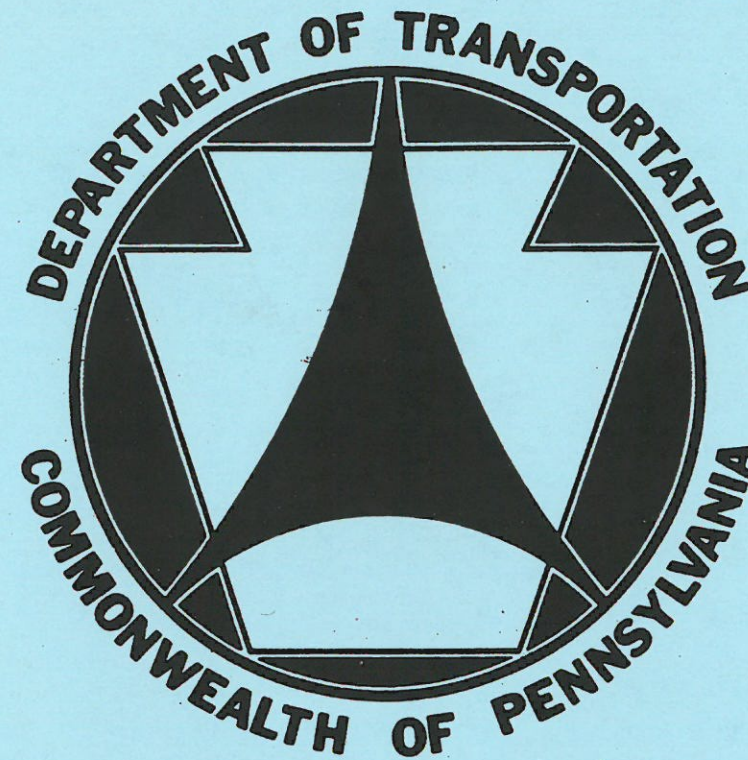




TRAFFIC STANDARDS — SIGNALS

BUREAU OF MAINTENANCE AND OPERATIONS

TC-7800 SERIES

JUNE 1989

As Re'd 4-18-03 LATEST (Same as Prev. Copies on Hwy. Shelve)

OS-299 (8-72)



TRANSMITTAL
LETTER

Publication 148

DATE
June 30, 1989

SUBJECT:

Traffic Standards - Signals; TC-7800 Series

INFORMATION AND SPECIAL INSTRUCTIONS:

The attached edition of Publication 148, entitled Traffic Standards - Signals; TC-7800 Series, covers the construction of traffic signals, including controller assemblies, traffic signal supports, electrical distribution, signal heads, and detectors.

This edition shall be referenced on all projects to be constructed in accordance with the 1987 edition of Publication 408 and a letting date after September 1, 1989.

CANCEL AND DESTROY THE FOLLOWING:

This edition of Publication 148 supersedes the January 1987 edition.

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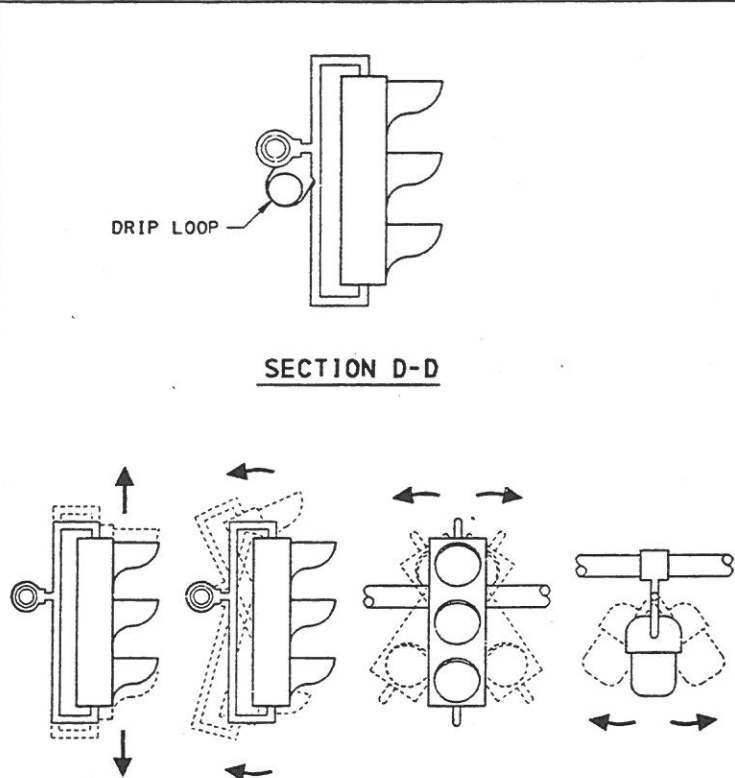
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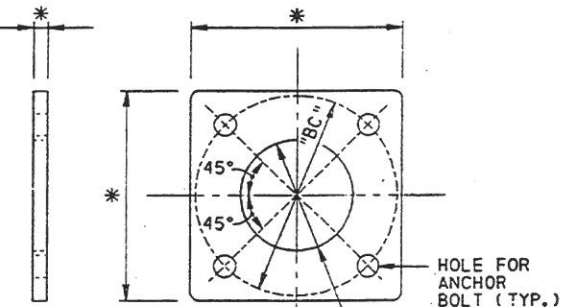
Howard Yerusalim, P.E.
Secretary of Transportation

By: *David E. Zyzworsky*
Deputy Secretary for
Highway Administration

4-18-03



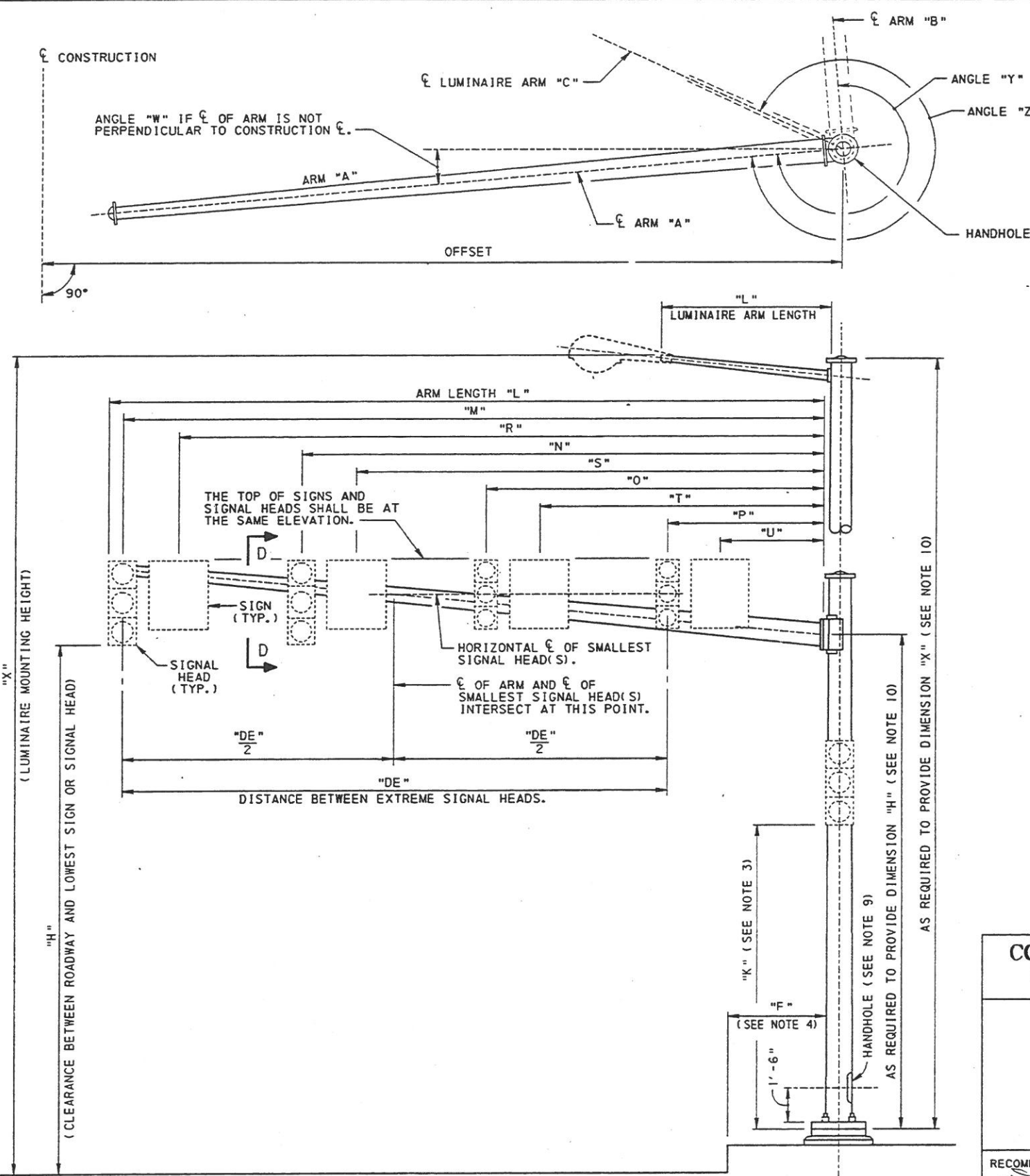
DETAIL A



* AS REQUIRED TO MEET THE DEPARTMENT'S "CRITERIA FOR THE DESIGN AND CONSTRUCTION OF TRAFFIC-RELATED STRUCTURES".

MAST ARM LENGTH	"BC" BOLT CIRCLE	DIA. OF ANCHOR BOLT
0'-15'	14"	3/4"
16'-20'	15"	1"
21'-25'	16"	1"
26'-30'	17"	1"
31'-35'	18"	1 1/4"
36'-40'	19"	1 1/4"
41'-45'	20"	1 1/4"
46'-50'	21"	1 1/4"
51'-55'	22"	1 1/2"
56'-60'	23"	1 1/2"

ANCHOR BASE



NOTES

1. FOR FOUNDATION DETAIL SEE SHEET 3 OF 4.
2. HANDHOLE SHALL BE PLACED 90° OR 180° FROM THE CENTERLINE OF ARM "A".
3. DIMENSION "K" SHALL BE FROM THE SIDEWALK, IF A SIDEWALK IS PRESENT. IF NO SIDEWALK, DIMENSION "K" SHALL BE FROM THE ROADWAY.
4. DIMENSION "F" SHALL BE 2'-0" MINIMUM FROM CURB OR FROM EDGE OF SHOULDER.
5. A "ROUND TAPERED" SUPPORT IS USED FOR ILLUSTRATION PURPOSES. THE TYPE OF SUPPORT MAY BE ANY OF THOSE INDICATED IN PUB. 408.
6. A MINIMUM OF ONE GROUND ROD SHALL BE INSTALLED IN EACH FOUNDATION. SEE TC-7804.
7. ARMS LESS THAN 31' WILL BE ONE SECTION.
8. ALL SIGNAL HEADS AND SIGNS ON THE MAST ARM SHALL BE RIGIDLY MOUNTED UNLESS OTHERWISE INDICATED. MOUNTING BRACKETS SHALL:
 - a. ATTACH TO THE TOP AND BOTTOM OF THE SIGNAL HEAD.
 - b. ATTACH TO EACH CORNER OF THE SIGN.
 - c. PERMIT THE ADJUSTMENTS SHOWN IN DETAIL A.
 - d. HAVE GROMMETED WIRE ENTRANCE.
 - e. NOT ENTRAP WATER INSIDE THE BRACKET.
9. MINIMUM AREA OF HANDHOLE 25 SQ. IN. WITH UNOBSTRUCTED WIDTH OF 3.5" MINIMUM.
10. OBTAIN ELEVATION OF ROADWAY AND TOP OF FOUNDATION PRIOR TO DETERMINING THIS DIMENSION.

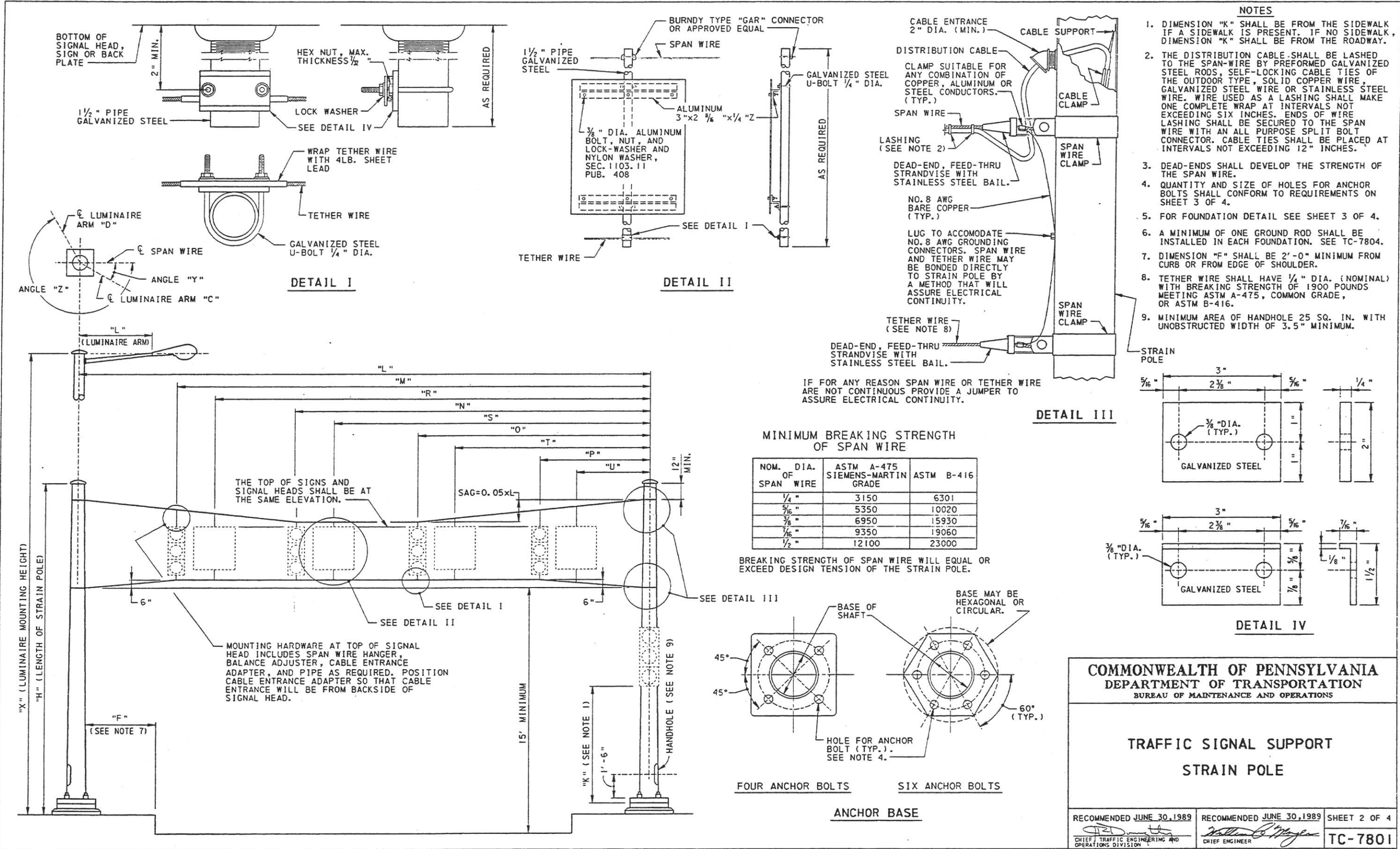
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

TRAFFIC SIGNAL SUPPORT
MAST ARM

RECOMMENDED JUNE 30, 1989
CHIEF TRAFFIC ENGINEERING AND
OPERATIONS DIVISION

RECOMMENDED JUNE 30, 1989
CHIEF ENGINEER

SHEET 1 OF 4
TC-7801



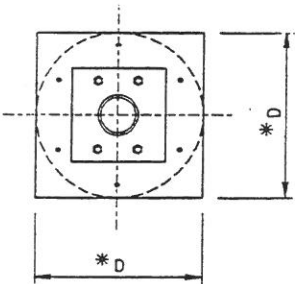
FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, MAST ARM

MAST ARM LENGTH	D	ANCHOR BOLTS						TYPE A FOUNDATION	
		QTY.	ONE ARM		TWO ARMS*		H	"W" BAR	QTY. SIZE
			DIA.	LGTH.	DIA.	LGTH.			
0'-5'	2'-6"	4	3/4"	3'-0"	1"	4'-0"	5'-0"	4	#8
6'-10'	2'-6"	4	3/4"	3'-0"	1"	4'-0"	5'-6"	4	#8
11'-15'	2'-6"	4	3/4"	3'-0"	1"	4'-0"	6'-0"	4	#8
16'-20'	2'-6"	4	1"	4'-0"	1 1/4"	5'-0"	6'-6"	4	#8
21'-25'	2'-6"	4	1"	4'-0"	1 1/4"	5'-0"	7'-0"	6	#8
26'-30'	3'-0"	4	1"	4'-0"	1 1/2"	5'-6"	7'-6"	6	#8
31'-35'	3'-0"	4	1 1/4"	5'-0"	1 1/2"	5'-6"	8'-6"	8	#8
36'-40'	3'-0"	4	1 1/4"	5'-0"	2"	6'-6"	9'-0"	8	#8
41'-45'	3'-0"	4	1 1/4"	5'-0"	2"	6'-6"	10'-0"	8	#8
46'-50'	3'-0"	4	1 1/4"	5'-0"	2"	6'-6"	10'-6"	8	#8
51'-55'	3'-0"	4	1 1/2"	5'-6"	—	—	11'-0"	8	#8
56'-60'	3'-0"	4	1 1/2"	5'-6"	—	—	12'-0"	8	#8

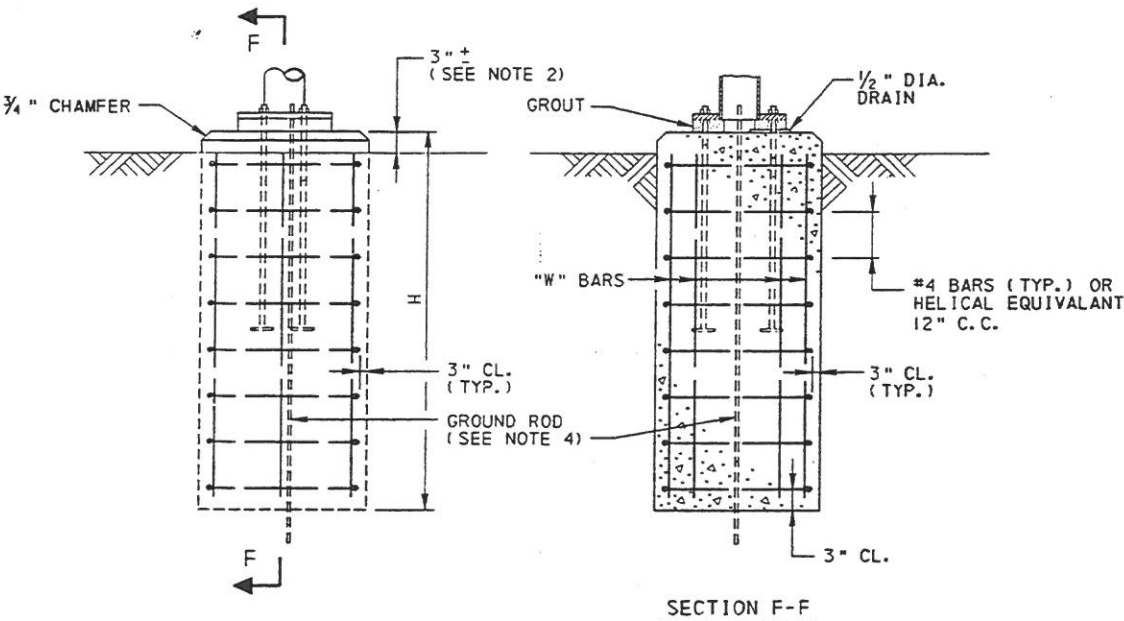
*TWO ARMS PERPENDICULAR TO EACH OTHER.

WHEN THE SHAFT OF THE SUPPORT IS EXTENDED IN LENGTH AND PROVIDED WITH A LUMINAIRE ARM THE DEPTH "H", REQUIRED BY THE DESIGN TABLE FOR THE TYPE "A" FOUNDATION, SHALL BE INCREASED BY 0'-6".

WHEN A MAST ARM SUPPORT HAS TWO ARMS WHICH ARE PERPENDICULAR TO EACH OTHER, THE FOUNDATION SHALL BE AS GIVEN IN THE DESIGN TABLE FOR A SINGLE ARM USING THE LENGTH OF THE LONGER ARM.



* DIAMETER IF CIRCULAR OR SIDE IF SQUARE. CIRCULAR FOUNDATIONS SHALL BE SQUARE FROM THE TOP TO A POINT SIX INCHES BELOW THE GROUND LINE.



TYPE A FOUNDATION

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, STRAIN POLE

DESIGN TENSION POUNDS	SHAFT LENGTH 20'-24'									SHAFT LENGTH 26'-32'									
	D	ANCHOR BOLTS			REINF. "W" BAR		20' SHAFT	22' SHAFT	24' SHAFT	D	ANCHOR BOLTS			REINF. "W" BAR		26' SHAFT	28' SHAFT	30' SHAFT	32' SHAFT
		QTY.	DIA.	LGTH.	QTY.	SIZE	FOUND. DEPTH H	FOUND. DEPTH H	FOUND. DEPTH H		QTY.	DIA.	LGTH.	QTY.	SIZE	FOUND. DEPTH H	FOUND. DEPTH H	FOUND. DEPTH H	FOUND. DEPTH H
1000	3'-0"	4	1"	3'-6"	4	#6	4'-0"	4'-0"	4'-0"	3'-0"	4	1"	4'-0"	4	#6	4'-0"	4'-6"	4'-6"	4'-6"
1250	3'-0"	4	1"	4'-0"	4	#6	4'-0"	4'-6"	4'-6"	3'-0"	4	1"	4'-0"	4	#6	4'-6"	5'-0"	5'-0"	5'-0"
1500	3'-0"	4	1"	4'-0"	4	#6	4'-6"	5'-0"	5'-0"	3'-0"	4	1 1/4"	5'-0"	4	#6	5'-0"	5'-6"	5'-6"	5'-6"
1750	3'-0"	4	1"	4'-0"	4	#6	5'-0"	5'-0"	5'-6"	3'-0"	4	1 1/4"	5'-0"	4	#6	5'-6"	6'-0"	6'-0"	6'-0"
2000	3'-0"	4	1 1/4"	5'-0"	4	#6	5'-6"	5'-6"	6'-0"	3'-0"	4	1 1/2"	5'-6"	4	#6	6'-0"	6'-0"	6'-6"	6'-6"
2250	3'-0"	4	1 1/4"	5'-0"	4	#6	5'-6"	6'-0"	6'-0"	3'-0"	4	1 1/2"	5'-6"	4	#7	6'-6"	6'-6"	7'-0"	7'-0"
2500	3'-0"	4	1 1/4"	5'-0"	4	#6	6'-0"	6'-6"	6'-6"	3'-0"	4	1 1/2"	5'-6"	4	#7	7'-0"	7'-0"	7'-0"	7'-6"
2750	3'-0"	4	1 1/2"	5'-6"	4	#6	6'-6"	6'-6"	7'-0"	3'-0"	4	1 1/2"	5'-6"	4	#7	7'-0"	7'-6"	7'-6"	8'-0"
3000	3'-0"	4	1 1/2"	5'-6"	4	#7	6'-6"	7'-0"	7'-0"	3'-0"	4	1 1/2"	5'-6"	6	#7	7'-6"	7'-6"	8'-0"	8'-0"
3250	3'-0"	4	1 1/2"	5'-6"	4	#7	7'-0"	7'-0"	7'-6"	3'-0"	4	1 1/2"	5'-6"	6	#7	8'-0"	8'-0"	8'-6"	8'-6"
3500	3'-0"	4	1 1/2"	5'-6"	4	#7	7'-0"	7'-6"	8'-0"	3'-0"	4	2"	6'-6"	6	#7	8'-0"	8'-6"	8'-6"	9'-0"
3750	3'-0"	4	1 1/2"	5'-6"	6	#7	7'-6"	8'-0"	8'-0"	3'-0"	4	2"	6'-6"	6	#7	8'-6"	9'-0"	9'-0"	9'-6"
4000	3'-0"	4	1 1/2"	5'-6"	6	#7	8'-0"	8'-0"	8'-6"	3'-0"	4	2"	6'-6"	6	#7	9'-0"	9'-0"	9'-6"	9'-6"
4250	3'-0"	4	1 1/2"	5'-6"	6	#7	8'-0"	8'-6"	9'-0"	3'-0"	4	2"	6'-6"	6	#7	9'-0"	9'-6"	10'-0"	10'-0"
4500	3'-0"	4	1 1/2"	5'-6"	6	#7	8'-6"	8'-6"	9'-0"	3'-0"	4	2"	6'-6"	8	#7	9'-6"	9'-6"	10'-0"	10'-6"
4750	3'-0"	4	1 1/2"	5'-6"	6	#7	8'-6"	9'-0"	9'-6"	3'-0"	4	2"	6'-6"	8	#7	9'-6"	10'-0"	10'-6"	10'-6"
5000	3'-0"	4	2"	6'-6"	6	#7	9'-0"	9'-6"	9'-6"	3'-0"	4	2"	6'-6"	8	#7	10'-0"	10'-6"	10'-6"	11'-0"
5500	3'-0"	4	2"	6'-6"	8	#7	9'-6"	10'-0"	10'-0"	3'-0"	4	2"	6'-6"	8	#8	10'-6"	11'-0"	11'-0"	11'-6"
6000	3'-0"	4	2"	6'-6"	8	#7	10'-0"	10'-0"	10'-6"	3'-0"	6	1 1/2"	5'-6"	8	#8	11'-0"	11'-6"	12'-0"	12'-0"
6500	3'-0"	4	2"	6'-6"	8	#7	10'-6"	11'-0"	11'-0"	3'-0"	6	2"	6'-6"	8	#8	11'-6"	12'-0"	12'-6"	13'-0"
7000	3'-0"	4	2"	6'-6"	8	#8	11'-0"	11'-6"	12'-0"	3'-0"	6	2"	6'-6"	8	#8	12'-0"	12'-6"	13'-0"	13'-6"
8000	3'-0"	6	1 1/2"	5'-6"	8	#8	12'-0"	12'-6"	12'-6"	3'-0"	6	2"	6'-6"	10	#8	13'-0"	13'-6"	14'-0"	14'-6"
9000	3'-0"	6	1 1/2"	5'-6"	8	#8	12'-6"	13'-0"	13'-6"	3'-0"	6	2"	6'-6"	10	#8	14'-0"	14'-6"	15'-0"	15'-6"
10000	3'-0"	6	2"	6'-6"	10	#8	13'-6"	14'-0"	14'-6"	3'-0"	6	2"	6'-6"	10	#8	15'-0"	15'-6"	16'-0"	16'-6"

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, PEDESTAL

SHAFT LENGTH	D	TYPE "A" FOUNDATION					
		ANCHOR BOLTS		DEPTH		REINF. "W" BARS	
		QTY.	DIA.	LGTH.	H	QTY.	SIZE
0'-10'	2'-6"	4	3/4"	3'-0"	4'-0"	4	#8
11'-14'	2'-6"	4	3/4"	3'-0"	5'-0"	4	#8

GENERAL NOTES:

MAST ARM AND STRAIN POLE FOUNDATIONS:

1. THE TYPE "A" FOUNDATION SHALL BE REQUIRED AT ALL LOCATIONS, EXCEPT THE TYPE "B" FOUNDATION (SHEET 4) MAY BE USED WHEN PHYSICAL CONDITIONS PREVENT PLACING THE TYPE "A" FOUNDATION TO ITS REQUIRED DEPTH.
2. WHEN FOUNDATIONS ARE PLACED IN A PAVED SIDEWALK, THE TOP OF FOUNDATION SHALL BE FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT.
3. ANCHOR BOLTS SHALL BE PROVIDED WITH THREADS WHICH EXTEND A MINIMUM OF THREE INCHES BELOW THE TOP OF THE FOUNDATION. A 4"x4"x1/4" MINIMUM STEEL PLATE SHALL BE ATTACHED TO BOTTOM OF EACH ANCHOR BOLT.
4. FOR GROUND ROD SIZE AND INSTALLATION DETAILS SEE TC-7804.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF MAINTENANCE AND OPERATIONS

TRAFFIC SIGNAL SUPPORT
FOUNDATION TYPE A

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, MAST ARM

MAST ARM LENGTH	D	ANCHOR BOLTS						REINFORCEMENT			TYPE B FOUNDATION			
		QTY.	ONE ARM		TWO ARMS*		"W" BAR		"L" BAR	Y	S	Z	S	
			DIA.	LGTH.	DIA.	LGTH.	QTY.	SIZE	SIZE					
0'-5'	2'-6"	4	3/4"	3'-0"	1"	4'-0"	4	#8	#4	3'-0"	7'-0"	4'-6"	5'-6"	
6'-10'	2'-6"	4	3/4"	3'-0"	1"	4'-0"	4	#8	#4	3'-6"	7'-0"	5'-0"	6'-0"	
11'-15'	2'-6"	4	3/4"	3'-0"	1"	4'-0"	4	#8	#4	3'-6"	7'-6"	5'-0"	6'-6"	
16'-20'	2'-6"	4	1"	4'-0"	1 1/4"	5'-0"	4	#8	#4	4'-0"	8'-0"	5'-6"	7'-0"	
21'-25'	2'-6"	4	1"	4'-0"	1 1/4"	5'-0"	6	#8	#4	4'-0"	8'-6"	6'-0"	7'-6"	
26'-30'	3'-0"	4	1"	4'-0"	1 1/2"	5'-6"	6	#8	#4	4'-6"	9'-0"	6'-6"	8'-0"	
31'-35'	3'-0"	4	1 1/4"	5'-0"	1 1/2"	5'-6"	8	#8	#4	4'-6"	9'-6"	7'-0"	8'-6"	
36'-40'	3'-0"	4	1 1/4"	5'-0"	2"	6'-6"	8	#8	#5	5'-0"	10'-0"	7'-0"	9'-0"	
41'-45'	3'-0"	4	1 1/4"	5'-0"	2"	6'-6"	8	#8	#5	5'-0"	10'-6"	7'-6"	9'-6"	
46'-50'	3'-0"	4	1 1/4"	5'-0"	2"	6'-6"	8	#8	#5	5'-6"	11'-0"	8'-0"	10'-0"	

*TWO ARMS PERPENDICULAR TO EACH OTHER.

NO DEVIATION IN THE FOUNDATION WILL BE REQUIRED WHEN THE SHAFT OF THE SUPPORT IS EXTENDED IN LENGTH TO SUPPORT A LUMINAIRE ARM.

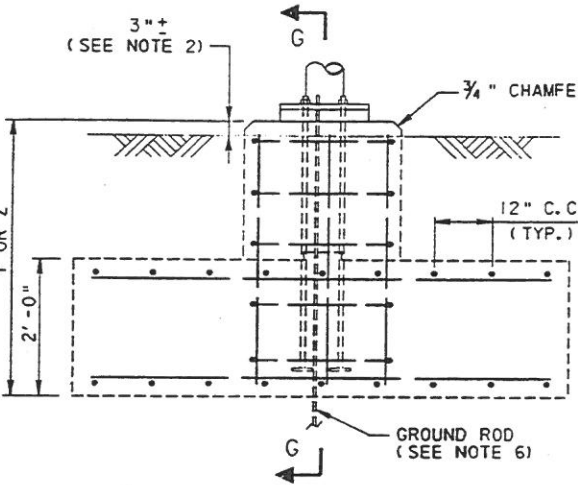
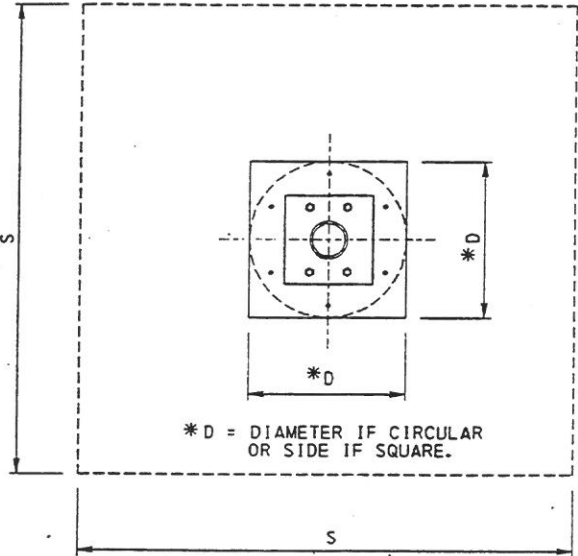
WHEN A MAST ARM SUPPORT HAS TWO ARMS WHICH ARE PERPENDICULAR TO EACH OTHER, THE FOUNDATION SHALL BE AS GIVEN IN THE DESIGN TABLE FOR A SINGLE ARM USING THE LENGTH OF THE LONGER ARM, EXCEPT THE "S" DIMENSION WHICH SHALL BE INCREASED AS FOLLOWS:

0'-35' ARM LENGTH, INCREASE "S" BY 1'-0"

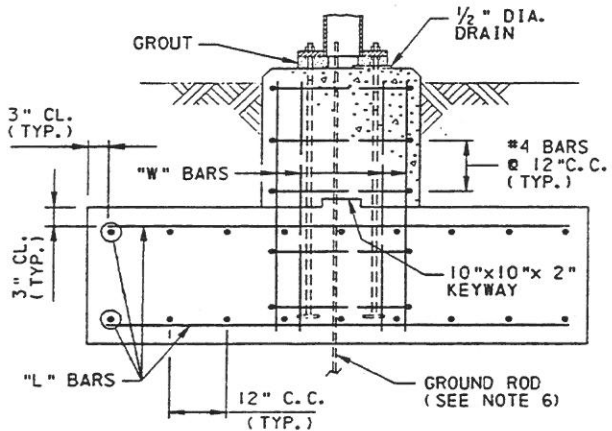
36'-40' ARM LENGTH, INCREASE "S" BY 1'-6"

41'-45' ARM LENGTH, INCREASE "S" BY 2'-0"

46'-50' ARM LENGTH, INCREASE "S" BY 2'-6"



TYPE B FOUNDATION



SECTION G-G

FOUNDATION FOR TRAFFIC SIGNAL SUPPORT, STRAIN POLE

DESIGN TENSION POUNDS	D	SHAFT LENGTH 20'-24'										SHAFT LENGTH 26'-32'									
		ANCHOR BOLTS			REINFORCEMENT			TYPE B FOUNDATION				ANCHOR BOLTS			REINFORCEMENT			TYPE B FOUNDATION			
		QTY.	DIA.	LGTH.	"W" BAR		"L" BARS	Y	S	Z	S	QTY.	DIA.	LGTH.	"W" BAR		"L" BARS	Y	S	Z	S
					QTY.	SIZE									SIZE	QTY.					
1250	3'-0"	—	—	—	—	—	—	—	—	—	4	1"	4'-0"	4	#6	#4	—	—	3'-0"	8'-6"	
1500	3'-0"	4	1"	4'-0"	4	#6	#4	—	—	3'-0"	8'-6"	4	1 1/4"	5'-0"	4	#6	#4	—	—	3'-0"	9'-0"
1750	3'-0"	4	1"	4'-0"	4	#6	#4	—	—	3'-0"	8'-6"	4	1 1/4"	5'-0"	4	#6	#4	—	—	3'-6"	9'-0"
2000	3'-0"	4	1 1/4"	5'-0"	4	#6	#4	—	—	3'-0"	9'-0"	4	1 1/2"	5'-6"	4	#6	#4	3'-0"	10'-0"	4'-0"	9'-6"
2250	3'-0"	4	1 1/4"	5'-0"	4	#6	#4	—	—	3'-6"	9'-0"	4	1 1/2"	5'-6"	4	#7	#4	3'-0"	10'-6"	4'-6"	9'-6"
2500	3'-0"	4	1 1/4"	5'-0"	4	#6	#4	3'-0"	10'-0"	4'-0"	9'-0"	4	1 1/2"	5'-6"	4	#7	#4	3'-6"	10'-6"	4'-6"	9'-6"
2750	3'-0"	4	1 1/2"	5'-6"	4	#6	#4	3'-0"	10'-0"	4'-0"	9'-6"	4	1 1/2"	5'-6"	4	#7	#4	3'-6"	10'-6"	4'-6"	10'-0"
3000	3'-0"	4	1 1/2"	5'-6"	4	#7	#4	3'-0"	10'-6"	4'-0"	10'-0"	4	1 1/2"	5'-6"	6	#7	#4	3'-6"	11'-0"	4'-6"	10'-0"
3250	3'-0"	4	1 1/2"	5'-6"	4	#7	#4	3'-6"	10'-6"	4'-6"	10'-0"	4	1 1/2"	5'-6"	6	#7	#4	4'-0"	11'-0"	5'-0"	10'-6"
3500	3'-0"	4	1 1/2"	5'-6"	4	#7	#4	3'-6"	10'-6"	4'-6"	10'-0"	4	2"	6'-6"	6	#7	#4	4'-0"	11'-0"	5'-0"	10'-6"
3750	3'-0"	4	1 1/2"	5'-6"	6	#7	#4	3'-6"	11'-0"	5'-0"	10'-0"	4	2"	6'-6"	6	#7	#4	4'-0"	11'-6"	5'-6"	10'-6"
4000	3'-0"	4	1 1/2"	5'-6"	6	#7	#4	4'-0"	11'-0"	5'-0"	10'-0"	4	2"	6'-6"	6	#7	#4	4'-6"	11'-6"	6'-0"	10'-6"
4250	3'-0"	4	1 1/2"	5'-6"	6	#7	#4	4'-0"	11'-0"	5'-0"	10'-6"	4	2"	6'-6"	6	#7	#4	4'-6"	11'-6"	6'-0"	11'-0"
4500	3'-0"	4	1 1/2"	5'-6"	6	#7	#4	4'-0"	11'-0"	5'-6"	10'-6"	4	2"	6'-6"	8	#7	#4	4'-6"	12'-0"	6'-0"	11'-0"
4750	3'-0"	4	1 1/2"	5'-6"	6	#7	#4	4'-0"	11'-6"	5'-6"	10'-6"	4	2"	6'-6"	8	#7	#4	4'-6"	12'-0"	6'-0"	11'-0"
5000	3'-0"	4	2"	6'-6"	6	#7	#4	4'-6"	11'-0"	6'-0"	10'-6"	4	2"	6'-6"	8	#7	#5	5'-0"	12'-0"	6'-6"	11'-0"
5500	3'-0"	4	2"	6'-6"	8	#7	#4	4'-6"	11'-6"	6'-0"	10'-6"	4	2"	6'-6"	8	#8	#5	5'-0"	12'-6"	7'-0"	11'-6"
6000	3'-0"	4	2"	6'-6"	8	#7	#5	5'-0"	11'-6"	6'-6"	11'-0"	6	1 1/2"	5'-6"	8	#8	#5	5'-6"	12'-6"	7'-0"	11'-6"
6500	3'-0"	4	2"	6'-6"	8	#7	#5	5'-0"	12'-0"	6'-6"	11'-0"	6	2"	6'-6"	8	#8	#5	5'-6"	12'-6"	7'-6"	11'-6"
7000	3'-0"	4	2"	6'-6"	8	#8	#5	5'-0"	12'-0"	7'-0"	11'-6"	6	2"	6'-6"	8	#8	#5	6'-0"	12'-6"	8'-0"	12'-0"
8000	3'-0"	6	1 1/2"	5'-6"	8	#8	#5	5'-6"	12'-6"	7'-6"	11'-6"	6	2"	6'-6"	10	#8	#6	6'-6"	13'-0"	8'-6"	12'-0"
9000	3'-0"	6	1 1/2"	5'-6"	8	#8	#5	6'-0"	12'-6"	8'-0"	12'-0"	6	2"	6'-6"	10	#8	#6	7'-0"	13'-6"	9'-0"	12'-6"
10000	3'-0"	6	2"	6'-6"	10	#8	#5	6'-6"	13'-0"	8'-6"	12'-0"	6	2"	6'-6"	10	#8	#6	7'-6"	13'-6"	10'-0"	12'-6"

GENERAL NOTES:

MAST ARM AND STRAIN POLE FOUNDATIONS:

1. THE TYPE "B" FOUNDATION WITH A "Y" OR "Z" DIMENSION LESS THAN FOUR FEET SHOULD BE CONSTRUCTED ONLY UNDER UNAVOIDABLE CIRCUMSTANCES WITH APPROVAL OF THE ENGINEER.
2. WHEN FOUNDATIONS ARE PLACED IN A PAVED SIDEWALK, THE TOP OF FOUNDATION SHALL BE FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT.
3. ANCHOR BOLTS SHALL BE PROVIDED WITH STANDARD 90° HOOKS WHEN LENGTH OF BOLT EXCEEDS DEPTH OF FOUNDATION.
4. ANCHOR BOLTS SHALL BE PROVIDED WITH THREADS WHICH EXTEND A MINIMUM OF THREE INCHES BELOW THE TOP OF THE FOUNDATION. A 4"x4"x1/4" MINIMUM STEEL PLATE SHALL BE ATTACHED TO THE BOTTOM OF EACH ANCHOR BOLT.
5. THE TYPE B FOUNDATION MAY BE AUTHORIZED FOR USE WHERE CONDITIONS PREVENT PLACING THE TYPE A FOUNDATION (SHEET 3) TO ITS REQUIRED DEPTH.
6. FOR GROUND ROD SIZE AND INSTALLATION DETAILS SEE TC-7804.

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TRAFFIC SIGNAL SUPPORT
FOUNDATION TYPE B

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RECOMMENDED <u>JUNE 30, 1989</u> <i>[Signature]</i> CHIEF, TRAFFIC ENGINEERING AND OPERATIONS DIVISION	RECOMMENDED <u>JUNE 30, 1989</u> <i>[Signature]</i> CHIEF ENGINEER	SHEET <u>1</u> OF <u>1</u> TC-7802
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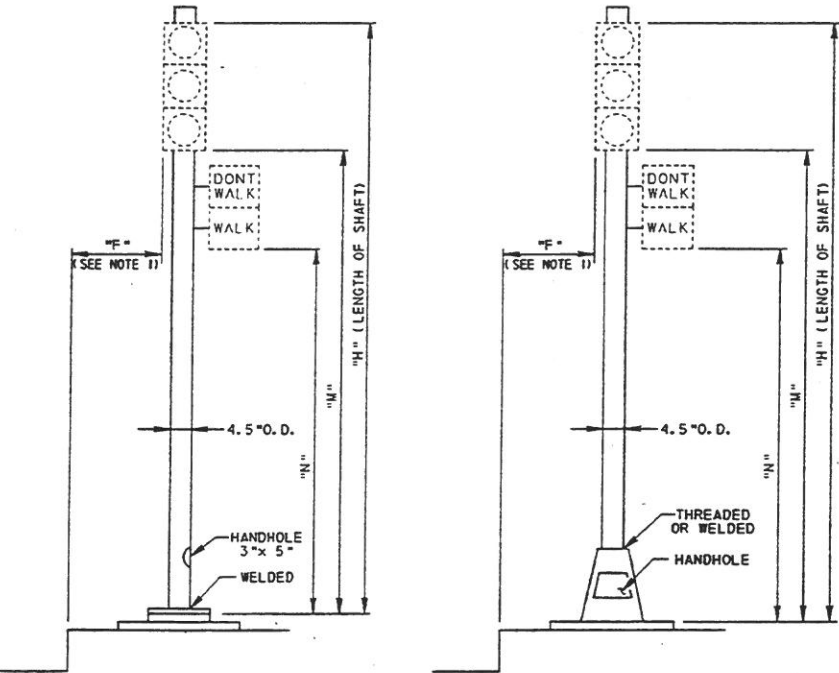


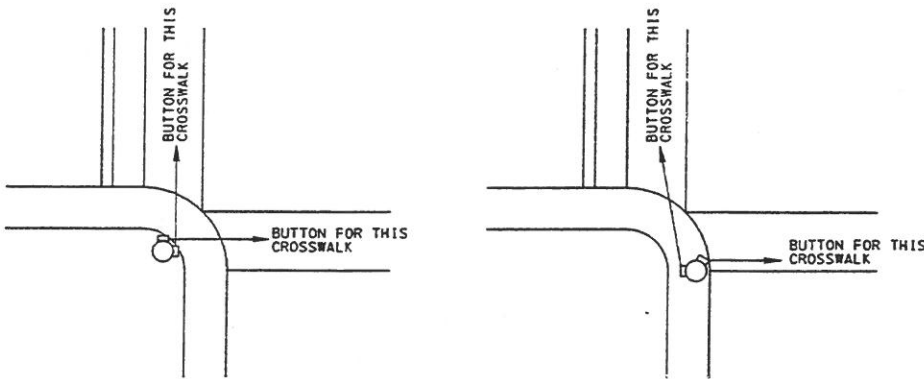
PLATE BASE

CAST BASE

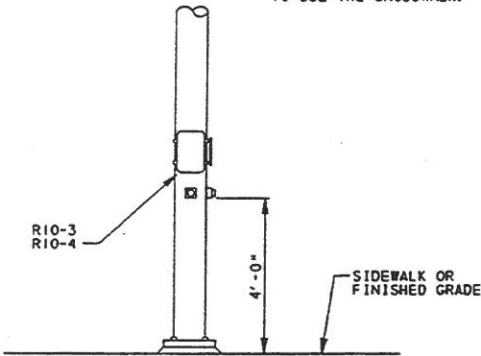
NOTES

1. CLEARANCE SHALL BE 2'-0" MINIMUM. IF THERE IS NO CURB, CLEARANCE SHALL BE FROM EDGE OF SHOULDER.
2. FOR DETAIL OF FOUNDATION SEE TC-7801.

TRAFFIC SIGNAL SUPPORT-PEDESTAL



PLACE PUSH BUTTON WHERE IT WOULD BE VISIBLE TO A PEDESTRIAN IN POSITION TO USE THE CROSSWALK.



PEDESTRIAN PUSH BUTTON PLACEMENT

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MISCELLANEOUS
(TRAFFIC SIGNAL SUPPORT-PEDESTAL)
(PEDESTRIAN PUSH BUTTON)

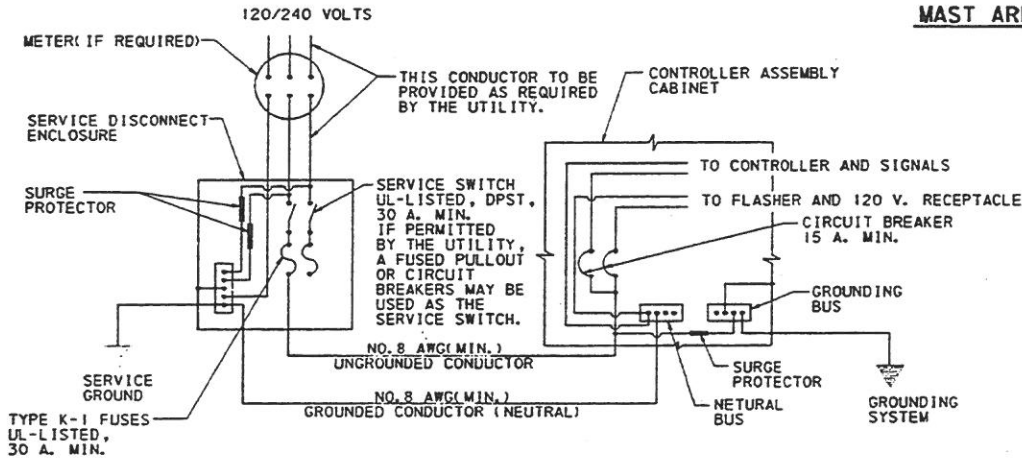
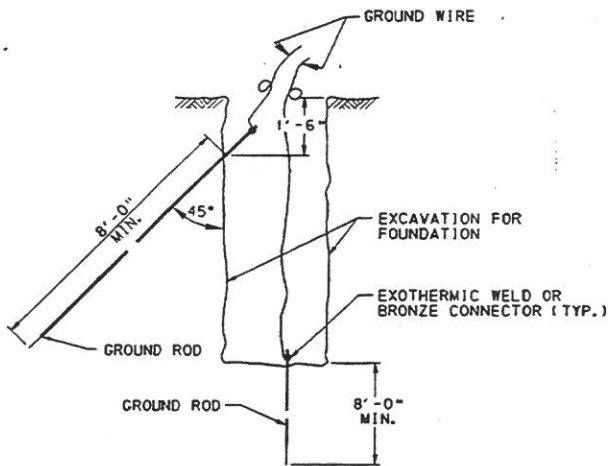
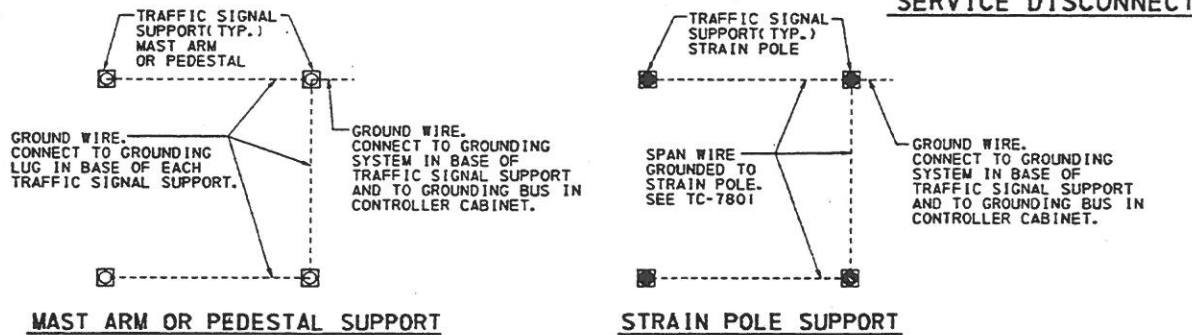
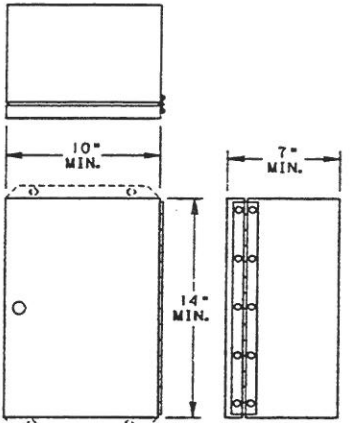
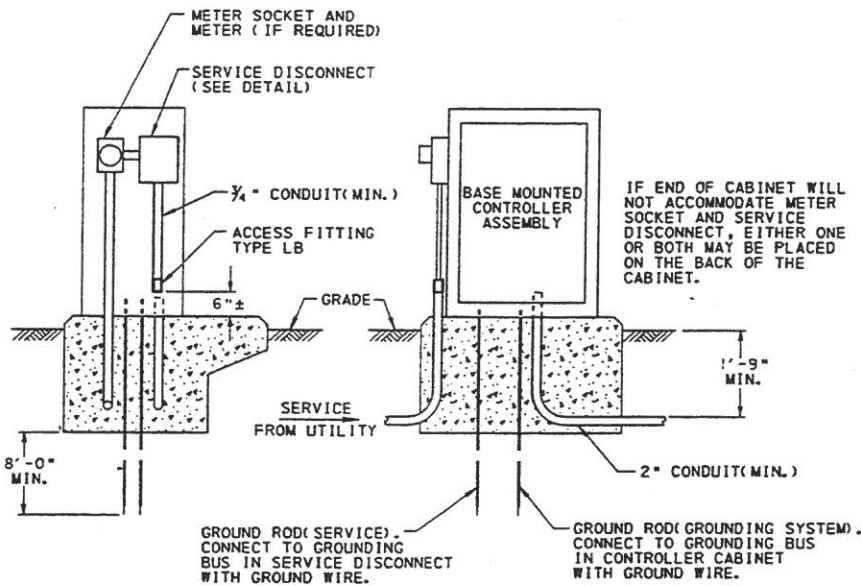
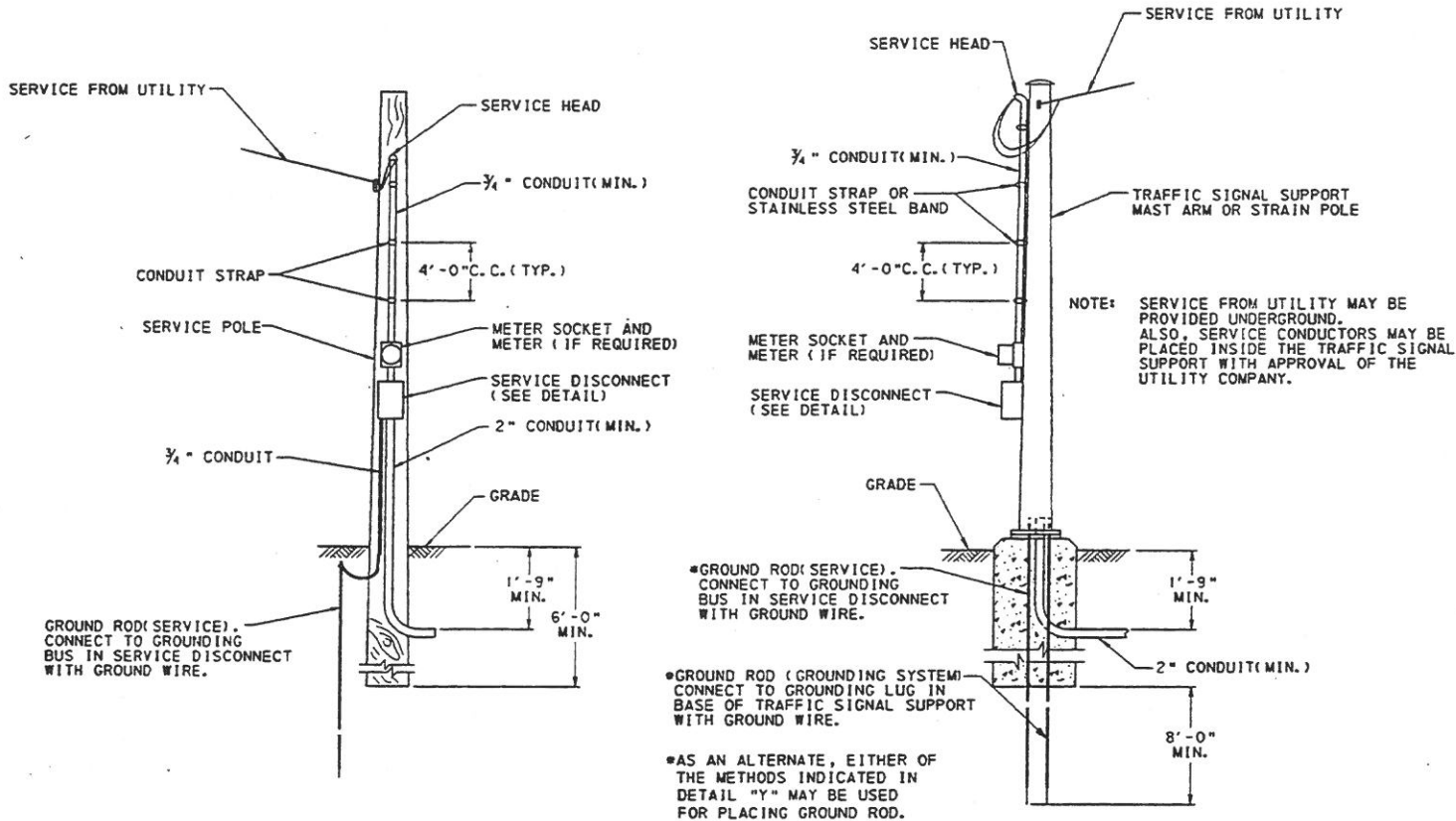
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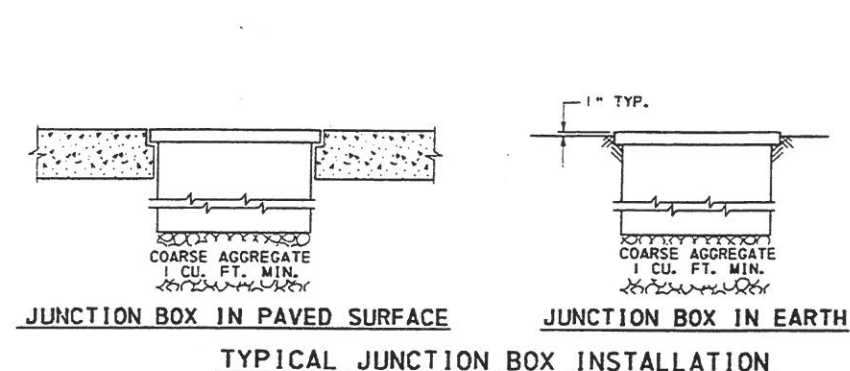
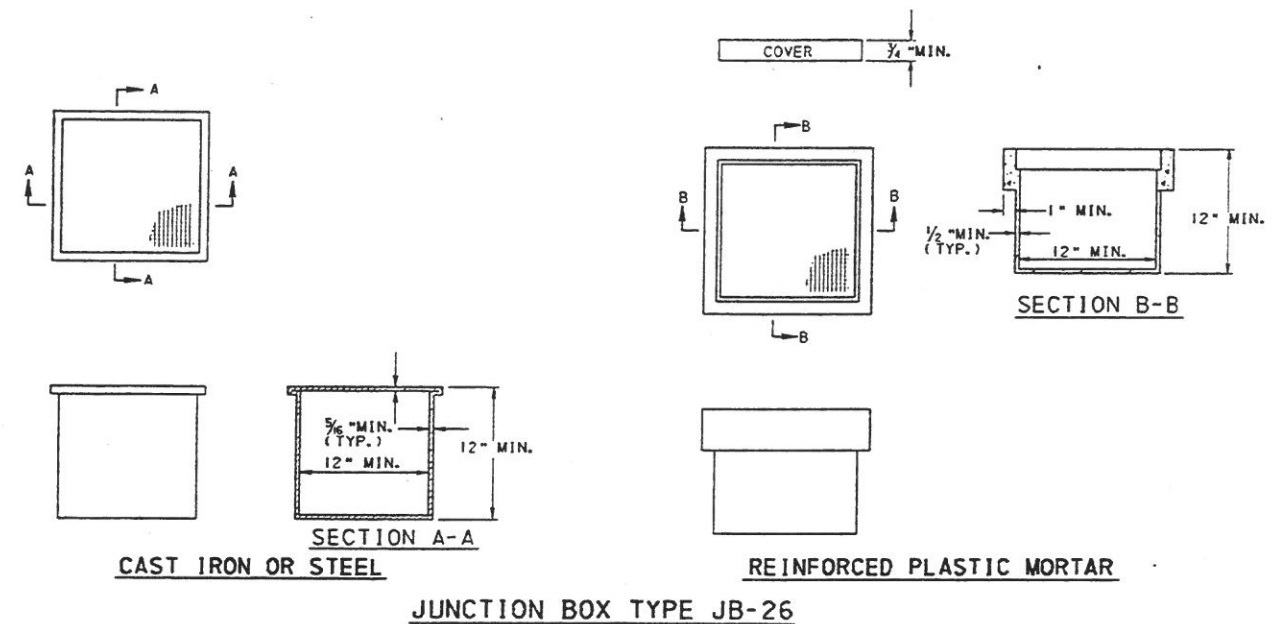
NOTES

1. FOR DETAIL OF TRAFFIC SIGNAL SUPPORT FOUNDATION, SEE TC-7801.
2. FOR DETAIL OF CONTROLLER ASSEMBLY FOUNDATION, SEE TC-7802.
3. ALL GROUND RODS ARE $\frac{3}{4}$ " DIA. x 10'-0" LONG (MIN.).

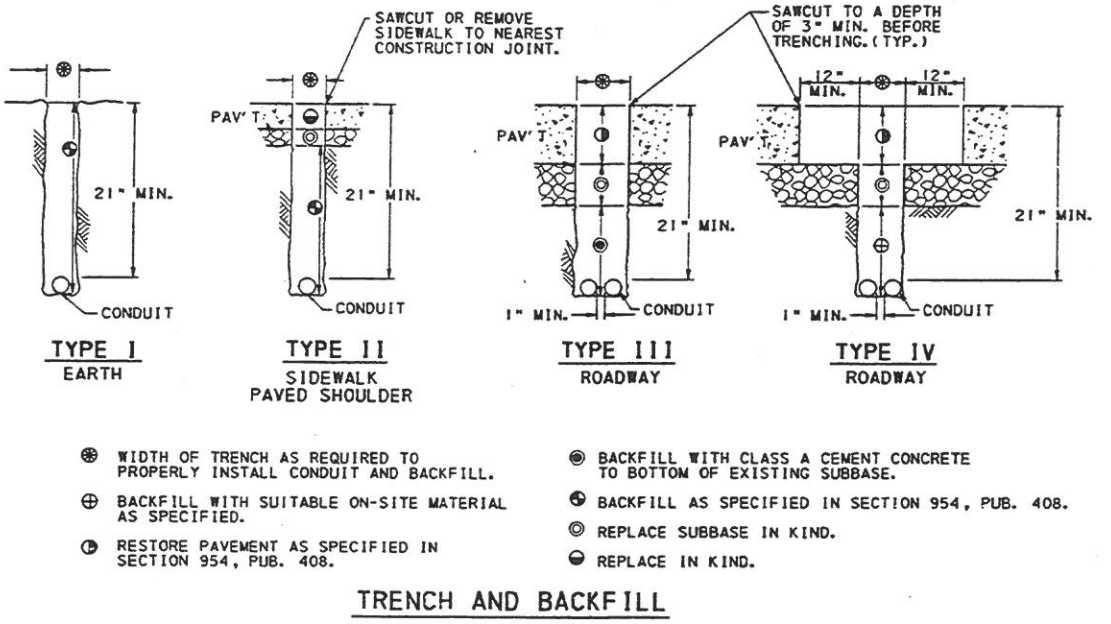
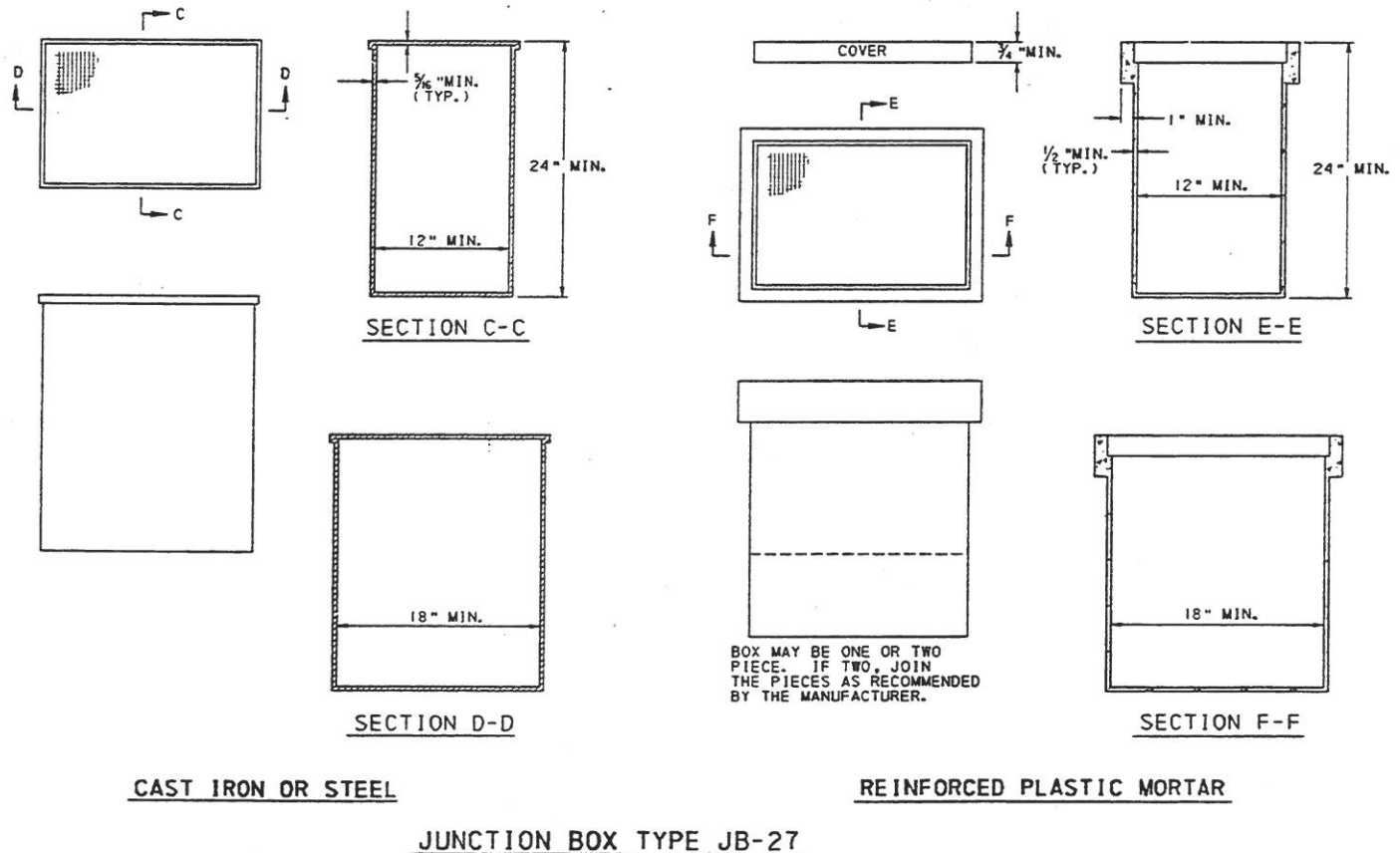


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ELECTRICAL DISTRIBUTION



- NOTES**
1. JUNCTION BOXES--COVER SHALL BE PROVIDED WITH A NON-SLIP SURFACE AND A MINIMUM OF TWO CORROSION RESISTANT FASTENERS.
 2. JUNCTION BOXES--JB-26 AND JB-27 SHALL ONLY BE USED IN AREAS NOT SUBJECT TO VEHICULAR TRAFFIC.
 3. JUNCTION BOXES--BOTTOM MAY BE OPEN OR CLOSED. IF CLOSED, PROVIDE A DRAIN HOLE. (1" DIAMETER MINIMUM).
 4. FOR DETAIL OF JUNCTION BOXES JB-1, JB-2, JB-11 AND JB-12 SEE STANDARD DRAWINGS RC-81 AND RC-82.



- ⊗ WIDTH OF TRENCH AS REQUIRED TO PROPERLY INSTALL CONDUIT AND BACKFILL.
- ⊕ BACKFILL WITH SUITABLE ON-SITE MATERIAL AS SPECIFIED.
- ⊙ RESTORE PAVEMENT AS SPECIFIED IN SECTION 954, PUB. 408.
- ⊙ BACKFILL WITH CLASS A CEMENT CONCRETE TO BOTTOM OF EXISTING SUBBASE.
- ⊕ BACKFILL AS SPECIFIED IN SECTION 954, PUB. 408.
- ⊙ REPLACE SUBBASE IN KIND.
- ⊙ REPLACE IN KIND.

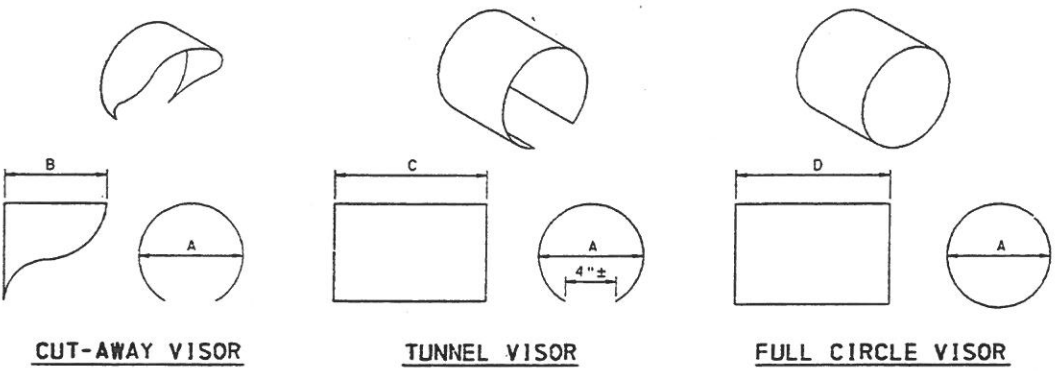
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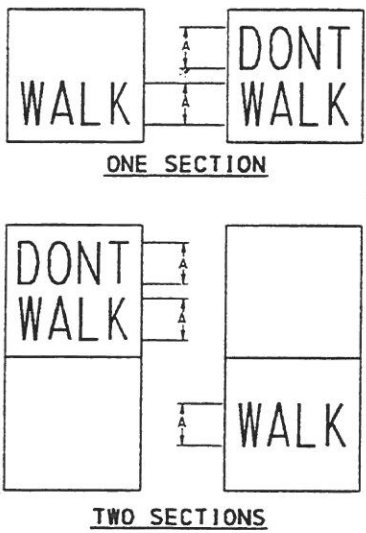
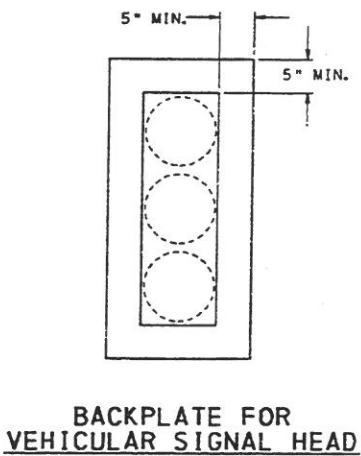
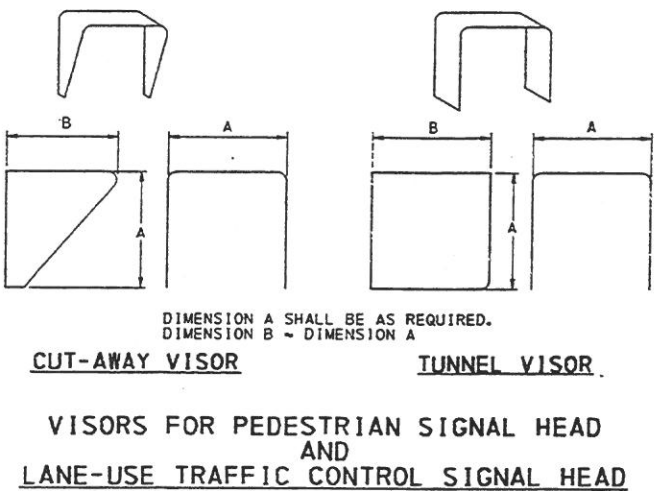
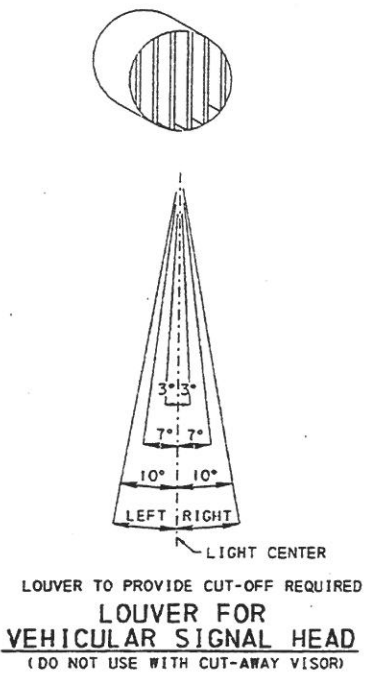
SHT. 2 OF 2
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A	B	C	D
8"	*	*	*
12"	*	*	*

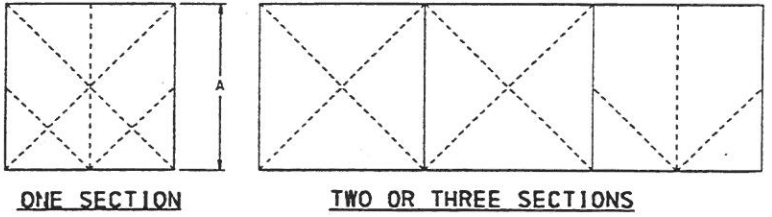
* IN ACCORDANCE WITH THE ITE STANDARD FOR "ADJUSTABLE FACE VEHICULAR TRAFFIC CONTROL SIGNAL HEADS"

VISORS FOR VEHICULAR SIGNAL HEAD



	A
TYPE A	3"
TYPE B	4 1/2"

PEDESTRIAN SIGNAL HEAD



	A*
TYPE A	12"
TYPE B	18"

* NOMINAL. ACTUAL DIMENSIONS SHALL BE AS REQUIRED TO PROVIDE SYMBOLS IN ACCORDANCE WITH ITE STANDARD FOR LANE-USE TRAFFIC CONTROL SIGNAL HEAD.

LANE-USE TRAFFIC CONTROL SIGNAL HEAD

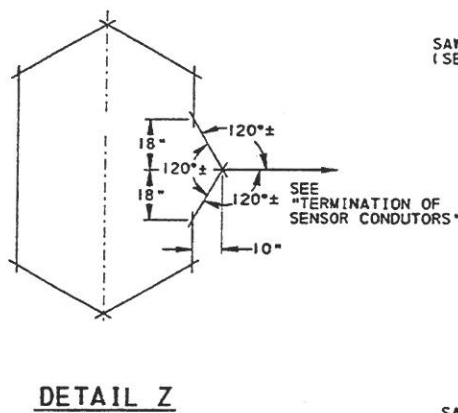
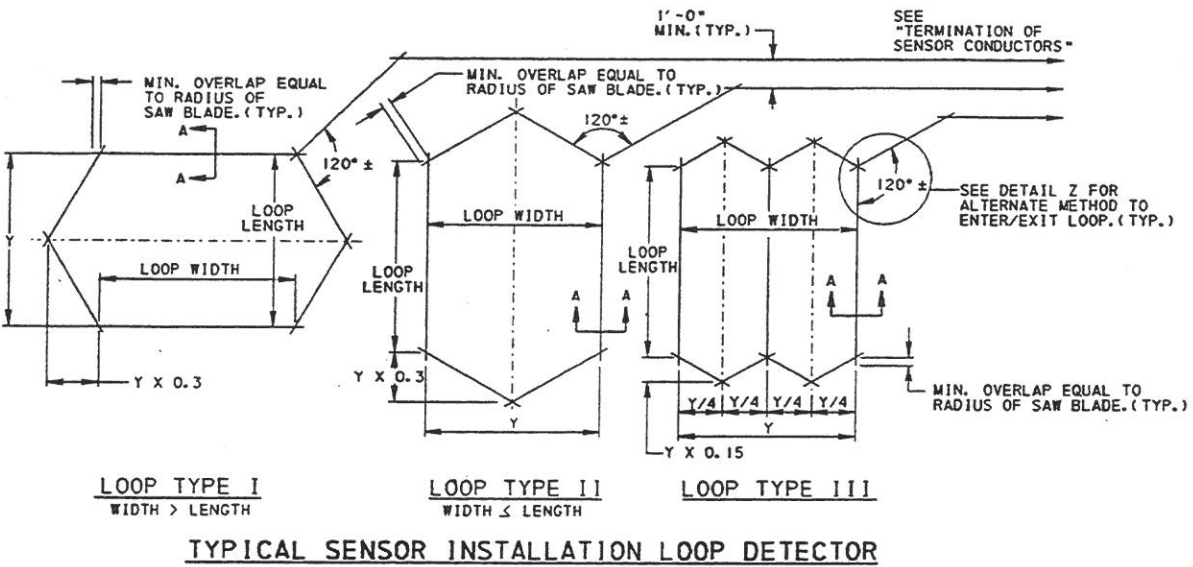
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SIGNAL HEADS

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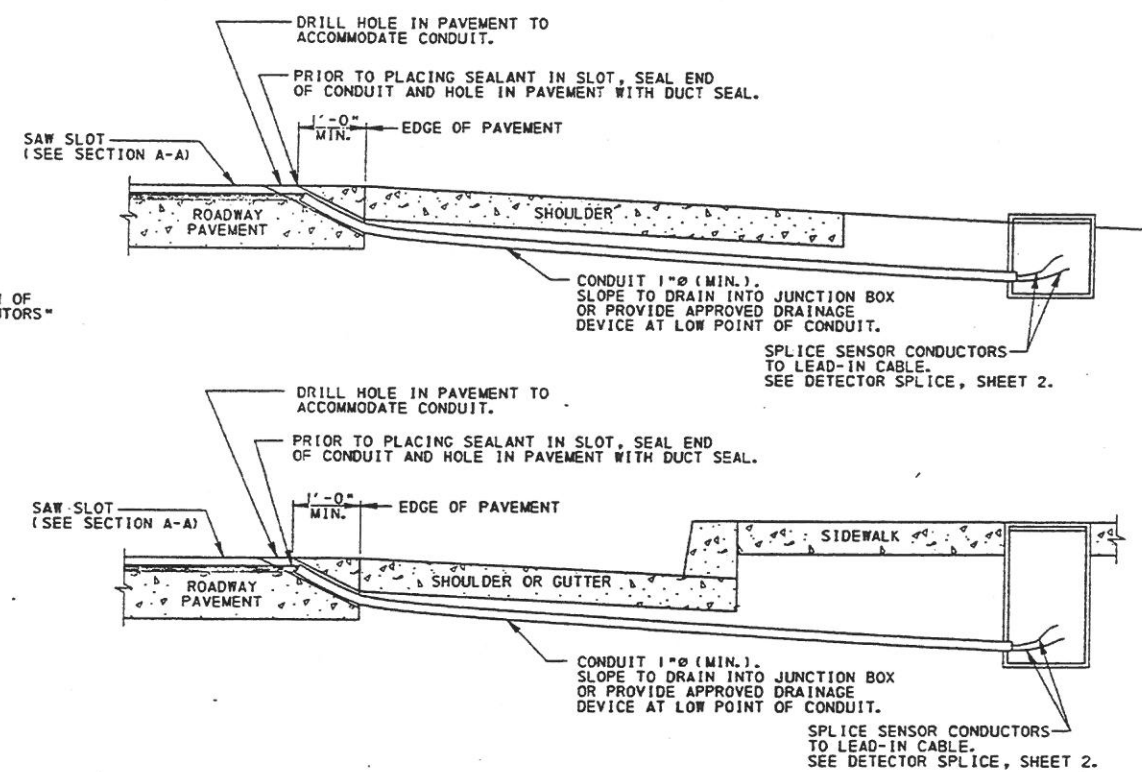
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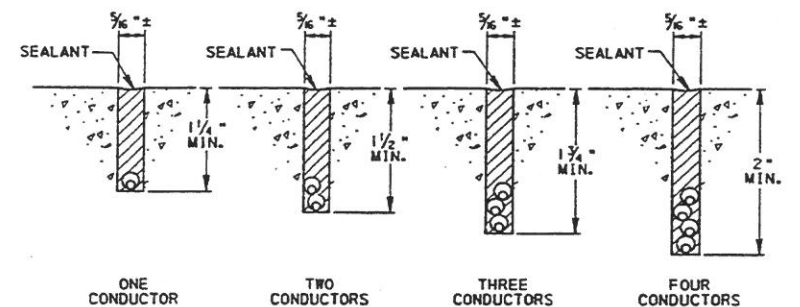


THIS TABLE (FOR INFORMATION ONLY) APPROXIMATES THE RESULTANT INDUCTANCE OF A LOOP BASED ON SIZE OF THE LOOP AND NUMBER OF SENSOR TURNS.

TURNS OF LOOP SENSOR	MICROHENRIES PER LINEAR FOOT OF LOOP
1	0.5
2	1.5
3	3.0

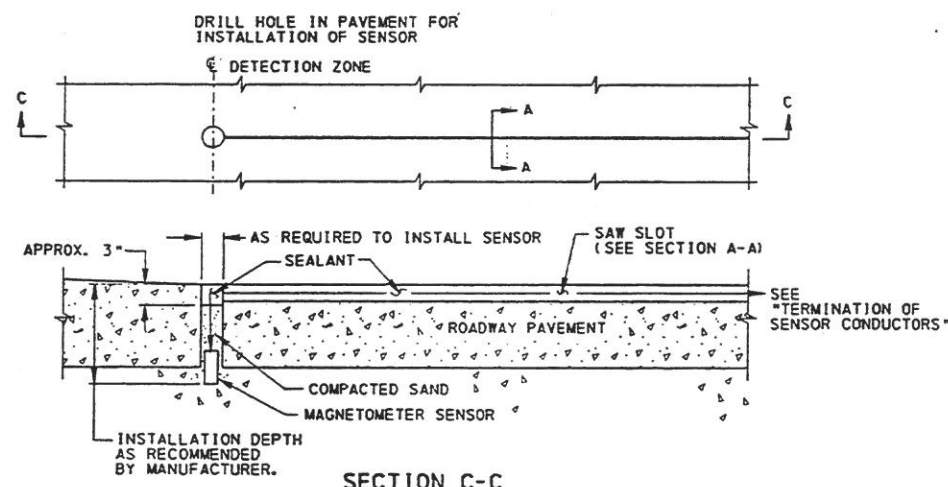


TERMINATION OF SENSOR CONDUCTORS

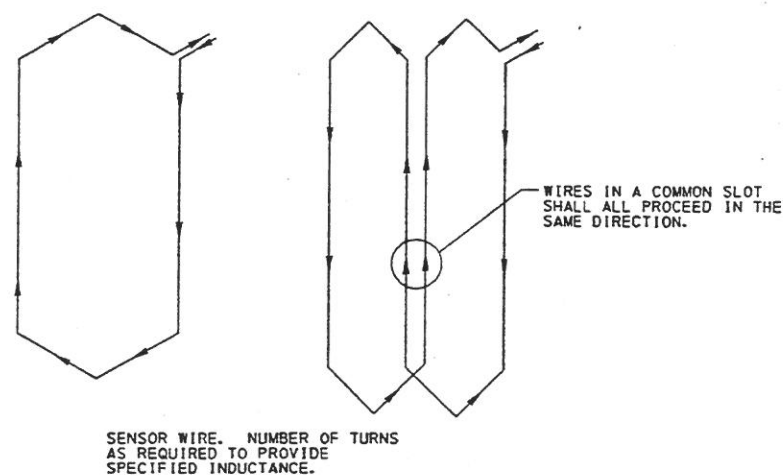


NOTE: NO MORE THAN FOUR CONDUCTORS SHALL BE PLACED IN A SLOT.

SECTION A-A



TYPICAL SENSOR INSTALLATION MAGNETOMETER DETECTOR



TYPE I & II TYPE III
TYPICAL LAYOUT OF LOOP SENSOR

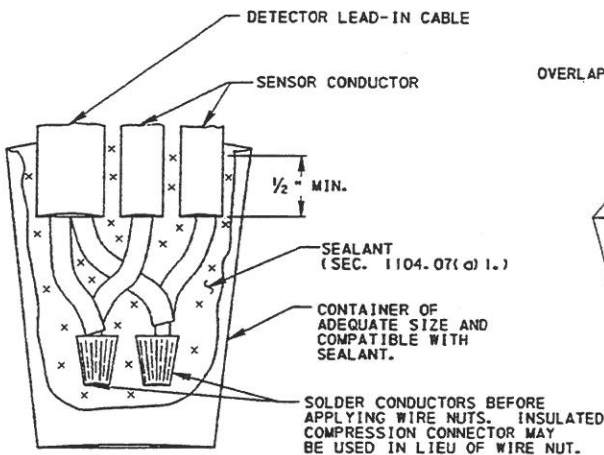
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DETECTORS

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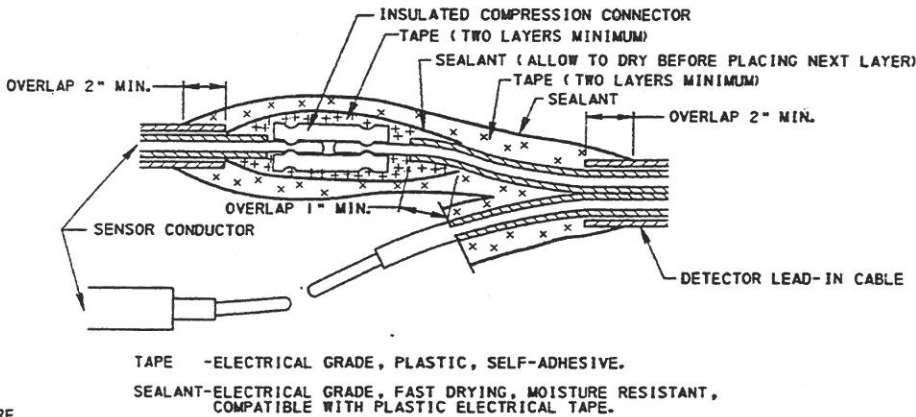
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PLACE SEALANT IN CONTAINER, IMMERSE SPLICE IN SEALANT, SUPPORT IN RIGID POSITION UNTIL SEALANT HAS SET.

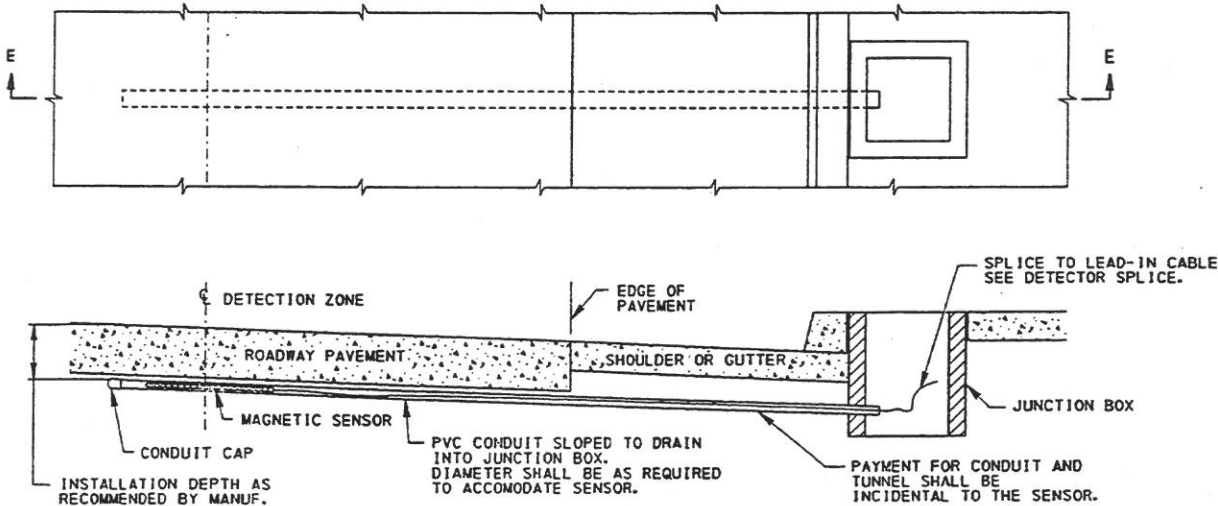
ALTERNATE A



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. 1104.07(d) 4, PUB. 408.

ALTERNATE C

DETECTOR SPLICE



SECTION E-E

TYPICAL SENSOR INSTALLATION
MAGNETIC DETECTOR

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Replaced by new edition issued October 14, 2010