

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

Standard Drawings
for
Traffic Signals
and
Highway Lighting



Traffic Engineering

Boston, Massachusetts

1968

Edward J. Liss
Commissioner

Dennis P. P. E.
Chief Engineer

K. Kilhoffer
Traffic Engineer

INDEX

	Page
Symbols Used on Signal Layouts - - - - -	3
Symbols Used on Lighting Layouts - - - - -	4
Traffic Signal Cable - Color Code - - - - -	5
Design Loading - Highway Lighting Poles - - - - -	6
<u>Conduit</u>	
Fibre duct in trench - - - - -	7
Fibre duct - concrete encased - - - - -	8
Duct crossing roadway - - - - -	9
Duct end location - - - - -	10
<u>Electric Manholes</u>	
3' Diameter X 3'6" - (SD2.010) - - - - -	11
3'6" X 4'6" X 5'0" - (SD2.011) - - - - -	12
4'0" X 4'0" X 6'0" - (SD2.012) - - - - -	13
5'0" X 7'0" X 7'0" - (SD2.013) - - - - -	14
6'0" X 9'0" X 10'0" - (SD2.014) - - - - -	15
4'0" X 4'0" X 6'6" - - - - -	16
<u>Electric Handholes</u>	
18" Diameter - Fibre - (SD2.020) - - - - -	17
24" Diameter - Fibre - (SD2.021) - - - - -	17
24" X 13" X 36" - Concrete - (SD2.022) - - - - -	18
24" X 24" X 36" - Concrete - (SD2.023) - - - - -	19
24" X 24" X 36" - Concrete - (SD2.024) - - - - -	20
36" X 36" X 36" - Concrete - - - - -	21
<u>Pull Boxes</u>	
8" X 23" - - - (SD2.030) - - - - -	22
12" X 12" - - - (SD2.031) - - - - -	23
Pull Box Frame & Cover - - - - -	24
<u>Light Standard Foundations</u>	
Anchor Base Foundation - - - - - (SD3.010) - - - - -	25
Anchor Base Foundation - - - - - (SD3.011) - - - - -	26
Transformer Base Foundation - - - - (SD3.012) - - - - -	27
Foundation for 30'-40' Mounting Height - (SD3.013) - - - - -	28
Foundation for 40'-100' Mounting Height - (SD3.014) - - - - -	28
Foundation on Structures - - - - -	29
Lighting Load Center Foundation - - - - - (SD3.020) - - - - -	30
<u>Traffic Signal Post Foundations</u>	
Standard Signal Post Foundation - - - (SD3.030) - - - - -	31
Pedestal Type Foundation - - - - - (SD3.031) - - - - -	32
Mast Arm Foundation - - - - - (SD3.040) - - - - -	33
Traffic Signal Control Box Foundation - - - (SD3.050) - - - - -	34
Traffic Signal Control Box Locks & Keys - - - - -	35
Traffic Signal Service Connection - Overhead - - - - -	36
<u>Painting</u>	
Standard marking on signal post to indicate pedestrian push button location - - - - -	37
<u>Traffic Signal Posts and Bases</u>	
Standard Post and Base - - - - -	38
Standard Post with Signal and Pedestrian Housings - - - - -	39
Signal Post - Pedestal Type - - - - -	40

INDEX

	Page
Column Base - Pedestal Type -----	41
Pedestal Base -----	42, 43
Mast Arm -----	44
Monolever Signal Pole -----	45
<u>Signal Assemblies and Mounting Assemblies</u>	
8" Traffic Signal Assembly -----	46
Standard Arrow for 8" Signal Lens -----	47
Standard Arrow for 12" Signal Lens -----	48
Post Top Mounted 8" Traffic Signals -----	49
Mounting 8" Traffic Signals -----	50
Pole Clamps for Steel Pole Mounting -----	51
Mast Arm Hanger - Type 2 -----	52
Mast Arm Hanger - Type 1 -----	53
Side Mounted Slip Fitter for Mast Arm Mounting -----	54
Louvers for 8" Signals -----	55
Backplates for 8" Signals -----	56
Meter Box Casting for 4" Pipe Post -----	57
Meter Box Casting - Flat Front Pipe Entrance -----	58
Wire Loop Detector Installation -----	59
Pedestrian Actuated Signal Signs -----	60
Wiring Diagram for Mercury Luminaire -----	61
Utility Service Pole Riser - Highway Lighting -----	62
Flashing Beacons -----	63
Illuminated Turn & Curve Signs -----	64

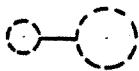
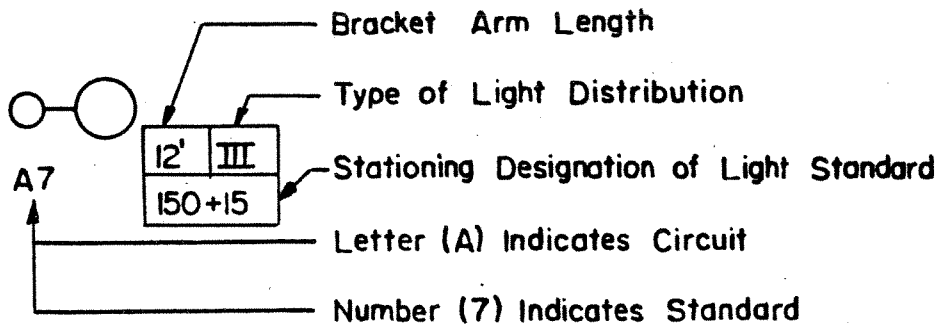
SYMBOLS USED ON SIGNAL LAYOUTS

	Signal Post
	12" X 12" Pull Box
	8" X 23" Pull Box
	Control Cabinet
	Flashing Beacon Control & Meter Pedestal
	Wooden Pole
	Mast on Wooden Pole
	Steel or Aluminum Mast Arm
	Magnetic Detector
	Magnetic Lane Detector
	Pressure Detector
	Directional Magnetic Detector
	Radar Detector
	Sonic Detector
	Inductive Loop Detector
	Pedestrian Push Button
	Signal or Flasher Housing
	Proposed Conduit
	Existing Conduit
	Overhead Cable
	Pedestrian Walk-Dont Walk Signal
	Direct Burial Cable

SYMBOLS USED ON LIGHTING LAYOUTS



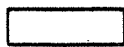
High Mast Pole or Tower



Existing or Future Assembly By Others



Flood Type Luminaire



Fluorescent Luminaire



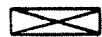
Electric Handhole



Electric Manhole



Ground



Load Center Assembly



12" X 12" Pull Box



8" X 23" Pull Box



Control Cabinet



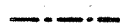
Wooden Pole



Proposed Conduit (Size, Type, No. Cables)



Existing Conduit



Overhead Cable



Direct Burial Cable (Size)

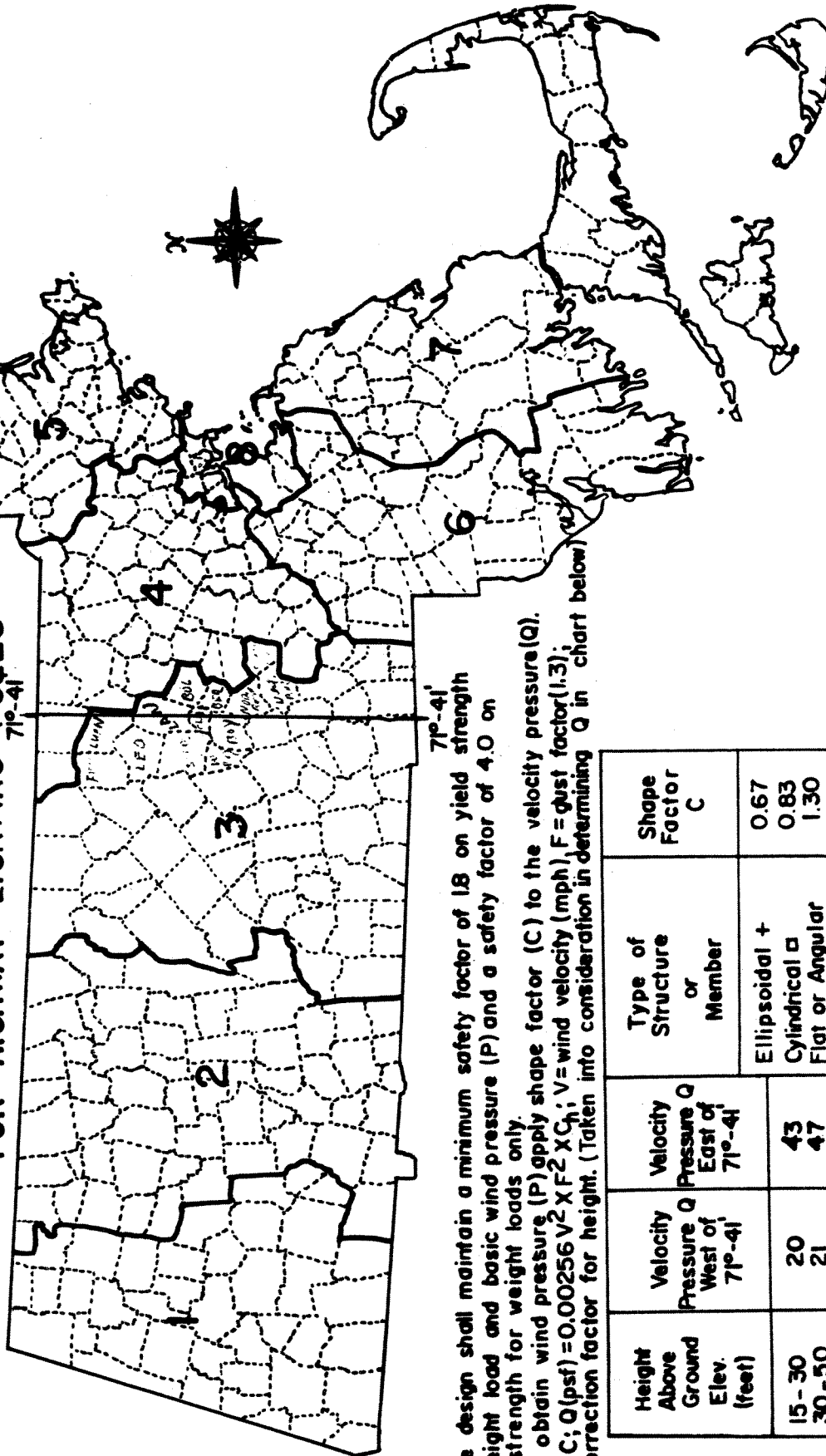
TRAFFIC SIGNAL WIRING COLOR IDENTIFICATION CODE

1.	Black	Power-Pedestrian Push Button, Arrows, Spare
2.	White	Common
3.	Red	Phase - Main St.
4.	Green	Phase - Main St.
5.	Orange	Phase - Main St.
6.	Blue	Pedestrian Walk, Arrows, Spare
7.	White - Black	Pedestrian Dont-Walk, Arrows, Spare
8.	Red - Black	Phase - Side St.
9.	Green - Black	Phase - Side St.
10.	Orange - Black	Phase - Side St.
11.	Blue - Black	Pedestrian Walk, Arrows, Spare
12.	Black - White	Pedestrian Dont-Walk, Arrows, Spare
13.	Red - White	Phase - Side St.
14.	Green - White	Phase - Side St.
15.	Blue - White	Phase - Side St.
16.	Black - Red	Miscellaneous and Spare
17.	White - Red	Miscellaneous and Spare
18.	Orange - Red	Miscellaneous and Spare
19.	Blue - Red	Miscellaneous and Spare
20.	Red - Green	Miscellaneous and Spare
21.	Orange - Green	Miscellaneous and Spare

Either Type I or Type 2 Traffic Signal Cable as specified in Section 804 may be installed when the air temperature is above 32° F. Type 2 Traffic Signal Cable shall be installed when the air temperature falls between 32° F and 20° F. No Cable is to be installed when the air temperature is below 20° F.

When Pedestrian Signal Heads have been incorporated in the installation at least 2 spare conductors shall be provided in all Signal Cable Runs. All other installations shall have at least 5 spare conductors provided in all Signal Cable Runs.

DESIGN WIND & WEIGHT LOADING FOR HIGHWAY LIGHTING POLES 7'±-4'



The design shall maintain a minimum safety factor of 1.8 on yield strength for weight load and basic wind pressure (P) and a safety factor of 4.0 on yield strength for weight loads only.

To obtain wind pressure (P) apply shape factor (C) to the velocity pressure (Q).
 $P = Q \times C$; $Q (\text{psf}) = 0.00256 V^2 \times F \times C_H$; $V = \text{wind velocity (mph)}$; $F = \text{gust factor (1.3)}$;
 $C_H = \text{correction factor for height. (Taken into consideration in determining Q in chart below)}$

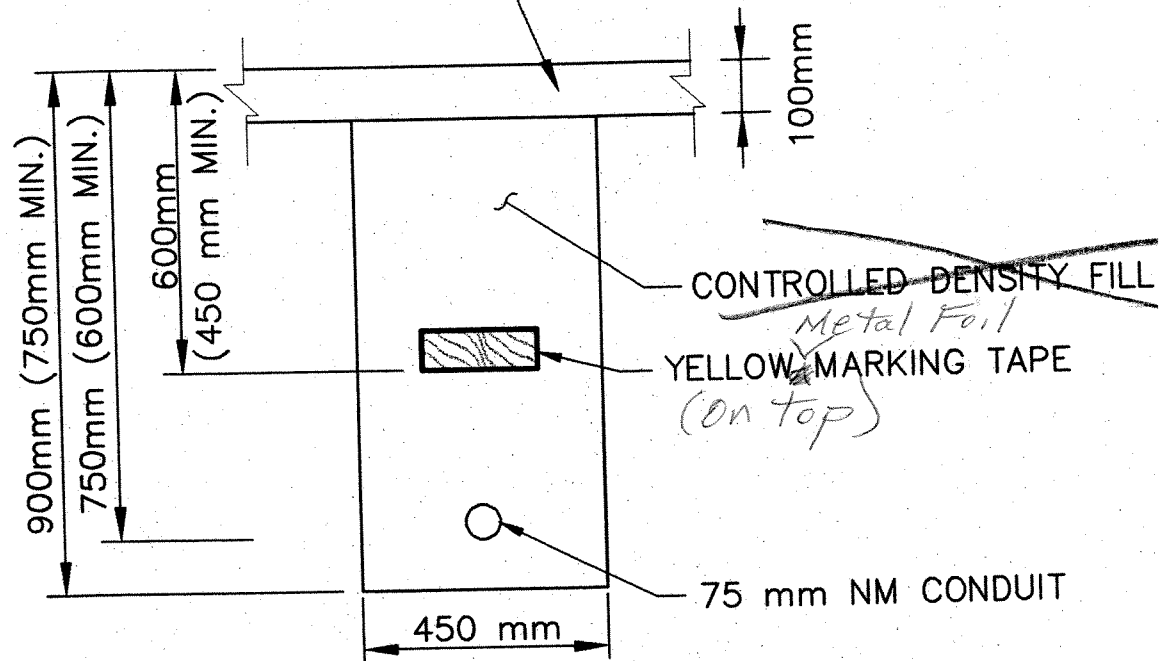
Height Above Ground Elev. (feet)	Velocity Pressure Q West of 71°-41'	Velocity Pressure Q East of 71°-41'	Type of Structure or Member	Shape Factor C
15-30	20	43	Ellipsoidal +	0.67
30-50	21	47	Cylindrical □	0.83
50-100	24	53	Fiat or Angular	1.30
100-300	29	64	Max. Luminaire Weight 75 #	
300-500	32	71	Max. Lum. Projected Area 3.3 □	
V =	67 mph	100 mph	Max. Lum. Support Length 15 ft.	

NOTE: + Standard metallic vapor luminaire shape.
 □ Poles and bracket arm shapes.

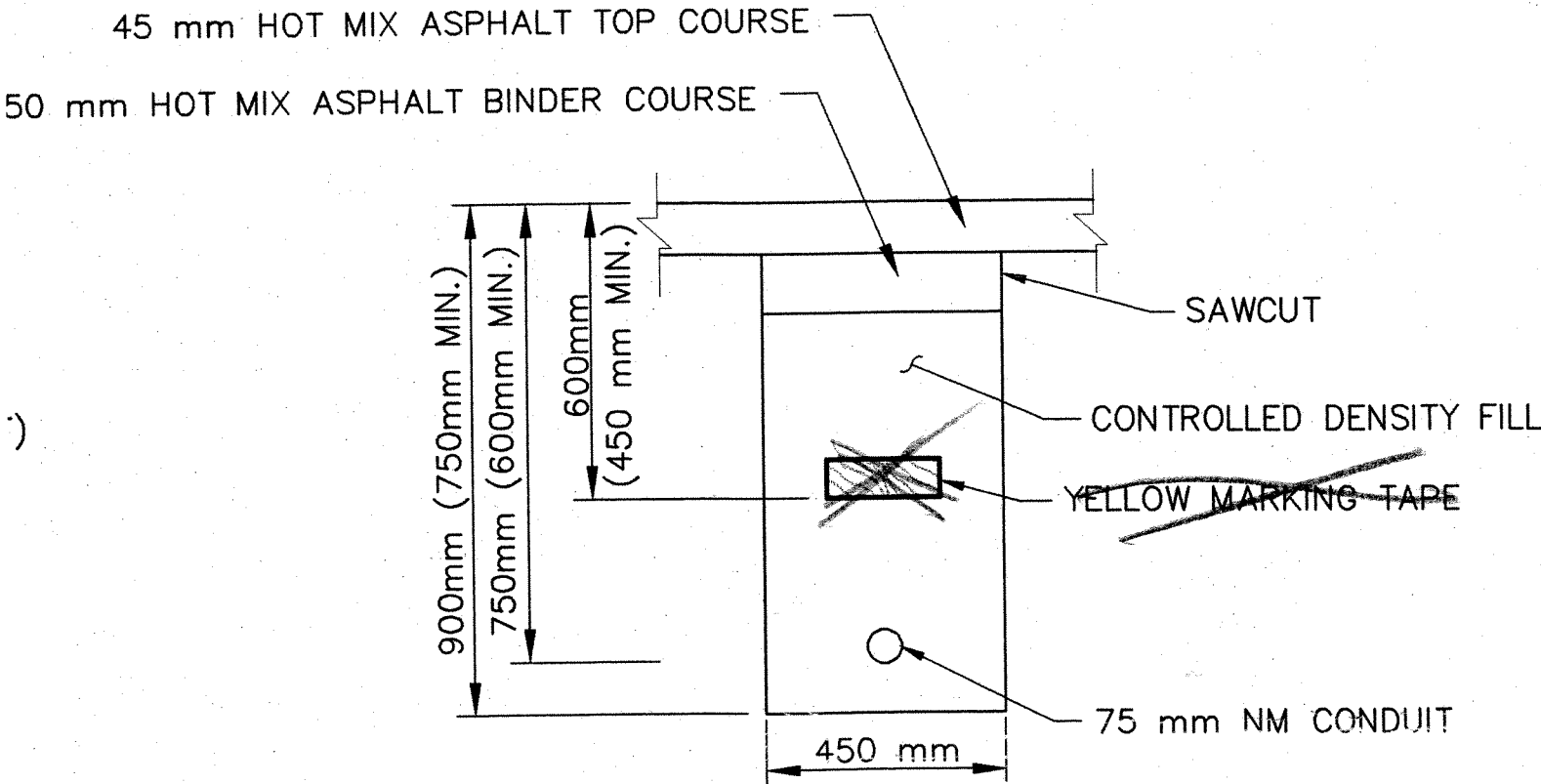
Commonwealth of Massachusetts
 Department of Public Works

Richard J. McNeil
 Traffic Engineer
Richard J. McNeil
 Bridge Engineer
Richard J. McNeil
 Chief Engineer

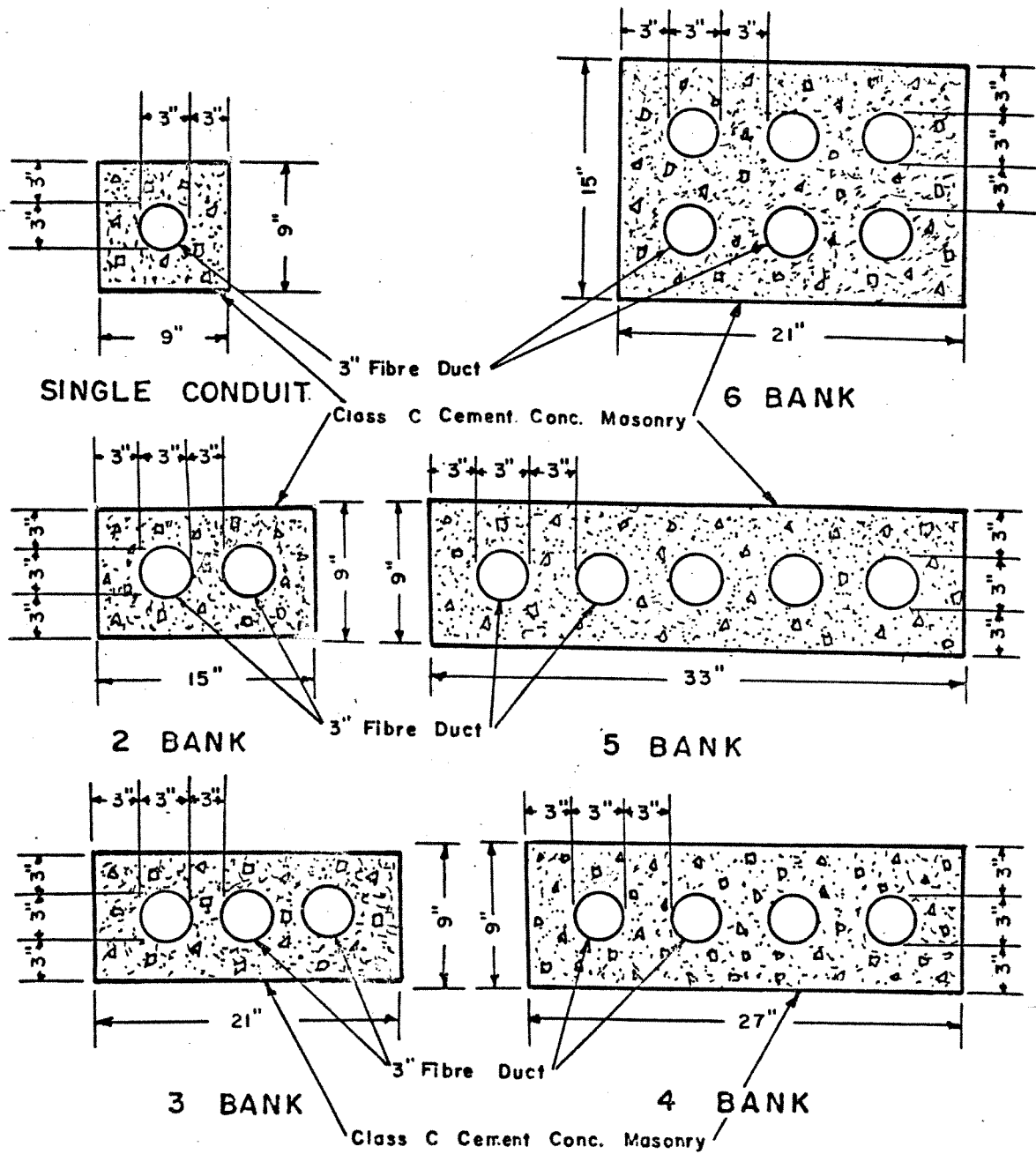
100 mm CEM. CONC. SIDEWALK



CONDUIT DETAIL FOR SIDEWALK CROSSING
NOT TO SCALE



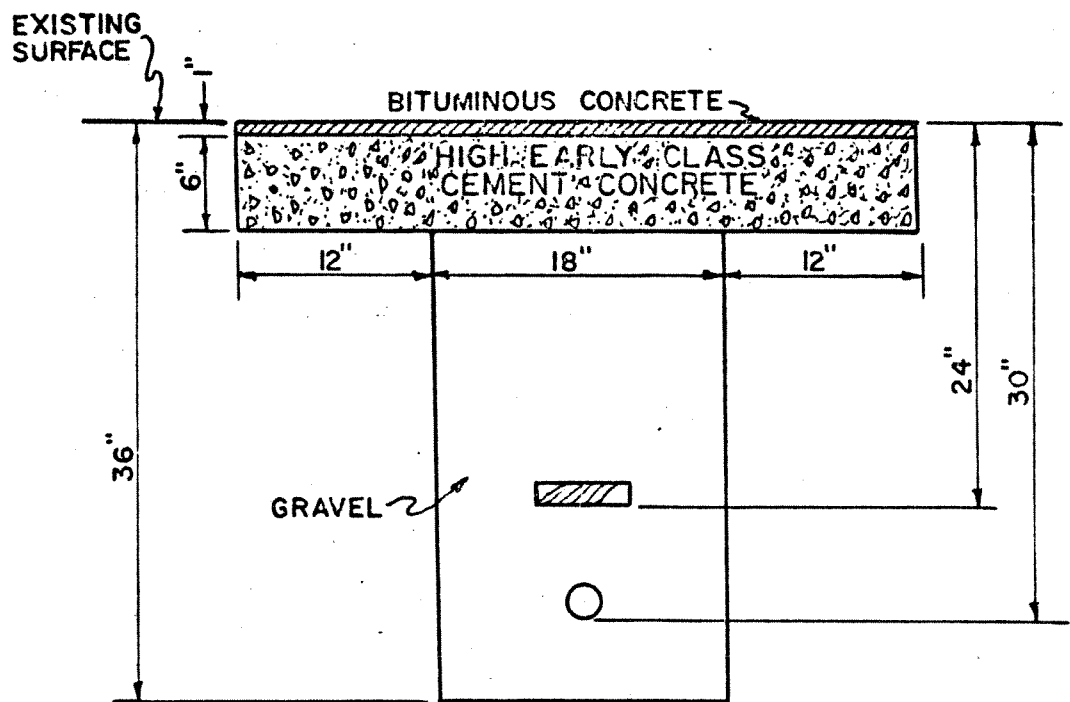
CONDUIT DETAIL FOR ROADWAY CROSSING
NOT TO SCALE



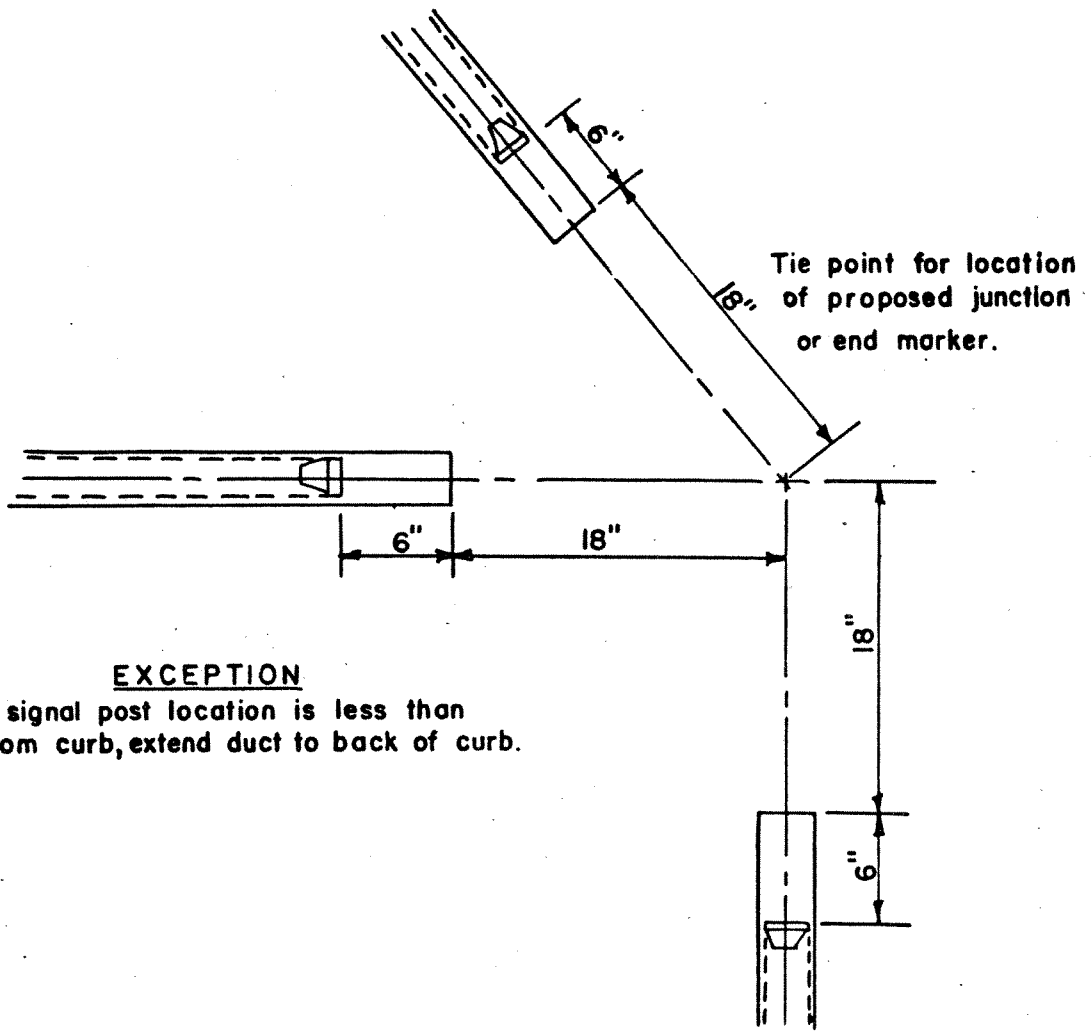
All 3" Fibre Ducts in Concrete Envelopes to be 30 Inches
Under All Paved Surfaces

TYPICAL CONDUIT ENCASEMENT UNDER PAVEMENT

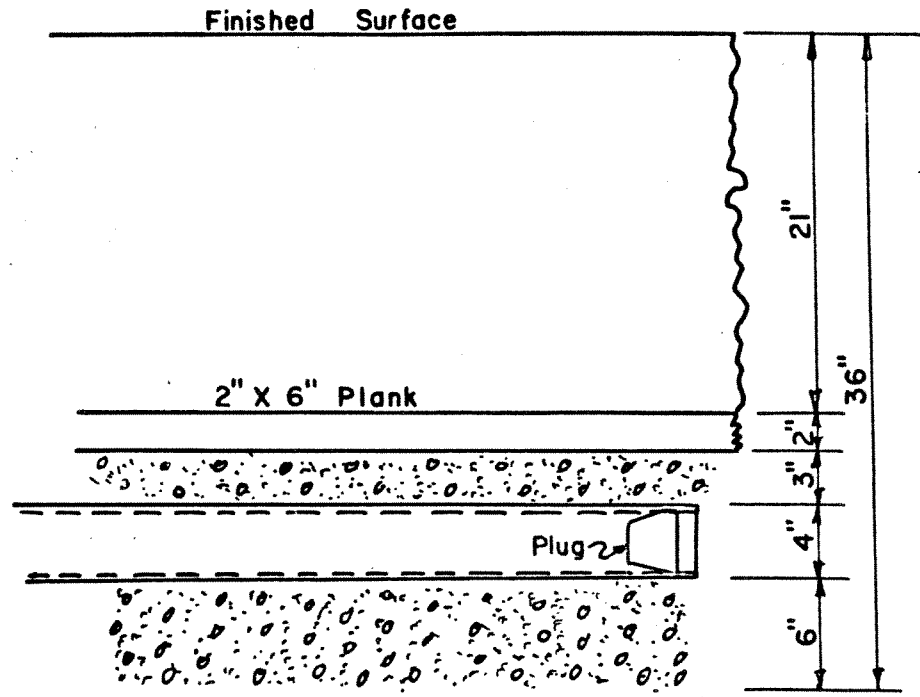
DUCT CROSSING ROADWAY



LOCATION OF TRAFFIC SIGNAL DUCT END



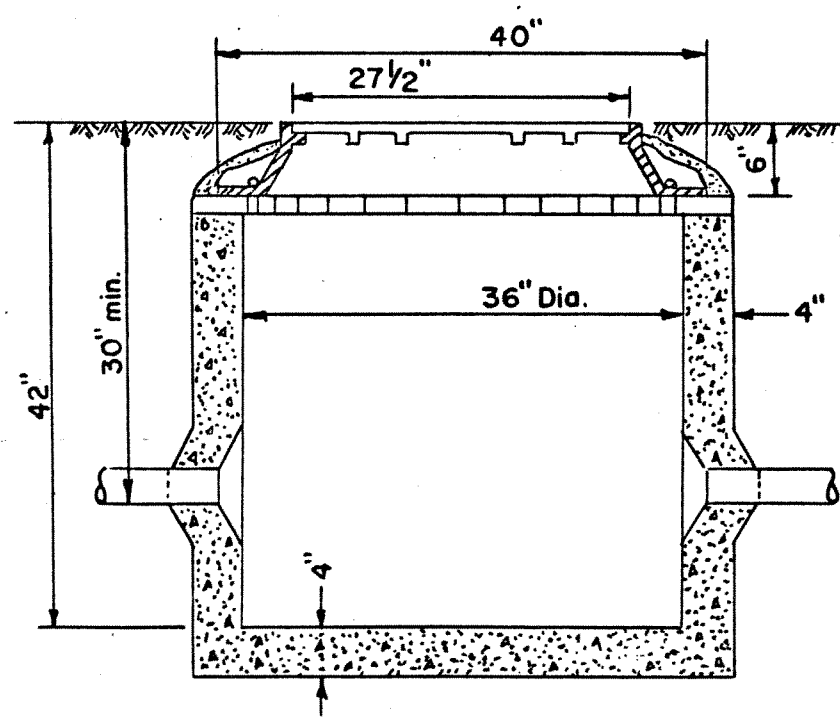
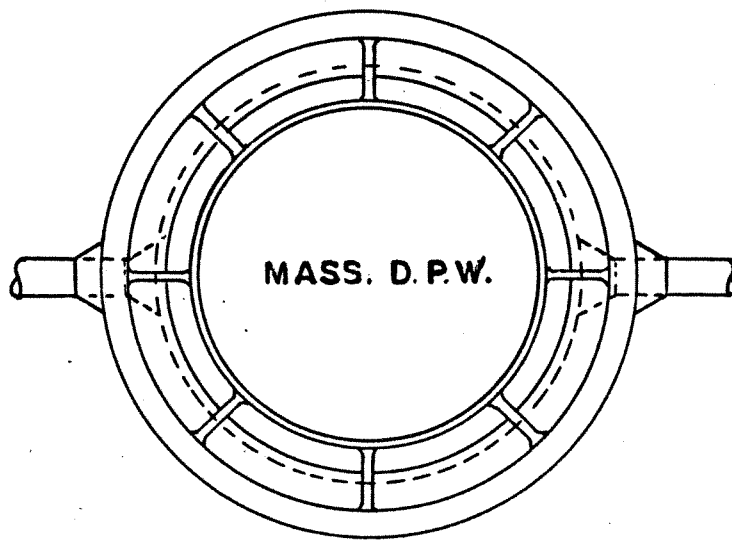
EXCEPTION
When signal post location is less than 30" from curb, extend duct to back of curb.



Scale: $\frac{3}{32} = 1"$

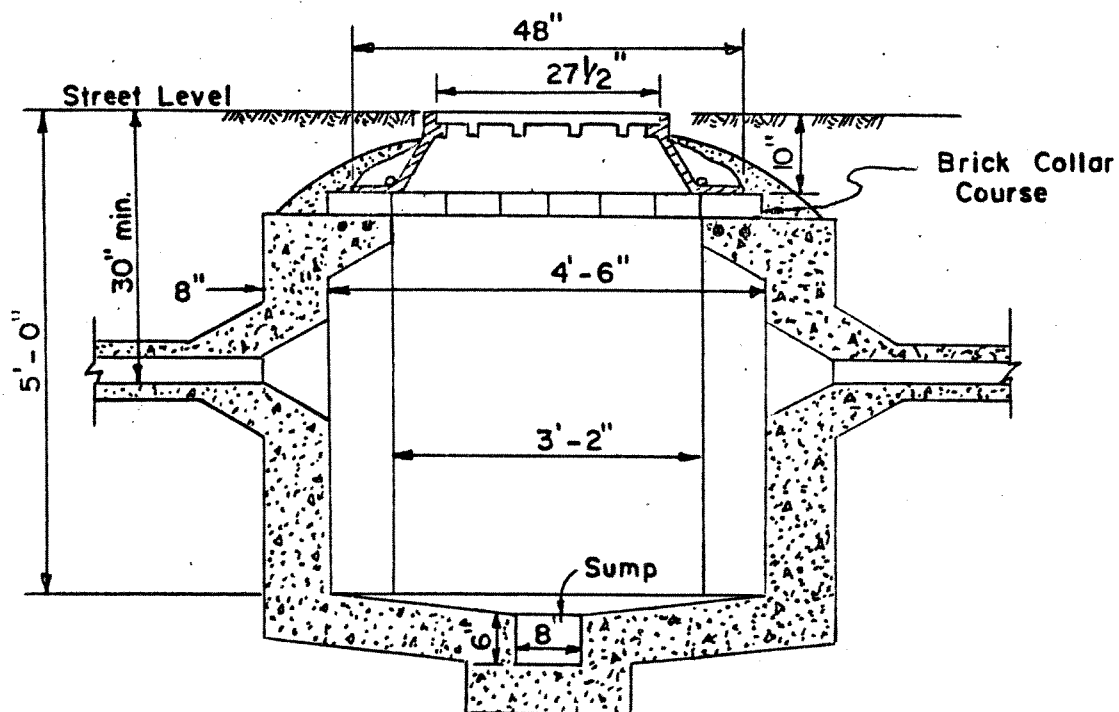
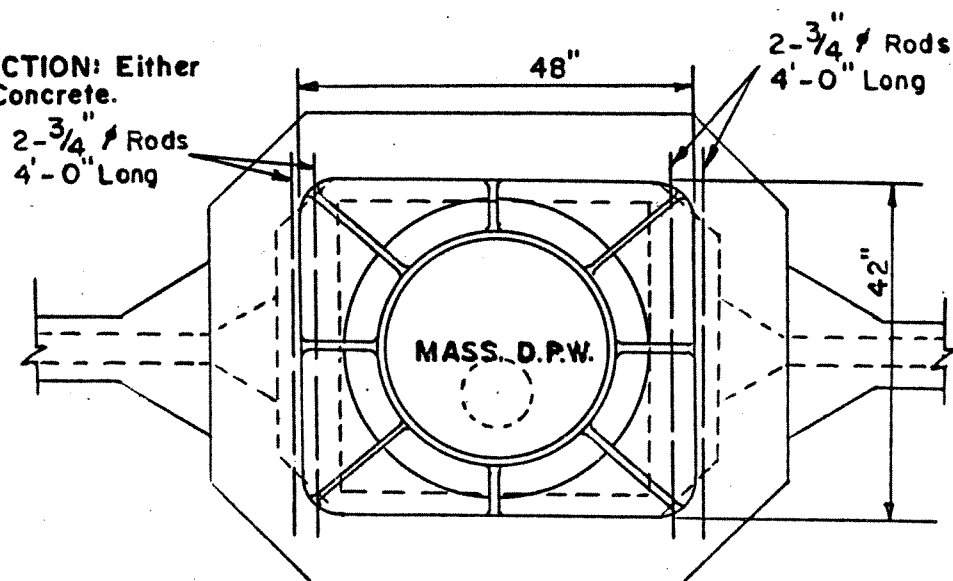
3' Dia. X 3'-6" ELECTRIC MANHOLE

CONSTRUCTION: Either
Brick or Concrete.

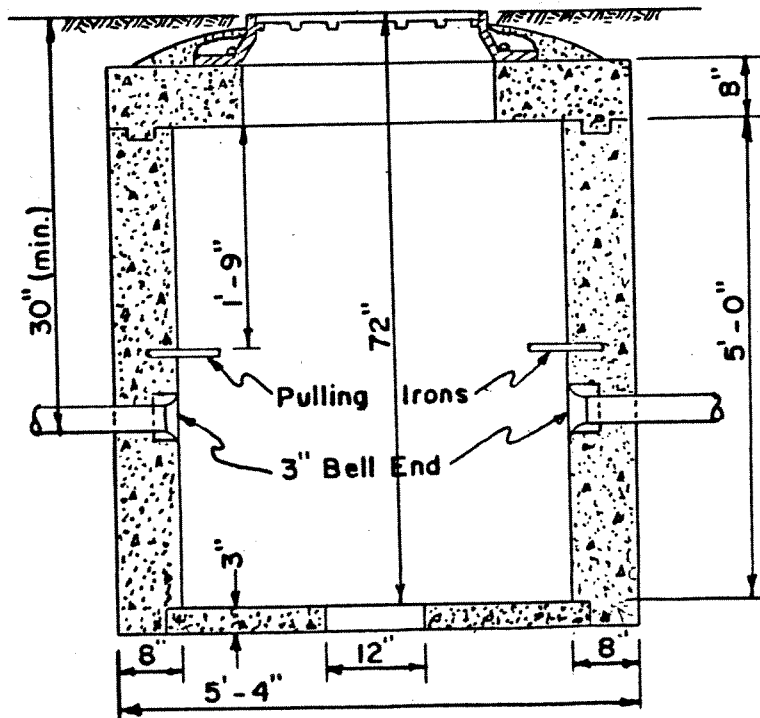
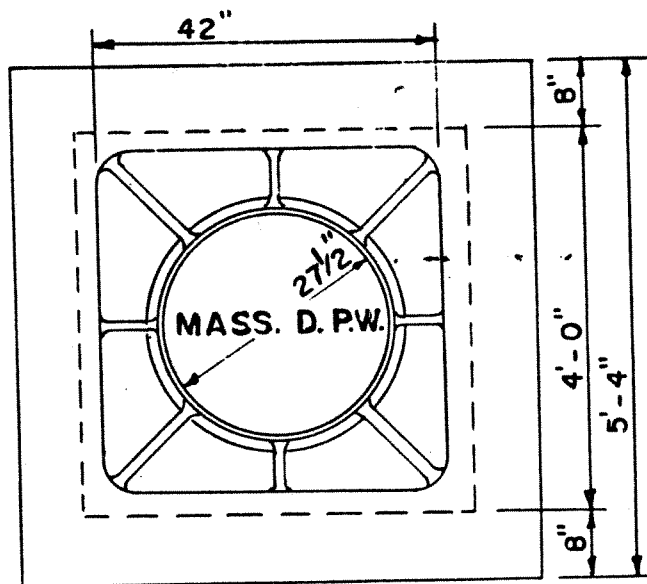


3'-6" X 4'-6" X 5'-0" ELECTRIC MANHOLE

CONSTRUCTION: Either
Brick or Concrete.



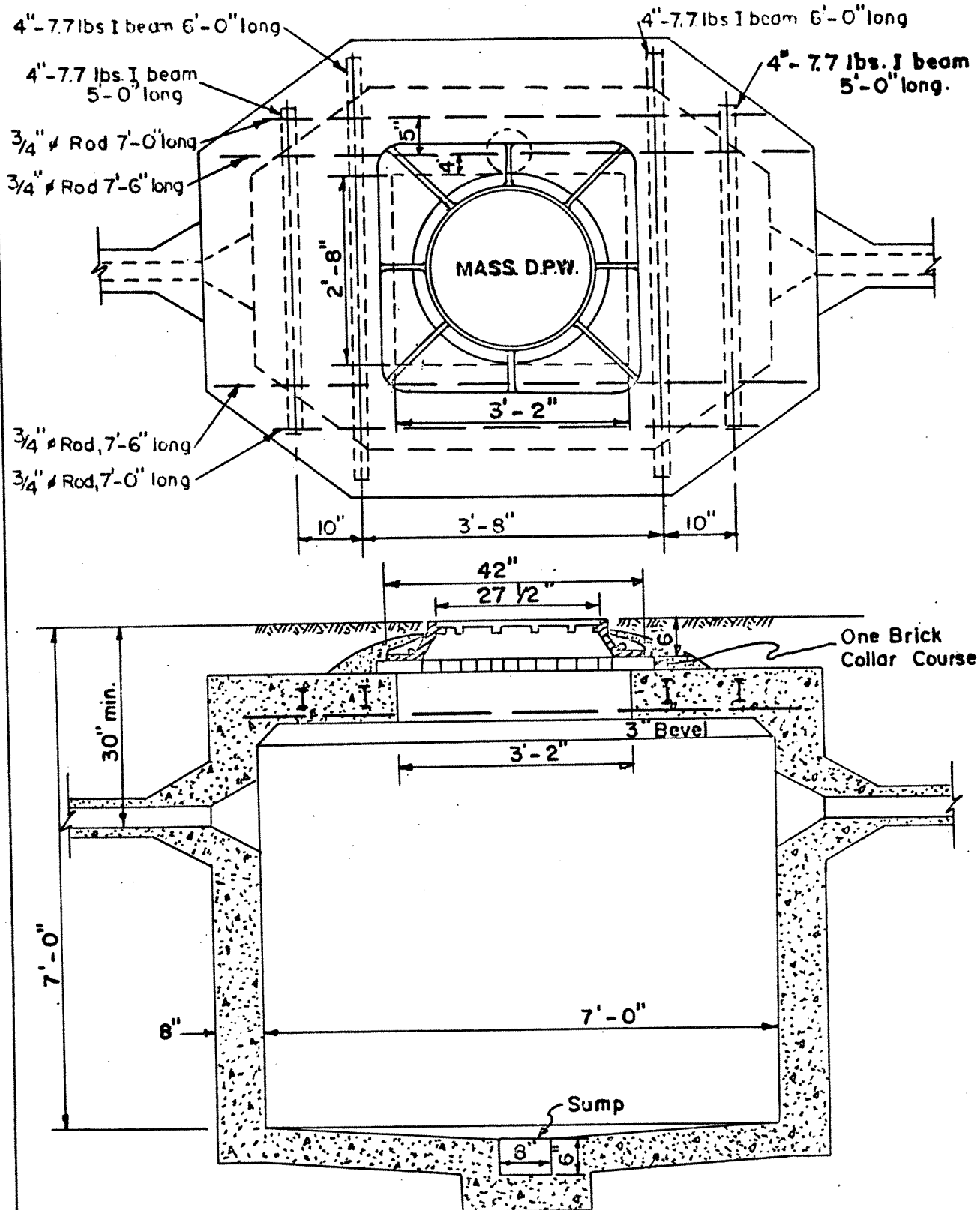
4' X 4' X 6' ELECTRIC MANHOLE



5' X 7' X 7'

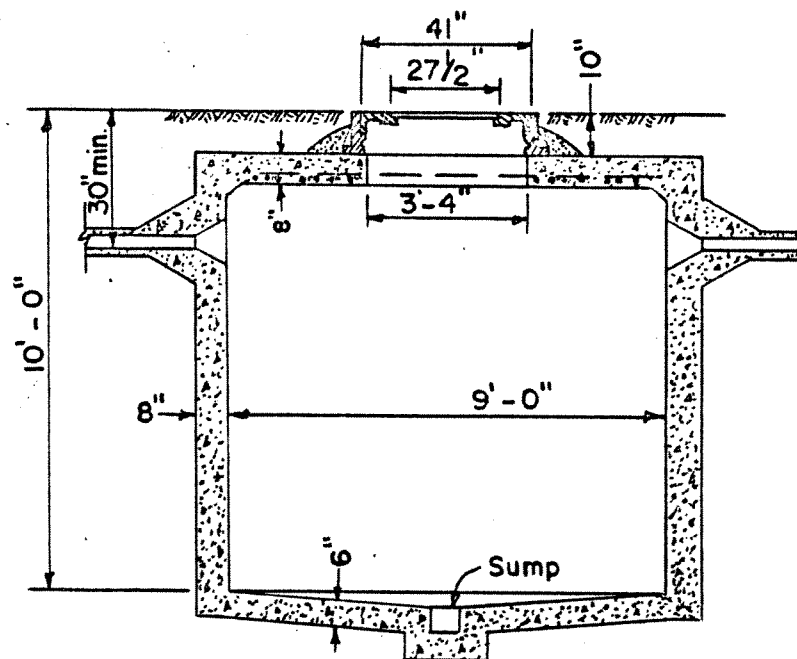
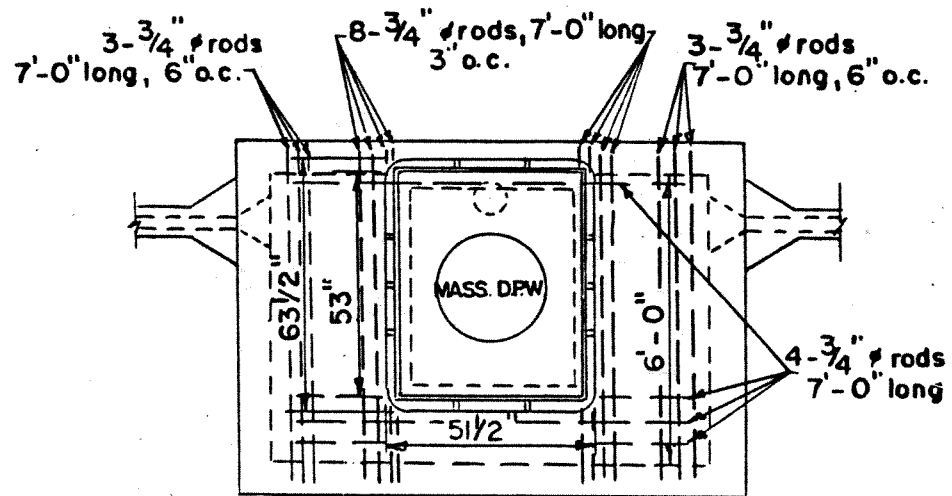
ELECTRIC

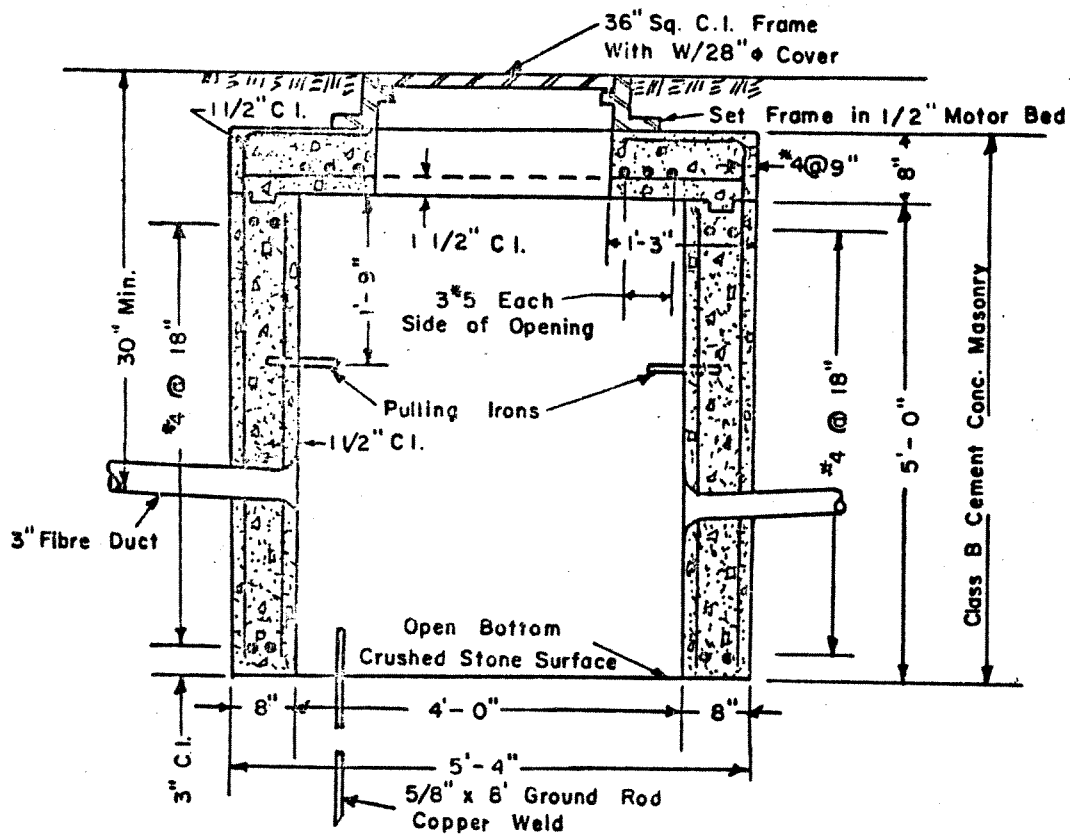
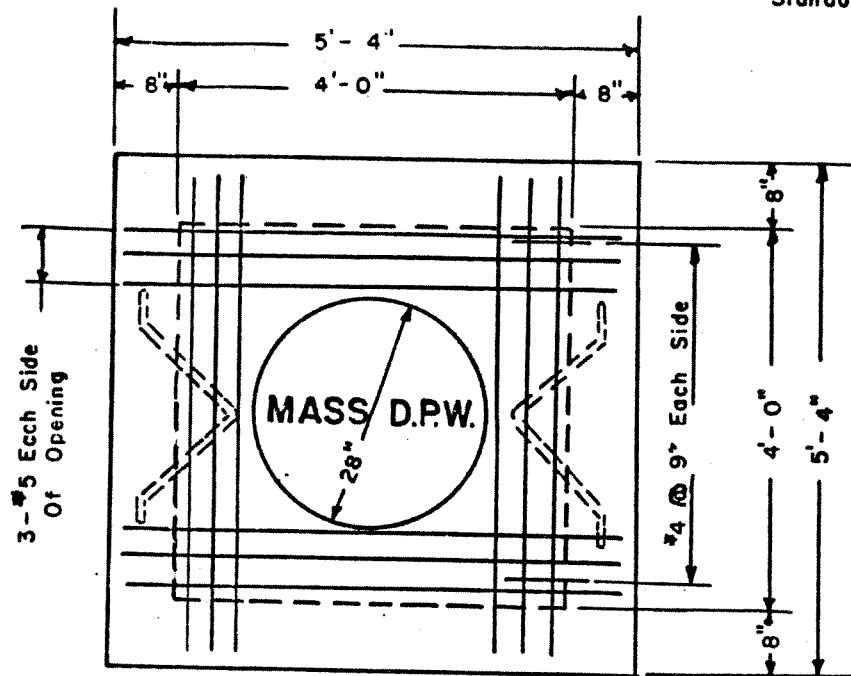
MANHOLE



6' X 9' X 10' ELECTRIC MANHOLE

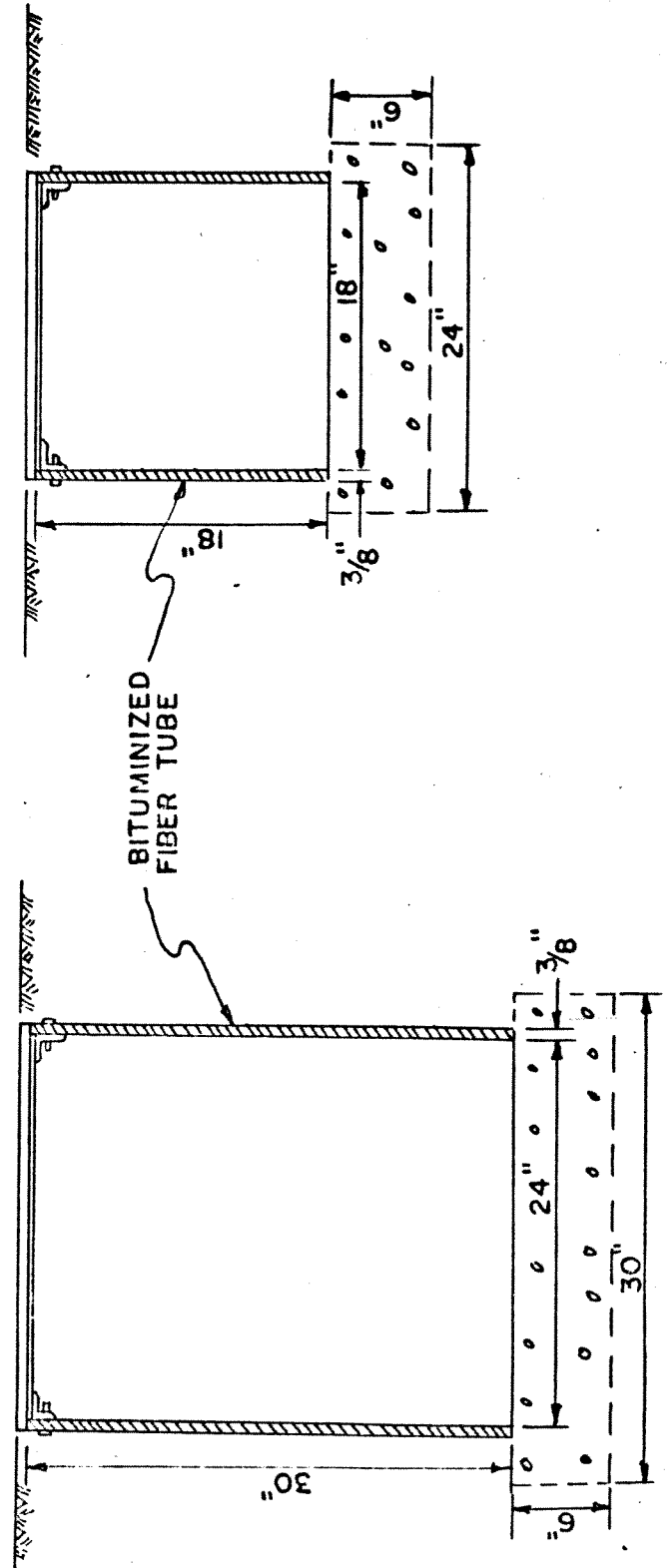
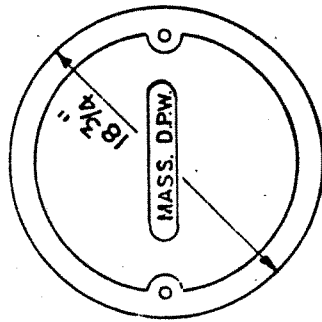
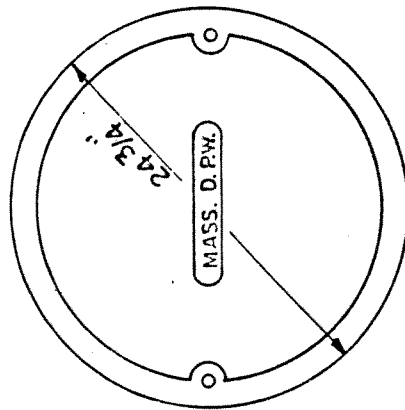
15



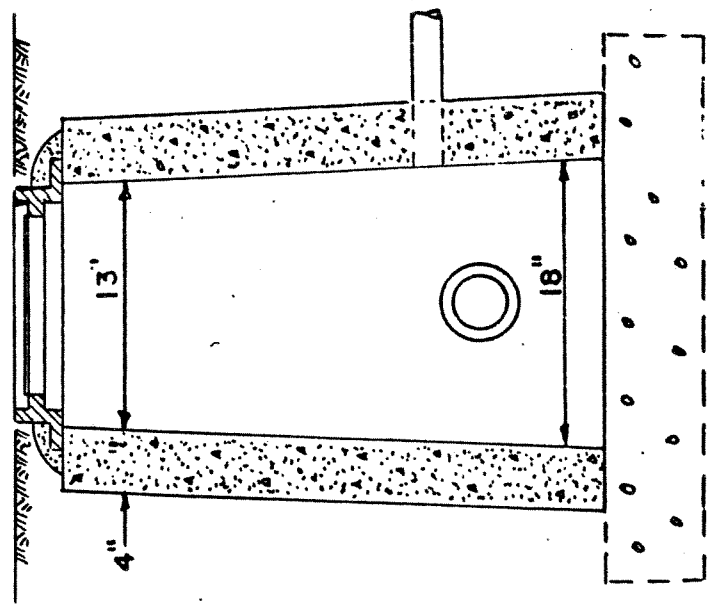
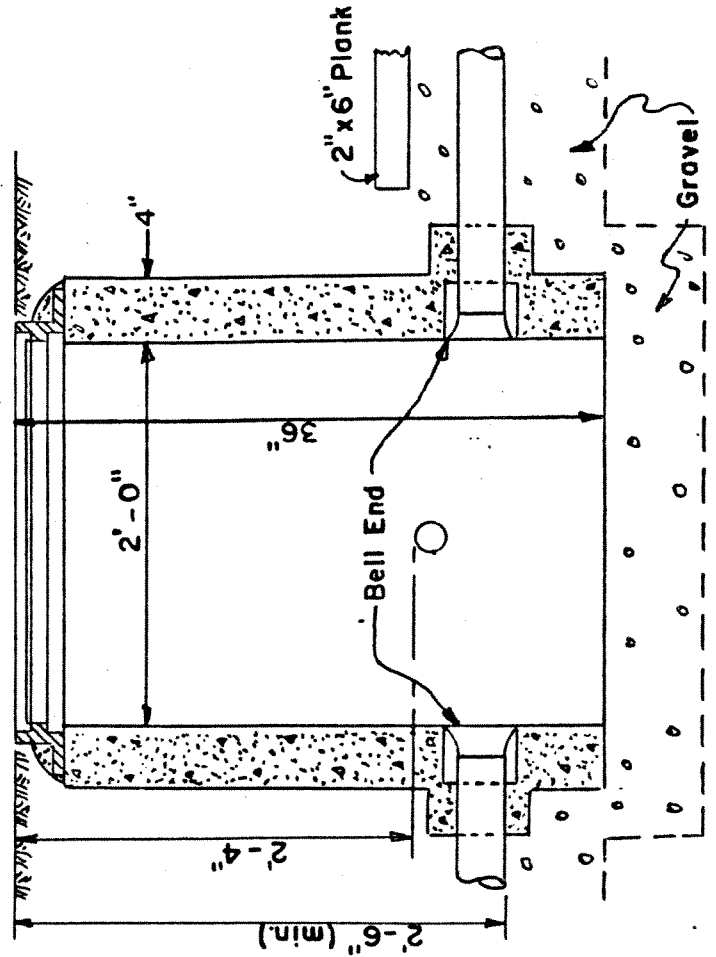
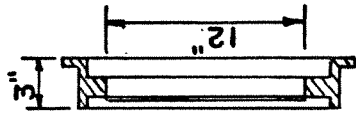
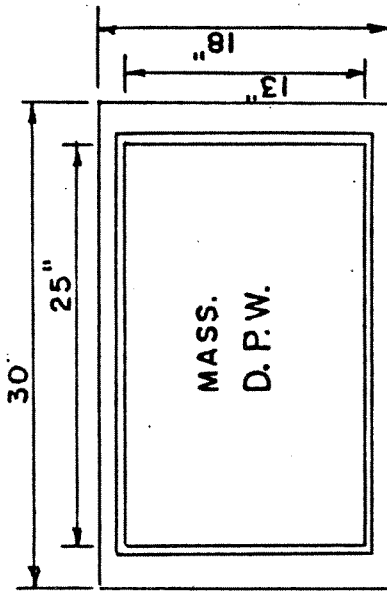


ELECTRIC MANHOLE

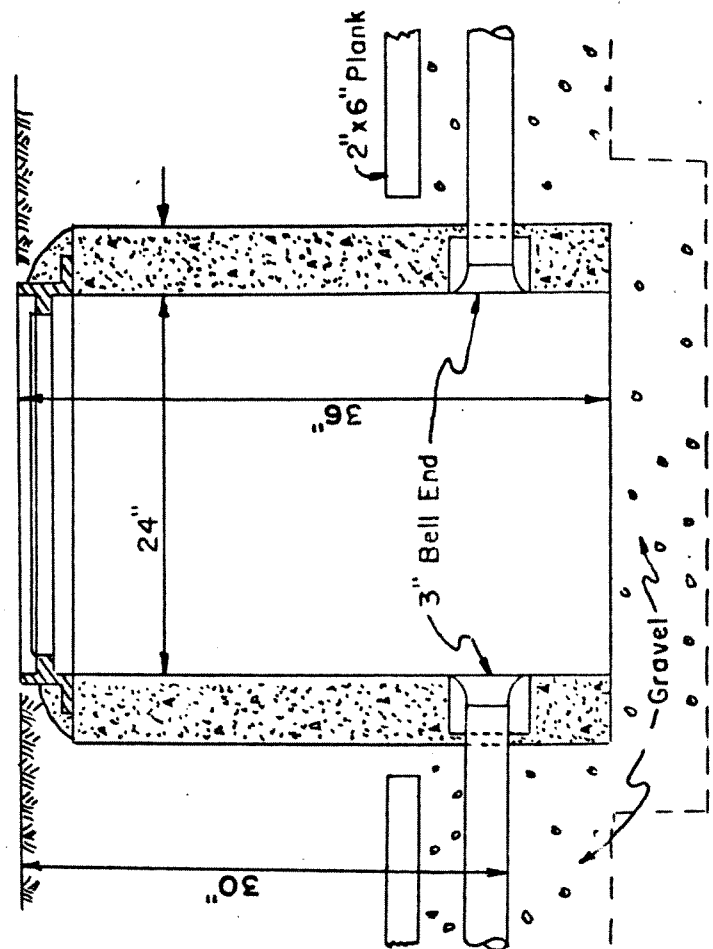
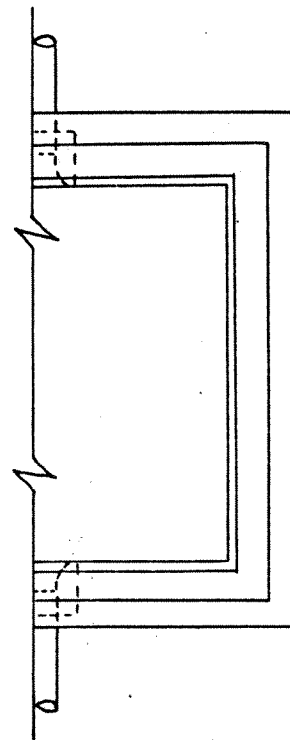
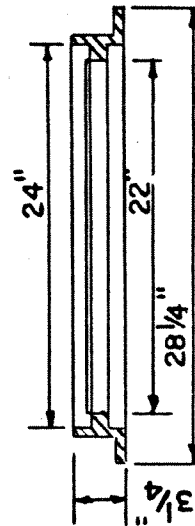
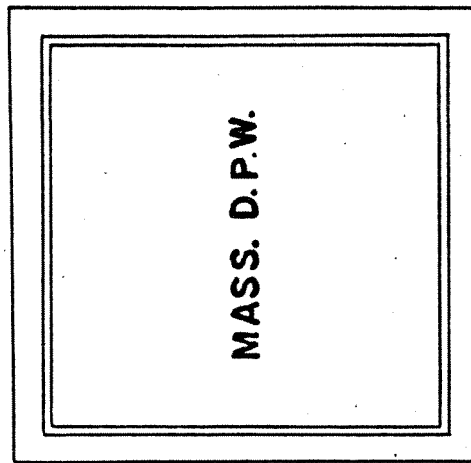
18 in. Dia. & 24 in. Dia. ELECTRIC HANDHOLE



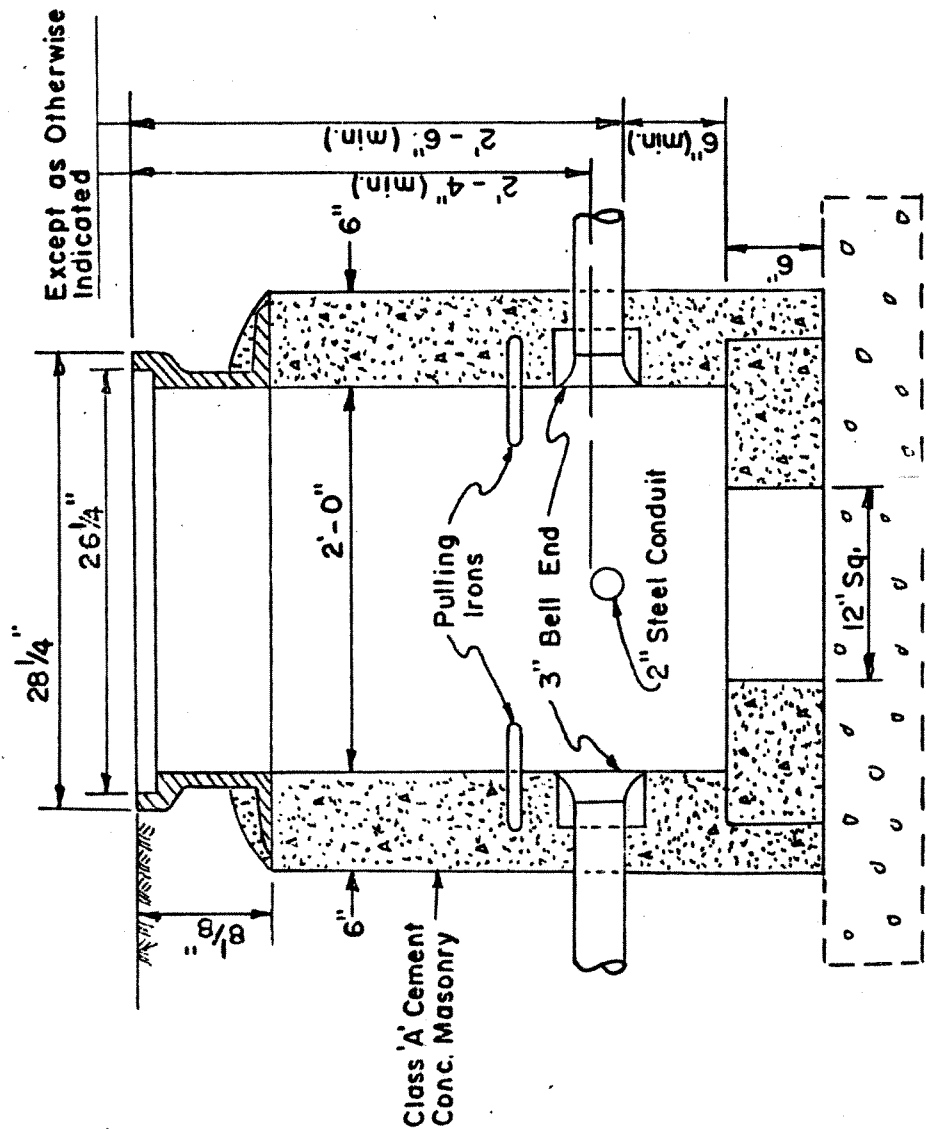
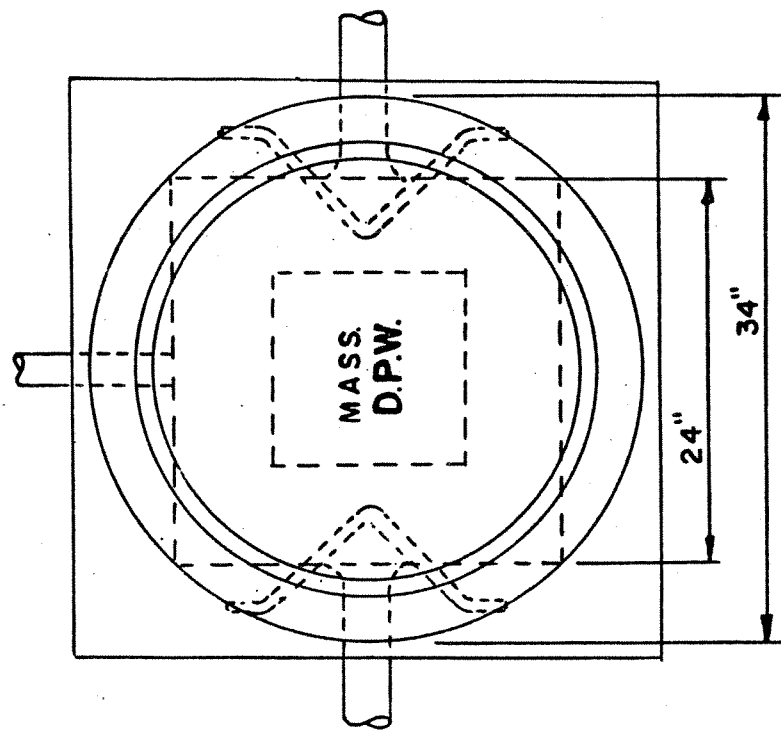
24 in. X 13 in. X 36 in. ELECTRIC HANDHOLE

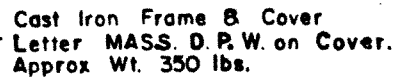


24in. X 24in. X 36in. ELECTRIC HANDHOLE

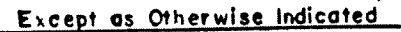


24 in. X 24 in. X 36 in. ELECTRIC HANDHOLE



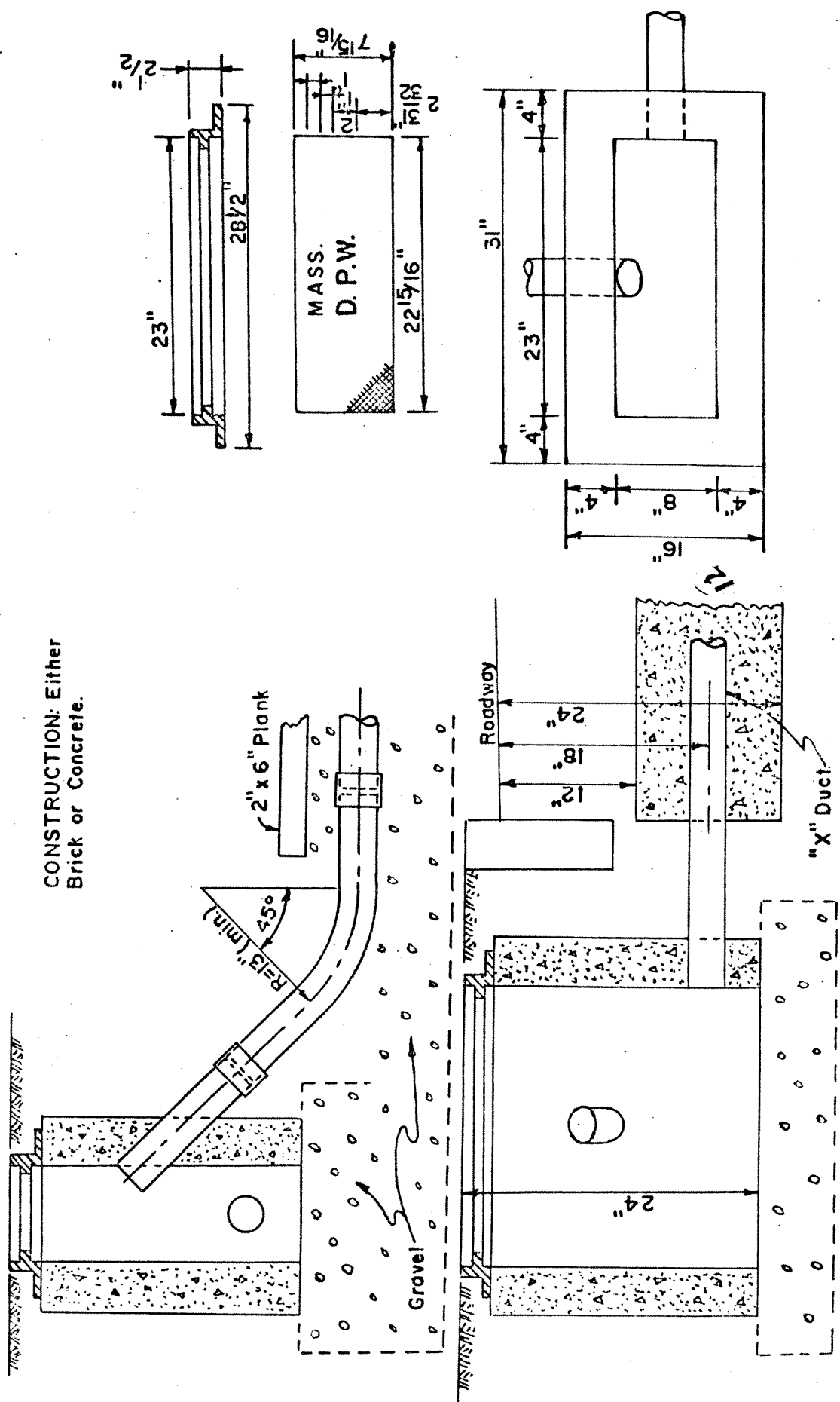


NOTE:
For the exact number, size
and orientation of the
conduits entering the handhole,
see the contract lighting
plans.



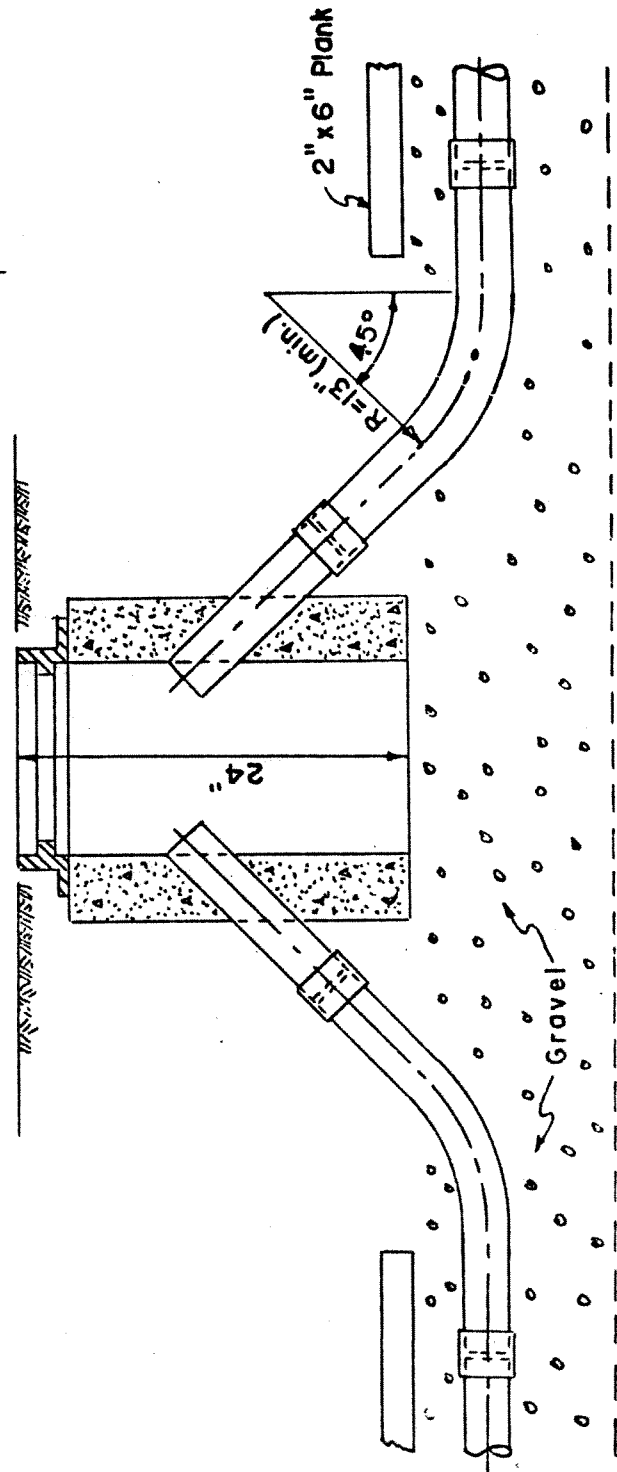
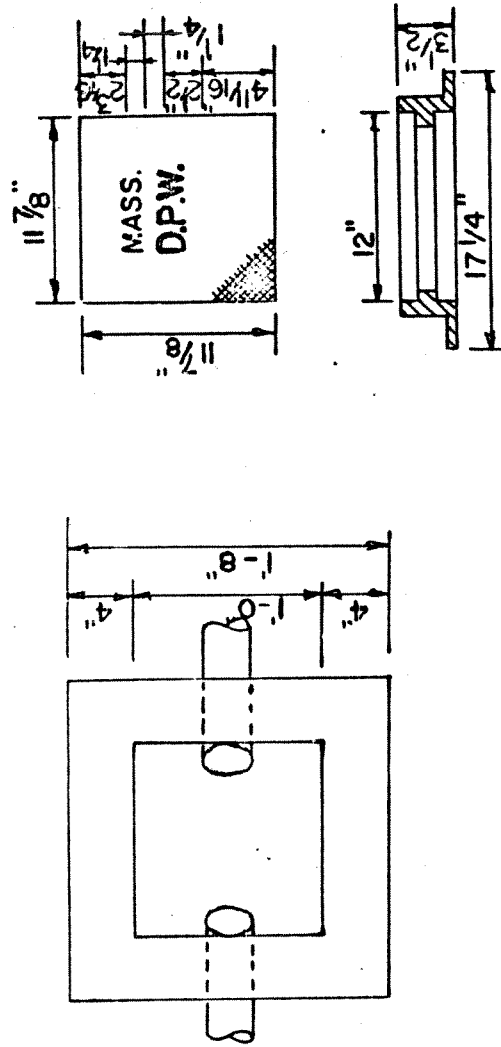
ELECTRIC HANDHOLE

8 in. X 23 in. PULL BOX

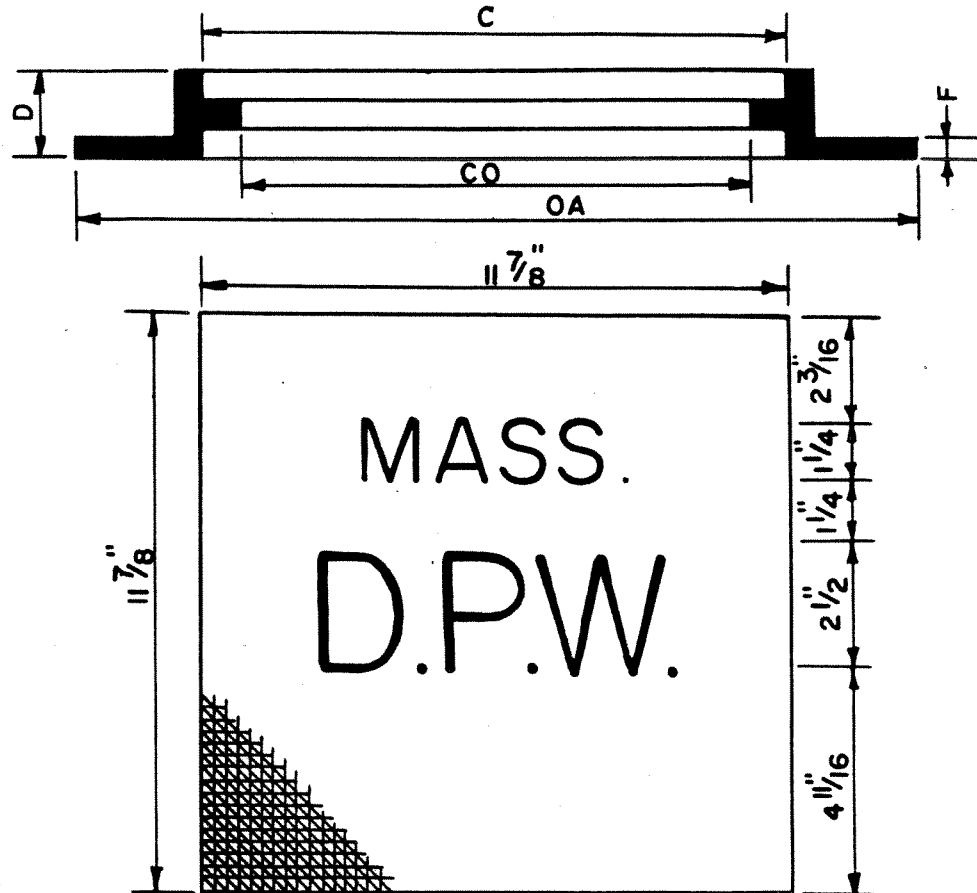


12 in. X 12 in. PULL BOX

**CONSTRUCTION: Either
Brick or Concrete.**

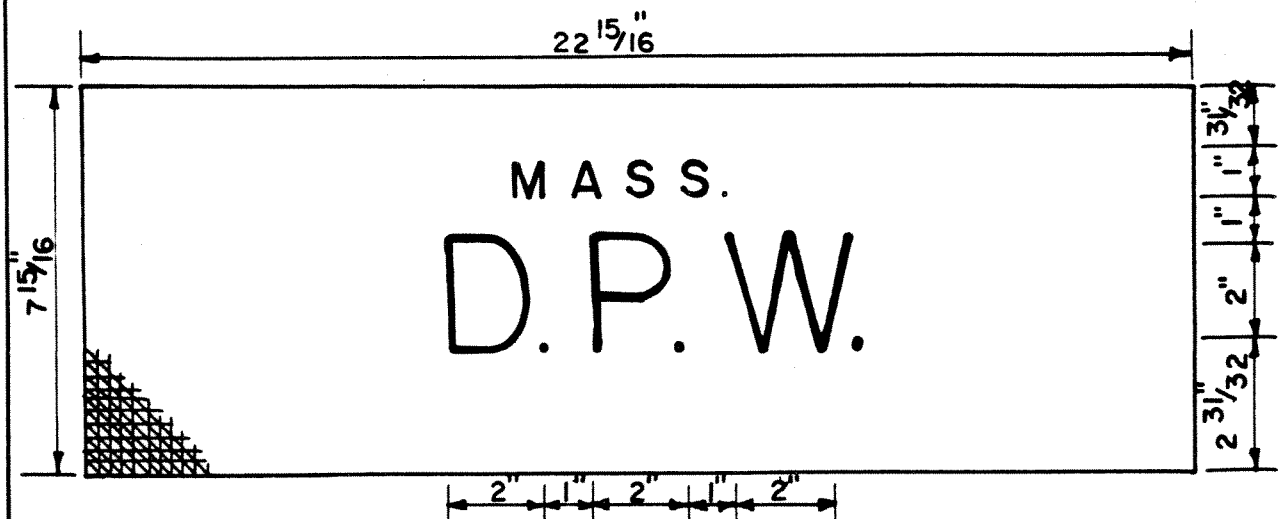


FRAME AND COVER FOR JUNCTION BOX



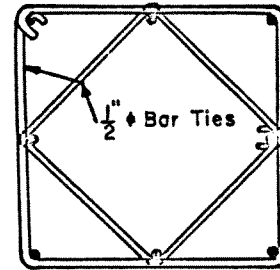
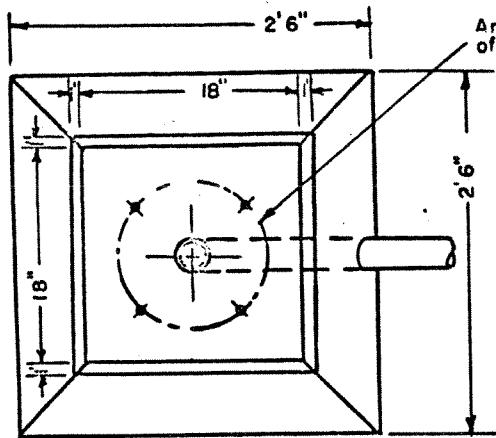
ALL DIMENSIONS IN INCHES

SIZE OF COVER	DEPTH	CLEAR OPENING	OVERALL	FLANGE	APPROX. WEIGHT
C	D	CO	OA	F	W
12 x 12	3 1/2	10 1/2 x 10 1/2	17 1/4 x 17 1/4	1/2	80
8 x 23	2 1/2	6 1/2 x 21 1/2	13 3/4 x 28 1/2	1/2	80

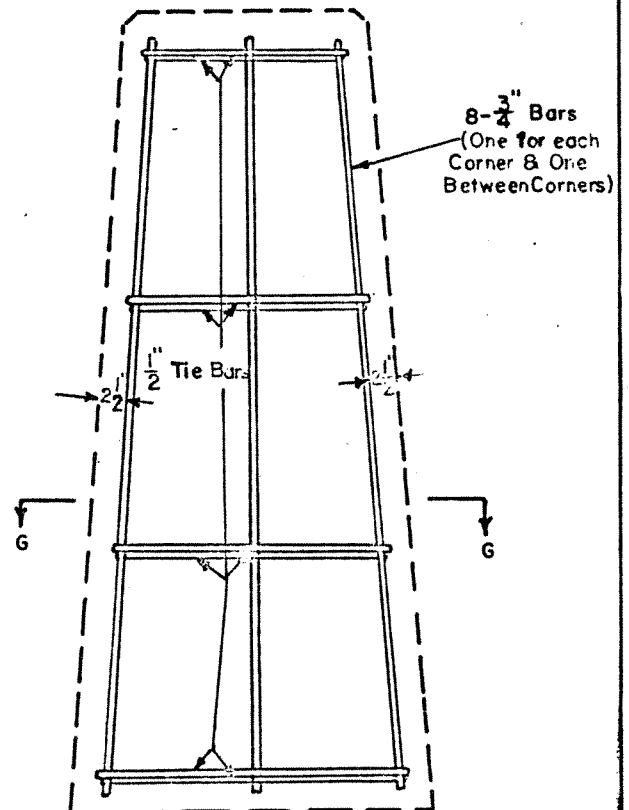
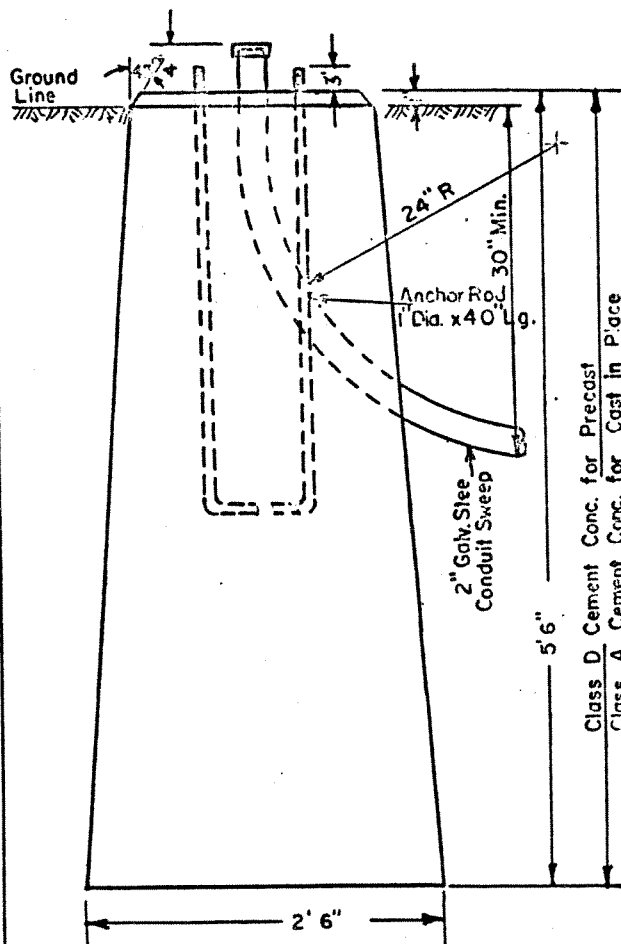


THE WORD MASS. HAS 1/4" SPACING.

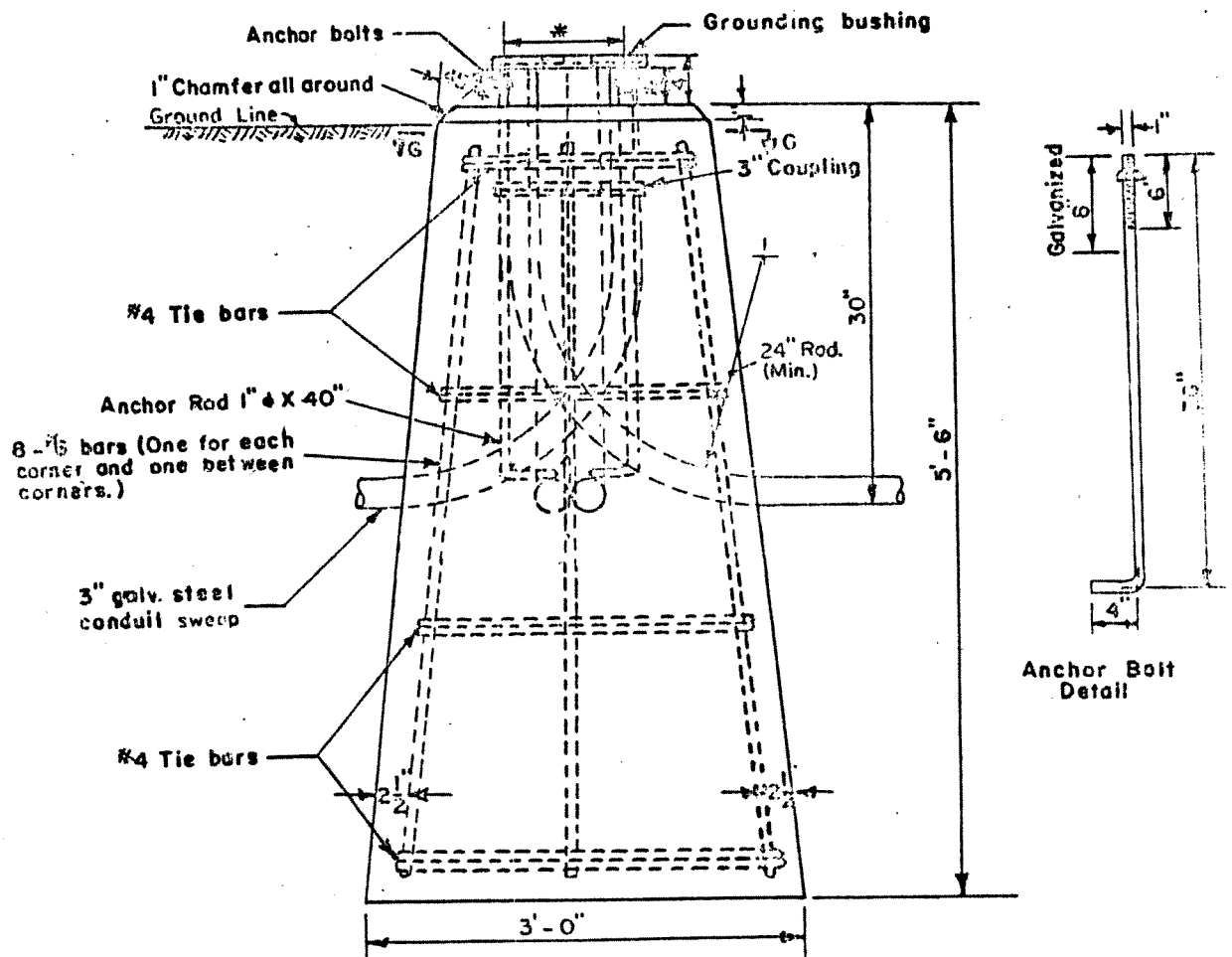
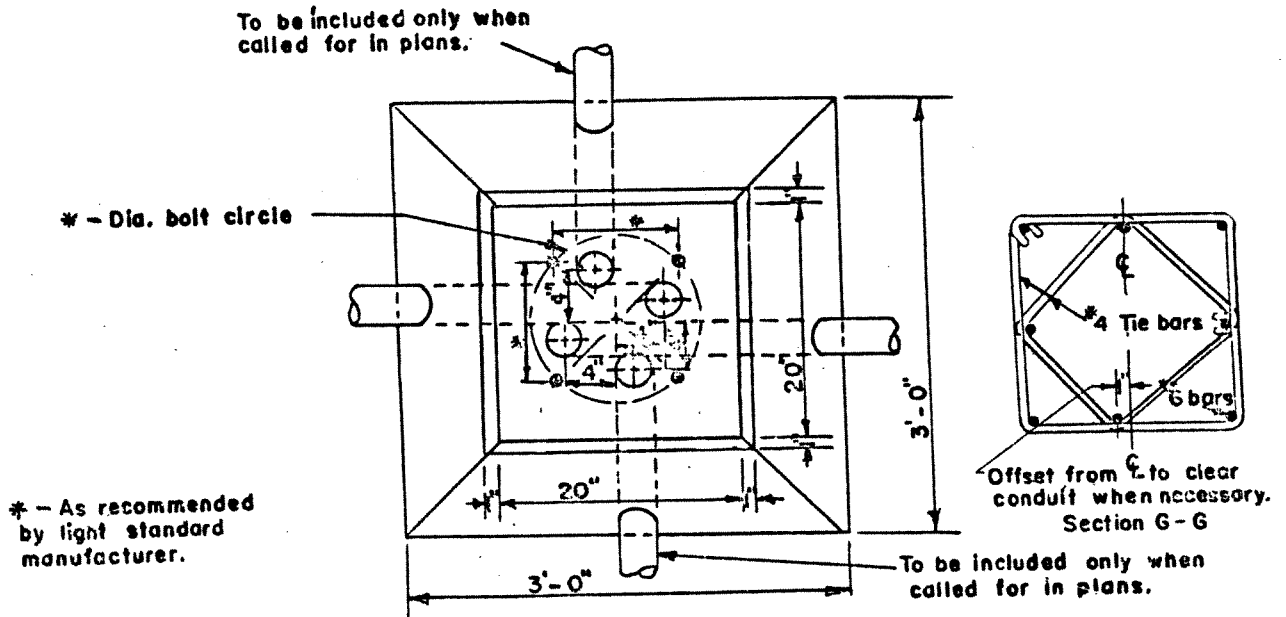
Scale: 1/4" = 1"



Section G - G

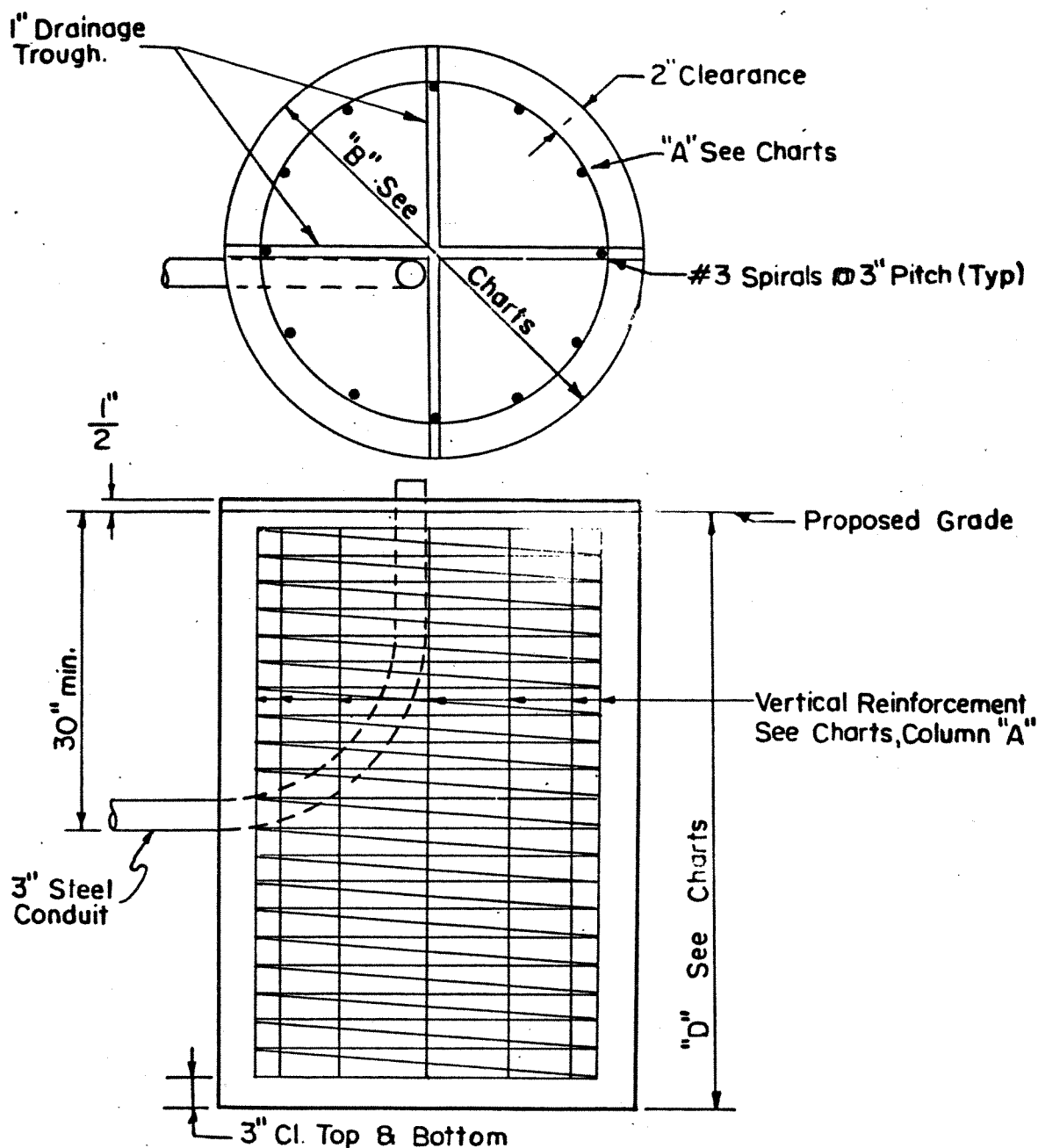


ROADWAY ILLUMINATION ANCHOR BASE FOUNDATION
(PRECAST OR CAST IN PLACE)
Scale: 3/4" = 1'-0"



TRANSFORMER BASE FOUNDATION
Scale: $\frac{3}{4}'' = 1'-0''$

TYPICAL LIGHT STANDARD FOUNDATION

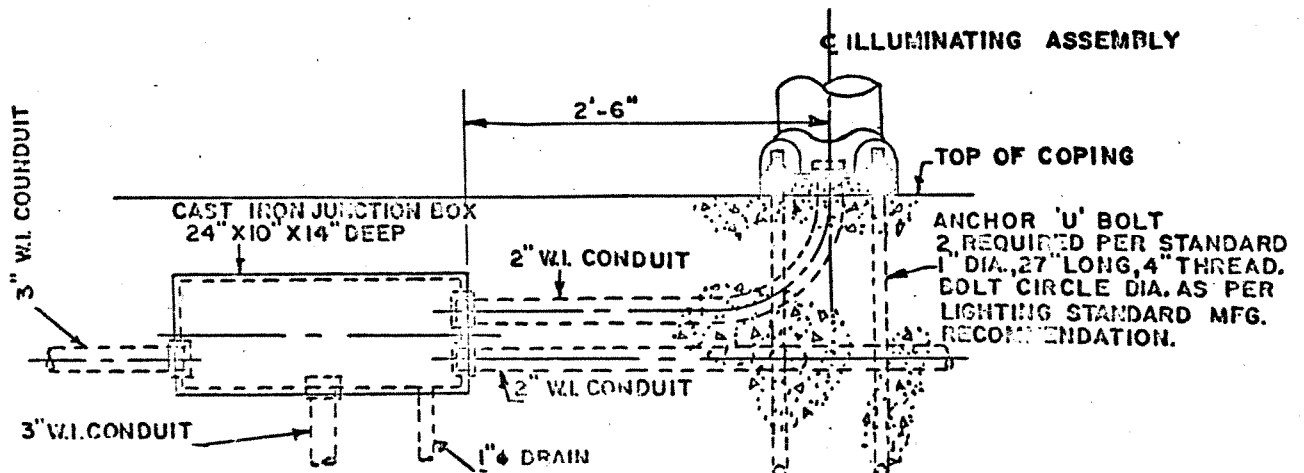
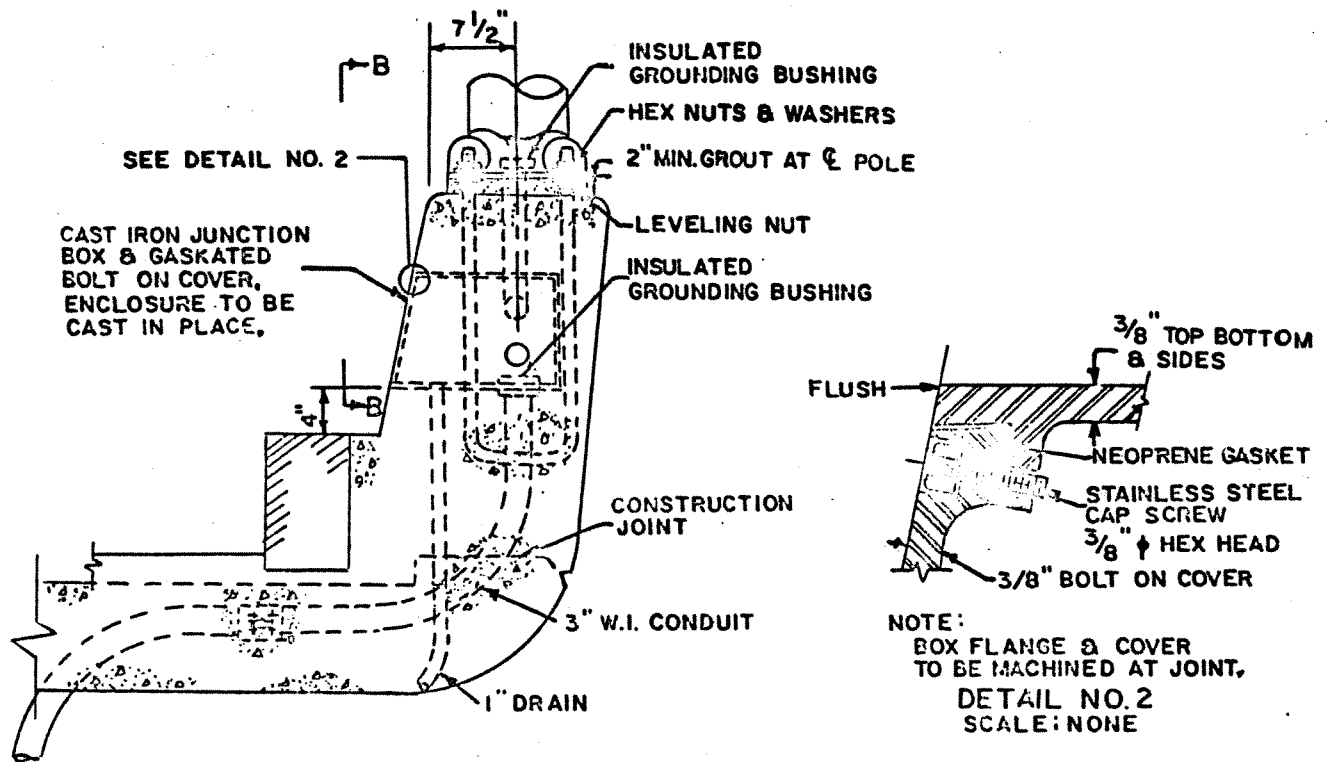


FOUNDATION DESIGN CHART

Mounting Height	Diameter "B"	Depth "D"	Vertical Reinforcement "A"	Std. Detail Number
30'-40'	3'-0"	7'-0"	8 - #5	SD 3. 013
40'-100'	3'-0"	10'-0"	12 - # 5	SD 3. 014

NOTES:

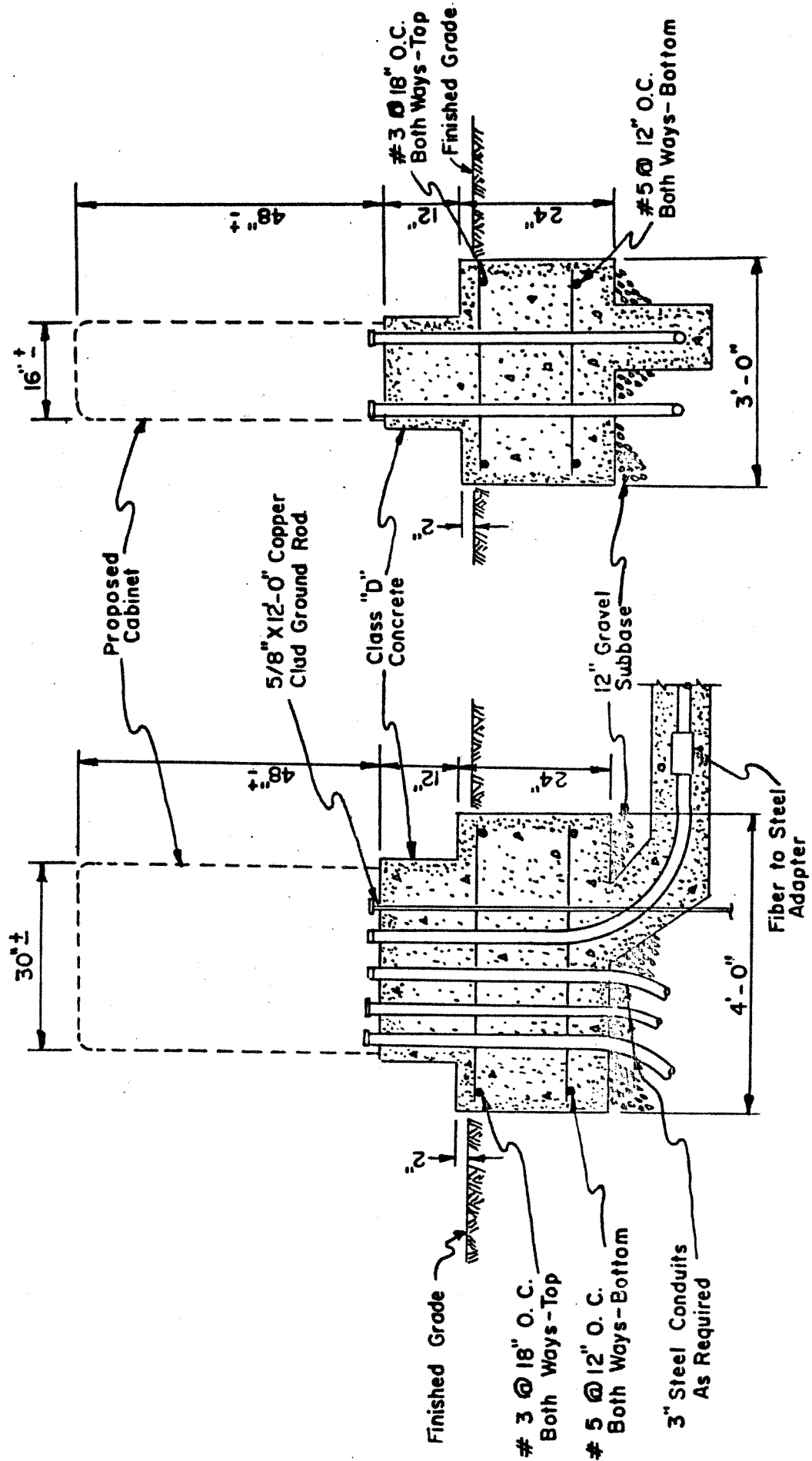
1. Cement concrete for foundations to be class 'A' cement concrete masonry.
2. A minimum slope of 1/8" per. ft. from edge of base plate to face of concrete.
3. The actual depth of foundation will be the "D" dimension above plus the 1/2" reveal.
4. The anchor bolts shall be supplied by the light standard manufacturer. The manufacturer shall also supply a template for setting the bolts and shall indicate the necessary projection.



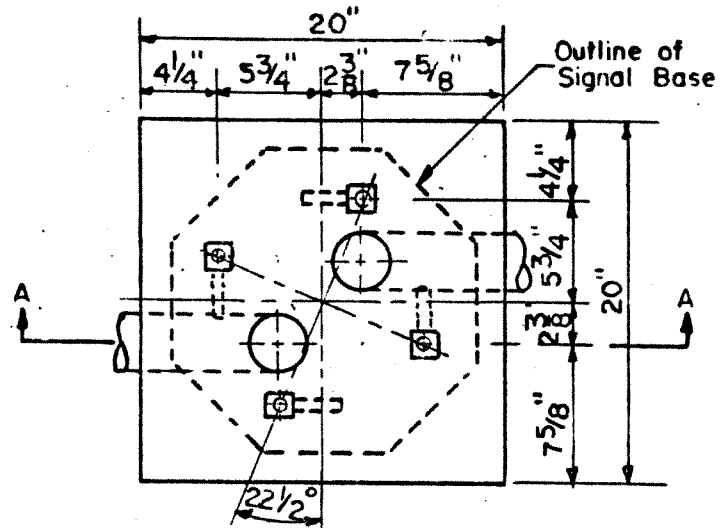
ELEVATION B-B
SCALE: 3/4" = 1'-0"

VIADUCT LIGHTING DETAILS

LIGHTING LOAD CENTER FOUNDATION

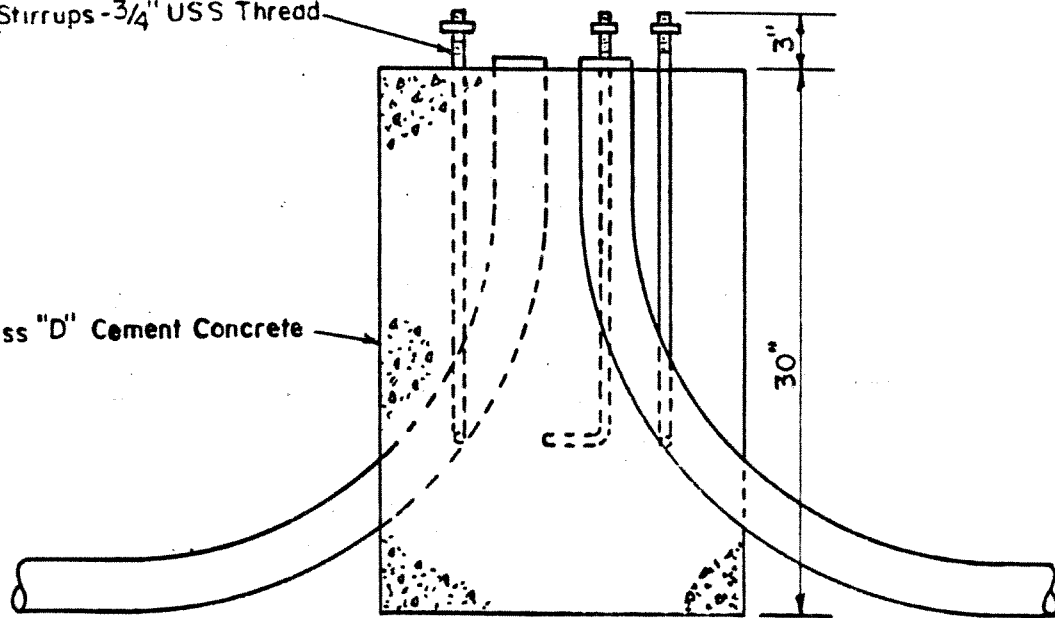


CONCRETE BASE STANDARD TRAFFIC SIGNAL POST



Maximum distance between
bolts $12\frac{3}{4}$ "
Stirrups - $\frac{3}{4}$ " USS Thread

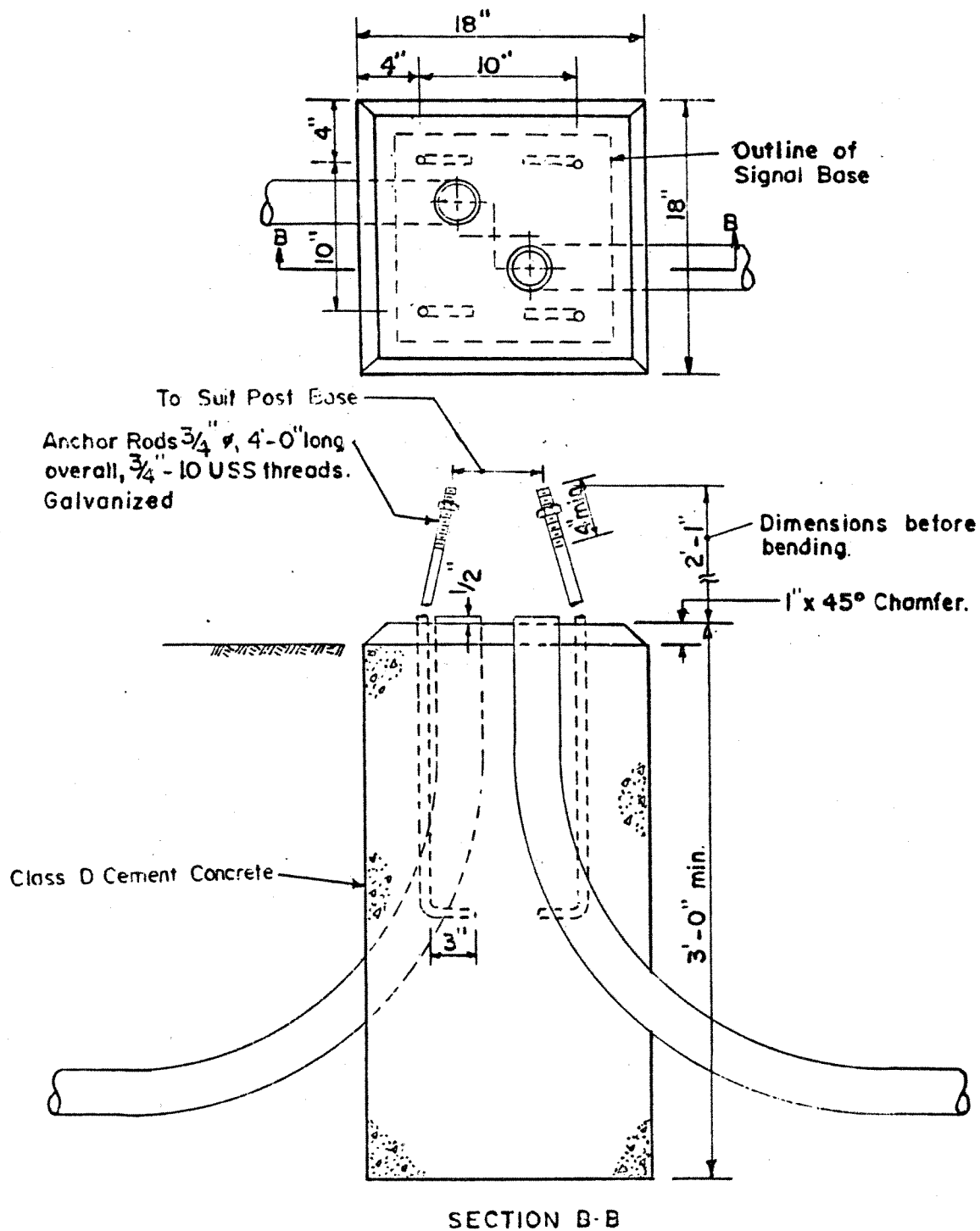
Class "D" Cement Concrete



SECTION A-A

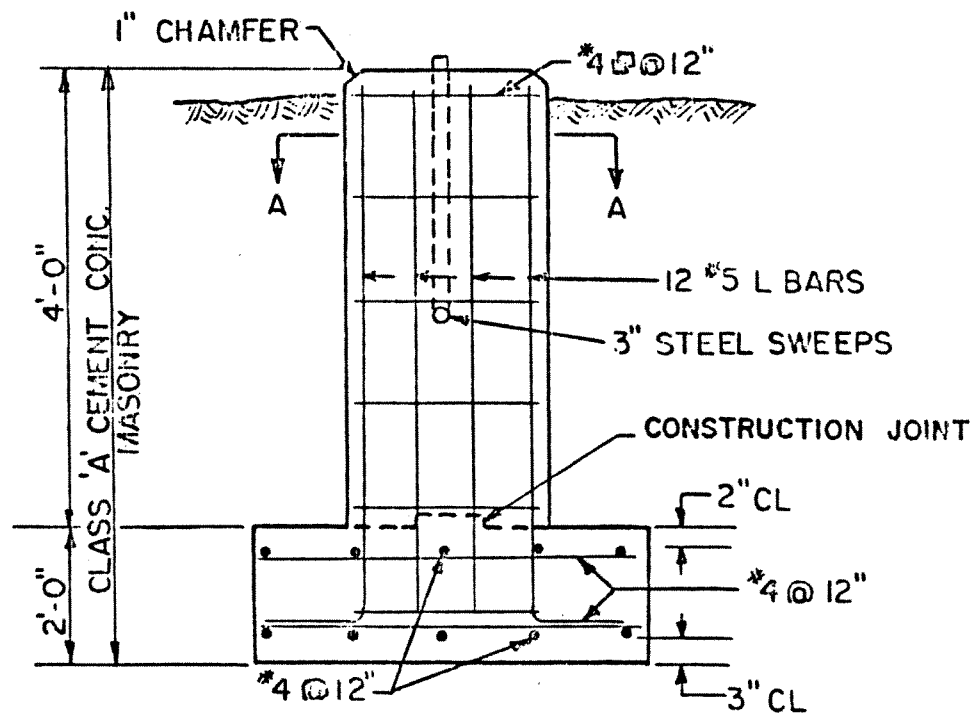
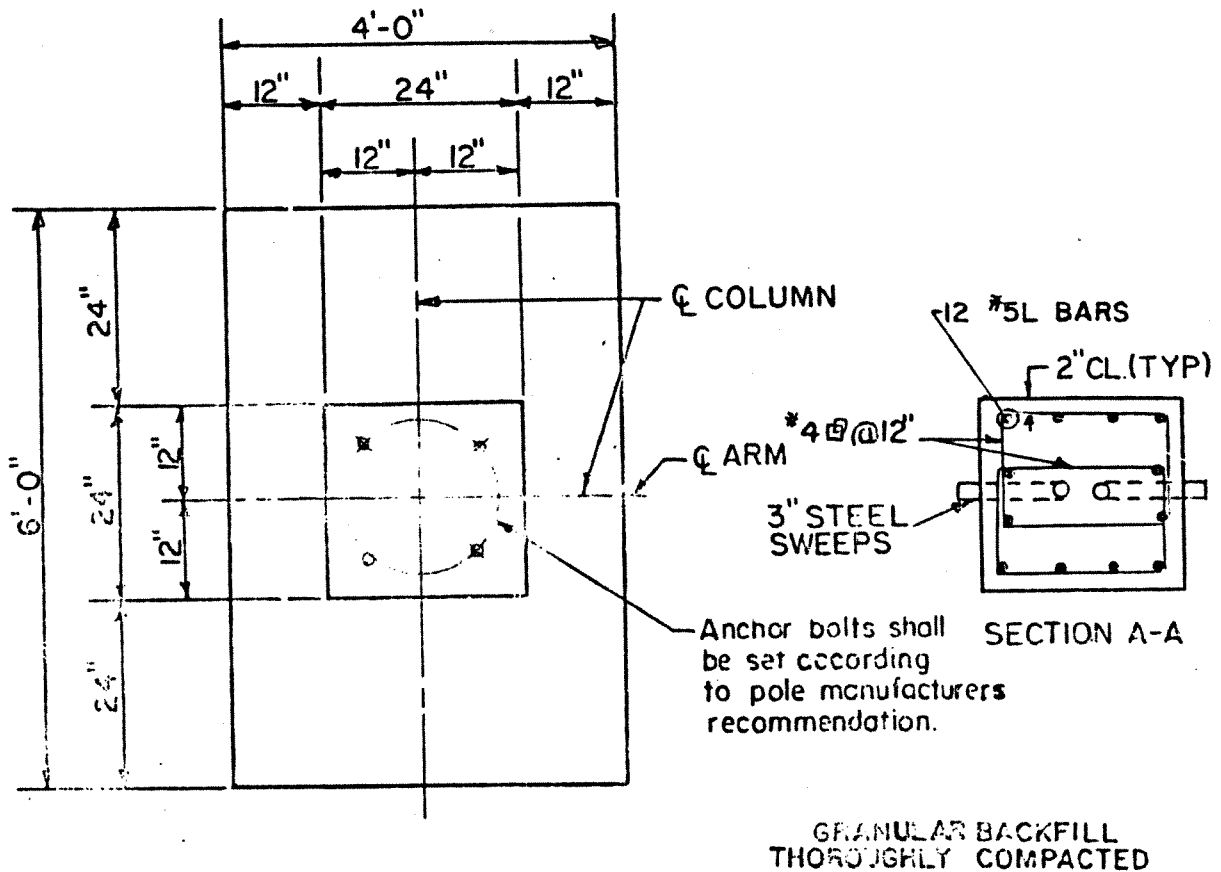
Scale: $\frac{3}{32}$ " = 1"

CONCRETE BASE PEDESTAL TYPE



Scale $\frac{3}{32}" = 1"$

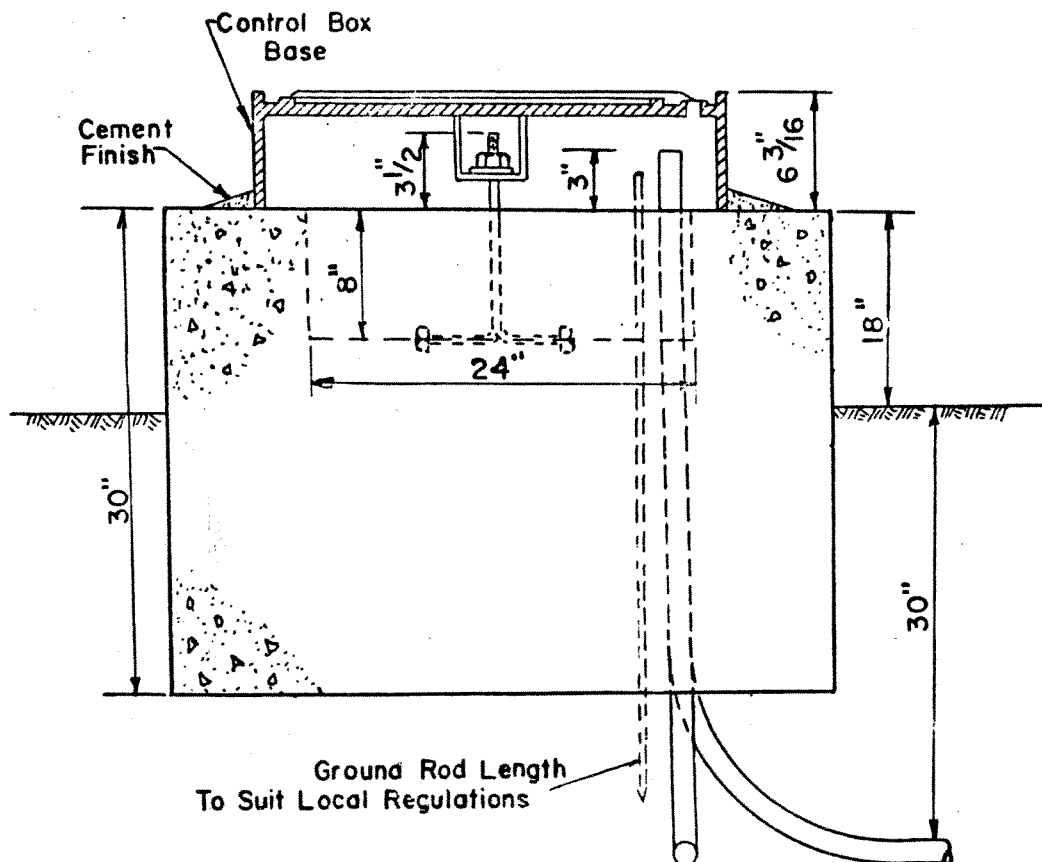
TRAFFIC SIGNAL MAST ARM FOUNDATION



May 18, 1937

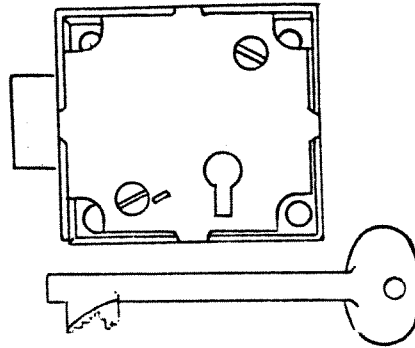
Scale: $\frac{1}{2}'' = 1'$

Technical drawing of a rectangular component, likely a mold or tray, showing dimensions and internal features. The overall width is 36" and the overall height is 22". The internal width is 29 1/4" REF. and the internal height is 15 1/2" REF. The component has a central rectangular area with a width of 12" and a height of 12". There are four circular features (possibly holes or indentations) located at the corners of the internal rectangular area. The drawing includes dashed lines indicating internal structure and dimensions.

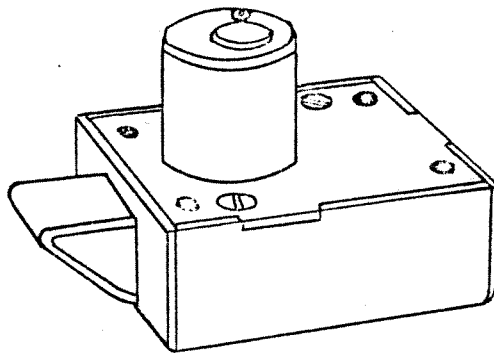


SECTION B-B

TRAFFIC SIGNAL CONTROL CABINET LOCKS & KEYS

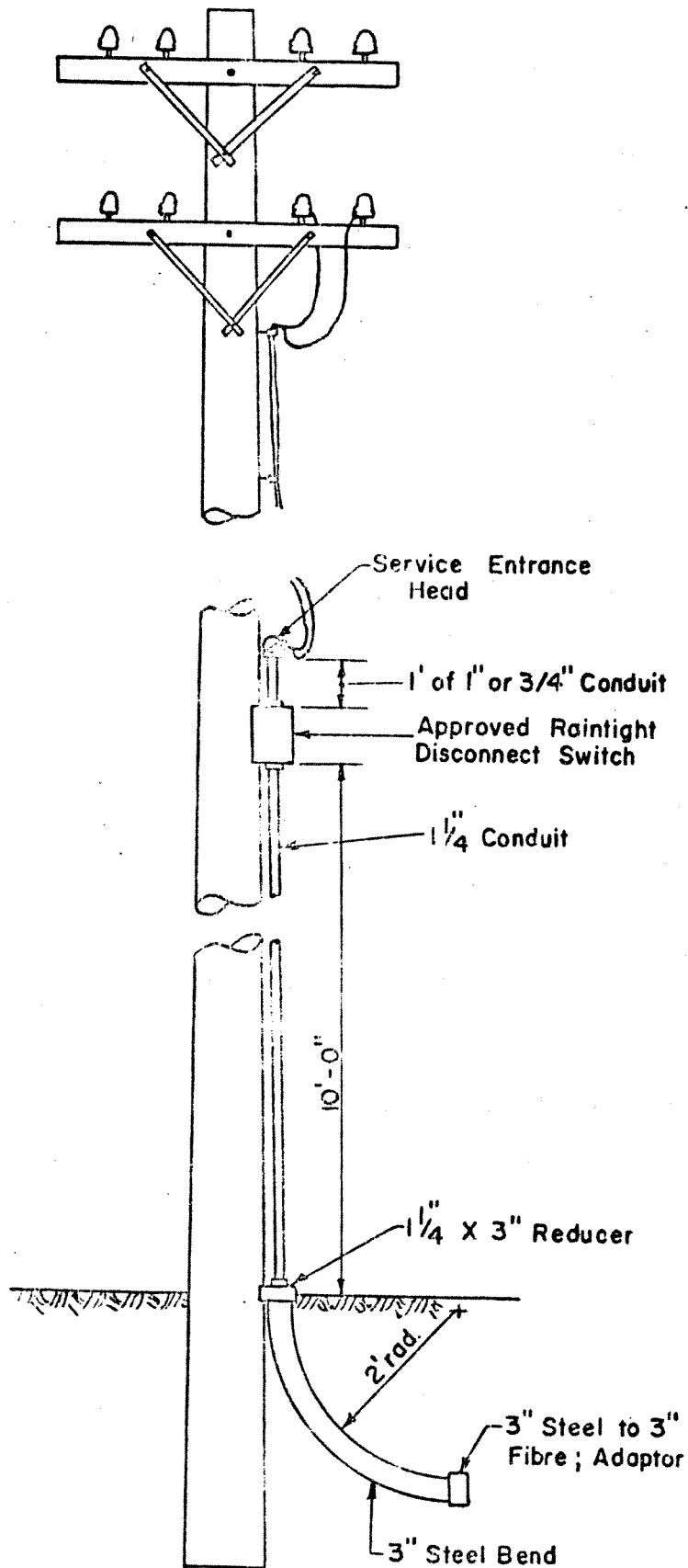


CONTROL BOX LOCK & KEY
POLICE PANEL

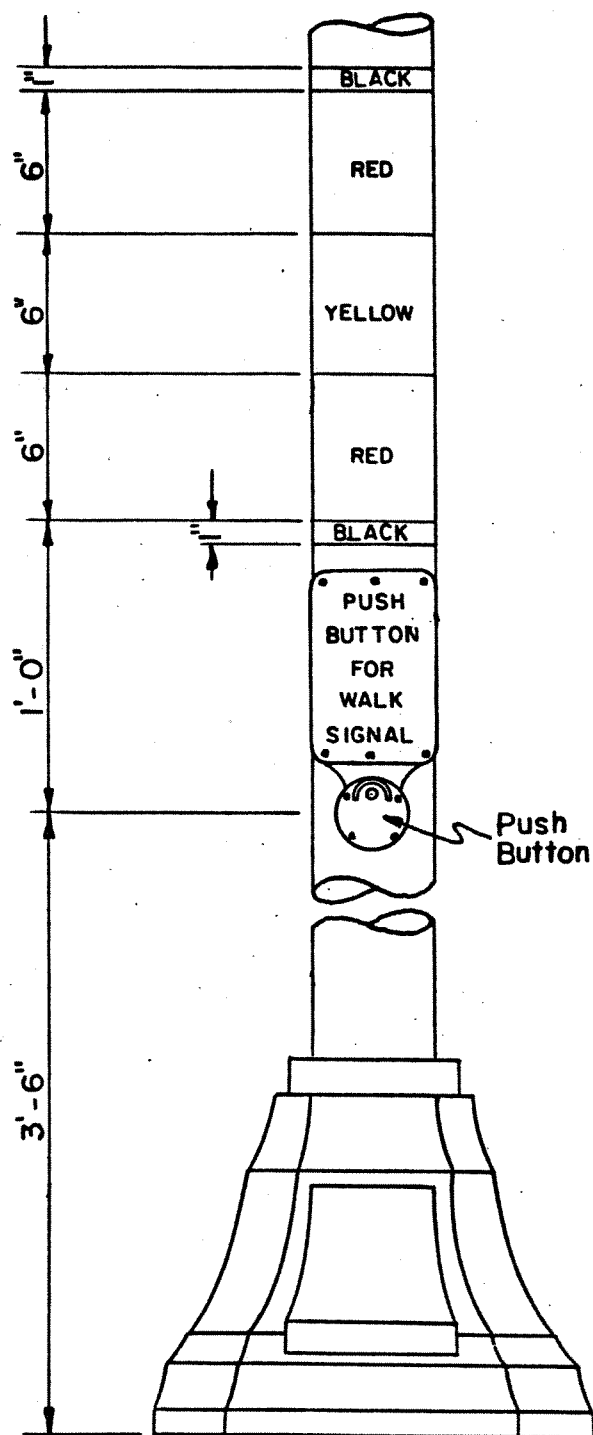


CYLINDER LOCK & KEY
CONTROLLER CABINET

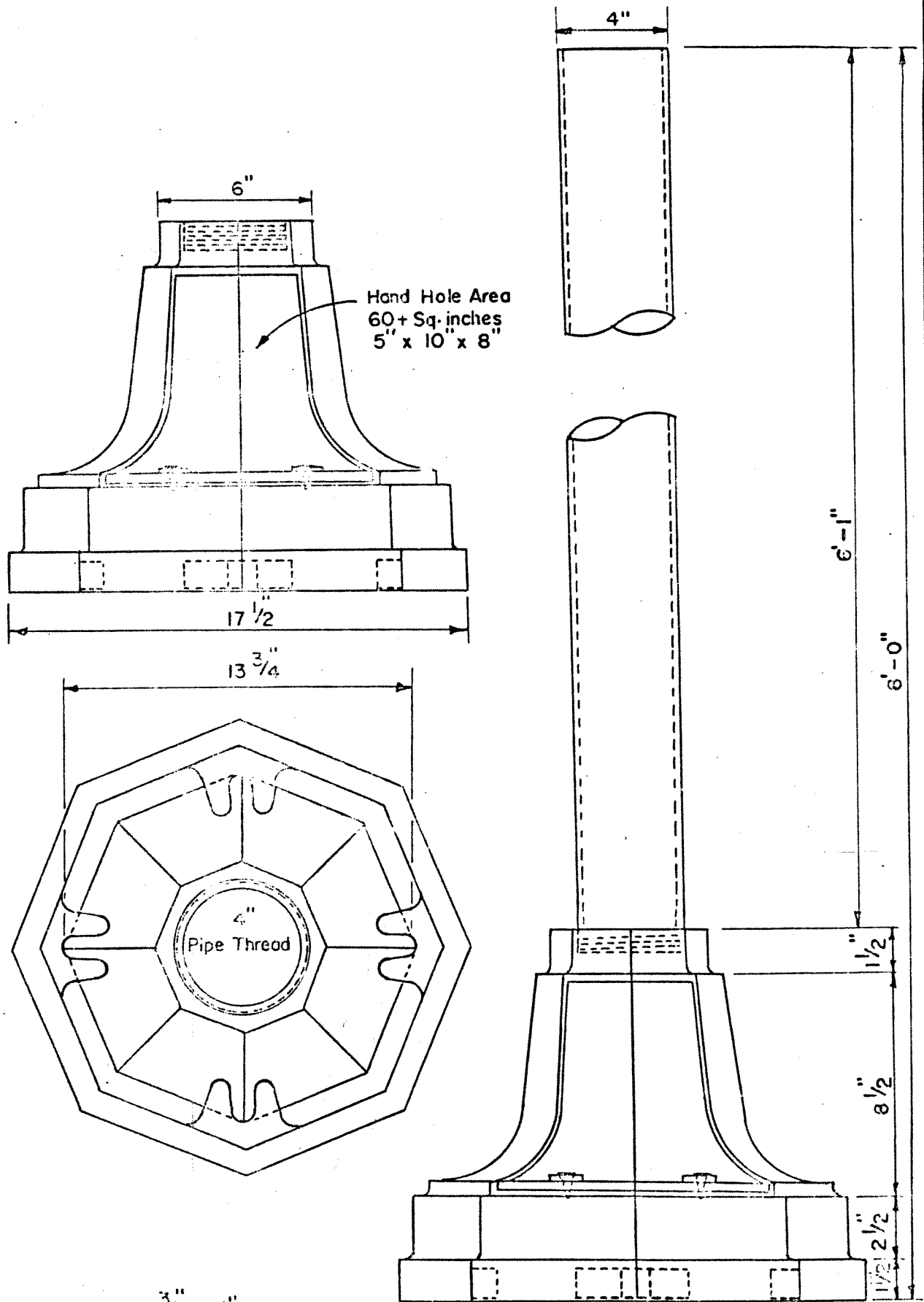
OVERHEAD TRAFFIC SIGNAL SERVICE CONNECTION



STANDARD MARKING ON SIGNAL POSTS TO INDICATE PEDESTRIAN PUSH BUTTON LOCATION

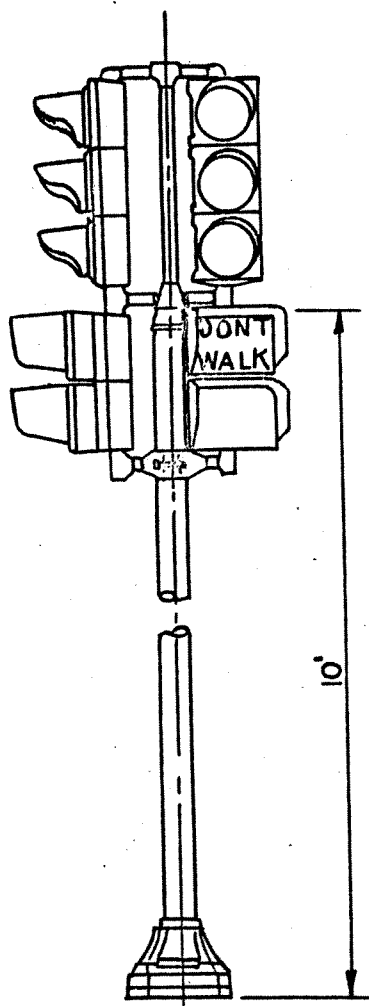


STANDARD TRAFFIC SIGNAL POST & BASE



Scale: 3/16" = 1"

STANDARD SIGNAL POST WITH SIGNAL & PEDESTRIAN HOUSINGS

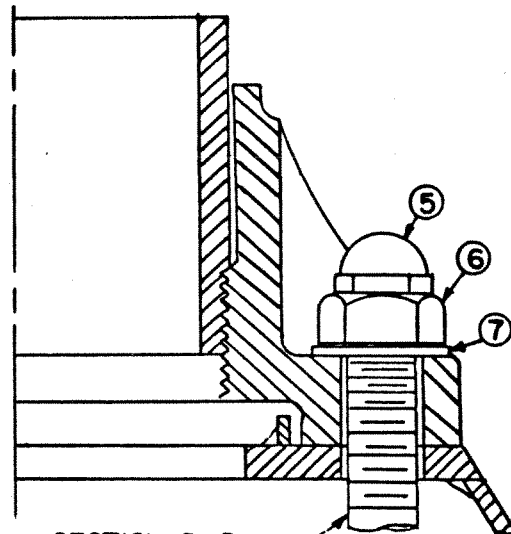


Bottom of Pedestrian Housing Shall Be Mounted Not Less Than 7 Feet, Nor More Than 10 Feet Above The Sidewalk Level And So That There Is A Signal In The Line Of Vision Of Pedestrians Crossing In Any Cross Walk.

TRAFFIC SIGNAL POST PEDESTAL TYPE

TYPE	POST HT.	H	S	PIPE SHAFT
3A	8'-0"	8'-0"	5'-10"	6'-1"
3B	9'-0"	9'-0"	6'-10"	7'-1"
3C	10'-0"	10'-0"	7'-10"	8'-1"
3P	5'-0"	5'-0"	2'-10"	3'-1"

4" Std. Pipe Shaft. Bottom End
to be Threaded Outside,
4" Std. Pipe Thread.



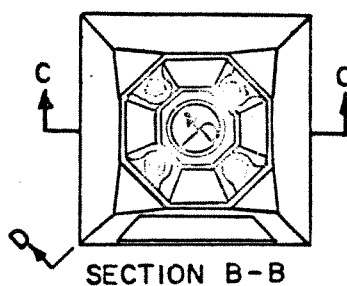
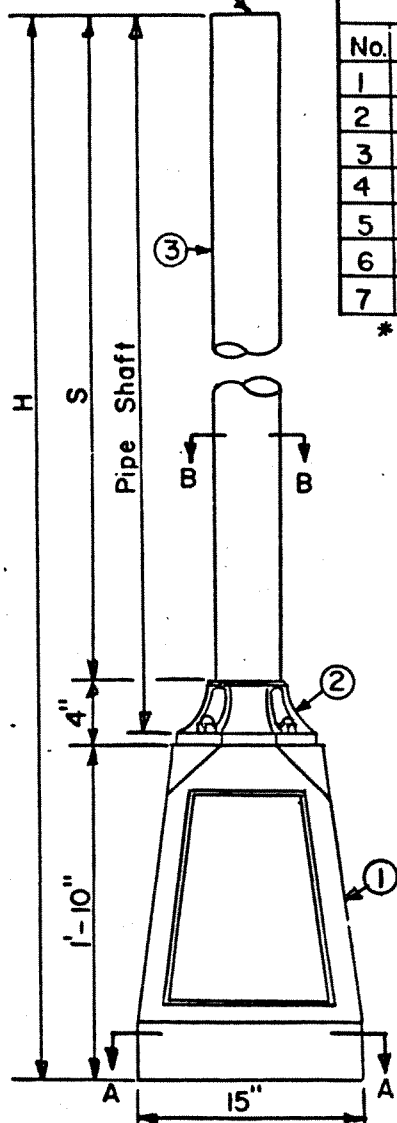
SECTION D-D

Top Ends of Anchor Rods to Have
3/4"-10 Threads 4" Long.

Scale: $\frac{1}{2}'' = 1'$

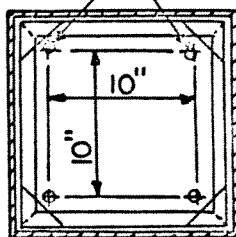
BILL OF MATERIAL			
No.	Name	Qua.	Material
1	Pedestal Base	1	Sheet Steel
2	Column Base *	1	Malleable Iron
3	Pipe Shaft	1	Steel
4	Anchor Rods	4	Steel Cadmium Plated
5	3/4"-10 Hex Cap Nuts	4	Brass
6	3/4"-10 Hex Nuts	4	Steel Cadmium Plated
7	Flat Washers	4	Steel Cadmium Plated

* See Column Base Drawing



SECTION B-B

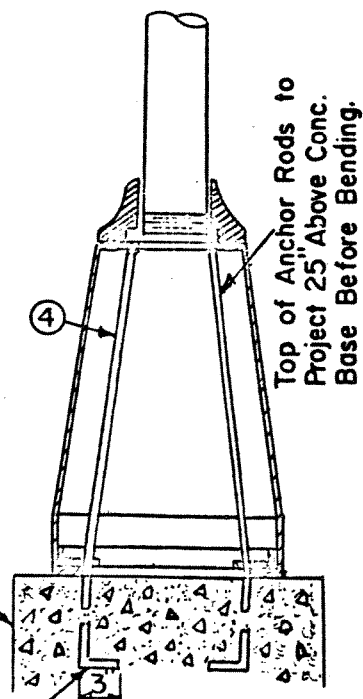
4-3/4"X 48" Long Steel
Anchor Rods.



SECTION A-A

Bottom Ends of Anchor
Rods to be Bent as Shown.

3000 lb. Cem. Conc. Base 20" Sq.
By 30" Deep With Anchor Rods as
Shown



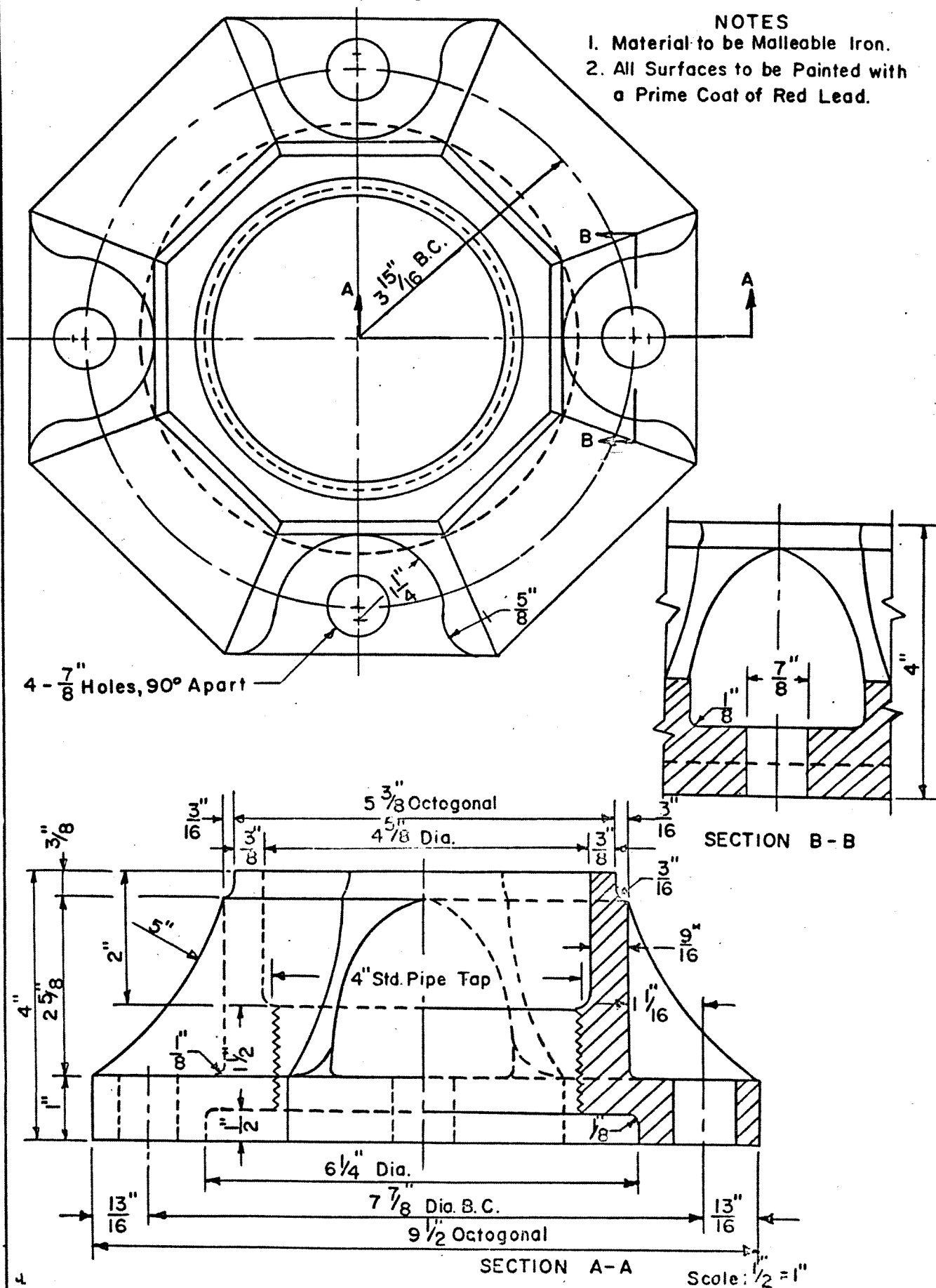
SECTION C-C

Scale: $1'' = 1'$

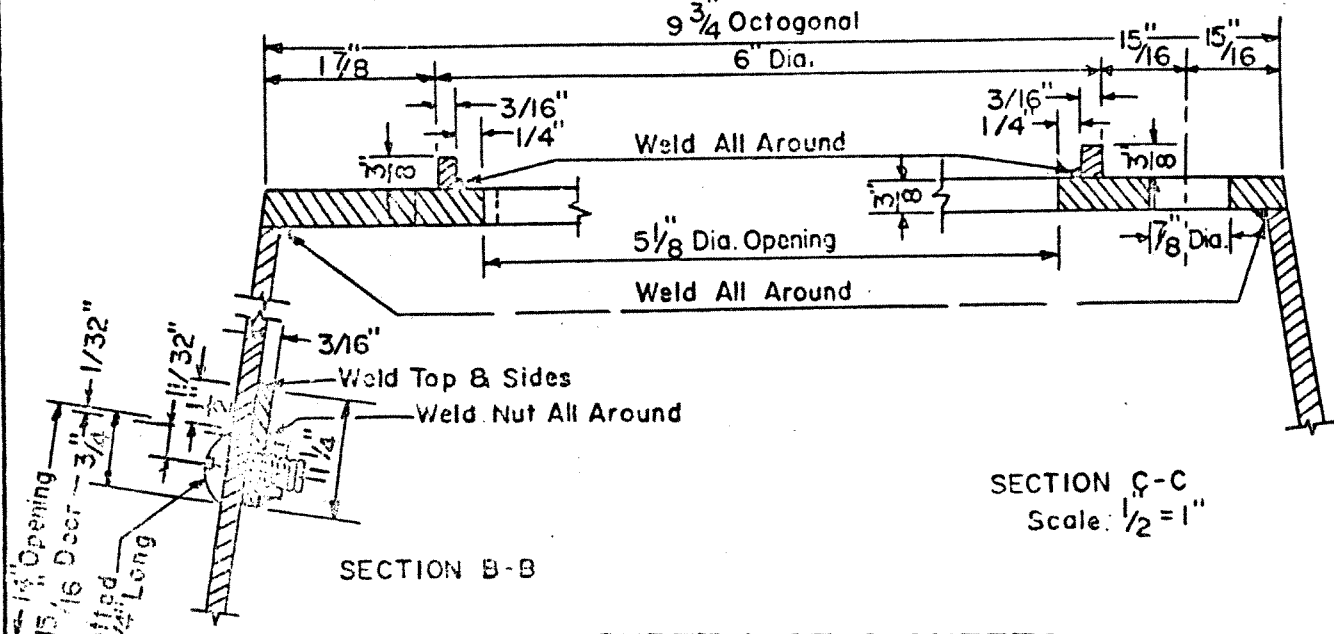
COLUMN BASE
PEDESTAL TYPE

NOTES

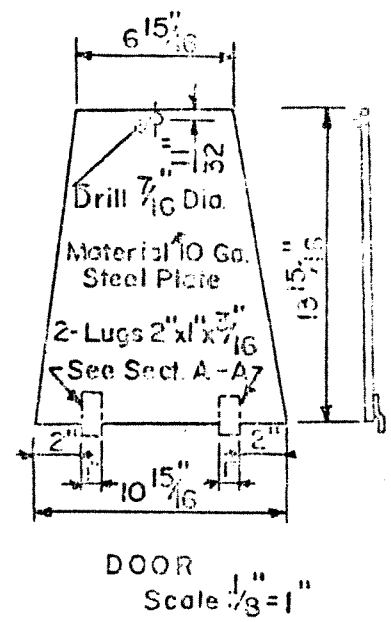
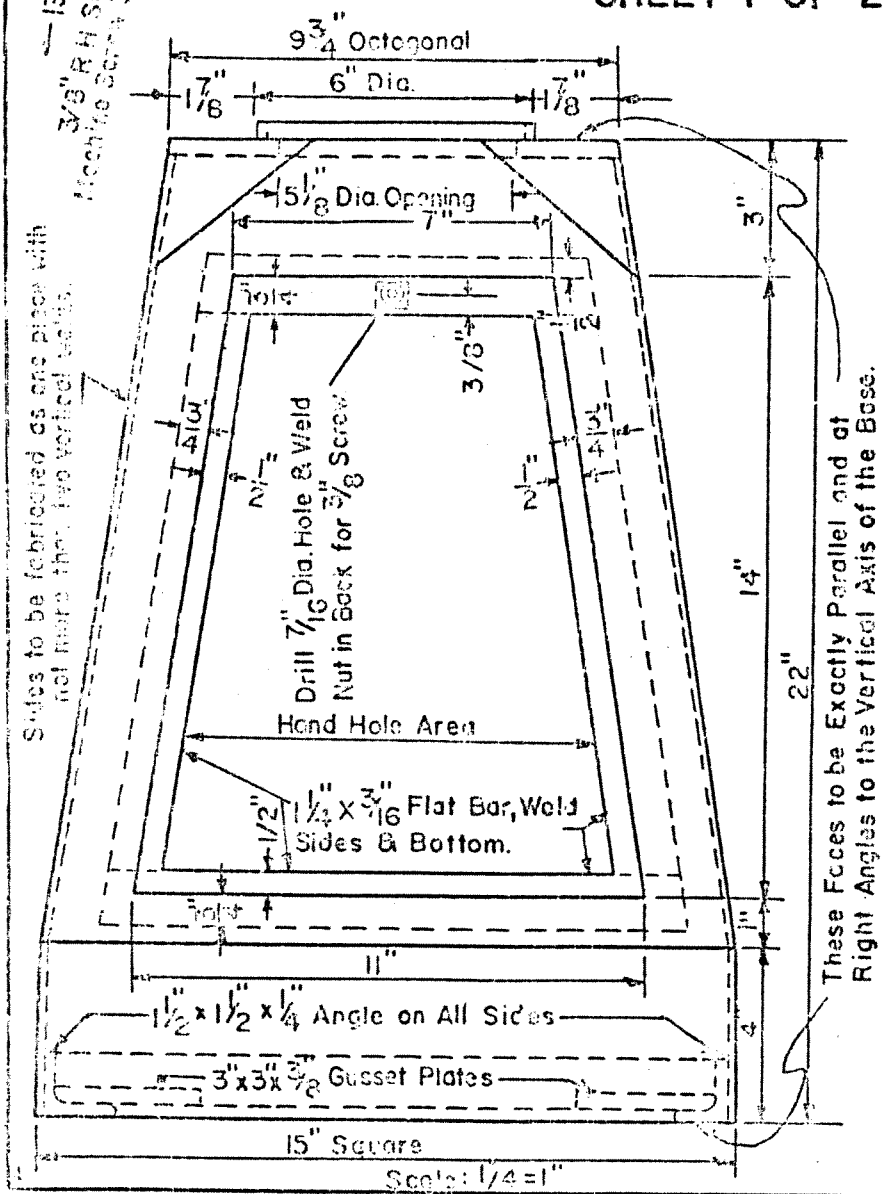
1. Material to be Malleable Iron.
2. All Surfaces to be Painted with a Prime Coat of Red Lead.



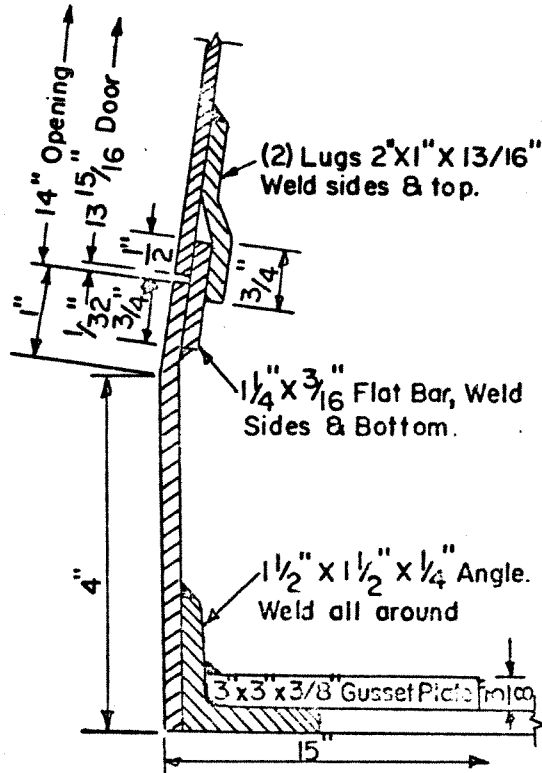
PEDESTAL BASE TRAFFIC SIGNAL POST



SHEET 1 OF 2 SHEETS



PEDESTAL BASE TRAFFIC SIGNAL POST

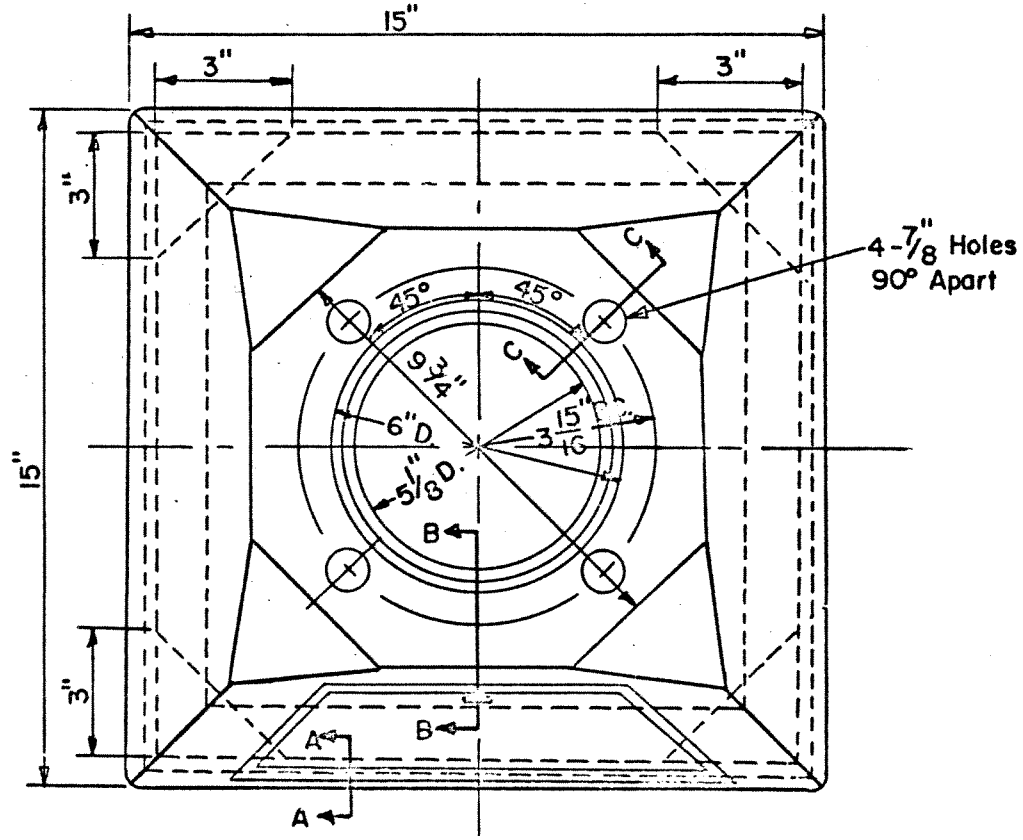


SECTION "A-A"
Scale: 1/2" = 1"

NOTES

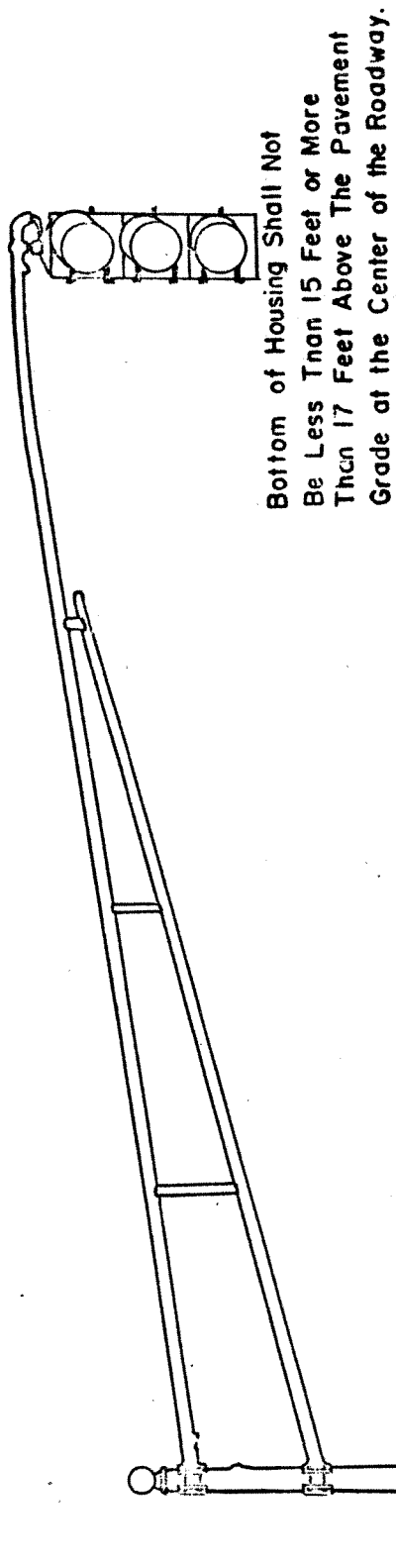
1. All welds to be continuous & of std. proportions
2. All exterior joints to be watertight.
3. Sides of base to be fabricated of 10 gauge (min. thickness) sheet steel. Top to be fabricated from 3/8" steel plate.
4. All material & workmanship are to be to the complete satisfaction of the Department of Public Works.
5. All exterior welds to be ground smooth after fabrication.
6. Entire Pedestal Base to be Hot-Dipped Galvanized and all surfaces to be prepared for paint adherence.

SHEET 2 OF 2 SHEETS



Scale: 1/4" = 1"

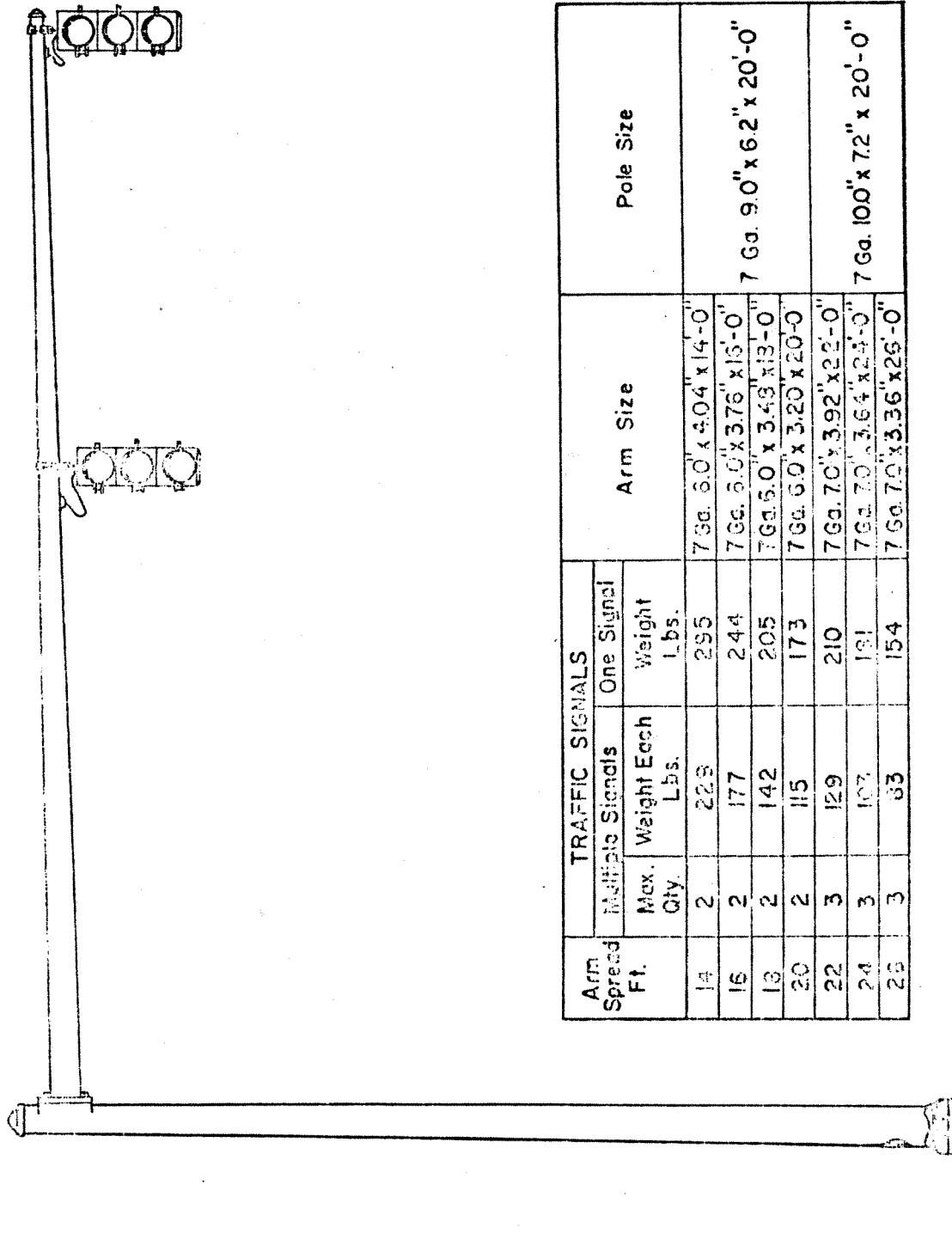
MAST ARM



Mast Arms shall be wired from base to housing with Stranded Type 2 Traffic Signal Cable; or with Type 5 Traffic Signal Head Wire protected with Flexible Metal Conduit (liquid-tight as specified in subsection M5.07.2B) at the junction of Arm and Signal Heads and when permitted by the Engineer, at the junction of Shaft and Arm.

MONOLEVER SIGNAL POLE

45



Arm Spread Ft.	TRAFFIC SIGNALS			Arm Size	Pole Size
	Multiple Signals		One Signal		
	Max. Qty.	Weight Each Lbs.	Weight Lbs.		
14	2	223	295	7 Ga. 6.0" x 4.04" x 14'-0"	7 Ga. 9.0" x 6.2" x 20'-0"
16	2	177	244	7 Ga. 6.0" x 3.76" x 16'-0"	
18	2	142	205	7 Ga. 6.0" x 3.43" x 18'-0"	
20	2	115	173	7 Ga. 6.0" x 3.20" x 20'-0"	
22	3	129	210	7 Ga. 7.0" x 3.92" x 22'-0"	7 Ga. 10.0" x 7.2" x 20'-0"
24	3	107	191	7 Ga. 7.0" x 3.64" x 24'-0"	
26	3	83	154	7 Ga. 7.0" x 3.36" x 26'-0"	

Anchor Bolts Are Set To Manufactures Specification.

EIGHT INCH TRAFFIC SIGNAL ASSEMBLY

HOUSING AND DOOR

LENS

TWIST ON VISOR

DOOR GASKET

LENS GASKET

REFLECTOR RING

REFLECTOR RING
SPRING

LAMP

REFLECTOR

ATTACHING WASHERS

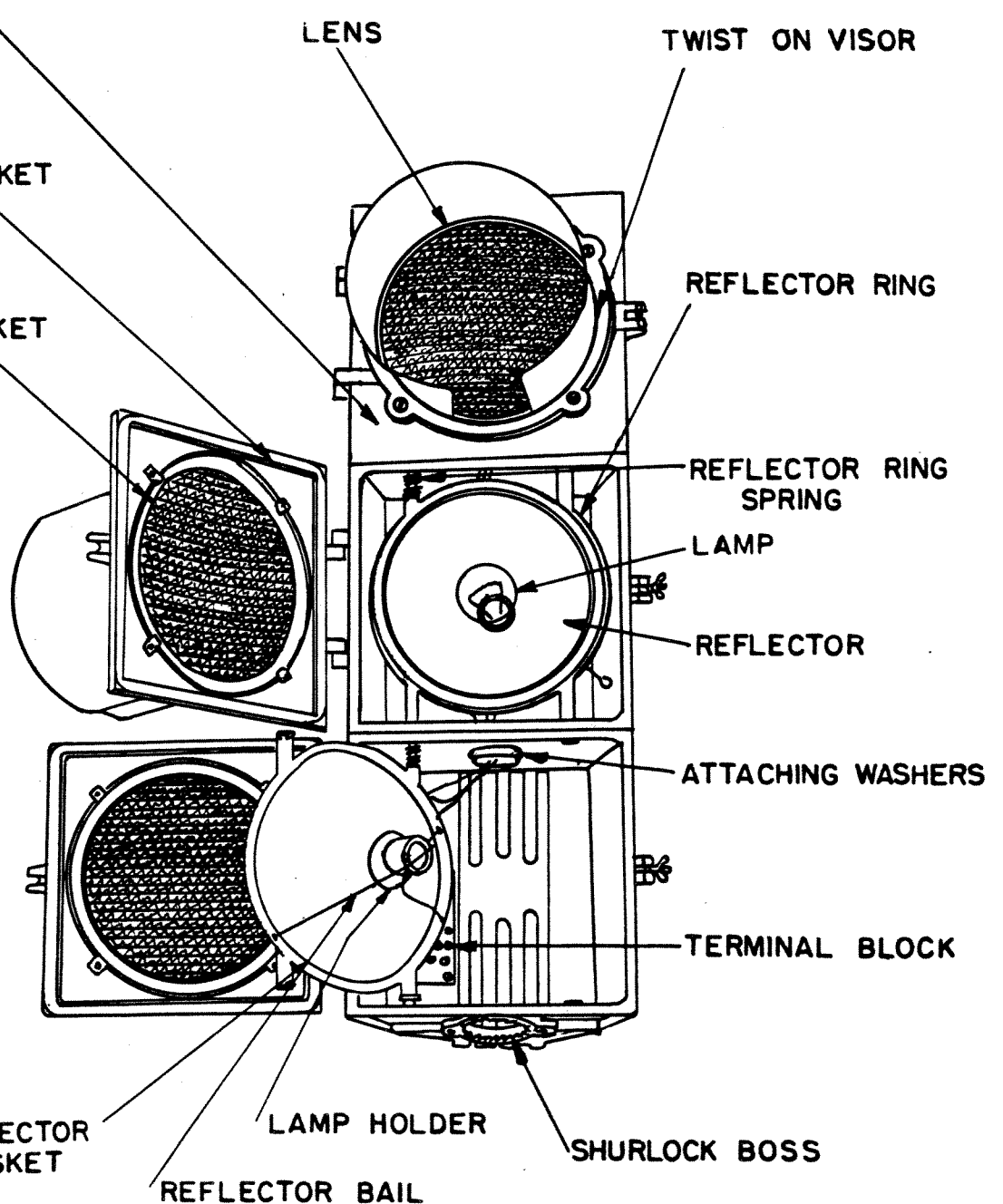
TERMINAL BLOCK

REFLECTOR
GASKET

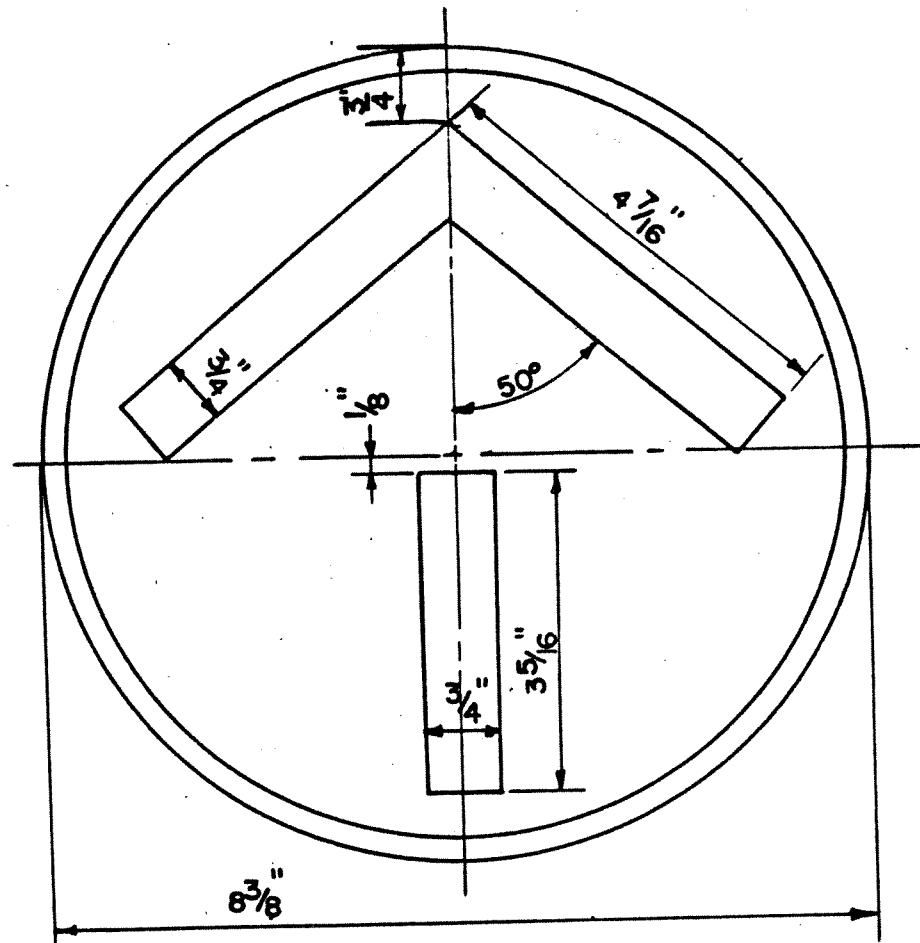
LAMP HOLDER

SHURLOCK BOSS

REFLECTOR BAIL

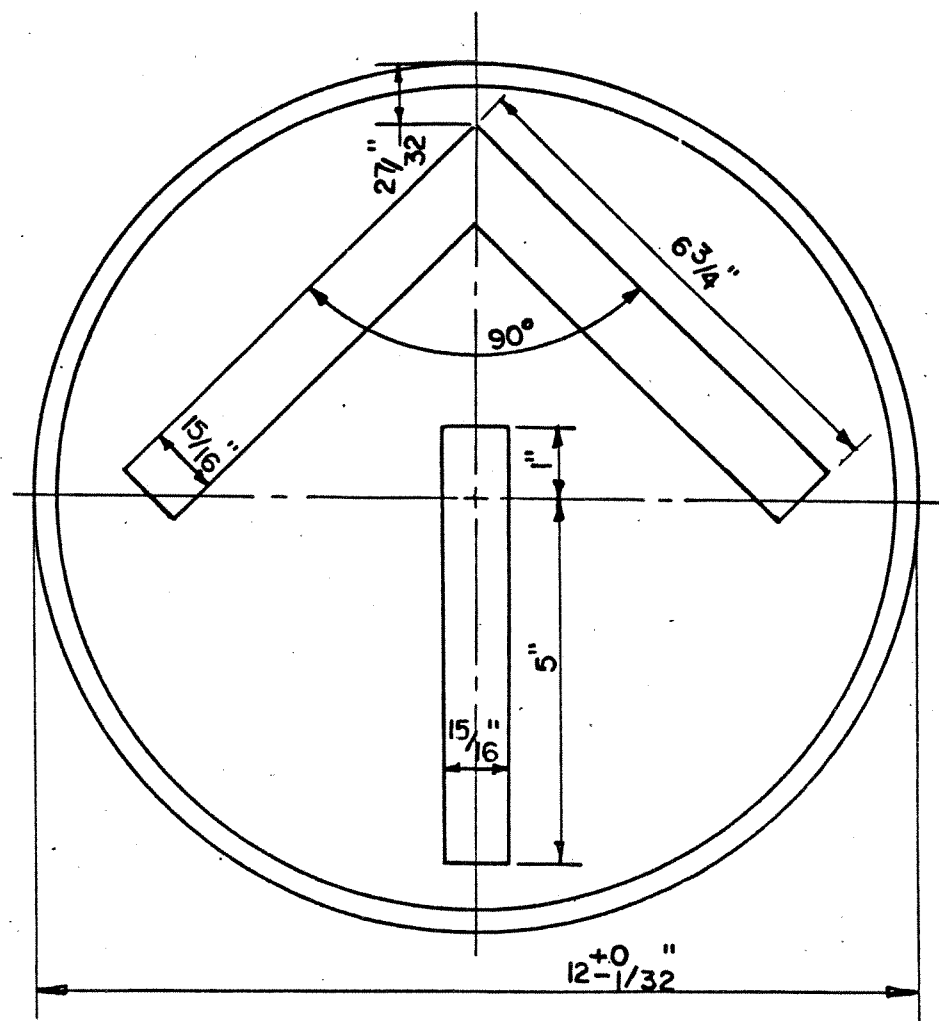


STANDARD ARROW FOR 8" SIGNAL LENS

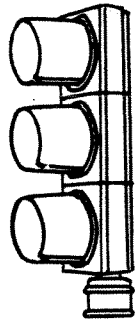
Scale: $1/2" = 0' - 1"$

STANDARD ARROW FOR 12" SIGNAL LENS

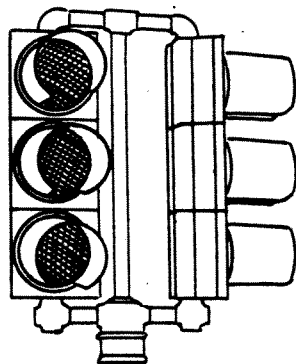
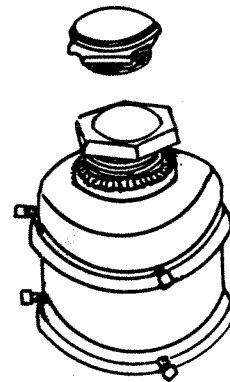
48

Scale: $3/8" = 0' - 1"$

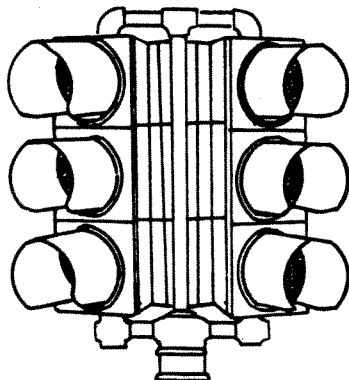
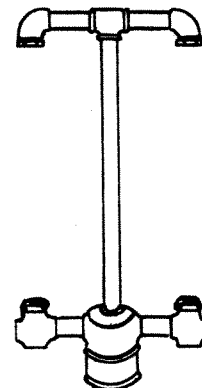
POST TOP MOUNTED 8" TRAFFIC SIGNALS



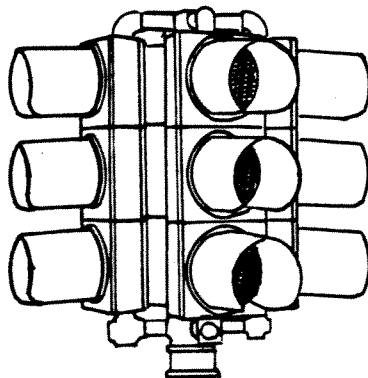
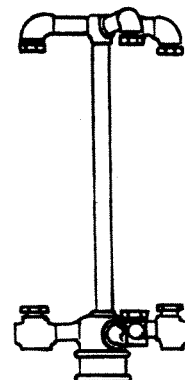
ONE WAY
THREE SECTION



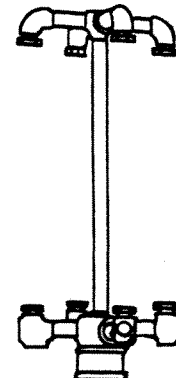
TWO WAY
THREE SECTION



THREE WAY
THREE SECTION



FOUR WAY
THREE SECTION

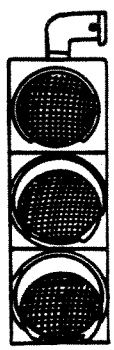
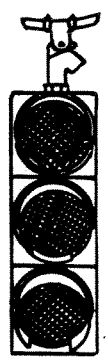


MOUNTING 8" TRAFFIC SIGNALS

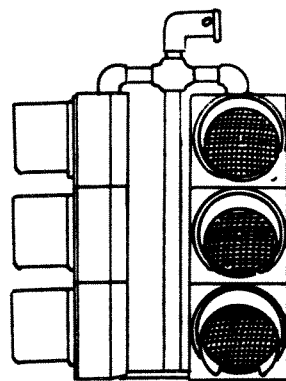
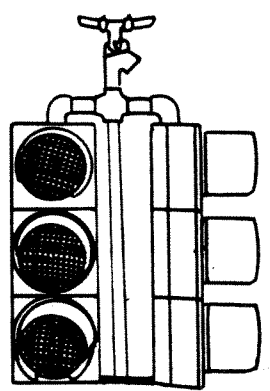
SPAN WIRE MOUNTED

MAST ARM MOUNTED

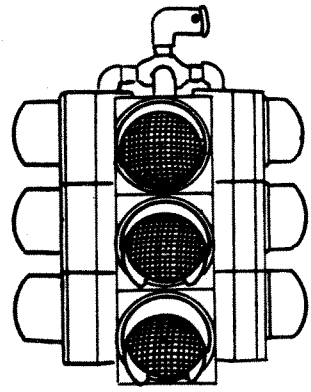
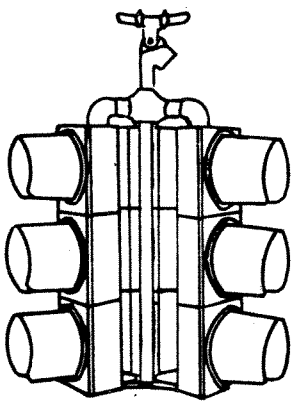
ONE WAY
THREE SECTION



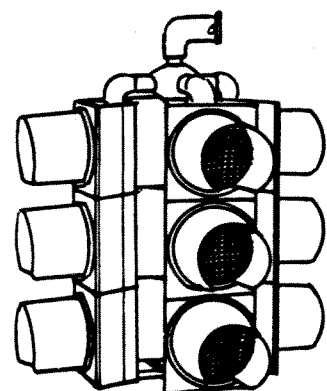
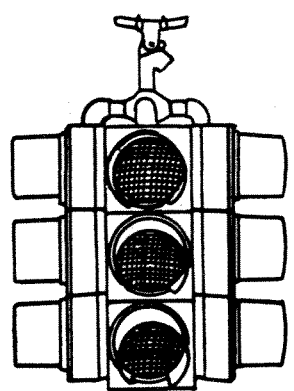
TWO WAY
THREE SECTION



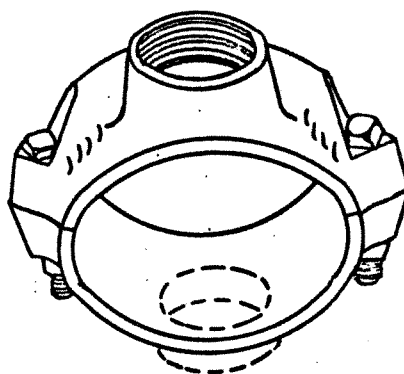
THREE WAY
THREE SECTION



FOUR WAY
THREE SECTION

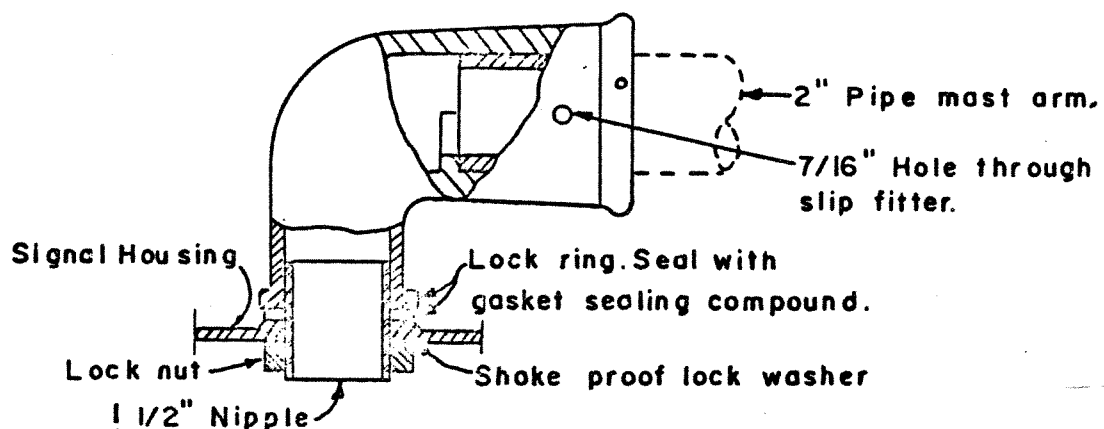
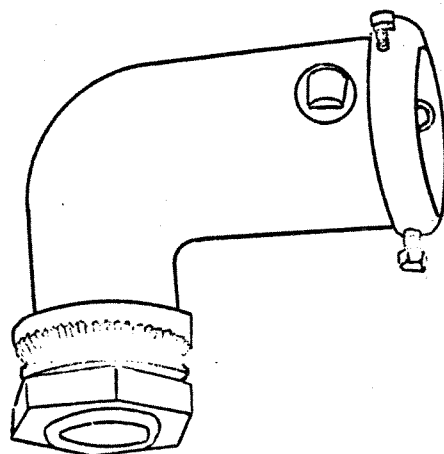


POLE CLAMPS FOR STEEL POLE MOUNTING (MALLEABLE IRON)



POLE SIZE			
SINGLE 1 1/2" HUB	OR	DOUBLE 1 1/2" HUB	
NOM. I.D.		ACTUAL O.D.	
4"		4 1/2"	
5"		5 9/16"	
6"		6 5/8"	
7"		7 5/8"	
8"		8 5/8"	

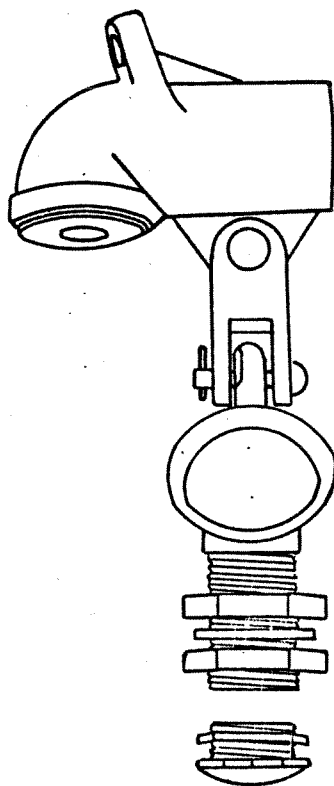
MAST ARM HANGER TYPE 2



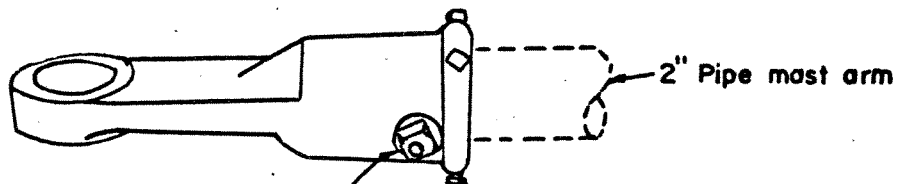
After signal has been plumbed and secured
drill 7/16" hole through mast arm in line with
hole through slip fitter.

Place 3/8" galvanized bolt with washer under bolt
head through hole and secure with two nuts
and a washer.

MAST ARM HANGER TYPE I



SIDE MOUNTED SLIP FITTER FOR MAST ARM MOUNTING

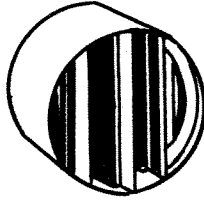


After signal has been plumbed and secured drill $7/16$ " hole through mast arm in line with hole through slip fitter.

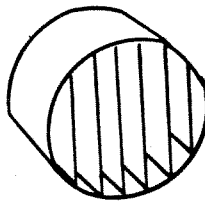
Place $3/8$ " galvanized bolt, with washer under head through hole and secure with two nuts and a washer.

(Use only when indicated on plans.)

LOUVERS FOR 8" SIGNALS

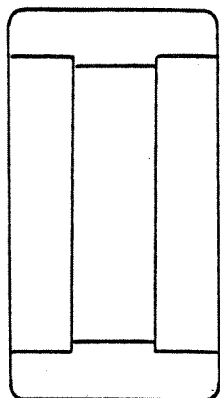


Directional, 3-Vane, with 3° cut-off right of center. Rotate louver 180° for 3° cut-off left of center.

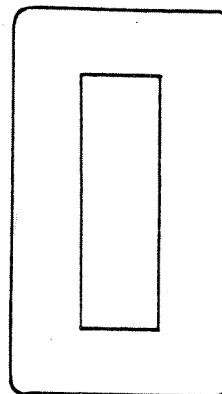


Directional, 6 Vane, with 3° cut-off right of center. Rotate louver 180° for 3° cut-off left of center.

MAST ARM MOUNTING BACKPLATES FOR 8" SIGNAL

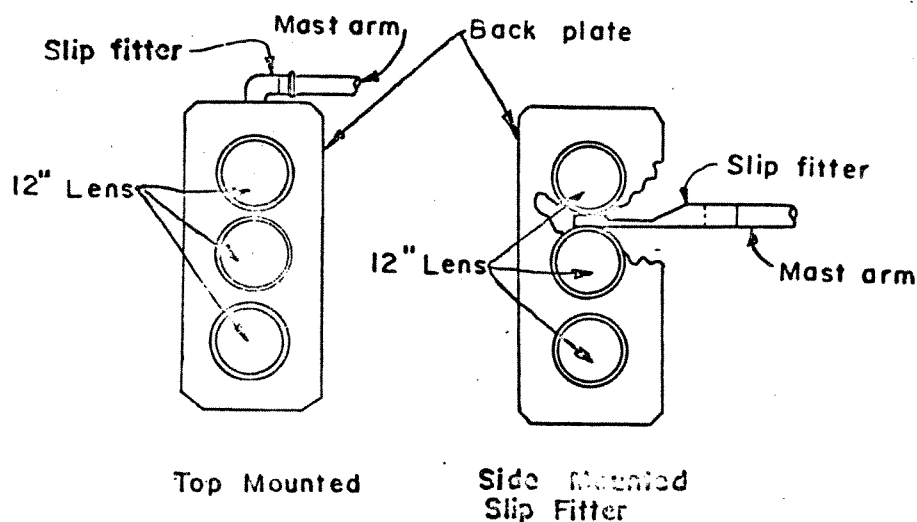


5" Border
for mast arm.



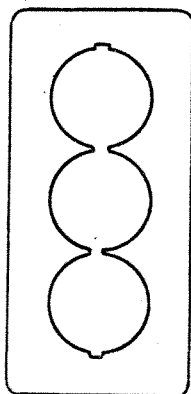
8" Border
for post mounting.

Drill signal head and
attach back plate us-
ing (6) 1/4"-20 plated
brass machine screws
with nut and lock
washer.

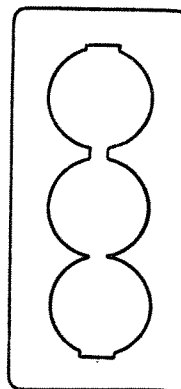


(Use only when
indicated on plans.)

BACKPLATES FOR 12" SIGNALS

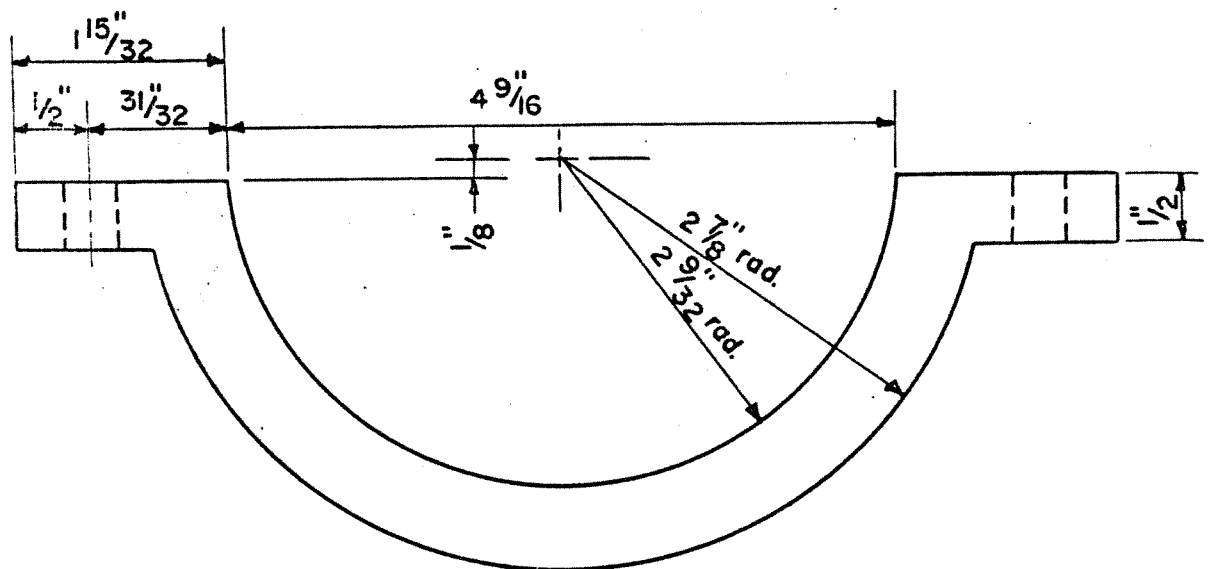
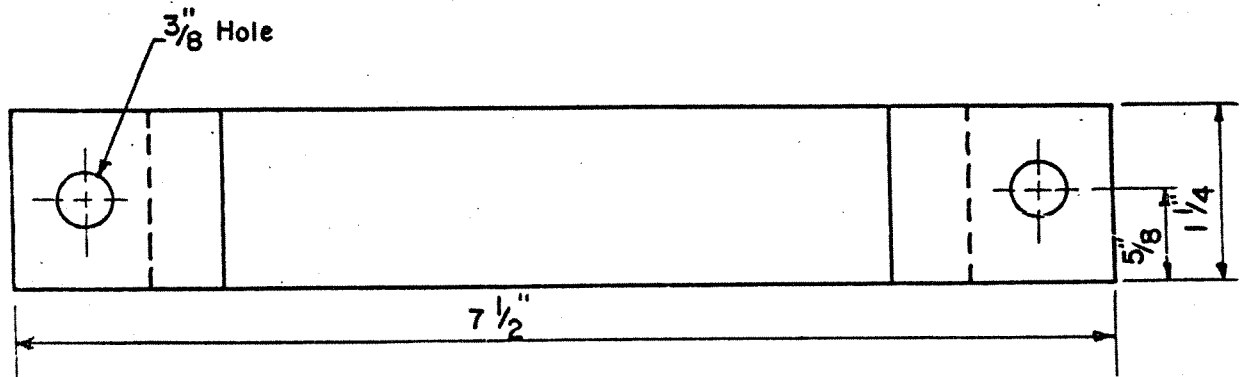


To fit 12" signal face.



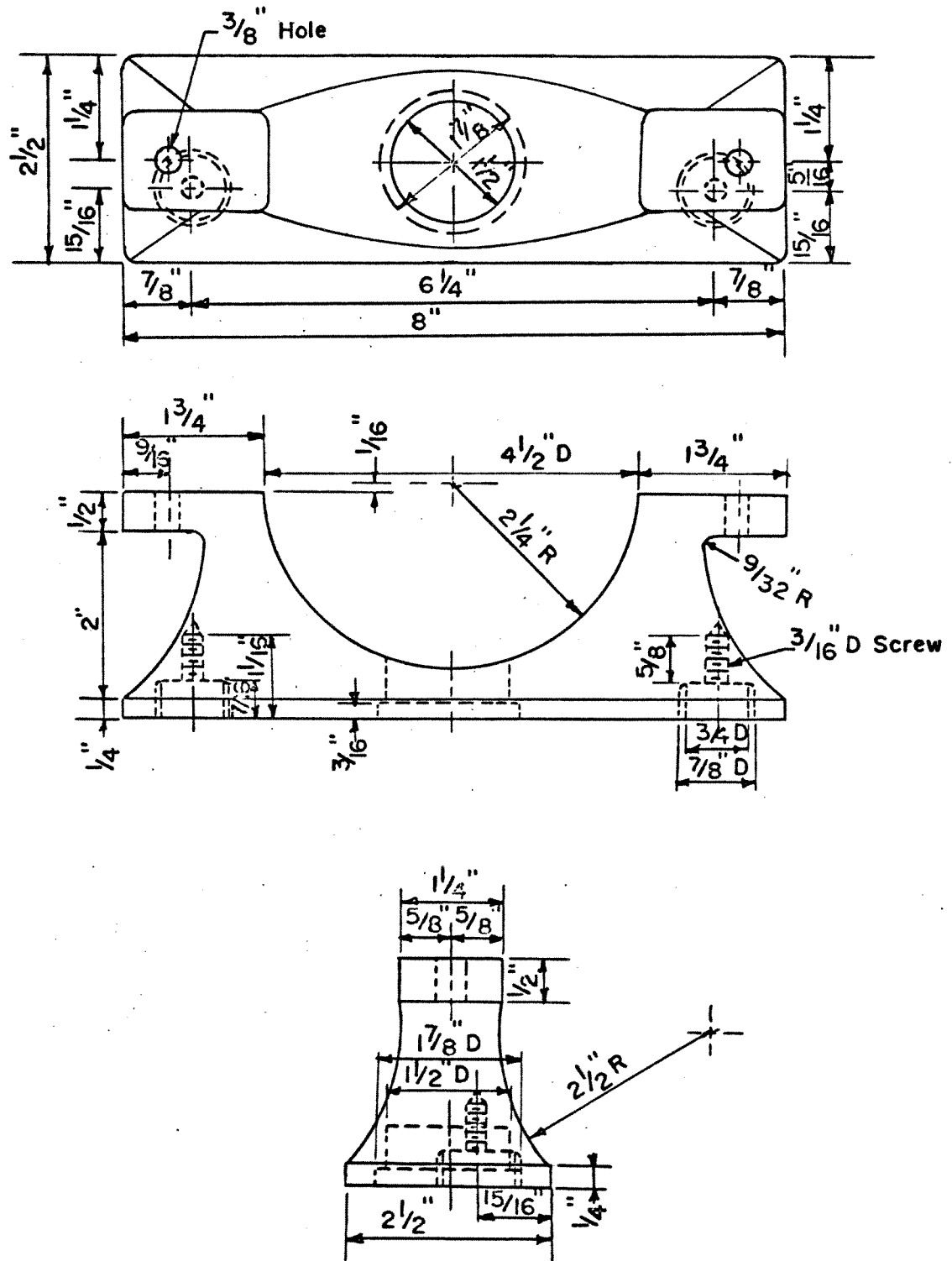
To fit 12" signal face equipped
with Elevator Plumbizer.

METER BOX CASTING FOR 4" PIPE POST

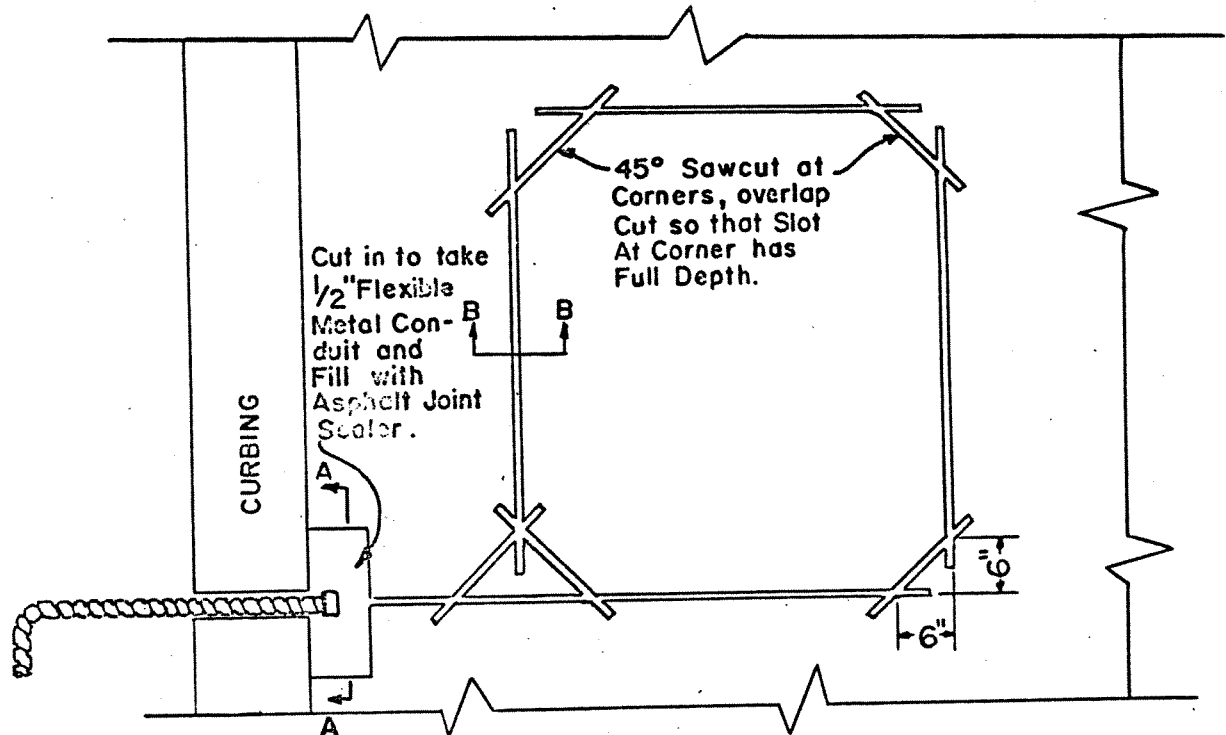


Scale: $\frac{3}{4}" = 1"$

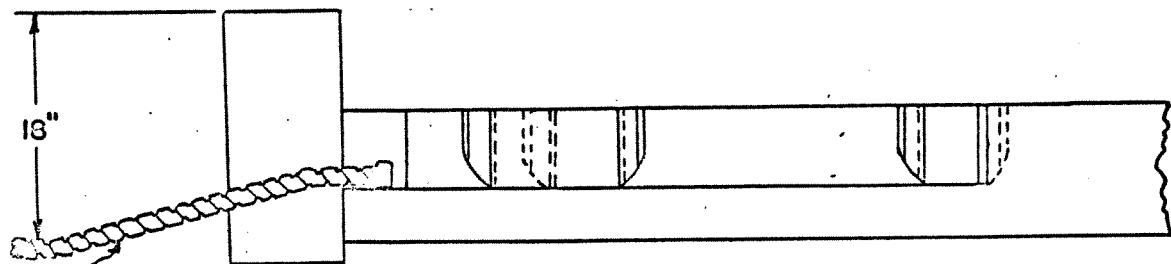
FLAT FRONT PIPE ENTRANCE METER BOX CASTING FOR 4" PIPE



INSTALLATION OF WIRE LOOP DETECTOR

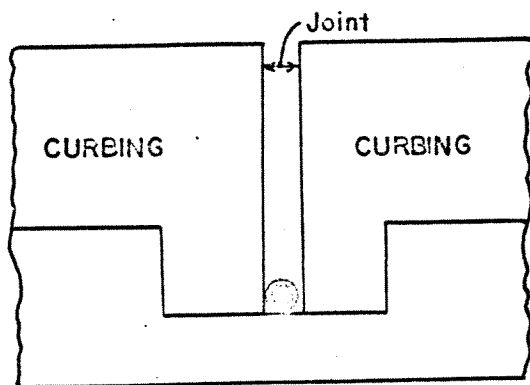


USE #12 AWG WIRE PER MANUFACTURERS' RECOMMENDATION.

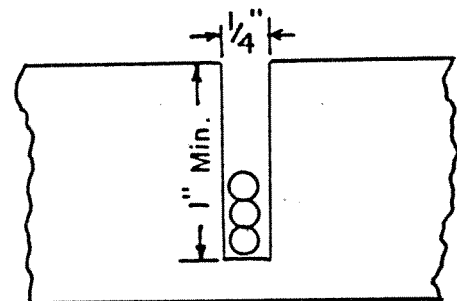


Flexible Steel Conduit.

Loop Conduit to Pull Box or Signal Foundation.



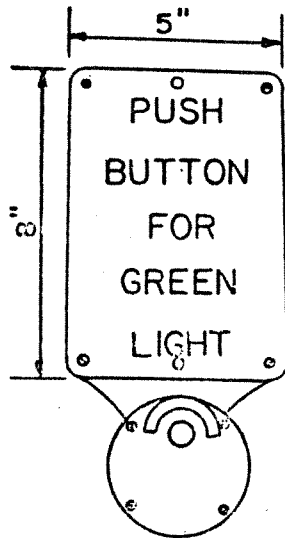
SECTION A-A



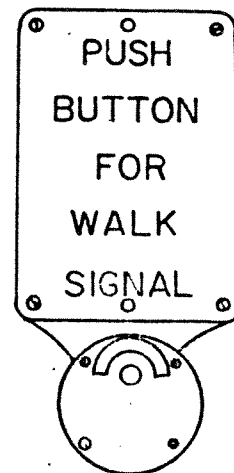
SECTION B-B

Not to Scale

PEDESTRIAN-ACTUATED SIGNAL SIGNS

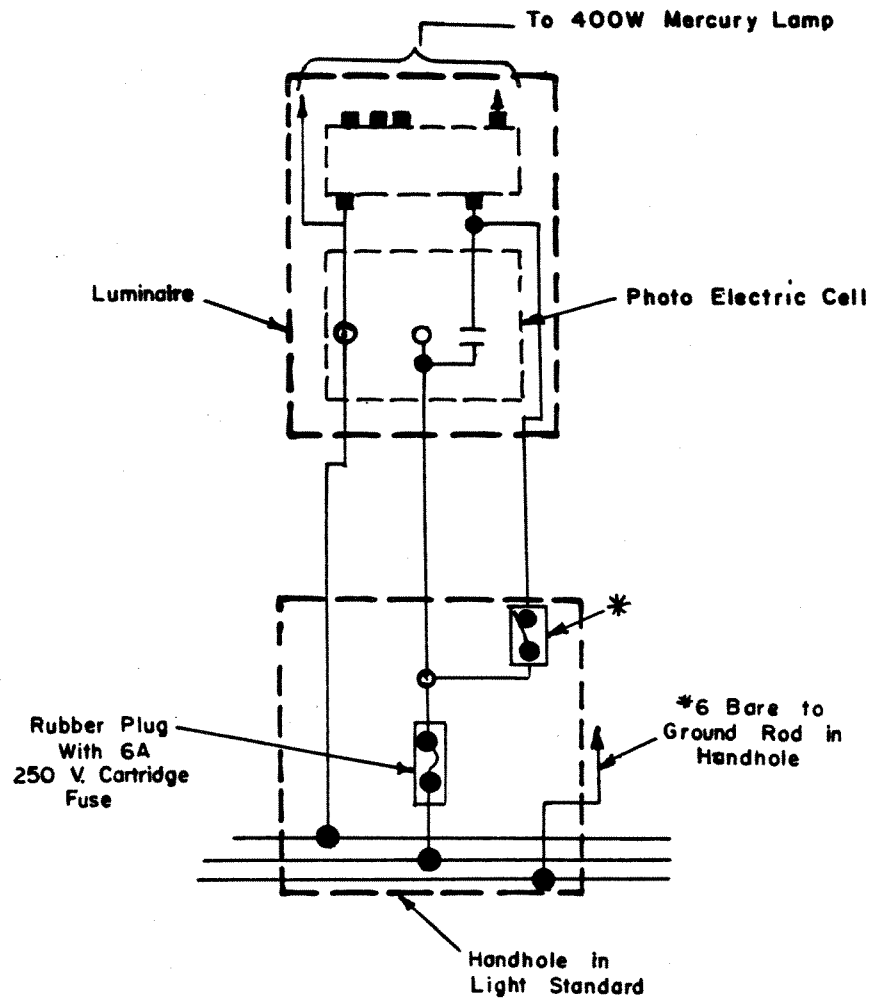


R9-6

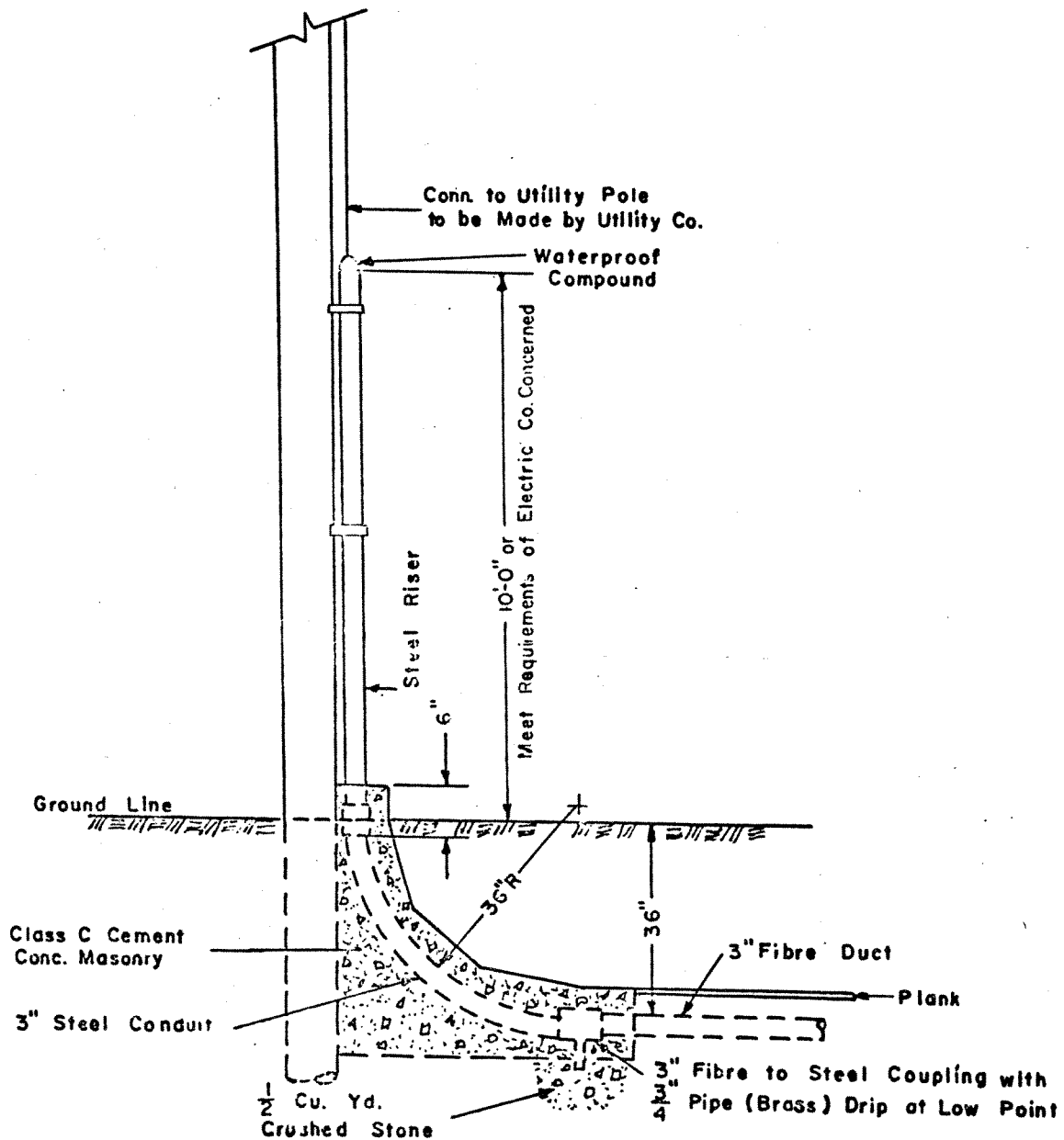


R9-7

Pushbutton should be at a height of 3-1/2 to 4 feet above the sidewalk, and the Pedestrian-Actuated Signal Sign, should be mounted immediately above it.



WIRING DIAGRAM FOR
MERCURY LUMINAIRE



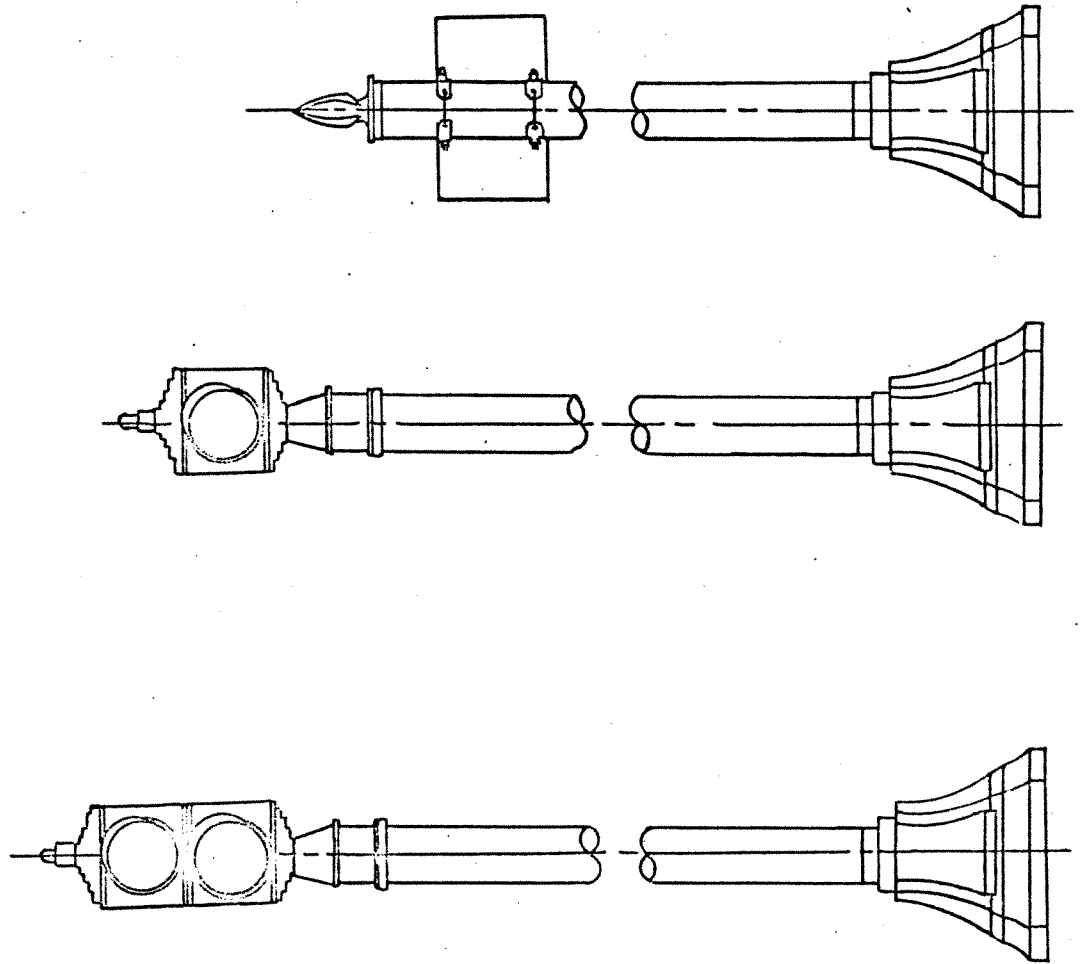
UTILITY SERVICE POLE RISER
HIGHWAY LIGHTING

FLASHING BEACONS

METER & FLASHER PEDESTAL

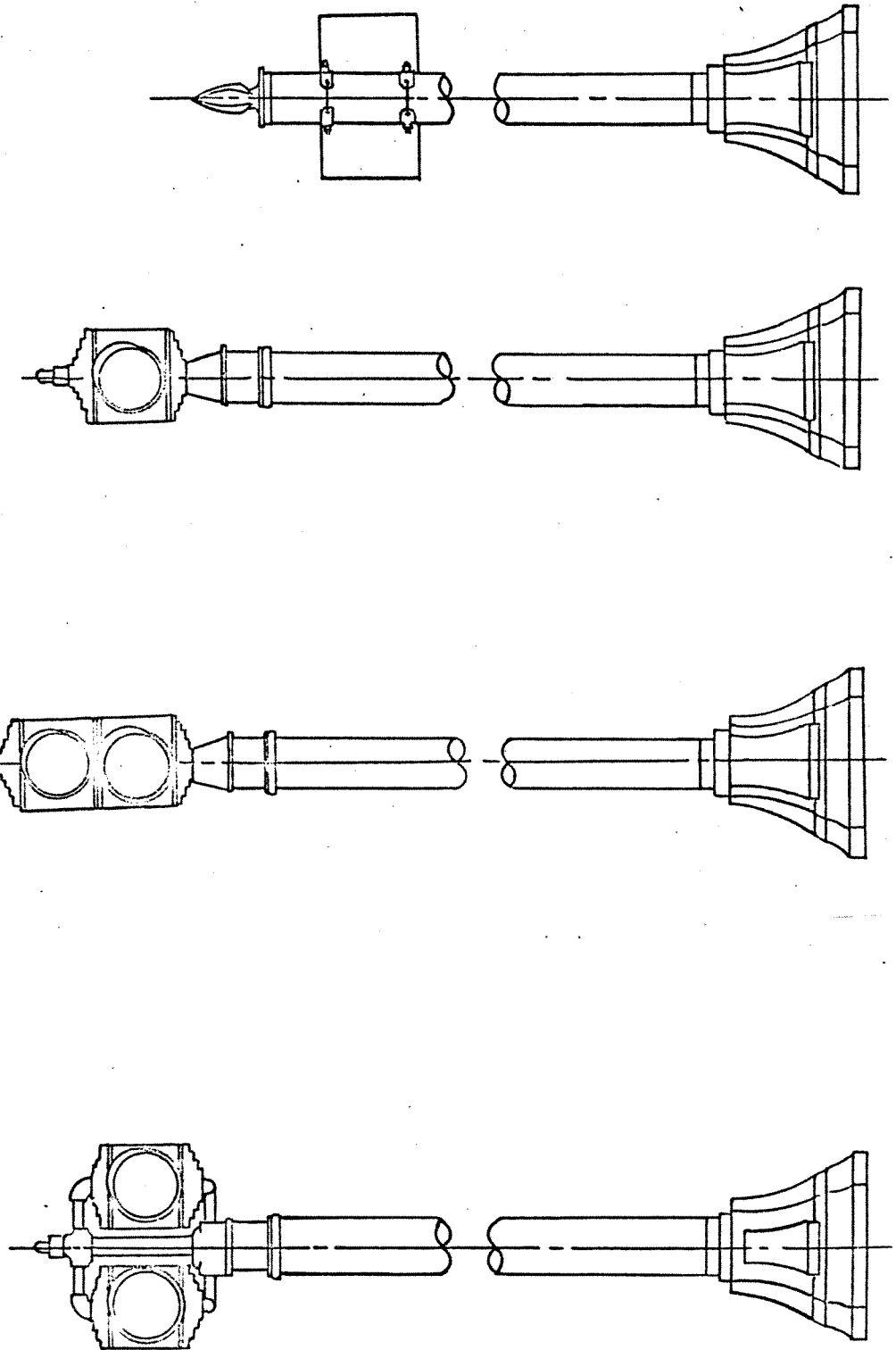
TYPE B

To be used at point where traffic must go to right of Beacon.



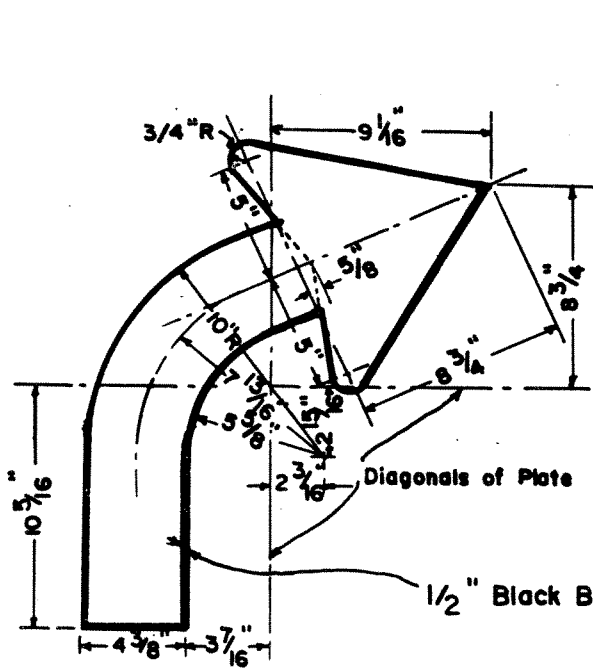
TYPE A

To be used at point where traffic can go to either left or right of the Beacon.

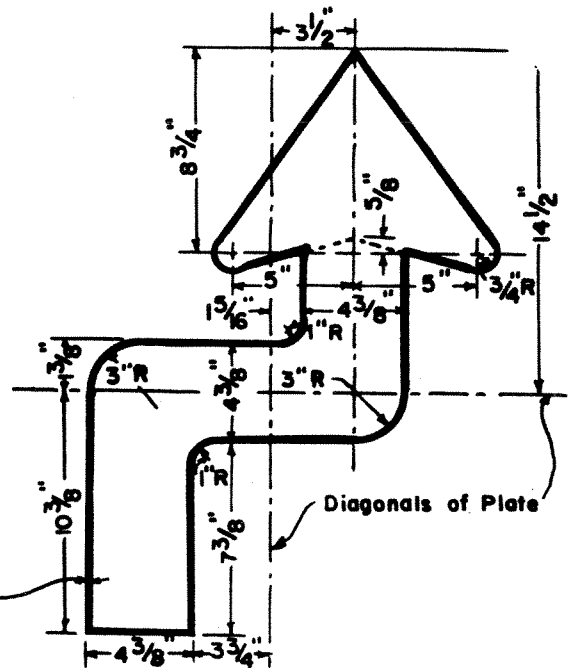


ALL POSTS SHALL BE STANDARD TYPE 8 FT. LONG INCLUDING BASE

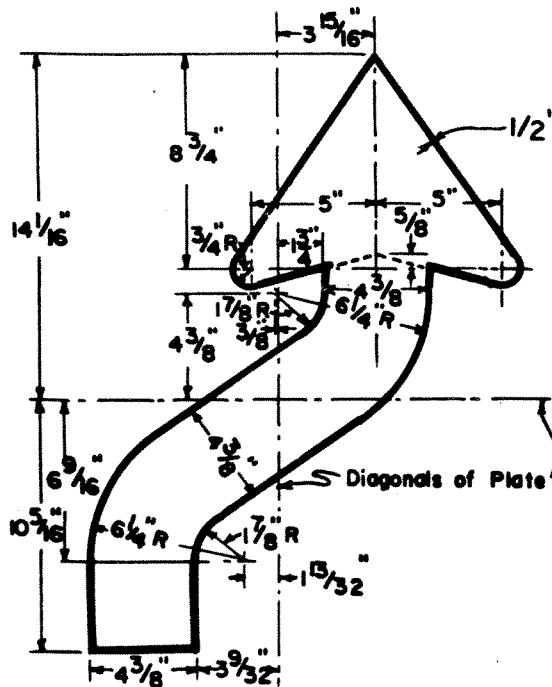
ILLUMINATED TURN & CURVE SIGNS



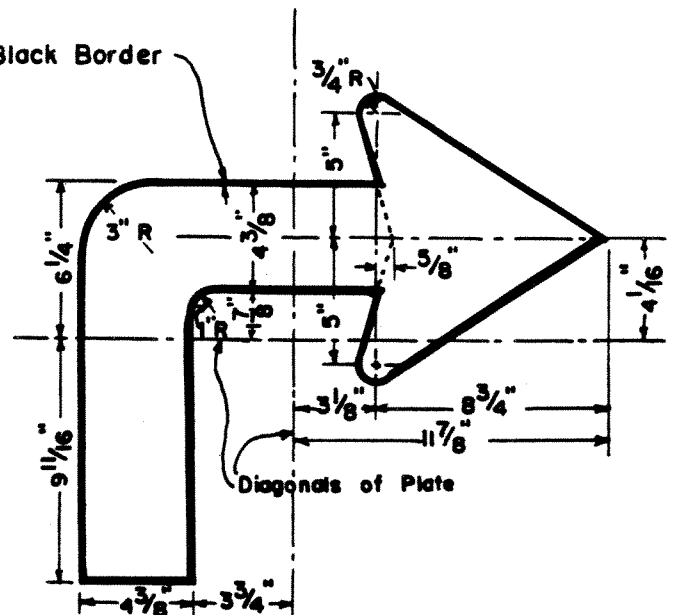
WI-2
30" x 30"



WI-3
30" x 30"



WI-4
30" x 30"



WI-1
30" x 30"

Scale: 1/8" = 1"