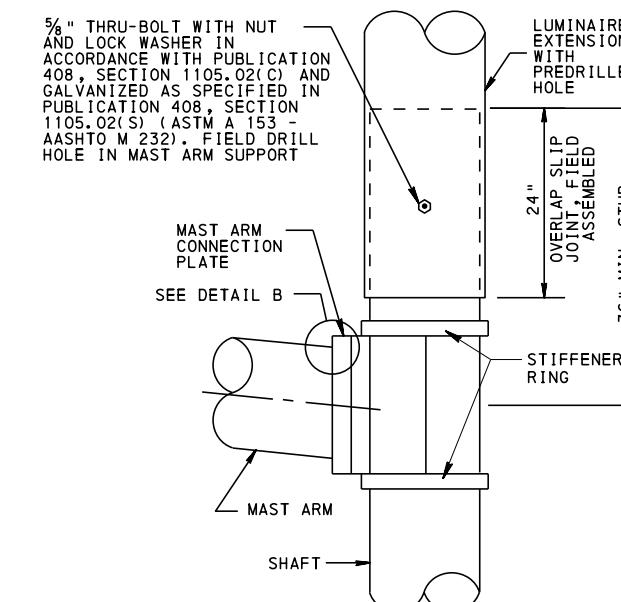
SECTION A-A

**BASE PLATE**

NOTE: A MINIMUM OF 6 ANCHOR BOLTS IS REQUIRED FOR MAST ARM AND STRAIN POLE TRAFFIC SIGNAL SUPPORTS (SHOWN) 4 ANCHOR BOLTS ARE REQUIRED FOR PEDESTAL POLE TRAFFIC SIGNAL SUPPORTS.

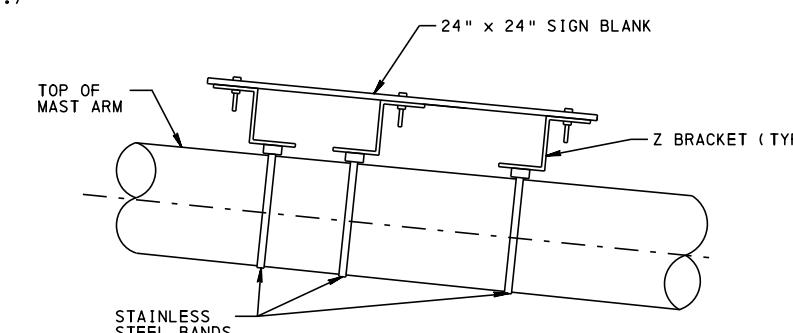
**BASE PLATE AND CONNECTION PLATE THICKNESS**

SHAFT OR COLUMN CONNECTION DIAMETER (IN)	PLATE THICKNESS MINIMUM, "T" (IN)
LESS THAN 6"	1"
6" TO 13"	2"
GREATER THAN 13" BUT LESS THAN 19"	2 1/2"
GREATER THAN OR EQUAL TO 19"	3"



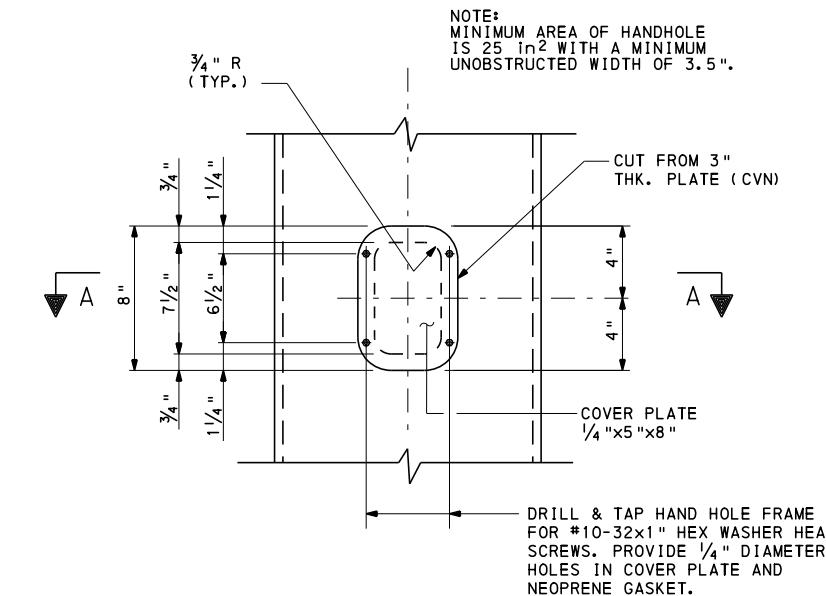
**MAST-ARM-TO-SHAFT CONNECTION DETAIL (RING-STIFFENED BUILT-UP BOX)**

NOTE: SEAL ALL NON-WELDED JOINTS WITH SILICONE CAULK.

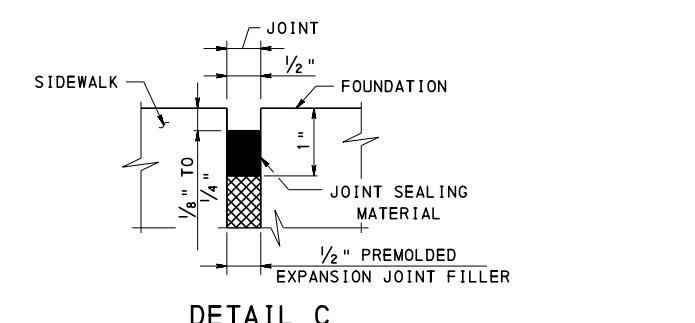


**MITIGATION DEVICE DETAIL**

NOTE: INSTALL MITIGATION DEVICE WITHIN 5' OF MAST ARM TIP WHEN REQUIRED.



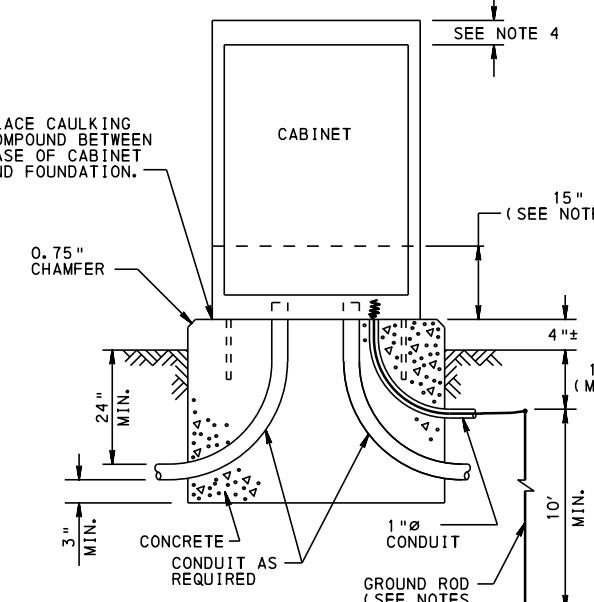
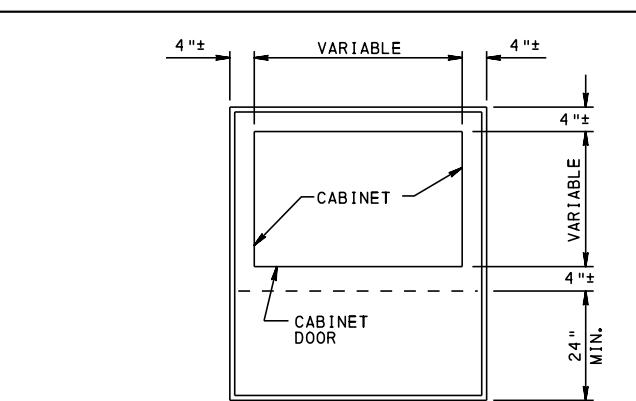
HAND HOLE DETAIL



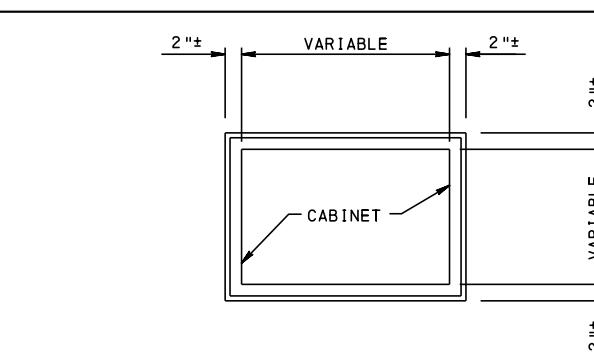
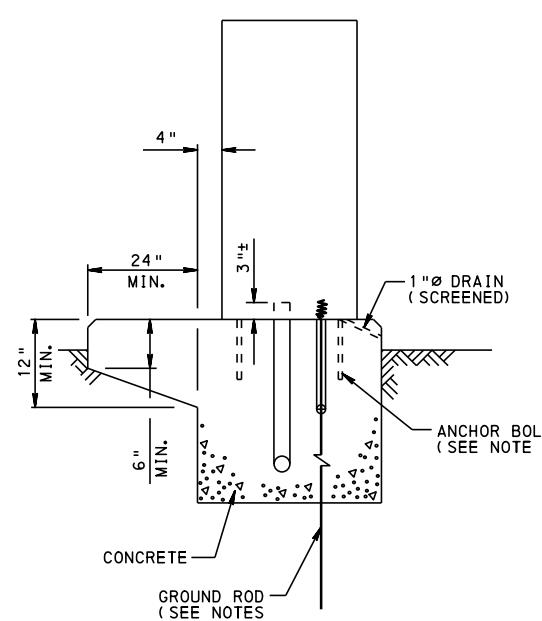
**COMMONWEALTH OF PENNSYLVANIA**  
**DEPARTMENT OF TRANSPORTATION**  
**BUREAU OF MAINTENANCE AND OPERATIONS**

**STANDARD**

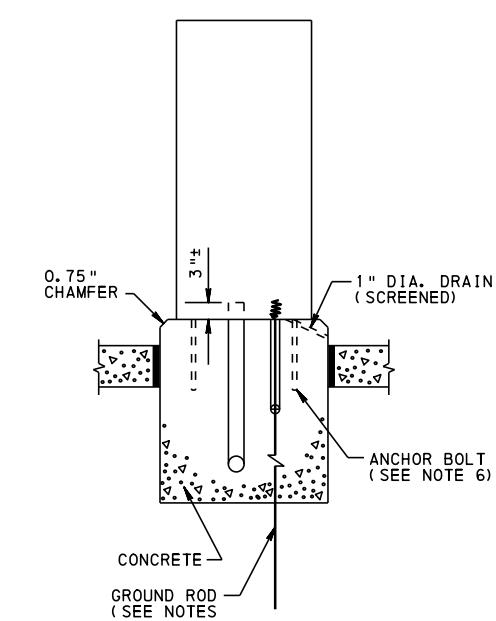
**TRAFFIC SIGNAL SUPPORT**  
**MISCELLANEOUS DETAILS**



## IN EARTH



NOTE:  
BASE-MOUNTED CONTROLLER ASSEMBLIES  
LOCATED IN A PAVED SURFACE SHALL  
HAVE THE ANCHOR BOLTS INSIDE THE  
CABINET.

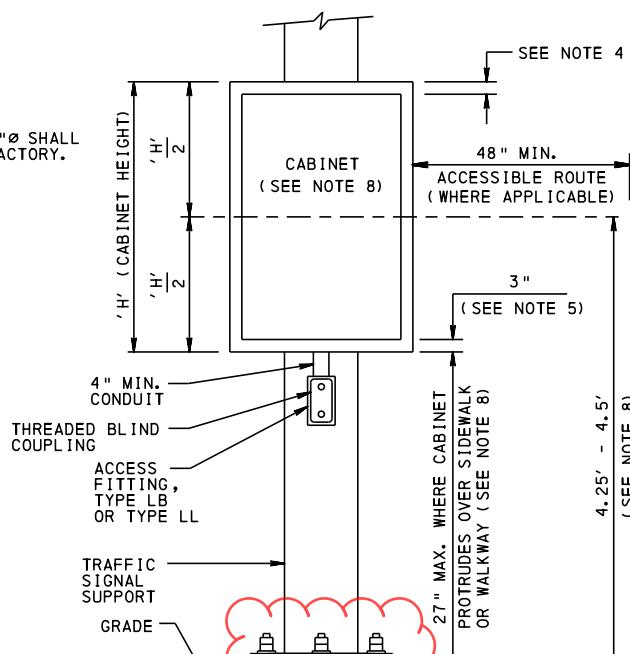


IN PAVED SURFACE

CONTROLLER ASSEMBLY ON CEMENT CONCRETE FOUNDATION  
TYPE I MOUNTING

**NOTE:**

ANY HOLE LARGER THAN 1"Ø SHALL  
BE REINFORCED AT THE FACTORY



CONTROLLER ASSEMBLY ON TRAFFIC SIGNAL SUPPORT  
TYPE II MOUNTING

## NOTE

1. PROVIDE GROUND ROD AS SPECIFIED IN SECTION 1101.11(J) OF PUBLICATION 408.
2. ANCHOR BOLT, NUT AND WASHER SHALL BE GALVANIZED.
3. HARDWARE FOR ATTACHING CABINET TO TRAFFIC SIGNAL SUPPORT SHALL BE ALUMINUM, GALVANIZED STEEL, OR STAINLESS STEEL.
4. NO PORTION OF ANY EQUIPMENT, EXCEPT FAN, BETWEEN THE TOP OF DOOR OPENING AND TOP OF CABINET.
5. MINIMUM CLEARANCE BETWEEN BOTTOM OF CABINET AND TERMINALS, EQUIPMENT OR DEVICES.
6. ANCHOR BOLTS M12  $\times$   $\frac{1}{2}$ "  $\times$  12" OR DRILL CONCRETE TO RECEIVE  $\frac{1}{2}$ " DIA  $\times$  3.75" LONG EXPANSION BOLT OR APPROVED EQUAL.
7. FOR GROUND ROD SIZE AND INSTALLATION DETAILS, SEE TC-8804.
8. MOUNT CABINET ON TRAFFIC SIGNAL SUPPORT IN A MANNER NOT TO PROTRUDE OVER EXISTING SIDEWALK. WHERE THIS IS NOT POSSIBLE, COMPLY WITH TYPE II MOUNTING DETAIL AND PUBLICATION 13M, CHAPTER 6.

COMMONWEALTH OF PENNSYLVANIA  
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## STANDARD

## CONTROLLER ASSEMBLY

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RECOMMENDED XXX. X, 20XX

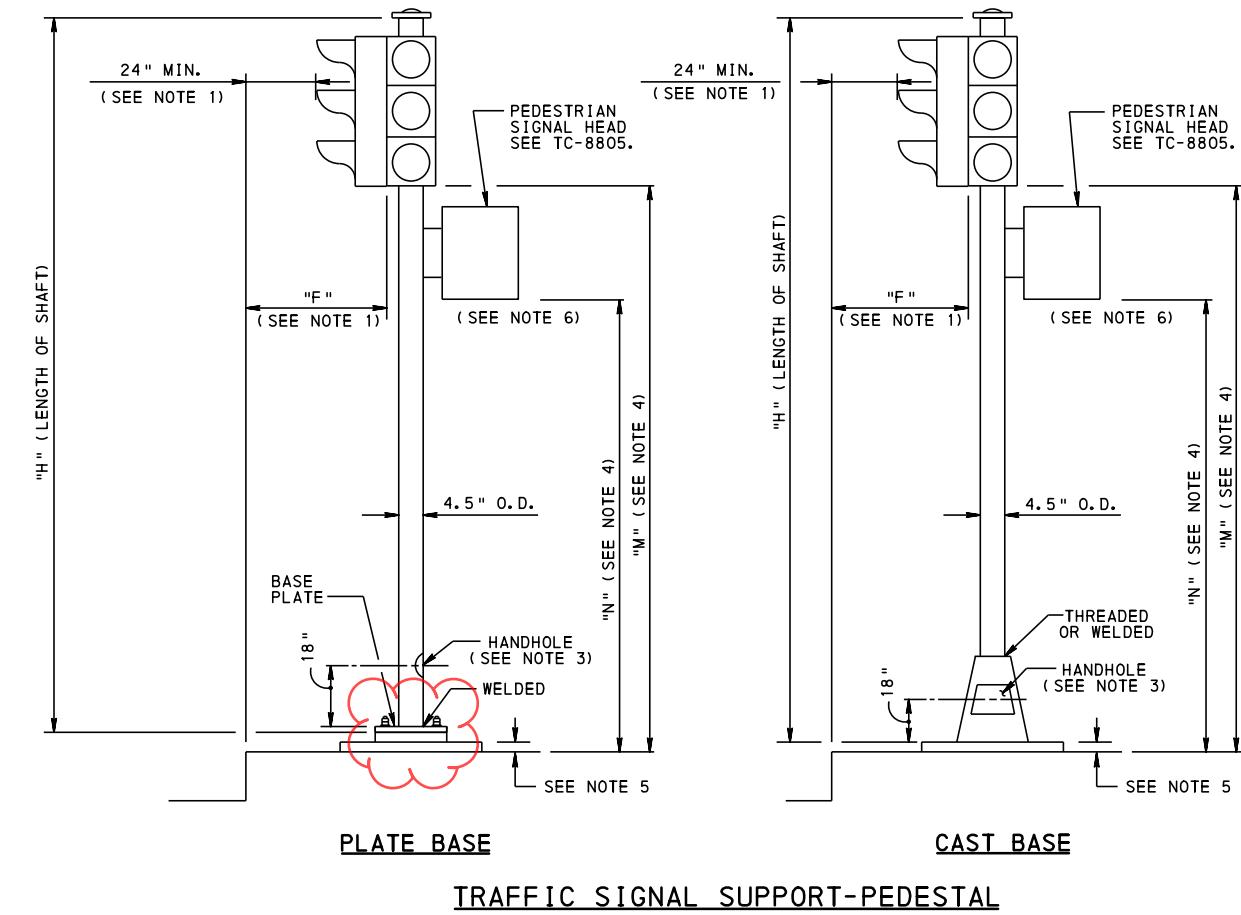
SHT 1 OF 1

CHIEF, TRAFFIC OPERATIONS  
SECTION

**CHIEF, HIGHWAY SAFETY AND  
TRAFFIC OPERATIONS BUREAU**

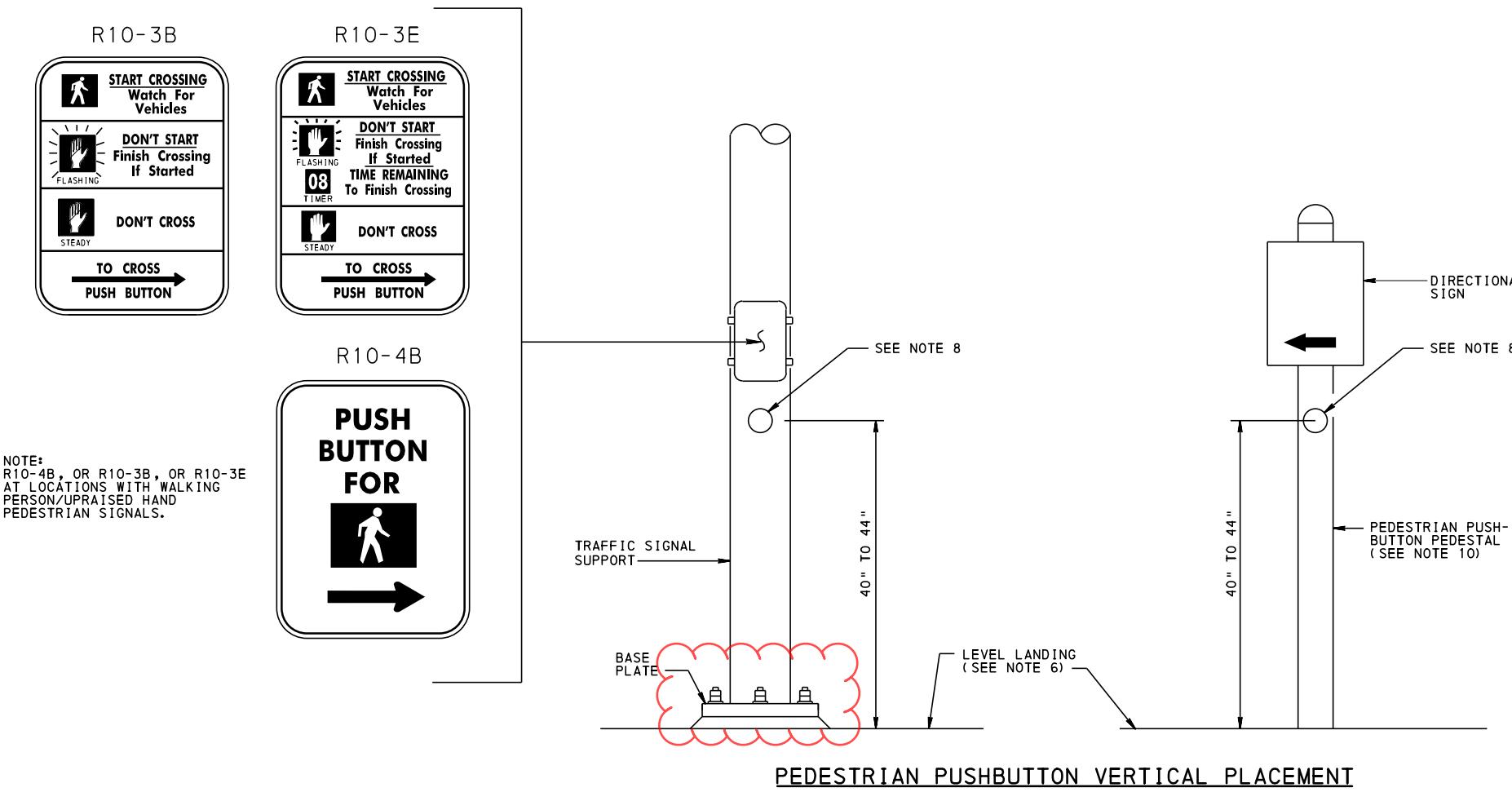
TC-8802

TC-8802



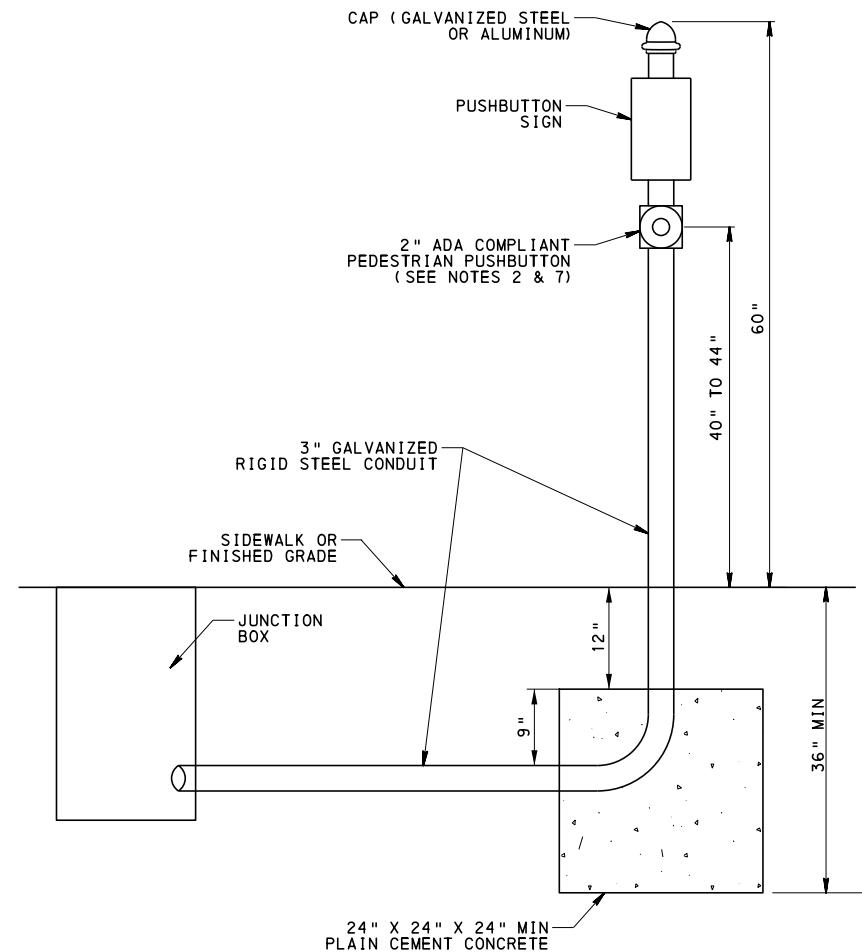
**NOTES:**

1. PROVIDE 24" LATERAL MINIMUM CLEARANCE. IF THERE IS NO CURB, MINIMUM CLEARANCE IS MEASURED FROM THE EDGE OF SHOULDER.
2. FOR DETAIL OF PEDESTAL FOUNDATION, SEE TC-8801.
3. PROVIDE 3" x 5" HANHOLE OPENING WITH A MINIMUM FRAME THICKNESS OF  $\frac{3}{8}$ ".
4. DIMENSIONS "M" AND "N" ARE REFERENCED FROM TOP OF SIDEWALK. IF NO SIDEWALK IS PRESENT, DIMENSIONS ARE TO BE TAKEN FROM THE TOP OF PAVEMENT AT CENTER OF ROADWAY. PROVIDE DIMENSION "M" SUCH THAT VERTICAL CLEARANCE IS 8" MINIMUM TO 19" MAXIMUM FOR TRAFFIC SIGNAL HEADS. PROVIDE DIMENSION "N" SUCH THAT VERTICAL CLEARANCE IS 7' MINIMUM TO 10' MAXIMUM FOR PEDESTRIAN SIGNAL HEADS.
5. IN A PAVED AREA, PLACE THE TOP OF THE FOUNDATION FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT. PROVIDE  $\frac{1}{2}$ " PREMOLDED EXPANSION JOINT FILLER BETWEEN FOUNDATION AND ADJACENT PAVEMENT. SEE DETAIL C ON SHEET 10 OF TC-8801.
6. ALL ACCESSIBILITY FEATURES MUST BE COMPLIANT TO PENNDOT PUBLICATION 13M (DM-2), CHAPTER 6, PUBLICATION 72M (RC STANDARDS) CRITERIA AND PUBLICATION 149.
7. PEDESTRIAN PUSHBUTTONS SHALL BE OF A TYPE APPROVED BY THE DEPARTMENT AND LISTED IN PUBLICATION 35 (BULLETIN 15).
8. PEDESTRIAN PUSHBUTTONS SHALL BE A MINIMUM OF 2" DIAMETER AND A FORCE PER ACTUATION THAT CANNOT EXCEED 5 LBS.
9. PROVIDE 4'-0" x 4'-0" MINIMUM LANDING WITH 2.00% MAXIMUM SLOPE IN ALL DIRECTIONS WHERE PEDESTRIANS PERFORM 180° TURNING MANEUVERS.
10. FOR PEDESTRIAN PUSHBUTTON MOUNTING DETAILS, SEE SHEET 2.

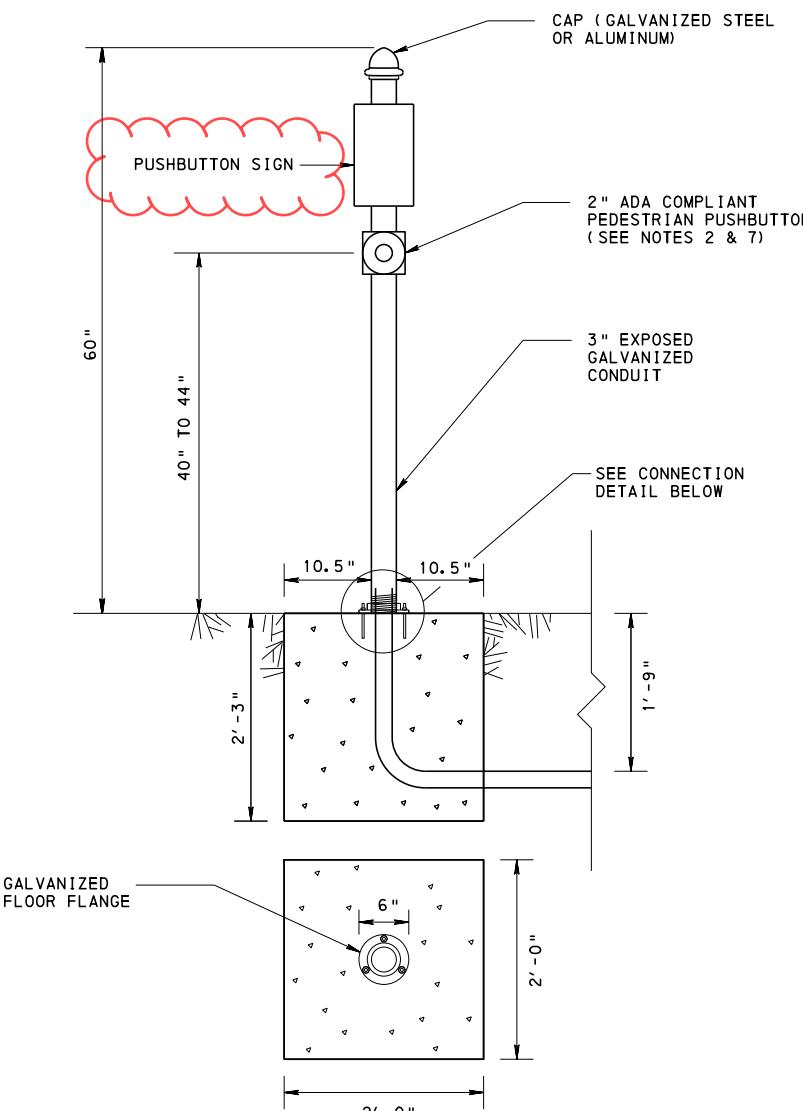


COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION BUREAU OF MAINTENANCE AND OPERATIONS		
STANDARD		
MISCELLANEOUS TRAFFIC SIGNAL SUPPORT-PEDESTAL PEDESTRIAN PUSHBUTTON		
RECOMMENDED XXX. X, 20XX	RECOMMENDED XXX. X, 20XX	SHT. 1 OF 4
CHIEF, TRAFFIC OPERATIONS SECTION	CHIEF, HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION	TC-8803

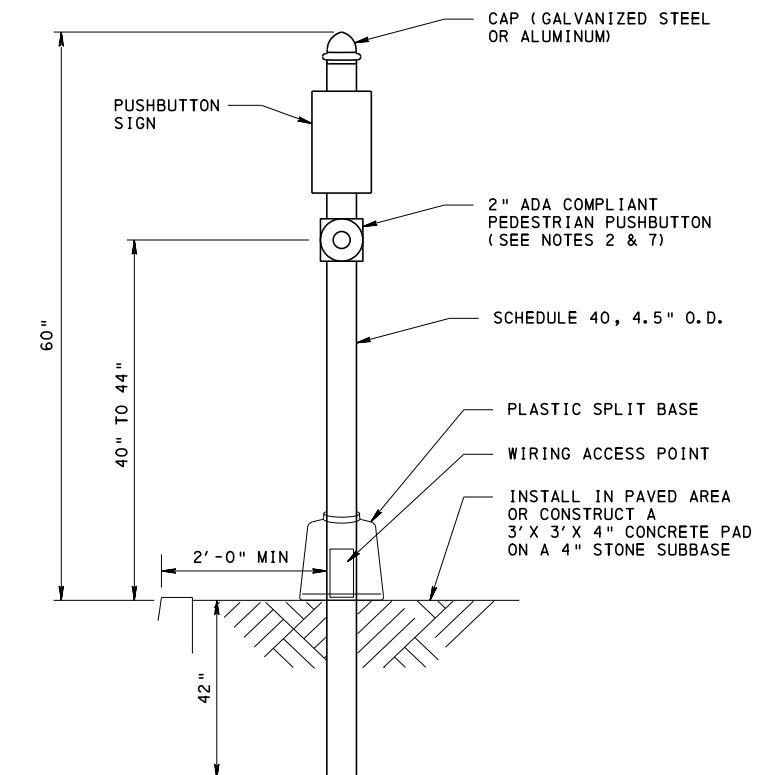
TYPE A



TYPE B

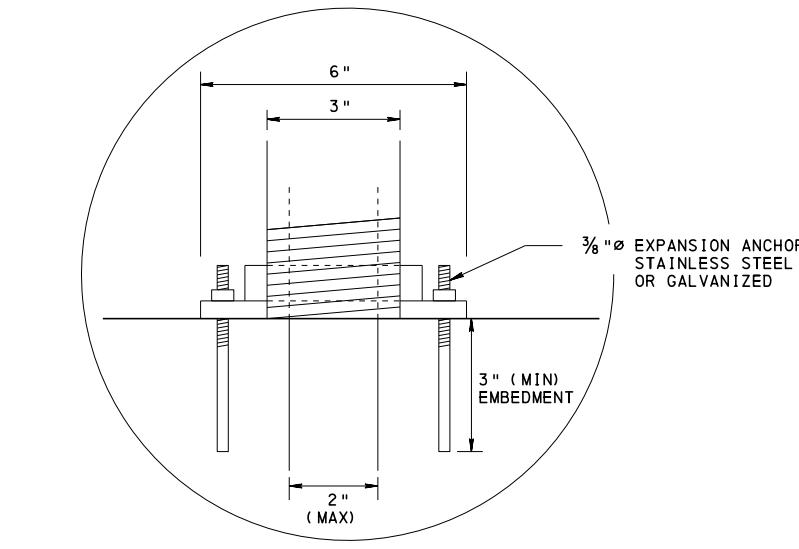


TYPE C



**NOTES:**

1. REFER TO RC-67M FOR CURB RAMP AND SIDEWALK DETAILS.
2. MOUNT PEDESTRIAN PUSHBUTTON BETWEEN 40" TO 44" ABOVE TOP OF SIDEWALK OR FINISHED GRADE TO THE EXPOSED CONDUIT AND LATERALLY 10" MAXIMUM FROM LEVEL LANDING.
3. ALL ACCESSIBILITY FEATURES MUST BE COMPLIANT TO PENNDOT PUBLICATION 13M (DM-2), CHAPTER 6, PUBLICATION 72M (RC STANDARDS) CRITERIA AND PUBLICATION 149.
4. IN A PAVED AREA, PLACE THE TOP OF THE FOUNDATION FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT. PROVIDE  $\frac{1}{2}$ " PREMOLDED EXPANSION JOINT FILLER BETWEEN FOUNDATION AND ADJACENT PAVEMENT. SEE DETAIL C ON SHEET 9 OF TC-8801.
5. PEDESTRIAN PUSHBUTTONS SHALL BE OF A TYPE APPROVED BY THE DEPARTMENT AND LISTED IN PUBLICATION 35 (BULLETIN 15).
6. PEDESTRIAN PUSHBUTTONS SHALL BE A MINIMUM OF 2" DIAMETER AND A FORCE PER ACTUATION THAT CANNOT EXCEED 5 LBS.
7. PEDESTRIAN PUSHBUTTON EXTENSION ARM TYPICALLY MEASURES UP TO 3". MAXIMUM LENGTH OF EXTENSION ARM TO BE 12". EXTENSION ARMS MEASURING BETWEEN 3" TO 12" REQUIRE DISTRICT APPROVAL PRIOR TO INSTALLATION.
8. INSTALL CONCRETE FOUNDATIONS IN ACCORDANCE WITH PUBLICATION 408 SECTION 951.2(b) AND 951.3(b).



CONNECTION DETAIL

PEDESTRIAN PUSHBUTTON MOUNTING DETAILS

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

MISCELLANEOUS  
PEDESTRIAN PUSHBUTTON  
MOUNTING DETAILS

RECOMMENDED XXX. X, 20XX

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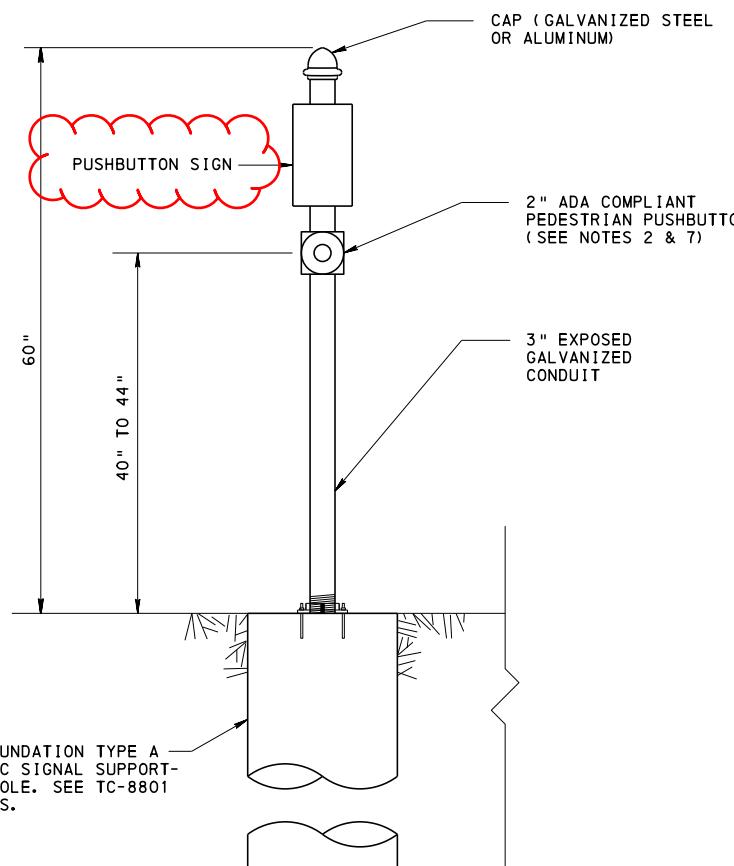
SHT. 2 OF 4

CHIEF, TRAFFIC OPERATIONS  
SECTION

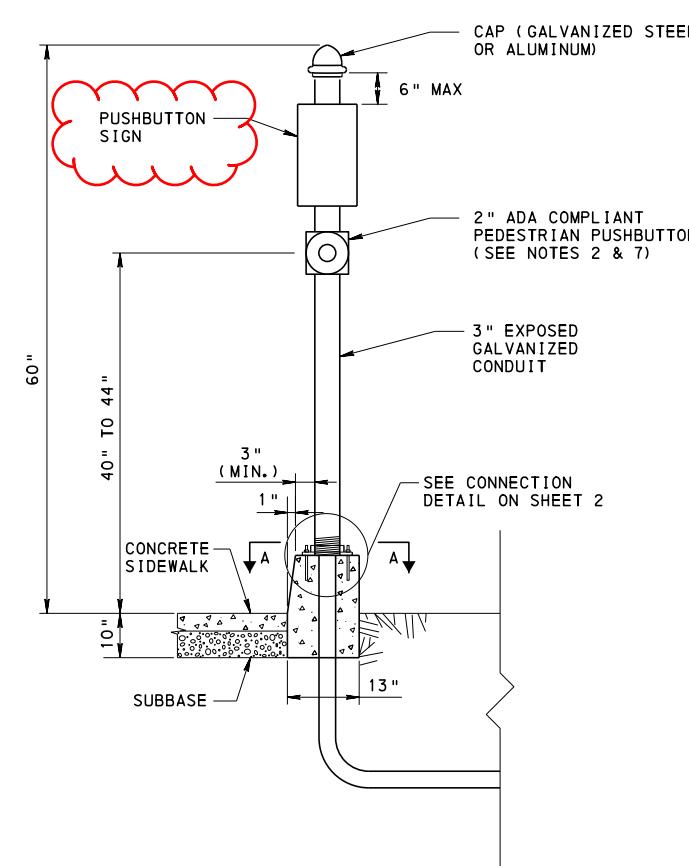
CHIEF, HIGHWAY SAFETY AND  
TRAFFIC OPERATIONS DIVISION

TC-8803

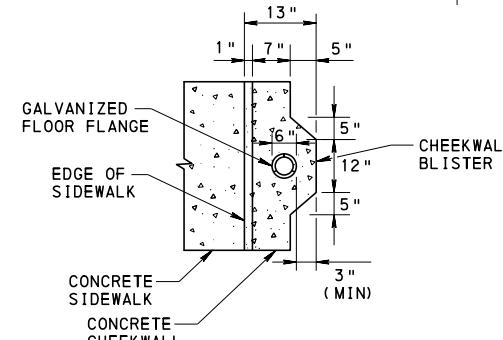
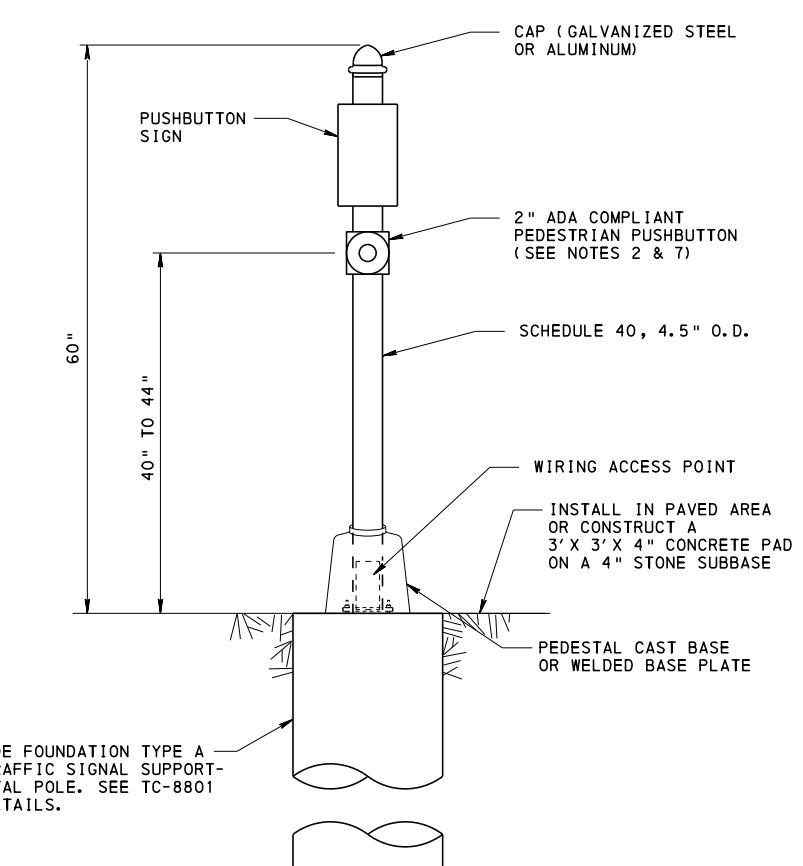
TYPE D



TYPE E



TYPE F



VIEW A-A

NOTES:

1. REFER TO RC-67M FOR CURB RAMP AND SIDEWALK DETAILS.
2. MOUNT PEDESTRIAN PUSHBUTTON BETWEEN 40" TO 44" ABOVE SIDEWALK OR FINISHED GRADE TO THE CENTER OF THE PUSHBUTTON AND 10" MAX LATERALLY FROM LANDING.
3. ALL ACCESSIBILITY FEATURES MUST BE COMPLIANT TO PENNDOT PUBLICATION 13M (DM-2), CHAPTER 6, PUBLICATION 72M (RC STANDARDS CRITERIA) AND PUBLICATION 149.
4. IN A PAVED AREA, PLACE THE TOP OF THE FOUNDATION FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT. PROVIDE  $\frac{1}{2}$ " PREMOLDED EXPANSION JOINT FILLER BETWEEN FOUNDATION AND ADJACENT PAVEMENT. SEE DETAIL C ON SHEET 9 OF TC-8801.
5. PEDESTRIAN PUSHBUTTONS SHALL BE OF A TYPE APPROVED BY THE DEPARTMENT AND LISTED IN PUBLICATION 35 (BULLETIN 15).
6. PEDESTRIAN PUSHBUTTONS SHALL BE A MINIMUM OF 2" DIAMETER AND A FORCE PER ACTUATION THAT CANNOT EXCEED 5 LBS.
7. PEDESTRIAN PUSHBUTTON EXTENSION ARM IS TYPICALLY UP TO 3". MAXIMUM EXTENSION ARM OF 12". EXTENSION ARMS BETWEEN 3" TO 12" REQUIRE DISTRICT APPROVAL PRIOR TO INSTALLATION.
8. INSTALL CONCRETE FOUNDATIONS IN ACCORDANCE WITH PUBLICATION 408 SECTION 951.2(b) AND 951.3(b).

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

MISCELLANEOUS  
PEDESTRIAN PUSHBUTTON  
MOUNTING DETAILS

RECOMMENDED XXX. X, 20XX

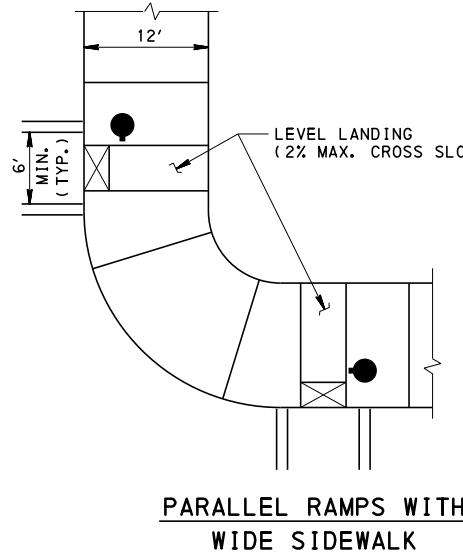
RECOMMENDED XXX. X, 20XX

SHT. 3 OF 4

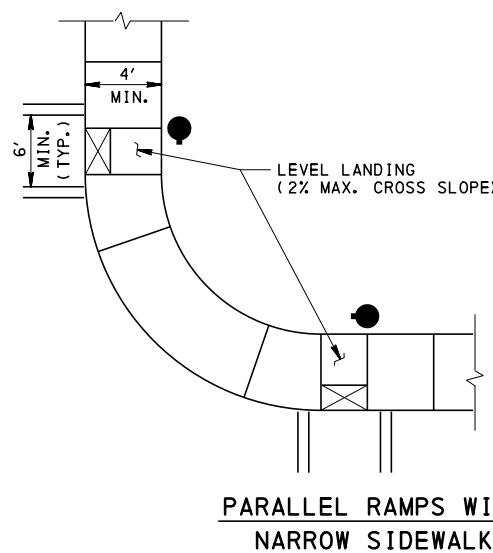
CHIEF, TRAFFIC OPERATIONS  
SECTION

CHIEF, HIGHWAY SAFETY AND  
TRAFFIC OPERATIONS DIVISION

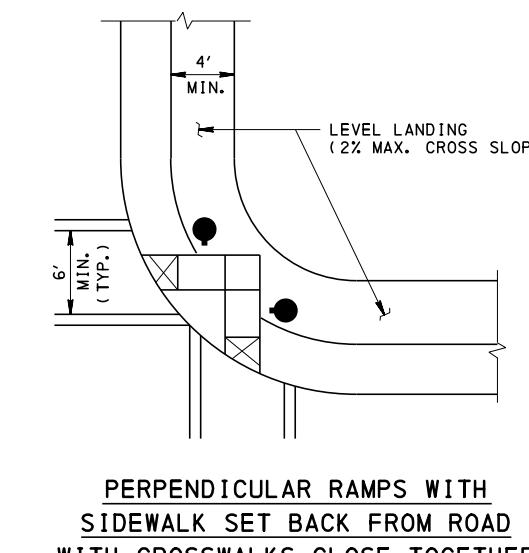
TC-8803



PARALLEL RAMPS WITH  
WIDE SIDEWALK

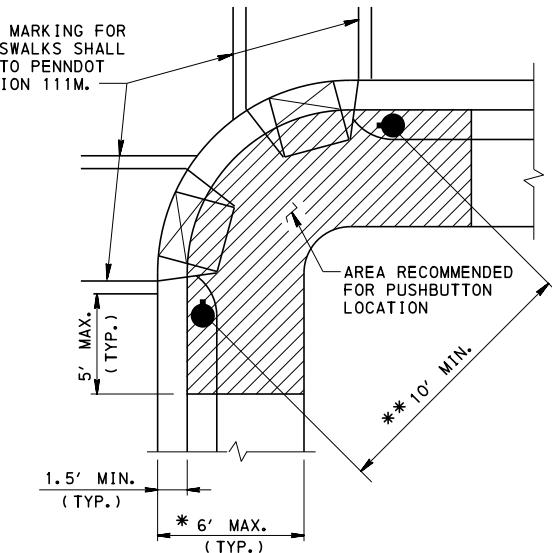


PARALLEL RAMPS WITH  
NARROW SIDEWALK



PERPENDICULAR RAMPS WITH  
SIDEWALK SET BACK FROM ROAD  
WITH CROSSWALKS CLOSE TOGETHER

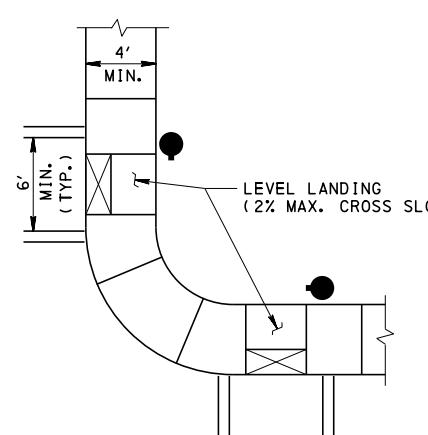
PAVEMENT MARKING FOR  
THE CROSSWALKS SHALL  
CONFORM TO PENNDOT  
PUBLICATION 11M.



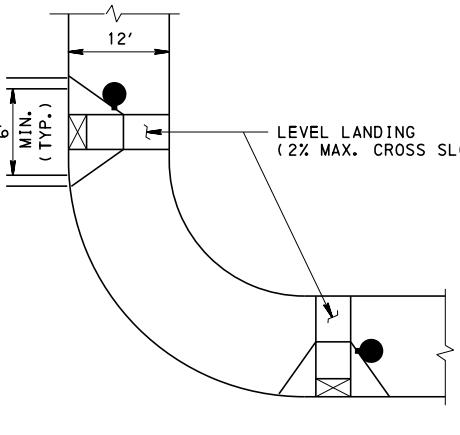
RECOMMENDED PUSHBUTTON LOCATIONS

\* WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5' AND 6' FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10' FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.

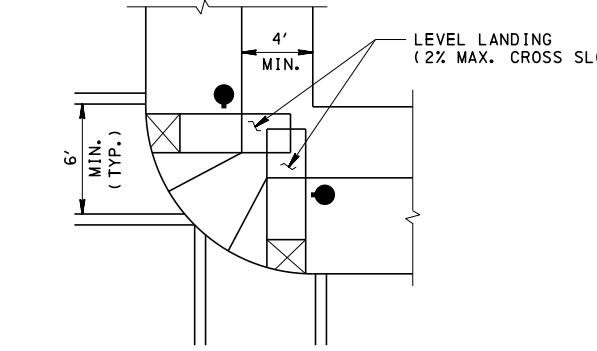
\*\* WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE 10' SEPARATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.



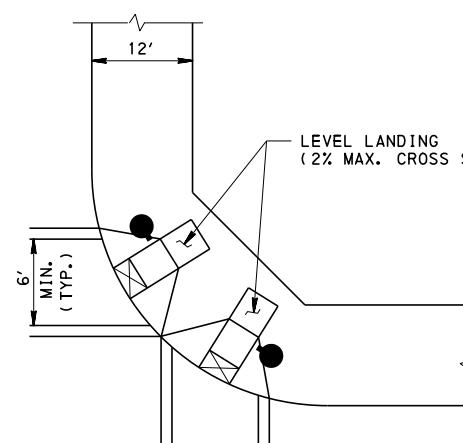
PARALLEL RAMPS WITH NARROW SIDEWALK  
AND TIGHT CORNER RADIUS



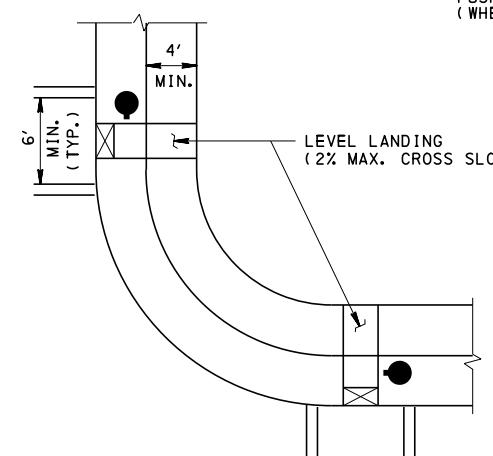
PERPENDICULAR RAMPS WITH  
CROSSWALKS FAR APART



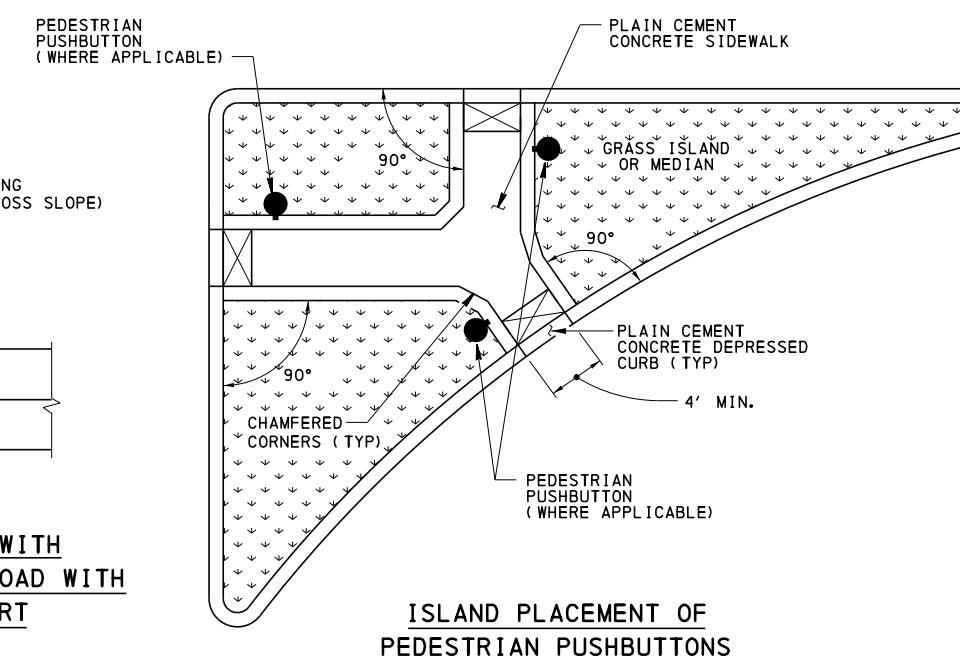
PERPENDICULAR RAMPS WITH  
SIDEWALK SET BACK FROM ROAD WITH  
CONTINUOUS SIDEWALK BETWEEN RAMPS



PERPENDICULAR RAMPS WITH  
CROSSWALKS CLOSE TOGETHER



PERPENDICULAR RAMPS WITH  
SIDEWALK SET BACK FROM ROAD WITH  
CROSSWALKS FAR APART



ISLAND PLACEMENT OF  
PEDESTRIAN PUSHBUTTONS

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

MISCELLANEOUS  
TYPICAL PEDESTRIAN PUSHBUTTON  
LOCATIONS

RECOMMENDED XXX. X, 20XX

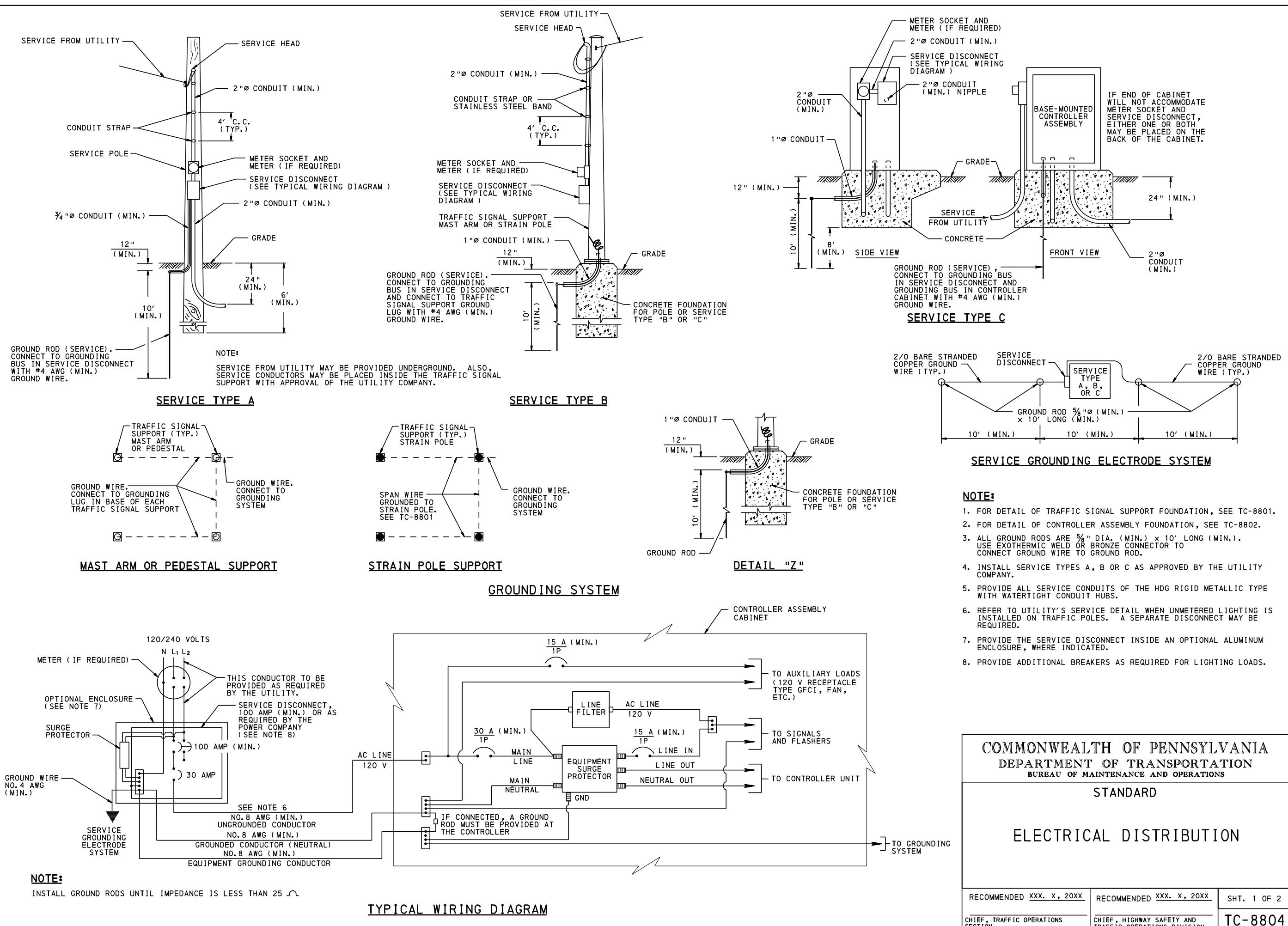
RECOMMENDED XXX. X, 20XX

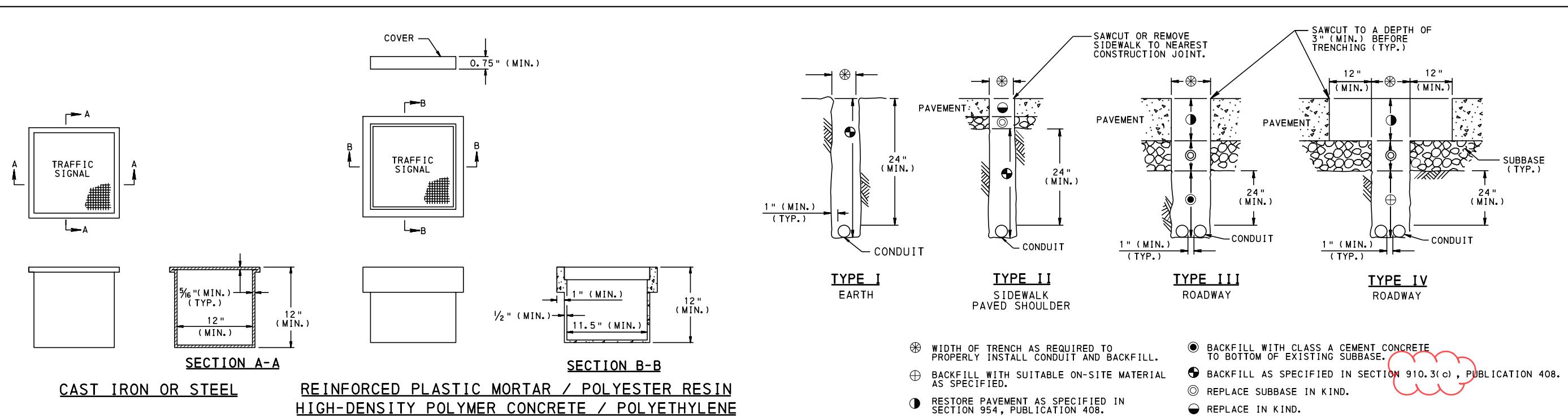
SHT. 4 OF 4

CHIEF, TRAFFIC OPERATIONS  
SECTION

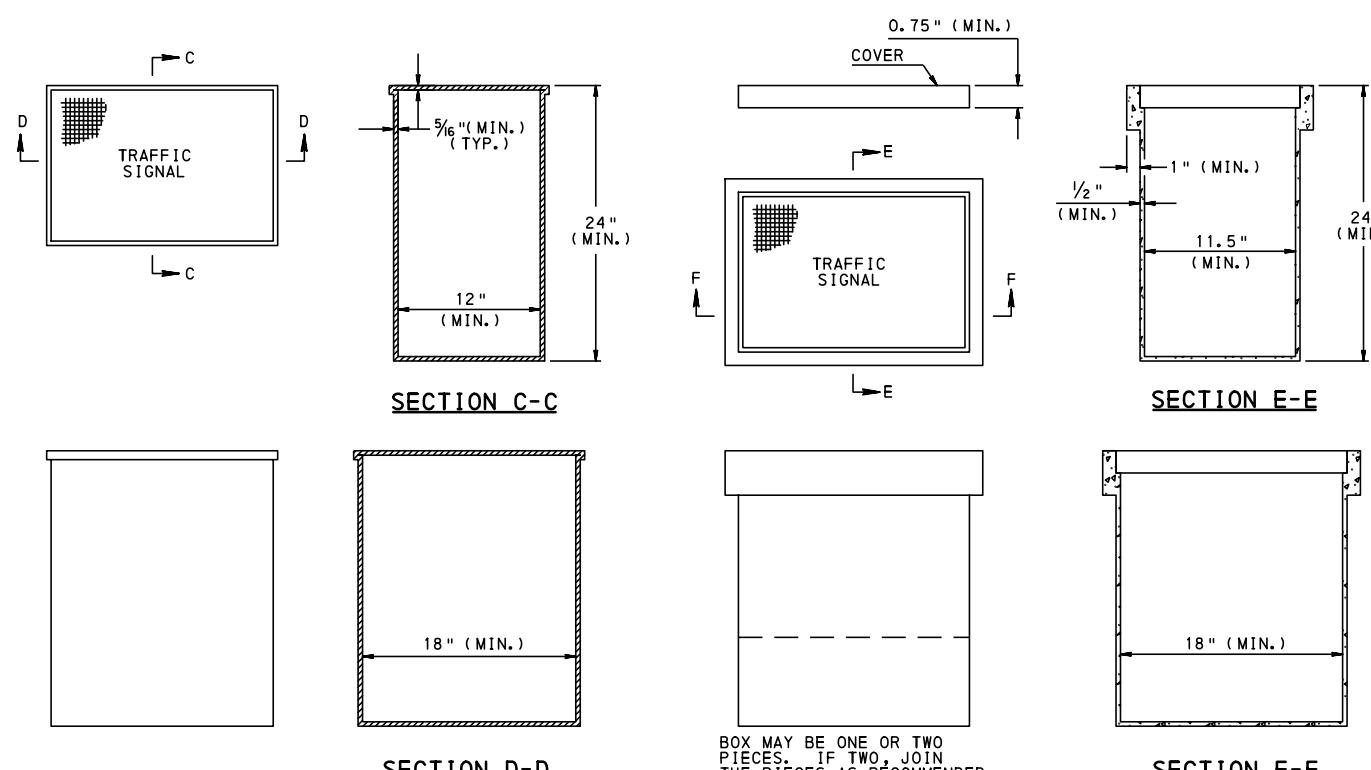
CHIEF, HIGHWAY SAFETY AND  
TRAFFIC OPERATIONS DIVISION

TC-8803

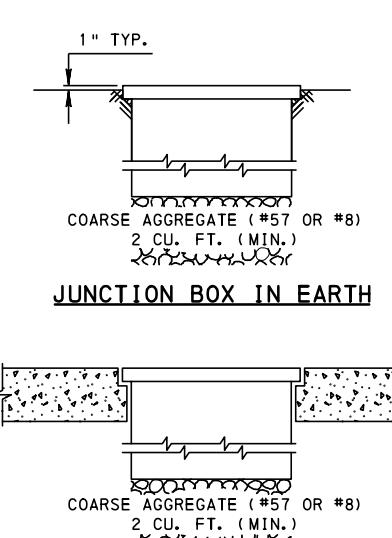




### JUNCTION BOX, TYPE JB-26



### JUNCTION BOX, TYPE JB-27



### TYPICAL JUNCTION BOX INSTALLATION

**NOTES:**

1. JUNCTION BOXES -- PROVIDE COVER WITH A NON-SLIP SURFACE AND A MINIMUM OF TWO CORROSION RESISTANT FASTENERS.
2. JUNCTION BOXES -- USE JB-26 AND JB-27 ONLY IN AREAS NOT SUBJECT TO VEHICULAR TRAFFIC.
3. JUNCTION BOXES -- BOTTOM MAY BE OPEN OR CLOSED. IF CLOSED, PROVIDE A DRAIN HOLE 2" DIAMETER MINIMUM.
4. FOR DETAIL OF JUNCTION BOXES JB-1, JB-2, JB-11 AND JB-12, SEE STANDARD DRAWINGS, RC-81M AND RC-82M OF PENNDOT PUB. 72M.
5. GROUND EXPOSED METAL PARTS OF JUNCTION BOXES. USE GROUNDING LUGS. DO NOT CONNECT GROUND WIRE DIRECTLY TO LID.

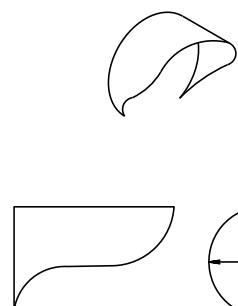
COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

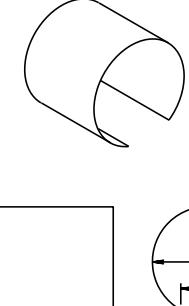
### ELECTRICAL DISTRIBUTION

RECOMMENDED XXX. X, 20XX	RECOMMENDED XXX. X, 20XX	SHT. 2 OF 2
CHIEF, TRAFFIC OPERATIONS SECTION	CHIEF, HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION	TC-8804

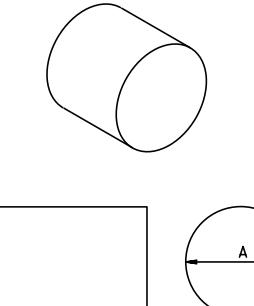
THE VISOR SHALL BE A MINIMUM OF 9.5" FOR A 12" SIGNAL LENS AND 7" FOR AN 8" SIGNAL LENS WITH A DOWNWARD TILT OF 3.5 DEGREES.



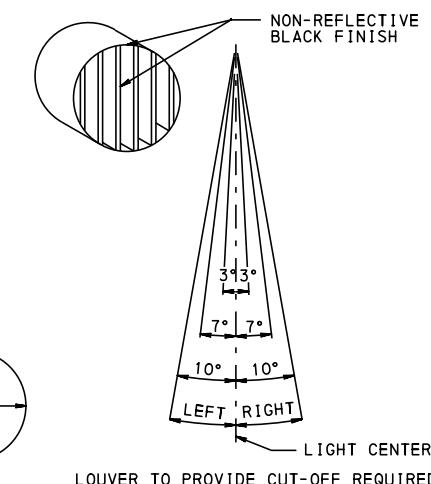
CUT-AWAY VISOR



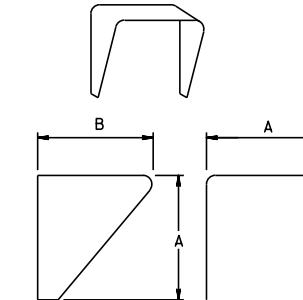
TUNNEL VISOR



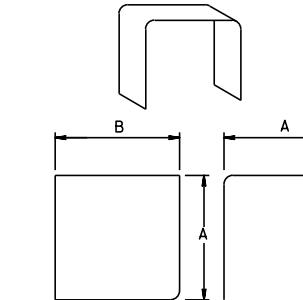
FULL-CIRCLE VISOR



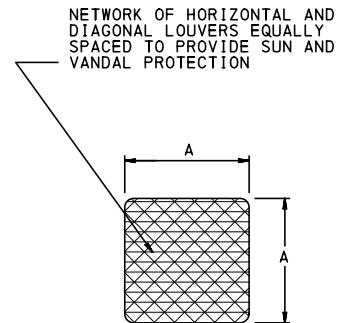
LOUVER FOR VEHICULAR SIGNAL HEAD  
(DO NOT USE WITH CUT-AWAY VISOR)



CUT-AWAY VISOR

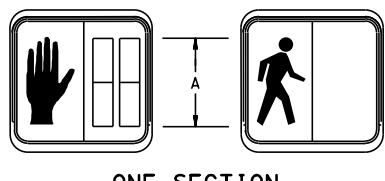


TUNNEL VISOR

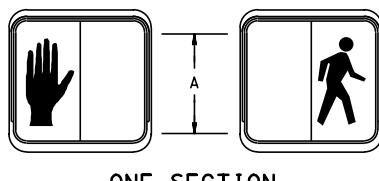


DIMENSION A AS REQUIRED.  
DIMENSION B ≈ DIMENSION A

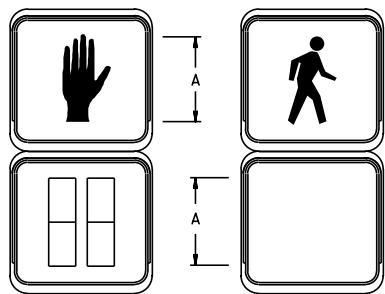
LOUVER VISOR  
(FOR PEDESTRIAN SIGNAL HEAD ONLY)



ONE-SECTION



ONE-SECTION



TWO-SECTIONS

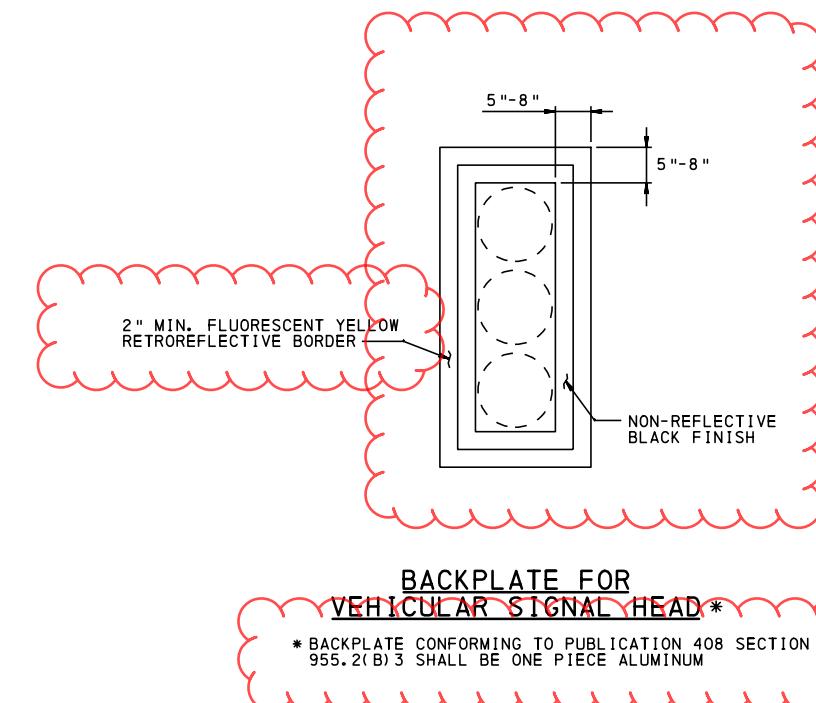
TYPE A  
(COUNTDOWN) \*

TYPE	DIMENSION A
A	6" *
B	6" **

\* COUNTDOWN PEDESTRIAN SIGNALS SHALL CONSIST OF PORTLAND ORANGE NUMBERS THAT ARE AT LEAST 6" IN HEIGHT. FOR CROSSWALKS WHERE THE PEDESTRIAN ENTERS THE CROSSWALK MORE THAN 100' FROM THE COUNTDOWN PEDESTRIAN SIGNAL DISPLAY, THE NUMBERS SHOULD BE AT LEAST 9" IN HEIGHT.

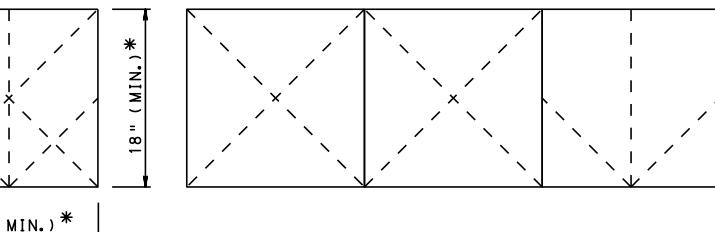
\*\* FOR CROSSWALKS WHERE THE PEDESTRIAN ENTERS THE CROSSWALK MORE THAN 100' FROM THE PEDESTRIAN SIGNAL HEAD INDICATIONS, DIMENSION "A" SHOULD BE AT LEAST 9" HIGH.

PEDESTRIAN SIGNAL HEAD



BACKPLATE FOR VEHICULAR SIGNAL HEAD \*

\* BACKPLATE CONFORMING TO PUBLICATION 408 SECTION 955.2(B)3 SHALL BE ONE PIECE ALUMINUM



TWO OR THREE SECTIONS

\* NOMINAL. ACTUAL DIMENSIONS ARE AS REQUIRED TO PROVIDE SYMBOLS IN ACCORDANCE WITH IITE STANDARD FOR "LANE-USE TRAFFIC CONTROL SIGNAL HEADS" AND CURRENT ADDITION OF MUTCD.

LANE-USE TRAFFIC CONTROL SIGNAL HEAD

NOTE:

1. PEDESTRIAN SIGNALS MAY INCLUDE A COUNTDOWN TIMER THAT OPERATES DURING THE "FLASHING UPRAISED HAND" PHASE.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

SIGNAL HEADS

RECOMMENDED XXX. X, 20XX

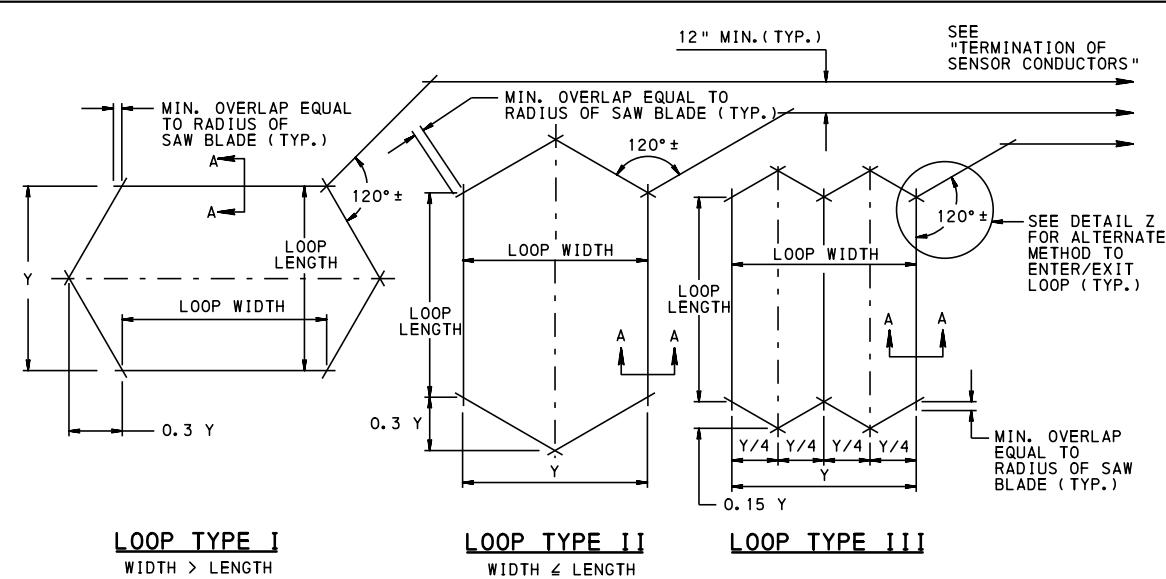
CHIEF, TRAFFIC OPERATIONS SECTION

RECOMMENDED XXX. X, 20XX

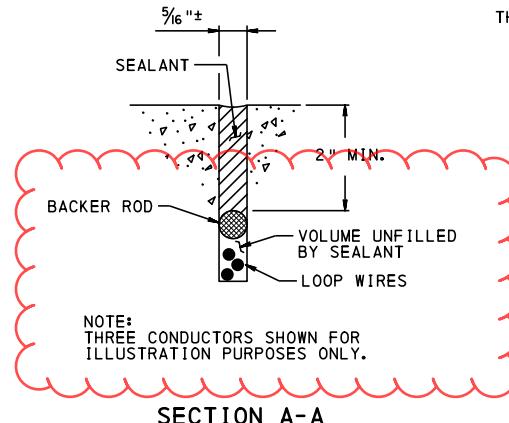
CHIEF, HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION

SHT. 1 OF 1

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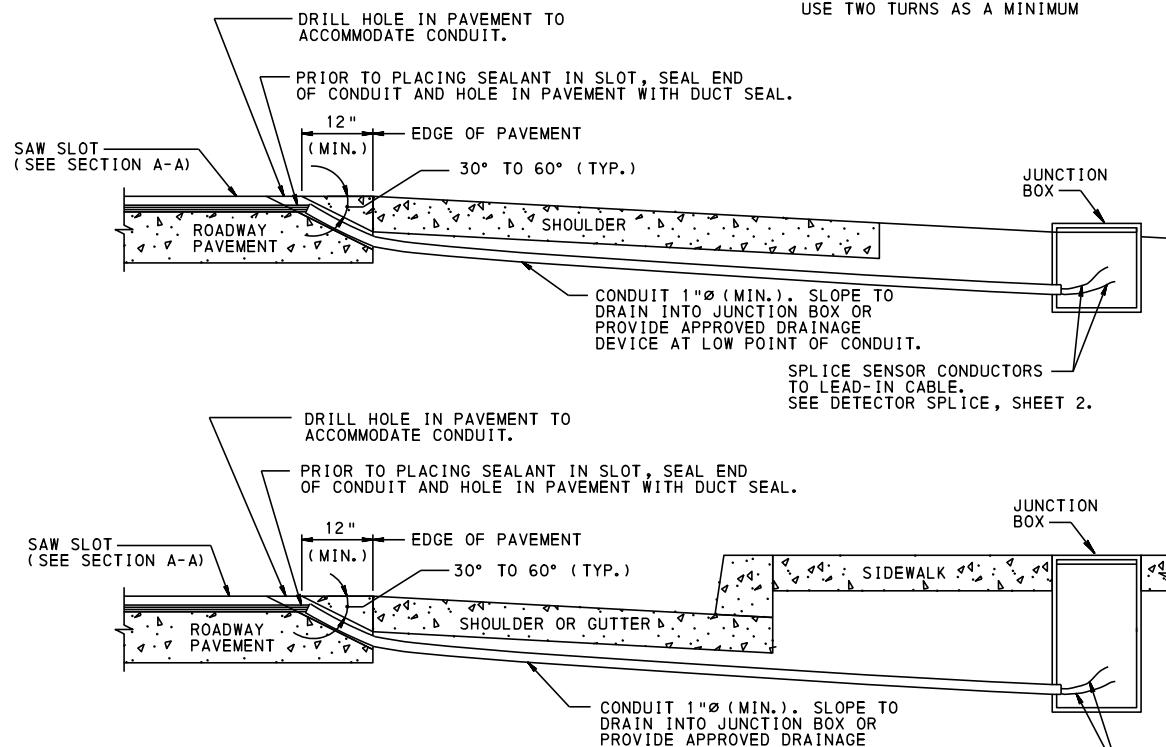
### TYPICAL SENSOR INSTALLATION - LOOP DETECTOR



THIS TABLE (FOR INFORMATION ONLY) APPROXIMATES THE RESULTANT INDUCTANCE OF A LOOP BASED ON SIZE OF THE LOOP AND NUMBER OF SENSOR TURNS.

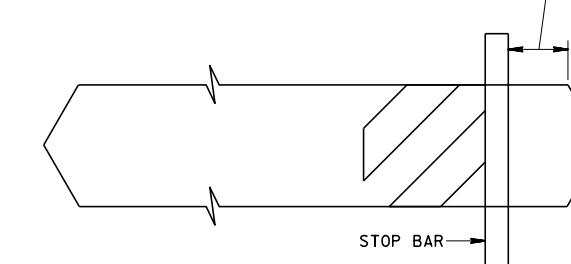
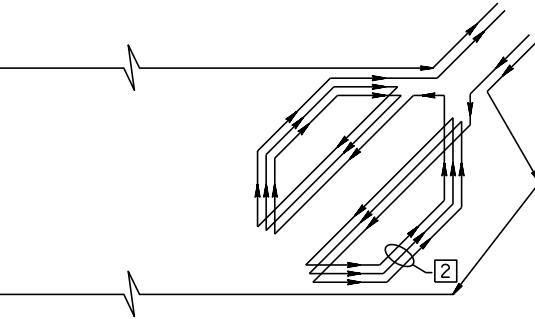
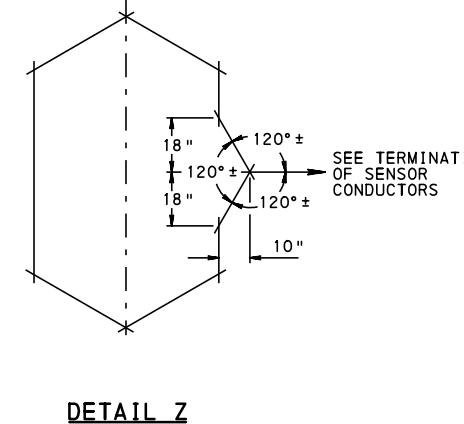
LOOP INDUCTANCE (MICROHENRIES)			
LOOP SIZE (FT)	NUMBER OF TURNS		
	2	3	4
5' x 5'	---	62	104
6' x 6'	---	76	129
6' x 10'	51	107	181
6' x 15'	69	147	249
6' x 20'	88	187	320
6' x 22'	96	204	349
6' x 25'	107	229	392
6' x 30'	126	272	461
6' x 35'	146	315	542
6' x 40'	165	359	618
6' x 45'	185	402	695
6' x 50'	205	447	773

USE TWO TURNS AS A MINIMUM

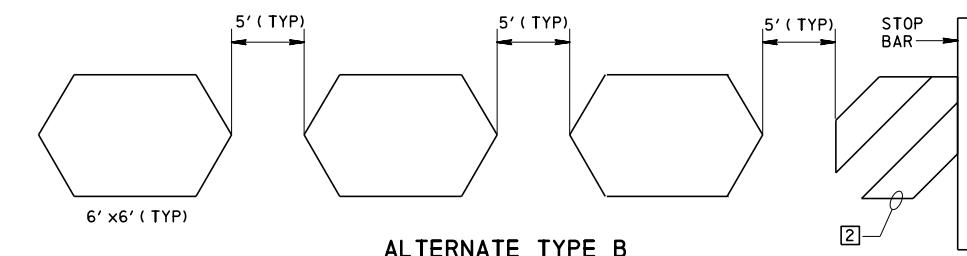


PAYMENT FOR CONDUIT, SEALANT, SAW CUT AND DRILLING IS BE INCIDENTAL TO THE SENSOR.

### TERMINATION OF SENSOR CONDUCTORS



### ALTERNATE TYPE A DETECTOR LAYOUT

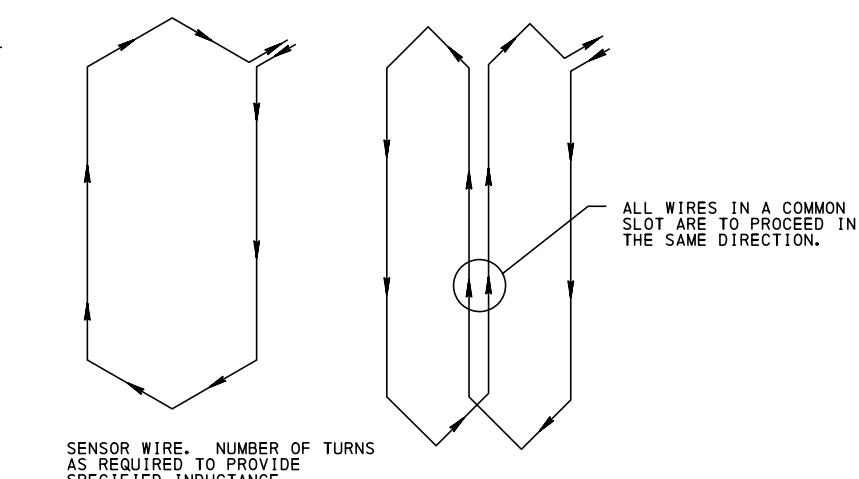


### ALTERNATE DETECTOR NOTES:

- [1] ROUND CORNERS OF ACUTE SAWCUTS TO PREVENT DAMAGE TO CONDUCTORS.
- [2] INSTALL 3 TURNS WHEN ONLY ONE LOOP IS ON A SENSOR UNIT CHANNEL. INSTALL 5 TURNS WHEN ONE LOOP IS CONNECTED IN SERIES WITH 3 ADDITIONAL 6'x6' LOOPS ON A SENSOR UNIT CHANNEL.

### ALTERNATE SENSOR INSTALLATION - LOOP DETECTOR

FOR ENHANCED BICYCLE AND MOTORCYCLE DETECTION



### TYPICAL LAYOUT OF LOOP SENSOR

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DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

STANDARD

DETECTORS

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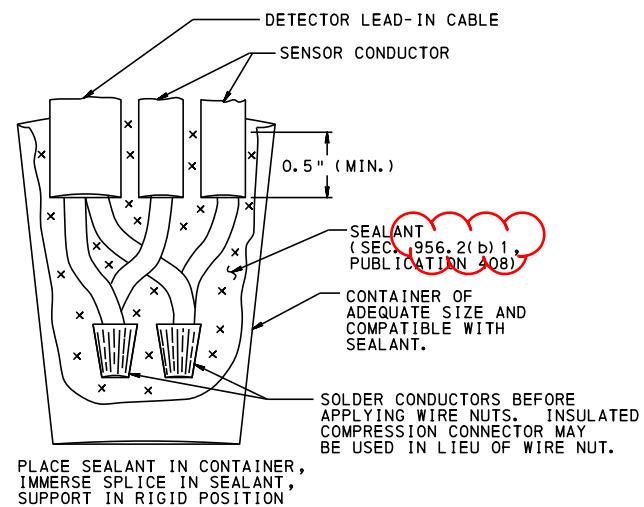
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SHT. 1 OF 2

CHIEF, TRAFFIC OPERATIONS SECTION

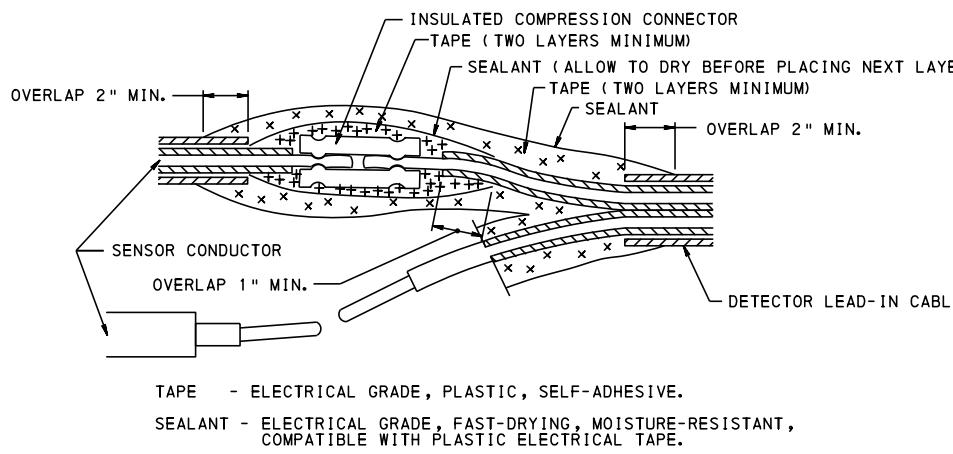
CHIEF, HIGHWAY SAFETY AND TRAFFIC OPERATIONS DIVISION

TC-8806



PLACE SEALANT IN CONTAINER,  
IMMERSER SPLICE IN SEALANT,  
SUPPORT IN RIGID POSITION  
UNTIL SEALANT HAS SET.

ALTERNATE A

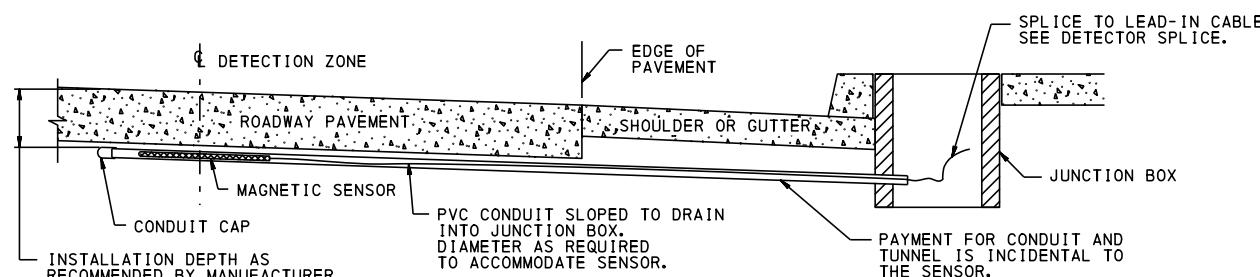
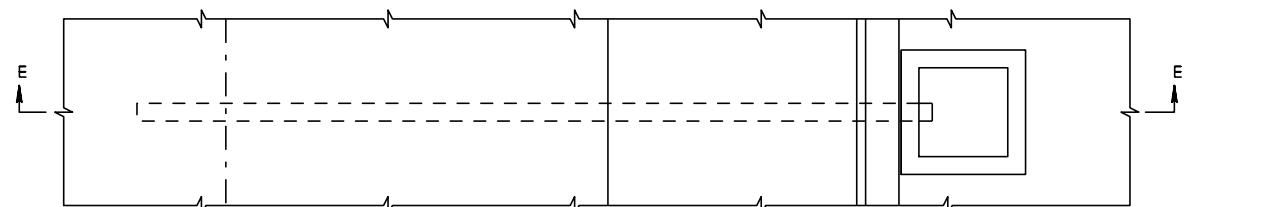


TAPE - ELECTRICAL GRADE, PLASTIC, SELF-ADHESIVE.  
SEALANT - ELECTRICAL GRADE, FAST-DRYING, MOISTURE-RESISTANT  
COMPATIBLE WITH PLASTIC ELECTRICAL TAPE.

ALTERNATE C SPLICE WILL BE MADE ELECTRICALLY SECURE WITH INSULATED COMPRESSION CONNECTORS THEN COVERED WITH A SPLICING KIT THAT IS MOISTURE-PROOF, SPLICE ENCAPSULATING (INCLUDING CABLE JACKET), AND DESIGNED FOR INSULATING AND SPLICING ELECTRIC CABLE; OR A RE-ENTERABLE SPLICE KIT AS SPECIFIED IN SEC 956.21(b)4, PUBLICATION 408.

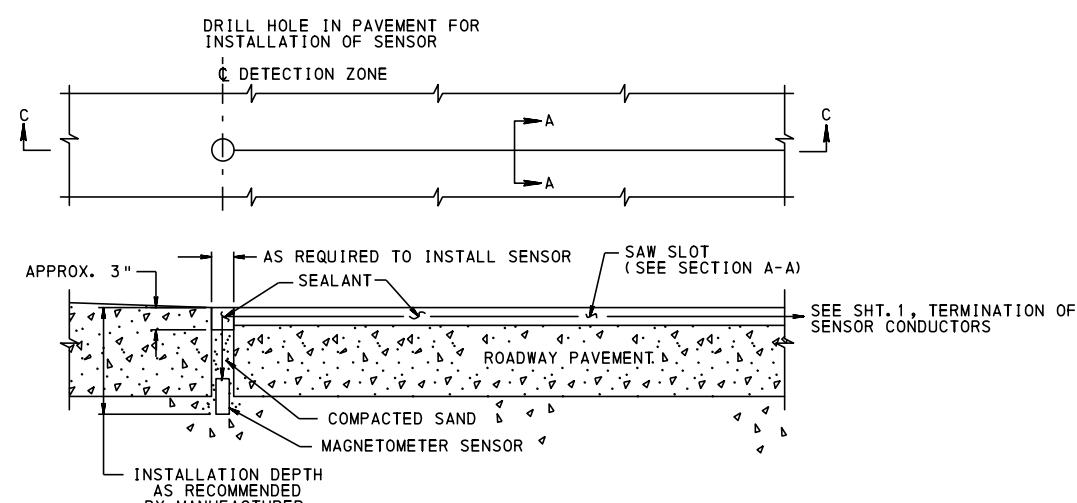
### ALTERNATE

## DETECTOR SPLICE



SECTION F-F

#### TYPICAL SENSOR INSTALLATION - MAGNETIC DETECTOR



#### TYPICAL SENSOR INSTALLATION - MAGNETOMETER DETECTOR

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DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE AND OPERATIONS

## STANDARD

## DETECTORS

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SHT. 2 OF 2

CHIEF, TRAFFIC OPERATIONS  
SECTION

CHIEF, HIGHWAY SAFETY AND  
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## SECTION

## TRAFFIC OPERATIONS DIVISION

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